

## ARIZONA

Anthem  
623.551.6868

Casa Grande  
520.876.5697

Chandler  
480.961.3311

Gilbert  
480.279.2404

Goodyear  
623.882.3200

North Phoenix  
602.992.2702

Mesa  
480.964.1616

Peoria  
623.876.9200

Phoenix  
602.305.6046

Scottsdale  
480.596.8711

Tucson  
520.408.1000

## CALIFORNIA

Concord  
925.825.3344

Dublin  
925.551.8383

Fresno  
559.431.8007

Menlo Park  
650.323.5161

Merced  
209.383.3330

Napa  
707.255.7575

Rancho Cordova  
916.638.7744

Roseville  
916.780.2033

Sacramento  
916.492.1000

San Diego  
858.278.5151

San Jose  
408.287.7882

San Rafael  
415.454.4313

Santa Ana  
714.279.8060

Santa Rosa  
707.584.7272

Stockton  
209.931.8555

Vacaville  
707.447.7773

Vista  
760.291.1916

## COLORADO

Colorado Springs  
719.623.4133

Littleton  
303.934.3200

Boynton Beach  
561.533.1481

Ft. Pierce  
772.465.1966

Lake Park  
561.863.5580

Stuart  
772.287.9905

## FLORIDA

## IDAHO

Boise  
208.376.4449

Hayden  
208.762.3399

## MARYLAND

Frederick  
301.948.2000

## NEVADA

Henderson  
702.435.9471

Las Vegas  
702.362.4224

Las Vegas North  
702.656.8150

Bend  
541.382.9333

Milwaukie  
503.652.0800

Tigard  
503.670.9949

## OREGON

## TEXAS

Alliance  
817.232.3380

Austin  
512.282.2331

Bedford  
817.545.7756

Corpus Christi  
361.808.4654

Dallas  
972.466.1600

Frisco  
972.712.5000

Houston  
713.934.9500

Richardson  
972.680.0007

Round Rock  
512.255.1990

San Antonio  
210.408.9090

Spring  
281.681.0600

## VIRGINIA

Richmond  
804.226.2700

## WASHINGTON

Bellevue  
425.828.4554

Everett  
425.303.9200

Lakewood  
253.581.4018

Renton  
425.277.2525

Spokane  
509.467.6601

Vancouver  
360.891.1998

See Page 423 for a complete location list.

Horizon

Product Catalog

Horizon

# Product CATALOG



Horizon  
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5<sup>th</sup> Edition

Irrigation • Outdoor Living • Landscape • Equipment • Irrigation • Outdoor Living • Landscape • Equipment



irrigation • outdoor living • landscape • equipment

First, let me take a moment to thank you for your business. Thank you for trusting in Horizon to deliver the products and services you need to ensure your company continues to thrive and succeed.

At Horizon, we take our professional relationship with you very seriously. We know that there are other distributors in the industry, but the fact that you continue to trust in us to help you get the job done is an honor. It's our goal to continue earning your business year after year.

So what makes Horizon different? First and foremost it is our people. You hear that a lot these days, but the folks in our stores and in our trucks truly take your business personally. They are dedicated, knowledgeable industry professionals that understand what you face every day and are eager to help you get the results you need.

But it's also our product selection. We offer the industry's most expansive and comprehensive selection of the products you need to get the job done. This includes irrigation products, power equipment, tools, chemicals and fertilizers, lighting, ponds, erosion control and more. Every product Horizon sells is professional-grade to help set you apart from the competition.

This Catalog serves as a tool to the green industry professional. We have created it to be a total resource used when working on quotes, specifications, bids, looking up references, or even just to find the right solution to your particular turf problem. We hope you find it comprehensive, valuable and easy to use.

The Catalog is one of many tools available from Horizon designed to give you the edge you need to grow sales and profits. Additional tools include:

Marketing Toolkit — your virtual marketing department! Marketing Toolkit contains templates for business cards, yard signs, door hangers and direct mail postcards that you can customize to professionally market your company. Plus the Toolkit offers marketing and sales tools to help you up-sell clients to more profitable products such as Water Smart irrigation products, ponds, lighting and more!

BizPro Online Videos — quick videos that answer your most common how-to questions. Topics include types of slow release fertilizer, how to calculate voltage drop, and more!

Horizon Maintenance Guide — the industry's leading reference guide for everything landscape. Developed specifically for the soil, turf and environment of your region, the maintenance guide gives you quick answers to your most common infield questions.

Please, take a moment to look through our 2014-2015 catalog, and stop by any one of our more than 60 stores.

Best regards,

Jim Ross  
President  
Horizon Distributors, Inc.

A PoolCorp Company



## OUR MISSION...

To provide exceptional value to our customers and suppliers, creating exceptional return for our shareholders, while providing exceptional opportunities for our employees.

## OUR VISION...

Big enough to be professional. Small enough to be personal. We set the standard by which other distributors are measured.

## OUR CORE VALUES...



# Introduction

## Our Differences Make A Difference For You

As the old saying goes, it's better to work smarter than to work harder, and that's exactly what partnering with Horizon can do for you...



### Horizon 24/7

Available exclusively to Horizon customers, Horizon 24/7 is our online ordering and account management system. With 24/7 you have immediate access to pricing, inventory, invoices, account information and more. You can even export sales and pricing history that easily uploads to most accounting software systems. Set up ordering templates for quick re-orders of common products that can be shipped directly or ready for pickup at your local Horizon store the next day. Get more done every day with Horizon 24/7.



### Always In Stock

Your time is limited, and you rely on your distributor partners to have product in stock so that you can do your job. That's why we've launched the Always in Stock program. We guarantee the core products you need will be on the shelves, or you receive a \$10 gift certificate. Our goal is to fill every order completely and get you back out making money as quickly as possible. Because of regional preferences the specific products vary by store.



### BizPro Training Videos & FAQ's

One of the best ways to expand your business is by tapping into profitable niche markets with new products and services. Horizon has produced a series of training videos that show you how to grow your business with these niche opportunities. You'll learn the ins and outs of the product or service, plus get tools, tips & coupons so your business can hit the ground running. Plus we have a series of quick videos designed to answer your most common questions with easy to understand answers.

### Marketing Toolkit

The Horizon Marketing Toolkit program offers contractors a unique and beneficial "image-building" program. The toolkit offers a comprehensive menu of strategies and materials to help you promote your services and establish yourself as a leading local professional. There are various customizable items including direct mail postcards, business cards, on-the-job signs and door hangers that you can use to reach new customers and promote your business — all at a nominal cost. The elements contained in the toolkit are meant to generate a powerful and appealing image for your company.



### Horizon Landscape Irrigation Pro App

Developed for any smart phone and iPad tablet, the Horizon app gives your resources and references at your fingertips. Easily locate Horizon stores, calculate common industry formulas, access MSDS sheets and more.

To apply for Horizon Credit, visit us at [www.horizononline.com](http://www.horizononline.com) to download an application or stop by your local store.

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# Irrigation

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Fertigation  
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Drainage  
PVC Fittings  
PVC Pipe  
Nipples/Fittings  
Solvents  
Valve Boxes  
Wire & Accessories  
Reference

## Smart Water Products:

With growing demands and strained water resources, it's important to promote water-saving products, adopt "best practices" and educate customers about how to do more with less. Usually when we think of water conservation, or smart water products, we immediately think of commercial properties, parks or HOA's. But the single family residential homeowner can take advantage of these products at a reasonable price.

With an estimated 50% of the total water bill associated with outdoor water use, Smart Water products will have an immediate impact on their water bill. Plus, over watering can create hardscape damage, plant disease, water-related liability issues and more. Property maintenance costs go up, while turf and plant life growth deteriorates.

Proper watering practices can dramatically improve the entire outdoor experience.

In addition to saving water and money for your customers, many water districts around the country are offering rebates on Smart Water products. In many cases, the cost of the product is paid for by the rebate which means increased profits for you. For the most complete compilation of rebate programs by state, go to [HorizonOnline.com/rebates](http://HorizonOnline.com/rebates).



Horizon is dedicated to helping our customers take full advantage of Smart Water products. Look for the Smart Water Symbol (💧) throughout the Source Book to easily identify water conserving products.

## SPRAYS



### 1800 SERIES

2", 4", 6", 12"

**1800 Series spray heads have first-rate quality built in for reliable operation and long life.**

**Their superior components and features make them the spray heads of choice for a wide variety of applications.**



- ◆ Exclusive co-molded wiper seal features in an encased plastic "cage" to provide unmatched resistance to grit, pressure and the environment. Additionally, the pressure-activated, multi-function seal design assures a positive seal without excess "flow-by" which enables more heads to be installed on the same valve
- ◆ Precision controlled flush at pop-down clears debris from unit, assuring positive stem retraction in all soil types
- ◆ Strong stainless steel spring provides reliable stem retraction
- ◆ Two-piece ratchet mechanism on all models allows easy nozzle pattern alignment and provides added durability
- ◆ Pre-installed orange 1800 Pop-Top™ flush plug blocks debris from entering after flushing. Allows for easy nozzle installation
- ◆ Constructed of time-proved UV-resistant plastic and corrosion resistant stainless steel parts, assuring long product life
- ◆ All sprinkler components are removable from the top without special tools, providing for quick and easy flushing and maintenance of the sprinkler
- ◆ Side and bottom inlets featured on 1806 and 1812 models

### Specifications:

Spacing: 3' to 24'  
Pressure: 15 psi to 70 psi  
Flow-by: 0 psi at 8 psi or greater; .10 GPM otherwise

### 1800-SAM SERIES 💧

4", 6", 12"

**Ideal for use in areas with changing elevations. The 1800 SAM Series offers all 1800 Series features plus:**

- ◆ Built-in Seal-A-Matic™ (SAM) check valve. Eliminates the need for under-the-head check valves. No parts to be installed at the site
- ◆ Traps water in lateral pipes in elevation changes of up to 80'. Reduces wear on system components by minimizing water hammer during start-up
- ◆ Prevents drainage from spray heads at lower elevations. Stops water waste. Ends landscape damage due to flooding and/or erosion
- ◆ Even stronger retract spring to accommodate elevation changes up to 8'. One of the strongest springs in the industry
- ◆ Designed for use with all Rain Bird plastic and brass spray head nozzles
- ◆ "SAM" stamped on cap for easy identification and maintenance



### Specifications:

Spacing: 3' to 20'  
Pressure: 25 psi to 70 psi  
SAM capability: Holds up to 14' of head; 6 psi  
SAM operable only when installed by bottom inlet



### 1800-PRS SERIES WITH FLOW OPTIMIZER

4", 6", 12"

**Designed for areas with high and/or widely fluctuating water pressures. The 1800 PRS Series has all 1800 Series features plus:**

- ◆ Patented PRS pressure regulator built into the stem. No parts to be installed at the site. Saves time and money
- ◆ Maintains constant outlet pressure at 30 psi. Spray heads and nozzles perform best at 30 psi
- ◆ Ensures maximum spray head and nozzle performance, even with varying inlet pressures
- ◆ Restricts water loss by up to 70% if nozzle is removed or damaged. Saves water and money
- ◆ Reduces possibility of accidents and property damage. Recommended for vandal prone areas
- ◆ Ends misting and fogging caused by high pressure. Stops water waste. Ensures necessary watering occurs in high pressure or wind conditions
- ◆ Designed for use with all Rain Bird plastic and brass spray head nozzles
- ◆ "PRS" stamped on cap for easy identification and maintenance



#### Specifications:

Spacing: 3' to 20'  
 Pressure: 15 psi to 70 psi  
 Flow-by: 0 psi at 8 psi or greater; .10 GPM otherwise  
 Installation: side or bottom inlet; side inlet not recommended for freezing climates

### 1800-SAM-PRS SERIES

4", 6", 12"

**Meets the needs for all spray areas, regardless of changing elevation or water pressures. Incorporates all 1800 Series SAM and PRS features stamped on the cap for easy identification and maintenance.**

- ◆ Regulates nozzle pressure to an average 45 psi (3.1 bar) with inlet pressures of up to 70 psi (4.8 bar)
- ◆ SAM capability: holds up to 14 feet (4.2 m) of head; 6 psi
- ◆ Installation: bottom inlet only

#### Operating Range

Spacing: 13 to 24 feet (4.0 to 7.3 m)  
 Pressure: 25 to 70 psi (1.7 to 4.8 bar)

#### Specifications:

Spacing: 2.5' to 24'  
 Pressure: 25 psi to 70 psi  
 Flow-by: 0 psi at 8 psi or greater; .10 GPM otherwise  
 SAM capability: Holds up to 14' of head; 6 psi  
 SAM operable only when installed by bottom inlet



#### Models:

1804 SAM-P45: 4" pop-up height (10 cm)  
 1806 SAM-P45: 6" pop-up height (15 cm)  
 1812 SAM-P45: 12" pop-up height (30 cm)

### RD1800™ SERIES SPRAY HEADS

**Tough enough for your most challenging landscapes**

- ◆ Debris pockets in the base of the spray body collect debris and prevent recirculation in the body during operation reducing wear.
- ◆ The co-molded, pressure activated, Triple-Blade Wiper Seal assures positive seal without excess "flow-by" which enables more heads to be installed on the same valve.
- ◆ Designed for use with all Rain Bird plastic spray head nozzles
- ◆ Parts developed to be resistant to corrosion in treated recycled water containing chlorine and other chemicals.

#### Specifications:

Spacing: 2.5 to 24 feet

3 to 18 feet with standard Rain Bird Spray Head Nozzles (MPR, VAN, U-Series). 13 to 24 feet with Rain Bird Rotary Nozzles

Pressure: 15 to 100 psi

Flow-by: SAM Models: 0 at 15 psi (1.0 bar) or greater; 0.5 gpm  
 All Other Models: 0 at 10 psi (0.7 bar) or greater; 0.5 gpm

Inlets: 1/2" (15/21) NPT female threaded

#### HOW TO SPECIFY:

Model:	Optional Features
RD04-4"	S – Seal-A-Matic
RD04-6"	NP – Non-Potable cover
RD-12-12"	F – Flow-Shield Technology
P30 – 30	psi instem pressure regulation
P45 – 45	psi instem pressure regulation

#### HOW TO SPECIFY: 1804-SAM

Model:	Optional Features:
1804	PRS
1806	SAM
1812	SAMPRS



**PRO-SPRAY®**

**Shrub, 2", 3", 4", 6", 12"**

**Rugged, contractor-friendly spray for residential and commercial projects.**

- ◆ Pressure-activated, multi-function, no flow-by wiper seal makes it easy to remove and clean
- ◆ Multi-thread buttress design withstands the harshest environments
- ◆ Compatible with all female threaded nozzles
- ◆ Ratcheting riser for quick arc alignment for making adjustments while sprinkler is operating
- ◆ Innovative "pull-ring" flush plug design allows limited flow permitting controlled directional flushing
- ◆ Factory-installed drain check valve for up to 10' (3 m) elevation change. "Check Valve" stamped on cap for easy ID

**Specifications:**

Pressure range: 15 psi to 100 psi  
Flow-by: 0 psi at 10 psi or greater; .1 GPM otherwise  
Precipitation rates: Approximately 1.5" per hour



**PRO-SPRAY PRS30**

**Shrub, 4", 6", 12"**

**Rugged, water-saving sprinklers designed for commercial, institutional and public area applications.**

- ◆ In-stem pressure regulation built-in for maximum nozzle efficiency, regardless of inlet pressure
- ◆ Multi-thread buttress design withstands the harshest environments
- ◆ Accepts adjustable, fixed and specialty nozzles
- ◆ Pressure activated, multi-function, no flow-by wiper seal is treated with UV inhibitors to ensure long life



**Specifications:**

Pressure range: 15 psi to 100 psi  
Flow-by: 0 psi at 10 psi or greater; .1 GPM otherwise  
Precipitation rates: Approximately 1.5" per hour

**Options:**

CV – Factory-installed check valve (not available for shrub)

**How to Specify:**

HOW TO SPECIFY: PRO02 – 2" – Pop-up		
Model:	Size:	Style:
PROS00		Shrub
PROS02	2"	Pop-up
PROS03	3"	Pop-up
PROS04	4"	Pop-up
PROS06	6"	Pop-up
PROS12	12"	Pop-up

Also available in Reclaimed Version

HOW TO SPECIFY: PRS 30 MODELS			
Model:	Size:	Style:	Options:
PROS-00-PRS30		Shrub	(blank) = No option
PROS-04-PRS30	4"	Pop-up	CV = Factory-installed drain check valve (pop-up models only)
PROS-06-PRS30	6"	Pop-up	
PROS-06-NSI-PRS30	6"	Pop-up	CV-R = Factory-installed reclaimed body cap (shrub molded in purple)
PROS-12-PRS30	12"	Pop-up	
PROS-12-NSI-PRS30	12"	Pop-up	6" and 12" models ordered as CV will come as (no side inlet)

**Pro-Spray PRS40**

**Shrub, 2", 3", 4", 6", 12"**

**Calibrated at a consistent 40 psi, it is designed to provide optimal performance when combined with the MP Rotator.**

- ◆ Built-in regulator set at 40 psi
- ◆ New easy-to-identify gray cap
- ◆ Factory-installed drain check valve
- ◆ Pressure activated, multifunction wiper seal has been designed to reduce flow-by
- ◆ Zero flush seal gives you surefire operation at low pressures and enables more sprinkler heads on the same zone



PRS40 MODELS	OPTIONS
PROS-00-PRS40 = 40 PSI regulated shrub adapter	(blank) = No option
PROS-04-PRS40-CV = 40 PSI regulated 4" pop-up	
PROS-06-PRS40-CV = 40 PSI regulated 6" pop-up	R = Factory-installed reclaimed body cap (shrub molded in purple)
PROS-06-NSI-PRS40-CV = 40 PSI regulated 6" pop-up with no side inlet	
PROS-12-PRS40-CV = 40 PSI regulated 12" pop-up	6" and 12" models ordered as CV will come as no side inlet
PROS-12-NSI-PRS40 = 40 PSI regulated 12" pop-up with no side inlet	

**Specifications:**

Recommended pressure range: 15 psi to 100 psi  
Flow-by: 0 psi at 10 psi or greater; 0.1 GPM otherwise  
Check height: Up to 14' elevation change



## 570Z SERIES

### Shrub, 2", 3", 4", 6", 12"

- ◆ Zero-flush seal prevents flushing on pop-up, enabling more sprinklers to be placed on the same zone
- ◆ Retraction flushing clears debris for reliable pop-down
- ◆ Low-pressure sealing at 15 psi
- ◆ Small, 2" diameter black cap is less visible, reducing damage from exposure or vandals
- ◆ Ratcheting riser feature for easy and reliable arc adjustment
- ◆ Non-side-inlet models available on both 6" and 12" sprinkler bodies for sandy soils or applications prone to high pressure surges and spikes



### Specifications:

Recommended operating pressure: 20 psi to 50 psi

Radius: 2' to 18'

Max Pressure: 75 psi

HOW TO SPECIFY: 570Z – 6P – COM		
Model:	Size:	Options:
S — Shrub	2P = 2" 3P = 3" 4P = 4" 6P = 6" 12P = 12"	SI = Side Inlet for 6" and 12" COM = check valve
Z — Lawn Pop-up		

## 570ZXF SERIES SPRAY

### Shrub, 4", 6", 12"

**Features all of the benefits of the 570Z Series, plus the exclusive patented X-Flow® shutoff feature for added convenience.**

- ◆ Flow rate: 0.05 GPM to 5.6 GPM
- ◆ Recommended operating pressure range: 20 psi to 50 psi
- ◆ Minimum operating pressure for COM models: 25 psi
- ◆ 2-year warranty



HOW TO SPECIFY: 570Z – 6P – XF – COM		
Model:	Size:	Options:
S — Shrub	4 — 4" 6 — 6" 12 — 12"	SI = Side Inlet COM = Check-Valve E = Effluent Water
Z — Lawn Pop-up		

## 570Z PRX SERIES SPRINKLERS

### Shrub, 4", 6", 12"

**Ideal for applications with high or varying operating pressure, including long lines and slopes.**

- ◆ Recommended for systems with a minimum operating pressure of 40 psi
- ◆ Patented in-riser pressure regulator
- ◆ Maintains constant 30 psi outlet pressure
- ◆ Eliminates misting and fogging caused by pressures above 30 psi
- ◆ Patented X-Flow™ high-flow shut-off device built into the riser
- ◆ Restricts water loss by 98% if the nozzle is removed or damaged, eliminating potential erosion or safety issues
- ◆ Allows for nozzle and filter replacement or maintenance while the system is running
- ◆ Side inlet models available on 6" and 12" sprinkler bodies
- ◆ Check valve maintains up to 10' in elevation change



### Specifications:

Recommended operating pressure: 20 psi to 75 psi

Maximum operating pressure: 75 psi

HOW TO SPECIFY: 570Z – 6P – SI – PRX		
Model:	Size:	Options:
Z = Lawn pop-up	4P = 4" 6P = 6" 12P = 12"	SI = Side Inlet COM = Check-Valve E = Effluent Water
S = Shrub		

## Toro 570Z PRX Shrub Adaptor

Patented in-riser pressure regulator maintains constant 30 psi outlet pressure.

**UNI-SPRAY SERIES****2", 4"**

**The UNI-Spray™ is designed for those applications where flexibility and convenience are primary.**

- ◆ Pressure-activated wiper seal prevents excessive flow-by and water waste. Keeps debris from entering upon retraction
- ◆ Durable two-piece stem ratchet allows for quick and easy nozzle pattern alignment
- ◆ Internal parts removable from the top of the sprinkler for easy servicing
- ◆ Optional field-installed Seal-A-Matic™ check valve prevents low head drainage up to 5' of elevation difference

**Specifications:**

Pressure: 15 psi to 70 psi  
 Optimum pressure: 30 psi  
 Flow-by: 0 psi at 10 psi or greater; 0.50 GPM otherwise

**PS ULTRA SPRAY SERIES****2", 4", 6"**

- ◆ Heavy duty wiper seal: Eliminates flow-by
  - ◆ Extra large filter screen and nozzle screen provide double filtration
  - ◆ Two-piece ratchet is stronger and more dependable, for reliable performance in the field
  - ◆ Male threaded riser accommodates all Hunter female threaded nozzles
  - ◆ Pre-installed Pro Adjustable Nozzle maximizes flexibility and performance
- Specifications:**
- ◆ Discharge rate: 0.20 GPM to 5.6 GPM
  - ◆ Radius: 9' to 19'
  - ◆ Recommended pressure range: 20 psi to 70 psi
  - ◆ Precipitation rates: 1.6" to 1.9" per hour

**LPS SPRAY SERIES****2", 4"**

- ◆ Available with pre-installed Toro Variable Arc Nozzles in five radii or as a body only
- ◆ Matched precipitation rate nozzles provide even coverage
- ◆ Easy to grip nozzles makes adjustments simple — wet or dry
- ◆ Riser accepts Toro male thread TVAN or MPR nozzles
- ◆ Optional check valve

**Specifications**

Radius: 2' to 18'  
 Recommended operating pressure range: 20 psi to 50 psi  
 Flow-by: 0 psi at 10 psi or greater  
 Inlet: 1/2" female-threaded

**IPRO SPRAY SERIES****2", 4", 6", 12"**

- ◆ Pressure-activated seal with lubricant additive
- ◆ Pre-installed in-riser pressure regulator and/or check valve (optional)
- ◆ Retrofittable riser
- ◆ Male-threaded riser
- ◆ Pre-installed flush plug

**Specifications:**

Standard: 20 psi to 50 psi (max 75 psi)  
 CV: 25 psi to 50 psi (max 75 psi)  
 PR: 30 psi to 70 psi (max 75 psi)  
 Precipitation rate: 0.96" to 4.69" per hour  
 Spacing: 4' to 15'  
 Flow-by: 0 at 10 psi or greater; .1 GPM otherwise



### R-VAN SERIES NOZZLES




#### The World's First Hand-Adjustable Rotary Nozzles.

- ◆ Adjust arc and radius without tools
- ◆ Color coded for easy identification of R-VAN model
- ◆ Low precipitation rate reduces run-off and erosion
- ◆ Maintains efficient performance at high operating pressures without misting or fogging
- ◆ Compatible with all models of Rain Bird spray bodies in addition to a wide variety of risers and adapters




- ◆ Matched precipitation rates across radius and arcs simplify the design process
- ◆ Coverage up to 24' but when paired with Rain Bird 5000 Series Rotor matched precipitation rate (MPR) nozzles, irrigation designs from 13' to 35' (4,0m to 10,7m) can be easily handled
- ◆ Three-year trade warranty.



R-VAN1318 (Black)

ARC	Pressure (psi)	Radius* (ft.)	Flow (gpm)	Precip (in/hr)	Precip (in/hr)
270° 	20	13	0.95	0.72	0.83
	25	14	1.12	0.69	0.80
	30	16	1.26	0.65	0.75
	35	16	1.35	0.64	0.74
	40	17	1.42	0.63	0.73
	45	18	1.51	0.60	0.69
	50	18	1.57	0.60	0.69
	55	18	1.62	0.60	0.69
180° 	20	13	0.75	0.72	0.83
	25	14	0.83	0.69	0.80
	30	16	0.85	0.65	0.75
	35	16	0.91	0.64	0.74
	40	17	0.98	0.63	0.73
	45	18	1.01	0.60	0.69
	50	18	1.07	0.60	0.69
	55	18	1.09	0.60	0.69
90° 	20	13	0.37	0.72	0.83
	25	14	0.39	0.69	0.80
	30	16	0.42	0.65	0.75
	35	16	0.47	0.64	0.74
	40	17	0.50	0.63	0.73
	45	18	0.50	0.60	0.69
	50	18	0.54	0.60	0.69
	55	18	0.58	0.60	0.69

R-VAN1724 (Yellow)

ARC	Pressure (psi)	Radius* (ft.)	Flow (gpm)	Precip (in/hr)	Precip (in/hr)
270° 	20	17	1.77	0.76	0.88
	25	19	1.99	0.72	0.83
	30	21	2.26	0.70	0.81
	35	22	2.39	0.66	0.76
	40	23	2.55	0.63	0.73
	45	24	2.73	0.61	0.70
	50	24	2.76	0.61	0.70
	55	24	2.80	0.61	0.70
180° 	20	17	1.24	0.76	0.88
	25	19	1.30	0.72	0.83
	30	21	1.41	0.70	0.81
	35	22	1.55	0.66	0.76
	40	23	1.69	0.63	0.73
	45	24	1.83	0.61	0.70
	50	24	1.91	0.61	0.70
	55	24	1.98	0.61	0.70
90° 	20	17	0.59	0.76	0.88
	25	19	0.67	0.72	0.83
	30	21	0.73	0.70	0.81
	35	22	0.78	0.66	0.76
	40	23	0.85	0.63	0.73
	45	24	0.91	0.61	0.70
	50	24	0.98	0.61	0.70
	55	24	1.05	0.61	0.70

## R-SERIES ROTARY NOZZLE

### Part of the Rain Bird Smart Water product family.







- ◆ Highly efficient water distribution from 13' to 24'
- ◆ Fewer zones, faster installs — system complexity and cost are reduced because more heads can be installed per zone
- ◆ The low precipitation rate significantly reduces wasteful run-off and erosion
- ◆ Low flow rate and an expanded radius of throw solve existing spray zone inefficiencies



### Specifications:

Pressure range: 20 psi to 55 psi (1,4 to 3,8 bars) Recommended  
 Operating Pressure: 45 psi (3,1 bar)  
 Spacing: 13' to 24' (4,0 m to 7,3 m)  
 Adjustments: Arc and radius should be adjusted while water is running

#### R13-18 Series (Black)

Arc	Pressure psi	Radius* ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
	R13-18F 20	13	1.31	0.75	0.86
	25	14	1.46	0.67	0.77
	30	16	1.60	0.61	0.70
	35	16	1.73	0.61	0.70
	40	17	1.85	0.61	0.70
	45	18	1.96	0.61	0.70
	50	18	2.07	0.61	0.70
	55	18	2.17	0.61	0.70
	R13-18TQ 20	13	0.98	0.75	0.86
	25	14	1.10	0.67	0.77
	30	16	1.20	0.61	0.70
	35	16	1.30	0.61	0.70
	40	17	1.39	0.61	0.70
	45	18	1.47	0.61	0.70
	50	18	1.55	0.61	0.70
	55	18	1.62	0.61	0.70
	R13-18TT 20	13	0.87	0.75	0.86
	25	14	0.97	0.67	0.77
	30	16	1.07	0.61	0.70
	35	16	1.15	0.61	0.70
	40	17	1.23	0.61	0.70
	45	18	1.31	0.61	0.70
	50	18	1.38	0.61	0.70
	55	18	1.44	0.61	0.70
	R13-18H 20	13	0.65	0.75	0.86
	25	14	0.73	0.67	0.77
	30	16	0.80	0.61	0.70
	35	16	0.86	0.61	0.70
	40	17	0.92	0.61	0.70
	45	18	0.98	0.61	0.70
	50	18	1.03	0.61	0.70
	55	18	1.08	0.61	0.70
	R13-18T 20	13	0.44	0.75	0.86
	25	14	0.49	0.67	0.77
	30	16	0.53	0.61	0.70
	35	16	0.58	0.61	0.70
	40	17	0.62	0.61	0.70
	45	18	0.65	0.61	0.70
	50	18	0.69	0.61	0.70
	55	18	0.72	0.61	0.70
	R13-18Q 20	13	0.33	0.75	0.86
	25	14	0.37	0.67	0.77

**Note:** Rotary Nozzles tested on 4 inch pop-ups.







Performance data taken in zero wind conditions

\*Radius refers to recommended spacing to achieve optimal precipitation rate and distribution uniformity with head to head spacing

■ Square spacing based on 50% diameter of throw

▲ Triangular spacing based on 50% diameter of throw

#### R17-24 Series (Yellow)

Arc	Pressure psi	Radius* ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
	R17-24F 20	17	2.45	0.79	0.92
	25	19	2.74	0.71	0.82
	30	21	3.00	0.65	0.75
	35	22	3.24	0.65	0.75
	40	23	3.46	0.65	0.75
	45	23	3.67	0.65	0.75
	50	24	3.87	0.65	0.75
	55	24	4.06	0.65	0.75
	R17-24TQ 20	17	1.84	0.79	0.92
	25	19	2.05	0.71	0.82
	30	21	2.25	0.65	0.75
	35	22	2.43	0.65	0.75
	40	23	2.60	0.65	0.75
	45	23	2.76	0.65	0.75
	50	24	2.90	0.65	0.75
	55	24	3.05	0.65	0.75
	R17-24TT 20	17	1.63	0.79	0.92
	25	19	1.83	0.71	0.82
	30	21	2.00	0.65	0.75
	35	22	2.16	0.65	0.75
	40	23	2.31	0.65	0.75
	45	23	2.45	0.65	0.75
	50	24	2.58	0.65	0.75
	55	24	2.71	0.65	0.75
	R17-24H 20	17	1.22	0.79	0.92
	25	19	1.37	0.71	0.82
	30	21	1.50	0.65	0.75
	35	22	1.62	0.65	0.75
	40	23	1.73	0.65	0.75
	45	23	1.84	0.65	0.75
	50	24	1.94	0.65	0.75
	55	24	2.03	0.65	0.75
	R17-24T 20	17	0.82	0.79	0.92
	25	19	0.91	0.71	0.82
	30	21	1.00	0.65	0.75
	35	22	1.08	0.65	0.75
	40	23	1.15	0.65	0.75
	45	23	1.22	0.65	0.75
	50	24	1.29	0.65	0.75
	55	24	1.35	0.65	0.75
	R17-24Q 20	17	0.61	0.79	0.92
	25	19	0.68	0.71	0.82

**Note:** Rotary Nozzles tested on 4 inch pop-ups.

Performance data taken in zero wind conditions

\*Radius refers to recommended spacing to achieve optimal precipitation rate and distribution uniformity with head to head spacing

■ Square spacing based on 50% diameter of throw

▲ Triangular spacing based on 50% diameter of throw



### PLASTIC MPR NOZZLES

**Matched Precipitation Rate (MPR) nozzles simplify the design process by allowing sprinklers with various arcs and radii to be mixed on the same circuit. Fit all Rain Bird spray heads and shrub adapters.**



- ◆ Matched precipitation rates across sets and across patterns in 5 Series, 8 Series, 10 Series, 12 Series, and 15 Series for even water distribution and design flexibility
- ◆ 1800 Series white filter screens (shipped with nozzles) maintain precise radius adjustment and prevent clogging (5 and 8 Series nozzles are shipped with blue fine-mesh filter screens.)
- ◆ Stainless steel adjustment screw to adjust flow and radius

### Specifications:




Pressure: 15 psi to 30 psi

Optimum pressure: 30 psi

Spacing: 3' to 20'

#### 5 Series MPR

##### 5° Trajectory

Nozzle	Pressure psi	Radius ft.	Flow GPM	Precip In/h	Precip In/h
5F 	15	3	0.29	2.07	2.39
	20	4	0.33	2.01	2.32
	25	4	0.37	1.62	1.87
	30	5	0.41	1.58	1.83
5H 	15	3	0.14	2.07	2.39
	20	4	0.16	2.01	2.32
	25	4	0.18	1.62	1.87
	30	5	0.20	1.58	1.83
5Q 	15	3	0.07	2.07	2.39
	20	4	0.08	2.01	2.32
	25	4	0.09	1.62	1.87
	30	5	0.10	1.58	1.83

**Note:** All MPR nozzles tested on 4" (10.2 cm) pop-ups.

■ Square spacing based on 50% diameter of throw.

▲ Triangular spacing based on 50% diameter of throw.




Performance data taken in zero wind conditions.

**Note:** Specify spray head body and nozzles separately. Refer to Price List for shipping unit quantities.

**Note:** Radius reduction over 25% of the normal throw of the nozzle is not recommended.



#### 8 Series MPR

##### 10° Trajectory

Nozzle	Pressure psi	Radius ft.	Flow GPM	Precip In/h	Precip In/h
8F 	15	5	0.74	2.07	2.39
	20	6	0.86	2.01	2.32
	25	7	0.96	1.62	1.87
	30	8	1.05	1.58	1.83
8H 	15	5	0.37	2.07	2.39
	20	6	0.42	2.01	2.32
	25	7	0.47	1.62	1.87
	30	8	0.52	1.58	1.83
8Q 	15	5	0.18	2.07	2.39
	20	6	0.21	2.01	2.32
	25	7	0.24	1.62	1.87
	30	8	0.26	1.58	1.83

#### 8 FLT Series MPR

##### 5° Trajectory

Nozzle	Pressure psi	Radius ft.	Flow GPM	Precip In/h	Precip In/h
8H-FLT 	15	6	0.56	3.36	3.88
	20	7	0.65	2.91	3.36
	25	7	0.72	2.60	3.01
	30	8	0.79	2.38	2.75
8Q-FLT 	15	6	0.28	3.32	3.83
	20	7	0.32	2.87	3.32
	25	7	0.36	2.57	2.97
	30	8	0.39	2.35	2.71




**Note:** All MPR nozzles tested on 4" (10.2 cm) pop-ups.

■ Square spacing based on 50% diameter of throw.

▲ Triangular spacing based on 50% diameter of throw.

Performance data taken in zero wind conditions.

**PLASTIC MPR NOZZLES (CONT.)**
**10 Series MPR**
**15° Trajectory**

Nozzle	Pressure psi	Radius ft.	Flow GPM	Precip In/h	Precip In/h
	15	7	1.16	2.28	2.63
	20	8	1.30	1.96	2.26
	25	9	1.44	1.71	1.98
	30	10	1.58	1.52	1.75
	15	7	0.58	2.28	2.63
	20	8	0.65	1.96	2.26
	25	9	0.72	1.71	1.98
	30	10	0.79	1.52	1.75
	15	7	0.29	2.28	2.63
	20	8	0.33	1.96	2.26
	25	9	0.36	1.71	1.98
	30	10	0.39	1.52	1.75




**Note:** All MPR nozzles tested on 4" (10.2 cm) pop-ups.

■ Square spacing based on 50% diameter of throw.

▲ Triangular spacing based on 50% diameter of throw.

Performance data taken in zero wind conditions.

**15 Series MPR**
**30° Trajectory**

Nozzle	Pressure psi	Radius ft.	Flow GPM	Precip In/h	Precip In/h
	15	11	2.60	2.07	2.39
	20	12	3.00	2.01	2.32
	25	14	3.30	1.62	1.87
	30	15	3.70	1.58	1.83
	15	11	1.30	2.07	2.39
	20	12	1.50	2.01	2.32
	25	14	1.65	1.62	1.87
	30	15	1.85	1.58	1.83
	15	11	0.65	2.07	2.39
	20	12	0.75	2.01	2.32
	25	14	0.82	1.62	1.87
	30	15	0.92	1.58	1.83

**Note:** All MPR nozzles tested on 4" (10.2 cm) pop-ups.

■ Square spacing based on 50% diameter of throw.




▲ Triangular spacing based on 50% diameter of throw.

Performance data taken in zero wind conditions.

**Note:** Specify spray head body and nozzles separately. Refer to Price List for shipping unit quantities.

**Note:** Radius reduction over 25% of the normal throw of the nozzle is not recommended.

**12 Series MPR**
**30° Trajectory**

Nozzle	Pressure psi	Radius ft.	Flow GPM	Precip In/h	Precip In/h
	15	9	1.80	2.14	2.47
	20	10	2.10	2.02	2.34
	25	11	2.40	1.91	2.21
	30	12	2.60	1.74	2.01
	15	9	0.90	2.14	2.47
	20	10	1.05	2.02	2.34
	25	11	1.20	1.91	2.21
	30	12	1.30	1.74	2.01
	15	9	0.45	2.14	2.47
	20	10	0.53	2.02	2.34
	25	11	0.60	1.91	2.21
	30	12	0.65	1.74	2.01

**Note:** All MPR nozzles tested on 4" (10.2 cm) pop-ups.

■ Square spacing based on 50% diameter of throw.







▲ Triangular spacing based on 50% diameter of throw.

Performance data taken in zero wind conditions.

**Note:** Specify spray head body and nozzles separately. Refer to Price List for shipping unit quantities.

**Note:** Radius reduction over 25% of the normal throw of the nozzle is not recommended.

**15 Strip Series**
**30° Trajectory**

	15	4 x 13	0.45
	20	4 x 14	0.50
	25	4 x 14	0.56
	30	4 x 15	0.61
	15	4 x 26	0.89
	20	4 x 28	1.00
	25	4 x 28	1.11
	30	4 x 30	1.21
	15	3 x 11	0.35
	20	3 x 12	0.40
	25	4 x 14	0.45
	30	4 x 15	0.49
	15	3 x 11	0.35
	20	3 x 12	0.40
	25	4 x 14	0.45
	30	4 x 15	0.49
	15	4 x 26	0.89
	20	4 x 28	1.00
	25	4 x 28	1.11
	30	4 x 30	1.21
	15	9 x 15	1.34
	20	9 x 16	1.47
	25	9 x 18	1.60
	30	9 x 18	1.73

**W** = Width of coverage pattern    **L** = Length of coverage pattern

**Note:** Specify spray head body and nozzles separately.

Refer to Price List for shipping unit quantities.

**Note:** Radius reduction over 25% of the normal throw of the nozzle is not recommended.



### HE-VAN SERIES NOZZLES

#### High Efficiency Variable Arc Nozzle

- ◆ Patent pending Flow Control Technology delivers superior close-in watering and uniform coverage across the entire spray pattern.
- ◆ Shorter run times
- ◆ Full adjustability from 0° to 360°

#### Specifications:

Pressure: 15 psi to 30 psi  
Range: 6-15'



8 Series HE-VAN						
24° Trajectory						
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h	
	15	5	0.83	3.19	3.68	
	20	6	0.96	2.56	2.95	
	25	7	1.07	2.10	2.42	
	30	8	1.17	1.76	2.03	
	15	5	0.62	3.19	3.68	
	20	6	0.72	2.56	2.95	
	25	7	0.80	2.10	2.42	
	30	8	0.88	1.76	2.03	
	15	5	0.41	3.19	3.68	
	20	6	0.48	2.56	2.95	
	25	7	0.53	2.10	2.42	
	30	8	0.59	1.76	2.03	
	15	5	0.21	3.19	3.68	
	20	6	0.24	2.56	2.95	
	25	7	0.27	2.10	2.42	
	30	8	0.29	1.76	2.03	

12 Series HE-VAN						
23° Trajectory						
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h	
	15	9	1.67	1.99	2.30	
	20	10	1.93	1.86	2.15	
	25	11	2.16	1.72	1.99	
	30	12	2.37	1.58	1.83	
	15	9	1.25	1.99	2.30	
	20	10	1.45	1.86	2.15	
	25	11	1.62	1.72	1.99	
	30	12	1.77	1.58	1.83	
	15	9	0.84	1.99	2.30	
	20	10	0.97	1.86	2.15	
	25	11	1.08	1.72	1.99	
	30	12	1.18	1.58	1.83	
	15	9	0.42	1.99	2.30	
	20	10	0.48	1.86	2.15	
	25	11	0.54	1.72	1.99	
	30	12	0.59	1.58	1.83	

10 Series HE-VAN						
27° Trajectory						
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h	
	15	7	1.26	2.48	2.86	
	20	8	1.46	2.19	2.53	
	25	9	1.63	1.94	2.24	
	30	10	1.78	1.72	1.98	
	15	7	0.95	2.48	2.86	
	20	8	1.09	2.19	2.53	
	25	9	1.22	1.94	2.24	
	30	10	1.34	1.72	1.98	
	15	7	0.63	2.48	2.86	
	20	8	0.73	2.19	2.53	
	25	9	0.81	1.94	2.24	
	30	10	0.89	1.72	1.98	
	15	7	0.32	2.48	2.86	
	20	8	0.36	2.19	2.53	
	25	9	0.41	1.94	2.24	
	30	10	0.45	1.72	1.98	

15 Series HE-VAN						
25° Trajectory						
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h	
	15	11	2.62	2.08	2.40	
	20	12	3.02	2.02	2.33	
	25	14	3.38	1.66	1.92	
	30	15	3.70	1.58	1.83	
	15	11	1.96	2.08	2.40	
	20	12	2.27	2.02	2.33	
	25	14	2.53	1.66	1.92	
	30	15	2.78	1.58	1.83	
	15	11	1.31	2.08	2.40	
	20	12	1.51	2.02	2.33	
	25	14	1.69	1.66	1.92	
	30	15	1.85	1.58	1.83	
	15	11	0.65	2.08	2.40	
	20	12	0.76	2.02	2.33	
	25	14	0.84	1.66	1.92	
	30	15	0.93	1.58	1.83	

**Note:** Turning the radius reduction screw may be required to achieve catalog radius and flow when the arc is set at less than maximum arc

■ Square spacing based on 50% diameter of throw

▲ Triangular spacing based on 50% diameter of throw

Performance data taken in zero wind conditions

**Note:** Turning the radius reduction screw may be required to achieve catalog radius and flow when the arc is set at less than maximum arc

■ Square spacing based on 50% diameter of throw

▲ Triangular spacing based on 50% diameter of throw

Performance data taken in zero wind conditions



## VAN SERIES NOZZLES





**Adjustable nozzles for all standard and irregular-shaped turf and shrub areas. Fits all Rain Bird spray heads and shrub adaptors.**





- ◆ Easy arc adjustment from 0° to 360° for 10, 12, 15 and 18-VAN; 0° to 330° for 4, 6 and 8-VAN
- ◆ Simple twist of center collar increases or decreases arc setting
- ◆ Captured screw slot prevents screwdriver stripping
- ◆ 12, 15, and 18-VAN have matched precipitation rates with Rain Bird MPR nozzles





### Specifications:





Pressure: 15 psi to 30 psi  
Optimum pressure: 30 psi



4 Series VAN					
0° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
330° Arc 	15	3	0.62	7.23	8.35
	20	3	0.70	8.17	9.43
	25	4	0.80	5.25	6.06
	30	4	0.88	5.78	6.67
270° Arc 	15	3	0.52	7.42	8.57
	20	3	0.58	8.27	9.55
	25	4	0.66	5.29	6.11
	30	4	0.73	5.86	6.77
180° Arc 	15	3	0.32	6.84	7.90
	20	3	0.37	7.91	9.13
	25	4	0.41	4.93	5.69
	30	4	0.45	5.41	6.25
90° Arc 	15	3	0.21	8.98	10.37
	20	3	0.24	10.27	11.86
	25	4	0.26	6.26	7.23
	30	4	0.29	6.98	8.06

8 Series VAN					
5° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
330° Arc 	15	6	1.21	3.53	4.07
	20	7	1.36	2.91	3.36
	25	7	1.55	3.32	3.83
	30	8	1.70	2.79	3.22
270° Arc 	15	6	1.11	3.95	4.55
	20	7	1.24	3.24	3.74
	25	7	1.41	3.69	4.25
	30	8	1.55	3.10	3.58
180° Arc 	15	6	0.84	4.49	5.18
	20	7	0.97	3.81	4.40
	25	7	1.09	4.28	4.94
	30	8	1.19	3.58	4.13
90° Arc 	15	6	0.51	5.46	6.29
	20	7	0.59	4.64	5.35
	25	7	0.66	5.19	5.98
	30	8	0.72	4.33	5.00

6 Series VAN					
0° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
330° Arc 	15	4	0.85	5.58	6.44
	20	5	0.96	4.03	4.65
	25	5	1.09	4.58	5.29
	30	6	1.20	3.50	4.04
270° Arc 	15	4	0.79	6.34	7.32
	20	5	0.88	4.52	5.22
	25	5	1.00	5.13	5.92
	30	6	1.10	3.92	4.53
180° Arc 	15	4	0.42	5.05	5.83
	20	5	0.49	3.77	4.35
	25	5	0.55	4.24	4.90
	30	6	0.60	3.21	3.71
90° Arc 	15	4	0.26	6.26	7.23
	20	5	0.30	4.62	5.33
	25	5	0.34	5.24	6.05
	30	6	0.37	3.96	4.57

10 Series VAN					
10° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
360° Arc 	15	7	1.93	3.80	4.39
	20	8	2.32	3.50	4.04
	25	9	2.52	3.00	3.46
	30	10	2.60	2.50	2.89
270° Arc 	15	7	1.45	3.80	4.39
	20	8	1.75	3.50	4.04
	25	9	1.89	3.00	3.46
	30	10	2.10	2.70	3.12
180° Arc 	15	7	0.97	3.80	4.39
	20	8	1.20	3.50	4.04
	25	9	1.26	3.00	3.46
	30	10	1.45	2.80	3.23
90° Arc 	15	7	0.48	3.80	4.39
	20	8	0.58	3.50	4.04
	25	9	0.63	3.00	3.46
	30	10	0.75	2.90	3.35

**Note:** Turning the radius reduction screw may be required to achieve catalog radius and flow when the arc is set at less than maximum arc

- Square spacing based on 50% diameter of throw
- ▲ Triangular spacing based on 50% diameter of throw

Performance data taken in zero wind conditions

**Note:** Turning the radius reduction screw may be required to achieve catalog radius and flow when the arc is set at less than maximum arc

- Square spacing based on 50% diameter of throw
- ▲ Triangular spacing based on 50% diameter of throw

Performance data taken in zero wind conditions



### VAN SERIES NOZZLES (CONTINUED)





**Adjustable nozzles for all standard and irregular-shaped turf and shrub areas. Fits all Rain Bird spray heads and shrub adaptors.**





- ◆ Easy arc adjustment from 0° to 360° for 10, 12, 15 and 18-VAN; 0° to 330° for 4, 6 and 8-VAN
- ◆ Simple twist of center collar increases or decreases arc setting
- ◆ Captured screw slot prevents screwdriver stripping
- ◆ 12, 15, and 18-VAN have matched precipitation rates with Rain Bird MPR nozzles





### Specifications:

Pressure: 15 psi to 30 psi  
Optimum pressure: 30 psi



12 Series VAN					
15° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
	15	9	1.56	1.86	2.14
	20	10	1.86	1.79	2.06
	25	11	2.12	1.68	1.95
	30	12	2.36	1.58	1.82
	15	9	1.17	1.86	2.14
	20	10	1.39	1.79	2.06
	25	11	1.59	1.68	1.94
	30	12	1.77	1.58	1.82
	15	9	0.78	1.86	2.14
	20	10	0.93	1.79	2.06
	25	11	1.06	1.68	1.95
	30	12	1.18	1.58	1.82
	15	9	0.39	1.86	2.14
	20	10	0.46	1.79	2.06
	25	11	0.53	1.68	1.95
	30	12	0.59	1.58	1.82

18 Series VAN					
26° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
	15	14	4.21	2.07	2.39
	20	15	4.70	2.01	2.32
	25	17	4.86	1.62	1.87
	30	18	5.32	1.58	1.83
	15	14	3.16	2.07	2.39
	20	15	3.52	2.01	2.32
	25	17	3.65	1.62	1.87
	30	18	3.99	1.58	1.83
	15	14	2.11	2.07	2.39
	20	15	2.35	2.01	2.32
	25	17	2.43	1.62	1.87
	30	18	2.66	1.58	1.83
	15	14	1.05	2.07	2.39
	20	15	1.17	2.01	2.32
	25	17	1.22	1.62	1.87
	30	18	1.33	1.58	1.83

15 Series VAN					
23° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
	15	11	2.60	2.07	2.39
	20	12	3.00	2.01	2.32
	25	14	3.30	1.62	1.87
	30	15	3.70	1.58	1.83
	15	11	1.95	2.07	2.39
	20	12	2.25	2.01	2.32
	25	14	2.48	1.62	1.87
	30	15	2.78	1.58	1.83
	15	11	1.30	2.07	2.39
	20	12	1.50	2.01	2.32
	25	14	1.65	1.62	1.87
	30	15	1.85	1.58	1.83
	15	11	0.65	2.07	2.39
	20	12	0.75	2.01	2.32
	25	14	0.82	1.62	1.87
	30	15	0.92	1.58	1.83

**Note:** Turning the radius reduction screw may be required to achieve catalog radius and flow when the arc is set at less than maximum arc

■ Square spacing based on 50% diameter of throw

▲ Triangular spacing based on 50% diameter of throw

Performance data taken in zero wind conditions

**Note:** Turning the radius reduction screw may be required to achieve catalog radius and flow when the arc is set at less than maximum arc

■ Square spacing based on 50% diameter of throw

▲ Triangular spacing based on 50% diameter of throw

Performance data taken in zero wind conditions



## U-SERIES NOZZLES

The patented U-Series nozzle is the first plastic nozzle with a second orifice for close-in watering and more uniform water distribution. Its unique patented design cuts watering times, saves water and money, and reduces waste. U-Series nozzles fit all Rain Bird sprinklers and shrub adapters and can be used with new and improved PCS screens.





- ◆ Additional orifice for close-in watering. Minimizes dry brown spots around spray heads
- ◆ Better, more uniform water distribution. Water flowing from both orifices combines to form a continuous water stream. Eliminates watering gaps for more uniform coverage throughout the entire watering area
- ◆ Lowest scheduling coefficient for most efficient watering. No need to overwater the entire watering area to make sure the dry sections get the water they need
- ◆ Reduces watering times
- ◆ Saves water and money/cuts waste

### Specifications:







Spacing: 5' to 15'  
Pressure: 15 psi to 30 psi  
Optimum pressure: 60 psi



### U8 Series Performance **NEW**

10° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow GPM	Precip In/h	Precip In/h
	15	5	0.74	2.07	2.39
	20	6	0.86	2.01	2.32
	25	7	0.96	1.62	1.87
	30	8	1.05	1.58	1.83
	15	5	0.37	2.07	2.39
	20	6	0.42	2.01	2.32
	25	7	0.47	1.62	1.87
	30	8	0.52	1.58	1.83
	15	5	0.25	2.07	2.39
	20	6	0.29	2.01	2.32
	25	7	0.32	1.62	1.87
	30	8	0.35	1.58	1.83
	15	5	0.18	2.07	2.39
	20	6	0.21	2.01	2.32
	25	7	0.24	1.62	1.87
	30	8	0.26	1.58	1.83

### U12 Series Performance

23° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow GPM	Precip In/h	Precip In/h
	15	9	1.80	2.14	2.47
	20	10	2.10	2.02	2.34
	25	11	2.40	1.91	2.21
	30	12	2.60	1.74	2.01
	15	9	1.35	2.14	2.47
	20	10	1.58	2.02	2.34
	25	11	1.80	1.91	2.21
	30	12	1.95	1.74	2.01
	15	9	1.20	2.14	2.47
	20	10	1.40	2.02	2.34
	25	11	1.60	1.91	2.21
	30	12	1.74	1.74	2.01
	15	9	0.90	2.14	2.47
	20	10	1.05	2.02	2.34
	25	11	1.20	1.91	2.21
	30	12	1.30	1.74	2.01
	15	9	0.60	2.14	2.47
	20	10	0.70	2.02	2.34
	25	11	0.80	1.91	2.21
	30	12	0.87	1.74	2.01
	15	9	0.45	2.14	2.47
	20	10	0.53	2.02	2.34
	25	11	0.60	1.91	2.21
	30	12	0.65	1.74	2.01





All U-Series nozzles tested on 4" (10,2) pop-ups. Performance data taken in zero wind conditions.

■ Square spacing based on 50% diameter of throw.







▲ Triangular spacing based on 50% diameter of throw.

Note: Radius reduction over 25% of the normal throw of the nozzle is not recommended.

### U10 Series Performance **NEW**

12° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow GPM	Precip In/h	Precip In/h
	15	7	1.16	2.07	2.39
	20	8	1.34	2.01	2.32
	25	9	1.50	1.62	1.87
	30	10	1.64	1.58	1.83
	15	7	0.58	2.07	2.39
	20	8	0.67	2.01	2.32
	25	9	0.75	1.62	1.87
	30	10	0.82	1.58	1.83
	15	7	0.39	2.07	2.39
	20	8	0.45	2.01	2.32
	25	9	0.50	1.62	1.87
	30	10	0.55	1.58	1.83
	15	7	0.29	2.07	2.39
	20	8	0.33	2.01	2.32
	25	9	0.37	1.62	1.87
	30	10	0.41	1.58	1.83

### U15 Series Performance

23° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow GPM	Precip In/h	Precip In/h
	15	11	2.60	2.07	2.39
	20	12	3.00	2.01	2.32
	25	14	3.30	1.62	1.87
	30	15	3.70	1.58	1.83
	15	11	1.95	2.07	2.39
	20	12	2.25	2.01	2.32
	25	14	2.48	1.62	1.87
	30	15	2.78	1.58	1.83
	15	11	1.74	2.07	2.39
	20	12	2.01	2.01	2.32
	25	14	2.21	1.62	1.87
	30	15	2.48	1.58	1.83
	15	11	1.30	2.07	2.39
	20	12	1.50	2.01	2.32
	25	14	1.65	1.62	1.87
	30	15	1.85	1.58	1.83
	15	11	0.87	2.07	2.39
	20	12	1.00	2.01	2.32
	25	14	1.10	1.62	1.87
	30	15	1.23	1.58	1.83
	15	11	0.65	2.07	2.39
	20	12	0.75	2.01	2.32
	25	14	0.82	1.62	1.87
	30	15	0.92	1.58	1.83



# BUILT TO CONSERVE

**THE HUNTER MP ROTATOR.  
THE INDUSTRY'S MOST  
EFFICIENT NOZZLE.**



*The MP Rotator's nozzle pops up from its protected position only after the riser is fully extended, providing a superior defense against dirt and debris.*



*The MP Tool makes radius adjustments easy; matched precipitation is maintained at any arc or radius.*

**THE MP ROTATOR® IS THE NOZZLE OF CHOICE FOR WATER CONSERVATION.** Hunter's MP Rotator delivers multi-trajectory streams at a slower rate, allowing water to gently soak into the soil, significantly reducing runoff. The MP Rotator's uniform distribution results in 30% less water use when compared to traditional sprays, and covers distances of up to 35'. And now, the **NEW MP800SR** offers increased versatility for spaces as tight as 6'.

**MP800SR**



**MP1000**



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**Hunter®**

**Hunter®****MP ROTATOR** **Multi-stream technology maximizes the water-efficiency of your irrigation systems.**

- ◆ Multiple rotating streams provide excellent uniformity
- ◆ Matched Precipitation even after arc and radius adjustment
- ◆ Low precipitation rate reduces runoff on slopes and tight soils
- ◆ Rotator® Technology proven in demanding agricultural conditions since 1987
- ◆ Easy arc adjustment, easy radius adjustment up to 25%, no nozzle to change
- ◆ Pressure range — 25 psi to 55 psi

**MP ROTATOR® PERFORMANCE DATA**

● **MP Corner**  
Radius: 8' to 15'  
Adjustable Arc  
Color Code: Turquoise

Pressure (PSI)	Radius (ft.)	Flow (GPM)	Flow (GPH)	Precip in/hr ■	Precip in/hr ▲
25	12	0.17	10.2	0.43	0.50
30	13	0.18	10.8	0.40	0.46
35	14	0.19	11.4	0.39	0.45
40	14	0.21	12.6	0.39	0.45
45	14	0.22	13.2	0.38	0.43
50	15	0.23	13.8	0.37	0.43
55	15	0.23	13.8	0.37	0.43

45°	25	11	0.31	18.6	—	—
	30	12	0.34	20.4	0.43	0.50
	35	13	0.36	21.6	0.40	0.46
	40	14	0.39	23.4	0.39	0.45
	45	14	0.41	24.6	0.39	0.45
	50	15	0.43	25.8	0.38	0.43
	55	15	0.46	27.6	0.37	0.43

90°	25	11	0.36	21.6	—	—
	30	12	0.39	23.4	0.43	0.50
	35	13	0.42	25.2	0.40	0.46
	40	14	0.45	27	0.39	0.45
	45	14	0.48	28.8	0.39	0.45
	50	15	0.51	30.6	0.38	0.43
	55	15	0.53	31.8	0.37	0.43

Bold = Recommended Pressure

**MP ROTATOR® PERFORMANCE DATA**

● **MPLCS515:** Ivory, MP Left Strip  
● **MPRCS515:** Copper, MP Right Strip  
● **MPS5530:** Brown, MP Side Strip

Pressure (PSI)	Radius (ft.)	Flow (GPM)	Flow (GPH)
30	4 x 14	0.19	11.4
35	5 x 15	0.21	12.6
40	5 x 15	0.22	13.2
45	5 x 15	0.23	13.8
50	6 x 16	0.25	15.0
55	6 x 16	0.26	15.6

MP Left Strip	30	4 x 14	0.19	11.4
	35	5 x 15	0.21	12.6
	40	5 x 15	0.22	13.2
	45	5 x 15	0.23	13.8
	50	6 x 16	0.25	15.0
	55	6 x 16	0.26	15.6

MP Right Strip	30	4 x 14	0.19	11.4
	35	5 x 15	0.21	12.6
	40	5 x 15	0.22	13.2
	45	5 x 15	0.23	13.8
	50	6 x 16	0.25	15.0
	55	6 x 16	0.26	15.6

MP Side Strip	30	4 x 28	0.38	22.8
	35	5 x 30	0.41	24.6
	40	5 x 30	0.44	26.4
	45	5 x 30	0.47	28.2
	50	6 x 32	0.49	29.4
	55	6 x 32	0.51	30.6

Bold = Recommended pressure is 40 PSI.

Notes: Strip pattern radius can be adjusted by 25%. MP Rotator is designed to maintain matched precipitation after radius adjustment.

Product Code	Description
MP1000	8' to 15'
MP2000	13' to 21'
MP3000	22' to 30'
MPCorner	8' to 15'
MPStrip	

**MP ROTATOR® PERFORMANCE DATA**

MP800SR

Radius: 6' to 12' ● Orange and Gray: 90° to 210°  
Adjustable Arc ● Lime Green and Gray: 360°

MAX RADIUS						MIN RADIUS	
Arc	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲	Radius ft.	Flow GPM
90°	30	8	0.17	0.90	1.04	6	0.13
	35	9	0.21	0.89	1.03	7	0.15
	40	10	0.23	0.83	0.96	8	0.16
	45	11	0.25	0.80	0.92	8	0.18
	50	11	0.27	0.79	0.92	9	0.19
	55	12	0.28	0.80	0.93	10	0.20
180°	30	8	0.33	0.88	1.02	6	0.26
	35	9	0.38	0.85	0.99	7	0.29
	40	10	0.42	0.81	0.93	8	0.32
	45	11	0.46	0.77	0.88	8	0.36
	50	11	0.48	0.76	0.88	9	0.38
	55	12	0.50	0.73	0.84	10	0.40
210°	30	8	0.35	0.80	0.93	6	0.30
	35	9	0.38	0.77	0.89	7	0.34
	40	10	0.43	0.81	0.91	8	0.37
	45	10	0.45	0.82	0.95	8	0.42
	50	11	0.49	0.73	0.85	9	0.44
	55	12	0.56	0.70	0.81	10	0.47
360°	30	8	0.66	0.89	1.03	6	0.47
	35	9	0.71	0.80	0.92	7	0.52
	40	10	0.78	0.79	0.91	8	0.56
	45	10	0.85	0.78	0.90	8	0.59
	50	11	0.88	0.73	0.85	9	0.63
	55	12	0.98	0.70	0.81	10	0.70

**MP ROTATOR® PERFORMANCE DATA**

MP1000 Radius: 8' to 15' Adjustable Arc and Full Circle ● Maroon: 90° to 210° ● Lt. Blue: 210° to 270° ● Olive: 360°						MP2000 Radius: 13' to 21' Adjustable Arc and Full Circle ● Black: 90° to 210° ● Green: 210° to 270° ● Red: 360°					
Pressure (PSI)	Radius (ft.)	Flow (GPM)	Flow (GPH)	Precip in/hr ■	Precip in/hr ▲	Radius (ft.)	Flow (GPM)	Flow (GPH)	Precip in/hr ■	Precip in/hr ▲	
90°	25	12	0.16	9.6	0.43	0.50	17	0.31	18.6	0.41	0.48
	30	13	0.18	10.8	0.40	0.46	18	0.33	19.8	0.39	0.45
	35	13	0.18	10.8	0.40	0.46	19	0.37	22.2	0.39	0.46
	40	14	0.19	11.4	0.39	0.45	20	0.4	24	0.39	0.44
	45	14	0.2	12	0.39	0.45	21	0.42	25.2	0.37	0.42
180°	25	14	0.21	12.6	0.38	0.43	21	0.44	26.4	0.35	0.40
	30	15	0.22	13.2	0.37	0.43	21	0.47	28.2	0.37	0.43
	35	15	0.23	13.8	0.37	0.43	16	0.58	34.8	0.44	0.50
	40	14	0.37	22.2	0.39	0.45	17	0.63	37.8	0.42	0.49
	45	14	0.37	22.2	0.39	0.45	18	0.69	41.4	0.41	0.47
210°	25	14	0.4	24	0.39	0.45	19	0.74	44.4	0.39	0.45
	30	14	0.4	24	0.39	0.45	20	0.78	46.8	0.38	0.43
	35	14	0.41	24.6	0.38	0.43	21	0.83	49.8	0.36	0.41
	40	15	0.43	25.8	0.37	0.43	21	0.85	51	0.37	0.43
	45	15	0.43	25.8	0.37	0.43	16	0.68	40.8	0.44	0.50
270°	25	15	0.46	27.6	0.39	0.45	17	0.74	44.4	0.42	0.49
	30	14	0.46	27.6	0.39	0.45	18	0.80	48	0.41	0.47
	35	14	0.48	28.8	0.38	0.43	19	0.86	51.6	0.39	0.45
	40	15	0.50	30	0.37	0.43	20	0.91	55.2	0.38	0.43
	45	15	0.50	30	0.37	0.43	21	0.97	58.2	0.36	0.41
360°	25	15	0.53	31.8	0.37	0.43	21	1.01	60.6	0.37	0.43
	30	12	0.65	39	0.43	0.50	16	0.87	52.2	0.44	0.50
	35	13	0.71	42.6	0.40	0.47	17	0.95	57	0.42	0.49
	40	14	0.75	45	0.39	0.46	18	1.03	61.8	0.41	0.47
	45	14	0.80	48	0.39	0.45	19	1.10	66	0.39	0.45

**MP ROTATOR® PERFORMANCE DATA**

MP3000 Radius: 22' to 30' Adjustable Arc and Full Circle ● Blue: 90° to 210° ● Yellow: 210° to 270° ● Gray: 360°						MP3500 Radius: 33' to 35' Adjustable Arc ● Light Brown: 90° to 210°					
Pressure (PSI)	Radius (ft.)	Flow (GPM)	Flow (GPH)	Precip in/hr ■	Precip in/hr ▲	Radius (ft.)	Flow (GPM)	Flow (GPH)	Precip in/hr ■	Precip in/hr ▲	
90°	25	25	0.69	41.4	0.43	0.49	33	1.04	62.4	0.37	0.42
	30	27	0.74	44.4	0.39	0.45	34	1.13	67.8	0.38	0.43
	35	28	0.80	48	0.39	0.45	34	1.21	72.6	0.40	0.47
	40	30	0.86	51.6	0.37	0.43	35	1.28	76.8	0.40	0.46
	45	30	0.91	54.6	0.39	0.45	35	1.38	82.8	0.43	0.50
180°	25	30	0.96	57.6	0.41	0.47	35	1.43	85.8	0.45	0.52
	30	30	1.01	60.6	0.43	0.50	35	1.50	90.0	0.47	0.54
	35	25	1.44	86.4	0.44	0.51	33	2.21	132.6	0.39	0.45
	40	27	1.58	94.8	0.42	0.48	34	2.24	134.4	0.37	0.43
	45	28	1.7	102	0.42	0.48	34	2.65	159.0	0.44	0.51
210°	25	30	1.82	109.2	0.39	0.45	35	2.86	171.6	0.45	0.52
	30	30	1.93	115.8	0.41	0.48	35	3.10	186.0	0.49	0.56
	35	30	2.04	122.4	0.44	0.50	35	3.21	192.6	0.50	0.58
	40	30	2.13	127.8	0.46	0.53	35	3.28	196.8	0.52	0.60
	45	25	1.68	100.8	0.44	0.51	33	2.59	155.4	0.39	0.45
270°	25	27	1.84	110.4	0.42	0.48	34	2.84	170.4	0.41	0.47
	30	28	1.99	119.4	0.42	0.48	34	3.08	184.8	0.44	0.51
	35	30	2.12	127.2	0.39	0.45	35	3.29	197.4	0.44	0.51
	40	30	2.25	135	0.41	0.48	35	3.54	212.4	0.48	0.55
	45	30	2.37	142.2	0.43	0.50	35	3.76	225.6	0.51	0.59
360°	25	30	2.49	149.4	0.46	0.53	35	3.94	236.4	0.53	0.61
	30	25	2.19	131.4	0.45	0.52	25	2.88	172.8	0.44	0.51
	35	27	2.37	142.2	0.42	0.48	27	3.15	189	0.42	0.48
	40	28	2.55	153	0.42	0.48	28	3.4	204	0.42	0.48
	45	30	2.73	163.8	0.39	0.45	30	3.64	218.4	0.39	0.45

# Hunter®

### PRO-SPRAY® NOZZLES

**Precise edges, optimum droplet size deliver superior matched precipitation for the most popular arc settings.**

- ◆ Precision engineered to ensure that the entire area of coverage receives its intended amount of water
- ◆ Large filter screen that comes with every nozzle prevents clogging from debris and ensures uniform coverage
- ◆ Save labor by not having to adjust each nozzle to common patterns

#### PRO-SPRAY FIXED NOZZLES PERFORMANCE 5' & 8' RADIUS

Arc	Position	Pressure PSI	Nozzle 5 Blue 5 ft Radius Fixed ¼, ½, ¾, Full Trajectory 0°				Nozzle 8 Brown 8 ft Radius Fixed ¼, ½, ¾, Full Trajectory 0°			
			Radius		Precip in/hr		Radius		Precip in/hr	
			ft	Flow GPM	■	▲	ft	Flow GPM	■	▲
90°	Q	20	4	0.09	2.25	2.60	7	0.20	1.54	1.78
		25	4	0.11	2.54	2.94	8	0.22	1.33	1.53
		30	5	0.12	1.80	2.08	8	0.24	1.46	1.69
		35	6	0.13	1.36	1.57	9	0.26	1.25	1.45
		40	6	0.14	1.46	1.69	9	0.28	1.34	1.55
180°	H	20	4	0.19	2.25	2.60	7	0.38	1.49	1.72
		25	4	0.21	2.54	2.94	8	0.43	1.28	1.48
		30	5	0.23	1.80	2.08	8	0.47	1.41	1.63
		35	6	0.25	1.36	1.57	9	0.51	1.21	1.39
		40	6	0.27	1.46	1.69	9	0.54	1.29	1.49
360°	F	20	4	0.37	2.25	2.60	7	0.78	1.54	1.78
		25	4	0.42	2.54	2.94	8	0.88	1.33	1.53
		30	5	0.47	1.80	2.08	8	0.97	1.46	1.69
		35	6	0.51	1.36	1.57	9	1.05	1.25	1.45
		40	6	0.55	1.46	1.69	9	1.13	1.34	1.55

#### PRO-SPRAY FIXED NOZZLES PERFORMANCE 10' & 12' RADIUS

Arc	Position	Pressure PSI	Nozzle 10 Red 10 ft Radius Fixed ¼, ½, ¾, Full Trajectory 15°				Nozzle 12 Green 12 ft Radius Fixed ¼, ½, ¾, ¾, Full Trajectory 28°			
			Radius		Precip in/hr		Radius		Precip in/hr	
			ft	Flow GPM	■	▲	ft	Flow GPM	■	▲
90°	Q	20	9	0.34	1.63	1.88	11	0.54	1.71	1.98
		25	10	0.39	1.48	1.71	12	0.61	1.62	1.87
		30	10	0.42	1.63	1.89	12	0.67	1.78	2.06
		35	11	0.46	1.47	1.69	13	0.72	1.65	1.90
		40	11	0.49	1.57	1.82	13	0.78	1.77	2.04
180°	H	20	9	0.70	1.67	1.92	11	1.05	1.67	1.93
		25	10	0.79	1.53	1.76	12	1.18	1.58	1.83
		30	10	0.88	1.69	1.95	12	1.30	1.74	2.01
		35	11	0.95	1.52	1.75	13	1.42	1.61	1.86
		40	11	1.03	1.63	1.89	13	1.52	1.73	2.00
360°	F	20	9	1.29	1.53	1.77	11	2.17	1.72	1.99
		25	10	1.45	1.39	1.61	12	2.45	1.63	1.89
		30	10	1.59	1.53	1.76	12	2.70	1.80	2.08
		35	11	1.72	1.37	1.58	13	2.93	1.67	1.93
		40	11	1.84	1.46	1.69	13	3.15	1.80	2.07

#### PRO-SPRAY FIXED NOZZLES PERFORMANCE 15' & 17' RADIUS

Arc	Position	Pressure PSI	Nozzle 15 Black 15 ft Radius Fixed ¼, ½, ¾, ¾, Full Trajectory 28°				Nozzle 17 Grey 17 ft Radius Fixed ¼, ¾ Trajectory 28°			
			Radius		Precip in/hr		Radius		Precip in/hr	
			ft	Flow GPM	■	▲	ft	Flow GPM	■	▲
90°	Q	20	14	0.78	1.53	1.77	16	0.93	1.40	1.61
		25	15	0.88	1.51	1.74	17	1.05	1.39	1.61
		30	15	0.97	1.67	1.92	17	1.15	1.54	1.77
		35	16	1.06	1.59	1.84	18	1.25	1.49	1.72
		40	17	1.14	1.52	1.75	19	1.34	1.43	1.65
180°	H	20	14	1.51	1.48	1.71	16	1.91	1.43	1.66
		25	15	1.69	1.45	1.67	17	2.15	1.43	1.65
		30	15	1.86	1.59	1.84	17	2.37	1.58	1.82
		35	16	2.02	1.52	1.75	18	2.57	1.53	1.76
		40	17	2.16	1.44	1.66	19	2.76	1.47	1.70
360°	F	20	14	3.04	1.49	1.72	Use Hunter 17A Nozzle			
		25	15	3.41	1.46	1.69				
		30	15	3.75	1.61	1.85				
		35	16	4.07	1.53	1.76				
		40	17	4.36	1.45	1.68				





## PRO-ADJUSTABLE NOZZLES

**Cover all of the angles. Fine-tune nozzles for your specific needs.**

- ◆ Can be used on hillside topography, a curved flower bed or other special landscape installation
- ◆ Set nozzles at any angle from 25° to 360°
- ◆ With matched precipitation, they can be grouped together, even with different radii



### PRO ADJUSTABLE NOZZLES PERFORMANCE DATA 4', 6', 8', 10' RADIUS

Arc	Pressure PSI	Nozzle 4A Lt. Green 4 ft Radius Adjustable from 0° to 360° Trajectory 0°					Nozzle 6A Lt. Blue 6 ft Radius Adjustable from 0° to 360° Trajectory 0°					Nozzle 8A Brown 8 ft Radius Adjustable from 0° to 360° Trajectory 0°					Nozzle 10A Red 10 ft Radius Adjustable from 0° to 360° Trajectory 15°				
		Radius		Flow		Precip in/hr	Radius		Flow		Precip in/hr	Radius		Flow		Precip in/hr	Radius		Flow		Precip in/hr
		ft	GPM	■	▲		ft	GPM	■	▲		ft	GPM	■	▲		ft	GPM	■	▲	
90° 	20	3	0.19	4.57	5.28		5	0.30	3.21	3.70		7	0.23	1.83	2.11		9	0.39	1.86	2.15	
	25	3	0.20	4.81	5.56		5	0.31	3.32	3.83		8	0.26	1.58	1.83		9	0.44	1.71	1.97	
	<b>30</b>	<b>4</b>	<b>0.28</b>	<b>6.74</b>	<b>7.78</b>		<b>6</b>	<b>0.37</b>	<b>3.96</b>	<b>4.57</b>		<b>8</b>	<b>0.29</b>	<b>1.75</b>	<b>2.02</b>		<b>10</b>	<b>0.49</b>	<b>1.89</b>	<b>2.18</b>	
	35	4	0.24	5.78	6.67		6	0.38	4.06	4.69		9	0.32	1.51	1.74		11	0.53	1.70	1.96	
	40	4	0.25	5.90	6.81		6	0.40	4.28	4.94		9	0.34	1.62	1.87		11	0.57	1.83	2.11	
180° 	20	3	0.34	4.09	4.72		5	0.50	2.67	3.09		7	0.47	1.83	2.11		9	0.78	1.86	2.15	
	25	3	0.38	4.57	5.28		5	0.54	2.89	3.33		8	0.53	1.58	1.83		10	0.89	1.71	1.97	
	<b>30</b>	<b>4</b>	<b>0.45</b>	<b>5.41</b>	<b>6.25</b>		<b>6</b>	<b>0.60</b>	<b>3.21</b>	<b>3.70</b>		<b>8</b>	<b>0.58</b>	<b>1.75</b>	<b>2.02</b>		<b>10</b>	<b>0.98</b>	<b>1.89</b>	<b>2.18</b>	
	35	4	0.46	5.53	6.39		6	0.64	3.42	3.95		9	0.63	1.51	1.74		11	1.07	1.70	1.96	
	40	4	0.48	5.78	6.67		6	0.68	3.64	4.20		9	0.68	1.62	1.87		11	1.15	1.83	2.11	
360° 	20	3	0.66	3.97	4.58		4	1.05	2.81	3.24		7	0.93	1.83	2.11		9	1.57	1.86	2.15	
	25	3	0.72	4.33	5.00		5	1.10	2.94	3.40		8	1.05	1.58	1.83		10	1.77	1.71	1.97	
	<b>30</b>	<b>4</b>	<b>0.80</b>	<b>4.81</b>	<b>5.56</b>		<b>6</b>	<b>1.26</b>	<b>3.37</b>	<b>3.89</b>		<b>8</b>	<b>1.16</b>	<b>1.75</b>	<b>2.02</b>		<b>10</b>	<b>1.96</b>	<b>1.89</b>	<b>2.18</b>	
	35	4	0.86	5.17	5.97		6	1.30	3.48	4.01		9	1.27	1.51	1.74		11	2.13	1.70	1.96	
	40	4	0.90	5.41	6.25		6	1.40	3.74	4.32		9	1.36	1.62	1.87		11	2.30	1.83	2.11	

Bold = Recommended pressure

### PRO ADJUSTABLE NOZZLES PERFORMANCE DATA 12', 15', 17' RADIUS

Arc	Pressure PSI	Nozzle 12A Green 12 ft Radius Adjustable from 0° to 360° Trajectory 28°					Nozzle 15A Black 15 ft Radius Adjustable from 0° to 360° Trajectory 28°					Nozzle 17A Grey 17 ft Radius Adjustable from 0° to 360° Trajectory 28°				
		Radius		Flow		Precip in/hr	Radius		Flow		Precip in/hr	Radius		Flow		Precip in/hr
		ft	GPM	■	▲		ft	GPM	■	▲		ft	GPM	■	▲	
90° 	20	11	0.50	1.60	1.85		14	0.74	1.46	1.69		20	1.16	0.96	1.44	1.67
	25	12	0.57	1.52	1.76		15	0.84	1.44	1.66		25	1.7	1.09	1.45	1.67
	<b>30</b>	<b>12</b>	<b>0.63</b>	<b>1.68</b>	<b>1.95</b>		<b>15</b>	<b>0.93</b>	<b>1.59</b>	<b>1.84</b>		<b>30</b>	<b>1.7</b>	<b>1.20</b>	<b>1.60</b>	<b>1.85</b>
	35	13	0.69	1.56	1.80		16	1.01	1.52	1.76		35	1.8	1.31	1.55	1.79
	40	13	0.74	1.68	1.94		17	1.09	1.45	1.68		40	1.9	1.41	1.50	1.73
180° 	20	11	1.01	1.60	1.85		14	1.49	1.46	1.69		20	1.6	1.92	1.44	1.67
	25	12	1.14	1.52	1.76		15	1.68	1.44	1.66		25	1.7	2.17	1.45	1.67
	<b>30</b>	<b>12</b>	<b>1.26</b>	<b>1.68</b>	<b>1.95</b>		<b>15</b>	<b>1.86</b>	<b>1.59</b>	<b>1.84</b>		<b>30</b>	<b>1.7</b>	<b>2.40</b>	<b>1.60</b>	<b>1.85</b>
	35	13	1.37	1.56	1.80		16	2.02	1.52	1.76		35	1.8	2.61	1.55	1.79
	40	13	1.48	1.68	1.94		17	2.18	1.45	1.68		40	1.9	2.81	1.50	1.73
360° 	20	11	2.02	1.60	1.85		14	2.98	1.46	1.69		20	1.6	3.84	1.44	1.67
	25	12	2.28	1.52	1.76		15	3.37	1.44	1.66		25	1.7	4.34	1.45	1.67
	<b>30</b>	<b>12</b>	<b>2.52</b>	<b>1.68</b>	<b>1.95</b>		<b>15</b>	<b>3.72</b>	<b>1.59</b>	<b>1.84</b>		<b>30</b>	<b>1.7</b>	<b>4.80</b>	<b>1.60</b>	<b>1.85</b>
	35	13	2.74	1.56	1.80		16	4.05	1.52	1.76		35	1.8	5.22	1.55	1.79
	40	13	2.95	1.68	1.94		17	4.36	1.45	1.68		40	1.9	5.62	1.50	1.73

Bold = Recommended pressure

**TORO**

### PRECISION™ PRESSURE COMPENSATING NOZZLES

- ◆ Uses 1/3 less flow to reach a radius of a conventional spray nozzle
- ◆ The H<sub>2</sub>O Chip generates a larger, more uniform droplet size resulting in consistency across the irrigated arc
- ◆ Male & female threaded models available
- ◆ Available in Pressure Compensating Device (PCD) versions



### Performance Data Pressure-Compensating Precision™ Series Spray Nozzles

Arc	PSI	GPM	Radius	Precip. Rate ⊗ (in./hr.)	Precip. Rate ▲ (in./hr.)
5Q	40	0.06	4.6	1.0	1.2
	50	0.08	5.1	1.2	1.4
	60	0.09	5.6	1.3	1.5
	70	0.11	6.2	1.5	1.7
5T	40	0.07	4.4	1.0	1.1
	50	0.11	4.9	1.3	1.5
	60	0.15	5.5	1.7	2.0
	70	0.19	6.0	2.0	2.4
5H	40	0.10	4.4	1.0	1.2
	50	0.13	4.9	1.1	1.3
	60	0.16	5.4	1.3	1.5
	70	0.19	6.0	1.4	1.6
5TT	40	0.14	4.3	1.1	1.3
	50	0.20	4.9	1.3	1.5
	60	0.25	5.4	1.4	1.7
	70	0.31	6.0	1.6	1.8
5TQ	40	0.15	4.3	1.0	1.2
	50	0.21	4.9	1.2	1.4
	60	0.26	5.6	1.4	1.6
	70	0.32	6.2	1.5	1.7
5F	40	0.17	4.0	1.0	1.2
	50	0.24	4.8	1.1	1.3
	60	0.31	5.5	1.2	1.4
	70	0.38	6.3	1.3	1.5

Arc	PSI	GPM	Radius	Precip. Rate ⊗ (in./hr.)	Precip. Rate ▲ (in./hr.)
8Q	40	0.14	7.0	1.1	1.3
	50	0.17	7.7	1.2	1.3
	60	0.20	8.4	1.2	1.4
	70	0.23	9.1	1.3	1.4
8T	40	0.20	7.6	1.0	1.2
	50	0.24	8.0	1.1	1.3
	60	0.27	8.5	1.2	1.4
	70	0.31	8.9	1.3	1.5
8H	40	0.26	7.0	1.0	1.2
	50	0.33	7.6	1.1	1.3
	60	0.39	8.1	1.2	1.4
	70	0.46	8.7	1.3	1.4
8TT	40	0.34	7.0	1.0	1.1
	50	0.43	7.8	1.1	1.2
	60	0.52	8.5	1.2	1.4
	70	0.61	9.3	1.3	1.5
8TQ	40	0.41	7.2	1.0	1.1
	50	0.48	7.9	1.1	1.2
	60	0.55	8.6	1.1	1.3
	70	0.62	9.3	1.2	1.4
8F	40	0.55	7.0	1.1	1.2
	50	0.65	7.5	1.1	1.2
	60	0.74	8.0	1.1	1.3
	70	0.84	8.5	1.1	1.3

Arc	PSI	GPM	Radius	Precip. Rate ⊗ (in./hr.)	Precip. Rate ▲ (in./hr.)
10Q	40	0.26	9.5	1.0	1.1
	50	0.28	10.0	1.1	1.2
	60	0.29	10.5	1.1	1.3
	70	0.31	11.1	1.2	1.4
10T	40	0.31	9.5	1.0	1.1
	50	0.36	10.0	1.1	1.2
	60	0.41	10.5	1.2	1.4
	70	0.46	11.0	1.3	1.5
10H	40	0.48	9.7	1.0	1.1
	50	0.53	10.1	1.1	1.2
	60	0.57	10.4	1.1	1.3
	70	0.62	10.8	1.2	1.4
10TT	40	0.63	9.6	1.0	1.1
	50	0.70	9.9	1.1	1.2
	60	0.77	10.3	1.1	1.3
	70	0.84	10.6	1.2	1.4
10TQ	40	0.71	9.5	1.0	1.1
	50	0.77	9.9	1.0	1.2
	60	0.82	10.3	1.1	1.2
	70	0.88	10.7	1.1	1.3
10F	40	0.95	9.6	1.0	1.1
	50	1.06	10.0	1.1	1.2
	60	1.16	10.5	1.1	1.3
	70	1.27	10.9	1.2	1.4

Arc	PSI	GPM	Radius	Precip. Rate ⊗ (in./hr.)	Precip. Rate ▲ (in./hr.)
12Q	40	0.34	12.0	1.0	1.2
	50	0.39	12.2	1.1	1.3
	60	0.43	12.5	1.2	1.3
	70	0.48	12.7	1.2	1.4
12T	40	0.46	11.5	1.0	1.2
	50	0.50	11.8	1.0	1.2
	60	0.54	12.0	1.1	1.3
	70	0.58	12.3	1.1	1.3
12H	40	0.70	11.5	1.0	1.2
	50	0.75	11.8	1.0	1.2
	60	0.80	12.2	1.1	1.2
	70	0.85	12.5	1.1	1.2
12TT	40	0.90	11.4	1.0	1.2
	50	1.03	11.5	1.1	1.3
	60	1.16	11.5	1.2	1.3
	70	1.29	11.6	1.2	1.4
12TQ	40	1.05	11.4	1.0	1.2
	50	1.14	11.7	1.0	1.2
	60	1.23	12.0	1.1	1.3
	70	1.32	12.3	1.1	1.3
12F	40	1.35	11.5	1.0	1.1
	50	1.49	11.8	1.0	1.2
	60	1.63	12.2	1.1	1.3
	70	1.77	12.5	1.1	1.3

Arc	PSI	GPM	Radius	Precip. Rate ⊗ (in./hr.)	Precip. Rate ▲ (in./hr.)
15Q	40	0.53	14.2	1.0	1.2
	50	0.59	14.5	1.1	1.2
	60	0.64	14.8	1.1	1.3
	70	0.70	15.1	1.2	1.3
15T	40	0.72	14.3	1.0	1.2
	50	0.77	14.8	1.0	1.2
	60	0.82	15.2	1.1	1.2
	70	0.87	15.7	1.1	1.2
15H	40	1.10	14.5	1.0	1.2
	50	1.20	14.3	1.1	1.2
	60	1.29	14.0	1.1	1.3
	70	1.39	13.8	1.2	1.3
15TT	40	1.45	14.5	1.0	1.2
	50	1.57	14.8	1.0	1.2
	60	1.68	15.0	1.1	1.2
	70	1.80	15.3	1.1	1.3
15TQ	40	1.60	14.0	0.9	1.0
	50	1.70	14.4	1.0	1.1
	60	1.80	14.8	1.0	1.2
	70	1.90	15.1	1.1	1.2
15F	40	2.20	14.5	1.0	1.2
	50	2.36	14.8	1.0	1.2
	60	2.52	15.1	1.1	1.2
	70	2.68	15.4	1.1	1.3

Arc	PSI	GPM	Radius	Precip. Rate ⊗ (in./hr.)	Precip. Rate ▲ (in./hr.)
4X30 SST	40	0.62	4x30	1.0	1.1
	50	0.65	4x30	1.0	1.2
	60	0.67	4x30	1.1	1.3
	70	0.70	4x30	1.1	1.3
4X15 LCS	40	0.32	4x15	1.0	1.2
	50	0.33	4x15	1.1	1.2
	60	0.34	4x15	1.1	1.3
	70	0.35	4x15	1.2	1.3
4X15 RCS	40	0.32	4x15	1.0	1.2
	50	0.33	4x15	1.1	1.2
	60	0.34	4x15	1.1	1.3
	70	0.35	4x15	1.2	1.3
4X18 SST	40	0.36	4X18	1.0	1.1
	50	0.37	4X18	1.0	1.2
	60	0.38	4X18	1.0	1.2
	70	0.39	4X18	1.0	1.2
4X9 LCS	40	0.18	4X9	1.0	1.1
	50	0.19	4X9	1.1	1.2
	60	0.20	4X9	1.1	1.2
	70	0.21	4X9	1.2	1.3
4X9 RCS	40	0.18	4X9	1.0	1.2
	50	0.19	4X9	1.1	1.2
	60	0.20	4X9	1.1	1.2
	70	0.21	4X9	1.2	1.3

**TORO**
**PRECISION™ SERIES ROTATING NOZZLES**

- ◆ Consistent speed of rotation not affected by pressure
- ◆ Maintains precipitation rate as radius is reduced
- ◆ Threads onto nearly all sprayheads and shrub adapters (male or female)
- ◆ Adjustable by hand or with included tool


**Performance Data—Precision™ Series Rotating Nozzles—US**

Arc	PSI	GPM	Radius	Precip. Rate ■ (in./hr.)	Precip. Rate ▲ (in./hr.)
45°	20	0.17	14.0	0.67	0.77
	30	0.19	15.0	0.65	0.75
	40	0.25	17.0	0.67	0.77
	50	0.31	18.5	0.70	0.81
	60	0.35	19.5	0.71	0.82
	75	0.43	22.0	0.68	0.79
90°	20	0.43	16.0	0.65	0.75
	30	0.49	17.5	0.62	0.71
	40	0.62	20.5	0.57	0.66
	50	0.75	22.5	0.57	0.66
	60	0.82	23.5	0.57	0.66
	75	0.92	25.0	0.57	0.65
120°	20	0.48	16.4	0.69	0.79
	30	0.57	17.5	0.72	0.83
	40	0.78	20.2	0.55	0.64
	50	0.97	22.5	0.55	0.64
	60	1.07	23.5	0.56	0.65
	75	1.18	25.0	0.55	0.63
180°	20	0.83	15.0	0.71	0.82
	30	0.94	17.0	0.63	0.72
	40	1.22	20.5	0.56	0.65
	50	1.46	22.5	0.56	0.64
	60	1.61	24.0	0.54	0.62
	75	1.81	26.0	0.52	0.60
240°	20	1.12	15.0	0.72	0.83
	30	1.27	17.0	0.63	0.73
	40	1.56	20.0	0.56	0.65
	50	1.80	21.5	0.56	0.65
	60	1.95	22.5	0.56	0.64
	75	2.20	24.0	0.55	0.64
270°	20	1.08	14.0	0.71	0.81
	30	1.23	16.0	0.62	0.71
	40	1.62	19.0	0.57	0.66
	50	2.00	21.5	0.55	0.64
	60	2.26	23.0	0.55	0.63
	75	2.60	25.0	0.53	0.61
360°	20	1.81	15.0	0.77	0.89
	30	2.00	17.2	0.65	0.75
	40	2.56	20.9	0.56	0.65
	50	3.09	22.9	0.57	0.65
	60	3.34	23.8	0.57	0.66
	75	3.68	25.6	0.54	0.62

**TORO**

### MPR PLUS SPRAY NOZZLES

- ◆ Standard and special spray patterns
- ◆ Adjustment screw allows up to 25% reduction in radius and complete shutoff
- ◆ Five levels of trajectory
- ◆ Fine-mesh snap-in filter screens for lower flow nozzles







































### Specifications:

Flow rate: .05 GPM to 4.58 GPM

Recommended operating pressure: 20 psi to 50 psi

570 MPR Plus Spray Nozzle Performance Chart—U.S.

5' Series with 0 Trajectory						8' Series with 5 Trajectory						10' Series with 12 Trajectory					
Pattern	Desc.	psi	GPM	Radius	Prec. Rate* △ □	Pattern	Desc.	psi	GPM	Radius	Prec. Rate* △ □	Pattern	Desc.	psi	GPM	Radius	Prec. Rate* △ □
	5-Q	20	0.05	4	1.40 1.21		8-Q	20	0.17	7	1.55 1.34		10-Q	20	0.30	9	1.66 1.44
		30	0.09	5	1.61 1.40			30	0.24	8	1.68 1.45			30	0.40	10	1.79 1.55
		40	0.12	6	1.78 1.54			40	0.26	9	1.61 1.39			40	0.50	11	1.85 1.60
		50	0.15	6	1.86 1.62			50	0.29	9	1.60 1.39			50	0.60	12	1.86 1.62
	5-Q-PC	30-40	0.09	5	1.61 1.40		8-Q-PC	30-40	0.22	8	1.54 1.33		10-Q-PC	30-40	0.33	10	1.48 1.28
		40-75	0.10	5	1.79 1.55			40-75	0.25	8	1.75 1.51			40-75	0.37	10	1.66 1.43
	5-T	20	0.07	4	1.47 1.27		8-T	20	0.23	7	1.58 1.36		10-T	20	0.42	9	1.74 1.51
		30	0.12	5	1.61 1.40			30	0.30	8	1.57 1.36			30	0.52	10	1.75 1.51
		40	0.16	6	1.78 1.54			40	0.36	9	1.67 1.45			40	0.65	11	1.80 1.56
		50	0.20	6	1.86 1.62			50	0.40	9	1.66 1.44			50	0.75	12	1.75 1.51
	5-T-PC	30-40	0.12	5	1.61 1.40		8-T-PC	30-40	0.29	8	1.52 1.32		10-T-PC	30-40	0.44	10	1.48 1.28
		40-75	0.13	5	1.79 1.55			40-75	0.35	8	1.84 1.59			40-75	0.50	10	1.68 1.45
	5-H	20	0.10	4	1.40 1.21		8-H	20	0.37	8	1.47 1.27		10-H	20	0.60	9	1.66 1.44
		30	0.19	5	1.70 1.47			30	0.50	8	1.75 1.51			30	0.71	10	1.59 1.38
		40	0.23	6	1.70 1.47			40	0.58	9	1.80 1.56			40	0.85	11	1.57 1.36
		50	0.27	6	1.68 1.45			50	0.65	9	1.80 1.56			50	0.99	12	1.65 1.43
	5-H-PC	30-40	0.18	5	1.61 1.40		8-H-PC	30-40	0.44	8	1.54 1.33		10-H-PC	30-40	0.66	10	1.48 1.28
		40-75	0.20	5	1.79 1.55			40-75	0.50	8	1.75 1.51			40-75	0.75	10	1.68 1.45
	5-TT	20	0.15	4	1.57 1.36		8-TT	20	0.56	7	1.92 1.66		10-TT	20	0.71	9	1.47 1.27
		30	0.25	5	1.68 1.45			30	0.70	8	1.84 1.59			30	0.97	10	1.63 1.41
		40	0.30	6	1.66 1.44			40	0.80	9	1.86 1.61			40	1.10	11	1.67 1.45
		50	0.35	6	1.63 1.41			50	0.88	9	1.82 1.58			50	1.19	11	1.65 1.43
	5-TT-PC	30-40	0.23	5	1.54 1.34		8-TT-PC	30-40	0.59	8	1.55 1.34		10-TT-PC	30-40	0.89	10	1.49 1.29
		40-75	0.27	5	1.81 1.57			40-75	0.70	8	1.84 1.59			40-75	1.00	10	1.68 1.45
	5-TQ	20	0.20	4	1.86 1.61		8-TQ	20	0.63	7	1.92 1.66		10-TQ	20	0.82	9	1.51 1.31
		30	0.29	5	1.73 1.50			30	0.76	8	1.77 1.53			30	1.04	10	1.55 1.34
		40	0.34	6	1.68 1.45			40	0.86	9	1.78 1.54			40	1.20	11	1.62 1.41
		50	0.40	6	1.66 1.44			50	0.93	9	1.71 1.48			50	1.35	11	1.66 1.44
	5-TQ-PC	30-40	0.26	5	1.55 1.34		8-TQ-PC	30-40	0.64	8	1.49 1.29		10-TQ-PC	30-40	0.99	10	1.48 1.28
		40-75	0.29	5	1.73 1.50			40-75	0.70	8	1.63 1.41			40-75	1.09	10	1.63 1.41
	5-F	20	0.25	4	1.75 1.51		8-F	20	0.74	7	1.69 1.46		10-F	20	1.11	9	1.72 1.49
		30	0.38	5	1.70 1.47			30	1.00	8	1.75 1.51			30	1.49	10	1.67 1.44
		40	0.45	6	1.66 1.44			40	1.16	9	1.80 1.56			40	1.61	11	1.63 1.42
		50	0.53	6	1.65 1.43			50	1.30	9	1.80 1.56			50	1.85	11	1.71 1.48
	5-F-PC	30-40	0.35	5	1.57 1.36		8-F-PC	30-40	0.85	8	1.49 1.29		10-F-PC	30-40	1.33	10	1.49 1.29
		40-75	0.39	5	1.75 1.51			40-75	1.00	8	1.75 1.51			40-75	1.51	10	1.69 1.46

12' Series with 23 Trajectory						15' Series with 27 Trajectory						Special Patterns					
Pattern	Desc.	psi	GPM	Radius	Prec. Rate* △ □	Pattern	Desc.	psi	GPM	Radius	Prec. Rate* △ □	Pattern	Desc.	psi	GPM	Special Patterns Width Length	Prec. Rate*
	12-Q	20	0.40	11	1.48 1.28		15-Q	20	0.68	14	1.55 1.34		4-EST	20	0.38	3' x 12'	2.03
		30	0.50	12	1.55 1.35			30	0.85	15	1.69 1.46			30	0.45	4' x 15'	1.44
		40	0.60	13	1.64 1.42			40	1.04	16	1.82 1.57			40	0.53	5' x 18'	1.13
		50	0.63	13	1.67 1.44			50	1.23	16	2.15 1.86			50	0.60	6' x 20'	0.96
	12-Q-PC	30-40	0.48	12	1.49 1.29		15-Q-PC	30-40	0.75	15	1.49 1.29		4-EST-PC	30-40	0.43	4' x 15'	1.38
		40-75	0.53	12	1.65 1.43			40-75	0.81	15	1.61 1.40			40-75	0.50	4' x 15'	1.61
	12-T	20	0.57	11	1.58 1.37		15-T	20	0.95	14	1.75 1.52		4-CST	20	0.75	3' x 24'	2.01
		30	0.72	12	1.68 1.45			30	1.10	15	1.64 1.42			30	0.90	4' x 30'	1.44
		40	0.87	13	1.87 1.62			40	1.30	16	1.82 1.57			40	1.04	4' x 30'	1.67
		50	0.97	13	1.93 1.67			50	1.45	16	2.03 1.75			50	1.16	4' x 31'	1.80
	12-T-PC	30-40	0.64	12	1.49 1.29		15-T-PC	30-40	1.00	15	1.49 1.29		4-CST-PC	30-40	0.86	4' x 30'	1.38
		40-75	0.70	12	1.63 1.41			40-75	1.10	15	1.64 1.42			40-75	1.00	4' x 30'	1.61
	12-H	20	0.95	11	1.76 1.52		15-H	20	1.37	13	1.79 1.55		9-SST	20	1.00	9' x 18'	1.19
		30	1.09	12	1.69 1.47			30	1.65	15	1.66 1.44			30	1.20	9' x 18'	1.43
		40	1.30	13	1.72 1.49			40	2.02	16	1.77 1.53			40	1.38	9' x 20'	1.48
		50	1.55	14	1.77 1.53			50	2.14	16	1.87 1.62			50	1.55	10' x 22'	1.36
	12-H-PC	30-40	0.96	12	1.49 1.29		15-H-PC	30-40	1.50	15	1.49 1.29		9-SST-PC	30-40	1.10	9' x 18'	1.31
		40-75	1.05	12	1.63 1.41			40-75	1.65	15	1.64 1.42			40-75	1.20	9' x 18'	1.43
	12-TT	20	1.12	11	1.55 1.35		15-TT	20	1.78	14	1.59 1.38		4-SST	20	0.65	4' x 24'	1.30
		30	1.45	12	1.69 1.46			30	2.20	15	1.64 1.42			30	0.90	4' x 30'	1.44
		40	1.63	13	1.75 1.52			40	2.66	16	1.74 1.51			40	1.04	4' x 32'	1.56
		50	1.80	13	1.79 1.55			50	2.84	16	1.86 1.61			50	1.16	5' x 33'	1.35
	12-TT-PC	30-40	1.28	12	1.49 1.29		15-TT-PC	30-40	2.00	15	1.49 1.29		4-SST-PC	30-40	0.88	4' x 30'	1.41
		40-75	1.40	12	1.63 1.41			40-75	2.20	15	1.64 1.42			40-75	1.00	4' x 30'	1.61
	12-TQ	20	1.05	11	1.42 1.23		15-TQ	20	2.10	13	1.85 1.61		2-SST	20	0.08	2' x 5'	1.54
		30	1.55	12	1.61 1.39			30	2.60	15	1.72 1.49			30	0.09	2' x 6'	1.41
		40	1.65	13	1.58 1.36			40	3.00	16	1.86 1.61			40	0.10	2' x 7'	1.38
		50	1.80	13	1.59 1.38			50	3.40	16	1.98 1.72			50	0.12	3' x 7'	1.10
	12-TQ-PC	30-40	1.44	12	1.49 1.29		15-TQ-PC	30-40	2.30	15	1.53 1.32		2-SST-PC	30-40	0.09	2' x 6'	1.44
		40-75	1.60	12	1.66 1.44			40-75	2.50	15	1.66 1.44			40-75	0.10	2' x 6'	1.61
	12-F	20	1.67	11	1.54 1.34		15-F	20	2.85	13	1.89 1.63		4S-SST	20	0.46	4' x 17'	1.30
		30	2.19	12	1.70 1.47			30	3.60	15	1.79 1.55			30	0.55	4' x 18'	1.47
		40	2.35	13	1.68 1.46			40	4.20	16	1.84 1.59			40	0.63	4' x 19'	1.60
		50	2.70	13	1.79 1.55			50	4.58	16	2.00 1.73			50	0.71	5' x 19'	1.44
	12-F-PC	30-40	1.92	12	1.49 1.29		15-F-PC	30-40	3.00	15	1.49 1.29		4S-SST-PC	30-40	0.50	4' x 18'	1.34
		40-75	2.10	12	1.63 1.41			40-75	3.30	15	1.64 1.42			40-75	0.59	4' x 18'	1.51


**TVAN NOZZLES**

- ◆ Compatible with any female threaded riser made, means one nozzle family can meet all your needs
- ◆ Stainless steel adjustment screw allows up to 25% radius reduction
- ◆ Easy grip top makes arc adjustment from 0°-360° a snap


**Specifications:**

Recommended operating pressure range: 20 psi to 50 psi  
Maximum operating pressure: 75 psi

**TVAN Variable Arc Nozzle Performance Data—US**

Pattern	PSI	8 Series-Green				10 Series-Blue				12 Series-Brown				15' Series-Black				17' Series-Gray			
		GPM	Rad	Precip. Rate ▲ ■		GPM	Rad	Precip. Rate ▲ ■		GPM	Rad	Precip. Rate ▲ ■		GPM	Rad	Precip. Rate ▲ ■		GPM	Rad	Precip. Rate ▲ ■	
90°	20	0.58	7	5.26	4.56	0.59	9	3.24	2.81	0.76	10	3.38	2.93	1.06	15	2.09	1.81	1.25	16	2.17	1.88
	30	0.71	8	4.93	4.27	0.72	10	3.20	2.77	0.93	12	2.87	2.49	1.29	15	2.55	2.21	1.46	17	2.25	1.95
	40	0.82	9	4.50	3.90	0.84	10	3.73	3.24	1.07	12	3.30	2.86	1.49	16	2.59	2.24	1.68	18	2.31	2.00
	50	0.92	9	5.05	4.38	0.94	10	4.18	3.62	1.21	13	3.18	2.76	1.66	16	2.88	2.50	1.87	18	2.57	2.22
180°	20	0.81	7	3.67	3.18	0.94	9	2.58	2.24	1.35	10	3.00	2.60	1.71	14	1.94	1.68	1.95	15	1.93	1.67
	30	0.99	8	3.44	2.98	1.15	10	2.56	2.21	1.65	12	2.55	2.21	2.08	15	2.05	1.78	2.38	17	1.83	1.59
	40	1.15	8	3.99	3.46	1.33	10	2.96	2.56	1.91	12	2.95	2.55	2.40	15	2.37	2.05	2.74	17	2.11	1.83
	50	1.28	9	3.51	3.04	1.49	10	3.31	2.87	2.13	13	2.80	2.43	2.68	15	2.65	2.29	3.06	18	2.10	1.82
270°	20	1.08	7	3.27	2.83	1.37	9	2.51	2.17	1.90	11	2.33	2.02	2.41	14	1.82	1.58	2.69	14	2.03	1.76
	30	1.33	8	3.08	2.67	1.67	10	2.47	2.14	2.32	12	2.39	2.07	2.94	15	1.94	1.68	3.28	17	1.68	1.46
	40	1.53	8	3.54	3.07	1.92	10	2.85	2.47	2.68	12	2.76	2.39	3.38	15	2.23	1.93	3.76	17	1.93	1.67
	50	1.70	9	3.11	2.69	2.15	10	3.19	2.76	2.99	12	3.08	2.67	3.77	16	2.18	1.89	4.19	18	1.92	1.66
360°	20	1.25	7	2.84	2.46	1.73	9	2.37	2.06	2.27	10	2.52	2.19	2.69	13	1.77	1.53	3.05	17	1.17	1.02
	30	1.52	8	2.64	2.29	2.11	10	2.35	2.03	2.77	12	2.14	1.85	3.26	15	1.61	1.40	3.73	17	1.43	1.24
	40	1.75	9	2.40	2.08	2.42	10	2.69	2.33	3.12	12	2.41	2.09	3.79	15	1.87	1.62	4.26	18	1.46	1.27
	50	1.96	9	2.69	2.33	2.69	10	2.99	2.59	3.47	12	2.68	2.32	4.33	16	1.88	1.63	4.71	18	1.62	1.40

Shaded data indicates optimal operating pressure.  
Radius shown in feet. Data based on 360°.

### RAIN BIRD

#### 1300A-F ADJUSTABLE FULL-CIRCLE BUBBLER



**Designed for tree, shrub and flower areas.**

- ◆ Fully adjustable flow
- ◆ Operates over a wide range of pressures
- ◆ Non-corrosive plastic and stainless steel construction for long life

#### Specifications:

Flow: 1 GPM to 2.3 GPM

Spacing: 1' to 3'

Pressure: 10 psi to 60 psi

#### 1400 SERIES PRESSURE COMPENSATING FULL-CIRCLE BUBBLERS



**Designed for irrigating tree, shrub and flower areas where pressure compensation is required.**

- ◆ Low-flow rates shallow water to be absorbed as needed. Reduces run-off
- ◆ Flow will not fluctuate at pressures between 20 psi and 90 psi. Maintains even flow
- ◆ Trickle pattern on models 1401 and 1402; umbrella pattern on models 1404 and 1408

#### Specifications:

Flow: 0.25 GPM to 2 GPM

Spacing: 1' to 3'

Pressure: 20 psi to 90 psi

Product Code	Description
1401	0.25 GPM; full-circle, trickle pattern
1402	0.50 GPM; full-circle, trickle pattern
1404	1 GPM; full-circle, umbrella pattern
1408	2 GPM; full-circle, umbrella pattern

### Hunter

#### BUBBLERS AND BUBBLER NOZZLES

**Precise Delivery of Water to Roots**



#### MULTI-STREAM BUBBLER PERFORMANCE DATA

Arc		Model	Flow GPM	Radius ft
	●	MSBN-25Q	0.25	1.0
	●	MSBN-50Q	0.50	1.5
	●	MSBN-50H	0.50	1.0
	●	MSBN-10H	1.00	1.5
	●	MSBN-10F	1.00	1.0
	●	MSBN-20F	2.00	1.5

**Note:** Typical spacing 2 to 4 ft.

Flows shown for pressures between 15 and 70 PSI.

#### PCN / PCB PERFORMANCE DATA

	Model	Flow GPM	Pattern Type
	25	0.25	Trickle
	50	0.50	Trickle
	10	1.00	Umbrella
	20	2.00	Umbrella

**Note:** Typical spacing 1 to 3 ft.

Flows shown for pressures between 15 and 70 PSI.

#### AFB PERFORMANCE DATA

	Model	Flow GPM	Pattern Type
	AFB	< 2.0	Trickle / Umbrella

#### 5-CST-B BUBBLER NOZZLE PERFORMANCE DATA

	Pressure PSI	Radius ft	Flow GPM
	20	5	0.30
	25	5	0.32
	30	5	0.38
	35	5	0.40
	40	5	0.42

# TURFGRO

## SWING ASSEMBLY

**Manufactured using two TurfGro proprietary products — TG Swing Pipe and TG Spiral Barb Fittings — and a Lasco marlex elbow.**

- ◆ 1/2" NPT, 3 axis (3L, Marlex ell on one end), 6" and 12" versions
- ◆ All components manufactured from the highest quality virgin raw material
- ◆ Operating pressure: Up to 150 psi



## SWING PIPE

- ◆ Super flex design makes it easier to use than branded competitive products
- ◆ Texture on the tubing makes the swing pipe easier to grip — even when your hands are wet
- ◆ Operating pressure: Up to 80 psi
- ◆ Inside Diameter: .49"
- ◆ Meets industry standards: ASTM D2104, D2239, D2737

## SPIRAL BARB FITTINGS

- ◆ Use with Swing Pipe to make a flexible swing
- ◆ Available in 1/2" and 3/4"

# RAIN BIRD

## ROOT WATERING SYSTEMS

**Enables vital water, oxygen, and nutrients to bypass compacted soil and directly reach tree and shrub root systems.**

- ◆ Helps prevent damage to hardscapes from tree roots
- ◆ Installed below grade for pleasing aesthetics
- ◆ Self-contained and factory assembled units for assured reliability
- ◆ Standard and mini version available



## Standard RWS:

- ◆ 4" retaining cap and vandal resistant locking grate tops a 36" semi-rigid mesh tube
- ◆ Factory installed swing assemblies (excluding RWS-BGX) with a 1401 (0.25 GPM), 1402 (0.5 GPM), 1404 (1 GPM) or 1408 (2 GPM) bubbler on a fixed riser makes connecting to lateral lines easy
- ◆ Innovative design with a locking grate protects system from vandalism and the optional sand sock is ideal for use in sandy soil

# RAIN BIRD

## Mini Root Watering:

- ◆ 4" retaining cap and vandal resistant locking grate tops a 18" semi-rigid mesh tube
- ◆ Factory installed 1/2" spiral barb elbow with a 1401 or 1402 bubbler makes connecting to lateral lines easy
- ◆ Innovative design with a locking grate protects system from vandalism and the optional sand sock is ideal for use in sandy soil



## HOW TO SPECIFY: RWS - X - X - X - XXXX - X

Model:	Other Size:	Bubbler:	Optional:	Bubbler Model:	Reclaimed Water Option:
RWS: Root Watering Series	M: RWS-Mini (4" X 18")	B: Bubbler Pre-installed	C: Check Valve	1401	P: Purple Grate
	S: RWS-Supplemental (2" X 10")	Bubbler:		1402	
		B: Bubbler Pre-installed		1404	
				1408	

## SPX SERIES FLEXIBLE SWING PIPE

## Specifications:

Inside diameter: .049"  
Operating range up to 80 psi  
Temperature up to 110°F



## SPIRAL BARB SB FITTINGS

- ◆ Use with swing pipe to make a flexible swing
- ◆ Joint assembly for sprays and rotors
- ◆ Available in 1/2" and 3/4" sizes



Product Code	Description
SBE050	1/2" male NPT X 1/2" spiral barbed elbow
SBE075	3/4" male NPT X 3/4" spiral barbed elbow
SBA050	1/2" male NPT X 1/2" spiral barbed adapter
SBA075	3/4" male NPT X 3/4" spiral barbed adapter
SBCPLG	1/2" spiral barbed coupling
SBTEE	1/2" spiral barbed tee
SBFE050	1/2" female NPT X 1/2" spiral barbed elbow
SBNPTTEE	1/2" male NPT X 1/2" spiral barb X 1/2" spiral barb tee



### SWING ASSEMBLIES

- ◆ Connects sprinkler head to lateral pipes
- ◆ Prevents sprinkler heads or pipes from breaking when run over by equipment
- ◆ Allows easy adjustment of the heads to grade



### Specifications:

Operating pressure up to 80 psi  
Surge pressure up to 240 psi  
Temperature up to 110°F

### HOW TO SPECIFY: SA-6-050

Model:	Length:	Inlet:
SA	6"	5050 = 1/2" X 1/2"
	12"	5075 = 1/2" X 3/4"
	18"	7575 = 3/4" X 3/4"

### PARTS

- ◆ **PA-8S Plastic Shrub Adapter:** Plastic model which attaches nozzle to riser to irrigate ground cover and shrub areas
- ◆ **PA-80:** Converts pop-up stem to 1/2" male pipe thread
- ◆ **1800-EXT:** Extends all Rain Bird spray head models an additional 6 1/2" in height
- ◆ **1800 NP Cover:** Identifies spray head as part of non-potable water system



### ROOT ZONE WATERING SYSTEMS

- ◆ Patented StrataRoot design distributes water to both near surface and deep roots
- ◆ Each unit is ready-to-install, making installation quick and easy
- ◆ Premium pressure compensating bubbler options — 0.25 GPM or 0.50 GPM
- ◆ Built in swing joint on bubbler models for maximum flexibility and ease of installation
- ◆ Durable pre-installed check valve option
- ◆ Recommended pressure range: 15 psi to 70 psi



### HOW TO SPECIFY: RZWS – 18 – 25 – CV

Model:	Size:	Bubbler Flow Rate:	Options:
RZWS = Root Zone Watering System	10 = 10"	25 = 0.25 GPM	CV = Check Valve
	18 = 18"	50 = 0.50 GPM	RZWS-SLEEVE
	36 = 36"		RZWS-CAP

### SWING JOINT

**Easily adjusts sprinklers to proper height and position, and eliminates broken risers.**

Product Code	Description	12"
SJ506	1/2" threaded X 6" length	
SJ512	1/2" threaded X 12" length	
SJ7512	1/2" X 3/4" threaded X 12" length	
SJ712	3/4" threaded X 12" length	



### HCV SERIES ADJUSTABLE CHECK VALVE

**An economical water-saver that eliminates low head drainage for sprinklers located on slopes.**

- ◆ Adjusts to compensate for elevational changes up to 23'
- ◆ Allows adjustment through sprinkler body before or after installation



Product Code	Description
HC50F50F	1/2" female inlet X 1/2" female outlet
HC50F50M	1/2" female inlet X 1/2" male outlet
HC75F75M	3/4" female inlet X 3/4" male outlet

### FLO-CONTROL SWING CHECK VALVE

**Useful on systems where fluid contains debris. No internal metal parts to corrode. Full flow.**

- ◆ Only 1/2 psi back pressure required to close

### ◆ Schedule 40 PVC material

KSC1250S	1 1/4" Swing check valve, slip X slip
KSC1500S	1 1/4" Swing check valve, slip X slip
KSC2000S	2" Swing check valve, slip X slip
KSC1000T	1" Swing check valve, thread X thread
KSC1250T	1 1/4" Swing check valve, thread X thread
KSC1500S	1 1/2" Swing check valve, thread X thread
KSC2000T	2" Swing check valve, thread X thread



# Hunter®

## HUNTER PGJ ROTOR

**Delivers all the benefits of a rotor in a compact, spray-sized package.**

- ◆ Capable of working in tandem with larger rotors to combine big and small areas in a single zone, offering a convenience and efficiency sprays do not
- ◆ Radius adjustment screw allows fine tuning of spray, ensures positive nozzle retention
- ◆ 40° to 360° adjustable arc easily adjusts from top of sprinkler, up, down, wet or dry
- ◆ Water-lubricated gear drive for time proven reliable rotation year after year

PGJ Nozzle Performance Data					
Nozzle	Pressure PSI	Radius ft.	Flow GPM	■	▲
.75	30	15'	0.64	0.55	0.63
	40	16'	0.75	0.56	0.65
	50	17'	0.85	0.57	0.65
1.0	30	18'	0.85	0.51	0.58
	40	19'	1.0	0.53	0.62
	50	19'	1.1	0.59	0.68
1.5	30	21'	1.3	0.57	0.66
	40	22'	1.6	0.60	0.69
	50	22'	1.7	0.68	0.78
2.0	30	24'	1.7	0.57	0.66
	40	25'	2.0	0.62	0.71
	50	25'	2.3	0.71	0.82
2.5	30	27'	2.2	0.58	0.67
	40	28'	2.5	0.61	0.71
	50	28'	2.8	0.69	0.79
3.0	30	30'	2.5	0.58	0.62
	40	31'	3.0	0.60	0.69
	50	31'	3.4	0.68	0.79
4.0	30	33'	3.7	0.65	0.76
	40	34'	4.0	0.67	0.77
	50	34'	4.3	0.72	0.83
5.0	30	36'	4.7	0.70	0.81
	40	37'	5.0	0.70	0.81
	50	37'	5.3	0.75	0.86



### Specifications:

Flow rate: .64 GPM to 5.3 GPM  
 Radius: 15' to 37'  
 Pressure range: 20 psi to 100 psi  
 Arc setting: 40 to 360 degrees  
 Precipitation rates: Approximately 0.60" per hour at 40 psi  
 Nozzle trajectory: Approximately 14°  
 1/2" female inlet NPT

Product Code	Description
PGJ00	Shrub
PGJ04	4" Pop-up
PGJ06	6" Pop-up
PGJ12	12" Pop-up

### HOW TO SPECIFY: PGJ – 06 – V

Model:	Code:	Options:
PGJ	00 = Shrub 04 = 4" 06 = 6" 12 = 12"	R = Reclaimed water identifier V = Factory-installed drain check valve

## HUNTER PGP-ADJ ROTOR

**The world's best selling residential and light commercial rotor. Proven reliable, easy to install and adjust.**

- ◆ Integral rubber cover keeps dirt out, won't fall off
- ◆ Complete set of interchangeable nozzles, including 12 standard or seven low-angle
- ◆ Variable stator keeps rotation speed consistent regardless of nozzle size or pressure
- ◆ Large dirty water screen puts an end to nozzle clogging
- ◆ Water-lubricated gear drive
- ◆ Provides more even distribution
- ◆ Superior scheduling coefficient that eliminates the problem of under- and overwatered areas of the landscape



### Specifications:

Flow rate: .5 GPM to 14.4 GPM  
 Radius: 22' to 52'  
 Pressure: 30 psi to 70 psi  
 Operating pressure range: 20 psi to 100 psi  
 3/4" female inlet NPT

Product Code	Description
PGPADJ	4" Adjustable pop-up

### HUNTER PGP ULTRA

#### This upgrade of the PGP is packed with new features.

- ◆ Automatic arc returns to the original arc regardless of where the turret is turned
- ◆ The patented, non-strippable, vandal proof drive mechanism enables the turret to be turned without causing damage
- ◆ Patented non-reversing 360 for part - and full-circle in one model, from 50 to 360 degrees
- ◆ Available in shrub, 4", and 12"
- ◆ Optional factory-installed drain check valve for up to 10' of elevation change. Saves water, reduce liability

#### Specifications:

Flow rate: 0.36 to 14.8 GPM

Recommended rate change: 30 to 25

Radius: 17' to 47'

Recommended pressure range: 30 psi to 70 psi

Operating pressure range: 20 psi to 100 psi

3/4" Female inlet NPT

Product Code	Description
PGP-00	Shrub
PGP-04	4" Pop-up
PGP-12-V	12" Pop-up



#### PGP Gray Low Angle Nozzle Performance Data

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr
<b>4</b>	30	22'	1.4	0.56
	40	24'	1.7	0.57
	<b>50</b>	<b>26'</b>	<b>1.8</b>	<b>0.51</b>
	60	28'	2.0	0.49
<b>5</b>	30	25'	1.6	0.49
	40	27'	1.9	0.50
	<b>50</b>	<b>28'</b>	<b>2.1</b>	<b>0.52</b>
	60	30'	2.3	0.49
<b>6</b>	30	27'	2.1	0.55
	40	30'	2.5	0.53
	<b>50</b>	<b>33'</b>	<b>2.8</b>	<b>0.49</b>
	60	35'	3.0	0.47
<b>7</b>	30	29'	2.8	0.64
	40	32'	3.1	0.58
	<b>50</b>	<b>35'</b>	<b>3.5</b>	<b>0.55</b>
	60	37'	3.8	0.53
<b>8</b>	30	31'	3.4	0.68
	40	34'	3.9	0.65
	<b>50</b>	<b>37'</b>	<b>4.4</b>	<b>0.62</b>
	60	38'	4.7	0.63
<b>9</b>	30	33'	4.3	0.76
	40	37'	5.0	0.70
	<b>50</b>	<b>40'</b>	<b>5.6</b>	<b>0.67</b>
	60	42'	6.1	0.67
<b>10</b>	40	38'	6.5	0.87
	<b>50</b>	<b>40'</b>	<b>7.3</b>	<b>0.88</b>
	<b>60</b>	<b>42'</b>	<b>8.0</b>	<b>0.87</b>
	70	44'	8.6	0.86

**P** Blank nozzle plug for turning off selected sprinklers during repairs, maintenance, etc.

Note: All precipitation rates calculated for 180 degree operation. For the precipitation rate for a 360 degree sprinkler, divide by 2.

#### PGP Blue Standard Nozzle Performance Data

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr
<b>1.5</b>	25	29'	1.2	0.27
	35	31'	1.4	0.28
	<b>45</b>	<b>31'</b>	<b>1.5</b>	<b>0.30</b>
	55	32'	1.8	0.34
<b>2.0</b>	25	33'	1.4	0.25
	35	33'	1.7	0.30
	<b>45</b>	<b>34'</b>	<b>2.0</b>	<b>0.33</b>
	55	34'	2.1	0.35
<b>2.5</b>	25	33'	1.7	0.30
	35	35'	2.1	0.33
	<b>45</b>	<b>35'</b>	<b>2.5</b>	<b>0.39</b>
	55	35'	2.6	0.41
<b>3.0</b>	25	33'	1.7	0.30
	35	36'	2.7	0.40
	<b>45</b>	<b>38'</b>	<b>3.0</b>	<b>0.40</b>
	55	39'	3.4	0.43
<b>4.0</b>	25	37'	3.0	0.42
	35	39'	3.5	0.44
	<b>45</b>	<b>40'</b>	<b>4.0</b>	<b>0.48</b>
	55	41'	4.5	0.52
<b>5.0</b>	25	37'	3.7	0.52
	35	39'	4.5	0.57
	<b>45</b>	<b>42'</b>	<b>5.0</b>	<b>0.55</b>
	55	42'	5.7	0.62
<b>6.0</b>	25	38'	4.3	0.57
	35	40'	5.6	0.67
	<b>45</b>	<b>43'</b>	<b>6.0</b>	<b>0.62</b>
	55	44'	6.7	0.77
<b>8.0</b>	25	37'	6.0	0.84
	35	41'	7.0	0.80
	<b>45</b>	<b>44'</b>	<b>8.0</b>	<b>0.80</b>
	55	46'	9.0	0.82

Note: All precipitation rates calculated for 180 degree operation. For the precipitation rate for a 360 degree sprinkler, divide by 2.

#### PGP Red Standard Nozzle Performance Data

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr
<b>1</b>	30	28'	0.5	0.12
	40	29'	0.6	0.14
	<b>50</b>	<b>29'</b>	<b>0.7</b>	<b>0.16</b>
	60	30'	0.8	0.17
<b>2</b>	30	29'	0.7	0.16
	40	30'	0.8	0.17
	<b>50</b>	<b>30'</b>	<b>0.9</b>	<b>0.19</b>
	60	31'	1.0	0.20
<b>3</b>	30	30'	0.9	0.19
	40	31'	1.0	0.20
	<b>50</b>	<b>31'</b>	<b>1.2</b>	<b>0.24</b>
	60	32'	1.3	0.24
<b>4</b>	30	32'	1.2	0.23
	40	33'	1.4	0.25
	<b>50</b>	<b>34'</b>	<b>1.6</b>	<b>0.27</b>
	60	34'	1.8	0.30
<b>5</b>	30	34'	1.6	0.27
	40	36'	1.8	0.27
	<b>50</b>	<b>38'</b>	<b>2.0</b>	<b>0.27</b>
	60	38'	2.2	0.29
<b>6</b>	30	34'	2.0	0.33
	40	36'	2.4	0.36
	<b>50</b>	<b>38'</b>	<b>2.7</b>	<b>0.36</b>
	60	38'	2.9	0.39
<b>7</b>	30	34'	2.6	0.43
	40	38'	3.0	0.40
	<b>50</b>	<b>40'</b>	<b>3.4</b>	<b>0.41</b>
	60	40'	3.7	0.45
<b>8</b>	30	37'	3.2	0.45
	40	39'	3.7	0.47
	<b>50</b>	<b>41'</b>	<b>3.9</b>	<b>0.45</b>
	60	42'	4.6	0.50
<b>9</b>	30	38'	3.6	0.48
	40	41'	4.3	0.49
	<b>50</b>	<b>44'</b>	<b>5.2</b>	<b>0.52</b>
	60	45'	5.5	0.52
<b>10</b>	30	44'	6.0	0.60
	40	46'	6.8	0.62
	<b>50</b>	<b>47'</b>	<b>7.6</b>	<b>0.66</b>
	60	49'	8.2	0.66
<b>11</b>	30	46'	8.0	0.73
	40	48'	8.9	0.74
	<b>50</b>	<b>50'</b>	<b>9.8</b>	<b>0.75</b>
	60	51'	10.5	0.78
<b>12</b>	30	46'	10.5	0.96
	40	48'	11.9	0.99
	<b>50</b>	<b>50'</b>	<b>12.7</b>	<b>0.98</b>
	60	52'	14.1	1.00

Note: All precipitation rates calculated for 180 degree operation. For the precipitation rate for a 360 degree sprinkler, divide by 2.

PGJ SRM PGP® **PGP ULTRA** I-20 I-25 I-40 I-90 ST SYSTEM

## PGP ULTRA BLUE STANDARD NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr	
				■	▲
<b>1.5</b> ● Blue	25	29	1.2	0.27	0.32
	35	31	1.4	0.28	0.32
	<b>45</b>	<b>31</b>	<b>1.5</b>	<b>0.30</b>	<b>0.35</b>
	55	32	1.8	0.34	0.39
	65	32	1.9	0.36	0.41
<b>2.0</b> ● Blue	25	33	1.4	0.25	0.29
	35	33	1.7	0.30	0.35
	<b>45</b>	<b>34</b>	<b>2.0</b>	<b>0.33</b>	<b>0.38</b>
	55	34	2.1	0.35	0.40
	65	32	2.3	0.43	0.50
<b>2.5</b> ● Blue	25	33	1.7	0.30	0.35
	35	35	2.1	0.33	0.38
	<b>45</b>	<b>35</b>	<b>2.5</b>	<b>0.39</b>	<b>0.45</b>
	55	35	2.6	0.41	0.47
	65	35	2.9	0.46	0.53
<b>3.0</b> ● Blue	25	35	2.2	0.35	0.40
	35	36	2.7	0.40	0.46
	<b>45</b>	<b>38</b>	<b>3.0</b>	<b>0.40</b>	<b>0.46</b>
	55	39	3.4	0.43	0.50
	65	39	3.7	0.47	0.54
<b>4.0</b> ● Blue	25	37	3.0	0.42	0.49
	35	39	3.5	0.44	0.51
	<b>45</b>	<b>40</b>	<b>4.0</b>	<b>0.48</b>	<b>0.56</b>
	55	41	4.5	0.52	0.60
	65	41	4.8	0.55	0.63
<b>5.0</b> ● Blue	25	37	3.7	0.52	0.60
	35	39	4.5	0.57	0.66
	<b>45</b>	<b>42</b>	<b>5.0</b>	<b>0.55</b>	<b>0.63</b>
	55	42	5.7	0.62	0.72
	65	42	6.2	0.68	0.78
<b>6.0</b> ● Blue	25	38	4.3	0.57	0.66
	35	40	5.6	0.67	0.78
	<b>45</b>	<b>43</b>	<b>6.0</b>	<b>0.62</b>	<b>0.72</b>
	55	44	6.7	0.67	0.77
	65	44	7.3	0.73	0.84
<b>8.0</b> ● Blue	25	37	6.0	0.84	0.97
	35	41	7.0	0.80	0.93
	<b>45</b>	<b>44</b>	<b>8.0</b>	<b>0.80</b>	<b>0.92</b>
	55	46	9.0	0.82	0.95
	65	46	9.8	0.89	1.03

## PGP ULTRA GREEN HIGH FLOW NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr	
				■	▲
<b>10</b> ● Dk. Green	40	42	8.4	0.92	1.06
	50	43	9.5	0.99	1.14
	<b>60</b>	<b>45</b>	<b>10.5</b>	<b>1.00</b>	<b>1.15</b>
	70	47	11.4	0.99	1.15
<b>13</b> ● Dk. Green	40	43	10.9	1.13	1.31
	50	44	12.3	1.22	1.41
	<b>60</b>	<b>45</b>	<b>13.6</b>	<b>1.29</b>	<b>1.49</b>
	70	47	14.8	1.29	1.49
<b>6.0</b> ● LA Dk. Green	30	31	4.2	0.84	0.97
	40	35	5.0	0.79	0.91
	<b>50</b>	<b>37</b>	<b>5.8</b>	<b>0.82</b>	<b>0.94</b>
	60	39	6.3	0.80	0.92
<b>8.0</b> ● LA Dk. Green	40	37	6.7	0.94	1.09
	50	39	7.7	0.97	1.13
	<b>60</b>	<b>41</b>	<b>8.5</b>	<b>0.97</b>	<b>1.12</b>
	70	41	9.2	1.05	1.22

## PGP ULTRA GRAY LOW ANGLE NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr	
				■	▲
<b>2.0</b> ● LA Gray	30	25	1.6	0.49	0.57
	40	27	1.9	0.50	0.58
	<b>50</b>	<b>28</b>	<b>2.1</b>	<b>0.52</b>	<b>0.60</b>
	60	30	2.3	0.49	0.57
	30	27	2.1	0.55	0.64
<b>2.5</b> ● LA Gray	40	30	2.5	0.53	0.62
	50	33	2.8	0.49	0.57
	<b>60</b>	<b>35</b>	<b>3.0</b>	<b>0.47</b>	<b>0.54</b>
	30	29	2.8	0.64	0.74
	40	32	3.1	0.58	0.67
<b>3.5</b> ● LA Gray	50	35	3.5	0.55	0.64
	60	37	3.8	0.53	0.62
	<b>30</b>	<b>29</b>	<b>3.4</b>	<b>0.78</b>	<b>0.90</b>
	40	32	3.9	0.73	0.85
	50	35	4.4	0.69	0.80
<b>4.0</b> ● LA Gray	60	37	4.7	0.66	0.76
	35	36	2.7	0.40	0.46
	<b>45</b>	<b>38</b>	<b>3.0</b>	<b>0.40</b>	<b>0.46</b>
	55	39	3.4	0.43	0.50
	65	39	3.7	0.47	0.54

## PGP ULTRA BLACK SHORT RADIUS NOZZLE PERFORMANCE DATA (18'/25')

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr	
				■	▲
<b>.50</b> ● SR Black	30	17	0.36	0.24	0.28
	40	17	0.43	0.29	0.33
	<b>50</b>	<b>18</b>	<b>0.50</b>	<b>0.30</b>	<b>0.34</b>
	60	19	0.57	0.30	0.35
<b>1.0</b> ● SR Black	30	17	0.78	0.52	0.60
	40	17	0.90	0.60	0.69
	<b>50</b>	<b>18</b>	<b>1.00</b>	<b>0.59</b>	<b>0.69</b>
	60	19	1.10	0.59	0.68
<b>2.0</b> ● SR Black	30	17	1.40	0.93	1.08
	40	17	1.70	1.13	1.31
	<b>50</b>	<b>18</b>	<b>2.00</b>	<b>1.19</b>	<b>1.37</b>
	60	19	2.20	1.17	1.35
<b>.75</b> ● SR Black	30	23	0.58	0.21	0.24
	40	24	0.68	0.23	0.26
	<b>50</b>	<b>25</b>	<b>0.75</b>	<b>0.23</b>	<b>0.27</b>
	60	26	0.83	0.24	0.27
<b>1.5</b> ● SR Black	30	23	1.10	0.40	0.46
	40	24	1.30	0.43	0.50
	<b>50</b>	<b>25</b>	<b>1.50</b>	<b>0.46</b>	<b>0.53</b>
	60	26	1.60	0.46	0.53
<b>3.0</b> ● SR Black	30	23	2.50	0.91	1.05
	40	24	2.70	0.90	1.04
	<b>50</b>	<b>25</b>	<b>3.00</b>	<b>0.92</b>	<b>1.07</b>
	60	26	3.10	0.88	1.02

**Bold** = Recommended pressure

**Note:**

All precipitation rates calculated for 180 degree operation. For the precipitation rate for a 360 degree sprinkler, divide by 2.

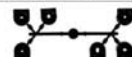
## PGP ULTRA NOZZLES



Blue Standard / Gray Low Angle (P/N 782900)



Dk. Green High Flow (P/N 444800)



Black Short Radius (P/N 466100)



### HUNTER I-20

#### 22 nozzles, 17' to 46' radius and six body choices.

- ◆ Patented non-reversing 360: Part and full circle in one model, 50° to 360°
- ◆ FloStop closes the flow of water from individual sprinkler heads while the system is running
- ◆ Features FloStop® Control, which closes the flow of water from individual sprinkler heads while the system is running. Ideal for changing nozzles or turning off specific heads during maintenance and construction.
- ◆ Drain check valve saves water, reduces liability, and increases system life
- ◆ Automatic arc return: Returns to the original arc regardless of where the turret is turned



Model:	Features:	Options:
I-20-00 = Shrub	ADV, 36V, ARV, 3RV	XX = Complete set of nozzles
I-20 = 4" Pop-up	ADV, 36V, ADS, 36S, ARV, 3RV, ARS, 3RS, ADJ, 360	1.0 to 8.0 = Factory-installed standard nozzles
I-20-6P = 6" Pop-up	ADV, 36V, ADS, 36S, ARV, 3RV, ARS, 3RS	2.0 LA to 4.5 LA = Factory-installed low angle nozzles
I-20-HP = 12" Pop-up	ADV, 36V, ARV, 3RV	

#### Specifications:

Discharge rate: 0.36 GPM to 14.8 GPM

Radius: 17' to 46'

Pressure range: 30 psi to 70 psi

Operating pressure range: 20 to 100 psi

Precipitation rates: Approximately 0.4"

1" Female inlet NPT

Product Code	Description
I-10	Shrub
I-20	4" Pop-up
I-20-6P	6" Pop-up
I-20-HP	12" Pop-up

#### Key to Features:

ADJ =	Adjustable with no check valve
36S =	Fill-circle with check valve and stainless steel riser
360 =	Full-circle with no check valve
ARV =	Adjustable, reclaimed water, with check valve
ADV =	Adjustable with check valve
3RV =	Full-Circle, reclaimed water, with check valve
36V =	Full-circle with check valve
ARS =	Adjustable, reclaimed water and stainless steel riser
ADS =	Adjustable with check valve and stainless steel riser
3RS =	Full-Circle, reclaimed water and stainless steel riser

#### PGP Grey Low Angle Performance Data

Nozzle	Pressure PSI	Radius ft	Flow GPM	Precip in/hr ■ ▲
<b>4 LA</b> ●	30	22	1.4	0.56 0.64
	40	24	1.7	0.57 0.66
	<b>50</b>	<b>26</b>	<b>1.8</b>	<b>0.51 0.59</b>
	60	28	2.0	0.49 0.57
Grey	30	25	1.6	0.49 0.57
	40	27	1.9	0.50 0.58
	<b>50</b>	<b>28</b>	<b>2.1</b>	<b>0.52 0.60</b>
	60	30	2.3	0.49 0.57
<b>5 LA</b> ●	30	27	2.1	0.55 0.64
	40	30	2.5	0.53 0.62
	<b>50</b>	<b>33</b>	<b>2.8</b>	<b>0.49 0.57</b>
	60	35	3.0	0.47 0.54
Grey	30	29	2.8	0.64 0.74
	40	32	3.1	0.58 0.67
	<b>50</b>	<b>35</b>	<b>3.5</b>	<b>0.55 0.64</b>
	60	37	3.8	0.53 0.62
<b>6 LA</b> ●	30	31	3.4	0.68 0.79
	40	34	3.9	0.65 0.75
	<b>50</b>	<b>37</b>	<b>4.4</b>	<b>0.62 0.71</b>
	60	38	4.7	0.63 0.72
Grey	30	33	4.3	0.76 0.88
	40	37	5.0	0.70 0.81
	<b>50</b>	<b>40</b>	<b>5.6</b>	<b>0.67 0.78</b>
	60	42	6.1	0.67 0.77
<b>7 LA</b> ●	30	38	6.5	0.87 1.00
	<b>50</b>	<b>40</b>	<b>7.3</b>	<b>0.88 1.01</b>
	60	42	8.0	0.87 1.01
	70	44	8.6	0.86 0.99
Grey	30	31	3.4	0.68 0.79
	40	34	3.9	0.65 0.75
	<b>50</b>	<b>37</b>	<b>4.4</b>	<b>0.62 0.71</b>
	60	38	4.7	0.63 0.72
<b>8 LA</b> ●	30	33	4.3	0.76 0.88
	40	37	5.0	0.70 0.81
	<b>50</b>	<b>40</b>	<b>5.6</b>	<b>0.67 0.78</b>
	60	42	6.1	0.67 0.77
Grey	30	38	6.5	0.87 1.00
	<b>50</b>	<b>40</b>	<b>7.3</b>	<b>0.88 1.01</b>
	60	42	8.0	0.87 1.01
	70	44	8.6	0.86 0.99
<b>9 LA</b> ●	30	33	4.3	0.76 0.88
	40	37	5.0	0.70 0.81
	<b>50</b>	<b>40</b>	<b>5.6</b>	<b>0.67 0.78</b>
	60	42	6.1	0.67 0.77
Grey	30	38	6.5	0.87 1.00
	<b>50</b>	<b>40</b>	<b>7.3</b>	<b>0.88 1.01</b>
	60	42	8.0	0.87 1.01
	70	44	8.6	0.86 0.99
<b>10 LA</b> ●	30	38	6.5	0.87 1.00
	<b>50</b>	<b>40</b>	<b>7.3</b>	<b>0.88 1.01</b>
	60	42	8.0	0.87 1.01
	70	44	8.6	0.86 0.99
Grey	30	38	6.5	0.87 1.00
	<b>50</b>	<b>40</b>	<b>7.3</b>	<b>0.88 1.01</b>
	60	42	8.0	0.87 1.01
	70	44	8.6	0.86 0.99

Notes:

**Bold** = Recommended pressure.

All precipitation rates calculated for 180 degree operation. For the precipitation rate for a 360 degree sprinkler, divide by 2.

#### I-10/I-20 Ultra Low Angle Nozzle Performance Data

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■ ▲
<b>2.0 LA</b>	30	25'	1.6	0.49 0.57
	40	27'	1.9	0.50 0.58
	<b>50</b>	<b>28'</b>	<b>2.1</b>	<b>0.52 0.60</b>
	60	30'	2.3	0.49 0.57
<b>2.5 LA</b>	30	27'	2.1	0.55 0.64
	40	30'	2.5	0.53 0.62
	<b>50</b>	<b>33'</b>	<b>2.8</b>	<b>0.49 0.57</b>
	60	35'	3.0	0.47 0.54
<b>3.5 LA</b>	30	29'	2.8	0.64 0.74
	40	32'	3.1	0.58 0.67
	<b>50</b>	<b>35'</b>	<b>3.5</b>	<b>0.55 0.64</b>
	60	37'	3.8	0.53 0.62
<b>4.5 LA</b>	30	29'	3.4	0.78 0.90
	40	32'	3.9	0.73 0.85
	<b>50</b>	<b>35'</b>	<b>4.4</b>	<b>0.69 0.80</b>
	60	37'	4.7	0.66 0.76

Note: All precipitation rates are calculated for 180 degree operation. For the precipitation rate for a 360 degree sprinkler, divide by 2.

#### I-20 High Flow Nozzles Performance Data

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■ ▲
<b>10</b>	40	42	8.4	0.92 1.06
	50	43	9.5	0.99 1.14
	<b>60</b>	<b>45</b>	<b>10.5</b>	<b>1.00 1.15</b>
	70	47	11.4	0.99 1.15
<b>13</b>	40	43	10.9	1.13 1.31
	50	44	12.3	1.22 1.41
	<b>60</b>	<b>45</b>	<b>13.6</b>	<b>1.29 1.49</b>
	70	47	14.8	1.29 1.49
<b>6.0 LA</b>	30	31	4.2	0.84 0.97
	40	35	5.0	0.79 0.91
	<b>50</b>	<b>37</b>	<b>5.8</b>	<b>0.82 0.94</b>
	60	39	6.3	0.80 0.92
<b>8.0 LA</b>	40	37	6.7	0.94 1.09
	50	39	7.7	0.97 1.13
	<b>60</b>	<b>41</b>	<b>8.5</b>	<b>0.97 1.12</b>
	70	41	9.2	1.05 1.22

#### I-20 Ultra 18' Short Radius Nozzle Performance Data

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■ ▲
<b>.50 SR</b>	30	17'	0.36	0.24 0.28
	40	17'	0.43	0.29 0.33
	<b>50</b>	<b>18'</b>	<b>0.50</b>	<b>0.30 0.34</b>
	60	19'	0.57	0.30 0.35
<b>1.0 SR</b>	30	17'	0.78	0.52 0.60
	40	17'	0.90	0.60 0.69
	<b>50</b>	<b>18'</b>	<b>1.0</b>	<b>0.59 0.69</b>
	60	19'	1.1	0.59 0.68
<b>2.0 SR</b>	30	17'	1.4	0.93 1.08
	40	17'	1.7	1.13 1.31
	<b>50</b>	<b>18'</b>	<b>2.0</b>	<b>1.19 1.37</b>
	60	19'	2.2	1.17 1.35

#### I-20 Ultra 25' Short Radius Nozzle Performance Data

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■ ▲
<b>.75 SR</b>	30	23'	0.58	0.21 0.24
	40	24'	0.68	0.23 0.26
	<b>50</b>	<b>25'</b>	<b>0.75</b>	<b>0.23 0.27</b>
	60	26'	0.83	0.24 0.27
<b>1.5 SR</b>	30	23'	1.1	0.40 0.46
	40	24'	1.3	0.43 0.50
	<b>50</b>	<b>25'</b>	<b>1.5</b>	<b>0.46 0.53</b>
	60	26'	1.6	0.46 0.53
<b>3.0 SR</b>	30	23'	2.5	0.91 1.05
	40	24'	2.7	0.90 1.04
	<b>50</b>	<b>25'</b>	<b>3.0</b>	<b>0.92 1.07</b>
	60	26'	3.1	0.88 1.02

## HUNTER I-25 ULTRA 1" ROTOR

### More Distance, Larger Radius.

- ◆ Easy arc adjustment (50° to 360°): Full and part-circle operation in a single rotor helps reduce stock
- ◆ Automatic arc return: Returns to the original arc regardless of where the turret is turned
- ◆ Non-strippable, vandal-proof drive mechanism enables the turret to be turned without causing damage
- ◆ 12 color-coded nozzles: Easy to identify, great distribution uniformity
- ◆ Optional stainless steel riser: Perfect for harsh soil conditions
- ◆ Available in 4" or 6" pop up
- ◆ Drain check valve for up to 10' of elevation change: Conserves water, reduces liability

### Specifications:

Flow rate: 3.8 GPM to 31.5 GPM

Radius: 37' to 71'













Recommended pressure range: 40 psi to 100 psi

Operating pressure range: 40 psi to 100 psi

Precipitation rates: 0.4 in/hr approx.

Product Code	Description
I-25-04	3 1/2" Plastic riser, commercial duty rotor
I-25-04-SS	3 1/2" Stainless steel riser, commercial duty rotor
I-25-04-SS-HS	3 1/2" High speed, stainless steel riser, commercial duty rotor
I-25-06	5 1/2" Plastic riser, commercial duty rotor
I-25-06-SS	5 1/2" Stainless steel riser, commercial duty rotor
I-25-06-SS-HS	5 1/2" High speed, stainless steel riser, commercial duty rotor



I-25 Ultra Nozzle Performance Data					
Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr	
				■	▲
 <b>4</b> Yellow	40	40'	3.8	0.46	0.53
	50	41'	4.3	0.49	0.57
	60	42'	4.7	0.51	0.59
	70	43'	5.1	0.53	0.61
 <b>5</b> White	40	43'	4.4	0.46	0.53
	50	44'	4.8	0.48	0.55
	60	45'	5.3	0.50	0.58
	70	46'	5.6	0.51	0.59
 <b>7</b> Orange*	40	45'	6.6	0.63	0.72
	50	47'	7.0	0.61	0.70
	60	48'	7.5	0.63	0.72
	70	49'	7.9	0.63	0.73
 <b>8</b> Lt. Brown	40	47'	7.7	0.67	0.77
	50	49'	8.3	0.67	0.77
	60	50'	9.2	0.71	0.82
	70	51'	9.9	0.73	0.85
 <b>10</b> Lt. Green*	50	51'	10.1	0.75	0.86
	60	52'	11.1	0.79	0.91
	70	53'	12.1	0.83	0.96
	80	54'	12.9	0.85	0.98
 <b>13</b> Lt. Blue	50	53'	11.2	0.77	0.89
	60	54'	12.3	0.81	0.94
	70	55'	13.3	0.85	0.98
	80	55'	14.3	0.91	1.05
 <b>15</b> Gray*	50	56'	13.4	0.82	0.95
	60	57'	14.3	0.85	0.98
	70	57'	15.2	0.90	1.04
	80	58'	16.4	0.94	1.08
 <b>18</b> Red	50	58'	14.5	0.83	0.96
	60	59'	15.7	0.87	1.00
	70	62'	16.9	0.85	0.98
	80	63'	18.2	0.88	1.02
 <b>20</b> Dk. Brown*	60	62'	17.8	0.89	1.03
	70	63'	19.2	0.93	1.08
	80	64'	20.5	0.96	1.11
	90	65'	21.8	0.99	1.15
 <b>23</b> Dk. Green	60	64'	21.9	1.03	1.19
	70	65'	23.6	1.08	1.24
	80	66'	25.6	1.13	1.31
	90	67'	27.0	1.16	1.34
 <b>25</b> Dk. Blue*	60	66'	23.5	1.04	1.20
	70	68'	25.5	1.06	1.23
	80	69'	28.0	1.13	1.31
	90	70'	29.5	1.16	1.34
 <b>28</b> Black	70	68'	26.9	1.12	1.29
	80	70'	28.7	1.13	1.30
	90	71'	30.6	1.17	1.35
	100	71'	31.5	1.20	1.39

\* 5 standard nozzles included with each sprinkler.

**Note:** All precipitation rates calculated for 180 degree operation. For the precipitation rate for a 360 degree sprinkler, divide by 2.

# Irrigation

## HUNTER ROTORS (CONT.)

### HUNTER I-40 1" ROTOR

**Number one choice for sports facilities worldwide—ideal for parks and commercial sites.**

- ◆ Easy arc adjustment (50° to 360°): Full and part-circle operation in a single rotor helps reduce stock
- ◆ Automatic arc return: Returns to the original arc regardless of where the turret is turned
- ◆ Non-strippable, vandal-proof drive mechanism enables the turret to be turned without causing damage
- ◆ Primary nozzle system has six interchangeable nozzles for consistent coverage with a radius from 45' to 70'
- ◆ Available in 4" or 6" pop up



#### Specifications:

Discharge rate: 7.0 GPM to 28.2 GPM

Radius I-40: 44' to 69'

Radius I-40-ON: 52' to 76'

Flow rate: I-40: 7.6 to 29.5 GPM

Flow rate: I-40-ON: 13.0 to 33.7 GPM

Recommended pressure range: 40 to 100 psi

Operating pressure range: 40 to 100 psi

Precipitation rates: 0.4 in/hr approx

#### I-40 - SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Standard Features	3 Feature Options	4 Nozzle Options
I-40-04-SS = 4" Pop-up	Adjustable arc, stainless steel riser, check valve and 6 nozzles	(blank) = No option HS = High speed HS-R = High-speed and reclaimed water ID R = Reclaimed water ID	#8 to #25 = Factory installed nozzle number

#### I-40-ON - SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Opposing Nozzle Model	2 Standard Features	3 Feature Options	4 Nozzle Options
I-40-04-SS-ON = 4" Pop-up I-40-06-SS-ON = 6" Pop-up	Full-circle, opposing nozzle, stainless steel riser, check valve and 6 nozzles	(blank) = No option ON = Full circle opposing nozzles ON-R = Full-circle opposing nozzles and reclaimed water ID HS = High speed HS-R = High speed and reclaimed water ID R = Reclaimed water ID	#15 to #28 = Factory installed nozzle number

#### Examples:

I-40-04-SS = 4" Pop-up, adjustable arc, stainless steel riser, with check valve

I-40-04-SS - ON-R - 23 = 4" Pop-up, adjustable arc, stainless steel riser, with check valve, and reclaimed water ID and #23 nozzle

I-40-06-SS - 15 = 6" Pop-up, adjustable arc, stainless steel riser, with check valve and #15 nozzle

# I-40 NOZZLE PERFORMANCE DATA

## I-40 NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft	Flow GPM	Precip in/hr ■ ▲
<b>8</b> (40) ● Lt. Brown	40	44	7.6	0.76 0.87
	50	45	8.4	0.80 0.92
	60	46	9.2	0.84 0.97
<b>10</b> ● (41) Lt. Green	50	49	10.3	0.83 0.95
	60	50	11.3	0.87 1.00
	70	51	12.2	0.90 1.04
	80	51	13.0	0.96 1.11
<b>13</b> ● (42) Lt. Blue	50	50	11.1	0.85 0.99
	60	51	12.3	0.91 1.05
	70	52	13.3	0.95 1.08
	80	53	14.2	0.97 1.12
<b>15</b> ● (43) Gray	50	54	13.8	0.91 1.05
	60	55	15.7	1.00 1.15
	70	57	16.6	0.98 1.14
	80	59	18.3	1.01 1.17
<b>23</b> ● (44) Dk. Green	60	62	21.3	1.07 1.23
	70	64	23.0	1.08 1.25
	80	65	24.5	1.12 1.29
	90	66	25.9	1.14 1.32
<b>25</b> ● (45) Dk. Blue	60	66	23.9	1.06 1.22
	70	67	25.8	1.11 1.28
	80	68	27.7	1.15 1.33
	90	69	29.5	1.19 1.38

## I-40 HIGH-SPEED NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft	Flow GPM	Precip in/hr ■ ▲
<b>8</b> (40) ● Lt. Brown	40	41	7.6	0.87 1.00
	50	41	8.4	0.96 1.11
	60	42	9.2	1.00 1.16
<b>10</b> ● (41) Lt. Green	50	45	10.3	0.98 1.13
	60	46	11.3	1.03 1.19
	70	47	12.2	1.06 1.23
	80	47	13.0	1.13 1.31
<b>13</b> ● (42) Lt. Blue	50	46	11.1	1.01 1.17
	60	47	12.3	1.07 1.24
	70	48	13.3	1.11 1.28
	80	49	14.2	1.14 1.31
<b>15</b> ● (43) Gray	50	51	13.8	1.02 1.18
	60	52	15.7	1.12 1.29
	70	53	16.6	1.14 1.31
	80	54	18.3	1.21 1.40
<b>23</b> ● (44) Dk. Green	60	58	21.3	1.22 1.41
	70	59	23.0	1.27 1.47
	80	60	24.5	1.31 1.51
	90	61	25.9	1.34 1.55
<b>25</b> ● (45) Dk. Blue	60	59	23.9	1.32 1.53
	70	61	25.8	1.33 1.54
	80	62	27.7	1.39 1.60
	90	63	29.5	1.43 1.65

## I-40 NOZZLES



Standard/High-Speed



## I-40 Opposing Nozzle 360° Model



## I-40 DUAL OPPOSING NOZZLE PERFORMANCE DATA

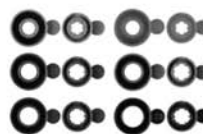
Nozzle	Pressure PSI	Radius ft	Flow GPM	Precip in/hr ■ ▲
<b>15</b> ● Gray	50	52	13.0	0.46 0.53
	60	54	13.2	0.44 0.50
	70	56	14.4	0.44 0.51
	80	57	15.5	0.46 0.53
<b>18</b> ● Red	50	58	13.7	0.39 0.45
	60	59	15.2	0.42 0.49
	70	60	16.6	0.44 0.51
	80	62	17.8	0.45 0.51
<b>20</b> ● Dk. Brown	60	63	19.1	0.46 0.53
	70	64	20.9	0.49 0.57
	80	66	22.3	0.49 0.57
	90	66	23.9	0.53 0.61
<b>23</b> ● Dk. Green	60	65	20.4	0.46 0.54
	70	66	22.3	0.49 0.57
	80	67	24.0	0.51 0.59
	90	68	25.6	0.53 0.62
<b>25</b> ● Dk. Blue*	60	66	22.0	0.49 0.56
	70	68	24.0	0.50 0.58
	80	69	25.9	0.52 0.60
	90	70	27.2	0.53 0.62
<b>28</b> ● Black	70	70	28.9	0.57 0.66
	80	72	30.9	0.57 0.66
	90	74	32.9	0.58 0.67
	100	76	33.7	0.56 0.65

\* Factory-installed nozzle

### Notes:

All precipitation rates calculated for 180 degree operation.  
For the precipitation rate for a 360 degree sprinkler, divide by 2. Precipitation rates for the ON-Opposing Nozzle model are calculated at 360 degrees.

## I-40 NOZZLES



Opposing

Front



Back



### HUNTER I-90

**Longest distance rotary sprinkler for parks, sports fields, and public areas.**

- ◆ With primary and secondary nozzles on opposite sides of the turret, streams arc in opposing directions and provide highly efficient coverage at every range of throw
- ◆ Eight standard 22.5 degree trajectory nozzles or the eight 15 degree nozzles for low-angle applications
- ◆ Check valve saves water, reduces liability, and increases system life



MODEL	STANDARD FEATURES
I-90 = 3" pop-up	Plastic riser, check valve, and 8 nozzles

FEATURE OPTIONS		NOZZLE OPTIONS
ADV, A RV, 36V, 3 RV	ADV = Adjustable arc ARV = Adjustable arc and reclaimed water ID 36V = Full circle, opposing nozzles 3RV = Full circle, opposing nozzles and reclaimed water ID	#25 to #73 = Factory installed nozzle number

### Specifications:

Radius: 63' to 101'  
Flow rate: 22 to 83 GPM  
Recommended pressure range: 60 to 110 PSI  
Operating pressure range: 50 to 120 PSI  
Precipitation rates: 0.75 in/hr approx.  
Nozzle trajectory: 22.5 degrees

**I-90-ADV Nozzle Performance Data**

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■ ▲
25 Lt. Blue NEW	60	63	22.0	1.07 1.23
	70	64	24.9	1.17 1.35
	80	65	27.5	1.25 1.45
	90	67	28.8	1.24 1.43
	100	68	30.6	1.27 1.47
33 Gray	60	67	30.7	1.32 1.52
	70	67	33.1	1.42 1.64
	80	68	35.5	1.48 1.71
	90	69	37.7	1.52 1.76
	100	70	39.8	1.56 1.81
38 Red	60	69	34.0	1.37 1.59
	70	70	36.9	1.45 1.67
	80	72	39.8	1.48 1.71
	90	73	42.3	1.53 1.76
	100	75	44.1	1.51 1.74
43 Dk. Brown	60	70	38.7	1.52 1.76
	70	71	42.0	1.60 1.85
	80	72	44.5	1.65 1.91
	90	73	47.6	1.72 1.99
	100	73	48.3	1.74 2.01
48 Dk. Green	70	75	47.0	1.61 1.86
	80	77	50.2	1.63 1.88
	90	79	53.3	1.64 1.90
	100	81	56.0	1.64 1.90
53 Dk. Blue*	70	79	48.5	1.50 1.73
	80	81	53.4	1.57 1.81
	90	85	57.0	1.52 1.75
	100	86	59.5	1.55 1.79
63 Black	70	84	60.9	1.66 1.92
	80	86	63.8	1.66 1.92
	90	88	66.5	1.65 1.91
	100	90	69.8	1.66 1.92
73 Orange NEW	80	90	66.9	1.59 1.84
	90	92	69.7	1.59 1.83
	100	95	72.8	1.55 1.79
	110	98	76.2	1.53 1.76

**I-90-36V Nozzle Performance Data**

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■ ▲
25 Lt. Blue NEW	60	69	25.5	0.52 0.60
	70	71	27.8	0.53 0.61
	80	73	30.2	0.55 0.63
	90	75	31.7	0.54 0.63
	100	77	33.9	0.55 0.64
33 Gray	60	71	29.8	0.57 0.66
	70	74	32.2	0.57 0.65
	80	76	34.4	0.57 0.66
	90	78	36.8	0.58 0.67
	100	80	38.6	0.58 0.67
38 Red	60	74	33.3	0.59 0.68
	70	77	36.1	0.59 0.68
	80	79	38.4	0.59 0.68
	90	80	40.9	0.62 0.71
	100	82	42.8	0.61 0.71
43 Dk. Brown	60	77	38.1	0.62 0.71
	70	79	40.9	0.63 0.73
	80	82	43.9	0.63 0.73
	90	83	46.5	0.65 0.75
	100	84	48.5	0.66 0.76
48 Dk. Green	70	82	46.3	0.66 0.77
	80	86	49.6	0.65 0.75
	90	89	52.5	0.64 0.74
	100	90	54.8	0.65 0.75
53 Dk. Blue*	70	85	50.5	0.67 0.78
	80	88	53.5	0.66 0.77
	90	90	57.4	0.68 0.79
	100	92	59.5	0.68 0.78
63 Black	70	90	60.6	0.72 0.83
	80	92	63.2	0.72 0.83
	90	94	65.9	0.72 0.83
	100	96	69.4	0.72 0.84
73 Orange NEW	80	95	72.1	0.77 0.89
	90	97	75.9	0.78 0.90
	100	99	79.5	0.78 0.90
	110	101	83.0	0.78 0.90

\*Factory-installed nozzle

\*\*Preliminary performance data

Note: All ADV precipitation rates are calculated for 180-degree operation.

For 360-degree rates, divide by 2. Precipitation rates for the 36V model are calculated at 360-degrees.



### RAIN BIRD 3500 SERIES

#### Part-circle rotor pop-up sprinklers.

- ◆ Top-adjust arc adjustment requiring only a flat blade screwdriver
- ◆ Water-lubricated gear drive design for durable, reliable operation
- ◆ 40° to 360° part-circle arc rotation and reversing full-circle rotation in one
- ◆ Attached nozzle tree of six Rain Curtain™ nozzles
- ◆ Radius adjustment screw allows up to 35% radius reduction without changing nozzles
- ◆ Dual action, positive stop wiper seal protects internals from debris and assures positive pop-up and retraction
- ◆ Easily removable filter screen

#### Specifications:

Precipitation rate: .37" to .72" per hour  
 Radius: 15' to 35'  
 Pressure: 25 psi to 55 psi  
 Flow rate: .54 GPM to 4.6 GPM  
 1/2" NPT female bottom threaded inlet  
 Reversing Full-and Part-circle adjustment: 40° to 360°



#### 3500 Nozzle Performance Data

Pressure psi	Nozzle	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
25	0.75	15	0.54	0.46	0.53
	1.0	20	0.77	0.37	0.43
	1.5	23	1.06	0.39	0.45
	2.0	27	1.40	0.37	0.43
	3.0	29	2.17	0.50	0.57
	4.0	31	2.97	0.59	0.69
35	0.75	17	0.67	0.45	0.52
	1.0	21	0.92	0.40	0.46
	1.5	23	1.28	0.47	0.54
	2.0	27	1.69	0.45	0.52
	3.0	31	2.60	0.52	0.60
	4.0	33	3.58	0.63	0.73
45	0.75	17	0.77	0.51	0.59
	1.0	21	1.06	0.46	0.53
	1.5	24	1.48	0.49	0.57
	2.0	27	1.93	0.51	0.59
	3.0	31	3.00	0.60	0.69
	4.0	35	4.13	0.65	0.75
55	0.75	18	0.85	0.51	0.58
	1.0	22	1.18	0.47	0.54
	1.5	24	1.65	0.55	0.64
	2.0	28	2.15	0.53	0.61
	3.0	32	3.25	0.61	0.71
	4.0	35	4.60	0.72	0.83

Precipitation rates based on half-circle operation

■ Square spacing based on 50% diameter of throw

▲ Triangular spacing based on 50% diameter of throw

Performance data collected in zero wind conditions

Performance data derived from tests that conform with ASAE Standards; ASAE S398.1.  
 See page 224 for complete ASAE Test Certification Statement.

Product Code	Description
3500-S-PC	Shrub
3500-S-PC-SAM	Shrub Seal-A-Matic
3504-PC	4" Pop-up
3504-PC-N	4" Pop-up, non-potable
3504-PC-SAM	4" Pop-up Seal-A-Matic
3504-PC-SAM-N	4" Pop-up Seal-A-Matic, non-potable

#### HOW TO SPECIFY: 3504-S-PC-SAM-N

Model:	Rotation:	Options:
3500 Series Rotor 4" pop-up	PC = 40° to 360°	S = Shrub model rotation SAM = Seal-A-Matic N = Non-potable cover

A heavy-duty seal is just the start. Learn what sets 5000 series rotors apart at [www.rainbird.com/5000rotor](http://www.rainbird.com/5000rotor).



## Choosing a rotor without leaks. That's intelligent.

**RAIN BIRD WIPER SEAL**



**LEADING COMPETITOR**





**The Rain Bird® 5000 series rotor with an oversized wiper seal.**

If your current seals are too thin to stop leaks, switch to Rain Bird® 5000 series rotors. With five times the sealing surface, they offer the industry's most reliable performance.

You can be confident our oversized seal will:

- Prevent leaks
- Protect internals
- Provide reliable popup and retraction



## RAIN BIRD 5000/5000 PLUS SERIES

### The Next Evolution in Rotor Performance.

- ◆ Faster maintenance with a new self-cleaning arc adjustment screw
- ◆ Available in 4", 6", 12", Shrub, and Stainless Steel (5000 Plus/5000 Plus PRS 4" and 6" only) models
- ◆ Heavy-duty cover assembly for extra durability in residential or commercial applications
- ◆ Flow Shut-Off device to stop the flow of water to a particular head while the system is still in operation
- ◆ Slip clutch mechanism for quick adjustment on installation
- ◆ Heavy-duty retract spring assures positive pop-down
- ◆ Award-winning MPR nozzle set simplifies design and installation by providing matched precipitation from 25' to 35' (see side box)
- ◆ Optional in-stem pressure regulator (PRS) reduces operating pressure to 45 psi for optimal nozzle performance
- ◆ Part-Circle units (PC) are adjustable from 40° to 360° degrees
- ◆ Full-Circle units (FC) are 360° only

### Specifications:

Precipitation rate: 0.20' to 1.01' per hour  
 Radius: 25' to 50'  
 Radius may be reduced up to 25% with radius reduction screw  
 Pressure: 25 psi to 65 psi  
 Flow Rate: 0.73 GPM to 9.63 GPM  
 3/4" Female inlet NPT



### 5000/5000 Plus Low Angle Nozzle Performance Data

Pressure psi	Nozzle	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
25	1.0 LA	25	0.76	0.23	0.27
	1.5 LA	27	1.15	0.30	0.35
	2.0 LA	29	1.47	0.34	0.39
	3.0 LA	29	2.23	0.51	0.59
35	1.0 LA	28	0.92	0.23	0.26
	1.5 LA	30	1.38	0.30	0.34
	2.0 LA	31	1.77	0.35	0.41
	3.0 LA	33	2.68	0.47	0.55
45	1.0 LA	29	1.05	0.24	0.28
	1.5 LA	31	1.58	0.32	0.37
	2.0 LA	32	2.02	0.38	0.44
	3.0 LA	35	3.07	0.48	0.56
55	1.0 LA	29	1.17	0.27	0.31
	1.5 LA	31	1.76	0.35	0.41
	2.0 LA	33	2.24	0.40	0.46
	3.0 LA	36	3.41	0.51	0.58
65	1.0 LA	29	1.27	0.29	0.34
	1.5 LA	31	1.92	0.38	0.44
	2.0 LA	33	2.45	0.43	0.50
	3.0 LA	36	3.72	0.55	0.64

Precipitation rates based on half-circle operation

■ Square spacing based on 50% diameter of throw

▲ Triangular spacing based on 50% diameter of throw

Performance data collected in zero wind conditions

Performance data derived from tests that conform with ASAE Standards; ASAE S398.1. See page 224 for complete ASAE Test Certification Statement.

### 5000/5000 Plus Nozzle Performance Data

Pressure (psi)	Nozzle	Radius (ft.)	Flow (GPM)	Precip In/h ■	Precip In/h ▲
25	1.5	33	1.12	0.20	0.23
	2.0	35	1.50	0.24	0.27
	2.5	35	1.81	0.28	0.33
	3.0	36	2.26	0.34	0.39
	4.0	37	2.91	0.41	0.47
	5.0	39	3.72	0.47	0.54
	6.0	39	4.25	0.54	0.62
	8.0	36	5.90	0.88	1.01
35	1.5	34	1.35	0.22	0.26
	2.0	36	1.81	0.27	0.31
	2.5	37	2.17	0.31	0.35
	3.0	38	2.71	0.36	0.41
	4.0	40	3.50	0.42	0.49
	5.0	41	4.47	0.51	0.59
	6.0	43	5.23	0.54	0.63
	8.0	43	7.06	0.74	0.85
45	1.5	35	1.54	0.24	0.28
	2.0	37	2.07	0.29	0.34
	2.5	37	2.51	0.35	0.41
	3.0	40	3.09	0.37	0.43
	4.0	42	4.01	0.44	0.51
	5.0	45	5.09	0.48	0.56
	6.0	46	6.01	0.55	0.63
	8.0	47	8.03	0.70	0.81
55	1.5	35	1.71	0.27	0.31
	2.0	37	2.30	0.32	0.37
	2.5	37	2.76	0.39	0.45
	3.0	40	3.47	0.42	0.48
	4.0	42	4.44	0.48	0.56
	5.0	45	5.66	0.54	0.62
	6.0	47	6.63	0.58	0.67
	8.0	50	8.86	0.68	0.79
65	1.5	34	1.86	0.31	0.36
	2.0	35	2.52	0.40	0.46
	2.5	37	3.01	0.42	0.49
	3.0	40	3.78	0.45	0.53
	4.0	42	4.83	0.53	0.61
	5.0	45	6.16	0.59	0.68
	6.0	48	7.22	0.60	0.70
	8.0	50	9.63	0.74	0.86

### How To Specify

Model	Standard Features	Optional Features		Nozzle Options
5000 Shrub	Slip clutch left edge finder	PL R S NP SS	"Plus" Flow Shut off PRS Pressure Regulation SAM Check Valve Non Potable Stainless Steel Riser	Pre-installed
5004	8 Standard 25 degree nozzles			1.5
5006	4 low angle 10 degree nozzles			2.0
	Keyed nozzle port			3.0
5012	Part Circle (PC)			4.0
	Full Circle (FC)	Pre-nozzled rotors only available on specific models.		

### Examples

5000PCS	Shrub, part circle, with check valve
5004PC2.0	4" Pop up, part circle, with 2.0 nozzle
5006PCPLRS	6" Pop up, part circle, with flow shut off, pressure regulation, and check valve

### RAIN BIRD 5000/5000 PLUS MPR NOZZLES





#### Achieve Matched Precipitation Rate Between 25' and 35'.

Rain Bird 5000/5000 Plus MPR nozzles simplify both the design process and the installation of rotors, because they reliably deliver matched precipitation rates within and between rotor radii from 25' to 35'. Without having to use fixed arc plates, designers and installers can achieve MPR using either 5000 Series or 5000 Plus Series Rotors. Superior flexibility in arc adjustment minimizes the risks of over- or under-watering.





- ◆ Three nozzle trees of 25', 30', and 35' radii
- ◆ Each tree contains a Q (90°), T (120°), H (180°), and F (360°) nozzle
- ◆ No fixed arc plate required
- ◆ Compatible with both the 5000 and 5000 Plus Rotor Series
- ◆ Rain Curtain™ Technology provides:
  - Large droplets for consistent performance
  - Effective close-in watering
  - Even distribution over the entire radius
- Precipitation rate of 0.60 in./hr reduces run-off and erosion







#### 5000-MPR-30 Nozzle Performance Data

Nozzle	Pressure psi	Radius ft.	Flow GPM	Precip In/h ■	Precip In/h ▲
Quarter 	25	29	1.03	0.47	0.54
	35	30	1.23	0.53	0.61
	45	30	1.40	0.60	0.69
	55	30	1.56	0.67	0.77
	65	30	1.69	0.72	0.83
Third 	25	29	1.34	0.46	0.53
	35	30	1.62	0.52	0.60
	45	30	1.85	0.59	0.69
	55	30	2.06	0.66	0.76
	65	30	2.24	0.72	0.83
Half 	25	29	2.15	0.49	0.57
	35	30	2.59	0.55	0.64
	45	30	2.96	0.63	0.73
	55	30	3.30	0.71	0.82
	65	30	3.60	0.77	0.89
Full 	25	29	4.24	0.49	0.56
	35	30	5.08	0.54	0.63
	45	30	5.78	0.62	0.71
	55	30	6.39	0.68	0.79
	65	30	6.92	0.74	0.85

#### 5000-MPR-25 Nozzle Performance Data

Nozzle	Pressure psi	Radius ft.	Flow GPM	Precip In/h ■	Precip In/h ▲
Quarter 	25	23	0.74	0.54	0.62
	35	24	0.88	0.59	0.68
	45	25	1.00	0.62	0.71
	55	25	1.11	0.68	0.79
	65	25	1.21	0.75	0.86
Third 	25	23	1.00	0.55	0.63
	35	24	1.21	0.61	0.70
	45	25	1.38	0.64	0.74
	55	25	1.53	0.71	0.82
	65	25	1.67	0.77	0.89
Half 	25	23	1.44	0.52	0.61
	35	24	1.73	0.58	0.67
	45	25	1.98	0.61	0.70
	55	25	2.21	0.68	0.79
	65	25	2.41	0.74	0.86
Full 	25	23	2.78	0.51	0.58
	35	24	3.34	0.56	0.64
	45	25	3.82	0.59	0.68
	55	25	4.25	0.65	0.76
	65	25	4.63	0.71	0.82

#### 5000-MPR-35 Nozzle Performance Data

Nozzle	Pressure psi	Radius ft.	Flow GPM	Precip In/h ■	Precip In/h ▲
Quarter 	25	32	1.40	0.53	0.61
	35	34	1.67	0.56	0.64
	45	35	1.92	0.60	0.70
	55	35	2.13	0.67	0.77
	65	35	2.31	0.73	0.84
Third 	25	32	1.77	0.50	0.58
	35	34	2.15	0.54	0.62
	45	35	2.46	0.58	0.67
	55	35	2.74	0.65	0.75
	65	35	2.99	0.70	0.81
Half 	25	32	2.75	0.52	0.60
	35	34	3.33	0.55	0.64
	45	35	3.81	0.60	0.69
	55	35	4.23	0.66	0.77
	65	35	4.62	0.73	0.84
Full 	25	32	5.36	0.50	0.58
	35	34	6.62	0.55	0.64
	45	35	7.58	0.60	0.69
	55	35	8.43	0.66	0.76
	65	35	9.18	0.72	0.83

## RAIN BIRD 5505 SERIES ROTOR

**Built tough to withstand the harshest conditions present in commercial rotor applications.**

- ◆ Color coded Rain Curtain™ nozzles give you optimal water distribution and close-in watering for greener grass with less water.
- ◆ Continuous full and part circle operation in one unit.
- ◆ Easy, wet, dry arc adjustment with slotted screwdriver through top of rotor from 50° to 330° part-circle, 360° non-reversing full-circle.
- ◆ Left and right side trips adjustable for ease of installation without turning the case and loosening the pipe connection.
- ◆ Seal-A-Matic™ (SAM) check device/riser to help prevent low head drainage.



### Specifications:

3/4" (20/27) NPT or BSP female threaded inlet

SAM check device holds up to 10 feet (3,1 m) of head

Nozzle outlet trajectory is 22°

### Operating Range:

Precipitation Rate: 0.21 to 1.48 in/hr (6,3 to 33,8 mm/h)

Radius: 17 to 55 feet (5,2 to 16,8m)

Pressure: 40 to 90 psi (2,1 to 6,2 Bars)

Flow: 1.2 to 15.5 gpm (0,32 to 3,52 m3/h; 4,52 to 58,66 l/m)

### 5500 Short Radius Nozzle Performance Data

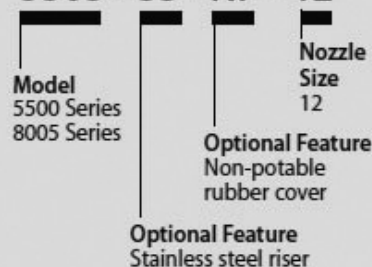
Pressure psi	Nozzle	Radius ft.	Flow gpm	Precip In/h	Precip In/h
30	18S	17	1.4	0.93	1.08
	22S	19	1.4	0.75	0.86
	26S	25	1.4	0.43	0.50
	30S	25	1.7	0.52	0.60
40	18S	19	1.5	0.80	0.92
	22S	21	1.6	0.70	0.81
	26S	25	1.9	0.59	0.68
	30S	29	1.8	0.41	0.48
50	18S	21	1.8	0.79	0.91
	22S	23	1.8	0.66	0.76
	26S	29	2.1	0.48	0.56
	30S	31	2.0	0.40	0.46
60	18S	23	2.0	0.73	0.84
	22S	25	2.0	0.62	0.71
	26S	29	2.4	0.55	0.63
	30S	33	2.2	0.39	0.45
70	18S	23	2.2	0.80	0.92
	22S	25	2.3	0.71	0.82
	26S	29	2.8	0.64	0.74
	30S	35	2.8	0.44	0.51
80	18S	25	2.4	0.74	0.85
	22S	27	2.5	0.66	0.76
	26S	29	3.1	0.71	0.82
	30S	35	3.1	0.49	0.56

### 5500 Nozzle Performance Data

Pressure psi	Nozzle	Radius ft.	Flow gpm	Precip In/h	Precip In/h
30	2	33	1.2	0.21	0.25
	3	35	2.3	0.36	0.42
	4	37	2.4	0.34	0.39
	5	37	2.6	0.37	0.42
	6	39	4.2	0.53	0.61
	8	39	5.3	0.67	0.77
40	2	37	1.6	0.23	0.26
	3	39	2.7	0.34	0.39
	4	41	2.9	0.33	0.38
	5	41	3.5	0.40	0.46
	6	45	4.8	0.46	0.53
	8	45	6.4	0.61	0.70
50	10	41	7.5	0.86	0.99
	12	39	10.1	1.28	1.48
	2	37	1.7	0.24	0.28
	3	41	3.0	0.34	0.40
	4	43	3.3	0.34	0.40
	5	45	3.8	0.36	0.42
60	6	47	5.4	0.47	0.54
	8	49	7.3	0.59	0.68
	10	47	8.9	0.78	0.90
	12	45	11.1	1.06	1.22
	2	37	1.9	0.27	0.31
	3	41	3.3	0.38	0.44
70	4	45	3.6	0.34	0.40
	5	47	4.8	0.42	0.48
	6	47	6.0	0.52	0.60
	8	51	8.2	0.61	0.70
	10	51	9.7	0.72	0.83
	12	51	12.3	0.91	1.05
80	2	39	2.1	0.27	0.31
	3	43	3.5	0.36	0.42
	4	45	3.9	0.37	0.43
	5	47	5.1	0.44	0.51
	6	47	6.5	0.57	0.65
	8	53	8.8	0.60	0.70
90	10	53	11.1	0.76	0.88
	12	53	13.5	0.93	1.07
	2	39	2.3	0.29	0.34
	3	43	3.8	0.40	0.46
	4	45	4.2	0.40	0.46
	5	47	5.5	0.48	0.55
90	6	49	7.0	0.56	0.65
	8	53	9.5	0.65	0.75
	10	55	12.1	0.77	0.89
	12	55	14.4	0.92	1.06
	10	55	13.1	0.83	0.96
	12	55	15.5	0.99	1.14

## How To Specify

**5505 - SS - NP - 12**



*Note: For non-U.S. applications, it is necessary to specify NPT or BSP thread type.*

### RAIN BIRD FALCON® 6504 ROTOR

#### Closed-case rotor for schools, cemeteries, athletic fields, parks and other large turf areas.

- ◆ Easy arc adjustment (part circle model) through top of rotor from 40° to 360°
- ◆ Water-lubricated gear drive for reliable, durable rotation
- ◆ Removable Seal-A-Matic™ (SAM) check device prevents puddling and erosion caused by low-head drainage
- ◆ Rain Curtain™ nozzles have three ports for optimal long-range, mid-range, and close-in watering, for green grass even in the heat of summer
- ◆ Radius adjustment screw allows radius reduction up to 25% without changing nozzles



#### Specifications:

Flow rate: 2.9 GPM to 21.7 GPM

Radius: 39' to 65'

Pressure: 30 psi to 90 psi

Precipitation rate: .37" to 1.14" per hour

1" Female inlet NPT

Product Code	Description
F4FC	Full-Circle
F4PC	Part-Circle
F4FCSS	Full-Circle, stainless steel
F4PCSS	Part-Circle, stainless steel
F4FCNP	Full-Circle, non-potable cover
F4PCNP	Part-Circle, non-potable cover
F4FCSSHS	Full-Circle, stainless steel, high-speed
F4PCSSHS	Part-Circle, stainless steel, high-speed
F4FCSSNP	Full-Circle, stainless steel, non-potable cover
F4PCSSNP	Part-Circle, stainless steel, non-potable cover

#### HOW TO SPECIFY: F4 – PC – SS – HS

Model:	Rotation:	Options:
F4	PC = 40° to 360° FC = 360	SS = Stainless steel riser NP = Non-potable cover HS = High-speed rotor

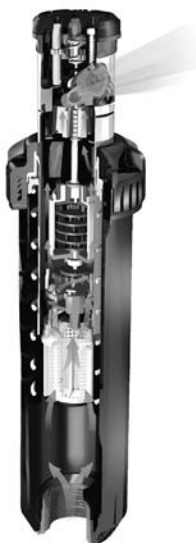
#### 6504 Nozzle Performance Data

Pressure (psi)	Nozzle	Radius (ft.)	Flow (GPM)	Precip In/h ■	Precip In/h ▲
30	4	39	2.9	0.37	0.42
	6	43	4.2	0.44	0.5
40	4	41	3.3	0.38	0.44
	6	45	4.9	0.47	0.54
	8	49	6.6	0.53	0.61
	10	51	8.1	0.6	0.69
	12	53	9.7	0.66	0.77
	14	55	11.3	0.72	0.83
	16	55	12.6	0.8	0.93
	18	59	13.7	0.76	0.87
50	4	41	3.7	0.42	0.49
	6	49	5.5	0.44	0.51
	8	51	7.4	0.55	0.63
	10	53	9.1	0.62	0.72
	12	55	11	0.7	0.81
	14	59	12.7	0.7	0.81
	16	61	14.3	0.74	0.85
	18	59	15.4	0.85	0.98
60	4	41	4	0.46	0.53
	6	47	6	0.52	0.6
	8	51	8.2	0.61	0.7
	10	55	10	0.64	0.73
	12	57	12.2	0.72	0.83
	14	61	14	0.72	0.84
	16	63	15.7	0.76	0.88
	18	63	17.1	0.83	0.96
70	4	41	4.4	0.5	0.58
	6	49	6.3	0.51	0.58
	8	51	8.9	0.66	0.76
	10	57	10.8	0.64	0.74
	12	59	13.2	0.73	0.84
	14	61	15.2	0.79	0.91
	16	63	16.9	0.82	0.95
	18	65	18.3	0.83	0.96
80	4	43	4.6	0.48	0.55
	6	49	6.9	0.55	0.64
	8	53	9.4	0.64	0.74
	10	55	11.6	0.74	0.85
	12	61	14	0.72	0.84
	14	61	16.2	0.84	0.97
	16	63	18.1	0.88	1.01
	18	65	19.6	0.89	1.03
90	18	65	21.7	0.99	1.14

## RAIN BIRD 8005 ROTOR

**Built rugged to withstand the harsh conditions and vandalism present in commercial rotor applications.**

- ◆ Five year trade warranty
- ◆ Memory Arc® returns the rotor to its original arc setting
- ◆ Non-strippable drive mechanism prevents damage from vandals
- ◆ Brass reinforcing shaft of the nozzle turret to riser withstands vandal kick
- ◆ Optional stainless steel riser model helps deter vandalism on public turf areas
- ◆ Full and part circle operation in one unit to reduce inventory requirements
- ◆ Easy, wet, dry arc adjustment with slotted screwdriver through top of rotor from 50° to 330° part-circle, 360° non-reversing full-circle
- ◆ Left and right side trips adjustable for ease of installation without turning the case and loosening the pipe connection
- ◆ Seal-A-Matic™ (SAM) check device/riser to help prevent low head drainage



### Specifications:

Radius: 57' to 81'  
 Precipitation rate: 0.48 to 1.23 inches per hour (12 to 31 mm/h)  
 Pressure: 50 to 100 psi (3.5 to 6.9 bar)  
 Flow: 11.1 to 36.3 gpm  
 1" (26/34) female NPT or BSP threaded inlet  
 SAM check device holds up to 10'

Product Code	Description
8005	1" NPT female threaded inlet (plastic riser stem)
8005-SS	1" NPT female threaded inlet

HOW TO SPECIFY: 8005-SS-NP-26		
Model:	Nozzle Size:	Options:
8005	04-black	SS = Stainless steel riser NP = Non-potable cover
	06-light blue	
	08-dark green	
	10-gray	
	12-beige	
	14-light green	
	16-dark brown	
	18-dark blue	
	20-red	
	22-yellow	
	24-orange	
	26-white	

### 8005 Nozzle Performance Data

Pressure psi	Nozzle	Radius ft.	Flow gpm	Precip In/h	Precip In/h
50	● 04	39	3.8	0.48	0.56
	● 06	45	5.6	0.53	0.62
	● 08	49	6.6	0.53	0.61
	● 10	53	9.3	0.64	0.74
	● 12	57	11.1	0.66	0.76
	● 14	59	12.6	0.70	0.81
	● 16	61	14.3	0.74	0.85
	● 18	63	16.1	0.78	0.90
	● 20	65	18.6	0.85	0.98
	● 22	65	20.7	0.94	1.09
60	● 24	63	22.3	1.08	1.25
	○ 26	65	24.3	1.11	1.28
	● 04	39	3.8	0.48	0.56
	● 06	45	6.1	0.58	0.67
	● 08	49	8.4	0.67	0.78
	● 10	53	10.1	0.69	0.80
	● 12	59	12.0	0.66	0.77
	● 14	61	14.3	0.74	0.85
	● 16	65	15.9	0.72	0.84
	● 18	65	17.8	0.81	0.94
70	● 20	67	20.1	0.86	1.00
	● 22	71	23.2	0.89	1.02
	● 24	69	24.7	1.00	1.15
	○ 26	73	26.7	0.96	1.11
	● 04	39	4.7	0.60	0.69
	● 06	45	6.7	0.64	0.74
	● 08	49	9.0	0.72	0.83
	● 10	55	11.1	0.71	0.82
	● 12	59	13.2	0.73	0.84
	● 14	63	15.3	0.74	0.86
80	● 16	67	17.2	0.74	0.85
	● 18	67	19.3	0.83	0.96
	● 20	71	22.0	0.84	0.97
	● 22	73	25.2	0.91	1.05
	● 24	75	27.0	0.92	1.07
	○ 26	75	29.4	1.01	1.16
	● 04	39	5.0	0.63	0.73
	● 06	45	7.1	0.68	0.78
	● 08	49	9.8	0.79	0.91
	● 10	55	11.8	0.75	0.87
90	● 12	61	14.2	0.73	0.85
	● 14	63	16.4	0.80	0.92
	● 16	67	18.6	0.80	0.92
	● 18	69	20.9	0.85	0.98
	● 20	71	23.9	0.91	1.05
	● 22	75	27.3	0.93	1.08
	● 24	77	29.2	0.95	1.10
	○ 26	79	31.5	0.97	1.12
	● 12	61	14.7	0.76	0.88
	● 14	65	17.9	0.82	0.94
100	● 16	69	20.0	0.81	0.93
	● 18	71	22.2	0.85	0.98
	● 20	73	25.3	0.91	1.06
	● 22	75	29.1	1.00	1.15
	● 24	79	31.0	0.96	1.10
	○ 26	79	33.7	1.04	1.20
	● 20	75	26.8	0.85	0.97
	● 22	77	30.7	1.00	1.15
	● 24	79	32.8	1.01	1.17
	○ 26	81	36.3	1.07	1.23

Precipitation rates based on half-circle operation

■ Square spacing based on 50% diameter of throw

▲ Triangular spacing based on 50% diameter of throw

Performance data collected in zero wind conditions

Performance data derived from tests that conform with ASAE Standards; ASAE S398.1.

See page 224 for complete ASAE Test Certification Statement.

**TORO**

### TORO T5 SERIES ROTOR

**A multi-purpose, basic featured rotor for all standard residential and commercial uses.**

- ◆ Optional RapidSet™ Arc Adjustment - all the arc adjustments can be made quickly, with a few twists of the nozzle turret, with no tools required
- ◆ Easily replaces many competitive units in the same footprint but delivers an extra inch of pop-up
- ◆ In-ground profile of any standard 4" pop-up, but delivers a full 5" pop-up
- ◆ Highly engineered nozzles deliver maximum irrigation efficiency from a nozzle tree of eight standard and four low angle nozzles
- ◆ Part- and full-circle sprinkler in one head with optional check valve
- ◆ An optional check valve is available with a hold back strength of 7' of elevation change



#### Specifications:

Radius: 25' to 50'  
Flow rate: .76 GPM to 9.63 GPM  
Recommended operating pressure range: 25 psi to 65 psi (maximum — 75 psi)  
Trajectory: 25° standard, 10° low angle  
Pop-up to nozzle: 5"  
Inlet: 3/4" NPT

Product Code	Description
T5P	5" Lawn Pop-up w/o check valve
T5S	T5 Shrub
T5HP	5" Lawn Pop-up High Pop

#### T-5 Low Angle Nozzle Performance Data

Nozzle	psi	Radius	GPM	Precipitation Rate (in/hr) ■	Precipitation Rate (in/hr) ▲
1.5LA	25	25	0.76	0.23	0.27
	35	28	0.92	0.23	0.26
	45	29	1.05	0.24	0.28
	55	29	1.17	0.27	0.31
	65	29	1.27	0.29	0.34
2.0LA	25	27	1.15	0.30	0.35
	35	30	1.38	0.30	0.34
	45	31	2.58	0.32	0.37
	55	31	2.76	0.35	0.41
	65	31	2.92	0.38	0.44
2.5LA	25	29	1.47	0.34	0.39
	35	31	2.77	0.35	0.41
	45	32	2.02	0.38	0.44
	55	33	2.24	0.40	0.46
	65	33	3.45	0.43	0.50
3.0LA	25	29	2.23	0.51	0.59
	35	33	2.68	0.47	0.55
	45	35	3.07	0.48	0.56
	60	36	2.41	0.51	0.58
	65	36	3.72	0.55	0.64

1. Precipitation rates based on half-circle operation 2. ■ Square spacing based on 50% diameter of throw. 3. ▲ Triangular spacing base on 50% diameter of throw.

#### T-5 Nozzle Performance Data

Nozzle	PSI	Radius	GPM	Precipitation Rate (in/hr)▲	Precipitation Rate (in/hr)■
1.5	25	33	1.15	0.23	0.20
	35	34	1.38	0.27	0.23
	45	35	1.59	0.29	0.25
	55	35	1.74	0.32	0.27
	65	36	1.88	0.32	0.28
2.0	25	35	1.45	0.26	0.23
	35	36	1.80	0.31	0.27
	45	37	2.12	0.34	0.30
	55	37	2.30	0.37	0.32
	65	37	2.58	0.42	0.36
2.5	25	35	1.75	0.32	0.28
	35	36	2.20	0.38	0.33
	45	37	2.55	0.41	0.36
	55	37	2.80	0.45	0.39
	65	37	3.05	0.50	0.43
3.0 Standard	25	36	2.20	0.38	0.33
	35	38	2.60	0.40	0.35
	45	40	3.05	0.42	0.37
	55	40	3.52	0.49	0.42
	65	40	3.80	0.53	0.46
4.0	25	37	2.95	0.48	0.41
	35	40	3.55	0.49	0.43
	45	42	4.10	0.52	0.45
	55	42	4.45	0.56	0.49
	65	43	4.85	0.58	0.50
5.0	25	39	3.75	0.55	0.47
	35	41	4.50	0.60	0.52
	45	43	5.10	0.61	0.53
	55	45	5.75	0.63	0.55
	65	45	6.10	0.67	0.58
6.0	25	39	4.20	0.61	0.53
	35	43	5.20	0.63	0.54
	45	46	6.05	0.64	0.55
	55	47	6.65	0.67	0.58
	65	48	7.25	0.70	0.61
8.0	25	36	5.75	0.99	0.85
	35	43	7.10	0.85	0.74
	45	47	8.05	0.81	0.70
	55	48	8.95	0.86	0.75
	65	50	9.70	0.86	0.75

#### Low Angle Nozzle Performance Data

Nozzle	PSI	Radius	GPM	Precipitation Rate (in/hr)▲	Precipitation Rate (in/hr)■
1.0LA	25	25	0.74	0.26	0.23
	35	28	0.94	0.27	0.23
	45	28	1.02	0.29	0.25
	55	29	1.14	0.30	0.26
	65	29	1.25	0.33	0.29
1.5LA	25	27	1.10	0.34	0.29
	35	30	1.35	0.33	0.29
	45	31	1.52	0.35	0.30
	55	31	1.75	0.40	0.35
	65	31	1.90	0.44	0.38
2.0LA	25	29	1.40	0.37	0.32
	35	31	1.72	0.40	0.34
	45	32	2.05	0.45	0.39
	55	33	2.25	0.46	0.40
	65	33	2.45	0.50	0.43
3.0LA	25	29	2.20	0.58	0.50
	35	33	2.60	0.53	0.46
	45	34	3.05	0.59	0.51
	55	36	3.40	0.58	0.51
	65	36	3.70	0.63	0.55

Data based on 180°.

#### Specifying Information—T5 Rotor

TSXX XXXX CK E-RS									
Descrip.	Body	Optional	Nozzle				Optional	Optional	
T5	XX	CK	XXXX				E	-RS	
TS—T5 Series Rotor	P—Lawn Pop S—Shrub HP—High Pop	CK—Check Valve*	1.5—1.5 GPM 2.0—2.0 GPM 2.5—2.5 GPM 3.0—3.0 GPM	4.0—4.0 GPM 5.0—5.0 GPM 6.0—6.0 GPM 8.0—8.0 GPM	Low Angle Nozzle		E—Effluent	RS—RapidSet™ (optional for lawn models only)	
					1.0LA—1.0 GPM 1.5LA—1.5 GPM 2.0LA—2.0 GPM 3.0LA—3.0 GPM				

Example: A T5 Lawn Pop-up sprinkler with a 2.5 nozzle, would be specified as: TSP-2.5

\* Check Valve is standard on all shrub models

**Horizon**

Denotes Smart Water products

**TORO TR50XT SERIES ROTOR**

**Ideal for both residential and commercial applications, the TR50XT Series rotors are simple to adjust with precise setting accuracy – making fine tuning easier than ever**

- ◆ X-Flow® Shutoff Device allows one sprinkler to be shut-off while all the others on the same line are still running
- ◆ Exclusive Trujectory™ Adjustment allows fine-tuning of nozzle spray trajectory – make adjustments from 5° to 25° to compensate for wind, low-hanging branches or throwing water from the top of slopes
- ◆ TruArc™ For Easy Arc Set eliminates “palming” of a sprinkler to check the final arc setting—visual arc set from arrow on cap to arrow on riser
- ◆ Smart Arc™ Memory safely returns sprinkler to previously set arc if vandalized

**Specifications:**

TR50XT Radius: 28' to 48'

TR50XT Flow rate: 1.0 GPM to 9.80 GPM

Recommended operating pressure: 30 psi to 70 psi

Maximum operating pressure: 75 psi

3/4" Female inlet NPT



HOW TO SPECIFY: TR50XT XX XX E			
Model:	Body:	Nozzles:	Options:
TR50XT	S – Shrub	15 to 1.5	E = Effluent
	HP – High-pop	20 to 2.0	
	PSS – Stainless Steel Riser	30 to 3.0	
		45 to 4.5	
		60 to 6.5	
		75 to 7.5	
		90 to 9.0	

*Specifying Information—TR50XT*

TR50XT XX-XX-E			
Description	Body	Nozzle	Optional
TR50XT	XX	XX	E
TR50XT—TR50XT Series Rotor	P—Lawn Pop-up S—Shrub HP—High-pop PSS—Stainless Steel Riser	10—1.0 15—1.5 20—2.0 30—3.0	45—4.5 60—6.0 75—7.5 90—9.0
Example: A TR50XT Series sprinkler with High-pop and a 6.0 nozzle, would be specified as: TR50XT-HP-60			

**TR50XT TR50XPSS Performance Data**

Nozzle Size	psi	Flow	5°			15°			25°		
			Radius	Precip. Rate*		Radius	Precip. Rate*		Radius	Precip. Rate*	
				▲	■		▲	■		▲	■
1.0 Yellow	30	1.0	20	0.28	0.24	26	0.16	0.14	30	0.12	0.11
	40	1.1	21	0.28	0.24	27	0.18	0.15	30	0.14	0.12
	50	1.3	22	0.30	0.26	27	0.20	0.17	31	0.15	0.13
	60	1.4	25	0.26	0.23	28	0.20	0.17	31	0.17	0.15
	70	1.5	25	0.29	0.25	28	0.22	0.19	31	0.18	0.16
1.5 Orange	30	1.2	28	0.18	0.15	30	0.15	0.13	34	0.12	0.10
	40	1.4	29	0.19	0.17	31	0.16	0.14	35	0.13	0.11
	50	1.6	29	0.21	0.18	32	0.18	0.15	36	0.14	0.12
	60	1.7	31	0.21	0.18	32	0.19	0.16	36	0.15	0.13
	70	1.9	31	0.22	0.19	32	0.21	0.18	35	0.18	0.15
2.0 Red	30	1.7	31	0.19	0.17	32	0.18	0.16	36	0.14	0.12
	40	1.9	31	0.22	0.19	34	0.18	0.16	38	0.15	0.13
	50	2.2	32	0.24	0.21	35	0.20	0.17	38	0.17	0.14
	60	2.4	33	0.25	0.22	36	0.20	0.18	39	0.18	0.15
	70	2.6	33	0.27	0.23	36	0.22	0.19	39	0.20	0.17
3.0* Black	30	2.3	31	0.27	0.23	34	0.23	0.20	38	0.18	0.16
	40	2.6	31	0.31	0.26	35	0.25	0.21	40	0.19	0.16
	50	3.0	33	0.30	0.26	36	0.26	0.22	41	0.20	0.17
	60	3.3	35	0.31	0.27	38	0.26	0.23	42	0.21	0.18
	70	3.6	35	0.32	0.28	39	0.27	0.23	44	0.21	0.18
4.5 Blue	30	3.6	31	0.42	0.36	34	0.35	0.30	39	0.26	0.23
	40	4.1	32	0.44	0.38	35	0.38	0.33	40	0.28	0.24
	50	4.6	34	0.45	0.39	37	0.39	0.33	41	0.31	0.27
	60	5.1	35	0.48	0.41	38	0.39	0.34	42	0.32	0.28
	70	5.6	36	0.48	0.42	39	0.41	0.35	42	0.35	0.31
6.0 Green	30	4.4	31	0.51	0.44	35	0.40	0.35	41	0.29	0.25
	40	5.0	32	0.56	0.48	37	0.42	0.36	42	0.32	0.28
	50	5.7	35	0.53	0.46	40	0.39	0.34	43	0.34	0.30
	60	6.3	37	0.51	0.44	40	0.45	0.39	43	0.39	0.33
	70	6.8	38	0.54	0.47	41	0.45	0.39	45	0.38	0.33
7.5 Brown	30	4.9	34	0.47	0.41	35	0.45	0.39	41	0.32	0.28
	40	5.6	36	0.49	0.42	36	0.48	0.41	41	0.38	0.33
	50	6.3	35	0.57	0.49	37	0.52	0.45	42	0.40	0.35
	60	6.9	36	0.61	0.53	38	0.55	0.47	42	0.44	0.38
	70	7.5	37	0.63	0.54	38	0.58	0.50	43	0.45	0.39
9.0 Gray	30	6.1	34	0.59	0.51	34	0.59	0.51	42	0.38	0.33
	40	7.0	35	0.64	0.55	35	0.65	0.57	42	0.44	0.38
	50	8.0	35	0.73	0.63	37	0.65	0.56	44	0.46	0.40
	60	8.9	35	0.80	0.70	39	0.66	0.58	45	0.50	0.43
	70	9.8	37	0.82	0.71	40	0.68	0.59	47	0.50	0.44

Shaded areas represent optimum operating pressure for that nozzle size.  
\*Factory installed nozzle.

**TORO**

### TORO T7 SERIES ROTOR

**A multi-purpose, basic featured rotor for all standard residential and commercial uses.**

- ◆ Arc setting indicator on top of the rotor allows for easy wet or dry adjustments from 45°-360°.
- ◆ High efficiency nozzle single port design ensures water is evenly distributed across the pattern without putting too much water near the head, which prevents seed from washing away.
- ◆ Smart Arc™ memory safely returns sprinkler to previously set arc if vandalized.
- ◆ Standard check valve to prevent low head drainage.
- ◆ Available in low-flow models (identified by "circle L" on rubber cover), for short radius (38'-53') applications, such as baseball infields.

### Specifications:

Radius: Low-flow models: 38'-53' (11.6 - 16.2m);

High-flow models: 46'-83' (14.0 - 25.0m)

Flow: Low-flow models: 1.7-13.0 gpm (6.4-49, 2 lpm);

High-flow models: 6.8-30.5 gpm (25.4-116 lpm)

Trajectory: 25°

Arc: Full Circle; Part-circle Adjustable; Part/Full circle in One

Recommended Operating Pressure:  
40-100 PSI (2.8 - 6.9 BAR)

Inlet: 1" (2.5 cm)

Pop-Up Height: 5 3/4" (14.6 cm)



#### T7 Performance Data - Low Flow Models

Nozzle	Press. (PSI)	Radius (FT)	Flow Rate (GPM)	Precip Rate (in/hr) ▲	Precip Rate (in/hr) ■
2.0	40	40	1.73	0.25	0.22
	50	42	1.96	0.29	0.25
	60	42	2.17	0.30	0.26
	70	41	2.36	0.33	0.28
	80	42	2.54	0.35	0.31
	90	41	2.71	0.36	0.31
3.0	100	41	2.88	0.38	0.33
	40	41	2.43	0.36	0.31
	50	42	2.77	0.39	0.33
	60	41	3.10	0.41	0.36
	70	41	3.38	0.45	0.39
	80	42	3.64	0.46	0.40
4.5	90	41	3.89	0.47	0.41
	100	43	4.06	0.49	0.42
	40	38	4.07	0.63	0.54
	50	41	4.65	0.62	0.53
	60	41	5.17	0.68	0.59
	70	42	5.64	0.71	0.62
6.0	80	42	6.08	0.77	0.66
	90	43	6.49	0.78	0.68
	100	43	6.88	0.83	0.72
	40	43	4.92	0.59	0.51
	50	46	5.63	0.59	0.51
	60	48	6.27	0.61	0.52
7.5	70	50	7.05	0.65	0.57
	80	49	7.37	0.68	0.59
	90	50	7.87	0.70	0.61
	100	50	8.37	0.74	0.64
	40	44	5.78	0.66	0.58
	50	46	6.63	0.70	0.60
9.0	60	48	7.37	0.71	0.62
	70	50	8.05	0.75	0.65
	80	51	8.73	0.78	0.67
	90	52	9.46	0.84	0.73
	100	52	9.89	0.81	0.70
	40	45	7.33	0.81	0.70
12.0*	50	49	8.44	0.78	0.68
	60	51	9.39	0.80	0.70
	70	54	10.43	0.83	0.72
	80	55	11.27	0.83	0.72
	90	55	12.05	0.89	0.77
	100	56	12.74	0.90	0.78

\* Pre-installed nozzle  
Data based on 180°

#### T7 Performance Data - High Flow Models

Nozzle	Press. (PSI)	Radius (FT)	Flow Rate (GPM)	Precip Rate (in/hr) ▲	Precip Rate (in/hr) ■
7.0	40	46.3	6.81	0.715	0.620
	50	48.7	7.41	0.746	0.646
	60	49.0	8.10	0.782	0.677
	70	50.3	8.90	0.824	0.714
	80	52.0	9.67	0.827	0.716
	90	52.0	10.27	0.845	0.732
9.0	100	53.3	10.85	0.827	0.716
	40	47.3	7.54	0.759	0.657
	50	50.7	8.25	0.734	0.635
	60	50.3	8.91	0.762	0.660
	70	52.0	9.81	0.807	0.699
	80	53.7	10.49	0.800	0.693
12.0*	90	53.3	11.20	0.823	0.713
	100	54.0	11.83	0.839	0.727
	40	50.3	9.95	0.885	0.767
	50	53.3	10.55	0.902	0.781
	60	56.7	11.53	0.913	0.791
	70	59.0	12.54	0.956	0.828
16.0	80	59.7	13.51	0.993	0.860
	90	60.7	14.38	1.020	0.883
	100	63.0	15.18	1.039	0.900
	40	52.3	13.42	1.062	0.920
	50	57.0	14.96	1.061	0.919
	60	60.0	15.79	1.044	0.904
20.0	70	61.0	17.13	1.094	0.948
	80	63.7	18.41	1.100	0.953
	90	64.3	19.64	1.136	0.984
	100	65.7	20.80	1.166	1.009
	40	52.0	16.10	1.275	1.104
	50	57.3	18.40	1.216	1.053
24.0	60	61.0	19.56	1.209	1.047
	70	63.7	21.01	1.256	1.087
	80	66.3	22.58	1.188	1.029
	90	68.0	23.99	1.225	1.061
	100	70.3	25.29	1.253	1.085
	40	53.7	15.46	1.272	1.101
27.0	50	60.3	17.69	1.093	0.946
	60	63.7	19.76	1.107	0.959
	70	66.3	21.61	1.138	0.985
	80	68.3	23.29	1.154	0.999
	90	70.0	24.87	1.196	1.036
	100	72.3	26.30	1.160	1.005
27.0	40	55.0	19.37	1.424	1.233
	50	64.3	21.98	1.157	1.002
	60	71.0	23.82	1.051	0.910
	70	72.3	25.67	1.101	0.954
	80	73.0	27.34	1.141	0.988
	90	74.3	29.03	1.179	1.021
	100	75.0	30.52	1.207	1.045

#### T7 Rotor Model List

Model	Description
• T7P-02	1" (25mm) Rotor
• T7P-02E	1" (25mm) Rotor, Effluent Indicator
• T7P-02L	1" (25mm) Rotor, Low Flow
• T7P-02LE	1" (25mm) Rotor, Low Flow, Effluent Indicator
• T7PSS-02	1" (25mm) Stainless Steel Rotor
• T7PSS-02E	1" (25mm) Stainless Steel Rotor, Effluent Indicator
• T7PSS-02L	1" (25mm) Rotor, Low Flow
• T7PSS-02LE	1" (25mm) Rotor, Low Flow, Effluent Indicator

#### Specifying Information—T7 Sprinkler

T7PXX-02XX			
Descrip.	Optional	Thread	Optional
T7P	SS	02	E
T7P—Sports Rotor	SS—Stainless Steel Riser	NPT Thread	E—Effluent L—Low Flow
Example: A low flow T7P sprinkler with a stainless steel riser and effluent rubber cover would be specified as T7PSS-02LS			

## Overview:

There are two specific categories of Smart Water control systems — EvapoTranspiration (ET) and Moisture. The more common category is the ET-based controller. Utilizing historical rainfall data, on-site weather stations or paging technology via weather satellites, ET controllers measure wind, rain and solar radiation and automatically adjust irrigation run times accordingly.

Moisture-based controllers utilize in-ground sensors to measure soil moisture content and drive irrigation schedules. Moisture based systems range from simple on/off sensors to digital systems that read both moisture and salinity (EC) content in the soil profile.

Both categories of Smart Water systems can save from 30% to 50% in water use over traditional controllers. It's all in the purpose of the system — traditional controllers did a great job of irrigating plant material. Smart Water controllers take the next step and actively manage water.



## Water Rebates:

Many government agencies around the country are offering rebates on smart water products: controllers, sensors, sprays and nozzles. For a complete list of available rebates by state, please go to our website: [horizononline.com/resources](http://horizononline.com/resources).



## ESP-SMTE SMART IRRIGATION CONTROLLER

**Combining the proven simplicity of the Extra Simple Programming (ESP) controller family with the accuracy of weather-based control.**

- ◆ Not only suspends irrigation during rain, it measures instantaneous rainfall amounts, determines the effective rainfall and calculates exactly how much to adjust your watering schedule to prevent over-watering and under-watering.
- ◆ Expandable modular design easily expands from 4 stations up to 22 stations with the addition of optional hot-swappable expansion modules.
- ◆ Zone specific water calculations
- ◆ Cycle and Soak™ feature allows you to take into account soil conditions when it calculates run time, reducing run-off

## Controller Features:

EPA Water Sense labeled

Expandable to 22 zones

English/Spanish button easily switches languages

Weather sensor sends rainfall and temperature data to the controller

Large LCD display



## Electrical Specifications:

Input Required: 120VAC +/- 10%

Output: 25.5VAC 1A

Surge Protection: Primary input side has (2) built-in MOV's (metal oxide varistor) to protect circuitry. Output side has (2) built-in MOV's for each valve station.

Power back-up: Lithium coin-cell battery maintains time and date while non-volatile memory maintains the schedule.

Multi-valve station capacity: Up to two 24VAC, 7VA solenoid valves per station plus a master valve.

Product Code	Description
ESP4SMTEI	4 Zone Indoor Modular Smart Controller with weather sensor
ESP4SMTE	4 Zone Outdoor Modular Smart Controller with weather sensor
ESP4SMTEUPG	Upgrade kit to convert existing ESP Modular into ESP-SMTE
ESPSM3	3-Zone Expansion Module
ESP4SMTEUPG	6-Zone Expansion Module





### ESP-ET SERIES CONTROLLER

#### 12-200 Station Smart Controller

- ◆ Make real-time adjustments to the irrigation schedule based on hourly weather information and manage available water capacity to shorten irrigation times.
- ◆ Water Savings of 20 – 50% over traditional time based irrigation control.
- ◆ Wind interrupt prevent overspray during high wind conditions
- ◆ Setup Wizard walks user through all key setup parameters.
- ◆ 8- or 12-stations base unit expandable to 48 stations with 4-, 8- and 12-Station Modules
- ◆ Flow Smart Module™ factory installed or field upgradable
- ◆ SimulStations™ are programmable to allow up to 5 stations to operate at the same time
- ◆ Flo-Watch protection for high and low flow conditions with user defined reactions
- ◆ FloManager manages hydraulic demand, making full use of available water to shorten total watering time



#### Operating Features:

- Station timing: 0 min to 12 hrs
- Seasonal Adjust: 0% to 300% (16 hrs maximum station run time)
- 4 independent programs (ABCD)
- ABCD programs can overlap
- 8 start times per program
- Program Day Cycles include Custom days of the week, Odd, Odd31, Even, and Cyclical dates
- Manual station, program, test program

Model	Description
ESPLXME-ET	ESP12LXME with ETCLX
ESPLXD-ET	ESPLXD with ETCLX





## SMARTLINE CONTROLLER

- ◆ “Basic” and “Smart” mode makes the controller flexible and easy to use
- ◆ ET Watering adjusts the duration, frequency, and soak time based on weather data, sprinkler, soil and plant type.
- ◆ SmartLink Network gives you access to your SmartLine controllers via your computer, tablet, or smartphone.
- ◆ Built in valve locator finds hidden valves by simply listening for the audible chatter of the solenoid created by a unique electrical frequency



## SMARTLINK 2.0 NETWORK

**Manage all of your sites from any computer, or mobile device, and a web browser – no software to install, no expensive hardware to purchase.**

- ◆ Web based application
- ◆ Unlimited accounts, unlimited sites, unlimited controllers
- ◆ Reports include historical water use, historical temperature overlays, total gallons used per site/controller/zone
- ◆ Set low/high flow threshold and receive email alerts when threshold is passed
- ◆ Requires SmartLine or ProLine controller with SmartLink Aircard installed.
- ◆ Yearly subscription fee

Product Code	Description
SL800	4-Zone base model, expandable to 8 zones (Indoor only)
SL1600	4-Zone base model, expandable to 16 zones (Indoor only)
SL1624	16-Zone base model, expandable to 24 zones (Indoor/Outdoor rated)
SL4800	12-Zone base model, expandable to 48 zones (Indoor/Outdoor rated)
SLM2	2-Zone module for use in the SL800 (Indoor/Outdoor rated)
SLM4	4-Zone module for use in the SL1600, SL1624, SL4800 (Indoor/Outdoor rated)
SLM12	12-Zone module for use in the SL1624, SL4800 (Indoor/Outdoor rated)



## SLRC WIRELESS REMOTE CONTROL

- ◆ Handheld remote control for wireless zone operation of any SmartLine® SL800, SL1600 Series or SL4800 controller – requires controller firmware version 1.08 or later and SLHUB-RF wireless receiver hub (included in remote kit)
- ◆ Operates on a bi-directional, spread spectrum 2.4 GHz frequency for superior range and reliability
- ◆ 600' line of sight operation
- ◆ LCD provides zone number, RF signal indication, and an hourglass icon for zone run time



Product Code	Description
SLRC-HH	Handheld Remote Only
SLHUB-RF	Internal Mount Wireless Receiver Hub
SLRC-ADAPTER	Internal/External Mount Wireless Receiver Hub with RJ-11 Connector
SLRC-KIT-ADP	Handheld Remote & SLRC-ADAPTER
SLRC-KIT-HUB	Handheld Remote & SLHUB-RF
SLRC-CLIP	Protective Belt Clip for SLRC-HH Remote
SLRC-LINK	SmartLink includes 25' Telephone Line & Outdoor RJ-11 Connection Port

## SLW1 & SLW5 WEATHER STATIONS

- ◆ Real-time weather data recording and processing enables ET-based water scheduling to occur
- ◆ Weather data is used to create powerful reporting when connected to the SmartLink™ Network
- ◆ Adjustable rain sensor - 1/8, 1/4, 1/2, and 3/4 inch
- ◆ Prevents watering during freezing weather - below 37°F/3°C
- ◆ SLW5 900mhz Range - 1,500ft LOS
- ◆ SLW1 Includes - 35ft of cable
- ◆ Wireless Version - SLW5
- ◆ Wired Version - SLW1





### EVOLUTION® SERIES

With an intuitive interface and exclusive features for “smart” control, the new Toro® EVOLUTION® is an easy choice for residential and light-commercial applications.

- ◆ Web based application
- ◆ Unlimited accounts, unlimited sites, unlimited controllers
- ◆ Reports include historical water use, historical temperature overlays, total gallons used per site/controller/zone
- ◆ Set low/high flow threshold and receive email alerts when threshold is passed
- ◆ Record estimated cost of repairs
- ◆ Requires SmartLine or ProLine controller with SmartLink Aircard installed.
- ◆ Yearly subscription fee



### SMART CONNECT ADD-ON DEVICES

#### Wireless ET Sensor

Uses live temperature and solar measurements as well as historical data to calculate amount of water needed from the irrigation system



#### Handheld Remote

Makes maintenance checks a snap, allowing you to run sprinklers or schedules from up to 1000 feet away

#### Smart Connect® Plug-In Receiver

Installs easily to the backside of the controller, allows you to communicate with all Add-On devices



#### EVOLUTION® Scheduling-Advisor™ Software

Programming can be transferred from your computer to the controller with a USB drive

#### Precision Soil Sensor

Up to three soil sensors can be used to monitor the moisture level of the soil.



# THE EVOLUTION® OF CONTROL ALL IN ONE!

ALWAYS  
AVAILABLE AT:

**Horizon™**



## Smart Connect® is a Smarter Way

Different customers have different needs. That's why the award-winning EVOLUTION® Controller can be customized with up to four Smart Connect® Add-Ons – all wirelessly connected to a single receiver that fits neatly inside the controller.

- Install the optional, EPA WaterSense® approved ET Sensor, or up to three easy-to-install wireless soil sensors, to automatically control zone runtimes – saving water and your time.
- Install the optional wireless relays for integrated control of fountain pumps, outdoor lighting, or even holiday lighting.
- Install the wireless Handheld Remote to make system testing a breeze.



Learn more at:  
[www.toro.com/EVOLUTION](http://www.toro.com/EVOLUTION)





### PRO-C

#### Pro-C Light Commercial and Residential Controller

**The fixed 6 and 12 station models offer affordability in a high-end residential controller, with the flexibility to expand on demand due to its modular design**

- ◆ Flexible design: Modular model offers 4–16 stations, or choose fixed 6 or 12 station models
- ◆ Will easily accommodate Hunter's Solar Sync® without additional wiring.
- ◆ Lighting programs built in for upgrade to landscape lighting
- ◆ The Quick Check feature makes field wiring issues easy to assess with the push of a button. Quick Check displays an ERR message when a field wiring short is detected on a particular station number. Solar-Sync delay feature for a delay up to 99 days

### Specifications

Independent programs: 3  
Start times per program: 4  
Max. station run time: 6 hours



Model	Description
PC-4	4-station base modular controller outdoor
PC-4i	4-station base modular controller indoor
PCC-6	6-station controller outdoor
PCC-6i	6-station controller indoor
PCC-12	12-station controller outdoor
PCC-12i	12-station controller indoor
PCM-300	3-station plug-in module
PCM-900	9-station plug-in module

(Use to increase from 7 to 16 stations only).

By adding a Solar Sync™ to your Hunter controller, it transforms into a smart controller using local weather conditions to tailor watering schedules to actual conditions on the site. A Hunter controller with Solar Sync has been independently proven to have a detailed list of water saving features and has been approved by the EPA as a WaterSense Smart Watering Controller.

### X-CORE RESIDENTIAL CONTROLLER

**Entry-level residential controller with extra flexibility, features and memory.**

- ◆ Easy dial programming makes the XC easy to operate
- ◆ Easy on-screen adjustment alters the amount of watering to accommodate changing weather conditions
- ◆ Three independent programs with four start times. Each accommodates a wide range of watering requirements
- ◆ Non-volatile memory retains current time, day and program data
- ◆ Choice of independent day scheduling for maximum watering flexibility (select days of the week, true odd/even or interval watering)
- ◆ Weather sensor compatible
- ◆ Replaceable lithium battery (included)

### Specifications:

Start times: Four per day, per program for up to 12 daily starts  
Station run time: 0 minutes to 4 hours in 1-minute increments  
Program schedule: Seven-day calendar true odd/even programming with 365-day calendar clock or interval watering (up to 31 days)

Model	Description
XC-200i	2-station indoor controller
XC-400	4-station outdoor controller
XC-400i	4-station indoor controller
XC-600	6-station outdoor controller
XC-600i	6-station indoor controller
XC-800	8-station outdoor controller
XC-800i	8-station indoor controller



### ICC

**Eight stations, expandable up to 48 stations (outdoor).**

Superior flexibility, ease of use and outstanding water management.

- ◆ Versatile modular design provides easy addition of more stations and simplified inventory management
- ◆ Four fully-independent programs each with separate day cycles and eight start times
- ◆ Independent day schedule options for each program — select days of the week, true odd/even days, skip days up to 31 days
- ◆ Cycle and Soak capability by station
- ◆ Programmable pump circuit by station to accommodate dual-water sources
- ◆ Supplied with connection for SRR and ICR remote controls

### Electrical Specifications:

Transformer input: 120/240 VAC, 50/60 Hz  
Station output: 24 VAC, 0.56 amps  
Transformer output: 24 VAC, 1.5 amps  
ICC metal controller: ICC Plastic Pedestal Controller  
Metal cabinet: 16" H X 12 1/4" W X 4 3/4" D  
Metal pedestal: 30" H X 11 3/8" W X 4" D  
Plastic pedestal: 38 3/16" H X 20 1/2" W X 15 1/8" D





## I-CORE

**Designed specifically for demanding commercial and high-end residential applications.**

- ◆ Modular controller expandable from 6 stations to 30 stations (plastic cabinet) and 42 stations (metal cabinet) with 6-station ICM modules
- ◆ Unique module design allows servicing of module without removing field wires from the controller
- ◆ Large, easy to read, backlit graphics display
- ◆ Removable front panel for remote programming
- ◆ Seasonal Adjustment by Program (globally, monthly, or daily by Solar Sync)
- ◆ Seasonal adjustment: 0% to 300%
- ◆ 4 independent programs (A, B, C, & D)
- ◆ Multi-language capability, programmable in six different languages
- ◆ Diagnostic Dashboard™ continually monitors and displays system operation for flow, station and sensor status
- ◆ Automatic short circuit detection, skips shorted stations and continues watering, no fuses to replace



Product Code	Description
IC-600PL	6-station outdoor controller, expandable to 30 stations, plastic cabinet
IC-600M	6-station outdoor controller, expandable to 42 stations, powder coated metal cabinet.
ICM-600	6-station module for use with all I-Core controllers
IC-600PP	6-station outdoor controller, expandable to 42 stations, with plastic pedestal
ACC-PED	Metal pedestal for ACC and I-Core controllers

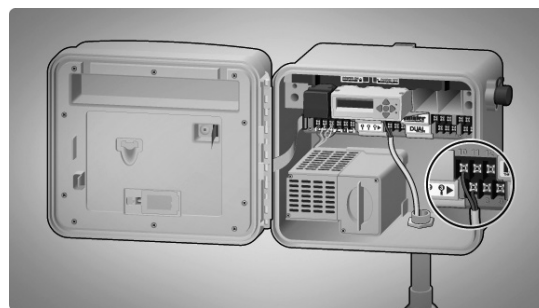
Metal Cabinet		
Desired Station Configuration	Order Base Unit	Plus Number of Modules Specify as:
6 Zone	one IC-600-M	no module needed IC-601-M
12 Zone	one IC-600-M	one ICM-600 IC-1201-M
18 Zone	one IC-600-M	two ICM-600 IC-1801-M
24 Zone	one IC-600-M	three ICM-600 IC-2401-M
30 Zone	one IC-600-M	four ICM-600 IC-3001-M
36 Zone	one IC-600-M	five ICM-600 IC-3601-M
42 Zone	one IC-600-M	six ICM-600 IC-4201-M

Plastic Cabinet		
Desired Station Configuration	Order Base Unit	Plus Number of Modules Specify as:
6 Zone	one IC-600-PL	no module needed IC-601-PL
12 Zone	one IC-600-PL	one ICM-600 IC-1201-PL
18 Zone	one IC-600-PL	two ICM-600 IC-1801-PL
24 Zone	one IC-600-PL	three ICM-600 IC-2401-PL
30 Zone	one IC-600-PL	four ICM-600 IC-3001-PL

## DUAL FOR I-CORE

### Use Dual to Convert the I-Core to a Two-Wire Controller

- ◆ Designed to bring the convenience and efficiency of two-wire technology to all, the DUAL system can operate up to 48 zones via a single pair of wires, at distances up to 7,500 feet
- ◆ Decoder station sizes available: 1, 2
- ◆ Field programmable decoders (no serial numbers to enter)
- ◆ Number of 2-wire paths:



Model	Description
DUAL48M	DUAL decoder output module. Plug-in module converts any I-CORE controller to 2-wire decoder system (up to 48 stations maximum)
DUAL-1	DUAL 1-station decoder (includes 2 DBRY-6 connectors)
DUAL-2	DUAL 2-station decoder (includes 2 DBRY-6 connectors)
DUAL-3	DUAL surge arrestor (includes 4 DBRY-6 connectors)

## ID WIRE MODEL GUIDE

14 AWG standard decoder cable		12 AWG long range, heavy duty decoder cable	
ID1GRY	Gray jacket	ID2GRY	Gray jacket
ID1PUR	Purple Jacket	ID2PUR	Purple Jacket
ID1YLW	Yellow Jacket	ID2YLW	Yellow Jacket
ID1ORG	Orange Jacket	ID2ORG	Orange Jacket
ID1BLU	Blue Jacket	ID2BLU	Blue Jacket
ID1TAN	Tan Jacket	ID2TAN	Tan Jacket

### Hunter®

#### ACC CONTROLLER

**Hunter's most powerful controller for command of large and sophisticated sites.**

- ◆ Real-time flow monitoring in stand-alone mode, learns flow by station and automatically responds to incorrect flow
- ◆ Stations expand with plug-in modules, providing easy addition of more stations and simplified inventory management
- ◆ Easy modular upgrade to 2-way communication with central control
- ◆ Six fully-independent programs (plus four custom programs)
- ◆ Maximum scheduling choices (select days of the week, true odd/even days, skip days up to 31 days)
- ◆ Cycle and Soak capability by station allows run times to be divided into repeat cycles to minimize runoff
- ◆ Remote control ready
- ◆ Watering Window Manager™ allows user to define hours when no watering is allowed; will override any user-set programs that enter that time frame
- ◆ Multiple sensor capability accommodates devices for weather and flow to provide automatic system shutoff in abnormal conditions HUNTER ICD-HP PROGRAMMER



Model	Description
ACC-1200	12-Station base unit controller, expands to 42 stations, metal cabinet
ACC-1200-SS	12-Station base unit controller, expands to 42 stations, stainless wall mount
ACC-1200-PP	12-Station base unit controller, expands to 42 stations, plastic pedestal
ACM-600	6-Station plug-in module for use with the ACC-1200 series controllers
AGM-600	6-Station plug-in module for use with the ACC-1200 series controllers (extreme service lightning protection version)

#### ICD-HP PROGRAMMER

**The indispensable field tool for the decoder professional.**

- ◆ Set and re-write decoder station numbers — Change any station number in the field, without disconnecting decoders
- ◆ Assign station numbers in any order (multi-station decoders) — No need to program sequentially — even skip station outputs for future expansion
- ◆ Turn stations on/off at the valve box — Activate valves, view current draw, check solenoid status
- ◆ Sensor tester — Check Hunter Klik and Flow Sensor inputs and outputs
- ◆ Multimeter functions — Check line voltage and other key readings in the field



#### ACC DECODER

- ◆ The 2-wire decoder version of Hunter's most powerful controller for command of large and sophisticated sites
- ◆ Real-time flow monitoring in standalone mode learns flow by station and automatically responds to incorrect flow
- ◆ Simple 2-wire decoder installation
- ◆ Up to 99 stations plus the ability to have remote sensors
- ◆ Up to six 2-wire paths of up to 15,000 ft./4.5 km each for economical wiring for the largest systems
- ◆ Diagnostic output LEDs and electrical current displays station activity and line status at a glance
- ◆ Field programmable decoders with built-in surge protection
- ◆ Easy modular upgrade to 2-way communication with central control
- ◆ Run pumps and master valves via conventional or decoder outputs



Product Code	Description
ACC-99D	2-Wire Decoder Controller with 99 station capacity, wall mount metal cabinet
ICD-100	Single-station decoder with surge suppression and ground wire
ICD-200	2-Station decoder with surge suppression and ground wire
ICD-400	4-Station decoder with surge suppression and ground wire
ICD-600	6-Station decoder with surge suppression and ground wire

#### Electrical Specifications:

Transformer input: 120/230 VAC, 50/60 Hz, 2A max at 120V, 1A max at 230V

Transformer output: 24 VAC, 4A, at 120 VAC

Decoder line (path) output: 34V peak-to-peak

Decoder power draw: 40 mA per active output

Solenoid capacity: Two standard 24 VAC Hunter solenoids per output within 100 ft./33 m runs, up to 14 solenoids max simultaneous (includes dual P/MV outputs)

Wiring, decoder to solenoid: Standard pair 18 awg/1 mm to 100 ft./33 m (twisted improves surge resistance)

# Hunter®

## ACC-99D DECODER

### Two-wire decoder system for ACC.

- ◆ Control up to 99 stations
- ◆ Two-wire technology saves copper wire, simplifies troubleshooting, permits rapid addition of new stations, minimizes trenching, and permits remote sensor monitoring over the two-wire path.



### Specifications:

- Max. distance to decoder
- (14 AWG) wire path: 10,000 ft
- (12 AWG) wire path: 15,000 ft
- Wiring, Decoder to solenoid: 150 ft. max
- 6 two-wire output paths to field decoders

Model	Description
ACC-99D	2-Wire decoder controller with 99 station capacity, metal cabinet
ACC-99D-SS	2-Wire decoder controller with 99 station capacity, stainless wall mount
ACC-99D-PP	2-Wire decoder controller with 99 station capacity, plastic pedestal

Decoder Model	Description
ICD-100	Single-station decoder with surge suppression and ground wire
ICD-200	2-station decoder with surge suppression and ground wire
ICD-400	4-station decoder with surge suppression and ground wire
ICD-600	6-station decoder with surge suppression and ground wire
ICD-SEN	2-input sensor decoder with surge suppression and ground wire

## ID WIRE MODEL GUIDE

14 AWG standard decoder cable		12 AWG long range, heavy duty decoder cable	
ID1GRY	Gray jacket	ID2GRY	Gray jacket
ID1PUR	Purple Jacket	ID2PUR	Purple Jacket
ID1YLW	Yellow Jacket	ID2YLW	Yellow Jacket
ID1ORG	Orange Jacket	ID2ORG	Orange Jacket
ID1BLU	Blue Jacket	ID2BLU	Blue Jacket
ID1TAN	Tan Jacket	ID2TAN	Tan Jacket

## HUNTER REMOTES

# Hunter®

## ROAM REMOTE

### Roam wire-free for simple remote operation.

- ◆ Remote operation of any station or program from up to 1,000' away
- ◆ 128 different programmable addresses so you can use multiple ROAM remotes in the same neighborhood
- ◆ Modify the run time without changing the regular program
- ◆ Operates on four AAA batteries (included) for up to one year of operation
- ◆ Automatic shutoff extends battery life
- ◆ Compatible with most Hunter controllers



## ROAM XL

### Long range remote for commercial projects.

- ◆ For large-scale sites such as shopping centers, industrial complexes, college campuses, and multi-unit housing complexes.
- ◆ Up to 2 mile range for remote manual operation of Hunter irrigation systems
- ◆ Designed to work with Hunter X-Core, Pro-C, PCC, I-Core and ACC controllers through a SmartPort® connection
- ◆ 128 different programmable addresses
- ◆ Display shows remaining battery life
- ◆ Maximum stations supported: 240



Product Code	Description
ROAMKIT	Transmitter and Receiver (SmartPort® Connector included)
ROAMTR	Replacement Transmitter
ROAMR	Replacement Receiver



### STPI SERIES

**Rain Bird's Simple-to-Program (STPi) Controllers are the easiest controllers in the irrigation industry to program and operate.**

- ◆ Independent zone control gives you the flexibility to easily accommodate the diverse watering needs of each zone
- ◆ The STPi controller allows you to use multiple start times per day on an individual zone basis, helping you maintain a healthier lawn and garden
- ◆ The Adjust Water feature enables you to easily increase or decrease the irrigation schedule as needed
- ◆ In the event of a prolonged rain, you can easily suspend the irrigation schedule up to 72 hours using the controller's Rain Delay feature

- ◆ The Water Now feature allows you to simply apply additional water to irrigate a zone without impacting that zone's previously set schedule
- ◆ To help manage water restrictions, the controller can be set up to only water on specific days of the week or "odd or even" days
- ◆ The current date and time, as well as the irrigation schedule are saved in the event of a power outage due to the controller's non-volatile memory

Product Code	Description
STP-400i	4 zone indoor
STP-600i	6 zone indoor
STP-900i	9 zone indoor



### ESP MODULAR SERIES

**4, 6, 8 stations (indoor/outdoor)**

**Designed for residential and light commercial landscapes where flexibility to adapt to growing landscaping needs is key.**

- ◆ Easily upgrades from a four-station base model to 13 stations with the addition of 3-station modules
- ◆ Hot-swappable modules can be installed while the controller is in operation and in any position
- ◆ 365-day calendar with leap year intelligence
- ◆ Four irrigation cycle modes for maximum flexibility and compliance to all major watering restrictions
- ◆ Non-volatile memory maintains the irrigation schedule indefinitely during a power outage
- ◆ Global season adjust (0% to 200%) allows the user to alter the run time of all the valves in every program with the push of a button
- ◆ Remote ready connector enables the controller to be used with Rain Bird's RM1 and RMX1 multi-function remote control systems

### Operating Specifications:

Number of programs: Three independent  
Automatic starts: Four per program, 12 total  
Station timing: 0 to 4 hours for all stations

### Electrical Specifications:

Input required: 120 VAC  $\pm$  20%, 60Hz / 230 VAC  $\pm$  20%, 50Hz / 240 VAC  
 $\pm$  20%, 50Hz  
Output: 25.5 VAC, 1 amp  
Multi-valve station capacity: Up to two 24 VAC, 7 VA solenoid valves per station plus a master valve

Product Code	Description
ESP4Mi	4-Station controller, indoor model
ESP4M	4-Station controller, outdoor model
ESP-SM3	3-Station Module



### ESP LX MODULAR CONTROLLER

**Smart Features. Smart Cartridges. Smart Choice.**

- ◆ Configurable up to 32 stations
- ◆ Cycle+Soak™
- ◆ Programmable valve delay
- ◆ Sensor override by station
- ◆ Master valve by station
- ◆ Calendar day off
- ◆ Total program and valve run times
- ◆ Automatic Seasonal Adjust, which lets you program water adjustments by month for the entire year, and it makes the changes automatically



Product Code	Description
ESPLXMI	ESP-LX Modular Controller, 8-Station Indoor, 120 VAC
ESPLXM	ESP-LX Modular Controller, 8-Station Outdoor, 120 VAC
ESPLXMSM4	Additional 4-Station Module
ESPLXMSM8	Additional 8-Station Module



### ESP-MC SERIES CONTROLLERS

**8, 12, 16, 24, 28, 32, 36, 40 stations**

**Advanced water-management tool in an easy-to-use package.**

- ◆ 12-hour watering duration for any or all stations to aid in drip compatibility
- ◆ Four independent programs, with eight start times each, allow mixed irrigation applications in a single controller
- ◆ All programs can overlap to maximize hydraulic efficiency and minimize watering time
- ◆ Upgradeable to Maxicom2® satellite
- ◆ Programmable rain delay enables system to stay off for up to 99 days with auto-restart
- ◆ Water budget by program provides adjustments from 0% to 300% in 1% increments (up to a maximum run time of 16 hours)
- ◆ Rain Bird's exclusive Cycle+Soak™ by station allows the total station run time to be split into usable cycles, minimizing puddling and runoff



### Operating Specifications:

Number of programs: Four independent programs with eight start times each

Automatic starts: 32 starts total, eight per program per day

Station timing: A, B, C, D — 0 to 2 hours in 1-minute increments; 2 to 12 hours in 10-minute increments

Rain delay: Programmable 1 to 99 days

### Electrical Specifications:

Input required: 117 VAC  $\pm$  10%, 60 Hz

Output: 26.5 VAC, 2.5 amps

Multi-valve station capacity: Up to two 24 VAC, 7 VA solenoid valves per station plus a master valve or pump start relay

Product Code	Description
ESP8MC	8 Stations
ESP12MC	12 Stations
ESP16MC	16 Stations
ESP24MC	24 Stations
ESP28MC	28 Stations
ESP32MC	32 Stations
ESP36MC	36 Stations
ESP40MC	40 Stations

### ESP-RZX SERIES CONTROLLERS

**4, 6 or 8 Zone Contractor-Grade controller for residential use**

- ◆ Zone based scheduling, allows for independent schedules assigned to each zone. (Run times, Start Times and Watering Days are customizable by zone)
- ◆ Contractor Rapid Programming™ automatically copies the Start Times and Watering Days from zone 1 to all remaining zones at initial set up
- ◆ 6 independent Start Times per zone
- ◆ 4 Watering Days options by zone: Custom days of week, ODD calendar days, EVEN calendar days, Cyclic (every 1 – 14 days)
- ◆ Manually water ALL or SINGLE zone on demand



### Operating Specifications:

Station timing: 0 to 199 min

Seasonal Adjust: -90% to +100%

Independent schedule per zone

6 Start Times per zone

Program Day Cycles include Custom days of the week, Odd, Even, & Cyclical dates

Model	Description
RZX4i	Indoor 4 Station ESP-RZX
RZX6i	Indoor 6 Station ESP-RZX
RZX8i	Indoor 8 Station ESP-RZX
RZX4	Outdoor 4 Station ESP-RZX
RZX6	Outdoor 6 Station ESP-RZX
RZX8	Outdoor 8 Station ESP-RZX



### ESP-ME SERIES CONTROLLERS

#### 4-22 Station Modular Indoor or Outdoor Controller

- ◆ Extra Simple Programming makes it easy for your crew to meet each landscape's unique needs.
- ◆ The scalability of the ESP-Me and the choice of installing either 3- or 6-station modules mean more flexibility and a competitive edge.
- ◆ ESP-Me offers One-Touch Watering, giving you an easy way to turn the system on.
- ◆ Industry's largest LCD screen
- ◆ Contractor Default™ allows you to easily restore original programming in just two steps. Rain Bird® ESP-Me Series Controllers



Model	Description
ESP4MEI	4 station indoor model
ESP4ME	4 station outdoor model
ESPSM3	3 station module
ESPSM6	6 station module

### ESP-LXME CONTROLLER

**The ESP-LXME Enhanced Controller offers flow sensing and management with modular station capacity from 8 to 48 stations.**

- ◆ Ideal for a wide variety of applications including light-commercial, commercial, and industrial irrigation systems.
- ◆ A large easy-to-read display plus quick-programming features such as Rain Bird's exclusive Program Review that shows more station settings at once so you can confirm your program faster.
- ◆ Configurable up to 48 stations
- ◆ Flexible programming options, including Cycle+Soak™, programmable valve delay, sensor override by station, master valve by station, calendar day off, and total program and valve run times
- ◆ Dynamic station numbering eliminates station numbering gaps
- ◆ Weather Sensor input with override switch
- ◆ 6 user-selectable languages



### ESP-LXMEF

**Features a standard Flow Smart Module™ for flow learning, logging and problem reaction. Flo-Watch™ protection monitors high and low flow conditions with user-defined reactions.**

#### Operating Features:

- Station timing: 0 min to 12 hrs
- Seasonal Adjust: 0% to 300% (16 hrs maximum station run time)
- 4 independent programs (ABCD)
- ABCD programs can overlap
- 8 start times per program
- Program Day Cycles include Custom days of the week, Odd, Odd31, Even, and Cyclical dates
- Manual station, program, test program

Model	Description
ESP8LXME	8-Station Controller, 120VAC
ESP12LXME	12-Station Controller, 120VAC
ESP8LXMEF	8-Station Controller with Flow Smart Module, 120VAC
ESP12LXMEF	12-Station Controller with Flow Smart Module, 120VAC
FSMLXME	Flow Smart Module for ESPLXME Controller
ESPLXMSM4	4-Station Module for ESP-LXME Controller
ESPLXMSM8	8-Station Module for ESP-LXME Controller
ESPLXMSM12	12-Station Module for ESP-LXME Controller
ESPLXMEFP	ESPLXME Controller Front Panel Only
LXMM	Metal Wall Mount Enclosure for ESP-LX Series Controllers
LXMPED	Metal Pedestal for ESP-LX Series Controllers



### ESP-LXD DECODER CONTROLLER

**The ESP-LXD controller has been designed to maintain the look, feel and ease of programming of the ESP-Series controllers, while offering a 2-wire path for decoder-based irrigation.**

- ◆ Can manage up to 50 stations and is easily expandable to up to 200 stations
- ◆ From Cycle+Soak™ to Contractor Default Program™, the ESP-LXD offers innovative features proven to cut installation expenses, troubleshooting time and water use.
- ◆ A modular design makes the ESP-LXD the perfect fit for a range of large residential and commercial projects—from the straightforward to the most complex.
- ◆ FloManager® ensures you don't overtax your water supply, while Flo-Watch™ quickly identifies and isolates high or low flow situations, such as mainline breaks.
- ◆ Rain Bird® Field Decoders provide easy, cost-effective installation and expansion for the ESP-LXD Decoder Controller.

### Operating Features:

- Station timing: 0 min to 12 hrs
- Seasonal Adjust: 0% to 300% (16 hrs maximum station run time)
- 4 independent programs (ABCD)
- ABCD programs can overlap
- 8 start times per program
- Program Day Cycles include Custom days of the week, Odd, Odd31, Even, and Cyclical dates
- Manual station, program, test program

Model	Description
ESP-LXD	Outdoor controller
ESPLXD-SM75	75-station module





### RAIN DIAL-R SERIES

#### 6, 9, and 12 stations Residential, Commercial Outdoor/Indoor

- ◆ Climate Logic® ready
- ◆ Remote control ready
- ◆ RainSensor™ ready
- ◆ Three independent programs
- ◆ Water budgeting
- ◆ 365-day calendar for odd/even date watering
- ◆ Water well recovery (delay between stations)
- ◆ Master valve/pump start circuit assignable per station
- ◆ Test all stations program



Model	Number of Stations	Outdoor/Indoor
RD600-EXT-R	6	outdoor
RD900-EXT-R	9	outdoor
RD1200-EXT-R	12	outdoor
RD600-INT-R	6	indoor
RD900-INT-R	9	indoor
RD1200-INT-R	12	indoor
RD6-MOD-R	6-station Module assembly	
RD9-MOD-R	9-station Module assembly	
RD12-MOD-R	12-station Module assembly	

### TOTAL CONTROL® - R

#### 6, 9, 12, 15, 18, 24, 36 & 48 Stations Residential, Light Commercial, Commercial Outdoor/Indoor

- ◆ Climate Logic® compatible
- ◆ New "R" models are remote-ready
- ◆ Four independent programs offer concurrent operation capability
- ◆ Seven-day calendar, odd/even day or day-interval options
- ◆ Programmable master valve On/Off per program
- ◆ Non-volatile memory
- ◆ Snap-out design



Model	Number of Stations	Outdoor/Indoor
TC-6EX-R	6	outdoor
TC-9EX-R	9	outdoor
TC-12EX-R	12	outdoor
TC-15EX-R	15	outdoor
TC-18EX-R	18	outdoor
TC-24EX-R	24	outdoor
TC-36EX-R	36	outdoor (metal cabinet)
TC-48EX-R	48	outdoor (metal cabinet)
TC-6IN-R	6	indoor
TC-9IN-R	9	indoor
TC-12IN-R	12	indoor
TC-6MOD-R	6	Module assembly, 6-Station
TC-12MOD-R	12	Module assembly, 12-Station
TC-15MOD-R	15	Module assembly, 15-Station
TC-18MOD-R	18	Module assembly, 18-Station

### MC-E (BLUE) SERIES

#### 4, 6, 8, 12, 18, 24, 30, 36, 42 and 48 Stations Residential and Commercial Outdoor/indoor

- ◆ Climate Logic® compatible
- ◆ Flow monitoring with diagnostics and 3 types of alarms
- ◆ Models with station counts from 4 up to 48
- ◆ Eight independent programs
- ◆ Commercial-grade, heavy-duty, lockable, weather resistant cabinets and pedestals
- ◆ Large, 32-character, backlit display with programming prompts
- ◆ Backward compatible face panel to existing MC Plus-B cabinets on site



Model	Number of Stations	Outdoor/Indoor
MC-4E	4	P-2B
MC-6E	6	P-2B
MC-8E	8	P-2B
MC-12E	12	P-2B
MC-18E	18	P-6B
MC-24E	24	P-6B
MC-30E	30	P-6B
MC-36E	36	P-6B
MC-42E	42	P-6B
MC-48E	48	P-6B

**RKD DECODER CONTROLLER****Stand-alone, decoder-based, 2-wire controller supporting from 1 to 100 Stations**

- ◆ Can operate up to 12 Stations simultaneously and run 10 programs concurrently
- ◆ Uses the RKLD-050 programmable line decoder, which can be addressed and tested at the controller
- ◆ Mist Manager — Valve operations controllable in 1-second increments
- ◆ FloStack™ — Program stacking based on flow for up to 10 simultaneous programs
- ◆ RealNet — Real-time, Internet-based water management via GPRS wireless
- ◆ Intellisist — Smart irrigation using a host of ET-based capabilities

**Operating Features:**

Programs: 10 + 1 test program  
 Concurrent Programs: 10  
 Start times: 12 per program  
 Calendar: 14 days or Odd/Even  
 Station Run Times: 0 to 999 minutes: 1-second increments (< 4 minutes);  
 1 minute increments (4 to 999 minutes)  
 Water Budget: 0% to 250% in 1% increments

**Electrical Specifications:**

Electrical: Input: 120 VAC, Output: 24 VAC  
 Maximum Stations: 100  
 Maximum Active Valves: 12  
 Master Valves: 1  
 Booster Pumps: 2 (1 per program)

**Add-Ons:**

RKLD-050 — Line Decoder

The decoder receives power and control signals via the 2-wire path.

**Product Code**

RKD

**RKS CONTROLLER****A conventional controller perfect for projects that require retrofitting existing systems.**

- ◆ Designed to convert conventional systems to Tucor's innovative Total-Cycle Management system
- ◆ Supports from 1 to 100 valves, operates up to 12 stations simultaneously
- ◆ Can run 10 programs concurrently
- ◆ Unique Add-a-Zone program allows you to add stations one at a time as your system grows
- ◆ Available in 25-station modules

**Product Code**

RKD





### TMC 212 SERIES CONTROLLER

**Modular controller can expand to 12 stations, making it a fit for a variety of residential applications.**

- ◆ 2 to 12 stations, expandable with two-station modules (base model comes with four stations)
- ◆ Three fully independent programs with four start times per program
- ◆ Hot-swappable station modules
- ◆ Automatic short detection for circuit protection and faster troubleshooting

#### Specifications:

Number of Stations: 2 to 12  
 Number of Programs: 3  
 Number of Start Times: 4 per program  
 Run Time: 4 hours  
 Programming Options: Days of the Week; Odd/Even; Interval  
 Valves: 2

Product Code	Description
TMC-212-ID	4-Station controller, indoor
TMC-212-OD	4-Station controller, outdoor
MOD02	2-Station expansion module

### 424E SERIES

**Combines sophisticated features with simple operation to provide a customizable controller.**

- ◆ Station count modularity from four to 24 stations using 4- and 8-station modules for flexibility
- ◆ Standard or High Surge modules provide options to meet regional lightning protection needs
- ◆ Monitor and react to system leaks or breaks
- ◆ Options for connection of up to four Master Valve or Pump Start Relays utilizing TSM-4F and TSM-8F modules
- ◆ Ability to set run times for less than a minute provides efficient watering for planter box, misting cycle, nursery, or syringe cycle needs
- ◆ Removable timing mechanism can be powered by 9V battery allowing for easy and comfortable programming
- ◆ Compatible with TMR-1 Maintenance Remote

#### Specifications:

Number of Stations: 4 to 24  
 Number of Programs: 4  
 Number of Start Times: 16  
 Run Time: 8 hours  
 Programming Options: Days of the Week; Odd/Even; Interval  
 Valves: 2



Product Code	Description
TMC-424-ID	4- to 24-Stations, Enhanced, Indoor
TMC-424-OD	4- to 24-Stations, Enhanced, Outdoor
TSM-4	4-Station, Standard-Surge
TSM-4H	4-Station, High-Surge
TSM-4F	4-Station, High-Surge and Flow-Sensing
TSM-8	8-Station, Standard-Surge
TSM-8H	8-Station, High-Surge
TSM-8F	8-Station, High-Surge and Flow-Sensing



## MAINTENANCE REMOTE

**This powerful tool enables a single operator to perform irrigation checks and operate the system up to 1.5 miles away.**

- ◆ 999 programmable receiver addresses enable true multi-controller/multi-site compatibility
- ◆ Quick Connect System allows receiver to easily be moved from one controller to another
- ◆ Controller compatibility: Toro TMC-212, TMC-424 and GreenKeeper® 212, Irritrol KwikDial® and RainDial® Plus



<b>TMR-1-KIT</b>	Complete kit: transmitter, receiver, circular connector/cable assembly, carrying case
<b>TMR-1-TX</b>	Hand-held transmitter
<b>TMR-1-RX</b>	Receiver, circular connector assembly
<b>TMR-1-CC</b>	Circular Connector

Product Code	Description
TMR1KIT-KIT	Complete Kit: Transmitter, Receiver, Circular Connector/Cable Assembly, Wall Charger, Batteries, Carrying Case

## EZ REMOTE

**Offer convenient remote capability through the optional EZ-Remote hand-held available for easy installation and servicing.**

- ◆ Simple command set
- ◆ Accesses controller and satellite features from the field
- ◆ System On and Off command activation
- ◆ Range: 160'



Product Code	Description
EZR100TORO	Toro EZ Remote

## RAINMASTER CONTROLLERS



### RME SENTAR II

**6, 12, 18, 24, 30, 36 stations**

**Rain Master's "work horse" feature packed controller, targeted for heavy duty commercial, municipal, government, HOA, school and park district applications.**

- ◆ Flow Sensing allows for total flow control and break detection (requires flow sensor)
- ◆ Four (4) completely independent programs with five (5) start times, for a total of 20 possible start times per day.
- ◆ Programmable rain shut down allows the selection of the number of days the controller will stay off (in rain shut down mode) before it goes back into the automatic mode.
- ◆ A "real time" clock holds the actual time during power outages without batteries. This eliminates the need to reset the clock every time the power goes out.
- ◆ Multiple displays provide a truly simple way of programming and information recall



### Electrical Specifications:

Input required: 105 VAC to 130 VAC, 50/60 Hz, .5 amps maximum, .1 amps idle  
Output: 24 VAC, 1.5 amps maximum total output (36 VA) 1 amp per station or Master Valve

Product Code	Description
RME6SE	Rainmaster RME Sentar II, 6 stations
RME12SE	Rainmaster RME Sentar II, 12 stations
RME18SE	Rainmaster RME Sentar II, 18 stations
RME24SE	Rainmaster RME Sentar II, 24 stations
RME30SE	Rainmaster RME Sentar II, 30 stations
RME46SE	Rainmaster RME Sentar II, 36 stations

# Hunter®

## **SOLAR SYNC™**

The Solar Sync ET sensor is an advanced weather sensor that calculates evapotranspiration (ET) and adjusts Hunter controllers daily based on local weather conditions

Model	Description
<b>SOLAR-SYNC</b>	Solar Sync kit for use with PCC and Pro-C controllers. Includes Solar Sync Sensor and module
<b>SOLAR-SYNC-SEN</b>	Solar Sync for use with ACC and X-Core controllers. Includes Solar Sync Sensor only (module not needed for X-Core, I-Core and ACC controllers)
<b>WSS</b>	Wireless Solar Sync for use with PCC and Pro-C controllers. Includes Wireless Solar Sync Sensor, Wireless Receiver, and module
<b>WSS-SEN</b>	Wireless Solar Sync for use with ACC and X-Core controllers. Includes Wireless Solar Sync Sensor and wireless receiver. (Module not required for X-Core, I-Core and ACC controllers)

## **ET SYSTEM**

Advanced ET Weather Control For for Pro-C family controllers. Using highly advanced technology, the Hunter ET System measures key climatic conditions to calculate local evapotranspiration (ET) factors.

Model	Description
<b>ET-SYSTEM</b>	ET Sensor and module for use with PCC and Pro-C controllers
<b>ET-WIND</b>	Optional anemometer add-on to ET Sensor to gather wind speed data
<b>ET-SENSOR</b>	Sensor only for use with IMMS-ET installations

## **MINI-WEATHER STATION**

Compact sensor that monitors wind, rain, freezing temperatures, and shuts the irrigation system off as weather conditions require.

Model	Description
<b>MWS</b>	Weather station combines wind and rain sensors
<b>MWS-FR</b>	Weather station combines wind and rain sensors with a freeze sensor

## **FLOW-SYNC®**

A simple and economical solution for metering and reacting to actual flow conditions. A proven water saver, the Hunter Flow Sync (HFS) connects to the ACC and I-Core controllers to measure actual flow, and provides automatic reaction to high or low flow conditions during irrigation.

Model	Description
<b>HFS</b>	Flow-Sync sensor, use with ACC and I-Core controllers, sensor requires FCT for pipe installation



### SOIL-CLIK™

The Soil-Clik probe uses proven technology to measure moisture within the root zone. When the probe senses that the soil has reached its desired moisture level, it will shut down irrigation, preventing water waste.

Model	Description
SOIL-CLIK	Soil-Clik moisture sensor module and probe

### RAIN-CLIK™

With built-in Quick Response technology, the Hunter Rain-Clik and Wireless Rain-Clik can command a controller to shut off right when it starts to rain, rather than waiting for an accumulated amount of rainfall.

Model	Description
RAIN-CLIK	Rain-Clik sensor
RFC	Rain/Freeze-Clik sensor
WR-CLIK	Rain/Freeze-Clik sensor
WRF-CLIK	Wireless rain/Freeze-Clik system

### MINI-CLIK®

Hunter's Mini Clik rain sensor provides the simplest, most effective way to prevent sprinklers from running during or after any level of rainfall. The Mini-Clik stops scheduled irrigation when it detects a pre-set level of rain has fallen. Mini-Clik is compatible with all Hunter controllers.

Model	Description
MINI-CLIK	Rain Sensor
MINI-CLIK-NO	Rain Sensor with normally open switch
MINI-CLIK-C	Rain Sensor with conduit mount
MINI-CLIK-HV	Rain Sensor for high voltage application (120/240 VAC)

### WIND-CLIK™

The Hunter Wind-Clik saves water and enhances system efficiency by shutting off irrigation during high wind conditions. Works with fountain systems to eliminate overspray in windy conditions.

Model	Description
WIND-CLIK	Wind sensor interrupts/returns irrigation when programmed wind speed is measured

### FLOW-CLIK®

The Hunter Wind-Clik saves water and enhances system efficiency by shutting off irrigation during high wind conditions. Works with fountain systems to eliminate overspray in windy conditions.

Model	Description
FLOW-CLIK	Standard kit for all 24 VAC controllers. Includes sensor and interface module, sensor requires FCT for pipe installation

### FREEZE-CLIK®

The Hunter Wind-Clik saves water and enhances system efficiency by shutting off irrigation during high wind conditions. Works with fountain systems to eliminate overspray in windy conditions.

Model	Description
FREEZE-CLIK	Freeze sensor interrupts irrigation when temperatures drop below 37° F
FREEZE-CLIK REV	Freeze sensor allows irrigation when temperatures drop below 37° F



## The Most **Environmentally Responsible** Control System

**Above and Below**—Get the whole picture with the latest advances in water-saving technology. Now, the Pro-C includes a Solar Sync dial position, making it easy to upgrade and program smart control without additional wiring. Use Solar Sync with our new Soil-Clik moisture sensor to measure both climate and soil conditions. Solar Sync uses ET to adjust application amounts when irrigation is needed. Soil-Clik prevents watering when soil moisture levels have been reached. Together they're the ultimate environmentally responsive solution.



The Pro-C and all AC powered Hunter controllers are now EPA WaterSense labeled when paired with the Solar Sync weather sensor.

RESIDENTIAL & COMMERCIAL IRRIGATION | *Built on Innovation®*  
Learn more. Visit [hunterindustries.com](http://hunterindustries.com)

# Hunter®



### IRRITROL RAIN SENSOR SERIES

#### Rain and Freeze Sensors.

#### Residential, Light Commercial, Commercial.

- ◆ Constant communication between transmitter & receiver
- ◆ Versatile mounting options
- ◆ Signal strength indicator
- ◆ SMART BYPASS™ for easy system override
- ◆ Patented wireless technology Irritrol Rain Sensor Series

Product Code	Description	Wireless
RS1000	Wireless Rain Sensor	Yes
RFS1000	Wireless Rain/Freeze Sensor	Yes
RS500	Rain Sensor	No

### IRRITROL CLIMATE LOGIC®

#### For simple, water saving, weather-following, automatic irrigation control.

- ◆ Built-in radios
- ◆ Temperature sensor for monitoring air temp
- ◆ Rain sensor
- ◆ Solar sensor
- ◆ Receiver module
- ◆ Optional remote control

Model	Description
CL-100-Wireless	Wireless weather sensor and module
CL-W1	Wireless weather sensor
CL-M1	Wireless receiver module
CL-R1	Remote control (transmitter only)
CL-MR	Mini-receiver (receiver only)
R-100-KIT	Mini remote kit (transmitter & receiver)



### RAIN BIRD® RSD SERIES RAIN SENSOR

#### Dial into the Convenience and Value.

- ◆ Automatic rain shutoff prevents overwatering due to natural precipitation
- ◆ Robust, reliable design reduces service call backs
- ◆ Moisture sensing disks work in a variety of climates
- ◆ Different sensor mounts permit speed and flexibility on the job site



Rain Bird® RSD Series Rain Sensor

#### RSD-CEX

#### Rain sensor with threaded adapter, extension wire

Product Code	Description
RSD-BEX	Rain sensor w/latching bracket, extension wire



### RAIN BIRD® SMRT-Y SOIL MOISTURE SENSOR KIT

#### Turns any controller into a smart controller.

- ◆ The sensor takes soil moisture readings every 10 minutes
- ◆ When the sensor detects dry conditions prior to the normal watering cycle, that cycle is allowed
- ◆ When the soil moisture is above the set threshold, the watering cycle is suspended to avoid wasting water
- ◆ Advanced Time Domain Transmissometry (TDT) digital sensor enables highly accurate readings that are independent of soil temperature and electrical conductivity (EC)



Product Code	Description
SMRT-Y	Complete Kit Includes: <ul style="list-style-type: none"> <li>• Controller User Interface</li> <li>• In-Ground Soil Moisture Sensor</li> <li>• Anodized, rust-proof screws, 1.5" (two per package)</li> <li>• Wire nuts — 5 blue, 2 gray, 1 yellow</li> <li>• Multilingual instruction manual, "Quick Start" Guide and sticker that reads: "This controller is connected to a Rain Bird Soil Moisture Sensor"</li> </ul>

### RAIN BIRD WR2 RAIN FREEZE SENSOR

#### Saving water and so much more.

- ◆ LCD Screen
- ◆ Signal strength indicators on sensor and LCD screen
- ◆ Versatile mounting bracket
- ◆ Pair one sensor with up to four controller interfaces
- ◆ Six rainfall set points on controller interface
- ◆ Quick Shut-Off
- ◆ Three adjustable low temperature points
- ◆ Dual built-in antennas



Product Code	Description
WR2-RC	Rain Combo
WR2-RFC	Rain/Freeze Combo
WR2-RS	Rain Sensor Only
WR2-RFS	Rain/Freeze Sensor Only
WR2-RFI	Rain/Freeze Controller Interface Only



### TORO PRECISION™ SOIL SYSTEM

- ◆ Works with most irrigation controllers to prevent overwatering
- ◆ Wireless communication up to 500' (152m) line-of-sight
- ◆ The sensor will automatically detect the soil type and adjust all calculations accordingly.



### TORO RAIN SENSORS

- ◆ Wired or wireless options
- ◆ Smart Bypass™ allows for system override at any time and resets automatically.

Model	Description
TRS	Wired model
TWRS	Wireless model
TWRFS	Wireless rain/freeze



### HUNTER NODE CONTROLLER

**Reliable battery-powered control without the need of electric connection.**

- ◆ Battery powered (9 volt battery)
- ◆ Compatible with solar panel kit
- ◆ Number of stations: 1, 2, 4, 6
- ◆ Enclosure: Outdoor
- ◆ Independent programs: 3
- ◆ Start times per program: 4
- ◆ Max. station run time: 6 hrs
- ◆ Master Valve operation (available in 2, 4, 6 station models)
- ◆ Programmable Off



Model	Description
NODE-100	Single station controller (DC latching solenoid included)
NODE-200	2-Station controller (DC latching solenoid ordered separately)
NODE-400	4-Station controller (DC latching solenoid ordered separately)
NODE-600	Single station controller (DC latching solenoid included)
NODE-100-VALVE	Single station controller with PGV-101G valve and DC latching solenoid (NPT threads)
NODE-100-VALVE-B	Single station controller with PGV-101G-B valve and DC latching solenoid (BSP threads)

### OPTIONS:

458200	DC latching solenoid
SPNODE	Solar Panel kit for Node

### XC HYBRID WITH SOLAR PANEL OPTION

**Battery-Powered Controller Delivers the Power Without The Plug**

- ◆ Easy dial programming
- ◆ Simple on-screen adjustment modulates watering to accommodate changing weather conditions.
- ◆ Three independent programs with four start times each
- ◆ Plastic version uses 6 AA batteries, stainless steel uses 6 C batteries



Model	Description
XCH-600	Plastic Indoor/Outdoor Model, 6 Stations
XCH-1200	Plastic Indoor/Outdoor Model, 12 Stations
XCH-600-SS	Stainless Steel Indoor/Outdoor Model, 6 Stations
XCH-1200-SS	Stainless Steel Indoor/Outdoor Model, 6 Stations
NODE-100-VALVE	Stainless Steel Indoor/Outdoor Model, 12 Stations
SPXCH	Optional Solar Panel



### RAIN BIRD TBOS-II™ SERIES BATTERY-OPERATED IRRIGATION CONTROLLERS

#### Commercial Level Control for Battery-Operated Systems

- ◆ Ideal for commercial applications, including municipal parks, street and highway landscape projects, and construction projects
- ◆ Convenient durable option for providing uninterrupted irrigation while AC-power is not available
- ◆ One TBOS II field transmitter programs and unlimited number of TBOS-II and/or TBOS control modules
- ◆ New user interface with drop down menu and direct access to main screen for easy navigation



Model	Description
TBOSCM1	1 station control module
TBOSCM2	2 station control module
TBOSCM3	3 station control module
TBOSCM4	4 station control module
TBOSCM6	6 station control module
TBOS2FTUS	Field Transmitter



### DIG LEIT 4000 CONTROLLER

**A self-contained, water management irrigation controller that harnesses ambient light (solar) as a power source, helpful in today's sustainable green solutions.**

- ◆ Operates four, six, or eight stations and a master valve or pump start without AC power hookup, batteries or conventional solar panels (master valve or pump start replaces station eight when required)
- ◆ Programming is easy using a self-guiding menu and four durable sealed buttons
- ◆ Multi-lingual software (Spanish, Italian, and French)
- ◆ Simple to install, easy-access wire connector accommodates standard irrigation wire up to 12 gauge
- ◆ Watering durations from 1 minute to 5 hours and 59 minutes

Model	Description
LEIT 4004	Four station plus MV/P
LEIT 4006	Six station plus MV/P
LEIT 4008	Eight station including MV/P



### DIG LEIT-X & LEIT-XRC

**The LEIT X Controller and the LEIT XRC Wireless Controller are advanced, ambient light (solar) powered, multi-functional, self-contained water management irrigation controllers that, together with the LEIT Link Remote Control Handset, provide a cost-effective solution for all irrigation applications.**

- ◆ Environmentally friendly, using light (solar) as a source of energy
- ◆ Operates up to 28 stations plus a master valve or pump start
- ◆ LEIT XRC has a remote programming and management capability using the LEIT Link remote control handset
- ◆ Status Report provides information on active programs or valves, month deactivation, rain stop, remote or local mode and station progress
- ◆ History Report allows the user to review the controller operating history for a total watering time of each valve with overall run time total, and manual run time totals.

Model	Description
LEIT X10	10 station plus MV/P
LEIT X12	12 station plus MV/P
LEIT X16	16 station plus MV/P
LEIT X20	20 station plus MV/P
LEIT X24	24 station plus MV/P
LEIT X28	28 station plus MV/P

### LEIT XRC SYSTEM CONTROLLER

Model	Description
LEIT XRC04	Wireless weather sensor
LEIT XRC24	Wireless receiver module
LEIT XRC06	Remote control (transmitter only)
LEIT XRC28	Mini-receiver (receiver only)
LEIT XRC08	Mini remote kit (transmitter & receiver)
LEIT XRC10	Wireless receiver module
LEIT XRC12	Remote control (transmitter only)
LEIT XRC16	Mini-receiver (receiver only)
LEIT XRC20	Mini remote kit (transmitter & receiver)

### LINK REMOTE CONTROL HANDSET

Model	Description
LEIT MULTI-PRO™	Up to 99 controllers
LEIT MASTER™	99 controllers with 99 groups

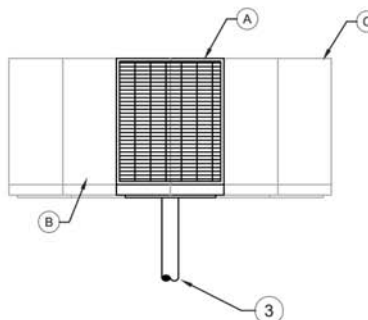
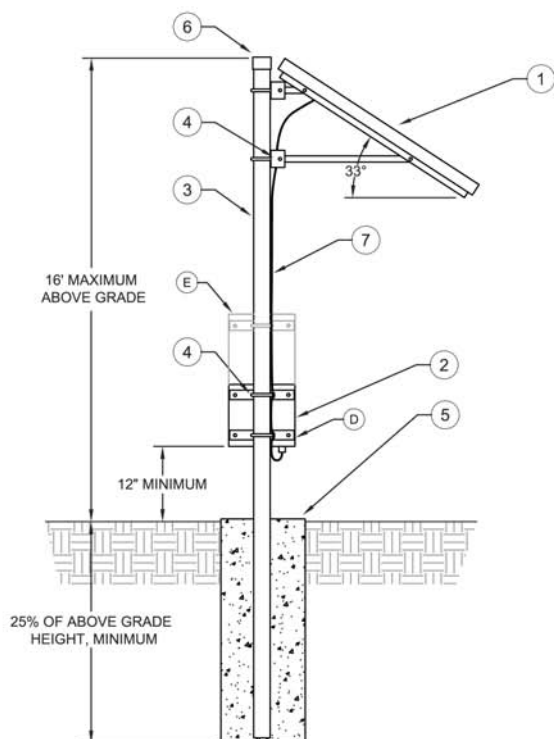


All solar power installations require onsite evaluation of placement prior to installation. Please contact Horizon for additional specification support.

## HORIZON SOLAR SOLUTION


**For either new or existing commercial sites, the Horizon Solar Rain Safe is a solar solution which offers a limitless supply of clean, safe and renewable energy. Unlike conventional power, there are no reoccurring power costs and in conjunction with other Horizon Smart Water landscape products, your landscape is that more green.**

### Horizon Rain Safe Solar Power Supplies:



## SOLAR POWER SUPPLY LEGEND

- 1 SOLAR ARRAY (135 WATT, CUSTOMIZED FOR SITE REQUIREMENTS)
  - A LEVEL 1 AND 2: ONE PANEL
  - B LEVEL 3: TWO PANELS
  - C LEVEL 4: THREE PANELS
- 2 CONTROL MODULE, CONTAINING BATTERIES, CHARGING EQUIPMENT AND CIRCUIT BREAKERS
  - D LEVEL 1, 2 AND 3: 15"H x 15"W x 16"D
  - E LEVEL 4: 32"H x 15"W x 16"D
- 3 3" OR 4" GALVANIZED POLE, SIZED AS REQUIRED BY SITE CONFIGURATION, SUPPLIED BY CONTRACTOR
- 4 UNI-MOUNT ASSEMBLY (ARRAY: SIDE OF POLE OR TOP OF POLE MOUNT, INTERCHANGABLE BASED ON AVAILABILITY)
- 5 3, 0000 PSI MINIMUM CONCRETE FOOTING, 12" x 12" x DEPTH DEPENDANT ON POLE LENGTH, SUPPLIED BY CONTRACTOR
- 6 CAP ASSEMBLY, SUPPLIED BY CONTRACTOR
- 7 ¾" FLEX CONDUIT, SUPPLIED BY CONTRACTOR

 <h1>Horizon</h1>	No.	Revisions:	Date:

## HORIZON SOLAR POWER SUPPLY

LEVEL 1  
LEVEL 2  
LEVEL 3  
LEVEL 4

Designed By:
Drawn By: E&B
Checked By: JH
Date: 7-7-09

Sheet No.

1 of XX

**DV SERIES/DVF SERIES****3/4", 1"**

**Economical irrigation valve for residential and light commercial applications.**

- ◆ Double-filtered pilot-flow design for maximum reliability
- ◆ Balanced-pressure diaphragm for long life
- ◆ External bleed to manually flush system of dirt and debris during installation and system start-up
- ◆ Internal bleed for spray-free manual operation
- ◆ Energy-efficient, low-power encapsulated solenoid with captured plunger and 90 mesh solenoid filter
- ◆ Operates in low-flow and Xerigation® applications when the RBY filter is installed upstream
- ◆ Flow control option offers unique, easy-to-turn, patented pressure assisted flow control mechanism (1" only)

**Specifications:**

Pressure: 15 psi to 150 psi  
 Flow: 0.2 GPM to 22 GPM (3/4") and 0.2 GPM to 40 GPM (1")  
 Power: 24 VAC 50/60 solenoid  
 Inrush current: 0.30 amps at 60 Hz  
 Holding current: 0.19 amps at 60 Hz



HOW TO SPECIFY: 100 - DV - MB		
Size:	Model:	Options:
075: 3/4" 100: 1"	DV	A — Angle F — Flow control SS — slip X slip

Product Code	Description
075-DV	3/4" DV Valve
100-DV	1" DV Valve
100-DV-SS	1" DV Valve, slip X slip
100-DV-A	1" DV Valve, angle
100-DV-MB	1" DV Valve, male X barb
100-DVF	1" DVF Valve
100-DVF-SS	1" DVF Valve slip X slip
100-DVF-A	1" DVF Valve, angle
100-DVF-MB	1" DVF Valve, male X barb

**PGA SERIES****1", 1 1/2", 2"**

**Plastic globe/angle valve offers versatility at an affordable price.**

- ◆ Rugged PVC construction for reliable operation
- ◆ One-piece solenoid with captured plunger and spring for easy servicing prevents parts loss in the field
- ◆ Non-rising flow control handle adjusts water flow as needed
- ◆ Manual internal bleed
- ◆ Double filtered pilot flow prevents clogging solenoid ports

**Specifications:**

Pressure: 15 psi to 150 psi  
 Flow: 0.2 GPM to 150 GPM  
 Power: 24 VAC 50/60 solenoid  
 Inrush current: 0.41 amps at 60 Hz  
 Holding current: 0.28 amps at 60 Hz

Product Code	Description
100PGA	1" PGA Valve
150PGA	1 1/2" PGA Valve
200PGA	2" PGA Valve

# Hunter®

## PGV SERIES

1", 1 1/2", 2"

**Complete line-up of rugged, professional-grade valves designed to handle the full range of landscape needs.**

- ◆ High grade construction with 150 psi rating
- ◆ Flow control with non-rising handle allows for adjustment of flow at each zone
- ◆ Internal manual bleed is easy to use and keeps valve box dry
- ◆ Globe and angle configurations
- ◆ Captive bonnet bolts and solenoid plunger
- ◆ 1" model also available with Jar-Top bonnet for easy access to the valve with no tools

### Specifications:

Flow: 0.2 GPM to 120 GPM

Pressure: 20 psi to 150 psi

Power: 24 VAC

Inrush current: 0.37 amps

Holding current: 0.19 amps



HOW TO SPECIFY: PGV - 100G - S	
Model:	Options:
100G = 1" globe, no flow control	S = slip X slip
101G = 1" globe, with flow control	
100A = 1" angle, no flow control	B = BSP Thread
101A = 1" angle, with flow control	
100JT = 1" globe jar-top, no flow control	DC = latching solenoid
101JT = 1" globe jar-top, with flow control	
100MB = 1" globe, no flow control, male X barb	
100MM = 1" globe, no flow control, male X male	
101MM = 1" globe, with flow control, male X male	
151 = 1 1/2" globe/angle, with flow control	
201 = 2" globe/angle, with flow control	



## TPV/TPVF VALVE

1"

- ◆ Flow ranges from 0.1 GPM to 40 GPM
- ◆ Rugged, Double-Beaded Santoprene® diaphragm
- ◆ Patented DBS Technology™ (Debris Bypass System)
- ◆ Encapsulated injection-molded solenoid with a captured plunger
- ◆ Optional flow control allows precise zone adjustment and manual shutoff

### Specifications:

Flow Range: 0.1 GPM to 40 GPM

Operating Pressure: Electric — 10 psi to 175 psi

Burst pressure safety rating: 1000 psi



HOW TO SPECIFY: TPVX100XXXX			
Description:	Flow Control:	Size:	Body Style:
TPV — TPV Valve	F — With Flow Control	100 — 1"	MM — Male X Male S — Slip MB — Male X Barb Solenoid DC — DCLS-P Latching Solenoid



### 2400/2600 SERIES ELECTRIC VALVE

1"

**Designed primarily for residential use, deliver reliable performance and convenient operation.**

- ◆ Rugged, double-beaded Santoprene® diaphragm provides leak-proof seal
- ◆ Globe or angle construction
- ◆ Manual internal and external bleed (flush mode)
- ◆ Encapsulated solenoid and captive hex plunger
- ◆ Easily serviced without removal from the system
- ◆ Floating bleed tube allows thermal expansion without affecting performance

#### Specifications:

Flow: 0.25 GPM to 30 GPM

Pressure: 10 psi to 150 psi

Power: 24 VAC

Inrush current: 0.4 amps

Holding current: 0.2 amps

#### HOW TO SPECIFY: 2400 - S - F

Model:	Configuration:	Flow Control:
2400 = 1" globe 2400 = 1" angle	S = slip X slip T = NPT threads B = male X barb M = male X male	F = with flow control



### 2500 SERIES

1"

**Built on the 205 series, debris-tolerant valves designed primarily for residential and light commercial use.**

- ◆ Manual internal and external bleed
- ◆ Full stainless steel metering system
- ◆ Debris-tolerant, floating metering system design suitable for wells and dirty water applications
- ◆ High-flow, low friction-loss design
- ◆ High strength ribbed bonnet
- ◆ Removable, tamper-resistant flow control handle

#### Specifications:

Flow: 0.25 GPM to 30 GPM

Pressure: 10 psi to 150 psi

Power: 24 VAC

Inrush current: 0.4 amps

Holding current: 0.2 amps

Product Code	Description
2500S	1" valve slip X slip, no flow control
2500SF	1" valve slip X slip, with flow control
2500T	1" valve NPT thread, no flow control
2500FT	1" valve NPT thread, with flow control





### 205 SERIES

1"

**Offers debris-tolerant operation and a high-flow, low-friction-loss design for optimum performance in recycled-water applications.**

- ◆ Optional flow control allows precise flow adjustment and manual shutoff
- ◆ Heavy-duty corrosion- and UV-resistant PVC construction
- ◆ Encapsulated solenoid and captive hex plunger
- ◆ Buna-N valve seat seal
- ◆ Manual external bleed

#### Specifications:

Flow: 2 GPM to 30 GPM  
Pressure: 10 psi to 150 psi  
Power: 24 VAC  
Inrush current: 0.4 amps  
Holding current: 0.2 amps



Product Code	Description
205S	1" valve slip X slip, no flow control
205SF	1" valve slip X slip, with flow control
205T	1" valve NPT thread, no flow control
205TF	1" valve NPT thread, with flow control



### 1200 SERIES (SILVER BULLET)

1"

- ◆ Fail safe "reverse flow" design insures that the valve will remain closed in the event of a diaphragm wall failure and extends diaphragm life
- ◆ Excellent for micro-irrigation, valve will operate as low as 1 GPH
- ◆ Dual diaphragm ports
- ◆ Internal manual bleed lever opens and closes the valve with a flip of the finger
- ◆ Heavy-duty glass filled body
- ◆ Shock cone incorporated in the diaphragm slows the water during closing to minimize water hammer

#### Specifications:

Pressure: up to 150 psi  
Power: 24 VAC  
Inrush: 9.77 VA  
Holding: 6.2 VA



Product Code	Description
12024E10-H	1" FIP
12024EF-10-H	1" FIP with flow control
12024EF-15-H	1 1/2" FIP with flow control
12024EF-20-H	2" FIP with flow control

## ANTI-SIPHON VALVES



### ASVF SERIES

3/4", 1"

**Economical irrigation valve and atmospheric backflow presenter for residential and light commercial applications.**

- ◆ Combination reliable DVF valve and atmospheric backflow preventer in one unit
- ◆ Incorporates all features of DV and DVF Series valves
- ◆ I.A.P.M.O. and A.S.S.E. listing approved

#### Specifications:

Pressure: 15 psi to 150 psi  
Flow: 0.2 GPM to 22 GPM (3/4") and 0.2 GPM to 40 GPM (1")  
Power: 24 VAC 50/60 solenoid  
Inrush current: 0.30 amps at 60 Hz  
Holding current: 0.19 amps at 60 Hz



Product Code	Description
075ASVF	3/4" anti-siphon valve
100ASVF	1" anti-siphon valve



### PGV-ASV ANTI-SIPHON VALVE

3/4" & 1"

- ◆ Atmospheric backflow prevention in an economical valve designed for residential and light commercial use
- ◆ Heavy-duty Hunter solenoid: Provides dependable operation and long life
- ◆ High grade construction: Made of durable PVC and stainless steel to resist wear
- ◆ Internal manual bleed: Easy to use and keeps valve area dry
- ◆ Standard flow control: Adjust the flow of each zone on a system
- ◆ Optional slip configuration: Permits direct solvent connection to PVC pipe
- ◆ Rigid diaphragm support: Works to prevent stress failure in tough conditions
- ◆ Captive solenoid plunger and anti-siphon poppet: No lost parts during routine service

#### Specifications:

Flow: 1 GPM to 30 GPM (0.23 to 6.8 m3/hr; 3.8 to 114 l/min)  
Pressure: 20 psi to 150 psi



Product Code	Description
205S	1" valve slip X slip, no flow control
205SF	1" valve slip X slip, with flow control
205T	1" valve NPT thread, no flow control
205TF	1" valve NPT thread, with flow control



**2700 SERIES****3/4", 1"**

**Offer the ultimate in performance, reliability and ease-of-use for a wide variety of residential applications.**

- ◆ Rugged, double-beaded Santoprene® diaphragm provides leak-proof seal
- ◆ Buna-N valve seat seal
- ◆ Manual internal and external bleed
- ◆ Easily serviced without removal from system
- ◆ Electric H-body with atmospheric vacuum breaker

**Specifications:**

Flow: .25 GPM to 30 GPM  
 Pressure: 10 psi to 150 psi  
 Power: 24 VAC  
 Inrush current: .4 amps  
 Holding current: .2 amps

Product Code	Description
2711APR	3/4" anti-siphon valve, stainless screws
2713APR	1" anti-siphon valve, stainless screws
2711DPR	3/4" anti-siphon valve, threaded
2713DPR	1" anti-siphon valve, threaded

**PLASTIC COMMERCIAL****PEB/PESB SERIES****1", 1 1/2", 2"**

**Industrial-strength glass-filled nylon globe valves for commercial applications.**

- ◆ Durable glass-filled nylon construction for long life and reliable performance
- ◆ Stainless steel studs molded into the body resist thread damage
- ◆ Slow closing to prevent water hammer and subsequent system damage
- ◆ One-piece solenoid with captured plunger and spring for easy servicing
- ◆ Flow control handle adjusts water flow as needed
- ◆ Internal and external bleed
- ◆ Plastic scrubber on PESB valve scrapes the stainless steel screen to clean and break down grit and plant material

**Specifications:**

Pressure: 20 psi to 200 psi  
 Flow: 0.25 GPM to 200 GPM  
 Power: 24 VAC, 50/60 Hz solenoid  
 Inrush current: 0.41 amps at 60 Hz  
 Holding current: 0.28 amps at 60 Hz

Product Code	Description
100PEB	1" plastic valve
100PESB	1" plastic valve with scrubber
150PEB	1 1/2" plastic valve
150PESB	1 1/2" plastic valve with scrubber
200PEB	2" plastic valve
200PESB	2" plastic valve with scrubber

**ICV SERIES****1", 1 1/2", 2"**

**Superior durability and ability to handle exceptionally high pressures.**

- ◆ Glass-filled nylon construction for 220 psi rated maximum strength and sturdiness
- ◆ Captive bonnet bolts and solenoid, plunger provide ease of service, eliminates lost parts
- ◆ Fabric reinforced diaphragm

**Specifications:**

Flow: .10 GPM to 300 GPM  
 Pressure: 20 psi to 220 psi  
 Power: 24 VAC  
 Inrush current: .37 amps  
 Holding current: .19 amps



Product Code	Description
ICV-101G	1" plastic globe valve
ICV-151G	1 1/2" plastic globe valve
ICV-201G	2" plastic globe valve



### Hunter®

#### ICV FILTER SENTRY™ SERIES

**Patented Filter Sentry system automatically cleans the filter.**

- ◆ Filter Sentry™ is a scouring mechanism which continuously works whenever the ICV is operating
- ◆ Clears away small debris commonly found in reclaimed water, wells, or in lakes and ponds



Product Code	Description
ICVGFS	1" plastic globe valve with Filter Sentry
ICV151GFS	1 1/2" plastic globe valve with Filter Sentry
ICV201GFS	2" plastic globe valve with Filter Sentry
ICV-301EFS	3" plastic globe/angle valve with Filter Sentry

### Irritrol® SYSTEMS

#### 700 SERIES

**3/4", 1", 1 1/2", 2"**

**Straight through flow path for minimum pressure loss makes these globe valves ideal for a variety of challenging light commercial and commercial applications.**

- ◆ Self-flushing, 150-mesh, stainless steel filter screen on 1"-, 1 1/2"- and 2" models
- ◆ Unique straight-through flow path provides low pressure loss and superior regulation
- ◆ Slow-closing design prevents water hammer
- ◆ Compact, low-profile design
- ◆ Three-way stainless steel bonnet screws with threaded brass inserts accept Phillips, flat-blade and hex-driver tools
- ◆ Tough glass-reinforced nylon, stainless steel and brass construction

#### Specifications:

Flow: 2 GPM to 180 GPM  
Pressure: 10 psi to 150 psi  
Power: 24 VAC  
Inrush current: .4 amps  
Holding current: .2 amps



Product Code	Description
700B75	3/4" 700 Series valve
7001	1" 700 Series valve
70015	1 1/2" 700 Series valve
7002	2" 700 Series valve

#### IRRITROL 100 SERIES (CENTURY PLUS)

**1", 1 1/2", 2", 3"**

**Heavy-duty globe/angle valves designed primarily for commercial applications and offering superior performance and durability under the most demanding conditions.**

- ◆ 200 psi rating
- ◆ Tough, glass-reinforced nylon, stainless steel and brass construction withstands high temperatures and system surges under pressure
- ◆ Rugged, double-beaded, nylon reinforced Buna-N diaphragm provides leak-proof seal
- ◆ Positive O-ring seal on inlet plug prevents leaks without damaging seal threads
- ◆ Molded-in and anchored studs allow positive bonnet attachment and removal
- ◆ Brass flow control stem on 2" and 3" models

#### Specifications:

Flow: 5 GPM to 300 GPM  
Pressure: 10 psi to 200 psi  
Power: 24 VAC  
Inrush current: .4 amps  
Holding current: .2 amps



Product Code	Description
100P1	1" 100 Series valve
100P15	1 1/2" 100 Series valve
100P2	2" 100 Series valve
100P3	3" 100 Series valve

**TORO**

## P220 VALVE

### 1", 1 1/2", 2", 3"

- ◆ The Spike-Guard™ solenoid features very low power consumption, which reduces wire size requirements, allows twice as many valves to run simultaneously on a transformer and lowers power costs
- ◆ Offers nearly three times the lightning protection of competitive products
- ◆ Tough, glass-filled nylon and stainless steel construction
- ◆ Pressure regulates in electric or manual modes and is serviceable under pressure
- ◆ No external tubing for either electric or pressure-regulating models
- ◆ Low-flow capability down to 5 GPM (20 LPM) with EZReg®

### Specifications:

Flow range:

- 1" — 5 GPM-35 GPM
- 1 1/2" — 30 GPM-110 GPM
- 2" — 80 GPM-180 GPM
- 3" — 150 GPM-300 GPM

### Burst pressure safety rating:

750 psi



### Body styles:

Globe/Angle valve — 1", 1 1/2", 2", 3" female threads

HOW TO SPECIFY: P220 2X X X			
Model:	Configuration:	Solenoid:	Size:
P220 — P-220 Series Plastic Valve	26—NPT, Electric	0—Solenoid	4 — 1"
	27—NPT, Pressure-regulated (5-100)	6—Less Solenoid	6 — 1 1/2"
		9—DC Latching Solenoid	8 — 2"
			0 — 3"

### Options for P-220 Series:

EZR-30 EZReg, 5-30 psi Regulator Module

EZR-100 EZReg, 5-100 psi Regulator Module

**Weather<sup>®</sup>matic<sup>®</sup>**

## 21000CR SERIES

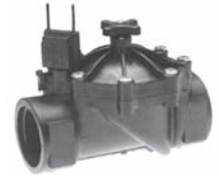
### 1", 1 1/2", 2"

- ◆ Fail safe "reverse flow" design insures that the valve will remain closed in the event of a diaphragm wall failure and extends diaphragm life
- ◆ Excellent for micro-irrigation, valve will operate as low as 1 GPH
- ◆ Dual flexing diaphragm ports provide great contamination resistance in dirty water or reclaimed applications
- ◆ Internal manual bleed lever opens and closes the valve with a flip of the finger
- ◆ M24E solenoid with stainless steel actuator
- ◆ Optional XPR regulator senses inlet pressure and maintains constant outlet pressure

### Specifications:

Pressure: up to 150 psi  
Power: 24 VAC  
Inrush: 9.77 VA  
Holding: 6.2 VA

Product Code	Description
21024E10	1" 21000 valve
21024E15	1 1/2" 21000 valve
21024E20	2" 21000 valve



## 11000CR SERIES (BLACK MAX)

### 1", 1 1/2", 2"

- ◆ Fail safe "reverse flow" design insures that the valve will remain closed in the event of a diaphragm wall failure and extends diaphragm life
- ◆ Excellent for micro-irrigation valve will operate as low as 1 GPH
- ◆ Dual flexing diaphragm ports provide great contamination resistance in dirty water or reclaimed applications
- ◆ Internal manual bleed lever open and closes the valve with a flip of the finger
- ◆ Heavy-duty commercial glass filled body
- ◆ Optional XPR regulator senses inlet pressure and maintains constant outlet pressure

### Specifications:

Pressure: up to 200 psi  
Power: 24 VAC  
Inrush: 9.86 VA  
Holding: 5.69



Product Code	Description
11024FCR10	1" 11000 Series valve
11024FCR15	1 1/2" 11000 Series valve
11024FCR20	2" 11000 Series valve



**300PBE/300PBES**

**3"**

**Built tough to offer long life and efficient, trouble-free performance – even under harsh conditions.**

- ◆ Unique hybrid construction featuring durable red brass body and glass-filled nylon bonnet for long life at a value price
- ◆ Globe and angle configuration for flexibility in design and installation
- ◆ Robust solenoid provides dependable performance even during constant operation
- ◆ Internal and external bleed
- ◆ BPES only: Patented nylon scrubber scrapes a stainless steel screen to clean and break down grit and plant material

**Specifications:**

Pressure: 20 psi to 200 psi  
 Flow: 60 GMP to 300 GMP  
 Power: 24 VAC  
 Inrush current: 0.41 amps at 60 Hz  
 Holding current: 0.28 amps at 60 Hz



Product Code	Description
300BPE	3" brass/plastic valve
300BPES	3" brass/plastic valve with scrubber

**EFB-CP SERIES**

**1", 1 1/4", 1 1/2", 2"**

**Durable brass valve with a contamination-proof, self-flushing screen for reliable performance in commercial dirty water applications.**

- ◆ Red brass construction for longer life and more rugged performance
- ◆ Fabric-reinforced diaphragm for longer life
- ◆ Normally closed, reverse flow design ensures valve will fail in the closed position. Prevents flooding, water waste and landscape damage
- ◆ Contamination-proof, self-flushing filter screen resists debris build-up
- ◆ Water flow continuously flushes the screen, dislodging particles and debris before they can accumulate and clog the filter
- ◆ Flow control handle adjusts water flow as needed

**Specifications:**

Pressure: 15 psi to 200 psi  
 Flow: 5 GPM to 200 GPM  
 Power: 24 VAC  
 Inrush current: 0.41 amps at 60 Hz  
 Holding current: 0.28 amps at 60 Hz



Product Code	Description
100-EFBCP	1" brass valve
125-EFBCP	1 1/4" brass valve
150-EFBCP	1 1/2" brass valve
200-EFBCP	2" brass valve

**Hunter®****IBV****1", 1 1/2" 2", & 3"**

- ◆ Solid brass construction
- ◆ 220 psi rated for maximum strength
- ◆ Fabric reinforced EPDM diaphragm and EPDM seat provides reliable operation in all water conditions
- ◆ Stainless steel flow control stem for maximum strength and durability
- ◆ Internal and external manual bleed
- ◆ With Filter Sentry™ for a superior self-cleaning system

**Specifications:**

Flow: 0.10 GPM to 300 GPM

Pressure: 20 psi to 220 psi

Temperature: up to 150°F (66°C)

Heavy-duty solenoid: 24 VAC, 370 mA inrush current, 190 mA holding current, 60 cycles; 475 mA inrush current, 230 mA holding current, 50 cycles

Product Code	Description
IBV-101G	1" brass globe valve
IBV-151G	1 1/2" brass globe valve
IBV-201G	2" brass globe valve
IBV-301G	3" brass globe

**HOW TO SPECIFY: IBV - 201G - FS - AS**

Model:	Features:
IBV	101G = 1" Globe Valve 151G = 1 1/2" Globe Valve 201G = 2" Globe Valve 301G = 3" Globe Valve

**Options-Factory Installed**

FS = Filter Sentry™

B = BSP Threads

DC = DC Latching Solenoid

**Options-User Installed**

AS = Accu-Set™ Pressure Regulator

R = Reclaimed Water Identification Handle

CC = Conduit Cover

**PRESSURE REGULATORS****RAIN BIRD®****PRESSURE REGULATING MODULE**

**Great way to regulate outlet pressure at the valve regardless of incoming pressure fluctuations.**

- ◆ Regulates and maintains constant outlet pressure between 15 psi and 100 psi
- ◆ Fits all Rain Bird PGA, PEB, PESB, GB, EFB-CP, PGE an BPES series valves

Product Code	Description
PRS-D	15 to 100 psi

**Hunter®****ACCU-SYNC**

**Regulating pressure at the valve enhances efficiency and system reliability**

- ◆ Adjustable model enables the zone pressure to be set anywhere between 20 and 100 PSI
- ◆ Fixed models remove the guesswork and can be installed throughout any system easily

Model	Description	Application
AS-ADJ	Adjustable 20-100PSI	For full customization
AS-20	Fixed 20 PSI	Ideal for point source micro irrigation systems
AS-30	Fixed 30 PSI	Ideal for spray systems
AS-40	Fixed 40 PSI	Ideal for MP Rotator and large in-line drip systems
AS-50	Fixed 50 PSI	Ideal for mid-range rotors
AS-70	Fixed 70 PSI	Ideal for large rotors



**TORO**

### **EZREG®**

- ◆ Can regulate with flows of only 5 GPM (1" valve)
- ◆ Only requires 10 psi differential to operate
- ◆ Perfect for retrofit projects and can be easily and quickly installed

Product Code	Description
EZREG	EZ-Reg Regulator



**Irritrol**  
SYSTEMS

### **IRRITROL OMNIREG PRESSURE REGULATOR**

**Enables user to quickly and accurately set the exact downstream pressure required for any application.**

- ◆ Desired pressure may be set with water on or off
- ◆ One model fits all heavy-duty commercial 100 Series, 700 Series, 200B and 311A Series valve
- ◆ Requires only 1 GMP to operate
- ◆ Maintains constant downstream pressure, regardless of widely varying inlet pressure
- ◆ Delivers an accuracy of  $\pm 3$  psi

Product Code	Description
OMR30	5 psi-30 psi
ORM100	5 psi-100 psi



## MANUAL ZONE CONTROL VALVES

### **100 SERIES GLOBE MANUAL ZONE VALVE**

### **200 SERIES ANGLE MANUAL ZONE VALVE**

### **300 SERIES ANGLE WITH UNION MANUAL ZONE VALVE**

**Time-proven brass manual valves for individual operation of irrigation system zones. Can be installed above or below ground.**

- ◆ Rubber disc seating surface for frequent use applications
- ◆ Full size waterways for low pressure loss
- ◆ Easily converted to automatic operation with electric adapters

Product Code	Description
100 Series	
SV075	3/4" 100 series straight valve with rising stem
SV100	1" 100 series straight valve with rising stem
SV125	1 1/4" 100 series straight valve with rising stem
SV150	1 1/2" 100 series straight valve with rising stem
SV200	2" 100 series straight valve with rising stem

Product Code	Description
200 Series	
AV075	3/4" 200 series angle valve with rising stem
AV100	1" 200 series angle valve with rising stem
AV125	1 1/4" 200 series angle valve with rising stem
AV150	1 1/2" 200 series angle valve with rising stem
AV200	2" 200 series angle valve with rising stem

Product Code	Description
300 Series	
AVU075	3/4" 300 series angle valve with union with rising stem
AVU100	1" 300 series angle valve with union with rising stem
AVU125	1 1/4" 300 series angle valve with union with rising stem
AVU150	1 1/2" 300 series angle valve with union with rising stem
AVU200	2" 300 series angle valve with union with rising stem

Product Code	Description
200 Series	
AV075	3/4" 200 series angle valve with rising stem
AV100	1" 200 series angle valve with rising stem
AV125	1 1/4" 200 series angle valve with rising stem
AV150	1 1/2" 200 series angle valve with rising stem
AV200	2" 200 series angle valve with rising stem

Product Code	Description
300 Series	
AVU075	3/4" 300 series angle valve with union with rising stem
AVU100	1" 300 series angle valve with union with rising stem
AVU125	1 1/4" 300 series angle valve with union with rising stem
AVU150	1 1/2" 300 series angle valve with union with rising stem
AVU200	2" 300 series angle valve with union with rising stem

**BRASS HOSE BIBS**

**Heavy duty brass design. All models accept 3/4" hose thread.**

Product Code	Description
HB050M	1/2" male inlet hose bib
HB050F	1/2" female inlet hose bib
HB075M	3/4" male inlet hose bib
HB075F	3/4" female inlet hose bib

**BENT NOSE GARDEN VALVES**

- ◆ Install on standpipes for connection of garden hoses. Sure seal gaskets and washers
- ◆ "L" models feature loose key design for vandal resistance
- ◆ Full flow inlet and outlet

Product Code	Description
GV050	1/2" female inlet to 3/4" male hose garden valve
GV050L	1/2" female inlet to 3/4" male hose garden valve with loose key design
GV075	3/4" female inlet to 3/4" male hose garden valve
GV075L	3/4" female inlet to 3/4" male hose garden valve with loose key design
GV100	1" female inlet to 3/4" male hose garden valve
GV100L	1" female inlet to 3/4" male hose garden valve with loose key design
	Key for opening "loose key" valves

**BRASS GATE VALVES**

- ◆ Threaded brass gate valves suitable for residential, commercial and industrial use
- ◆ 200 psi
- ◆ Not recommended for throttling water flow

Product Code	Description
GV005	1/2" Threaded gate valve
GV007	3/4" Threaded gate valve
GV010	1" Threaded gate valve
GV012	1 1/4" Threaded gate valve
GV015	1 1/2" Threaded gate valve
GV020	2" Threaded gate valve
GV025	2 1/2" Threaded gate valve
GV030	3"

**BRASS BALL VALVES**

- ◆ Threaded brass ball valves ideal for frequent on-off use
- ◆ Full-port design for low pressure loss
- ◆ 400 psi

Product Code	Description
BBV005	1/2" Threaded ball valve
BBV007	3/4" Threaded ball valve
BBV010	1" Threaded ball valve
BBV012	1 1/4" Threaded ball valve
BBV015	1 1/2" Threaded ball valve
BBV020	2" Threaded ball valve
BBV025	2 1/2" Threaded ball valve
BBV030	3" Threaded ball valve

**PVC VALVES**

- ◆ Designed for reliability, speed and easy operation
- ◆ 150 psi working pressure at 73°F (22°C)
- ◆ Suitable for Schedule 40 and 80 Pipe

Product Code	Description
PBV005S	1/2" PVC ball valve, slip x slip
PBV005T	1/2" PVC ball valve, threaded
PBV007S	3/4" PVC ball valve, slip x slip
PBV007T	3/4" PVC ball valve, threaded
PBV010S	1" PVC ball valve, slip x slip
PBV010T	1" PVC ball valve, threaded
PBV012S	1 1/2" PVC ball valve, slip x slip
PBV012T	1 1/2" PVC ball valve, threaded
PBV015S	1 1/2" PVC ball valve, slip x slip
PBV015T	1 1/2" PVC ball valve, threaded
PBV020S	2" PVC ball valve, slip x slip
PBV020T	2" PVC ball valve, threaded
PBV030S	3" PVC ball valve, slip x slip
PBV030T	3" PVC ball valve, threaded
PBV040S	4" PVC ball valve, slip x slip
PBV040T	4" PVC ball valve, threaded



### QUICK COUPLING VALVES

- ◆ Available in 3/4" and 1" Female NPT inlet
- ◆ Lid stays closed by strong positive-action spring
- ◆ High visibility TuffTop or brass lids available
- ◆ Constructed of solid red brass for durability, economy and recyclability
- ◆ Corrosion resistant stainless steel spring and self-flushing brass plunger
- ◆ Wrench flats at base for easy installation
- ◆ Drain hole in body to minimize debris collection
- ◆ Chevron-shaped wiper seal to reduce leakage around key while inserted
- ◆ Self cleaning seal design
- ◆ Flow ranges from 5 GPM to 100 GPM
- ◆ Handles pressures up to 150 psi



### QUICK COUPLING VALVES

#### Industrial-strength brass quick-coupling valves for convenient water access.

- ◆ Red brass construction for long life and rugged performance
- ◆ Yellow thermoplastic cover for durability
- ◆ One-piece body design (models 3RC, 5RC and 7)
- ◆ Two-piece body design for easy servicing (models 33DRC, 44LRC and 44RC)
- ◆ Strong corrosion-resistant stainless steel spring prevents leakage
- ◆ Also available with non-potable cover

#### Specifications:

Pressure: 5 psi to 125 psi  
Flow: 10 GPM to 125 GPM



Product Code	Description
TG3RC	3/4" Single Slot, Yellow Cover
TG33DRC	3/4" Double Slot, Yellow Top
TG33DLRC	3/4" Double Slot, Yellow Top
TG33DNP	3/4" Double Slot, Locking Cover
TG44RC	1" Single Slot, Yellow Cover
TG44LRC	1" Single Slot, Locking Yellow Cover
TG44NP	1" Single Slot, Locking Lavender
TG44NPAT10	1" Acme Thread Qc Valve Np
TG5LRC	1" Double Slot, Locking Yellow Cover
TG5NP	1" Double Slot, Locking Lavender Cover
TG5RC	1" Double Slot, Yellow Cover

TG33DK	3/4" TurfGro Quick Coupler Keys
TG44K	1" TurfGro Quick Coupler Keys

TGSH0	Hose Swivel EII 3/4" to 3/4" MIPT
TGSH1	TurfGro Hose Swivel EII 1" NPT X 3/4" MIPT
TGSH2	TurfGro Hose Swivel EII 1" NPT X 1" MIPT

Product Code	Description
3RC	3/4" rubber cover, 1-piece body
33DRC	3/4" double track key lug, rubber cover, 2-piece body
33DLRC	3/4" double track key lug, locking rubber cover, 2-piece body
33DNP	3/4" 2-piece body, non-potable cover
44RC	1" rubber cover, 2-piece body
44LRC	1" locking rubber cover, 2-piece body
44NP	1", 2-piece body, non-potable cover
5RC	1" rubber cover, 1-piece body
5LRC	1" locking rubber cover, 1-piece body
5NP	1" 1-piece body, non-potable cover
7	1 1/2" metal cover, 1-piece body

Product Code	Description
Rain Bird Valve Keys	
33DK	3/4" quick-coupling valve
44K	1" quick-coupling valve, 2-piece body
55K	1 for 1" quick-coupling valve, one-piece body
7K	1 1/2" quick-coupling valve



## INTRODUCING THE NEW RAIN BIRD® XFCV DRIPLINE WITH HEAVY-DUTY CHECK VALVE



### WHEN YOU NEED A CHECK VALVE DRIPLINE CHOOSE XFCV WITH 8 FEET OF HOLDBACK



#### ELEVATED PERFORMANCE

Keeps dripline charged with water even with elevation changes to 8 feet

#### GREATER FLEXIBILITY

Rain Bird's proprietary blend provides industry-leading flexibility for easy design and installation

#### CONSERVES WATER

Prevents puddling and water loss at the low point of the dripline

#### LEED COMPLIANT

Contains at least 20% post consumer recycled polyethylene which qualifies for LEED credit 4.2



#### RAIN BIRD'S PROFESSIONAL CUSTOMER SATISFACTION POLICY

XF Series Dripline offers five (5) years on product workmanship and seven (7) years on environmental stress cracking



### TECHLINE® CV DRIPPERLINE

- ◆ 2 psi check valve in each dripper
- ◆ All drippers turn on and off at the same time, maximizing balance of application
- ◆ Holds back up to 4 1/2' of water (elevation change)
- ◆ Precise and equal amounts of water are delivered over a broad pressure range
- ◆ Flushes debris as it is detected, throughout operation, not just at the beginning or end of a cycle, ensuring uninterrupted dripper operation
- ◆ Unique dripper design with physical root barrier
- ◆ Self-contained, one-piece dripperline construction assures reliable, easy installation
- ◆ UV resistant, withstands heat and direct sun — for on-surface installations

### Applications:

- ◆ Subsurface or on-surface installations
- ◆ Slopes
- ◆ Curved, angular or narrow planting areas
- ◆ High-traffic/high-liability areas
- ◆ Areas subject to vandalism
- ◆ High-wind areas
- ◆ Turf, shrubs, trees and flowers
- ◆ At-grade windows
- ◆ Sports turf, tennis courts and golf courses
- ◆ Green walls
- ◆ Rooftop gardens
- ◆ Raised planters
- ◆ Auto dealerships

### What are the Benefits of Drip Irrigation?

- Water savings, since only those areas directly around the plant's root zone are irrigated
- Plants undergo less stress from variations in soil moisture. Plant appearance is enhanced
- Constant moisture improves plant growth
- Prevents excess surface water build-up and reduces evaporation
- The low application rate and the use of automatic timers results in precise water control
- Weed growth is reduced
- System can be designed for use in all types of terrain and soil
- System's low flow rate allows irrigation of larger areas and more plants can be watered at once
- Drip irrigation systems are usually installed at costs considerably less than those of an underground sprinkler, bubbler, or shrub spray system
- Through the use of fertilizer dispensers, chemicals and nutrients can be fed directly to the plant in controlled quantities
- The water application rate can be tailored to fit each individual plant. This is accomplished by the use of different quantities of emitters and emitters with different discharge rates

### HOW TO SPECIFY:











Dripper Flow Rate:	Dripper Spacing:	Coil Length:
0.26 GPH = 26, 0.4 GPH = 4, 0.6 GPH = 6, 0.9 GPH = 9	12" = 12, 18" = 18, 24" = 24	100' = 01, 250' = 025, 1,000' = 10

### Techline® CV general guidelines

Description						
	Turf			Shrub and Ground Cover		
Specifications	Clay Soil	Loamy Soil	Sandy Soil	Clay Soil	Loamy Soil	Sandy Soil
Dripper Flow (GPH)	0.26	0.4	0.6	0.26	0.4	0.6
Dripper Interval (in.)	18	12	12	18	18	12
Lateral (Row) Spacing (in.)	18-22	18-22	12-16	18-24	18-24	16-20
Burial Depth	On-surface or bury evenly throughout the zone to a maximum of 6"					
Application Rate (in./hour)	.19 -.15	.43 -.35	.96 -.72	.19 -.14	.29 -.21	.72 -.58
Time to Apply 1/4" of Water (min.)	79-100	35-43	16-21	79-107	52-71	21-26
*Following these maximum spacing guidelines, dripper flow section can be increased if desired by the designer.						



### Techline CV Ordering Information

Flow Rate	Coil Label Code	Dripper Spacing	Coil Length	Model Number
0.26 GPH		12"	1,000'	TLCV26-1210
			250'	TLCV26-12025
			100'	TLCV26-1201
		18"	1,000'	TLCV26-1810
			250'	TLCV26-18025
			100'	TLCV26-1801
0.4 GPH		12"	1,000'	TLCV4-1210
			250'	TLCV4-12025
			100'	TLCV4-1201
		18"	1,000'	TLCV4-1810
			250'	TLCV4-18025
			100'	TLCV4-1801
0.6 GPH		12"	1,000'	TLCV6-1210
			250'	TLCV6-12025
			100'	TLCV6-1201
		18"	1,000'	TLCV6-1810
			250'	TLCV6-18025
			100'	TLCV6-1801
		24"	1,000'	TLCV6-2410
			250'	TLCV6-24025
			100'	TLCV6-2401
0.9 GPH		12"	1,000'	TLCV9-1210
			250'	TLCV9-12025
			100'	TLCV9-1201
		18"	1,000'	TLCV9-1810
			250'	TLCV9-18025
			100'	TLCV9-1801
		24"	1,000'	TLCV9-2410
			250'	TLCV9-24025
			100'	TLCV9-2401
Blank Tubing			1,000'	TLCV010
			250'	TLCV0025
			100'	TLCV001



## **XFCV DRIPLINE WITH HEAVY-DUTY CHECK VALVE**

- ◆ Patent-pending 3.5 psi check valve technology keeps the dripline charged with water at all times, increasing uniformity of watering
- ◆ Conserves water by eliminating the need to recharge the line at the beginning of each watering cycle
- ◆ Most effective dripline in the industry addressing applications where elevation changes exist
- ◆ Helps to prevent over-watering at the low-point in the zone

### **Operating Range:**

Opening Pressure: 14.5 psi  
 Pressure: 20 to 60 psi  
 Flow Rates: 0.6 and 0.9 gph

### **Temperature:**

Water: Up to 100°F  
 Ambient: Up to 125°F

### **Specifications:**

12" & 18" spacing  
 Coil lengths: 100' and 500' coils  
 Coil Color: Brown

### **Models:**

XFCV0612100	XFCV0912100
XFCV0612500	XFCV0912500
XFCV0618100	XFCV0918100
XFCV0618500	XFCV0918500

## **XFCV Dripline Maximum Lateral Length**

n	S Ma i a a ng	
	0.6	0.9
<b>12" Spacing</b>		
20	192	136
30	289	205
40	350	248
50	397	281
60	436	309
<b>18" Spacing</b>		
20	254	215
30	402	337
40	498	416
50	573	477
60	637	529



### XFD™ DRIPLINE

**Flexible, pressure compensating inline emitter tubing for irrigating ground cover, dense plantings, hedge rows and more.**

- ◆ Rain Bird's proprietary blend provides industry leading flexibility allowing for tighter turns with fewer elbows for fast and easy installation
- ◆ Dual-layered tubing (brown over black or purple over black) provides unmatched resistance to chemicals, UV damage and algae growth
- ◆ Low profile emitter design results in reduced friction loss, allowing longer lateral runs and more cost-effective system design
- ◆ Clog-resistant design ensures that water will keep flowing to your plant material



#### Operating Range:

Pressure: 8.5 to 60 psi (0.58 to 4.14 bar)  
 Flow rates: 0.4, 0.6 and 0.9 gph (1.5 l/h, 2.3 l/h and 3.5 l/h)  
 Temperature: Up to 100° F (43.3 C) water; up to 125 F (51.7° C) ambient  
 Required filtration: 120 mesh

#### Specifications:

Spacing: 12", 18" or 24"  
 Lengths: 100', 250', and 500' coils

### XFD On-Surface Dripline Models

Model	Flow gph	Spacing in.	Coil Length ft.
XFD-04-12-100	0.40	12	100
XFD-04-12-500	0.40	12	500
XFD-04-18-100	0.40	18	100
XFD-04-18-500	0.40	18	500
XFD-06-12-100	0.60	12	100
XFD-06-12-250	0.60	12	250
XFD-06-12-500	0.60	12	500
XFD-06-18-100	0.60	18	100
XFD-06-18-250	0.60	18	250
XFD-06-18-500	0.60	18	500
XFD-06-24-500	0.60	24	500
XFD-09-12-100	0.90	12	100
XFD-09-12-250	0.90	12	250
XFD-09-12-500	0.90	12	500
XFD-09-18-100	0.90	18	100
XFD-09-18-250	0.90	18	250
XFD-09-18-500	0.90	18	500
XFD-09-24-500	0.90	24	500
XFD-04-12-500 (Purple)	0.40	12	500
XFD-04-18-500 (Purple)	0.40	18	500
XFD-06-12-500 (Purple)	0.60	12	500
XFD-06-18-500 (Purple)	0.60	18	500
XFD-09-12-500 (Purple)	0.90	12	500
XFD-09-18-500 (Purple)	0.90	18	500

### XFD Dripline Maximum Lateral Length

Inlet Pressure (PSI)	Maximum Lateral Length (feet)			Inlet Pressure (PSI)	Maximum Lateral Length (feet)			Inlet Pressure (PSI)	Maximum Lateral Length (feet)		
12" Spacing	Nominal Flow (GPH):			18" Spacing	Nominal Flow (GPH):			24" Spacing	Nominal Flow (GPH):		
	0.4	0.6	0.9		0.4	0.6	0.9		0.6	0.9	
15	352	273	155	15	374	314	250	15	424	322	
20	399	318	169	20	417	353	294	20	508	368	
30	447	360	230	30	481	413	350	30	586	414	
40	488	395	255	40	530	465	402	40	652	474	
50	505	417	285	50	610	528	420	50	720	488	
60	573	460	290	60	734	596	455	60	780	514	

### XFS™ DRIPLINE

**The reliable and durable sub-surface drip solution for turf and non-turf applications.**

- ◆ Copper colored for easy identification and it ensures the copper chip is on the inside – protecting the emitter from root intrusion
- ◆ Grit-tolerant emitter resists clogging by using an extra-wide flow path combined with a self-flushing action
- ◆ Rain Bird's proprietary blend provides industry leading flexibility allowing for tighter turns with fewer elbows for fast and easy installation



#### Operating Range:

Pressure: 8.5 to 60 psi  
 Flow rates: 0.6 and 0.9 gph  
 Temperature:  
 Water: Up to 100°F  
 Ambient: Up to 125°F  
 Required Filtration: 120 mesh

#### Models:

XFS-06-12-100	XFS-09-18-100
XFS-06-12-500	XFS-09-18-500
XFS-06-18-100	XFS-09-24-500
XFS-06-18-500	XFSP-06-12-500
XFS-06-24-500	XFSP-06-18-500
XFS-09-12-100	XFSP-09-12-500
XFS-09-12-500	XFSP-09-18-500

#### Specifications:

12", 18", 24" spacing  
 Available in 100' and 500' coils  
 Coil Color: Copper

### XFS Dripline Maximum Lateral Length

Inlet Pressure (PSI)	Maximum Lateral Length (feet)			Inlet Pressure (PSI)	Maximum Lateral Length (feet)			Inlet Pressure (PSI)	Maximum Lateral Length (feet)		
12" Spacing	Nominal Flow (GPH):			18" Spacing	Nominal Flow (GPH):			24" Spacing	Nominal Flow (GPH):		
	0.6	0.9			0.6	0.9			0.6	0.9	
15	273	155		15	314	250		15	424	322	
20	318	169		20	353	294		20	508	368	
30	360	230		30	413	350		30	586	414	
40	395	255		40	465	402		40	652	474	
50	417	285		50	528	420		50	720	488	
60	460	290		60	596	455		60	780	514	



## DL2000® SERIES

- ◆ Patented, non-toxic ROOTGUARD® technology guards against root intrusion
- ◆ Flexible, sturdy design fits into unusual spaces
- ◆ Pressure-compensating emitters for uniform water application
- ◆ Easy to install, requires minimal maintenance
- ◆ Precise watering puts water where it's needed; avoids water marks on expensive hardscapes, glass or signage

## Specifications:

Flow rate: .53/1.06 GPH  
 Inside diameter: 0.620"  
 Outside diameter: 0.710"  
 Operating pressure: (P) 15 psi to 60 psi

Product Code	Description
RGP-212-01	0.50 GPH, 12" emitter spacing, 100' coil
RGP-412-01	1.00 GPH, 12" emitter spacing, 100' coil
RGP-218-01	0.50 GPH, 18" emitter spacing, 100' coil
RGP-418-01	1.00 GPH, 18" emitter spacing, 100' coil
RGP-212-05	0.50 GPH, 12" emitter spacing, 500' coil
RGP-412-05	1.00 GPH, 12" emitter spacing, 500' coil
RGP-218-05	0.50 GPH, 18" emitter spacing, 500' coil
RGP-418-05	1.00 GPH, 18" emitter spacing, 500' coil
RGP-212-10	0.50 GPH, 12" emitter spacing, 1000' coil
RGP-412-10	1.00 GPH, 12" emitter spacing, 1000' coil
RGP-218-10	0.50 GPH, 18" emitter spacing, 1000' coil
RGP-418-10	1.00 GPH, 18" emitter spacing, 1000' coil



## PLD PROFESSIONAL LANDSCAPE DRIP LINE

**Applies water slowly and evenly for consistent distribution.**

- ◆ In-line pressure-compensating emitters provide consistent high-quality performance
- ◆ Built-in check valve prevents emitter clogging and wasteful runoff
- ◆ Flexible, kink and UV resistant
- ◆ Emitter check height of 5'
- ◆ Available emitter spacing of 12", 18", or 24"
- ◆ Emitter flow rates available in 0.4, 0.6, or 1.0 GPH
- ◆ Blank tubing available (no emitters)
- ◆ Comes in 100, 250 and 1,000 ft. rolls

## Specifications:

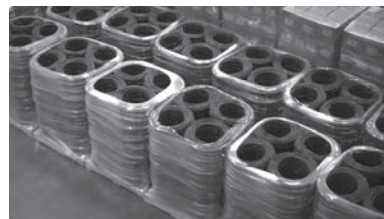
Operating pressure range: 15 to 50 PSI  
 Recommended filtration: 120 Mesh  
 Accepts 17 mm insert fittings

## Spacing:

12 = 12"  
 18 = 18"  
 24 = 24"

## Length:

100 = 100'  
 250 = 250'  
 1K = 1,000'



## Options:

R = Reclaimed

## Notes:

100' rolls only available in models PLD-BLNK, PLD-06-12-100, PLD-10-12-100, and PLD-10-18-100

## Models:

XFS-06-12-100	XFS-09-18-100
XFS-06-12-500	XFS-09-18-500
XFS-06-18-100	XFS-09-24-500
XFS-06-18-500	XFSP-06-12-500
XFS-06-24-500	XFSP-06-18-500
XFS-09-12-100	XFSP-09-12-500
XFS-09-12-500	XFSP-09-18-500

PLD Maximum Line Length Chart 0.4 GPH			
Pressure (PSI)	Emitter Spacing Maximum Lateral Length (ft)		
	12"	18"	24"
15.0	344	475	594
20.0	479	660	823
25.0	509	703	879
30.0	535	742	928
35.0	584	808	1010
40.0	627	868	1086
45.0	646	894	1119
50.0	689	957	1200

PLD Maximum Line Length Chart 0.6 GPH			
Pressure (PSI)	Emitter Spacing Maximum Lateral Length (ft)		
	12"	18"	24"
15.0	190	261	325
20.0	279	384	479
25.0	331	459	574
30.0	354	490	614
35.0	390	542	679
40.0	420	585	735
45.0	436	607	761
50.0	472	654	819

PLD Maximum Line Length Chart 1.0 GPH			
Pressure (PSI)	Emitter Spacing Maximum Lateral Length (ft)		
	12"	18"	24"
15.0	141	193	240
20.0	203	283	354
25.0	243	339	427
30.0	259	361	453
35.0	289	401	502
40.0	312	432	541
45.0	322	447	561
50.0	344	482	606

\*Maximum single lateral length at 0% slope

## DISTRIBUTION TUBING



### TECHLINE CV

#### Maximum Uniformity in Subsurface and On-Surface Including Slopes

- ◆ 2 psi check valve in each emitter delivers more precise watering
- ◆ Unique patented emitter design with physical root barrier
- ◆ Continuous self-flushing emitter design flushes debris as it is detected, ensuring uninterrupted operation
- ◆ Flexible UV resistant tubing adapts to any planting area shape



**TECHLINE CV**  
NOW MADE WITH  
POST CONSUMER  
RECYCLED MATERIAL

### SPECIFYING MODEL NUMBER

Reference for Ordering Information Chart

**A** Techline CV Dripline = **TLCV**

SAMPLE MODEL NUMBER

**TLCV4-1210**

1 2 3

**1** **EMITTER FLOW RATE**

0.26 GPH = **26**

0.4 GPH = **4**

0.6 GPH = **6**

0.9 GPH = **9**

**2** **EMITTER SPACING**

12" = **12**

18" = **18**

24" = **24**

**3** **COIL LENGTH**

100' = **01**

250' = **025**

500' = **05**

1,000' = **10**



### XQ 1/4" DISTRIBUTION TUBING

#### Maximum Uniformity in Subsurface and On-Surface Including Slopes

- ◆ Unique blend of polymers that give it the flexibility of vinyl with hold of poly.
- ◆ New textured finish improves handling.
- ◆ Self extracting coiling feature makes it easy to use, store and eliminates waste.
- ◆ Patent Pending XQ Bucket makes using and storing large coils easy and efficient.
- ◆ 60 psi rating exceeds competitor's specifications



Model Number	Description
XQ100	XQ 1/4" POLYETHYLENE DISTRIBUTION TUBING 100FT
XQ1000	XQ 1/4" POLYETHYLENE DISTRIBUTION TUBING 1000FT
XQ1000B	XQ 1/4" POLYETHYLENE DISTRIBUTION TUBING 1000FT

## CONTROL ZONE KITS

**Control Zone Kits provide all of the components necessary to control flow, pressure and filtration for a low-volume irrigation zone. These convenient kits provide automatic control of a drip irrigation zone when connected to an irrigation controller. There are several options to fit your needs.**

### Control Zone Selection Steps

1. Calculate flow rate requirements for drip zone
2. If less than 5 GPM, choose Low Flow kit
3. If greater than 5 GPM, choose Medium Flow kit



### XCZ-075-PRF

#### 3/4" pre-assembled kit with Low Flow in-line valve and Pressure Regulating Filter.

- ◆ Low Flow Valve is the only valve on the market that can effectively handle low flows (below three GPM (0,19 l/s)) without weeping

### Specifications:

Flow: 0.2 GPM to 5 GPM (0,01 to 0,32 l/s)  
Inlet pressure: 20 psi to 120 psi (1,4 to 8,3 bar)  
Regulated pressure: 30 psi (2,1 bar)  
Filtration: 200 mesh (75 micron)  
Connections: 3/4" inlet and outlet  
Size: 10" (25 cm) overall length



### XCZ-100-PRF

- ◆ 1" pre-assembled kit with in-line DV valve and Pressure Regulating Filter

### Specifications:

Flow: 3 GPM to 15 GPM  
(0,19 to 0,95 l/s)  
Inlet pressure: 20 psi to 120 psi  
(1,4 to 8,3 bar)  
Regulated pressure: 40 psi (2,8 bar)  
Filtration: 200 mesh (75 micron)  
Connections: 1" inlet and outlet (NPT)  
Size: 10" (25 cm) overall length



### XCZ-100-PRB-COM

#### Commercial kit includes a 1" in-line scrubber valve and pressure regulating quick check basket filter.

- ◆ The PESB valve provides a patented scrubbing action, making this kit ideal for dirty water applications
- ◆ Pressure Regulating Quick Check Basket Filter has a clear indicator that goes from red to green, telling you when to clean the filter

### Specifications:

Flow: 3 GPM to 20 GPM (0,19 to 1,27 l/s)  
Inlet pressure: 20 psi to 150 psi (1,4 to 10,3 bar)  
Regulated pressure: 40 psi (2,8 bar)  
Filtration: 200 mesh (75 micron)  
Connections: 1" inlet and outlet (NPT)





## XCZNVPRF

### Valveless Control Zone Kit.

- ◆ Pressure-Regulating (P/R) Filter reduces the number of components in a control zone
- ◆ Combination unit reduces the number of connections
- ◆ 30 psi or 40 psi pressure regulator is integrated into filter body
- ◆ 3/4" units: 0.50 GPM to 5 GPM

Product Code	Description
XCZ075PRF	Rain Bird 3/4" PRF Control Zone Kit
XCZ100PRF	Rain Bird 1" PRF Control Zone Kit
XCZ100BCOM	1" Commercial Xeri Control Zone
XCZNVPRF	Rain Bird valveless Control Zone Kit



## DRIP ZONE KIT

### 150 MESH Filter, 30 psi Regulator.

- ◆ Easy installation
- ◆ Fits 680-710 OD PE tubing for a wide range of PE tubing, saving the need to have additional products
- ◆ 3/4" or 1" inlet easily installs on 3/4" or 1" discharges
- ◆ 150 mesh filter prevents debris entering drip system
- ◆ 30 psi regulator will operate a wide range of micro products



## PCZ-101 DRIP ZONE CONTROL KIT

### 1" PGV globe valve with 1" HY100 filter system with 25 psi regulator.

- ◆ Pressure regulator (controls dynamic pressure to 25 psi or 40 psi) protects barbed connections within drip zone from fatiguing and leaking
- ◆ Kit is sold fully assembled saving you time and labor
- ◆ Filter element is made from stainless steel ensuring long-lasting protection against clogging drip emitters

### Specifications:

Flow: .5 GPM to 15 GPM (30 GPH to 900 GPH; 0.12 to 3.45 m<sup>3</sup>/hr, 1.9 to 57 l/min)

Pressure: 15 psi to 120 psi



Product Code	Description
PCZ-101-25	Hunter 25 psi Control Zone Kit
PCZ-101-40	Hunter 40 psi Control Zone Kit

## ICZ DRIP ZONE CONTROL KIT

### 1" ICV valve with 1" HY100 Wye filter and 25 PSI high-flow regulator.

- ◆ Glass-filled nylon valve delivers the highest strength and reliability in a control zone valve
- ◆ Filter element is made from stainless steel ensuring long lasting protection against clogging drip emitters
- ◆ Kit is sold fully assembled saving you time and labor
- ◆ High flow capabilities allows up to 25 GPM of flow for high demand commercial sites

### Specifications:

Flow: .5 GPM to 20 GPM (30 GPH to 1200 GPH; 0.12 m<sup>3</sup>/hr to 9.60 m<sup>3</sup>/hr, 1.9 l/min to 76 l/min)

Pressure: 15 psi to 120 psi (1 bar to 8 bar; 100 kPa to 800 kPa)

Temperature: Up to 150°F (66°C)

Heavy-duty solenoid: 24 AC, 370 mA inrush current, 190 mA holding current, 60 cycles; 475 mA inrush current, 230 mA holding current, 50 cycles



Product Code	Description
ICZ10125	Institutional Control Kit with 1" ICV Valve and 25 psi
ICZ10140	Institutional Control Kit with 1" ICV Valve and 40 psi



### PC PLUS™ EMMITTERS

- ◆ Pressure-compensating emitter
- ◆ Available in three flow rates
- ◆ Maintain discharge rate from 10 psi to 40 psi



Product Code	Description
PCP5	0.5 GPH (red)
PCP10	1 GPH (black)
PCP20	2 GPH (green)

### SUPER-FLO™ EMMITTERS

- ◆ Designed to be taken apart simply by twisting
- ◆ Standard 1/4" barbed inlet at the base, plus a 1/4" barbed outlet on the side
- ◆ Non-compensating
- ◆ Operates at 10 psi to 30 psi



Product Code	Description
TAE10	1 GPH (black)
TAE20	2 GPH (green)
TAE40	4 GPH (blue)



### XERI-BUG™ EMMITTERS

#### Single outlet, pressure-compensating emission device.

- ◆ Flow rates from 0.5 GPH to 2 GPH
- ◆ Delivers uniform flow throughout a wide pressure range (15 psi to 50 psi)
- ◆ Inlet and outlet barb securely retains 1/4" distribution tubing



Product Code	Description
XB05	0.5 GPH, barb inlet (blue)
XB10	1 GPH, barb inlet (black)
XB20	2 GPH, barb inlet (red)
XBT10	1 GPH, 1/2" FPT inlet
XBT20	2 GPH, 1/2" FPT inlet

### PRESSURE-COMPENSATING MODULES

#### Single outlet, pressure-compensating higher flow emission devices.

- ◆ Higher flow ideal for watering larger shrubs and trees and for precisely regulating water flow to Xeri-Bubblers and Xeri-Sprays
- ◆ Flow rates from 5 GPH to 24 GPH
- ◆ Pressure 15 psi to 50 psi



Product Code	Description
PC05	5 GPH (light brown)
PC07	7 GPH (violet)
PC10	10 GPH (green)
PC12	12 GPH (dark brown)
PC18	18 GPH (white)
PC24	24 GPH (orange)



### DBK CLASSIC EMMITTERS

#### Proven, reliable non-pressure compensating emitter with take-apart design.

- ◆ Flow rates from 1 GPH to 4 GPH
- ◆ Economic emitter for troublefree applications

Product Code	Description
DBK04	1 GPH, barb inlet (black)
DBK08	2 GPH, barb inlet (red)
DBK16	4 GPH, barb inlet (maroon)

### DPJ TURBO-SC® PLUS EMMITTERS

#### Pressure-compensating emitter ideal for use with difficult topographical conditions.

- ◆ Take-apart design permits easy on-site inspection and cleaning
- ◆ Available in three flow rates (.05, 1, 2)
- ◆ Large, self-flushing, turbulent flow path for higher resistance to plugging



Product Code	Description
SB06	0.6 GPH (green)
SB10	1 GPH (blue)
SB20	2 GPH (red)

**TORO****NGE® NEW GENERATION EMITTERS**

**Uniform flow rates make the NGE ideal for use in difficult topographical conditions**

- ◆ Unique emitter design allows the emitter to self-flush during operation
- ◆ Pressure compensation diaphragm stops the emitter from draining below 2-3 psi preventing complete drainage of the system
- ◆ Coefficient of Variation (CV) of 3% or less

Product Code	Description
DPC02	0.5 GPH
DPC03	0.8 GPH
DPC04	1 GPH
DPC08	2.1 GPH

**BOWSMITH****SB® EMITTERS**

- ◆ Non-Stop® flow path
- ◆ Single barb outlet
- ◆ 0.250" and 0.175" barbs on opposite ends



Product Code	Description
SB06	0.6 GPH (green)
SB10	1 GPH (blue)
SB20	2 GPH (red)

**"SL200 SERIES EMITTERS**

- ◆ Non-Stop® flow path
- ◆ Single outlet, 1/2" FPT inlet



Product Code	Description
SL206	0.6 GPH (green)
SL210	1 GPH (blue)
SL220	2 GPH (red)

**JAIN®**  
Jain Irrigation Systems Ltd.

**CHAPIN SPRAY TUBES**

**("N" for nursery containers, "P" for pots.)**

- ◆ Economical
- ◆ Uniform water distribution
- ◆ Easy to install
- ◆ Available in 12, 18, 24, 30, 36, 48, 60, 72 in. tube lengths
- ◆ PE. tubing type: .076 I.D. for Type "P" and .128 for Type "N"

**Recommended flow rates for optimum coverage:**

Container Size	Flow in GPM
6" to 8"	0.07
10" to 12"	0.08
5 gals. to 15 gals.	0.10
20 gals. or more	0.12

Product Code	Description
STP	"P" type spray tube
STN	"N" type spray tube

**MULTI-OUTLET EMMITERS****BOWSMITH****"M200" SERIES EMITTERS**

- ◆ Non-Stop® flow path
- ◆ Six outlets open, 0.250" barb inlet
- ◆ Includes full set of elbow/outlet caps and line plugs



Product Code	Description
M206	0.6 GPH (green)
M210	1 GPH (blue)
M220	2 GPH (red)

**ML200 SERIES EMITTERS**

- ◆ Six outlets open, 1/2" FPT inlet
- ◆ Includes full set of elbow/outlet caps and line plugs



Product Code	Description
ML206	0.6 GPH (2.3 LPH) (Green Cap) each open outlet
ML210	1 GPH (3.8 LPH) (Blue Cap) each open outlet
ML220	2 GPH (7.6 LPH) (Red Cap) each open outlet

### BOWSMITH

#### SERIES 2000 FLOW DISTRIBUTOR

- ◆ Six outlets open, 1/2" FPT inlet
- ◆ Pressure regulator operates on supply pressure from 15 psi to 100 psi
- ◆ Includes full set of elbow/outlet caps and line plugs



Product Code	Description
FD2010	1 GPH (blue)
FD2020	2 GPH (red)

### RAIN BIRD

#### MULTI-OUTLET XERI-BUG™

- ◆ Pressure-compensating design delivers uniform flow throughout a side pressure range (15 psi to 50 psi)
- ◆ Six-outlet emitter supplied with one outlet opened
- ◆ Flow: 0.5, 1 or 2 GPH
- ◆ Self-flushing action minimizes clogging



Product Code	Description
XB056	0.5 GPH barb inlet (blue)
XB106	1 GPH barb inlet (black)
XB206	20 GPH barb inlet (red)
XBT056	0.5 GPH 1/2" FPT inlet (blue)
XBT106	1 GPH 1/2" FPT inlet (black)
XBT206	2 GPH 1/2" FPT inlet (red)

#### XERI-BIRD 8 MULTI-OUTLET EMMITTERS

- ◆ Threads on to any 1/2" riser and delivers water to multiple locations for increased system flexibility
- ◆ Eight bottom-mounted, sure-grip barbed outlets securely retain 1/4" distribution tubing
- ◆ Flow 0 GPH to 24 GPH, 15 psi to 50 psi



Product Code	Description
XBD80	8 unit includes seven removeable port plugs
XBD81	8 unit with eight 1 GPH Xeri-Bug emitters factory installed

### RAIN BIRD

#### 6 OUTLET MANIFOLD

- ◆ 1/2" (15/21) FPT inlet threads onto 1/2" riser and provides a manifold with six free-flowing 1.4" barb outlets
- ◆ Each barb outlet is sealed with a durable plastic cap
- ◆ Plastic caps remove easily, allowing for a drip area that can be customized with up to six different emission devices
- ◆ Use the EMT-6XERI with Xeri-Bugs and Xeri-Bubbler

#### Operating Range:

Pressure: 15 psi to 50 psi  
(1,0 to 3,5 bars)



Product Code
EMT-6XERI

## ADJUSTABLE EMMITTERS



#### DIAL-A-FLO EMMITTERS

**Adjustable emitter available in a variety of configurations and spray patterns.**

- ◆ Cap is calibrated so that as it is rotated, the flow rate and the radius changes
- ◆ Available with either a barbed or threaded inlet, and with a barbed inlet on a stake

Product Code	Description
DAFB	1/4" barbed inlet, Radius: 360 – 360°, 8 stream, 0 GPH to 10 GPH
DAFT	1/4" threaded inlet, Radius: 180 – 180°, 5 stream, 0 GPH to 10 GPH
DAFU	1/4" FIPT inlet, Radius: FAN – 360°, fan stream, 0 GPH to 20 GPH
DAFS	1/4" barb on a 6' stake, Radius: BUB – Umbrella bubbler, 0 GPH to 25 GPH



## MAXI-FLO™ BUBBLER

- ◆ Six-outlet, pressure compensating emitter
- ◆ Discharge rate remains constant, regardless of how many outlets are used
- ◆ Each outlet has a barbed horizontal connection making it extremely simple to attach to the tubing
- ◆ Pressure: 2 psi to 80 psi

Product Code	Description
MFBL2	2 GPH, 1/2" FIPT
MFBL6	6 GPH, 1/2" FIPT
MFBL10	10 GPH, 1/2" FIPT
MFBL20	20 GPH, 1/2" FIPT
MFBA	0 GPH to 20 GPH, adjustable flow, 1/2" FIPT with shut-off capability

## CUATRO-FLO™ BUBBLER

- ◆ Four outlet, pressure compensating bubbler with a 1/2" female pipe thread inlet
- ◆ Each outlet swivels and can accept 1/4" distribution tubing.
- ◆ Non-adjustable.
- ◆ Operating range from 20 to 80 psi



Product Code	Description
CF	3/4" MIPT 2: 2 GPH (blue)
CFL	1/2" FIPT 6: 6 GPH (black)
10	10 GPH (red)
20	20 GPH (green)



## XERI-BUBBLER™

- ◆ Adjust flow and radius by turning outer cap
- ◆ Clean by completely unscrewing cap from base unit
- ◆ SXB series flow: 0 GPH to 13 GPH  
UXB series flow: 0 GPH to 35 GPH
- ◆ Pressure 15 psi to 30 psi

HOW TO SPECIFY :		
Model:	Radius:	Connection:
SXB – Stream	180 – half-circle, 5 streams 360 – full-circle, 8 streams	050 – 1/2" FIPT 025 – 1/4" barb SPYK – 5" spike
UXB – Umbrella		050 – 1/2" FIPT 025 – 1/4" barb SPYK – 5" spike



## PEPCO OCTA-BUBBLER®

- ◆ Delivers water to multiple locations
- ◆ Optional plugs for unused ports
- ◆ Suitable for retrofitting zones
- ◆ Pressure compensation range 20-60 psi
- ◆ Flow rates 2, 6, 10 & 20 GPH



Product Code	Description
OCT816	Blue low flow bubbler (2 GPH/outlet), eight swivel ports, .250 barb outlet, 1/2" FIPT inlet
OCT856	Black med flow bubbler (6 GPH/outlet), eight swivel ports, .250 barb outlet, 1/2" FIPT inlet
OCT896	Red high flow bubbler (10 GPH/outlet), eight swivel ports, .250 barb outlet, 1/2" FIPT inlet
OCT8186	Green ex-high flow bubbler (20 GPH/outlet), eight swivel ports, .250 barb outlet, 1/2" FIPT inlet

## PEPCO QB2

- ◆ Color-coded flow rates
- ◆ Good for retrofitting zones
- ◆ 1/2" FIPT inlet
- ◆ Clog resistant
- ◆ Pressure compensation range 20-60 psi
- ◆ Flow rates 2, 6, 10 & 20 GPH



Product Code	Description
QB2-16	Blue low flow (2 GPH/outlet) 1/2" FIPT inlet,
QB2-56	Black med flow (6 GPH/outlet) 1/2" FIPT inlet,
QB2-96	Red high flow (10 GPH/outlet) 1/2" FIPT inlet
QB2-186	Green extra high flow (20 GPH/outlet) 1/2" FIPT inlet

# Irrigation

## MICRO-SPRAYS



### XERI-POP™

**Easy to install and reconfigure, making them ideal for seasonal flower and planting beds.**

- ◆ Operates with 20 psi to 50 psi base pressure when water is supplied via 1/4" distribution tubing
- ◆ Can readily connect to 1/2" or 3/4" polyethylene tubing
- ◆ Can use Multi-Port nozzle for Xeri-Pop, 5 series MPR, 5 series plastic bubbler or 8 series MPR nozzle



Product Code	Description
XP400X	4" pop-up
XP600X	6" pop-up
XP1200X	12" pop-up



### HYDRO-POP™

- ◆ Designed specifically for low-volume irrigation and can operate at very low pressures — requires just 15 psi for extension
- ◆ Can be used with most Agrifim emitters and bubblers
- ◆ Available with two inlet connections — 1/2 MIPT or compression fit



Product Code	Description
HYP250	9" pop-up riser with 1/4" compression fit
HYP500	9" pop-up riser with 1/4" MIPT inlet
HYPJ250	5" pop-up riser with 1/4" compression fit
HYPJ500	5" pop-up riser with 1/4" MIPT inlet

## FILTERS



### PRESSURE-REGULATING FILTER

- ◆ Reduces the number of components in a control zone, making it smaller and easier to install
- ◆ P/R RBY Filter Cap has sealing o-ring and unthreads to provide access to the filter element for easy cleaning
- ◆ P/R Back Flush Filter provides self-cleaning action with every cycle, as debris is flushed every time the system is turned on and off
- ◆ 30 psi or 40 psi pressure regulator is integrated into filter body

#### Specifications:

Flow: 3/4" units: 0.50 GPM to 5 GPM

1" units: 3 GPM to 15 GPM

Inlet pressure: 20 psi to 150 psi

Regulated pressure: 3/4" units: 30 psi

1" units: 40 psi



Product Code	Description
PRF-075-RBY	3/4" P/R RBY Filter
PRF-100-RBY	1" P/R RBY Filter

### QUICK-CHECK BASKET FILTER

- ◆ A clear indicator top that goes from green to red when the filter is full, telling you when to clean the filter
- ◆ Reduces maintenance and takes the guess work out of cleaning the filter
- ◆ Threaded top makes it easy to remove and clean the stainless-steel element
- ◆ "No Spill" feature ensures that the dirt and debris does not fall out of the basket filter element when you remove it for cleaning
- ◆ Rugged design incorporates four Buna N o-rings for leak-free performance and is rated up to 150 psi



### QUICK-CHECK BASKET FILTER (CONT.)

Product Code	Description
QKCHK-075	3/4" Inlet/Outlet
QKCHK-100	1" Inlet/Outlet
PRB-QKCHK-100	1" Inlet/Outlet; Pressure Regulating

### IN-LINE WYE FILTERS

**Used in conjunction with a valve and pressure regulator, it protects the downstream components in a drip irrigation system.**

- ◆ Provides 150 psi pressure rating through MPT connections
- ◆ Flow: 3/4" units: 0.20 GPM to 12 GPM, 1/2" units: 0.20 GPM to 18 GPM
- ◆ Pressure: 20 psi to 150 psi



Product Code	Description
RBY075MPTX	3/4" with 200 mesh screen
RBY100MPTX	1" inline with 200 mesh screen

**Replacement filters available in three configurations:**

RBY100XM — 100 mesh

RBY150MX — 150 mesh

RBY200MX — 200 mesh

### "Y" FILTERS

**Filter traps all dirt and prevents plugging of the emitters.**

- ◆ With 150 mesh polyester screen element
- ◆ 10 GPM capacity
- ◆ 150 psi maximum pressure

Product Code	Description
YS75	Agrifim 3/4" Drip Filter
DF075	Netafim 3/4" Drip Filter

## PRESSURE REGULATORS



### INLINE PRESSURE REGULATORS

- ◆ Can be installed above or below ground
- ◆ Preset outlet pressures: 30 psi, 40 psi, 50 psi
- ◆ 3/4" or 1" female-threaded inlet and outlet
- ◆ 10 psi to 150 psi



Product Code	Description
PSIL30X075	3/4" 30 psi for low flow (0.10 GPM to 5 GPM; 6 GPH to 300 GPH)
PSIM30X075	3/4" 30 psi for medium flow (2 GPM to 10 GPM; 120 GPH to 600 GPH)
PSIM40X075	3/4" 40 psi for medium flow (2 GPM to 10 GPM; 120 GPH to 600 GPH)
PSIM40X100	1" 40 psi for medium flow (2 GPM to 10 GPM; 120 GPH to 600 GPH)

## DRIP HOSE COMPRESSION FITTINGS



### EASY FIT COMPRESSION FITTINGS

Accept all 1/2" poly tubing from .630" to .710" outside diameter.



Product Code	Description
MDCF50FPT	1/2" FPT Adapter
MDCF50MPT	1/2" MPT Adapter
MDCF75FPT	3/4" FPT Adapter
MDCF75FHT	3/4" FHT Adapter
MDCF75MPT	3/4" MPT Adapter
MDCF50CAP	Flush cap adapter
MDCF50PCAP	Flush cap adapter, purple
MDFTEE	Drip Tee
MDCFEL	Elbow
MDCF50COUP	Coupling

## DRIP TUBE INSERT FITTINGS



### XF INSERT FITTINGS

**Shut-off/flow control valve used with 1/4" distribution tubing.**

- ◆ Complete line of 17 mm insert fittings to simplify installation of XF Dripline.
- ◆ High quality barbs grab tubing for a secure fit.
- ◆ Unique barb design to reduce insertion force and still retain a secure fit.
- ◆ Non-obtrusive colored fittings to complement natural earth tones.
- ◆ Pressure: 0 – 50 psi

	MODEL	DESCRIPTION	APPLICATION
	XFF-COUP	Barb coupling 17 x 17mm Operating pressure: 0 to 50 psi (0,0 to 3,5 bar)	For 2-way joints
	XFF-ELBOW	Barb elbow 17 x 17mm Operating pressure: 0 to 50 psi (0,0 to 3,5 bar)	Elbow joint connection
	XFF-TEE	Barb tee 17 x 17 x 17mm Operating pressure: 0 to 50 psi (0,0 to 3,5 bar)	For 3-way joints
	XFF-MA-050	Barb male adapter 17mm x 1/2" MPT Operating pressure: 0 to 50 psi (0,0 to 3,5 bar)	For transition from 1/2" pipe to XF series dripline
	XFF-MA-075	Barb male adapter 17mm x 3/4" MPT Operating pressure: 0 to 50 psi (0,0 to 3,5 bar)	For transition from 3/4" pipe to XF series dripline
	XFF-TMA-050	Tee male adapter 17mm x 1/2" MPT x 17mm Operating pressure: 0 to 50 psi (0,0 to 3,5 bar)	For a 3-way joint connection to 1/2" pipe

## VALVES



### AGRIFIM 1/4" MICRO-VALVE

**Shut-off/flow control valve used with 1/4" distribution tubing.**

Product Code
MV25



### LOW FLOW VALVE

**Made especially for drip irrigation systems. Contains all features of DV valve.**

- ◆ Unique "double-knife" diaphragm coupled with 1/2" diameter seat for flawless operation at low flow rates
- ◆ External and internal bleed
- ◆ Flow: 0.20 GPM to 8 GPM; 15 psi to 150 psi



Product Code	Description
LFV075	3/4" valve
LFV100	1" valve

## FAN SPRAYS AND STAKE ASSEMBLIES



### XERI SPRAY™

#### Adjust flow/radius by turning integral ball valve.

- ◆ Uniform emission pattern provides excellent distribution
- ◆ 10-32 self-tapping threads fit into 1/2" X 10 — 32 adapter
- ◆ (10-32A); 1800 Xeri-Bubbler™ adapter (XBA-1800); and polyflex riser (PFR-12)
- ◆ Ideal for ground cover, mass plantings, annual flower beds and containers

#### Operating Range:

Flow: 0 GPH to 31 GPH (0 l/h to 120,1 l/h)  
 Pressure: 10 psi to 30 psi (0,75 to 2,0 bar)  
 Radius: 0' to 13.4' (0 m to 4,1 m) full-circle; 0' to 10.6' (0 m to 3,2 m) quarter and half circle

Product Code	Description
XS-90	Quarter circle, spray
XS-180	Half circle, spray
XS-360	Full circle, stream spray
360 ADJ Mister	Full circle, adjustable mister

### XERI SPRAY™ 360° TRUE SPRAY

#### True micro spray with full-circle fan spray pattern.

- ◆ Adjust flow/radius by turning outer cap
- ◆ Ideal for mass plantings, ground cover, annual flower beds and containers
- ◆ Easily cleaned by completely unscrewing cap from base unit

#### Operating Range:

Flow: 0 GPH to 24.5 GPH (0 l/h to 94,9 l/h)  
 Pressure: 15 psi to 30 psi (1,0 bar to 2,0 bar)  
 Radius: 0' to 6.7' (0 m to 2,0 m)

Product Code	Description
XS-360TS-SPYK	5" spike

### 1/4" TUBING STAKE

- ◆ Holds distribution tubing and emitter or Diffuser Bug Cap in desired location

Product Code
TS025
TS025WCAP (w/cap)



## FAN SPRAYS AND STAKE ASSEMBLIES (CONT.)



### AGRIFIM STAKE ASSEMBLIES

- ◆ Various stake assemblies are available in a pre-assembled form. The 1/4" connector on the end of the vinyl tubing is simply attached to the supply tubing and the system is ready to go



HOW TO SPECIFY :			
Model	Jet Assembly	Rotation	Base
TA24: 24" vinyl tubing with S12 stake	1 – 1 piece 2 – 2 pieces	F – 360° H – 180°	3 – black 4 – blue
TA244: no jet	3 – 3 pieces	Q – 90°	5 – green
TA245: Dial-A-Flo (DAFB360)			6 – red
TA246: Micro-Flo sprinkler			7 – white

## RISERS



### RAIN BIRD® 12" POLYFLEX RISER

- ◆ Accepts Xeri-Bubbler™ and Xeri-Spray™ emission devices



Product Code
PFR12

## ACCESSORIES



### XERIMAN™ TOOL

- ◆ Provides fast and easy, one-step installation of Xeri-Bug™ emitters; PC Modules and 1/4" barbed insert fittings directly into 1/2" or 3/4" drip tubing such as Xeri-Tube™

Product Code
XM-TOOL

### 1/4" SELF PIERCING BARB CONNECTOR

- ◆ Can be inserted into distribution tubing using an XM tool or Bug Gun to provide a transfer fitting for 1/4" distribution tubing

Product Code
SPB025

### XF FITTING INSERTION TOOL

#### Tool aids in reducing the effort required to insert fittings into the dripline tube.

- ◆ Works with Rain Bird XF flanged fittings



Product Code
FITINS-TOOL

**Horizon Distributors carries all of the commonly requested diameters and lengths of both PE (polyethylene) and IPS Flex PVC Pipe including:**

Large Bore PE Tubing Sizes	
Product Code	Description
Poly Drip Tubing	.620 X .520 Black
Poly Drip Tubing	.700 X .600 Black
Poly Drip Tubing	.710 X .620 Black
Poly Drip Tubing	.710 X .620 Blue STRP
Poly Drip Tubing	.710 X .620 Purple STRP
Poly Drip Tubing	.710 X .620 Yellow STRP
Poly Drip Tubing	.927 X .817 Black
Poly Drip Tubing	.927 X .817 Blue STRP
Poly Drip Tubing	.927 X .817 Purple STRP
Poly Drip Tubing	.927 X .817 Yellow STRP
Poly Drip Tubing	.940 X .820 Black
Poly Drip Tubing	1.20 X 1.06 Black

Small Bore PE Tubing Sizes	
Product Code	Description
Poly Drip Tubing	.185 X .125 Vinyl
Poly Drip Tubing	.187 X .125 PE
Poly Drip Tubing	.220 X .160 PE
Poly Drip Tubing	.220 X .160 Vinyl
Poly Drip Tubing	.250 X .170 PE
Poly Drip Tubing	.250 X .170 Vinyl

## Specific Drip Irrigation Installation Information

- Connecting Drip Tubing**  
 Drip lines can be connected directly to existing hose bibs. Typical hose bib connections include an atmospheric vacuum breaker, in-line filter, pre-set pressure regulator and swivel adapt that connects directly to the tubing. Drip lines can be connected to a specific in-line zone valve or to a combination anti-siphon valve. The typical installation requires a Y-filter and a pre-set pressure regulator. In this situation, the drip zone can be operated automatically with the rest of the irrigation system from the controller.
- Retrofitting Existing Spray Sprinkler Systems to Drip**  
 Existing networks of spray sprinklers in shrubbery areas can quickly and easily be adapted to a more efficient and vandal-resistant drip system. First, the zone's control equipment must be upgraded to include a filter, pressure regulator and control valve with low flow capability. Then, existing sprays can be removed and replaced with multiple-outlet emitters. Distribution tubing is used to carry water from the emitters directly to the plants.
- Drip Systems Require Filtration**  
 Pressure regulators are typically preset to 20 or 30 psi. Pressure regulators are used for reducing pressures to proper levels for low volume system operation. Regulating pressure is important since high pressures cause emitters to blow off and fittings to separate from drip tubing.
- Water Delivery Tubing or Piping**  
 Water can be transported from the drip zone control valve through either conventional PVC pipe or polyethylene tubing. In the case of a system that utilizes PVC piping, emitters are typically mounted to nipples rising from the PVC line. This may be a convenient method when retrofitting an existing conventional spray head system.  
  
 Polyethylene tubing can be run directly from the valve, either above or under the ground, and emitters placed anywhere along the tubing run. A mixed system uses PVC pipe from the valve to the vicinity of irrigation and changes to polyethylene at nipples rising from tees and elbows in the pipe.
- Distribution 1/2" tubing is designed to be used near the point of water delivery.** They are typically connected to the outlets of drip emitters to place water directly at the base of a specific plant.
- A Wide Selection of Emitters**  
 Drip emitters apply water at very slow application rates. Bubblers are designed for use in shorter watering cycles when faster application rates are desired. Microsprays are designed for general planted areas, such as groundcover. Emitter line is tubing with in-line emitters placed at specific intervals and is ideal for row plantings, or loops around shrubs and trees.

**Please contact your local Horizon Sales Representative for more information.**



**Fertigation is the application of fertilizers, soil amendments, or other water soluble products through an irrigation system.**

**Benefits of fertigation over traditional broadcast or drop fertilizing methods include:**

- ◆ Increased nutrient absorption by plants
- ◆ Reduction in fertilizer and chemicals needed
- ◆ Reduced leaching to the water table
- ◆ Reduction in water usage due to the plant's resulting increased root mass being able to trap and hold water
- ◆ Application of nutrients at the precise time they are needed and at the rate they are utilized



### EZ-FLO SYSTEMS

**EZ-FLO Main Line Systems feed the entire landscape automatically every time you water.**

- ◆ Engineered to handle static water pressure even when your irrigation system is off
- ◆ When operating, the systems do not cause any measurable pressure loss
- ◆ Can be installed in minutes
- ◆ Main-line systems come in seven sizes — the size of the tank determines the refill frequency
- ◆ All models are equipped with shutoff valves for ease of refill and a pressure relief valve that releases and resets when water pressure in the tank exceeds 150lbs. per square inch
- ◆ EZ-FLO's patented flow technologies ensure that the proportion of fertilizer to water remains constant from the beginning of the cycle until the tank is depleted of fertilizer

Product Code	Description
EZ 001-CX	1.5 gals.
EZ 003-CX	2.5 gals.
EZ 005-FX	5 gals.
EZ 010-FX	10 gals.
EZ 010-HC	10 gals. (High Capacity)
EZ 020-HC	20 gals. (High Capacity)
EZ 030-HC	30 gals. (High Capacity)

### BALL VALVE COUPLING CONNECTION

- ◆ Used to connect the EZ-FLO system to the irrigation flow line before or after the valve with the 1/4" flexible tubing
- ◆ Available in sizes ranging from 3/4" to 4" with socket X socket connections for gluing into PVC pipe
- ◆ Manufactured from Schedule 40 PVC with 1/4" nylon barbed tubing connections
- ◆ Highly recommended for use with EZ005-FX and EZ010-FX models and REQUIRED FOR all High Capacity (HC) main line units



Product Code	Description
EZCBV075	3/4" coupling connection w/ball valve
EZCBZ100	1" coupling connection w/ball valve
EZCBZ125	1 1/4" coupling connection w/ball valve
EZCBZ150	1 1/2" coupling connection w/ball valve
EZCBZ175	1 3/4" coupling connection w/ball valve
EZCBZ200	2" coupling connection w/ball valve
EZCBZ250	2 1/2" coupling connection w/ball valve
EZCBZ300	3" coupling connection w/ball valve
EZCBZ400	4" coupling connection w/ball valve

**See page 281 for a list of all fertilizers available for use with EZ-FLO injector systems.**



### STANDARD SLIP COUPLING CONNECTION

- ◆ Available in sizes ranging from 3/4" to 4" with socket X socket connections for gluing into PVC pipe
- ◆ Manufactured from Schedule 40 PVC with 1/4" nylon barbed tubing connections
- ◆ Used to connect the EZ-FLO system to the irrigation flow line before or after the valve with the 1/4" flexible tubing provided with every EZ-FLO system
- ◆ Required for complex system designs or when the elevation of zone valves downstream from the installation point are at an elevation of 10' or more above the installation point
- ◆ Provide the ability to adjust the differential pressure between the inlet and outlet connections to the irrigation flow line
- ◆ Highly recommended for use with EZ005-FX and EZ010-FX models and REQUIRED FOR all High Capacity (HC) main line units



Product Code	Description
ECZ075	3/4" coupling connection
EZC100	1" coupling connection
EZC125	1 1/4" coupling connection
EZC150	1 1/2" coupling connection
EZC175	1 3/4" coupling connection
EZC200	2" coupling connection
EZC250	2 1/2" coupling connection
EZC300	3" coupling connection
EZC400	4" coupling connection



### FERTILE EARTH PROFEEDER

#### Fertigation and all-natural pest control for landscape professionals.

- ◆ Installs in a standard valve box
- ◆ Auto-regulating design
- ◆ Water pressure: 25 psi to 125 psi
- ◆ Water flow: 1.5 GPM to 30 GPM
- ◆ Easy to service and repair
- ◆ Very low friction loss
- ◆ Works with drip, pop-up or impact installed in the same system
- ◆ All-mechanical design
- ◆ Liquid Life™ fertilizer
- ◆ Easy to refill Quick Connect bottle
- ◆ Safe for use around kids & pets
- ◆ Use the SmartFeeder™ as an all-natural pest-control system



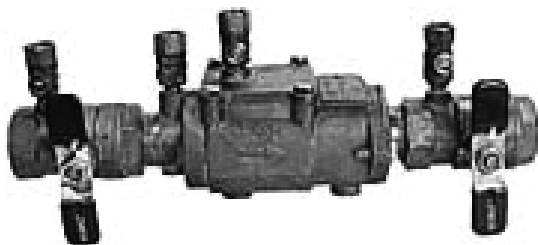


### FEBCO 850 SERIES

- ◆ Used to prevent backflow of pollutants that are objectionable but not toxic
- ◆ May be installed under continuous pressure and may be subjected to backpressure
- ◆ For use in sprinkler systems and fire protection systems without chemical additives

#### Specifications:

Maximum working water pressure: 175 psi  
Hydrostatic test pressure: 350 psi  
Temperature range: 32°F to 140°F



Product Code	Description
85007	3/4" Double check valve
85010	1" Double check valve
85015	1 1/2" Double check valve
85020	2" Double check valve
850U007	3/4" Union ball double check valve
850U010	1" Union ball double check valve



### WILKINS 950XL AND 950XLT SERIES

Designed for installation on potable water lines to protect against both back-siphonage and backpressure of polluted water into the potable water supply.

- ◆ Double check valve assembly complete with two full port valves and four ball valve test cocks

#### Specifications:

Maximum working water pressure: 175 psi  
Maximum working water temperature: 180°F  
Hydrostatic test pressure: 350 psi



Product Code	Description
950XL007	3/4" XL Series
950XL010	1" XL Series
950XL012	1 1/4" XL Series
950XL015	1 1/2" XL Series
950XL020	2" XL Series
950XLT007	3/4" XLT Series
950XLT010	1" XLT Series
950XLT012	1 1/4" XLT Series
950XLT015	1 1/2" XLT Series
950XLT020	2" XLT Series
950XLTU007	3/4" XLT Series with union ball valves
950XLTU010	1" XLT Series with union ball valves
950XLTU012	1 1/4" XLT Series with union ball valves
950XLTU015	1 1/2" XLT Series with union ball valves
950XLTU020	2" XLT Series with union ball valves

## DOUBLE CHECK VALVE ASSEMBLY (CONT.)

### WILKINS

a ZURN company

#### WILKINS MODEL 350

Designed for installation on potable water lines to protect against both back-siphonage and backpressure of polluted water into the potable water supply.

- ◆ Easy to test. Top access to test cocks, shutoff valves and check assembly
- ◆ Entire flow housing is removable to enable check access for cleaning or repair
- ◆ Easy to winterize by removing wetted components between shut off valves
- ◆ Simple design — composite housing and check modules resist corrosion

#### Specifications:

Maximum working water pressure: 175 psi  
Maximum working water temperature: 180°F  
Hydrostatic test pressure: 350 psi



Product Code	Description
350007	3/4" 350 Double Check Backflow Assembly
350010	1" 350 Double Check Backflow Assembly

### CONBRACO

#### CONBRACO 2" 40-100-T2 SERIES

Product Code	Description
40104T2	3/4" Double Check Backflow Preventer
40105T2	1" Double Check Backflow Preventer
40107T2	1 1/2" Double Check Backflow Preventer
40108T2	2" Double Check Backflow Preventer

## PRESSURE VACCUUM BREAKER ASSEMBLY

### FEBCO

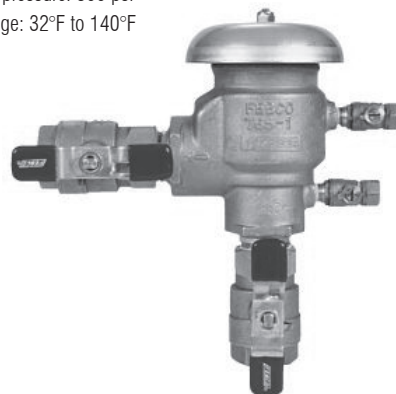
BACKFLOW PREVENTION

#### FEBCO 765 SERIES

- ◆ All bronze body for durability
- ◆ One check valve and an air opening port in one assembly
- ◆ Lightweight poppet seals air opening under minimum flow conditions
- ◆ Simple service procedures
- ◆ All internal parts serviceable in line from the top of the unit
- ◆ Designed for minimum head loss
- ◆ Engineered plastic bonnet protect valve bodies from freeze damage
- ◆ Optional union end ball valves for easy removal and ultimate freeze protection

#### Specifications:

Maximum working water pressure: 150 psi  
Hydrostatic test pressure: 300 psi  
Temperature range: 32°F to 140°F



Product Code	Description
765005	1/2" Pressure vacuum breaker
765007	3/4" Pressure vacuum breaker
765010	1" Pressure vacuum breaker
765012	1 1/4" Pressure vacuum breaker
765015	1 1/2" Pressure vacuum breaker
765020	2" Pressure vacuum breaker
765UB007	3/4" PVB with union ball valve
765UB010	1" PVB with union ball valve

## PRESSURE VACCUUM BREAKER ASSEMBLY (CONT.)

**WILKINS**  
a ZURN company

### WILKINS 720 SERIES

The valve isolates non-potable or irrigation lines from the potable water systems. It has the ability to withstand supply pressure for long periods and to prevent backflow of hazardous and non-hazardous water into the potable water system in back-siphonage conditions only.

#### Specifications:

Maximum working water pressure: 150 psi  
Maximum working water temperature: 110°F  
Hydrostatic test pressure: 300 psi



Product Code	Description
720A005	1/2" Backflow PVB
720A007	3/4" Backflow Pressure Vacuum Breaker
720A010	1" Backflow Pressure Vacuum Breaker
720A012	1 1/4" Backflow Pressure Vacuum Breaker
720A015	1 1/2" Backflow Pressure Vacuum Breaker
720A020	2" Backflow Pressure Vacuum Breaker

## REDUCED PRESSURE ASSEMBLY

**FEBCO**  
BACKFLOW PREVENTION

### FEBCO 825Y SERIES

- ◆ Reliable FEBCO quality in traditional "Y" pattern design
- ◆ All internal parts serviceable without removing unit
- ◆ Angle pattern available (product code 825YA)

#### Specifications:

Maximum working water pressure: 175 psi  
Hydrostatic test pressure: 350 psi  
Temperature range: 32°F to 140°F



Product Code	Description
825Y007	3/4" 825Y Series
825Y010	1" 825Y Series
825Y012	1 1/4" 825Y Series
825Y015	1 1/2" 825Y Series
825Y020	2" 825Y Series

**CONBRACO**

### CONBRACO 1" 4V-500 SERIES

Product Code	Description
4V50402	3/4" Pressure Vacuum Breaker
4V50502	1" Pressure Vacuum Breaker

## REDUCED PRESSURE ASSEMBLY (CONT.)



### FEBCO 825YA SERIES

- ◆ Low head loss for optimum performance
- ◆ Compact design simplifies retrofit
- ◆ Field-tested design for reliability and performance
- ◆ Replaceable relief valve seat ring for longer life



#### Specifications:

Maximum working water pressure: 175 psi  
Hydrostatic test pressure: 350 psi  
Temperature range: 32°F to 140°F

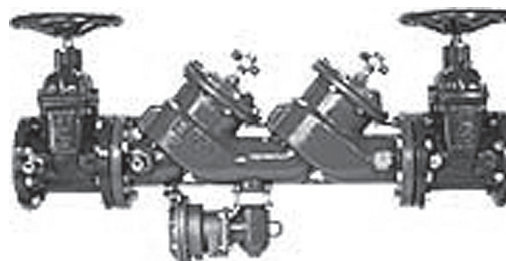
Product Code	Description
825YA007	3/4" 825YA Series
825YA010	1" 825YA Series
825YA015	1 1/2" 825YA Series
825YA020	2" 825YA Series

### FEBCO 860 SERIES

- ◆ Ductile iron body for superior strength and lightweight
- ◆ Patented spring-loaded swing checks for reliability and low head loss
- ◆ 100% fusion epoxy coated inside and out
- ◆ Modular bottom mount relief valve
- ◆ Simple service procedures require no tools
- ◆ Cast in lifting hooks for easy, safe installation
- ◆ Bulkhead fittings eliminate all threaded holes in body and cover

#### Specifications:

Maximum working water pressure: 175 psi  
Hydrostatic test pressure: 350 psi  
Temperature range: 32°F to 140°F



Product Code	Description
860005	1/2" 860 Series RPA
860007	3/4" 860 Series RPA
860010	1" 860 Series RPA
860012	1 1/4" 860 Series RPA
860015	1 1/2" 860 Series RPA
860020	2" 860 Series RPA
860025	2 1/2" 860 Series RPA
860030	3" 860 Series RPA
860040	4" 860 Series RPA
860060	6" 860 Series RPA



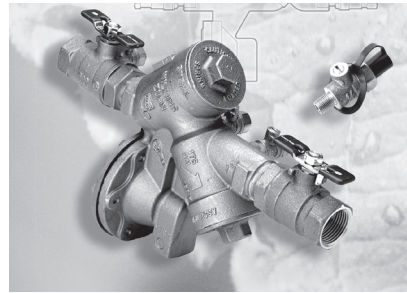
### WILKINS 975XL SERIES

- ◆ Prevents the reverse flow of water, gases or other substances into the distribution system of the potable water supply
- ◆ Pressure differential relief valve between two independent spring-loaded "Y" type center guided check valves complete with two full port ball valves and four ball valve test cocks

#### Specifications:

Maximum working water pressure: 175 psi

Maximum working water temperature: 180°F



Product Code	Description
12-975XL2	1/2" Reduced Pressure Principle Assy, Lead-Free, FNTF x FNTF
34-975XL2	3/4" Reduced Pressure Principle Assy, Lead-Free, FNTF x FNTF
1-975XL2	1" Reduced Pressure Principle Assy, Lead-Free, FNTF x FNTF
114-975XL2	1-1/4" Reduced Pressure Principle Assy, Lead-Free, FNTF x FNTF
112-975XL2	1-1/2" Reduced Pressure Principle Assy, Lead-Free, FNTF x FNTF
2-975XL2	2" Reduced Pressure Principle Assy, Lead-Free, FNTF x FNTF

Lead Free products contain a weighted average lead content less than 0.25% for wetted surfaces.

### WILKINS 375 SERIES

#### 2 1/2" to 4"

Designed for installation on potable water lines to protect against both back-siphonage and backpressure of contaminated water into the potable water supply.

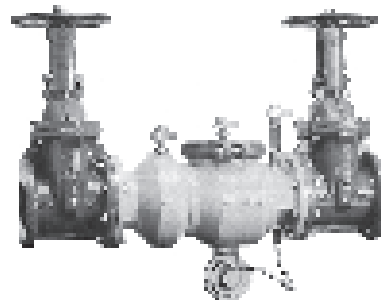
#### Specifications:

Maximum working water pressure: 175 psi

Maximum working water temperature: 140°F

Hydrostatic test pressure: 350 psi

With NRS shut-off valves



Product Code	Description
1-375XL	1" Reduced Pressure Principle Assy, Lead-Free, Composite Vessel, FNTF x FNTF
2-375XL	2" Reduced Pressure Principle Assy, Lead-Free, Composite Vessel, FNTF x FNTF
3-375OSY	3" Reduced Pressure Principle Assy, Lead-Free, Flanged Body, Flanged OSY x Flanged OSY
4-375	4" Reduced Pressure Principle Assy, Lead-Free, Flanged Body, Flanged OSY x Flanged OSY

Lead Free products contain a weighted average lead content less than 0.25% for wetted surfaces.

## SINGLE WALL PIPE



**ADS single-wall corrugated HDPE pipe is ideal for drainage projects where flexibility, light weight and low cost are important.**

Product Code	Description
3010010	3" Flex perforated pipe, 10' length
3010100	3" Flex perforated pipe, 100' length
3010300	3" Flex perforated pipe, 300' length
4010010	4" Flex perforated pipe, 10' length
4010100	4" Flex perforated pipe, 100' length
4010250	4" Flex perforated pipe, 250' length
6010010	6" Flex perforated pipe, 10' length
6010100	6" Flex perforated pipe, 100' length
8010020	8" Flex perforated pipe, 20' length
10010020	10" Flex perforated pipe, 20' length
12010020	12" Flex perforated pipe, 20' length
15010020	15" Flex perforated pipe, 20' length
18010020	18" Flex perforated pipe, 20' length
3510010	3" Flex solid pipe, 10' length
3510100	3" Flex solid pipe, 100' length
3510300	3" Flex solid pipe, 300' length
4510010	4" Flex solid pipe, 10' length
4510100	4" Flex solid pipe, 100' length
4510250	4" Flex solid pipe, 250' length
6510010	6" Flex solid pipe, 10' length
6510100	6" Flex solid pipe, 100' length
8510020	8" Flex solid pipe, 20' length
10510020	10" Flex solid pipe, 20' length
12510020	12" Flex solid pipe, 20' length
15510020	15" Flex solid pipe, 20' length
18510020	18" Flex solid pipe, 20' length
24510020	24" Flex solid pipe, 20' length

## SINGLE WALL PIPE WITH SOCK



**This pipe features a factory-installed synthetic wrap "sock" that prevents the entry of particles into the drainage line. Ideal for use in sand-based golf applications or to eliminate the need for landscape fabric.**

Product Code	Description
03730100BS	3" Flex perforated pipe with filter sock, 100' roll
04730100BS	4" Flex perforated pipe with filter sock, 100' roll
06730100BS	6" Flex perforated pipe with filter sock, 100' roll
0420HA	4" Filter sock only, 100' roll

## DUAL WALL PIPE



**N-12 dual wall pipe has a smooth interior wall and a corrugated exterior wall and offers exceptional hydraulics and strength. N-12 provides superior corrosion and abrasion resistance. N-12 is available in recycled materials per ASTM F-2648 or virgin materials per AASHTO.**

Product Code	Description
N-12 Plain End per ASTM F-2648	Horizon Distributors offer all of the commonly specified dual wall corrugated polyethylene pipe configurations from 4" to 60". Plain end, in-line ball couplings and assorted fittings.
N-12 Water Tight per ASTM F-2648	
N-12 Soil Tight per ASTM F-2648	
N-12 Plain End per AASHTO	
N-12 Water Tight per AASHTO	
N-12 Soil Tight per AASHTO	



Plain End



Water Tight



Soil Tight

## ADS TRIPLE WALL PIPE



**ADS 3000 Triple Wall pipe is triple bonded polyethylene for exceptional pipe stiffness. With smooth inner and outer walls and corrugated structural core, ADS 3000 pipe is designed to have superior pipe stiffness to that of PVC sewer and drain pipe, yet priced to compete.**

Product Code	Description
3520010	3" Triple wall sewer & drain perforated pipe, 10' length
4520010	4" Triple wall sewer & drain perforated pipe, 10' length
3550010	3" Triple wall sewer & drain solid pipe, 10' length
4550010	4" Triple wall sewer & drain solid pipe, 10' length



Single Wall

Single Wall  
with Sock

Triple Wall

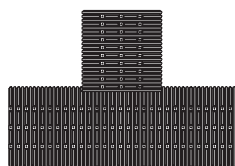
## ADVANEDGE® PIPE



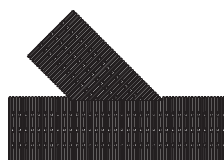
**Panel-shaped AdvanEDGE HDPE is utilized for building foundation drainage, golf courses, athletic fields, airport runways, railroad truck ballast and perimeter curtain drains.**

- ◆ Easy to install
- ◆ Durable
- ◆ Available with fabric or without fabric

Product Code	Description
04900100	12" Panel pipe no fabric, 100' length
04910100	12" Panel pipe 3.5 oz Tytar fabric, 100' length
04930100	12" Panel pipe 4.0 oz. Tytar fabric, 100' length
04930400	12" Panel pipe 4.0 oz. Tytar fabric, 400' length
04930112	12" Panel pipe 4.0 oz. Tytar fabric, 112' length
04940100	12" Panel pipe knitted polyester sock, 100' length
04950100	12" Panel pipe 4.0 oz Amoco fabric (grey), 100' length
06900100	18" Panel pipe no fabric, 100' length
06930100	18" Panel pipe 4.0 oz fabric, 100' length
06931600	18" Panel pipe 4.0 oz fabric, 1,600' length
06950100	18" Panel pipe Needle punched fabric, 100' length



**Fabricated Tee  
(Horizontal)**



**Fabricated Wye  
(Horizontal)**



**Fabricated  
Cross Tee**



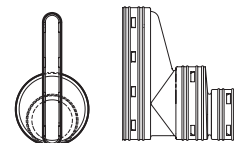
**Fabricated  
Tee with  
Side Outlet**



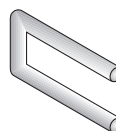
**Fabricated  
Cross Wye**



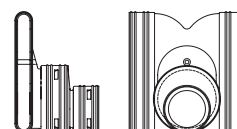
**End Cap**



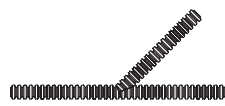
**End Outlet**



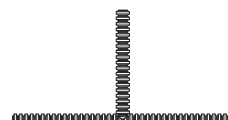
**Coupling  
Pin**



**Side Outlet**



**FABRICATED WYE**



**Fabricated Tee**

## ADVANEDGE® PIPE FITTINGS



**Panel-shaped AdvanEDGE HDPE is utilized for building foundation drainage, golf courses, athletic fields, airport runways, railroad truck ballast and perimeter curtain drains.**

Product Code	Description
1432AA	12" Panel pipe snap end cap
1632AA	18" Panel pipe snap end cap
1411AA	12" Panel pipe external split coupler
1611AA	18" Panel pipe external split coupler
1480AA	12" Panel pipe wye
0840MB	12" & 18" Panel pipe coupling pin (2/pack)
1472AA	12" Panel pipe end outlet
1672AA	18" Panel pipe end outlet
1471AA	18" Panel pipe side outlet
1671AA	18" Panel pipe side outlet
1432AN	12" Panel pipe flat outlet
1460AN	12" Panel pipe fabricated tee
1660AN	18" Panel pipe fabricated tee
1460ANH	12" Panel pipe horizontal fabricated tee
1660ANH	18" Panel pipe horizontal fabricated tee
1464ANH	12" Panel pipe fabricated tee with side outlet
1464ANH81	12" Panel pipe fabricated tee with perforated side outlet
1436ANH	12" Panel pipe fabricated horizontal cross tee
1480AN	12" Panel pipe fabricated wye
1680AN	18" Panel pipe fabricated wye
1480ANH	12" Panel pipe fabricated horizontal wye
1680ANH	18" Panel pipe fabricated horizontal wye
1438ANH	12" Panel pipe fabricated cross wye

**HINGED TEE**

**Hinged corrugated tee fits on 4" singlewall pipe and N-12® dual wall pipe. Hinged corrugated tee will fasten securely to pipe and allow for ease of use in the field.**

Product Code	Description
0421AAHF	4" Hinged tee with clips

**EXPANDABLE DOWNSPOUT ADAPTER**

**Adapter comes in 8½" compressed length and expands to 16". Bends from 45° to 90° angles. Angles around landscaping and easily bent to move for mowing.**

Product Code	Description
0473AA	2"x3" Downspout Fitting
0474AA	3"x4" Downspout Fitting



## INSERTA TEE® FITTINGS

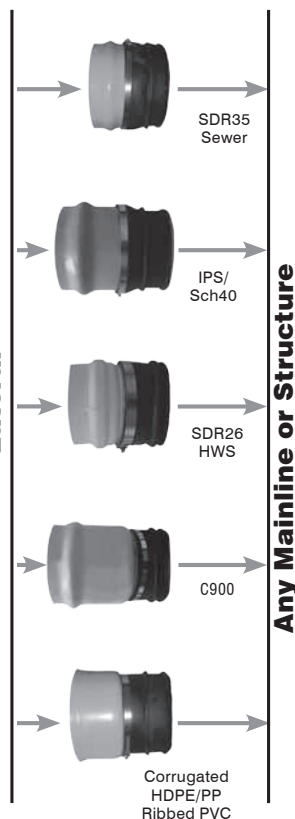


**Compression fits into the cored wall of a mainline and requires no special tools. Designed to connect 2"-30" services to mainlines.**

Product Code	Description
2IPS8N12	2" IPS/SCH40 into 8" corrugated HDPE pipe
2IPS10N12	2" IPS/SCH40 into 10" corrugated HDPE pipe
2IPS12N12	2" IPS/SCH40 into 12" corrugated HDPE pipe
2IPS8P35	2" IPS/SCH40 into 8" SDR35
4IPSF8N12	4" IPS/SCH40 into 8" corrugated HDPE pipe
4IPSF10N12	4" IPS/SCH40 into 10" corrugated HDPE pipe
4IPSF12N12	4" IPS/SCH40 into 12" corrugated HDPE pipe
4P26FB8N12	4" SDR26 into 8" corrugated HDPE pipe
4P26FB10N12	4" SDR26 into 10" corrugated HDPE pipe
4P26FB12N12	4" SDR26 into 12" corrugated HDPE pipe
4P26FB18N12	4" SDR26 into 18" corrugated HDPE pipe
4P26FB8P35	4" SDR into 8" SDR35
4P26FB12P35	4" SDR into 12" SDR35
4N1210N12	4" corrugated HDPE into 10" corrugated HDPE pipe
4N1212N12	4" corrugated HDPE into 12" corrugated HDPE pipe
4N1218N12	4" corrugated HDPE into 18" corrugated HDPE pipe
6IPSF8N12	6" IPS/SCH40 into 8" corrugated HDPE pipe
6IPSF10N12	6" IPS/SCH40 into 10" corrugated HDPE pipe
6IPSF12N12	6" IPS/SCH40 into 12" corrugated HDPE pipe
6IPSF18N12	6" IPS/SCH40 into 18" corrugated HDPE pipe
6P26FB8N12	6" SDR26 into 8" corrugated HDPE pipe
6P26FB10N12	6" SDR26 into 10" corrugated HDPE pipe
6P26FB12N12	6" SDR26 into 12" corrugated HDPE pipe
6P26FB18N12	6" SDR26 into 18" corrugated HDPE pipe
6P26FB8P35	6" SDR26 into 8" SDR35
6P26FB12P35	6" SDR26 into 12" SDR35
6N1210N12	6" corrugated HDPE into 10" corrugated HDPE pipe
6N1212N12	6" corrugated HDPE into 12" corrugated HDPE pipe
6N1218N12	6" corrugated HDPE into 18" corrugated HDPE pipe
8P3512N12	8" SDR35 into 12" corrugated HDPE pipe
8P3518N12	8" SDR35 into 18" corrugated HDPE pipe
8P3524N12	8" SDR35 into 24" corrugated HDPE pipe
8P3512P35	8" SDR35 into 12" SDR35
8P3518P35	8" SDR35 into 18" SDR35
8N1212N12	8" corrugated HDPE pipe into 12" corrugated HDPE pipe
8N1218N12	8" corrugated HDPE pipe into 18" corrugated HDPE pipe



Lateral



## INSERTA TEE® SAWS



**INSERTA TEE hole saws are custom made to our specifications and sizing and are color coded for easy identification. Each saw is meant for a specific pipe or structure material.**

Product Code	Description
Y412	4½" Yellow Series hole saw for PVC
Y612	6½" Yellow Series hole saw for PVC
Y834	8¾" Yellow Series hole saw for PVC
R412	4½" Red Series hole saw for corrugated HDPE
R612	6½" Red Series hole saw for corrugated HDPE
R834	8¾" Red Series hole saw for corrugated HDPE



## NONWOVEN GEOTEXTILES



**Nonwoven geotextiles are used to stabilize roadways and can be used on drainage systems to filter solid particles.**

Product Code	Description
0311TG	3 oz. lightweight nonwoven, 150" x 360'
0311TS	3 oz. lightweight nonwoven, 180" x 360'
0351TC	3.5 oz. lightweight nonwoven, 24" x 360'
0351TA	3.5 oz. lightweight nonwoven, 36" x 360'
0351TB	3.5 oz. lightweight nonwoven, 48" x 360'
0351TT	3.5 oz. lightweight nonwoven, 90" x 360'
0351TG	3.5 oz. lightweight nonwoven, 150" x 360'
0351TS	3.5 oz. lightweight nonwoven, 180" x 360'
0401TT	4 oz. lightweight nonwoven, 90" x 360'
0401TG	4 oz. lightweight nonwoven, 150" x 360'
0401TS	4 oz. lightweight nonwoven, 180" x 360'
0451TG	4.5 oz. lightweight nonwoven, 150" x 360'
0451TS	4.5 oz. lightweight nonwoven, 180" x 360'
0601TG	6 oz. medium weight nonwoven, 150" x 360'
0601TS	6 oz. medium weight nonwoven, 180" x 300'
0701TE	7 oz. medium weight nonwoven, 72" x 360'
0701TG	7 oz. medium weight nonwoven, 150" x 360'
0701TS	7 oz. medium weight nonwoven, 180" x 300'
0801TG	8 oz. medium weight nonwoven, 150" x 360'
0801TS	8 oz. medium weight nonwoven, 180" x 300'



## TURF REINFORCEMENT MATS



**Turf reinforcement mats enhance the natural ability of plants to protect soil from erosion and improve water quality.**

Product Code	Description
PP58GTR	7.5' X 120' Turf reinforcement mat
PP510GTR	7.5' X 120' Turf reinforcement mat
PP512GTR	7.5' x 120' Turf reinforcement mat
PP5HD8GTR	8' x 112.5' High performance turf reinforcement mat

## WOVEN GEOTEXTILES



**Woven geotextiles are manufactured from extruded polypropylene monofilaments interlaced to form a dimensionally stable construction fabric. This produces a premium filter that is extremely resistant to soil and biological clogging.**

Product Code	Description
200WTK	200 grab tensile woven, 150" x 432'
200WTS	200 grab tensile woven, 180" x 360'
200WTM	200 grab tensile woven, 210" x 300'
315WTK	315 grab tensile woven, 150" x 360'
315WTM	315 grab tensile woven, 210" x 257'
315WTS	315 grab tensile woven, 180" x 300'

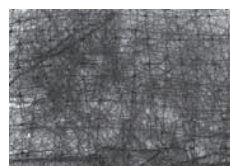


## GEOGRIDS



**Geogrids are used for soil reinforcement such as bare reinforcement and soft soil stabilization.**

Product Code	Description
BX114GG	13.1' X 246' biaxial geogrid
BX124GG	13.1' X 164' biaxial geogrid
BX134GG	13.1' X 164' biaxial geogrid
BX414GG	13.1' X 246' biaxial geogrid



# Irrigation

## FLEXSTORM® CATCH-IT FILTERS



The FLEXSTORM CATCH-IT system is a temporary inlet protection filter and storm water runoff control. Filter includes a bypass protection to prevent jobsite ponding. Units install in 30 seconds and may be used for landscape construction, roads, parking lots, floor drains, maintenance and residential development.

Product Code	Description
62SSQFX	Small square filter up to 18" x 18"
62MSQFX	Medium square filter up to 24" x 24"
6212NYFX	12" Round filter
6218NYFX	18" Round filter
6224NYFX	24" Round filter



## FLEXSTORM® PURE FILTERS



The FLEXSTORM PURE system is a permanent inlet protection and storm water runoff control filter. PURE inlet filters fit any drainage structure and are available with site-specific filter bags providing various filtration levels. May be utilized in car washes, loading ramps, landscapes, parking lots, dock drains, maintenance and industrial.

Product Code	Description
62MHDPCP	Medium square filter up to 24" x 24" (Hydrocarbon removal)
62MHDRPCP	Medium round filter up to 24" (Hydrocarbon removal)
62MHDFX	Medium square filter up to 24" x 24"
62MHDFXP	Medium square filter up to 24" x 24" (Hydrocarbon removal)



## OPEN THROAT CURB INLET



**FX:** woven bag at 82% filtration efficiency for construction sediment load

**PC:** woven with Adsorb-it line targeting small particle and hydrocarbon removal

**FX+ and PC+ bags include ClearTec skimmer pouches for additional hydrocarbon removal capabilities**

Product Code	Description
62HDWM1FX	Small wall mount up to 48"
62HDWM2FX	Medium wall mount between 48" & 96"



**NDS STYRENE SEWER DRAIN FITTINGS****STYRENE DOWNSPOUT ADAPTER**

Product Code	Description
STY3DS	3"
STY4DS	4"

**STYRENE COUPLING**

Product Code	Description
STY3COUP	3"
STY4COUP	4"
STY6COUP	6"

**STYRENE TEE**

Product Code	Description
STY3TEE	3"
STY4TEE	4"
STY6TEE	6"

**STYRENE 45° WYE**

Product Code	Description
STY3WYE	3"
STY4WYE	4"
STY6WYE	6"

**STYRENE 90° ELBOW SHORT**

Product Code	Description
STY390	3"
STY490	4"
STY690	6"

**STYRENE 90° LONG TURN ELBOW**

Product Code	Description
STY3LT90	3"
STY4LT90	4"
STY6LT90	6"

**STYRENE 45° ELBOW**

Product Code	Description
STY345	3"
STY445	4"
STY645	6"

**STYRENE 22.5° ELBOW**

Product Code	Description
STY3225	3" Styrene 22.5° elbow
STY4225	4" Styrene 22.5° elbow
STY6225	6" Styrene 22.5° elbow

**STYRENE END CAP**

Product Code	Description
STY3CAP	3" Styrene end cap
STY4CAP	4" Styrene end cap
STY6CAP	6" Styrene end cap

**STYRENE REPAIR COUPLING**

Product Code	Description
STY3RCOUP	3"
STY4RCOUP	4" S

**STYRENE THREADED PLUG**

Product Code	Description
STY3PLUG	3"
STY4PLUG	4"

**REDUCER COUPLING**

Product Code	Description
STY4X3COUP	4" X 3"
STY6X4COUP	6" X 4"

**STYRENE REDUCER BUSHING**

Product Code	Description
STY4X3RB	4" X 3"
STY6X4RB	6" X 4"


**STYRENE CLEANOUT FEMALE ADAPTER**

Product Code	Description
STY3FA	3"
STY4FA	4"
STY6FA	6"


**STYRENE SANITARY TEE**

Product Code	Description
STY3SANTEE	3"
STY4SANTEE	4"


**NDS PVC SEWER DRAIN FITTINGS****PVC DOWNSPOUT ADAPTER**

Product Code	Description	
PVC3DS	3" PVC Downspout adapter	
PVC4DS	4" PVC Downspout adapter	


**PVC COUPLING**

Product Code	Description	
PVC3COUP	3" PVC Coupling	
PVC4COUP	4" PVC Coupling	
PVC6COUP	6" PVC Coupling	


**PVC TEE**

Product Code	Description	
PVC3T	3" PVC Tee	
PVC4T	4" PVC Tee	
PVC6T	6" PVC Tee	


**PVC SANITARY TEE**

Product Code	Description	
PVC3SANT	3" PVC Sanitary tee	
PVC4SANT	4" PVC Sanitary tee	
PVC6SANT	6" PVC Sanitary tee	


**PVC 45° WYE**

Product Code	Description	
PVC3Y	3" PVC 45° Wye	
PVC4Y	4" PVC 45° Wye	
PVC6Y	6" PVC 45° Wye	

**PVC 90° ELBOW SHORT**


Product Code	Description	
PVC390	3" PVC 90° Elbow short	
PVC490	4" PVC 90° Elbow short	
PVC690	6" PVC 90° Elbow short	

**PVC 90° LONG TURN ELBOW**


Product Code	Description	
PVC3LT90	3" PVC 90° Elbow long turn	
PVC4LT90	4" PVC 90° Elbow long turn	
PVC6LT90	6" PVC 90° Elbow long turn	

## NDS PVC SEWER DRAIN FITTINGS (CONT.)


### PVC 45° ELBOW

Product Code	Description	
PVC345	3" PVC 45° Elbow	
PVC445	4" PVC 45° Elbow	
PVC645	6" PVC 45° Elbow	


### PVC 22.5° ELBOW

Product Code	Description	
PVC3225	3" PVC 22.5° Elbow	
PVC4225	4" PVC 22.5° Elbow	
PVC6225	6" PVC 22.5° Elbow	


### PVC END CAP

Product Code	Description	
PVC3CAP	3" PVC End cap	
PVC4CAP	4" PVC End cap	
PVC6CAP	6" PVC End cap	


### PVC REPAIR COUPLING

Product Code	Description	
PVC3RCOUP	3" PVC Repair coupling	
PVC4RCOUP	4" PVC Repair coupling	
PVC6RCOUP	6" PVC Repair coupling	


### PVC PLUG

Product Code	Description	
PVC3PLUG	3" PVC Threaded plug	
PVC4PLUG	4" PVC Threaded plug	
PVC6PLUG	6" PVC Threaded plug	


### REDUCER COUPLING

Product Code	Description	
PVC4X3COUP	4" X 3" Reducer coupling	
PVC6X4COUP	6" X 4" Reducer coupling	
PVC8X6COUP	8" X 6" Reducer coupling	

### PVC REDUCER BUSHING

Product Code	Description	
PVC4X3RB	4" X 3" Reducer bushing	
PVC6X4RB	6" X 4" Reducer bushing	
PVC8X6RB	8" X 6" Reducer bushing	

### PVC CLEANOUT FEMALE ADAPTER

Product Code	Description	
PVC3FA	3" Female adapter	
PVC4FA	4" Female adapter	
PVC6FA	6" Female adapter	



### NDS EZFLOW™

#### Spend less time installing and more time living.

- ◆ Lightweight, easy to use, versatile and environmentally friendly
- ◆ The patented EZflow system replaces gravel with geosynthetic aggregate in septic system drainfields and subsurface water management
- ◆ Ideal for septic leachfields, foundations, curtain and landscaping drains, retaining walls, golf course drainage, and sports complexes
- ◆ Preassembled, lightweight EZflow units can be transported and installed by a single worker
- ◆ May be used in conjunction with additional 10' lengths of geosynthetic aggregate, without pipe, when additional drainage is needed
- ◆ 5' and 10' lengths with either a 3" or 4" (depending on bundle diameter) corrugated pipe surrounded by geosynthetic aggregate and enclosed in a high strength polystyrene netting

Product Code	Description
EZ0701	EZflow™ Pipe 7" X 10' 3" Slotted
EZ10001	EZflow™ Pipe 10" X 10' 4" Slotted



## ROUND GRATES

Product Code	Description	
NDS14	3" Round grate, black	
NDS16	3" Round grate, green	
NDS16S	3" Round grate, sand	
NDS11	4" Round grate, black	
NDS13	4" Round grate, green	
NDS13S	4" Round grate, sand	
NDS40	6" Round grate, black	
NDS50	6" Round grate, green	
NDS60S	6" Round grate, sand	
NDS10	8" Round grate, black	
NDS20	8" Round grate, green	
NDS30S	8" Round grate, sand	

## SQUARE GRATES

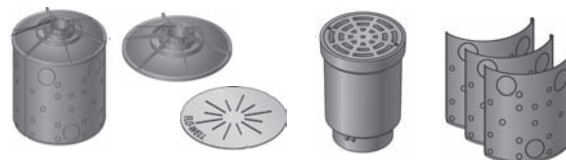
Product Code	Description	
NDS04	6" Square grate, black	
NDS05	6" Square grate, green	
NDS06S	6" Square grate, sand	
NDS950	9" Square grate, green	
NDS970	9" Square grate, black	
NDS970S	9" Square grate, sand	

## ATRIUM GRATES

Product Code	Description	
NDS70	3" Atrium grate, green	
NDS74	3" Atrium grate, black	
NDS74S	3" Atrium grate, sand	
NDS75	4" Atrium grate, green	
NDS78	4" Atrium grate, black	
NDS78S	4" Atrium grate, sand	
NDS80	6" Atrium grate, green	
NDS90	6" Atrium grate, black	
NDS90S	6" Atrium grate, sand	

## FLO-WELL®

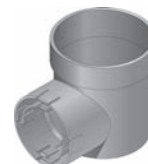
Lightweight dry well system that is used to collect and discharge unwanted water back into the subsoil. No need for piping systems to transport storm water to a far-off discharge point. No special equipment is required for installation. The modular design creates greater flexibility, and the Flo-Well can be either stacked or connected for increased capacity.



Product Code	Description
FWAS24 NDS	24" Diam x 28 3/4" H Flo-Well® storm water leaching
FWAS24C NDS	24" Diam Flo-Well® cover only
FWBP24 NDS	24" Diam Flo-Well® bottom only
FWSD69 NDS	4" SCH40 Surface drain inlet w/ grate
FWSPS3	NDS Flo-Well® side panels/extension only

## SPEE-D BASINS

Quick installation catch basins that accept 6" round grates or drainage adaptors. Single or multiple outlet designs compatible with 3" and 4" corrugated or PVC drainage pipe.



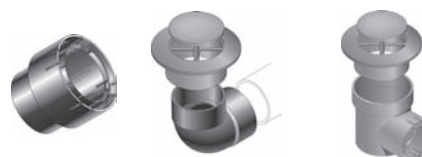
Product Code	Description
NDS101	Spee-D 6" basin single 3" X 4" locking outlet
NDS201	Spee-D 6" basin double 3" X 4" locking outlets

## POP-UP DRAINAGE EMITTER

**An easy, safe and an efficient solution.**

- ◆ Allows water to be diverted and released to water-safe areas away from structures, erosion-prone landscapes and poor drainage areas
- ◆ Allows captured water to flow through the drainage pipe and away from structural foundations to safe or useful areas
- ◆ Opened by the hydrostatic pressure of water flowing through the drain pipe
- ◆ Emitter with elbow may be used with Flo-Well® to relieve overflow
- ◆ Can now be installed in vertical applications—ideal for discharging water from retaining walls and street curbs

Product Code	Description
NDS1241	NDS 3" & 4" Universal adapter w/ 4" spigot
NDS321	NDS 3" Pop-up drainage emitter w/ elbow
NDS421	NDS 4" Pop-up drainage emitter w/ elbow
NDS625	NDS 6" Pop-up drainage emitter w/ Spee-D basin

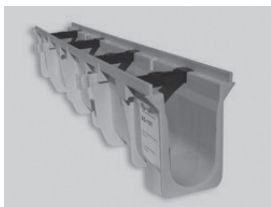


# Irrigation

## NDS CATCH BASINS AND GRATES (CONT.)

### DURA SLOPE™ CHANNEL DRAIN

- ◆ Lightweight 4' modular sections for easier handling and installation and lower freight costs
- ◆ 2" radius bottom minimizes debris build-up
- ◆ Polyethylene material is durable and inexpensive
- ◆ Less breakage versus concrete
- ◆ Bottom outlet on each channel section increases system versatility and requires fewer accessories
- ◆ 0.7% built-in slope maintains optimum flow rates throughout system



Horizon Distributors supports the Dura Slope™ Channel Drain product line. Please contact your local Horizon Representative for more information.

### 9" CATCH BASIN SERIES

Product Code	Description	
NDS900	9" X 9" Catch basin 2-opening	
NDS916	9" X 9" Catch basin 7 3/8" extension	
NDS930	9" X 9" Low profiler adapter	
NDS980	9" Square grate, black	
NDS981	9" Atrium grate, black	
NDS990	9" Square grate, green	
NDS991	9" Atrium grate, green	
NDS999S	9" Square grate, sand	

### 12" CATCH BASIN SERIES

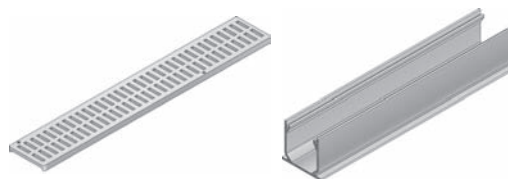
Product Code	Description	
NDS1200	12" X 12" Catch basin 2-opening	
NDS1211	12" Square grate, black	
NDS1212	12" Square grate, green	
NDS1212S	12" Square grate, sand	
NDS1216	12" X 12" Catch basin 7 1/8" extension	
NDS1230	12" X 12" Low profile adapter	
NDS1280	12" Atrium grate, green	
NDS1290	12" Atrium grate, black	
NDS1290S	12" Atrium grate, sand	

### OUTLETS

Product Code	Description	
NDS1206	6" Universal plug adapter	
NDS1241	3" & 4" Universal adapter w/ 4" spigot	
NDS1243	3" & 4" Universal locking outlet	
NDS1245	3" & 4" Universal offset outlet	
NDS1266	6" Universal locking outlet	

### MINI CHANNEL™ DRAINS

**Low-cost alternative to Spee-D Channel. Excellent for light duty applications including residential pools, patios, spas and tennis courts.**



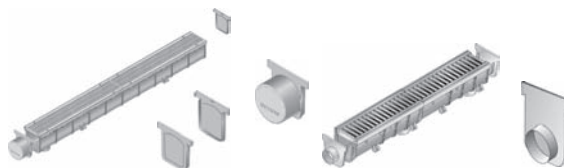
Product Code	Description
NDS543	3' Channel grate, black
NDS552B	1' Brass channel grate, satin brass
NDS500	6' Mini channel drain, gray

### SPEE-D CHANNEL™ DRAINS

Product Code	Description	
NDS244	2' Channel grate, black	
NDS400	4' Channel drain, gray	
NDS400-10	10' Channel drain, gray	

### PROFILE CHANNEL DRAINS

**Unique patented flying buttress design provides load bearing support from both sides as well as underneath. Available in four sizes: Dura Channel for traffic applications and large flow capacities, Spee-D for driveways, large decks and commercial areas, Mini for landscapes, pools or decks and Micro for residential pools and spas.**



Product Code	Description
NDS764	NDS Pro series 3" X 39 3/4" channel & grate drain kit
NDS712	NDS Pro series 3" channel end cap

**LASCO**  
Fittings, Inc.



**TEE**  
**SLIP X SLIP X SLIP**

Product Code	Size (In.)	Carton (QTY.)
401003	3/8	100
401005	1/2	50
401007	3/4	50
401010	1	50
401012	1 1/4	25
401015	1 1/2	25
401020	2	25
401025	2 1/2	10
401030	3	10
401040	4	5
401050	5	4
401060	6	4
401080	8	2



**TEE REDUCING**  
**(SLIP X SLIP X SLIP)**

Product Code	Size (In.)	Carton (QTY.)
401094	3/4 X 1/2 X 1/2	50
401101	3/4 X 3/4 X 1/2	50
401122	1 X 1/2 X 1	50
401124	1 X 3/4 X 1/2	50
401125	1 X 3/4 X 3/4	50
401126	1 X 3/4 X 1	50
401130	1 X 1 X 1/2	50
401131	1 X 1 X 3/4	50
401157	1 1/4 X 1 X 3/4	25

TEE REDUCING (SLIP X SLIP X SLIP) CONT.		
Product Code	Size (In.)	Carton (QTY.)
401158	1 1/4 X 1 X 1	25
401166	1 1/4 X 1 1/4 X 1/2	25
401167	1 1/4 X 1 1/4 X 3/4	25
401168	1 1/4 X 1 1/4 X 1	25
401209	1 1/2 X 1 1/2 X 1/2	25
401210	1 1/2 X 1 1/2 X 3/4	25
401211	1 1/2 X 1 1/2 X 1	25
401212	1 1/2 X 1 1/2 X 1 1/4	25
401239	2 X 1 1/2 X 1	10
401241	2 X 1 1/2 X 1 1/2	10
401247	2 X 2 X 1/2	10
401248	2 X 2 X 3/4	10
401249	2 X 2 X 1	10
401250	2 X 2 X 1 1/4	10
401251	2 X 2 X 1 1/2	10
401287	2 1/2 X 2 1/2 X 1/2	10
401288	2 1/2 X 2 1/2 X 3/4	10
401289	2 1/2 X 2 1/2 X 1	10
401290	2 1/2 X 2 1/2 X 1 1/4	10
401291	2 1/2 X 2 1/2 X 1 1/2	10
401292	2 1/2 X 2 1/2 X 2	10
401333	3 X 3 X 1/2	10
401334	3 X 3 X 3/4	10
401335	3 X 3 X 1	10
401336	3 X 3 X 1 1/4	10
401337	3 X 3 X 1 1/2	10
401338	3 X 3 X 2	10
401416	4 X 4 X 3/4	4
401417	4 X 4 X 1	4
401419	4 X 4 X 1 1/2	5
401420	4 X 4 X 2	5

TEE REDUCING (SLIP X SLIP X SLIP) CONT.		
Product Code	Size (In.)	Carton (QTY.)
401422	4 X 4 X 3	5
401486	5 X 5 X 2	5
401488	5 X 5 X 3	5
401490	5 X 5 X 4	5
401528	6 X 6 X 2	5
401530	6 X 6 X 3	5
401532	6 X 6 X 4	5
401582	8 X 8 X 4	2
401585	8 X 8 X 6	2



**(SLIP X SLIP X FIPT)**

Product Code	Size (In.)	Carton (QTY.)
402005	1/2	50
402007	3/4	50
402010	1	50
402012	1 1/4	25
402015	1 1/2	25
402020	2	10
402030	3	10
402040	4	5



**TEE REDUCING**  
**(SLIP X SLIP X FIPT)**

Product Code	Size (In.)	Carton (QTY.)
402071	1/2 X 1/2 X 1/8	50
402072	1/2 X 1/2 X 1/4	50
402074	1/2 X 1/2 X 3/4	50
402094	3/4 X 1/2 X 1/2	50
402095	3/4 X 1/2 X 3/4	50
402101	3/4 X 3/4 X 1/2	50
402124	1 X 3/4 X 1/2	50
402125	1 X 3/4 X 3/4	50
402130	1 X 1 X 1/2	50
402131	1 X 1 X 3/4	50

TEE REDUCING (SLIP X SLIP X FIPT) CONT.		
Product Code	Size (In.)	Carton (QTY.)
402156	1 1/4 X 1 X 1/2	25
402157	1 1/4 X 1 X 3/4	25
402166	1 1/4 X 1 1/4 X 1/2	25
402167	1 1/4 X 1 1/4 X 3/4	25
402168	1 1/4 X 1 1/4 X 1	25
402199	1 1/2 X 1 1/4 X 1/2	25
402202	1 1/2 X 1 1/4 X 1	25
402209	1 1/2 X 1 1/2 X 1/2	25
402210	1 1/2 X 1 1/2 X 3/4	25
402211	1 1/2 X 1 1/2 X 1	25
402212	1 1/2 X 1 1/2 X 1 1/4	25
402239	2 X 1 1/2 X 1	10
402247	2 X 2 X 1/2	10
402248	2 X 2 X 3/4	10
402249	2 X 2 X 1	10
402250	2 X 2 X 1 1/4	10
402251	2 X 2 X 1 1/2	10
402287	2 1/2 X 2 1/2 X 1/2	10
402288	2 1/2 X 2 1/2 X 3/4	10
402289	2 1/2 X 2 1/2 X 1	10
402290	2 1/2 X 2 1/2 X 1 1/4	10
402291	2 1/2 X 2 1/2 X 1 1/2	10
402292	2 1/2 X 2 1/2 X 2	10
402333	3 X 3 X 1/2	10
402334	3 X 3 X 3/4	10
402335	3 X 3 X 1	10
402337	3 X 3 X 1 1/2	10
402338	3 X 3 X 2	10
402417	4 X 4 X 1	5
402418	4 X 4 X 1 1/4	5
402419	4 X 4 X 1 1/2	5
402420	4 X 4 X 2	5
402422	4 X 4 X 3	5
402528	6 X 6 X 2	5

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Fittings, Inc.



**TEE**  
(FIPT X FIPT X FIPT)

Product Code	Size (In.)	Carton (QTY.)
405005	1/2	50
405007	3/4	50
405010	1	50
405012	1 1/4	25
405015	1 1/2	25



**90° ELL REDUCING**  
(SLIP X SLIP)

Product Code	Size (In.)	Carton (QTY.)
406101	3/4 X 1/2	50
406130	1 X 1/2	50
406131	1 X 3/4	50
406168	1 1/4 X 1	25
406211	1 1/2 X 1	25
406212	1 1/2 X 1 1/4	25
406249	2 X 1	25
406251	2 X 1 1/2	25



**90° ELL REDUCING**  
(SLIP X FIPT)

Product Code	Size (In.)	Carton (QTY.)
407074	1/2 X 3/4	50
407101	3/4 X 1/2	50
407130	1 X 1/2	50
407131	1 X 3/4	50
407168	1 1/4 X 1	25
407211	1 1/2 X 1	25
407212	1 1/2 X 1 1/4	25
407249	2 X 1	25
407250	2 X 1 1/4	10
407251	2 X 1 1/2	10



**90° STREET ELL**  
(MIPT X SLIP)

Product Code	Size (In.)	Carton (QTY.)
410005	1/2	50
410007	3/4	50
410010	1	50
410012	1 1/4	25
410015	1 1/2	25
410020	2	10
410101	3/4 X 1/2	50



**90° ELL**  
(SLIP X SLIP)

Product Code	Size (In.)	Carton (QTY.)
406003	3/8	100
406005	1/2	50
406007	3/4	50
406010	1	50
406012	1 1/4	25
406015	1 1/2	25
406020	2	25
406025	2 1/2	10
406030	3	10
406040	4	5
406050	5	5
406060	6	4
406080	8	3



**90° ELL**  
(FIPT X SLIP)

Product Code	Size (In.)	Carton (QTY.)
407005	1/2	50
407007	3/4	50
407010	1	50
407012	1 1/4	25
407015	1 1/2	25
407020	2	10
407025	2 1/2	10
407030	3	10
407040	4	5



**90° ELL**  
(FIPT X FIPT)

Product Code	Size (In.)	Carton (QTY.)
408005	1/2	50
408007	3/4	50
408010	1	50
408012	1 1/4	25
408015	1 1/2	25
408020	2	0



**90° STREET ELL**  
(SP X FIPT)

Product Code	Size (In.)	Carton (QTY.)
411007	3/4	50
411010	1	50



**90° STREET ELL**  
(SP X SLIP)

Product Code	Size (In.)	Carton (QTY.)
409005	1/2	50
409007	3/4	50
409010	1	50
409012	1 1/4	25
409015	1 1/2	25
409020	2	10



**90° STREET ELL**  
(MIPT X FIPT)

Product Code	Size (In.)	Carton (QTY.)
412005	1/2 PVC	50
412007	3/4 PVC	50
412010	1 PVC	50
412012	1 1/4 PVC	25
412015	1 1/2 PVC	25
M412005	1/2 Poly*	50
M412007	3/4 Poly*	50
M412010	1 Poly*	50

\*Not listed by NSF

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**SIDE OUTLET**  
**90° ELL**  
**(SLIP X SLIP X FIPT)**

Product Code	Size (In.)	Carton (QTY.)
414005	1/2	50
414101	3/4 X 3/4 X 1/2	50
414130	1 X 1 X 1/2	25



**CROSS**  
**(SLIP X SLIP)**

Product Code	Size (In.)	Carton (QTY.)
420005	1/2	50
420007	3/4	50
420010	1	50
420012	1 1/4	25
420015	1 1/2	25
420020	2	10
420025	2 1/2	8
420030	3	10
420040	4	5



**COUPLING**  
**(FIPT X FIPT)**

Product Code	Size (In.)	Carton (QTY.)
430005	1/2	100
430007	3/4	50
430010	1	50
430101	3/4 X 1/2	50
43000545	1/2 Gray	100
43000745	3/4 Gray	50
43010145	3/4 X 1/2 Gray	50

FEMALE ADAPTER (SLIP X FIPT) CONT.		
Product Code	Size (In.)	Carton (QTY.)
435015	1 1/2	25
435020	2	25
435025	2 1/2	10
435030	3	10
435040	4	5
435060	6	4



**45° ELL**  
**(SLIP X SLIP)**

Product Code	Size (In.)	Carton (QTY.)
417005	1/2	50
417007	3/4	50
417010	1	50
417012	1 1/4	25
417015	1 1/2	25
417020	2	25
417025	2 1/2	10
417030	3	10
417040	4	5
417050	5	5
417060	6	4
417080	8	4



**COUPLING**  
**(SLIP)**

Product Code	Size (In.)	Carton (QTY.)
429003	3/8	100
429005	1/2	100
429007	3/4	50
429010	1	50
429012	1 1/4	25
429015	1 1/2	25
429020	2	25
429025	2 1/2	10
429030	3	10
429040	4	5
429050	5	4
429060	6	5
429080	8	4



**RISER EXTENDER**  
**(MIPT X FIPT)**

Product Code	Size (In.)	Carton (QTY.)
434005	1/2 X 2 1/16 lg.	50
434007	3/4 X 1 5/8 lg.	50
439005	1/2	50



**FEMALE ADAPTER REDUCING**  
**(SLIP X FIPT)**

Product Code	Size (In.)	Carton (QTY.)
435074	1/2 X 3/4	50
435101	3/4 X 1/2	50
435102	3/4 X 1	50
435131	1 X 3/4	50



**MALE ADAPTER**  
**(MIPT X SLIP)**

Product Code	Size (In.)	Carton (QTY.)
436005	1/2	100
436007	3/4	50
436010	1	50
436012	1 1/4	25
436015	1 1/2	25
436020	2	25
436025	2 1/2	10
436030	3	10
436040	4	5

**FEMALE ADAPTER**  
**(SLIP X FIPT)**

Product Code	Size (In.)	Carton (QTY.)
435005	1/2	100
435007	3/4	50
435010	1	50
435012	1 1/4	25

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**MALE ADAPTER  
REDUCING  
(MIPT X SLIP)**

Product Code	Size (In.)	Carton (QTY.)
436073	1/4 X 3/8	100
436074	1/2 X 3/4	50
436101	3/4 X 1/2	50
436102	3/4 X 1	50
436131	1 X 3/4	50
436132	1 X 1 1/4	25
436168	1 1/4 X 1	25
436169	1 1/4 X 1 1/2	25
436212	1 1/2 X 1 1/4	25
436213	1 1/2 X 2	10
436251	2 X 1 1/2	10
436252	2 X 2 1/2	10
436293	2 1/2 X 3	10
436341	3 X 4	10

REDUCER BUSHING (SP X SLIP) CONT		
Product Code	Size (In.)	Carton (QTY.)
437247	2 X 1/2	10
437248	2 X 3/4	10
437249	2 X 1	10
437250	2 X 1 1/4	10
437251	2 X 1 1/2	25
437287	2 1/2 X 1/2	10
437288	2 1/2 X 3/4	10
437289	2 1/2 X 1	10
437290	2 1/2 X 1 1/4	10
437291	2 1/2 X 1 1/2	10
437292	2 1/2 X 2	10
437334	3 X 3/4	10
437335	3 X 1	10
437336	3 X 1 1/4	10
437337	3 X 1 1/2	10
437338	3 X 2	10
437339	3 X 2 1/2	10
437420	4 X 2	5
437421	4 X 2 1/2	5
437422	4 X 3	5
437488	5 X 3	5
437490	5 X 4	4
437528	6 X 2	5
437530	6 X 3	5
437532	6 X 4	5
437534	6 X 5	5
437582	8 X 4	5
437585	8 X 6	5

REDUCER BUSHING (SP X FIPT) CONT		
Product Code	Size (In.)	Carton (QTY.)
438210	1 1/2 X 3/4	25
438211	1 1/2 X 1	25
438212	1 1/2 X 1 1/4	25
438247	2 X 1/2	10
438248	2 X 3/4	10
438249	2 X 1	10
438250	2 X 1 1/4	10
438251	2 X 1 1/2	10
438289	2 1/2 X 1	10
438290	2 1/2 X 1 1/4	10
438291	2 1/2 X 1 1/2	10
438292	2 1/2 X 2	10
438335	3 X 1	10
438337	3 X 1 1/2	10
438338	3 X 2	10
438339	3 X 2 1/2	10
438420	4 X 2	5
438421	4 X 2 1/2	5
438422	4 X 3	5

THREADED BUSHING (MIPT X FIPT) CONT		
Product Code	Size (In.)	Carton (QTY.)
439249	2 X 1	10
439250	2 X 1 1/4	10
439251	2 X 1 1/2	10
439292	2 1/2 X 2	10
439338	3 X 2	5



**CAP (SLIP)**

Product Code	Size (In.)	Carton (QTY.)
447005	1/2	100
447007	3/4	100
447010	1	50
447012	1 1/4	25
447015	1 1/2	25
447020	2	25
447025	2 1/2	10
447030	3	10
447040	4	5
447050	5	5
447060	6	5
447080	8	4



**REDUCER BUSHING  
(SP X SLIP)**

Product Code	Size (In.)	Carton (QTY.)
437073	1/2 X 3/8	100
437101	3/4 X 1/2	100
437130	1 X 1/2	100
437131	1 X 3/4	100
437166	1 1/4 X 1/2	25
437167	1 1/4 X 3/4	25
437168	1 1/4 X 1	25
437209	1 1/2 X 1/2	25
437210	1 1/2 X 3/4	25
437211	1 1/2 X 1	25
437212	1 1/2 X 1 1/4	25



**REDUCER BUSHING  
(SP X FIPT)**

Product Code	Size (In.)	Carton (QTY.)
438071	1/2 X 1/8	100
438072	1/2 X 1/4	100
438073	1/2 X 3/8	100
438098	3/4 X 1/4	50
438101	3/4 X 1/2	100
438130	1 X 1/2	100
438131	1 X 3/4	100
438166	1 1/4 X 1/2	25
438167	1 1/4 X 3/4	25
438168	1 1/4 X 1	25
438209	1 1/2 X 1/2	25

**THREADED BUSHING  
(MIPT X FIPT)**

Product Code	Size (In.)	Carton (QTY.)
439005	1/2 X 1/2	50
439052	3/8 X 1/4	50
439072	1/2 X 1/4	50
439073	1/2 X 3/8	50
439098	3/4 X 1/4	50
439099	3/4 X 3/8	50
439101	3/4 X 1/2	50
439130	1 X 1/2	50
439131	1 X 3/4	50
439166	1 1/4 X 1/2	25
439167	1 1/4 X 3/4	25
439168	1 1/4 X 1	25
439209	1 1/2 X 1/2	25
439210	1 1/2 X 3/4	25
439211	1 1/2 X 1	25
439212	1 1/2 X 1 1/4	25



**CAP (FIPT)**

Product Code	Size (In.)	Carton (QTY.)
448005	1/2	100
448007	3/4	100
448010	1	50
448012	1 1/4	25
448015	1 1/2	25
448020	2	10
448025	2 1/2	10
448030	3	10
448040	4	5

## SCHEDULE 40 FITTINGS (CONT.)

**LASCO**  
Fittings, Inc.



**PLUG  
(SP)**

Product Code	Size (In.)	Carton (QTY.)
449005	1/2	50
449007	3/4	50
449010	1	50
449012	1 1/4	25
449015	1 1/2	25
449020	2	10



**ADAPTER  
(INSERT X SLIP)**

Product Code	Size (In.)	Carton (QTY.)
474007	3/4	50
474010	1	50
474015	1 1/2	25



**NESTED COUPLING  
(SLIP)**

Product Code	Size (In.)	Carton (QTY.)
429005N	1/2	100
429007N	3/4	50
429010N	1	50



**PLUG  
(MIPT)**

Product Code	Size (In.)	Carton (QTY.)
450005	1/2	50
450007	3/4	50
450010	1	50
450012	1 1/4	25
450015	1 1/2	25
450020	2	10
450025	2 1/2	10
450030	3	10
450040	4	5

**FITTING ADAPTER  
(SP X FIPT)**

Product Code	Size (In.)	Carton (QTY.)
478010	1	25
478012	1 1/4	25

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Product Code	Size (In.)	Carton (QTY.)
801-005	1/2	25
801-007	3/4	25
801-010	1	25
801-012	1 1/4	10
801-015	1 1/2	10
801-020	2	10
801-025	2 1/2	5
801-030	3	5
801-040	4	5
801-060	6	4
801-080	8	2



**REDUCING TEE  
(SLIP X SLIP X SLIP)**

Product Code	Size (In.)	Carton (QTY.)
801-101	3/4 X 3/4 X 1/2	25
801-130	1 X 1 X 1/2	25
801-131	1 X 1 X 3/4	25
801-210	1 1/2 X 1 1/2 X 3/4	10
801-211	1 1/2 X 1 1/2 X 1	10
801-248	2 X 2 X 3/4	10
801-249	2 X 2 X 1	10

## SCHEDULE 80 FITTINGS

**REDUCING TEE  
(SLIP X SLIP X SLIP) CONT.**

Product Code	Size (In.)	Carton (QTY.)
801-250	2 X 2 X 1 1/4	10
801-290	2 1/2 X 2 1/2 X 1 1/4	5
801-292	2 1/2 X 2 1/2 X 2	5
801-337	3 X 3 X 1 1/2	5
801-338	3 X 3 X 2	5
801-420	4 X 4 X 2	5
801-422	4 X 4 X 3	5



**TEE  
(SLIP X SLIP X FIPT)**

Product Code	Size (In.)	Carton (QTY.)
802-005	1/2	25
802-007	3/4	25
802-010	1	25
802-015	1 1/2	10
802-020	2	10
802-250	2 X 2 X 1 1/4	10
802-251	2 X 2 X 1 1/2	10
802-291	2 1/2 X 2 1/2 X 1 1/2	5

**LASCO**  
Fittings, Inc.



**TEE**  
(FIPT X FIPT X FIPT)

Product Code	Size (In.)	Carton (QTY.)
805-003	3/8	25
805-005	1/2	25
805-007	3/4	25
805-010	1	25
805-012	1 1/4	10
805-015	1 1/2	10
805-020	2	10
805-025	2 1/2	5
805-030	3	5



**90° ELL**  
(SLIP X SLIP)

Product Code	Size (In.)	Carton (QTY.)
806-005	1/2	25
806-007	3/4	25
806-010	1	25
806-012	1 1/4	10
806-015	1 1/2	10
806-020	2	10
806-025	2 1/2	5
806-030	3	5
806-040	4	5
806-060	6	4
806-080	8	2



**90° ELL**  
(SLIP X FIPT)

Product Code	Size (In.)	Carton (QTY.)
807-005	1/2	25
807-007	3/4	25
807-010	1	25
807-012	1 1/4	10
807-015	1 1/2	10
807-020	2	10



**90° ELL**  
(FIPT X FIPT)

Product Code	Size (In.)	Carton (QTY.)
808-005	1/2	25
808-007	3/4	25
808-010	1	25
808-012	1 1/4	10
808-015	1 1/2	10
808-020	2	10
808-030	3	5
808-040	4	5



**45° ELL**  
(SLIP X SLIP)

Product Code	Size (In.)	Carton (QTY.)
817-005	1/2	25
817-007	3/4	25
817-010	1	25
817-012	1 1/4	10

45° ELL (SLIP X SLIP) CONT.		
Product Code	Size (In.)	Carton (QTY.)
817-015	1 1/2	10
817-020	2	10
817-025	2 1/2	5
817-030	3	5
817-040	4	5
817-060	6	4
817-080	8	2



**45° ELL**  
(FIPT X FIPT)

Product Code	Size (In.)	Carton (QTY.)
819-007	3/4	25
819-010	1	25
819-012	1 1/4	10
819-015	1 1/2	10
819-020	2	10



**COUPLING**  
(SLIP X SLIP)

Product Code	Size (In.)	Carton (QTY.)
829-005	1/2	25
829-007	3/4	10
829-010	1	25
829-012	1 1/4	10
829-015	1 1/2	10
829-020	2	10
829-025	2 1/2	5
829-030	3	5
829-040	4	5
829-060	6	5
829-080	8	4



**REDUCER COUPLING**  
(SLIP X SLIP)

Product Code	Size (In.)	Carton (QTY.)
829-131	1 X 3/4	25
829-168	1 1/4 X 1	10



**COUPLING**  
(FIPT X FIPT)

Product Code	Size (In.)	Carton (QTY.)
830-005	1/2	25
830-007	3/4	25
830-010	1	25
830-012	1 1/4	10
830-015	1 1/2	10
830-020	2	10
830-025	2 1/2	5

**LASCO®**  
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**(SLIP X FIPT)**

Product Code	Size (In.)	Carton (QTY.)
835-007	3/4	25
835-010	1	25
835-012	1 1/4	10
835-015	1 1/2	10
835-020	2	10
835-025	2 1/2	5
835-030	3	5
835-040	4	5



**MALE ADAPTER  
(MIPT X SLIP)**

Product Code	Size (In.)	Carton (QTY.)
836-005	1/2	25
836-007	3/4	25
836-010	1	25
836-012	1 1/4	10
836-015	1 1/2	10
836-020	2	10
836-025	2 1/2	5
836-030	3	5
836-040	4	5



**REDUCER BUSHING —  
FLUSH STYLE  
(SP X SLIP)**

Product Code	Size (In.)	Carton (QTY.)
837-072	1/2 X 1/4	25
837-101	3/4 X 1/2	25
837-130	1 X 1/2	25
837-131	1 X 3/4	25
837-167	1 1/4 X 3/4	10
837-168	1 1/4 X 1	10
837-209	1 1/2 X 1/2	10
837-210	1 1/2 X 3/4	10
837-211	1 1/2 X 1	10
837-212	1 1/2 X 1 1/4	10
837-247	2 X 1/2	10
837-248	2 X 3/4	10
837-249	2 X 1	10
837-250	2 X 1 1/4	10
837-251	2 X 1 1/2	10
837-289	2 1/2 X 1	10
837-291	2 1/2 X 1 1/2	10
837-292	2 1/2 X 2	10
837-335	3 X 1	5
837-336	3 X 1 1/4	5
837-337	3 X 1 1/2	5
837-338	3 X 2	5
837-339	3 X 2 1/2	5
837-420	4 X 2	5
837-422	4 X 3	5
837-530	6 X 3	5
837-532	6 X 4	5
837-585	8 X 6	5



**REDUCER BUSHING —  
FLUSH STYLE  
(SP X FIPT)**

Product Code	Size (In.)	Carton (QTY.)
838-101	3/4 X 1/2	25
838-130	1 X 1/2	25
838-131	1 X 3/4	25
838-167	1 1/4 X 3/4	10
838-168	1 1/4 X 1	10
838-209	1 1/2 X 1/2	10
838-210	1 1/2 X 3/4	10
838-211	1 1/2 X 1	10
838-247	2 X 1/2	10
838-248	2 X 3/4	10
838-249	2 X 1	10
838-251	2 X 1 1/2	10
838-292	2 1/2 X 2	10
838-338	3 X 2	5
838-339	3 X 2 1/2	5
838-420	4 X 2	5
838-422	4 X 3	5
838-532	6 X 4	5



**REDUCER BUSHING —  
FLUSH STYLE  
(MIPT X FIPT)**

Product Code	Size (In.)	Carton (QTY.)
839-072	1/2 X 1/4	25
839-073	1/2 X 3/8	25
839-098	3/4 X 1/4	25
839-101	3/4 X 1/2	25
839-128	1 X 1/4	25
839-129	1 X 3/8	25
839-130	1 X 1/2	25
839-131	1 X 3/4	25
839-166	1 1/4 X 1/2	10
839-168	1 1/4 X 1	10
839-211	1 1/2 X 1	10
839-212	1 1/2 X 1 1/4	10
839-248	2 X 3/4	10
839-249	2 X 1	10
839-250	2 X 1 1/4	10
839-251	2 X 1 1/2	10
839-292	2 1/2 X 2	5

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### CAP (SLIP)

Product Code	Size (In.)	Carton (QTY.)
847-005	1/2	25
847-007	3/4	25
847-010	1	25
847-012	1 1/4	10
847-015	1 1/2	10
847-020	2	10
847-025	2 1/2	5
847-030	3	5
847-040	4	5
847-060	6	4



### PLUG (MIPT)

Product Code	Size (In.)	Carton (QTY.)
850-002	1/4	25
850-010	1	25
850-012	1 1/4	10
850-015	1 1/2	10
850-020	2	10
850-025	2 1/2	5
850-030	3	5
850-040	4	5

LASCO PUSH FITTINGS	
Description	Lasco Part #
837-072	LP01-007
837-101	LP01-010
837-130	LP06-007
837-131	LP06-010
837-167	LP29-007
837-168	LP29-010
837-209	LP47-007
837-210	LP47010
837-211	LP2918-007
837-212	LP2918-010
837-247	3535-007
837-248	3535-101
837-249	3535-130
837-250	3535-131
837-251	3500-007
837-289	3500-010
837-291	3529-101
837-292	3529-130
837-335	3529-131



### CAP (FIPT)

Product Code	Size (In.)	Carton (QTY.)
848-005	1/2	25
848-007	3/4	25
848-010	1	25
848-012	1 1/4	10
848-020	2	10
848-025	2 1/2	5
848-030	3	5
848-040	4	5

### ULTRA-VIOLET RESISTANT FITTINGS

Horizon Distributors offer all of the commonly specified and requested UVR Fittings – from 1/2" to 4"

Please call your local Horizon Sales Representative for more information.

# FITTING YOUR IRRIGATION NEEDS



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For almost 50 years, PVC (poly-vinyl-chloride) piping has been successfully specified and installed in sprinkler irrigation systems. Various sizes and types of PVC pipe are available to meet the needs of virtually any flow and pressure requirement.

PVC piping is durable, easy to move, and simple to install. It is not subject to rot, corrosion or build-up. PVC pressure pipe carried by Horizon is of the highest quality, strictly manufactured to ASTM specifications and many types are certified for use in potable water systems by the National Sanitary Foundation.

Contact your nearest Horizon location regarding delivery of large quantities of PVC pipe directly to your job site.

PVC is sold in 20' lengths with bell-end.

### CLASS 125 SDR 32.5 PVC PIPE

#### 125 psi rated ASTM D-2241

Product Code	Description	Foot per Pallet
41243	1 1/4" Class 125	4000'
41280	1 1/2" Class 125	3600'
41345	2" Class 125	2800'
41410	2 1/2" Class 125	2240'
41470	3" Class 125	1500'
41660	6" Class 125	400'
41695	8" Class 125	280'

### CLASS 160 SDR 26 PVC PIPE

#### 160 psi rated ASTM D-2241

Product Code	Description	Foot per Pallet
45243	1 1/4" Class 160	4000'
45280	1 1/2" Class 160	3600'
45345	2" Class 160	2800'
45410	2 1/2" Class 160	2240'
45470	3" Class 160	1500'
47075	4" Class 160	580'
47120	6" Class 160	400'

### CLASS 200 SDR 21 PVC PIPE

#### 200 psi rated ASTM D-2241

Product Code	Description	Foot per Pallet
46157	3/4" Class 200	6600'
46207	1" Class 200	5400'
46243	1 1/4" Class 200	4000'
46285	1 1/2" Class 200	3600'
46345	2" Class 200	2800'
46410	2 1/2" Class 200	2240'
46470	3" Class 200	1500'
47275	4" Class 200	580'
47320	6" Class 200	400'
47335	8" Class 200	280'

### CLASS 315 SDR 13.5 PVC PIPE

#### 315 psi rated ASTM D-2241

Product Code	Description	Foot per Pallet
46105	1/2" Class 315	8400'
46025	2" Class 315	2800'
46035	2 1/2" Class 315	2240'
46045	3" Class 315	1500'
46055	4" Class 315	580'

### SCHEDULE 40 PVC PIPE

#### ASTM D-1785

Product Code	Description	Foot per Pallet
42015	1/2" Schedule 40	8400'
42030	3/4" Schedule 40	6600'
42046	1" Schedule 40	5400'
42056	1 1/4" Schedule 40	4000'
42070	1 1/2" Schedule 40	3600'
42085	2" Schedule 40	2800'
42102	2 1/2" Schedule 40	2240'
42111	3" Schedule 40	1500'
42120	4" Schedule 40	580'
42130	6" Schedule 40	400'
45695	8" Schedule 40	280'

### SCHEDULE 80 PVC PIPE

#### ASTM D-1785

Product Code	Description	Foot per Pallet
43010	1/2" Schedule 80	5200'
43025	3/4" Schedule 80	4400'
43045	1" Schedule 80	5200'
43065	1 1/4" Schedule 80	4000'
43080	1 1/2" Schedule 80	2360'
43095	2" Schedule 80	1860'
43115	2 1/2" Schedule 80	1160'
43120	3" Schedule 80	1500'
43135	4" Schedule 80	580'
43150	6" Schedule 80	400'
43165	8" Schedule 80	280'

### CLASS 125/SDR 32.5 GASKET JOINT PVC PIPE

#### 125 PSI RATED - ASTM D-2241

Product Code	Description	Foot per Pallet
49044	4" Class 125 Gasket Joint	760'
49045	5" Class 125 Gasket Joint	460'
49046	6" Class 125 Gasket Joint	360'
49048	8" Class 125 Gasket Joint	280'

## CLASS 160/SDR 26 GASKET JOINT PVC PIPE

**160 psi rated ASTM D-2241**

Product Code	Description	Foot per Pallet
48110	3" Class 160 Gasket Joint	1160'
48130	4" Class 160 Gasket Joint	760'
48170	6" Class 160 Gasket Joint	360'
48190	8" Class 160 Gasket Joint	280'

## CLASS 200/SDR 21 GASKET JOINT PVC PIPE

**200 psi rated ASTM D-2241**

Product Code	Description	Foot per Pallet
48511	3" Class 200 Gasket Joint	1160'
48531	4" Class 200 Gasket Joint	760'
48571	6" Class 200 Gasket Joint	360'
48591	8" Class 200 Gasket Joint	280'

## PURPLE RECLAIMED WATER PVC PIPE

Product Code	Description	Foot per Pallet
57030	3/4" Class 200 Purple	6600'
57045	1" Class 200 Purple	5400'
57055	1 1/4" Class 200 Purple	4000'
57070	1 1/2" Class 200 Purple	3600'
57085	2" Class 200 Purple	2800'
570100	2 1/2" Class 200 Purple	2240'
57110	3" Class 200 Purple	1500'
57425	2" Class 315 Purple	2800'
57435	2 1/2" Class 315 Purple	2240'
57445	3" Class 315 Purple	1500'
57455	4" Class 315 Purple	580'
57215	1/2" Schedule 40 Purple	8400'
57230	3/4" Schedule 40 Purple	6600'
57245	1" Schedule 40 Purple	5400'
57255	1 1/4" Schedule 40 Purple	4000'
57270	1 1/2" Schedule 40 Purple	3600'
57285	2" Schedule 40 Purple	2800'
57300	2 1/2" Schedule 40 Purple	2240'
57310	3" Schedule 40 Purple	1500'
57320	4" Schedule 40 Purple	580'
57180	3" Class 200 Purple Gasket Joint	1160'
57187	4" Class 200 Purple Gasket Joint	760'
57195	6" Class 200 Purple Gasket Joint	360'

**HIGH-DENSITY POLYETHYLENE PIPE:**

**Horizon Distributors can supply all of the commonly specified HDPE products. Please call your local Horizon Sales Representative for more information.**

## SCHEDULE 80 THREADED NIPPLES

1/2" Sch 80 Threaded Nipples		
Product Code	Description	Carton (Qty.)
205011	1/2 X 1-1/8 CL TBE	50
205020	1/2 X 2 TBE	50
205030	1/2 X 3 TBE	50
205040	1/2 X 4 TBE	50
205060	1/2 X 6 TBE	50
205080	1/2 X 8 TBE	50
205100	1/2 X 10 TBE	50
205120	1/2 X 12 TBE	50
205180	1/2 X 18 TBE	50
205240	1/2 X 24 TBE	50
205300	1/2 X 30 TBE	50
205360	1/2 X 36 TBE	50
205480	1/2 X 48 TBE	50

1" Sch 80 Threaded Nipples		
Product Code	Description	Carton (Qty.)
210015	1 X CL TBE	50
210020	1 X 2 TBE	50
210030	1 X 3 TBE	50
210040	1 X 4 TBE	50
210060	1 X 6 TBE	50
210080	1 X 8 TBE	50
210100	1 X 10 TBE	50
210120	1 X 12 TBE	50
210180	1 X 18 TBE	50
210240	1 X 24 TBE	20
210300	1 X 30 TBE	20
210360	1 X 36 TBE	20
210480	1 X 48 TBE	20

2" Sch 80 Threaded Nipples		
Product Code	Description	Carton (Qty.)
220020	2 X 2 CL TBE	10
220030	2 X 3 TBE	10
220040	2 X 4 TBE	10
220060	2 X 6 TBE	10
220080	2 X 8 TBE	10
220100	2 X 10 TBE	10
220120	2 X 12 TBE	15
220180	2 X 18 TBE	10
220240	2 X 24 TBE	10

2 1/2" Sch 80 Threaded Nipples		
Product Code	Description	Carton (Qty.)
225025	2-1/2 X CL TBE	5
225040	2-1/2 X 4 TBE	5
225060	2-1/2 X 6 TBE	5
225120	2-1/2 X 12 TBE	10

3/4" Sch 80 Threaded Nipples		
Product Code	Description	Carton (Qty.)
207013	3/4 X CL TBE	50
207020	3/4 X 2 TBE	50
207030	3/4 X 3 TBE	50
207040	3/4 X 4 TBE	50
207060	3/4 X 6 TBE	50
207080	3/4 X 8 TBE	50
207100	3/4 X 10 TBE	50
207120	3/4 X 12 TBE	50
207180	3/4 X 18 TBE	50
207240	3/4 X 24 TBE	25

1 1/4" Sch 80 Threaded Nipples		
Product Code	Description	Carton (Qty.)
212016	1-1/4 X CL TBE	25
212020	1-1/4 X 2 TBE	25
212030	1-1/4 X 3 TBE	25
212040	1-1/4 X 4 TBE	25
212060	1-1/4 X 6 TBE	25
212080	1-1/4 X 8 TBE	25
212100	1-1/4 X 10 TBE	25
212120	1-1/4 X 12 TBE	25

3" Sch 80 Threaded Nipples		
Product Code	Description	Carton (Qty.)
230026	3 X CL TBE	5
230040	3 X 4 TBE	5
230060	3 X 6 TBE	5
230100	3 X 10 TBE	5
230120	3 X 12 TBE	5
230180	3 X 18 TBE	5

1 1/2" Sch 80 Threaded Nipples		
Product Code	Description	Carton (Qty.)
215017	1-1/2 X 1-3/4 TBE	25
215020	1-1/2 X 2 TBE	25
215025	1-1/2 X 2-1/2 TBE	25
215030	1-1/2 X 3 TBE	25
215040	1-1/2 X 4 TBE	25
215060	1-1/2 X 6 TBE	25
215080	1-1/2 X 8 TBE	25
215100	1-1/2 X 10 TBE	25
215120	1-1/2 X 12 TBE	25
215180	1-1/2 X 18 TBE	25

4" Sch 80 Threaded Nipples		
Product Code	Description	Carton (Qty.)
240028	4 X CL TBE	5
240060	4 X 6 TBE	5
240080	4 X 8 TBE	5
240100	4 X 10 TBE	5
240120	4 X 12 TBE	5

## GALVANIZED THREADED NIPPLES

1/2" GALVANIZED THREADED NIPPLES		
Product Code	Size	Carton (Qty .)
G005CL	1/2" X close	25
G005020	1/2" X 2"	25
G005030	1/2" X 3"	25
G005040	1/2" X 4"	25
G005050	1/2" X 5"	25
G005060	1/2" X 6"	25
G005080	1/2" X 8"	25
G005100	1/2" X 10"	25
G005120	1/2" X 12"	25
G005160	1/2" X 16"	1
G005180	1/2" X 18"	5
G005240	1/2" X 24"	5
G005300	1/2" X 30"	5
G005360	1/2" X 36"	5

3/4" GALVANIZED THREADED NIPPLES		
Product Code	Size	Carton (Qty .)
G007CL	3/4" X close	25
G007020	3/4" X 2"	25
G007030	3/4" X 3"	25
G007040	3/4" X 4"	25
G007060	3/4" X 6"	25
G007080	3/4" X 8"	25
G007100	3/4" X 10"	25
G007120	3/4" X 12"	25
G007140	3/4" X 14"	1
G007180	3/4" X 18"	5
G007240	3/4" X 24"	5
G007300	3/4" X 30"	5
G007360	3/4" X 36"	5

1" GALVANIZED THREADED NIPPLES		
Product Code	Size	Carton (Qty .)
G010CL	1" X close	25
G010020	1" X 2"	25
G010030	1" X 3"	25
G010040	1" X 4"	25
G010050	1" X 5"	25
G010060	1" X 6"	25
G010080	1" X 8"	25
G010100	1" X 10"	25
G010120	1" X 12"	25
G010140	1" X 14"	1
G010180	1" X 18"	1
G010240	1" X 24"	1
G010300	1" X 30"	1
G010360	1" X 36"	1

NIPPLES		
Product Code	Size	Carton (Qty .)
G120CL	1 1/4" X close	25
G012020	1 1/4" X 2"	25
G012030	1 1/4" X 3"	25
G012040	1 1/4" X 4"	25
G012060	1 1/4" X 6"	25
G012080	1 1/4" X 8"	10
G012120	1 1/4" X 12"	10
G012180	1 1/4" X 18"	1
G012240	1 1/2" X 24"	1
G012300	1 1/4" X 30"	1
G012360	1 1/4" X 36"	1

1 1/2" GALVANIZED THREADED NIPPLES		
Product Code	Size	Carton (Qty .)
G015CL	1 1/2" X close	25
G015020	1 1/2" X 2"	25
G015030	1 1/2" X 3"	25
G015040	1 1/2" X 4"	25
G015060	1 1/2" X 6"	25
G015080	1 1/2" X 8"	10
G015100	1 1/2" X 10"	10
G015120	1 1/2" X 12"	10
G015180	1 1/2" X 18"	1
G015240	1 1/2" X 24"	1
G015300	1 1/2" X 30"	1
G015360	1 1/2" X 36"	1

2" GALVANIZED THREADED NIPPLES		
Product Code	Size	Carton (Qty .)
G020CL	2" X close	25
G020030	2" X 3"	25
G020040	2" X 4"	25
G020060	2" X 6"	25
G020080	2" X 8"	10
G020100	2" X 10"	10
G020120	2" X 12"	10
G020180	2" X 18"	1
G020240	2" X 24"	1
G020300	2" X 30"	1
G020360	2" X 36"	1

2 1/2" GALVANIZED THREADED NIPPLES		
Product Code	Size	Carton (Qty .)
G025030	2 1/2" X 3"	1
G025040	2 1/2" X 4"	1
G025060	2 1/2" X 6"	1
G025080	2 1/2" X 8"	1
G025120	2 1/2" X 12"	1
G025180	2 1/2" X 18"	1
G025240	2 1/2" X 24"	1
G025300	2 1/2" X 30"	1
G025360	2 1/2" X 36"	1

3" GALVANIZED THREADED NIPPLES		
Product Code	Size	Carton (Qty .)
G030CL	3" X close	1
G030030	3" X 3"	1
G030040	3" X 4"	1
G030060	3" X 6"	1
G030080	3" X 8"	1
G030100	3" X 10"	1
G030120	3" X 12"	1
G030180	3" X 18"	1
G030240	3" X 24"	1
G030300	3" X 30"	1
G030360	3" X 36"	1

## GALVANIZED THREADED NIPPLES (CONT.)

GALVANIZED IRON PIPE T & C		
Product Code	Size	
GI075	3/4"	
GI100	1"	
GI125	1 1/4"	
GI150	1 1/2"	
GI200	2"	
GI250	2 1/2"	
GI300	3"	
GI400	4"	

## GALVANIZED FITTINGS

GALVANIZED TEE		
Product Code	Size	Carton (Qty .)
FG-200G	1/2"	40
FG-200I	3/4"	35
FG-200K	1"	20
FG-200L	1 1/4"	15
FG-200M	1 1/2"	15
FG-200N	2"	10
FG-200P	2 1/2"	1
FG-200Q	3"	1

GALVANIZED ELBOW (FIPT X FIPT)		
Product Code	Size	Carton (Qty .)
G00590	1/2"	50
G00790	3/4"	35
G01090	1"	20
G01290	1 1/4"	20
G01590	1 1/2"	20
G02090	2"	8
G02590	2 1/2"	9
G03090	3"	7
G04090	4"	1

GALVANIZED STREET ELBOW (MIPT X FIPT)		
Product Code	Size	Carton (Qty .)
G005ST90	1/2"	60
G007ST90	3/4"	35
G010ST90	1"	30
G012ST90	1 1/4"	25
G015ST90	1 1/2"	18
G020ST90	2"	10

## GALVANIZED FITTINGS

GALVANIZED 45° ELBOW (FIPT X FIPT)		
Product Code	Size	Carton (Qty .)
G00745	3/4"	40
G01045	1"	20
G02045	2"	12
G02545	2 1/2"	27

GALVANIZED COUPLING		
Product Code	Size	Carton (Qty .)
G005C	1/2"	60
G007C	3/4"	50
G010C	1"	50
G012C	1 1/4"	32
G015C	1 1/2"	18
G020C	2"	12
G030C	3"	12
G040C	4"	1

GALVANIZED REDUCER COUPLING		
Product Code	Size	Carton (Qty .)
G005002C	1/2" X 1/4"	1
G007005C	3/4" X 1/2"	60
G010007C	1" X 3/4"	25
G012010C	1 1/4" X 1"	20
G015012C	1 1/2" X 1 1/4"	30
G020015C	2" X 1 1/2"	12
G030020C	3" X 2"	8
G040030C	4" X 3"	6

GALVANIZED REDUCER BUSHING  
HEXAGON STYLE

Product Code	Size	Carton (Qty .)
G005002B	1/2" X 1/4"	1
G007005B	3/4" X 1/2"	1
G010005B	1" X 1/2"	50
G010007B	1" X 3/4"	50
G012007B	1 1/4" X 3/4"	30
G012010B	1 1/4" X 1"	30
G015010B	1 1/2" X 1"	25
G015012B	1 1/2" X 1 1/4"	25
G015015B	1 1/2" X 1 1/2"	25
G020010B	2" X 1"	20
G020012B	2" X 1 1/4"	20
G020015B	2" X 1 1/2"	20
G025020B	2 1/2" X 2"	15
G030010B	3" X 1"	12
G030020B	3" X 2"	12
G030025B	3" X 2 1/2"	12

## GALVANIZED CAP

Product Code	Size	Carton (Qty .)
G005CAP	1/2"	75
G007CAP	3/4"	40
G010CAP	1"	35
G015CAP	1 1/2"	25
G020CAP	2"	18
G040CAP	4"	7

## PLUG THREADED

Product Code	Size	Carton (Qty .)
G005P	1/2"	50
G007P	3/4"	1
G010P	1"	20
G015P	1 1/2"	30
G020P	2"	20
G025P	2 1/2"	1
G030P	3"	1
G040P	4"	1
G060P	6"	1
G080P	8"	1

## GALVANIZED FITTINGS (CONT.)

GALVANIZED UNION		
Product Code	Size	Carton (Qty .)
G005U	1/2"	50
G007U	3/4"	35
G010U	1"	20
G012U	1 1/4"	15
G015U	1 1/2"	10
G020U	2"	6
G025U	2 1/2"	4
G030U	3"	1
G040U	4"	1

## CAST IRON FLANGED FITTINGS

CAST IRON COMPANION FLANGE	
Product Code	Size
17TH 1020	2"
17TH 1025	2 1/2"
17TH 1030	3"
17TH 1040	4"
17TH 1060	6"

## BRASS THREADED NIPPLES

1/2" BRASS THREADED NIPPLES		
Product Code	Size	Carton (Qty .)
B005CL	1/2" X close	25
B005030	1/2" X 3"	1
B005060	1/2" X 6"	1

3/4" BRASS THREADED NIPPLES		
Product Code	Size	Carton (Qty .)
501-050000	3/4" X close	25
501-050050	3/4" X 2"	25
501-050090	3/4" X 3"	25
501-050130	3/4" X 4"	25
501-050210	3/4" X 6"	25
501-050290	3/4" X 8"	25
501-050370	3/4" X 10"	25
501-050450	3/4" X 12"	25
501-050510	3/4" X 18"	5
501-050570	3/4" X 24"	5
501-050630	3/4" X 30"	5

1" BRASS THREADED NIPPLES		
Product Code	Size	Carton (Qty .)
501-060000	1" X close	25
501-060050	1" X 2"	25
501-060090	1" X 3"	25
501-060130	1" X 4"	25
501-060210	1" X 6"	25
501-060290	1" X 8"	25
501-060450	1" X 12"	25
501-060510	1" X 18"	5
501-060570	1" X 24"	5
501-060630	1" X 30"	5
501-060690	1" X 36"	5

1 1/4" BRASS THREADED NIPPLES		
Product Code	Size	Carton (Qty .)
501-070000	1 1/4" X close	25
501-070090	1 1/4" X 3"	25
501-070130	1 1/4" X 4"	25
501-070210	1 1/4" X 6"	25
501-070290	1 1/4" X 8"	25
501-070450	1 1/4" X 12"	10
501-070510	1 1/4" X 18"	5
501-070570	1 1/4" X 24"	5
501-070630	1 1/4" X 30"	5
501-070690	1 1/4" X 36"	5

## BRASS THREADED NIPPLES (CONT.)

1 1/2" BRASS THREADED NIPPLES		
Product Code	Size	Carton (Qty .)
501-080000	1 1/2" X close	25
501-080090	1 1/2" X 3"	25
501-080130	1 1/2" X 4"	25
501-080210	1 1/2" X 6"	25
501-080290	1 1/2" X 8"	25
501-080450	1 1/2" X 12"	10
501-080510	1 1/2" X 18"	5
501-080570	1 1/2" X 24"	5
501-080630	1 1/2" X 30"	5
501-080690	1 1/2" X 36"	5

2" BRASS THREADED NIPPLES		
Product Code	Size	Carton (Qty .)
501-090090	2" X 3"	25
501-090130	2" X 4"	25
501-090210	2" X 6"	25
501-090290	2" X 8"	25
501-090450	2" X 12"	10
501-090510	2" X 18"	5
501-090570	2" X 24"	5
501-090630	2" X 30"	5
501-090690	2" X 36"	5

## BRASS FITTINGS

BRASS TEE	
Product Code	Size
B005T	1/2"
B007T	3/4"
B010T	1"
B012T	1 1/4"

### BRASS FITTINGS (CONT.)

BRASS 90° ELBOW	
Product Code	Size
B00590	1/2"
B00790	3/4"
B01090	1"
B01290	1 1/4"
B01590	1 1/2"
B02090	2"

BRASS STREET ELBOW (MIPT X FIPT)	
Product Code	Size
B005ST90	1/2"
B007ST90	3/4"
B010ST90	1"
B012ST90	1 1/4"
B015ST90	1 1/2"
B020ST90	2"

BRASS COUPLING	
Product Code	Size
B005C	1/2"
B007C	3/4"
B010C	1"
B012C	1 1/4"
B015C	1 1/2"
B020C	2"

BRASS REDUCER BUSHING HEXAGON STYLE	
Product Code	Size
B005007HEX	1/2" X 1/4"
B007005HEX	3/4" X 1/2"
B010005HEX	1" X 1/2"
B010007HEX	1" X 3/4"
B012007HEX	1 1/4" X 3/4"
B012010HEX	1 1/4" X 1"
B015010HEX	1 1/2" X 1"
B015012HEX	1 1/2" X 1 1/4"
B020010HEX	2" X 1"
B020012HEX	2" X 1 1/4"
B020015HEX	2" X 1 1/2"

BRASS UNIION	
Product Code	Size
B005U	1/2"
B007U	3/4"
B010U	1"
B012U	1 1/4"
B015U	1 1/2"
B020U	2"

### COPPER FITTINGS

COPPER TEE (C X C X C)	
Product Code	Size
C005T	1/2"
C007T	3/4"
C010T	1"
C012T	1 1/4"
C015T	1 1/2"
C020T	2"

COPPER 90° ELBOW (C X C)	
Product Code	Size
C00590	1/2"
C00790	3/4"
C01090	1"
C01290	1 1/4"
C01590	1 1/2"
C02090	2"

COPPER 45° ELBOW (C X C)	
Product Code	Size
C00545	1/2"
C00745	3/4"
C01045	1"
C01545	1 1/2"
C02045	2"

COPPER COUPLING	
Product Code	Size
C005C	1/2"
C007C	3/4"
C010C	1"
C012C	1 1/4"
C015C	1 1/2"
C020C	2"

COPPER FEMALE ADAPTER (C X FIPT)	
Product Code	Size
C005FA	1/2"
C007FA	3/4"
C010FA	1"
C012FA	1 1/4"
C015FA	1 1/2"
C020FA	2"

COPPER MALE ADAPTER (MIPT X C)	
Product Code	Size
C005MA	1/2"
C007MA	3/4"
C010MA	1"
C012MA	1 1/4"
C015MA	1 1/2"
C020MA	2"

COPPER CAP	
Product Code	Size
C005CAP	1/2"
C007CAP	3/4"
C010CAP	1"
C015CAP	1 1/2"

COPPER UNION (C X C)	
Product Code	Size
C007U	3/4"
C010U	1"
C012U	1 1/4"
C015U	1 1/2"
C020U	2"

### COPPER PIPE

TYPE K HARD COPPER PIPING	
Product Code	Size
C005K	1/2"
C007K	3/4"
C010K	1"
C012K	1 1/4"
C015K	1 1/2"
C020K	2"
C030K	3"

**MEDIUM BODIED CEMENTS**



**WELD-ON 705™  
CLEAR/GRAY/WHITE**

Medium bodied, fast setting, PVC cement for all classes and schedules of pipe and fittings with interface fit through 6" diameter, Schedule 80 through 4" diameter. This product may also be used on PVC foam core pipe. Can be used without primer on non-pressure systems if local codes permit.



Product Code	Description
705G	IPS 705 clear gal.
705HP	IPS 705 clear half pt.
705P	IPS 705 clear pt.

**WELD-ON 721™ BLUE**

Medium bodied, fast setting, PVC cement for all classes and schedules of pipe and fittings with interface fit through 6" diameter, Schedule 80 through 4" diameter. Can be used without primer on non-pressure systems if local codes permit. This product may also be used on PVC foam core pipe.



Product Code	Description
721G	IPS 721 blue gal.
721HP	IPS 721 blue half pt.
721P	IPS 721 blue pt.
721Q	IPS 721 blue qt.

**HEAVY BODIED CEMENTS**



**WELD-ON 711™ GRAY**

Heavy bodied, medium setting, PVC cement for all classes and schedules of pipe and fittings with interface fit, including Schedule 80 through 12" diameter. It has good gap filling properties and its medium set allows more working time in warm weather.



Product Code	Description
711G	IPS 711 gray gal.
711HP	IPS 711 gray half pt.
711P	IPS 711 gray pt.
711Q	IPS 711 gray qt.

**SPECIALTY CEMENTS**



**WELD-ON 725™  
"WET 'R DRY"™ AQUA BLUE**

Medium bodied, extremely fast setting, PVC cement for all classes and schedules of rigid and flexible pipe and fittings with interface fit through 6" diameter, Schedule 80 through 4" diameter. Specially formulated for applications where conditions are wet and/or dry when quick pressurization is desired. Can be used without primer on non-pressure systems if local codes permit.



Product Code	Description
725G	IPS 725 Wet R Dry gal.
725HP	IPS 725 Wet R Dry half pt.
725P	IPS 725 Wet R Dry pt.
725Q	IPS 725 Wet R Dry qt.

**WELD-ON 795™ CLEAR**

Medium bodied, fast setting, PVC cement for all flex/flex & flex/rigid PVC pipe and fittings with interface fit through 6" diameter, Schedule 80 through 3" diameter. Excellent product for flex/rigid applications. It has an elastomer in the formulation which allows a more flexible joint.



Product Code	Description
795G	IPS 795 clear gal.
795HP	IPS 795 clear half pt.
795P	IPS 795 clear pt.
795Q	IPS 795 clear qt.

**PRIMERS & CLEANERS**



**WELD-ON P-68™  
PRIMER PURPLE/CLEAR**

Quality low VOC primer essential for proper softening and preparation of PVC and CPVC pipe and fitting surfaces. The strong action of P-68 primer rapidly softens and dissolves the joining surfaces of PVC and CPVC pipe and fittings. Available in clear and purple; the latter allows easy identification when used on the joining surfaces.



### PRIMERS & CLEANERS (CONT.)

#### WELD-ON P-70™ PRIMER PURPLE/CLEAR

The most aggressive primer commercially available. Excellent product for cold weather applications. If used properly, will soften the surfaces of PVC and CPVC pipe and fittings which is necessary for the proper solvent welding of the materials. Meets ASTF F-656 & SCAQMD 1168 Industry listings.

Product Code	Description
P70G	IPS P70 primer purple gal.
P70HP	IPS P70 primer purple half pt.
P70P	IPS P70 primer purple pt.
P70Q	IPS P70 primer purple qt.



#### WELD-ON P-75™ WET 'R DRY™

WELD-ON® P-75™ Wet 'R Dry™ is an aqua blue, low VOC emission, non-bodied, very fast acting, primer specially formulated to be used with 725™ Wet 'R Dry™ low VOC PVC solvent cement. It can also be used with other WELD-ON PVC solvent cements to prepare PVC pipe and fitting surfaces for bonding.

Product Code	Description
P75Q	IPS P75 primer qt.



### PVC LOW VOC MEDIUM BODIED CEMENTS



#### WELD-ON 2705™ CLEAR

Medium bodied, fast setting, PVC cement for all classes and schedules of pipe and fittings with interface fit through 6" diameter, Schedule 80 through 4" diameter. This product may also be used on PVC foam core pipe. Can be used without primer on non-pressure systems if local codes permit.

Product Code	Description
2705G	Gal. clear low VOC glue
2705HP	1/2 pt. clear low VOC glue
2705P	Pt. clear low VOC glue
2705Q	Qt. clear low VOC glue



#### WELD-ON 2721™ BLUE

Medium bodied, fast setting, PVC cement for all classes and schedules with interface fit through 6" diameter, Schedule 80 through 4" diameter. This product may also be used on PVC foam core pipe. Can be used without primer on non-pressure systems if local codes permit.

Product Code	Description
2721G	Gal. blue low VOC glue
2721HP	1/2 pt. blue low VOC glue
2721P	Pt. blue low VOC Glue
2721Q	Qt. blue low VOC glue



### PVC LOW VOC HEAVY BODIED CEMENTS (CONT.)



#### WELD-ON 2711™ GRAY

Heavy bodied, medium setting, PVC cement for all classes and schedules with interface fit, including Schedule 80 through 12" diameter. It has good gap filling properties and its medium set allows more working time in warm weather.

Product Code	Description
2711G	Gal. gray low VOC glue
2711HP	1/2 pt. gray low VOC glue
2711P	Pt. gray low VOC glue
2711Q	Qt. gray low VOC glue



### PVC LOW VOC SPECIALTY CEMENTS



#### WELD-ON 2725™ "WET 'R DRY"™ AQUA BLUE

Medium bodied, extremely fast setting, PVC cement for all classes and schedules of rigid and flexible pipe with interface fit through 6" diameter, Schedule 80 through 4" diameter. Specially formulated for applications where conditions are wet and/or dry when quick pressurization is desired. Can be used without primer on non-pressure systems if local codes permit.

Product Code	Description
2725G	IPS 2725 gal. Wet R Dry low VOC glue
2725HP	1/2 pt. Wet R Dry low VOC glue
2725P	Pt. Wet R Dry low VOC glue
2725Q	Qt. Wet R Dry low VOC glue



#### WELD-ON 2795™ CLEAR

Medium bodied, fast setting, PVC cement for all flex/flex & flex/rigid PVC pipe and fittings with interface fit through 6" diameter, Schedule 80 through 3" diameter. Excellent product for flex/rigid applications. It has an elastomer in the formulation which allows a more flexible joint.

Product Code	Description
2795G	Gal. flex low VOC glue
2795HP	1/2 pt. flex low VOC glue
2795P	Pt. flex low VOC glue
2795Q	Qt. flex low VOC glue



**PVC SPECIALTY CEMENTS OFFER  
LESS SET & CURE TIMES!**

**SOLVENT CEMENTS**

**CHRISTY'S RED HOT GLUE**

- ◆ Available in regular and environmentally safe "Low VOC" formulations
- ◆ Excellent for wet or damp conditions
- ◆ Very fast setting
- ◆ Can be used "as is" through 6" diameter piping, unless local code requires a primer
- ◆ Blue in color to show you quantity applied
- ◆ Has excellent "gap-filling" capability
- ◆ The preferred solvent cement of many professionals
- ◆ Suitable for potable water, DWV, sewer, conduit, sprinkler, pool, spa and PVC flex-vinyl applications
- ◆ NSF-IAPMO listed

Product Code	Description
RH-RHBG-1	Gal. container
RH-RHBG-Qt	Qt. container
RH-RHBG-PT	Pt. container



**OATEY SOLVENTS  
ALL PURPOSE CEMENT**

- ◆ Medium-bodied milky clear cement for ABS, PVC or CPVC up to 6" diameter
- ◆ Recommended for pipe and fittings Sch. 40 and Sch. 80, potable water, pressure pipe, gas, conduit and DWV
- ◆ Recommended application temperature 40°F to 100°F
- ◆ Meets performance requirements of ASTM D-2564, D-2235, F-493

Product Code	Description
30324	Clear regular body pvc. cm. gal.
30336S	Clear regular body pvc. cm. qt.
30346S	Clear regular body pvc. cm. pt.



**PLASTI-WELD™**

**PLASTI-WELD™ 903 SERIES  
NSF PURPLE PRIMERS**

- ◆ Purple-tinted aggressive primer for use on PVC pipe and fittings
- ◆ Can be used with all schedules and diameters of pipe
- ◆ Softens the pipe surface to allow a fast, secure solvent weld
- ◆ Meets NSF standards where required or specified

Product Code	Description
90324	Purple primer gal.
90336S	Purple primer qt.
90346S	Purple primer pt.



**SOLVENT CEMENTS (CONT.)**

**UNI-WELD**

**UNI-WELD 9300  
SERIES CLEAR PRIMERS**

- ◆ A clear aggressive primer for use on PVC pipe
- ◆ Can be used with all schedules and diameters of pipe
- ◆ Softens the pipe in preparation for solvent cement
- ◆ Does not apply a purple stain to the conduit

Product Code	Description
9324	Clear primer gal.
9336S	Clear primer qt.
9346S	Clear primer pt.

**UNI-WELD TURF-TITE™  
2400 SERIES MEDIUM BLUE "HOT"**

- ◆ Recommended for solvent welding all schedules and classes of PVC pipe and fittings up to 6" diameter Fast-setting cement specially formulated for wet conditions and/or quick pressurization
- ◆ Can be used as a one-step (no primer necessary) where local codes permit for non-pressure piping systems up to 4" diameter
- ◆ Can be used for potable water, sewer and drain, waste and vent systems

Product Code	Description
TURFTITEG	Turf-Tite medium blue "Hot", gal. container
TURFTITEQ	Turf-Tite medium blue "Hot", qt. container
TURFTITEP	Turf-Tite medium blue "Hot", pt. container



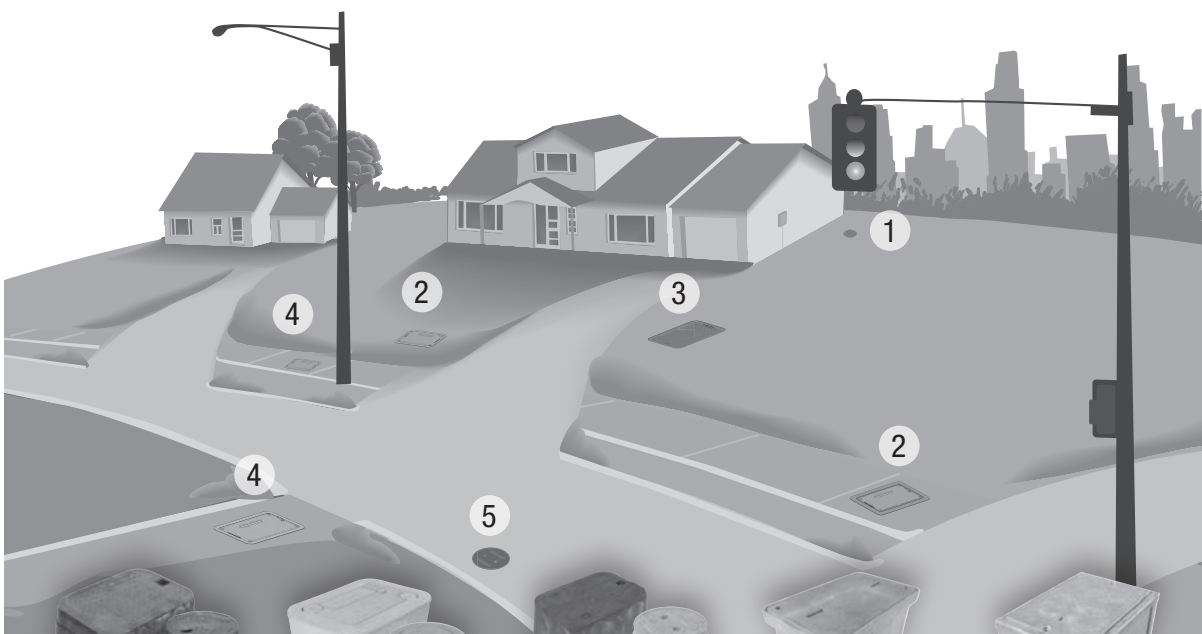
**WELD-ON APPLICATORS AND ACCESSORIES**



Product Code	Description
3020	Roll-A-Weld 3" roller for pipe diameters from 3" through 6"; fits MT-653 empty quart triple tight neck
6020	Roll-A-Weld 4" roller for pipe diameters from 3" through 8"; fits standard quart can as well as MT-651 empty quart can
7020	Jumbo Roll-A-Weld 7" roller for pipe diameters of 6" or larger; fits MT-648 empty gallon can and cements available in wide mouth cans
4020	4" swab for pipe diameters of 6" and larger; fits MT-648 empty gallon can and cements and primers available in wide mouth cans
5020	4" swab for pipe diameters from 3" through 8"; fits standard quart can as well as MT-651 empty quart can
8020	4" cotton swab with wire handle for use on pipe with 6" diameter or larger
Can-Mate Daubers	Adjustable plastic applicator with telescoping stem to fit all cans (except 1/4 pint). Available in 1/2", 3/3/4" and 1 1/4" dauber sizes
Cap Dauber	DH dauber fits 1/4 and 1/2 pint cans. DP daubers fit 1/2 pint and pint cans. DQ daubers fit quart cans. Available in 3/8", 1/2", 3/4" and 1 1/2"

# Oldcastle® Enclosure Solutions

The Right Enclosure • The Right Load Rating • The Right Application



- ① **CARSON**  
Plastic

Value-engineered TrussT series offers top-down strength.


- ② **CHRISTY**  
Concrete

Christy R-Series concrete is reliable and cost effective with chip-resistant guards.


- ③ **CARSON**  
Plastic

Specification Grade products offer lasting durability for a variety of projects.


- ④ **H-SERIES**  
Polymer

H-Series polymer concrete offers high strength with lower weight than concrete.






- ⑤ **CHRISTY**  
Concrete

With a galvanized steel cover and frame in place, these Christy boxes are traffic rated.



### LOAD RATINGS

Enclosures must withstand loads *reasonable to expect* based on the installation location. Our bodies and lids are rated for performance to help you match Oldcastle brands with your application.

-  Pedestrian Traffic Only
-  Pedestrian Traffic and Non-Deliberate Micro-Motor Traffic
-  Non-Deliberate Heavy Vehicular Traffic
-  Deliberate Roadway Traffic

**(800) 735-5566**

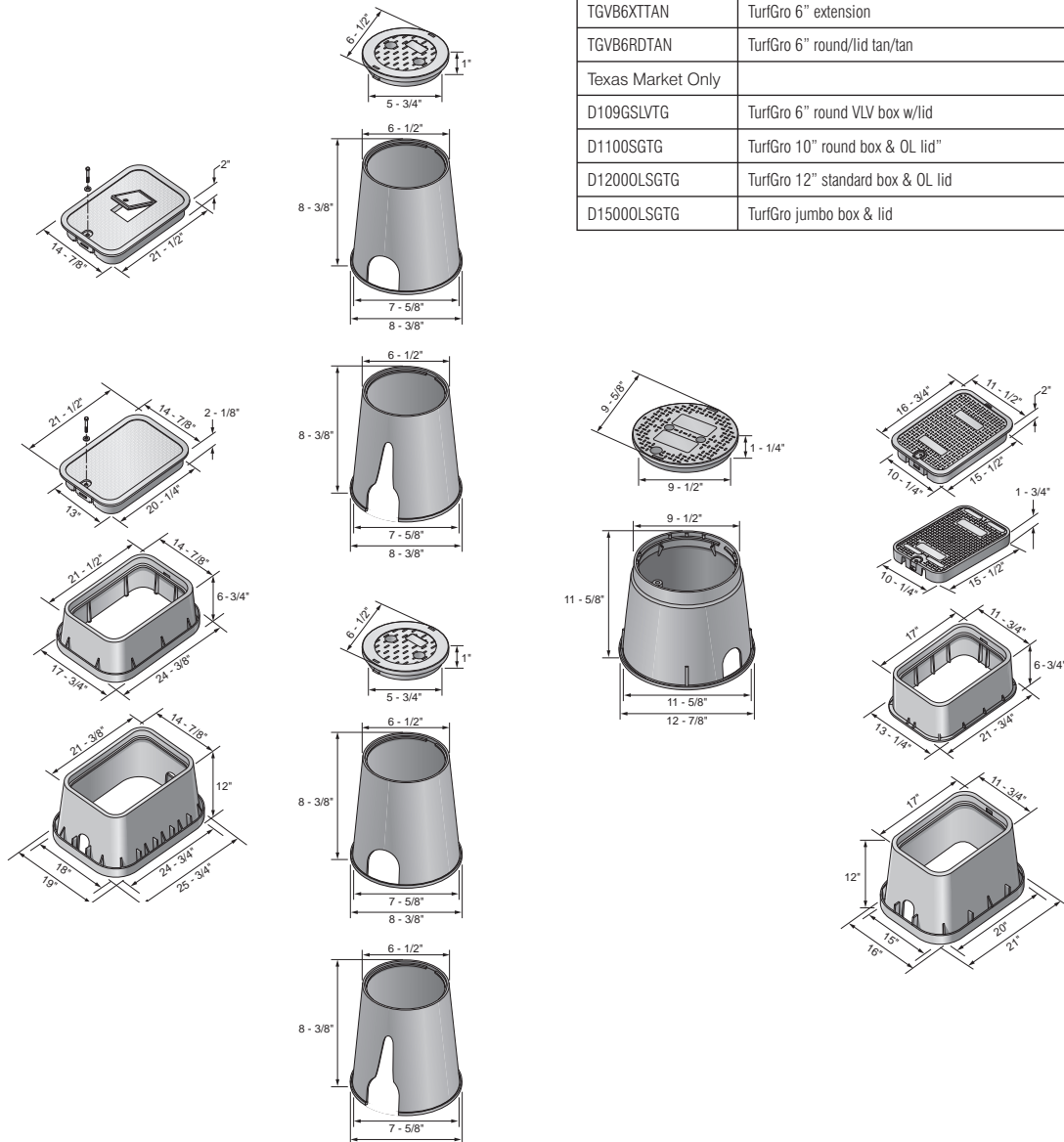
[oldcastleprecast.com/enclosuresolutions](http://oldcastleprecast.com/enclosuresolutions)



**TurfGro Valve Boxes are high-quality, cost-competitive plastic access boxes for housing irrigation control valves. The TurfGro Standard Series valve boxes and covers are injection molded of structural foam polyolefin material with a heat index between 10 to 12. Available in a variety of sizes, TurfGro valve boxes provide a value alternative for residential and light commercial projects.**

**SKU availability depends on the market. Contact your local Horizon location for more information.**

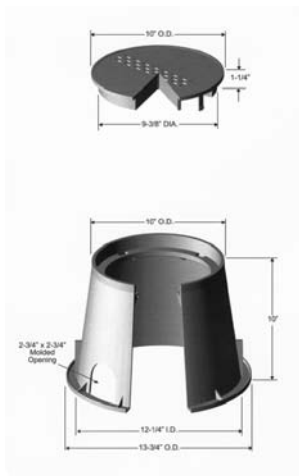
Product Code	Description
TGVB6RD	TurfGro 6" round w/lid green/green
TGVB10RD	TurfGro 10" round w/lid green/green
TGVBSTD	TurfGro 14" X 19" box w/lid green/green
TGVBJUMBO	TurfGro jumbo box w/lid green/green
TGVB6RDBLK	TurfGro 6" round black/green
TGVB10RDBLK	TurfGro 10" round black/green
TGVBSTDBLK	TurfGro 14" X 19" box w/lid black/green
TGVBJUMBOBLK	TurfGro jumbo box w/lid black/green
TGVB10RDTAN	TurfGro 10" round w/lid sand/sand
TGVBSTD TAN	TurfGro 14" X 19" box w/lid sand/sand
TGVBSTD TAN	TurfGro 14" X 19" box w/lid sand/sand
TGVBJUMBOTAN	TurfGro jumbo box w/lid sand/sand
TGVB6XTTAN	TurfGro 6" extension
TGVB6RDTAN	TurfGro 6" round/lid tan/tan
Texas Market Only	
D109GSLVTG	TurfGro 6" round VLV box w/lid
D1100SGTG	TurfGro 10" round box & OL lid
D12000LSGTG	TurfGro 12" standard box & OL lid
D15000LSGTG	TurfGro jumbo box & lid





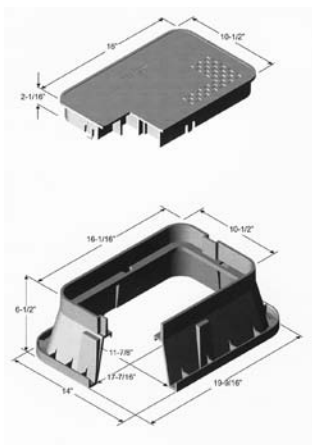
### Res/Com Valve Boxes

Carson brand quality is a complete line of residential/commercial grade access boxes for irrigation systems. Manufactured using high pressure, straight injection molding, these valve boxes are available in popular sizes for all residential and commercial applications



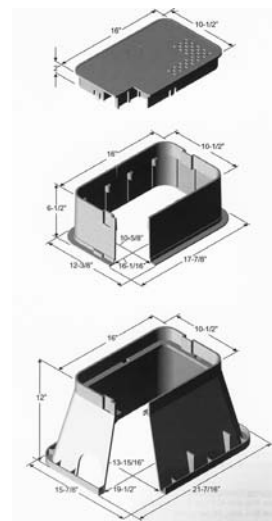
### 011 10" ROUND VALVE BOX

Product Code	Options	Color	Part #
011 10" Round	Body & Cover	Black/Green	00111002
	Body	Black	00112002
	Cover	Green	001140010



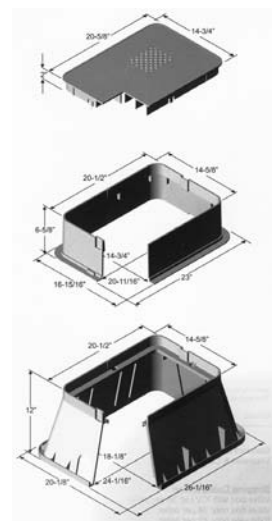
### 10156 6" FLARED VALVE BOX

Product Code	Options	Color	Part #
10156 6" Flared	Box w/ICV Lid	Black/Green	10151234
	Box Only	Black	14193002
	ICV Lid Only	Green	14194001



### 1015 — 12 STANDARD 12"

Product Code	Options	Color	Part #
1015 - 12 Standard 12"	Box w/ICV Lid	Black/Green	10151008
	Box Only	Black	14192005
	ICV Lid Only	Green	10154072
	6" Extension	Tan	10151235
	6" Extension with ICV Lid	Tan	10151235

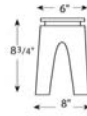


### 012 — 12 12" JUMBO

Product Code	Options	Color	Part #
012-12 12" Jumbo	Box w/ICV Lid	Green	012201014
	Box Only	Black	012202005
	ICV Lid Only	Green	013244001
	6" Extension	Black	014193002
	6" Extension with ICV Lid Black/Green	Green	012201002

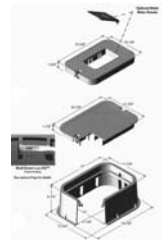
## Specification Grade Valve Boxes

The most complete line of plastic access boxes for housing irrigation control valves available. Found on golf courses, community parks, business parks and schools, Carson valve boxes are the strongest and best performing products of their kind. Manufactured using a unique low pressure structural foam molding process, Carson has the valve box to meet any of your engineering specification needs.



### 510 EMITTER

Product Code	Options	Color	Part #
510 Emitter	Body & Cover (T-style)	Black	5101001



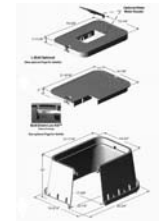
### 510 EMITTER

Product Code	Options	Color	Part #
510 Emitter	Body & Cover (T-style)	Black	5101001



### 708 ECONO

Product Code	Options	Color	Part #
708 Econo	Body & Cover	Tan	07081002
	Body	Purple	07081008
	Cover (T-style)	Tan	07084006



### 708 ECONO

Product Code	Options	Color	Part #
708 Econo	Body & Cover	Tan	07081002
	Body	Purple	07081008
	Cover (T-style)	Tan	07084006



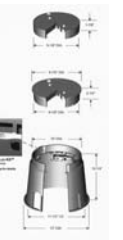
### 809 DELUXE ECONO

Product Code	Options	Color	Part #
809 Deluxe Econo	Body & Cover	Green	08091001
	Body	Green	08092001
	Cover (T-style)	Green	08094001



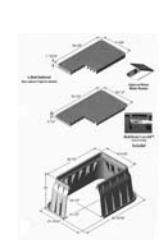
### 809 DELUXE ECONO

Product Code	Options	Color	Part #
809 Deluxe Econo	Body & Cover	Green	08091001
	Body	Green	08092001
	Cover (T-style)	Green	08094001



### MODEL 910

Product Code	Options	Color	Part #
Model 910	Body & Cover	Available in: Green, gray, black, tan, violet	910104
	Body		91010
	Cover (T-style)		9104



### MODEL 910

Product Code	Options	Color	Part #
Model 910	Body & Cover	Available in: Green, gray, black, tan, violet	910104
	Body		91010
	Cover (T-style)		9104

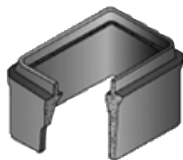


Oldcastle concrete boxes are manufactured with a high-density reinforced concrete. They feature non-settling shoulders to maintain grade level and facilitate appropriate backfilling. Etched, UV-resistant polyethylene face is anchored in the concrete design for maximum durability.

### MODEL B9 CONCRETE UTILITY BOX AND LID CODES

Measures 10 1/4" X 17 1/4" inside at the base.

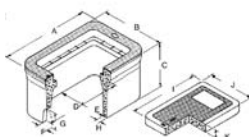
Product Code	Description
B9	Concrete Box
B9C	Cast Iron Lid "Water"
B9D	Concrete Lid "Water"
B9DE	Concrete Lid "Electric"
B9DRCV	Concrete Lid "RCV"
B9DS	Concrete Lid "Sewer"
FL9D	Flibrelyte Lid "Water"



### MODEL B16 CONCRETE UTILITY BOX AND LID CODES

Measures 12" X 22 1/4" inside at the base.

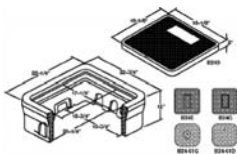
Product Code	Description
B16	Concrete Box
B16C	Cast Iron Lid "Water"
B16D	Concrete Lid "Water"
B16DE	Concrete Lid "Electric"



### MODEL B24 CONCRETE UTILITY BOX AND LID CODES

Measures 18" X 19 1/2" inside at the base.

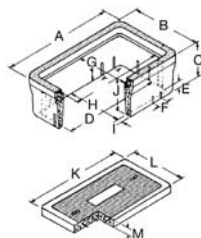
Product Code	Description
B24	Concrete Box
B24D	Concrete Lid "Water"



### MODEL B36 CONCRETE UTILITY BOX AND LID CODES

Measures 17 1/4" X 30" inside at the base.

Product Code	Description
B36	Concrete Box
B36D	Concrete Lid "Water"
B36DI	Concrete Lid "Irrigation"
B36DSC	Concrete Lid "Sprinkler Control"



### MODEL F8 CONCRETE ROUND BOX AND LID CODES

Measures 8" inside diameter at the base and 12" in height.

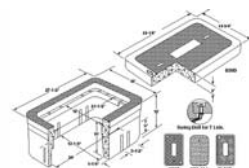
Product Code	Description
F8	Concrete Box
F8CLID	Cast Iron Lid "Water"
F8R	Concrete Lid "Water"
F8RCO	Concrete Lid "Clean Out"
F8RE	Concrete Lid "Electric"
F8RGV	Concrete Lid "Gate Valve"
F8RCQV	Concrete Lid "CQV"
F8RS	Concrete Lid "Sewer"



### MODEL N30 ELECTRICAL BOX

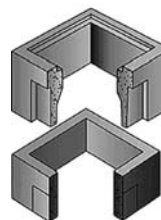
Measures 13 1/4" X 24".

Product Code	Description
N30BOX	Concrete Box
N30T	Concrete Lid "Water" Bolt Down
N30TE	Concrete Lid "Electric" Bolt Down
N30TI	Concrete Lid "Irrigation" Bolt Down
N30TSC	Concrete Lid "Sprinkler Control" Bolt Down



### MODEL 64 CONCRETE DRAIN BOX

Measures 18 3/8" X 18 3/8".



Horizon Distributors offers all of the commonly specified Concrete Valve Box/Precast Enclosure Solution SKUs.

Please contact your local Horizon Sales Representative for more information.



Product Code	Description	Roll Size
18DB3500	18 gauge, 3 strand, direct burial wire	500'
18DB31000	18 gauge, 3 strand, direct burial wire	1000'
18DB4250	18 gauge, 4 strand, direct burial	250'
18DB41000	18 gauge, 4 strand, direct burial	1000'
18DB5250	18 gauge, 5 strand, direct burial	250'
18DB51000	18 gauge, 5 strand, direct burial	1000'
18DB6250	18 gauge, 6 strand, direct burial	250'
18DB61000	18 gauge, 6 strand, direct burial	1000'
18DB7250	18 gauge, 7 strand, direct burial	250'
18DB71000	18 gauge, 7 strand, direct burial	1000'
18DB8250	18 gauge, 8 strand, direct burial	250'
18DB81000	18 gauge, 8 strand, direct burial	1000'
18DB9250	18 gauge, 9 strand, direct burial	250'
18DB91000	18 gauge, 9 strand direct burial	1000'
18DB10250	18 gauge, 10 strand, direct burial	250'
18DB101000	18 gauge, 10 strand, direct burial	1000'
18DB13250	18 gauge, 13 strand, direct burial	250'
18DB131000	18 gauge, 13 strand, direct burial	1000'

Product Code	Description	Roll Size
12LC10	12/2 Landscape Lighting Cable	250'
12LC	12/2 Landscape Lighting Cable	500'
10LC10	10/2 Landscape Lighting Cable	250'
08LC10	8/2 Landscape Lighting Cable	250'
10LC1100	10/2 Landscape Lighting Cable	2100'
16LC11	16/2 Landscape Lighting Cable	2500'
08LC11	8/2 Landscape Lighting Cable	2500'
16LC1100	16/2 Landscape Lighting Cable	2100'
12LC12	12/2 Landscape Lighting Cable	21000'
16LC10	16/2 Landscape Lighting Cable	2250'
8LC1100	8/2 Landscape Lighting Cable	2100'

Product Code	Description	Roll Size
14R5	14/1 AWG UF Wire, Red	500'
14R25	14/1 AWG UF Wire, Red	2500'
14UF11	14/1 AWG UF Wire, Black	500'
14UF15	14/1 AWG UF Wire, Black	2500'
14UF71	14/1 AWG UF Wire, Brown	560'
14UF45	14/1 AWG UF Wire, Blue	2500'
14UF85	14/1 AWG UF Wire, Orange	2500'
14UFA5	14/1 AWG UF Wire, Pink	2500'
14UF65	14/1 AWG UF Wire, Yellow	2500'
14UFC5	14/1 AWG UF Wire, Tan	2500'
14UFB1	14/1 AWG UF Wire, Purple	500'
14UF55	14/1 AWG UF Wire, Green	2500'
14UF31	12/1 AWG UF Wire, Red	500'
14UF35	12/1 AWG UF Wire, Red	2500'
14UF15	12/1 AWG UF Wire, Black	2500'
14UF11	12/1 AWG UF Wire, White	500'
14UF25	12/1 AWG UF Wire, White	2500'








### TUCOR® CONTROL CABLE

Tucor control cable is designed to operate valve decoders and sensor decoders. It consists of bare copper conductors insulated with PVC and a high density polyethylene direct burial jackets. Operating two valves simultaneously the cable can stretch to 11,200' on 18-gauge and 27,300' on 14-gauge. 12-gauge is available on special order.

Product Code	Description
TW18/2	Tucor 18/2 COM Wire
TW16/2	Tucor 16/2 COM Wire
TW14/2	Tucor 14/2 COM Wire

### Decoder Wire by Manufacturer

	Paige Electric		AWG & No. of Conductors	Colors	
	Part No.	Spec No.		Conductors	Outer Jacket
 <b>Hunter</b>	170116RB	P7313	14/2c	Red & Blue	None
	170109B		12/2c		
	170801BU	P7354D	14/2c		Blue
	170801GY				Gray
	170801OG				Orange
	170801PR				Purple
	170801TN				Tan
	170801YL				Yellow
	170802BU		12/2c		Blue
	170802GY				Gray
	170802OG				Orange
	170802PR				Purple
	170802TN				Tan
	170802YL				Yellow
 <b>Rain Bird</b>	180115	P7072D	14/2c	Red & Black	Red
	180126				White
	180127				Black
	180114				Orange
	180116				Blue
	180118				Yellow
	1801181				Purple
	1801182				Brown
	1801151				Pink
	1801183				Gray
	180117				Green
	180161		12/2c		Red
	180160				Black
	180165				Orange
	180162				Blue
	180163				Yellow
	180168				Purple
	180166				Brown
	180167				Gray
	180164				Green
 <b>Toro</b>	1701168KWT	P7313	14/2c	Black & White	None
	170800	P7350D			Red
	170800BK				Red & Black Stripe
	170800GN				Red & Green Stripe
	170800YL				Red & Yellow Stripe

### ALSO AVAILABLE AT YOUR HORIZON STORE:

FC005	1/2 Flex Conduit
C40010	1" Schedule 40
C40007	3/4" Schedule 4
C40020	2" Schedule 40
C40005	1/2" Schedule 4
C40015	1-1/2" Schedule
C40012	1-1/4" Schedule
C40030	3" sch40 Conduit
SW010	1" PVC Sweep
SW007	3/4" PVC Sweep
SW020	2" PVC Sweep
SW005	1/2" PVC Sweep
SW030	3" PVC Sweep Sc
SW040	4" PVC Sweep Sc
005CBCG	1/2" Conduit Bo
005LMA	1/2" Liquid Tig
005LT90	1/2" Liquid Tig
K61135	King Con Blk/Wh
K10222	King Wire Conn.
K61235	King Con Blk/Gr
K20111	King Wire Conn.
K61335	King Conn Lrg B
K10241	King Conn Blue/
K61146	King Conn Small
K20136	King Conn Tan
K61350	King Conn Lrg B
DBYKIT	3M Direct Buria
DBYBULK	3M "Bulk" Splic
DBRKIT	3M Direct Buria
DBRBULK	3M "Bulk" Splic
316IR	3M Low Volt Con
3M314BOX	314-Box
UAL	3M UAL Connecto
DS400	Dri Splice Conn
DS100	Dri Splice Conn
DS300	Dri Splice Seal
K67075	Wire Nut Yellow
WADEWC14	WC-14
WADEWC16	WC-16

Electrical Conduit	
PC Schedule 40, UL listed conduit	
58015	1/2" PVC electrical conduit
58025	3/4" PVC electrical conduit
58035	1" PVC electrical conduit
58045	1 1/4" PVC electrical conduit
58055	1 1/2" PVC electrical conduit
58065	2" PVC electrical conduit
58075	2 1/2" PVC electrical conduit
58085	3" PVC electrical conduit
58095	4" PVC electrical conduit

Electrical Conduit Fittings	
Conduit 90° Sweep Elbows	
E050SWEEP	1/2" PVC sweep elbow
E075SWEEP	3/4" PVC sweep elbow
E100SWEEP	1" PVC sweep elbow
E125SWEEP	1 1/4" PVC sweep elbow
E150SWEEP	1 1/2" PVC sweep elbow
E200SWEEP	2" PVC sweep elbow
E250SWEEP	2 1/2" PVC sweep elbow
E300SWEEP	3" PVC sweep elbow
E400SWEEP	4" PVC sweep elbow

Conduit Couplers (S x S)	
EC050	1/2" PVC conduit coupler
EC075	3/4" PVC conduit coupler
EC100	1" PVC conduit coupler
EC125	1 1/4" PVC conduit coupler
EC150	1 1/2" PVC conduit coupler
EC200	2" PVC conduit coupler
EC250	2 1/2" PVC conduit coupler
EC300	3" PVC conduit coupler
EC400	4" PVC conduit coupler

Conduit Steel Lock nuts	
ELN050	1/2" steel electrical lock nut
ELN075	3/4" steel electrical lock nut
ELN100	1" steel electrical lock nut
ELN125	1 1/4" steel electrical lock nut
ELN150	1 1/2" steel electrical lock nut
ELN200	2" steel electrical lock nut

Conduit Female Adapters (FIPT x SLIP)	
EFA050	1/2" PVC conduit female adapter
EFA075	3/4" PVC conduit female adapter
EFA100	1" PVC conduit female adapter
EFA125	1 1/4" PVC conduit female adapter

Conduit Male Adapters (MIPT x SLIP)	
EMA050	1/2" PVC conduit male adapter
EMA075	3/4" PVC conduit male adapter
EMA100	1" PVC conduit male adapter
EMA125	1 1/4" PVC conduit male adapter
EMA150	1 1/2" PVC conduit male adapter
EMA200	2" PVC conduit male adapter

Conduit Boxes and Covers	
ECB050	1/2" Conduit box
ECB075	3/4" Conduit box
ELCB050	1/2" Conduit box, 90°
ELCB075	3/4" Conduit box, 90°

Conduit Female Adapters (FIPT x SLIP)	
EFA050	1/2" PVC conduit female adapter
EFA075	3/4" PVC conduit female adapter
EFA100	1" PVC conduit female adapter
EFA125	1 1/4" PVC conduit female adapter

Conduit Male Adapters (MIPT x SLIP)	
EMA050	1/2" PVC conduit male adapter
EMA075	3/4" PVC conduit male adapter
EMA100	1" PVC conduit male adapter
EMA125	1 1/4" PVC conduit male adapter
EMA150	1 1/2" PVC conduit male adapter
EMA200	2" PVC conduit male adapter

Conduit Steel Lock Nuts	
ELN050	1/2" steel electrical lock nut
ELN075	3/4" steel electrical lock nut
ELN100	1" steel electrical lock nut
ELN125	1 1/4" steel electrical lock nut
ELN150	1 1/2" steel electrical lock nut
ELN200	2" steel electrical lock nut

Conduit Boxes and Covers	
ECB050	1/2" Conduit box
ECB075	3/4" Conduit box
ELCB050	1/2" Conduit box, 90°
ELCB075	3/4" Conduit box, 90°



### **PRO-700 WIRE AND VALVE LOCATOR**

- ◆ Fault locator for irrigation contractors and maintenance personnel
- ◆ Tracks irrigation wires, finds missing valves, and detects damage to vulnerable underground cabling
- ◆ 27 inch receiver, external speaker, and "D" transmitter battery power
- ◆ Enlarged analog meters for easy viewing of power levels on the transmitter and receiver



### **PRO871 DUAL FREQUENCY CABLE LOCATOR**

- ◆ Locates buried wires and cables
- ◆ Dual frequency capability
- ◆ Inductive clamp included (Pro871C)
- ◆ Audible (Speaker or Headset) or visual power indicators
- ◆ Low battery indicator
- ◆ Null or peak reception options with volume control
- ◆ Custom molded case
- ◆ Uses 8 "D" cell batteries (not included)



### **GFL3000 GROUND FAULT LOCATOR**

- ◆ Locates buried ground faults
- ◆ Dual power capability (Hi/Low)
- ◆ Audible 'On' beeper
- ◆ Battery power indicator
- ◆ Custom molded case
- ◆ Rechargeable battery (Includes Battery and Charger)



### **PRO300 RESIDENTIAL WIRE AND VALVE LOCATOR**

- ◆ The perfect fit for the contractor working primarily with smaller wired systems
- ◆ Great for residential sprinkler systems
- ◆ The Pro300 comes complete with transmitter/ case, receiver, antenna, and ground stake
- ◆ Output Frequency — 2Khz
- ◆ Output Power — 350 VAC P-P
- ◆ Transmitter Power — 8 C Type Batteries
- ◆ Receiver Power — one 9V Square Battery



### **PRO90 AUTOMATIC MULTIMETER**

- ◆ Automatically looks for voltage from 1.3 to 600V AC or to 1000 volts DC. If it sees it, it measures it including automatically setting the correct range and determining AC or DC.
- ◆ If it does not see voltage, it automatically switches to resistance or ohm measurement, again auto-ranging
- ◆ The clamp is used for measuring AC currents from .9 to 400 Amps



### **PRO110 TONE GENERATOR**

- ◆ Rugged design
- ◆ Visual indication: Tone generation
- ◆ 9V alkaline battery with up to 100 hrs. operation
- ◆ Test lead fitted with crocodile clip & RJ11 plug
- ◆ Waterproof heavy duty design

### **PRO210 PROBE**

- ◆ Waterproof heavy duty design
- ◆ Audio indication of test signal
- ◆ Visual ON indication
- ◆ 5 Digitally controlled sensitivity settings
- ◆ High gain 46 dB
- ◆ Headset socket
- ◆ Ergonomically designed for right or left handed use
- ◆ 9V alkaline battery

### **PRO-220K TONE AND PROBE KIT**

- ◆ A durable, reliable tone and probe kit designed for identifying the termination point of any wire
- ◆ Used for identifying where a particular solenoid is connected into the clock or controller



### **PRO-48 SOLENOID ACTIVATOR/ CHATTERBOX**

- ◆ Activates and holds solenoids open
- ◆ Generates and traces 1Khz tracing tone
- ◆ Checks clock 24V power output
- ◆ Tests for open or shorted wiring
- ◆ Uses two 9V batteries (not included)



### **PRO-48K SOLENOID ACTIVATOR KIT**

Consists of a Pro48 Activator, the Pro220 Tone Probe, and a Pro22 carrying case

**TESTING EQUIPMENT (CONT.)****PRO290**

- ◆ Tracks underground wires including landscape lighting and fence
- ◆ Won't damage lights (125 mw Output)
- ◆ Ground condition LED
- ◆ Detachable antenna
- ◆ Receiver volume control
- ◆ Standard 33khz tracking signal
- ◆ Ground stake included
- ◆ Transmitter automatic off switch
- ◆ Uses 8 C Batteries and one 9V (not included)

**ACCESSORIES**

Product Code	Description
PRO700	Wire and Valve Locator
PRO871C	Pro871 w/Inductive Clamp
GFL3000	Ground Fault Locator
PRO300	Mini Wire and Valve Locator
PRO90	Automatic Multimeter
PRO110	Tone Generator
PRO210	Tone Probe
PRO220K	Tone Probe Kit
PRO48	Multi-Function Irrigation System Tester
PRO48K	Multi-Function Irrigation System Tester, With Case

**MISCELLANEOUS ACCESSORIES****MISCELLANEOUS ACCESSORIES**

Product Code	Description
SERCONQ	Tip-N-Measure Service Container qt.
SERCONG	Tip-N-Measure Service Container gal.
RU168501	5 Gal. Water Cooler
WD40	WD-40 11 oz.
35251	1lb. Bag Of Rag
TCGB350	Trash Bags Box

**ALSO AVAILABLE AT YOUR HORIZON STORE:**

BRUTEGRAY	BRUTE GRAY TRASH CAN
4024	4 X 24 Rebar
4036	4 X 36 Rebar
ECORD5	5' Electrical Cord
86001	Electrical Tape
T10MIL	Pipe Wrap
T007	3/4" X 520" Teflon Tape
20602N	Duct Tape
T010	1" X 520" Teflon Tape
TC-5736	1/2" X 520" Teflon Tape
TARPP	7' X 7' Poly Tarp
1250	7' X 7' Burlap Tarp
TD31	31" Tie Down
TD41	41" Tie Down
TD20	20" Tie Down
TR50	Rope 3/8 X 50' Coil

## MISCELLANEOUS ACCESSORIES (CONT.)

### HOSE END PRODUCTS

TC-5706	#6 Hose Clamp
TC-5708	#8 Hose Clamp
TC-5716	#16 Hose Clamp
SSC8712	#12 Hose Clamp
TC-5720	#20 Hose Clamps
TC-5724	#24 Hose Clamp
TC-5710	#10 Hose Clamp
TC-5728	#28 Hose Clamp
TC-5740	#40 Hose Clamp
TC-5732	#32 Hose Clamp
TC-5736	#36 Hose Clamp
TC-5756	# 56 Hose Clamp
TC-5748	# 48 Hose Clamp
BHF12	Swivel 3/4" to 3/4" F Pipe
BHF8	3/4" M 1/2" F
BHF13	Swivel 3/4" Fem to 1/2" F Pipe
BHF9	Fitting 3/4" Female 3/4 Male 1/2"
BHF7	Swivel 3/4" Female to 3/4" F Hose
BHF10	Fitting 3/4" Male Hose to 1/2" M
BHF6	3/4" Male Hose x 3/4" M Hose
50312	Brass Y Connect

### HOSE

10034100	3/4" x 100' Garden Hose
10010100	1" x 100' 6 Ply Hose
10010050	1" x 50' 6 Ply Hose
10034050	3/4" x 50' 8 Ply Hose
10058100	5/8" x 100' 8 Ply Hose
25034075	3/4" x 75' Commercial Hose 6 Ply
29058050	5/8" x 50' Commercial Hose 6 Ply
29058075	5/8" x 75' Commercial Hose 6 Ply

### ADDITIONAL ACCESSORIES- MARKING TOOLS

MKPSTICK	Marking Gun
DOLOMARK	Dolomark Marking Chalk
FR	Red Flag
FY	Yello Flag
FB	Blue Flag
FO	Orange Flag
FW	White Flag
FP	Pink Flag
FG	Green Flag
PFLAG	Pesticide Flag
FLAGCHEM	Flag Chemical N
PFO	Marking Paint Florescent Orange
PW	Marking Paint White
PFP	Marking Paint Florescent Pink
PFR	Marking Paint Florescent Red
PFG	Marking Paint Florescent Green
PR	Marking Paint Red
PFB	Marking Paint, Florescent Blue
PB	Marking Paint Blue
PPU	Marking Paint Purple
PY	Marking Paint Yellow
FTP	Flagging Tape Purple
FTG	Flagging Tape Green
FTBU	Flagging Tape Blue
CTY	3" X 1000' Barricade
TCAUTION	3" Caution Tape
TRECLAIMD	3" X 1000' Detectable
3BWDET	3" X 1000' Detectable

**Note:** Conversions listed in these pages are not exact. Refer to sources such as Handbook of Chemistry and Physics and C.R.C. Standard Math Tables by the Chemical Rubber Company, Scientific Tables by Ciba-Geigy Ltd., Websters Desk Encyclopedia by Griesewood and Dempsey, Conversion Factors by Forney's Inc., Conversions by Cahn Instruments and Technical Reference Handbook by E.P. Rasis for more detailed conversions and specifications.

Area		
Convert From	Into	Multiply By
<b>acres</b>	hectares or sq. hectometer	0.4047
	sq. feet	43,560
	sq. meters	4,047
	sq. miles	0.0015625
	sq. yards	4,840
	sq. inches	6,272,640
<b>square feet</b>	acres	$2.4702 \times 10^{-8}$
	sq. centimeters	929.03
	sq. feet	144
	sq. meters	0.0929
	sq. miles	$3.58701 \times 10^{-8}$
	sq. millimeters	$9.29 \times 10^4$
	sq. yards	0.1111
<b>square inches</b>	acres	$1.594 \times 10^{-7}$
	sq. centimeters	6.4516
	sq. feet	0.00694
	sq. meters	0.000645
	sq. miles	$2.491 \times 10^{-10}$
	sq. millimeters	645.16
<b>square miles</b>	acres	640
	hectares	258,999
	sq. feet	$2.78783 \times 10^7$
	sq. kilometers	2.5899
	sq. meters	258,999
	sq. yards	$3,098,000 (3.098 \times 10^6)$
<b>square yards</b>	acres	0.000207
	hectares	$8.3613 \times 10^{-5}$
	sq. centimeters	8,361.27
	sq. feet	9
	sq. inches	1,296
	sq. meters	0.8361
	sq. miles	$3.228 \times 10^{-7}$

Flow		
Convert From	Into	Multiply By
<b>cu. feet per minute</b>	acre-feet/hr	0.00138
	acre-feet/min	$2.2956 \times 10^{-5}$
	cu. meters/sec	0.00047195
	gallons (US)/min	7.48052
	liters/sec	0.47193
<b>cu. feet per second</b>	acres-inches/hr	0.99173
	cu. meters/sec	0.02832
	gallons/min	448.83
	liters/min	1,698.96
	liters/sec	28.316
	millions gallons/day	0.64632
<b>gallons per day</b>	cu. feet/hour	0.00557
<b>gallons per hour</b>	acre-feet/hour	$3.0689 \times 10^{-6}$
	cu. feet/hour	0.13368
	cu. meters/minute	$6.309 \times 10^{-5}$
	gallons/minute	0.0166667
	liters/hour	3.7853
	liters/minute	0.0044192
<b>gallons per minute</b>	cu. feet/hour	8.0208
	cu. feet/second	0.002228
	cu. meters/hour	0.2268
	cu. meters/second	0.000063
	gallons/hour	60
	liters/minute	3.7853
	liters/second	0.06308

Weight		
Convert From	Into	Multiply By
<b>ounces</b>	grams	28.349
	kilograms	0.02835
	pounds	0.0625
	tons (metric)	$2.835 \times 10^{-5}$
	tons (short)	$3.125 \times 10^{-5}$
<b>pounds</b>	drams	256
	dynes	444,800
	grains	7,000
	grams	453.59
	kilograms	0.4536
	ounces	16
	tons (long)	0.0004464
	tons (metric)	0.0004536
	tons (short)	0.0005
<b>pounds of water</b>	cu. feet	0.01602
	cu. inches	27.68
	gallons	0.1198
	liters	0.4545
<b>tons (short)</b>	dynes	$8.8964 \times 10^9$
	kilograms	907.18
	ounces	32,000
	pounds	2,000
	tons (long)	0.89286
	tons (metric)	0.90718

Length		
Convert From	Into	Multiply By
<b>feet</b>	centimeters	30.48
	inches	12
	kilometers	$3.048 \times 10^{-4}$
	meters	0.3048
	microns	304,800
	miles	0.000189
	millimeters	304.8
	yards	0.333333
<b>inches</b>	centimeters	2.54
	feet	0.08333
	meters	0.0254
	microns	25,400
	miles	$1.578 \times 10^{-5}$
	millimeters	25.4
	mils	1,000
	yards	0.0278
<b>miles</b>	centimeters	160,934
	feet	5,280
	furlongs	8
	inches	63,360
	kilometers	1.609344
	light years	$1.701 \times 10^{-12}$
	meters	1,609.344
	yards	$1.701 \times 10^{-12}$
<b>yards</b>	centimeters	91.44
	cubits	2
	fathoms	0.5
	feet	3
	furlongs	0.004545
	inches	36
	kilometers	$9.144 \times 10^{-4}$
	meters	0.9144
	miles	$5.682 \times 10^{-4}$
	millimeters	914.4



# Irrigation

## CONVERSIONS (CONT.)

Pressure Loss		
Convert From	Into	Multiply by
pounds per sq. inch (psi) per 100 feet	bars/100 meters .....	0.226
	kilopascals/100 meters .....	22.621
	meters/100 meters .....	2.31

Temperature		
Convert From	Into	Multiply by
Centigrade	Fahrenheit .....	(°C x 1.8) + 32
Fahrenheit	Centigrade .....	(°F - 32) / 1.8

Velocity		
Convert From	Into	Multiply by
feet per minute	centimeters/second .....	0.508
	kilometers/hour .....	0.018288
	kilometers/minute .....	0.000348
	meters/minute .....	0.3048
	meters/second .....	0.00508
	miles/hour .....	0.011364
feet per second	centimeters/second .....	30.48
	kilometers/hour .....	1.09728
	kilometers/minute .....	0.01829
	meters/minute .....	18.288
	meters/second .....	0.3048
	miles/hour .....	0.681818
feet per (second x second)	centimeters/(second x second) .....	30.48
	kilometers/(hr x second) .....	1.0973
	meters/(second x second) .....	0.3048
gravity constant	cm/(second x second) .....	980.6
	feet/(second x second) .....	32.17
inches per hour	centimeters/hour .....	152.4
	feet/hour .....	5
	miles/hour .....	1.5783 x 10 <sup>-4</sup>
inches per minute	centimeters/hour .....	152.4
	feet/hour .....	5
	feet/second .....	0.0013889
	miles/hour .....	0.000947
miles per hour	centimeters/second .....	44.704
	feet/hour .....	5.280
	feet/minute .....	.88
	feet/second .....	1.4667
	kilometers/hour .....	1.6094
	kilometers/minute .....	0.0268
	knots (international) .....	0.86897
	meters/minute .....	26.822
	miles/minute .....	0.01667

## CHARTS

### Installation of Channel Drains Standard Installation

Excavate a trench to accommodate the channel and bedding concrete. Erect a string line at each end of the drain run as a guide for laying the channels to the required level. Begin channel installation at the evacuation or discharge end of the run where the outlet or outlets are located. Install channel end-to-end PVC cementing sections together. Design bottom or end outlets into the channel run in the appropriate location and glue to the drain pipe or fittings. PVC cement end-caps where appropriate. Using either NDS stakes, 1/2" or 5/8" rebar or wood stakes, anchor channel to the trench bed every 24" on each side of channel. Backfill with either concrete sand.

**Hunter®**

Special thanks to Horizon's strategic partner Hunter Industries for supplying the charts and formulas for this section.

U.S. MESH	INCHES	MICRONS	MILLIMETERS
3	0.2650	6730	6.730
4	0.1870	4760	4.760
5	0.1570	4000	4.000
6	0.1320	3360	3.360
7	0.1110	2830	2.830
8	0.0937	2380	2.380
10	0.0787	2000	2.000
12	0.0661	1680	1.680
14	0.0555	1410	1.410
16	0.0469	1190	1.190
18	0.0394	1000	1.000
20	0.0331	841	0.841
25	0.0280	707	0.707
30	0.0232	595	0.595
35	0.0197	500	0.500
40	0.0165	400	0.400
45	0.0138	354	0.354
50	0.0117	297	0.297
60	0.0098	250	0.250
70	0.0083	210	0.210
80	0.0070	177	0.177
100	0.0059	149	0.149
120	0.0049	125	0.125
140	0.0041	105	0.105
170	0.0035	88	0.088
200	0.0029	74	0.074
230	0.0024	63	0.063
270	0.0021	53	0.053
325	0.0017	44	0.044
400	0.0015	37	0.037

### Mesh Sizes and Microns

What does mesh size mean? Figuring out mesh sizes is simple. All you do is count the number of openings in one inch of screen (in the United States, anyway.) The number of openings is the mesh size. So a 4 mesh screen means there are four little squares across one linear inch of screen. A 100 mesh screen has 100 openings, and so on. Note, therefore that as the number describing the mesh size increases, the size of the particles decreases. Higher numbers = finer powder. Mesh size is not a precise measurement of particle size. Screens can be made with different thicknesses of wire. The thicker the wires, the smaller the particle passing through that screen, and vice versa.

What do the minus ( - ) and plus ( + ) plus signs mean when describing mesh sizes? Here's a simple example of how they work. -200 mesh aluminum would mean that all particles will pass through a 200 mesh screen. A +200 mesh aluminum means that all the particles are retained on a 200 mesh screen.

How fine do screens get? That depends on the wire thickness. But the supplier of our screens does not offer any screens finer than 500 mesh. <sup>9</sup>If you think about it, the finer the weave, the closer the wires get together, eventually leaving no space between them at all. So, beyond 325-400 mesh, we usually describe particle size in "microns."

What is a micron? A micron is another measurement we use for measuring particle size. A micron is one-millionth of a meter or one twenty-five thousandth of an inch.

This table is adapted from a post made by Ken Kosanke to the PML and previously published in a PGII Bulletin.

U.S. Standard *			
Space between wires			
Sieve Mesh No.	Inches	Microns **	Typical material
14	0.056	1400	
28	0.028	700	Beach sand
60	0.0098	250	Fine sand
100	0.0059	150	
200	0.0030	74	Portland cement
325	0.0017	44	Silt
400	0.0015	37	Plant Pollen
(1200)	0.0005	12	Red Blood Cell
(2400)	0.0002	6	
(4800)	0.0001	2	Cigarette smoke

\*The mesh numbers in parentheses are too small to exist as actual screen sizes; they are estimated and included just for reference

This page gleaned from the [colonial virginia high power](#)

### Slope

Slope, as used in irrigation, is a measure of the incline of an area. The greater the incline, the greater the tendency for runoff.

$$S = \frac{\text{Rise}}{\text{Run}}$$

Where:

S = the percent of slope

Rise = the net elevation change in elevation between two points

Run = the horizontal distance between the two points

### Friction Loss in Pipe

Also known as the Hazen-Williams equation, it is the most commonly used formula for calculating pressure loss in PVC pipe.

$$h_f = 0.00090194 \frac{(100)^{1.852} Q^{1.852}}{C^{1.852} d^{4.866} L}$$

Where:

$h_f$  = head loss due to friction in pounds per square inch (psi)

C = Hazen Williams coefficient for roughness of the inside of the

pipe

Q = flow in gallons per minute (gpm)

d = inside diameter of pipe in inches

L = length of pipe in feet

### Water Horsepower Requirements

Used to calculate the amount of power required to pump a given volume of water at a specified head.

$$\text{WHP} = \frac{\text{GPM} \times \text{TDH}}{3960}$$

Where:

WHP = horsepower output required

GPM = gallons per minute flow from the pump

TDH = Total Dynamic Head in feet of head

3960 = constant used to convert flow and head into horsepower

### Scheduling Coefficient

A scheduling coefficient is used to measure the uniformity of water distribution by relating the lowest precipitation rate for any contiguous region within an irrigated area to the overall precipitation rate of the entire area.

$$\text{SC} = \frac{\text{PR}}{\text{LPR}}$$

Where:

SC = Scheduling Coefficient, 1.0 would be perfect uniformity

PR = Precipitation Rate

LPR = Lowest Precipitation Rate in the irrigated area

Example:

In a catchment test, collectors are placed at two foot intervals. The average precipitation rate is calculated to be 1.6 in/hr. The lowest precipitation rate of all catchments was 0.8 in/hr. What is the Scheduling Coefficient?

$$\text{SC} = \frac{1.6}{0.8}$$

$$\text{SC} = 2.0$$

$$0.8$$

### Sprinkler Run Time

The sprinkler run time formula calculates the number of minutes required to apply enough water to replace the water lost by evapotranspiration for a specific crop irrigated with a system at a particular precipitation rate and efficiency.

The "run time" is calculated using the following formula.

$$T = \frac{60 \times D \times E_t \times K_c}{\text{PR} \times \text{IE}}$$

Where:

T = sprinkler run time in minutes

60 = constant for conversion of area, flow, inches per hour and inches per day into

common units

D = watering frequency in days

$E_t$  = reference evapotranspiration rate, in inches per day

$K_c$  = crop coefficient, decimal

PR = precipitation rate of the area, in inches per hour

IE = application efficiency of the system, percent

Example:

Determine the sprinkler run time for an athletic field with a daily  $E_t$  of 0.15 inches and a crop coefficient for the warm season turf of 0.70. The watering schedule is set for every three days. The sprinkler precipitation rate is 0.50 in/hr with an application efficiency of 75%.

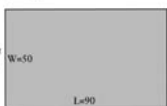
$$T = \frac{60 \times 3 \times 0.15 \times 0.70}{0.50 \times 75\%} = \frac{60 \times 3 \times 0.15 \times 0.70}{0.50 \times 75\%}$$

$$T = 50 \text{ minutes every 3 days}$$

## How to Calculate Areas

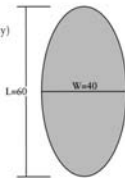
### Square or rectangle

Area = L x W  
L = length  
W = width  
A = 90 ft x 50 ft  
= 4,500 sq ft



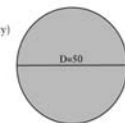
### Ovals or egg shapes (within 5 percent accuracy)

Area = 0.8 L x W  
L = length  
W = width at midpoint  
A = 0.8 x 60 x 40 ft  
= 1,920 sq ft



### Circle (within 5 percent accuracy)

Area = 0.8 D<sup>2</sup>  
D = diameter  
A = 0.8 x 50 ft x 50 ft  
= 2,000 sq ft



### Unusual shapes

Divide the area into sections of regular geometric shapes, calculate the area of each section, then total:

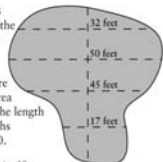
Area of triangle  
+ Area of rectangle  
+ Area of one-half of circle  
= Total area



### Irregular shapes

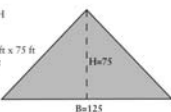
Find the length of the longest line across the area. Every 10 ft along the length line, measure the width of the area at right angles to the length line. Total all widths and multiply by 10.

Area = (A + B + C, etc.) x 10  
= (32 ft + 50 ft + 45 ft + 17 ft) x 10  
= 144 x 10  
= 1,440 sq ft



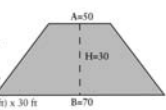
### Triangle

Area = 0.5 x B x H  
B = base  
H = height  
A = 0.5 x 125 ft x 75 ft  
= 4,687 sq ft



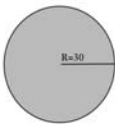
### Trapezoid

Area = 0.5 x (A + B) x H  
A = one parallel side  
B = second parallel side  
H = height perpendicular to parallel sides  
A = 0.5 x (50 ft + 70 ft) x 30 ft  
= 0.5 x 120 ft x 30 ft  
= 1,800 sq ft



### Circle

Area = πr<sup>2</sup>  
π = 3.14  
R = radius  
A = 3.14 x (30 ft x 30 ft)  
= 2,826 sq ft



## Precipitation Rate

Two formulas are shown below, the first is most useful when comparing precipitation rates between different types of sprinklers or calculating precipitation rates on areas with a single type of sprinkler and uniform head and row spacing. The second method is better suited to areas where sprinkler head flows or spacing varies. Metric versions are shown in parenthesis.

### Precipitation Rate - Method #1 - Individual Head Method

$$PR = \frac{34650 \times \text{GPM (for any arc)}}{\text{Degrees Arc} \times \text{Head Spacing} \times \text{Row Spacing}} \left( PR = \frac{\text{m/hr (for any arc)} \times 360,000}{\text{Degrees of arc} \times \text{Head spacing (m)} \times \text{Row Spacing (m)}} = \text{mm/hr} \right)$$

$$\left( PR = \frac{\text{L/min (for any arc)} \times 21,600}{\text{Degrees of arc} \times \text{Head spacing (m)} \times \text{Row Spacing (m)}} = \text{mm/hr} \right)$$

#### Where:

PR = precipitation rate in inches per hour  
GPM = flow for a given sprinkler of any arc, in gallons per minute  
Degrees Arc = the arc of the given sprinkler in degrees  
Head Spacing = the space between the heads in a row, in feet  
Row Spacing = the space between rows of heads, in feet  
34650 = constant for conversion of area and flow into common units

#### Example:

What is the precipitation rate for a 270 degree sprinkler with 6.8 gpm spaced at 28' by 30'?

$$PR = \frac{34,650 \times 6.8}{270 \times 28 \times 30}$$

$$PR = 1.04 \text{ in./hr.}$$

### Precipitation Rate - Method #2 - Total Area Method

$$PR = \frac{96.25 \times \text{Total GPM}}{\text{Total Area}} \left( PR = \frac{\text{Total m/hr} \times 1,000}{\text{Total Area (m}^2\text{)}} = \text{mm/hr} \right) \left( PR = \frac{\text{Total l/min} \times 60}{\text{Total Area (m}^2\text{)}} = \text{mm/hr} \right)$$

#### Where:

PR = precipitation rate in inches per hour  
Total GPM = total flow from all sprinklers in the given area in gallons per minute  
Total Area = the given irrigated area in square feet  
96.25 = constant for conversion of area and flow into common units

#### Example:

What is the average precipitation rate for a section of turf 325' by 80' if the total flow from all sprinklers in the area is 112 gpm.

$$PR = \frac{96.25 \times 112}{(325 \times 80)}$$

$$PR = 0.41 \text{ in./hr.}$$

## Average Number of Sprinklers per Acre

### Square and/or Rectangular Spacing

Spacing In Feet	Heads Per Acre	Spacing In Feet	Heads Per Acre
10 x 10	435.6	30 x 60	94.2
11 x 11	360.0	40 x 40	27.2
12 x 12	302.4	40 x 50	21.8
13 x 13	257.6	40 x 60	18.2
14 x 14	222.3	40 x 80	13.6
15 x 15	193.5	50 x 50	17.4
16 x 16	170.0	50 x 60	14.5
17 x 17	150.8	50 x 70	12.4
18 x 18	134.3	50 x 80	10.9
19 x 19	120.6	60 x 60	12.1
20 x 20	109.0	60 x 70	10.4
20 x 30	72.7	60 x 80	9.1
20 x 40	54.5	70 x 70	8.9
20 x 50	43.5	70 x 80	7.8
20 x 60	36.3	70 x 90	6.9
25 x 25	69.7	80 x 80	6.8
30 x 30	48.4	80 x 90	6.1
30 x 40	36.3	80 x 100	5.5
30 x 50	29.0	100 x 100	4.4

## Average Number of Sprinklers per Acre

### Equilateral Triangular Spacing

Spacing In Feet	Heads Per Acre	Spacing In Feet	Heads Per Acre
10	504	60	11.5
11	418	68	10.9
12	348	72	10.3
13	296	76	9.7
14	256	74	9.2
15	224	78	8.7
16	196	78	8.3
17	175	80	7.9
18	155	82	7.5
19	140	84	7.1
20	125	86	6.8
21	114	88	6.5
22	105	90	6.2
23	96	92	5.9
24	87	94	5.7
25	80	96	5.5
26	74	98	5.2
27	69	100	5.0
28	64	102	4.8
29	60	104	4.6
30	56	106	4.5
32	49	108	4.3
34	44	110	4.2
36	39	112	4.0
38	35	114	3.9
40	31	116	3.7
42	28.5	118	3.6
44	26.0	120	3.5
46	23.7	122	3.4
48	21.8	124	3.3
50	20.0	126	3.2
52	18.6	128	3.1
54	17.2	130	3.0
56	16.0	132	2.9
58	15.0	134	2.8
60	14.0	136	2.7
62	13.1	138	2.6
64	12.3	140	2.5

The theoretical figures above represent the minimum number of sprinklers required to cover a square acre (208.7' x 208.7') with the most economical placement of sprinklers possible. Actual layouts to match individual field conditions may require additional sprinklers. This table should only be used for estimating purposes.

## Precipitation Rate - Minimum Rate Required

This formula is used to determine the minimum precipitation rate than can be used to deliver the required water during the peak period of water usage.

$$\text{Minimum PR} = \frac{\text{ET} \times \text{Total Acres}}{\text{Hours Avail.} \times \text{Acre per Section} \times \text{Valves} \times \text{Efficiency}}$$

#### Where:

Minimum PR = minimum required precipitation rate in inches per hour  
ET = amount of water to be applied in inches per day, including crop coefficient  
Total Acres = the area to be irrigated in acres  
Hours Avail. = hours available for irrigation each day  
Acre per Section = average area covered by one control valve in acres  
Valves = number of valves operating at one time  
Efficiency = system operating efficiency in decimal equivalent of percent

#### Example:

What is the minimum precipitation rate that will deliver 0.28 inches of water to 15 acres under the following conditions:

- during a 12 hour period
- the average section is 0.40 acres (17,424 sq. ft.)
- there will be two valves operating at one time
- the system efficiency is 75%

$$\frac{0.28 \times 15}{12 \times 0.40 \times 2 \times .75}$$

$$= 0.58 \text{ in./hr. minimum precipitation rate required}$$

### AB 325, California Calculation of Estimated Applied Water Use (EWU)

This formula is used to calculate the estimated amount of water used in one hydrozone of a landscape (the hydrozone may be one control valve or several with similar water requirements). All hydrozones would be added together to determine the Estimated Applied Water Use (EWU) for an entire project. The EWU must be less than the Maximum Applied Water Allowance (MAWA), as shown in the next formula, in order to receive project approval. The use of this formula was mandated by California State assembly bill 325.

$$EWU = \frac{Et_o \times PF \times HA \times 0.62}{IE}$$

Where:

- EWU = the estimated water use in gallons per day
- $Et_o$  = potential daily evapotranspiration for the worst case scenario, in inches per day
- PF = Plant Factor (Crop Coefficient), percent in decimal form
- HA = hydrozone area in square feet
- IE = Irrigation Efficiency or Distribution Uniformity, percent in decimal form
- 0.62 = constant for conversion of units to gallons per day

Example:

You want to determine the EWU for a rectangular lawn area with the following characteristics

- the estimated worst case  $Et_o$  is 0.40 inches per day
- for the warm season turf you are using, the crop coefficient has been determined to be 60% (0.60)
- 380 ft. long by 260 ft. wide (98,800 sq. ft.)
- the system efficiency has been estimated at 75% (0.75)

$$EWU = \frac{0.40 \times 0.60 \times 98,800 \times 0.62}{0.75}$$

$$EWU = \frac{14,701.44}{0.75}$$

$$EWU = 19,601.92 \text{ gallons per day}$$

### Coefficient of Uniformity

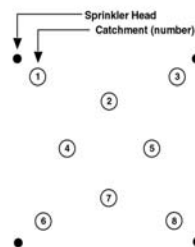
This formula is used to measure the variability of water distribution over a given area. It is calculated by using a series of catchments and comparing the average (mean) catchment and the deviation from that average. This formula was developed by J.E. Christiansen.

$$C_u = 100 \left( 1.0 - \frac{\sum x}{mn} \right)$$

Where:

- $C_u$  = Uniformity Coefficient
- $x$  = the deviation of individual observations or catchments
- $\sum x$  = the sum of the deviations of individual observations from the mean value,  $m$
- $m$  = mean value of all observations in the distribution
- $n$  = number of observations in the distribution
- 100 = constant for conversion to percent

Example:



Catchment #	Catchment Quantity (ml)	Deviation From Mean (mean = 46.75 ml)
1	48	1.25
2	51	4.25
3	44	2.75
4	41	5.75
5	45	1.75
6	44	2.75
7	50	3.25
8	51	4.25
Total		26.00

Note: catchment may be expressed in any convenient unit (i.e. milliliters, ounces, etc.), as long as all catchments are measured in the same units.

In a landscape area, eight catchments are placed between sprinklers and the above observations recorded. What is the Coefficient of Uniformity?

$$C_u = 100 \left( 1.0 - \frac{26.00}{46.75 \times 8} \right)$$

$$C_u = 93.0$$

### Distribution Uniformity

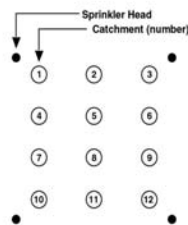
This formula is one of several that are titled Distribution Uniformity. It is used to estimate the variation in water application between sprinklers resulting from pressure variation, improper nozzle selection or lack of maintenance.

$$DU = 100 \times \left( \frac{MQ1}{M} \right)$$

Where:

- DU = Distribution Uniformity expressed as a percent
- MQ1 = mean of observations in lowest 25% of the distribution
- M = mean of distribution
- 100 = constant for conversion to percent

Example:



Catchment #	Quantity after 15 minutes in milliliters
1	13"
2	18"
3	22
4	17"
5	19
6	23
7	19
8	21
9	22
10	23
11	24
12	22
Total	243

\*Lowest 1/4 = 48

Note: catchment may be measured in any units (inches, ounces, milliliters, etc.)

$$DU = 100 \times \left( \frac{48 \div 3}{243 \div 12} \right)$$

$$DU = 100 \times \left( \frac{16}{20.25} \right)$$

$$DU = 100 \times 0.79$$

$$DU = 79\%$$



## SDR - 26

## Pressure Drop Of Water Per 100 Ft. Of Pipe

SIZE	1/2"		3/4"		1"		1 1/4"		1 1/2"		2"		2 1/2"		3"		4"		6"		8"		SIZE
GALLONS PER MINUTE	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	GALLONS PER MINUTE
1	.79	.21	.47	.06	.29	.02																	1
2	1.57	.76	.94	.22	.57	.06																	2
3	2.36	1.61	1.42	.46	.86	.14	.52	.04															3
4	3.15	2.74	1.89	.79	1.14	.23	.69	.07	.54	.04													4
5	3.94	4.14	2.36	1.19	1.43	.35	.87	.10	.67	.05													5
6	4.73	5.80	2.83	1.67	1.72	.49	1.04	.14	.80	.08													6
8	6.30	9.87	3.78	2.84	2.29	.84	1.39	.24	1.06	.13	.68	.04											8
10	7.88	14.91	4.72	4.29	2.86	1.27	1.74	.37	1.33	.20	.85	.07	.58	.03									10
15			7.08	9.08	4.29	2.68	2.61	.78	2.00	.41	1.27	.14	.87	.05									15
20			9.44	15.46	5.72	4.57	3.49	1.33	2.66	.70	1.70	.24	1.16	.09	.78	.04							20
25					7.15	6.90	4.35	2.01	3.33	1.06	2.12	.36	1.45	.14	.97	.05							25
30					8.58	9.67	5.22	2.81	4.00	1.49	2.55	.50	1.74	.20	1.17	.08							30
35							6.10	3.74	4.66	1.98	2.98	.67	2.03	.27	1.35	.10							35
40							6.95	4.79	5.33	2.54	3.40	.86	2.32	.34	1.56	.13	.94	.04					40
45									6.00	3.16	3.84	1.06	2.61	.42	1.75	.16	1.06	.05					45
50									6.66	3.84	4.25	1.29	2.90	.51	1.95	.19	1.18	.06					50
60									8.00	5.38	5.10	1.81	3.48	.72	2.33	.27	1.41	.08					60
70									9.32	7.15	5.95	2.41	4.06	.96	2.72	.36	1.65	.11					70
80											6.80	3.08	4.64	1.23	3.11	.46	1.88	.14					80
90											7.65	3.84	5.22	1.53	3.50	.58	2.12	.17					90
100											8.50	4.66	5.80	1.85	3.89	.70	2.35	.20	1.09	.03			100
125											10.60	7.04	7.25	2.80	4.86	1.06	2.94	.31	1.36	.05			125
150													8.00	3.93	5.81	1.48	3.53	.43	1.64	.07			150
175											10.15	5.22			6.81	1.97	4.11	.58	1.91	.09			175
200													7.78	2.60	4.70	.76	2.18	.12					200
225													8.75	3.17	5.29	.92	2.45	.14					225
250													9.73	3.81	5.88	1.12	2.73	.17					250
275													10.70	4.55	6.46	1.33	3.00	.20					275
300															7.05	1.56	3.27	.24	1.96	.07			300
325															7.64	1.81	3.54	.28	2.12	.08			325
350															8.23	2.08	3.82	.32	2.29	.09			350
375															8.81	2.36	4.09	.36	2.46	.11			375
400															9.40	2.66	4.36	.41	2.62	.12			400
425															9.99	2.98	4.63	.46	2.77	.13			425
450															10.58	3.31	4.91	.51	2.95	.15			450
475																	5.18	.56	3.09	.16			475
500																	5.45	.62	3.27	.18			500
550																	6.00	.73	3.60	.21			550
600																	6.54	.86	3.93	.25			600
650																			4.26	.29			650
700																			4.58	.33			700
750																			4.91	.38			750
800																			5.24	.43			800
900																			5.89	.53			900
1000																			6.55	.65			1000

Note: All pressure drops calculated using the Williams and Hazen formula with: C=150

Recommended operating conditions shown above heavy line in charts.

Note: All pressure drops calculated using the Williams and Hazen formula with: C=150

Recommended operating conditions shown above heavy line in charts.

## SDR - 21

## Pressure Drop Of Water Per 100 Ft. Of Pipe

SIZE	1/2"		3/4"		1"		1 1/4"		1 1/2"		2"		2 1/2"		3"		4"		6"		8"		SIZE
	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.			
1	.79	.21	.47	.06	.29	.02																1	
2	1.57	.76	.94	.22	.57	.06																2	
3	2.36	1.61	1.42	.46	.86	.14	.54	.04														3	
4	3.15	2.74	1.89	.79	1.14	.23	.73	.08	.55	.04												4	
5	3.94	4.14	2.36	1.19	1.43	.35	.91	.12	.69	.06												5	
6	4.73	5.80	2.83	1.67	1.72	.49	1.09	.16	.83	.08												6	
8	6.30	9.87	3.78	2.84	2.29	.84	1.45	.28	1.10	.14	.71	.05										8	
10	7.88	14.91	4.72	4.29	2.86	1.27	1.81	.42	1.38	.21	.89	.07	.60	.03								10	
15			7.08	9.08	4.29	2.68	2.72	.89	2.07	.45	1.33	.15	.90	.06								15	
20			9.44	15.46	5.72	4.57	3.63	1.51	2.76	.77	1.77	.26	1.20	.10	.84	.04						20	
25					7.15	6.90	4.54	2.28	3.45	1.16	2.21	.39	1.50	.15	1.05	.06						25	
30					8.58	9.67	5.45	3.20	4.15	1.62	2.65	.54	1.81	.22	1.26	.09						30	
35							6.35	4.25	4.83	2.16	3.10	.72	2.10	.29	1.49	.11						35	
40							7.26	5.45	5.52	2.76	3.54	.92	2.41	.37	1.68	.15	.98	.04				40	
45							8.17	6.77	6.20	3.43	3.98	1.14	2.71	.45	1.90	.18	1.10	.05				45	
50							9.08	8.23	6.90	4.17	4.42	1.30	3.01	.56	2.11	.22	1.23	.06				50	
60							10.89	11.53	8.29	5.84	5.30	1.95	3.61	.80	2.39	.31	1.48	.09				60	
70									6.19	2.59	4.21	1.04	2.96	.41	1.72	.12						70	
80									6.77	3.32	4.82	1.32	3.38	.53	1.97	.15						80	
90									7.10	4.12	5.42	1.64	3.80	.86	2.22	.19						90	
100									8.02	5.01	6.21	.81	2.46	.23	1.14	.04						100	
125									7.95	5.01												125	
150											7.50	3.00	5.27	1.21	3.08	.35	1.43	.05				150	
175											9.03	4.24	6.33	1.70	3.69	.49	1.71	.07				175	
200											10.05	5.64	7.37	2.23	4.30	.65	1.99	.09				200	
225													8.42	2.90	4.92	.83	2.28	.13				225	
250													9.48	3.58	5.54	1.03	2.57	.15				250	
275													10.60	4.36	6.15	1.25	2.85	.19				275	
300													11.60	5.21	6.78	1.50	3.27	.22				300	
325															7.38	1.76	3.42	.28	2.04	.08	300	325	
350															8.00	2.04	3.71	.31	2.21	.09	325	350	
375															8.60	2.34	3.99	.36	2.38	.10	350	375	
400															9.22	2.66	4.28	.41	2.54	.12	375	400	
425															9.86	2.98	4.56	.46	2.72	.13	400	425	
450															10.45	3.35	4.86	.51	2.89	.15	425	450	
475															11.10	3.73	5.14	.57	3.06	.16	450	475	
500																	5.42	.63	3.23	.18	475	500	
550																	5.71	.69	3.40	.20	500	550	
600																	6.28	.82	3.74	.24	550	600	
650																			4.08	.28	600	650	
700																			4.42	.32	650	700	
750																			4.76	.37	700	750	
800																			5.10	.42	750	800	
900																			5.44	.48	800	900	
1000																			6.12	.59	900	1000	
																			6.79	.72	1000		

**SCH 40 IPS**

Pressure Drop Of Water Per 100 Ft. Of Pipe

SIZE	1/2"		3/4"		1"		1 1/4"		1 1/2"		2"		2 1/2"		3"		4"		6"		8"		SIZE
GALLONS PER MINUTE	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	GALLONS PER MINUTE
1	1.05	.43	.60	.11	.37	.03																	1
2	2.11	1.55	1.20	.39	.74	.12	.43	.03															2
3	3.17	3.27	1.80	.83	1.11	.26	.64	.07	.47	.03													3
4	4.22	5.57	2.41	1.42	1.48	.44	.86	.11	.63	.05													4
5	5.28	8.42	3.01	2.15	1.86	.66	1.07	.17	.79	.08													5
6	6.33	11.81	3.61	3.01	2.23	.93	1.29	.24	.95	.11	.57	.03											6
8	8.44	20.10	4.81	5.12	2.97	1.58	1.72	.42	1.26	.20	.76	.06	.54	.02									8
10	10.55	30.37	6.02	7.73	3.71	2.39	2.15	.63	1.58	.30	.96	.09	.67	.04									10
15			9.02	16.37	5.57	5.06	3.22	1.33	2.36	.63	1.43	.19	1.01	.08	.65	.03							15
20					7.42	8.61	4.29	2.27	3.15	1.07	1.91	.32	1.34	.13	.87	.05							20
25					9.28	13.01	5.36	3.42	3.94	1.63	2.39	.48	1.67	.20	1.08	.07							25
30					11.14	18.22	6.43	4.80	4.73	2.27	2.87	.67	2.01	.28	1.30	.10							30
35							7.51	6.38	5.52	3.01	3.35	.89	2.35	.38	1.52	.13	.88	.03					35
40							8.58	8.17	6.30	3.88	3.82	1.14	2.64	.48	1.73	.17	1.01	.04					40
45							9.65	10.16	7.09	4.80	4.30	1.42	3.01	.60	1.95	.21	1.13	.05					45
50							10.72	12.35	7.88	5.83	4.78	1.73	3.35	.73	2.17	.25	1.26	.07					50
60							9.46	8.17	5.74	2.42	4.02	1.02	2.60	.35	1.51	.09							60
70							11.03	10.87	6.69	3.22	4.69	1.36	3.04	.47	1.76	.12							70
80									7.65	4.13	5.36	1.74	3.47	.60	2.02	.16							80
90									8.60	5.13	6.03	2.16	3.91	.75	2.27	.20							90
100									9.56	6.23	6.70	2.63	4.34	.91	2.52	.24	1.11	.03					100
125									11.95	9.42	8.38	3.97	5.42	1.38	3.15	.37	1.39	.05					125
150													10.05	5.56									150
175															6.51	1.93	3.78	.51	1.67	.07			175
200															7.59	2.57	4.41	.68	1.94	.09			200
225															8.68	3.40	5.04	.90	2.22	.12			225
250															9.76	4.09	5.67	1.09	2.50	.15			250
275															10.85	4.97	6.30	1.32	2.78	.18			275
300																	6.93	1.58	3.06	.21	1.96	.07	300
325																	7.58	1.85	3.33	.25			325
350																	8.19	2.15	3.61	.29	2.12	.08	350
375																	8.82	2.47	3.89	.34	2.29	.09	375
400																	9.45	2.80	4.17	.38	2.46	.11	400
425																	10.08	3.16	4.44	.43	2.62	.12	425
450																			4.72	.48	2.77	.13	450
475		1.85	.05																5.26	.53	2.95	.15	475
500		2.05	.06																5.78	.59	3.09	.16	500
550		2.26	.07																5.55	.65	3.27	.18	550
600		2.46	.08																6.11	.78	3.60	.21	600
650		2.67	.10																6.67	.91	3.93	.25	650
700		2.87	.11																7.22	1.06	4.26	.29	700
750		3.08	.12	2.17	.05														7.78	1.21	4.58	.33	750
800		3.29	.14	2.31	.06														8.33	1.38	4.91	.38	800
850		3.70	.17	2.60	.07														8.89	1.58	5.24	.43	850
900		4.11	.21	2.89	.09																		900
950																							950
1000																							1000
1100		4.52	.25	3.18	.11																		1100
1200		4.93	.30	3.47	.13																		1200
1300		5.34	.34	3.76	.15																		1300
1400		5.75	.39	4.05	.17																		1400
1500		6.16	.45	4.34	.19																		1500
1750		7.19	.60	5.35	.25																		1750
2000		8.21	.76	5.78	.32																		2000
2250				6.51	.40																		2250
2500				7.23	.49																		2500

Note: This chart is also valid for:

CRESLINE NT Form No. 161-NT

CRESLINE HD Form No. 161-HD

Note: This chart is also valid for:

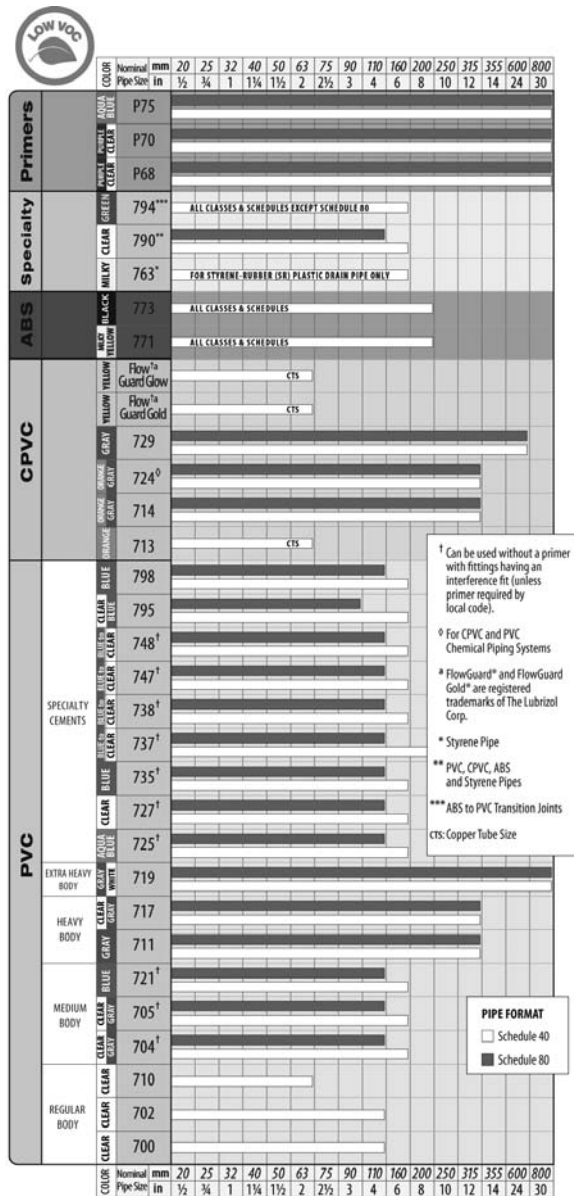
CRESLINE NT Form No. 161-NT

CRESLINE HD Form No. 161-HD

**SCH 80 IPS**

Pressure Drop Of Water Per 100 Ft. Of Pipe

SIZE	1/2"		3/4"		1"		1 1/4"		1 1/2"		2"		2 1/2"		3"		4"		6"		8"		SIZE
GALLONS PER MINUTE	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	VELOCITY FEET PER SECOND	PRESSURE DROP POUNDS PER SQ. IN.	GALLONS PER MINUTE
1	1.37	.81	.74	.18	.45	.05																	1
2	2.74	2.92	1.48	.65	.89	.19	.50	.05															2
3	4.11	6.18	2.23	1.39	1.34	.40	.75	.10	.54	.04													3
4	5.48	10.52	2.97	2.36	1.78	.69	1.00	.17	.73	.08													4
5	6.85	15.89	3.71	3.57	2.23	1.04	1.25	.25	.91	.12													5
6	8.22	22.27	4.45	5.01	2.68	1.45	1.50	.35	1.09	.16	.65	.05											6
8	10.96	37.92	5.93	8.52	3.57	2.47	2.00	.60	1.45	.28	.87	.08	.61	.03									8
10			7.42	12.88	4.46	3.73	2.50	.91	1.81	.42	1.09	.12	.75	.06									10
15			11.13	27.27	6.69	7.91	3.75	1.93	2.72	.89	1.63	.25	1.13	.10	.73	.04							15
20					8.92	13.46	5.00	3.29	3.63	1.51	2.17	.43	1.51	.18	.97	.06							20
25					11.15	20.34	6.25	4.97	4.54	2.28	2.72	.65	1.89	.27	1.21	.09							25
30							7.50	6.97	5.45	3.20	3.26	.92	2.27	.38	1.46	.13							30
35							8.75	9.27	6.35	4.25	3.80	1.22	2.65	.51	1.70	.17	.98	.04					35
40							10.00	11.87	7.26	5.45	4.35	1.56	3.03	.65	1.94	.22	1.12	.06					40
45									8.17	6.77	4.89	1.94	3.41	.81	2.19	.27	1.25	.07					45
50									9.08	8.23	5.43	2.36	3.78	.98	2.43	.33	1.39	.09					50
60							10.89	11.53	6.52	3.31	4.54	1.37	2.91	.47	1.67	.12							60
70									7.61	4.40	5.30	1.83	3.40	.62	1.96	.16							70
80									8.69	5.63	6.06	2.34	3.89	.79	2.23	.21							80
90									9.78	7.00	6.81	2.91	4.37	.99	2.51	.26							90
100							10.87	8.51	7.57	3.53	4.86	1.20	2.79	.31	1.23	.04							100
125									9.46	5.34	6.07	1.81	3.49	.47	1.54	.06							125
150									11.35	7.43	7.29	2.54	4.19	.66	1.85	.09							150
175											8.50	3.38	4.88	.88	2.15	.12							175
200											9.71	4.47	5.58	1.16	2.46	.16							200
225											10.93	5.38	6.28	1.40	2.77	.19							225
250													6.98	1.70	3.08	.23							250
275													7.67	2.03	3.38	.28							275
300													8.37	2.38	3.69	.32	2.14	.09	300				300
325													9.07	2.76	4.00	.38	2.32	.10	325				325
350													9.77	3.16	4.31	.43	2.50	.12	350				350
375													10.46	3.59	4.61	.49	2.68	.13	375				375
400															4.92	.55	2.86	.15	400				400
425															5.23	.62	3.04	.17	425				425
450															5.54	.69	3.21	.18	450				450
475															5.85	.76	3.39	.20	475				475
500															6.15	.83	3.57	.22	500				500
550															6.77	1.00	3.93	.27	550				550
600															7.38	1.17	4.28	.31	600				600
650															8.00	1.36	4.64	.37	650				650
700															8.61	1.56	5.00	.42	700				700
750															9.23	1.77	5.36	.48	750				750
800															9.85	2.03	5.71	.54	800				800
900																6.43	.67	.90	900				900
1000																7.14	.81	1.00	1000				1000



Average Initial Set Schedule  
For WELD-ON<sup>®</sup> PVC / CPVC Solvent Cements<sup>\*\*</sup>

Temperature Range	Pipe Sizes 1/2" to 1 1/4"	Pipe Sizes 1 1/2" to 2"	Pipe Sizes 2 1/2" to 8"	Pipe Sizes 10" to 15"	Pipe Sizes 15" +
60°-100°F	2 minutes	5 minutes	30 minutes	2 hours	4 hours
40°-60°F	5 minutes	10 minutes	2 hours	8 hours	16 hours
0°-40°F	10 minutes	15 minutes	12 hours	24 hours	48 hours

**Note** - Initial set schedule is the necessary time to allow before the joint can be carefully handled. In damp or humid weather allow 50% more set time.

Average Joint Cure Schedule  
For WELD-ON<sup>®</sup> PVC / CPVC Solvent Cements<sup>\*\*</sup>

Relative Humidity 60% or Less	Cure Time Pipe Sizes ½" to 1¼"		Cure Time Pipe Sizes 1½" to 2"		Cure Time Pipe Sizes 2½" to 8"		Cure Time Pipe Sizes 10" to 15"	Cure Time Pipe Sizes 15"+
Temperature range during assembly and cure periods	up to 160 psi	above 160 psi to 370 psi	up to 160 psi	above 160 psi to 315 psi	up to 160 psi	above 160 psi to 315 psi	up to 100 psi	up to 100 psi
60°-100°F	15 min	6 hrs	30 min	12 hrs	1½ hrs	24 hrs	48 hrs	72 hrs
40°-60°F	20 min	12 hrs	45 min	24 hrs	4 hrs	48 hrs	96 hrs	6 days
0°-40°F	30 min	48 hrs	1 hour	96 hrs	72 hrs	8 days	8 days	14 days

**Note** - Joint cure schedule is the necessary time to allow before pressurizing system. In damp or humid weather allow 50% more cure time.

<sup>\*\*</sup>These figures are estimates based on our laboratory tests; extended set and cure times are required for chemical applications. Due to the many variables in the field, these figures should be used as a general guide only.

Average Number of Joints/Qt. of WELD-ON Cement<sup>\*</sup>

Pipe Diameter	1/2"	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	12"	15"	18"
Number of Joints	300	200	125	90	60	40	30	10	5	2-3	1-2	1/4	1/2

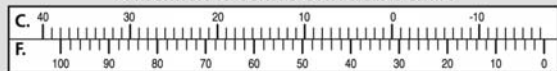
**\*For Primer. Double the number of joints shown for cement.** These figures are estimates based on our laboratory tests. Due to the many variables in the field, these figures should be used as a general guide only.

**Note: 1 Joint = 1 Socket**

Pipe Size Equivalent Chart - Inches/Millimeters

in.	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	18"	24"	30"
mm.	20	25	32	40	50	63	75	90	110	160	200	250	315	355	450	600	800

Fahrenheit to Celsius Conversion Chart



\* For additional product application data, visit the Weld-On web site at [www.ipscorp.com/weldon](http://www.ipscorp.com/weldon).



### QUICK SELECTION CHART

**WELD-ON**

REFERENCE

ABS	Acrylic Cell Cast	Acrylic Cross-Linked	Acrylic Extruded	Butyrate	Concrete	Fiberglass	Metal	PETG	Polycarbonate	Polyester	Polyurethane	PVC (Rigid)	PVC (Flexible)	PVC (Foamed)	Styrene	Wood	
2354 1707/4707 55/58	16 1802 40/42	10/11 40/42	16 1802 40/42	16 55/58 40/42	10/11 45	10/11 45	45 10/11	16 55/58 40/42	16 55/58 40/42	40/42 10/11	66 4784 55/58	10/11 16/4052 45	45	16 40/42 45	16 1802	45	ABS
16 1802 40/42	40/42 3/4/45C 16	10/11 40/42	40/42 3/4/45C 16	16 40/42 45	10/11 45	10/11 45	10/11 45	10/11 40/42 16	16 40/42 45	40/42 10/11	66 4784	40/42 16 4052	45	16 40/42 45	16 4052 10/11	45	Acrylic Cell Cast
10/11 40/42	10/11 40/42	10/11 40/42	10/11 40/42	40/42 10/11 45	10/11 45	10/11 45	10/11 45	10/11 40/42 45	10/11 40/42 45	40/42 10/11	40/42 10/11	10/11 40/42 45	45	40/42 45	10/11 40/42	10/11 45	Acrylic Cross-Linked
16 1802 40/42	40/42 3/4/45C 16	10/11 40/42	40/42 3/4/45C 16	16 40/42 45	10/11 45	10/11 45	10/11 45	10/11 40/42 16	10/11 40/42 45	40/42 10/11	66 4784	40/42 16 4052	45	16 40/42 45	16 4052 10/11	45	Acrylic Extruded
16 55/58 45/40/42	16 40/42 45	40/42 10/11 45	16 40/42 45	3/4/45C 2007/16 55/58	10/11 45	10/11 45	45 10/11	16 55/58 40/42	16 55/58 40/42	40/42 10/11 45	66 4784 55/58	16 55/58 40/42	66 4784 45	66 40/42 45	1802 16 45	45 10/11	Butyrate
10/11 45	10/11 45	10/11 45	10/11 45	10/11 45	10/11 45	10/11 45	10/11 45	10/11 45	10/11 45	10/11 45	10/11	10/11 45	45	10/11 45	10/11 45	10/11 45	Concrete
10/11 45	10/11 45	10/11 45	10/11 45	10/11 45	10/11 45	10/11 45	10/11 45	10/11 45	10/11 45	10/11 45	10/11	10/11 45	45	10/11 45	10/11 45	10/11 45	Fiberglass
45 10/11	10/11 45	10/11 45	10/11 45	45 10/11	10/11 45	10/11 45	10/11 45	10/11 45	10/11 45	10/11 45	10/11	10/11 45	45	45 10/11	10/11 45	10/11 45	Metal
16 55/58 40/42	10/11 40/42 16	10/11 40/42 45	10/11 40/42 16	16 55/58 40/42	10/11 45	10/11 45	10/11 45	55/58 3/4/45C 40/42	55/58 40/42 45	40/42 45	10/11	10/11 40/42 16	45	16 40/42 45	16 10/11	45	PETG
16 55/58 40/42	16 40/42 45	10/11 40/42 45	10/11 40/42 45	16 55/58 40/42	10/11 45	10/11 45	10/11 45	55/58 40/42 45	55/58 3/4/45C 16	40/42 10/11 45	10/11	40/42 10/11 16	45	16 40/42 45	10/11 16 1802	45	Polycarbonate
40/42 10/11	40/42 10/11	40/42 10/11	40/42 10/11	40/42 10/11 45	10/11 45	10/11 45	10/11 45	40/42 45	40/42 10/11 45	40/42 10/11 45	10/11 1829	40/42 10/11	45	10/11 40/42 45	40/42 10/11	10/11 1829	Polyester
66 4784 55/58	66 4784	40/42 10/11	66 4784	66 4784 55/58	10/11	10/11	10/11	10/11	10/11	10/11 1829	66 4784 55/58	66 4784	66 4784 45	66 4784	10/11 45	45	Polyurethane
10/11 16/4052 45	40/42 16 4052	10/11 40/42 45	40/42 16 4052	16 55/58 40/42	10/11 45	10/11 45	10/11 45	10/11 40/42 16	40/42 10/11 16	40/42 10/11	66 4784	2007 10/11/40/42 4007	2007 45	16 2007 40/42/45	10/11 16 1802	45	PVC (Rigid)
45	45	45	45	66 4784 45	45	45	45	45	45	45	66 4784 45	2007 45	2007 66/4784 45	2007 45	2007 45	45	PVC (Flexible)
16 40/42 45	16 40/42 45	40/42 45	16 40/42 45	16 40/42 45	10/11 45	10/11 45	45 10/11	16 40/42 45	16 40/42 45	10/11 40/42 45	66 4784	16 2007 40/42/45	2007 45	2007 16 40/42/45	1802 16 45	45 10/11	PVC (Foamed)
16 1802	16 4052 10/11	10/11 40/42	16 4052 10/11	1802 16 45	10/11 45	10/11 45	10/11 45	16 10/11	10/11 16 1802	40/42 10/11	10/11 45	10/11 1802	2007 45	1802 16 45	4807 16 1802	45	Styrene
45	45	10/11 45	45	45 10/11	10/11 45	10/11 45	10/11 45	45	45	10/11 1829	45	45	45	45	45	45	Wood

# Golf

## **Rain Bird Aeration**

WE SERVICE WHAT WE SELL!  
SEE PAGE 213 FOR HORIZON  
SERVICE CENTERS.



**Rain Bird® Central Control Systems are designed with ease of use in mind.**

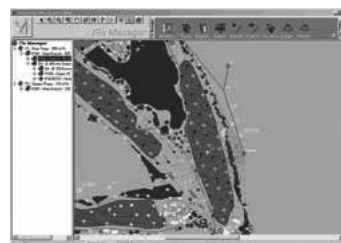
**These systems effectively integrate advanced technologies and optional software to arrive at solutions that manage water use responsibly to save money and reduce utility costs, while continually enhancing course appearance and improving playability.**



### **CIRRUS™ CENTRAL CONTROL SYSTEM**

The Golf Industry's Only Full-Featured Central Control System. Now with RainWatch.™

By combining Computer Aided Design (CAD) with GPS technology, Cirrus™ shows you your course like no other central control system can. With state-of-the-art ET-based scheduling, customized course graphics and multiple mapping options, controlling your irrigation system is fast and easy.

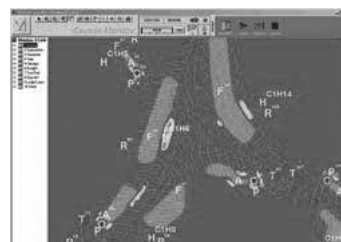


*Cirrus Flo-Manager*

### **NIMBUS™ II CENTRAL CONTROL SYSTEM**

Easy, Intuitive Map-Based Irrigation Control. Now with RainWatch.™

For a superior combination of ET-based scheduling, advanced flow management and Windows-based simplicity, Nimbus™ II is an excellent choice to efficiently control all irrigation applications on up to three individual courses with a maximum of 54 holes.



*Nimbus II Course Monitor*

### **STRATUS™ II CENTRAL CONTROL SYSTEM**

Two-Wire, Wireless and Decoder Central Control System. Now with RainWatch.™

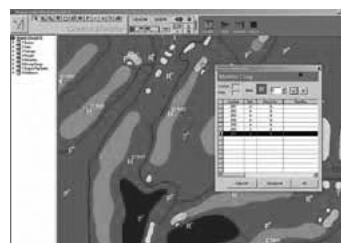
For easy-to-use, time- or ET-based scheduling, there's really only one choice — Stratus™ II — the one irrigation central control system that combines the point-and-click simplicity of Windows® with intuitive Rain Bird features to control up to as many as 27 holes.



*Stratus II Course Monitor*

### **STRATUS LT™ CENTRAL CONTROL SYSTEM**

Total Control. In Record Time. No Experience Required. The Rain Bird Start-up Wizard built right into StratusLT™ will have you watering your 18-hole golf course in no time — from the greens to the roughs, clubhouse to driving range — without having to become a computer expert or spend extensive time learning to operate the system. StratusLT now supports ET-based scheduling with WS-PRO LT and a weather software module.



*StratusLT Map*

## CENTRAL CONTROL SYSTEMS – STANDARD CENTRAL CONTROL FEATURES

CENTRAL CONTROL COMPARISON CHART				
	CIRRUS™	NIMBUS™ II	STRATUS™ II	STRATUS LT™
FEATURES	Real-time decision making	✓	✓	✓
	Radio communication option	✓	✓	✓
	Works with all Rain Bird satellites	✓	✓	✓
	Works with decoders	✓	✓	✓
	Works with Rain Bird Integrated Control™ System (ICS)	✓	✓	✓
	Works with FREEDOM™ System	✓	✓	✓
	Works with Rain Bird® MI Series Mobile Controller	✓	✓	✓
	Number of 2-wire satellite wire groups standard	4	4	2
	Number of IC™ wire groups standard	4	4	1
	Maximum number of interfaces – Hybrid (same or mix)	12	3	2
	Maximum number of 2-wire satellite wire groups – Hybrid	48**	12**	4**
	Maximum number of 2-wire satellite stations	32,256**	8,064**	2,688†
	Maximum number of wireless satellite stations	32,256**	8,064**	2,688†
	Maximum number of IC™ stations	36,000‡	9,000‡	3,000‡
	Number of decoders/solenoids standard	500/1,000	500/1,000	500/1,000
	Maximum number of decoders/solenoids – Hybrid	6,000/12,000Δ	1,500/3,000Δ	700/1,400Δ
	Number of active decoders/solenoids	40/LDI	40/LDI	40 with LDI
PROGRAMMING	Maximum number of weather stations	5	5	1
	Maximum number of pump stations	6	6	6
	Standard/Quick/RR™/Simple/IR™	✓	✓	✓
	Number of courses	3	3	2
	Number of holes	54	54	27
	Number of Flo-Zones™	500	500	500
	Programs	Unlimited	Unlimited	500
	Schedules	50 per program	50 per program	25 per program
	Irrigation programs – active simultaneous	50	50	20
	Flo-Manager™ – Dynamic Power and Hydraulic Management	✓	✓	✓
SOFTWARE FEATURES	Flo-Guard™	✓	✓	✓
	ET Management (fully automatic)	✓	Optional	Optional
	ET-Based scheduling	✓	✓	✓
	ET Spreadsheet™ Analysis	✓	✓	✓
	Rain Bird® MI Series Mobile Controller	✓	✓	✓
	Wireless satellite radio diagnostics	✓	✓	✓
	Comprehensive decoder diagnostics	✓	✓	✓
	Advanced IC™ diagnostics	✓	✓	✓
	Real-Time Run Log	✓	✓	✓
	Report Generation	✓	✓	✓
	Water Budgeting 0 – 300%	✓	✓	✓
	Rain Bucket™ – accumulated rainfall	✓	Optional	Optional
	Rain Sensor	✓	✓	✓
	Rain Watch™	✓	✓	✓
	QuickStart™	✓	✓	✓
	Help Screens	✓	✓	✓
	Course Monitor™	✓	✓	✓
	Hole View	✓	✓	✓
	Projected flow (Dryrun™)	✓	✓	✓
	Graphics – Course View™	✓	✓	✓
SOFTWARE MODULES	Import GPS, CAD or Aerial photo	✓	✓	✓
	Visual Monitoring – Area	✓	✓	✓
	Visual Monitoring – Station level	✓	Optional	Optional
	Smart Weather™ Alarms	✓	Optional	Optional
	Precipitation Data	✓	✓	✓
	Rotor Data	✓	✓	✓
	Cycle + Soak™	✓	✓	✓
	Automatic ET	✓	Optional	Optional
	Smart Weather™	✓	Optional	Optional
	Additional Weather Stations	✓	Optional	Optional
	Smart Sensors™ with Flo-Watch™	✓	Optional	Optional
	Rain Bird® Messenger™	✓	Optional	Optional
	Hybrid – Additional interfaces (same or mix)	✓	Optional	Optional
	The FREEDOM System™	✓	Optional	Optional
	Map Utilities™	✓	Optional	Optional
	Station Layers – Map/Operations	✓	Optional	Optional
	Smart Pump™	✓	Optional	Optional
	Additional Wire Groups	✓	✓	Optional

\*\* Possible with Hybrid Module and additional MIM™(s) † Possible with Hybrid Module and additional Wire Groups Module(s) ‡ Possible with Hybrid Module and additional IC(s) Δ Possible with Hybrid Module and additional LDI(s) ◊ Possible using a LDI instead of Standard SDI. Hybrid not required.



### MI SERIES MOBILE CONTROLLERS

- ◆ Remote access to your central control is now as convenient as the Internet, with mobile control. This software runs on your central control computer to provide remote irrigation control via a web-enabled cell phone.
- ◆ Rain Bird® MI Series Mobile Controllers are designed to work on a standard cell phone with Internet connectivity and offer far more remote options than anything else available.
- ◆ Once connected to the Internet, up to 9 remote users can simultaneously control sprinklers and programs, review system activity or directly change settings on both sprinklers and irrigation programs. All activity is logged for convenient review.
- ◆ Available in Basic, Advanced and Professional versions, you can turn sprinklers and programs on and off, see which sprinklers and programs are running, how much they are using and how long they have been running.



\*Phone not included.

### System Requirements

- Designed for Windows® XP SP2 or Windows® 7 32-bit.
- Requires an Internet connection to the central control computer.
- Requires a smart phone or tablet.

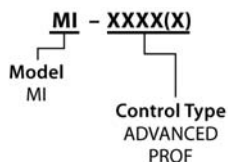
### Feature Comparison

LINK NAME	ADVANCED	PROFESSIONAL
Satellites (Areas)/Stations	X	X
Programs/Schedules	X	X
Diagnostics		X
Accessories		X
Alarm Log		X
Cancel All	X	X

### Accessories

LINK NAME	ADVANCED	PROFESSIONAL
Water Budget		X
Demand Flow	X	X
Smart Pump™		X
Smart Weather™		X
Activity Log	X	X
Online Users	X	X

### How to Specify

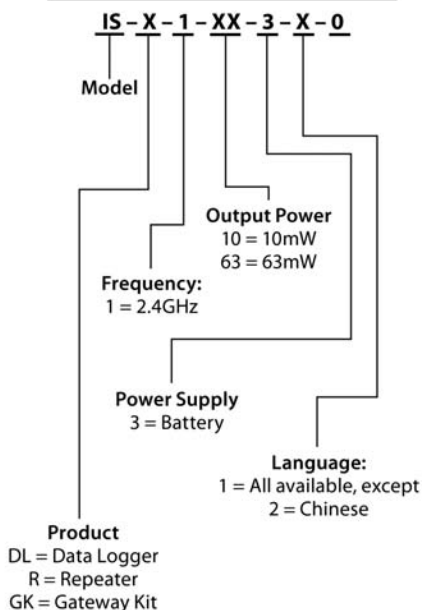


## RAIN BIRD® ISS INTEGRATED SENSOR SYSTEM

- ◆ Upgradeable — Plug in Output Station Modules (OSM) to expand station capacity to 72 stations, in 8 station increments
- ◆ Automatically adjust sprinkler run times to reach and maintain desired moisture levels, minimizing water consumption, resulting in healthier turf and better playing conditions.
- ◆ Automatically adjust sprinkler run times to reach and maintain desired moisture levels, minimizing water consumption, resulting in healthier turf and better playing conditions.
- ◆ Zero calibration
- ◆ The ISS uses a proven wireless mesh network which ensures the necessary range of transmission and a secured traffic from the data logger to the Soil Manager™ software.



## How to Specify



*Note: Check country of use output power regulations before ordering.*

## RAIN BIRD FIELD CONTROLS



**Rain Bird® Field Control Systems are engineered to deliver the trusted performance that golf course professionals need to optimize course appearance and playability.**

### IC SYSTEM™

**Connects central control directly to the rotor or valve.**

- ◆ Upgradeable — Plug in Output Station Modules (OSM) to expand station capacity to 72 stations, in 8 station increments
- ◆ Fewer splices and less wire require less time and effort to install
- ◆ Offers tear off bar codes and an easy to use scanner to simplify the creation of the central control system database for quick operation.
- ◆ No satellite controllers to design around or conceal.
- ◆ Capable of intelligent, two-way communication with each and every ICM on the golf course.



### System Capacity\*

750 ICMs per Output Wire Path, 1500 ICMs per Output Driver Board, 3000 ICMs per IC Interface (ICI), up to 36,000 ICMs with Cirrus.

\* Specific System Capacity is dependent on the Central Control System ICI

### Electrical Input

100 VAC Nominal 91-110 VAC @ 60 HZ +/- 2 HZ  
115 VAC Nominal 98-132 VAC  
220-240 VAC Nominal 208-255 VAC.

### Electrical Output

26.5 VAC, 1.25 AMP Per Wire Path.

### Compatibility

Rain Bird EAGLE™ 500, 700 and some 900 Series Rotors, and Rain Bird PES-B, PEB, PGA, EFB, and BPE Electric Valves with ICM Adapter.



### PAR+ES CONTROLLER

**The easy-to-program, central control-ready Rain Bird® PAR+ES Controller features 72-Station capability, unlimited programs with central control, premium surge protection, extensive diagnostics and a best-in-class pedestal enclosure.**

- ◆ Standalone, two-wire and LINK.
- ◆ Works with any Rain Bird Central Control System.
- ◆ Large, raised control buttons with clear, descriptive icons and a high-contrast Liquid Crystal Display (LCD) panel make programming easy
- ◆ Available in 16 to 32- and 56-station base configurations and can be easily upgraded in 8-station increments.
- ◆ Perfect for syringing or putting down fertilizer, multi manual allows to manually launch as many stations as necessary.



### Configurations

- PAR+ES standalone controller in a plastic pedestal.
- PAR+ES satellite with two-wire module in a plastic pedestal.
- PAR+ES satellite with Link (wireless) module in a plastic pedestal

### Station Capacity

72 stations, up to 16 solenoids operating simultaneously (60 Hz)

### Electrical Input

- (50/60 Hz) 117 VAC Nominal 98 to 132 VAC
- -220 VAC Nominal 208 to 232 VAC
- - 240 VAC Nominal 225 to 255 VAC

### Electrical Output

26.5 VAC, 5.25 AMP.

### Station Load Capacity

Up to four (4) 24 VAC, seven (7) VA solenoids per station

### PAR+ES DECODER CONTROLLER

**The PAR+ES Sat Decoder combines the features and benefits of a controller system with those of a decoder system.**

- ◆ Operates as a standalone controller or add a Rain Bird® Central Control System for greater control.
- ◆ Operates up to 72 decoder addresses





## GEAR DRIVEN ROTORS

Rain Bird Gear-Driven Rotors are engineered to efficiently manage water, while promoting a lush, highly profitable course, through minimal maintenance requirements, worry-free performance and maximum water distribution uniformity. Trusted by golf course professionals everywhere, particularly those in drought prone areas, these innovative rotors deliver optimal playing surfaces, high durability and reduced water costs.

## RAIN BIRD 700/751 SERIES

Offering proven Rain Bird durability and distribution uniformity, these cost efficient rotors are also backward-compatible with existing Rain Bird rotor cases. Rapid-Adjust Technology featuring MemoryArc™ on new Rain Bird® 751 Golf Rotors allows you to easily adjust watering on greens, fairways or roughs for unmatched versatility and precise control.

- ◆ Turn-a-Screw Flexibility with Rapid-Adjust Technology on 751 Rotors (see graphic)
- ◆ High efficiency nozzles with large droplets that cut through harsh winds and reliable and consistent pressure regulation
- ◆ Backward-compatibility with every 700 Series EAGLE™ Rotor manufactured since 1992



## SPECIFICATIONS:

### Radius

Rain Bird 700 Series: 56' to 79'  
(17.1 m to 24.1 m)

Rain Bird 751 Series: 35' to 75'  
(10.7 m to 22.9 m)

### Flow Rate

700 Series: 16.3 to 43.9 gpm  
(1.03 to 2.76 l/s) (3.70 to 9.95 m3/h)

751 Series: 7.0 to 37.7 gpm  
(0.44 to 2.38 l/s) (1.59 to 8.56 m3/h)

### Arc

700 Series: Full-circle 360°

751 Series: Full-circle 360°;  
Adjustable 30° to 345°

### Maximum Inlet Pressure

Models 700/751E and IC: 150 psi (10.3 bars)

Models 700/751S/H and B: 100 psi (6.9 bars)

### Pressure Regulation Range

60 to 100 psi (4.1 to 6.9 bars)



## FULL CIRCLE

700E: Electric

700IC: Integrated Control

700S/H: Combined use Stopmatic (SAM) or Hydraulic (N.O.)\*

700B: Seal-A-Matic™ device

## FULL and PART-CIRCLE

700E: Electric

700IC: Integrated Control

700S/H: Combined use Stopmatic (SAM) or Hydraulic (N.O.)\*

700B: Seal-A-Matic™ device

## 700 SERIES PERFORMANCE DATA — U.S.

Base Pressure (psi)	50		60		70		80		90		100	
	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)
<b>WIND TOLERANT NOZZLES</b>												
#16 - Gray	-	-	56	16.3	56	17.5	60	18.5	62	20.2	63	21.1
#18 - Red	-	-	58	19.0	61	20.9	65	22.3	65	23.2	65	24.2
#22 - Black	-	-	-	-	65	27.6	65	34.8	67	38.8	71	40.5
<b>DUAL SPREADER™ NOZZLES</b>												
#28 - White	57	18.0	59	19.7	59	21.3	61	22.8	61	24.1	61	25.5
#32 - Blue	61	21.9	63	22.8	65	24.5	65	27.4	67	29	67	29.6
#36 - Yellow	65	23.2	65	25.5	65	27.5	67	29.5	65	31.2	67	32.9
#40 - Orange	65	25.5	67	27.8	71	29.8	71	31.9	73	33.9	73	35.6
#44 - Green	-	-	71	30.7	69	33.0	71	35.2	75	37.5	75	39.5
#48 - Black	-	-	-	-	73	37.0	77	39.4	79	41.8	77	43.8

## 751 SERIES PERFORMANCE DATA — U.S.

Base Pressure (psi)	50		60		70		80		90		100	
	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)
<b>WIND TOLERANT NOZZLES</b>												
#16 WTN - Gray	-	-	60	15.7	62	16.7	62	17.8	64	18.8	66	20.4
#18 WTN - Red	-	-	63	18.8	63	20.0	65	21.4	67	22.7	67	24.0
#22 WTN - Black	-	-	-	-	65	27.6	65	35.8	67	37.6	71	41.1
<b>DUAL SPREADER™ NOZZLES</b>												
#20 - Gray	37	7.0	39	7.8	39	8.4	41	8.9	-	-	-	-
#22 - Red	40	8.3	45	9.5	45	10.2	43	10.8	-	-	-	-
#28 - White	55	15.2	57	16.8	59	18.1	59	19.3	59	20.5	57	21.5
#32 - Blue	59	17.1	61	18.6	61	20	61	21.4	63	22.5	63	23.9
#36 - Yellow	61	19.1	63	20.8	65	22.6	67	24	69	25.5	69	26.5
#40 - Orange	63	21.7	67	23.8	69	25.6	71	27.5	71	28.9	71	30.7
#44 - Green	-	-	65	26.3	69	28.3	71	30.4	71	32.1	73	34.1
#48 - Black	-	-	-	-	69	31.4	73	33.7	75	35.7	73	37.7

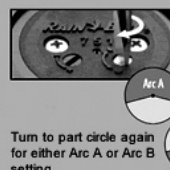
## Introducing Rapid Adjust Technology featuring MemoryArc™



Set primary rotor arc.



Turn the Full/Part Adjustment Screw for full-circle operation.



Turn to part circle again for either Arc A or Arc B setting.

No need to adjust arc when going between full- and part-circle settings.



### EAGLE 900/950 CLOSED CASE ROTORS

For fairways and the rough, the EAGLE 900/950 rotor series provides superior coverage.

- ◆ True close-cased construction extends the life of the rotor by protecting the motor from debris, outside elements and environmental changes.
- ◆ The industry's only self-flushing mode at pop-up and pop-down adds another barrier to debris that is crucial in fine sands and silty soil types.
- ◆ Available in full- and part-circle versions, with a choice of electric, hydraulic, and Stop-a-Matic (SAM) models.
- ◆ Unique flow-around-the-motor design reduces friction and ensures reliable performance with all water types.



### SPECIFICATIONS:

#### Radius

EAGLE 900 Series: 63' to 97' (19.2 m to 29.6 m)

EAGLE 950 Series: 70' to 92' (21.3 m to 28.0 m)

#### Flow Rate

EAGLE 900 Series: 21.4 to 57.1 gpm (1.35 to 3.60 l/s) (4.85 to 12.97 m<sup>3</sup>/h)

EAGLE 950 Series: 19.5 to 59.4 gpm (1.23 to 3.75 l/s) (4.43 to 13.49 m<sup>3</sup>/h)

#### Arc

EAGLE 900 Series: Full-circle, 360°

EAGLE 950 Series: 40° to 345°

#### Maximum Inlet Pressure

Models 900E/IC, 950E/IC: 150 psi (10.3 bars)

Models 900S/H, 950S/H: 100 psi (6.9 bars)

#### Pressure Regulation Range

60 to 100 psi (4.1 to 6.9 bars)

#### FULL CIRCLE

EAGLE 900E: Electric

EAGLE 900 IC: Integrated Control

EAGLE 900S/H: Combined use Stop-a-Matic (SAM) or Hydraulic (N.O.)\*

#### FULL and PART-CIRCLE

EAGLE 950E: Electric

EAGLE 950 IC: Integrated Control

EAGLE 950S/H: Combined use Stop-a-Matic (SAM) or Hydraulic (N.O.)\*

### EAGLE 900 SERIES PERFORMANCE DATA — U.S.

#### HIGH PERFORMANCE NOZZLES

Base Pressure (psi)	#44 BLUE		#48 YELLOW		#52 ORANGE		#56 GREEN		#60 BLACK		#64 RED	
	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)
60	63	21.4	73	28.9	75	31.9	—	—	—	—	—	—
70	67	23.5	73	31.9	79	34.6	83	40.7	87	43.2	91	47.2
80	71	24.7	75	34.1	81	37.1	85	43.5	91	49.5	93	51.0
90	71	26.5	77	35.0	81	39.5	87	46.4	91	49.5	95	54.0
100	73	27.9	77	36.2	83	41.8	89	49.1	91	52.2	97	57.1

### EAGLE 950 SERIES PERFORMANCE DATA — U.S.

#### NOZZLES

Base Pressure (psi)	#18 WHITE-C		#20 GRAY-C		#22 BLUE-C		#24 YELLOW-C		#26 ORANGE		#28 GREEN		#30 BLACK		#32 BROWN	
	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)
60	70	19.5	72	23.0	74	26.5	76	30.8	78	36.0	—	—	—	—	—	—
70	72	21.3	74	25.1	76	28.8	80	33.5	82	38.7	84	42.9	84	47.3	84	50.4
80	74	22.9	76	27.0	80	30.9	84	36.0	84	41.5	86	47.3	86	50.4	85	53.1
90	75	24.4	78	28.7	82	32.9	88	38.4	86	43.4	89	48.5	90	52.9	88	55.6
100	76	25.8	80	30.5	84	34.6	90	40.5	88	46.7	91	52.2	92	55.8	92	59.4



### EAGLE 351B SERIES

The first golf-quality short-throw irrigation rotor. With an ideal adjustable range for tee boxes, small greens, and other limited irrigation areas, the EAGLE 351B uses a nozzle technology that exceeds all other brands, specifically designed for efficient water distribution.



- ◆ Control the arc with a flathead screwdriver, without turning the case, for precision coverage in tiny spaces.
- ◆ As requested by superintendents, the radius of throw is a versatile 18' to 55' for irrigating tight areas
- ◆ Built to withstand golf course irrigation system water pressure; operates at pressure from 60 to 90 psi, and can sustain up to 100 psi
- ◆ The Rain Bird® Memory Arc® feature returns the rotor to its original arc setting when it has been forcibly turned beyond the trip points of the set arc
- ◆ Nozzle pop-up height of 3.25" from top of the case to the center of the nozzle clears the taller grasses

### SPECIFICATIONS:

#### Radius

18 to 55 feet (5,5 to 16,8 m)

#### Flow Rate

1.5 to 15.5 gpm (0.09 to 0.98 l/s) at Full-Circle Mode: 360° → less than or equal to 180 seconds; 120 seconds nominally

#### Arc

EAGLE 351B: 360° in full-circle mode; adjustable from 50° to 330° in part-circle mode

#### Maximum Inlet Pressure

Model 351B: 100 psi (6,9 bar)

#### Recommended Operating Pressure

60 psi (4,1 bar), 70 psi (4,8 bar), 80 psi (5,5 bar)

#### Part-Circle Mode

180° less than or equal to 90 seconds; 60 seconds nominally

#### Inlet Threads

1" (2,5cm) (26/36) ACME

#### Holdback

10' (3,1m) of elevation

#### Nozzle Trajectory

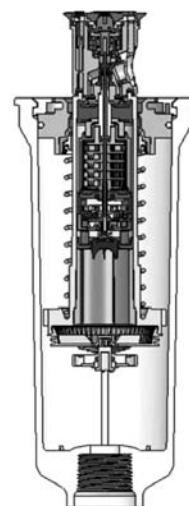
17° and 25°

#### Maximum Stream Height

13' (4 m)

### EAGLE 351B SERIES PERFORMANCE DATA — U.S.

BASE PRESSURE		60 PSI		70 PSI		80 PSI		90 PSI	
Nozzle		Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)
LOW FLOW	18S White	18	1.8	20	1.9	20	2.0	22	2.2
	22S Dark Gray	22	2.2	22	2.4	24	2.5	26	2.7
	26S Dark Orange	24	2.6	24	2.8	26	3.1	26	3.2
	30S Light Green	30	3.0	30	3.1	32	3.2	32	3.4
	36S Brown	34	3.6	34	3.8	34	4.2	36	4.4
HIGH FLOW	18M Ivory	20	4.0	22	4.2	22	4.4	24	4.7
	26M Medium Orange	24	5.6	24	6.0	26	6.5	26	6.9
	30M Green	30	5.7	30	6.2	32	6.6	32	7.1
	36M Light Brown	34	7.1	34	7.8	34	8.4	36	8.9
LONG THROW	40 Orange	40	2.1	40	2.3	42	2.4	42	2.5
	44 Red	44	3.5	46	3.6	46	4.1	46	4.3
	48 Blue	48	5.8	48	6.4	48	6.8	48	7.0
	54 Beige	50*	12.4*	54*	13.5*	56*	14.6*	56*	15.5*



## SWING JOINTS



### SWING JOINTS

Innovative elbow design reduces pressure losses by over 50%.

- ◆ Superior flow characteristics through an innovative swept elbow design\* that reduces pressure loss by over 50% compared to other swing joints.
- ◆ Excellent structural integrity from the swept elbow design reduces the costs associated with fatigue-related failures.
- ◆ Double O-ring protection provides a better seal ensuring joints are kept clean and can be repositioned more easily.

### SPECIFICATIONS:

#### Pressure Rating

- ◆ 315 psi (21,7 Bars) @ 73°F (22,8°C)

#### Diameters

- ◆ 1" (2,5 cm), 1 1/4" (3,2 cm), and 1 1/2" (3,8 cm)

#### Lengths

- ◆ 8" (20,3 cm), 12" (30,5 cm), and 18" (45,7 cm)

#### Inlet type

- ◆ NPT, BSP, ACME, spigot, metric spigot, socket

#### Outlet thread type

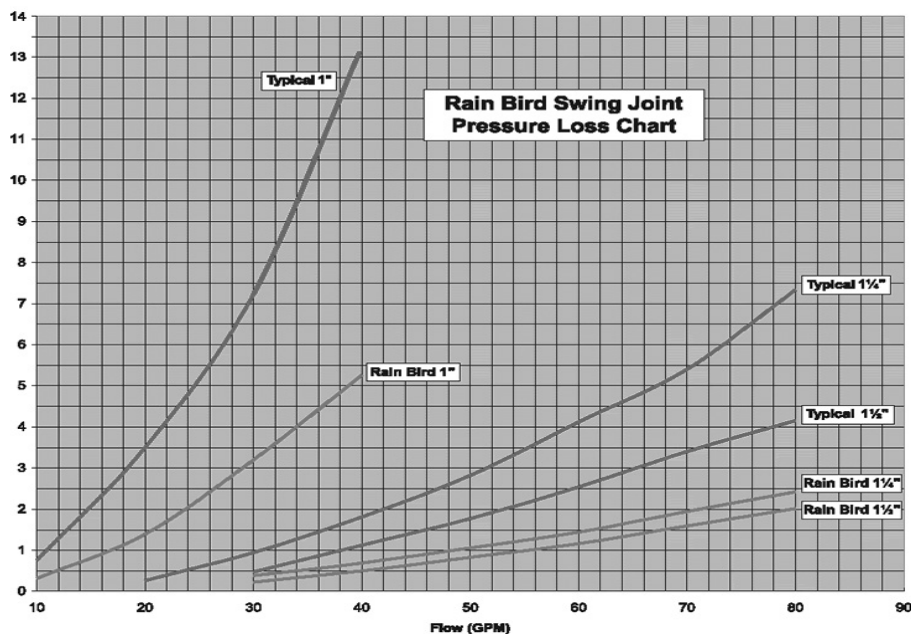
- ◆ NPT, BSP, or ACME
- ◆ Enlarging NPT, BSP, or ACME outlets are also available on 1" (2,5 cm) and 1 1/4" (3,2 cm) swing joints for connections to many rotors with 1 1/4" (3,2 cm) and 1 1/2" (3,8 cm) inlet sizes respectively (no additional adapters required).

#### Outlet configuration

- ◆ Single-top or triple-top



SWING FAMILY



## UNDERGROUND HOSE REELS

### RAINBIRD UNDERGROUND HOSE REELS

Makes syringing greens economical and efficient while cutting down on turf wear.

- ◆ Less interruption and inconvenience for golfers
- ◆ More professional look for your course
- ◆ Saves time and reduces employee fatigue



## HOSE END NOZZLES



**Get the right flow for the right application with water-intelligent Rain Bird® hose-end nozzles.**

Variety of nozzle options provides improved flow control for the right application

- ◆ Quick Connect couplers allow you to switch between nozzles in seconds
- ◆ Adjustable spray patterns deliver the right water distribution for each application
- ◆ Powder-coated aluminum construction for added durability
- ◆ Durable rubber bumper made to last
- ◆ Manufactured in the U.S.A.



### Specifications

Nozzle Inlet Threads:

1" (25mm) in High Flow, Mid-Flow and Low Flow models (NPSH)

0.75" (19mm) in Mid-Flow model (GHT)

Product Code	Description	Max Flow Rate*	Optimal Flow Rate
NZ0100HF	High Flow Nozzle with 1" (25mm) inlet NPSH	98 GPM (6.1 lps)**	20/60 GPM (1.3/3.8 lps)
NZ0100MF	Mid-Flow Nozzle with 1" (25mm) inlet NPSH	57 GPM (3.6 lps)	35 GPM (2.2 lps)
NZ0075MF	Mid-Flow Nozzle with 0.75" (19mm) inlet GHT	57 GPM (3.6 lps)	35 GPM (2.2 lps)
NZ0100LF	Low Flow Nozzle with 1" (25mm) inlet NPSH	54 GPM (3.4 lps)	10/24 GPM (0.6/1.5 lps)
NZM100	1" Male Quick Connect Coupler NPSH	n/a	n/a
NZF100	1" Female Quick Connect Coupler NPSH	n/a	n/a
NZF075	0.75" Female Quick Connect Coupler GHT	n/a	n/a

## ROTOR SERVICE TOOLS

### RAINBIRD ROTOR SERVICE TOOLS

A full line of quality tools for the service and maintenance of Rain Bird golf rotors constructed of heavy-duty metal alloys and durable plastic.

- ◆ Snap ring pliers
- ◆ Valve insertion tool
- ◆ EAGLE selector service toolkey
- ◆ Universal hose adaptor
- ◆ 7" & 18" selector valve key
- ◆ 351B rotor tool & hold-up tool



## AERATION/ALGAE CONTROL



**Horizon Distributors supports the sales and service of the following aeration products:**

- ◆ Otterbine Barebo, Inc.
- ◆ Aqua Master®



### RAIN BIRD® ALGAE CONTROL SYSTEM™ (ACS)

Non-toxic, chemical free control system that uses state-of-the-art ultrasonic technology to eliminate and control algae growth. Submerged just beneath the surface, it generates ultrasonic waves that inhibit the growth and spread of algae.

### COST SAVINGS

- ◆ Average return on investment (ROI) is 2 years
- ◆ Eliminate costly chemical applications
- ◆ Reduce labor costs
- ◆ Easy to use and maintain





## Pumps and Filtration Pump Station Platforms Quick Reference Guide

### PUMP STATION PLATFORMS QUICK REFERENCE GUIDE

#### LP SERIES

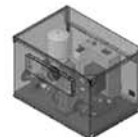
##### HES1

- One horizontal end suction pump
- 5 to 10 HP motor with VFD
- Up to 100 psi (6.9 bar)
- Up to 200 gpm (12.6 lps, 45.4 m<sup>3</sup>/h)
- Aluminum Enclosure
- Monochrome touch-panel display



##### VM1

- One vertical multistage pump
- 1 to 2 HP motor with VFD
- Up to 50 psi (3.5 bar)
- Up to 60 gpm (36.2 lps, 13.6 m<sup>3</sup>/h)
- Aluminum Enclosure
- Monochrome touch-panel display



#### D SERIES

##### HES1

- One horizontal end suction pump
- 5 to 20 HP motor with VFD
- Up to 130 psi (9.0 bar)
- Up to 350 gpm (22.1 lps, 79.5 m<sup>3</sup>/h)
- Powder-coated steel enclosure
- Monochrome touch-panel display



##### VM1

- One vertical multistage pump
- 3 to 15 HP motor with VFD
- Up to 115 psi (7.9 bar)
- Up to 200 gpm (12.6 lps, 45.4 m<sup>3</sup>/h)
- Powder-coated steel enclosure
- Monochrome touch-panel display



#### M SERIES

##### HES1

- One horizontal end suction pump
- 20 to 50 HP motor with VFD
- Up to 120 psi (8.3 bar)
- Up to 600 gpm (37.9 lps, 136 m<sup>3</sup>/h)
- Aluminum Enclosure
- Monochrome touch-panel display



##### VM1

- One vertical multistage pump
- 15 to 60 HP motor with VFD
- Up to 155 psi (10.7 bar)
- Up to 500 gpm (31.5 lps, 114 m<sup>3</sup>/h)
- Aluminum Enclosure
- Monochrome touch-panel display



#### COMPACT DECK

##### VT1

- 25 to 75 HP motors with VFD
- Up to 140 psi (9.7 bar)
- Up to 500 gpm (31.5 lps, 114 m<sup>3</sup>/h)
- Color touch-panel display



##### VT2

- 25 to 75 HP motors with VFD
- Up to 140 psi (9.7 bar)
- Up to 1600 gpm (101 lps, 363 m<sup>3</sup>/h)
- Color touch-panel display



#### LARGE DECK

##### VT2

- Large Deck to accommodate optional integrated filtration
- 25 to 75 HP motors with VFD
- Up to 140 psi (9.7 bar)
- Up to 1600 gpm (101 lps, 363 m<sup>3</sup>/h)
- Color touch-panel display



##### VT3

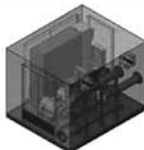
- Large Deck to accommodate optional integrated filtration
- 40 to 75 HP motors with VFD
- Up to 140 psi (9.7 bar)
- Up to 2400 gpm (151 lps, 545 m<sup>3</sup>/h)
- Color touch-panel display



#### PUMP STATION PLATFORMS

##### HES2

- Two horizontal end suction pumps
- 20 to 60 HP motors with VFD
- Up to 124 psi (8.6 bar)
- Up to 1200 gpm (76 lps, 273 m<sup>3</sup>/h)
- Aluminum Enclosure
- Monochrome touch-panel display



##### VM2

- Two vertical multistage pumps
- 25 to 60 HP motor with VFD
- Up to 150 psi (10.3 bar)
- Up to 1000 gpm (63.1 lps, 227 m<sup>3</sup>/h)
- Aluminum Enclosure
- Monochrome touch-panel display



##### HES3

- Three horizontal end suction pumps
- 20 to 60 HP motors with VFD
- Up to 124 psi (8.6 bar)
- Up to 1800 gpm (114 lps, 409 m<sup>3</sup>/h)
- Aluminum Enclosure
- Monochrome touch-panel display



##### VT4-LARGE

- Large Deck to accommodate optional integrated filtration
- 40 to 75 HP motors with VFD
- Up to 140 psi (9.7 bar)
- Up to 3000 gpm (189 lps, 681 m<sup>3</sup>/h)
- Color touch-panel display



#### PANEL ONLY

- Controls 1-6 pumps, up to 100 HP each
- VFD or VPM
- Flow meter and pressure transducer included.



# Water Management

**Central Control  
Pumps**



Intelligent Water Management

### ETWATER SMART CONTROLLER 205

The first smart irrigation controller to complete the Irrigation Association's (IA) Smart Water Application Technology test protocol.

- ◆ Capacity to manage up to 48 valves
- ◆ Purchase as few as 16 stations and add plug-in 8 station modules as needed
- ◆ Connects via wireless, standard telephone line, or powerline for receiving daily schedule adjustments and sending alert messages
- ◆ Easy-to-use keypad for viewing programs, manual valve operation and other system functions
- ◆ Standard connections for rain switch, master pump, and master valve
- ◆ Convenient panel retrofit for upgrading selected existing controller brands. No enclosure or valve re-wiring needed
- ◆ Compact cabinet design suitable for wall mounting and selected pedestal installations

### Electrical Specifications:

Transformer Input: 110 VAC

Transformer Output: 24 VAC 1.875 Amps

ETL and FCC approved

### Connectivity Options:

Cellular wireless

Standard phone line

Powerline



### ETWATER SMART MANAGER

Gives you complete desktop control over all your sites, reducing hours in the field.

- ◆ Weather-based watering schedules with ET and rain adjustments automatically generated on a daily basis for all stations
- ◆ Reliable, local weather data is provided across the U.S. from a network of over 8,500 local weather stations monitored around the clock
- ◆ Easy-to-use Web interface with controls for all critical functions — setting water windows, choosing blocked days and making watering adjustments
- ◆ Easy step-by-step configuration process enables system to generate a customized watering schedule for each station to optimize water use and minimize runoff
- ◆ Automatic email alerts notify you of any unauthorized changes in watering schedules, interruptions in watering, or other potential controller performance issues

### Requirements:

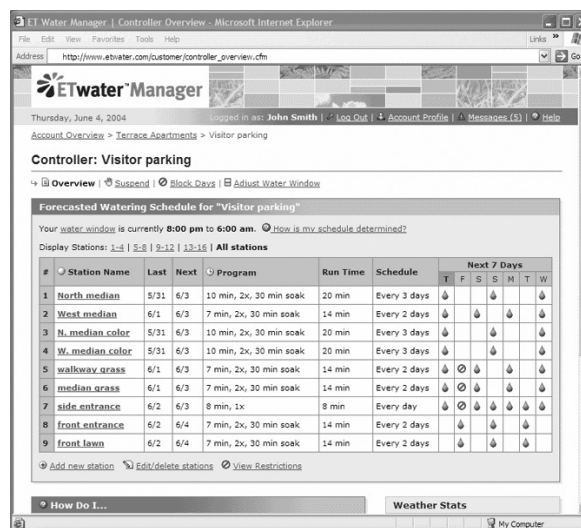
Active e-mail address

Browser: Internet Explorer 5.0 and higher, Apple Safari 2.0, and Mozilla 2.

### HERMITCRAB 2 WITH FLOW MONITORING

Upgrades conventional controllers to ETwater Internet-based technology.

- ◆ Capacity up to 48 stations
- ◆ Great value: make your conventional controller "smart" for much less than the cost of a new smart controller.
- ◆ With 20-50% water savings possible, payback can be just a few months.
- ◆ "Plug and Play" installation in under 10 minutes.
- ◆ Compatible with most major controller brands.
- ◆ Remote monitoring + management via the web.

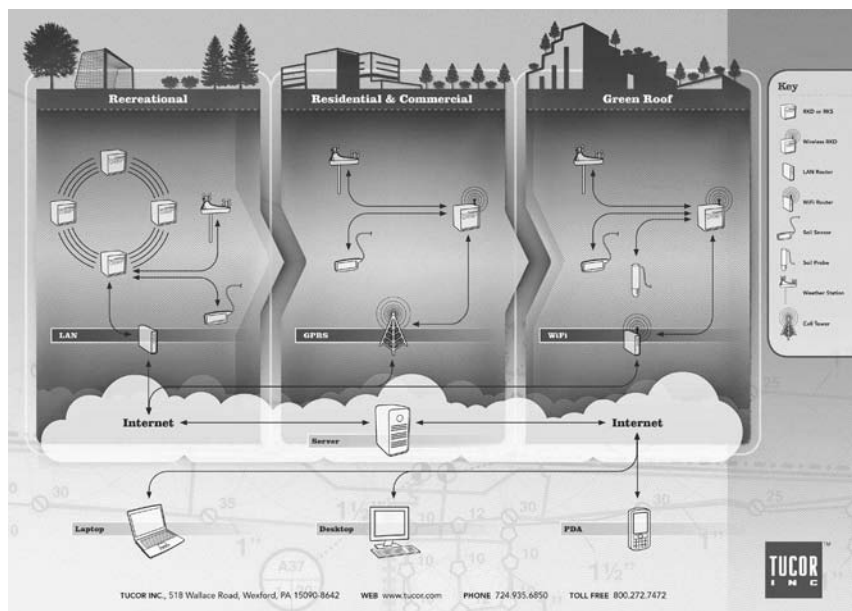


**Markets Supported: CA, WA, OR, ID, CO, NV, AZ**

Tucor's Total-Cycle Management solution uses weather stations in combination with soil-moisture sensors to provide the most accurate data about your site's irrigation needs. And accurate data means accurate irrigation, so you use only the water you need, conserving water and promoting plant health. By combining both climate and soil monitoring technologies — along with Tucor's intelligent controllers — Total-Cycle Management provides you with irrigation scheduling you can trust.

**HORIZON IS PROUD TO BE AN EXCLUSIVE DISTRIBUTOR OF TUCOR CONTROL SYSTEMS.**

**The Tucor TWCNV can be fully managed from the "Total Cycle Management" interface and all Tucor Controllers can now schedule adjust from On Site Weather Station ET rate data or a nationwide network of weather data sites.**

**Two-Wire Technology**

Two-wire technology is revolutionizing the irrigation industry. With a conventional controller irrigation system, you are forced to run wires directly from the controller to every single valve. But with a two-wire system, you use just one, small-gauge, two-wire cable from the controller across the entire system. Just one cable connects to field decoders and valves like a string of ornamental lights.

**Two-wire technology provides several advantages over a conventional system:**

- ◆ Ease of installation. You only have to install — and dig — one wire line per system as opposed to one wire line per valve
- ◆ Ease of expansion. Two-wire allows you to expand a new or existing irrigation system indefinitely because you don't have to re-wire your system when making expansions or modifications. The unique two-wire technology allows you to infinitely add to an existing irrigation system, using just one two-wire cable to control the entire system
- ◆ Cost reduction. You save money on expensive copper cable; in fact, you can save as much as 80% over conventional wire systems

**Total-Cycle Management**

Tucor's Total-Cycle Management solution uses weather stations in combination with soil-moisture sensors to provide the most accurate data about your site's irrigation needs. And accurate data means accurate irrigation, so you use only the water you need, conserving water and promoting plant health.

Before Tucor's Total-Cycle Management, irrigation systems provided water monitoring via soil or climate data — not both. But each of these methods has drawbacks when used alone. For example, soil-moisture sensors and probes may not be practical for projects with inconsistent soil types. Weather stations, on the other hand, do not measure the soil's true water content, watering based on climate conditions when the soil could be saturated. By combining these two technologies — along with Tucor's intelligent controllers — Total-Cycle Management provides you with irrigation scheduling you can trust

**NEW PRODUCT OFFERING!**

**The New Tucor 3D** is designed to retrofit existing systems which eliminates the need for:

1. Cumbersome and landscape disrupting, trenching and wiring installations when adding a flow sensor and/or master valve
2. Battery operated controllers used to overcome poor system wiring conditions
3. Adding irrigation valves without costly, cumbersome and landscape disrupting, trenching and wiring installations

## TUCOR TWO-WIRE CENTRAL CONTROL SYSTEM (CONT.)



### **RKD CONTROLLER**

- ◆ Stand-alone, decoder-based, 2-wire controller supporting from 1-100 Stations (valves)
- ◆ Can operate up to 12 Stations simultaneously and run 10 Programs concurrently
- ◆ Uses the RKLD-050 programmable line decoder, which can be addressed and tested at the controller
- ◆ Mist Manager — Valve operations controllable in one second increments
- ◆ FloStack™ — Program stacking based on flow for up to 10 simultaneous Programs
- ◆ RealNet — Real-time, Internet-based water management via GPRS wireless
- ◆ Intellisat — Smart irrigation using a host of ET-based capabilities

## TUCOR CONVENTIONAL CENTRAL CONTROL SYSTEM



### **RKS CONTROLLER**

- ◆ A conventional controller perfect for projects that require retrofitting existing systems
- ◆ Designed to convert conventional systems to Tucor's innovative Total-Cycle Management system
- ◆ Supports from 1 to 100 valves, operates up to 12 stations simultaneously, and can run 10 programs concurrently
- ◆ Unique Add-a-Zone program allows you to add stations one at a time as your system grows
- ◆ Up to three 25-station expansion boards can be added to the base controller via hard wiring or wirelessly with Tucor's own ZigBee-based mesh radios
- ◆ Available in 25-station modules



### **TUCOR TWC FLOWMASTER CONTROLLER**

- ◆ Provide central control of 25 to 500 valves using reliable decoder-based two-wire technology
- ◆ System is easily extended without the need of installing additional wires back to the controller
- ◆ Supports two-way communications allowing it to read external sensors such as flow meters
- ◆ Supported with Windows-based, multi-site software

#### **Flowmaster controllers come in three versions:**

- ◆ COM-25/50 for individual control of up to 50 valves
- ◆ TWC-NV 50 / 100 / 150 / 200 for up to 200 valves
- ◆ PROCOM 50 / 100 / 200 / 300 / 400 / 500 for up to 500 valves

The Tucor **TWCNV** can be fully managed from the "Total Cycle Management" interface and all Tucor Controllers can now schedule adjust from On Site Weather Station ET rate data or a nationwide network of weather data sites.



m a x i c o m <sup>2</sup>

## RAIN BIRD MAXICOM<sup>2</sup>®

The Maxicom<sup>2</sup> Irrigation Central Control Systems is designed for multi-site commercial or industrial irrigation applications. Hundreds of sites and weather sources can be controlled and monitored from one location.

A Maxicom<sup>2</sup> system utilizes a Central Controller installed at a primary location. Information is transmitted from this Central Controller to Cluster Control Units (CCU) or ESP-SITE Satellite Controllers in the field. The CCU acts as the system's "computer-in-the-field," allowing the ability to control hundreds of remote sites from one Central Controller. The CCU can monitor, communicate to, and manage as many as 28 ESP-SAT Satellite controllers or other field devices via a variety of hardwire and wireless communications options.

- ◆ Low Flow Alarm feature is designed to notify users when the flow in a designated section of the irrigation system falls below a pre-determined threshold level
- ◆ Ability to program to irrigate on Odd, Even, or Odd31 days
- ◆ Irrigation start days are easily scheduled to meet complex watering requirements
- ◆ Station operating times or the number of days between operation can be automatically adjusted in response to changing daily ET (Evapotranspiration) values supplied by a Rain Bird Weather Station or other ET source
- ◆ Cycle+Soak™ feature optimizes the application of water on sites with poor drainage sites, slopes, and heavy soil areas
- ◆ Operation of lighting systems (such as athletic field lighting), security gates, fountains, pumps, sensors, or other systems can also be managed from one central Maxicom<sup>2</sup> location

### Software Features:

Graphical User Interface (Windows)	Cycle+Soak™
Automated ET (with Min/Max ET)	Irrigation water windows
ET Checkbook™	Control of non-irrigation applications
Flo-Manager™	Event calendar scheduling
Flo-Watch™	Water usage logs

## MAXICOM<sup>2</sup>® CLUSTER CONTROL UNITS (CCU)



m a x i c o m <sup>2</sup>

**NOW  
AVAILABLE!**

- ★ 900Mghz Spread Spectrum Radio (no ongoing FCC frequency licensing required)
- ★ CCU now offers available GPRS / Cellular Modem Connection for Verizon and Sprint from Central Computer (cellular data service requires separate "from carrier" data plan)

Serve as an interface between the central controller and field satellites (ESP-MC-SAT Series) on the Maxicom<sup>2</sup> system.

- ◆ Operates up to 28 satellites, pulse decoders, or sensor decoders
- ◆ Operates up to SIX satellites, pulse decoders, or sensor decoders
- ◆ LED display that provides current satellite status
- ◆ Stores and executes schedule instructions from the central computer
- ◆ Utilizes Flo-Watch™ to monitor hydraulic conditions in the field, checking for breaks in system piping, or valve malfunctions. Will automatically identify where the problem is located, initiate valve or mainline shutdown to isolate the problem area, and continue with irrigation for the remaining available valves
- ◆ Utilizes Flo-Manager™ to monitor and sequence valves scheduled to be turned on, so expected demand does not exceed the hydraulic capacity of POCs



## ESP-SAT SERIES CONTROLLERS



### SATELLITE CONTROLLER FOR MAXICOM<sup>2</sup>® OR SITECONTROL

- ◆ Advanced water-management commercial-duty tool in an easy-to-use package
- ◆ Serves as a field satellite controller for the Rain Bird Maxicom<sup>2</sup> and SiteControl central control systems
- ◆ Four programs, a real-time calendar, Rain Bird's exclusive Cycle+Soak™ water management feature

#### Specifications:

Input required: 117 VAC ± 10 %, 60Hz

Output: 26.5 VAC, 2.5A

Station Load Capacity: Up to two 24 VAC, 7VA solenoid valves per station plus a master valve or pump start relay

Product Code	Description
ESP-12-SAT-TW-WM	12 stations, two wire, wall mount
ESP-16-SAT-TW-WM	16 stations, two wire, wall mount
ESP-24-SAT-TW-WM	24 stations, two wire, wall mount
ESP-32-SAT-TW-WM	32 stations, two wire, wall mount
ESP-40-SAT-TW-WM	40 stations, two wire, wall mount
ESP-12-SAT-LINK-WM	12 stations, Link radio, wall mount
ESP-16-SAT-LINK-WM	16 stations, Link radio, wall mount
ESP-24-SAT-LINK-WM	24 stations, Link radio, wall mount
ESP-32-SAT-LINK-WM	32 stations, Link radio, wall mount
ESP-40-SAT-LINK-WM	40 stations, Link radio, wall mount
ESP-12-SAT-TW-SS	12 stations, two wire, stainless steel pedestal
ESP-16-SAT-TW-SS	16 stations, two wire, stainless steel pedestal
ESP-24-SAT-TW-SS	24 stations, two wire, stainless steel pedestal
ESP-32-SAT-TW-SS	32 stations, two wire, stainless steel pedestal
ESP-40-SAT-TW-SS	40 stations, two wire, stainless steel pedestal
ESP-12-SAT-LINK-SS	12 stations, Link radio, stainless steel pedestal
ESP-16-SAT-LINK-SS	16 stations, Link radio, stainless steel pedestal
ESP-24-SAT-LINK-SS	24 stations, Link radio, stainless steel pedestal
ESP-32-SAT-LINK-SS	32 stations, Link radio, stainless steel pedestal
ESP-40-SAT-LINK-SS	40 stations, Link radio, stainless steel pedestal

## ESP-SITE SATELLITE SERIES

### 12, 16, 24, 32, 40 STATION FIELD SATELLITE

This controller combines the capabilities of the Cluster Control Unit (CCU) with all the power of an ESP-SAT controller. Powerful enough for large sites yet flexible for smaller applications.

- ◆ Stores and executes schedule instructions from the central computer
- ◆ Operates up to 40 stations
- ◆ Communicates with central computer via telephone, hardware, radio or fiber-optic cable
- ◆ Four programs with eight start times each allow mixed irrigation applications in a single controller
- ◆ Two master valve terminals, one programmable by station, provide better control
- ◆ 365-day calendar with leap year intelligence for one-time date and time setting
- ◆ Event day off option to set any day of the month as a non-watering day for all programs
- ◆ Programmable rain delay enables system to stay off for specified period with auto-restart
- ◆ Water budget by program provides adjustments from 0% to 300% in 1% increments



#### HOW TO SPECIFY: ESP-24SAT-2W

Model:	Mounting:	Number of Stations Satellite:
ESP (120VAC) IESP (230 VAC)	W: Metal Wall Mount S: Stainless Steel	12SITE: 12 stations 16SITE: 16 stations 24SITE: 24 stations 28SITE: 28 stations 32SITE: 32 stations 36SITE: 36 stations 40SITE: 40 stations

Other Rain Bird Central Control Products available at Horizon Distributors include: IQ System, MDC Two Wire Control System, SiteControl and related flow sensing, decoders and remote control applications. Please contact your local Horizon Sales Representative for more information on these products.

Note: Not available in all markets — please call for pricing information



- ◆ Powerful, yet simple-to-use software is ideal for large sites such as cities, business parks and school districts
- ◆ Central control software
- ◆ Simple To Use
- ◆ Microsoft® Windows-based software — daily operations and scheduling are made quick and easy
- ◆ ET-based watering, flow sensing and optimization, view water usage and compare to historical
- ◆ Communication options like radio, telephone, cellular, and Ethernet can be mixed and matched to meet system needs
- ◆ Stores irrigation programs in the computer while allowing irrigation control at the satellite level, ensuring the loss of a component does not result in the loss of irrigation across the system
- ◆ All centrals come with a minimum of two years of NSN support — unlimited 24-hour toll-free support with 24/7/365 emergency paging

### Three Choices Of Central Packages

- 1) Software only
- 2) Software and radio communications interface
- 3) Central controller, software and radio communications interface

**HORIZON IS THE EXCLUSIVE DISTRIBUTOR  
OF SENTINEL IN ARIZONA AND NORTHERN  
CALIFORNIA**

### Specifications and Features:

- ◆ Control up to 999 field satellites
- ◆ Group controllers into "systems" for system-wide adjustments:
  - Rain Days
  - Percent Adjust
  - ET-Adjustment from shared weather source
- ◆ Extensive reporting features:
  - Run time reports
  - Water usage
  - Alarms
  - Logging of system changes
- ◆ Water use, rain and ET accumulation
- ◆ Flow optimizing to maintain optimum flow and shorten water window
- ◆ Ability to redefine valve sequence without physically changing wire terminations in field satellite

### CENTRAL SOFTWARE/COMPUTER MODELS

Product Code	Description
SGIS-1-T	Software Only w/two years of NSN Support
SGIS-0-1	Software, Peripheral Hardware w/two years of NSN Support
SGIS-1-0	Software, Computer Equip, Peripheral Hardware w/two years of NSN Support

### NSN SUPPORT EXTENSION MODELS

Product Code	Description
SSE-T-1	1-year Extension for SGIS-0-1 of SGIS-1-T
SSE-T-3	3-year Extension for SGIS-0-1 of SGIS-1-T
SSE-C-1	1-year Extension for SGIS-1-0 (w/computer warranty)
SSE-C-3	3-year Extension for SGIS-1-0 (w/computer warranty)



- ◆ Decoder, Two Wire, Valve Controller to 204 Stations
- ◆ Modular, remote ready, flow-sensor ready
- ◆ Flow Sensing
- ◆ Reads, displays and reacts to under and over flow situations and track water usage. No additional circuit boards are required
- ◆ Options for three levels of surge protection
- ◆ Weather Based Irrigation
- ◆ Sentinel waters according to ET values by using one or a number of onsite weather stations
- ◆ Flip the toggle switch to manually operate stations
- ◆ Available Wireless Output Board(s), with Enclosure in 12 & 24 Stations Configurations to 96 Stations Maximum
- ◆ True Two-Way Communication
- ◆ Allows for changes in the field to be uploaded to the central computer and allows feedback to a hand held radio in stand-alone mode

#### Input:

- 120 VAC, 60 Hz
- 0.4A (maximum)
- ◆ Station output power:
  - 24 VAC
  - 0.25 Amps per station; 2 Amps maximum
- ◆ Station draw: Six stations and pump maximum (also limited by software)
- ◆ Surge protection: Level 4, 24V output boards, 20 KV @ 10 KVA
- ◆ UL Listed



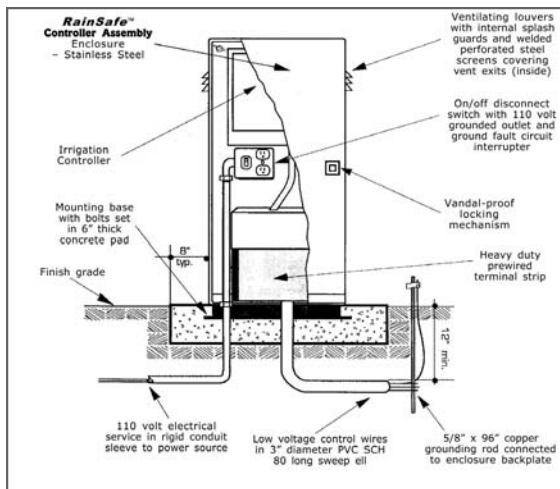
## TORO SENTINAL® CONTROLLER

#### Specifications and Features:

- ◆ 16 programs
- ◆ Eight start times per program
- ◆ 6-week or 365-day scheduling calendar
- ◆ Station runtimes from one minute to four hours and 15 minutes
- ◆ Global adjustment from 0% to 255%
- ◆ Percent adjust by program from 0% to 255%
- ◆ Ability to operate from one to six programs simultaneously
- ◆ Flow sensor ready
- ◆ Handheld remote ready
- ◆ Two sensor inputs included for rain sensors or other switch sensors
- ◆ Ability to connect to a laptop to download large station count programs
- ◆ Upgrade to a central computer system without additional field satellite hardware or costs
- ◆ Program single or multiple stations to operate sequentially or start a program or multiple programs with just a few keystrokes
- ◆ Ability to read open- or closed-contact switches in any station count configuration
- ◆ Current monitor will disable a station if excessive amp draw is detected
- ◆ Non-volatile memory will retain all programming and real-time data for 10 years
- ◆ Field-satellite-diagnostics capable when used with a troubleshooting kit reducing downtime and warranty costs
- ◆ Multi-language display: English, Spanish, French and Italian
- ◆ Operating Temperature: 14° to 140° F

#### OPTIONAL ACCESSORIES:

Product Code	Description
TRS	Wired RainSensor
TWRS/TWRFS	Wireless RainSensor or Wireless Rain/Freeze Sensor
TFS	Flow Sensors
SHHR	Hand Held Remote
SSAK	Sentinel Satellite Assembly with Keypad
SSAMN	Sentinel MapTo Assembly



### HORIZON RAINSAFE ENCLOSURES

#### Complete corrosion- and vandal-resistant system custom designed to your specifications.

The RainSafe™ Controller Enclosure Assembly offers complete protection for your valuable irrigation control system. The system is available with many pre-wired options, including a master valve relay suitable for two controllers, a pump start relay and a bypass assembly for moisture sensors, rain check devices or radio remote control. When you specify the controller model(s) you want along with the electrical options, Horizon will build a complete, ready-to-install system customized to your exact specifications.

#### Features:

- ◆ 100% stainless steel construction with brushed stainless steel finish
- ◆ Three-point locking mechanism, flush-mounted access handle, and heavy duty continuous hinge
- ◆ Removable, predrilled backboard for easy installation
- ◆ Stainless steel mounting hardware and template included

#### Benefits:

- ◆ Rustproof durability
- ◆ Hinged for maximum security
- ◆ Easy access to plans and scheduling information

#### Standard Components:

- ◆ Consists of a stainless steel, vandal-resistant enclosure, stainless steel predrilled removable backboard, controller, terminal strip and 117V outlet
- ◆ Electrical junction box contains a key-operated on/off switch and a duplex receptacle equipped with a ground fault interrupt circuit
- ◆ A prelabeled, prewired terminal strip clearly indicates the proper points of connection for all wiring

#### Assembly Options:

- ◆ Rain sensor WCS-DDC/WSS ENC: prohibits a cycle start during rain. Includes sensor bypass switch
- ◆ Rain switch bypass: Allows overriding of rain sensing devices
- ◆ Antenna: Permanent antenna for use with radio remote devices
- ◆ Remote ready: Permanent remote connector
- ◆ Master valve power assembly: Allows use of one master valve with multiple controllers
- ◆ Master valve replay: Allows the controller's 24V AC Master valve circuit to start a higher voltage pump motor
- ◆ Sensor bypass: Used to override up to four sensors
- ◆ RJ11 phone jack: Allows quick connection to telephone service
- ◆ Valve surge kit: Protects valve output circuit from field power surges
- ◆ Primary power surge kit: Protects internal components from primary power surges
- ◆ High temperature cooling: Thermostatically controlled fan with on/off switch operated by 110V AC to avoid overheating

# Water Management

## PUMPING SOLUTIONS

### **BARRETT PUMPS IRRIBOOST®**

Horizon is the exclusive distributor of Barrett pumps in the West.

- ◆ Heavy duty cast iron bronze fitted centrifugal commercial pumps with back-pullout design, mechanical seals, and 175 psi working pressure
- ◆ Industrial NEMA 4X corrosion resistant enclosures complete with industrial duty contactors, circuit breakers, and motor overload protectors. 600 VAC rated power and control wiring, panel compatible with all irrigation controllers
- ◆ Heavy duty Type L copper on systems under 300 GPM, and fusion bonded epoxy coated schedule 40 welded steel on systems over 300 GPM
- ◆ Industrial service full lug elastomer-lined, wafer-style butterfly valves or all bronze ball valves, and heavy duty cast iron, bronze fitted wafer silent check valves or all bronze stainless trim disk check valves on all systems

#### **Design assistance available:**

Specifications and drawings designed specifically for your application  
All Irriboost CAD drawings and specifications available on diskette

### **SMALL SYSTEMS**

#### **For low flow and pressure:**

- ◆ Designed primarily for low flow, low-to-medium boost applications such as residential or small commercial systems
- ◆ Utilizes a multistage end suction, close-coupled centrifugal pump
- ◆ 1/2 hp to 3/4 hp range
- ◆ 20 GPM flow rate or less
- ◆ 30 psi to 55 psi boost range
- ◆ 1 1/4" piping

#### **For low flow and moderate pressure:**

- ◆ Designed primarily for low flow, low-to-medium boost applications such as larger residential or small commercial systems
- ◆ Utilizes a multistage end suction, close-coupled centrifugal pump
- ◆ 3/4 hp to 1.5 hp range
- ◆ 35 GPM flow rate or less
- ◆ 30 psi to 65 psi boost range
- ◆ 1 1/4" to 2" piping

#### **For low to moderate flow and pressure:**

- ◆ Designed primarily for low flow, low-to-medium boost applications such as larger residential or small commercial systems
- ◆ Equipped with variable speed drive to provide constant pressure output
- ◆ Utilizes a multistage end suction, close-coupled centrifugal pump, or vertical multistage centrifugal pump
- ◆ 3/4 hp to 3 hp range
- ◆ 65 GPM flow rate or less
- ◆ 30 psi to 85 psi boost range
- ◆ 1 1/4" to 2" piping

**Please contact your local Horizon Representative  
for a site-specific pump quotation.**

### **SMALL TO LARGE BOOST PUMP SYSTEMS**

#### **For low to moderate flow, low to moderate pressure:**

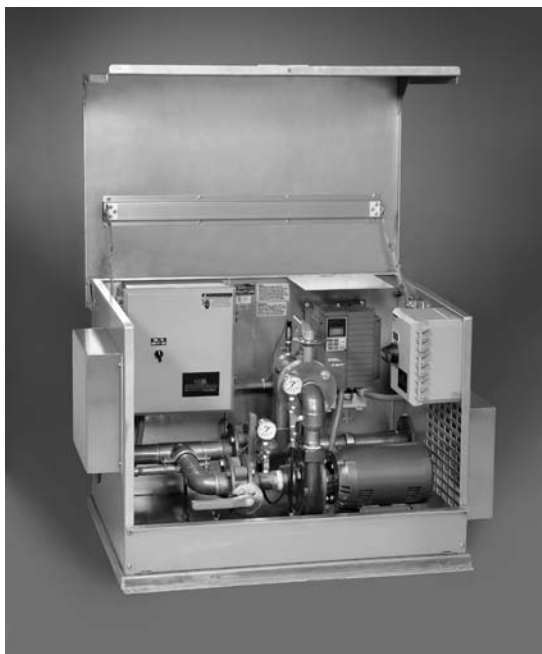
- ◆ Designed primarily for medium flow, low-to-medium boost applications such as small and medium sized commercial and park systems
- ◆ Utilizes a single stage end suction, close-coupled centrifugal pump
- ◆ 3/4 hp to 7.5 hp range
- ◆ 70 GPM flow rate or less
- ◆ 20 psi to 70 psi boost range
- ◆ 2" to 2 1/2" piping

#### **For moderate to high flow and pressure:**

- ◆ Designed primarily for medium-to-high flow, low-to-medium boost applications such as small-to-large sized commercial and park systems
- ◆ Utilizes a horizontal end suction, close-coupled centrifugal pump
- ◆ 2 hp to 75 hp range
- ◆ 50 GPM to 700 GPM flow rate range
- ◆ 0 to 80 psi boost range
- ◆ 2" to 6" piping

#### **For low to high flow, moderate to high pressure:**

- ◆ Designed primarily for low-to-medium flow, medium-to-high boost applications such as small-to-medium sized commercial and park systems with high pressure boost requirements
- ◆ Utilizes a vertical multistage centrifugal pump
- ◆ Works well with variable speed drive controls
- ◆ 3/4 hp to 40 hp range
- ◆ 5 GPM to 360 GPM flow rate range
- ◆ 30 psi to 200 psi boost range
- ◆ 2" to 6" piping



## RAIN BIRD COMMERCIAL PUMPS AND BOOSTER PUMPS



### Rain Bird offers a variety of pump station options to meet your needs including:

- ◆ CHIE Series (Single and Dual Pump VFD) — Flows up to 80 GPM
- ◆ Integrated Plug-n-Pump Stations (Models: D/DP/DPX) — Flows up to 300 GPM
- ◆ Intermediate Flow Pump Stations — Flows up to 750 GPM
- ◆ Main Irrigation Pump Stations — Flows up to 10,000 GPM
- ◆ Water Feature Pump Stations — Flows up to 10,000 GPM and Greater
- ◆ Additional Product Options include: Pump Manager and Filtration

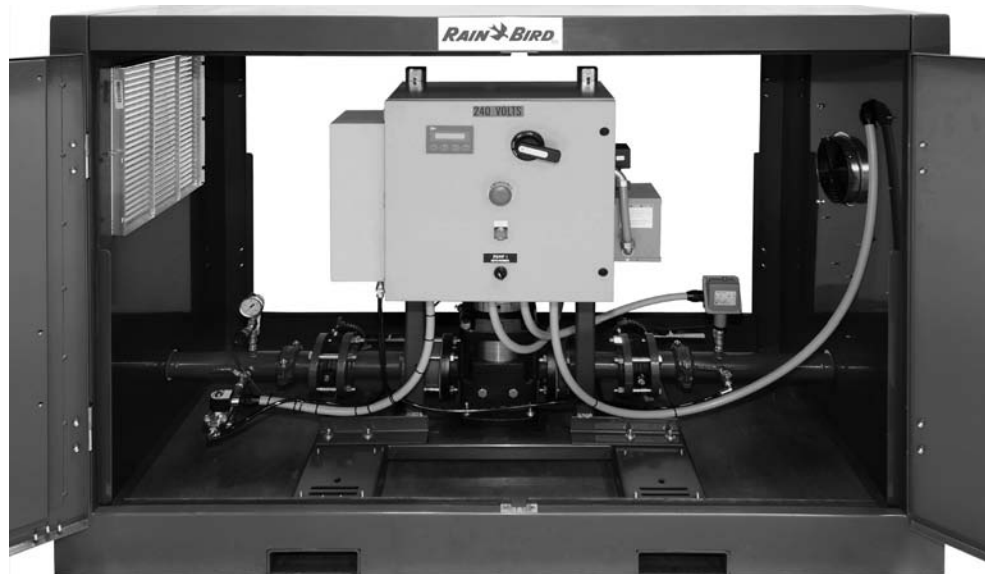
Pump Stations from Rain Bird feature a reliable Variable Frequency Drive (VFD). VFD technology has proven to be an efficient method to reduce energy costs and minimize system water.

Horizon Distributors supports the specification, sales and service of Rain Bird Pump Stations. Please contact your local Horizon Sales Representative for more information.

# Water Management

### Rain Bird Pump Station Product Line

Product	Flow (GPM)	Pumps (HP)	Applications
Integrated Plug-n-Pump - Marine	0 to 150	Up to 10	Large residential turf, drip, boost applications
Integrated Plug-n-Pump - PCE	0 to 300	Up to 30	Schools, Parks, Sports Field, Roads, Medians
Intermediate Flow Pump Station	0 to 750	Up to 60	Resorts, Large Parks, Nurseries, Zoos, Botanic Gardens, Racetracks, Stadiums
Large Commercial Pump Station	0 to 10,000	Up to 100 and greater	Large developments, Waterfalls, Water features



**HORIZON DISTRIBUTORS ALSO SUPPORTS PUMP SPECIFICATIONS FROM WATERTRONICS, FLOWTRONEX AND MUNRO PUMPS.**

# Equipment

**Line Trimmers**

**Hedge Trimmers**

**Edgers**

**Clean-Up**

**Saws**

**Mowers**

**Mid-Size Walk Behinds/  
Stand-On Mowers**

**Riders**

**Specialty Turf**

**Utility Vehicles**

**Accessories**

**Snow Plows**

**Reference**

WE SERVICE WHAT WE SELL!  
SEE PAGE 213 FOR HORIZON  
SERVICE CENTERS



**YOUR CHOICES FOR THE INDUSTRY'S  
BEST OUTDOOR POWER EQUIPMENT**





### SRM225

#### Fuel efficient, powerful tool.

- ◆ 21.2 cc Power Boost Vortex™ engine
- ◆ i-30™ starting system reduces starting effort by 30%
- ◆ 14.9 fl. oz. capacity see-through fuel tank
- ◆ 59" straight shaft with flex cable drive
- ◆ U Turn™ trimmer head
- ◆ Commercial duty air filtration system provides long engine life

### SRM230/ ECHSRM230S

#### Increased power and performance.

- ◆ 22.8 cc Power Boost Vortex™ engine delivers more power and reduced fuel consumption
- ◆ 59" flex shaft is designed to handle the toughest trimming and cutting requirements
- ◆ Die-cast fan cover with heavy-duty engine vibration reduction system
- ◆ High volume air filter for maximum filtration
- ◆ S-steel shaft drive

### SRM266

- ◆ 25.4 cc professional-grade, 2-stroke engine for outstanding performance
- ◆ 2-stage commercial-grade air filtration for long engine life
- ◆ Extra heavy-duty engine vibration reduction mount and rubber over-mold handles for operator comfort
- ◆ High-capacity Speed-Feed® head for larger line capacity
- ◆ i-30™ starting system for reduced effort starting
- ◆ New cylinder/piston plating for increased engine life

### SRM266T

#### The top-of-the-line choice for power, performance and torque.

- ◆ 25.4 cc professional-grade, 2-stroke engine for outstanding performance
- ◆ High-capacity Speed-Feed® head for larger line capacity
- ◆ 2-stage commercial-grade air filtration for long engine life
- ◆ 50% more cutting torque than the SRM-266
- ◆ Extra, heavy-duty vibration reduction system for operator comfort
- ◆ i-30™ starting system for reduced effort starting
- ◆ New cylinder/piston plating for increased engine life

### SRM280

- ◆ 28.1 cc Power Boost Vortex™ engine
- ◆ 21.6 fl. oz. capacity fuel tank
- ◆ 59" 4-layer flex cable
- ◆ ECHOmatic™ Pro-trimmer head

### SRM280T

#### The top-of-the-line choice for power, performance and torque.

- ◆ 28.1 cc Power Boost Vortex™ engine
- ◆ 59" steel drive shaft mounted in high quality isolite bearings for smooth, quick acceleration
- ◆ Large 21.6 fl. oz. see-through fuel tank delivers extended run times
- ◆ Commercial-grade felt air filtration for improved air quality and increased engine performance

Specifications	Product Code/Description						
	SRM225	SRM230	SRM230S	SRM266	SRM266T	SRM280	SRM280T
Engine Displacement (cc)	21.2	22.8	22.8	25.4	25.4	28.1	28.1
Carburetor (w/Purge Pump)	Rotary-Valve Diaphragm	Rotary-Valve Diaphragm	Rotary-V alve Diaphragm	Rotary-Valve Diaphragm	Rotary-V alve Diaphragm	Rotary-Valve Diaphragm	Rotary-Valve Diaphragm
Fuel Capacity (fl. oz.)	14.9	19.1	19.1	16.9	16.9	21.1	21.1
Shaft Length (in.)	59	59	59	59	59	59	59
Shaft Type	Straight	Straight	Straight	Straight	Straight	Straight	Straight
Starting System	i-30™	Standard	Standard	i-30™	i-30™	Standard	Standard
Cutting Head	Speed Feed	Speed Feed	Speed Feed	High-Capacity Speed Feed	High-Capacity Speed Feed	High-Capacity Speed Feed	ECHOmatic™
Cutting Swath (in.)	17	17	17	17	17	17	17
Drive Shaft	4-Layer Cable	4-Layer Cable	4-Layer Flex Cable	4-Layer Cable	4-Layer Flex Cable	4-Layer Cable	4-Layer Cable
Dry Weight (lbs.)	12.1	12.2	12.2	13.4	13.6	13.4	13.5
Commercial Warranty	2 years	2 years	2 years	2 years	2 years	2 years	2 years

# shindaiwa

## T235

**Legendary Shindaiwa features and improved cutting performance.**

- ◆ Solid drive shaft
- ◆ Ergonomic grips
- ◆ 2-stage air filtration
- ◆ Full-wrap tank stand
- ◆ High-capacity Speed-Feed 400 cutting head



## T242

- ◆ 23.9 cc engine
- ◆ 22.3 fl. oz. fuel tank
- ◆ 1-piece electronic ignition
- ◆ Heavy-duty 3-piece forged crankshaft
- ◆ Low vibration, 180° loop handle



## T254

**Workhorse trimmer with 2/4 stroke engine technology and more torque!**

- ◆ 24.5cc 2/4 Stroke Engine Technology
- ◆ High Torque Design
- ◆ Vibration Reducing Handle Mounts
- ◆ Rubber Overmolded Front Handle
- ◆ Tank Stand



## T282

**Well balanced machine with the lineage of the legendary T27 and T270 trimmers. T282X blade ready model also available.**

- ◆ 28.8cc Commercial-Grade Engine
- ◆ Solid Steel Drive Shaft
- ◆ Rubber Overmold Front Handle
- ◆ Tank Stand
- ◆ Blade-Ready Model Available (T282X)



## T344

**Comparatively light weight based on its engine class and 2/4 stroke engine technology.**

- ◆ 34.0cc 2/4 Stroke Engine Technology
- ◆ High Torque Design
- ◆ Vibration Reducing Handle Mounts
- ◆ Rubber Overmolded Front Handle
- ◆ Tank Stand



## TURFGRO

TurfGro Trimmerline delivers superior wear, outstanding toughness, and minimal line split and fraying. TurfGro is available in Diamond, Blazer or Vortex line. Try Horizon's TurfGro Trimmerline today! **See page 212** for more information.

	Product Code/Description				
Specifications	T235	T242	T282	T254	T344
Engine Displacement (cc)	21.2	23.9	28.9	24.5	34
Fuel Capacity (fl. oz.)	14.9	23.3	25.4	20.1	22.4
Dry Weight (lbs.)	12.1	11.7	13.4	12.6	15
Commercial Warranty	2 years	2 years	2 years	2 years	2 years



### GT225

**Lightweight, curved shaft trimmer features reduced-effort i-30™ starting technology.**

- ◆ 21.2 cc Power Boost Vortex™ engine
- ◆ 30% reduction in starting effort
- ◆ 2-line Rapid-Loader
- ◆ 48" curved shaft
- ◆ Ergonomic right-hand throttle grip with on-off switch



### GT230

- ◆ 22.8 cc professional-grade, 2-stroke engine for outstanding performance
- ◆ 2-line ECHOMATIC™ trimmer head for easy bump-feed line advancement
- ◆ 52" curved shaft for longer reach
- ◆ Engine vibration-reduction system for operator comfort
- ◆ Ergonomic, adjustable left-hand grip for custom fit



Specifications	Product Code/Description	
	GT225	GT230
Engine Displacement (cc)	21.2	22.8
Carburetor (w/Purge Pump)	Rotary-Valve Diaphragm + C664	Rotary-Valve Diaphragm
Fuel Capacity (fl. oz.)	14.9	19.1
Shaft Length (in.)	48	52
Shaft Type	Curved	Curved
Starting System	i-30™	Standard
Cutting Head	Rapid-Loader™	ECHOMATIC™
Cutting Swath (in.)	16	16
Drive Shaft	4-Layer Cable	Flexible
Nylon Line (in. dia.)	.080 Cross-Fire®	.080 Cross-Fire®
Dry Weight (lbs.)	10.2	11.5
Commercial Warranty	2 years	2 years

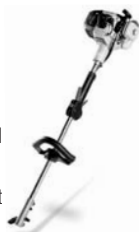
## SPLIT BOOM



### PAS230

**Ultimate in versatility for professional and residential applications.**

- ◆ 22.8 cc Power Boost Tornado™ engine is powerful, fuel efficient and environmentally clean
- ◆ Single-source power head fits all PAS (Pro- Attachment Series) attachments



### PAS266

- ◆ 25.4 cc Power Boost Vortex™ engine for plenty of power
- ◆ i-30™ technology reduces starting effort by 30%
- ◆ Compatible with 11 different ECHO attachments for complete versatility



**AVAILABLE ATTACHMENTS  
(available at your local Horizon store):**

Product Code	Description
99944200470	Edger
99944200480	Hedge Clipper
99944200510	Tiller/Cultivator
99944200530	Power Pruner®
99944200540	Standard Trimmer Head
99944200550	ProSweep™
99944200560	ProThatch™
99944200595	180° Articulating Hedge Clipper (HCA)
99944200600	Brushcutter
99944200610	Rapid-Loader™ Trimmer Head
99944200620	ProPaddle™



### M242

- ◆ Whole tool chest that works off one power source
- ◆ Quick and easy changing of eight different attachments
- ◆ Durable Shindaiwa 242-series engine



### M254

**Shindaiwa's premium Multi-Tool power source, using 2/4 stroke engine for maximum torque.**

- ◆ 24.5cc 2/4 Stroke Engine Technology
- ◆ Quick-change Coupler
- ◆ Accommodates 9 Attachments



**AVAILABLE ATTACHMENTS  
(available at your local Horizon store):**

Product Code	Description
I65001	Trimmer: Converts to a professional string trimmer.
I65003	Articulated Hedge Trimmer: 10-position hedge trimmer attachment has 150° articulating gearcase.
I65002	Pole Pruner Attachment: Nine feet of length with 8", 10" or 12" bar lengths.
I78703	Multi-Purpose Trimmer Tool
I65010	Lawn Edger Attachment: Edging made easy with this light-weight add-on.
I80264	PowerBroom™ Attachment: Fast-rotating, versatile sweeping action for most any job.

**HC152**

- ◆ 21.2 cc professional-grade, 2-stroke engine for outstanding performance
- ◆ 20" double-sided, double-reciprocating RazorEdge™ blades are precision ground and laser cut for long-lasting sharpness
- ◆ Commercial-duty air filtration system for long engine life
- ◆ Large ergonomic front handle with safety guard for increased comfort and control
- ◆ Large rear handle provides comfort and great control
- ◆ Rigid support bar allows straighter and more precise cuts

**HC155**

- ◆ 21.2 cc professional-grade, 2-stroke engine for outstanding performance
- ◆ i-30™ starting system for reduced effort starting
- ◆ 24" double-sided, double-reciprocating RazorEdge™ blades are precision ground and laser cut for long-lasting sharpness
- ◆ Redesigned gear box provides dependability and durability
- ◆ Commercial-duty air filtration system for long engine life
- ◆ Ergonomic front and rear handles for a comfortable grip

**HC165**

- ◆ 21.2 cc Power Boost Vortex™ engine provides power with light weight
- ◆ i-30™ technology reduces starting effort by 30%
- ◆ 5-position rotating rear handle for a variety of cutting positions
- ◆ RazorEdge™ blades for long-lasting sharpness and enhanced cutting performance

**HC185****Commercial-grade 30" double-sided hedge trimmer.**

- ◆ 21.2 cc Power Boost Vortex™ engine provides power with light weight
- ◆ i-30™ technology reduces starting effort by 30%
- ◆ 5-position rotating rear handle for a variety of cutting positions
- ◆ RazorEdge™ blades for long-lasting sharpness and enhanced cutting performance



Specifications	Product Code/Description			
	HC150	HC155	HC165	HC185
Engine Displacement (cc)	21.2	21.2	21.2	21.2
Carburetor (w/Purge Pump)	Rotary-Valve Diaphragm	Rotary-Valve Diaphragm	Rotary-Valve Diaphragm	Rotary-Valve Diaphragm
Starting System	Standard	Standard	i-30™	i-30™
Fuel Capacity (fl. oz.)	16.9	16.9	16.9	16.9
See-Through Fuel Tank	Standard	Standard	Standard	Standard
Blade Length (in.)	20	24	24	30
Blade Type	Double-Sided, Double-Reciprocating	Double-Sided, Double-Reciprocating	Double-Sided, Double-Reciprocating	Double-Sided, Double-Reciprocating
Dry Weight (lbs.)	10.7	11.5	12.1	12.6
Commercial Warranty	1 year	1 year	1 year	1 year

# shindaiwa

**DH232-24**

**The DH232-24 is the lightest, full-featured double-sided hedge trimmer available. A 180 degree rotating handle increases its versatility.**

- ◆ 21.2 cc professional-grade, 2-stroke engine
- ◆ 180 degree rotating rear handle
- ◆ Reduced effort starter
- ◆ Spring anti-vibration system
- ◆ Forward-facing exhaust tube
- ◆ Chrome-plated blades with aluminum support bar

**DH232-30**

**The DH232-30 is a lightweight, full-featured workhorse with a 180 degree rotating handle for operation in a variety of positions.**

- ◆ 21.2 cc professional-grade, 2-stroke engine
- ◆ 180 degree rotating rear handle
- ◆ Reduced effort starter
- ◆ Spring anti-vibration system
- ◆ Forward-facing exhaust tube
- ◆ 30" Chrome-plated blades with aluminum support bar



### shindaiwa

#### DH254-24

**Newly redesigned, the DH254-24 has high blade speed and a wide tooth gap for heavy cutting.**

- ◆ 24.5cc 2/4 Stroke Engine Technology
- ◆ Chrome-plated Blades
- ◆ 43.3" Blade Length
- ◆ Industry Leading Blade Speed
- ◆ Vibration Reducing Handle Mounts
- ◆ Rubber Overmolded Front Handle



#### DH254-30

**The DH254-30 features a longer blade than the DH254-24 but has the same high blade speed and a wide tooth gap for heavy cutting.**

- ◆ 24.5cc 2/4 Stroke Engine Technology
- ◆ Chrome-plated Blades
- ◆ 48" Blade Length
- ◆ Industry Leading Blade Speed
- ◆ Vibration Reducing Handle Mounts
- ◆ Rubber Overmolded Front Handle



## SINGLE SIDED

### ECHO

#### HC235

- ◆ 21.2 cc Power Boost Vortex™ engine provides power with light weight
- ◆ i-30™ technology reduces starting effort by 30%
- ◆ 30" single-sided, double-reciprocating



#### HC245

**Commercial-grade 40" single-sided hedge trimmer.**

- ◆ 21.2 cc Power Boost Vortex™ engine provides power with light weight
- ◆ i-30™ technology reduces starting effort by 30%



Specifications	Product Code/Description	
	HC235	HC245
Engine Displacement (cc)	21.2	21.2
Carburetor (w/Purge Pump)	Rotary-Valve Diaphragm	Rotary-Valve Diaphragm
Starting System	i-30™	i-30™
Fuel Capacity (fl. oz.)	16.9	16.9
Blade Length (in.)	30	40
Blade Type	Single Sided, Double-Reciprocating	Single Sided, Double-Reciprocating
Dry Weight (lbs.)	12.8	13.9
Commercial Warranty	2 years	2 years

### LITTLE WONDER®

#### LIT2230

- ◆ 30" single-sided hedge trimmer
- ◆ Double reciprocating blades for reduced vibration and heavier cuts
- ◆ 21.22 cc commercial grade engine, extended engine life, rated between 600 and 800 hours



### shindaiwa

#### HT232-30

**The HT232-30 is the lightest, single-sided hedge trimmer available. The standard debris shield allows easy sweeping of material off the hedges.**

- ◆ 21.2 cc professional-grade, 2-stroke engine22.5 cc premium Shindaiwa engine
- ◆ Front and rear rubber, over-mold handles
- ◆ Reduced effort starter
- ◆ Anti-vibration system
- ◆ Forward-facing exhaust tube
- ◆ 30" Chrome-plated blades with aluminum support bar
- ◆ Debris shield included



#### HT232-40

**The HT232-40 is a lightweight, long-reach hedge trimmer that includes a debris shield for easy sweeping of material.**

- ◆ 21.2 cc professional-grade, 2-stroke engine22.5 cc premium Shindaiwa engine
- ◆ Front and rear rubber, over-mold handles
- ◆ Reduced effort starter
- ◆ Anti-vibration system
- ◆ Forward-facing exhaust tube
- ◆ 40" Chrome-plated blades with aluminum support bar
- ◆ Debris shield included



# shindaiwa

## HT254-24

**The HT254-24 has a 40" blade coupled with 2/4 stroke engine power and single-sided cutting performance.**

- ◆ 24.5cc 2/4 stroke engine technology
- ◆ Chrome-plated blades
- ◆ Industry leading blade speed
- ◆ Vibration reducing handle mounts
- ◆ Rubber overmolded front and rear handles



## HT254-30

**2/4 stroke engine power with multi-position use and immediate throttle response.**

- ◆ 24.5cc 2/4 Stroke Engine
- ◆ Chrome-plated Blades
- ◆ 48" Blade Length
- ◆ Industry Leading Blade Speed
- ◆ Vibration Reducing Handle Mounts
- ◆ Rubber Overmolded Front and Rear Handles



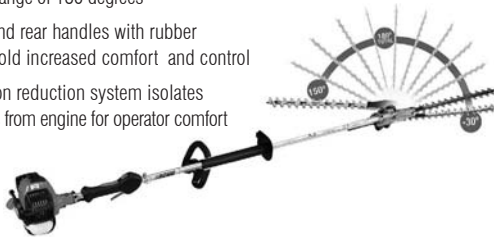
## ARTICULATING

# ECHO

## HCA266

**25.4 cc professional-grade, 2-stroke engine for outstanding performance**

- ◆ 25.4 cc articulating hedge trimmer with 59" shaft
- ◆ i-30TM starting system for reduced effort starting
- ◆ 18" double-sided, double-reciprocating RazorEdge blades for long-lasting sharpness
- ◆ 2-stage commercial-grade air filtration for long engine life
- ◆ Articulating gear case allows blade adjustment in 15 degree increments with a total range of 180 degrees
- ◆ Front and rear handles with rubber over-mold increased comfort and control
- ◆ Vibration reduction system isolates handles from engine for operator comfort



# shindaiwa

## AH242

- ◆ 22" double reciprocating blades, 93" overall length
- ◆ Ideal for professionals who need the extended reach for tall trimming jobs
- ◆ Provides 150° of articulation (11 positions)
- ◆ Solid steel drive shaft system



# shindaiwa

## AHS242

- ◆ 22" double reciprocating blades, 66" overall length
- ◆ Provides 135° of articulation (10 positions)
- ◆ Mid-reach shaft is safer compared to standard single-sided hedge trimmer
- ◆ Solid steel drive shaft system



## AH254

**A powerful 2/4 stroke engine and a 93" length allow shaping of just about any hedge.**

- ◆ 24.5cc 2/4 Stroke Engine Technology
- ◆ 11 Position - 150 ° Articulating Blades
- ◆ Chrome-plated Blades
- ◆ Vibration Reducing Engine Mount
- ◆ Rubber Overmolded Front and Rear Handles



## AHS254

**A high-torque 2/4 stroke engine and a short shaft make it easily maneuverable and perfect for low shrubs.**

- ◆ 24.5cc 2/4 Stroke Engine Technology
- ◆ 10 Position - 135 ° Articulating Blades
- ◆ Chrome-plated Blades
- ◆ Vibration Reducing Engine Mount
- ◆ Rubber Overmolded Front and Rear Handles



Specifications	Product Code/Description				
	HCA266	IAH242	IHS242	IAAH254	IHS254
Engine Displacement (cc)	25.4	23.9	23.9	24.5	24.5
Range of Articulation	180" - 15 position	150" - 11 position	135" - 10 position	150" - 10 position	135" - 10 position
Fuel Capacity (fl. oz.)	16.9	23.3	23.3	20.1	20.1
Dry Weight (lbs.)	15.3	13.6	13.2	14.1	14
Overall Length (in.)	77"	94"	66.2	93.3	65.7
Commercial Warranty	2 years	2 years	2 years	2 years	2 years



### SHC225

#### 21.2cc Hedge trimmer with 33" shaft and i-30 starter.

- ◆ 21.2 cc Power Boost Vortex engine
- ◆ 30% reduction in starting effort
- ◆ 33" shaft length limits stooping to cut low growth 20" double-sided, double-reciprocating RazorEdge blades Commercial-duty air filtration system
- ◆ Vibration reduction system for increased comfort



### SHC225S

#### All the features and benefits of the SCH225 with reduced shaft length for great maneuverability and outstanding balance.

- ◆ 20" shaft length limits stooping to cut low growth



### SHC266

- ◆ 25.4 cc professional-grade, 2-stroke engine for outstanding performance
- ◆ i-30TM starting system for reduced effort starting
- ◆ 20" double-sided, double-reciprocating RazorEdge blades for long-lasting sharpness
- ◆ 2-stage commercial-grade air filtration for long engine life
- ◆ 51" shaft enables operator to trim tall hedges
- ◆ 7 degree angled shaft provides a wide-angle view for trimming complex shapes
- ◆ Front and rear handles with rubber over-mold increased comfort and control
- ◆ Vibration reduction system isolates handles from engine for operator comfort



Specifications	Product Code/Description		
	SHC225	SHC225S	SHC266
Engine Displacement (cc)	21.2	21.2	25.4
Carburetor (w/Purge Pump)	Rotary-Valve Diaphragm	Rotary-Valve Diaphragm	Rotary-Valve Diaphragm
Starting System	i-30™	i-30™	i-30™
Fuel Capacity (fl. oz.)	14.9	14.9	16.9
See-Through Fuel Tank	Standard	Standard	Standard
Blade Length (in.)	20	20	20
Shaft Length (in.)	33	20	51
Cutter Type	Double sided Double-reciprocating	Double sided Double-reciprocating	Double sided Double-reciprocating
Dry Weight (lbs.)	13.4	12.6	14.5
Commercial Warranty	2 years	2 years	2 years

**28RC**

**Uses four 8" wheels and a 3.5 hp Briggs & Stratton engine. A favorite with commercial users.**

- ◆ Four-wheel design features exclusive, patented design with low center of gravity for perfect balance and control
- ◆ 90% self-propelled
- ◆ Tilts to any angle

**STICK****PE225**

- ◆ 21.2 cc Power Boost Vortex™ engine
- ◆ Pivoting mechanism allows fast, easy non-slip adjustment to any cutting depth
- ◆ Durable plastic debris shield with heavy-duty wheel height adjustment

**PE230**

- ◆ Commercial-grade 22.8 cc Power Boost Tornado™ engine
- ◆ Gear case provides over 30% more cutting torque
- ◆ New open-face, die-cast design significantly reduces clogging

**PE266/ECHPE266S**

**Powerful performance, innovative features.**

- ◆ 25.4 cc professional-grade, 2-stroke engine for outstanding performance
- ◆ i-30™ starting system for reduced effort starting
- ◆ 2-stage commercial-grade air filtration for long engine life
- ◆ Clog-resistant, open-face metal shield for reduced clogging
- ◆ New cylinder/piston plating system for increased engine life
- ◆ Vibration-reducing engine mount and cushioned left and right handles provide great operator comfort

**PE280**

**Top-of-the-line edger in a new class of performance.**

- ◆ 28.1 cc Power Boost Vortex™ engine
- ◆ 59" curved shaft with flex cable drive
- ◆ 21.6 fl. oz. capacity see-through fuel tank



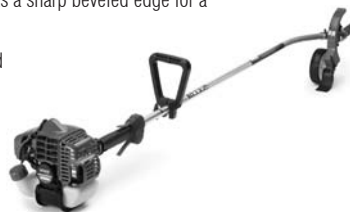
Specifications	Product Code/Description			
	PE225	PE230	PE266/ECHPE266S	PE280
Engine Displacement (cc)	21.2	22.8	25.4	28.1
Carburetor (w/Purge Pump)	Rotary-Valve Diaphragm	Rotary-Valve Diaphragm	Rotary-Valve Diaphragm	Rotary-Valve Diaphragm
Fuel Capacity (fl. oz.)	14.9	19.6	16.9	21.6
Starting System	i-30™	Standard	i-30™	Standard
Debris Shield	High-Impact Nylon	Die-Cast Metal	Die-Cast Metal	Die-Cast Metal
Blade Length (in.)	8	8	8	8
Blade Thickness (in.)	0.090	0.090	0.090	0.090
Dry Weight (lbs.)	13.2	13.4	15.4	15.2
Commercial Warranty	2 years	2 years	2 years	2 years

# shindaiwa

## LE242

**Next generation 2-stroke technology that meets very stringent emission standards.**

- ◆ 23.9 cc, 1.1 hp 2-stroke engine
- ◆ Cyclone™ Edger Blade has a sharp beveled edge for a clean and long-lasting cut
- ◆ Heavy-duty 3-piece forged crankshaft



## LE254

**With a powerful 2/4 stroke engine, the LE254 has more torque to get the job done faster.**

- ◆ 24.5cc 2/4 Stroke Engine Technology
- ◆ Height-adjustable Guide Wheel
- ◆ Open-face Shield
- ◆ Steel Skid Plate



Specifications	Product Code/Description	
	ILE242	ILE254
Engine Displacement (cc)	23.9	24.5
Carburetor	Walbro Barrel-Valve	Walbro Barrel-Valve
Dry Weight (lbs.)	12.8	14
Power Output (hp)	1.1	1.1
Fuel Capacity (fl. oz.)	21	20.1
Overall Length (in.)	68.6	69.7

## BED REFINER

# ECHO

## BRD280

**The BRD-280 cuts a crisp, beveled groove along the turf edge, leaving a professional, manicured finish.**

- ◆ 28.1 cc Power Boost Vortex engine
- ◆ Unique, six-finger blade geometry
- ◆ Rubber throttle control handle
- ◆ 59" straight shaft with flex cable drive
- ◆ Over-sized high-impact nylon shield with guide marker
- ◆ Large, adjustable support wheel
- ◆ 21.6 fl oz. Capacity see-through fuel tank
- ◆ 7.75" x 2.5" replaceable steel blade with carbide tips



Specifications	Product Code/Description	
	BDR280	
Engine Displacement (cc)	28.1	
Carburetor (w/Purge Pump)	Rotary-Valve Diaphragm	
Fuel Capacity (fl. oz.)	21.6	
Starting System	Standard	
Debris Shield	High-Impact Nylon	
Blade Length (in)	7.75	
Blade Thickness (in)	2.5	
Dry Weight (lb)	18	
Commercial Warranty	1 year	



## PB-265LN

- ◆ 25.4 cc professional-grade, 2-stroke engine for outstanding performance
- ◆ i-30™ starting system for reduced effort starting
- ◆ 375 CFM and 158 MPH performance
- ◆ Low noise, 64 dB(A)\* output for noise sensitive environments
- ◆ Padded backrest and shoulder straps for comfort
- ◆ Posi-loc™ pipes for a secure connection
- ◆ Variable speed throttle with cruise control for operator convenience



## PB-460LN

**With patented sound attenuation technology, only 65 dB(A) per ANSI B175.2002 at wide-open throttle.**

- ◆ 380 cfm air volume and 175 mph air force at the pipe
- ◆ Rugged frame protects vital engine components while maintaining serviceability
- ◆ Industry-leading sound technology



## PB-500H/PB-500T

**Comfortable operation with superior air filtration and increased performance.**

- ◆ 50.8 cc Power Boost Vortex™ engine with 450 cfm
- ◆ Leaf guard prevents leaves and rubbish from entering airtake
- ◆ Hip or tube-mounted throttle
- ◆ 61.2 fl. oz. see-through fuel tank



## PB-755SH/PB-755ST

**Powerful performance coupled with ease of use and maintenance**

- ◆ 63.3 cc professional-grade, 2-stroke engine for outstanding performance
- ◆ Extra flexible tube for cold weather operation
- ◆ Hip-mounted throttle with cruise control for operator convenience
- ◆ Padded backrest and shoulder straps for comfort
- ◆ Pleated, automotive-style air filter for superior filtration



## PB-760LNH/PB-760LNT

- ◆ 535 CFM and 214 MPH performance
- ◆ 63.3cc professional-grade, 2-stroke engine
- ◆ Exclusive vented back pad for user comfort in hot weather
- ◆ Low noise, 65dB(A) output for noise sensitive environments
- ◆ Padded backrest and shoulder straps for comfort
- ◆ Side-mounted, heavy-duty, dual-stage air filtration for long engine life
- ◆ Variable speed hip-mounted throttle with cruise control for operator convenience



## PB-770H/PB-770T

**Echo's most powerful blower featuring hip-mounted throttle control**

- ◆ 63.3 cc Power Boost Tornado engine
- ◆ Easy-to-reach hip-mounted throttle with cruise control (H) or convenient tube-mounted throttle with cruise control (T)
- ◆ Side-mounted, heavy-duty, dual-stage air filtration
- ◆ Padded backrest and shoulder straps
- ◆ Exclusive vented back pad for user comfort in hot weather
- ◆ Leaf guard prevents leaves and rubbish from entering airtake
- ◆ 68 fl. oz. see-through fuel tank



Specifications	Product Code/Description					
	PB-265LN	PB-460LN	PB-500H/ PB-500T	PB-755SH/ PB-755ST	PB-760LNH/ PB-760LNT	PB-770H/ PB-770T
Type	Backpack	Backpack	Backpack	Backpack	Backpack	Backpack
Engine Displacement (cc)	25.4	44	50.8	63.3	63.3	63.3
Carburetor (w/Purge Pump)	Rotary-Valve Diaphragm	Butterfly-Valve Diaphragm (w/o purge pump)	Butterfly-Valve Diaphragm	Rotary	Butterfly-Valve Diaphragm	Rotary-Valve Diaphragm
Starting System	i-30™	Standard	Standard	Standard	Standard	Standard
Fuel Capacity (fl. oz.)	21	64	51.8	68.3	47.3	68.3/
Average Air Volume (cfm-pipe)	375	380	465	651	535	765
Maximum Air Speed (mph-pipe)	158	175	195	233	214	204
dB(A)	64	65	70	74	65	74
Dry Weight (lbs.)	13.3	26.4	22.9	24.7	26.1	24.3/23.8
Commercial Warranty	2 years	2 years	2 years	2 years	2 years	2 years

### shindaiwa

#### EB-508RT

**Entry-level commercial backpack blower offers light weight and solid performance at an affordable price.**

- ◆ 50.8 cc professional-grade, 2-stroke engine
- ◆ Light weight for ease-of-use
- ◆ Grouped controls including cruise control for comfortable operation
- ◆ Posi-loc™ ensures secure pipe connection



#### EB-633RT

**High-performance blower designed with innovative efficiency.**

- ◆ 63.3 cc engine with 625 cfm
- ◆ Heavy-duty, commercial-grade air filter system
- ◆ Extra-flexible tube for easy cold weather operation
- ◆ Easy-to-reach tube mounted throttle with "cruise control"



#### EB-802/EB-802RT

**Reliable 2-stroke engine with a tube-mounted throttle and low noise "hush mode".**

- ◆ High Quality 2-Stroke Engine
- ◆ Comfortable Back and Shoulder Pads
- ◆ Large Fuel Tank Capacity



#### EB-854/EB-854RT

**Hip-mounted throttle and a unique heat sensor that keeps the blower from overheating due to leaf clogging.**

- ◆ Large 79.7cc 2/4 Stroke Engine Technology
- ◆ Fastest Backpack Air Speed at 213 MPH
- ◆ Comfortable Back and Shoulder Pads



Specifications	Product Code/Description			
	EB-508RT	EB-633RT	EB-802/ EB-802RT	EB-854/ EB-854RT
Type	Backpack	Backpack	Backpack	Backpack
Engine Displacement (cc)	50.8	63.3	79.2	79.7
Dry Weight (lbs.)	22.9	24.9	22.9	26.2
Fuel Capacity (fl. oz.)	57.8	68.3	67.6	67.6
dB(A)	70	74	76	75
Air Volume @ Nozzle	645 CFM	651 CFM	695 CFM	722 CFM
Maximum Air Speed	195 mph	233 mph	243 mph	221 mph
Average Air Speed @ Nozzle	163 mph	195 mph	203 mph	185
Commercial Warranty	2 years	2 years	2 years	2 years

**PB-250LN****Outstanding low-noise performance and lightweight.**

- ◆ 25.4 cc professional-grade, 2-stroke engine for outstanding performance
- ◆ 391 CFM and 165 MPH performance
- ◆ Exclusive curved blower tube provides rotational control to reduce user fatigue
- ◆ Grouped controls including throttle with cruise
- ◆ Low noise, 65 dB(A)\* output for noise sensitive environments
- ◆ Posi-loc™ pipes for a secure connection

**PB-255LN****Professional features with low-noise performance.**

- ◆ 25.4 cc professional-grade, 2-stroke engine for outstanding performance
- ◆ 354 CFM and 191 MPH performance
- ◆ Low noise, 64 dB(A)\* output for noise sensitive environments
- ◆ Parallel handles aid in directional operation
- ◆ Flared pipe for increased air speed
- ◆ Posi-loc™ pipes for a secure connection
- ◆ Rubber top handle grip for more comfort

**ES-255****Loaded with professional features and specially designed for commercial-duty property maintenance.**

- ◆ 25.4 cc Power Boost Vortex™ engine
- ◆ 30% reduction in starting effort
- ◆ Positive locking collar secures pipe to blower
- ◆ Patented 4-blade shredding mechanism



Specifications	Product Code/Description		
	PB-250LN	PB-255LN	ES-255
Type	Handheld	Handheld	Handheld
Engine Displacement (cc)	25.4	25.4	25.4
Carburetor	Rotary	Diaphragm	Rotary Valve Diaphragm
Starting System	Standard	Standard	i-30™
Fuel Capacity (fl. oz.)	16.9	16.9	16.2
Average Air Volume	391	354	354 CFM
Maximum Air Speed	165	191	69
dB(A)	65	64	191mph
Dry Weight (lbs.)	9.9	10.4	11.8
Commercial Warranty	2 years	2 years	2 years

**EB-212****Lightweight 2-stroke handheld blower for landscape clean-up jobs.**

- ◆ 21.2cc professional-grade, 2-stroke engine
- ◆ Light weight for ease-of-use
- ◆ Grouped controls including cruise control for comfortable operation
- ◆ Includes flared end pipe for moving wet debris



# shindaiwa

## EB-254

**2/4 stroke engine technology with a low-tone sound and lightweight.**

- ◆ Low-Tone 24.5cc 2/4 Stroke Engine
- ◆ Comfortable Handle Grip
- ◆ All Position Operation



## EB-344

**2/4 stroke engine technology with a low-tone sound and lightweight.**

- ◆ Largest Displacement Handheld Blower
- ◆ Comfortable Handle Grip
- ◆ All Position Operation



Specifications	Product Code/Description		
	EB-212	EB-254	EB-344
Engine Displacement (cc)	21.2	24.5	34
Dry Weight (lbs.)	8.8	10.8	11.2
Fuel Capacity (fl. oz.)	16.9	20.4	20.4
dB(A)	65	68	71
Air Volume @ Nozzle	290 CFM	310 CFM	(Round Pipe) 348 CFM (Flared Pipe) 375 CFM
Maximum Air Speed @ Nozzle	150 mph	205 mph	(Round Pipe) 230 mph (Flared Pipe) 213 mph
Average Air Speed @ Nozzle	123 mph	170 mph	(Round Pipe) 191 mph (Flared Pipe) 176 mph

## POWER BROOM

# shindaiwa

## PS-344

**From construction sites and forest parks to golf courses and roadsides, the PB3410 PowerBroom™ lets you clean in a fraction of the time.**

- ◆ Features patented 3410-series Shindaiwa C4 Technology® engine
- ◆ Excellent fuel economy: Runs up to 25% longer on a tank versus comparable 2-stroke engines
- ◆ Reduced emissions, low engine noise

**Optional Attachments** (available at your local Horizon store)

- ◆ 99909-33021 Powerbroom™ Debris Shield
- ◆ 99909-11027 Nylon Brush Kit
- ◆ 99909-35000 Rubber Paddle Kit
- ◆ 80297 Crimped Wire Brush Kit
- ◆ 80712 Aggressive Nylon Brush Kit
- ◆ 99909-11004 Replacement Nylon Brush
- ◆ 80208 Replacement Crimped Wire Brush
- ◆ 80711 Replacement Aggressive Nylon Brush





### F1302H

**Quiet Blow Blowers have had the industry's lowest noise levels for the last 10 years.**

- ◆ Patented Aim N Shoot™ fingertip control
- ◆ 17" 16-blade advanced fan technology
- ◆ Low weight, low noise, ergonomic handles
- ◆ No rust, no dent composite housing (5-year warranty)
- ◆ Self-propelled option eliminates fatigue
- ◆ 6.2x the air volume of backpack



### F902H

**The control of a backpack—the performance of a wheel blower.**

- ◆ Patented Aim N Shoot™ fingertip control
- ◆ 17" 16-blade advanced fan technology
- ◆ Low weight, low noise, ergonomic handles
- ◆ No rust, no dent composite housing (5-year warranty)
- ◆ Self-propelled option eliminates fatigue
- ◆ 3.8x the air volume of backpacks

## VACCUUM



### KV650H

**Powerful suction and easy operation make cleanup a snap.**

- ◆ Large 5-blade impeller with serrated edges
- ◆ Variable height adjustment
- ◆ Integral dust skirt
- ◆ Optional hose kit
- ◆ Zipperless bag for simple bag handling
- ◆ Honda or Briggs power, self-propelled option



### MV650H/MV650SPH

**Step up to the heavy-duty cleanup power of the MV lawn and litter vacuum.**

- ◆ Rugged low weight
- ◆ Composite housing & hood
- ◆ Top load bag slides out on rails
- ◆ Operator adjustable intake door
- ◆ Hard surface push or 3-speed self-propelled with optional electric start
- ◆ Optional 5" x 10' hose kit; optional disposable bag liners



### WV190/WV190S

- ◆ Quickly and efficiently pick up leaves, grass, or other light debris
- ◆ Available with push engine or self-propelled (S)
- ◆ Five different height settings for easy pick-up on any type of terrain
- ◆ Six-bushel capacity quick dump bag
- ◆ Adjustable handle bars with cushion grip
- ◆ Five-blade radial fan that delivers more cfm than any other competitor vacuum
- ◆ Easy-to-maneuver 12 X 2.5 inch rubber tires with ball bearing hubs

#### Product Code/Description

Specifications	WV190	WV190S
Bag Capacity	6 Bushels	6 Bushels
Rotor Construction	1/4" Steel Blades	1/4" Steel Blades
Intake Width (in)	27	27
Drive	Push	Self-Propelled
Dry Weight (lbs.)	113	126
Make	Briggs & Stratton	Briggs & Stratton
Engine Displacement (cc)	190	190
Start Type	Recoil	Recoil
Fuel Capacity (gal.)	0.4	0.4



### CS-271T

#### 26.9cc top handle chain saw

- ◆ 26.9 cc professional-grade, 2-stroke engine for outstanding performance
- ◆ i-30TM starting system for reduced effort starting
- ◆ Automatic, clutch-driven oiler for reduced oil consumption
- ◆ Available in 12" bar length
- ◆ G-Force Engine Air Pre-Cleaner™ for reduced air filter maintenance
- ◆ Rear-mounted, tool-less air filter cover for easy access
- ◆ Side access chain tensioner for quick chain adjustments



### CS-303T

#### 30.1 cc top handle chain saw

- ◆ 30.1 cc professional-grade, 2-stroke engine for outstanding performance
- ◆ Automatic adjustable oiler to match cutting conditions
- ◆ Available in 12" and 14" bar lengths prior to air filtration
- ◆ Extended top handle for greater reach, maneuverability and control.
- ◆ Metal lanyard ring for easy attaching and detaching
- ◆ Side access chain tensioner for quick chain adjustments
- ◆ Vibration-reduction system for operator comfort



### CS-310

#### 30.5cc chain saw with i-30 starter

- ◆ 30.5 cc professional-grade, 2-stroke engine for outstanding performance
- ◆ i-30TM starting system for reduced effort starting
- ◆ Automatic, clutch-driven oiler for reduced oil consumption
- ◆ Available in 14" bar length
- ◆ Side access chain tensioner for quick chain adjustments
- ◆ Tool-less air filter cover for easy access
- ◆ Vibration-reduction system for operator comfort



### CS-352

#### 34.0cc chain saw with i-30 starter

- ◆ 34 cc professional-grade, 2-stroke engine for outstanding performance
- ◆ -30TM starting system for reduced effort starting
- ◆ Automatic, clutch-driven oiler for reduced oil consumption
- ◆ Available in 14" and 16" bar lengths
- ◆ Side access chain tensioner for quick chain adjustments
- ◆ Tool-less air filter cover for easy access
- ◆ Vibration-reduction system for operator comfort



### CS-355T

#### 35.8cc top handle chain saw with reduced-effort starter

- ◆ 35.8cc professional-grade, 2-stroke engine
- ◆ Available in 14" and 16" bar lengths
- ◆ Automatic, adjustable clutch-driven oiler
- ◆ Contoured handle shaped to fit your hand
- ◆ Handle angle provides a natural wrist position while cutting
- ◆ Palm rest supports hand and provides leverage
- ◆ Reduced-effort starting system for easy start-ups



### CS-370

#### 36.3cc chain saw with i-30 starter

- ◆ 36.3 cc professional-grade, 2-stroke engine for outstanding performance
- ◆ -30™ starting system for reduced effort starting
- ◆ Aluminum handle with rubber over-mold for improved comfort
- ◆ Automatic, adjustable oiler to match cutting conditions
- ◆ Available in 14", 16", and 18" bar lengths
- ◆ G-Force Engine Air Pre-Cleaner™ for reduced air filter maintenance
- ◆ Heavy-duty, easy-access, automotive-style air filter for superior filtration



### CS-400

#### 40.2cc chain saw with i-30 starter

- ◆ 40.2 cc professional-grade, 2-stroke engine for outstanding performance
- ◆ i-30™ starting system for reduced effort starting
- ◆ Aluminum handle with rubber over-mold for improved comfort
- ◆ Automatic, adjustable oiler to match cutting conditions
- ◆ Available in 16" and 18" bar lengths
- ◆ G-Force Engine Air Pre-Cleaner™ for reduced air filter maintenance
- ◆ Heavy-duty, easy-access, automotive-style air filter for superior filtration



	Product Code/Description						
Specifications	CS-271T	CS-303T	CS-310	CS-352	CS-355T	CS-370	CS-400
Engine Displacement (cc)	26.9	30.1	30.5	34	35.8	36.3	40.2
Engine Displacement (cu. in.)	1.64	1.84	1.86	2.08	2.19	2.21	2.45
Starting System	i-30™	Standard	i-30™	i-30™	Reduced-Effort	i-30™	i-30™
Ignition System	Digital	Digital	Digital	Digital	Digital	Digital	Digital
Carburetor (w/Purge Pump)	Butterfly-Valve Diaphragm	Butterfly-Valve Diaphragm	Butterfly-Valve Diaphragm	Butterfly-Valve Diaphragm	Butterfly-Valve Diaphragm	Butterfly-Valve Diaphragm	Butterfly-Valve Diaphragm
Oiling System	Automatic (Clutch Driven)	Automatic (Clutch Driven)	Automatic (Clutch Driven)	Automatic (Clutch-Driven)	Automatic/Adjustable (Clutch-Driven)	Automatic/Adjustable	Automatic/Adjustable
Available Bar Lengths (in.)	12	12, 14	14	14, 16	14, 16	14, 16, 18	16, 18
Fuel Capacity (fl. oz.)	8.1	8.5	8.5	8.5	11.2	13.9	13.9
Dry Weight (lbs.)	6.6	7.7	8.8	8.8	8	10	10.1
Commercial Warranty	1 year	1 year	1 year	1 year	1 year	1 year	1 year

**CS-450P****45.0cc chain saw**

- ◆ CS-450P Product Knowledge
- ◆ 45cc professional-grade, 2-stroke engine for outstanding performance
- ◆ Aluminum handle with rubber over-mold for improved comfort
- ◆ Automatic, adjustable clutch-driven oiler for reduced oil consumption
- ◆ Available in 16", 18", and 20" bar lengths
- ◆ Heavy-duty, easy-access, automotive-style air filter for superior filtration
- ◆ Performance Cutting System™ - upgraded bar and aggressive chain for improved cutting performance
- ◆ Side access chain tensioner for quick chain adjustments

**CS-500P****50.2cc chain saw**

- ◆ 50.2 cc professional-grade, 2-stroke engine for outstanding performance
- ◆ Aluminum handle with rubber over-mold for improved comfort
- ◆ Available in 16", 18", and 20" bar lengths
- ◆ G-Force Engine Air Pre-Cleaner™ for reduced air filter maintenance
- ◆ Performance Cutting System™ - upgraded bar and aggressive chain for improved cutting performance
- ◆ Reduced Effort starting system
- ◆ Two-piece flocked air filter for easy cleaning

**CS-590****59.8cc farm and ranch chain saw**

- ◆ 59.8cc professional-grade, 2-stroke engine for outstanding performance
- ◆ Automatic, adjustable clutch-driven oiler for reduced oil consumption
- ◆ Available in 18" and 20" bar lengths
- ◆ Decompression valve for easier starter rope pulling
- ◆ Easy-access, heavy-duty 2-piece air filter for easy cleaning
- ◆ G-Force Engine Air Pre-Cleaner™ for reduced filter maintenance
- ◆ Translucent fuel tank for quick fuel level checks

**CS-600P****59.8cc chain saw**

- ◆ Aluminum handle with rubber over-mold for improved comfort
- ◆ 59.8 cc professional-grade, 2-stroke engine for outstanding performance
- ◆ Automatic, adjustable clutch-driven oiler for reduced oil consumption
- ◆ Available in 16", 18", 20", 24", and 27" bar lengths
- ◆ Decompression valve for easier starter rope pulling
- ◆ G-Force Engine Air Pre-Cleaner™ for reduced filter maintenance
- ◆ Performance Cutting System™ - upgraded bar and aggressive chain for improved cutting performance
- ◆ Two-piece flocked air filter for easy cleaning

**CS-680****66.8cc chain saw**

- ◆ 66.8 cc high performance, 2-stroke engine for outstanding performance
- ◆ Aluminum handle with rubber over-mold for improved comfort
- ◆ Automatic, adjustable oiler with manual over-ride for reduced oil consumption
- ◆ Available in 20", 24", and 27" bar lengths
- ◆ Heavy-duty, easy-access, automotive-style air filter extends saw life
- ◆ Performance Cutting System™ - upgraded bar and aggressive chain for improved cutting performance

**CS-8000****80.7cc chain saw**

- ◆ 80.7 cc professional-grade, 2-stroke engine for outstanding performance
- ◆ Aluminum handle with rubber over-mold for improved comfort
- ◆ Automatic, adjustable oiler with manual over-ride for reduced oil consumption
- ◆ Available in 24", 27", 32", and 36" bar lengths
- ◆ Performance Cutting System™ - upgraded bar and aggressive chain for improved cutting performance
- ◆ Tool-less air filter cover for easy access


















Specifications	Product Code/Description					
	CS-450P	CS-500P	CS-590	CS-600P	CS-680	CS-8000
Engine Displacement (cc)	45	50.2	59.8	59.8	66.8	80.7
Engine Displacement (cu. in.)	2.75	3.06	3.65	3.65	4.07	4.92
Starting System	Standard	Reduced Effort	Standard	Standard	Standard	Standard
Ignition System	Digital	CDI	Digital	Digital	SAIS	SAIS
Carburetor (w/Purge Pump)	Butterfly-Valve Diaphragm	Butterfly-Valve Diaphragm (w/o Purge Pump)	Butterfly-Valve Diaphragm (w/o Purge Pump)	Butterfly-Valve Diaphragm (w/o Purge Pump)	Butterfly-Valve Diaphragm (w/o Purge Pump)	Butterfly-Valve Diaphragm (without Purge Pump)
Oiling System	Automatic/Adjustable (Clutch Driven)	Automatic/Adjustable (Clutch Driven)	Automatic/Adjustable (Clutch Driven)	Automatic/Adjustable (Clutch Driven)	Automatic/ Adjustable (with manual override)	Automatic/ Adjustable (with manual override)
Available Bar Lengths (in.)	16, 18, 20	16, 18, 20	16, 18, 20, 24, 27	16, 18, 20, 24, 27	20, 24, 27	24, 27, 32, 36
Fuel Capacity (fl. oz.)	15.2	16.9	21.8	19.1	22.5	28.9
Dry Weight (lbs.)	11.2	10.6	13.3	13.3	14.5	16.5
Commercial Warranty	1 year	1 year	1 year	1 year	1 year	1 year



SAW CHAIN						GUIDE BARS					DISPLAY PACKS		
SPECS (inches)			CHAIN PART NO.			ARMOR TIP		POWER MATCH		PRO-LITE		PRO-AM	
PITCH	GAUGE	BAR LENGTH	CHAIN TYPE	DRIVE LINKS	DRIVE TEETH	AT LA	RN RW GN PM	SL GL SP GP MG MP	SF SX PX GD MLB	SD DG MLE	COMBOS	CHAIN LOOPS	
											BAR & CHAIN	GREEN LABEL	YELLOW LABEL

ECHO*														
CS-400EVL, CS-440, CS-440EVL, CS-510, CS-520, CS-3600, CS-3900, CS-4000, CS-4100, CS-4400, CS-4500, CS-4600, CS-5000														
.325	.050	14	20BPX	20LPX	059	7	140LAXA041							
		16			066	7	160LAXA041		160GLGK041	160GDBK041		105711	20BPX066CK	20LPX066CK
		18			072	7			180GLGK041	180GDBK041		105715	20BPX072CK	20LPX072CK
		20			078	7			200GLGK041			540395	20BPX078CK	20LPX078CK
MICRO-LITE™														
.325		13	95VPX		056	7					130MLBK041			
		15			064	7				150MLBK041				
		16			066	7				160MLBK041		95VPX066CK		
		18			072	7				180MLBK041		95VPX072CK		
CS-501, CS-5500														
.325	.050	16	20BPX	20LPX	068	7	160ATMD176 160LAMD176							
		20			079	7	200ATMD176 200LAMD176							
		24			091	7								
CS-450, CS-450P, CS-500P, CS-530, CS-550P														
.325	.050	16	20BPX	20LPX	066	7			160GLGK216				20BPX066CK	20LPX066CK
		18			072	7			180GLGK216				20BPX072CK	20LPX072CK
		20			078	7			200GLGK216				20BPX078CK	20LPX078CK
		16			066	7			168SLGK216				21BPX066CK	21LPX066CK
	.058	18	21BPX	21LPX	072	7			188SLGK216				21BPX072CK	21LPX072CK
		20			078	7			208SLGK216					21LPX078CK
MICRO-LITE™														
.325	.050	16	95VPX		066	7			160MGK216				95VPX066CK	
		18			072	7			180MGK216				95VPX072CK	
POWERsharp A041 applications are available (see page 4)														
3/8	.050	12	91PX 91VG	91VXL 91VX	045	6			120GPEA041		120DGEA041	105698	91VG045CK	91VXL045CK
		14			047	6	120LAXA041							
		14			052	6	140LAXA041		140GPEA041		140DGEA041	105699	91VG052CK	91VXL052CK
		16			056	6			160GPEA041		160DGEA041	105700	91VG056CK	91VXL056CK
					057	6	ORIGINAL EQUIPMENT GUIDE BAR							
					058	6	160LAXA041							
		18			062	6					180DGEA041	540394	91VG062CK	91VXL062CK

SAW CHAIN							GUIDE BARS					DISPLAY PACKS		
														
SPECS (inches)			CHAIN PART NO.									COMBOS		
PITCH	GAUGE	BAR LENGTH	CHAIN TYPE	DRIVE LINKS	DRIVE TEETH		AT LA	RN RW GN PM	SL GL SP GP MG MP	SF SX PX GD MLB	SD DG MLE	BAR & CHAIN	GREEN LABEL	YELLOW LABEL
ECHO*														
INTENZ*														
3/8	.050	12	91PX 91VG	91VXL 91VX	045	6			120GPET041		120DGET041		91VG045CK	91VXL045CK
		14			052	6			140GPET041		140DGET041		91VG052CK	91VXL052CK
		16			056	6			160GPET041		160DGET041		91VG056CK	91VXL056CK
					057	6	ORIGINAL EQUIPMENT GUIDE BAR						91VG057CK	91VXL057CK
MICRO-LITE*														
3/8	.043	12	90SG		045	6					124MLEA041			
		14			052	6					144MLEA041		90SG052CK	
		16			056	6					164MLEA041		90SG056CK	
CS-271														
3/8	.050	10	91PX 91VG	91VXL 91VX	040	6					100SDEA041			
		12			045	6			120GPEA041		120DGEA041	105698	91VG045CK	91VXL045CK
CS-60, CS-60S, CS-451, CS-452, CS-500, CS-501EVL, CS-510EVL, CS-550, CS-601, CS-602, CST-610, CS-610T, CS-706														
3/8	.050	16	72V	72LGX 72LPX	060	7	160ATMD176	160RND176	160GLHD176				72V060CK	72LGX060CK 72LPX060CK
					064	7								
		18			066	7		180RND176		180GDDD176			72V066CK	72LGX066CK 72LPX066CK
					070	7	200ATMD176 200LAMD176	200RND176	200GLHD176	200GDDD176			72V070CK	72LGX070CK 72LPX070CK
		24			081	7	240ATMD176 240LAMD176	240RND176						
					084	7	240ATMD176 240LAMD176							
					093	7								
					27									
POWERSHARP* A041 applications are available (see page 4) PPF-280, PPT-280, PPT-265, PPT-265H, PPT-265S, PPT-266, PPT-266H, PPT-266S														
3/8	.050	10	91PX 91VG	91VXL 91VX	039	6	ORIGINAL EQUIPMENT GUIDE BAR							
					040	6					100SDEA041			
		12			044	6	ORIGINAL EQUIPMENT GUIDE BAR							
					045	6			120GPEA041		120DGEA041	105698	91VG045CK	91VXL045CK
		14			047	6	120LAXA041							
					049	6	ORIGINAL EQUIPMENT GUIDE BAR							
3/8	.050	12	91PX 91VG	91VXL 91VX	052	6	140LAXA041		140GPEA041		140DGEA041	105699	91VG052CK	91VXL052CK
		14												
INTENZ*														
3/8	.050	12	91PX 91VG	91VXL 91VX	045	6			120GPET041		120DGET041		91VG045CK	91VXL045CK
		14			052	6			140GPET041		140DGET041		91VG052CK	91VXL052CK
MICRO-LITE*														
3/8	.043	10	90SG		039	6	ORIGINAL EQUIPMENT GUIDE BAR							
					040	6					104MLEA041			
		12			044	6	ORIGINAL EQUIPMENT GUIDE BAR							
					045	6					124MLEA041			
		14			049	6	ORIGINAL EQUIPMENT GUIDE BAR							
					052	6					144MLEA041		90SG052CK	

SAW CHAIN						GUIDE BARS					DISPLAY PACKS		
SPECS (inches)			CHAIN PART NO.										
PITCH	GAUGE	BAR LENGTH	CHAIN TYPE	DRIVE LINKS	DRIVE TEETH	AT LA	RN RW GN PM	SL GL SP GP MG MP	SF SX PX GD MLB	SD DG MLE	COMBOS	CHAIN LOOPS	
											BAR & CHAIN	GREEN LABEL	YELLOW LABEL

ECHO*													
POLE SAWS† PPF-210, PPF-211, PPF-225, PPT-230, PPT-231, PPT-260, PPT-261; POWER PRUNER: PP300, PP400, PP600, PP800, PP1200, PP1250, PP1260, PP1400, PP1400-D, PPF-2100, PPT-2100, PPF-2400, PPT-2400, PPSR-2122, PPSR-2433													
3/8	.050	8	91PX 91VG	91VXL 91VX	034 039 044	6					100SDEA218 120SDEA218		91VXL039CK 91VXL044CK
INTENZ*													
3/8	.050	12	91PX,VG	VX,VXL	044	6					120SDET218		91VG044CK 91VXL044CK
MICRO-LITE™													
3/8	.043	10	90SG		039	6					104MLEA218		90SG039CK
		12			044	6					124MLEA218		90SG044CK

ECHO*														
CS-600P, CS-650, CS-660, CS-670, CS-680, CS-701, CS-702, CS-750, CS-6700, CS-8000														
3/8	.050	16	72V	72LGX 72LPX	060	7	160ATMD176	160GNDD176	160GLHD176			105707	72V060CK	72LGX060CK 72LPX060CK
		064			7									
		18			066	7		180RNDD176		180GDDD176			72V066CK	72LGX066CK 72LPX066CK
		20			070	7	200ATMD176 200LAMD176	200GNDD176	200GLHD176	200GDDD176		105709	72V070CK	72LGX070CK 72LPX070CK
		081			7	240ATMD176	240GNDD176							
		24			084	7	240ATMD176 240LAMD176							
		27			093	7		270GNDD176						
		32			105	7		320GNDD176						
		36			116	7		360GNDD176						
CS-900, CS-1001														
3/8	.050	16	72V	72LGX 72LPX	060	7	160ATMD196	160RNDD196	160GLHD196	160GDDD096		105708	72V060CK	72LGX060CK 72LPX060CK
		064			8									
		18			066	7			180GDDD096				72V066CK	72LGX066CK 72LPX066CK
		20			070	7	200ATMD196	200GNDD196 200RNDD196	200GLHD196	200GDDD096		105710	72V070CK	72LGX070CK 72LPX070CK
		24			081	7		240RNDD196						
		27			093	7		270GNDD196						
3/8	.063	21	75V	75LGX 75LPX	079	7	213ATMD196							

**PPF-225**

**Fixed shaft power pruner cuts tough jobs down to size.**

- ◆ 21.2 cc Power Boost Vortex™ engine
- ◆ 30% reduction in starting effort
- ◆ Rubber left and right handle grips
- ◆ 7'9" long with 3' extension also available

**PPT-266**

**Professional features and long-reach cutting ability.**

- ◆ 25.4 cc professional-grade engine for outstanding performance
- ◆ i-30™ starting system for reduced effort starting
- ◆ 2-stage commercial-grade air filtration for long engine life
- ◆ Aluminum inner drive shaft for torsion strength
- ◆ Automatic, adjustable oiler to match cutting conditions
- ◆ Ergonomic loop handle with rubber over-mold for comfort and handling
- ◆ Ribbed fiberglass outer shaft for rigidity and control

**PPT-266H**

**Trimmer-style handle and long-reach cutting ability**

- ◆ 25.4 cc professional-grade, 2-stroke engine for outstanding performance
- ◆ i-30™ starting system for reduced effort starting
- ◆ 2-stage commercial-grade air filtration for long engine life
- ◆ Aluminum inner drive shaft for torsion strength
- ◆ Automatic, adjustable oiler to match cutting conditions
- ◆ In-line handle with rubber over-mold for comfort and handling
- ◆ Ribbed fiberglass outer shaft for rigidity and control

**PPT-280**

- ◆ 28.1 cc Power Boost Vortex™ engine
- ◆ Extended length shaft (12" longer than ECHPPT265)
- ◆ Ergonomic handle w/ rubber overmold
- ◆ Side-access chain tensioner
- ◆ Branch extractor
- ◆ 12" bar length standard
- ◆ 10" and 14" bar sizes sold as an accessory



Specifications	Product Code/Description			
	PPF-225	PPT-266	PPT-266H	PPT-280
Engine Displacement (cc)	21.2	25.4	25.4	28.1
Engine Displacement (cu. in.)	1.29	1.55	1.55	1.71
Carburetor (w/Purge Pump)	Rotary-Valve Diaphragm	Rotary-Valve Diaphragm	Rotary-Valve Diaphragm	Rotary-Valve Diaphragm
Starting System	i-30™	i-30™	i-30™	Standard
Fuel Capacity (fl. oz.)	14.9	16.4	16.4	21.6
Length Collapsed (in.)	93	107	107	113
Length Extended (in.)	N/A	146	146	158
Optional Extension (ft.)	3	4	4	5
Bar Length (in.)	10	12	12	12
Dry Weight (lbs.)	13.9	17.4	17.2	19.2
Commercial Warranty	2 years	2 years	2 years	2 years

## POLE SAW ACCESSORIES



### **99946400010 3 FT. EXTENSION (ALL PPF MODELS)**

- ◆ 3 Ft. Extension for Fixed Pruner
- ◆ Provides extra temporary reach when you need it. Fits all PPF models

### **99946400023 4 FT. EXTENSION (ALL PPT MODELS)**

- ◆ 4 Ft. Extension for Telescoping Pruner
- ◆ Provides extra temporary reach when you need it. Fits all PPT models

## FILES



**Quality round and flat chain saw files sharpen chains with ease.**

### **70504**

5/32" Round File

### **70503**

3/16" Round File

### **70502**

7/32" Round File

### **70511**

4.5mm x 8" Round Saw File

### **12211**

Flat



## SAW ACCESSORIES



### **POWERSHARP® STARTER KIT**

The starter kit includes everything you need to get started with the PowerSharp precision saw chain sharpening system: PowerSharp chain, bar-mount sharpener, sharpening stone, and the PowerSharp guide bar.

- ◆ Bar-mount sharpener is small, lightweight, and portable. Clamps easily to bar tip.
- ◆ PowerSharp guide bar has the alignment and latch pin holes required for use with the bar-mount sharpener
- ◆ Chain features top-sharpening cutter design that can be sharpened in seconds, with the bar-mount sharpener
- ◆ All PowerSharp chain is low-kickback per ANSI B175.1 & CSA Z62.3
- ◆



## SAW ACCESSORIES (CONT.)

### **ALSO AVAILABLE:**

### **POWERSHARP® (PS-SERIES) SAW CHAIN**

PowerSharp 91PS (Low Profile™) chain, a part of the PowerSharp precision saw chain sharpening system, features top-sharpening cutters with depth gauge tie straps and guidance drive links for low-kickback performance, good chip flow, and smooth cutting action.

**IMPORTANT:** Designed to be used only with the PowerSharp system.



- ◆ Top-sharpening design allows the cutters to be sharpened in seconds, using the PowerSharp bar-mount sharpener
- ◆ Chisel-style cutters deliver efficient cutting and excellent stay-sharp.
- ◆ Ramped depth gauges and ramped guidance drive links deliver smooth cutting action and low-kickback performance
- ◆ All PowerSharp chain is low-kickback per ANSI B175.1 & CSA Z62.3

### **POWERSHARP® BAR-MOUNT SHARPENER WITH GUIDE BAR**

The bar-mount sharpener, a part of the PowerSharp precision saw chain sharpening system, is a simple-to-use, lightweight attachment that sharpens PowerSharp chain in seconds.

Comes with a genuine PowerSharp guide bar. **IMPORTANT:** Designed to be used only with the PowerSharp system. Requires PowerSharp chain and sharpening stone.

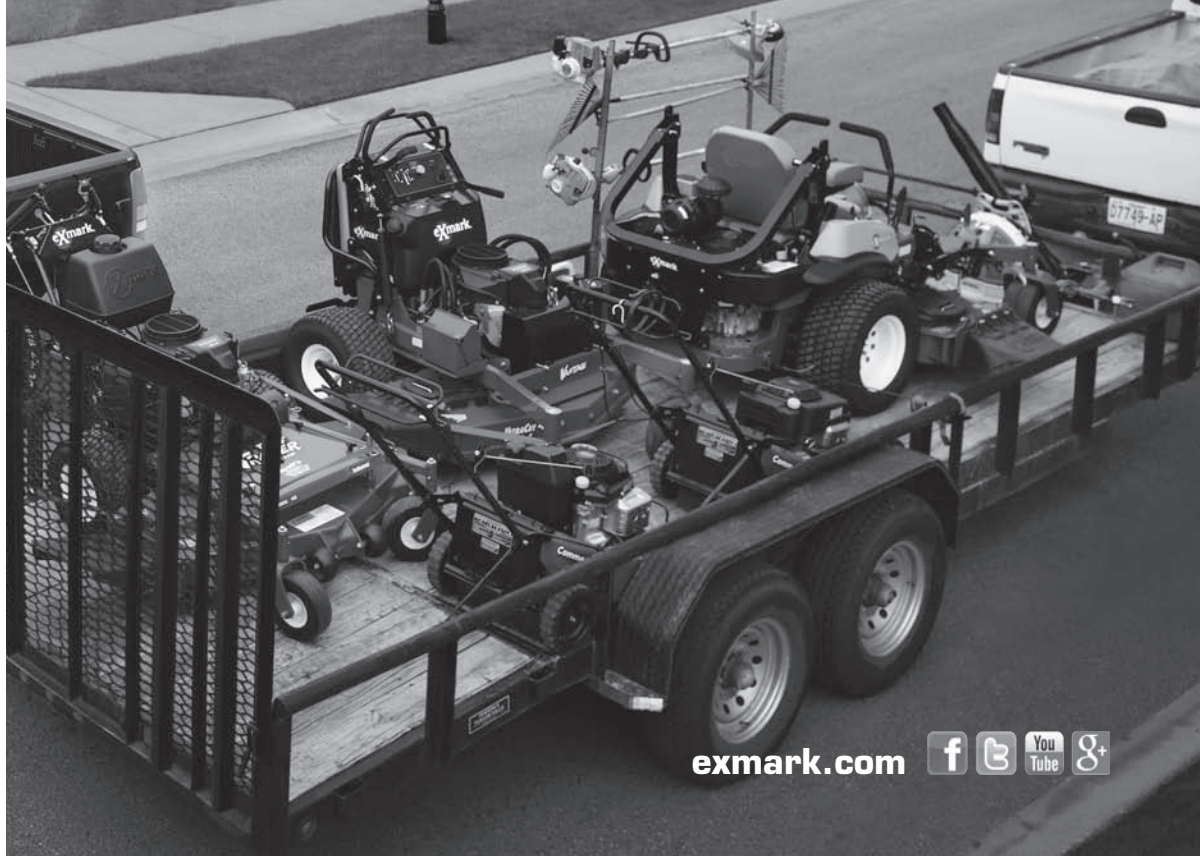


- ◆ Bar-mount sharpener is small, lightweight, and portable. Clamps easily to bar tip.
- ◆ Bar has alignment and latch pin holes, required for use with PowerSharp bar-mount sharpener.
- ◆ Slim symmetrical contour of bar is lightweight, maneuverable, and reversible for long life.
- ◆ Small-radius bar nose helps reduce kickback energies.



# THE BRAND LANDSCAPE PROS PURCHASED 2 TO 1.

*SEE YOUR HORIZON DEALER FOR A DEMO.*



[exmark.com](http://exmark.com)



## MCLANE REEL MOWERS



All McLane front throw reel mowers incorporate both belt and chain drive for reliable and consistent results. They feature a penetrating bedknife to deter thatch buildup and an easy spin recoil starter. McLane mowers comply with all Federal Safety Standards. These mowers are ideally suited for all Bermudas, St. Augustines and Boysia grasses.



### 17-5.50GT-10

- ◆ 17" Push Mower 10 blade 5.50GT Briggs & Stratton OHV

### 17-5.50GT-7

- ◆ 17" Push Mower 7 blade 5.50GT Briggs & Stratton OHV

### 20-5.50GT-7

- ◆ 20" Mower 7 blade 5.50GT Briggs & Stratton OHV

## MCLANE ROTARY MOWERS

McLane Rotary mowers feature induction heat-treated high strength armor plate steel blades for longer life. They have an all steel deck with a safety ring and wide tire wheels for easier pushing and level cutting. Cutting height from 1/2" to 3".



### N21-6.75GT-P

- ◆ 21" Rotary Mower 6.75 GT B&S

### N21-6.75GT-SP

- ◆ 21" Rotary Mower 6.75 GT B&S Engine Self Propelled

## EXMARK COMMERCIAL 21 S-SERIES



### ECSKA21

- ◆ Goodbye guesswork: The S-Series features an open-top bag, so it's easy for the operator to tell when it's full. No more wasted time dumping half-full bags.
- ◆ Single-speed transmission: Just engage and go, at speeds up to 4.2 mph. It's simple operation makes the S-Series a great mower for training new employees.
- ◆ Multi-purpose blade: The innovative blade design makes it easy to go from mulching to bagging. And vice versa..



## EXMARK COMMERCIAL 21 X-SERIES

### HN21, KA21 & KABBC21

- ◆ Patented front height adjust: Innovative, simple and built to last, our patented front height adjustment eliminates the need for pivot-style adjusters.
- ◆ The Exmark signature cut: The X-Series cutting deck is a full five inches deep to deliver a consistently great cut whether you're bagging or mulching.
- ◆ Single-point rear height adjust: This simple design lets the operator quickly and easily change cutting heights. And like every Exmark component, it's built to last.



## EXMARK COMMERCIAL 30

### ECKA30

- ◆ Twin-blade efficiency: The Commercial 30's timed blade system keeps the overall design compact while delivering a superior cut.
- ◆ Simplified maintenance: Its access panel makes for easy belt and blade adjustments. And less time in the shop means more time on the job.
- ◆ Heavyweight performance, lightweight handling: At just 170 pounds, the machine is surprisingly light for a commercial, 30-inch mower.



## EXMARK METRO



### MG481KA322P, MG481KA362, MG481KA483

- ◆ Simple drive belt maintenance: Yet another reason to own a Metro. Drive belts can be changed quickly and easily—no tools required.
- ◆ Enhanced Control System: Our patented ECS puts the operator's hands in a natural, neutral position to help reduce fatigue. Or, you can choose traditional pistol-grip controls.
- ◆ All-round performance: The Metro delivers excellent performance with speeds up to 6.2 mph and reverse assist. High-clearance, well-balanced decks also make curb climbing and trailering easy.



## EXMARK VIKING



### VH481KA362 & VH481KA483

- ◆ Deck options: With the Viking, you can choose either a 36-inch UltraCut™ Series 2 or 48-inch UltraCut Series 3 cutting deck.
- ◆ Operator-friendly: Instant forward-to-reverse with infinite speed control makes the Viking easy to operate. And with speeds up to 6.2 mph and 2.2 in reverse, it's also very productive.
- ◆ Exceptional traction: The Viking features large, 16 x 6.5-8 Turf Master® rear tires for extra grip while smooth-tread, semi-pneumatic front caster tires virtually eliminate flats.



## EXMARK TURF TRACER S-SERIES

### TTS481KA363, TTS481KA483, TTS541KA523, TTS600KAE483 & TTS600KAE523

#### CA Carb Approved Models available.

- ◆ Turnkey operation: Electric start is standard on Turf Tracer S-Series models with Kawasaki® FS600V engines.
- ◆ Forget flats: Standard 9 x 3.5-4 smooth-tread, semi-pneumatic front caster tires virtually eliminate tire repair.
- ◆ Smooth blade engagement: Exmark's® innovative, ultra-smooth blade engagement system minimizes maintenance and repair costs.



## EXMARK TURF TRACER X-SERIES

### TTS650EKCE604, TTX691KAE524 & TTX691KAE604

- ◆ Patented Enhanced Control System (ECS): Recent university tests showed landscape professionals prefer our control system to all others on the market.
- ◆ Superior air filtration: X-Series Turf Tracers come standard with heavy-duty canister air filtration systems for longer engine life, more efficient performance and simple maintenance.
- ◆ Clutch performance: A large-capacity, electromagnetic PTO clutch provides excellent durability for extra-long life.



## EXMARK VANTAGE S-SERIES

### VTS541KA363, VTS691KA484, VTS730EKC524 & VTS740EKC604

#### CA Carb Approved Models available.

- ◆ Patented Mechanical control system: With its solid rods, there are no cables to stretch, and no annoying loss of ground speed.
- ◆ Zero-maintenance spindles: Made from rugged, cast aluminum with sealed bearings, our spindles are designed to withstand the effects of moisture and impacts, no annual greasing required.
- ◆ Trailer-friendly: Its compact size and foldable operator platform take up less space. Vantage models also feature integrated tie-down points for secure trailering



## EXMARK VANTAGE-X SERIES



### VTX651KA484, VTX691KA524, VTX730EKC524 & VTX740EKC604

- ◆ “Enhanced” X-Series: The Vantage X-Series now comes with our patented Enhanced Control System (ECS) for greater operator comfort and productivity.
- ◆ Operator platform: A rubber platform with self-compensating suspension provides a comfortable ride for any size rider. Patented, integrated thigh pads also pivot away, allowing easy access for maintenance.
- ◆ Upgraded hydro drive: Smoother operation and consistent control is made possible with our new 12 cc pump and 230 cc wheel motor. This upgrade translates to a maintained ground speed of up to 8 mph.



## EXMARK PIONEER

### PNE651KA482, PNE691KA522, PNS651KA483 & PNS651KA523

- ◆ Even filling up is efficient: A large, seven-gallon fuel tank with a single fill location translates to less time pumping gas and more time cutting grass.
- ◆ Maintenance-free spindles: Commercial-grade, cast aluminum spindles feature sealed bearings to resist damage from moisture and impact. No annual greasing is required.
- ◆ Lock down: An easy-to-use transport lock conveniently holds the deck up for trailering. It also enables manual feathering on uneven terrain.
- ◆ Safety-plus: First and foremost, the Rollover Protection System is an important safety feature. Plus, it's rear-sloping design helps deflect branches away from the operator.
- ◆ Comfort counts: The Pioneer features a bolstered seat with coil-spring suspension. Because operator comfort and productivity go hand-in-hand.



## EXMARK QUEST

### QTE651KA421, QTE691KA501, QTS691KA422 & QTS691KA502

- ◆ Treaded, pneumatic tires: Comfort and handling come standard with the E-Series' 13 x 5 front caster tires.
- ◆ Automatic braking system: For added safety, whenever the Quest's controls are put out, its brakes are applied automatically.
- ◆ Simple adjustment: With a single-point rake adjust, it's easy to adjust the Quest's cutting deck.
- ◆ Quick cleanup: The convenient wash-out port makes cleaning the deck as easy as attaching a garden hose.
- ◆ Superior handling: The Quest is designed with its heaviest components mounted low in the frame, toward the center of the machine. This low center of gravity improves handling and traction.



## EXMARK NAVIGATOR

### NV640KC42, NV640KC48 & NV730EKC48

- ◆ Bag / mulch versatility: The Navigator's fill-reduction system lets you bag 100%, bag 50% and mulch 50% or mulch 100%. All with versatile cutting deck and baffle system.
- ◆ “FeatherTouch” controls: As the name implies, you don't have to muscle the Navigator around. Its FeatherTouch controls make maneuvering tight spots virtually effortless.
- ◆ More capacity, more productivity: The 9.5-bushel hopper means less time emptying and more time mowing. An exclusive baffle design fills evenly back to front for maximum efficiency.



## EXMARK LAZER Z E-SERIES



### LZE600KA484, LZE691KA524, LZE730KA604SS & LZE740EKC604

- ◆ Safety plus convenience: Our Rollover Protection System (ROPS) is engineered for more than safety. Its rear-sloping design also diverts branches away from the operator. And it folds easily for transport.
- ◆ Single-point height adjust: This simple system lets you adjust deck height without resetting rake and level. Set height of cut from 1 to 5.5 inches by simply moving a bolt.
- ◆ On-board diagnostics: Check vital functions at a glance on the digital screen. An electronic fuel gauge, battery voltage warning, hour meter and OPC safety switch monitoring make troubleshooting easy.
- ◆ Hydro drive simplified: Our hydro drive system has no hoses to leak and just two, easy-to-change belts. Only simple, annual maintenance is required. It also lowers the center of gravity for improved handling.



## EXMARK LAZER Z S-SERIES

### LZE600KA484, LZE691KA524, LZE730KA604SS & LZE740EKC604

- ◆ Feathering made easy: Our transport lock function makes it easy to feather the deck on uneven terrain. Keep the deck locked or unlocked in the "Up" position for smooth, scalp-free feathering.
- ◆ Gaining traction: Horsepower is meaningless if you can't get that power to the ground. That's why we use Carlisle® Turf Master® drive tires. Because serious performance demands serious traction.
- ◆ Less time at the pump: Gas-powered S-Series models have a single 12-gallon tank with one fill location. And our propane model uses a 10.3-gallon (43.5 lbs) tank. So fuel stops are fewer and farther between.
- ◆ Built to last: Want tough? Try a 10-gauge, formed and continuously seam-welded top. 7-gauge side skirt. Welded spindle mounting sites. And full-floating, 4-point suspension with 4 adjustable anti-scalp rollers.



## EXMARK LAZER Z X-SERIES

### LZX740EKC526, LZX801KA606, LZX921KA606, LZX921KA726, LZX940EKC606 & LZX980EKC726

- ◆ UltraCut™ Series 6 deck: This full-floating deck uses double-row bearings with a splined blade driver to stop bolt tightening on impacts. And our patented bearing design on idler arm pivots only needs annual service.
- ◆ Deck support system: A cutting deck this good deserves the best support possible. So, we developed a Panhard rod and strut system to eliminate side-to-side deck sway, reducing wear and maintenance costs.
- ◆ Durable drive system: Our exclusive hydro drive system sets new standards for durability. High-temperature seals minimize leaks. Specially formulated oils optimize cooling. And there are no hoses to leak.
- ◆ A new level of comfort: Comfort increases productivity. That's why we designed a new, ergonomically advanced seat system featuring our exclusive Iso-mount Seat Isolation System.



## EXMARK LAZER Z DS-SERIES

### LZDS902K605, LZDS902K60RD, LZDS902K725 & LZDS902K72RD

- ◆ Lower temps = longer life: The DS-Series radiator is positioned to take advantage of maximum airflow. And it's wavy screen effectively increases the exposed surface area, further improving its cooling efficiency.
- ◆ Give it some air: We equipped the DS-Series with a canister air filtration system to ensure proper fuel/air mixture even in the dustiest conditions. And that can quickly add up to significant fuel savings.
- ◆ Frame strength: Given the extreme mowing conditions the DS-Series is intended to handle, its frame has to be extraordinarily strong. As in heavy-duty, welded, tubular-steel strong. Which is exactly what it is.





## AUGER

### EA-410

**Powerful 42.7 cc engine makes this earth/ice auger a reliable tool for any digging operation.**

- ◆ Designed for a wide variety of auger diameters
- ◆ Available auger lengths: 34" (881 mm)
- ◆ Turns into a powerful ice auger for year-round use

### EA-500

- ◆ 51.7 cc engine designed for digging a wide range of holes for planting small trees, fence posts, poles and road signs
- ◆ Additional handle allows for two-person operation



### DRILL ACCESSORIES CHART

Product Code	Description
99944900011	2.5" Bulb/Plant Auger, 24" long
99944900021	3" Bulb/Plant Auger, 24" long
99944900040	1.125" Deep Root Auger, 24" long
99944900061	3" Heavy Duty Auger, 18" long
99944900070	7" Gallon Pot Auger, 12" long
99944900020	Engine Drill Keyless Chuck
99944900021	Keyed Chuck Kit for EDR-260

### AUGER ACCESSORIES CHART

Product Code	Description
99944900150	2" earth auger w/ point
99944900160	3" earth auger w/ point
99944900170	4" earth auger w/ point
99944900180	6" earth auger w/ point & spring
99944900190	8" earth auger w/ point & spring
99944900200	10" earth auger w/ point & spring
99944900210	18" extension shaft — 7/8" diam
99944900220	12" extension shaft — 7/8" diam
99944900230	4" replacement blade — earth auger
99944900240	6" replacement blade — earth auger
99944900250	8" replacement blade — earth auger
99944900260	10" replacement blade — earth auger
99944900270	Replacement point — earth auger
99944900370	8" ice auger dual blade
99944900275	10" ice auger dual blade
99944900280	8" replacement blade — ice auger
99944900290	10" replacement blade — ice auger
99944900300	8" Replacement Blade
99944900310	8" r10" Replacement Blade
99944900335	10" r7/8" to 1" Adapter w/Spring



## DRILL

### EDR-210

**Cordless convenience in a heavy-duty drill.**

- ◆ 21.2 cc engine
- ◆ 0-450 RPM forward/reverse
- ◆ Torque (ft. lb.) — 11
- ◆ Maximum chuck diameter — 1/2" standard
- ◆ Pro-Fire® Electronic ignition for quick, easy starts
- ◆ Throttle lock-out prevents accidental drill bit rotation
- ◆ Heavy-duty keyed chuck holds up to 1/2" drill shank



Specifications	Product Code/Description	
	EDR-210	EDR-260
Engine Displacement (cc)	21.2	25.4
Carburetor (w/Purge Pump)	Butterfly-Valve Diaphragm	Butterfly-Valve Diaphragm
Starting System	Standard	Standard
Fuel Capacity (fl. oz.)	14	14
Gear Reduction Ratio	17.1:1	17.1:1
RPM	0-450 Forward/Reverse	0-450 Forward/Reverse
Torque (ft. lb.)	11	12
Maximum Chuck Diameter	1/2" Standard	1/2" Keyless
Dry Weight (lbs.)	10	10.7
Commercial Warranty	1 year	1 year



### EDR-260

**Heavy-duty gear reduction converts engine power into tough drilling torque.**

- ◆ All-position diaphragm with purge pump carburetor allows operation at any angle
- ◆ 1/2" keyless chuck
- ◆ Reversible function — 0-450 RPM forward/reverse
- ◆ Torque (ft. lb.) — 12

### WP-1000

- ◆ Ideal for general purpose pumping, draining, filling, and lawn and garden irrigation
- ◆ Discharges up to 28 gal. per min. and 1,680 gal. per hour





## TR-20H/TR-20B

- ◆ Powers its way through thick thatch and root-bound grass, giving it new life and promoting deep root growth
- ◆ 5-position, single action height adjustment
- ◆ 5 hp Briggs & Stratton (CLATR20B) or 5.5 hp Honda O.H.V. engine with oil alert (CLATR20H)



## TR-C20H/TR20B

- ◆ Same great features of the TR20, including catcher bag
- ◆ 5 hp Briggs & Stratton (TR20B) or 5.5 hp Honda O.H.V. engine with oil alert (TR20H)



## PR-PR22H5FA – 22" FLAIL, 4.8 HP HONDA GX160 PR-22H5NRA – 22" NO REEL-HONDA GX160 4.8 HP

- ◆ Features a modular platform that can be configured to a power rake, seeder or power rake with rear catcher bag to collect thatch
- ◆ Pin deck depth adjustment has seven settings in 1/4" increments
- ◆ 22" raking width with 4.8 hp Honda engine



# TILLER/CULTIVATOR



## TC-210

- ◆ Four, 10-tooth tines provide smooth tilling action for up to 9" wide furrow
- ◆ Worm gear-type transmission provides tine RPM and high torque



## LITTLE WONDER®

### 7225-15-02

- ◆ Patented serpentine tines
- ◆ Till down through 10"
- ◆ Chop tough sod or hard clay
- ◆ Lifetime guarantee on tines
- ◆ Fold down handles
- ◆ Easy transport or storage
- ◆ Commercial-grade 2-cycle engine



# SOD CUTTERS



## CLASSEN SOD CUTTERS

- ◆ Ideal for use in golf course maintenance, landscape contractors, cemeteries, park and athletic fields, nurseries and concrete installers
- ◆ 4-cycle 5.5–8hp Honda O.H.V. engine with built in 2:1 reduction and centrifugal clutch
- ◆ Clutch/brake lever for ease in unloading machine backwards from truck or trailer
- ◆ 12" – 18" cutting width



## SC-18

- ◆ Four wheel drive for easy cutting on slopes and transport
- ◆ 4-forward speeds including 2 c
- ◆ 5.5 hp (4kw) Honda oil bath w/centrifugal clutch



## SEEDERS



### TS-20H/TS-20B

- ◆ Multipurpose machine for seeding a new lawn or overseeding an existing lawn
- ◆ 5-position, single action height adjustment
- ◆ 5 hp Briggs & Stratton (TS20B) or 5.5 hp Honda O.H.V. engine with oil alert (TS20H)



### TSS-20H – 20" SELF PROP. OVERSEEDER, HONDA GX160 TSS-20B – 20" SELF PROP. OVERSEEDER, B&S INTEK 85

- ◆ Infinite speed from 0 to 3.4 mph eliminates fatigue on operator
- ◆ Operates forward and reverse, is great on hills and makes loading and unloading a snap
- ◆ Constant speed ensures more consistent seed placement
- ◆ Folding handle and quick-remove seed box for easy transportation
- ◆ 26 heat-treated multipurpose blades, uniquely designed with cutting edge on both ends of blade for double the life
- ◆ 1-1/2" spacing between blades 5-position, single action height adjustment
- ◆ Durable, easily removable covered seed box is mounted higher to eliminate clogging
- ◆ Pin attachment design allows for quick removal of seed box to empty out excess seed
- ◆ Heavy duty, greasable bearings with cast iron housings
- ◆ Wheels have sealed bearings and semi-pneumatic tires
- ◆ Can be converted to a dethatcher or vertical cutter in minutes
- ◆ Self-Propelled models cannot be converted to a catcher bag attachment.
- ◆ Partial and Complete Reel Assemblies are available to retrofit your existing Classen TS or TSS model
- ◆ 2-Year Warranty



Product Number	TS-20H/TS-20B	TSS-20H/TSS-20B
ENGINE	Honda GX160 or 5.5 hp Briggs & Stratton® Intek	
DIMENSIONS	39"H x 27"W x 51"L	39"H x 31.5"W x 51"L
DIMENSIONS (HANDLE FOLDED)	29.5"H x 27"W x 30.5"L	34"H x 31.5"W x 37"L
DRY WEIGHT	150 lbs.	237 lbs.

## SEEDERS (CONT.)



### SS-22B5DA/SS-22H5DA

The S22 Seeder is well balanced and portable thanks to the placement of the seed hopper and its folding handle. The 30-lb capacity polymer hopper features a site window and is mounted at the rear to ensure easier maneuverability and minimal seed damage during overseeding.

- ◆ Working width: 22 inch
- ◆ Standard blade type: Delta blade



## AERATORS



### TA-19D

- ◆ 19" aerating width fits through 30" gate, covers 24,000 sq.ft. per hour
- ◆ 30 tines with coring depth up to 2.75"
- ◆ 4 hp Honda engine



### TA-26D

- ◆ 26.5" aerating width fits through 36" gate by easily removing rear wheels, covers 34,000 sq. ft. per hour
- ◆ 42 tines with coring depth up to 2.75"
- ◆ 4 hp Honda engine

### TA-17D SPLIT DRIVE

- ◆ Patented split drive technology permits operator to steer, turn and aerate non-stop without raising tines out of the ground
- ◆ 16.25" aerating width fits through 30" gate, covers 19,333 sq. ft. per hour
- ◆ 24 tines with coring depth up to 2.75" and hole pattern of 4.06" X 7"
- ◆ 4 hp Honda engine



## AERATORS (CONT.)

### TA-25D SPLIT DRIVE

- ◆ Patented split drive technology permits operator to steer, turn and aerate non-stop without raising tines out of the ground
- ◆ 24.375" aerating width fits through 36" gate by easily removing rear wheels, covers 29,000 sq. ft. per hour
- ◆ 36 tines with coring depth up to 2.75" and hole pattern of 4.06" X 7"
- ◆ 4 hp Honda engine

### TOW/3PT. (MANUAL LIFT)

Product Code	Aerating Width	Tine Qty.
CLA48RT	42"	48
CLA60RT	52"	60
CLA72RT	62"	72

### 3 PT. ONLY

Product Code	Aerating Width	Tine Qty.
CLA48RT	42"	48
CLA60RT	52"	60
CLA72RT	62"	72



### H-530A/B-530B

Greater productivity, better maneuverability and a user-friendly design are just a few of the features that make the 530 a breeze to operate.

- ◆ Aerating width: 19 inch
- ◆ Aerating depth: 0-3 inch
- ◆ Aerating pattern: 3.8x4.2 inch



### B-742/H-742

The 742 Lawn Aerator offers the highest productivity in the market. A 4 HP Honda engine with a synchronized clutching system allows for smooth starts, while the 742's rugged design provides low maintenance and outstanding durability for profitable operation.

- ◆ Aerating width: 25.5 inch
- ◆ Aerating depth: 0-3 inch
- ◆ Aerating pattern: 3.6x6.8 inch



## AERATORS (CONT.)



### SAR-481KA30

Nothing beats the Exmark® Stand-On Aerator for productivity. With speeds up to 7 mph, you can aerate more than two acres per hour. And the two center tine sets are free-turning, so its easy to aerate around trees and flower beds.

- ◆ Weight directly over tines to maximize core depth
- ◆ Compact size as compared to competitive offerings
- ◆ Split tines for easier turning with tines engaged
- ◆ Self-cleaning and easy to replace tines
- ◆ Foot pedal for tine engagement
- ◆ Tine down - force hydraulic actuated (also adjustable)
- ◆ 1-year limited warranty



### SPECIFICATIONS

### (SAR481KA30) 30" STAND-ON AERATOR

Power Components	
Engine:	Kawasaki®
Model:	FS481V
Type:	electric start
Transmission:	Hydro Gear ZT3100
Speed:	7.0 mph
Fuel Capacity:	5 gallons
Equipment	
Working Width:	30"
Rear Tires:	16 x 6.50-8
Front Tires:	13 x 5-6 semi pneumatic\n casters
Drive:	#50 chain
Number of Tines:	48 coring tines
Core Depth:	2"-5"
Plugs / Square Foot:	4.6
Miscellaneous	
Overall Width:	48"
Overall Height:	53"
Overall Length:	65"
Weight:	1015 lbs
Warranty:	1-year limited

## AERATORS (CONT.)



### ARS-180KA21

Our 21-inch, transaxle-drive S-Series aerator is incredibly easy to use, thanks to straightforward controls for intuitive operation. Reaching speeds up to 4 mph, it's capable of aerating nearly an acre per hour.

- ◆ Easy to use controls
- ◆ Intuitive operation
- ◆ Removable suitcase weights
- ◆ Low effort maneuverability as compared to competitive offerings
- ◆ Self-cleaning and easy to replace tines
- ◆ Powered by FJ180V Kawasaki KAI series engine
- ◆ 1-year limited warranty



SPECIFICATIONS		(ARS180KA21) 21" AERATOR S-SERIES	
Power Components			
Engine:	Kawasaki®		
Model:	FJ180V KAI		
Type:	recoil start		
Transmission:	Hydro Gear T2		
Speed:	4.0 mph		
Fuel Capacity:	1 gallon		
Equipment			
Working Width:	21"		
Rear Tires:	10 x 2.75-5.5 solid		
Front Tires:	11 x 4-4		
Drive:	#40 chain		
Number of Tines:	36 coring tines		
Core Depth:	2"-3"		
Plugs / Square Foot:	4.6		
Miscellaneous			
Overall Width:	30"		
Overall Height:	38" (handle folded)	46" (handle up)	
Overall Length:	48" (handle folded)	58" (handle up)	
Weight:	320 lbs (includes one 30 lb wt)		
Warranty:	1-year limited		

## SLICER/SEEDERS



### SLICER SEEDER MODEL: SD-270SU20

An Exmark® slicer seeder that's efficient, durable, compact, and easy to use. It also distributes seeds quickly and uniformly.

- ◆ The wide stable base delivers good side hill stability and even cutting Verticutting reel
- ◆ Integrated lift handles and foldable handles improve transport and storage
- ◆ Seed rate regulated by ground speed for even seed distribution
- ◆ Increase seed/soil contact Removes thatch High-carbon steel for improved durability
- ◆ Features Subaru EX27 engine
- ◆ 1-year limited warranty



SPECIFICATIONS	(SD270SU20) 20" SLICER SEEDER	
Power Components		
Engine:	Subaru	
Model:	EX270	
Equipment		
Clutch:	Noram mechanical	
Tires:	10 x 2.75-5.5 solid	
Front Tires:	11 x 4-4	
Cutting Depth:	#40 chain	
Number of Tines:	Adjustable up to 1" deep	
Seeding / Slicing Width:	20"	
Hopper Size:	40 lbs.	
Miscellaneous		
Overall Width:	30"	
Overall Height:	28" (handle folded)	45" (handle up)
Overall Length:	27" (handle folded)	52" (handle up)
Weight:	260 lbs	
Warranty:	1-year limited	

## ROTARY BROOMS



### BR-270KC36

Whether it's cleaning up grass clippings, removing snow or anything in between, Exmark's walk-behind rotary broom is one well-sorted machine. The patented power steering system makes it extremely easy to maneuver. The 36-inch wide brush (25-inch outer diameter) is specifically designed to minimize surface impact - perfect for snow and ice removal

- ◆ Brush design minimizes impact and surface damage while cleaning more effectively
- ◆ Independent control levers to engage broom and ground drive
- ◆ Proven commercial variable speed shift-on-the-fly transmission features six-position forward and two-position reverse
- ◆ The Kohler® engine functions as a multi-season engine as the air intake rotates 180°
- ◆ Commercial performance & results that can be utilized as a broom on a lawn dethatcher
- ◆ Reinforced handlebars for durability
- ◆ Integrated tie-down points for trailering



SPECIFICATIONS		(BR270KC36) 36" ROTARY BROOM
Power Components		
Engine:	Kohler® Command™ Pro	
Model:	CH270	
Transmission:	Friction disc	
Steering:	Power steering with clutch left and right hand	
Fuel Capacity:	4.2 quarts	
Equipment		
Broom Angle:	40° total. 20° left and 20° right.	
Broom Width:	36" (18 wafers)	
Broom Diameter:	25"	
Broom Speed:	200 RPM	
Broom Drive:	Direct	
Starter:	Recoil	
Tires:	15" x 5"	
Miscellaneous		
Weight:	350 lbs.	
Warranty:	1 year limited. 2 year limited on engine.	

## STUMP GRINDERS



### SG-1314/SG-1314B

- ◆ Maximizes cutting performance with its 14" diameter blade with carbide-tipped teeth, offering a variable cutting depth up to 12"
- ◆ Well-balanced design offers commercial power and high productivity
- ◆ 13 hp Honda with cyclone air filter and Noram Nutomatic Centrifugal Clutch



## TURFGRO

### TURFGRO OIL

**TurfGro Pro Power Premium Oils are top of the line and meet all current industry standards.**

- ◆ Blended by a leading manufacturer of power equipment oil to deliver same quality as those offered by industry leaders
- ◆ Going directly to the manufacturer means a better price for you
- ◆ 2-cycle oil meets or exceeds ISO, L-ED and JASO-FC industry standards
- ◆ Specially formulated with additives that help stabilize fuel/oil mix for extended periods of storage, either in power equipment or in the fuel container
- ◆ Lower exhaust smoke, improved lubricity, less carbon build up, reduced oxidation and better overall performance



TurfGro Oil	
Product Code	Description
SM5002TG	2.6 OZ 2 CYCLE OIL
SM5123TG	6.4 OZ 2 CYCLE OIL
SM5063TG	12.8 OZ 2 CYCLE OIL
SM5004TG	1 GAL 2 CYCLE OIL
SM5105TG	5 GAL 2 CYCLE OIL
SM5055TG	55 GAL 2 CYCLE OIL
BC3104TG	1 GAL BAR & CHAIN OIL
LM1112TG	1 QT 10W30 4 CYCLE ENGINE OIL

Gasoline U.S. Gal.	Oil at 50:1*	Oil at 40:1	Oil at 32:1
50	1 gal.	1.25 gal.	1.5 gal.
5	12.8 oz.	16 oz.	20 oz.
2.5	6.4 oz.	8 oz.	10 oz.
1	2.6 oz.	3.2 oz.	4 oz.

\* recommended rate

## TURFGRO

### TURFGRO DIAMOND, BLAZER OR VORTEX LINE

- ◆ Superior wear provided through the use of specialized copolymer trimmer line resins
- ◆ Outstanding toughness: Engineered for ultimate impact resistance and less line failure
- ◆ Processed to minimize line split and fraying
- ◆ Added rigidity for improved cutting
- ◆ Consistency of product and superior quality control

### TURFGRO VORTEX TRIMMER LINE

- ◆ Significant improvement in energy efficiency
- ◆ Up to 50% noise reduction in larger diameter lines
- ◆ Increased RPMs allows use of larger diameter lines

TurfGro Trimmer Line										
	Vortex						Diamond & Blazer			
	.080	.095	.105	.130	.155	.080	.095	.105	.130	.155
1 lb.	X	X	X	X	X	X	X	X	X	X
2.4 lb.	X	X	X	X	X					
3 lb.							X	X	X	X
4 lb.	X	X	X	X	X					
5 lb.						X	X	X	X	X

\* Larger spool sizes available upon request. Call your local Horizon sales representative for more information.

### TURFGRO ADJUSTABLE HEAD

- ◆ Bump and feed tap head
- ◆ Universal head fits most commercial line trimmers
- ◆ Single spool feature allows for single or dual line indexing
- ◆ Large capacity spool can hold up to 40 ft. of .095 trimmer line
- ◆ Simple, problem-free indexing mechanism
- ◆ Recommended for use on trimmers under 30cc



# Horizon Service Centers

Horizon Service Centers provide the highest level of repair services in the industry. We offer repair and maintenance on most landscape equipment products, including BlueBird, Briggs & Stratton, Classen, Echo, Exmark, Husqvarna, Kawasaki, Kohler, Makita, McLane, RedMax, Shindaiwa, Toro TRX and more. We understand that when your machine is down, you are too. That's why we've opened regional service locations staffed with factory-trained technicians and a huge assortment of parts. Our goal is to fix your machine and get it back in the field as soon as possible, with as little delay to you as possible. You'll find our landscape equipment service center locations at our stores in:

- ✓ Phoenix, AZ
- ✓ Concord, CA
- ✓ Sacramento, CA
- ✓ San Diego, CA
- ✓ San Jose, CA
- ✓ Littleton, CO
- ✓ Boynton Beach, FL
- ✓ Boise, ID
- ✓ Gaithersburg, MD
- ✓ Tigard, OR
- ✓ Austin, TX
- ✓ Bedford, TX
- ✓ Houston, TX
- ✓ Bellevue, WA
- ✓ Spokane, WA



## Question about parts?

Call Horizon's Parts Hotline at 844-411-PARTS



### POWER-V XT PLOWS

**Lets you choose from the Scoop-, Straight-, or V-position or any position in between.**

- ◆ Available sizes: 7'6", 8'2", 9'2"
- ◆ SmartTouch 2™ control
- ◆ SmartHitch 2® attachment system
- ◆ High-performance hydraulic package
- ◆ Enclosed hydraulic system
- ◆ Hydraulic cylinder lifting system (no chains)
- ◆ Full moldboard trip design
- ◆ Heavy-duty push frame and center section
- ◆ Diagonal cross-bracing
- ◆ 1/2" thick cutting edge



### POLY POWER-V XT PLOWS

**Finish a job up to 30% faster than traditional Straight-Blade Snowplows.**

- ◆ Available sizes: 8'2", 9'2"
- ◆ All the reliable qualities of Power-V Plows, with benefits of the nonstick polyethylene moldboard
- ◆ Move more snow more quickly
- ◆ Snow won't stick so you can save time and fuel



### HEAVY DUTY POWER-V DXT PLOWS

**Designed specifically for heavy-duty applications: parking lots, intersections, etc.**

- ◆ Poly/Steel/Stainless Steel Options available.
- ◆ 8'2", 9'2" and 10' options available



### STRAIGHT-BLADE PLOWS

**Proven choice for professionals and homeowners alike.**

- ◆ Available sizes: 7'6", 8', 8'6", 9'0" Super-Duty
- ◆ SmartTouch 2™ control
- ◆ SmartHitch 2® attachment system
- ◆ High-performance hydraulic package
- ◆ Enclosed hydraulic system
- ◆ Hydraulic cylinder lifting system (no chains)
- ◆ Full moldboard trip design
- ◆ Heavy-duty push frame and center section
- ◆ Diagonal cross-bracing
- ◆ Blade shock absorber
- ◆ Heavy-duty A-frame and quadrant
- ◆ 1/2" thick cutting edge



### POLY-STRAIGHT-BLADE PLOWS

- ◆ Available size: 8' Super-Duty
- ◆ All the reliable qualities of Steel Straight-Blade Plows, with the benefits of a non-stick polyethylene moldboard
- ◆ Snow won't stick, which saves time, fuel, and wear and tear
- ◆ The poly blade is saturated with color so nicks and scratches don't show
- ◆ 7'6" standard duty option



### SUPER DUTY STRAIGHT-BLADE PLOWS

- ◆ All the reliable qualities of Steel Straight-Blade Plows
- ◆ Optimized blade curl means snow rolls cleanly off the blade
- ◆ Designed for medium-duty trucks and built for heavy-duty use
- ◆ 7'6", 8'0", 8'6" & 9'0" options available



### POLY SPORT DUTY PLOW

**Designed specifically for personal use.**

- ◆ Perfect for downsized 4 X 4 or SUV
- ◆ SmartTouch 2™ control
- ◆ Enclosed hydraulic system
- ◆ 26" Blade Height
- ◆ 7'0" & 7'6" options available



## BOSS BOX PLOWS: BX-12, B-8 & B-10

- ◆ High-efficiency moldboard features a 70 degree angle that reduces resistance
- ◆ Self-adjusting box wings automatically adjust to pavement contour
- ◆ Self adjusting hitch automatically adjusts the blade to negotiate any terrain
- ◆ Rugged support struts add structural strength
- ◆ Trip-edge design allows each cutting edge segment to trip individually
- ◆ Tested heavy-duty trip springs
- ◆ Universal fork mounting system coupler easily attaches for Skid Steer applications (B8 & B10 models)
- ◆ Support struts pivot for structural strength, stability and reliability
- ◆ 2-year limited warranty on parts & labor



## BOSS SMARTHITCH TGS-600, TGS-800 AND TGS-1100 MINI TAILGATE SPREADER

**Designed to apply dry, free-flowing materials such as salt and other de-icers.**

- ◆ Low-profile poly hopper
- ◆ Power attach/detach
- ◆ Poly "adjustable" deflector allows you to adjust pattern of material discharge
- ◆ 12" diameter poly spinner with special-shaped spinner flutes for a consistent discharge pattern
- ◆ Variable speed control with built-in "blast" feature and "overload protection" with pulsed start-up



**TGS-600**



**TGS-800**



**TGS-1100**



## MEYER SNOW PLOWS

**Meyer**  
SNOW PLOWS



### ST SERIES

**Perfectly sized for personal use.**

- ◆ Available size: 7'5"
- ◆ For 4 X 4 standard duty pickups
- ◆ State-of-the-art powder coat paint is applied to moldboards, lift frames, mounting components, sector and A-frames which produce a durable high gloss enamel-like finish

Product Code	Moldboard Length	Moldboard Gauge	Vertical Ribs	Trip Springs	Cutting Edge	Plow Width at Full Angle	Sector	Power Angling Arms
Meyer ST-7.5	7 1/2'	25"	12 Steel	4	3/8" X 6"	79"	11"	1-1/2" X 10"

### C SERIES

**Designed to take the daily wear and tear professional contractors and commercial landscapers demand.**

- ◆ Available sizes: 7'5", 8', 8'5", 9'
- ◆ Heavy-duty moldboards are constructed from heavy-gauge steel and deliver outstanding strength
- ◆ All moldboards have vertical ribs and massive, adjustable trip springs to help protect the driver and equipment from damage caused by snow-covered objects



	Moldboard Length		Vertical Ribs	Trip Springs	Cutting Edge	Plow Width at Full Angle	Sector	Power Angling Arms
Meyer C-7.5	7 1/2'	28"	12 Steel	6	3/8" X 6"	79"	15"	1-1/2" X 12"
Meyer C-8	8'	28"	12 Steel	6	1/2" X 6"	84"	15"	1-1/2" X 12"
Meyer C-8.5	8 1/2'	28"	12 Steel	6	1/2" X 6"	88"	15"	1-1/2" X 12"
Meyer C-9	9'	28"	12 Steel	6	1/2" X 6"	93"	15"	1-1/2" X 12"

# Equipment

## MEYER SNOW PLOWS (CONT.)

### POLYETHYLENE PLOWS

- ◆ Available sizes: 7', 8', 8.5', 9'
- ◆ Meyer Max® Moldboards are constructed of a one-piece, unspliced sheet of very high molecular weight polyethylene
- ◆ Low coefficient of friction, self-lubricating and very slippery
- ◆ High resistance to abrasion extends moldboard surface life. Resists abrasion six times better than carbon steel
- ◆ High resistance to impact - better than steel or polycarbonates
- ◆ Will not rust. Never needs painting, and ultraviolet protection is an integral part of the polyethylene composition
- ◆ Zero water absorption, resists snow and ice freezing to surface



Product Code	Moldboard Length	Moldboard Gauge	Vertical Ribs	Trip Springs	Cutting Edge	Plow Width at Full Angle	Sector	Power Angling Arms	
Meyer CP-7.5	7 1/2'	30"	3/8" Poly	6	4	3/8" X 6"	79"	15"	1-1/2" X 12"
Meyer CP-8	8'	30"	3/8" Poly	6	4	1/2" X 6"	84"	15"	1-1/2" X 12"
Meyer CP-8.5	8 1/2'	30"	3/8" Poly	6	4	1/2" X 6"	88"	15"	1-1/2" X 12"
Meyer CP-9	9'	30"	3/8" Poly	6	4	1/2" X 6"	93"	15"	1-1/2" X 12"

### TM SERIES

#### Personal-use snowplows for smaller sport utility vehicles and light-duty pickup trucks.

- ◆ Designed specifically to fit the weight limits and axle capacities of smaller vehicles
- ◆ Tough, durable and reliable
- ◆ Available in three steel models and two polyethylene models
- ◆ Widths from 5' up to 7' to fit a wider range of vehicles



Product Code				Vertical Ribs	Trip Springs	Cutting Edge	Plow Width at Full Angle	Power Angling Arms	Weight Complete
Meyer TM-5	5'	23"	14 Steel	4	2	3/8" X 6"	64"	1-1/2" X 10"	420lbs.
Meyer TM-6	6'	23"	14 Steel	4	2	3/8" X 6"	64"	1-1/2" X 10"	420lbs.
Meyer TM-6.5	6 1/2'	23"	14 Steel	4	2	3/8" X 6"	69"	1-1/2" X 10"	443lbs.
Meyer TML-6.5	6-1/2'	23"	14 Steel	4	2	1/4" X 6"	69"	1-1/2" X 10"	425lbs.
Meyer TMP-6.5	6 1/2'	23"	3/8" Poly	4	2	3/8" X 6"	69"	1-1/2" X 10"	455lbs.
Meyer TMP-7	7'	23"	3/8" Poly	4	2	3/8" X 6"	74"	1-1/2" X 10"	481lbs.

### LOT PRO

- ◆ Available sizes: 7'5", 8', 8'5", 9', 10'
- ◆ Steel snow plow
- ◆ Tallest and most aggressive contractor class moldboard on the market, with a 32" height and 75° attack angle
- ◆ Better overall clearing performance in less time



Product Code				Vertical Ribs	Trip	Cutting Edge	Plow Width at Full Angle	Power Angling Arms	Weight
Meyer LP-7.5	7 1/2'	32"	12 Steel	6	4	3/8 X 6"	90"	1-1/2" X 10"	733lbs.
Meyer LP-8	8'	32"	12 Steel	6	4	1/2 X 6"	96"	1-1/2" X 10"	820lbs.
Meyer LP-8.5	8 1/2'	32"	12 Steel	6	4	1/2 X 6"	102"	1-1/2" X 10"	835lbs.
Meyer LP-9	9'	32"	12 Steel	6	4	1/2 X 6"	108"	1-1/2" X 10"	843lbs.
Meyer LP-10	10'	32"	12 Steel	6	6	1/2 X 6"	120"	1-1/2" X 10"	865lbs.

### DP SERIES DRIVE PRO

#### Meyer DP 6'8" Contractor Drive Pro Series.

- ◆ Steel snow plow
- ◆ Lightweight yet rugged commercial plow
- ◆ Designed to make it easier for contractors to plow driveways, condos or anywhere there is a limited amount of space
- ◆ For smaller vehicles like light pick-ups or SUVs



Product Code				Vertical Ribs	Trip	Cutting Edge	Plow Width at Full Angle	Power Angling Arms	Weight
Meyer DP 6'8" Contractor	6' 8"	22"	14 Steel	6	2	1/4" X 6"	72"	1-1/2" X 10"	405lbs.

### EZ-MOUNT XPRESS

#### Mounts in seconds and requires no pins, no holes, no twisting or turning.

- ◆ Automatically attaches and locks to the truck
- ◆ Features a highway style plow with an aggressive 75° attack angle delivering maximum snow removal capacity
- ◆ Plow is offered with a full-trip or bottom-trip



## Super easy, super fast, super tough.

- ◆ Available sizes: 8'5" and 9'5"
- ◆ One touch controller and dual-acting cylinders
- ◆ Each of its bottom-trip moldboards can trip independently
- ◆ Upper and lower deflectors
- ◆ Laser cut ribs and plates ensure tight tolerances and more precise, longer lasting moldboard



				Vertical Ribs	Trip Springs	Cutting Edge	Plow Width at Full Angle	Power Angling Arms	Weight Complete
Meyer	8' 5"	30.5"	12 Steel	4 per wing	2 per wing	1/2" X 6"	88"	12" Double Acting	955lbs. w/ Wing Deflectors
Meyer	9' 5"	30.5"	12 Steel	4 per wing	2 per wing	1/2" X 6"	88"	12" Double Acting	955lbs. w/ Wing Deflectors

## ROAD PRO

**Full-Trip and Bottom-Trip municipal snowplows are the most robust and most versatile plows.**

- ◆ Available sizes: 9' and 10'
- ◆ Aggressive attack angle, with 15" overhang and precision-cut radius
- ◆ Throws snow higher and farther to leave only the cleanest roads behind
- ◆ 65° attack angle and precise curvature create superior snow rolling action
- ◆ Moldboards are constructed using 10-gauge steel or 3/8" polyethylene



						Trip	Plow Width at Full Angle	Power Angling Rams	Weight Complete	Blade Type
Meyer RP-9	9'	36"	10 Steel	8	6	1/2" X 6"	93"	2 1/2" X 11 1/2"	1562lbs. w/o options	Full-Trip
Meyer RP-10	10'	36"	10 Steel	8	6	1/2" X 6"	103"	2 1/2" X 11 1/2"	1610lbs. w/o options	Full-Trip
Meyer RPP-10	10'	36"	3/8" Poly	8	6	1/2" X 6"	103"	2 1/2" X 11 1/2"	1590lbs. w/o options	Full-Trip

## DIAMOND EDGE SERIES

**Tallest, most aggressive bottom-trip snowplow available.**

- ◆ Available size: 10'
- ◆ 31.5" attack angle and precise curvature that delivers superior path clearing
- ◆ Snow rolling action that moves more snow in less time
- ◆ Bottom trip: Only the lower portion of the plow gives way, while the rigid moldboard remains upright so the load is not lost
- ◆ All Meyer Diamond Edge™ plows are built with reliable over-time construction



Product Code						Vertical Ribs	Trip	Cutting Edge	Plow Width at Full Angle	Power Angling Rams	Weight	Blade Type
Meyer DAGC-10	10'	36"	10 Steel	8	8	3/4" X 6"	103"	2 1/2" X 11 1/2"	1850lbs. w/o options	Bottom-Trip		

## MEYER SPREADERS

### MEYER BASE LINE SPREADER 240

**Meyer Base Line tailgate spreaders offer contractors economical ice control.**

**The BL-240 is available in a 3.7 cu. ft. capacity, is easy-to-use and perfect for small- to medium-sized jobs like icy walkways and long, snowy driveways.**



Model: BL 240	Part #: 31100	Hopper Width: 23"	Hopper Depth: 18"
Hopper Height: 20"	Total Height: N/A	Spread Width (min-max): 3' - 25'	Empty Weight: 96 lbs.
Max Capacity Load: 3.7 cu ft	Max Capacity Weight: 296 lbs (80lbs./cubic foot)	Spreading Material: Bagged Rock Salt	Operating System: 12V Electric
Horse Power: 1/8	Mounting Method: 2" receiver hitch mount (std)	Vehicle Application: Class 1, SUV's, Utility Vehicles	Warranty: 2 year
Material Movement: Auger	Hopper Material: Poly	Spinner Diameter: 9"	Spinner Material: Poly
Controller: 2 Speed			

### MEYER SPREADER BLASTERS

**The Meyer Blaster series gives you the ability to customize the auger configuration based on the type of material being spread.**



Model: Blaster 350	Part #: 3200	Hopper Width: 49"	Hopper Depth: 24"
Hopper Height: 35.5	Total Height: N/A	Spread Width (min-max): 3' - 40'	Empty Weight: 175 lbs.
Max Capacity Load: 520 lbs (80lbs./cubic foot)	Max Capacity Weight: 520 lbs (80lbs./cubic foot)	Spreading Material: Bagged Rock Salt	Operating System: Electric
Horse Power: 1/2	Mounting Method: 2" receiver (std)	Vehicle Application: SUV, Light Truck, 1/2 ton	Warranty: ROC 3/5 Year
Material Movement: Auger	Hopper Material: Poly	Spinner Diameter: 9"	Spinner Material: Stainless Steel
Controller: Variable Speed			

Model: Blaster 350S w/Vibrator	Part #: 37000	Hopper Width: 49"	Hopper Depth: 24"
Hopper Height: 35.5"	Total Height: N/A	Spread Width (min-max): 3' - 40'	Empty Weight: 185 lbs.
Max Capacity Load: 3.5 cu ft	Max Capacity Weight: 520 lbs (80lbs./cubic foot)	Spreading Material: Bagged 50/50 Rock Salt/Sand or Sand	Operating System: Electric
Horse Power: 1/2	Mounting Method: 2" receiver (std)	Vehicle Application: SUV, Light Truck, 1/2 ton+	Warranty: ROC 3/5 Year
Material Movement: Auger	Hopper Material: Poly	Spinner Diameter: 9"	Spinner Material: Stainless Steel
Controller: Variable Speed			

## MEYER SPREADERS (CONT.)

<b>Model:</b> Blaster 750	<b>Part #:</b> 33000	<b>Hopper Width:</b> 49"	<b>Hopper Depth:</b> 24"
<b>Hopper Height:</b> 35.5"	<b>Total Height:</b> N/A	<b>Spread Width (min-max):</b> 3' - 40'	<b>Empty Weight:</b> 198 lbs.
<b>Max Capacity Load:</b> 12.8 cu ft	<b>Max Capacity Weight:</b> 1024 lbs (80lbs./cubic foot)	<b>Spreading Material:</b> Bagged Rock Salt	<b>Operating System:</b> Electric
<b>Horse Power:</b> 1/2	<b>Mounting Method:</b> Hinged, Dump, Fixed, Flat Bed (all optional)	<b>Vehicle Application:</b> SUV, Light Truck, 1/2 ton	<b>Warranty:</b> ROC 3/5 year
<b>Material Movement:</b> Auger	<b>Hopper Material:</b> Poly	<b>Spinner Diameter</b> 9"	<b>Spinner Material</b> Stainless Steel
<b>Controller:</b> Variable Speed			



<b>Model:</b> Blaster 750R	<b>Part #:</b> 33750	<b>Hopper Width:</b> 49"	<b>Hopper Depth:</b> 24"
<b>Hopper Height:</b> 35.5"	<b>Total Height:</b> N/A	<b>Spread Width (min-max):</b> 3' - 40'	<b>Empty Weight:</b> 229 lbs.
<b>Max Capacity Load:</b> 12.8 cu ft	<b>Max Capacity Weight:</b> 1024 lbs (80lbs./cubic foot)	<b>Spreading Material:</b> Bagged Rock Salt	<b>Operating System:</b> Electric
<b>Horse Power:</b> 1/2	<b>Mounting Method:</b> Integrated 2" receiver	<b>Vehicle Application:</b> 1/2 ton +	<b>Warranty:</b> ROC 3/5 Year
<b>Material Movement:</b> Auger	<b>Hopper Material:</b> Poly	<b>Spinner Diameter</b> 9"	<b>Spinner Material</b> Stainless Steel
<b>Controller:</b> Variable Speed			

<b>Model:</b> Blaster 750RS w/vibrator	<b>Part #:</b> 39010	<b>Hopper Width:</b> 49"	<b>Hopper Depth:</b> 24"
<b>Hopper Height:</b> 35.5"	<b>Total Height:</b> N/A	<b>Spread Width (min-max):</b> 3' - 40'	<b>Empty Weight:</b> 235 lbs.
<b>Max Capacity Load:</b> 12.8 cu ft	<b>Max Capacity Weight:</b> 1024 lbs (80lbs./cubic foot)	<b>Spreading Material:</b> Bagged Rock Salt or Sand	<b>Operating System:</b> Electric
<b>Horse Power:</b> 1/2	<b>Mounting Method:</b> Integrated 2" receiver	<b>Vehicle Application:</b> 1/2 ton +	<b>Warranty:</b> ROC 3/5 Year
<b>Material Movement:</b> Auger	<b>Hopper Material:</b> Poly	<b>Spinner Diameter</b> 9"	<b>Spinner Material</b> Stainless Steel
<b>Controller:</b> Variable Speed			

<b>Model:</b> Blaster 750S w/vibrator	<b>Part #:</b> 39000	<b>Hopper Width:</b> 49"	<b>Hopper Depth:</b> 24"
<b>Hopper Height:</b> 35.5"	<b>Total Height:</b> N/A	<b>Spread Width (min-max):</b> 3' - 40'	<b>Empty Weight:</b> 208 lbs.
<b>Max Capacity Load:</b> 12.8 cu ft	<b>Max Capacity Weight:</b> 1024 lbs (80lbs./cubic foot)	<b>Spreading Material:</b> Bagged 50/50 Rock Salt/Sand or Sand	<b>Operating System:</b> Electric
<b>Horse Power:</b> 1/2	<b>Mounting Method:</b> Hinged, Dump, Fixed, Flat Bed (all optional)	<b>Vehicle Application:</b> 1/2 ton +	<b>Warranty:</b> ROC 3/5 Year
<b>Material Movement:</b> Auger	<b>Hopper Material:</b> Poly	<b>Spinner Diameter</b> 9"	<b>Spinner Material</b> Stainless Steel
<b>Controller:</b> Variable Speed			

## SNOW & ICE MELT

### SNO-PLOW™ ICE MELT

- ◆ Each individual SNO-PLOW™ granule is coated with LIQUI-FIRE™ melting enhancer
- ◆ LIQUI-FIRE™ effectively lowers the working temperature range of SNO-PLOW™ allowing it to work up to three times faster
- ◆ Contains no dangerous chemicals. It can be handled safely with bare hands. 100% non-toxic to children and pets. USDA approved
- ◆ Green colored granules reduce the possibility of over-application, the major cause of tracking problems



### ICE HEAT SKU: SDIH50

## ICE HEAT

99% NaCl,  
Melt Down Temperature: 0°F  
**SDIH50**



## SNOW SHOVELS

**EMSCO GROUP**



### 1280 25" BIGFOOT SNOW SHOVEL

- ◆ Bigfoot Poly Snow Pusher; 25" blade; D-grip handle
- ◆ Built tough for moving mountains of snow and lasting many winters

### MIDWEST RAKE/SEYMOUR SKU #PP100

**Snow pushers are designed to push snow rather than lift and throw it. They allow the user to stand erect to minimize back strain and reduce fatigue.**

- ◆ Rugged ABS plastic head
- ◆ 12 in. x 24 in. head
- ◆ 44" fiberglass handle w/ poly D-grip
- ◆ Seymour's Best tool grade



# Equipment

## Efficiency at 100% and 80%

MPH	21" Width		30" Width		36" Width		42" Width		48" Width		52" Width		60" Width		72" Width	
	100%	80%	100%	80%	100%	80%	100%	80%	100%	80%	100%	80%	100%	80%	100%	80%
1.5	13.2	10.6	13.9	11.1	19.8	15.8	0.64	0.51	0.73	0.58	0.79	0.63	0.91	0.73	1.09	0.88
2.0	17.6	14.1	18.5	14.8	26.4	21.1	0.85	0.68	0.97	0.78	1.05	0.84	1.21	0.97	1.45	1.16
2.5	22.0	17.6	23.1	18.5	33.0	26.4	1.06	0.85	1.21	0.97	1.31	1.05	1.52	1.21	1.83	1.45
3.0	26.4	21.1	27.7	22.2	39.6	31.7	1.27	1.02	1.45	1.16	1.58	1.26	1.82	1.45	2.19	1.74
3.5	30.8	24.6	32.3	25.9	46.2	37.0	1.48	1.19	1.70	1.36	1.84	1.47	2.12	1.70	2.54	2.04
4.0	35.2	28.2	37.0	29.6	52.8	42.2	1.70	1.35	1.94	1.55	2.10	1.68	2.42	1.94	2.90	2.33
5.0					66.0	52.8	2.12	1.69	2.42	1.94	2.63	2.10	3.03	2.42	3.64	2.90
6.0					79.2	63.4	2.55	2.03	2.91	2.33	3.15	2.52	3.64	2.91	4.37	3.49
7.0					92.4	73.9	2.97	2.37	3.39	2.72	3.68	2.94	4.24	3.40	5.05	4.08
8.0					105.6	84.5			3.88	3.10	4.20	3.36	4.84	3.88	5.80	4.66
8.5									4.12	3.29	4.46	3.57	5.15	4.11	6.18	4.94
9.0									4.36	3.48	4.73	3.77	5.46	4.35	6.53	5.23
9.5									4.61	3.68	4.99	3.98	5.76	4.59	6.90	5.52
10.0									4.85	3.87	5.25	4.19	6.06	5.00	7.27	6.00
11.0													6.66	5.33	8.02	6.42
12.0													7.27	5.81	8.73	6.97

\* Two productivity ratings are shown: one at 100% and one at 80% efficiency. Many manufacturers use 100% efficiency ratings for sales purposes. Exmark believes an 80% efficiency rating is more

Formulas for calculating acres per hour:  
100% efficiency—MPH x width of cut ÷ 99 = acres per hour

Commercial 21 S-Series Specifications		
PRODUCT CODE		ECSKA21
POWER COMPONENTS	Engine:	Kawasaki®
	Model:	FJ180V
	Displacement:	179
	Air Filter:	Dual element air cleaner
	Drive System:	Self-propelled; rear-wheel gear-driven.
	Speed:	0.0 mph to 4.2 mph (6.6 kmph) forward.
	Fuel Capacity:	2 quart integral fuel tank
	Safety Package:	Zone start
	CARB Compliant:	No
DECKS	Deck Construction:	5" deep, 1/4"-thick die-cast aluminum.
	Deck Style:	Fixed deck, Rear -discharge bagger standard with option to mulch.
	Width:	21" (53.34 cm)
	Cutting Heights	1.0" (2.5 cm) to 4.5" (11.4 cm) in 0.5" (1.3 cm) increments.
	Blades	1 Blade at 20.5" Length
	Blade-Tip Speed	Approximately 18,500 fpm.
EQUIPMENT	Drive Tires	9" x 2.5", semi-pneumatic.
	Bag Capacity	2.5 bushels (20 gallons).
MISCELLANEOUS	Curb Weight:	112 lbs
	Length:	62 in. (157.5 cm)
	Width:	22 in. (55.9 cm)
	Height:	38 in. (96.5 cm)
	Warranty:	1 Year

# Equipment

Commercial 21 X-Series Specifications				
PRODUCT CODE		ECXHN21	ECXKA21	ECXKABBC21
POWER COMPONENTS	Engine:	Honda	Kawasaki®	
	Model:	GXV 160	FJ180V KAI	
	Displacement:	163	179	
	Air Filter:	Dual element air cleaner		
	Drive System:	Self-propelled; rear-wheel gear-driven.		
	Speed:	0.0 mph to 4.2 mph (6.6 kmph) forward.		
	Fuel Capacity:	1 gallon (3.8-L).		
	Safety Package:	Zone start		Blade Brake Clutch (BBC).
	CARB Compliant:	Yes		
DECKS	Deck Construction:	5" deep, 1/4"-thick die-cast aluminum.		
	Deck Style:	Fixed deck, Rear -discharge bagger and mulch plug standard.		
	Width:	21" (53.34 cm)		
	Cutting Heights	1.0" (2.5 cm) to 4.5" (11.4 cm) in 0.5" (1.3 cm) increments.		
	Blades	1 Blade at 20.5" Length		
	Blade-Tip Speed	Approximately 18,500 fpm.		
EQUIPMENT	Drive Tires	9" x 2.5", semi-pneumatic.		
	Bag Capacity	2.5 bushels (20 gallons).		
MISCELLANEOUS	Curb Weight:	112 lbs	114 lbs	115 lbs
	Length:	62 in. (157.5 cm)		
	Width:	22 in. (55.9 cm)		
	Height:	38 in. (96.5 cm)		
	Warranty:	1 Year		

Commercial 30 Specifications		
PRODUCT CODE		ECKA30
POWER COMPONENTS	Engine:	Kawasaki®
	Model:	FJ180V KAI
	Displacement:	179
	Air Filter:	Dual element air cleaner
	Drive System:	Self-propelled, rear-wheel gear-driven.
	Speed:	0.0 mph to 4.2 (6.6 kmph) mph forward.
	Fuel Capacity:	1 gallon (3.8-L)
	Safety Package:	Blade Brake Clutch (BBC).
	CARB Compliant:	Yes
DECKS	Deck Construction:	4.6" Deep Stamped Steel with welded reinforcement
	Deck Style:	Fixed deck, Rear-discharge bagger with option to mulch or side discharge.
	Width:	0" (0 cm)
	Cutting Heights	1.5"(3.8 cm) to 5.0" (12.7 cm) in 0.5" (1.3 cm) increments.
	Blades	2 Blades at 15.4" Length
	Blade-Tip Speed	Approximately 18,500 fpm.
EQUIPMENT	Drive Tires	10 x 3.0, semi-pneumatic
	Bag Capacity	2.5 bushels (20 gallons)
MISCELLANEOUS	Curb Weight:	170 lbs
	Warranty:	1 Year

Metro Specifications						
PRODUCT CODE		MG481KA322P	MG481KA362	MG481KA362CA (CALIFORNIA)	MG481KA483	MG481KA483CA (CALIFORNIA)
POWER COMPONENTS	Engine:	Kawasaki®				
	Model:	FS481V				
	Displacement:	603				
	Air Filter:	Standard Engine Manufacturer's air filter				
	Drive System:	Direct drive from transmission to single-belt wheel drives				
	Speed:	2.0 mph (3.2 kmph) to 6.2 mph (10 kmph) forward, reverse assist.				
	PTO Engagement:	Lever-actuated blade engagement with blade brake.				
	Fuel Capacity:	5-gallon (18.9-L) fuel tank.				
	Drive Wheel Release:	Gearbox in neutral allows unit movement without engine running.				
	Safety Package:	Operator Presence Controls (OPC). Operator must have transmission in neutral and blades disengaged to leave operator's position without stopping engine.				
	Casters:	.38" thick caster yoke arms				
	Cup Holder:	No				
CARB Compliant:	No	No	Yes	No	Yes	
DECKS	Deck Construction:	10-gauge top that is formed and continuously seam welded, 7-gauge side skirt and 7-gauge welded spindle mounting locations for improved strength.				
	Deck Style:	Fixed UltraCut Series 2, side discharge standard, with molded discharge chute and option to bag or mulch.			Fixed UltraCut Series 3, side discharge standard, with	
	Width:	32" (81.28 cm)	36" (91.44 cm)	36" (91.44 cm)	48" (121.92 cm)	48" (121.92 cm)
	Deck Lift:	Manual cutter housing and front caster spacer position adjustment.				
	Cutting Heights	1.0" (2.5 cm) to 4.25" (10.8 cm) in 0.25" (0.64 cm) increments.				
	Blades	2 Blades at 16.25" Length			3 Blades at 16.25" Length	
	Blade-Tip Speed	Approximately 18,500 fpm.				
EQUIPMENT	Steering Control:	Gear drive with Pistol grip, forward/reverse assist.		Gear drive with Enhanced Control System (ECS), forward/reverse assist.		
	Front Caster Tires:	9 x 3.5-4, smooth-tread, semi-pneumatic.				
	Drive Tires	13 x 5.0-6, 4-ply Turf Saver		13 x 6.5-6, 4-ply Turf Master®		
	Parking Brake	Standard; brake bands.				
	Blade Spindles	No maintenance, sealed and non-greasable spindles; 5.40"-diameter cutter housing and 1.0" diameter spindle tube.				
	Electrical	No battery, recoil start.				
MISCELLANEOUS	Curb Weight:	421 lbs	451 lbs	456 lbs	501 lbs	506 lbs
	Length:	73.0 in. (185.4 cm)	78.0 in. (198.1 cm)	78.0 in. (198.1 cm)	73.0 in. (185.4 cm)	78.0 in. (198.1 cm)
	Width:	43.3 in. (110.0 cm)	47.0 in. (119.4 cm)	47.0 in. (119.4 cm)	57.9 in. (147.1 cm)	57.9 in. (147.1 cm)
	Height:	43.0 in. (109.2 cm)	43.0 in. (109.2 cm)	43.0 in. (109.2 cm)	43.0 in. (109.2 cm)	43.0 in. (109.2 cm)
	Warranty:	2 Year	2 Year	2 Year	2 Year	2 Year

Viking Specifications			
PRODUCT CODE		VH481KA362	VH481KA483
POWER COMPONENTS	Engine:	Kawasaki	
	Model:	FS481V	
	Displacement:	603	
	Air Filter:	Standard Engine Manufacturer's air filter	
	Drive System:	Twin Hydro-Gear variable-displacement pumps and twin high-efficiency Parker/Ross wheel-drive motors with 1" (2.54 cm) tapered	
	Speed:	Infinitely variable speed selection from 0 6.2 mph (10 kmph) forward, 0 2.2 mph (3.5 kmph) reverse.	
	PTO Engagement:	Mechanical blade engagement with blade brake.	
	Fuel Capacity:	5-gallon (18.9-L) fuel tank.	
	Drive Wheel Release:	Allows unit movement without engine running.	
	Safety Package:	Operator Presence Controls (OPC). Operator must have speed control lever in neutral and blades disengaged to leave operator's	
	Casters:	.38" thick caster yoke arms	
	Cup Holder:	No	
	CARB Compliant:	No	
DECKS	Deck Construction:	10-gauge top that is formed and continuously seam welded, 7-gauge side skirt and 7-gauge welded spindle mounting locations for	
	Deck Style:	Fixed Ultracut Series 2, side discharge standard, with molded discharge chute and option to bag or mulch.	Fixed UltraCut Series 3, side discharge standard, with molded discharge chute and option to bag or mulch.
	Width:	36" (91.44 cm)	48" (121.92 cm)
	Deck Lift:	Manual lift with hairpin from hole to hole for position adjustment.	
	Cutting Heights	1.0" (2.5 cm) to 4.25" (10.8 cm) in 0.25" (0.54 cm) increments.	
	Blades	2 Blades at 18.00" Length	3 Blades at 16.25" Length
EQUIPMENT	Blade-Tip Speed	Approximately 18,500 fpm.	
	Steering Control:	Hydro drive with Enhanced Control System (ECS), forward/reverse, left/right or zero-turn.	
	Front Caster Tires:	9 x 3.5-4, smooth-tread, semi-pneumatic.	
	Drive Tires	16 x 6.5-8, 4-ply Turf Master	
	Parking Brake	Lever-actuated mechanical compression.	
	Blade Spindles	No maintenance, sealed and non-greasable spindles; 5.40"-diameter cutter housing and 1.0" diameter spindle tube.	
MISCELLANEOUS	Electrical	No battery, recoil start.	
	Curb Weight:	481 lbs	531 lbs
	Length:	78.0 in. (198.1 cm)	
	Width:	47.0 in. (119.4 cm)	
	Height:	43.2 in. (109.7 cm)	
	Warranty:	2 Year	

## Turf Tracer S-Series Specifications

PRODUCT CODE		TTS481KA363	TTS481KA363CA (CALIFORNIA)	TTS481KA483	TTS541KA483CA (CALIFORNIA)	TTS541KA523	TTS600KAE483	TTS600KAE523	
POWER COMPONENTS	Engine:	Kawasaki®							
	Model:	FS481V							
	Displacement:	603							
	Air Filter:	Standard Engine Manufacturer's air filter							
	Drive System:	Twin Hydro-Gear variable-displacement pumps and twin high-efficiency Parker/Ross wheel-drive motors with 1" (2.54 cm) tapered shafts.							
	Speed:	Infinitely variable speed selection from 0–6.2 mph (10 kmph) forward, 0–2.2 mph (3.5 kmph) reverse.							
	PTO Engagement:	Mechanical blade engagement with blade brake.							
	Fuel Capacity:	5-gallon (18.9-L) fuel tank.							
	Drive Wheel Release:	Allows unit movement without engine running.							
	Safety Package:	Operator Presence Controls (OPC). Operator must have speed control lever in neutral and blades disengaged to leave operator's position without stopping engine							
	Casters:	.38" thick caster yoke arms							
	Cup Holder:	No							
CARB Compliant:	No								
DECKS	Deck Construction:	10-gauge top that is formed and continuously seam welded, 7-gauge side skirt and 7-gauge welded spindle mounting locations for improved strength.							
	Deck Style:	Full-floating UltraCut Series 3, side discharge standard, with molded discharge chute and option to bag or mulch.							
	Width:	36" (91.44 cm)	48" (121.92 cm)	52" (132.08 cm)	48" (121.92 cm)	52" (132.08 cm)			
	Deck Lift:	Manual lift with hairpin from hole to hole for position adjustment.							
	Cutting Heights	1.5" (3.8 cm) to 4.5" (11.4 cm) in 0.5" (1.3 cm) increments.							
	Blades	2 Blades at 18.00" Length	3 Blades at 16.25" Length	3 Blades at 18.00" Length	3 Blades at 16.25" Length	3 Blades at 18.00" Length			
	Blade-Tip Speed	Approximately 18,500 fpm.							
EQUIPMENT	Steering Control:	Hydro drive with Enhanced Control System (ECS), forward/reverse, left/right or zero-turn.							
	Front Caster Tires:	9 x 3.5-4, smooth-tread, semi-pneumatic.							
	Drive Tires	16 x 6.5-8, 4-ply Turf Master®	16 x 7.5-8, 4-ply Turf Master®						
	Parking Brake	Lever-actuated mechanical compression.							
	Blade Spindles	No maintenance, sealed and non-greasable spindles; 5.40"-diameter cutter housing with 1.75"-diameter splined blade driver and 1.0" diameter spindle shaft.							
	Electrical	No battery, recoil start.					12-volt battery with 15-amp alternator.		
MISCELLANEOUS	Curb Weight:	569 lbs	574 lbs	602 lbs	626 lbs	636 lbs	621 lbs	659 lbs	
	Length:	77.7 in. (197.4 cm)		73.7 in. (187.2 cm)		75.9 in. (192.8 cm)	73.7 in. (187.2 cm)	75.9 in. (192.8 cm)	
	Width:	46.7 in. (118.6 cm)		57.9 in. (147.1 cm)		63.5 in. (161.3 cm)	57.9 in. (147.1 cm)	63.5 in. (161.3 cm)	
	Height:	42.0 in. (106.7 cm)							
	Warranty:	2 Year							

Turf Tracer X-Series Specifications				
PRODUCT CODE		TTX650EKCE604	TTX691KAE524	TTX691KAE604
POWER COMPONENTS	Engine:	Kohler®	Kawasaki®	Kawasaki®
	Model:	ECV650	FX691V	FX691V
	Displacement:	694	726	726
	Air Filter:	Heavy-duty canister air filtration system		
	Drive System:	Twin Hydro-Gear variable-displacement pumps and twin high-efficiency		
	Speed:	Infinitely variable speed selection from 0– 6.75 mph (10.9 kmph) forward,		
	PTO Engagement:	Electromagnetic 200 ft-lbs clutch.		
	Fuel Capacity:	5-gallon (18.9-L) fuel tank.		
	Drive Wheel Release:	Allows unit movement without engine running.		
	Safety Package:	Operator Presence Controls (OPC). Operator must have speed control lever in		
	Casters:	.38" thick caster yoke arms		
	Cup Holder:	No		
	CARB Compliant:	No		
DECKS	Deck Construction:	10-gauge top that is formed and continuously seam welded, 7-gauge side skirt		
	Deck Style:	Full-floating UltraCut Series 4. Side discharge standard, with molded discharge		
	Width:	60" (152.4 cm)	52" (132.08 cm)	60" (152.4 cm)
	Deck Lift:	Manual lift with hairpin from hole to hole for position adjustment.		
	Cutting Heights	1.5" (3.8 cm.) to 4.5" (11.4 cm) in 0.5" (1.3 cm) increments.		
	Blades	3 Blades at 20.5" Length	3 Blades at 18" Length	3 Blades at 20.5" Length
	Blade-Tip Speed	Approximately 18,500 fpm.		
EQUIPMENT	Steering Control:	Hydro drive with Enhanced Control System (ECS), forward/reverse, left/right or		
	Front Caster Tires:	11 x 4.0-5, smooth tread, semi-pneumatic.		
	Drive Tires	18 x 8.5-8, 4-ply Turf Master®		
	Parking Brake	Lever-actuated mechanical compression.		
	Blade Spindles	No maintenance, sealed and non-greasable spindles; 5.40"-diameter cutter		
	Electrical	12-volt battery with 20-amp alternator.		
MISCELLANEOUS	Curb Weight:	840 lbs	720 lbs	760 lbs
	Length:	104.8 in. (266.2 cm)	84.8 in. (215.4 cm)	
	Width:	72.0 in. (182.96 cm)		
	Height:	45.0 in. (114.3 cm)		
	Warranty:	2 Year		

## Vantage S-Series Specifications

PRODUCT CODE		VTS541KA363	VTS541KA363CA (CALIFORNIA)	VTS691KA484CA	VTS730EKC524	VTS740EKC604
POWER COMPONENTS	Engine:	Kawasaki®			Kohler®	Kohler®
	Model:	FS541V			FX691V	ECV740
	Displacement:	603			726	747
	Air Filter:	Standard Engine Manufacturer's air filter				Heavy-duty canister air filtration system
	Drive System:	Two Hydro Gear 10 cc pumps powering two Parker 12 cubic inch motors.				Two Hydro Gear 12 cc pumps powering two Parker 14 cubic inch motors.
	Speed:	Infinitely variable speed selection 0–8.0 mph (12.9 kmph) forward, 0–4.0 mph (6.4 kmph) reverse				
	PTO Engagement:	Warner 175 ft-lb clutch		Warner 200 ft-lb clutch		
	Fuel Capacity:	8-gallon (30.3-L), single fuel tank with single fill location.				
	Drive Wheel Release:	Allows unit movement without engine running.				
	Safety Package:	Operator Presence Controls (OPC) with safety interlock system indicators				
	Casters:	.38" thick double-yoke, smooth tread caster wheel assembly with pre-installed bearing cups.				
	Cup Holder:	Optional				
CARB Compliant:	No	Yes			No	
DECKS	Deck Construction:	10-gauge top that is formed and continuously seam welded, 7-gauge side skirt and 7-gauge formed and welded spindle mounting locations for				
	Deck Style:	Full-floating UltraCut Series 3. Side discharge		Full-floating UltraCut Series 4. Side discharge standard, with molded discharge chute and option to		
	Width:	36" (91.44 cm)		48" (121.92 cm)	52" (132.08 cm)	60" (152.4 cm)
	Deck Lift:	Standard; mechanical lift-assist springs.				
	Cutting Heights	1.0" (2.54 cm) to 5.0" (12.7 cm) in 0.25" (0.64 cm) increments adjustable from the operator position.				
	Blades	2 Blades at 18" Length		3 Blades at 16.25" Length	3 Blades at 18" Length	3 Blades at 20.50" Length
	Blade-Tip Speed	Approximately 18,500 fpm.				
EQUIPMENT	Tractor Frame:	Welded, heavy-duty 1.5" x 3" tubular steel.				
	Steering Control:	Twin levers with no-tools adjustable front reference bar to modify forward ground speed.				
	Front Caster Tires:	11 x 4.0-5, smooth-tread, semipneumatic tires.				
	Drive Tires	18 x 8.5-8 Kenda Tires		20 x 10.50-8 Kenda Tires		
	Parking Brake	Lever-actuated bar brake.				
	Blade Spindles	No maintenance, sealed and nongreasable spindles; 7.75" diameter cutter housing with 1.75" diameter splined blade driver 1.0"-diameter spindle				
	Electrical	12-volt battery with 15-amp alternator.				12-volt battery with 20-amp alternator.
MISCELLANEOUS	Curb Weight:	790 lbs		855 lbs	866 lbs	883 lbs
	Length:	74 in. (188 cm)				
	Width:	48.0 in. (121.9 cm)		59.6 in. (151.4 cm)	64.8 in. (164.6 cm)	72.8 in. (184.9 cm)
	Height:	50 in. (127 cm)				
	Warranty:	3 Year Comm / 5 Year Cons				

Vantage X-Series Specifications					
PRODUCT CODE		VTX651KA484	VTX691KA524	VTX730EKC524	VTX740EKC604
POWER COMPONENTS	Engine:	Kawasaki®	Kawasaki®	Kohler®	Kohler®
	Model:	FS651V	FX691V	ECV730	ECV740
	Displacement:	726		747	
	Air Filter:	Heavy-duty canister air filtration system			
	Drive System:	Two Hydro Gear 10 cc pumps powering two Parker 12 cubic inch motors.	Two Hydro Gear 12 cc pumps powering two Parker 14 cubic inch motors.		
	Speed:	Infinitely variable speed selection 0–8.0 mph (12.9 kmph) forward, 0–4.0 mph (6.4 kmph) reverse			
	PTO Engagement:	Warner 200 ft-lb clutch			
	Fuel Capacity:	8-gallon (30.3-L), single fuel tank with single fill location.			
	Drive Wheel Release:	Allows unit movement without engine running.			
	Safety Package:	Operator Presence Controls (OPC) with safety interlock system indicators			
	Casters:	.38" thick double-yoke, smooth tread caster wheel assembly with pre-installed bearing cups.			
	Cup Holder:	Optional			
	CARB Compliant:	No			
DECKS	Deck Construction:	10-gauge top that is formed and continuously seam welded, 7-gauge side skirt and 7-gauge formed			
	Deck Style:	Full-floating UltraCut Series 4. Side discharge standard, with molded discharge chute and option to			
	Width:	48" (121.92 cm)	52" (132.08 cm)	60" (152.4 cm)	
	Deck Lift:	Standard; mechanical lift-assist springs.			
	Cutting Heights	1.0" (2.54 cm) to 5.0" (12.7 cm) in 0.25" (0.64 cm) increments adjustable from the operator position.			
	Blades	3 Blades at 16.25" Length	3 Blades at 18" Length	3 Blades at 20.50" Length	
	Blade-Tip Speed	Approximately 18,500 fpm.			
EQUIPMENT	Tractor Frame:	Welded, heavy-duty 1.5" x 3" tubular steel.			
	Steering Control:	Hydro drive with Enhanced Control System (ECS), forward/reverse, left/right or zero-turn.			
	Front Caster Tires:	11 x 4.0-5, smooth-tread, semipneumatic tires.			
	Drive Tires	20 x 10.50-8 Kenda Tires			
	Parking Brake	Lever-actuated bar brake.			
	Blade Spindles	No maintenance, sealed and nongreasable spindles; 7.75" diameter cutter housing with 1.75"			
	Electrical	12-volt battery with 15-amp alternator.		12-volt battery with 20-amp alternator.	
MISCELLANEOUS	Curb Weight:	855 lbs	866 lbs	875 lbs	883 lbs
	Length:	74 in. (188 cm)			
	Width:	59.6 in. (151.4 cm)	64.8 in. (164.6 cm)		72.8 in. (184.9 cm)
	Height:	50 in. (127 cm)			
	Warranty:	3 Year Comm / 5 Year Cons			

# Equipment

Navigator Specifications				
PRODUCT CODE		NV640KC42	NV640KC48	NV730EKC48
POWER COMPONENTS	Engine:	Kohler®	Kohler®	Kohler®
	Model:	CH640	CH640	ECH730
	Displacement:	624	624	747
	Air Filter:	Heavy-duty canister air filtration		
	Drive System:	New Dual Hydro-Gear 12 cc variable displacement pumps power		
	Speed:	Infinitely variable speed selection from 0–7.0 mph (11.3 kmph)		
	PTO Engagement:	Lever-actuated clutching belt with 6" brake band.		
	Fuel Capacity:	7.5-gallon (28.4-L), pivoting tank for easier engine service.		
	Drive Wheel Release:	Allows movement without engine running.		
	Safety Package:	Operator Presence Controls (OPC) and drive system interlock.		
	Rollover Protection System (ROPS):	Optional 2-post foldable ROPS with seat belt and latch.		
	Casters:	0.50" thick rear caster fork		
	CARB Compliant:	Yes		
	DECKS	Deck Construction:	7-gauge sides joined by a continuous bead weld to a 10-gauge	
Deck Style:		Full Floating rear discharge cutting deck w/heavy duty gear driven		
Width:		42" (106.68 cm)	48" (121.92 cm)	
Cutting Heights		1.0" (2.54 cm) to 4.0" (10.2 cm) in 0.25" (0.64 cm) increments .		
Blades		2 Blades at 22" Length	2 Blades at 25" Length	
Blade-Tip Speed		Approximately 18,500 fpm.		
EQUIPMENT	Tractor Frame:	Channeled and fully welded 1.5" x 1.5" x 0.187" wall tubing with a		
	Steering Control:	FeatherTouch hand-control drive levers, low-force constant speed		
	Front Caster Tires:	8 x 3.0-4 semi-pneumatic.		
	Drive Tires	18 x 10.5-10 Multi-Trac® C/S.		
	Parking Brake	Wet disc, internal in wheel motor.		
	Seat	High-back, "EVC" (Elastomeric Vibration Control) seat, which has		
	Blade Spindles	Heavy Duty cast iron right-angle gearboxes.		
	Electrical	12-volt battery with 15-amp alternator.		12-volt battery with 20-amp alternator.
	Bag Capacity	9.5 bushel (76 gallons)		
MISCELLANEOUS	Curb Weight:	1140 lbs	1170 lbs	
	Length:	91.8 in. (233.2 cm)	94.5 in. (240.0 cm)	
	Width:	43.2 in. (109.7 cm)	49.2 in. (125.0 cm)	
	Height:	51.2 in. (130.0 cm)		
	Warranty:	2 Year Comm / 2 Year Cons		

Lazer Z E-Series Specifications					
PRODUCT CODE		LZE600KA484	LZE691KA524	LZE730KA604SS	LZE740EK604
POWER COMPONENTS	Engine:	Kawasaki®			Kohler®
	Model:	FX600V	FX691V	FX730V	ECV740
	Displacement:	603	726		747
	Air Filter:	Heavy-duty canister air filtration system			
	Drive System:	Two Exmark exclusive Parker unitized pump and wheel motor		Two Exmark exclusive Parker unitized pump and wheel motor	
	Speed:	Infinitely variable speed selection 0-18.0 mph (12.9 kmph) forward, 0-6.0 mph (9.7 kmph) reverse.			
	PTO Engagement:	MagStop Electromagnetic 175 ft-lb clutch with spot brake		MagStop electromagnetic 200-ft-lb clutch with spot brake	
	Fuel Capacity:	8-gallon (30.3-L) single fuel tank with single fill location.			
	Drive Wheel Release:	Allows unit movement without engine running.			
	Safety Package:	Operator Presence Controls (OPC) and drive system interlock, with safety interlock system indicators.			
	Rollover Protection System (ROPS):	2-post foldable ROPS standard with seat belt and latch.			
	Casters:	.50" thick caster yoke arms.			
	Cup Holder:	Standard			
CARB Compliant:	No				
DECKS	Deck Construction:	10-gauge top that is formed and continuously seam welded		10-gauge top that is formed and continuously seam welded,	
	Deck Style:	Full-floating UltraCut Series 4. Side discharge standard, with molded discharge chute and option to bag or mulch.			
	Width:	48" (121.92 cm)	52" (132.08 cm)	60" (152.4 cm)	
	Deck Lift:	Standard; foot-controlled deck lift changes cutting height and lifts the deck to maneuver around obstacles, or place in			
	Cutting Heights	1.0" (2.5 cm) to 5.5" (14.0 cm) in 0.25" (0.64 cm) increments adjustable from operator's seat.			
	Blades	3 Blades at 16.25" Length	3 Blades at 18.00" Length	3 Blades at 20.50" Length	
Blade-Tip Speed	Approximately 18,500 fpm.				
EQUIPMENT	Tractor Frame:	Unibody, welded, heavy-duty 1.5" x 3" tubular steel.			
	Steering Control:	Hydraulically dampened twin levers, adjust fore and aft. Adjustable dampeners (3 positions) to customize drive			
	Front Caster Tires:	13 x 5.0-6, smooth-tread, semi-pneumatic.			
	Drive Tires	23 x 9.5-12, 4 ply Super Turf®		24 x 12-12, 4 ply Super Turf®	
	Parking Brake	Lever-actuated disc brake.			
	Seat	Two tone bolstered seat with Elastomeric Vibration Control material. Adjustment: Fore and aft from Operators' Position.		Deluxe, bolstered suspension seat with Elastomeric Vibration Control material. Adjustment: Fore and aft from Operators' Position.	Two tone bolstered seat with Elastomeric Vibration Control material. Adjustment: Fore and aft from Operators' Position.
	Blade Spindles	No maintenance, sealed and non-greasable spindles; 7.75"-diameter cutter housing with 25mm (.98") diameter spindle			
	Electrical	12-volt battery with 15-amp alternator.			12-volt battery with 20-amp alternator.
MISCELLANEOUS	Curb Weight:	1015 lbs	1060 lbs	1115 lbs	
	Length:	79.2 in. (201.2 cm)	79.2 in. (201.2 cm)	83.1 in. (211.1 cm)	
	Width:	59.6 in. (151.4 cm)	64.8 in. (164.6 cm)	72.8 in. (184.9 cm)	
	Height:	70 in. (177.8 cm)			
	Warranty:	2 Year Comm 4 Year Cons			

## Lazer Z S-Series Specifications

PRODUCT CODE		LZS651KA484	LZS691KA524	LZS730EKC524	LZS740EKC60RD	LZS742KC604	LZS749EKC604
POWER COMPONENTS	Engine:	Kawasaki®		Kohler®			
	Model:	FX651V	FX691V	ECV730	ECV740	CV742	ECV749
	Displacement:	726		747			
	Air Filter:	Heavy-duty canister air filtration system					
	Drive System:	Two Exmark exclusive Parker unitized pump and wheel motor systems with no hoses, integrated cooling fans, 1.7-quart integrated reservoir, spin-on filter and heavy-duty components. 12 cc pumps and 14. 5 cubic inch motors.			Two Exmark exclusive Parker unitized pump and wheel motor systems with no hoses, integrated cooling fans, shock valve, 1.7-quart integrated reservoir, spin-on filter and heavy-duty components. 12 cc pumps and 14. 5 cubic inch motors.		
	Speed:	Infinitely variable speed selection from 0–10.0 mph (16 kmph) forward, 0–6.0 mph (9.7 kmph) reverse.					
	PTO Engagement:	MagStop electromagnetic 200-ft-lb clutch with spot brake					
	Fuel Capacity:	12-gallon (45.4-L), single fuel tank with single fill location.					
	Drive Wheel Release:	Allows unit movement without engine running.					
	Safety Package:	Operator Presence Controls (OPC) and drive system interlock, with safety interlock system indicators.					
	Rollover Protection System (ROPS):	2-post foldable ROPS standard with seat belt and latch.					
	Casters:	.50" thick caster yoke arms.					
	Cup Holder:	Standard					
	CARB Compliant:	Yes		No		Yes	No
DECKS	Deck Construction:	10-gauge top that is formed and continuously seam welded, 7-gauge side skirt and 7-gauge reinforced spindle mounting locations for improved strength and reduced weight.			7-gauge high strength alloy top that is formed and continuously seam welded, with 7-gauge high strength alloy side skirt.	10-gauge top that is formed and continuously seam welded, 7-gauge side skirt and 7-gauge formed and welded spindle mounting locations for improved strength and reduced weight.	
	Deck Style:	Full-floating UltraCut Series 4. Side discharge standard, with molded discharge chute and option to bag or mulch.			Full-floating RD Series High-Capacity Cutting Platform. Rear-discharge standard with option to mulch.	Full-floating UltraCut Series 4. Side discharge standard, with molded discharge chute and option to bag or mulch.	
	Width:	48" (121.92 cm)	52" (132.08 cm)		60" (152.4 cm)		
	Deck Lift:	Standard; foot-controlled deck lift changes cutting height and lifts the deck to maneuver around obstacles, or place in transport position.					
	Cutting Heights	1.0" (2.5 cm) to 5.5" (11.8 cm) in 0.25" (0.64 cm) increments adjustable from operator's seat.					
	Blades	3 Blades at 16.25" Length	3 Blades at 18.00" Length		3 Blades at 20.50" Length		
	Blade-Tip Speed	Approximately 18,500 fpm.					
EQUIPMENT	Tractor Frame:	Unibody, welded, heavy-duty 1.5" x 3" tubular steel.					
	Steering Control:	Hydraulically dampened twin levers, adjust fore and aft. Adjustable dampeners (3 positions) to customize drive responsiveness. Also adjustable					
	Front Caster Tires:	13 x 5.0-6, smooth-tread, semi-pneumatic.			13 x 6.5-6, smooth-tread, semi-pneumatic.		
	Drive Tires	23 x 9.5-12, 4 ply Turf Master®	23 x 9.5-12, 4 ply Turf Master®	23 x 9.5-12, 4 ply Turf Master®	24 x 12-12, 4 ply Turf Master®	24 x 12-12, 4 ply Turf Master®	24 x 12-12, 4 ply Turf Master®
	Parking Brake	Lever-actuated disc brake.	Lever-actuated disc brake.	Lever-actuated disc brake.	Lever-actuated disc brake.	Lever-actuated disc brake.	Lever-actuated disc brake.
	Seat	Deluxe, two tone, bolstered seat with Elastomeric Vibration Control material. Mounted on innovative Seat Isolation System that provides					
	Blade Spindles	No maintenance, sealed and non-greasable spindles; 7.75"-diameter cutter housing with 25mm (.98") diameter spindle shaft and splined blade					
	Electrical	12-volt battery with 15-amp alternator.		12-volt battery with 20-amp alternator.		12-volt battery with 15-amp alternator.	12-volt battery with 20-amp alternator.
	MISCELLANEOUS	Curb Weight:	1093 lbs	1104 lbs	1133 lbs	1177 lbs	1164 lbs
Length:		79.2 in. (201.2 cm)		79.2 in. (201.2 cm)	85.6 in (217.4 cm )	83.1 in. (211.1 cm)	
Width:		59.6 in. (151.4 cm)	64.8 in. (164.6 cm)	64.8 in. (164.6 cm)	66.2 in. (168.1 cm)	72.8 in. (184.9 cm)	
Height:		70 in. (177.8 cm)					
Warranty:		3 Year Comm / 5 Year Cons					

## Lazer Z S-Series Specifications

PRODUCT CODE		LZS749EK724		LZS749EK72RD		LZS801KA524		LZS801KA604		LZS801KA724	
POWER COMPONENTS	Engine:	Kohler®				Kawasaki®					
	Model:	ECV749				FX801V					
	Displacement:	749		747		852					
	Air Filter:	Heavy-duty canister air filtration system									
	Drive System:	Two Exmark exclusive Parker unitized pump and wheel motor systems with no hoses, integrated cooling fans, shock valve, 1.7-quart integrated reservoir, spin-on filter and heavy-duty components. 12 cc pumps and 14. 5 cubic inch motors.				Two Exmark exclusive Parker unitized pump and wheel motor systems with no hoses, integrated cooling fans, 1.7-quart integrated reservoir, spin-on filter and heavy-duty components. 12 cc pumps and 14. 5 cubic inch motors.		Two Exmark exclusive Parker unitized pump and wheel motor systems with no hoses, integrated cooling fans, shock valve, 1.7-quart integrated reservoir, spin-on filter and heavy-duty components. 12 cc pumps and 14. 5 cubic inch motors.			
	Speed:	Infinitely variable speed selection from 0–10.0 mph (16 kmph) forward, 0–6.0 mph (9.7 kmph) reverse.		Infinitely variable speed selection from 0–10.0 mph (16 kmph) forward, 0–6.0 mph (9.7 kmph) reverse.		Infinitely variable speed selection from 0–10.0 mph (16 kmph) forward, 0–6.0 mph (9.7 kmph) reverse.		Infinitely variable speed selection from 0–10.0 mph (16 kmph) forward, 0–6.0 mph (9.7 kmph) reverse.		Infinitely variable speed selection from 0–10.0 mph (16 kmph) forward, 0–6.0 mph (9.7 kmph) reverse.	
	PTO Engagement:	MagStop electromagnetic 200-ft-lb clutch with spot brake									
	Fuel Capacity:	12-gallon (45.4-L), single fuel tank with single fill location.									
	Drive Wheel Release:	Allows unit movement without engine running.									
	Safety Package:	Operator Presence Controls (OPC) and drive system interlock, with safety interlock system indicators.									
	Rollover Protection System (ROPS):	2-post foldable ROPS standard with seat belt and latch.									
	Casters:	.50" thick caster yoke arms.									
	Cup Holder:	Standard									
	CARB Compliant:	Yes									
DECKS	Deck Construction:	10-gauge top that is formed and continuously seam welded, 7-gauge side skirt and 7-gauge formed and welded spindle mounting locations for improved strength and reduced weight.		7-gauge high strength alloy top that is formed and continuously seam welded, with 7-gauge high strength alloy side skirt.		10-gauge top that is formed and continuously seam welded, 7-gauge side skirt and 7-gauge reinforced spindle mounting locations for improved strength and reduced weight.					
	Deck Style:	Full-floating UltraCut Series 4. Side discharge standard, with molded discharge chute and option to bag or mulch.		Full-floating RD Series High-Capacity Cutting Platform. Rear-discharge standard with option to mulch.		Full-floating UltraCut Series 4. Side discharge standard, with molded discharge chute and option to bag or mulch.					
	Width:	72" (182.88 cm)				52" (132.08 cm)		60" (152.4 cm)		72" (182.88 cm)	
	Deck Lift:	Standard; foot-controlled deck lift changes cutting height and lifts the deck to maneuver around obstacles, or place in transport position.									
	Cutting Heights	1.0" (2.5 cm) to 5.5" (11.8 cm) in 0.25" (0.64 cm) increments adjustable from operator's seat.									
	Blades	3 Blades at 24.50" Length				3 Blades at 18.00" Length		3 Blades at 20.50" Length		3 Blades at 24.50" Length	
	Blade-Tip Speed	Approximately 18,500 fpm.									
EQUIPMENT	Tractor Frame:	Unibody, welded, heavy-duty 1.5" x 3" tubular steel.									
	Steering Control:	Hydraulically dampened twin levers, adjust fore and aft. Adjustable dampeners (3 positions) to customize drive responsiveness. Also adjustable to 2 height positions.									
	Front Caster Tires:	13 x 6.5-6, smooth-tread, semi-pneumatic.									
	Drive Tires	24 x 12-12, Turf Master®									
	Parking Brake	Lever-actuated disc brake.									
	Seat	Deluxe, two tone, bolstered seat with Elastomeric Vibration Control material. Mounted on innovative Seat Isolation System that provides operator isolation in all three planes of motion as well as fore-aft slide and seat flip-up.									
	Blade Spindles	No maintenance, sealed and non-greaseable spindles; 7/75"-diameter cutter housing with 25mm(.98") diameter spindle shaft and spined blade driver.									
	Electrical	12-volt battery with 20-amp alternator.				12-volt battery with 15-amp alternator.		12-volt battery with 20-amp alternator.		12-volt battery with 15-amp alternator.	
MISCELLANEOUS	Curb Weight:	1220 lbs		1220 lbs		1134 lbs		1177 lbs		1208 lbs	
	Length:	86.1 in. (218.7 cm)		89.8 in. (228.1 cm)		79.2 in. (201.2 cm)		83.1 in. (211.1 cm)		86.1 in. (218.7 cm)	
	Width:	84.9 in. (215.6 cm)		78.2 in. (198.6 cm)		64.8 in. (164.6 cm)		72.8 in. (184.9 cm)		84.9 in. (215.6 cm)	
	Height:	70 in. (177.8 cm)									
	Warranty:	3 Year Comm / 5 Year Cons									

Lazer Z X-Series Specifications							
PRODUCT CODE		LZX740EKC526	LZX801KA606	LZX921KA606	LZX921KA726	LZX940EKC606	LZX980EKC726
POWER COMPONENTS	Engine:	Kohler®	Kawasaki®			Kohler®	Kohler®
	Model:	ECV740	FX801V	FX921V		ECV940	ECV980
	Displacement:	747	852	999			
	Air Filter:	Heavy-duty canister air filtration system					
	Drive System:	Two Exmark exclusive Parker unitized pump and wheel motor systems with no hoses, integrated cooling fans, 1.7 quart integrated reservoir, spin-on filter and heavy-duty components. 12 cc pumps and 14.5 cubic inch motors.	Two Exmark exclusive Parker unitized pump and wheel motor systems with no hoses, integrated cooling fans, shock valve, 1.7-quart integrated reservoir, spin-on filter and heavy-duty components. 16 cc pumps and 17.1 cubic inch motors.				
	Speed:	Infinitely variable speed selection from 0-10.0 mph (16 kmph) forward, 0-6.0 mph (9.7 kmph) reverse.					
	PTO Engagement:	MagStop Electromagnetic 200-ft-lbs clutch with spot	MagStop Electromagnetic 250-ft-lbs clutch with spot brake				
	Fuel Capacity:	12-gallon (45.4-L), single fuel tank with single fill location.					
	Drive Wheel Release:	Allows unit movement without engine running.					
	Safety Package:	Operator Presence Controls (OPC) and drive system interlock, with safety interlock system indicators.					
	Rollover Protection System (ROPS):	2-post foldable ROPS standard with seat belt and latch.					
	Casters:	.50" thick caster yoke arms.					
	Cup Holder:	Standard					
	CARB Compliant:	No			Yes		
DECKS	Deck Construction:	10-gauge top that is formed and continuously seam welded, 7-gauge side skirt and 7-gauge reinforced spindle mounting locations for improved strength					
	Deck Style:	Full-floating UltraCut Series 6 with heavy-duty spindle. Side discharge standard with the option to bag or mulch.					
	Width:	52" (132.08 cm)	60" (152.4 cm)	72" (182.88 cm)	60" (152.4 cm)	72" (182.88 cm)	
	Deck Lift:	Standard foot-controlled deck lift changes cutting height and lifts the deck to maneuver around obstacles, or place in transport position.					
	Cutting Heights	1.0" (2.5 cm) to 5.5" (11.8 cm) in 0.25" (0.64 cm) increments adjustable from operator's seat.					
	Blades	3 Blades at 18.00" Length	3 Blades at 20.50" Length	3 Blades at 24.50" Length	3 Blades at 20.50" Length	3 Blades at 24.50" Length	
	Blade-Tip Speed	Approximately 18,500 fpm.					
EQUIPMENT	Tractor Frame:	Welded, heavy-duty 1.5" x 3" tubular steel.					
	Steering Control:	Hydraulically dampened twin levers, adjustable fore and aft. Adjustable dampeners (3 positions) to customize drive responsiveness. Also adjustable height					
	Front Caster Tires:	13 x 5.0-6 smooth tread, semi-pneumatic tires.	13 x 6.5-6 smooth tread, semi-pneumatic tires.				
	Drive Tires	23 x 9.5-12, 4 ply Turf Master®	24 x 12.0-12, 4-ply Turf Master®				
	Parking Brake	Lever-actuated disc brake.					
	Seat	Deluxe, two-tone, bolstered suspension seat with Elastomeric Vibration Control material. Mounted on innovative Seat Isolation System that provides					
	Blade Spindles	No maintenance, sealed and non-greasable spindles 7.75"-diameter curb housing with 30mm (1.18") diameter spindle shaft and splined blade driver.					
	Electrical	12-volt battery with 25-amp alternator.	12-volt battery with 15-amp alternator.	12-volt battery with 25-amp alternator.			
MISCELLANEOUS	Curb Weight:	1116 lbs	1215 lbs	1235 lbs	1294 lbs	1264 lbs	1276 lbs
	Length:	79.2 in. (201.2 cm)	83.1 in. (211.1 cm)	86.1 in. (218.7 cm)		83.1 in. (211.1 cm)	86.1 in. (218.7 cm)
	Width:	64.8 in. (164.6 cm)	72.8 in. (184.9 cm)	84.9 in. (215.6 cm)		72.8 in. (184.9 cm)	84.9 in. (215.6 cm)
	Height:	70 in. (177.8 cm)					
	Warranty:	3 Year Comm 5 Year Cons					

## Lazer Z DS-Series Specifications

PRODUCT CODE		LZDS902K605	LZDS902K60RD	LZDS902K725	LZDS902K72RD
POWER COMPONENTS	Engine:	Kubota®			
	Model:	D902			
	Feature:	3 Cylinder, Liquid Cooled	N/A	3 Cylinder, Liquid-Cooled	N/A
	Displacement:	898			
	Air Filter:	Heavy-duty canister air filtration system			
	Drive System:	Two Hydro-Gear 21cc/rev pumps with integral SCR (System Check Relief) valves (in forward), powering two 18-cubic-inch wheel			
	Speed:	Infinitely variable speed selection from 0-12.0 mph (19.3 kmph) forward, 0-8.0 mph (12.9 kmph) rever			
	PTO Engagement:	MagStop electromagnetic 250-ft-lb clutch with spot brake			
	Fuel Capacity:	15.5-gallons (58.7-L) twin fuel tanks.			
	Drive Wheel Release:	Allows unit movement without engine running.			
	Safety Package:	Operator Presence Controls (OPC) and drive system interlock.			
	Rollover Protection System (ROPS):	2-post foldable ROPS standard with seat belt and latch.			
	Casters:	0.50" thick double-yoke, smooth tread caster wheel assembly with pre-installed bearing cups.			
Cup Holder:	Standard				
CARB Compliant:	Yes				
DECKS	Deck Construction:	10-gauge top that is formed and continuously seam-welded, with 10-gauge top reinforcement plate, 7-gauge side skirt and 7-gauge reinforcement rings at spindle assembly.	7-gauge high strength alloy top that is formed and continuously seam welded, with 7-gauge high strength alloy side skirt.	10-gauge top that is formed and continuously seam-welded, with 10-gauge top reinforcement plate, 7-gauge side skirt and 7-gauge reinforcement rings at spindle assembly.	7-gauge high strength alloy top that is formed and continuously seam welded, with 7-gauge high strength alloy side skirt.
	Deck Style:	Full-floating Series 5 High-Capacity Cutting Platform. Side discharge standard with option to bag or mulch.	Full-floating RD Series High-Capacity Cutting Platform. Rear-discharge standard with option to mulch.	Full-floating Series 5 High-Capacity Cutting Platform. Side discharge standard with option to bag or mulch.	Full-floating RD Series High-Capacity Cutting Platform. Rear-discharge standard with option to mulch.
	Width:	60" (152.4 cm)		72" (182.88 cm)	
	Deck Lift:	Standard; foot-controlled deck lift changes cutting height and lifts the deck to maneuver around obstacles, or place in transport			
	Cutting Heights	1.0" (2.5 cm) to 5.0" (12.7 cm) in 0.25" (0.64 cm) increments and adjustable	1.5" (3.8 cm) to 5.0" (12.7 cm) in 0.25" (0.6 cm) increments adjustable from operator position via foot-operated, deck-lift system.	1.0" (2.5 cm) to 5.0" (12.7 cm) in 0.25" (0.64 cm) increments and adjustable	1.5" (3.8 cm) to 5.0" (12.7 cm) in 0.25" (0.6 cm) increments adjustable from operator position via foot-operated, deck-lift system.
	Blades	3 Blades at 20.75" Length	3 Blades at 20.50" Length	3 Blades at 24.75" Length	3 Blades at 24.50" Length
	Blade-Tip Speed	Approximately 18,500 fpm.			
EQUIPMENT	Tractor Frame:	Welded, heavy-duty tubular steel.			
	Steering Control:	Hydraulically dampened twin levers, adjustable fore and aft. Adjustable dampeners (3 positions) to customize drive			
	Front Caster Tires:	13 x 6.50-6, smooth-tread, semi-pneumatic tires.	15 x 6.00-6, smooth-tread, semi-pneumatic tires.	13 x 6.50-6, smooth-tread, semi-pneumatic tires.	15 x 6.00-6, smooth-tread, semi-pneumatic tires.
	Drive Tires	26 x 12.0-12, 4-ply Multi-Trac.®			
	Parking Brake	Lever-actuated drum and band integrated with transmission-neutral interlock.			
	Seat	Deluxe, two tone, bolstered, full-suspension seat with Elastomeric Vibration Control material. Adjusts to individual operator			
	Blade Spindles	No maintenance, sealed and non-greasable spindles; 7.75"-diamter cutter housing with 1.75" diameter splined blade driver and			
Electrical	12-volt battery with 60-amp alternator.				
MISCELLANEOUS	Curb Weight:	1602 lbs	1552 lbs	1702 lbs	1629 lbs
	Length:	84.5 in. (214.6 cm)	85.6 in. (217.4 cm)	88.7 in. (225.3 cm)	89.8 in. (228.1 cm)
	Width:	72.8 in. (184.9 cm)	66.2 in. (168.1 cm)	85.8 in. (217.9 cm)	78.2 in. (198.6 cm)
	Height:	72.7 in. (184.7 cm)			
	Warranty:	2 Year Comm / 2 Year Cons			

## MOWER SERVICE TIPS

### 1. *Cleaning your mower*

Clean your unit as often as possible, but minimize the use of water. Water under pressure + detergent = corrosion and problems. Pressure washers clean great, but they also put water and detergents into places that can be very detrimental to your equipment. Use compressed air or blowers as much as possible. Also make sure you grease and lubricate the unit afterward if water was used.

### 2. *Installing a spring*

An easy tool to remove or install a spring is an old starter rope. Simply take the old rope and make a loop at the handle. Attach it to one side of the spring and slip the rope over the other end. Use the rope to stretch the spring and attach it to the other anchor point.

### 3. *A faster, simpler way to remove old engine oil*

You may want to look at some of the oil evacuation systems that are on the market. Many dealers use these types of devices. They're a lot like vacuum cleaners. You stick the hose down the dip stick tube and suck the old oil out. Remember to change the filter!

### 4. *Fixing a flat*

Flats can be a problem. Some tire sealant may work great. Be careful about how much weight this adds to the wheel. Do not use a sealant that makes the tire hard. Keep in mind, the tire is your shock absorber on the unit. You may put excessive load on the frame and drive system.

### 5. *Storing foam precleaners*

Keep extra oil-treated, foam precleaners for the engine in a zip-lock bag. The precleaner filters out most of the dirt and is reusable and inexpensive when compared to the price of the paper air cleaner element.

### 6. *A tip for greasing the pivot points of your mower*

Remove the tension from the spring-tensioned pivot points when greasing them. This will allow the grease to be more evenly distributed.

### 7. *Corrosion prevention*

Corrosion is inevitable—that's why you grease and lubricate your machine. Don't forget about the electrical connections. At least once a year, clean and repack the electrical connections with dielectric grease. Your dealer and many auto parts stores carry this type of grease for the electrical connections.

### 8. *Types of oil*

It's the quality not the quantity of grease that's important. Make sure the lubricates you choose will do an adequate job. A short cut here to save a few cents can really cost you in the long run. Keep in mind that many engine manufacturers recommend a certain weight of oil, and it may depend on the time of year. This can make a big difference in oil consumption as well as the proper lubrication of the engine. Do not use synthetic oil in the engine during the break-in period. If you use synthetic oil, the change interval stays the same; however, most engine manufacturers do not recommend the use of synthetic oils. The proper petroleum-based oil lubricates the engine adequately.

### 9. *Storing oxygenated fuels*

Be aware that oxygenated fuels have a shelf life of 30 days (fuels containing alcohol blends or MTBE-methyl tertiary butyl ether). Mark the date on your gas can when you fill it. There are also inexpensive testers to check your fuel to be sure that it does not contain over the maximum 10 percent alcohol or 15 percent MTBE.

### 10.

#### *Maintaining idler pulleys*

To add a little life to your idler pulleys, try using a little spray lubricant on the seals. Over time, water and sunlight can cause the seals to harden, shrink or crack. When this happens, the seal no longer protects the bearing and a failure will soon happen. The lubricant will help to keep the seal soft and resistant to the weathering that can occur.

### 11.

#### *Adjusting a new belt*

Make sure to check the adjustment on a new belt, often. Check the belt three times in the first 24 hours of use, and adjust it if necessary. During this time, the belt is fitting into the pulleys. If the belt is allowed to loosen as it fits in, you may spin/burn the belt, which drastically reduces belt life.

### 12.

#### *Checking belt tension*

A simple belt-tension gauge is a ruler and a fish scale. Simply hook the fish scale around the belt, and pull. Use the ruler to measure the distance. On some belts, we recommend a 1/2-inch deflection with 10 pounds of pressure. This means it would take a force of 10 pounds to move the belt a half-inch. Be sure to consult the operator's manual for the belt you're adjusting.

### 13.

#### *Sharpening and balancing mower blades*

Blade sharpness and balancing are important. Dull blades tear leaf tips, making them susceptible to dieback and pests. A dull blade also increases the load on the belts, bearings and engine. An unbalanced blade can cause vibrations and stress to the cutting deck. Every 8 to 10 hours of use, sharpen the blades and replace any damaged blades. Blade-balancing tools are inexpensive and readily available. Consider keeping an extra set of sharp, balanced blades on hand.

### 14.

#### *Using fuel stabilizers*

As the season draws to an end, put a little fuel stabilizer in your gas. This will help protect the fuel when it's slow, and ensure that the stabilized fuel gets into the carburetor.

Courtesy of Exmark Manufacturing

Your ECHO unit is designed to provide many hours of trouble free service. Regular scheduled maintenance will help your unit achieve that goal. If you are unsure or are not equipped with the necessary tools, you may want to take your unit to an ECHO Service Dealer for maintenance. To help you decide whether you want to DO-IT-YOURSELF or have the ECHO Dealer do it, each maintenance task has been graded. If the task is not listed see your Echo dealer for repairs.

## SKILL LEVELS

**Level 1** = Easy to do. Common tools may be required.

**Level 2** = Moderate difficulty. Some specialized tools may be required.

## MAINTENANCE INTERVALS

COMPONENT/ SYSTEM	MAINTENANCE PROCEDURE	REQ'D SKILL LEVEL	DAILY OR BEFORE USE	EVERY REFUEL	3 MONTHS	YEARLY
Air Filter	Inspect/Clean	1	I / C *		R *	
Automatic Oiler	Inspect/Adjust	1	I			
Oil Filter	Inspect/Replace	1	I		I/C *	
Fuel System	Inspect/Replace	1	I (1) *	I (1) *		
Fuel Filter	Inspect/Replace	1			I *	I / R *
Fuel Cap Gasket	Replace	1			I *	R *
Guide Bar & Sprocket Nose	Inspect/Clean/Lubricate	1	I / C *	I		
Saw Chain	Inspect/Sharpen/Replace/ Tensioning	2	I *			
Sprocket	Inspect/Replace	2	I *			
Spark Plug	Inspect/Clean	1			I / C / R *	
Cooling System	Inspect/Clean	2	I / C			
Muffler Spark Arrestor	Inspect/Clean/Replace	2			I / C / R *	
Cylinder Exhaust Port	Inspect/Clean/Decarbon	2			I / C	
Recoil Starter Rope	Inspect/Clean	1	I / C *			
Screws/Nuts/Bolts	Inspect/Tighten/Replace	1	I *			

**MAINTENANCE PROCEDURE LETTER CODES:** I = INSPECT, R = REPLACE, C = CLEAN

**IMPORTANT NOTE** - Time intervals shown are maximum. Actual use and your experience will determine the frequency of required maintenance.

**MAINTENANCE PROCEDURE NOTES:**

(1) Low evaporative fuel tanks DO NOT require regular maintenance to maintain emission integrity.

\* Replacement is recommended based on the finding of damage or wear during inspection.

## ECHO LINE TRIMMERS

REPOWER PARTS						
MODEL	REPOWER FILTER KIT	REPOWER TUNE-UP KIT	REPOWER SHORT BLOCK	REPOWER FUEL LINE GROMMET KIT (2011 and Before)	REPOWER FUEL LINE GROMMET KIT (2012 and After)	REPOWER CAP & VENT KIT
GT-225	90008	90152	SB1096	90117	90127BP	90248
GT-230	90008	90152	SB1061	90069	N/A	90248
GT-231	90008	90152	SB1061	90069	N/A	90248
SRM-225	90008	90152	SB1096	90117	90127BP	90248
SRM-230	90008	90152	SB1061	90104	90142BP	90248
SRM-260	90030	90153	SB1060	90104	N/A	90248
SRM-265	N/A	90152	SB1090	90105	N/A	90248
SRM-265T	N/A	90152	SB1090	90105	N/A	90248
SRM-266	N/A	90125	SB1102	90105	90137BP	90248
SRM-266S	N/A	90125	SB1102	90105	90137BP	90248
SRM-266T	N/A	90125	SB1102	90105	90137BP	90248
SRM-266U	N/A	90125	SB1102	90105	90137BP	90248
SRM-280	N/A	90125	SB1091	90106	90141BP	90248
SRM-280S	N/A	90125	SB1091	90106	90141BP	90248
SRM-280T	N/A	90125	SB1091	90106	90141BP	90248
SRM-280U	N/A	90125	SB1091	90106	90141BP	90248
SRM-311	90030	90153	SB1073	90099	N/A	90248
SRM-410U	N/A	N/A	SB1097	90069	N/A	90248

FAST MOVING PARTS							
MODEL	SPARK PLUG	FUEL CAP ASSEMBLY	AIR FILTER	FUEL FILTER	TANK VENT	BULK STARTER ROPE	STARTER ROPE
GT-225	BPM-8Y	P021012210	A226001410	125-527	A356000031	146-084	#3.5
GT-230	BPM-8Y	13100455530	A226001410	125-527	A356000031	146-084	#3.5
GT-231	BPM-8Y	13100455530	A226001410	125-527	A356000031	146-084	#3.5
SRM-225	BPM-8Y	P021012210	A226001410	125-527	A356000031	146-084	#3.5
SRM-230	BPM-8Y	13100455530	A226001410	125-527	A356000031	146-084	#3.5
SRM-260	BPM-8Y	13100455530	13031051830	125-527	A356000031	146-084	#3.5
SRM-265	BPM-8Y	13100455530	A226001410	125-528	A356000031	146-084	#3.5
SRM-265T	BPM-8Y	13100455530	A226001410	125-528	A356000031	146-084	#3.5
SRM-266	BPM-8Y	13100455530	A226000471±	125-528	A356000031	146-084	#3.5
SRM-266S	BPM-8Y	13100455530	A226000471±	125-528	A356000031	146-084	#3.5
SRM-266T	BPM-8Y	13100455530	A226000471±	125-528	A356000031	146-084	#3.5
SRM-266U	BPM-8Y	13100455530	A226000471±	125-528	A356000031	146-084	#3.5
SRM-280	BPM-8Y	13100455530	A226000471±	125-528	A356000031	146-084	#3.5
SRM-280S	BPM-8Y	13100455530	A226000471±	125-528	A356000031	146-084	#3.5
SRM-280T	BPM-8Y	13100455530	A226000471±	125-528	A356000031	146-084	#3.5
SRM-280U	BPM-8Y	13100455530	A226000471±	125-528	A356000031	146-084	#3.5
SRM-311	BPM-8Y	13100455530	13031051830	125-527	A356000031	146-092	#4
SRM-410U	BPM-7A	13100455530	A226000360	125-527	A356000031	146-084	#3.5

## PRO ATTACHMENT SERIES

REPOWER PARTS						
MODEL	REPOWER FILTER KIT	REPOWER TUNE-UP KIT	REPOWER SHORT BLOCK	REPOWER FUEL LINE GROMMET KIT (2011 and Before)	REPOWER FUEL LINE GROMMET KIT (2012 and After)	REPOWER CAP & VENT KIT
REPOWER PARTS						
MODEL	REPOWER FILTER KIT	REPOWER TUNE-UP KIT	REPOWER SHORT BLOCK	REPOWER FUEL LINE GROMMET KIT (2011 and Before)	REPOWER FUEL LINE GROMMET KIT (2012 and After)	REPOWER CAP & VENT KIT
PAS-225	90008	90152	SB1096	90117	90127BP	90248
PAS-230	90008	90152	SB1061	90104	90138BP	90248
PAS-265	N/A	90152	SB1090	90105	N/A	90248
PAS-266	N/A	90125	SB1102	90105	90137BP	90248
PAS-280	N/A	90125	SB1091	90106	90141BP	90248

FAST MOVING PARTS							
MODEL	SPARK PLUG	FUEL CAP ASSEMBLY	AIR FILTER	FUEL FILTER	TANK VENT	BULK STARTER ROPE	STARTER ROPE
FAST MOVING PARTS							
MODEL	SPARK PLUG	FUEL CAP ASSEMBLY	AIR FILTER	FUEL FILTER	TANK VENT	BULK STARTER ROPE	STARTER ROPE SIZE (mm)
PAS-225	BPM-8Y	P021012210	A226001410	125-527	A356000031	146-084	#3.5
PAS-230	BPM-8Y	13100455530	A226001410	125-527	A356000031	146-084	#3.5
PAS-265	BPM-8Y	13100455530	A226001410	125-528	A356000031	146-084	#3.5
PAS-266	BPM-8Y	13100455530	A226000472	125-528	A356000031	146-084	#3.5
PAS-280	BPM-8Y	13100455530	A226000472	125-528	A356000031	146-084	#3.5

# Equipment

## HEDGE TRIMMERS

REPOWER PARTS						
MODEL	REPOWER FILTER KIT	REPOWER TUNE-UP KIT	REPOWER SHORT BLOCK	REPOWER FUEL LINE GROMMET KIT (2011 and Before)	REPOWER FUEL LINE GROMMET KIT (2012 and After)	REPOWER CAP & VENT KIT
HC-150	90008	90152	SB1074	900103	90135BP	90248
HC-152	90008	90152	SB1074	N/A	90143BP	N/A
HC-155	90008	90152	SB1075	N/A	90136BP	90248
HC-160	90008	90152	SB1075	N/A	N/A	90248
HC-165	90008	90152	SB1075	N/A	90136BP	90248
HC-180	90008	90152	SB1075	N/A	N/A	90248
HC-185	90008	90152	SB1075	N/A	90136BP	90248
HC-200	90008	90152	SB1075	N/A	N/A	90248
HC-201	90008	90152	SB1075	N/A	N/A	90248
HC-225	90008	90152	SB1075	90117	N/A	90248
HC-230	90008	90152	SB1063	N/A	N/A	90248
HC-231	90008	90152	SB1063	N/A	N/A	90248
HC-235	90008	90152	SB1075	N/A	90136BP	90248
HC-245	90008	90152	SB1075	N/A	90136BP	90248
HCA-260	90030	90153	SB1060	N/A	N/A	90248
HCA-265	N/A	90152	SB1090	90104	N/A	90248
HCA-266	N/A	90125	SB1102	90104	90137BP	90248
SHC-210	90008	90152	SB1072	N/A	N/A	90248
SHC-225	90008	90152	SB1096	90117	90139BP	90248
SHC-225S	90008	90152	SB1096	90117	90139BP	90248
SHC-260	90030	90153	SB1060	N/A	N/A	90248
SHC-265	N/A	90152	SB1090	90105	N/A	90248
SHC-266	N/A	90125	SB1102	90105	90137BP	90248

## HEDGE TRIMMERS (CONT.)

MODEL	FAST MOVING PARTS						
	SPARK PLUG (GAP: 0.65 mm, 0.026")	FUEL CAP ASSEMBLY	AIR FILTER	FUEL FILTER	TANK VENT	BULK STARTER ROPE	STARTER ROPE SIZE (mm)
HC-150	BPM-8Y	13100455530	A226001410	125-527	A356000031	146-084	#3.5
HC-152	BPM-8Y	P021040430	A226001410	125-527	A356000031	146-084	#3.5
HC-155	BPM-8Y	P021012210	A226001410	125-527	A356000031	146-084	#3.5
HC-160	BPM-8Y	13100455530	A226001410	125-527	A356000031	146-084	#3.5
HC-165	BPM-8Y	P021012210	A226001410	125-527	A356000031	146-084	#3.5
HC-180	BPM-8Y	13100455530	A226001410	125-527	A356000031	146-084	#3.5
HC-185	BPM-8Y	P021012210	A226001410	125-527	A356000031	146-084	#3.5
HC-200	BPM-8Y	13100455530	A226001410	125-527	A356000031	146-084	#3.5
HC-201	BPM-8Y	13100455530	A226001410	125-527	A356000031	146-084	#3.5
HC-225	BPM-8Y	P021012210	A226001410	125-527	A356000031	146-084	#3.5
HC-230	BPM-8Y	13100455530	A226001410	125-528	A356000031	146-084	#3.5
HC-231	BPM-8Y	13100455530	A226001410	125-528	A356000031	146-084	#3.5
HC-235	BPM-8Y	P021012210	A226001410	125-527	A356000031	146-084	#3.5
HC-245	BPM-8Y	P021012210	A226001410	125-527	A356000031	146-084	#3.5
HCA-260	BPM-8Y	13100455530	13031051830	125-528	A356000031	146-084	#3.5
HCA-265	BPM-8Y	13100455530	A226001410	125-528	A356000031	146-084	#3.5
HCA-266	BPM-8Y	13100455530	A226000472	125-528	A356000031	146-084	#3.5
SHC-210	BPM-8Y	13100455530	A226001410	125-527	A356000031	146-084	#3.5
SHC-225	BPM-8Y	P021012210	A226001410	125-527	A356000031	146-084	#3.5
SHC-225S	BPM-8Y	P021012210	A226001410	125-527	A356000031	146-084	#3.5
SHC-260	BPM-8Y	13100455530	13031051830	125-528	A356000031	146-084	#3.5
SHC-265	BPM-8Y	13100455530	A226001410	125-528	A356000031	146-084	#3.5
SHC-266	BPM-8Y	13100455530	A226000472	125-528	A356000031	146-084	#3.5

# Equipment

## POWER EDGERS

REPOWER PARTS						
MODEL	REPOWER FILTER KIT	REPOWER TUNE-UP KIT	REPOWER SHORT BLOCK	REPOWER FUEL LINE GROMMET KIT (2011 and Before)	REPOWER FUEL LINE GROMMET KIT (2012 and After)	REPOWER CAP & VENT KIT
REPOWER PARTS						
MODEL	REPOWER FILTER KIT	REPOWER TUNE-UP KIT	REPOWER SHORT BLOCK	REPOWER FUEL LINE GROMMET KIT (2011 and Before)	REPOWER FUEL LINE GROMMET KIT (2012 and After)	REPOWER CAP & VENT KIT
BRD-280	N/A	90125	SB1091	90106	90141BP	N/A
PE-225	90008	90152	SB1096	90117	90127BP	90248
PE-230	90008	90152	SB1061	90104	90142BP	90248
PE-260	90030	90153	SB1060	90104	N/A	90248
PE-265	N/A	90152	SB1090	90105	N/A	90248
PE-265S	N/A	90152	SB1090	90105	N/A	90248
PE-266	N/A	90125	SB1102	90105	90137BP	90248
PE-266S	N/A	90125	SB1102	90105	90137BP	90248
PE-280	N/A	90125	SB1091	90106	90141BP	N/A
PE-311	90030	90153	SB1073	90099	N/A	90248

FAST MOVING PARTS							
MODEL	SPARK PLUG (GAP: 0.65 mm, 0.026")	FUEL CAP ASSEMBLY	AIR FILTER	FUEL FILTER	TANK VENT	BULK STARTER ROPE	STARTER ROPE SIZE (mm)
FAST MOVING PARTS							
MODEL	SPARK PLUG (GAP: 0.65 mm, 0.026")	FUEL CAP ASSEMBLY	AIR FILTER	FUEL FILTER	TANK VENT	BULK STARTER ROPE	STARTER ROPE SIZE (mm)
BRD-280	BPM-8Y	13100455530	A226000351	125-528	A356000031	146-084	#3.5
PE-225	BPM-8Y	P021012210	A226001410	125-527	A356000031	146-084	#3.5
PE-230	BPM-8Y	13100455530	A226001410	125-528	A356000031	146-084	#3.5
PE-260	BPM-8Y	13100455530	13031051830	125-528	A356000031	146-084	#3.5
PE-265	BPM-8Y	13100455530	A226001410	125-528	A356000031	146-084	#3.5
PE-265S	BPM-8Y	13100455530	A226001410	125-528	A356000031	146-084	#3.5
PE-266	BPM-8Y	13100455530	A226000472	125-528	A356000031	146-084	#3.5
PE-266S	BPM-8Y	13100455530	A226000472	125-528	A356000031	146-084	#3.5
PE-280	BPM-8Y	13100455530	A226000351	125-528	A356000031	146-084	#3.5
PE-311	BPM-8Y	13100455530	13031051830	125-527	A356000031	146-092	#4

## BLOWERS

REPOWER PARTS						
MODEL	REPOWER FILTER KIT	REPOWER TUNE-UP KIT	REPOWER SHORT BLOCK	REPOWER FUEL LINE GROMMET KIT (2011 and Before)	REPOWER FUEL LINE GROMMET KIT (2012 and After)	REPOWER CAP & VENT KIT
PB-250	N/A	90152	SB1104	N/A	90129BP	90248
PB-251	N/A	90154	SB1092	90130BP	N/A	90248
PB-255	N/A	90154	SB1092	90130BP	90130BP	90248
PB-255LN	N/A	90154	SB1092	N/A	90130BP	N/A
PB-265L	N/A	90154	SB1092	N/A	90126BP	90248
PB-265LN	N/A	90154	SB1092	N/A	90126BP	N/A
PB-410	N/A	N/A	SB1056	N/A	N/A	N/A
PB-413H	N/A	90151	SB1077	N/A	N/A	N/A
PB-413T	N/A	90151	SB1077	N/A	N/A	N/A
PB-460LN	N/A	90161	SB1077	N/A	90131BP	N/A
PB-500H	N/A	90151	SB1095	N/A	90132BP	N/A
PB-500T	N/A	90151	SB1095	N/A	90132BP	N/A
PB-610	N/A	90161	SB1078	N/A	N/A	N/A
PB-620	N/A	90151	SB1078	N/A	N/A	N/A
PB-620H	N/A	90161	SB1078	N/A	N/A	N/A
PB-620ST	N/A	90151	SB1078	N/A	N/A	N/A
PB-755H	N/A	90161	SB1070	N/A	N/A	90248
PB-755SH	N/A	90151	SB1070	N/A	90133BP	90248
PB-755ST	N/A	90151	SB1070	N/A	90133BP	90248
PB-755T	N/A	90161	SB1070	N/A	N/A	90248
PB-760LNT	90124	90150	N/A	N/A	90134BP	90248
PB-770H	90124	90122	SB1099	90123	90134BP	90248
PB-770T	90124	90122	SB1099	90123	90134BP	90248

# Equipment

## BLOWERS (CONT.)

MODEL	FAST MOVING PARTS				
	SPARK PLUG	FUEL CAP ASSEMBLY	AIR FILTER	FUEL FILTER	TANK VENT
PB-250	BPM-8Y	13100455530	A226001410	125-527	A356000031
PB-251	BPM-8Y	13100455530	A226000351	125-527	A356000031
PB-255	BPM-8Y	13100455530	A226000351	125-527	A356000031
PB-255LN	BPM-8Y	13100455530	A226000351	125-527	A356000031
PB-265L	BPM-8Y	13100455530	A226000351	125-527	A356000031
PB-265LN	BPM-8Y	P021040030	A226000351	125-527	A356000031
PB-410	BPM-8Y	13160009861	13031700760	125-528	13131406320
PB-413H	BPM-8Y	13160009861	A226000032	125-528	13131406320
PB-413T	BPM-8Y	13160009861	A226000032	125-528	13131406320
PB-460LN	BPM-8Y	13160009861	13030508361	125-528	13131406320
PB-500H	BPM-8Y	13160009861	A226000032	125-528	13131406320
PB-500T	BPM-8Y	13160009861	A226000032	125-528	13131406320
PB-610	BPM-8Y	13160009861	13030508361	125-528	13131406320
PB-620	BPM-8Y	13160009861	A226000032	125-528	13131406320
PB-620H	BPM-8Y	13160009861	13030508361	125-528	13131406320
PB-620ST	BPM-8Y	13160009861	A226000032	125-528	13131406320
PB-755H	BPM-8Y	13100455530	13030508361	125-528	A356000031
PB-755SH	BPM-8Y	13100455530	A226000032	125-528	A356000031
PB-755ST	BPM-8Y	13100455530	A226000032	125-528	A356000031
PB-755T	BPM-8Y	13100455530	13030508361	125-528	A356000031
PB-760LNT	BPM-6Y	P021040030	A226000410±	125-528	A356000031
PB-770H	BPM-8Y	13100455530	A226000410±	125-528	A356000031
PB-770T	BPM-8Y	13100455530	A226000410±	125-528	A356000031

**BLOWERS (CONT.)**

MODEL	PIPES & TUBES				
	ELBOW	SHOULDER STRAP	TUBE (END NOZZLE)	TUBE (MIDDLE)	TUBE (SWIVEL)
PB-250	N/A	N/A	E165000171	E165000320	N/A
PB-251	N/A	N/A	E165000171	E165000180	N/A
PB-255	N/A	N/A	E165000171	E165000180	N/A
PB-255LN	N/A	N/A	E165000191	E165000180	N/A
PB-265L	E160000111	C061000111	E165000171	E165000141	E165000130
PB-265LN	E160000111	C061000111	E165000171	E165000141	E165000130
PB-410	21001101160	30030102260	21002303461	21000103464	21200503460
PB-413H	E160000061	C061000100	21002303461	21000103464	21200507560
PB-413T	E160000061	C061000100	21002303461	21000103464	21200507560
PB-460LN	E160000061	C061000111	21002303461	21000103464	21200507560
PB-500H	E160000061	C061000111	E165000171	E165000141	E165000130
PB-500T	E160000061	C061000111	E165000171	E165000141	E165000130
PB-610	E160000061	C061000100	E165000030	E165000020	E165000010
PB-620	E160000061	C061000111	E165000171	E165000141	E165000130
PB-620H	E160000061	C061000111	E165000171	E165000141	E165000130
PB-620ST	E160000061	C061000111	E165000171	E165000141	E165000130
PB-755H	E160000092	C061000111	21200507560	E165000141	E165000130
PB-755SH	E160000092	C061000111	21200507560	E165000141	E165000130
PB-755ST	E160000092	C061000111	21200507560	E165000141	E165000130
PB-755T	E160000092	C061000111	21200507560	E165000141	E165000130
PB-760LNT	E160000130	C061000491/501	E165000620	E165000610	E165000311
PB-770H	E160000130	P021046660	E165000280	E165000291	E165000371
PB-770T	E160000130	P021046660	E165000280	E165000291	E165000311

## POWER PRUNERS

REPOWER PARTS						
MODEL	REPOWER FILTER KIT	REPOWER TUNE-UP KIT	REPOWER SHORT BLOCK	REPOWER FUEL LINE GROMMET KIT (2011 and Before)	REPOWER FUEL LINE GROMMET KIT (2012 and After)	REPOWER CAP & VENT KIT
PPF-210	90008	90074	SB1072	90097	N/A	90248
PPF-225	90008	90074	SB1096	90117	90139BP	90248
PPF-280	N/A	90125	SB1091	90106	90141BP	90248
PPT-230	90008	90074	SB1061	90104	N/A	90248
PPT-260	90030	90075	SB1060	90104	N/A	90248
PPT-265	N/A	90074	SB1090	90105	N/A	90248
PPT-265S	N/A	90074	SB1090	90105	N/A	90248
PPT-266	N/A	90125	SB1102	90105	90137BP	90248
PPT-266H	N/A	90125	SB1102	90105	90137BP	90248
PPT-266S	N/A	90125	SB1102	90105	N/A	90248
PPT-280	N/A	90125	SB1091	90106	90141BP	90248

FAST MOVING PARTS							
MODEL	SPARK PLUG (GAP: 0.65 mm, 0.026")	FUEL CAP ASSEMBLY	AIR FILTER	FUEL FILTER	TANK VENT	BULK STARTER ROPE	STARTER ROPE SIZE (mm)
PPF-210	BPM-8Y	13100455530	A226001410	125-527	A356000031	146-084	#3.5
PPF-225	BPM-8Y	P021012210	A226001410	125-527	A356000031	146-084	#3.5
PPF-280	BPM-8Y	13100455530	A226000472	125-528	A356000031	146-084	#3.5
PPT-230	BPM-8Y	13100455530	A226001410	125-528	A356000031	146-084	#3.5
PPT-260	BPM-8Y	13100455530	13031051830	125-528	A356000031	146-084	#3.5
PPT-265	BPM-8Y	13100455530	A226001410	125-528	A356000031	146-084	#3.5
PPT-265S	BPM-7A	13100455530	A226001410	125-528	A356000031	146-084	#3.5
PPT-266	BPM-8Y	13100455530	A226000472	125-528	A356000031	146-084	#3.5
PPT-266H	BPM-8Y	13100455530	A226000472	125-528	A356000031	146-084	#3.5
PPT-266S	BPM-8Y	13100455530	A226000472	125-528	A356000031	146-084	#3.5
PPT-280	BPM-8Y	13100455530	A226000472	125-528	A356000031	146-084	#3.5

GUIDE BAR & CHAIN PARTS					
MODEL	OIL CAP	OREGON GUIDE BAR 10"	OREGON SAW CHAIN 10"	GUIDE BAR 12"	SAW CHAIN 12"
PPF-210	P021000951	104MLEA218	90PX039G	120SDET218	91PX044G
PPF-225	P021005592	100SDEA041	91PX039G	120DGEA041	91PX044G
PPF-280	P021005592	100SDEA041	91PX039G	120SDEA041	91PX044G
PPT-230	P021000951	104MLEA218	90PX039G	120SDET218	91PX044G
PPT-260	P021000951	100SDEA218	91PX039G	120SDET218	91PX044G
PPT-265	P021005592	100SDEA041	91PX039G	120DGEA041	91PX044G
PPT-265S	P021005592	100SDEA041	91PX039G	120DGEA041	91PX044G
PPT-266	P021005592	100SDEA041	91PX039G	120DGEA041	91PX044G
PPT-266H	P021005592	100SDEA041	91PX039G	120DGEA041	91PX044G
PPT-266S	P021005592	100SDEA041	91PX039G	120DGEA041	91PX044G
PPT-280	P021005592	100SDEA041	91PX039G	120DGEA041	91PX044G

## SHRED N VAC

REPOWER PARTS						
MODEL	REPOWER FILTER KIT	REPOWER TUNE-UP KIT	REPOWER SHORT BLOCK	REPOWER FUEL LINE GROMMET KIT (2011 and Before)	REPOWER FUEL LINE GROMMET KIT (2012 and After)	REPOWER CAP & VENT KIT
REPOWER PARTS						
MODEL	REPOWER FILTER KIT	REPOWER TUNE-UP KIT	REPOWER SHORT BLOCK	REPOWER FUEL LINE GROMMET KIT (2011 and Before)	REPOWER FUEL LINE GROMMET KIT Post 2011	REPOWER CAP & VENT KIT
ES-210	90008	90152	SB1076	90098	N/A	90248
ES-211	90008	90152	SB1076	90098	N/A	90248
ES-230	90030	90153	SB1062	N/A	N/A	90248
ES-231	90030	90153	SB1062	N/A	N/A	90248
ES-250	N/A	90152	SB1104	N/A	90129BP***	90248
ES-255	N/A	90154	SB1092	90130BP	90130BP	90248

FAST MOVING PARTS					
MODEL	SPARK PLUG	FUEL CAP ASSEMBLY	AIR FILTER	FUEL FILTER	TANK VENT
FAST MOVING PARTS					
MODEL	SPARK PLUG	FUEL CAP ASSEMBLY	AIR FILTER	FUEL FILTER	TANK VENT
ES-210	BPM-8Y	1310045530	A226001410	125-527	A356000031
ES-211	BPM-8Y	1310045530	A226001410	125-527	A356000031
ES-230	BPM-8Y	1310045530	13031051830	125-528	A356000031
ES-231	BPM-8Y	1310045530	13031051830	125-528	A356000031
ES-250	BPM-8Y	1310045530	A226001410	125-527	A356000031
ES-255	BPM-8Y	1310045530	A226000351	125-527	A356000031

PIPES & TUBES						
MODEL	ELBOW	SHOULDER STRAP	TUBE (END NOZZLE)	TUBE (MIDDLE)	TUBE (SWIVEL)	PIPE (FLEX TUBE)
PIPES & TUBES						
MODEL	ELBOW	COLLECTION BAG	SHOULDER STRAP	TUBE (END NOZZLE)	TUBE (MIDDLE)	TUBE (SUCTION)
ES-210	21501205060	99944100205	99944100030	21001420561	21001505060	E180000020
ES-211	21501205060	99944100205	99944100030	21001420561	21001505060	P021009410
ES-230	21501205060	99944100205	99944100030	21001420561	21001505060	E180000020
ES-231	21501205060	99944100205	99944100030	21001420561	21001505060	E180000020
ES-250	E160000171	X692000120	99944100030	E165000171	E165000321	E180000011
ES-255	E160000120	99944100206	99944100030	E165000191	E165000180	E180000011

## AUGERS / DRILLS

REPOWER PARTS						
MODEL	REPOWER FILTER KIT	REPOWER TUNE-UP KIT	REPOWER SHORT BLOCK	REPOWER FUEL LINE GROMMET KIT (2011 and Before)	REPOWER FUEL LINE GROMMET KIT (2012 and After)	REPOWER CAP & VENT KIT
REPOWER PARTS						
MODEL	REPOWER FILTER KIT	REPOWER TUNE-UP KIT	REPOWER SHORT BLOCK	REPOWER CAP & VENT KIT	FUEL FILTER	SPARK PLUG (GAP: 0.65 mm, 0.026")
EA-400	N/A	N/A	SB1059	90248	125-528	RCJ-6Y
EA-410	N/A	N/A	SB1097	90248	125-528	BPM-7A
EA-500	N/A	N/A	N/A	90248	125-528	RCJ-6Y
ED-200	N/A	N/A	SB1065	90248	125-527	BPM-8Y
EDR-210	N/A	N/A	SB1065	90248	125-527	BPM-8Y
EDR-260	90008	90153	SB1060	90248	125-528	BPM-8Y
TC-210	90008	90152	SB1087	90248	125-527	BPM-8Y

FAST MOVING PARTS						
MODEL	SPARK PLUG (GAP: 0.65 mm, 0.026")	FUEL CAP ASSEMBLY	AIR FILTER	FUEL FILTER	TANK VENT	BULK STARTER ROPE
FAST MOVING PARTS						
MODEL	FUEL CAP ASSEMBLY	AIR FILTER	AIR FILTER COVER	TANK VENT	BULK STARTER ROPE	STARTER ROPE SIZE (mm)
EA-400	13100455530	A226000220	A232000280	A356000031	146-084	#3.5
EA-410	13100455530	A226000360	P021012110	A356000031	146-084	#3.5
EA-500	13100455530	A226000220	A232000280	A356000031	146-084	#3.5
ED-200	13100455530	13031044330	13030020960	A356000031	146-084	#3.5
EDR-210	13100455530	13031044330	13030020960	A356000031	146-084	#3.5
EDR-260	13100455530	A226001410	13031306563	A356000031	146-084	#3.5
TC-210	13100455530	A226001410	13031306563	A356000031	146-084	#3.5

## PUMPS

REPOWER PARTS						
MODEL	REPOWER FILTER KIT	REPOWER TUNE-UP KIT	REPOWER SHORT BLOCK	REPOWER FUEL LINE GROMMET KIT (2011 and Before)	REPOWER FUEL LINE GROMMET KIT (2012 and After)	REPOWER CAP & VENT KIT
REPOWER PARTS						
MODEL	REPOWER FILTER KIT	REPOWER TUNE-UP KIT	REPOWER SHORT BLOCK	REPOWER CAP & VENT KIT	FUEL FILTER	SPARK PLUG (GAP: 0.65 mm, 0.026")
SHR-210	90008	90152	SB1065	90248	125-527	BPM-8Y
WP-1000	90008	90157	SB1026	90248	125-527	BPM-7A

FAST MOVING PARTS						
MODEL	SPARK PLUG (GAP: 0.65 mm, 0.026")	FUEL CAP ASSEMBLY	AIR FILTER	FUEL FILTER	TANK VENT	BULK STARTER ROPE
FAST MOVING PARTS						
MODEL	FUEL CAP ASSEMBLY	AIR FILTER	AIR FILTER COVER	TANK VENT	BULK STARTER ROPE	STARTER ROPE SIZE (mm)
SHR-210	13100455530	A226001410	13031306563	A356000031	146-084	#3.5
WP-1000	13100455530	A226001410	13031306563	A356000031	146-084	#3.5

# Equipment

## CHAIN SAWS

REPOWER PARTS				FAST MOVING PARTS						
MODEL	REPOWER TUNE-UP KIT	REPOWER SHORT BLOCK	REPOWER FUEL SYSTEM KIT (2012 and After)	AIR AIR FILTER / ASSY	SPARK PLUG (GAP: 0.65 mm, 0.026")	FUEL CAP ASSEMBLY	OIL CAP / ASSY	CLUTCH ASSEMBLY	FUEL FILTER	TANK VENT
CS-271T	N/A	N/A	N/A	A226000051	BPM-8Y	P021038080	P021005581	A056000030	13120514930	13130056431
CS-301	90149	SB1052	N/A	13031039132	BPM-8Y	43600139232	43600139232	Refer to IPL**	125-527	A356000031
CS-303T	90164BP	SB1108	90169BP	13031039132	BPM-8Y	P021044600	P021044580	A056000070	13120514931	A356000031
CS-305	90149	SB1052	N/A	13031039132	BPM-8Y	43600139232	43600139232	A056000070	125-527	A356000031
CS-306	90149	SB1052	N/A	13031039132	BPM-8Y	P021011590	P021011590	A056000070	125-527	A356000031
CS-310	90121	N/A	N/A	P021016500	BPM-8Y	P021037920	P021005581	A056000210	125-527	A356000031
CS-330MX4	90159	SB1085	N/A	A226000291	BPM-8Y	P021005592	P021005581	A056000070	125-527	A356000031
CS-330T	90159	SB1085	N/A	A226000291	BPM-8Y	P021005592	P021005581	A056000070	125-527	A356000031
CS-330T	90159	SB1085	N/A	A226000291	BPM-8Y	P021005592	P021005581	A056000070	125-527	A356000031
CS-341	90149	SB1069	N/A	13031039132	BPM-8Y	P021011590	P021011590	A056000070	125-527	A356000031
CS-341	90149	SB1069	N/A	13031039132	BPM-8Y	43600139232	43600139232	A056000070	125-527	A356000031
CS-346	90149	SB1069	N/A	13031039132	BPM-8Y	43600139232	43600139232	Refer to IPL**	13120514930	A356000031
CS-352	N/A	N/A	N/A	A226001420	BPM-8Y	P021037920	P021005581	A056000210	13120514930	A356000031
CS-355T	90144	N/A	90145BP	A226001660	BPM-8Y	P021038080	P021005581	A056000070	13120514930	13130056431
CS-360T	90159	SB1086	N/A	A226000291	BPM-8Y	P021005592	P021005581	A056000070	125-527	A356000031
CS-370	90109	SB1088	N/A	13030039730	BPM-8Y	13100435931	P021007630	A056000180	13120519832	A356000031
CS-400	90109	SB1089	N/A	13030039730	BPM-8Y	P021036960	P021007630	A056000180	13120519832	A356000031
CS-400	90109	SB1089	N/A	13030039730	BPM-8Y	P021036960	P021007630	A056000180	13120519832	A356000031
CS-440	N/A	SB1082	N/A	13031038331	BPM-8Y	P021037920	43600139232	A056000180	13120519832	A356000031
CS-450	N/A	SB1094	N/A	13031038331	BPM-8Y	P021036960	P021007630	A056000180	13120519832	A356000031
CS-450P	N/A	SB1094	N/A	13031038331	BPM-8Y	P021036960	P021007630	A056000180	13120519832	A356000031
CS-500P	N/A	N/A	N/A	A226001090	BPM-8Y	13100437632	C020000040	A0560000610	13120519832	A356000050
CS-510	N/A	N/A	N/A	13031038331	BPM-7A	P021037920	43600139232	P021007071	13120519832	A356000031
CS-510	N/A	N/A	N/A	13031038331	RCJ-6Y	P021037920	43600139232	P021007071	13120519832	A356000031
CS-520	N/A	SB1080	N/A	13031038331	BPM-7A	P021037920	43600139232	P021007071	13120519832	A356000031
CS-530	N/A	SB1080	N/A	13031038331	BPM-8Y	P021036960	P021007630	A056000111	13120519832	A356000031
CS-550P	N/A	N/A	N/A	A226001610	BPM-8Y	P021016041	P021016031	A056000220	13120519832	13130056431
CS-590	90167BP	N/A	90166BP	P021016371	BPM-8Y	P021037420	P021016031	A056000220	13120519832	13130056431
CS-590										
CS-600P	90167BP	N/A	90166BP	P021016371	BPM-8Y	P021037420	P021016031	A056000220	13120519832	A356000031
CS-600P										
CS-600P										
CS-600P										
CS-620P	90167BP	N/A	90166BP	P021016371	BPM-8Y	P021037420	P021016031	A056000220	13120519832	13130056431
CS-620P										
CS-620P										
CS-620P										
CS-620P										
CS-620PW	90167BP	N/A	90166BP	P021016371	BPM-8Y	P021037420	P021016031	A056000220	13120519832	13130056431
CS-620PW										
CS-620PW										
CS-620PW										
CS-620PW										
CS-670	N/A	N/A	N/A	A226000070	CJ-6Y	13100437632	43600139232	Refer to IPL**	13120519832	A356000031
CS-680	N/A	N/A	N/A	A226000070	BPM-7A	13100437632	43600135934	A056000050	13120519832	A356000031
CS-8000	N/A	N/A	N/A	13030330831	BPM-7A	13100437632	43600138830	17500030832	13120519832	A356000031

## CHAIN SAWS (CONT.)

MODEL	GUIDE BAR & CHAIN PARTS				
	CLUTCH DRUM	CHAIN BRAKE ASSEMBLY	GUIDE BAR	SAW CHAIN	RIM SPROCKET
CS-271T	A556000091	P021038180	12" - 124MLEA041	12"- 90SG045G	N/A
CS-301	1.7501E+10	C032000052	12" - 120DGEA041	12"- 91PX045G	N/A
CS-303T	1.7501E+10	P021043760	12" - 120DGEA041	12"- 91PX045G	N/A
			14" - 140DGEA041	14"- 91PX052G	
CS-305	1.7501E+10	C032000062	12" - 124MLEA041	12"- 90SG045G	N/A
CS-306	1.7501E+10	C0320000290	14" - 140DGEA041	14"- 91PX052G	N/A
CS-310	A556000543	N/A	14" - 140DGEA041	14"- 91PX052G	N/A
CS-330MX4	1.7501E+10	C032000340	14" - 140DGEA041	14"- 91PX052G	N/A
CS-330T	1.7501E+10	P021016470	14" - 140DGEA041	14"- 91PX052G	N/A
CS-330T	1.7501E+10	C032000261	12" - 120DGEA041	12"- 91PX045G	N/A
CS-341	1.7501E+10	P021011570	14" - 140DGEA041	14"- 91PX052G	N/A
CS-341	1.7501E+10	P021011570	16" - 160DGEA041	16"- 91PX057G	N/A
CS-346	1.7501E+10	Refer to IPL**	16" - 160DGEA041	16"- 91PX057G	N/A
CS-352	A556000543	Refer to IPL**	14" - 140DGEA041	14"- 91PX052G	N/A
CS-355T	1.7501E+10	P021042602	14" - 140DGEA041	14"- 91PX052G	N/A
			16" - 160DGEA041	16"- 91PX057G	
CS-360T	1.7501E+10	C032000261	16" - 160DGEA041	16"- 91PX057G	N/A
CS-370	A556000400	P021017220	16" - 160DGEA041	16"- 91PX057G	N/A
CS-400	A556000400	P021017220	16" - 160DGEA041	16"- 91PX057G	N/A
CS-400	A556000400	P021017220	18" - 180DGEA041	18"- 91PX062G	N/A
CS-440	A556000172	4.331E+10	16" - 160GLGK041	16"- 20BXP066G	Refer to IPL**
CS-450	A556000441	C032000323	18" - 180GLGK216	18"- 20BXP072G	17511412530
CS-450P	A556000441	C032000323	18" - 180GLGK216	18"- 20LPX072G	17511412530
CS-500P	A556001121	N/A	20" - 200GLGK216	20"- 20LPX078G	17511412530
CS-510	A556000021	4.331E+10	16" - 160GLGK041	16"- 20BXP066G	17511412530
CS-510	A556000021	4.331E+10	18" - 180GLGK041	18"- 20BXP072G	17511412530
CS-520	A556000021	4.331E+10	16" - 160GLGK041	16"- 20BXP066G	17511412530
CS-530	A556000021	C032000323	20" - 200GLGK216	20"- 20LPX078G	17511412530
CS-550P	A555000160	Refer to IPL**	20" - 200GLGK216	20"- 20LPX078G	17511412530
CS-590	A556001580	N/A	18" - 180SLHD176	18"- 72LPX064G	N/A
CS-590			20" - 200GLHD176	20"- 72LPX070G	
CS-600P	A556000550	N/A	20" - 200GLHD176	20"- 72LPX070G	682100
CS-600P			24"-240RNDD176	24"-72LPX081G	
CS-600P			27"-27D0PS3893	27"-72LPX093G	
CS-600P			16" - 160GLHD176	16"-72LPX060G	
CS-620P	A556001610	N/A	20" - 200GLHD176	20"- 72LPX070G	682100
CS-620P			24"-240RNDD176	24"-72LPX081G	
CS-620P			27"-27D0PS3893	27"-72LPX093G	
CS-620P			16" - 160GLHD176	16"-72LPX060G	
CS-620P			18" - 180RNDD176	18"- 72LPX066G	
CS-620PW	A556001610	N/A	20" - 200GLHD176	20"- 72LPX070G	682100
CS-620PW			24"-240RNDD176	24"-72LPX081G	
CS-620PW			27"-27D0PS3893	27"-72LPX093G	
CS-620PW			16" - 160GLHD176	16"-72LPX060G	
CS-620PW			18" - 180RNDD176	18"- 72LPX066G	
CS-670	1.7511E+10	P021010652	27"-27D0PS3893	27"-72LPX093G	682100
CS-680	1.7511E+10	P021010642	24"-240RNDD176	24"-72LPX081G	682100
CS-8000	1.7511E+10	4.332E+10	27"-27D0PS3893	27"-72LPX093G	682100

# Outdoor Living

**Lighting**

**Outdoor Kitchens and Grills**

**Outdoor Fireplaces and Pits**

**Hardscapes**

**Permeable Pavers**

**Synthetic Grass**

**Waterscaping**

# Introducing... elements™ series

A new offering from Unique Lighting Systems®



## An Authentic Style, A Unique Construction.

Unique Lighting Systems®, the leader in brass and copper landscape lighting fixtures, is proud to introduce the Elements™ Series - a high-quality, outdoor lighting portfolio with an advanced alloy construction. This clean and sleek family of fixtures was designed with durability and ease of installation in mind. A sophisticated E-Shield™ process ensures longevity while the innovative FLEX™ Auxiliary Wire Lead provides unmatched flexibility.



Superior Corrosion  
Resistance



Exclusive Coating  
Process



Brass Threaded  
Stake



Light Logic™  
Ready



Multiple Transformer  
Options Available



Welcome to Vista Professional Outdoor Lighting, one of the leading suppliers and innovators in the architectural and landscape lighting industry.

Vista has a well-established reputation among lighting designers, engineers, architects, distributors, contractors, and property owners for high quality products and outstanding customer support. Vista's range of innovative designs and finishes are an ideal compliment to residential, commercial, public area, resort and institutional applications.

The charts below help you determine product specifications for all Vista Professional Outdoor Lighting products within this catalog.

### STANDARD VISTA FINISHES:

<b>B</b>	Black	<b>HG</b>	Hunter Green
<b>G</b>	Verde	<b>WB</b>	Weather Bronze
<b>BR</b>	Architectural Brick	<b>WI</b>	Weathered Iron
<b>Z</b>	Architectural Bronze	<b>W</b>	White
<b>GT</b>	Granite	<b>BSN</b>	Natural Brass
<b>P</b>	Pewter	<b>BSO</b>	Olde Brass
<b>TC</b>	Terracotta	<b>CSN</b>	Copper
<b>R</b>	Rust	<b>M</b>	Mocha
<b>LZ</b>	Light Bronze	<b>SS</b>	Stainless Steel
<b>DZ</b>	Dark Bronze		

HOW TO SPECIFY: GR-2219-B-BAB-HL				
Mounting:	Part No.:	Finish:	Lamp:	Accessories:
<b>GR</b> - ABS ground stake incl.	2219	<b>B</b> - Black	(Please see lamp order code column on lamp guide, Vista product catalog.)	<b>BL</b> - Flat Cool Blue lens
		<b>G</b> - Verde		<b>SL</b> - Flat Spread lens
		<b>BR</b> - Architectural Brick		<b>FR</b> - Flat Frosted lens
		<b>Z</b> - Architectural Bronze		<b>DBL</b> - Flat Dark Blue lens
		<b>GT</b> - Granite		<b>GL</b> - Flat Dark Green lens
		<b>P</b> - Pewter		<b>RL</b> - Flat Red lens
		<b>TC</b> - Terracotta		<b>YL</b> - Flat Amber lens
		<b>R</b> - Rust		<b>HL</b> - Honeycomb louver
		<b>LZ</b> - Light Bronze		
		<b>DZ</b> - Dark Bronze		
		<b>HG</b> - Hunter Green		
		<b>WB</b> - Weathered Bronze		
		<b>WI</b> - Weathered Iron		
		<b>W</b> - White		
<b>WR</b> - Wall-mount canopy incl.		<b>BSN</b> - Natural Brass		
		<b>BSO</b> - Olde Brass		
		<b>CSN</b> - Copper		
		<b>M</b> - Mocha		
		<b>SS</b> - Stainless Steel		
<b>TR</b> - Tree-mount junction box incl.				

## VISTA - UP AND ACCENT LIGHTS, ALUMINUM SERIES

**HOUSING:** Die-cast, copper-free aluminum

**SHROUD:** Die-cast, copper-free aluminum fitted to the housing with a silicone o-ring gasket — providing a superior weather-tight seal

**SOCKET/LAMP HOLDER:** Top grade ceramic socket with nickel contacts, stainless steel springs, and Teflon-jacketed wire leads

**WIRING:** Prewired with a three-foot pigtail of 18-2 direct-burial cable and underground connectors for a secure connection to the supply cable

### GR2216

**LAMP:** MR-16 Halogen — 50W maximum. LN-20 BAB (20W) Standard

**DIMENSIONS:** 2 1/2" X 7 1/8"

**FINISH:** Polyester powder-coated finish available in Black, Verde, Architectural Brick, Architectural Bronze, Light Bronze, Dark Bronze, Granite, Pewter, Terracotta, Rust, Hunter Green, Mocha, Weathered Bronze, Weathered Iron, and White

**LENS:** Clear or frosted convex glass lens

**MOUNTING:** ABS ground stake included



### GR2219

**LAMP TYPE:** MR-16 Halogen — 50W maximum. LN-20 BAB (20W) Standard

**DIMENSIONS:** 2 1/4" X 7 7/8"

**FINISH:** Polyester powder-coated finish available in Black, Verde, Architectural Brick, Architectural Bronze, Light Bronze, Dark Bronze, Granite, Pewter, Terracotta, Rust, Hunter Green, Mocha, Weathered Bronze, Weathered Iron, and White

**LENS:** Clear or frosted convex glass lens

**MOUNTING:** ABS ground stake included



### GR5006

**LAMP TYPE:** MR-16 LED Lamp Only - 36° Flood, 4.5W Standard

**DIMENSIONS:** 2 5/8" X 5 7/8"

**FINISH:** Polyester powder-coated finish available in Black, Verde, Architectural Brick, Architectural Bronze, Light Bronze, Dark Bronze, Granite, Pewter, Terracotta, Rust, Hunter Green, Mocha, Weathered Bronze, Weathered Iron, and White

**LENS:** Clear, tempered, shock and heat-resistant, soda-lime glass lens

**OPTICS:** Available in 15° Narrow Spot, 25° Spot, 36° Flood, or 60° Wide Flood distributions

**MOUNTING:** ABS ground stake included



### GR5004

**LAMP TYPE:** MR-11 LED Lamp Only - 36° Flood, 2.5W Standard

**DIMENSIONS:** 2 1/8" X 5 3/8"

**FINISH:** Polyester powder-coat finish available in Black, Verde, Architectural Brick, Architectural Bronze, Light Bronze, Dark Bronze, Granite, Pewter, Terracotta, Rust, Hunter Green, Mocha, Weathered Bronze, Weathered Iron, and White

**LENS:** Clear, tempered, shock and heat-resistant, soda-lime glass lens

**OPTICS:** Available in 15° Narrow Spot, 25° Spot, 36° Flood, or 60° Wide Flood distributions

**MOUNTING:** ABS ground stake included



## VISTA - UP AND ACCENT LIGHTS, COPPER SERIES



PROFESSIONAL  
OUTDOOR LIGHTING

**HOUSING:** Heavy-gauge, extruded, solid copper housing fitted to a precision CNC-machined, solid brass base. A solid copper lens-retaining flange and high temperature, color-coordinated silicone seal — provides a superior weather-tight seal

**SOCKET/LAMP HOLDER:** Top grade ceramic socket with nickel contacts, fixed-position design lamp mechanism with stainless steel lamp retaining clip, and Teflon-jacketed wire leads

**WIRING:** Prewired with a three-foot pigtail of 18-2 direct-burial cable and underground connectors for a secure connection to the supply cable

### GR2116CSN

**LAMP TYPE:** MR-16 Halogen — 35W maximum. LN-20 BAB (20W) Standard

**FINISH:** Brushed natural copper and brass (Brushed copper will rapidly age to an elegant rich bronze-like color and may develop areas of patina over time.)

**LENS:** Clear or frosted convex glass lens

**DIMENSIONS:** 7" X 2"

**MOUNTING:** ABS ground stake included



### GR2104CSN

**LAMP TYPE:** T3 — 20W maximum. LN-10 T3 Halogen (10W) Standard

**FINISH:** Natural Copper, Natural Brass, or Olde Brass finish

**LENS:** Frosted, high-impact, polycarbonate lens

**DIMENSIONS:** 2 3/8" X 6 7/8", with lamp 5 1/8"

**MOUNTING:** ABS ground stake included



## VISTA - UP AND ACCENT LIGHTS, BRASS SERIES

**HOUSING:** Machined solid brass

**SOCKET/LAMP HOLDER:** Top grade ceramic socket with nickel contacts, stainless steel springs, and Teflon-jacketed wire lead

**LENS:** Clear or frosted convex glass lens

**WIRING:** Prewired with a three-foot pigtail of 18-2 direct-burial cable and underground connectors for a secure connection to the supply cable

### GR2350BSO

**LAMP TYPE:** MR-16 Halogen — 50W maximum. LN-20 BAB (20W) Standard

**FINISH:** Natural Brass and Olde Brass

**LENS:** Clear or frosted convex glass lens

**DIMENSIONS:** 2 1/2" X 6 3/4"

**MOUNTING:** ABS ground stake included



## VISTA - PATH AND SPREAD FIXTURES, ALUMINUM SERIES

**HOUSING:** Die-cast, copper-free aluminum

**SOCKET/LAMP HOLDER:** Top grade ceramic socket with nickel contacts, stainless steel springs, and Teflon-jacketed wire leads

**WIRING:** Prewired with a three-foot pigtail of 18-2 direct-burial cable and underground connectors for a secure connection to the supply cable

**MOUNTING:** Bottom of stem threaded with 1/2" NPT

### PR4704

**LAMP TYPE:** T3 — 20W maximum. LN-10 T3 Halogen (10W) Standard

**LENS:** Clear, high-impact, polycarbonate lens

**STEM:** 1/2" schedule-40 aluminum pipe with 1/2" NPT

**FINISH:** Polyester powder-coated finish available in Black, Verde, Architectural Brick, Architectural Bronze, Granite, Pewter, Terracotta, Rust, Hunter Green, Mocha, Weathered Bronze, Weathered Iron, and White

**DIMENSIONS:** 15 3/4" X 7 3/8"



### PR9206B

**LAMP TYPE:** T3 — 20W maximum. LN-10 T3 Halogen (10W) Standard

**LENS:** Clear, prismatic, high-impact, polycarbonate spread lens

**STEM:** 1/2" schedule-40 aluminum pipe with 1/2" NPT

**FINISH:** Polyester powder-coated finish available in Black, Verde, Architectural Brick, Architectural Bronze, Granite, Pewter, Terracotta, Rust, Hunter Green, Mocha, Weathered Bronze, Weathered Iron and White

**DIMENSIONS:** 15 1/2" X 10 1/4" x 6 1/2"



## VISTA - PATH AND SPREAD FIXTURES, ALUMINUM SERIES (CONT.)

### PR4211

**LAMP TYPE:** T3 — 20W maximum. LN-10 T3 Halogen (10W) Standard

**LENS:** Clear, high-impact, polycarbonate lens

**STEM:** 1/4" schedule-40 aluminum pipe with 1/2" NPT custom bushing designed with a stress-dispersing collar, to provide strength and stability for mounting

**FINISH:** Polyester powder-coated finish available in Black, Verde, Architectural Brick, Architectural Bronze, Granite, Pewter, Terracotta, Rust, Hunter Green, Mocha, Weathered Bronze, Weathered Iron, and White

**DIMENSIONS:** 17 3/4" X 1 5/8" x 4 5/8"



### PR6500

**LENS:** Clear, high-impact, polycarbonate lens

**LAMP TYPE:** T3 — 20W maximum. LN-10 T3 Halogen (10W) Standard

**STEM:** 1/4" schedule-40 aluminum pipe with 1/2" NPT custom bushing designed with a stress-dispersing collar, to provide strength and stability for mounting

**FINISH:** Polyester powder-coated finish available in Black, Verde, Architectural Brick, Architectural Bronze, Granite, Pewter, Terracotta, Rust, Hunter Green, Mocha, Weathered Bronze, Weathered Iron, and White

**DIMENSIONS:** 2 1/2" X 21", with 6" shade



### PR9216

**LAMP TYPE:** T3 — 20W maximum. LN-10 T3 Halogen (10W) Standard

**LENS:** Clear, prismatic, high-impact, polycarbonate spread lens

**STEM:** 1/2" schedule-40 aluminum pipe with 1/2" NPT

**FINISH:** Polyester powder-coated finish available in Black, Verde, Architectural Brick, Architectural Bronze, Granite, Pewter, Terracotta, Rust, Hunter Green, Mocha, Weathered Bronze, Weathered Iron, and White

**DIMENSIONS:** 18" X 10" X 6"



### PR7218

**LENS:** Clear, high-impact, molded, polycarbonate lens

**LAMP TYPE:** T3 — 20W maximum. LN-10 T3 Halogen (10W) Standard

**FINISH:** Polyester powder-coated finish available in Black, Verde, Architectural Brick, Architectural Bronze, Granite, Pewter, Terracotta, Rust, Hunter Green, Mocha, Weathered Bronze, Weathered Iron, and White

**DIMENSIONS:** 6 1/4" X 8 1/8"



## VISTA - PATH AND SPREAD LIGHTS, COPPER SERIES



**VISTA  
PROFESSIONAL  
OUTDOOR  
LIGHTING**

**HOUSING:** Spun solid copper shade with a precision CNC-machined, Twist-to-Lock solid brass lamp base for easy tool-free lamp access

**FINISH:** Brushed natural copper and brass (Brushed copper will rapidly age to an elegant rich bronze-like color and may develop areas of patina over time)

**SOCKET/LAMP HOLDER:** Top grade American-made ceramic socket with nickel contacts, stainless steel springs, and Teflon-jacketed wire leads

**MOUNTING:** Bottom of stem threaded with 1/2" NPT. Fixture may be mounted into threaded hubs in junction boxes, ground stakes, tree-mount boxes, or floor mounting canopies

**WIRING:** Prewired with a three-foot pigtail of 18-2 direct-burial cable and underground connectors for a secure connection to the supply cable

### PR2165CSN

**LENS:** Clear, optical grade, Pyrex lens for superior beam spread

**LAMP TYPE:** T3 — 20W maximum. LN-10 T3 Halogen (10W) Standard

**DIMENSIONS:** 3 3/8" X 16 1/2", with 1 3/8" shade

**STEM:** 1/2" heavy-gauge, extruded, solid copper pipe with 1/2" NPT





PROFESSIONAL  
OUTDOOR LIGHTING

### GR5240B

**LENS:** Lens cover ordered separately, but not required

**LAMP TYPE:** PAR-36 — 50W maximum. LN-7558 (20W) Standard

**HOUSING:** Black silicone rubber lamp holder suspended inside a 5" black ABS well

**FINISH:** Black

**SOCKET/LAMP HOLDER:** Socket not required. Fixture supplied with high-temperature rated screw terminal spade connectors

**MOUNTING:** In-grade. Mounting accessories not required

**OPTICS/AIMING:** Adjustable lamp bracket provides up to 25° of tilt as well as 360° rotation of the housing for precise beam control

**DIMENSIONS:** 7 3/4" X 5 3/4"



### GR5270B

**HOUSING:** Injection-molded, glass-reinforced Ryton™ R4 composite for strength and high UV stability — warranted for ten years against corrosion

**LENS COVER:** Injection-molded, glass-reinforced Ryton™ R4 composite fitted to the housing with a silicone o-ring gasket — providing a superior weather-tight seal

**FINISH:** Available in Black, Verde, Architectural Brick, Light Bronze, Dark Bronze, Granite, Terracotta, Rust, Hunter Green, Mocha, Weathered Bronze, Weathered Iron, and White

**SOCKET/LAMP HOLDER:** Top grade ceramic socket with nickel contacts, stainless steel springs, and Teflon-jacketed wire leads

**LENS:** Clear, tempered, shock and heat-resistant, soda-lime glass lens-crowned (convex) to promote water runoff

**LAMP TYPE:** MR-16 Halogen — 50W maximum. LN-20 BAB/FG (20W) Standard

**OPTICS/AIMING:** Adjustable lamp bracket (not available with LED) provides up to 25° of tilt as well as 360° rotation of the housing for precise beam control

**MOUNTING:** In-grade. Conduit mount fixtures have two 3/4" NPT inlets on the bottom

**DIMENSIONS:** 5" X 4 3/4", with 1/4" grate



### GR5272B

**HOUSING:** Injection-molded, glass-reinforced Ryton™ R4 composite for strength and high UV stability — warranted for ten years against corrosion

**LENS COVER:** Injection-molded, glass-reinforced Ryton™ R4 composite fitted to the housing with a silicone o-ring gasket — providing a superior weather-tight seal

**FINISH:** Available in Black, Verde, Architectural Brick, Light Bronze, Dark Bronze, Granite, Terracotta, Rust, Hunter Green, Mocha, Weathered Bronze, Weathered Iron, and White

**SOCKET/LAMP HOLDER:** Top grade ceramic socket with nickel contacts, stainless steel springs, and Teflon-jacketed wire leads

**LENS:** Clear, tempered, shock and heat-resistant, soda-lime glass lens-crowned (convex) to promote water runoff

**LAMP TYPE:** MR-16 Halogen — 50W maximum. LN-20 BAB/FG (20W) Standard

**OPTICS/AIMING:** Adjustable lamp bracket (not available with LED) provides up to 25° of tilt as well as 360° rotation of the housing for precise beam control

**DIMENSIONS:** 5" X 4 3/4"

**MOUNTING:** In-grade



## VISTA - SPECIALTY LIGHTS

**HOUSING:** Die-cast, copper-free aluminum

**SHROUD:** Die-cast, copper-free aluminum fitted to the housing with a silicone o-ring gasket — providing a superior weather-tight seal

**SOCKET/LAMP HOLDER:** Top grade American-made ceramic socket with nickel contacts, stainless steel springs, and Teflon-jacketed wire leads

**WIRING:** Prewired with a three-foot pigtail of 18-2 SPT1 UV-resistant cable and weather-resistant connectors for a secure connection to the supply cable

### HT2238

**FINISH:** Polyester powder-coated finish available in Black, Verde, Architectural Brick, Architectural Bronze, Granite, Pewter, Terracotta, Rust, Hunter Green, Mocha, Weathered Bronze, Weathered Iron, and White

**LENS:** Clear, tempered, shock and heat-resistant, soda-lime glass lens

**LAMP TYPE:** MR-16 Halogen — 35W maximum. LN-20 BAB (20W) Standard

**MOUNTING:** Solid brass loop with 6' stainless steel cable-hanger included

**DIMENSIONS:** 2 1/4" X 4 3/4"



### DL2237

**FINISH:** Polyester powder-coated finish available in Black, Verde, Architectural Brick, Architectural Bronze, Granite, Pewter, Terracotta, Rust, Hunter Green, Mocha, Weathered Bronze, Weathered Iron, and White

**LENS:** Clear, tempered, shock and heat-resistant, soda-lime glass lens

**LAMP TYPE:** MR-16 Halogen — 35W maximum. LN-20 BAB (20W) Standard

**MOUNTING:** Adjustable bracket and J-box included

**DIMENSIONS:** 6 3/4" X 2 1/4"



### UW4217

**HOUSING:** Injection-molded Noryl polymer

**LENS COVER:** Injection molded, polycarbonate lens fitted to the housing with a silicone o-ring gasket — providing a superior watertight seal

**FINISH:** Available in black only

**SOCKET/LAMP HOLDER:** Top grade ceramic socket with nickel contacts, stainless steel springs, and Teflon-jacketed wire leads

**LENS:** Clear, prismatic spread lens with removable mirror-finish reflector to block up light and provide wider horizontal spread

**LAMP TYPE:** T3 — 20W maximum. LN-10 T3 Halogen (10W) Standard, High Output LED with Vista exclusive smart driver, powered to operate for 50,000 hours

**MOUNTING:** Internally weighted base for stable placement underwater

**WIRING:** Prewired with a 15-foot pigtail of 18-3 double jacketed, water-resistant cable including a green ground wire

**DIMENSIONS:** 5 3/4" X 4 3/4"



**PROFESSIONAL  
OUTDOOR LIGHTING**

### UW5217

**HOUSING:** Injection-molded, glass-reinforced Ryton™ R-4 composite for strength and high UV stability — warranted for ten years against corrosion

**LENS COVER:** Injection molded, polycarbonate lens fitted to the housing with a silicone o-ring gasket — providing a superior watertight seal

**FINISH:** Available in black only

**LAMP TYPE:** MR-16 Halogen — 50W maximum. LN-20 BAB/FG (20W) Standard

**MOUNTING:** Fully adjustable mounting bracket, to provide precise light aiming, mounted on a cement counter weight base for stable placement under water

**WIRING:** Prewired with a fifteen-foot pigtail of 18-3 double jacketed, water resistant cable including a green ground wire



## VISTA - STEP AND BRICK LIGHTING

### SL4242

**HOUSING:** Stamped and formed aluminum recessed box

**COVER PLATE:** Die-cast, copper-free, aluminum fitted to the recessed box with UV-resistant weather stripping— providing a superior weather-tight seal

**FINISH:** Polyester powder-coated finish available in Black, Verde, Architectural Brick, Architectural Bronze, Granite, Pewter, Terracotta, Rust, Hunter Green, Mocha, Weathered Bronze, Weathered Iron, and White

**SOCKET/LAMP HOLDER:** Top grade ceramic socket with nickel contacts, stainless steel springs, and Teflon-jacketed wire leads

**LENS:** Clear, high-impact, polycarbonate lens

**LAMP TYPE:** T3 — 20W maximum. LN-10 T3 Halogen (10W) Standard

**MOUNTING:** Recessed mounting box with easy-to-align system included

**DIMENSIONS:** 4 3/4" X 2 7/8"



### SL4246

**HOUSING:** Copper free, stamped and formed aluminum recessed box with 1/2" knockouts on the back and side

**COVER PLATE:** Die-cast, copper-free, aluminum fitted to the recessed box with UV-resistant weather stripping— providing a superior weather-tight seal

**FINISH:** Polyester powder-coated finish available in Black, Verde, Architectural Brick, Architectural Bronze, Granite, Pewter, Terracotta, Rust, Hunter Green, Mocha, Weathered Bronze, Weathered Iron, and White

**SOCKET/LAMP HOLDER:** Top grade ceramic socket with nickel contacts, stainless steel springs, and Teflon-jacketed wire leads

**LENS:** Clear, high impact, polycarbonate lens

**LAMP TYPE:** T3 (x 2) — 20W maximum. LN-10 T3 Halogen (10W) Standard

**MOUNTING:** Recessed mounting box included

**DIMENSIONS:** 9 1/8" X 2 7/8"

### SL4260

**CHASSIS:** Stainless Steel

**FLANGE PLATE:** Stainless Steel

**HOUSING:** Aluminum, Stainless Steel, Brass, or Copper

**FINISH:** Polyester powder-coated finish available in Black, Verde, Architectural Brick, Architectural Bronze, Granite, Pewter, Terracotta, Rust, Hunter Green, Mocha, Weathered Bronze, Weathered Iron, and White

**SOCKET/LAMP HOLDER:** Top grade Noryl polymer socket with phosphor bronze contacts and PVC-jacketed wire leads. Stainless steel lamp holder

**LAMP TYPE:** LN-10 T3.5 (10W) Standard. 10W Max



### SL4243

**HOUSING:** Die-cast, copper-free, aluminum housing

**FINISH:** Polyester powder-coated finish available in Black, Verde, Architectural Brick, Architectural Bronze, Granite, Pewter, Terracotta, Rust, Hunter Green, Mocha, Weathered Bronze, Weathered Iron, and White

**SOCKET/LAMP HOLDER:** Top grade ceramic socket with nickel contacts, stainless steel springs, and Teflon-jacketed wire leads

**LENS:** Frosted, tempered, shock and heat-resistant soda-lime glass lens

**LAMP TYPE:** T3 — 20W maximum. LN-10 T3 Halogen (10W) Standard

**MOUNTING:** Surface mounting plate included, no recessed box required

**DIMENSIONS:** 3 1/4" X 1 7/8"





**PROFESSIONAL**  
OUTDOOR LIGHTING

### ACCESSORIES

(not all accessories available for all fixtures)

GS150 — 9" black ABS in-ground stake with 1/2" NPT hub

TM150 — Tree mount junction box, black or bronze finish

Optical Effects Lenses	
BL — Flat cool blue lens	RL — Flat red lens
SL — Flat spread lens	YL — Flat amber lens
FR — Flat frosted lens	HL — Honeycomb louver
DBL — Flat dark blue lens	CX — Convex clear lens
GL — Flat dark green lens	CFR — Convex frosted lens
	CBL — Convex cool lens

### VISTA - TRANSFORMERS

#### MT STAINLESS STEEL MULTI-TAP SERIES

Stainless steel, custom-designed, weathertight casing seals components from moisture and debris. Vista's Smudge-Free clear powder-coat ensures a like-brand-new look for years to come.

- ◆ Take-apart stainless steel hinges for easy door removal allowing greater access during installation
- ◆ Water-resistant weatherstripping around door seal
- ◆ Easy to read instructions mounted inside door
- ◆ Magnetic overload circuit breakers for reliable automatic circuit protection under all conditions. A rocker switch may also be used for manual on/off switching
- ◆ Over-sized wiring compartment makes cable installation easy
- ◆ Extra-large terminal strip for multiple low voltage cable connections
- ◆ Separate accessory terminal strip for easy installation of optional photo-cell, motion sensor, or other external switching devices
- ◆ 6', heavy-gauge, grounded, water-resistant power cord with integrally molded plug
- ◆ 120-volt Accessory receptical for use with optional, removable multi-setting mechanical 24-hour timer or electronic/digital 7-day timer (with battery back-up)
- ◆ Secondary voltage: 11, 12, 13, 14 and 15 volts
- ◆ Lockable, stainless steel latch can be secured to prevent tampering
- ◆ Discrete louvered vents in the rear and sides of the cabinet maintain a cool operating temperature
- ◆ 120-volt terminal strip for easy hardwiring
- ◆ UL Listed to U.S. and Canadian safety standards for landscape lighting transformers (UL 1838)
- ◆ Pool and Spa Ready — Suitable for Use with Submersible Luminaires or Submersible Pumps

#### TRANSFORMER ACCESSORIES

FPC170 — Vista Photo Cell swivel mount

FPC150 — Vista Photo Cell swivel mount with wiring harness





PROFESSIONAL  
OUTDOOR LIGHTING

### ES-150 LANDSCAPE SERIES

**EXTERIOR CONSTRUCTION:** 20-gauge polished, top-grade domestic, 304 stainless steel

**FINISH:** Polyester powder-coated finish available in Black, Verde, Architectural Brick, Architectural Bronze, Granite, Pewter, Terracotta, Rust, Hunter Green, Mocha, Weathered Bronze, Weathered Iron, and White

**TRANSFORMER CHARACTERISTICS:** Available Power Rating: 150 Watts  
Primary Voltage: 120 Volts  
Secondary Voltage: 12 and 15 Volts

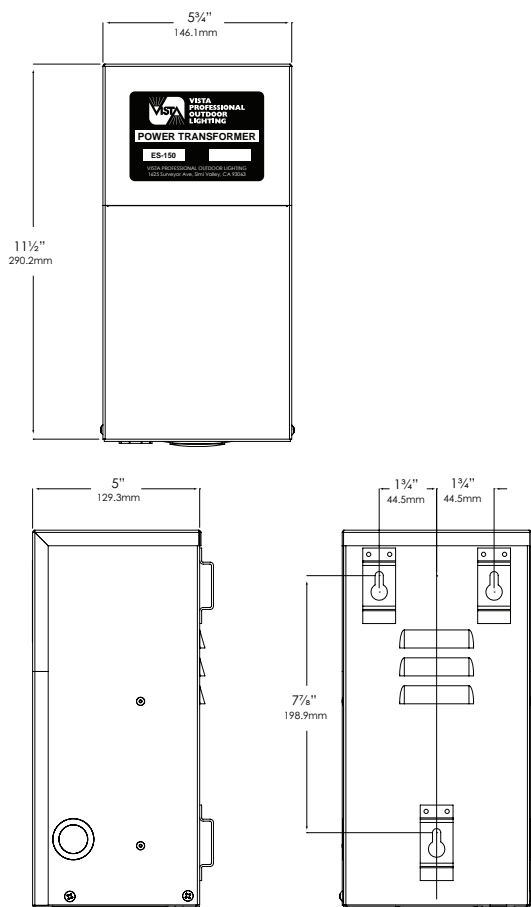
**PRIMARY PROTECTION:** Auto thermal shut-off

**SECONDARY PROTECTION:** Resettable high performance magnetic circuit breaker

**TERMINALS:** Extra-large terminal strip for multiple low voltage cable connections

**CERTIFICATION:** UL Listed to U.S. safety standards for general purpose transformers (UL 1838)

### DIMENSIONS:



### V-PRO

The new vPRO Transformers are low profile, light weight, stainless steel and utilize solid-state technology. A proprietary, downloadable app allows the transformer to be controlled by any Bluetooth® enabled device.

- ◆ Low profile, light weight, stainless-steel enclosure
- ◆ Ease of handling and installation flexibility
- ◆ Solid-state technology
- ◆ Downloadable app allows control by any Bluetooth® enabled device
- ◆ User-friendly interface for fast, easy set up
- ◆ Astronomic programming with multiple on/off and dimming
- ◆ Smooth dimming from full bright to off
- ◆ On-the-fly override for all control aspects
- ◆ Self-adjusting voltage and current reductions to protect against overload; no breakers to reset
- ◆ Available in single or double circuits; double circuit dimming individually addressable
- ◆ Multiple wattage options from 75 to 500
- ◆ Selectable voltage adjustment (12V or 15V)
- ◆ Outdoor/indoor rated
- ◆ Password protected
- ◆ American made

MODEL	DESCRIPTION
VP-75	Solid State Universal Power Supply 75W Single Circuit
VP-150	Solid State Universal Power Supply 150W Single Circuit
VP-250	Solid State Universal Power Supply 250W Single Circuit
VP-75X2	Solid State Universal Power Supply 150W w/ Dual 75W Circuits
VP-150X2	Solid State Universal Power Supply 300W w/ Dual 150W Circuits
VP-250X2	Solid State Universal Power Supply 500W w/ Dual 250W Circuits





## ***GET EDUCATED & GET THE EDGE ON YOUR COMPETITORS***

### **L I T E**

#### ***Lighting Institute of Technology & Education***

- Industries' leading contractor training and education certification program.
- Contractors will receive certification for:
  - Intelli-System:** Save energy & wire with this low-energy-use, "green" low-voltage lighting system
  - Power Management System:** Maximize proper voltage distribution, consolidate and protect wire connections.
  - Contractor Referral Program:** Qualified Certified contractors will be added to a referral directory accessible by SDSP participants, Developers, Builders, Homeowners, etc.
- Certified Contractors will have access to SDSP services.

### **SDSP**

#### ***Specification & Design Support Program***

- Industries' leading CAD design training, education & support program.
- Lighting Designers will become more "Green" by learning to design with the Intelli-System & Power Management System to create energy efficient, sustainable and cost-effective lighting designs
- Lighting Designers will receive directory of LITE Certified contractors in their area.

### ***Green Light***

#### ***Energy Conscious Outdoor Lighting Systems***

- Incorporates the use of 24V Low Voltage Lighting Systems with low wattage, long lasting lamps; including replaceable LED lamps.
- More efficient wiring techniques designed to save energy, time & materials.
- Incorporates more flexible glare control techniques for Dark Sky Compliance.

***Call your local Unique Lighting Systems, Inc. sales representative for more info today!***

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### UNIQUE LIGHTING SYSTEMS®

#### STANDARD UNIQUE FINISHES:

<b>WB</b>	Weather wBrass	<b>WH</b>	White
<b>NB</b>	Natural Brass	<b>BK</b>	Black
<b>TT</b>	Tucson Tan	<b>VG</b>	Verde Green
<b>BZ</b>	Bronze		

#### **PULSAR**

Equipped with four designer lenses, 25' of #16/2 low voltage wire and a Lifetime Warranty the Pulsar is perfect no matter how difficult the challenge..

**CONSTRUCTION:** Cast Brass

**KNUCKLE:** Cast Brass, Adjustable with Machined Natural Brass Thumb Screw

**SOCKET:** Beryllium Copper, pre-greased

**SHROUD:** Lock and Load, 360 Rotation, 8 Settings

**FINISH COAT:** Poly-Thermal Shield

**MOUNTING:** Brown Fusion Stake, Orbital Lock Nut

**WIRE:** 25', 16/2 THW UV Brown

**LAMP:** MR-16



Product Code	Description
PULS-NL	Pulsar, No Lamp

### The Power of the Demo

Unique Lighting Systems has developed the ultimate sales tool for the landscape lighting professional. This round the clock sales tool allows the homeowner the opportunity to enjoy the beautiful effects of their well lit landscaped home before making their final decision. The demo kit sets up in minutes and comes equipped with everything you need for a lighting presentation.

#### Features and Benefits of the Demo Kit include:

- ◆ Plug and light. Simply plug in transformer and connect the homerun wires to the hubbed fixtures
- ◆ Unique's exclusive system ensures proper voltage to every fixture every time
- ◆ Quick connects make for speedy set-up and take down. No more wire stripping
- ◆ Features Unique's Multi-Matic transformer and Equalizer Hub wiring
- ◆ Allows you to set up 16 lights in under 15 minutes
- ◆ Helps you sell landscape lighting while allowing you to work on all types of lighting techniques
- ◆ Establish VALUE by giving the homeowner a visual of what a professionally installed landscape lighting job looks like, in turn helping you close the sale



Contact your local Horizon store to get your demo kit!

# UNIQUE

LIGHTING SYSTEMS®

## STARBURST

This fixture features an unprecedented dual socket mount system allowing you to install a vertical MR16 for directional up-lighting or a horizontal T-3 lamp for wall washing if necessary.



**CONSTRUCTION:** Cast Brass

**SOCKET:** Beryllium Copper, pre-greased

**FINISH COAT:** Poly-Thermal Shield

**KNUCKLE:** Cast Brass Adjustable with Machined Natural Brass Thumb Screw

**MOUNTING:** Brown PVC Gravity Stake

**WIRE:** 25', 16/2 THW UV Brown

**LAMP:** MR-16, T-3

**VOLTAGE:** 12 volt

Product Code	Description
STAR-NL	Starburst, No Lamp Included

## STELLAR

A miniature version of the Starburst, the Stellar mini wall washer is a powerful fixture. Featuring a small die cast brass body, this undersized power house is able to illuminate planter areas, short retaining walls, step landings or any other area needing a soft glow. Advance applications include under eaves or second story level lighting\*.



\*(Round Mounting Base needed when installing the Stellar on a surface mount application.)

**CONSTRUCTION:** Cast Brass

**SOCKET:** Beryllium Copper, pre-greased

**FINISH COAT:** Poly-Thermal Shield

**KNUCKLE:** Cast Brass Adjustable with Machined Natural Brass Thumb Screw

**MOUNTING:** Brown PVC Gravity Stake

**WIRE:** 25', 18/2 THW UV Brown

**LAMP:** T-3

**VOLTAGE:** 12 volt

**MAXIMUM WATTAGE:** 20 Watts

Product Code	Description
VALC-NL	Valor , No Lamp

## VALOR

Stake Mounted Up Light.

**CONSTRUCTION:** Precision formed from brass

**GASKET:** High temperature silicone o-ring (2) for water-tight seal

**KNUCKLE:** Machined brass knuckle with a solid brass adjustable thumb screw

**SHROUD:** Precision formed and comes with a factory sealed shock resistant tempered glass lens to prevent water intrusion

**LAMP:** MR-16



## GUARDIAN

The Guardian offers style and function without compromise. Its sleek straight lines and dual gasket shroud feature make the Guardian an essential fixture when lighting queen palms, trees, columns or any other tall structure. Equipped with a clear convex lens, 25' of #16/2 low voltage wire and a 15 Year Warranty the Guardian is a perfect choice.

**CONSTRUCTION:** Natural Copper

**KNUCKLE:** Cast Brass, Adjustable

**SOCKET:** Beryllium Copper, pre-greased

**FINISH COAT:** Poly-Thermal Shield

**MOUNTING:** Brown PVC Gravity Stake

**WIRE:** 25', 16/2 THW UV Brown

**LAMP:** MR-16

**VOLTAGE:** 12 volt



Product Code	Description
GUAR-NL	Guardian, No lamp

# Outdoor Living

## UNIQUE LIGHTING SYSTEMS®

### INTREPID

Sleek straight lines, rotatable shroud feature make the Intrepid an essential fixture when lighting palms, trees, columns or other tall structures. The Intrepid can be also utilized for back lighting, graze lighting, shadow lighting or simply as a directional up light.

**CONSTRUCTION:** Brass

**FINISH:** Weathered Brass

**SHROUD:** 360° Rotation, O-Ring

**WIRE:** 16/2 Thin UV Brown

**SOCKET:** Beryllium Copper, pre-greased

**LAMP:** MR16

**LENS:** Clear Convex Tempered Lens, Designer lens kit

**MOUNTING:** Gravity Stake with Orbital Lock Nut 1/2-14 NPSM

**VOLTAGE:** 12 volt



Product Code	Description
INTR-NL	Intrepid, no lamp

### UNIQUE - IN GROUND AND WELL LIGHTS

#### F100/F200

Unique Lighting carries a full line of powerful in-ground well lights ranging from F100 to the F200. The F-200 uses a PAR 36 35W wide flood lamp to cast an ample beam spread against any landscape element. Its dual cut body allows for surface flush or angled installation options. The featured patented stainless steel gimble ring holds the lamp in place while allowing vertical and horizontal adjustments within the ABS body.

#### ABS COMPOSITE WELL LIGHTS

Product Code	Description
F200-12-35	Well Light, ABS Composite, Stainless Steel Gimble Ring, 25' Wire Lead and 35W PAR 36 Halogen WFL

#### PVC COMPOSITE WELL LIGHTS

Product Code	Description
F100-12-35	Well Light, PVC Composite, Rubber Gimble Ring, Grate, 25' Wire Lead and 35W PAR 36 Halogen WFL



### UNIQUE - PATH AND SPREAD FIXTURES

#### CENTAURUS4/CENTAURUS6

The Centaurus offers soft level lighting with an elegant look. The frosted cylindrical lens minimizes glare. The Centaurus is ideal for planter areas, walkways etc.



**CONSTRUCTION:** Cast and Stamped Solid Brass

**FINISH:** Weathered Brass (optional finishes available)

**MAXIMUM WATTAGE:** 20 Watts

**SHROUD:** Reflective Powder Coat Interior

**WIRE:** 25' Intelli-Flex wire factory connected

**SOCKET:** Beryllium Copper, pre-greased with silicon

**CONNECTIONS:** Anti-Moisture Migration connections

**LENS:** Frosted Lens

**MOUNTING:** Stabilizer Stake 1/2-14NPSM

**VOLTAGE:** 12 volt

Product Code	Description
C4-NL	Centaurus4, No lamp
C6-NL	Centaurus6, No lamp

## UNIQUE LIGHTING SYSTEMS®

### ILLUMINATOR4/ILLUMINATOR6

The frosted cylindrical lens minimizes glare while the T-3 lamp provides sufficient light to cast soft glows on any path or walking area. Ideal for walkways, the Illuminator is also perfect for small planter areas in need of light.



**CONSTRUCTION:** Natural Copper Housing with Machined Brass Collar

**SHROUD:** Rotating Height Adjustment Settings

**SOCKET:** Beryllium Copper, pre-greased

**FINISH:** Poly-Thermal Shield

**MOUNTING:** Brown PVC Stabilizer Stake

**WIRE:** 25', 18/2 THW UV Brown

**VOLTAGE:** 12 volt

Product Code	Description
I4-NL	Illuminator4, No lamp
I6-NL	Illuminator6, No lamp

### LANCER4 / LANCER6

The Lancer offers soft level lighting with an elegant look. The frosted cylindrical lens minimizes glare while the T-3 lamp provides sufficient light to cast soft glows on any path or walking area. The Lancer is ideal for planter areas, walkways etc. The adjustable collar gives maximum design flexibility by creating multiple levels of light with one fixture.



**CONSTRUCTION:** Cast and Stamped Solid Brass

**FINISH:** Weathered Brass (optional finishes available)

**MAXIMUM WATTAGE:** 20 Watts

**SHROUD:** Reflective Powder Coat Interior

**WIRE:** 25' Intelli-Flex wire factory connected

**SOCKET:** Beryllium Copper, pre-greased with silicon

**CONNECTIONS:** Anti-Moisture Migration connections

**LENS:** Frosted Lens

**MOUNTING:** Stabilizer Stake 1/2-14NPSM

**VOLTAGE:** 12 volt

Product Code	Description
L4-NL	Lancer4, No lamp
L6-NL	Lancer6, No lamp

### SATURN

Saturn offers soft level lighting with an elegant look. Ideal for walkways, the Saturn is also perfect for when planter areas need lighting. The adjustable settings give maximum design flexibility by creating numerous beam spreads with one fixture.

**CONSTRUCTION:** Spun Brass with Machined Brass Collar

**SHROUD:** Adjustable Height Settings

**SOCKET:** Beryllium Copper, pre-greased

**FINISH COAT:** Poly-Thermal Shield

**MOUNTING:** Brown PVC Stabilizer Stake

**WIRE:** 25', 18/2 THW UV Brown

**VOLTAGE:** 12 and 24-volt



Product Code	Description
SA-NL	Saturn, No Lamp

### CAMBRIDGE

The Cambridge offers soft level lighting with an elegant look. Provides sufficient light to cast soft glows on any path or walking area. Ideal for walkways, the Cambridge is also perfect for when planter areas need lighting. The adjustable settings give maximum design flexibility by creating numerous beam spreads with one fixture.

**CONSTRUCTION:** Natural Copper with Machined Brass Collar

**SHROUD:** Adjustable Height Settings

**SOCKET:** Beryllium Copper, pre-greased

**FINISH COAT:** Poly-Thermal Shield

**MOUNTING:** Brown PVC Stabilizer Stake

**WIRE:** 25', 18/2 THW UV Brown

**VOLTAGE:** 12 volt



Product Code	Description
CM-NL	Cambridge, No Lamp

### UNIQUE LIGHTING SYSTEMS®

#### CONQUEST

The Conquest is perfect for downlighting with a 360° rotational shroud for glare control. The adjustable brass knuckle allows for perfect directional control.

**CONSTRUCTION:** Brass

**FINISH:** Weathered Brass (optional finishes available)

**SHROUD:** 360° Rotation, O-Ring

**KNUCKLE:** Adjustable With Thumbnut

**WIRE:** 25' Intelli-Flex wire factory connected

**SOCKET:** Beryllium Copper, pre-greased

**CONNECTIONS:** Anti-Moisture Migration connections

**MOUNTING:** Brass Mounting Bracket

**VOLTAGE:** 12 volt

**15 Year Warranty**



Product Code	Description
CONQ-NL	Conquest, No Lamp

## UNIQUE - STEP/BRICK

#### GEMINI

Perfect for gracing niche surface areas, the Gemini offers a half dome lock and load cover directing parallel light output while concealing all mounting hardware. It's frosted designer lens softens the beam spread to create a warm glow while still powerful enough to provide safety and security.



**CONSTRUCTION:** Cast Brass

**SOCKET:** Beryllium Copper, pre-greased

**SHROUD:** Lock and Load, Fully Rotatable

**FINISH COAT:** Poly-Thermal Shield

**MOUNTING:** Screws and Anchors/Surface Mount

**WIRE:** 25', 18/2 THW UV Brown

**VOLTAGE:** 12 volt

Product Code	Description
GEMI-NL	Gemini, No Lamp

#### VOYAGER8

The Voyager 8 is a classic recessed step light. Perfect to illuminate stairs, benches, short retaining walls and other niche locations, The Voyager 8 can be ordered with a louvered, open or hooded faceplate to direct and spread light to the intended area.

**CONSTRUCTION:** Cast Brass Faceplate and Injection Molded, Fully Potted Mount Box

**SOCKET:** Beryllium Copper, pre-greased

**SHROUD:** Louver, Open or Hooded (please specify)

**FINISH COAT:** Poly-Thermal Shield

**MOUNTING:** Screws and Anchors

**WIRE:** 25', 18/2 THW UV Brown

**VOLTAGE:** 12 volt



Product Code	Description
V08L- NL	Voyager8, No Lamp

#### VOYAGER5

A smaller version of the Voyager 8, the Voyager 5 is perfect to illuminate stairs, benches, short retaining walls and other niche locations. The Voyager 5 can be ordered with a louvered, open or hooded faceplate to direct and spread light to the intended area.

**CONSTRUCTION:** Cast Brass Faceplate and Injection Molded, Fully Potted Mount Box

**SOCKET:** Beryllium Copper, pre-greased

**SHROUD:** Louver, Open or Hooded (please specify)

**FINISH COAT:** Poly-Thermal Shield

**MOUNTING:** Screws and Anchors

**WIRE:** 25', 18/2 THW UV Brown

**MAXIMUM WATTAGE:** 20 Watts

**VOLTAGE:** 12 volt

**Lifetime Warranty**



Product Code	Description
V05L	Voyager5, No Lamp

#### SOVEREIGN

The Sovereign is a step beyond the normal recessed step light. Perfect to illuminate stairs, benches, short retaining walls and other niche locations. The Sovereign pane and louvered cover direct and spread light to the intended area. The mounting box secures the fixture while still allowing face plate adjustments.

**CONSTRUCTION:** Brass Faceplate/Composite Box

**FINISH:** Weathered Brass

**FACE PLATE:** Louver with Level Adjustment Plate

**WIRE:** 25' Intelli-Flex wire factory connected and potted

**CONNECTIONS:** Fully potted

**MOUNTING:** Recessed

**VOLTAGE:** 12 volt

**15 Year Warranty**

Product Code	Description
S5FL-NL	Sovereign 5 — 6"
S8FL-NL	Sovereign 8 — 9.5"



## WHAT SETS US APART

### The Hub System



For over 20 years Unique Lighting Systems® has provided leadership and distinguished itself as innovators in the low voltage lighting industry. Our patented HUB system sets the benchmark within the industry and continues to be the best solution for saving time and money.

Wire connections are the weakest point of any low voltage installation and are susceptible to wicking and water infiltration. Utilizing the HUB installation method will reduce the number of connections by up to 80% versus standard wiring methods. This means less maintenance, less lamp outages and easier troubleshooting. In addition the HUB method utilizes less wire and saves money.

Flexibility is essential as landscape continues to grow and change over time. The Elements™ Series features an auxiliary 12" wire lead, in addition to the 15' wire lead, on most fixtures. The new 12" *FLEX™* Auxiliary Lead enables unmatched flexibility and makes expansion easy as trees grow and landscape develops.



Expansion is easy as your landscape grows and changes. The ability to move and add fixtures is easier and faster with the standard 15' wire lead and 12" *FLEX™* Auxiliary Lead.



**New landscape:**  
10' diameter canopy  
10' tall tree

Lights placed 18" away from the base of the trunk. Illumination grazes the trunk and fills the canopy.



**3 year old landscape:**  
17' diameter canopy  
14' tall tree

Lights moved to 30" away from the base of the trunk. The flexibility provided by the 15' wire lead adapts your lighting to the growing landscape.



**7 year old landscape:**  
20' diameter canopy  
17' tall tree

Lights placed 48" away from the base of the trunk. An additional fixture is added using the *FLEX™* Auxiliary Lead without having to run new wires.

# UNIQUE LIGHTING SYSTEMS®

## PHOTON

The Photon® fixture is designed primarily as an uplight. Due to its smaller size, this fixture is ideal for achieving an elegant lighting effect in small, tight spaces.

- ◆ Marine grade A360 alloy construction
- ◆ 15' hub-ready wire lead
- ◆ 12" *FLEX*™ Auxiliary Lead
- ◆ Composite stake with molded brass threaded insert
- ◆ Available in shrouded and non-shrouded version
- ◆ Dual silicone o-ring seal
- ◆ Accepts Unique's *FLEX*™ Series LED MR11 lamps or halogen lamps

**DIMENSION:** • 2.25" diameter x 6.25" length  
• 2" diameter x 4.75" length

## FIXTURE ORDERING INFORMATION

Example: PHOS-NL-BK (Photon Shrouded, No Lamp, Black)

Model Name	Wattage	Finish
PHOS = Shrouded	NL = No Lamp	BK = Black
PHOT = No Shroud		BZ = Bronze
		TT = Tuscan Tan

## NUCLEUS

The Nucleus® fixture is designed to illuminate shrubs, trees, signage, architectural facades and more.

- ◆ Marine grade A360 alloy construction
- ◆ 15' hub-ready wire lead
- ◆ 12" *FLEX*™ Auxiliary Lead
- ◆ Composite stake with molded brass threaded insert
- ◆ Available in shrouded and non-shrouded version
- ◆ Dual silicone o-ring seal
- ◆ Accepts Unique's *FLEX*™ Series LED MR16 lamps or halogen lamps

**DIMENSION:** • 3.3" diameter x 6.8" length  
• 2.75" diameter x 4.72" length

## FIXTURE ORDERING INFORMATION

Example: NUCL-NL-BK (Nucleus Shrouded, No Lamp, Black)

Model Name	Wattage	Finish
NUCS = Shrouded	NL = No Lamp	BK = Black
NUCL = No Shroud		BZ = Bronze
		TT = Tuscan Tan



## GAMMA RAY

The Gamma Ray® fixture is economically priced yet maintains Unique's high standards of quality components, superior finishes, and lasting performance - making it the perfect selection for any value engineered project.

- ◆ Marine grade A360 alloy construction
- ◆ 3' wire lead
- ◆ Composite stake with molded brass threaded insert
- ◆ Available in shrouded version
- ◆ Silicone o-ring seal
- ◆ Accepts Unique's *FLEX*™ Series LED MR16 lamps or halogen lamps

**DIMENSION:** 2.5" diameter x 6.7" length

## FIXTURE ORDERING INFORMATION

Example: GAMS-NL-BK (Gamma Ray Shrouded, No Lamp, Black)

Model Name	Wattage	Finish
GAMS = Shrouded	NL = No Lamp	BK = Black
		BZ = Bronze
		TT = Tuscan Tan



## ORBITAL

The Orbital® fixture is designed to mimic the soft, inviting glow of moonlight. The installation height of these fixtures allows their illumination to expand broadly across outdoor areas and gently sway with the wind, casting subtle shadows just as natural light would.

- ◆ Marine grade A360 alloy construction
- ◆ Hangs from 15' hub-ready wire lead
- ◆ 12" *FLEX*™ Auxiliary Lead
- ◆ Silicone o-ring seal
- ◆ Petite 5" height
- ◆ Accepts Unique's *FLEX*™ Series LED MR11 lamps or halogen lamps

**DIMENSION:** 3.03" diameter x 4.92" height

## FIXTURE ORDERING INFORMATION

Example: ORBI-NL-BK (Orbital Shrouded, No Lamp, Black)

Model Name	Wattage	Finish
ORBI	NL = No Lamp	BK = Black
		BZ = Bronze



## UNIQUE LIGHTING SYSTEMS®

### PROTON

The Proton® fixture features a five inch shroud and is the perfect selection for every intimate garden space, planter area or pathway.

- ◆ Marine grade A360 alloy construction
- ◆ 15' hub-ready wire lead
- ◆ 12" FLEX™ Auxiliary Lead
- ◆ Larger composite stake with molded brass threaded insert
- ◆ White reflection panel under shroud for greater luminence
- ◆ Available in 12" and 18" stem lengths
- ◆ Borosilicate glass lense
- ◆ Accepts Unique's FLEX™ Series LED T3 lamps or halogen lamps

**DIMENSION:** 5" diameter x 15" or 21" height

### FIXTURE ORDERING INFORMATION

**Example: PR18-NL-BK (Proton 18" Stem, No Lamp, Black)**

Model Name	Wattage	Finish
PR18 = 18" Stem	NL = No Lamp	BK = Black
PR12 = 12" Stem		BZ = Bronze
		TT = Tuscan Tan



### ISO

The ISO® fixture is designed for hardscaping installations. It will beautifully illuminate a stone wall, an outdoor bar area or deck.



- ◆ 18 guage AL 1060 aluminum sheet
- ◆ 6' wire lead
- ◆ Available with 2700K or 3000K integrated LEDs
- ◆ 40,000 hour LED lifespan
- ◆ Easily retrofit with two bendable tabs to secure in place
- ◆ Slim 1/2" construction will tuck into any ledge or cantilever
- ◆ LED compartment is sealed and water resistant
- ◆ Black or bronze powder coat finish

**DIMENSION:** 5.875" wide x 2.75" length x .5" height

### FIXTURE ORDERING INFORMATION

#### Models

IS6-LED-27k-BK

IS6-LED-30k-BK

IS6-LED-27k-BZ

IS6-LED-30k-BZ



### NEUTRON

The Neutron® features a larger seven inch shroud to further increase spread performance. It is perfect for pathways, area lighting or planters.

- ◆ Marine grade A360 alloy construction
- ◆ 15' hub-ready wire lead
- ◆ 12" FLEX™ Auxiliary Lead
- ◆ Larger composite stake with molded brass threaded insert
- ◆ White reflection panel under shroud for greater luminence
- ◆ Available in 12" and 18" stem lengths
- ◆ Borosilicate glass lense
- ◆ Accepts Unique's FLEX™ Series LED T3 lamps or halogen lamps

**DIMENSION:** 7" diameter x 15" or 21" height

### FIXTURE ORDERING INFORMATION

**Example: NU18-NL-BK (Neutron 18" Stem, No Lamp, Black)**

Model Name	Wattage	Finish
NU18 = 18" Stem	NL = No Lamp	BK = Black
NU12 = 12" Stem		BZ = Bronze
		TT = Tuscan Tan



UNIQUE  
LIGHTING SYSTEMS®

INTELLIHUB (INTELLIHUB)

The Intelli-Hub™ is the ultimate In-Line fuse protected wiring system

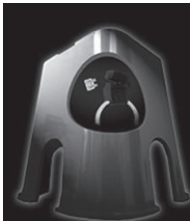


Includes a replaceable 10, 15 and three 20 Amps fuses allowing you to size the fuse according to load or wire size, thus making troubleshooting accessible, convenient and fast. Includes two Intelli-Connect lugs with greased tubes and five In-Line fuse.

SATELLITE HUB (SHUB)

The Hub System ensures proper voltage distribution and can be used with one or more fixtures.

The Satellite Hub includes three barrel lugs with lithium greased caps and a In-Line 20 amp fuse. The dark brown housing blends discreetly for above or below ground installation.



LUGNUT

Brass Lug Nut

UNIQUE - TRANSFORMERS

UNIQUE  
LIGHTING SYSTEMS®

MULTI-MATIC  
TRANSFORMERS

The MULTI-MATIC compensates for voltage drop by allowing the contractor to select from up to eight different voltage taps (12, 13, 14, 15, 16, 17, 18, 20 and 22-volt). This allows the contractor to customize the voltage for each individual run. It's like having eight different transformers in one. With this exclusive feature you may have wire runs up to 800' instead of the traditional short runs of 100' or less, and still get 12-volts to the fixture.



ACCESSORIES

Product Code	Description
SNPC2	Unique Snap-in Photo Cell



Product Code	Description	Finish
360SSSLWB	360 W 12, 13, 14, and 15-volt	Weathered Brass
600SSSLWB	600 W 12, 13, 14, 15, 16, and 17-volt	Weathered Brass
840SSSLWB	840 W 12, 13, 14, 15, 16, 18 and 20-volt	Weathered Brass
1120SSSLWB	1120 W 12, 13, 14, 15, 16, 18, 20 and 22-volt	Weathered Brass
200SSSLLEDWB	200 W 12 and 15-volt	Weathered Brass
300SSSLLSWB	300 W 12 and 15-volt	Weathered Brass

# UNIQUE

LIGHTING SYSTEMS®

UNIQUE  
LIGHTING SYSTEMS®

## Unique Lighting FLEX™ Series LED Lamps

Part Number	Description	Volts	Type	Lumen	CCT	Watts	Lifespan	Beam Spread	Distribution	Volt Amps	List Price
<b>2700K</b>											
LED-2W-M1FL27K-12	MR11, 2W, 2700K, flood, 12V	12	MR11	110	2700K	2	40,000	30	Flood	3.2	\$ 42.00
LED-2W-T327K-12-WR	T3, 2W, 2700K, 12V Water Resistant	12	T3 WR	132	2700K	2.4	40,000	NA	NA	3.0	\$ 40.50
LED2-3W-M6FL27K	MR16, 3W, 2700K, flood, 12V	12	MR16	150	2700K	3	40,000	40	Flood	4.9	\$ 37.25
LED2-3W-M6WF27K	MR16, 3W, 2700K, wide flood, 12V	13	MR16	150	2700K	3	40,000	60	Flood	4.9	\$ 37.25
LED2-4W-M6FL27K	MR16, 4W, 2700K, flood, 12V	12	MR16	220	2700K	4	40,000	40	Flood	5.5	\$ 44.75
LED2-4W-M6SP27K	MR16, 4W, 2700K, spot, 12V	12	MR16	220	2700K	4	40,000	15	Spot	5.5	\$ 44.75
LED2-4W-M6WF27K	MR16, 4W, 2700K, wide flood, 12V	12	MR16	220	2700K	4	40,000	60	Wide Flood	5.5	\$ 44.75
LED-4W-M6FL27K-24	MR16, 4W, 2700K, flood, 24V	24	MR16	190	2700K	4	40,000	34	Flood	5.5	\$ 50.00
LED-4W-M6SP27K-24	MR16, 4W, 2700K, spot, 24V	24	MR16	190	2700K	4	40,000	11	Spot	5.5	\$ 50.00
LED-5W-M6FL27K-12	MR16, 5W, 2700K, flood, 12V	12	MR16	250	2700K	5	40,000	39	Flood	6.6	\$ 60.50
LED-5W-M6FL27K-24	MR16, 5W, 2700K, flood, 24V	24	MR16	250	2700K	5	40,000	39	Flood	6.6	\$ 66.00
LED2-6W-M6FL27K	MR16, 6W, 2700K, flood, 12V	12	MR16	350	2700K	6	40,000	40	Flood	6.9	\$ 87.75
LED2-6W-M6SP27K	MR16, 6W, 2700K, spot, 12V	12	MR16	350	2700K	6	40,000	15	Spot	6.9	\$ 87.75
LED2-6W-M6WF27K	MR16, 6W, 2700K, wide flood, 12V	12	MR16	300	2700K	6	40,000	60	Wide Flood	6.9	\$ 87.75
LED2-8W-M6FL27K	MR16, 8W, 2700K, flood, 12V	12	MR16	500	2700K	8	40,000	40	Flood	9.3	\$ 94.75
LED2-8W-M6SP27K	MR16, 8W, 2700K, spot, 12V	12	MR16	500	2700K	8	40,000	15	Spot	9.3	\$ 94.75
LED2-8W-M6WF27K	MR16, 8W, 2700K, wide flood, 12V	12	MR16	500	2700K	8	40,000	60	Wide Flood	9.3	\$ 94.75
LED-6W-PSP27K-12	PAR36, 6W, 2700K, spot, 12V	12	PAR36	300	2700K	6	40,000	15	Spot	9.7	\$ 94.75
LED-6W-PWF27K-12	PAR36, 6W, 2700K, wide flood, 12V	12	PAR36	300	2700K	6	40,000	32	Wide Flood	9.7	\$ 94.75
LED-10W-PSP27K-12	PAR36, 10W, 2700K, spot, 12V	12	PAR36	400	2700K	9	40,000	15	Spot	14.6	\$ 105.75
LED-10W-PWF27K-12	PAR36, 10W, 2700K, wide flood, 12V	12	PAR36	420	2700K	9	40,000	32	Wide Flood	14.6	\$ 105.75
LED-10W-PWF27K-24	PAR36, 10W, 3000K, wide flood, 24V	24	PAR36	420	2700K	9	40,000	32	Wide Flood	14.6	\$ 115.25
LED-18W-PSP27K-12	PAR36, 18W, 2700K, spot, 12V	12	PAR36	660	2700K	18	40,000	18	spot	26.3	\$ 164.00
LED-18W-PWF27K-12	PAR36, 18W, 2700K, wide flood, 12V	12	PAR36	720	2700K	18	40,000	32	Wide Flood	26.3	\$ 164.00
<b>3000K</b>											
LED-1W-T330K-12	T3, 1W, 3000K, 12V	12	T3	100	3000K	1.5	20,000	NA	NA	2.7	\$ 36.50
LED-2W-T330K-12	T3, 2W, 3000K, 12V	12	T3	200	3000K	2.4	20,000	NA	NA	3.0	\$ 39.25
LED-2W-T330K-24	T3, 2W, 3000K, 24V	24	T3	200	3000K	2.4	20,000	NA	NA	3.0	\$ 44.75
LED-2W-T330K-12-WR	T3, 2W, 3000K, 12V Water Resistant	12	T3 WR	140	3000K	2.4	40,000	NA	NA	3.0	\$ 40.50
LED2-4W-M6FL30K	MR16, 4W, 3000K, flood, 12V	12	MR16	230	3000K	4	40,000	40	Flood	5.5	\$ 44.75
LED2-4W-M6SP30K	MR16, 4W, 3000K, spot, 12V	12	MR16	230	3000K	4	40,000	15	Spot	5.5	\$ 44.75
LED2-4W-M6WF30K	MR16, 4W, 3000K, wide flood, 12V	12	MR16	230	3000K	4	40,000	60	Wide Flood	5.5	\$ 44.75
LED-5W-M6FL30K-12	MR16, 5W, 3000K, flood, 12V	12	MR16	265	3000K	5	40,000	39	Flood	6.6	\$ 60.50
LED2-6W-M6FL30K	MR16, 6W, 3000K, flood, 12V	12	MR16	330	3000K	6	40,000	40	Flood	6.9	\$ 87.75
LED2-8W-M6FL30K	MR16, 8W, 3000K, flood, 12V	12	MR16	500	3000K	8	40,000	40	Flood	9.3	\$ 94.75
LED-6W-PSP30K-12	PAR36, 6W, 3000K, spot, 12V	12	PAR36	335	3000K	6	40,000	15	spot	9.7	\$ 94.75
LED-6W-PWF30K-12	PAR36, 6W, 3000K, side flood, 12V	12	PAR36	335	3000K	6	40,000	32	Wide Flood	9.7	\$ 94.75
LED-10W-PSP30K-12	PAR36, 10W, 3000K, spot, 12V	12	PAR36	443	3000K	9	40,000	15	spot	14.6	\$ 105.75
LED-10W-PWF30K-12	PAR36, 10W, 3000K, side flood, 12V	12	PAR36	450	3000K	9	40,000	32	Wide Flood	14.6	\$ 105.75
LED-18W-PSP30K-12	PAR36, 18W, 3000K, spot, 12V	12	PAR36	690	3000K	18	40,000	18	spot	26.3	\$ 164.00
LED-18W-PWF30K-12	PAR36, 18W, 3000K, side flood, 12V	12	PAR36	750	3000K	18	40,000	32	Wide Flood	26.3	\$ 164.00
<b>5000K</b>											
LED-2W-T350K-12	T3, 2W, 5000K, 12V	12	T3	220	5000K	2.4	20,000	NA	NA	3.0	\$ 39.00
LED2-4W-M6FL50K	MR16, 4W, 5000K, flood, 12V	12	MR16	235	5000K	4	40,000	40	Flood	5.5	\$ 44.75
LED2-6W-M6FL50K	MR16, 6W, 5000K, flood, 12V	12	MR16	390	5000K	6	40,000	40	Flood	6.9	\$ 87.75
LED2-6W-M6WF50K	MR16, 6W, 5000K, wide flood, 12V	12	MR16	385	5000K	6	40,000	60	Wide Flood	6.9	\$ 87.75
LED2-8W-M6FL50K	MR16, 8W, 5000K, flood, 12V	12	MR16	550	3000K	8	40,000	40	Flood	9.3	\$ 94.75
LED-10W-PWF50K-12	PAR36, 10W, 5000K, wide flood, 12V	12	PAR36	550	5000K	9	40,000	32	Wide Flood	14.6	\$ 105.75
LED-18W-PWF50K-12	PAR36, 18W, 5000K, wide flood, 12V	12	PAR36	1012	5000K	18	40,000	32	Wide Flood	26.3	\$ 164.00

### UNIQUE LIGHTING SYSTEMS®

#### **FLEX™ SERIES PAR36 LED LAMP 6W, 10W & 18W**

- ◆ 40,000 hour rated life at L70
- ◆ IP67 rated
- ◆ Intended for outdoor use, not intended for prolonged submersion in water
- ◆ Up to 85% energy savings when compared to traditional lamps
- ◆ Input voltage 10V-15V
- ◆ Operating temperature from -4° to 122° F
- ◆ No ultra-violet rays to attract insects
- ◆ Mercury-free
- ◆ Five year warranty
- ◆ 18 watt PAR36 not for use in enclosed fixtures

#### **FLEX™ SERIES MR-16 LED LAMP 3W & 4W**

- ◆ 40,000 hour rated life at L70
- ◆ 14 year life for average of 8 hours per day
- ◆ Up to 85% energy savings when compared to traditional lamps
- ◆ Input voltage 10V-18V
- ◆ Operating temperature from -4° to 122° F
- ◆ No ultra-violet rays to attract insects
- ◆ Mercury-free
- ◆ Five year warranty

#### **FLEX™ SERIES MR-16 LED LAMP 5W**

- ◆ 40,000 hour rated life at L70
- ◆ 14 year life for average of 8 hours per day
- ◆ Up to 85% energy savings when compared to traditional lamps
- ◆ Input voltage 10V-18V
- ◆ Operating temperature from -4° to 122° F
- ◆ No ultra-violet rays to attract insects
- ◆ Mercury-free
- ◆ Five year warranty

#### **FLEX™ SERIES MR-16 LED LAMP 6W & 8W**

- ◆ 40,000 hour rated life at L70
- ◆ 14 year life for average of 8 hours per day
- ◆ Up to 85% energy savings when compared to traditional lamps
- ◆ Input voltage 10V-15V
- ◆ Operating temperature from -4° to 122° F
- ◆ No ultra-violet rays to attract insects
- ◆ Mercury-free
- ◆ Five year warranty



#### **FLEX™ SERIES MR-11 LED LAMP**

- ◆ 40,000 hour rated life at L70
- ◆ 14 year life for average of 8 hours per day
- ◆ Up to 85% energy savings when compared to traditional lamps
- ◆ Input voltage 10V-18V
- ◆ Operating temperature from -4° to 122° F
- ◆ No ultra-violet rays to attract insects
- ◆ Mercury-free
- ◆ Five year warranty

#### **FLEX™ SERIES T3 LED LAMP**

- ◆ 20,000 hour rated life at L70
- ◆ Seven year life for average of eight hours per day
- ◆ Input voltage 10V-18V
- ◆ Operating temperature from -4° to 122° F
- ◆ No ultra-violet ray to attract bugs
- ◆ Mercury-free
- ◆ Five year warranty

#### **FLEX™ SERIES T3 LED LAMP 2W, WATER RESISTANT**

- ◆ 40,000 hour rated life at L70
- ◆ 14 year life for average of 8 hours per day
- ◆ Rated for use in open or enclosed fixtures
- ◆ Up to 85% energy savings when compared to traditional lamps
- ◆ Input voltage 10V-18V
- ◆ Operating temperature from -4° to 113° F
- ◆ IP65 rated for outdoor use, not submersible
- ◆ Five year warranty

DESIGNED TO  
*create a scene*



***With FX Luminaire, you'll find everything you need*** to create a perfectly illuminated landscape. From artfully designed LED fixtures made with premium materials, to digital lighting control with the latest technological innovations like zoning, dimming, and Wi-Fi control, FX Luminaire brings it all together.

LANDSCAPE & ARCHITECTURAL LIGHTING | *The Intersection of Art and Engineering*  
Learn more. Visit [fxl.com](http://fxl.com)

FXLuminaire.

### STANDARD FX FINISHES

## FXLuminaire

AB	Antique Bronze	FB	Flat Black
AL	Almond	FW	Flat White
AB	Antique Bronze	M	Paintable Matte Gray
AT	Antique Tumbled	NP	Nickel Plate
BS	Natural Brass	SB	Sedora Brown
BZ	Bronze Metallic	SS	Stainless Steel
CB	Camo Bronze	VF	Verde Speckle
CU	Copper	WG	White Gloss
DG	Desert Granite	WI	Weathered Iron
DT	Desert Tan	SV	Silver

### LR

Engineered for the client that wants to make a long-term investment in their garden, the LR is without peer. This rugged micro luminaire provides the power and control of the MR-16 lamp family. Through the innovative use of an O-ring hydraulic compression cap seal, the potentially troublesome threads and screws found in other spotlights are eliminated.



**DIMENSION:** 2.40" X 6"

**FINISH:** CU, NP

**LAMP:** MR-16

Product Code	Description
LR	UP Light without glare shield
LR-GS	UP Light with glare shield

### MU

The MU is one of the most versatile spotlights on the market and is the perfect choice for the discriminating landscape designer. The MU can be mounted as an uplight or downlight and is the standard for advanced users. A wide variety of effects can be produced by adding our patented RecessorRing®, HexBaffle™ or one of many filters, spread lens or glare control options.



**DIMENSION:** 2.40" X 7.50"

**FINISH:** WG, FW, AL, BZ, DG, WI, VF, SB, FB

**LAMP:** MR-16

Product Code	Description
MU	UP Light

### MP

The MP is constructed without compromise using aerospace grade alloys and silicone seals. This super small luminaire is an excellent choice for illuminating small garden elements such as shrubs, boulders and cacti. The MR-11 lamp provides crisp light and high efficiency.



**DIMENSION:** 1.625" X 5"

**FINISH:** WG, FW, AL, BZ, DG, WI, VF, SB, FB

**LAMP:** MR-11

Product Code	Description
MP	UP Light

### RS

The RS is a rugged micro luminaire that provides the power and control of the halogen MR-16 lamp family. This precision lighting instrument is a fine example of engineering for simplicity and reliability. Through the innovative use of a G-ring hydraulic compression cap seal, the potentially troublesome threads and screws found in other spotlights are eliminated.



**DIMENSION:** 2.40" X 6.50"

**FINISH:** WG, FW, AL, BZ, DG, WI, VF, SB, RB

**LAMP:** MR-16

Product Code	Description
RS	UP Light

### RL

The RL is specifically designed to gently illuminate small scale plant material, boulders, and short garden walls.



**DIMENSION:** 4" X 6"

**FINISH:** CU, NP, WG, FW, AL, BZ, DG, WS, VF, SB, FB

**LAMP:** T3

Product Code	Description
RL	UP Light

### PB

The PB is a compact LED wall wash lighting solution. Available in 1 or 3 LED with full color lens options of frosted, blue, amber, and green included. The wider angle of the PB allows a broader lighting option for larger structures and spaces. Engineered with solid construction, yet petite in size.



**DIMENSION:** 3.9" X 5.5"

**MATERIAL:** Brass or Aluminum

**FINISH:** Brass AB, AT, NP, BS, WG, FW, AL, BZ, DG, WI, VF, SB, FB

**LAMP:** 1LED, 3LED

Product Code	Description
PB	Fixture

## FX - UP AND ACCENT LIGHTS

### FXLuminaire

#### FB

Similar in style to its bigger brother the NP, the FB fits nicely into smaller landscapes and tight spaces. Accommodating up to a 3 LED Board, the FB offers all the same up light benefits of the NP in a more compact package.

**DIMENSION:** 2" X 7.5"

**MATERIAL:** Aluminum

**FINISH:** WG, FW, AL, BZ, DG, WI, VF, SB, FB

**LAMP:** 1LED, 3LED

Product Code	Description
FB	UP Light



#### QZ

The QZ is the smallest up light offered in the FX LED line. With only a 1LED option it's capable of all the same features and optics of the larger LED up lights like the NP and FB, but in a smaller package.

**DIMENSION:** 1.75" x 5.75"

**MATERIAL:** Aluminum

**FINISH:** WG, FW, AL, BZ, DG, WI, VF, SB, FB

**LAMP:** 1LED

Product Code	Description
QZ	UP Light



#### NP

The NP is our most versatile LED up light, and is engineered to accommodate all aspects of your up lighting needs. By coupling the proper light intensity with one of the provided color filters, your designer can fine-tune the NP to beautifully enhance every landscape feature.

**DIMENSION:** 2.66" x 8.38"

**MATERIAL:** Aluminum

**FINISH:** WG, FW, AL, BZ, DG, WI, VF, SB, FB

**LAMP:** 1LED, 3LED, 6LED, 9LED

Product Code	Description
NP	UP Light



## FX - PATH AND SPREAD FIXTURES

#### DM

For those who appreciate the best, this pathway light is designed for both high performance and style. The strong, linear lines of the DM will complement any landscape by day and bring it to life at night. This patent pending luminaire is the best choice for the client who wants a flawless design that will make a long-term contribution to their garden.

**DIMENSION:** 7.1" x 16.2"

**RISER TYPE/HEIGHT:** Copper 8", 12" 18", 29", 36"

**MATERIAL:** Copper/Brass

**FINISH:** AB, AT, NP, WG, FW, AL, BZ, DG, WI, VF, SB, FB

**LAMP:** T3, 1 LED, 3 LED

Product Code	Description
DM	Path Light



#### DL

Milled from extra heavy gauge copper and brass, the DL is engineered to survive. This model is perfect for coastal exposures or areas where irrigation water contains high levels of mineral or caustic salts.

**DIMENSION:** 6.25" X 15.6"

**RISER TYPE/HEIGHT:** Copper 8", 12", 18", 24", 36"

**MATERIAL:** Copper/Brass

**FINISH:** CU, NP, WG, FL, AL, BZ, DG, WI, VF, SB, FB

**LAMP:** T3

Product Code	Description
DL	Path Light



#### SP

Designed for today's crowded planters — the top of the FX Luminaire® SP is just 3.65" in diameter. When incorporated with plant material, the SP simply disappears into the garden.

**DIMENSION:** 3.62" X 15"

**RISER TYPE/HEIGHT:** Copper 8", 12", 18", 24", 36"

**MATERIAL:** Copper/Brass

**FINISH:** CU, NP, WG, FL, AL, BZ, DG, WI, VF, SB, FB

**LAMP:** Incandescent

Product Code	Description
SP	Path Light



## FX - PATH AND SPREAD FIXTURES (CONT.)

## FXLuminaire

**CB**

Its sophisticated styling and first class quality will add new dimension to any fine landscape. It is no secret why our pathlights are easy to distinguish from the rest.

**DIMENSION:** 7.4" X 16.2"

**RISER TYPE/HEIGHT:** Copper 8", 12", 18", 24", 36"

**MATERIAL:** Copper/Brass

**FINISH:** AB, AT, CU, NP, WG, FW, AL, BZ, DG, WI, VF, SB, FB

**LAMP:** T3, 1 LED, 3 LED

Product Code	Description
CB	Path Light

**HC**

The HC offers soft, efficient, and safe lighting solutions for pathways of all shapes, sizes, and locations. With a unique and sleek hat design, durability, and outstanding efficiency, it is the ideal choice for a wide array of path lighting scenarios.

**DIMENSION:** 3.6" X 15"

**RISER TYPE/HEIGHT:** Copper 8", 12", 18", 24", 36"

**MATERIAL:** Copper/Brass

**FINISH:** AB, AT, CU, NP, WG, FW, AL, BZ, DG, WI, VF, SB, FB

**LAMP:** 1LED

Product Code	Description
HC	Path Light

**JS**

The JS is a solid path light built to last in the harshest environments and provide efficient illumination. Available in both 1 and 3 LED with the ability to emit soft light that's functional and beautiful, the JS is an excellent path light for many applications.

**DIMENSION:** 6.3" x 16.5"

**RISER TYPE/HEIGHT:** Copper 8", 12", 18", 24", 36"

**MATERIAL:** Copper/Brass

**FINISH:** AB, AT, NP, CU, WG, FW, AL, BZ, DG, WI, VF, SB, FB

**LAMP:** 1LED, 3LED

Product Code	Description
JS	Path Light

**TM**

Designed for mid-sized landscapes, the TM provides unmatched elegance and function in the aluminum constructed category. Its small cap provides a stylish presentation, but doesn't compromise on shine. Not only does it accomplish the function of path lighting, it does so with grace and style.

**DIMENSION:** 5" x 15"

**RISER TYPE/HEIGHT:** A, 15"

**MATERIAL:** Aluminum 8", 12", 18", 24", 36"

**FINISH:** WG, FW, AL, BZ, DG, WI, VF, SB, FB

**LAMP:** 1LED, 3LED

Product Code	Description
TM	Path Light



## FX - DOWN LIGHTS

**JB**

The JB is FX Luminaire's original LED down light. The JB solves the problem of changing lamps in complicated areas by providing long-life LEDs. The pure color of the LED allows you to add the supplied blue lens to create a natural moonlight effect.

**DIMENSION:** 8.9" x 2.4"

**FINISH:** WG, FW, AI, BZ, DG, WI, VF, SB, FB

**LAMP:** 1LED, 3LED

Product Code	Description
JB	Down Light

**LE**

To illuminate a space from above without the need for a large mount a LE can be hung to moonlight areas. Using a hook design, with the included four color filters, illuminate a seating area, under a table umbrella or even from the branch of a tree.

**DIMENSION:** 1.6" x 3.3"

**FINISH:** AB, AT, CU, NP, WG, FW, AL, BZ, DG, WI, VF, SB, FB

**LAMP:** 1LED

Product Code	Description
LE	Down Light



## FX - DOWN LIGHTS (CONT.)

## FXLuminaire

**TC**

This fixture is designed to surface mount onto beams or posts. The halogen lamp is adjustable to allow maximum forward projection making this unique model well suited for illuminating steps or color posts from adjacent structures.



**DIMENSION:** 2.75" X 3.5"

**FINISH:** CU, NP, WG, FW, AL, BZ, DG, WI, VF, SB, FB

**LAMP:** Halogen AR-11

Product Code	Description
TC	Down Light

**TS**

This fixture is an outdoor "track light" giving the exterior lighting designer a full range of previously interior only lighting effects. The mounting base swivels and pivots on nylon bushings allowing for smooth, precise aiming after installation. A 50W TS is available, and is slightly larger than the 20W and 35W fixtures, measuring 6.50" in length.



**DIMENSION:** 2" x 5" or 2.5" x 6.5"

**FINISH:** CU, NP, WG, FW, AL, BZ, DG, WI, VF, SB, FB

**LAMP:** Halogen AR-11 or AR-20

Product Code	Description
TS	Down Light

**VL**

When a moonlighting effect is desired, but the caliper of a tree is too small to use the TrellisSolare® series specify the FX Luminaire® ViteLume®. The VL uses the same powerful 20W halogen lamp as the TS. This micro downlight hangs from the host tree by a cinch tie requiring no screws or permanent hardware. A small brass hook is also included for beam-mounted applications.



**DIMENSION:** 2" X 4.50"

**FINISH:** CU, NP, WG, FW, AL, BZ, DG, WI, VF, SB, FB

**LAMP:** Halogen AR-11

Product Code	Description
XL	Down Light

## FX - WALL LIGHTS

**CP**

Engineered to bring light to areas such as walkways, stairways and decks as well as to other foot traffic hazards that don't have an adjacent planter area for pathlighting or trees and trellis from which to downlight. Incorporated into the design of the CP is the LevelX feature. The LevelX assures the lighting installer that the faceplates of these permanently mounted fixtures will remain perfectly level upon completion of the installation.



**DIMENSION:** 5" X 3.50", 3.875" deep

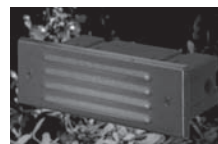
**FINISH:** AB, AT, CU, NP, WG, FW, AL, BZ, DG, WI, VF, SB, FB

**LAMP:** T3, 1 LED

Product Code	Description
CP	Wall Light

**LM**

The patent pending LM is engineered to bring light to areas such as walkways, stairways and decks as well as to other foot traffic hazards that don't have an adjacent planter area for pathlighting or trees and trellis from which to downlight. Some of the features of the LM include a Sleeve that is permanently mounted in concrete or wood wall combined with multiple threaded knockouts and corrosion-free, stainless steel inserts.



**DIMENSION:** 9.00" X 3.50", 4.00" deep

**FINISH:** AB, AT, CU, NP, WG, FW, AL, BZ, DG, WI, VF, SB, FB

**LAMP:** 2XT3, 2 LED

Product Code	Description
LM	Wall Light

**MM**

To mount, simply drill a 1/4" wireway hole through the post or wall to connect fixture to mainline. Then with the provided screws, attach the MM to the surface. Tempered glass diffuser optics softens the beam spread transition. The MM's narrow profile and wide range of powdercoat options allow it to blend into any surrounding material.



**DIMENSION:** 3.25" X 1.75"

**FINISH:** NP, BS, WG, FW, AL, BZ, DG, WI, VF, SB, FB

**LAMP:** T3

Product Code	Description
MM	Wall Light

## FXLuminaire

**LF**

The LF is our LED under-the-cap hardscape wall light. It can easily be fitted between a block wall and capstone for a neat, clean installation. Due to its modular bracket design, the LF can even be installed under railings and existing construction.

**DIMENSION:** 6.7" x 3.6" x .9"

**FINISH:** AB, AT, BS, CU, SS, WG, FW, AL, BZ, DG, WI, VF, SB, FB

**LAMP:** 1 LED



Product Code	Description
LF	Wall

**MS**

The MS comes to the FX LED line as an immediate favorite thanks to its close relative the MM. The MS takes all the great features of the MM and adds the energy efficiency and long life of LED. Changeable filters and available in Brass or Powdercoat allow you to add glow at night and during the day.



**DIMENSION:** 2" x 3.7"

**FINISH:** AB, AT, NP, BS, WG, FW, AL, BZ, DG, WI, VF, SB, FB

**LAMP:** 1 LED

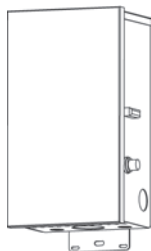
Product Code	Description
MS	Wall Light

## TRANSFORMERS

**PX**

Patented PX is available in 300W, 600W and 900W capacities.

- ◆ Heavy gauge stainless steel for long life in corrosive exterior locations
- ◆ Solid power supply for safe, clean power to energy-efficient components
- ◆ Open switching control architecture
- ◆ Multi-tap



Product Code	Description
PX300SS	300W with 3' power cord
PX600SS	600W with 3' power cord
PX900SS	900W with 3' power cord
PXPC	Photocell

**LX**

The LX Transformer is the industry's first fully digital lighting control transformer.

The integrated LCD screen provides current time, photocell, function, and line output readouts. Since its digital display is backlit, adjustments can easily be made 24 hours a day. Including flexible scheduling options and realtime status readouts, the LX provides the ultimate in system reliability and efficiency.



- ◆ Full Digital Control: All functions are controlled by the integrated LCD Screen for a complete real-time output of functions
- ◆ Active Load Draw Bar: Digital Readout of system load usage displayed as a bar in 10% increments
- ◆ Status LEDs: Displays readouts and readiness of the 120V, External Function, Photocell activity, and 12V output
- ◆ 12V Photocell Included and Preinstalled: Smaller size with less wiring

Product Code	Description
LX150M	150W, Digital Control Trans, Matte Gray
LX150SS	150W, Digital Control Trans, Stainless Steel
LX300M	300W, Digital Control Trans, Matte Gray
LX300SS	300W, Digital Control Trans, Stainless Steel

**LUXOR**

With Luxor controlling an LED landscape lighting system, lights don't simply turn on and off. They come alive. Luxor offers both zoning and dimming capabilities that provide virtually limitless design possibilities..

- ◆ Up to 250 independently adjustable lighting groups can be created
- ◆ Compatible with FX LED ZD lights only
- ◆ All groups can be turned on independently and dimmed from 1-100%
- ◆ No matter where a light is within a system, it can communicate with the transformer to receive its schedule, intensity, and group



Product Code	Description
LZD150M	150W, Dimming Zoning Trans, Matte Gray
LZD150SS	150W, Dimming Zoning Trans, Stainless Steel
LZD300M	300W, Dimming Zoning Trans, Matte Gray
LZD300SS	300W, Dimming Zoning Trans, Stainless Steel

**PRO90 AUTOMATIC CLAMP METER**

- ◆ Fully automatic and hassle free
- ◆ 400A AC, 600V AC/DC, 2000 Ohms measurement
- ◆ Data hold to capture important readings
- ◆ Accessories included: test leads, carrying case



**YOUR INVENTORY OF TOOLS FOR LOW-VOLTAGE LIGHTING SHOULD INCLUDE A CLAMP METER AND A DIGITAL MULTIMETER. NOTHING ELSE YOU CAN USE WILL MAKE INSTALLATIONS GO MORE SMOOTHLY AND ENSURE CORRECT VOLTAGES.**

**PRO30 GENERAL PURPOSE DIGITAL MULTIMETER**

**Light, compact, easy to use, measures volts, ohms, and current**

- ◆ DCV: 0-500V
- ◆ ACV: 0-500V
- ◆ DCA: 0-200mA
- ◆ Resistance: 0-2Mohm
- ◆ Audible continuity: <50ohmDiode test
- ◆ Battery: A23 (included)



**VOLTAGE DROP CHARTS ARE AVAILABLE ON OUR WEBSITE AT [WWW.HORIZONONLINE.COM](http://WWW.HORIZONONLINE.COM)**

**LAMPS****USHIO****MR-11**

Product Code	Description
1000622	FTD MR11 20W 30
1000620	FTC MR11 20W 17
1000628	FTH MR11 35W 30
1000618	USHIO MR-11 HAL
1000615	MR11 FTA Lamp 1
1000626	FTF MR11 35W 20



In addition to the technologically superior MR-16 lamps manufactured by USHIO, smaller halogen mirrored reflectors have also been developed in both MR-11 and MR-8 sizes. These reduced-size, low-voltage MR lamps are ideal for landscape lighting and some of the newer low-profile track lighting systems.

**MR-16**

Product Code	Description
1000014	BAB MR16 20W 36
1000573	FMW MR16 35W 36
1000370	ESX MR16 20W 12
1000405	EXN MR16 50W 36
1000559	FMV MR16 35W 24
1000592	FNV MR16 50W 60
1000566	FMW MR16 35W 60
1000551	FMT MR16 35W 12
1000430	EXZ MR16 50W 24
1000419	EXT MR16 50W 12
1000004	USHIO MR-16 EUR
1000037	MR16 20W 24D
1000447	EYC MR16 75W 36
1003341	USHIO FMW/FG/WS
1000000	BABJR12V-20W/SL
1000455	EYJ MR16 75W 24



USHIO's halogen 12V PAR 36 lamps are built to withstand the demanding conditions of landscape use while still providing optimum performance in track lighting and retail applications. With a life rating of 4,000 hours and a flame-sealed lens, these lamps are designed to last twice as long as incandescent lamps and are protected against the adverse affects of moisture. Not only do these Halogen lamps provide a longer life than incandescent lamps, they also offer up to 40% more energy savings compared to incandescents, improved lamp to lamp color consistency, and a brighter, whiter light source.

**PAR-36**

Product Code	Description
1003533	PAR36 35W 30°
1003531	PAR36 20W 30°
1003535	PAR36 35W 8°
1003536	PAR36 50W 30°
1003538	PAR36 50W 8°

**T3 HALOGEN**

Product Code	Description
1000821	T3 20W
1000811	T3 10W
1000833	T3 5W
1000825	USHIO T-3 HALOG
1003085	USHIO T-3 XENON

**T4 HALOGEN**

Product Code	Description
1000823	T4 35W
1000822	USHIO T-4 HALOG
1001430	912 WEDGE 13W
1001433	921 WEDGE 18W



### Use the Proper Size Cable

Before you lay any cable, refer to the Cable Size Chart below. This will assist you with matching up the correctly sized cable with the correct minimum gauge of each run.

		CABLE SIZE CHART – 12-VOLT TRANSFORMERS							
		SIZE OF CABLE							
A	25	12	12	12	12	10	10	10	8
B	50	12	12	10	10	8	8	8	0
C	75	12	10	10	8	8	0	0	0
D	100	12	10	8	0	0	0	0	0
E	150	10	8	0	0	0	0	0	0
F	200	10	0	0	0	0	0	0	0
G	250	8	0	0	0	0	0	0	0
H	300	0	0	0	0	0	0	0	0
I	400	0	0	0	0	0	0	0	0

### Secrets to Professional Wiring Design

#### Laying out the Cable

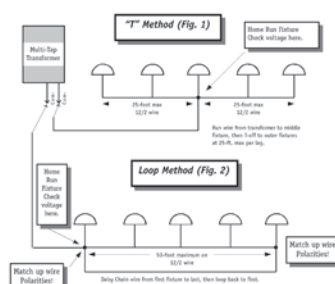
In order to ensure that your installation meets professional standards, we recommend the following:

1. Cluster the fixtures based on the distance from the transformers.
2. Use multiple wire runs to reduce the voltage drop between fixtures.
3. Know your wire capacity. (See Maximum Cable Loads chart)
4. Adhere strictly to the 50' wiring rule. (see wiring diagrams)

MAXIMUM CABLE LOADS			
Wire Size	Rating	Max Usage 80%	Amps
12/2	240 watts	192 watts	16
10/2	360 watts	288 watts	24
8/2	480 watts	384 watts	32

### Getting Started

1. Determine the transformer location.
2. Refer to the voltage chart. This will ensure that you don't overload your wire, avoiding excessive voltage drop.
3. Once you have grouped your fixtures into zones, run one cable from the transformer to each zone.



4. It is very important that you observe the 50' wiring rule (see Figs. 1 and 2). The biggest mistake most contractors make is using the Daisy Chain wiring method and allowing too much distance from the first fixture to the last on the wiring run. This causes dim lights at the end of the run due to voltage drop. Instead, use the "T" or "Loop" Wiring Methods. When using the T Method, keep the distance between the middle (home run fixture) and last fixture within 25'. Using the Loop Method, you may extend this distance to 50'. The reason for this is simple: a multi-tap transformer can only control voltage drop to the home run fixture. Voltage drop starts to occur again as the power extends to the remaining fixtures. Observing the 50' wiring rule will prevent the lamps at the end of the run from becoming too dim.

### About Voltage Drop

Voltage drop (dim lights) is the biggest problem facing the lighting contractor so it's vitally important that you understand how and why voltage drop occurs.

### Where Does Voltage Drop Occur?

1. At the source (where the transformer plugs in) — Most low voltage transformers are designed to operate at a 10:1 ratio. That is, 120V in = 12V out. So if you only have 110V at the outlet you will only have 11V output.
2. At the transformer — Prior to putting a load on the transformer, you will maintain a true 10:1 power ratio. However, as soon as you hook up your wire runs, the transformer will suffer voltage drop and the 12V output may now only be 11V.
3. At the lamps — This is the main reason for voltage drop. The distance of your home run cable, together with the total amount of Ws on the run, will dramatically affect the amount of voltage at the lamps.

None of the lights work.	1.) Is there power at the 120V outlet? 2.) Is the transformer wired directly to a circuit breaker? 3.) Check for secondary voltage at the transformer. 4.) Is the transformer breaker tripped? 5.) Does the unit have a photocell? 6.) Is the timer bad? 7.) Are the bulbs burned out? 8.) Are cable runs connected? 9.) If you have lugs:	Check with voltmeter, or plug in another appliance. Check the plug, check GFI reset button, check circuit breaker. Check and reset the circuit breaker. Using a voltmeter, check for power by connecting to any white and any colored wire. If you have power, skip down to item #7. Turn off power supply and check breaker. If burned out, replace per label instructions. Cover the eye with black electrical tape. Wait a few minutes. If the lights come on, photocell is OK. Remove the timer and plug the white cord into socket. With the unit on, use a voltmeter to check for power at lamps. If power is present, replace the lamp. Check to see that one side of each cable is connected to a white wire, and one connected to a colored wire. Make certain wire is stripped and securely connected.
System comes on for replace photocell.  Check with Amp probe.	10. Check photocell.  11.) Check timer. 12.) Check primary breaker.	Cover the eye with black electrical tape. If unit won't come on, or if unit turns off prior to timer off, a short period of time.  See timer instructions. If breaker is tripped, check total bulb wattage. If it exceeds 80% of unit capacity, unit may be overloaded.
All lights are dim.	13.) Check voltage at the fixture that wire from the transformer connects to. 14.) Poor connections.	Using the colored wire leads, increase the voltage until you have between 11 and 12 volts.  Check for corrosion at all connections and sockets at fixtures.
Lights dim at end of run.	15.) Check distance from first fixture to last.	If more than 50 ft., use the T method of wiring. See wiring instructions for other methods.
Some of the lights work.	16.) Check voltage at each lamp. 17.) Check for interrupted power.	If you have voltage, replace the lamp. Look for bad connections and cut wires somewhere in the loop.
Primary breaker is tripped.	18.) Check total lamp wattage. Total lamp load should not exceed 80% of rated transformer capacity. 19.) Check for shorts in field wiring.	Replace lamps with lamps that have less wattage. Install a higher-wattage transformer. Add another transformer. Disconnect all secondary wiring leads. Now connect one wiring run at a time and check for shorts.

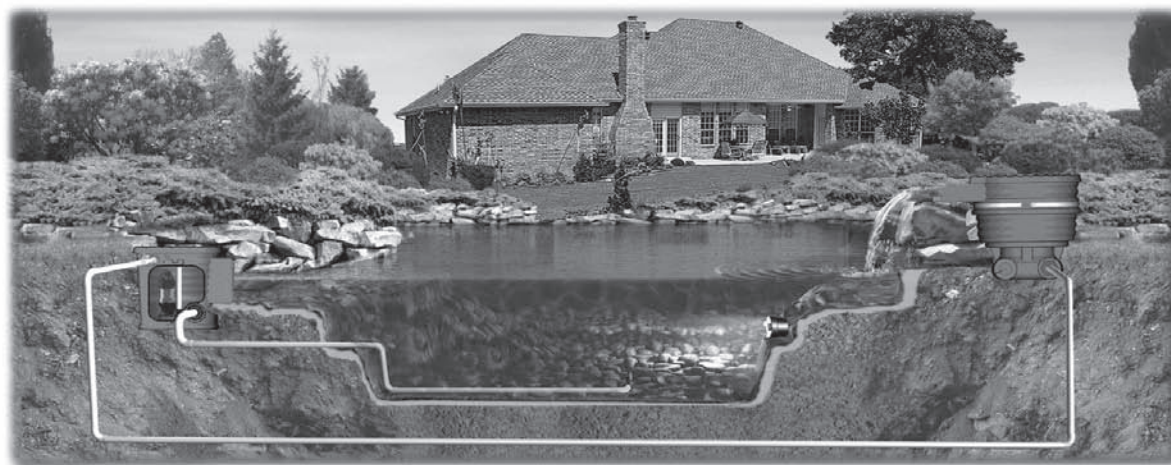
**Landscape Low Voltage Lighting**

The voltage losses in the chart below were calculated using Ohm's Law, and are theoretical. Safety margin should be built into the design to take into consideration deterioration of wire splices, power brownouts, etc. CONSULT THE MANUFACTURER OF THE LIGHT FIXTURE FOR MORE DETAIL.

- NOTES:
- 1) Do not use a cable whose ampacity is less than the rating of the transformer circuit breaker.
  - 2) Chart shows voltage drop for maximum flows of 80% of the cables' ampacities.

**VOLTAGE DROP PER 10 LINEAR FEET OF CABLE**

LAMP POWER FLOWING IN CABLE SECTION (WATTS @ 12V)	FLOW (amps)	WIRE GAUGE (awg), CLASS K COPPER				
		18	16	12	10	8
		WIRE RESISTANCE (Ohms/10' of cable, both conductors) @ 77 °F (25 °C)				
		0.1358	0.0852	0.0336	0.0212	0.0136
20	1.67	0.226	0.142	0.056	0.035	0.023
25	2.08	0.283	0.178	0.070	0.044	0.028
30	2.50	0.340	0.213	0.084	0.053	0.034
35	2.92	0.396	0.249	0.098	0.062	0.040
40	3.33	0.453	0.284	0.112	0.071	0.045
45	3.75	0.509	0.320	0.126	0.080	0.051
50	4.17	0.566	0.355	0.140	0.088	0.057
55	4.58	0.622	0.391	0.154	0.097	0.062
60	5.00	0.679	0.426	0.168	0.106	0.068
65	5.42	0.736	0.462	0.182	0.115	0.074
70	5.83	0.792	0.497	0.196	0.124	0.079
75	6.25	0.849	0.533	0.210	0.133	0.085
80	6.67	0.905	0.568	0.224	0.141	0.091
85	7.08	0.962	0.604	0.238	0.150	0.096
90	7.50	1.019	0.639	0.252	0.159	0.102
95	7.92	1.075	0.675	0.266	0.168	0.108
100	8.33	-	0.710	0.280	0.177	0.113
105	8.75	-	0.746	0.294	0.186	0.119
110	9.17	-	0.781	0.308	0.194	0.124
115	9.58	-	0.817	0.322	0.203	0.130
120	10.00	-	0.852	0.336	0.212	0.136
125	10.42	-	-	0.350	0.221	0.141
130	10.83	-	-	0.364	0.230	0.147
135	11.25	-	-	0.378	0.239	0.153
140	11.67	-	-	0.392	0.247	0.158
145	12.08	-	-	0.406	0.256	0.164
150	12.50	-	-	0.420	0.265	0.170
155	12.92	-	-	0.434	0.274	0.175
160	13.33	-	-	0.448	0.283	0.181
165	13.75	-	-	0.462	0.292	0.187
170	14.17	-	-	0.476	0.300	0.192
175	14.58	-	-	0.490	0.309	0.198
180	15.00	-	-	0.504	0.318	0.204
185	15.42	-	-	0.518	0.327	0.209
190	15.83	-	-	0.532	0.336	0.215
195	16.25	-	-	0.546	0.345	0.221
200	16.67	-	-	0.560	0.353	0.226
205	17.08	-	-	0.574	0.362	0.232
210	17.50	-	-	0.588	0.371	0.238
215	17.92	-	-	0.602	0.380	0.243
220	18.33	-	-	0.616	0.389	0.249
225	18.75	-	-	0.630	0.398	0.255
230	19.17	-	-	0.644	0.406	0.260
235	19.58	-	-	0.658	0.415	0.266
240	20.00	-	-	0.672	0.424	0.272



### SUREPRO SKIMMERS AND ACCESSORIES

SurePro skimmers provide an efficient, effective method of maintaining a beautiful water garden. An easy flow-through design combined with simple installation and minimal maintenance offers ideal solution for any existing or new water garden or Koi pond.

- ◆ Makes installing a water garden easier than ever
- ◆ Lockable weir gate restricts water for easier maintenance
- ◆ Bottom siphon port allows for complete water circulation
- ◆ Circular, ridged wall design provides extra strength and in-ground anchoring
- ◆ Molded drill-out ports on both sides provide flexible installation for new or existing ponds
- ◆ Heavy-duty net catches large debris
- ◆ Easy-clean brushes catch smaller debris

### 2500 GPH SKIMMER

Specification:	SPS2
Width	17.24"
Height	23.25"
Length	21.73"
Gate Width	6.6"
Max GPH	2,500



### 5000 GPH SKIMMER

Specification:	SPS5
Width	20"
Height	23.0"
Length	26.0"
Gate Width	6.6"
Max GPH	5,000



### Standard Pond Calculations:

#### Liner and Underlayment Sizing

Maximum Depth x 2 + Maximum Length + 3' = Liner Length

Maximum Depth x 2 + Maximum Width + 3' = Liner Width

#### Calculating Pond Volume

Rectangular Pond Calculation Formula

L = Length of pond in feet, W = Width of pond in feet,  
D = Depth of pond in feet

$L \times W \times D \times 7.5 = \text{gals. of pond}$

Example: 10' X 12' X 1.5' depth = 1,350 gals.

#### Circular Pond Calculation Formula

$(\text{Diameter} \div 2) \times (\text{Diameter} \div 2) \times \text{Depth} \times 23.55$

Example: 15' diameter X 2.5' depth = 3,312 gals.

Recommended Circulation by pond volume:

### 10,000 GPH SKIMMER

Specifications:	SPS10
Width	24.0"
Height	23.0"
Length	31.5"
Gate Width	9"
Max GPH	10,000



### SKIMMER LIDS

Product Code	Description	Used with skimmer
SPS2LG	Lid (granite)	SPS2
SPS2LS	Lid (sandstone)	SPS2
SPS5LG	Lid (granite)	SPS5
SPS5LS	Lid (sandstone)	SPS5
SPS10LG	Lid (granite)	SPS10
SPS10LS	Lid (sandstone)	SPS10

### ACCESSORIES

Product Code	Description
SPAFV	SurePro Auto Fill Valve Assembly
SPMP2	SurePro Skimmer Matala Pad (2500 GPH)
SPMP5	SurePro Skimmer Matala Pad (5000 GPH)
SPMP10	SurePro Skimmer Matala Pad (10,000 GPH)
SPS2NET	SurePro Skimmer Replacement Net (2500 GPH)
SPS5NET	SurePro Skimmer Replacement Net (5000 GPH)
SPS10NET	SurePro Skimmer Replacement Net (10,000 GPH)

### BIOLOGICAL WATERFALL FILTER

SurePro biological waterfall filters are created to mimic a natural waterfall or spring while helping you maintain a balanced ecosystem. Easy to install, our waterfalls are constructed with 14" and 23" waterfall widths and will retrofit into any existing water garden. Utilizing BioVortex™ technology these filters are designed to evenly disperse debris and settle solid bio loads for less maintenance and superior filtration.



- ◆ Corrugated design for extra strength, anchoring and anti-flotation
- ◆ Back flush outlet offers easy maintenance and removal of settling solid bio loads, and helps drain water from the waterfall
- ◆ Molded bottom inlet with 2" bulk head fitting for quick connection
- ◆ Waterfall outlet available in 14" and 23" widths
- ◆ BioVort separator plate creates a cyclone-type up flow to help uniformly separate and evenly disperse debris

Product Code	Description
SPF5	Sur
SPF10	Sur

### WATERFALL WEIR

- ◆ Created to mimic a natural waterfall
- ◆ Designed for flows up to 6,000 gals. per hour
- ◆ Constructed with a 7.75" flow opening
- ◆ Built-in drip edge directs water flow and help prevent back flow
- ◆ Circular, ridged wall design provides extra strength and in-ground anchoring



Product Code	Description
SPWF	SurePro Waterfall Weir

### LIDS

Product Code	Description	Used with filter
SPF5LG	Lid (Granite)	SurePro BioVortex Filter (5000 GPH)

### WEIR

Product Code	Description	Used with filter
SPF5WG	Rock Weir (Granite)	SurePro BioVortex Filter (5000 GPH)
SPF10WG	Rock Weir (Granite)	SurePro BioVortex Filter (10,000 GPH)



### ACCESSORIES

Product Code	Description
VSGV150SL	1-1/2" Slide Gate Valve
SVGV200SL	2" Slide Gate Valve
SVGV300SL	3" Slide Gate Valve
SVGV400SL	4" Slide Gate Valve



## PONDLESS FOUNTAINS



### SIMPLY FALLS™ VAULT

- ◆ For applications when you already have the components to make your water feature, but need something to house your pump
- ◆ 19.25" W X 19.2" L X 24" T vault
- ◆ Vault is rotational molded polyethylene for durability



- ◆ Wall ridges provide added strength
- ◆ Sturdy vault lid allows you to conceal the unit with rocks, gravel, plants, etc
- ◆ Pre-drilled 3" discharge port takes the hassle out of installation
- ◆ Multiple inlet vents allows unit to collect water at a rapid pace

Product Code	Description
SPSF	SurePro Simply Falls Vault



- ◆ Heavy duty disappearing water feature basins for in-ground installations
- ◆ Ideal for smaller applications
- ◆ Rugged design holds up in adverse weather conditions
- ◆ Safe for aquatic plants, fish and animals

## SPDB36

### Specifications:

Width 36"  
Height 10.8"  
Length 36"  
Holding Capacity 35 gals.

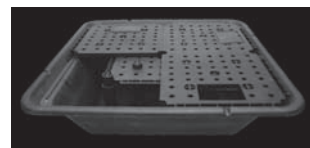


Product Code	Description	Maximum Weight Capacity
SPDB36	SurePro Disappearing Basin 36" Round	3,000lbs.

## SPDB44

### Specifications:

Width 44"  
Height 11"  
Length 44"  
Holding Capacity 60 gals.



Product Code	Description	Maximum Weight Capacity
SPDB44	SurePro Disappearing Basin 44" Square	3,000lbs.

# FOUNTAIN PUMPS



These pumps features an epoxy-encapsulated motor, plastic housing and radial lip seal on the motor shaft. It provides enough power to effectively operate a water garden, statuary, or tabletop fountain. This "potted" pump is usually more compact in size than an oil-filled pump of equal flow capacity.

- ◆ Environmentally safe, oil-less
- ◆ Energy efficient
- ◆ Corrosion resistant body
- ◆ 15' power cord
- ◆ 115V
- ◆ 1/4" MNPT discharge
- ◆ For submersible use only
- ◆ Discharge accepts 1/2" I.D. tubing

## SPFP170

- ◆ 170 GPH @ 1' TDH
- ◆ 7' shut-off head
- ◆ 36W

## SPFP300

- ◆ 300 GPH @ 1' TDH
- ◆ 12.2' shut-off head
- ◆ 47W

## SPFP475

- ◆ 475 GPH @ 1' TDH
- ◆ 13.4' shut-off head
- ◆ 80W



Product Code	Description
SPFP170	SurePro Fountain Pump
SPFP300	SurePro Fountain Pump
SPFP475	SurePro Fountain Pump

# DUAL DISCHARGE PUMPS



This pump utilizes a permanent-split capacitor (PSC) motor sealed in a stainless steel housing, which in turn is surrounded by a plastic case. The PSC motor allows the pump to use less energy than other pumps of similar flow capacity. The motor also develops less heat; therefore, the pump does not require oil internally. This pump is ideal for use in waterfall and stream applications found in water gardens.



## SPDDP1250

- ◆ 1250 GPH @ 5' TDH
- ◆ 20' shut-off head
- ◆ 230W
- ◆ 1 1/4" FNPT discharge
- ◆ Handles 1/4" solids
- ◆ 115V
- ◆ 16' power cord

## SPDDP4000

- ◆ 4000 GPH @ 5' TDH
- ◆ 30' shut-off head
- ◆ 700W
- ◆ 1 1/4" FNPT discharge
- ◆ Handles 1/4" solids
- ◆ 115V
- ◆ 16' power cord

Product Code	Description	Specification
SPDDP1250	SurePro Dual Discharge Pump	1250 GPH @ 5' TDH
SPDDP4000	SurePro Dual Discharge Pump	4000 GPH @ 5' TDH



SurePro™ water feature pumps are engineered with high quality and structural integrity for optimum efficiency and long life. Constructed with stainless steel, cast iron and durable thermoplastic, each pump meets the rigorous demands of the most impressive water features. The stainless steel cylinder houses a powerful PSC motor and the direct-drive system produces greater starting torque for nearly instantaneous flow. Recommended for Koi and Goldfish ponds as well as features without fish, and for use in conjunction with skimmers and biological waterfall filters for a complete, ecologically balanced system.

### SPSSP2300

- ◆ 2300 GPH @ 5' TDH
- ◆ 21' shut-off head
- ◆ 355W
- ◆ 1 1/4" FNPT discharge
- ◆ Handles 3/8" solids
- ◆ 115V
- ◆ 19' power cord



### SPSSP4280

- ◆ 4280 GPH @ 5' TDH
- ◆ 30' shut-off head
- ◆ 590W
- ◆ 2" FNPT discharge
- ◆ Handles 1 3/16" solids
- ◆ 115V
- ◆ 19' power cord



### SPSSP6400

- ◆ 6400 GPH @ 5' TDH
- ◆ 35' shut-off head
- ◆ 1210W
- ◆ 2" FNPT discharge
- ◆ Handles 1 3/8" solids
- ◆ 115V
- ◆ 19' power cord



Product Code	Description	Specification
SPSSP2300	SurePro Stainless Steel Pump	2300 GPH @ 5' TDH
SPSSP4280	SurePro Stainless Steel Pump	4280 GPH @ 5' TDH
SPSSP6400	SurePro Stainless Steel Pump	6400 GPH @ 5' TDH

## LittleGIANT®

This pump has been designed to operate in applications such as waterfalls, streams, and fountainheads. It can also be used to circulate the water in your pond. Unique features of this pump include a non-clogging vortex impeller, auto resetting thermal overload protection, stainless steel motor housing, and the ability to pass solids with diameters up to 1.18"/30mm (WGFP-50) or 1.38"/35mm (WPFG-75, WGFP-100, WGFP-150, and WPFG-200).

**CAUTION:** To prevent damaging the pump, do not pump abrasives such as sand or mud.



Product Code	Description
566061	WGFP-150 9750GPH @ 5', 1210 WATTS, 19' CORD, 3/4" SOLIDS
566072	WGFP-200 16000GPH @ 5', 2085 WATTS, 19' CORD, 3/4" SOLIDS
566724	1200GPH PUMP 115V 60HZ 20FT

## WATER FEATURE PUMPS

## LittleGIANT®

The F-Series pumps provide circulating, oxygenated water to features such as ponds fountains, displays, waterfalls and filter systems.



Product Code	Description
566726	WGFP-150 9750GPH @ 5', 1210 WATTS, 19' CORD, 3/4" SOLIDS
566728	WGFP-200 16000GPH @ 5', 2085 WATTS, 19' CORD, 3/4" SOLIDS
566729	1200GPH PUMP 115V 60HZ 20FT



**LOW WATER LEVEL CUT-OFF SWITCH**

- ◆ Converts any manual pump, up through 1/2 hp (10 max. run Amps), to automatic
- ◆ 115V Pump Cut-off Switch
- ◆ 18' Power Cord

Product Code	Description
SPLWLS	SurePro Low Water Level Cut-Off Switch



**HIGH FLOW ENERGY EFFICIENT POND CIRCULATION PUMPS**



The SPOSES & SPOESHH Energy Saving pumps are the benchmark for today's pond industry. These pumps have true 3" suction and discharge fittings and are fitted with energy saving motors. With their advanced technology, the SPOSES & SPOESHH have whisper quiet operations with tremendous flow rates. Offered in both high flow as well as high head designs. These pumps are designed for out of pond applications and are not for use as submersible pumps.

**SPOSES10500**

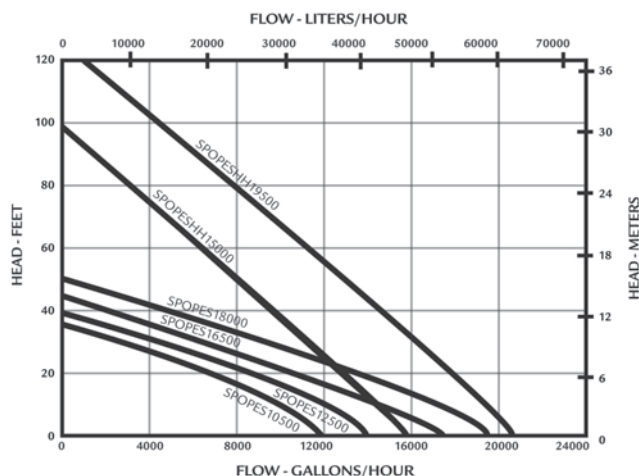
- ◆ 10,500 GPH @ 5' TDH
- ◆ 35' shut-off head
- ◆ 540W
- ◆ 3" FNPT discharge
- ◆ Handles 1/8" solids
- ◆ 115V
- ◆ 15' power cord

**SPOSES12500**

- ◆ 12,500 GPH @ 5' TDH
- ◆ 38' shut-off head
- ◆ 814W
- ◆ 3" FNPT discharge
- ◆ Handles 1/8" solids
- ◆ 115V
- ◆ 15' power cord

**SPOSES16500**

- ◆ 16,500 GPH @ 5' TDH
- ◆ 44' shut-off head
- ◆ 1309W
- ◆ 3" FNPT discharge
- ◆ Handles 1/8" solids
- ◆ 115V
- ◆ 15' power cord



Product Code	Description	Specification
PTES10500	SurePro Energy Saver Out of Pond Pump	10,500 GPH @ 5' TDH
PTES12500	SurePro Energy Saver Out of Pond Pump	12,500 GPH @ 5' TDH
PTES16500	SurePro Energy Saver Out of Pond Pump	16,500 GPH @ 5' TDH

### SUREPRO

The SPOP Series water garden pump is the most energy efficient pump on the market. With its extremely quiet operation and low energy consumption it is the perfect choice for today's discerning pond builder. These pumps are designed for out of pond applications and are not for use as submersible pumps.



#### SPOP3500

- ◆ 3500 GPH @ 5' TDH
- ◆ 18' shut-off head
- ◆ 143W
- ◆ 2" FNPT discharge
- ◆ Handles 1/8" solids
- ◆ 115V
- ◆ 15' power cord

#### SPOP4500

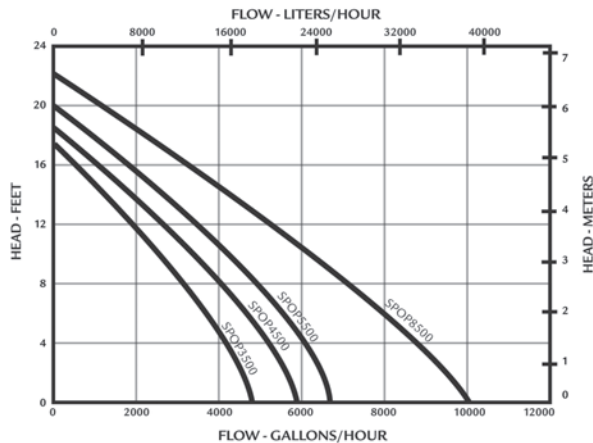
- ◆ 4500 GPH @ 5' TDH
- ◆ 19' shut-off head
- ◆ 187W
- ◆ 2" FNPT discharge
- ◆ Handles 1/8" solids
- ◆ 115V
- ◆ 15' power cord

#### SPOP5500

- ◆ 5500 GPH @ 5' TDH
- ◆ 20' shut-off head
- ◆ 286W
- ◆ 2" FNPT discharge
- ◆ Handles 1/8" solids
- ◆ 115V
- ◆ 15' power cord

#### SPOP8500

- ◆ 8500 GPH @ 5' TDH
- ◆ 22' shut-off head
- ◆ 363W
- ◆ 2" FNPT discharge
- ◆ Handles 1/8" solids
- ◆ 115V
- ◆ 15' power cord



Product Code	Description	Specification
SPOP3500	SurePro Energy Saver Out of Pond Pump	3500 GPH @ 5' TDH
SPOP4500	SurePro Energy Saver Out of Pond Pump	4500 GPH @ 5' TDH
SPOP5500	SurePro Energy Saver Out of Pond Pump	5500 GPH @ 5' TDH
SPOP8500	SurePro Energy Saver Out of Pond Pump	8500 GPH @ 5' TDH



## Little GIANT® Outdoor Living

We offer a full **decorative water** product line from the two great **brands** you know and **trust**



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LEARN MORE!

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## PRIMING POTS, DEBRIS TRAPS



### SPPT2

Our 2" priming pot/debris trap is designed specifically for the water gardening industry. It features a camber lock lid with excellent flow through capabilities. Specially designed basket improves flow while keeping harmful debris such as string algae out of the pump.



- ◆ Strong glass-filled thermoplastic housing for long life
- ◆ High strength see through lid
- ◆ Best flow characteristics
- ◆ Quick-connect 2" union included
- ◆ Drain plug for winterizing
- ◆ Specially designed debris basket for maximum flow
- ◆ Comes with adaptor for use with most water garden pumps
- ◆ Flow range up to 6,000 GPH
- ◆ SPPT2 Dimensions: width = 6", height = 10"

### SPPT3

The 3" priming pot/debris trap is specifically designed for the water gardening industry. With the 550 cubic inch capacity, it is designed for high flow applications. The loss of flow through the pump is minimal via the 3" inlet as well as the oversized capacity.

- ◆ Strong glass-filled thermoplastic housing
- ◆ Drain plug for winterization
- ◆ Adjustable feet to match with any pump height
- ◆ Quick-connect 3" union included
- ◆ Best flow of any priming pot/debris trap available
- ◆ Flow rates up to 13,000 GPH
- ◆ Keep harmful debris such as string algae out of pump
- ◆ SPPT3 Dimensions: width = 8.5", height = 18"



## PLASTIC SUCTION STRAINERS

Product Code	Description
SPPSS10	SurePro Plastic Suction Strainer 1"
SPPSS15	SurePro Plastic Suction Strainer 1 1/2"
SPPSS20	SurePro Plastic Suction Strainer 2"
SPPSS30	SurePro Plastic Suction Strainer 3"



## SUREPRO PRESSURE FILTERS



### BIOLOGICAL BEAD FILTERS & ACCESSORIES

This pond and water feature filter is a pressure side system, designed to filter out small debris. It is designed to be used with energy efficient pumps. Comes with specially designed start-up bacteria. These units are designed for new applications or to retrofit existing ones.

- ◆ Works with low-amp pumps
- ◆ Easy to clean backwash feature
- ◆ Backwashing pressure filter may be placed anywhere on the discharge of the pump (perfect for retrofitting existing pond)
- ◆ Valve can be hidden in an artificial rock or valve box
- ◆ Bio bead media is designed for use with Koi and goldfish ponds
- ◆ Pressure gauge to indicate when to backwash

### SPBF1000

- ◆ 1.5" valve
- ◆ For any pond or water feature up to 1000 gals.
- ◆ Dimensions: width = 19", height = 27"



### SPBF2000

- ◆ 1.5" valve
- ◆ For any pond or water feature up to 2000 gals.
- ◆ Dimensions: width = 16", height = 32"



### SPBF4000

- ◆ 2" valve
- ◆ For any pond or water feature up to 4000 gals.
- ◆ Dimensions: width = 19", height = 36"



### SPBF6000

- ◆ 2" valve
- ◆ For any pond or water feature up to 6000 gals.
- ◆ Dimensions: width = 24", height = 43"



Product Code	Description
SPBF1000	1.5" valve, 1,000 gal.
SPBF2000	1.5" valve, 2,000 gal.
SPBF4000	2" valve, 4,000 gal.
SPBF6000	2" valve, 6,000 gal.

# EXPLORE THE WORLD OF WATER FEATURES

## DISCOVER ATLANTIC'S PREMIERE WATER GARDENING PRODUCTS

From all-in-one kits for easy installation to lighting accessories to enjoy your water feature deep into the evening. Explore our full line of Formal Spillways, SOL LED Lighting, TidalWave pumps and more.

- Atlantic Water Gardens products are available at all Horizon locations
- Atlantic offers online water gardening education, Atlantic Water Gardens University -- Visit AWGU under the tools section of our website



## DISCOVER THE DIFFERENCE

Phone: 1.877.80PONDS | Fax: 330.274.8790 | [info@atlanticwatergardens.com](mailto:info@atlanticwatergardens.com) | [www.atlanticwatergardens.com](http://www.atlanticwatergardens.com)



*Waterscapes*  
By Atlantic

**L SERIES PUMP**

TidalWave L-Series are axial flow pumps, specially designed to deliver high volumes through large diameter plumbing to relatively low heights. Under 10' of head, the low power consumption of these 3" outlet pumps can't be beat for your high flow applications. Built with the same robust cast iron and stainless steel construction as our A-Series, Atlantic's L-Series pumps will deliver for years.

**Features**

- ◆ Cast iron vortex impeller
- ◆ Double silicon carbide mechanical seals
- ◆ Dual drive bearings
- ◆ Auto-cut thermal protection
- ◆ 30' power cord
- ◆ 2-year warranty



CE  
L-305

**MODEL L-305**

<b>Volts:</b>	115	<b>Motor:</b>	1/2 HP
<b>Watts:</b>	710	<b>Amps:</b>	6.4
<b>Weight:</b>	60 lbs.	<b>Outlet:</b>	3" MPT
<b>Dimensions:</b>	9"L x 9"W x 19.25"H		

**MODEL L-310**

<b>Volts:</b>	115	<b>Motor:</b>	1 HP
<b>Watts:</b>	1105	<b>Amps:</b>	10
<b>Weight:</b>	65 lbs.	<b>Outlet:</b>	3" MPT
<b>Dimensions:</b>	9"L x 9"W x 19.25"H		

\* Wattage is calculated @ BEP using the following formula  
(Volts x Amps x PF = Watts).

Model #	Watts	Max	5'	10'	15'	20'	25'	30'	35'	40'	45'	50'	55'	60'
L-305	710	--	10380	7380	3960									
L-310	1105	--	13500	10560	7380	3240								

\*Operating pumps outside of the recommended range may cause bearing damage and premature failure.

Recommended Operating Range    Best Efficiency Point    Do Not Operate Range

*Waterscapes*  
By Atlantic

**A SERIES PUMP**

TidalWave A-Series are manufactured from cast iron and stainless steel with precision motors and thermal overload protection. These professional-grade direct drive pumps are engineered for demanding high volume applications and perform where most cannot.

**Features**

- ◆ Cast iron vortex impeller
- ◆ Double silicon carbide mechanical seals
- ◆ Dual drive bearings
- ◆ Auto-cut thermal protection
- ◆ 30' power cord
- ◆ 2-year warranty

**MODEL A-31**

<b>Volts:</b>	115	<b>Motor:</b>	1 HP
<b>Watts:</b>	1160	<b>Amps:</b>	10
<b>Weight:</b>	48 lbs.	<b>Outlet:</b>	3" MPT
<b>Dimensions:</b>	11"L x 7"W x 18"H		

\* Wattage is calculated @ BEP using the following formula (Volts x Amps x PF = Watts).

Model #	Watts	Max	5'	10'	15'	20'	25'	30'	35'	40'	45'	50'	55'	60'
A-05	645	--	3165	2840	2500	2155	1875	1455	935	320				
A-05L	725	--	5040	4320	3600	2820	1920	840						
A-21	1060	--	5810	5325	4824	4335	3770	3140	2400	1530	540			
A-31	1160	--	9300	8150	6830	5535	4120	2535	625					
A-32	2055	--	12000	11040	10440	9780	9000	8280	7560	6780	5580	4920	3890	

\*Operating pumps outside of the recommended range may cause bearing damage and premature failure.

Recommended Operating Range    Best Efficiency Point    Do Not Operate Range



A-05L  
A-21

A-05

<b>Volts:</b>	230	<b>Motor:</b>	2 HP
<b>Watts:</b>	2055	<b>Amps:</b>	9.4
<b>Weight:</b>	95 lbs.	<b>Outlet:</b>	3" FIPT
<b>Dimensions:</b>	15"L x 8.5"W x 23"H		

*Waterscapes*  
By Atlantic

### SH SERIES PUMP

A mainstay of the Water Garden Industry, TidalWave SH-Series Pumps have proven to be one of the most dependable and energy-efficient composite direct drives available. With true solids handling capacities of up to 1½" and stable base geometry, these value-packed pumps excel under the most rigorous conditions..

\* Wattage is calculated @ BEP using the following formula (Volts x Amps x PF = Watts).

Model #	Watts	Max	5'	10'	15'	20'	25'	30'	35'
SH1450	240	1450	1170	650					
SH2050	320	2050	1700	1130	235				
SH3600	575	3600	3245	2750	2090	1210			
SH5000	950	5000	4350	3620	2800	1875	825		
SH6500	1000	6500	5710	4875	4000	3080	2110	1085	

\*Operating pumps outside of the recommended range may cause bearing damage and premature failure.

Recommended Operating Range

Best Efficiency Point

Do Not Operate Range

### Features

- ◆ Non-corrosive and handles solids
- ◆ Oil-Free design
- ◆ Vortex Impeller
- ◆ Overload and thermal protection
- ◆ 16' power cord
- ◆ 2-year warranty



### SH3600 Model Specifications

<b>Volts:</b>	115	<b>Outlet:</b>	1.25" FIPT w/1.5" FIPT elbow
<b>Amps:</b>	5.5	<b>Dimensions:</b>	6"L x 9"W x 14"H
<b>Watts:</b>	575		

### SH5000 Model Specifications

<b>Volts:</b>	115	<b>Outlet:</b>	1.5" FIPT w/1.5" FIPT elbow
<b>Amps:</b>	9	<b>Dimensions:</b>	9.5"L x 12"W x 15.75"H
<b>Watts:</b>	950		

### SH6500 Model Specifications

<b>Volts:</b>	115	<b>Outlet:</b>	1.5" FIPT w/1.5" FIPT elbow
<b>Amps:</b>	9.5	<b>Dimensions:</b>	9.5"L x 12"W x 15.75"H
<b>Watts:</b>	1000		

## IONIZERS

### TRITON IONIZER

The Triton Ionizer's modular design is at the cutting edge of innovation, featuring tool-less, seamless integration with our award-winning Triton Check Valve! Safe for animals and plants and unaffected by sunlight and heat, this mineralized water maintains a residual ability to treat organics, greatly reducing the need for chemical treatments.

### HOW IT WORKS

The Triton Ionizer utilizes the same union fittings and adapters as the Triton Check Valve, so connecting the ionizer above or below the Check Valve takes only seconds. Periodic replacement of electrodes is just as simple. Instead of the whole assembly, only the electrodes are changed, again without needing tools. It doesn't get any simpler or better designed than this!



### Features

- ◆ Safe for fish and plants
- ◆ Low maintenance
- ◆ Clears water without the use of harsh chemicals
- ◆ Level of mineralization is controlled by the LED panel
- ◆ Treats ponds up to 25,000 gallons
- ◆ Easily installed in any new or existing water feature
- ◆ Electrodes are easily replaced without tools
- ◆ 1-year warranty

### TRITON IONIZER REPLACEMENT ANODE

Part Number: TRION2-RA

### MDFH1020 Model Specifications

<b>Description:</b>	Electronic Water Clarifier
<b>Application:</b>	Pond / Pond-free / Fountain
<b>Input Voltage:</b>	12 volt AC
<b>Watts:</b>	2
<b>Inlet/Outlet:</b>	2" Sch 40 PVC
<b>For Use With:</b>	1000 – 2000 gph MD pumps
<b>Includes:</b>	Outdoor transformer and copper test strips



## COLOR CHANGING COLORFALLS

Atlantic's Color Changing Colorfalls add a whole new dimension to Formal Spillways. The modular body style offers easier maintenance, with a removable back for easy access and side plumbing ports. A more generous weir opening resists clogging and creates a thicker, fuller sheer for extra color and less wind deflection. The innovative modular design with easy to install threaded couplings makes connecting any number of falls together a snap! The LED light bar offers 48 vibrant color options and 16 patterns via remote control.

### Colorfalls Features

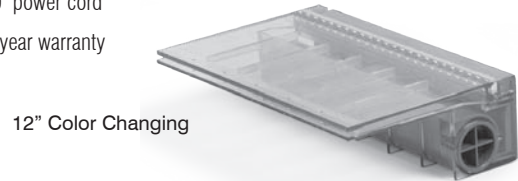
- 1) Larger weir opening produces a thicker sheer, less splash, more color and less chance of clogging
- 2) Redesigned supports eliminate splitting of the water sheer and increase load capacity
- 3) 1½" FIPT side and back plumbing options for maximum versatility
- 4) Includes (2) 1½" plugs for unused plumbing inlets
- 5) Self-draining body for easy winterization
- 6) Removable baffle for easy cleaning and servicing
- 7) Color Changing LED light bar that is accessible from the rear of the unit
- 8) Removable back plate provides unparalleled access to the interior and light bar for routine maintenance
- 9) Includes threaded adapter for connecting multiple Color Changing Colorfalls

### CC06 Model Specifications

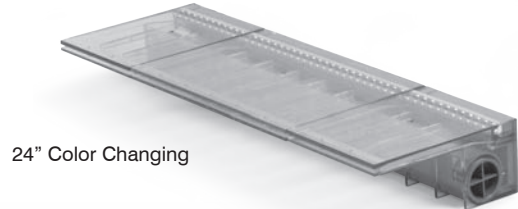
<b>Description:</b>	6" Color Changing Colorfalls
<b>Flow Rate:</b>	600 gph
<b>Input Voltage:</b>	12 volt DC
<b>Watts:</b>	3.5 Variable
<b>Inlet:</b>	1.5" FIPT
<b>Dimensions:</b>	6"W x 8"D x 3.5"H

### Color Changing Features

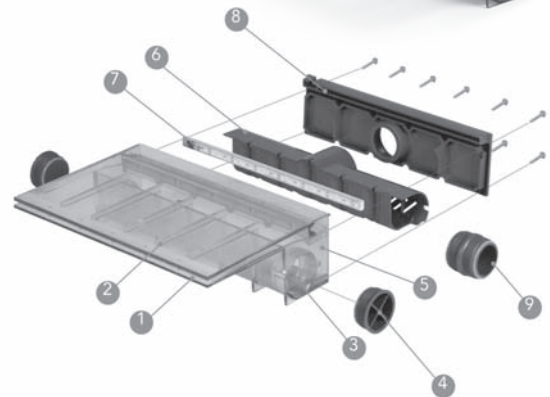
- ◆ 5" lip extension
- ◆ 12 volt single control module with weather resistant outdoor enclosure & remote control
- ◆ 20' power cord
- ◆ 1-year warranty



12" Color Changing



24" Color Changing

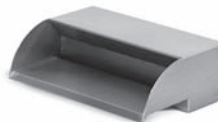


### CC12 Model Specifications

<b>Description:</b>	12" Color Changing Colorfalls
<b>Flow Rate:</b>	1200 gph
<b>Input Voltage:</b>	12 volt DC
<b>Watts:</b>	7 Variable
<b>Inlet:</b>	1.5" FIPT
<b>Dimensions:</b>	12"W x 8"D x 3.5"H

## Stainless Steel Scuppers

Atlantic's newest entry to the Formal Spillways category, our Stainless Steel Scuppers bring a polished, gleaming dimension to our spillway line. Constructed of durable 304 stainless steel and available in the same sizes as our popular Colorfalls, these sleek modern Scuppers put a sharp, fresh shine on your formal water feature project.



12" Scupper

### SS12 Model Specifications

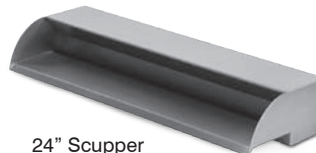
<b>Description:</b>	12" Stainless Steel Scupper
<b>Flow Rate:</b>	1200 gph
<b>Inlet:</b>	1.5" FIPT
<b>Dimensions:</b>	12"W x 8.5"D x 4"H

### Features

- ◆ 1) Larger 5" lip extension
- ◆ Fully welded enclosure
- ◆ 304 Stainless steel
- ◆ 1-year warranty



Scupper Inlet



24" Scupper

### SS24 Model Specifications

<b>Description:</b>	24" Stainless Steel Scupper
<b>Flow Rate:</b>	2400 gph
<b>Inlet:</b>	1.5" FIPT
<b>Dimensions:</b>	24"W x 8.5"D x 4"H

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### BF1600

#### OASIS FilterFalls Features

1. Sturdy top grate and support bar allow natural rock camouflage
2. Media bag for additional biological filtration
3. Dual Bio-Tech filter mats for biological filtration
4. Sturdy bottom grate supports filter media
5. Rolled upper rim provides clean lines and incredible strength
6. One-piece liner attachment flange
7. Heavy-duty 1½" FIPT bulkhead

#### BF1600 Model Specifications

<b>Waterfall Width:</b>	16" Spillway
<b>Dimensions:</b>	21.5W x 19.5D x 17.75H
<b>Pump Flow Range:</b>	1000 – 3900 gph
<b>Bulkhead:</b>	1.5"
<b>Pond Volume:</b>	up to 250 gallons
<b>Match to Skimmer:</b>	PS3900



Model BF1600 shown

### SP1900 and SP 2600

featuring deep plumbing channels on top of the basins, easy access pump chambers and external flow adjustment for convenient installation and maintenance. Now they're even better, with new internal buttressing cones for greater rigidity. Count on Atlantic to keep on performing!

#### OASIS FilterFalls Features

1. Sturdy top grate and support bar allow natural rock camouflage
2. Media bag for additional biological filtration
3. Dual Bio-Tech filter mats for biological filtration
4. Sturdy bottom grate supports filter media
5. Rolled upper rim provides clean lines and incredible strength
6. One-piece liner attachment flange
7. Heavy-duty 1½" FIPT bulkhead

#### SP1900 Model Specifications

<b>Dimensions:</b>	20.5W x 17D x 10.25H
<b>Waterfall Width:</b>	19"
<b>Bulkhead:</b>	1.5"
<b>Max Pump Flow:</b>	4000 gph
<b>Bulkhead:</b>	2" FIPT

#### SP1900 Model Specifications

<b>Dimensions:</b>	27.5W x 17D x 10.25H
<b>Waterfall Width:</b>	26"
<b>Bulkhead:</b>	1.5"
<b>Max Pump Flow:</b>	6000 gph
<b>Bulkhead:</b>	2" FIPT



SP1900



SP2600



# Waterscapes By Atlantic

Add another dimension to your water garden with Atlantic's Fountain Heads. Compatible with all of Atlantic's Mag Drive Pumps, these versatile Fountain Heads pivot to make leveling easy, telescope to adjustable heights and feature four different spray patterns to choose from..

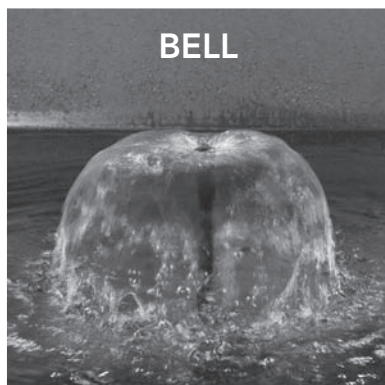


## MDFH2575 Model Specifications

<b>Description:</b>	Telescoping Fountain Head
<b>Min Height:</b>	12"
<b>Max Height:</b>	18"
<b>Inlet:</b>	3/4" FITP
<b>Outlet:</b>	1/2" insert
<b>For Use With:</b>	250 – 750 gph MD pumps
<b>Includes:</b>	Telescoping diverter w/4 interchangeable fountain heads

## MDFH1020 Model Specifications

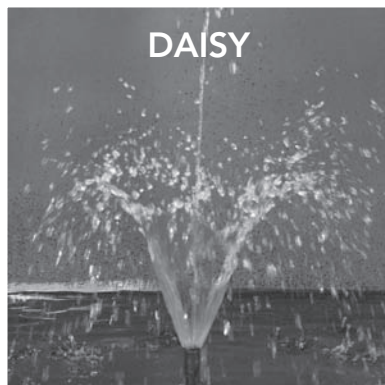
<b>Description:</b>	Telescoping Fountain Head
<b>Min Height:</b>	15"
<b>Max Height:</b>	22"
<b>Inlet:</b>	1" FITP
<b>Outlet:</b>	1" MIPT
<b>For Use With:</b>	1000 – 2000 gph MD pumps
<b>Includes:</b>	Telescoping diverter w/4 interchangeable fountain heads



BELL



BLOSSOM



DAISY



TRUMPET

*Waterscapes*  
By Atlantic

### FTN CC24 and FTN CC32

During the day the three sizes create the welcome sights and sounds of dancing water, bubbling up and cascading down their sides – but in the dark, they come alive with light! Working on the same technology as our Color Changing Colorfalls, these vases radiate in 48 different colors, or in 16 different pre-programmed patterns, with speed and intensity regulated by Remote Control.

#### Features

- ◆ Color changing LED light ring
- ◆ Remote control and control module
- ◆ Integrated anchor base for increased stability
- ◆ Durable rotomolded polyethylene construction
- ◆ Simulated granite finish
- ◆ Sold individually or as a 3-piece kit
- ◆ Each color changing vase includes LED light ring, SOL control module and remote

### FTNPP32



### FTNPP32 Model Specifications

<b>Description:</b>	Fiberglass Pebble Pot
<b>Inlet:</b>	.75 insert fitting
<b>Dimensions:</b>	18"W x 32"H
<b>For Use With:</b>	FB3200 Basin & F400 pump

### FTN CCV24 Model Specifications

<b>Description:</b>	Color Changing Vase
<b>Inlet:</b>	.75" PVC pipe
<b>Dimensions:</b>	12"W x 24"H
<b>For Use With:</b>	FB3200 Basin, FBKIT1 & FP300 pump

### FTN CCV32 Model Specifications

<b>Description:</b>	Color Changing Vase
<b>Inlet:</b>	.75" PVC pipe
<b>Dimensions:</b>	14"W x 32"H
<b>For Use With:</b>	FB3200 Basin, FBKIT1 & FP400 pump

Patent Pending

## FOUNTAIN BASINS

### FB3200

When they were introduced, Atlantic Fountain Basins were already the strongest and best-designed on the market, featuring deep plumbing channels on top of the basins, easy access pump chambers and external flow adjustment for convenient installation and maintenance. Now they're even better, with new internal buttressing cones for greater rigidity. Count on Atlantic to keep on performing!



#### PRO Series Fountain Basin Features

1. One-piece construction provides exceptional strength.
2. Built-in channels simplify installation, allowing the plumbing to be run on top of the basin.
3. Seven molded cones support the top panel.
4. Recessed pocket accepts the Triton 3-Way Diverter. Adjusting the water flow to multiple pieces has never been easier.
5. Recessed 1 1/2" conduit recesses allow for clean installation in surrounding masonry without notching
6. Flat panel for optional AF1000 Auto Fill installation

### FB3200 Model Specifications

<b>Dimensions:</b>	32"W x 13"H
<b>Max Pump Flow:</b>	2000 gph
<b>Plumbing Size:</b>	(3) .75" or (1) 1" hose
<b>Capacity:</b>	32 Gallons
<b>Supports Up To:</b>	400 lbs.



Model FB-4600 shown

INTERNAL CONE SUPPORT SYSTEM



## CFBASINKIT12 and CFBASINKIT24

Atlantic Basin Kits are designed to fit all our formal spillways perfectly. Whether you're adding the shimmering nighttime enchantment of a Classic or Color Changing Colorfalls or the elegant touch of class of the Stainless Steel Scupper, our Basin Kits provide everything you need to complete the installation, from the reservoir to the plumbing to the pump, with double filtration, tubing, fittings, anti-splash mat and even an Automatic Fill Valve.

### Basin Kits Include

- ◆ Colorfalls Basin & TW2 Pump
- ◆ 1½" x 10' Flexible PVC Pipe
- ◆ Splash Mat
- ◆ AF1000 Auto Fill
- ◆ Complete Installation Kit including pump discharge, flow valve, spray glue and thread sealant

### CFBASINKIT12 Model Specifications

<b>Description:</b>	Complete Basin Kit
<b>For Use With:</b>	All 12" Spillways
<b>Dimensions:</b>	20"W x 20"D x 16"H
<b>Includes:</b>	CFBASIN12 and TW 1200 pump

### CFBASINKIT24 Model Specifications

<b>Description:</b>	Complete Basin Kit
<b>For Use With:</b>	All 24" Spillways
<b>Dimensions:</b>	44"W x 22"D x 16"H
<b>Includes:</b>	CFBASIN24 and TW 2400 pump



12" Basin Kit

24" Basin Kit

## PUMP VAULTS

### PV1700

Atlantic's heavy-duty one-piece rotomolded Pump Vaults offer all the strength and versatility you need for your Pond-free projects. Liberal volumes and copious flow capacities handle multiple pump configurations and larger pumps, while strong, tightly-fitting covers and generous openings provide easy pump and pipe access.



### PV1700 Model Specifications

<b>Dimensions:</b>	17"W x 12"D x 22"H
<b>Max Pump Flow:</b>	3900 gph
<b>Opening:</b>	10"



1. Inset lid keeps gravel from falling into the vault
2. Pump discharge step fittings for 1½" & 2" pipe provided on both sides of the vault
3. Flat front panel installs tight against Eco-Blox for a compact basin
4. Recessed pockets accept Triton 3-Way Diverter for use with the Eco-Rise
5. Flat panel for 1½" pipe for use with the Eco-Rise

*Waterscapes*  
By Atlantic

### FBKIT1



### FBKIT1 Model Specifications

**For Use With:** FP200 – 500 & MD250 – 750

- ◆ Single ball valve
- ◆ 6' of .75" diameter kink-free hose
- ◆ (1) standpipe sealant strip
- ◆ .75" insert x .75" socket fitting
- ◆ 1.5" cord stopper for conduit sleeve

\*.75" PVC standpipe & pump not included

### FBKIT3



### FBKIT3 Model Specifications

**For Use With:** FP1200 – 2400 & MD1000 – 2000

- ◆ Triton 3-Way Diverter
- ◆ 20' of .75" diameter kink-free hose
- ◆ (3) standpipe sealant strips
- ◆ (3) .75" insert x .75" socket fittings
- ◆ (2) 1.5" cord stoppers for conduit sleeve

\*.75" PVC standpipe & pump not included

### TR3WAY

The Triton 3-Way Diverter is the only manifold designed exclusively for pond-free fountain installations. The 1½" inlet allows unrestricted flow into the manifold, delivering the maximum possible volume to all three of the ¾" outlets. True 'ball' style valves with removable handles enable independent flow adjustment of each outlet. The compact design makes it a perfect fit for installation in all Pump Vaults and Fountain Basins.



### TR3WAY Model Specifications

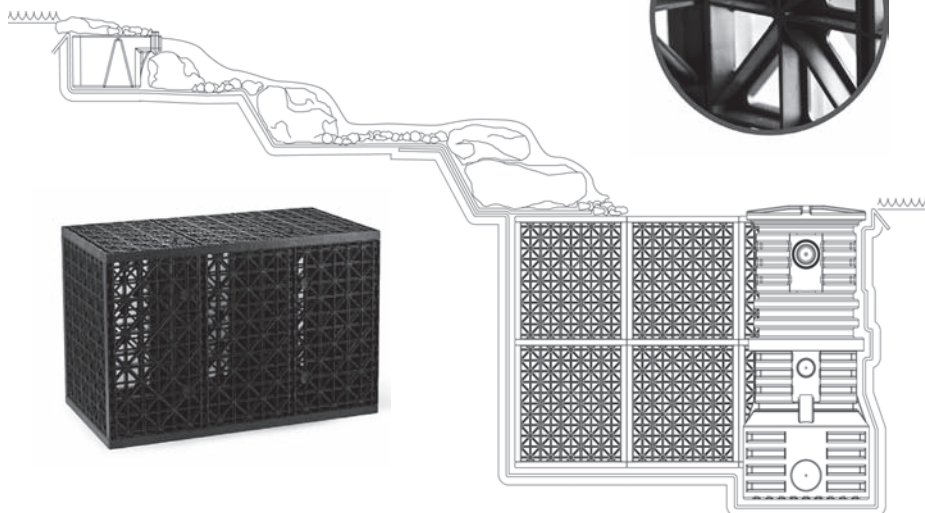
**Dimensions:** 5.75"L x 4.5"W x 2.875"H  
**Inlet:** 1.5" FIPT  
**Outlet:** (3) .75" Insert  
**Includes:** (2) removable "T" handles



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By Atlantic

## ECO-BLOX

Atlantic's proprietary Eco-Blox water matrix saves you time and money on all your rainwater harvesting, stormwater management and pond-free installations. With 96% void space, Eco-Blox reservoirs store large volumes of water easily and economically. Underground and out of sight, their enormous strength allows for landscaping right over the reservoir.



Eco-Blox water matrices still hold 31.5 gallons of water but support even greater loads this year, with an all-new formulation that increases flexibility and ease of assembly even under the most adverse conditions, and provides greater comprehensive and point load strength for a lifetime of dependable service!

## PV1700 Model Specifications

<b>Dimensions:</b>	27"L x 16"W x 17.5"H
<b>Capacity:</b>	31.5 Gallons
<b>Application:</b>	Ponf-free / Fountain / Rain Harvesting

## ECO-RISE

The extremely strong radial structure handles the weight of heavier statuary, vases and columns while providing a broad stable base over Eco-Blox reservoirs. The versatility of the Eco-Rise used in conjunction with Eco-Blox, PV1700 Pump Vault and Triton 3-Way Diverter allows for multiple features in any configuration above odd basin shapes, while keeping plumbing and flow adjustment topside for easy access.

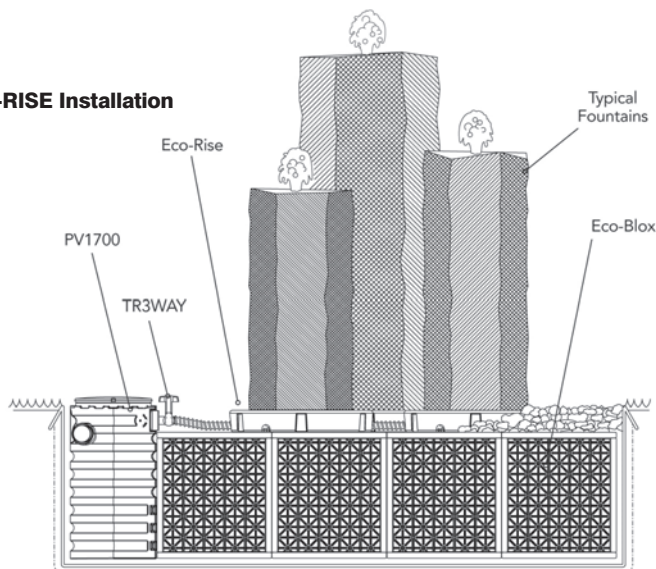
## ECORISE20 Model Specifications

<b>Dimensions:</b>	20"L x 20"W x 3"H
<b>Plumbing Size:</b>	.75" to 1.5"
<b>Max Load:</b>	3000 lbs.



### Typical Fountain ECO-RISE Installation

PV1700 Pump Vault shown with 3-Way Diverter installed for use with the Eco-Rise and Eco-Blox. Add a second pump and a second 3-Way Diverter to control up to six water features from a single PV1700 Vault.





### PS7000 and PS15000

Atlantic's Pond Skimmers offer just what you need for all of your pond projects. With ample pre-filtration options, auto fill capacity, complete freedom in plumbing location, multiple pump capability and remarkable strength and rigidity, these versatile components allow for every style and preference!

#### PRO Series Skimmer Features

1. Sturdy removable top lid supports natural rock camouflage and foot traffic
2. Heavy-duty brush panel provides maximum surface area for mechanical filtration
3. Heavy-duty stainless steel framed trap net for catching large debris
4. Rolled upper rim provides clean lines and great strength
5. Super Flow weir door for maximum surface cleaning
6. High-density polyethylene shell for the ultimate in durability



Model PS7000 shown

#### PS7000 Model Specifications

<b>Weir Width:</b>	9"
<b>Internal Water Depth:</b>	17.5"
<b>Dimensions:</b>	25"W x 30"D x 24"H
<b>Max Pump Flow:</b>	7000 Gallons
<b>Sq. Ft. Rating:</b>	900 lbs.
<b>Filtering:</b>	Net, Brush panel
<b>Match to Filter Falls:</b>	BF2600

#### PS15000 Model Specifications

<b>Weir Width:</b>	14"
<b>Internal Water Depth:</b>	24.5"
<b>Dimensions:</b>	28"W x 33"D x 31"H
<b>Max Pump Flow:</b>	15,000 Gallons
<b>Sq. Ft. Rating:</b>	1400 lbs.
<b>Filtering:</b>	Net, Brush panel
<b>Match to Filter Falls:</b>	BF3800



PS7000



PS15000

## SUREPRO MISCELLANEOUS

### PLANT BASKETS

- ◆ Allows soil to be placed in basket without lining
- ◆ Allows water to reach root system
- ◆ Plant and fish friendly
- ◆ Prevents soil from eroding away
- ◆ 9" diameter round or 12" square



Product Code	Description
SPPBR	SurePro Plant Basket 9" Round
SPPBS	SurePro Plant Basket 12" Square

## EPDM LINER



### FIRESTONE PONDGARD EPDM LINER

PondGard membrane is based on EPDM synthetic rubber, a highly flexible stable waterproofing membrane. PondGard is specially formulated to be safe for exposure to fish and plant life in decorative ponds. It can easily be shaped to fit the unique contours of any pond. PondGard shows outstanding resistance to the harmful effects of ultraviolet radiation (UV), ozone and other environmental conditions. It requires little or no regular maintenance once installed.



Product Code	Description
PL5100	5' X 100" EPDM Liner
PL10100	10' X 100" EPDM Liner
PL15100	15' X 100" EPDM Liner
PL20100	20' X 100" EPDM Liner
PL25100	25' X 100" EPDM Liner
PL30100	30' X 100" EPDM Liner
PL40100	40' X 100" EPDM Liner
PL50100	50' X 100" EPDM Liner
PL550	5' X 50' EPDM Liner
PL1550	15' X 50' EPDM Liner
PL1050	10' X 50' EPDM Liner
PL2050	20' X 50' EPDM Liner
PL2550	25' X 50' EPDM Liner
PL3050	30' X 50' EPDM Liner
PL4050	40' X 50' EPDM Liner
PL5050	50' X 50' EPDM Liner

## MISCELLANEOUS - ACCESSORIES



### W56RAC1693

Firestone QuickSeam Cover Strip, 6" X 25'

- ◆ 6" wide cover tape for seaming EPDM rubber liner. Sticky on one side



### W563582023

Firestone QuickSeam Silicone Roller, 1 5/16"



### W563582045

Firestone QuickSeam Scrubber Kit

- ◆ Includes 30 scrub pads and four holders that allow the installer to apply QuickPrime Plus or Seam Prep when seaming two sections of PondGard EPDM liner



### W563587112

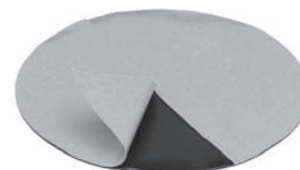
Firestone QuickPrime Plus, 1 gal. (W563587041) or qt.

- ◆ Designed to clean and prime Firestone EPDM prior to the application of the QuickSeam products



### W56RAC1646

Firestone QuickSeam Corner Flashing, 8 1/2" diameter





### SurePro Underwater Lighting

With the right lighting, water gardens can be enjoyed long after the sun sets. Light adds new dimension to landscapes and waterscapes as the white or colored hues play against the ripples of the water, magnify the pleasing effect of fountains or underscore the beauty of statues and other forms of garden art.

#### SPLEDK

- ◆ Submersible LED Light and Transformer kit includes one LED light with free standing support, fountain nozzle attachments in two different lengths and transformer
- ◆ Contains one LED light with 11 different pre-programmed lighting Options



Product Code	Description
SPLEDK	SurePro Underwater Kit w/ Transformer, Fixture & LED Lamp

#### SPLEDF

- ◆ LED Light with stand and nozzle attachments. LED light with 20' power cord connects to 120V transformer
- ◆ Comes pre-programmed with 11 lighting options ranging from brilliant red to a continuous transition of soft color, you can easily reflect any mood



Product Code	Description
SPLEDF	SurePro Underwater Fixture w/ LED Lamp

#### SPLEDL

- ◆ LED Replacement Bulb is programmed with 11 different modes — choose from Red, Yellow, Green, Aqua, Blue, Purple, White, Celebration mode and three time-changing Spectrum mode options. Each easily installed fixture features push-in, MR16-style terminal power pins



Product Code	Description
SPLEDL	SurePro LED Replacement Lamp

#### SPLVK

- ◆ Fully submersible 12V light
- ◆ 20W MR16 halogen lamp
- ◆ Includes one each colored lens (Yellow, Blue, Red and Green)
- ◆ Weather-proof, 120V transformer with on-off timer
- ◆ Powers up to three 20W lights



Product Code	Description
SPLVK	SurePro Underwater Kit w/ Transformer, Fixture & MR-16 Lamp

#### SPLVF

- ◆ Fully submersible 12V light with 20W MR16 halogen lamp
- ◆ Includes one each colored lens (Yellow, Blue, Red and Green)



Product Code	Description
SPLVF	SurePro Underwater Fixture w/ MR-16 Lamp

## POND ACCESSORIES

### PIPE

Product Code	Description
FLEX0550	1/2" flex PVC hose, 50'
FLEX07550	3/4" flex PVC hose, 50'
FLEX150	1" flex PVC hose, 50'
FLEX12550	1 1/4" flex PVC hose, 50'
FLEX1550	1 1/2" flex PVC hose, 50'
FLEX250	2" flex PVC hose, 50'
FLEX350	3" flex PVC hose, 50'

For complete information on waterscaping; from how to install it to how to sell it, visit [horizononline.com](http://horizononline.com).



### Liquid Water Clarifiers

#### **MICROBE-LIFT/PL**

- ◆ Use any time your pond water is not as clear as you'd like, the temperature is over 45°F (8°C), or there is sediment buildup on the bottom of your pond or your pond is not cycling
- ◆ Balances your pond's ecosystem by establishing all natural biological processes required to: keep water clear and clean; reduce or eliminate organic sludge buildup; and seed your filter
- ◆ Does the work of three to four competitive products
- ◆ The only pond product with photosynthetic microorganisms
- ◆ Safe if pets drink out of a pond treated with PL



#### **BARLEY STRAW CONCENTRATED EXTRACT (CBSE)**

- ◆ Start in the spring before water temperatures reach 50°F (10°C) and continue throughout the year to provide water clarity when ML/PL alone does not provide the desired results
- ◆ Preferred by pond owners with bottom drains since it leaves no residue
- ◆ Provides many of the same benefits as ML/BSP but without the peat so there is no residue
- ◆ Contain pre-digested barley that release these same compounds within one to five days

#### **ALGAWAY 60**

- ◆ Chemical algae eliminator formulated for decorative ponds and fountains, irrigation ponds, water hazards and retention ponds
- ◆ Eliminates most planktonic and filamentous algae quickly and efficiently and there's no phytotoxicity so water is safe for irrigation, turf and shrubs
- ◆ Is a highly concentrate (60% active ingredient) EPA registered algaecide



#### **ALGAWAY 5.4**

- ◆ Algaecide for ponds
- ◆ Can be applied to areas that contain fish and plants
- ◆ 5.4% active ingredient
- ◆ For use in self-contained ornamental ponds and fountains without overflow

Product Code	Description
10PBLXG	Microbe-Lift Pro Blend Liquid gal.
10PBLXQ	Microbe-Lift Pro Blend Liquid qt.
MLCBSE1L	Microbe-Lift Concentrate Barley Straw Ext 32 oz.
AAG60G	Microbe-Lift Algaway 60, 1 gal.
AAG60Q	Microbe-Lift Algaway 60, 32 oz.
ALGA16	Microbe Lift Algaway 5.4, 16 oz.
ALGAG	Microbe-Lift Algaway 5.4, 1 gal.

### Dry Water Clarifiers

#### **BSP (BARLEY STRAW PELLETS+)**

- ◆ Start in the spring before water temperatures reach 50°F (10°C) and continue maintenance throughout the year
- ◆ To provide additional water clarity when MICROBE-LIFT/PL alone does not provide the desired degree of clarity
- ◆ Pellets sink to the bottom within minutes and dissolve quickly
- ◆ May turn pond water a tea-color for 10 to 14 days and does leave a residue from the peat



Product Code	Description
10BSPP2.2	Microbe-Lift Barley Straw Pellets
10BSPP4.4	Microbe-Lift Barley Straw Pellets

### Specialty Bacteria & Enzyme Products

#### **NITE-OUT II**

- ◆ Use when the ammonia levels in your pond exceed 0.8 mg/L and the temperature is over 50°F (10°C), especially useful when starting up a pond and when nitrite buildup is observed
- ◆ Quickly establishes the necessary populations required to efficiently cycle nitrogen compounds in the pond, i.e. oxidize ammonia to nitrite, and nitrite to nitrate
- ◆ Acts within a day or two to lower ammonia nitrogen and nitrite nitrogen levels naturally



#### **SA (SLUDGE AWAY)**

- ◆ Use any time there is excessive non-cellulosic organic sludge buildup in the bottom of the pond, especially rock bottom ponds
- ◆ Helps solubilize organic sludges making them more readily available for biodegradation
- ◆ Has been shown to break down up to 3" of sludge in as little as four weeks
- ◆ Should be used with Microbe-Lift/PL



Product Code	Description
NITE32	Microbe-Lift Niteout II Nitrifying Bacteria 32 oz.
MLXSAG	Microbe-Lift Sludge Away gal.
MLXSAQ	Microbe-Lift Sludge Away qt.

### Chemical Water Treatments

#### FLOCCULANT PLUS

- ◆ To clear cloudy water and improve filtration
- ◆ A proprietary water clarifier formulation used to attract and coagulate suspended solids in the pond water
- ◆ After use, particles in the water settle to the bottom of the pond and/or filter out through the filter system



#### DEFOAMER

- ◆ Use when unsightly foaming is persistent in ponds and fountain of all sizes
- ◆ Eliminates foam in seconds leaving pond water clean and clear by increasing surface tension of the water
- ◆ Foaming can indicate a heavy concentration of undissolved particulate organics



Product Code	Description
FPLUS16	Microbe-Lift Flocculant PLUS 16 oz.
FPLUS32	Microbe-Lift Flocculant PLUS 32 oz.
DFOAM16	Microbe-Lift Defoamer 16 oz.
DFOAM32	Microbe-Lift Defoamer 32 oz.

### Filter Products

#### SUPER START BEAD FILTER BACTERIA

- ◆ Use when starting up a bead filter or after maintenance or rebedding of the filter
- ◆ Provides population that quickly colonizes beads to provide rapid startup of bead filters
- ◆ Helps to stabilize overall process especially after maintenance
- ◆ Contains populations that are effective in producing biopolymers, glue-like substances, that aid in bacterial attachment and film formation



Product Code	Description
MLBFBQ	Microbe-Lift Bead Filter Bacteria 1 qt.

### BiSafe Systems, LLC GreenClean

#### BIOSAFE

- ◆ Works on contact to control algae in water gardens, ornamental ponds, fountains, and other water features
- ◆ Patented formula immediately begins fighting algae blooms, releasing vital oxygen into the water body as it biodegrades
- ◆ Ready-to-use



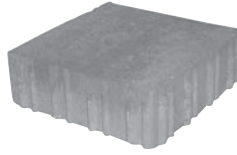
Product Code	Description
GREENCLEAN2	2lb. bottle algaecide
GREENCLEAN8	8lb. bottle algaecide
GREENCLEAN20	20lb. pail algaecide



### ECO-VENETIAN STONE™ COMBO

Its modular square and rectangular shapes and uniquely attractive cleft surface set it apart from other permeable pavement treatments. This texture resembles stone facing and invokes a more natural convention. The Eco-Venetian Stone™ larger scales lends itself to stately residential settings and more expansive commercial applications.

The unique Eco-Venetian™ joint profile allows surface water to infiltrate into the pavement and its sub-layers. With initial permeability average flow rates of over 100" per hour, the Eco-Venetian™ product, even with a clogging factor, will still meet the majority of current storm water management plans (SWMP).



Specifications:	
<b>Giant — 3 1/8"</b>  Length: 9 3/16" Width: 9 3/16" Height: 3 1/8" Stone/Pallet: 80 Stones	<b>Large Rectangle — 3 1/8"</b>  Length: 9 3/16" Width: 4 1/2" Height: 3 1/8" Stones/Pallet: 80 Stones
<b>Square — 3 1/8"</b>  Length: 4 1/2" Width: 4 1/2" Height: 3 1/8" Stones/Pallet: 48 Stones	<b>Med. Rectangle. — 3 1/8"</b>  Length: 6 13/16" Width: 4 1/2" Height: 3 1/8" Stones/Pallet: 96 Stones
Applications:	
Parking Lots Driveways Patios Entrance Areas Sidewalks	Terraces Garden Pathways Pool Decks Pedestrian Malls Roof Gardens

### HOLLAND STONE

The renowned durability of interlocking pave stones, Holland Stone offers the old world charm of a simple paver shape. The rectangle shape can be installed in a number of fascinating patterns to produce simple or intricate designs.



Holland Stone is available in Standard, Parkway™ (non— chamfered edges), Provencal™ (smooth) and Heritage™ (tumbled) Series finishes.

Specifications:	
<b>Holland Stone — 2 3/8"</b>  Length: 7 13/16" Width: 3 7/8" Height: 2 3/8" Stones/Pallet: 480 stones	<b>Holland Stone — 3 1/8"</b>  Length: 7 13/16" Width: 3 7/8" Height: 3 1/8" Stones/Pallet: 384 stones
Applications:	
General Road Construction Parking Lots Gas Stations Driveways Patios Highway Ramps Highway Rest Areas Bridge Underpasses Entrance Areas Industrial Plants Industrial Yards Storage Depots	Loading Docks Flooring in Stables Sidewalks Terraces Garden Pathways Pool Decks Beach Promenades Pedestrian Malls Roof Gardens Street Medians

### PLAZA STONE

This timeless paving stone offers a rich embossed surface for multiple applications. It has an array of stone shape options and is available in many colors.



The Plaza Stone comes with a non-tumbled finish which is shown here but is also available in the Plaza Stone Heritage or tumbled finish which will add additional texture to the stones finish.

Specifications:	
<b>Large Rectangle — 2 3/8"</b>  Length: 8 3/16" Width: 5 7/16" Height: 2 3/8" Stones/Pallet: 300 stones	<b>Large Rectangle — 3 1/8"</b>  Length: 8 3/16" Width: 5 7/16" Height: 3 1/8" Stones/Pallet: 240 stones
<b>Plaza Stone — Square — 2 3/8"</b>  Length: 5 7/16" Width: 5 7/16" Height: 2 3/8" Stones/Pallet: 480 stones	<b>Plaza Stone — Square — 3 1/8"</b>  Length: 5 7/16" Width: 5 7/16" Height: 3 1/8" Stones/Pallet: 384 stones
<b>Giant — 2 3/8"</b>  Length: 10 15/16" Width: 8 3/16" Height: 2 3/8" Stones/Pallet: 160 stones	
Applications:	
General Road Construction Parking Lots Driveways Patios Bridge Underpasses Entrance Areas Flooring in Stables	Sidewalks Terraces Garden Pathways Pool Decks Pedestrian Malls Roof Gardens

## PAVERS (CONT.)

### VENETIAN STONE

The Venetian Stone™ product advent is the latest development in enhanced pavers. Its uniquely attractive cleft surface sets it apart from other pavement treatments.



This texture resembles old world charm and invokes a traditional convention. The Venetian Stone™ larger scales lends itself to stately residential settings and more expansive commercial applications. Its modular pattern equalizes the scale of any project and is fitting to most any architectural elements. The standard finish is shown but the tumbled finish or Heritage™ finish of the Venetian Stone also adds additional texture from our standard finish.

Specifications:	
<b>Giant — 2 3/8"</b>	<b>Large Rectangle — 2 3/8"</b>
Length: 11 3/4" Width: 11 3/4" Height: 2 3/8" Stones/Pallet: 120 stones	Length: 11 3/4" Width: 5 13/16" Height: 2 3/8" Stones/Pallet: 200 stones
<b>Rectangle — 2 3/8"</b>	
Length: 8 3/4" Width: 5 13/16" Height: 2 3/8" Stones/Pallet: 250 stones	
<b>Applications:</b>	
Driveways Patios Entrance Areas Sidewalks Terraces	Garden Pathways Pool Decks Pedestrian Malls Courtyards Plazas

### VINTAGE STONE

The tumbled Vintage Stone™ Giant Heritage™ product mixture delivers scale, color, and modular design options for a unique pavement expression. The truly random pattern of Vintage Stone™ expands an infinite number of impression possibilities making it one of the most popular design tools for pavements today.



The tumbled Heritage™ texture and the Giant Vintage Stone™ open up the scale for more elegant designs.

Specifications:	
<b>Vintage Stone™ Giant — 2 3/8"</b>	<b>Vintage™ Rectangle — 2 3/8"</b>
Length: 8 3/4" Width: 8 3/4" Height: 2 3/8" Stones/Pallet: 200 stones	Length: 8 3/4" Width: 5 13/16" Height: 2 3/8" Stones/Pallet: 250 stones
<b>Applications:</b>	
Driveways Patios Entrance Areas Sidewalks Terraces	Garden Pathways Pool Decks Pedestrian Malls Courtyards Plazas

## RETAINING WALLS



### ANCHOR HAMPTON STONE® BEVELED

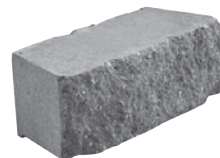
Anchor Hampton Stone® is perfect for wall projects up to 3' (900 mm) and higher with reinforcement. The Anchor Hampton Stone® features a natural appearance, is available in warm earth tones, and in a straight or bevel face.

Specifications:
Anchor Hampton Stone® Beveled
Length: 15 7/8" Width: 10" Height: 6" Stones/Pallet: 45 stones Face Ft./Pallet: 30 sq. ft.
Applications:
Terraced Gardens Landscaped Retaining Walls Geosynthetic Reinforced Tall Walls Erosion Control



### ANCHOR HIGHLAND STONE

The Anchor Highland Stone® with it's rough—hewn exterior and patented rear lip system is now available in both 6" and 3" heights. Use these stones alone or mixed together to create natural stone beauty without sacrificing stability.



The Anchor Highland Stone® is a integral part of the 3" or 6" Combo retaining wall system. It combines earthen tones, rich textures and varied contours to make it a reliable alternative to natural stone walls. The stone-like, multi-colored face contributes to the impression of a natural rock wall.

Specifications:	
<b>Anchor Highland Stone® Large</b>	<b>Anchor Highland Stone® Medium</b>
Depth: 12" Width: 18" Height: 6" Stones/Pallet: 45 stones Face Ft./Pallet: 33 sq. ft.	Depth: 12" Width: 12" Height: 6" Stones/Pallet: 48 stones Face Ft./Pallet: 24 sq. ft.
<b>Anchor Highland Stone® Small</b>	
Depth: 12" Width: 6" Height: 6" Stones/Pallet: 80 stones Face Ft./Pallet: 20 sq. ft.	
<b>Applications:</b>	
Terraced Gardens Landscaped Retaining Walls Geosynthetic Reinforced Tall Walls Erosion Control	



### ANCHOR HIGHLAND STONE FSW (FREE STANDING WALL)

The Anchor Highland Stone® Free Standing Wall is crafted with the same earthen colors and rough-hewn texture that made Anchor Highland Stone® a top choice for retaining walls.



It is offered in a straight or curved option. The Anchor Highland Stone® Free Standing Wall is our most versatile product yet.

Specifications:	
Anchor Highland 6" FSW Front	Anchor Highland 6" FSW Back
Depth: 9" Width: 6" Height: 6" Stones/Pallet: 100 stones Face Ft./Pallet: 32 sq. ft.	Depth: 9" Width: 4" Height: 6" Stones/Pallet: 100 stones Face Ft./Pallet: 32 sq. ft.
Anchor Highland 12" FSW	Anchor Highland 18" FSW Front
Depth: 9" Width: 12" Height: 6" Stones/Pallet: 60 stones Face Ft./Pallet: 30 sq. ft.	Depth: 9" Width: 18" Height: 6" Stones/Pallet: 40 stones Face Ft./Pallet: 30 sq. ft.
Anchor Highland 18" FSW Back	
Depth: 9" Width: 16" Height: 6" Stones/Pallet: 40 stones Face Ft./Pallet: 30 sq. ft.	
Applications:	
Seating Areas Borders	Pilasters Columns

### RUMBLED™ WALL

Capturing the old world charm, Rumbled™ Wall by Pavestone Company invites history and tradition into the modular wall product offering. Available in square and rectangle shapes, simplicity and functionalism are combined. Dry stacked or mortar set Rumbled™ Wall is easily constructed and visually distinguishes itself from other retaining structures.



Specifications:	
Rumbled Wall Square	Rumbled™ Wall Rectangle
Depth: 8" Width: 8" Height: 4" Stones/Pallet: 112 stones Face Ft./Pallet: 25 sq. ft.	Depth: 8" Width: 16" Height: 4" Stones/Pallet: 70 stones Face Ft./Pallet: 31 sq. ft.
Applications:	
Landscape Walls Grill Enclosures Privacy Walls Columns	Benches Planters Fountains



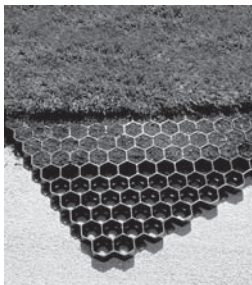
Horizon Distributors offers all of the commonly specified permeable paver systems including:



### NDS TUFFTRACK® GRASSROAD PAVERS®

**Permeable pavers designed for natural grass paved environments as an alternative solution to concrete, asphalt or similar surfaces.**

- ◆ Composed of a series of cells that connect to form a grid system which provides a stable and continuous surface that can withstand significant structural loads
- ◆ Designed to transfer vehicle load to the paver base while preventing soil compaction within paver cells
- ◆ Allow for healthy turf growth in areas of high traffic
- ◆ Aesthetically pleasing and environmentally friendly
- ◆ Can be used to achieve LEED® credits in multiple categories

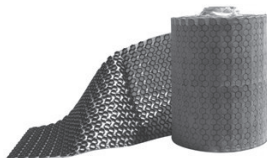


Product Code	Description
TT24	24" X 24" Tufftrack® Grassroad Pavers® Black 1/132 4.00 55GP

### NDS EZ ROLL™ GRASS PAVERS

**Plastic grass pavers that allow light to heavy vehicular traffic to drive over turf areas.**

- ◆ Prevents soil compaction, allowing healthy root growth where grass can thrive
- ◆ Used to stabilize soil and allow turf to grow in areas that would traditionally have impervious hardscaping installed
- ◆ Can be used as a BMP for NPDES Phase II compliance
- ◆ Pre-assembled rolls for easy installation



Product Code	Description
EZ4X24	EZ Roll™ Grass Pavers, 4' X 24' roll, 96 sq. ft. total
EZ4X150	EZ Roll™ Grass Pavers, 4' X 150' roll, 600 sq. ft. total

#### RECOMMENDED INSTALLATIONS FOR NDS GRASS PAVERS

<ul style="list-style-type: none"> <li>• Frequent usage</li> <li>• Heavy duty vehicles</li> <li>• Heavy usage where vehicle tires will be turned frequently</li> <li>• Can be used for light applications without a road base</li> </ul>	<ul style="list-style-type: none"> <li>• Emergency access roads that do not have frequent usage</li> <li>• OK for heavy vehicles</li> <li>• Must always be installed on a road base, even with light applications</li> </ul>
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### NDS EZ ROLL™ GRAVEL PAVERS

**A load transfer paving system designed to be placed directly on a clean stone or sandy gravel base.**

- ◆ Allows light to heavy vehicular traffic to travel over turf without damage
- ◆ Can be used for erosion control and help reduce or eliminate surface water runoff
- ◆ Include a fabric covering that is heat bonded to the bottom surface and allows water to drain freely into sub grade
- ◆ Packaged in rolls that can be rolled out over the base materials, allowing for easy installation and savings on labor costs



Product Code	Description
GP4X150	EZ Roll™ Gravel Pavers, 4' X 150' roll
GP4X150G	EZ Roll™ Gravel Pavers, 4' X 150' roll
GP4X150R	EZ Roll™ Gravel Pavers, 4' X 150' roll
GP4X150T	EZ Roll™ Gravel Pavers, 4' X 150' roll
GPCLIP	EZ Roll™ Gravel Paver Clips
GPSTAKE	EZ Roll™ Gravel Paver Stake

#### RECOMMENDED APPLICATIONS FOR NDS GRAVEL PAVERS

<ul style="list-style-type: none"> <li>• Golf cart paths</li> <li>• Residential driveways</li> <li>• Service roads</li> <li>• Parking lots</li> <li>• Jogging tracks</li> <li>• Overflow parking area</li> <li>• Bike paths</li> <li>• Roadway shoulders</li> <li>• RV and boat access/parking</li> <li>• Truck &amp; cart wash-down areas</li> </ul>	<ul style="list-style-type: none"> <li>• Fire lanes</li> <li>• Emergency vehicle access roads</li> <li>• Service vehicle utility roads</li> <li>• Truck maintenance and equipment yards</li> <li>• Construction entrance soil stabilization</li> </ul>	<ul style="list-style-type: none"> <li>• Erosion control on slopes</li> <li>• Erosion control in swales</li> </ul>
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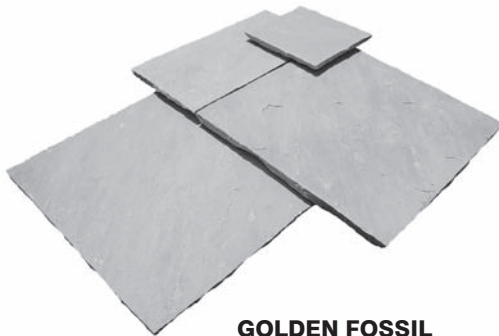


**This Classic series pre-cut calibrated flagstone is conveniently packaged to allow simple installation.**

- ◆ Flagstone can be thin-set over concrete or sand set on base.
- ◆ Less cutting leads to minimal waste
- ◆ Calibrated to a 1" thickness
- ◆ 1 pallet covers 205 Sq Ft



LAKELAND



GOLDEN FOSSIL



DRY HARVEST



HARVEST



PROMENADE

Product Code	Description
SPU-GF-CLAS-1	Golden Fossil Classic
SPU-SB-CLAS-1	Steel Blue Classic
SPU-HAR-CLAS-1	Harvest Classic
SPU-LAK-CLAS-1	Lakeland Classic
SPU-PRO-CLAS-1	Promenade Classic
SPU-CHA-CLAS-1	Charcoal Classic

Premium series flagstone is also available in a variety of colors and finishes together with our Heritage range of pavers and cobblestones. Ask your local Horizon dealer for details.

**Concrete bonding adhesive permanently bonds new concrete, plaster, and stucco to existing concrete, plaster and stucco. Eliminates the need for roughing the surface before the application. Exceeds the performance of ASTM C 1059 Type I and II.**



### Use for:

- ◆ Bonding New Concrete to old Concrete
- ◆ Bonding applications on concrete overlays 1" or thicker

### Waterproofing:

Hydraulic Water-Stop Cement is rapid setting, high strength repair material designed to plug leaks instantly in concrete and masonry. Sets in 3-5 minutes and can be used above and below grade. Designed to block running water or leaks in cracked masonry or concrete surfaces.



### Veneer Stone Mortar:

Veneer Stone Mortar is a Portland cement and hydrate lime based mortar designed for veneer applications and tuck pointing of manufactured and natural stone.



### Concrete Mix:

The original 4000 psi average compressive strength blend of Portland cement, sand, and gravel or stone. Just add water. Use for any general concrete work.



Product Code	Description
1150-47	Power-loc Joint Sand
1137-80	80# Veneerstone Mortar
1126-11	10# Hydraulic Water Stop
9902-10	10.1 Oz Construction Adhesive
9902-11	29 Oz Construction Adhesive
9902-01	1 Gal Concentrate Bonding Adhesive
8610-01	1 Gal Acrylic Fortifier
8670-06	1 Gal Oil Stain Remover
8675-33	1 Gal Efflorescence and Rust Remover
8650-05	5.5 Stucco Repair Tube
8640-15	5.5 Concrete Crack Seal
8601-14	Concrete and Asphalt Cleaner
9901-14	Quart Concrete Bonding Adhesive
8640-00	Quart Concrete Crack Seal
1100-10	10# Quikrete 4000 Concrete Mix
1102-10	10# Mortar Mix
1319-18	10 oz Stucco Color-Sage
1319-17	10 oz Stucco Color-Birch
1319-01	10 oz Stucco Color-Charcoal
1319-06	10 oz Stucco Color-Pewter
8730-02	10 oz Stucco Color-Mocha
1319-10	10 oz Stucco Color-Sandstone
1245-11	10# Anchoring Cement
1585-20	20# Fast Set Grout
8610-10	10 Oz Self Leveling Sealant
9800-01	1.5# Concrete Accelerator
8730-02	1 Gal Concrete Sealer Satin Finish
8800-05	1 Gal Water Proofing Sealer-Natural Look

**TURFGRO SELECT**

A 1.5" pile, polyethylene monofilament with thatch construction. Designed specifically for landscape application to enhance recovery.

**Recommended Use:** Light to moderate Traffic

**Colors:** Field Green/Olive Green or Field Green/ Lime Green

**Features:**

- ◆ Designed to truly replicate grass
- ◆ 1.5" blade height to achieve a natural appearance
- ◆ Uniquely formulated polyurethane coated backing provides greater seam strength and durability. Not water soluble
- ◆ Heat and frost resistant, UV stabilized
- ◆ No harmful environmental effects
- ◆ Non-flammable, ant-acid yarn resistant to chemical attack

Turf Characteristics	Manufactured Rolls	Particulate Infil
Pile/Face Weight: 50 oz.	Width: 15'	Type: Quality Infil
Pile Height: 1.5"	Length: 100 ft.	Weight: 1.5 – 2 lbs. per sq. ft.
Machine Gauge .5"	Ship Weight: 802 lbs.	Height: approx .5" to .75"
Thatch Color: Brown	Roll Diameter: 24"	Color: Green



Product Code	Description
TGP-53-1206	15' x 1' LT 2 Olive
TGP-53-1207	15' x 1' LT 2 Lime

**TURFGRO ELITE**

A 1.75" pile, polyethylene monofilament with thatch construction. Designed specifically for landscape application to enhance recovery.

**Features:**

- ◆ Designed to truly replicate grass
- ◆ 1.75" blade height to achieve a natural appearance
- ◆ Uniquely formulated polyurethane coated backing provides greater seam strength and durability. Not water soluble
- ◆ Heat and frost resistant, UV stabilized
- ◆ No harmful environmental effects
- ◆ Non-flammable, ant-acid yarn resistant to chemical attack

Turf Characteristics	Manufactured Rolls	Particulate Infil
Pile/Face Weight: 65 oz.	Width: 15'	Type: Quality Infil
Pile Height: 1.75"	Length: 100 ft.	Weight: 1 – 2 lbs. per sq. ft.
Machine Gauge .375"	Ship Weight: 959 lbs.	Height: approx .5" to .75"
Thatch Color: Brown	Roll Diameter: 24"	Color: Green

**Recommended Use:** Light to moderate Traffic

**Colors:** Field Green/Olive Green or Field Green/ Lime Green

Product Code	Description
TGP-53-1171	15' x 1' Linear Ft. Lime
TGP-53-1174	15' x 1' Linear Ft. Olive

**TURFGRO ULTIMATE**

A 1.875" pile, polyethylene monofilament with thatch construction. Designed specifically for landscape application to enhance recovery.

**Recommended Use:** Light to moderate Traffic

**Colors:** Field Green/Olive Green or Field Green/ Lime Green

**Features:**

- ◆ Designed to truly replicate grass
- ◆ 1.875" blade height to achieve a natural appearance
- ◆ Uniquely formulated polyurethane coated backing provides greater seam strength and durability. Not water soluble
- ◆ Heat and frost resistant, UV stabilized
- ◆ No harmful environmental effects
- ◆ Non-flammable, ant-acid yarn resistant to chemical attack

Turf Characteristics	Manufactured Rolls	Particulate Infil
Pile/Face Weight: 80 oz.	Width: 15'	Type: Quality Infil
Pile Height: 1.875"	Length: 100 ft.	Weight: 1 – 2 lbs. per sq. ft.
Machine Gauge .375"	Ship Weight: 1209 lbs.	Height: approx .5" to .75"
Thatch Color: Brown	Roll Diameter: 24"	Color: Green

**ARTIFICIAL GRASS IS GREAT FOR PETS!**

- ◆ Pet Hotels
- ◆ Dog Parks
- ◆ Pet Shows
- ◆ Dog Runs
- ◆ Backyards
- ◆ Animal Shelters
- ◆ Animal Hospitals
- ◆ Pet Training Areas
- ◆ And Much More!



This Product contains no detectable traces of lead or other RCRA hazardous waste heavy metals.

Product Code	Description
TGP-53-1169	15' x 1' Linear Ft. Lime
TGP-53-1173	15' x 1' Linear Ft. Olive



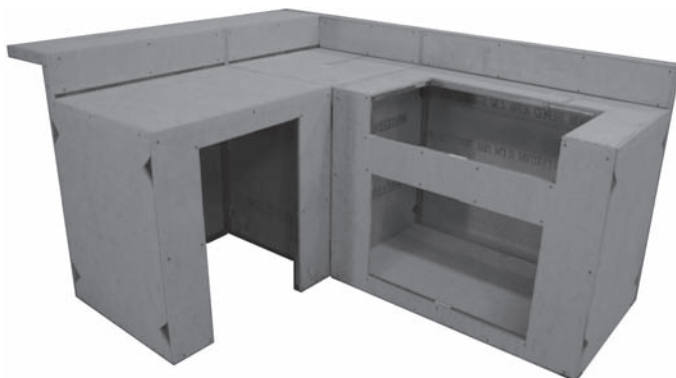
# rtf systems™

Ready-To-Finish Outdoor Kitchen Systems

## Ready-To-Finish Outdoor Kitchen System

The Ready-To-Finish Outdoor Kitchen System™ is the fastest, most efficient, and most profitable method for building outdoor kitchens. The modular cabinets will allow you to create completely customized designs and finish them with any veneer and countertop material you choose, and the adjustable frames will accommodate any grill and any accessory.

Because the cabinets assemble in a few hours, not days, building outdoor kitchens has never been easier. If you can operate a screw gun, then you can use the Ready-To-Finish Outdoor Kitchen System.™ **You will save time and make more money on every project!**



### FEATURES & BENEFITS

#### Lightweight

Compared to concrete block construction, our system is as light as a feather. The RTF Outdoor Kitchen System™ weighs about 50 lbs. per linear ft.

#### Customizable

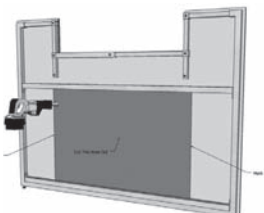
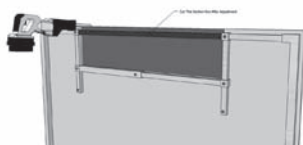
From the shape and size of the outdoor kitchen, to the veneer and countertops, even the appliances, The RTF Outdoor Kitchen System™ is designed to be completely customizable and universal - allowing you to design to your customers specifications.

#### Fast, Efficient, & Profitable

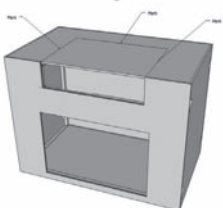
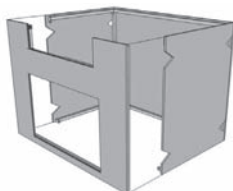
A screw gun, level, and a 4 in. grinder is all it takes to assemble and configure the RTF Outdoor Kitchen System™ cabinets. That means there's no mess to clean up, no lawn to repair, and no fence to put back up. It also means you'll make more money per job than with concrete block or any other system on the market!

### FAST, EASY ASSEMBLY

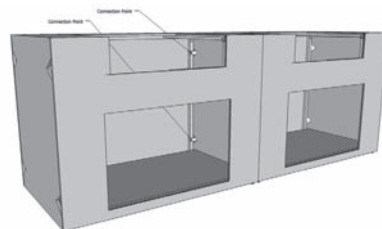
#### STEP 1 - Cutouts



#### STEP 2 - Assembly



#### STEP 3 - Configuration





Standard Cabinet Selections



RTF6-29-FC  
6 in. W x 36 in. H



RTF12-29-FC  
12 in. W x 36 in. H



RTF18-29-AC  
18 in. W x 36 in. H



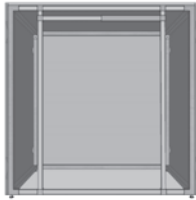
RTF24-29-AC  
24 in. W x 36 in. H



RTF30-29-AC  
30 in. W x 36 in. H



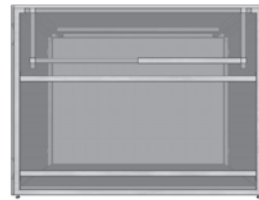
RTF36-29-AC  
36 in. W x 36 in. H



RTF36-29-RC  
36 in. W x 36 in. H



RTF42-29-AC  
42 in. W x 36 in. H



RTF48-29-AC  
48 in. W x 36 in. H



RTF54-29-AC  
54 in. W x 36 in. H



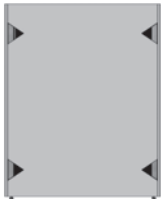
RTF60-29-AC  
60 in. W x 36 in. H



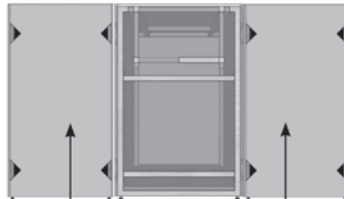
RTF66-29-AC  
66 in. W x 36 in. H



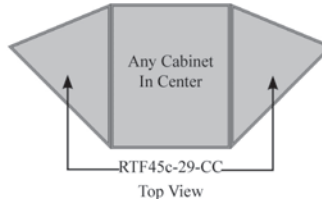
RTF72-29-AC  
72 in. W x 36 in. H



RTF90c-29-CC  
29 in. W x 36 in. H



RTF45c-29-CC  
(any cabinet) W x 36 in. H



RTF48-29-KC (Kamado Cabinet)  
48 in. W x 36 in. H



RTF36-29-PB (Power Burner Cabinet)  
36 in. W x 36 in. H



RTF(cabinet width)-bar or backsplash  
(cabinet width) in. W x 6 in. H



(Side View) Bar  
14 in. D (12 in. Overhang)



(Side View) Backsplash  
2 in. D

**rtf systems™**  
 Ready-To-Finish Outdoor Kitchen Systems

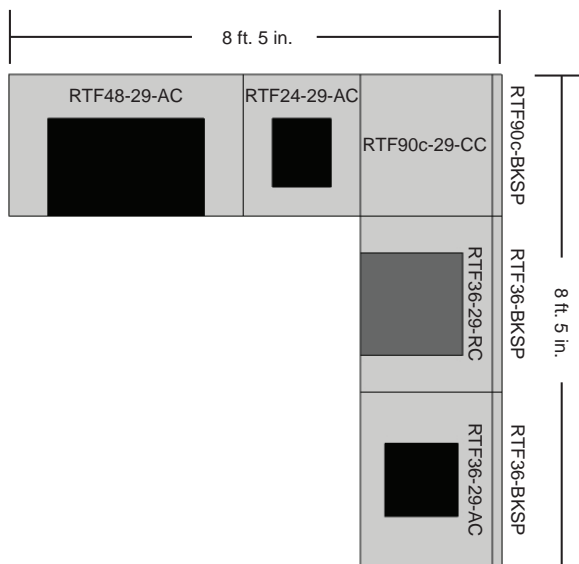
### “L” Shaped Kitchen With Bar

Custom designs using standard cabinets



rtf systems™ Cabinets:	
QTY:	Item:
1 ea.	RTF48-29-AC
1 ea.	RTF24-29-AC
1 ea.	RTF90c-29-CC
1 ea.	RTF36-29-RC
1 ea.	RTF36-29-AC
1 ea.	RTF90c-BKSP
2 ea.	RTF36-BKSP
4 ea.	RTF-Corbel

Finishing Materials:	
QTY:	Item:
120 sq. ft.	Veneer Material
44 sq. ft.	Countertop Material
13.5 sq. ft.	Bar-top Material

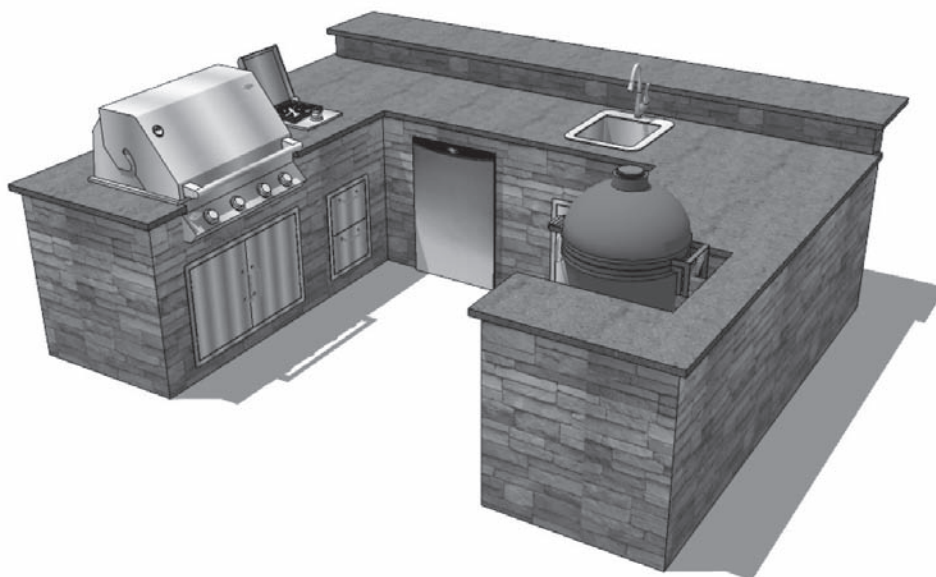


Finishing materials quantities are estimates and provided for illustration purposes only. The quantities listed will vary based on the type of material chosen and should be verified prior to ordering.

**rtf systems™**  
 Ready-To-Finish Outdoor Kitchen Systems

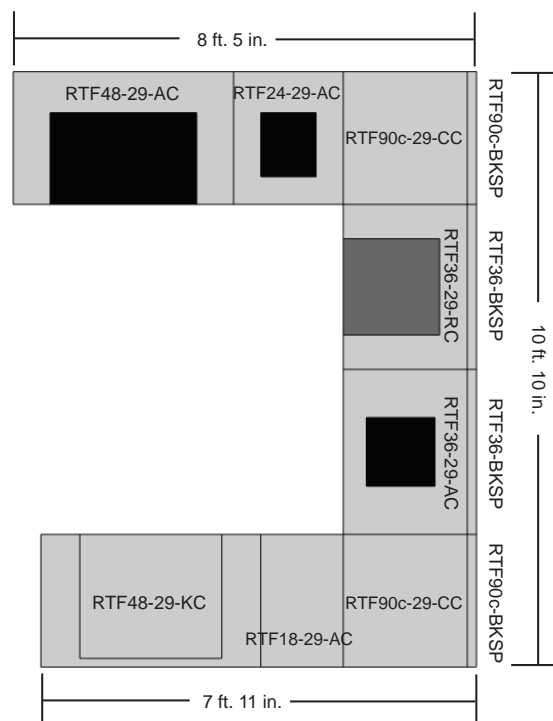
## “U” Shaped Kitchen With Bar

Custom designs using standard cabinets



rtf systems™ Cabinets:	
QTY:	Item:
1 ea.	RTF48-29-AC
1 ea.	RTF24-29-AC
2 ea.	RTF90c-29-CC
1 ea.	RTF36-29-RC
1 ea.	RTF36-29-AC
1 ea.	RTF18-29-AC
1 ea.	RTF48-29-KC
2 ea.	RTF90c-BKSP
2 ea.	RTF36-BKSP
6 ea.	RTF-Corbel

Finishing Materials:	
QTY:	Item:
168 sq. ft.	Veneer Material
68 sq. ft.	Countertop Material
18 sq. ft.	Bar-top Material



Finishing materials quantities are estimates and provided for illustration purposes only. The quantities listed will vary based on the type of material chosen and should be verified prior to ordering.

**rtf systems™**  
 Ready-To-Finish Outdoor Kitchen Systems

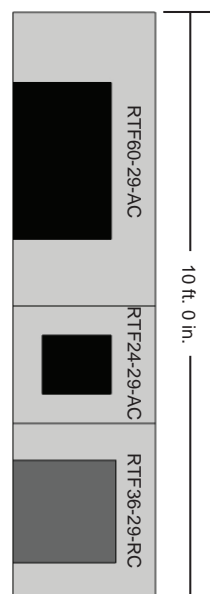
### Straight Kitchen

Custom designs using standard cabinets



rtf systems™ Cabinets:	
QTY:	Item:
1 ea.	RTF60-29-AC
1 ea.	RTF24-29-AC
1 ea.	RTF36-29-RC

Finishing Materials:	
QTY:	Item:
75 sq. ft.	Veneer Material
33 sq. ft.	Countertop Material



Finishing materials quantities are estimates and provided for illustration purposes only. The quantities listed will vary based on the type of material chosen and should be verified prior to ordering.

**rtf systems™**  
 Ready-To-Finish Outdoor Kitchen Systems

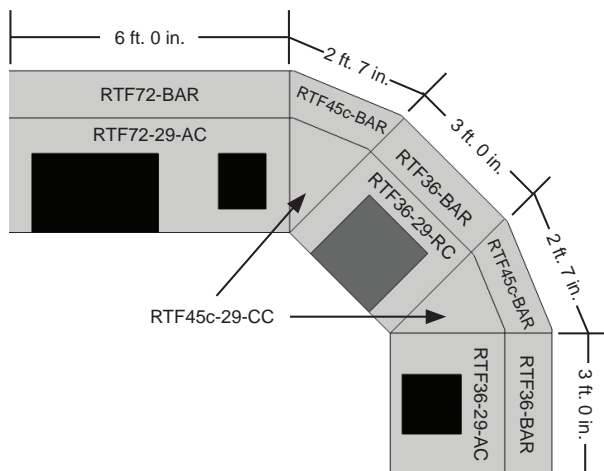
## “L” Shaped Kitchen With Bar and 45-degree Corner Cabinet

Custom designs using standard cabinets



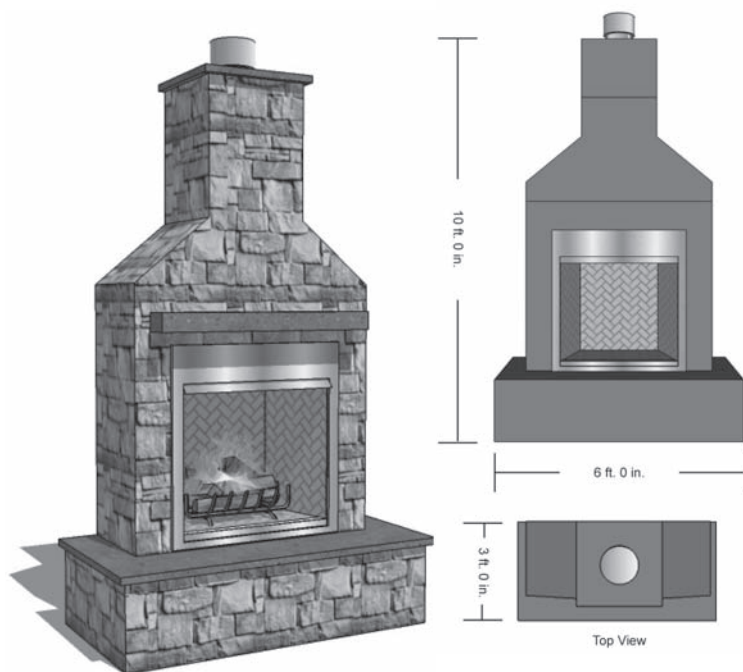
rtf systems™ Cabinets:	
QTY:	Item:
1 ea.	RTF72-29-AC
1 ea.	RTF45c-29-CC
1 ea.	RTF36-29-RC
1 ea.	RTF36-29-AC
1 ea.	RTF72-BAR
1 ea.	RTF45c-BAR
2 ea.	RTF36-BAR

Finishing Materials:	
QTY:	Item:
104 sq. ft.	Veneer Material
48 sq. ft.	Countertop Material
27 sq. ft.	Bar-top Material



Finishing materials quantities are estimates and provided for illustration purposes only. The quantities listed will vary based on the type of material chosen and should be verified prior to ordering.

### Traditional Fireplace


**rtf systems™ Fire Feature Kit:**

QTY:	Item:
1 ea.	RTF-FPLkit-(Size)

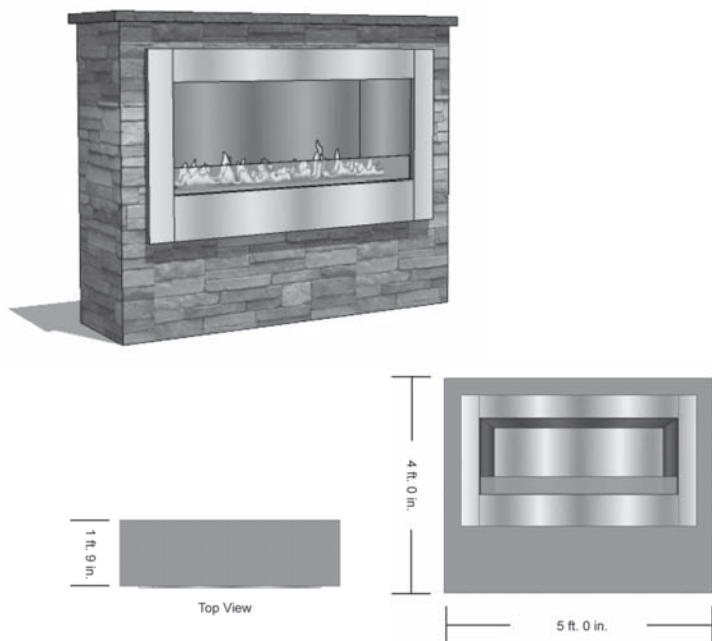
Kits available with 36", or 42" wide fireplace insert. Fireplace designed to burn wood, however, optional vented and vent-free gas logs and accessories available.

**Finishing Materials:**

QTY:	Item:
116 sq. ft.	Veneer Material
12 sq. ft.	Hearth & Cap Material
2.5 sq. ft.	Mantle Material

Finishing materials quantities are estimates and provided for illustration purposes only. The quantities listed will vary based on the type of material chosen and should be verified prior to ordering.

### Linear Fireplace


**rtf systems™ Fire Feature Kit:**

QTY:	Item:
1 ea.	RTF-FPLkit-Linear-(NG or LP)

Specify gas type in part number when ordering. See Through Conversion Kit also available. Requires 110v electrical service at unit.

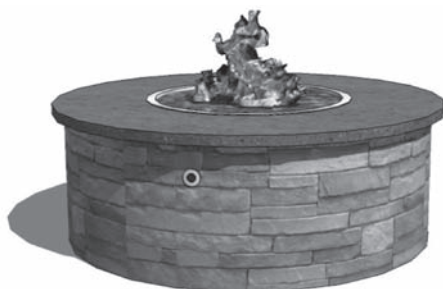
**Finishing Materials:**

QTY:	Item:
52 sq. ft.	Veneer Material
10 sq. ft.	Cap Material

Finishing materials quantities are estimates and provided for illustration purposes only. The quantities listed will vary based on the type of material chosen and should be verified prior to ordering.



## Round Fire Pits

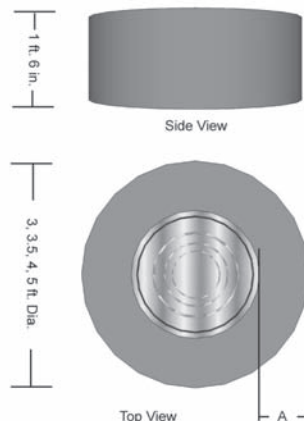


rtf systems™ Fire Feature Kit:

QTY:	Item:
1 ea.	RTF-FPkit-RND(Size)

Kits available as 36", 42", 48", and 60" diameter.  
Fire Pits designed as gas burning only (LP or NG).  
NEVER BURN WOOD in this fire pit. Fire glass and/or lava rock are the preferred burn media.

Finishing Materials:		
Diameter:	Veneer Mat.	Cap Mat.
36 in.	15 sq. ft.	10 sq. ft.
42 in.	17 sq. ft.	13 sq. ft.
48 in.	19 sq. ft.	16 sq. ft.
60 in.	24 sq. ft.	24 sq. ft.



Burner-To-Edge Dimension "A":	
Diameter:	Dimension A:
36 in.	8.5 in.
42 in.	8.5 in.
48 in.	11.5 in.
60 in.	17.5 in.



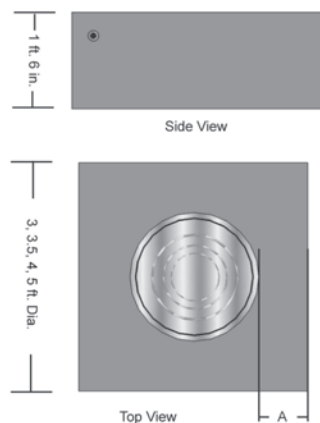
## Square Fire Pits

rtf systems™ Fire Feature Kit:

QTY:	Item:
1 ea.	RTF-FPkit-SQR(Size)

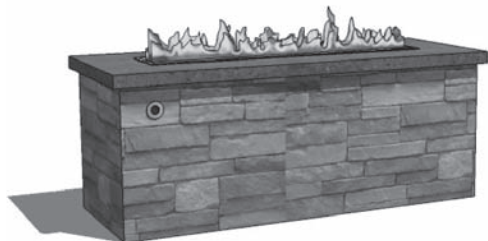
Kits available as 36", 42", 48", and 60" square. Fire Pits designed as gas burning only (LP or NG). NEVER BURN WOOD in this fire pit. Fire glass and/or lava rock are the preferred burn media.

Finishing Materials:		
Square:	Veneer Mat.	Cap Mat.
36 in.	18 sq. ft.	13 sq. ft.
42 in.	21 sq. ft.	16 sq. ft.
48 in.	24 sq. ft.	21 sq. ft.
60 in.	30 sq. ft.	31 sq. ft.



Burner-To-Edge Dimension "A":	
Square:	Dimension A:
36 in.	8.5 in.
42 in.	8.5 in.
48 in.	11.5 in.
60 in.	17.5 in.

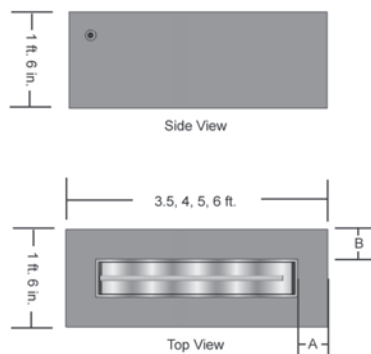
### Linear Fire Pits



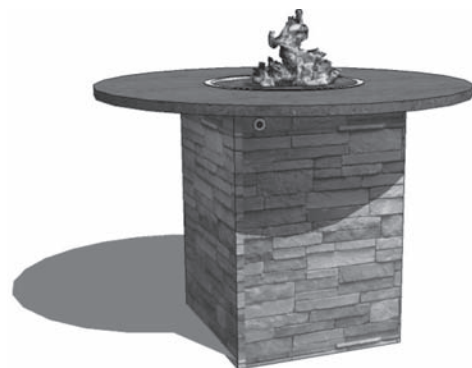
rtf systems™ Fire Feature Kit:	
QTY:	Item:
1 ea.	RTF-FPkit-RND(Size)

Kits available as 36", 42", 48", and 60" length. Fire Pits designed as gas burning only (LP or NG). NEVER BURN WOOD in this fire pit. Fire glass and/or lava rock are the preferred burn media.

Finishing Materials:		
Length:	Veneer Mat.	Cap Mat.
42 in.	16 sq. ft.	8 sq. ft.
48 in.	18 sq. ft.	9 sq. ft.
60 in.	23 sq. ft.	11 sq. ft.
72 in.	27 sq. ft.	13 sq. ft.



Burner-To-Edge Dimensions "A" & "B":		
Length:	Dimension A:	Dimension B:
42 in.	6 in.	6 in.
48 in.	6 in.	6 in.
60 in.	6 in.	6 in.
72 in.	6 in.	6 in.

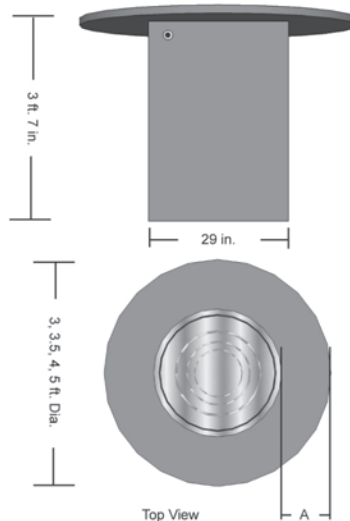


rtf systems™ Fire Feature Kit:	
QTY:	Item:
1 ea.	RTF-FPkit-BAR-(Size)

Kits available as 48", and 60" diameter. Fire Pits designed as gas burning only (LP or NG). NEVER BURN WOOD in this fire pit. Fire glass and/or lava rock are the preferred burn media. Base dimensions are 29" x 29".

Finishing Materials:		
Diameter:	Veneer Mat.	Cap Mat.
48 in.	35 sq. ft.	16 sq. ft.
60 in.	35 sq. ft.	24 sq. ft.

### Bar Table Fire Pits



Burner-To-Edge Dimension "A":	
Square:	Dimension A:
36 in.	8.5 in.
42 in.	8.5 in.
48 in.	11.5 in.
60 in.	17.5 in.

**Appliance Cabinets:**

Part Number:	Description	Weight (lbs.)	Width (in.)	Height (in.)	Depth (in.)
RTF6-29-FC	6" Wide x 29" Deep x 36" Tall Outdoor Kitchen Filler Cabinet	46	6	36	29
RTF12-29-FC	12" Wide x 29" Deep x 36" Tall Outdoor Kitchen Filler Cabinet	64	12	36	29
RTF18-29-AC	18" Wide x 29" Deep x 36" Tall Outdoor Kitchen Appliance Cabinet with Universal Slide-In Appliance Frame and Universal Storage Accessory Frame	86	18	36	29
RTF24-29-AC	24" Wide x 29" Deep x 36" Tall Outdoor Kitchen Appliance Cabinet with Universal Slide-In Appliance Frame and Universal Storage Accessory Frame	104	24	36	29
RTF30-29-AC	30" Wide x 29" Deep x 36" Tall Outdoor Kitchen Appliance Cabinet with Universal Slide-In Appliance Frame and Universal Storage Accessory Frame	108	30	36	29
RTF36-29-AC	36" Wide x 29" Deep x 36" Tall Outdoor Kitchen Appliance Cabinet with Universal Slide-In Appliance Frame and Universal Storage Accessory Frame	138	36	36	29
RTF36-29-RC	36" Wide x 29" Deep x 36" Tall Outdoor Kitchen Refrigeration Cabinet with Universal Refrigeration Appliance Frame	132	36	36	29
RTF36-29-PB	36" Wide x 29" Deep x 36" Tall Outdoor Kitchen Power Burner Cabinet with Universal Slide-In Appliance Frame and Universal Storage Accessory Frame	140	36	36	29
RTF42-29-AC	42" Wide x 29" Deep x 36" Tall Outdoor Kitchen Appliance Cabinet with Universal Slide-In Appliance Frame and Universal Storage Accessory Frame	160	42	36	29
RTF48-29-AC	48" Wide x 29" Deep x 36" Tall Outdoor Kitchen Appliance Cabinet with Universal Slide-In Appliance Frame and Universal Storage Accessory Frame	164	48	36	29
RTF48-29-KC	48" Wide x 29" Deep x 36" Tall Outdoor Kitchen Kamado Cabinet with Kamado Appliance Frame and Universal Storage Accessory Frame	154	48	36	29
RTF54-29-AC	54" Wide x 29" Deep x 36" Tall Outdoor Kitchen Appliance Cabinet with Universal Slide-In Appliance Frame and Universal Storage Accessory Frame	176	54	36	29
RTF60-29-AC	60" Wide x 29" Deep x 36" Tall Outdoor Kitchen Appliance Cabinet with Universal Slide-In Appliance Frame and Universal Storage Accessory Frame	202	60	36	29
RTF66-29-AC	66" Wide x 29" Deep x 36" Tall Outdoor Kitchen Appliance Cabinet with Universal Slide-In Appliance Frame and Universal Storage Accessory Frame	206	66	36	29
RTF72-29-AC	72" Wide x 29" Deep x 36" Tall Outdoor Kitchen Appliance Cabinet with Universal Slide-In Appliance Frame and Universal Storage Accessory Frame	224	72	36	29

**Corner Cabinets & End Caps:**

Part Number:	Description	Weight (lbs.)	Width (in.)	Height (in.)	Depth (in.)
RTF90c-29-CC	29" Wide x 29" Deep x 36" Tall Outdoor Kitchen 90 Degree Corner Cabinet	90	29	36	29
RTF90c-29-CC-RND	29" Wide x 29" Deep x 36" Tall Outdoor Kitchen 90 Degree Corner Cabinet With Outside Radius	110	29	36	29
RTF45c-29-CC	29" Deep x 36" Tall Outdoor Kitchen 45 Degree Cabinets	46	44	36	29
RTF-EndCap-RND	15" Wide x 29" Deep x 36" Tall Outdoor Kitchen Rounded End Cap	88	15	36	29

### Bar & Backsplash Accessories:

Part Number:	Description	Weight (lbs.)	Width (in.)	Height (in.)	Depth (in.)
RTF6-BAR	12" Overhang Raised Bar & Backsplash Designed To Attach To The Back Of 6" Wide Filler Cabinet	5	6	7	14
RTF12-BAR	12" Overhang Raised Bar & Backsplash Designed To Attach To The Back Of 12" Wide Filler Cabinet	10	12	7	14
RTF18-BAR	12" Overhang Raised Bar & Backsplash Designed To Attach To The Back Of 18" Wide Appliance Cabinet	15	18	7	14
RTF24-BAR	12" Overhang Raised Bar & Backsplash Designed To Attach To The Back Of 24" Wide Appliance Cabinet	20	24	7	14
RTF30-BAR	12" Overhang Raised Bar & Backsplash Designed To Attach To The Back Of 30" Wide Appliance Cabinet	25	30	7	14
RTF36-BAR	12" Overhang Raised Bar & Backsplash Designed To Attach To The Back Of 36" Wide Appliance or Refrigeration Cabinet	30	36	7	14
RTF42-BAR	12" Overhang Raised Bar & Backsplash Designed To Attach To The Back Of 42" Wide Appliance Cabinet	35	42	7	14
RTF48-BAR	12" Overhang Raised Bar & Backsplash Designed To Attach To The Back Of 48" Wide Appliance Cabinet	40	48	7	14
RTF54-BAR	12" Overhang Raised Bar & Backsplash Designed To Attach To The Back Of 54" Wide Appliance Cabinet	45	54	7	14
RTF60-BAR	12" Overhang Raised Bar & Backsplash Designed To Attach To The Back Of 60" Wide Appliance Cabinet	50	60	7	14
RTF66-BAR	12" Overhang Raised Bar & Backsplash Designed To Attach To The Back Of 66" Wide Appliance Cabinet	55	66	7	14
RTF72-BAR	12" Overhang Raised Bar & Backsplash Designed To Attach To The Back Of 72" Wide Appliance Cabinet	60	72	7	14
RTF90c-BAR	12" Overhang Raised Bar & Backsplash Designed To Attach To The Back Of One Side Of 90 Degree Corner Cabinet	25	29	7	14
RTF90c-DBL-BAR	12" Overhang Raised Bar & Backsplash Designed To Attach To The Back Of Two Sides Of 90 Degree Corner Cabinet	60	35	7	14
RTF90c-DBL-BAR/BKSP-R	12" Overhang Raised Bar & Backsplash Combo Designed To Attach To The Back Of Two Sides Of 90 Degree Corner Cabinet With Bar On Right Hand Side	44	35	7	14
RTF90c-DBL-BAR/BKSP-L	12" Overhang Raised Bar & Backsplash Combo Designed To Attach To The Back Of Two Sides Of 90 Degree Corner Cabinet With Bar On Left Hand Side	44	35	7	14
RTF45c-BAR	12" Overhang Raised Bar & Backsplash Designed To Attach To The Back Of 45 Degree Corner Cabinet	40	48	7	14

Part Number:	Description	Weight (lbs.)	Width (in.)	Height (in.)	Depth (in.)
RTF6-BKSP	7" Tall Raised Backsplash Designed To Attach To The Back Of 6" Wide Filler Cabinet	2	6	7	2
RTF12-BKSP	7" Tall Raised Backsplash Designed To Attach To The Back Of 12" Wide Filler Cabinet	4	12	7	2
RTF18-BKSP	7" Tall Raised Backsplash Designed To Attach To The Back Of 18" Wide Appliance Cabinet	6	18	7	2
RTF24-BKSP	7" Tall Raised Backsplash Designed To Attach To The Back Of 24" Wide Appliance Cabinet	8	24	7	2
RTF30-BKSP	7" Tall Raised Backsplash Designed To Attach To The Back Of 30" Wide Appliance Cabinet	10	30	7	2
RTF36-BKSP	7" Tall Raised Backsplash Designed To Attach To The Back Of 36" Wide Appliance or Refrigeration Cabinet	12	36	7	2
RTF42-BKSP	7" Tall Raised Backsplash Designed To Attach To The Back Of 42" Wide Appliance Cabinet	14	42	7	2
RTF48-BKSP	7" Tall Raised Backsplash Designed To Attach To The Back Of 48" Wide Appliance Cabinet	16	48	7	2
RTF54-BKSP	7" Tall Raised Backsplash Designed To Attach To The Back Of 54" Wide Appliance Cabinet	18	54	7	2
RTF60-BKSP	7" Tall Raised Backsplash Designed To Attach To The Back Of 60" Wide Appliance Cabinet	20	60	7	2
RTF66-BKSP	7" Tall Raised Backsplash Designed To Attach To The Back Of 66" Wide Appliance Cabinet	22	66	7	2
RTF72-BKSP	7" Tall Raised Backsplash Designed To Attach To The Back Of 72" Wide Appliance Cabinet	24	72	7	2
RTF90c-BKSP	7" Tall Raised Backsplash Designed To Attach To The Back Of One Side Of 90 Degree Corner Cabinet	10	29	7	2
RTF90c-DBL-BKSP	7" Tall Raised Backsplash Designed To Attach To The Back Of Two Sides Of 90 Degree Corner Cabinet	20	29	7	2
RTF45c-BKSP	7" Tall Raised Backsplash Designed To Attach To The Back Of 45 Degree Corner Cabinet	16	48	7	2

**STEER****3-burner stainless steel built-in gas barbecue grill.****Standard Features:**

- ◆ 30,000 BTU's
- ◆ Warming rack
- ◆ Grease tray
- ◆ Built in trim kit
- ◆ Smoker box
- ◆ Stainless steel burners
- ◆ Dual lined hood
- ◆ Zinc knobs



Product Code	Description
BU06328	25" 3-Burner Stainless Steel Built-in Grill, Propane Gas
BU06329	25" 3-Burner Stainless Steel Built-in Grill, Natural Gas

**OUTLAW****4-burner stainless steel built-in gas barbecue grill.****Standard Features:**

- ◆ 60,000 BTU's
- ◆ 304 stainless steel construction
- ◆ 4 porcelain coated bar burners
- ◆ Single piece dual lined hood
- ◆ Piezo igniters/zinc knobs
- ◆ Solid stainless steel grates
- ◆ Heavy duty thermometer
- ◆ Warming rack 210 sq. in.
- ◆ Cooking surface 810 sq. in.
- ◆ CSA approved



Product Code	Description
26038 LP	4-Burner 30" Stainless Steel Built-in Gas Barbecue Grill, Propane Gas
26039 NP	4-Burner 30" Stainless Steel Built-in Gas Barbecue Grill, Natural Gas

**ANGUS****4-burner stainless steel built-in gas barbecue grill with infrared back burner****Standard Features:**

- ◆ 16 gauge — 304 stainless steel
- ◆ 75,000 BTU's total cooking power
- ◆ Infrared burner 15,000 BTU's
- ◆ Five (5) bull sure-lite gas valves
- ◆ Five (5) Piezo igniters on each valve
- ◆ Heavy-duty thermometer
- ◆ Dual-lined roll top hood with seamless welded edges
- ◆ Stainless steel cooking grates 600 sq. in. cooking area
- ◆ Stainless steel warming rack 210 sq. in.
- ◆ Stainless steel rotisserie motor
- ◆ Chrome plated spit & rod
- ◆ Stainless steel full length handle
- ◆ Hose & regulator included with lp models
- ◆ N.G. regulator included with ng models
- ◆ CSA, SE, CE, approved

Product Code	Description
47628 LP	30 1/4" 4-Burner Stainless Steel Built-in Grill with Rotisserie & Lights, Propane Gas
47629 NP	30 1/4" 4-Burner Stainless Steel Built-in Grill with Rotisserie & Lights, Natural Gas



### **BRAHMA**

**5-burner stainless steel built in gas barbecue grill with infrared back burner**

#### **Standard Features:**

- ◆ 16 gauge — 304 stainless steel
- ◆ Five cast stainless steel bar burners
- ◆ Infrared burner 15,000 BTU'S
- ◆ Six (6) bull sure-lite gas valves
- ◆ Six (6) Piezo igniters on each valve
- ◆ Heavy-duty thermometer
- ◆ Dual-lined roll top hood with seamless welded edges
- ◆ Stainless steel cooking grates 760 sq. in. cooking area
- ◆ Stainless steel warming rack 266 sq. in.
- ◆ Stainless steel full size drip tray
- ◆ Stainless steel rotisserie motor
- ◆ Chrome plated spit & rod
- ◆ Stainless steel full length handle
- ◆ Hose & regulator included with lp models
- ◆ N.G. regulator included with ng models
- ◆ CSA, SA, CE approved

Product Code	Description
575686 LP	38 1/4" 5-Burner Stainless Steel Built-in Grill with Rotisserie & Lights, Propane Gas
575686 NP	38 1/4" 5-Burner Stainless Steel Built-in Grill with Rotisserie & Lights, Natural Gas



### **7 BURNER PREMIUM GRILL**

**4-burner stainless steel built-in gas barbecue grill.**

#### **Standard Features:**

- ◆ 105,000 BTU'S
- ◆ Smoker box
- ◆ Double sideburner 30,000 BTU'S
- ◆ Full length handle
- ◆ Warming rack
- ◆ Piezo igniters on each valve
- ◆ 800 sq. inches of cooking surface
- ◆ Four cast stainless burners
- ◆ Rotisserie included
- ◆ Heavy duty thermometer
- ◆ Dual lined roll top hood
- ◆ CSA, SA, CE approved

Product Code	Description
BU18038	46 3/4" 4-Burner Stainless Steel Built-in Grill with Rotisserie, Lights & Double Sideburner, Propane Gas
BU18039	Propane gas — 46 3/4" 4-Burner Stainless Steel Built-in Grill with Rotisserie, Lights & Double Sideburner, Natural Gas

## ACCESSORIES - DOORS



**Allows for entry into an island for the propane tank, gas lines, or whatever else you'd like to store inside your island.**

Dimensions: 25 1/2" W X 18 1/4" H X 1 1/2" D

Cut Out Dimensions:

23" W X 15 3/4" H X 1 1/2" D



Product Code	Description
89970	Stainless Steel Single Door



Dimensions: 33" W X 22" H X 2" D

Cut Out Dimensions: 31" W X 19 3/4" H X 2 1/4" D

Product Code	Description
33568	Stainless Steel Double Door

## ACCESSORIES - COMBOS



**Adds a space saving design feature to any island.**

Dimensions: 33" W X 22" H X 20 1/2" D

Cut Out Dimensions: 31" W X 19 1/2" H X 20 3/4" D

Product Code	Description
25876	Stainless Steel Door/Drawer Combo



Dimensions: 33" W X 22" H X 16 1/4" D

Cut Out Dimensions: 31" W X 19 3/4" H X 16 3/8" D

Product Code	Description
65784	Stainless Steel Door/Propane Drawer Combo

## ACCESSORIES - DRAWERS

Cut Out Dimensions: 23 1/4" W X 4" L x 20 3/4" D

Product Code	Description
09970	Stainless Steel Single Drawer

Cut Out Dimensions: 12 3/4" W X 19 1/2" L X 20 3/4" D

Product Code	Description
56985	Stainless Steel Double Drawer

Cut Out Dimensions: 28 1/2" W X 10" L X 20 1/4" D

Product Code	Description
85747	Stainless Steel Warming Drawer



# Outdoor Living

## ACCESSORIES - REFRIGERATORS



- ◆ Space saving flush back design
- ◆ Stainless steel door panel
- ◆ Reversible door-left or right swing
- ◆ Full range temperature control
- ◆ Beverage can dispenser (Holds up to five 12 oz. cans)



Cut Out Dimensions: 21.5" W X 33" H X 20.75" D

Product Code	Description
11001	Stainless Steel Refrigerator

Cut Out Dimensions: 21.25" W x 34.5" L X 2" D

Product Code	Description
99935	Stainless Steel Refrigerator Frame

## ACCESSORIES - SINKS

Dimensions: 15" L x 15" W

Cut Out Dimensions: 14 1/4" L X 14.25" W X 7 5/8" D



Product Code	Description
12389	Stainless Steel Sink

## ACCESSORIES - ICE CHEST

Dimensions:

16 3/4" W X 21 1/2" D

Cut Out Dimensions:

14 1/4" W X 20 1/2" L X 15 1/2" D



Product Code	Description
00002	Stainless Steel Ice Chest

## ACCESSORIES - BAR CENTERS



Dimensions:

18" W X 10 1/2" H X 25 3/4" D

Cut Out Dimensions:

17 1/8" W x 9 3/4" H x 22 1/4" D



Dimensions: 30" W X 10 1/2" H X 25 3/4" D

Cut Out Dimensions: 29" W X 9 3/4" H X 22 3/4" D

Product Code	Description
11001	Stainless Steel Refrigerator

## ACCESSORIES - SIDE BURNERS

### Stainless Steel Double Side Burner

- ◆ 30,000 BTU'S
- ◆ Piezo ignition
- ◆ Cast brass burner
- ◆ Porcelain cast iron grates



Cut Out Dimensions: 22 3/8" W X 17 1/8" L X 2 1/2" D

Product Code	Description
60088 LP	Propane – Stainless Steel Double Side Burner
60099 NG	Natural Gas – Stainless Steel Double Side Burner

### Slide -in Double Side Burner, Front & Back

- ◆ 304 stainless steel
- ◆ 304 stainless steel removable cover
- ◆ Solid brass burners, 11,000 BTU'S each
- ◆ Solid stainless steel grates and Piezo igniter system



Cut Out Dimensions: 12 1/8" L X 20 1/2" W X 10" D

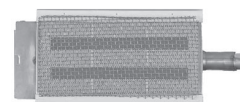
Product Code	Description
30008 LP	Propane – Slide in Double Side Burner, Front and Back
30009 NG	Natural Gas – Slide in Double Side Burner, Front and Back

## ACCESSORIES - INFRARED SEARING BURNER

Dimensions: 26 1/2" W X 20 1/2" D

Cut Out Dimensions:

22 3/8" W X 2 1/2" H X 17 1/8" D



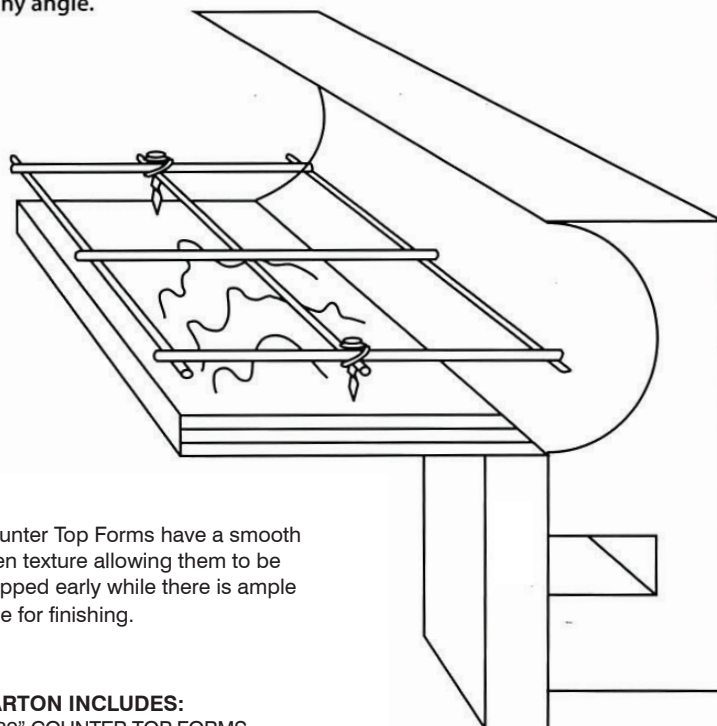
Product Code	Description
20505	Angus/Brahma
20506	Lonestar



## POURED IN PLACE COUNTER TOP FORMS

Stegmeier's Counter Top Forms are the answer to installing the popular counters found in many contemporary kitchens, baths, and commercial sites such as restaurants and bars. These short 2" thick profiles are the perfect height for most applications and can be shaped or mitered to any angle.

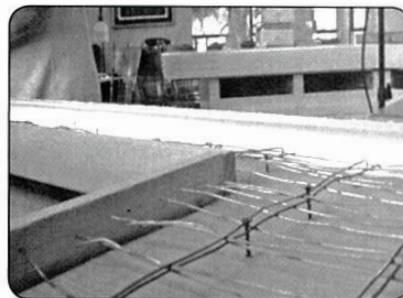
any angle.



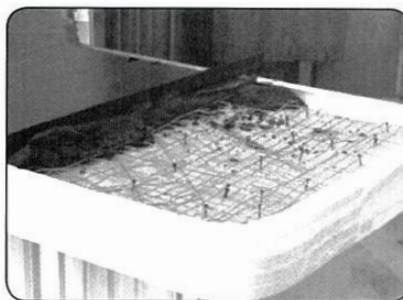
Counter Top Forms have a smooth even texture allowing them to be stripped early while there is ample time for finishing.

### CARTON INCLUDES:

- 32" COUNTER TOP FORMS
- 1 COUNTER TOP SIDE KIT  
(35 TIE WIRES, 25 WOOD SCREWS, 1 FOAM PROFILE EDGING TOOL)
- 1 ROLL OF BENDING TAPE



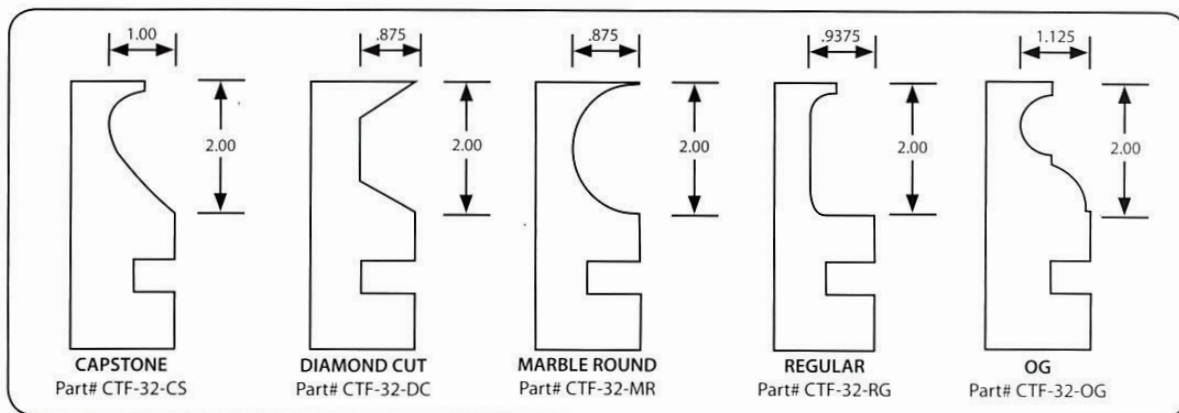
SETUP



POUR



FINISH



If 3 1/2" thick counters are desired see Pool Forms.

# Landscape

**Fertilizers**

**Herbicides**

**Insecticides**

**Rodenticides &  
Repellants**

**Fungicides**

**Amendments & Specialty  
Chemicals**

**Tank Additives**

**Safety Products**

**Spreaders & Sprayers**

**Seeds & Sod**

**Erosion Control**

**Landscape Accessories**

**Tools**

**Reference**



Formulated for the specific needs of your region –  
**your turf, your soil & your weather.**

#### TurfGro Fertilizer Program

- Easy to follow program for green, healthy turf all year
- Specialty fertilizers such as high iron, slow release nitrogen, and weed & feed
- Incorporate technologies designed to improve plant health and appearance

Spring, Summer, Fall  
& Winter blends



Slow Release  
(blue label)



Traditional  
(green label)



Organic/Natural  
(brown label)



Combination/Pest Control  
(yellow label)



Ornamental Plants  
(pink label)

TurfGro Professional Fertilizers  
powered by



# GRANULAR FERTILIZER – SLOW RELEASE



TurfGro Professional Fertilizers are formulated for your region – your soil, turf and plant needs – and are available exclusively at Horizon! There are 5 types of TurfGro Fertilizer to suit your situation – Look for the **BLUE labels** for **Slow Release Turf formulas**, which offer the most efficient feeding for lawns and increase the time between applications, saving you labor and maintenance costs.

## **TURFGRO 15-5-10 “TEXAS STANDARD PLUS”**

- ◆ The #1 turf analysis in Texas, plus non-staining Iron and XCU Slow Release Nitrogen
- ◆ Provides lawns with deep green color, without excessive shoot growth
- ◆ Great for Iron-loving bermudagrass and St. Augustine grass
- ◆ A 3-1-2 ratio of Nitrogen, Phosphorus and Potassium
- ◆ Performs consistently on all varieties of turfgrass, and under all but the most severe climate conditions
- ◆ 50 lb. bag
- ◆ Available in TX



## **TURFGRO 16-0-8 FLORIDA TURF**

- ◆ The university recommended analysis for Florida lawns
- ◆ 50% slowly available Nitrogen from XCU polymer-coated-sulfur-coated urea provides uniform growth and sustained feeding
- ◆ Phosphorus-free formulation poses a lower risk of nutrient runoff to water sources and does not encourage weed germination
- ◆ High iron for additional quick color without flush growth
- ◆ 50 lb. bag
- ◆ Available in FL



## **TURFGRO 18-0-0 WITH STABILIZED NITROGEN**

- ◆ **All Nitrogen fertilizer with 50% slowly available from Uflexx stabilized nitrogen**
- ◆ Dual-inhibitor technology protects against nitrogen loss due to volatilization, leaching and denitrification, keeping nutrients readily available for plant uptake and sustaining a healthy green appearance between feedings
- ◆ 50 lb. bag
- ◆ Available in TX



## **TURFGRO 20-0-4 WITH UFLEXX**

- ◆ **50% slowly available fertilizer from Uflexx stabilized nitrogen**
- ◆ Dual-inhibitor technology protects against nitrogen loss due to volatilization, leaching and denitrification, keeping nutrients readily available for plant uptake and sustaining a healthy green appearance between feedings
- ◆ 50 lb. bag
- ◆ Available in CO



## **TURFGRO 21-0-15 WINTERIZER**

- ◆ Premium fertilizer for fall application on cool season turf
- ◆ 50% slow release Nitrogen (XRT & XCU) provides sustained feeding from fall through winter, with emphasis on root—not shoot—development
- ◆ High potassium strengthens plant structure and builds winter stress resistance
- ◆ **Minimizes need for mid-winter fertilization and aids in early spring greenup**
- ◆ **New Wolf Trax Iron makes grass greener, lasts longer than other iron sources with little to no stain potential**
- ◆ Phosphorus-free formulation meets recently passed legislation restricting phosphorus in lawn fertilizer
- ◆ 50 lb. bag
- ◆ Available in ID, OR, WA



## **TURFGRO 21-2-15 WINTERIZER**

- ◆ Premium fertilizer for fall application on cool season turf
- ◆ 50% slow release Nitrogen (XRT & XCU) provides sustained feeding from fall through winter, with emphasis on root—not shoot—development
- ◆ High potassium strengthens plant structure and builds winter stress resistance
- ◆ **Minimizes need for mid-winter fertilization and aids in early spring greenup**
- ◆ **New Wolf Trax Iron makes grass greener, lasts longer than other iron sources with little to no stain potential**
- ◆ 50 lb. bag
- ◆ Available in CA



**LOOK FOR THE GREEN SYMBOL (♣)  
THROUGH-OUT THE SOURCE BOOK TO EASILY  
IDENTIFY GREEN PRODUCTS**



### **TURFGRO 21-2-15 WINTERIZER**

- ◆ Premium fertilizer for fall application on cool season turf
- ◆ 50% slow release Nitrogen (Nutralene & XCU) provides sustained feeding from fall through winter, with emphasis on root—not shoot—development
- ◆ High potassium strengthens plant structure and builds winter stress resistance
- ◆ **Minimizes need for mid-winter fertilization and aids in early spring greenup**
- ◆ 2% Iron for deep green color
- ◆ 50. lb bag
- ◆ Available in CO



### **TURFGRO 21-2-16 EXTENDED FEED**

- ◆ 70% slow release Nitrogen from XCU polymer-sulfur-coated urea provides 12+ weeks of feeding
- ◆ Controlled release Nitrogen reduces the number of applications required, lowering labor and product costs
- ◆ 50. lb bag
- ◆ Available in ID, WA



### **TURFGRO 22-8-15 WINTERIZER**

- ◆ Premium fertilizer for fall application
- ◆ 63% slow release Nitrogen from XCU polymer-sulfur-coated urea provides sustained feeding from fall through winter, with emphasis on root—not shoot—development
- ◆ High potassium strengthens plant structure and builds winter stress resistance
- ◆ **Minimizes need for mid-winter fertilization and aids in early spring green-up**
- ◆ 50. lb bag
- ◆ Available in TX



**SOIL SAMPLES ARE THE MOST ACCURATE WAY TO ENSURE YOUR TURF GETS THE NUTRIENTS AND MICRONUTRIENTS IT NEEDS. BRING YOUR SOIL SAMPLE TO HORIZON FOR PROCESSING BY LEADING SOIL LABORATORIES!**

### **TURFGRO 23-0-10 SPRING AND SUMMER**

- ◆ 50% slow release Nitrogen from XCU polymer-sulfur-coated urea provides 10+ weeks of feeding and reduces the number of applications required, lowering labor and product costs.
- ◆ **New Wolf Trax Iron makes grass greener, lasts longer than other iron sources, with little to no stain potential**
- ◆ Phosphorus-free formulation meets recently passed legislation restricting phosphorus in lawn fertilizer
- ◆ 50. lb bag
- ◆ Available in OR, WA



### **TURFGRO 24-0-9 SUMMER**

- ◆ 50% slow release Nitrogen – half from XCU polymer-sulfur-coated urea and half from Nutralene
- ◆ Nitrogen is released by a combination of temperature, moisture and microbial activity – promoting slow, healthy turfgrass growth
- ◆ **Nutralene provides lengthened residual, even in hot weather or heavy rains**
- ◆ **New Wolf Trax Iron makes grass greener, lasts longer than other iron sources, with little to no stain potential**
- ◆ Phosphorus-free formulation meets recently passed legislation restricting phosphorus in lawn fertilizer
- ◆ 50. lb bag
- ◆ Available in ID, OR, WA



### **TURFGRO 24-0-11 PREMIUM TURF**

- ◆ 50% slow release Nitrogen from XCU polymer-sulfur-coated urea provides uniform growth and sustained feeding
- ◆ Controlled release Nitrogen reduces the number of applications required, lowering labor and product costs
- ◆ Phosphorus-free formulation poses a lower risk of nutrient runoff to water sources and does not encourage weed germination
- ◆ 50. lb bag
- ◆ Available in FL, MD, VA



### **TURFGRO 24-2-9 SUMMER**

- ◆ A premium turf fertilizer with 50% slow release Nitrogen (25% Methylene Urea, 25% PCSCU) that provides a longer nutrient release during warmer weather
- ◆ Nitrogen is released by a combination of temperature, moisture, and microbial activity — Promoting slow, healthy turfgrass growth
- ◆ Slower growth results in fewer clippings, which means reduced labor and wear on equipment
- ◆ Contains 4% Iron for a deep green look
- ◆ 50. lb bag
- ◆ Available in CO



### TURFGRO



#### TURFGRO 24-3-12 EXTENDED FEED

- ◆ 70% slow release Nitrogen from XRT provides gradual release over 90 days, meaning enhanced nutrient uptake, uniform color & growth, and minimal nitrogen loss to leaching & volatilization
- ◆ Increases your bottom line – Efficient feeding means fewer applications, lower total product cost, and reduced labor in application, mowing & cleanup
- ◆ Durable XRT coating is virtually unaffected by transport and handling
- ◆ 5% water insoluble Nitrogen from SoundGro natural biosolids provides food source for soil microbes
- ◆ New Wolf Trax Iron makes grass greener and lasts longer than other iron sources, with little to no stain potential
- ◆ 50. lb bag
- ◆ Available in CA



#### TURFGRO 24-5-11 SPRING AND SUMMER

- ◆ 50% slow release Nitrogen from XCU polymer-sulfur-coated urea provides 10-12 weeks of feeding
- ◆ New Wolf Trax Iron makes grass greener, lasts longer than other iron sources, posing little to no stain potential
- ◆ Controlled release Nitrogen reduces the number of applications required, lowering labor and product costs
- ◆ 50. lb bag
- ◆ Available in AZ, CA, NV



#### TURFGRO 28-0-0 XCU + IRON

- ◆ 50% slow release Nitrogen from XCU polymer-sulfur-coated urea provides 10-12 weeks of feeding
- ◆ Controlled release Nitrogen reduces the number of applications required, lowering labor and product costs
- ◆ 50. lb bag
- ◆ Available in TX



#### TURFGRO 28-0-10 SPRING AND SUMMER PHOS-FREE

- ◆ 50% slow release Nitrogen from PCSCU for longer Nitrogen release through warmer weather
- ◆ Promotes slow, healthy turfgrass growth vs. a "feast and famine" cycle
- ◆ Slower growth results in fewer clippings, which means reduced labor and wear on equipment
- ◆ 2% non-staining Iron virtually eliminates damage to sidewalks and gives turf deep green color
- ◆ 50 lb. bag
- ◆ Available in TX



#### TURFGRO 28-3-10 SPRING & SUMMER

- ◆ Balanced, premium lawn fertilizer with 50% slowly available from Uflexx stabilized nitrogen
- ◆ Dual-inhibitor technology protects against nitrogen loss due to volatilization, leaching and denitrification, keeping nutrients readily available for plant uptake and sustaining a healthy green appearance between feedings
- ◆ 2% non-staining Iron virtually eliminates damage to sidewalks and gives turf deep green color
- ◆ 50. lb bag
- ◆ Available in TX



#### TURFGRO 30-3-6 HIGH NITROGEN

- ◆ A premium turf fertilizer with 50% slow release Nitrogen from XCU
- ◆ High Nitrogen in controlled release form reduces the number of applications and rates required, lowering product and labor costs
- ◆ 50 lb. bag
- ◆ Available in ID



#### TURFGRO 32-0-8 UFLEXX/UMAXX

- ◆ 80% slowly available fertilizer from Uflexx AND Umaxx stabilized nitrogen provides 2 levels of controlled release
- ◆ Dual-inhibitor technology protects against nitrogen loss due to volatilization, leaching and denitrification, keeping nutrients readily available for plant uptake and sustaining a healthy green appearance between feedings
- ◆ 50. lb bag
- ◆ Available in CO



**SPREAD IT & FORGET IT**  
for greener turf all season long

#### SIFI 35-0-10 NORTHERN BLEND

- ◆ An advanced, high-efficiency fertilizer that's formulated to give turf consistent feeding for 6 months or more with just 1 application – saving you time, labor and money, while reducing environmental impact
- ◆ Combines 4 variations of Duration controlled-release Nitrogen, which release at various temperatures
- ◆ Northern Blend contains a higher percentage of Duration that will release in cooler temperatures
- ◆ No need to worry about growth flushes or nitrogen runoff from excessive moisture
- ◆ Coating is very durable, so granules stand up to rough handling
- ◆ 50. lb bag



**SPREAD IT & FORGET IT**  
for greener turf all season long

**SIFI 37-0-8 SOUTHERN BLEND** ✦

- ◆ An advanced, high-efficiency fertilizer that's formulated to give turf consistent feeding for 6 months or more with just 1 application – saving you time, labor and money, while reducing environmental impact
- ◆ Combines 4 variations of Duration controlled-release Nitrogen, which release at various temperatures
- ◆ Southern Blend contains a higher percentage of Duration that will release once warmer temperatures are achieved
- ◆ No need to worry about growth flushes or nitrogen runoff from excessive moisture
- ◆ Coating is very durable, so granules stand up to rough handling
- ◆ 50 lb. bag



**SIFI 43-0-0** ✦

- ◆ An advanced, high-efficiency fertilizer that's formulated to give turf consistent feeding for 6 months or more with just 1 application – saving you time, labor and money, while reducing environmental impact
- ◆ Combines 4 variations of Duration controlled-release Nitrogen, which release at various temperatures
- ◆ Straight Nitrogen formula when additional nutrients are not needed and lowest application rates are desired
- ◆ No need to worry about growth flushes or nitrogen runoff from excessive moisture
- ◆ Coating is very durable, so granules stand up to rough handling
- ◆ 50 lb. bag



**See SIFI Combo/Pre-Emergent Herbicide blends on page 340**

**OTHER SLOW RELEASE**

**XCU 43-0-0**

- ◆ 100% Poly-Coated Sulfur Coated Urea



**NITROFORM 38-0-0**

- ◆ 100% Methylene Urea



**GRANULAR FERTILIZER – ORIGINAL**

**TURFGRO**



TurfGro Professional Fertilizers are formulated for your region – your soil, turf and plant needs – and are available exclusively at Horizon! There are 5 types of TurfGro Fertilizer to suit your situation – Look for the **GREEN labels** for **Quick Release Turf formulas**, which are great when you need green lawns fast.

**TURFGRO 0-10-10**

- ◆ A suitable starter fertilizer when only Phosphorus and Potassium are needed, or when Nitrogen is restricted
- ◆ 50 lb. bag
- ◆ Available in CA

**TURFGRO 5-5-20 WINTERIZER**

- ◆ A low Nitrogen, high Potassium fertilizer ideal for fall application to non-overseeded warm-season turf
- ◆ 50 lb. bag
- ◆ Available in TX

**TURFGRO 6-20-10 PROSTARTER**

- ◆ Formulated specifically for pre-plant applications of turfgrass and ornamental plants
- ◆ High Phosphorus stimulates root development for healthier plants and grass
- ◆ Contains essential minors necessary for plant establishment
- ◆ Available in CA
- ◆ 50 lb. bag

**TURFGRO 6-20-20 PROSTARTER**

- ◆ Premium Starter Fertilizer with 2% Iron
- ◆ Formulated for pre-plant turf and ornamentals
- ◆ High phosphorus stimulates root development for healthier plants and grass
- ◆ Essential minors ideal for starter fertilizer, including calcium and sulfur
- ◆ 50 lb. bag
- ◆ Available in AZ, NV, ID

**TURFGRO 10-6-8 MINI**

- ◆ A balanced, 100% soluble turf fertilizer for quick greening all season
- ◆ Smaller prill size is distributed more evenly in close-cut turf, which eliminates the common "spotty" look
- ◆ New WolfTrax Iron makes grass greener, lasts longer than other iron sources, with little to no stain potential
- ◆ 50 lb. bag
- ◆ Available in AZ



Fill your spreader with me and I'll go to work for you, working longer in a single application.

So you **SAVE LABOR**. And **FUEL**. And **TIME**.

I'll free up your crew to do more of whatever needs doing.

There's **A BETTER WAY TO FERTILIZE**, and I humbly say, it starts with me.



## WORD IS SPREADING.

More and more turfgrass managers are choosing a better way to fertilize.

And it starts with a single application of

SPREAD IT & FORGET IT® fertilizer. An advanced polymer coating makes it possible to reduce the number of applications, saving time, fuel and labor costs without sacrificing the turf's look and vigor. It also frees up your crews to do more. See how SPREAD IT & FORGET IT can economically keep your turf green and healthy.

*Consult with your distributor today for*

## A BETTER WAY TO FERTILIZE.

## CALCULATE YOUR SQUARE FOOT ADVANTAGE.

Go online to find out how fewer applications can save you time, labor and improve your bottom line. Visit: **DrivenByDuration.com**

For questions regarding SPREAD IT & FORGET IT® fertilizer contact:

John Meyer  
Regional Sales Manager  
Koch Agronomic Services, LLC  
952-334-6845  
johnmeyer@kochind.com

[www.KASTurf.com](http://www.KASTurf.com)

**K KOCH**

KOCH AGRONOMIC SERVICES, LLC

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Original

**TURFGRO 12-8-6 STARTER**

- ◆ High Phosphorous in this 50% organic-based fertilizer stimulates root development for rapid establishment of new seedlings
- ◆ **Great for new lawns and overseeding applications**
- ◆ 50 lb. bag
- ◆ Available in ID, OR, WA

**TURFGRO 15-5-10 TEXAS STANDARD**

- ◆ **The #1 turf analysis in Texas, plus non-staining Iron**
- ◆ Provides lawns with deep green color, without excessive shoot growth
- ◆ Great for Iron-loving bermudagrass and St. Augustine grass
- ◆ A 3-1-2 ratio of Nitrogen, Phosphorus and Potassium
- ◆ Performs consistently on all varieties of turfgrass, and under all but the most severe climate conditions
- ◆ 50 lb bag
- ◆ Available in TX

**TURFGRO 16-0-8 / QUICK GREEN FOR ARID LANDSCAPES**

- ◆ Multi-season fertilizer designed for Western soils
- ◆ Phosphorus-free has less environmental impact and does not encourage new weeds
- ◆ 4% Iron for deep green color without excess flush growth
- ◆ 16% Sulfur to correct alkaline soil
- ◆ Performs consistently on all species of turfgrass, under all but the most severe climate conditions
- ◆ 50 lb. bag
- ◆ Available in CA, ID, OR, NV, WA

**TURFGRO 16-0-8 / QUICK GREEN COASTAL PNW**

- ◆ 100% available Nitrogen and 4% Iron for quick greening in warm weather
- ◆ Lower sulphur content than traditional formula is suitable for Coastal Pacific Northwest soils
- ◆ Phosphorus-free has less environmental impact and does not encourage new weeds
- ◆ 50 lb. bag
- ◆ Available in OR, WA

**TURFGRO 16-0-8 LANDSCAPER**

- ◆ 100% available Nitrogen and 4% Iron for quick greening in warm weather
- ◆ Phosphorus-free has less environmental impact and does not encourage new weeds
- ◆ 50 lb. bag
- ◆ Available in AZ

**TURFGRO 16-6-8 LANDSCAPER**

- ◆ 100% available Nitrogen and 4% Iron for quick turf greenup spring through fall
- ◆ 16% Sulfur to correct alkaline soil
- ◆ 50 lb. bag
- ◆ Available in CA, NV

**TURFGRO 18-18-18 HYDROMULCH FORMULA**

- ◆ 1:1:1 ratio of soluble NPK is ideal for Hydroseeding applications
- ◆ 50 lb. bag
- ◆ Available in TX

**TURFGRO 21-0-7 COOL SEASON**

- ◆ Keeps lawns green throughout fall and winter
- ◆ 10% nitrate Nitrogen: Enough to ensure quick greening of turf in cold weather, with minimal Nitrogen loss from leaching
- ◆ Phosphorus-free reduces concern of run-off and does not encourage new weeds
- ◆ 4% Iron for deep green without excess flush growth
- ◆ Lasts longer than Calcium Nitrate
- ◆ 50 lb. bag
- ◆ Available in AZ, CA, ID, NV, OR, WA

**TURFGRO 21-0-14 COOL SEASON**

- ◆ Keeps lawns green throughout fall and winter
- ◆ **Compare to Turf Royale – Same nitrate nitrogen for quick results in cool temperatures, but with new Wolf Trax Iron for long-lasting green color**
- ◆ Phosphorus-free formula does not encourage winter weed growth or pose a risk for runoff
- ◆ 50 lb bag
- ◆ Available in AZ

**0-45-0 TRI-SUPER PHOSPHATE**

- ◆ 50 lb. bag

**OTHER TRADITIONAL FERTILIZERS****SULFATE OF POTASH**

- ◆ 0-0-52 OR 0-0-50
- ◆ 50 lb. bag

**POTASSIUM NITRATE 13-0-44**

- ◆ Prilled or Solution Grade

**CALCIUM NITRATE 15-0-0**

- ◆ Prilled or Solution Grade
- ◆ 50 lb. bag 50 lb. bag

**AMMONIUM PHOSPHATE 16-20-0**

- ◆ Standard Grade or Fines
- ◆ 50 lb. bag

**TURF ROYALE 21-7-14**

- ◆ 50 lb. bag

**UREA 46-0-0**

- ◆ 50 lb. bag

### TURFGRO



Organic

TurfGro Professional Fertilizers are formulated for your region – your soil, turf and plant needs – and are available exclusively at Horizon! There are 5 types of TurfGro Fertilizer to suit your situation – Look for the **BROWN labels** for **Organic & Natural-Based formulas**, which are ideal for environmentally-sensitive areas or any landscape in need of improved soil biology.

#### TURFGRO 7-2-3

- ◆ A Hybrid Organic product containing synthetic and natural nutrient sources
- ◆ Urea Nitrogen provides quick greening, while SoundGro natural biosolids provide slowly available Nitrogen, a food source for soil microbes, and micronutrients
- ◆ 50 lb. bag
- ◆ Available in CA



#### TURFGRO 8-0-4 ORGANIC

- ◆ **100% organic; comprised of all OMRI Certified inputs**
- ◆ Nitrogen comes from feather meal, and is slow release
- ◆ Appropriate for environmentally sensitive sites
- ◆ **Contains beneficial mycorrhizae, which colonize plant roots and improve uptake of nutrients and water**
- ◆ 40 lb. bag
- ◆ Available in CA, ID, OR, WA



#### TURFGRO 8-1-2 SOIL MD

- ◆ **A 75% Organic fertilizer, powered by Sanctuary protein meal-based organic inputs**
- ◆ 25% of the Nitrogen is available for quick greening
- ◆ Contributes low levels of salts and provides nutrition to stimulate soil bacteria, which results in a more porous soil capable of holding and supplying plants with more water
- ◆ 40 lb. bag
- ◆ Available in AZ, CO, NV, TX



#### TURFGRO 8-4-5 NATURAL BASED

- ◆ A hybrid fertilizer containing nitrogen from natural biosolids and from synthetic ammonium sulfate
- ◆ Provides immediate and some residual feeding
- ◆ **Contains beneficial mycorrhizae, which colonize plant roots and improve uptake of nutrients and water**
- ◆ 50 lb. bag
- ◆ Available in CA, ID, OR, WA



#### TURFGRO 12-4-6 WITH NATURAL BIOSOLIDS

- ◆ 34% slowly-available Nitrogen from SoundGro Natural Organic Biosolids
- ◆ Releases slowly, contains micronutrients, and provides a food source to soil microbes
- ◆ Urea Nitrogen provides quick response in growth and color
- ◆ 50 lb. bag
- ◆ Available in CA



#### TURFGRO 16-20-0 WITH NATURAL BIOSOLIDS

- ◆ **The same NPK analysis as straight Ammonium Phosphate, but with 17% slowly available nitrogen plus minors from SoundGro natural biosolids**
- ◆ New WolfTrax Iron makes grass greener, lasts longer than other iron sources, with little to no stain potential
- ◆ 50 lb. bag
- ◆ Available in CA



#### TURFGRO 18-5-0

- ◆ **If you like Ammonium Sulfate 21-0-0, try this product which adds organic content, phosphorus for root development, iron for color, plus additional micronutrients**
- ◆ 13% slowly available Nitrogen from SoundGro natural biosolids
- ◆ Perfect for regular feeding of lawns, and can be used on shrubs, flowers & vegetable gardens
- ◆ 50 lb. bag
- ◆ Available in CA, NV



#### TURFGRO 21-0-4 ORGANIC + QUICK RELEASE N

- ◆ A Hybrid Organic product containing synthetic and natural nutrient sources
- ◆ **Urea Nitrogen provides quick greening, while 16% slowly available Nitrogen from Sanctuary Feather, Soybean & Cottonseed meals provides a food source for soil microbes**
- ◆ 40 lb. bag
- ◆ Available in TX



#### TURFGRO 23-0-4 ORGANIC + SLOW RELEASE N

- ◆ A Hybrid Organic product containing 3 sources of Nitrogen
- ◆ Urea Nitrogen provides quick greening, while 26% of the Nitrogen is slowly available – **Sanctuary Feather, Soybean & Cottonseed meals are a food source for soil microbes, and Nutralene provides long residual feeding**
- ◆ 40 lb. bag
- ◆ Available in TX





## **SANCTUARY 8-0-4 PROBIOTIC** ✦

- ◆ **50% slow release Nitrogen from Feather, Fish & Blood meals plus beneficial soil bacteria and mycorrhizal fungi**
- ◆ Builds and enhances biological soil activity and aids in the release of organic nutrients
- ◆ Promotes rooting & recovery, and reduces transplant shock
- ◆ Ideal for installation or seeding applications, as well as general maintenance of turf or plants
- ◆ 50 lb. bag

## **SANCTUARY ALL NATURAL 8-3-6** ✦

- ◆ **An all-natural blend of protein meals (feather, fish blood and bone), carbohydrates and Humic Acid**
- ◆ Provides nutrition to stimulate soil bacteria, aiding in nutrient, stress and disease management
- ◆ A low salt, non-burning nutrient source
- ◆ Provides outstanding turf color and density
- ◆ 50 lb. bags in standard grade (200 SGN), greens grade (120 SGN), and super fine (80 SGN)

## **SANCTUARY HYBRID ORGANIC STARTER 8-8-8** ✦

- ◆ A balanced organic fertilizer with protein meals, Urea, and Diammonium Phosphate as nutrient sources
- ◆ Stimulates root development
- ◆ **Great for new construction and landscape installation, spring and fall feeding, or throughout the growing season when balanced feeding is needed**
- ◆ Ideal for shrubs, trees, groundcovers, flowers and turf
- ◆ Standard grade in 50 lb. bag

## **SANCTUARY STRESS LIFE 12-2-12** ✦

- ◆ A blend of protein meals, Urea, and minors for nutrient-depleted soils
- ◆ **1:1 ratio of Nitrogen and low-salt Potassium, ideal for heat and stress tolerance + turf recovery**
- ◆ 50lb. bags in standard and greens grade
- ◆ Standard grade in 50lb. bag

## **SANCTUARY COOL SEASON 14-1-2** ✦

- ◆ A blend of organic and quick-release Nitrate Nitrogen sources plus Iron for color response in cooler weather
- ◆ **Ideal for all turf types to initiate spring color, or for overseeded warm season turf in the winter months**
- ◆ Standard grade in 50 lb. bag

## **SANCTUARY LAWN AND LANDSCAPE 14-2-2** ✦

- ◆ Cost-effective, natural-based fertilizer product for lawn and landscape
- ◆ Organic and traditional ingredient content
- ◆ Use in all seasons:
  - **Spring Energizer** — Cool temperature release
  - **Summer Stress** — Residual color and improved density; Non-burning and low salts
  - **Fall Recovery** — Improved rooting; Aids with spring color
- ◆ Also a great after-aeration product, for enhanced rooting and thatch management
- ◆ Standard grade in 50 lb. bag

## **SANCTUARY 16-2-4** ✦

- ◆ Blends traditional and organic nutrients that promote excellent nutrient availability.
- ◆ Organic protein meals add carbon energy which feed microbes in tired soils, Methylene urea provides residual color and slow, even growth, and Ammonium sulfate provides initial color and growth.
- ◆ 38% slowly available Nitrogen
- ◆ Available in a dust-free fairway grade – a 200 SGN ideal for tee and fairway applications.
- ◆ 50 lb. bag

## **SANCTUARY SYNERGY COLOR 18-2-6** ✦

The Sanctuary's premier granular organic. Combines the release characteristics and benefits of three different Nitrogen sources

- ◆ **Protein meals** for carbon energy and microbial food source
- ◆ **Methylene Urea** for residual color and slow, even growth
- ◆ **Ammonium Sulfate** for initial color and disease management
- ◆ Available in standard grade – 50 lb. bags and 1,000 lb. totes

## **SANCTUARY 24-2-2 FAIRWAY 50#** ✦

- ◆ Blends traditional and organic nutrients that promote excellent nutrient availability.
- ◆ **Organic protein meals stimulate and build microbial populations while polymer coated urea provides extended residual color.**
- ◆ Available in a dust-free fairway grade – a 200 SGN ideal for tee and fairway applications.
- ◆ 50 lb. bag

### MEAL-BASED

#### BIO-SOL 7-2-3 ★

- ◆ Derived from soybean meal and cottonseed meal
- ◆ 55lb. bag

#### “PAR 4” 9-3-7 ★

- ◆ **OMRI Listed (Certified Organic) Multi-Purpose Natural Fertilizer**
- ◆ Feather & Bone meals plus mined potassium sulfate provide slowly available Nitrogen plus Calcium, Sulfur and trace elements
- ◆ Contains no manures or compost, is low in heavy metals, and has minimal environmental impact on waterways or aquatic organisms
- ◆ 50 lb. bag

#### GARDNER & BLOOME 4-5-2 FOR ACID AND SHADE LOVING PLANTS ★

- ◆ Great for acid & shade loving plants like rhododendron, azaleas & camellias.
- ◆ Made from 100% organic ingredients with quick-released nutrients for great results.
- ◆ Feeds for several months.
- ◆ **OMRI Listed (Certified Organic)**



#### BLOOD MEAL ★

- ◆ 50 lb. bag

#### BONE MEAL ★

- ◆ 4 lb. bag and 50 lb. bag

#### COTTONSEED MEAL ★

- ◆ 55 lb. bag

### BIOSOLIDS AND MANURES

#### SOUNDGRO 6-7-0 ★

- ◆ 100% organic from biosolids w/minors

#### MILORGANITE 6-2-0 / 5-2-0 ★

- ◆ 36 lb. bag

#### RICHLAWN CHICKEN MANURE 5-3-2 ★

- ◆ 40 lb. bag

#### STEER MANURE ★

- ◆ 2 cu. ft. bag

### GRANULAR FERTILIZER – COMBO WITH PEST CONTROL

#### WITH PRE-EMERGENT HERBICIDES

#### TURFGRO



TurfGro Professional Fertilizers are formulated for your region – your soil, turf and plant needs – and are available exclusively at Horizon! There are 5 types of TurfGro Fertilizer to suit your situation – Look for the **YELLOW bags** for **Combo formulas**, which combine fertilizer with Pest Control products, making it easy to feed turf AND control weeds or insects in ONE step.

#### TURFGRO 12-4-16 W/ BARRICADE PRE-EMERGENT HERBICIDE

- ◆ 20% slow release nitrogen provides immediate and residual feeding
- ◆ 0.37% Barricade (Prodiamine) herbicide prevents germination of annual grasses and broadleaf weeds in turf and ornamental plantings for 4 - 6 months
- ◆ **A good fall formulation for preventing Poa annua while building winter stress resistance with high potassium**
- ◆ 50 lb. bag
- ◆ Available in AZ, CA, NV, OR, WA



#### TURFGRO 15-0-5 W/ DIMENSION PRE-EMERGENT HERBICIDE

- ◆ Fertilizer with 20% slow release nitrogen provides immediate and residual feeding
- ◆ 0.15% Dimension (Dithiopyr) herbicide prevents germination of annual grasses and broadleaf weeds in turf and ornamental plantings for 4 - 6 months
- ◆ **A good spring formulation that will also control young emerged crabgrass if ideal application window is missed**
- ◆ Phosphorous-free formula does not encourage new weeds
- ◆ 50 lb. bag
- ◆ Available in CA, ID, OR, WA



#### TURFGRO 15-3-5 W/ DIMENSION PRE-EMERGENT HERBICIDE

- ◆ 20% slow release nitrogen provides immediate and residual feeding
- ◆ 0.13% Dimension (Dithiopyr) herbicide prevents germination of annual grasses and broadleaf weeds in turf and ornamental plantings for 4 - 6 months
- ◆ **A good spring formulation that will also control young emerged crabgrass if ideal application window is missed**
- ◆ 50 lb. bag
- ◆ Available in AZ, CO, NV



## WITH PRE-EMERGENT HERBICIDES



### **TURFGRO 18-0-6 W/ DIMENSION PRE-EMERGENT HERBICIDE**

- ◆ 40% slow release nitrogen provides immediate greenup and 10+ weeks of extended feeding
- ◆ 0.22% Dimension (Dithiopyr) herbicide prevents germination of annual grasses and broadleaf weeds in turf and ornamental plantings for 4 - 6 months
- ◆ **A good spring formulation that will also control young emerged crabgrass if ideal application window is missed**
- ◆ Phosphorous-free formula does not encourage new weeds
- ◆ 50 lb. bag
- ◆ Available in CA, ID, OR, WA



### **TURFGRO 18-3-6 W/ DIMENSION PRE-EMERGENT HERBICIDE**

- ◆ 40% slow release nitrogen provides immediate greenup and 10+ weeks of extended feeding
- ◆ 0.172% Dimension (Dithiopyr) herbicide prevents germination of annual grasses and broadleaf weeds in turf and ornamental plantings for 4 - 6 months
- ◆ **A good spring formulation that will also control young emerged crabgrass if ideal application window is missed**
- ◆ 50 lb. bag
- ◆ Available in AZ, CO, NV



### **TURFGRO 19-0-7 WITH 0.43% BARRICADE HERBICIDE**

- ◆ Feed Turf + Prevent Weed Germination in 1 Step!
- ◆ **A higher load of Barricade pre-emergent herbicide ensures long-lasting residual weed control – a great fall option for preventing winter and early spring weeds, without breakthroughs**
- ◆ 50 lb. bag
- ◆ Available in TX

### **TURFGRO 22-0-5 WITH 0.37% PRODIAMINE HERBICIDE**

- ◆ Feed Turf + Prevent Weed Germination in 1 Step!
- ◆ **Prodiamine pre-emergent herbicide (Barricade equivalent) is long-lasting – a great fall option for preventing winter and early spring weeds**
- ◆ 50 lb. bag
- ◆ Available in TX

### **TURFGRO 22-0-6 WITH 0.17% DIMENSION HERBICIDE**

- ◆ Feed Turf + Prevent Weeds in 1 Step!
- ◆ **Dimension herbicide will also control early emerged crabgrass, making this a great spring option if ideal application window is missed**
- ◆ 50 lb. bag
- ◆ Available in TX



### **BCF 0-0-7 / .38% BARRICADE HERBICIDE**

- ◆ Potassium fertilizer with .38% Barricade pre-emergent herbicide
- ◆ Barricade herbicide is long-lasting – a great fall option for preventing winter and early spring weeds
- ◆ 50 lb. bag
- ◆ Available in TX

### **BCF 0-0-7 / .22% DIMENSION**

- ◆ Potassium fertilizer with 0.22% Dimension pre-emergent herbicide
- ◆ Dimension herbicide will also control early emerged crabgrass, making this a great spring option if ideal application window is missed
- ◆ 50 lb. bag
- ◆ Available in TX

### **BCF 0-0-7 W/ PENDULUM PRE-EMERGENT HERBICIDE**

- ◆ Potassium fertilizer with 0.86% Pendulum pre-emergent herbicide
- ◆ Four to six months control of crabgrass as well as other annual grasses and broadleaf weeds common in lawns
- ◆ 50 lb. bag
- ◆ Available in TX

### WITH PRE-EMERGENT HERBICIDES

**SPREAD IT & FORGET IT™**  
for greener turf all season long

#### **SIFI 35-0-7 WITH 0.1% DIMENSION HERBICIDE (NORTHERN BLEND)**

- ◆ An advanced, high-efficiency fertilizer PLUS Dimension pre-emergent herbicide provides season-long feeding of turf and prevents the germination of annual weeds
- ◆ Formulated to give turf consistent feeding for 6 months or more with just 1 application – saving you time, labor and money, while reducing environmental impact
- ◆ Combines 4 variations of Duration controlled-release Nitrogen, which release at various temperatures
- ◆ Northern Blend contains a higher percentage of Duration that will release in cooler temperatures
- ◆ Dimension herbicide will also control early emerged crabgrass, making this a great spring option if ideal application window is missed
- ◆ No need to worry about growth flushes or nitrogen runoff from excessive moisture
- ◆ Coating is very durable, so granules stand up to rough handling
- ◆ 50 lb. bag



#### **SIFI 37-0-5 WITH 0.125% DIMENSION (SOUTHERN BLEND)**

- ◆ An advanced, high-efficiency fertilizer PLUS Dimension pre-emergent herbicide provides season-long feeding of turf and prevents the germination of annual weeds
- ◆ Formulated to give turf consistent feeding for 6 months or more with just 1 application – saving you time, labor and money, while reducing environmental impact
- ◆ Combines 4 variations of Duration controlled-release Nitrogen, which release at various temperatures
- ◆ Southern Blend contains a higher percentage of Duration that will release once warmer temperatures are achieved, and a higher load of Dimension to match the longer weed germination season
- ◆ Dimension herbicide will also control early emerged crabgrass, making this a great spring option if ideal application window is missed
- ◆ No need to worry about growth flushes or nitrogen runoff from excessive moisture
- ◆ Coating is very durable, so granules stand up to rough handling
- ◆ 50 lb. bag



### WITH POST-EMERGENT HERBICIDES

**TURFGRO**



#### **TURFGRO 15-0-5 WITH SURGE BROADLEAF HERBICIDE**

- ◆ Feed Turf & Remove Unsightly Broadleaf Weeds in 1 Step!
- ◆ Reduced labor means more profit to your bottom line
- ◆ 20% Slow Release Nitrogen from XCU polymer coated-sulfur coated urea, for uniform growth and sustained feeding
- ◆ Phos-Free Formulation does not encourage weeds
- ◆ Surge® herbicide (2,4-D + MCPP + dicamba + sulfentrazone) removes Dandelion, Chickweed, Plantain, Clover and other Broadleaf Weeds from Turf FAST!
- ◆ Great for spring & fall, or any time broadleaf weeds are present and actively growing
- ◆ 50 lb. bag
- ◆ Available in CA, ID, OR, WA



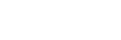
#### **TURFGRO 15-3-5 W/ VIPER BROADLEAF HERBICIDE**

- ◆ Fertilizer with 20% slow release nitrogen provides immediate and residual feeding
- ◆ 1.56% Viper herbicide (2,4-D ester, 2,4-D acid, MCPP and dicamba) provides post-emergent control on a range of common broadleaf weeds including dandelion, plantain, henbit, chickweed, spurge, and even hard to kill weeds like clover and ground ivy.
- ◆ Longer feeding, heavier herbicide load, and better results compared to common fertilizers with Trimec
- ◆ 50 lb. bag
- ◆ Available in AZ, CO, NV



#### **TURFGRO 16-0-8 ST. AUGUSTINE WEED & FEED WITH 0.92% ATRAZINE**

- ◆ Fertilize and control weeds in sensitive turf in 1 step!
- ◆ Atrazine herbicide controls emerged broadleaf weeds and prevents new weed seeds from germinating, without damaging sensitive St. Augustine and Centipedegrass
- ◆ 50% slowly available Nitrogen from XCU polymer coated-sulfur coated urea, for uniform growth and sustained feeding
- ◆ Minors package provides color for turf that can otherwise experience temporary yellowing from an herbicide application
- ◆ 50 lb. bag
- ◆ Available in FL



## WITH POST-EMERGENT HERBICIDES



### **TURFGRO 16-3-4 WEED & FEED WITH 0.53% TRIMEC**

- ◆ **Feed Turf & Remove Unightly Broadleaf Weeds in 1 Step!**
- ◆ **Reduced labor means more profit to your bottom line**
- ◆ Trimec® herbicide (2,4-D + MCPP + dicamba) removes a wide range of broadleaf weeds, including Dandelion, Chickweed, Knotweed, Plantain, Henbit and Spurge
- ◆ Great for spring & fall, or any time broadleaf weeds are present and actively growing
- ◆ 50 lb. bag
- ◆ Available in TX

### **TURFGRO 25-3-5 ST. AUGUSTINE WEED & FEED WITH 1.15% ATRAZINE**

- ◆ Fertilize and control weeds in sensitive turf in 1 step!
- ◆ **Atrazine herbicide controls emerged broadleaf weeds and prevents certain weeds such as Crabgrass, Paspalums and Spotted Spurge—without damaging sensitive St. Augustine and Centipedegrass**
- ◆ 50 lb. bag
- ◆ Available in TX

## WITH PRE & POST-EMERGENT HERBICIDES



### **HJE 20-0-2 WITH CUATRO**

- ◆ **Feed Turf + Control Existing Broadleaf Weeds + Prevent New Weeds in 1 Step!**
- ◆ High quality weed & feed fertilizer contains 4 powerful herbicides for post broadleaf weed control and pre AND post-emergent control of grassy weeds
- ◆ 20% slowly available Nitrogen from XCU Polymer Coated-Sulfur Coated urea, for uniform growth and sustained feeding
- ◆ Safe for use on established cool season turf (except bentgrass or annual bluegrass) as well as Bermuda, Zoysia and Buffalograss.
- ◆ Do not use on St. Augustinegrass
- ◆ 50 lb. bag

## WITH INSECTICIDE



### **TURFGRO 17-0-6 WITH 0.225G ALLECTUS INSECTICIDE**

- ◆ **Feed Turf + Control Insects in 1 Step!**
- ◆ Turf formula fertilizer with 27% slowly available Nitrogen from XCU polymer-sulfur-coated urea
- ◆ **Contains Allectus insecticide – an innovative new tool for insect control both above and below the ground**
- ◆ Controls all major surface feeding and subsurface insects, including Chinch Bugs, Mole Crickets, Fire Ants, Grubs, Sod Webworms, Aphids, Armyworms and more
- ◆ Because Allectus controls multiple insect stages, turf managers have a wide window of application for convenient management options
- ◆ 50 lb. bag
- ◆ Available in FL



### **TURFGRO 22-0-8 WITH 0.069% BIFENTHRIN INSECTICIDE**

- ◆ **Feed Turf + Control Insects in 1 Step!**
- ◆ Turf formula fertilizer with 30% slowly available Nitrogen from XCU polymer-sulfur-coated urea
- ◆ Contains Bifenthrin insecticide, which controls many surface feeding insects, including Ants, Chinch Bugs, Billbugs, Cutworms and Leafhoppers
- ◆ 50 lb. bag
- ◆ Available in TX

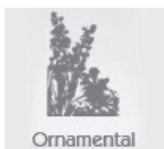


## OTHER FERTILIZER WITH INSECTICIDE



### **HJE 8-0-0 WITH 0.069% BIFENTHRIN INSECTICIDE**

- ◆ 100% available Nitrogen plus Insect control in 1 product
- ◆ Contains Bifenthrin insecticide, which controls many surface feeding insects, including Ants, Chinch Bugs, Billbugs, Cutworms and Leafhoppers
- ◆ 50 lb. bag



Ornamental

TurfGro Professional Fertilizers are formulated for your region – your soil, turf and plant needs – and are available exclusively at Horizon! There are 5 types of TurfGro Fertilizer to suit your situation – Look for the **PINK** labels for **Ornamental Plant formulas**, which provide the perfect balance of nutrients to support healthy trees, shrubs, flowers and other landscape plantings.

### **TURFGRO 8-2-10 HIGH IRON**

- ◆ A fertilizer suitable for both Turf and Palms, or in other landscape situations where high Iron and other micronutrients are needed



- ◆ 50% slowly available Nitrogen from XCU polymer coated-sulfur coated urea
- ◆ 50 lb. bag
- ◆ Available in FL

### **TURFGRO 8-2-12 PREMIUM PALM WITH KIESERITE**

- ◆ Specialty fertilizer formulated with a complete minors package to meet the needs of palms and other tropical plants
- ◆ Contains Kieserite – A controlled-release Magnesium source, which is university recommended to treat Magnesium deficiencies common in palms
- ◆ Nitrogen, Phosphorus and Potassium sources are polymer-coated, ensuring sustained feeding and low burn potential
- ◆ 50 lb. bag
- ◆ Available in FL

### **TURFGRO 9-9-9 HIGH IRON**

- ◆ A balanced fertilizer with 11% Iron and 11% Sulfur for acid-loving plants like Azaleas, Camellias, Rhododendrons, Roses and Evergreens
- ◆ High Iron helps to overcome Chlorosis (yellowing of the leaves) and with the formation of chlorophyll for greener plants
- ◆ Acidifying fertilizer to improve alkaline Western soils
- ◆ 50 lb. bag
- ◆ Available in AZ, CA, CO, ID, NV, OR, TX, WA

### **TURFGRO 13-5-13 PALM AND TROPICAL**

- ◆ Specialty fertilizer formulated for the needs of palms, other tropical plants, citrus and annual color beds
- ◆ Slow release Nitrogen from Methylene Urea provides three months of extended feeding
- ◆ Contains a complete package of essential micronutrients, including Magnesium, Iron, Manganese, and Zinc
- ◆ Apply two to four times per growing season
- ◆ 50 lb. bag
- ◆ Available in AZ, CA, NV, TX



### **TURFGRO 14-14-14 PLANT PRO PLUS**

- ◆ A premium balanced plant food with micronutrients and over 60% of the Nitrogen from Nitroform
- ◆ Provides uniform growth and sustained feeding for six to twelve months
- ◆ Does not encourage flush growth like 100% available fertilizers, which can encourage insect activity
- ◆ Perfect for trees, shrubs, evergreens, flowers, vegetables, ferns, potted plants, ground cover, and bulbs
- ◆ 50 lb. bag
- ◆ Available in CA, CO, OR, TX, WA



### **TURFGRO 14-14-14 PLANT PRO PLUS**

- ◆ A premium balanced plant food with micronutrients and slowly available Nitrogen from Nutralene
- ◆ Provides uniform growth and feeding for 3+ months
- ◆ Does not encourage flush growth like 100% available fertilizers, which can encourage insect activity
- ◆ Contains a complete package of essential micronutrients important for development of healthy tree, shrubs and other landscape plantings
- ◆ 50 lb. bag
- ◆ Available in FL, MD, VA



### **TURFGRO 14-18-14 ANNUAL BOOSTER**

- ◆ Specialty fertilizer formulated for the needs of annuals
- ◆ 65% slow release Nitrogen ensure development of annuals even in cooler conditions
- ◆ Includes extensive micronutrient package From Wolf Trax
- ◆ Compare to Osmocote
- ◆ 50 lb. bag
- ◆ Available in CA, OR, WA



### **TURFGRO 15-15-15 PLANT PRO**

- ◆ Uniform 1:1:1 ratio of 100% available Nitrogen, Phosphorous, & Potash, plus Sulphur for balanced feeding
- ◆ High phosphate and potash stimulate root development at planting of new turf seed and ornamentals
- ◆ Great for spring and fall feeding of shrubs, trees and groundcovers
- ◆ 50 lb. bag
- ◆ Available in AZ, CA, CO, NV, TX

### **TURFGRO 16-16-16**

- ◆ Uniform 1:1:1 ratio of 100% available Nitrogen, Phosphorous, & Potash, plus Sulphur for balanced feeding
- ◆ High phosphate and potash stimulate root development at planting of new turf seed and ornamentals
- ◆ Great for spring and fall feeding, or throughout the growing season when balanced feeding is needed
- ◆ Ideal for shrubs, trees, groundcovers, flowers and turf
- ◆ 50 lb. bag
- ◆ Available in ID, OR, WA

## OTHER ORNAMENTAL PLANTS

### 18-6-12 ORNAMENTAL

- ◆ For use on trees, shrubs, evergreens, flowers, vegetables, ferns, potted plants, ground cover, bulbs, and all turfgrasses mowed at one half inch or higher
- ◆ 100% Nitrogen is from Nitroform, providing uniform growth and sustained feeding
- ◆ 50 lb. bag

## GRANULAR FERTILIZER – GREENS GRADE

### K-MAG 0-0-22

- ◆ Properly balanced potassium (K), magnesium (Mg) and sulfur (S) in a highly available water-soluble form.
- ◆ 50 lb. bag

### SULFATE OF POTASH 0-0-50

- ◆ An excellent high-potassium and sulfate sulfur source, with virtually no chloride and one of the lowest salt indexes of any potassium fertilizer
- ◆ 50 lb. bag

### MAP 11-52-0

- ◆ With its low pH levels, it is best used for high-alkaline soils at planting
- ◆ It is an ideal starter fertilizer because MAP contains less ammonia-nitrogen than DAP, reducing potential seed damage
- ◆ 50 lb. bag

**See Organic Greens Grade Fertilizers on page 337**

## LIQUID FERTILIZER – GREENS GRADE

### GROWTH PRODUCTS 0-0-25 LIQUID POTASSIUM SOLUTION

- ◆ 100% soluble Potassium for immediate plant uptake
- ◆ It can be used throughout the growing season to correct soil deficiencies, and as a fall fertilization product to improve stress tolerance
- ◆ 2.5 gal. jug and 30 gal. drum



### GROWTH PRODUCTS 0-29-26 TKO PHOSPHITE

- ◆ Phosphite is a form of Phosphorus that is highly available to plants, unlike other forms which can become bound in soil
- ◆ When applied as a foliar spray, "TKO" Phosphite quickly enters turf through the leaves, crowns and roots
- ◆ It moves through both xylem and phloem, and quickly increases root mass and improves turf vigor
- ◆ Applications of "TKO" Phosphite have been shown to significantly reduce summer stress on turf
- ◆ 2.5 gal. jug and 30 gal. drum



### COLOR STAR 19-13-6

- ◆ Plant Food formulated to increase bloom quality, size and number in all flowering plants
- ◆ Provides immediate results and residual feeding for up to 4 months
- ◆ Perfect for annuals, perennials, bulbs and flowering shrubs
- ◆ 25 lb bag



### 13-2-13 GREENS GRADE + MICROS

- ◆ 100% of N: Immediately Available From Ammonium Sulfate and Ammonium Phosphate
- ◆ 100% of K: Sulfate of Potash
- ◆ Contains plant-available micronutrients (B, Cu, Fe, Mn, Mo, Zn) to correct and prevent deficiencies
- ◆ 50 lb. bag

### 18-4-18 GREENS GRADE + MICROS

- ◆ 50% of N: Immediately Available From Urea and Ammonium Phosphate
- ◆ 50% of N: From Methylene Urea
- ◆ 100% of K: Sulfate of Potash
- ◆ Contains plant-available micronutrients (B, Cu, Fe, Mn, Mo, Zn) to correct and prevent deficiencies
- ◆ 50 lb. bag



**We also offer a selection of fertilizers for Maryland and Virginia areas.**

**Contact your local store for more information.**



### GROWTH PRODUCTS 0-30-0 LIQUID PHOSPHORUS SOLUTION

- ◆ 100% soluble form of Phosphate used to improve root growth or correct soil deficiencies
- ◆ It can also be used as a buffer-activator by lowering the pH of pesticide solutions to a more effective level of acidity
- ◆ 2.5 gal. jug



### GROWTH PRODUCTS RECOVER RX 3-18-18

- ◆ A salicylic acid + phosphorus blend formulated to improve plant growth and development
- ◆ Helps bring trees and plantings out of stress and decline, and rejuvenate from damage
- ◆ 2.5 gal jug





### **GROWTH PRODUCTS 6-12-12 AUTUMN CARE**

- ◆ In the fall, deciduous trees and shrubs need a low Nitrogen, high Phosphorus, high Potassium fertilizer
- ◆ **Autumn Care 6-12-12 will prepare trees and shrubs for the stresses of winter, and improve rooting and carbohydrate reserves**
- ◆ Its 40% slow release Nitrogen from Methylene Diurea provides excellent residual release, will not leach or volatilize, and will remain in the soil for spring uptake
- ◆ 2.5 gal. jug



### **GROWTH PRODUCTS 7-2-21 K-BUILDER**

- ◆ Formulated for year-round application and provides the ideal ratio of Potash to Nitrogen to improve stress tolerance from traffic, drought, and winter
- ◆ 50% slow release Nitrogen from Methylene Urea
- ◆ 2.5 gal. jug and 30 gal. drum



### **GROWTH PRODUCTS 8-32-5 STARTER PLUS**

- ◆ **A high Phosphorus solution, ideal for newly seeded areas**
- ◆ Starter Plus provides a continuous steady source of Nitrogen from Methylene Urea along with quickly available Nitrogen to promote top growth with limited thatch formation
- ◆ Both the P and K are readily available to assure good rooting.
- ◆ 2.5 gal. jug



### **GROWTH PRODUCTS 10-10-10 TRIPLE TEN**

- ◆ A perfect balance of Nitrogen (40% slow release), Phosphorus, and Potassium
- ◆ Ideal for annual and perennial beds, new seeding, or wherever equal amounts of N-P-K are needed
- ◆ 1 qt. and 2.5 gal. jugs



### **GROWTH PRODUCTS 12-4-12 PALM PRO**

- ◆ Formulated for all tropical landscape plants and turf
- ◆ Contains the Magnesium, Manganese, other micronutrients, Organic Humic Acids and sugars that Palms need to thrive
- ◆ 60% Smart Nitrogen feeds for 3 – 4 months
- ◆ 100% chelated micronutrients deliver fast greening results
- ◆ 2.5 gal jug



### **GROWTH PRODUCTS 15-2-15 PRO-BALANCE**

- ◆ Equal ratio of Nitrogen (50% slow release) and soluble, readily available Potassium for immediate plant uptake
- ◆ **Potassium thickens cell walls and builds disease resistance, and is known to improve winter hardiness in turfgrass**
- ◆ 2.5 gal. jug and 30 gal., 55 gal. drums



### **GROWTH PRODUCTS 15-8-4 ARBOR CARE**

- ◆ Arbor Care 15-8-4 with 40% Slow Release Nitrogen Plus micronutrients is an **ideal product for feeding trees and shrubs**
- ◆ Applied from early spring to early summer, Arbor Care 15-8-4 provides evergreens of all types with an excellent ratio of Nitrogen, Phosphorous and Potassium
- ◆ It also contains four fully chelated micronutrients (Cu, Fe, Mn, and Zn) which are necessary for tree health and are immediately available for plant uptake
- ◆ 2.5 gal. jug



### **GROWTH PRODUCTS 18-3-6 THE CLASSIC** ✦

- ◆ 50% SRN Plus Micronutrients
- ◆ Safe and easy to apply through traditional spray applicators or through fertigation, 18-3-6 provides a perfect balance of quick-release Nitrogen for fast green-up and slow release Nitrogen for continuous, steady feeding without flush growth
- ◆ 2.5 gal. jug and 30 gal., 55 gal. drums



### **GROWTH PRODUCTS 18-3-6 PRO FORMANCE ULTRA** ✦

- ◆ A complete package in a single bottle, Pro-Formance Ultra not only provides N-P-K in an 18-3-6 analysis, but five essential micronutrients: Calcium, chelated Iron, Manganese, Magnesium and Zinc
- ◆ **It also contains multiple organic enhancers — Humic Acid, L-amino acids, kelp and yucca extracts, and hydrolyzed soy protein — all powerhouses when it comes to plant development and soil improvement**
- ◆ 2.5 gal. jug



### **GROWTH PRODUCTS 18-6-12**

- ◆ Provides a balance of quick release Nitrogen for initial green-up and 60% slow release Nitrogen for a continuous steady feeding
- ◆ 18-6-12 contains Methylene Urea from Nitro-30, which resists leaching and provides a release over 8 to 12 weeks
- ◆ 2.5 gal. jug and 30 gal. drum



### **GROWTH PRODUCTS 20-3-3 QUICK RESPONSE**

- ◆ General purpose turf fertilizer, with most of the Nitrogen available for immediate uptake and quick green-up, and 20% as Methylene Urea for residual feeding
- ◆ 2.5 gal. jug and 55 gal. drum



**GROWTH PRODUCTS 22-0-0 AMMOS**

- ◆ AMMOS contains 40% Smart Nitrogen™ slow release Nitrogen and 60% quick release Nitrogen, providing the benefits of a rapid green-up and then a slow, continuous feed of Nitrogen
- ◆ It also contains immediately available Sulfur and Sulfur with longer-term release, which is ideal for reducing the pH of alkaline soils
- ◆ 55 gal. drum

**GROWTH PRODUCTS 22-0-16 NITRO+K**

- ◆ 82% slow release Nitrogen with Potassium Carbonate
- ◆ This concentrated solution provides the most efficient and reliable sources of Nitrogen and Potassium, resists leaching and volatilization, and provides a food source for soil microbes
- ◆ 2.5 gal. jug and 30 gal., 55 gal. drums

**GROWTH PRODUCTS 30-0-0 NITRO-30 SRN**

- ◆ **Known as the Smart Nitrogen™**, Nitro-30 SRN (30-0-0) provides rapid correction of Nitrogen deficiencies and gives steady, even feeding without harmful surge growth. It also acts as a sticker/spreader, so it will not be washed away by rain or irrigation; will not leach or volatilize, making it good for the environment and good for your bottom line; and does not contribute to thatch build-up associated with fast release Nitrogen products
- ◆ **With Nitro-30 SRN you can get healthier, greener turf, all while saving time, labor and money**
- ◆ 2.5 gal. jug and 30 gal., 55 gal. drums, 275 gal. tote

**PLANT FOOD CO 10-10-10**

- ◆ A perfect balance of Nitrogen, Phosphorus, and Potassium, plus Sulfur and micronutrients
- ◆ Ideal for annual and perennial beds, new seeding, or wherever equal amounts of N-P-K are needed
- ◆ 2.5 gal. jugs

**PLANT FOOD CO 12-3-12**

- ◆ Equal ratio of Nitrogen and Potassium, plus Sulfur and micronutrients
- ◆ 50% of Nitrogen is slow release
- ◆ Potassium thickens cell walls and builds disease resistance, and is known to improve winter hardiness in turfgrass
- ◆ 2.5 gal. jug

**PLANT FOOD CO 10-4-6**

- ◆ Nitrate, Ammoniacal, and Urea Nitrogen for quick green-up and residual growth, plus Sulfur and micronutrients
- ◆ 2.5 gal. jug

**PLANT FOOD CO 18-3-6**

- ◆ Complete liquid fertilizer with 50% slow release Nitrogen, Sulfur, and micronutrients
- ◆ Ideal for all types of turf, as well as trees and shrubs
- ◆ 2.5 gal. jug

**LIQUID FERTILIZERS – IRON****GROWTH PRODUCTS 6-0-0 X-TRA IRON 10%**

- ◆ **X-TRA Iron 6-0-0 contains more Iron than the closest competitive product on the market**
- ◆ It provides 100% soluble, chelated Iron in an immediately available form, and with its low Nitrogen to Iron ratio, it provides rapid green-up without any harmful surge growth
- ◆ **It's a difference you can see in just 24 hours! X-TRA Iron is formulated with citric acid as the chelating source, which is quickly absorbed through plant tissue for correction of Iron deficiency and Chlorosis**
- ◆ 2.5 gal. jug and 30 gal., 55 gal. drums

**GROWTH PRODUCTS 15-0-0 IRON MAX AC 6%**

- ◆ 15% Nitrogen solution with 6% chelated Iron and 2% chelated Manganese, plus 3.5% Sulfur
- ◆ Can be used for regular turf maintenance to enhance green color and promote strong root systems in high traffic areas and stress conditions
- ◆ 2.5 gal. jug and 30 gal., 55 gal. drums





### **GROWMORE 12-0-0 FERTA-MIC MN**

- ◆ 12% Nitrogen solution with 6% chelated Iron and 2% chelated Manganese, plus 4% Sulfur
- ◆ Can be used for regular turf maintenance to enhance green color and promote strong root systems in high traffic areas and stress conditions
- ◆ 2.5 gal. jug and 30 gal., 55 gal. drums, 275 gal. tote



### **FERROMECH 15-0-0 LIQUID IRON COMPLEX**

- ◆ 15% Nitrogen solution with 6% Iron and 4% Sulfur from ferrous Sulfate
- ◆ Corrects Chlorosis and gives turf a dark green color
- ◆ 2.5 gal. jug

## LIQUID FERTILIZERS – MICRONUTRIENTS & SPECIALTY



### **GROWTH PRODUCTS 5-0-0 MICREL TOTAL**

- ◆ 5% Nitrogen with a complete micronutrient package — Sulfur, Magnesium, Boron, Copper, Iron, Manganese, Molybdenum, and Zinc
- ◆ Treats overall micronutrient deficiencies and aids in resistance to disease, winter desiccation, and tolerance to stress
- ◆ 2.5 gal. jug



### **GROWTH PRODUCTS 6-0-0 CAL-TEC CALCIUM GLUCOHEPTONATE 9%**

- ◆ A unique sugar acid chelate that forms a 100% soluble Calcium/Nitrogen solution
- ◆ Calcium is essential for plant membrane integrity, proper cell division, and overall plant vigor and stiffness
- ◆ **It also improves soil structure by reducing salt build-up and soil compaction**
- ◆ 2.5 gal. jug



### **GROWTH PRODUCTS 7-0-3 CAL MAG MAX**

- ◆ Chelated Calcium and Magnesium from Glucoheptonates
- ◆ Corrects Calcium to Magnesium ratio in plant tissues, which is important for sugar formation
- ◆ Also strengthens cell walls and aids in utilization of other nutrients
- ◆ 2.5 gal. jug



### **GROWTH PRODUCTS MAGNESIUM CHELATE 3%**

- ◆ An organic Glucoheptonate (sugar acid) chelate that provides magnesium in soluble form, making it readily available for both soil and foliar application
- ◆ Corrects Magnesium deficiencies in turf and ornamentals, and assists in chlorophyll production
- ◆ 2.5 gal. jug



### **GROWTH PRODUCTS MANGANESE CHELATE 5%**

- ◆ An organic Glucoheptonate (sugar acid) chelate with 2% Sulfur
- ◆ Corrects Manganese deficiencies and assists in enzyme formulation
- ◆ 2.5 gal. jug



### **GROWTH PRODUCTS 0-2-5 GREEN-SPEED SI**

- ◆ 7% Potassium Silicate, with Phosphate and 2% Humic Acid
- ◆ Green Speed Si (0-2-5) is a proprietary liquid formula that combines silica, Potassium Phosphate, and Humic Acid to give both a faster ball roll and healthier turf
- ◆ 2.5 gal. jug



### **GROWMORE 0-0-3 SILO TEC**

- ◆ Soluble Silicate solution that increases turf turgidity and resistance to disease, heat and drought
- ◆ 2.5 gal. jug

### **PLANT FOOD CO SUGAR CAL CALCIUM 10%**

- ◆ A unique sugar Calcium Acetate that when used in a program with other nutrients, makes the other nutrients more available to the plant
- ◆ Increased nutrient absorption improves plant turgidity and vigor
- ◆ 2.5 gal. jug



### **PLANT FOOD CO 1-0-0 MICRO MIX**

- ◆ A complete foliar micronutrient liquid that enters the plant within 12 hours
- ◆ The small amount of Nitrogen aids in foliar absorption of the micronutrients
- ◆ 2.5 gal. jug

**SANCTUARY K PLUS** ✦

- ◆ Contains multiple potassium sources to improve turf's wear and stress tolerance
- ◆ Low salt index, no chlorides
- ◆ Rich in carbohydrates to feed soil microbes
- ◆ 2.5 gal. jug

**SANCTUARY POLYSACCHARIDES** ✦

- ◆ Deliver micronutrients using "Activated Carbohydrate Technology" (ACT) – **ACT polysaccharides protect the micronutrients and control their release rate** into the soil through microbial breakdown, while also enhancing the proliferation of beneficial bacteria in the soil

Product	Description
Micro Turf ME – 2.5 gal	Iron, Manganese, Zinc, Copper, Silicate
Iron ME – 2.5 gal	Iron 5.5%
Synergy ME – 2.5 gal	Iron, Manganese, Zinc, Silicate
Vigor ME – 2.5 gal	Magnesium, Manganese, Silicate
Vitality ME – 2.5 gal	Nitrogen, Calcium, Silicate

**GROWTH PRODUCTS ORGANIC IRON 5%** ✦

- ◆ A new organic chelate made from a Glucoheptonate (naturally fermented sugar acid) chelating agent
- ◆ A very stable chelate that will remain available longer than other types
- ◆ **Perfect for plants in high pH soils that are showing signs of Iron deficiency**
- ◆ **Non-staining**
- ◆ 2.5 gal jug, 30 gal. drum

**GROWTH PRODUCTS MICRO-GREEN ORGANIC CHELATE** ✦

- ◆ An organic Glucoheptonate (sugar acid) chelate with Iron, Manganese, Copper, Zinc, and Sulfur to correct compound deficiencies
- ◆ Perfect for high-pH soils where minor nutrients often become unavailable to plants
- ◆ 2.5 gal. jug

**FISH EMULSION 5-1-1**

- ◆ 1 gal jug

**WATER SOLUBLE FERTILIZERS – INORGANIC FORMULA****10-20-30**

- ◆ **Fall Formula**
- ◆ High Potassium to build winter stress tolerance
- ◆ 5 lb. and 25 lb. bags

**25-15-10**

- ◆ **Spring formula**
- ◆ Moderate to high Phosphorous to encourage root growth and budding
- ◆ 5 lb. and 25 lb. bags

**28-8-18**

- ◆ **Summer Formula**
- ◆ High Nitrogen for growing season
- ◆ 5 lb. and 25 lb. bags

**10-52-10**

- ◆ High Phosphorus root starter, ideal for deficiency correction or as a young plant starter
- ◆ 25lb. bag

**20-10-20**

- ◆ Contains 60% Nitrate Nitrogen, 40% Ammoniacal Nitrogen
- ◆ Fast acting in foliar sprays or liquid fertilizer injector systems
- ◆ Designed for cool temperature climates when plants need extra vigor and growth
- ◆ May also be used in soil-less growing media
- ◆ 25lb. bag

**Recommended for use with the EZ-FLO Injection System.**

**For more information, please see page 98.**



### 20-20-20

- ◆ Balanced Formula — All purpose, balanced, high analysis formula for all field or greenhouse grown ornamental or agricultural crops
- ◆ Appropriate starter fertilizer, or for wherever equal amounts of NPK are needed
- ◆ 25lb. bag

### 30-10-10

- ◆ High Nitrogen formula especially designed for foliar sprays
- ◆ 84% of the Nitrogen is Low Biuret Urea for long lasting effects
- ◆ May be combined with insecticides or fungicides
- ◆ Popular for spring applications, providing that extra Nitrogen boost
- ◆ 25lb. bag

### SEQUESTAR 7% IRON CHELATE

- ◆ A fully chelated, water soluble, powdered form of Iron recommended for the prevention and correction of Iron deficiency
- ◆ Dissolve in water or fluid fertilizer, or dry blend with other water soluble fertilizers
- ◆ For trees or individual plants, the chelate may be blended with an inert (such as soil or sand) or sprinkled directly on the soil uniformly under the plant's drip line, then watered in
- ◆ May also be used in fertigation systems
- ◆ 5lb. bag



## WATER SOLUBLE FERTILIZERS – ORGANIC FORMULA



### MICRO-TURF MICRONUTRIENTS ★

- ◆ A blend of micronutrients (Zinc, Manganese, Copper), including high (10%) Iron content for exceptional turf color
- ◆ Contains Silicate, which builds cell wall thickness for tolerance to heat and traffic
- ◆ Enriches the soil with carbohydrates for microbial stimulation
- ◆ 24 lb. case

### SYNERGY MICRONUTRIENTS ★

- ◆ A blend of Zinc and Manganese for disease management
- ◆ Contains Silicate, which builds cell wall thickness for tolerance to heat and traffic
- ◆ Enriches the soil with carbohydrates for microbial stimulation
- ◆ 24 lb. case

## OTHER FERTILIZER



### TURFGRO GROPAKS 20-10-5 + MINORS

- ◆ Gradual release of Nitrogen for up to 12 months
- ◆ Perfect at time of planting, to improve chances of survival and reduce call-backs
- ◆ **More efficient nutrient supply than from competitor tablets**
- ◆ Nutrients only supplied when conditions are ideal for growth
- ◆ Biodegradable packet
- ◆ 100 count and 500 count boxes

### PALM TREE FERTILIZER SPIKES

- ◆ Feed uniformly for up to 12 months and can be installed any time of the year

# COMPLETE SOLUTIONS FOR LANDSCAPERS & TURF MANAGERS

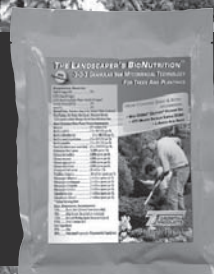


## Essential® Plus 1-0-1

- Soil Amendment & Root Biostimulant
- Boosts Seed Germination
- Adds Organic Matter to Poor Soils
- Serves as a Food Source for Soil Microbes
- Reduces Compaction and High Salts

## The Landscaper's BioNutrition™ 3-0-3

- Conditions Soil Structure
- Improves Water Retention
- Stimulates Root Growth
- Adds Important Carbon to Soil
- Provides Slow Release Nitrogen



Fertilizers  
Micronutrients  
Biological Fungicide

### PRIMERA ONE APEX-10

- ◆ **Proprietary peat humic bio-stimulant**, that is in its most active state compared to humic acids extracted from coal-based products such as leonardite & lignite
- ◆ Provides **fertilizer and irrigation reduction** by up to 66% and 30% respectively
- ◆ Cuts plant loss rate due to transplant shock by 50% or more
- ◆ Treated plants have a greater ability to maintain root mass and visual quality during periods of drought
- ◆ Stimulates soil microbe population and increases soil's nutrient retention
- ◆ **Return on Investment through decreased fertilizer & irrigation expenses, labor costs, plant & sod replacements, and the ability to bring turf to maturity faster**
- ◆ OMRI Listed
- ◆ ½ gal, 1 gal and 2.5 gal jugs



### MYCORRHIZAL APPLICATIONS, INC.

From the Greek translation "fungus-roots," mycorrhizae are beneficial fungi that attach themselves to plant roots and create a mutually beneficial relationship between themselves and the plant. The fungus mines for nutrients, minerals and water that benefit the plant, while the plant provides the fungus with essential sugars to fuel its own growth. **Mycorrhizal fungi literally become extensions of the root system, allowing more effective nutrient and water absorption.** The results – Stronger, healthier plants below and above the ground, and a reduced requirement for fertilizer inputs.



### LANDSCAPER'S BIONUTRITION

#### 3-0-3 GRANULAR

- ◆ **Use in new construction sites, to properly prepare soils and ensure that expensive plant materials will survive the stress of transplanting**
- ◆ Contains Yucca, Humic Acid, Kelp, Beneficial Bacteria, Endo- and Ecto-Mycorrhizae, Organic Polymer Gel and Slow Release Nitrogen
- ◆ It will:
  - Condition soil structure
  - Stimulate root growth
  - Introduce valuable soil microbes
  - Colonize soils with mycorrhizal fungi
  - Improve a soil's water retention
- ◆ 8oz packets, 5 lb and 20 lb bulk sizes



### MYCOAPPLY® ULTRAFINE ENDO

- ◆ Four-species of Endomycorrhizae
- ◆ 130,000 propagules per pound
- ◆ Fine powder formulation – Can pass #70 screen
- ◆ **Apply to grass seed as a dust prior to planting, use in water-in (drench) applications, or for hydroseeding**
- ◆ 20 lb. bag



### MYCOAPPLY® ENDO

- ◆ Four-species of Endomycorrhizae
- ◆ 60,000 propagules per pound
- ◆ **Granular formulation is great for broadcast lawn applications, transplanting of trees & shrubs, and hydroseeding**
- ◆ 40 lb. bag



### MYCOAPPLY® SOLUBLE ENDO

- ◆ Four-species of Endomycorrhizae
- ◆ 40,000 propagules per pound
- ◆ **Also contains soluble 5-0-2 organic fertilizer**
- ◆ Fine powder formulation – Can pass #70 screen
- ◆ Apply to grass seed as a dust prior to planting, use in water-in (drench) applications, or for hydroseeding
- ◆ 1 lb. bag



### ESSENTIAL PLUS 1-0-1

- ◆ 100% Natural Rooting Substance and Biostimulant
- ◆ This highly concentrated liquid organic solution is loaded with Iron, Humic Acid, natural plant hormones, vitamins, natural wetting agents and L-amino acids to help repair stressed plants, prevent transplant shock, and act as an insurance policy for all your installations
- ◆ 1 qt, 1 gal, 2.5 gal jugs and 30 gal drum

### REPAIR PLUS 3-0-3 DRY

- ◆ Combining the best of Growth Products' Companion and Essential Plus products, Repair Plus is a granular that is incorporated into soil or top dressing mixes
- ◆ Its array of beneficial microbes, biological soil amendments and plant growth stimulants provide quick results when it is time to reseed, top dress, or repair divot damage from a horse's hoof or player's cleats on any type of sports turf.
- ◆ 5lb. tote

**PH REDUCER** ★

- ◆ A gentle but effective Citric Acid solution
- ◆ Non-burning organic formula that is safer on turf, as well as on skin and clothing, than phosphoric or Sulfuric acids
- ◆ Can be used to acidify high pH soils, or as a tank mix buffer solution.
- ◆ 2.5 gal

**CONTROL DE-THATCHER** ★

- ◆ A rich organic solution with 15% slow release Nitrogen and enzyme-producing microbes that assist in the breakdown of thatch
- ◆ 2.5 gal

**RESTORE PLUS 3-0-2 LIQUID** ★

- ◆ The All-In-One Solution For Quick Green-Up and Improved Soils
- ◆ Contains 10% Humic Acid, 5% L-amino acids, 3% chelated Iron, 1% chelated Manganese, hydrolyzed soy protein, and yeast
- ◆ 2.5 gal

**PLANT FOOD CO ADAMS EARTH**

- ◆ An organic blend of humic and amino acids, North Atlantic kelp extract, natural sugars, vitamins and other organic compounds
- ◆ Improves soil structure, rooting and the uptake of nutrients
- ◆ 2.5 gal jug

**GRO POWER 5-3-1**

- ◆ 70% Humus, 15% Humic Acids, micronutrients, and soil enhancers for soil preparation, backfill, hydroseeding, maintenance, and for all purpose use
- ◆ 50 lb. bag

**GRO POWER PLUS 5-3-1**

- ◆ Original formula + soil penetrant. Designed for soil conditions that are impossible, such as highly-compacted, hard pan areas (clay, adobe, caliche soils) or areas that have extremely high levels of salt (EC), sodium, boron or pH problems
- ◆ 50 lb. bag

**GRO POWER 12-8-8 SLOW RELEASE**

- ◆ For color areas and sensitive plants
- ◆ Will release slowly, over three to four months, under normal conditions
- ◆ 100% of Nitrogen from Methylene Urea
- ◆ 40 lb. bag

**GRO POWER 3-12-12 FLOWER 'N BLOOM**

- ◆ Used in areas where a higher phosphorus and Potassium nutrient is desired, i.e. blooming plants, color, fruit or vegetable gardens and new turf
- ◆ 35% Humus, 7% Humic Acids, micronutrients, and soil enhancers
- ◆ 50 lb. bag

**TRI-C HUMATE PLUS** ★

- ◆ Homogenous blend of Humate (minerals, carbon, organic matter, humic acids, beneficial bacteria) and Gypsum
- ◆ Improves soil structure and water holding capacity
- ◆ Granular formulation eliminates dust which is often a problem with organic materials
- ◆ OMRI Listed (Certified Organic)

**OYSTER SHELL FLOUR** ★

- ◆ Calcium Carbonate
- ◆ 50lb. bag

**WORM CASTINGS** ★

- ◆ 50lb. bag

**GROWMORE CITRA-GROW CITRIC ACID** ★

- ◆ Provides Carbon for ammonium assimilation in roots and synthesis of amino acids
- ◆ Also plays a major role in detoxification of plant root system, and is particularly effective in protecting plant root from the harmful effects of aluminum



### **EZ ORGANIC SUPPLEMENT** ✦

- ◆ This all-natural bio-stimulant contains micro-nutrients, vitamins, enzymes, amino acids, complex carbohydrates, rooting hormones, and other natural growth stimulants
- ◆ Drastically improves uptake and availability of fertilizers and those nutrients presently in the soil, giving plants a boost in growth, vigor and health
- ◆ Also energizes soil by stimulating the production of beneficial bacteria, which break down thatch, build humus, and fight against soil-borne pathogens
- ◆ Stimulates massive root development, not only improving nutrient and water uptake, but enabling plants to better withstand extreme temperatures
- ◆ The mild acid base dissolves hard water mineral deposits that can clog sprinkler heads and drip emitters, keeping them clean and running efficiently
- ◆ Can be used to enhance any fertilization program, but is particularly beneficial at transplant
- ◆ 1 pint and 2.5 gal jug

### **TURF PRO/TURF PRO PLUS - BIO-STIMULANT AND SOIL CONDITIONER/TURF PRO** ✦

- ◆ 100% Organic Bio-Stimulant/Soil Conditioner/Nutrient Converter
- ◆ In addition to micro-nutrients, plant extracts, enzymes, carbon, and vitamins, Turf Pro Bio-Stimulant contains Lignin, Humic and Fulvic acids, 73 trace elements, and 20 beneficial soil microbes
- ◆ Turf Pro replenishes and maintains the microbial colonies that are often eliminated by excessive fertilizer and chemical use. Microbes amplify a plant's ability to absorb nutrients by more than 100 times. That means plants can meet their genetic growth potential on lower levels of supplemental nutrition, as well as increased tillering, thicker walls, thicker vascular system, and generally higher quality plants and trees with better color and texture
- ◆ Lignin and Humic/Fulvic acids are excellent sources of food for these beneficial soil fungi, and help to minimize leachate pollutants
- ◆ Turf Pro is non-toxic, can be applied as a soil drench or foliar spray, and is systemically absorbed throughout the plant for optimum response
- ◆ Turf Pro available in 1 gal and 2.5 gal jugs
- ◆ Turf Pro Plus (with Iron) available in 1 gal and 2.5 gal jugs

### **TURF AND GARDEN PRO PLUS IRON** ✦

- ◆ A pasteurized/homogenized/deodorized manure in liquid form
- ◆ Combined with plant hormones as well as Humic and Fulvic acids to develop root mass and length, it is ideal for the establishment of new turf
- ◆ 2.5 gal jug and 55 gal drum

### **SUPERTHRIVE - THE ORIGINAL VITAMINS-HORMONES SOLUTION** ✦

- ◆ A vitamins-hormones solution added to any fertilizer program to activate nutrients to their full potential and revive plants
- ◆ Highly effective for jump-starting transplanted material, increasing seed germination rates, deepening and toughening root systems, and speeding up the growth in size of trees and shrubs
- ◆ 1 qt. and 1 gal. jugs

### **VITAMIN B-1** ✦

- ◆ Solution with vitamin B-1 for use in transplanting
- ◆ 1 gal. jug



## CALTRISAL ST

- ◆ Speeds up the solubilization process of Calcium, and interrupts the crystallization of Calcium Carbonate
- ◆ More Calcium is active in the soil solution to replace harmful sodium ions, bind small clay particles together and re-aggregate the soil, so soil structure is improved
- ◆ **Aggregated soil is more porous, allowing for greater infiltration and leaching of water**
- ◆ 5.9 gal. pail

## BLAST INJECTABLE & BLAST SPRAYABLE

- ◆ **Synthetic acid-based soil recovery tool used to dissolve carbonate build-up in the soil, which opens soil pores for better infiltration of water**
- ◆ Frees up calcium, magnesium and other bound-up nutrients in the soil for plant use
- ◆ Patented Synergy Technology
- ◆ **Regular use will improve soil structure and increase infiltration & nutrient availability**
- ◆ Injectable formula in 30 gal drum and 258 gal tote
- ◆ Sprayable formula in 2.5 gal jug and 30 gal drum

# SOIL SURFACTANTS & WETTING AGENTS



## AQUEDUCT SOIL SURFACTANT

- ◆ A curative surfactant formulation designed specifically to provide rapid recovery from existing water management problems such as Localized Dry Spot
- ◆ Moves water deeply into problem areas, reducing water repellency and restoring the rootzone's ability to regain optimum moisture levels
- ◆ **Quickly reduces turf wilt and promotes recovery of stressed turf**
- ◆ Liquid formulation in 2.5 gal. jug, 5 gal. pail, 30 gal. and 55 gal. drums
- ◆ **Granular formulation in convenient 20lb. pail — perfect for landscaper use**
- ◆ SWDG (Spreadable, Water Dispersible Granule) in 50lb. bag



## SIXTEEN90

- ◆ **"Sixteen Ounces, 90 Days." — Provides guaranteed safe protection against water repellency problems for ninety days**
- ◆ Reduces water repellency (the cause of localized dry spots) and promotes turf uniformity
- ◆ Liquid in 5 gal. pail and 30 gal. drum; Granular in 40lb. bag



## ADVANTAGE PELLETS

- ◆ **Makes touching up problem spots easy**
- ◆ Offers temporary relief of Localized Dry Spots
- ◆ Turf safety in any weather
- ◆ Box of 12 pellets



## AQUATROLS APPLICATOR

- ◆ **Automatically mixes Aqueduct liquid with water flowing through at a constant proportion of 1:320 (4 oz. of Aqueduct concentrate per minute at 10 gals. of water per minute)**



## ADVANTAGE APPLICATOR

- ◆ **For use with Advantage Pellets**
- ◆ Can be adapted for a 3/4" or 1" hose fitting
- ◆ Fittings able to handle high pressure normally used to operate irrigation systems





### DISPATCH

- ◆ Increases the penetration and infiltration of irrigation or rainfall, making it more readily available for plant uptake
- ◆ **Improved irrigation efficiency and reduced water use**
- ◆ Mix with pre-emergent herbicides or soil applied insecticides to ensure uniform chemical distribution
- ◆ Injectable formulation in 5 gal. pail, 30 gal. and 55 gal. drums and 260 gal. SpaceKraft
- ◆ Sprayable formulation in 2.5 gal. jug and 30 gal. drum



### REVOLUTION

- ◆ **Patent-pending technology that balances air-to-water ratios in the soil**
- ◆ By providing better moisture access and gas exchange in the rootzone, overall turf health is improved and it is much more resilient under all types of stresses
- ◆ Keep leaf turgor stable for more consistent play, and maintains evapotranspiration rates to keep turf canopy cooler
- ◆ Exceptionally safe on fine turf species and is **backed by Aquatrols' exclusive money-back performance guarantee**
- ◆ 2.5 gal. jug, 30 gal. and 55 gal. drums, and 50lb. bag SWDG

### PRIMER SELECT

- ◆ A high-performance soil surfactant that is the foundation of an effective rootzone management program
- ◆ **Enhances turfgrass uniformity by establishing matrix flow in the rootzone**
- ◆ 5 gal. pail, 30 gal. drums, and 50lb. bag SWDG



### AQUATROLS INFILTRX

- ◆ An economical penetrant developed specifically to move water off the surface and into the rootzone, for less puddling and healthier turf
- ◆ **Reduces water loss due to surface evaporation and run-off**
- ◆ 55 gal drum

### GROWTH PRODUCTS HYDRO-MAX

- ◆ **All-Natural Wetting Agent plus Humic Acid**
- ◆ Derived from Yucca and Leonardite
- ◆ Loosens compacted soils, increases water & fertilizer penetration, alleviates dry spots and helps leach salts
- ◆ **Can also be used to reduce surface tension of pesticide sprays (as a spreader)**
- ◆ 2.5 gal jug

## FIELD CARE / POROUS SOIL AMENDMENTS



### TURFACE MVP

- ◆ The leader in field conditioning products!
- ◆ Can be incorporated into infield mix to fight compaction that leads to running, sliding and bad ball hop injuries
- ◆ Can also be used as a topdressing to quickly turn muddy conditions into dry, safe surfaces
- ◆ **Holds moisture and increases drainage as a result of balanced air and water pore space**
- ◆ 50lb. bag, 2000 lb. sack



### TURFACE PROLEAGUE

- ◆ A smaller, more consistent particle size that delivers the color, safety and performance of a Major League infield
- ◆ Offers same safety and drainage features as MVP
- ◆ **Also flows easily into aerification holes, used as an amendment to increase soil porosity**
- ◆ Available in natural, red, brown, and heritage red
- ◆ 50lb. bags



### TURFACE QUICK DRY

- ◆ After a rain, Turface Quick Dry makes muddy, slippery conditions a thing of the past
- ◆ Will not cake, become slippery or turn a field rock-hard, and works over and over again
- ◆ 50lb. bag





## Dependable Performance.

It's why you trust  **Aquatrols®**  
aquatrols.com

 **Revolution®**

 **AQUEDUCT®**  
SOIL SURFACTANT

 **Dispatch®**  
Injectable

 **Dispatch®**  
Sprayable

 **PRIMER®** Select  
Enhanced  
Water Flow  
Soil Surfactant

 **Sixteen**  
30

 **Advantage II**

**AQUAPLEX amino®**  
**BLAST™** **BLAST™**  
SPRAYABLE® INJECTABLE®

**CALTRISAL ST®** ↓



## YOUR HOME FIELD ADVANTAGE

The #1 Conditioner for Safe & Playable Fields

Visit [www.turface.com](http://www.turface.com) for product and  
field maintenance education

 Find us on  
**Facebook**  
[facebook.com/Turface](https://facebook.com/Turface)






### **MOUND CLAY AND MOUNDMASTER BLOCKS**

- ◆ Virgin packing clay without any additives that diminish a clay's quality
- ◆ High degree of plasticity provides the best footing and wear resistance, allowing it to stand up to the intense activity received by pitching mounds and batter's and catcher's boxes
- ◆ Blocks (bag of 8) are great for mound and box renovation; Clay (50 lb. bag) is easy-to-handle for smaller repairs



### **FIELD AND FAIRWAY**

- ◆ Incorporated into the root zone, it adds porosity to prevent compaction in high traffic areas
- ◆ Medium-sized particle holds moisture and nutrients and provides a permanent balance of air and water space to increase drainage and prevent muddy conditions that destroy turf
- ◆ Two colors available — Incorporate **Natural** into rootzones to prevent compaction and amend poor soils; **Emerald** covers up rough spots on the field, masks worn or high-traffic areas and adds color and strength to turf
- ◆ 50 lb. bag

### **PERLITE**

- ◆ Lightweight soil conditioner increases the soil's air and water holding capacity
- ◆ Comes from volcanic material, so it does not break down like organic matter
- ◆ 4 cu ft bag

## **BASIC SOIL AMENDMENTS**

### **PELLETIZED GYPSUM**

- ◆ Regular, Mini and Solution Grade
- ◆ 40 and 50 lb. bags

### **LIQUID GYPSUM**

- ◆ A very good substitute for powdered gypsum
- ◆ Contains binding agents and surfactants
- ◆ 1 qt. and 1 gal. jug

### **PRILLED LIME – CALCITIC**

- ◆ Regular and Mini Grade
- ◆ 50 lb. bag

### **PRILLED DOLOMITE**

- ◆ 50 lb. bag

### **SULFUR – 90% DISINTIGRATING**

- ◆ 50 lb. bag

### **SULFUR FOR BURNERS – 99% PURITY**

- ◆ 50 lb. bag 50 lb. bag

### **IRON SULFATE 20%**

- ◆ 50 lb. bag 50 lb. bag

### **FERROUS SULFATE 31% MONOHYDRATE**

- ◆ Use for quick and full greening of turf, to reduce alkalinity of soil, or to control moss
- ◆ Best form of Iron for green response, however it will stain surfaces
- ◆ Regular and Fine granule
- ◆ 50 lb. bag

### **GRANUSOL IRON 50%**

- ◆ Greens Grade
- ◆ 50 lb. bag

### **MAGNESIUM SULFATE**

- ◆ 50 lb. bag

### **MANGANESE SULFATE**

- ◆ 50 lb. bag

### **ZINC SULFATE 36%**

- ◆ 50 lb. bag

## **MULCHES AND SOIL MIXES**

### **MULCH & POTTING SOIL**

- ◆ Bagged & Bulk Options available
- ◆ Specific mulches & soils vary by region – contact your local store for details

- Hardwood Mulch
- Bark Bits
- Bark Chunks
- Composted Mulch/Bark Blends
- Playground Chips (meet specific safety standards)
- Amended Top Soil
- Potting Soil
- Peat Moss
- Organic Amendment





- **PROVEN:**  
Monsanto products have built a reputation for consistent quality and professional performance while meeting the expectations of the Industrial Turf and Ornamental industry.
- **RELIABLE:**  
With more than 30 years of manufacturing experience and containing the highest quality ingredients, Monsanto products deliver consistent performance.
- **SUPPORTED:**  
Monsanto's high-quality products are backed by the most experienced team of experts in the business.

# Get to the root of the problem. **Faster.**

**ROUNDUP PROMAX® IS A CONCENTRATED AND SUPERIOR FORMULATION THAT CONTROLS TOUGH WEEDS, BRUSH AND VINES IN TOUGH CONDITIONS IN UNDER 30 MINUTES.**

Roundup PROMAX is weatherproof in significantly less time than imitators. **Roundup PROMAX offers a 30-minute rainfast warranty.** Roundup PROMAX provides fast, consistent results every time you spray.



**YOUR TIME IS IMPORTANT – SO ROUNDUP QUIKPRO™ DELIVERS VISIBLE RESULTS WITHIN 24 HOURS FOR FEWER CALLBACKS.**

Roundup QuikPRO is rainfast in one hour and its dry formulation creates a true solution that **won't clog nozzles.**

For more information, contact your local dealer or visit **MonsantoITO.com**



Roundup Technology® includes Monsanto's glyphosate-based herbicide technologies. **Individual results may vary**, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible.

**ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS.** Roundup PROMAX and Design®, Roundup PROMAX®, Roundup QuikPRO™, Roundup Technology® and TRUEBLUE ADVANTAGE PROVEN RELIABLE SUPPORTED and Design™ are trademarks of Monsanto Technology LLC. ©2014 Monsanto Company.

**NOTE: A Soil Surfactant mixed with Pre-Emergent Herbicide ensures the Herbicide is distributed uniformly in the soil profile.  
See Dispatch Soil Surfactant on page 357.**

**LOOK FOR THE GREEN SYMBOL (✦) THROUGHOUT THE SOURCE BOOK TO EASILY IDENTIFY GREEN PRODUCTS**

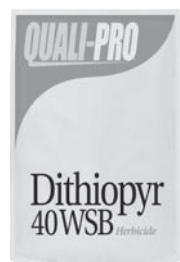
### **QUALI-PRO OXADIAZON 50 WSB**

- ◆ Pre-emergent control of grassy annuals and small-seeded broadleaf weeds
- ◆ Safe in cool-season turf, warm-season turf, and ornamental beds
- ◆ **Best Goosegrass control**
- ◆ **Ronstar 50 WSB equivalent**
- ◆ 2 X 1lb. water soluble bags



### **QUALI-PRO DITHIOPYR 40 WSB**

- ◆ Pre-emergent control of grassy annuals and small-seeded Broadleaf weeds
- ◆ **Plus, it offers early post-emergent control of Crabgrass, and it's non-staining**
- ◆ Safe in cool-season turf, warm-season turf, and ornamental beds
- ◆ **Dimension 40 WSB equivalent**
- ◆ 4 X 5 oz. water soluble bags



### **QUALI-PRO PRODIAMINE**

- ◆ Pre-emergent control of grassy annuals and small-seeded Broadleaf weeds
- ◆ Safe in cool-season turf, warm-season turf, and ornamental beds
- ◆ **Longest-lasting pre-emergent weed control at lowest application rates, and it's non-staining**
- ◆ **Barricade 65 WDG equivalent**
- ◆ Available in 5lb. 65WDG formulation or 2.5 gal. liquid



### **QUALI-PRO ORYZALIN/SURFLAN/ MONTEREY WEED IMPEDE**

- ◆ Pre-emergent control of grassy annuals and small-seeded broadleaf weeds
- ◆ Safe, economical control in warm-season turf and ornamental beds
- ◆ **Excellent tank mix with Roundup for pre- and post-emergent control in one step**
- ◆ Not safe for cool-season turf
- ◆ 2.5 gal., 1 qt. and 1 pt. jugs



### **PENDULUM AQUACAP**

- ◆ Pre-emergent control of grassy annuals and small-seeded broadleaf weeds
- ◆ Safe in cool-season turf, warm-season turf, and ornamental beds
- ◆ **Encapsulated water-based formula has virtually no odor and reduced staining potential compared to the 3.3 EC version**
- ◆ 2.5 gal. jug, 30 gal. drum

### **PENDULUM 3.3 EC**

- ◆ Pre-emergent control of grassy annuals and small-seeded broadleaf weeds
- ◆ Safe in cool-season turf, warm-season turf, and ornamental beds
- ◆ 2.5 gal. jug

### **QUALI-PRO ISOXABEN 75 WG**

- ◆ **The only sprayable preemergence herbicide that controls 95 species of Broadleaf weeds** — including dandelion — for up to eight months
- ◆ An excellent tank mix with other pre-emergent herbicides that primarily control grassy weeds, for the broadest spectrum of weed control
- ◆ **Gallery DF equivalent**
- ◆ 1lb. jar



**SEE TURFGRO COMBINATION FERTILIZERS FOR WEED & FEED OPTIONS ON PAGE 340**

## PRE-EMERGENT HERBICIDES - SPRAYABLE (CONT.)

### **TREFLAN/MONTEREY VEG & ORNAMENTAL WEEDEER/TRIFLURALIN**

- ◆ Pre-emergent control of grassy annuals and small-seeded broadleaf weeds in flower beds, around trees, shrubs, and certain vegetables
- ◆ **Provides excellent control when applied prior to mulching of planting bed area**
- ◆ **Not safe in turf**
- ◆ 2.5 gal., 1 gal. and 1 qt. jugs



### **Sim-Trol® 4L** Simazine Flowable Herbicide

#### **SIM-TROL 4L**

- ◆ Provides pre-emergent control of most annual grasses and broadleaf weeds, with **exceptional control of winter annuals when applied in the fall**
- ◆ Safe for use in Bermudagrass, Centipedegrass, St Augustinegrass and Zoysiagrass
- ◆ Active ingredient: Simazine
- ◆ 2.5 gal jug

## PRE-EMERGENT HERBICIDES - GRANULAR

### **QUALI-PRO OXADIAZON 2G**

- ◆ Pre-emergent control of grassy annuals and small-seeded broadleaf weeds
- ◆ Safe in cool-season turf, warm-season turf, and ornamental beds
- ◆ **Best Goosegrass control**
- ◆ **Ronstar 2G equivalent**
- ◆ 50lb. bag



#### **SULFLAN XL 2G**

- ◆ Pre-emergent control of grassy annuals and small-seeded broadleaf weeds
- ◆ Contains Oryzalin and Benefin
- ◆ **Safe, economical control in warm-season turf and ornamental beds**
- ◆ **Not safe for cool-season turf**
- ◆ 50lb. bag

## PRE-EMERGENT HERBICIDES - GRANULAR (CONT.)

### **CASORON 4G/BARRIER**

- ◆ **Spectrum of weed control is limited, but controls many difficult weeds such as horsetails in many established woody ornamentals**
- ◆ It is volatile, so should only be used in the late fall, winter, or early spring
- ◆ Does provide some post-emergent activity to certain weed species
- ◆ **Not for use in turf**
- ◆ 50lb. bag

### **TREFLAN GRANULAR**

- ◆ Pre-emergent control of grassy annuals and small-seeded broadleaf weeds in flower beds, around trees, shrubs, and certain vegetables
- ◆ **Provides excellent control when applied prior to mulching of planting bed area**
- ◆ **Not for use in turf**
- ◆ 40lb. bag

### **DIMENSION GRANULAR**

- ◆ Pre-emergent control of grassy annuals and small-seeded broadleaf weeds
- ◆ **Plus, it offers early post-emergent control of Crabgrass**
- ◆ Safe in cool-season turf, warm-season turf, and ornamental beds
- ◆ 0.27G in 40lb. bag, 0.27G in 50 lb. bag



### **PENDULUM 2G**

- ◆ Pre-emergent control of grassy annuals and small-seeded broadleaf weeds
- ◆ Safe in cool-season turf, warm-season turf and ornamental beds
- ◆ 40 lb bag

## PRE-EMERGENT HERBICIDES - GRANULAR (CONT.)

### FREEHAND 1.75G

- ◆ Combination herbicide of dimethenamid-P (new chemistry) with tried-and-true pendimethalin
- ◆ **Broad range of pre-emergent weed control — Annual grasses, certain Sedge species and many small-seeded Broadleaf weeds**
- ◆ Flexible rates, easy spreading, and excellent residual control
- ◆ Safe in ornamentals and in warm-season turf
- ◆ 37.5 lb and 50 lb bags



### QUALI-PRO T/I

- ◆ **Controls more Broadleaf and Grassy weeds — in more ornamentals — than any other preemergent herbicide**
- ◆ Contains Trifluralin and Isoxaben, the same active ingredients as in Treflan and Gallery
- ◆ Provides excellent plant tolerance and long-lasting broad-spectrum control
- ◆ Bonds tightly with soil particles and is low in water solubility, so it won't move out of the application zone
- ◆ **Snapshot Equivalent**
- ◆ 50lb. bag



### PREMERGE/ CORN GLUTEN ★

- ◆ Corn gluten is a **naturally occurring substance** that inhibits the growth of a seed's tiny feeder roots, causing weed seedlings to die before they germinate
- ◆ With 9% Nitrogen, it is also a good natural fertilizer
- ◆ 50lb. bag

## PRE-EMERGENT HERBICIDES - OTHER

### BIO-BARRIER ROOT CONTROL FABRIC

- ◆ **Geotextile fabric impregnated with Trifluralin herbicide, to redirect root growth of trees away from sidewalks, foundations, pipes and other structures**
- ◆ Prevents root tip cell division but does not impact overall plant health
- ◆ Fabric allows water, air and nutrients to pass through, is easily cut to size, and is guaranteed for 15 years
- ◆ 12" x 20', 12" x 100', 19 1/2" x 100', 58" x 100' sizes

## POST-EMERGENT HERBICIDES - NON-SELECTIVE CONTROL

**NOTE: Certain Post-Emergent Herbicides require or recommend the addition of a tank adjuvant for expected performance.**

See TurfGro Tank Adjuvants on page 383.



### ROUNDUP PROMAX

- ◆ The next big thing in weed control is also the smallest! Roundup PROMAX is the latest addition to the Roundup family of herbicides — and it's the most compact, powerful PRO ever
- ◆ **More Concentrated** — More active ingredients in every gallon means lower usage rates, and a smaller jug that is easier to handle and uses less of the world's resources
- ◆ **Consistent, Professional Performance** — Like the Roundup PRO you've come to know and trust, Roundup PROMAX controls a broad spectrum of weeds with virtually no re-growth
- ◆ **30-Minute Rainfast Warranty** — The unique surfactant system of Roundup PROMAX allows the solution to penetrate weed leaf surfaces faster, which means Roundup PROMAX is rainfast in half the time of Roundup PRO
- ◆ 1.67 gal. jug and 30 gal. drum



### ROUNDUP QUICKPRO

- ◆ The **POWER & SPEED** you need — there is simply no better choice for immediate, visible results AND unsurpassed weed control!
- ◆ Visible results in as little as 24 HOURS
- ◆ Quick uptake speeds weed-killing power right to the root, where it can't wash away
- ◆ Rain-fast in one hour
- ◆ **Quick burndown of top growth AND complete control, roots and all, reduce hassle of customer complaints and callbacks**
- ◆ High-level performance even in cool temperatures
- ◆ Packaging designed for easy storage, handling & application — labeled measuring cup, English & Spanish label, child-resistant cap, 30% of the weight of liquid, easy clean-up
- ◆ 6.8lb. jug and 5-pack of 1.5 oz. pre-measured doses



## RANGER PRO

- ◆ 41% Glyphosate + Surfactant
- ◆ 2.5 gal. jug and 30 gal. drum

## SCYTHE

- ◆ Provides fast burndown of emerged, actively-growing, green vegetation, **including Moss and Lichens**
- ◆ Visible results on most weeds occur within hours
- ◆ Does not damage mature, non-green, woody parts of plants, and is not translocated to the root — however it is wise to occasionally alternate such a product with applications of Glyphosate (Roundup) to prevent weed resistance
- ◆ 2.5 gal. and 1 gal. jugs



## NUFARM DIQUAT SPC 2L

- ◆ Fast-acting, non-selective, non-systemic herbicide with an aquatic label
- ◆ Spreads quickly through the water and makes fast contact with aquatic weeds
- ◆ Water-soluble, so it is absorbed by target plants in just minutes, providing broad-spectrum control of floating, submersed and marginal weeds without any worry about groundwater contamination or toxicity to fish, other organisms or wildlife
- ◆ Also suitable for quick burndown of weeds in landscaped areas
- ◆ **Requires a non-ionic surfactant for expected performance**
- ◆ **Reward equivalent**
- ◆ 1 gal. jug



# FINALSAN

## TOTAL VEGETATION KILLER ✦

- ◆ A non-selective herbicide formulated with ammoniated soap of fatty acids, which penetrates the wax layer of the leaf and destroys the epidermis cell membranes so that the plant dries up
- ◆ Controls grassy and broadleaf weeds, as well as moss & algae growing on roofs, decks and other surfaces
- ◆ Kills within one hour and works even in cool weather
- ◆ **OMRI Listed and organic certified**
- ◆ 2.5 gal jug

# Finale®

## FINALE

- ◆ **Contact herbicide applied for top-growth burndown of emerged weeds**
- ◆ In addition to annual grasses & broadleaves, it will also control certain woody species
- ◆ 2.5 gal. jug

## PRONTO VEGETATION KILLER

- ◆ Season-long control of tough weeds, grass and brush
- ◆ **Eliminates AND prevents unwanted growth**
- ◆ Imazapyr + Glyphosate
- ◆ **Addition of a non-ionic surfactant or MSO will enhance performance**
- ◆ 2.5 gal and 1 quart jugs



## BURNOUT ✦

- ◆ An **organic grass and weed killer** made from food grade ingredients including Cove Oil and Citric Acid
- ◆ For non-selective control of herbaceous (non-woody) Broadleaf and Grass weeds
- ◆ Safe to use around ponds and streams
- ◆ 1 gal. and 2.5 gal. concentrate, 24 oz. ready-to-use

**SEE TURFGRO SPREADER-STICKER NON-IONIC SURFACTANT ON PAGE 380**

### QUALI-PRO QUINCLORAC 75DF

- ◆ **Excellent post-emergent control of Crabgrass, even in its mature stages**
- ◆ Also eliminates other Grassy & Broadleaf weeds such as Foxtail, Kikuyugrass, Clover, Dandelion, Dollarweed and Violet, without harming turf
- ◆ Application and seeding flexibility — can be applied before or after overseeding
- ◆ St Augustinegrass and Bentgrass are susceptible to injury
- ◆ **Drive 75DF equivalent**
- ◆ **Include Methylated Seed Oil (MSO) for maximum performance**
- ◆ 1 lb. jar



### FUSILADE II

- ◆ Broad-spectrum, systemic control of Annual & Perennial grasses
- ◆ **Labeled to spray over the top of ornamentals, or as a directed spray, without damaging valuable plantings**
- ◆ At reduced rates, will safely remove Bermudagrass from Tall Fescue and Zoysia Grass
- ◆ Extremely fast & effective control, and rain-fast in only one hour
- ◆ Active ingredient: Fluazifop
- ◆ **Requires a non-ionic surfactant for expected performance**
- ◆ 1 qt. tip and pour jug for easy measuring



**SEE TURFGRO BOOSTER MSO+ORGANOSILICONE ON PAGE 380**

### ORNAMEC

- ◆ The same active ingredient and applications as Fusilade II, in a less-concentrated formulation
- ◆ **Also may be sprayed over the top of ornamentals; also requires a non-ionic surfactant**
- ◆ 1 gal. and 1 qt. jugs



### KATANA

- ◆ Post-emergence control of 58 sedges, grassy and broadleaf weeds in warm-season turf
- ◆ **Especially effective in removing Poa Annua, Clumpy Ryegrass, Tall Fescue, Sedges and Kyllingias**
- ◆ More active in cooler temperatures than many Sulfonyleurea herbicides used to remove cool-season grasses from warm-season turf
- ◆ Active ingredient: Flazasulfuron
- ◆ 3 oz jar



### GRASSGETTER

- ◆ **Systemic selective herbicide kills weedy grasses without injuring desirable plants**
- ◆ Labeled for homeowner use on and around flowers, evergreens, ornamental groundcovers, bedding plants, shrubs, trees, and certain fruits & vegetables
- ◆ Active ingredient: Sethoxydim
- ◆ **Include Methalated Seed Oil (MSO) for maximum performance**
- ◆ 1 gal. jug and 1 pt. twin-pack w/Herbicide Helper crop oil concentrate



### QUALI-PRO RIMSULFURON

- ◆ **Unsurpassed control of Ryegrass and Poa on warm-season turf**
- ◆ Enhances rapid and complete spring transition of bermudagrass
- ◆ Prevents and controls Bluegrass infestations in fall overseeding
- ◆ **TranXit equivalent**
- ◆ **Must add a non-ionic surfactant or MSO for expected results**
- ◆ 15 oz jar



**SEE TURFGRO BOOSTER MSO + ORGANOSILICONE AND TURFGRO SPREADER-STICKER NON-IONIC SURFACTANT ON PAGE 380**

## **SPEEDZONE (RED LABEL)**

- ◆ **The fastest broadleaf weed control — ever!**
- ◆ Carfentrazone + 2, 4-D + MCPP + Dicamba
- ◆ Visible activity in HOURS
- ◆ Effective, fast-acting, **cool-weather performance**
- ◆ Clover control in as little as one week
- ◆ Rain-fast in three hours
- ◆ Can reseed treated area in two weeks
- ◆ CAUTION signal word (compared to Trimec's DANGER)
- ◆ 2.5 gal. and 1 gal. jugs, 20 oz bottle, 30 gal. drum



## **SPEEDZONE SOUTHERN (GREEN LABEL)**

- ◆ **The fastest broadleaf weed control ever — in a gentler formulation more suitable for sensitive warm-season grasses**
- ◆ Carfentrazone + 2, 4-D + MCPP + Dicamba
- ◆ Visible activity in HOURS
- ◆ Broadleaf weed control in as little as one week
- ◆ Can also be used in cool-season grasses
- ◆ Rain-fast in three hours
- ◆ Can reseed treated area in one week
- ◆ CAUTION signal word (compared to Trimec's DANGER)
- ◆ 2.5 gal. and 1 gal. jugs



## **SURGE (BLUE LABEL)**

- ◆ Warm-weather weed control — fast!
- ◆ Sulfentrazone + 2,4-D + MCPP + Dicamba
- ◆ **Amine formulation (vs. Ester) is less volatile and can be applied up to 90°F**
- ◆ Up to 2X faster than other Amine-formulated products
- ◆ Yellow Nutsedge suppression
- ◆ 2.5 gal. and 1 gal. jugs



## **TRIMEC CLASSIC**

- ◆ The original low odor 2,4-D, MCPP & dicamba formulation
- ◆ Controls all major broadleaf weeds in turf
- ◆ Gets many hard-to-kill weeds without repeated applications
- ◆ 2.5 gal., 1 gal. and 1 pt. jugs, 30 gal. drums



## **TRIMEC SOUTHERN**

- ◆ High degree of tolerance in sensitive warm-season turfgrasses
- ◆ Economical Clover control option — North or South
- ◆ Wide spectrum of post-emergent broadleaf weed control
- ◆ Best amine Trimec for Clover and Chickweed
- ◆ MCPP + 2,4-D + Dicamba
- ◆ 1 qt. bottle, 2.5 gal. jug



## **TRIMEC 992**

- ◆ **The “applicator formula” Trimec complex, with a little extra 2,4-D for the quick visual response, especially on dandelion**
- ◆ Also labeled for use on sod farms
- ◆ Registered for use on cool-season and warm-season grasses, although should NOT be applied to Floratam St. Augustinegrass
- ◆ 2,4-D + Dicamba + MCPP
- ◆ 2.5 gal jug and 30 gal drum



## **2,4-D AMINE**

- ◆ 2.5 gal. and 1 gal. jugs



## **TRIPL 80Z**

- ◆ Broadleaf weed control — Full strength formula in small 8-oz packaging
- ◆ 2,4-D + MCPP + Dicamba

## **TRIAMINE JET SPRAY / WEED WHACKER JET SPRAY**

- ◆ 3-way broadleaf weed killer in a **unique foam formula which marks treated weeds, making it easy to spot spray and see where applicator has been**
- ◆ 22 or 23 oz aerosol can
- ◆ Weed Whacker also available in 1 qt ready-to-spray bottle



### QUALI-PRO 2-D

- ◆ **Combination of Triclopyr + Clopyralid provides superior control of up to 35 “difficult-to-manage” species of broadleaf weeds**
- ◆ Provides broad-spectrum weed control with one application, saving product & labor costs from repeat treatments
- ◆ Labeled for use on most established cool- and warm-season turfgrasses
- ◆ **Not for use on residential turf, and no clippings may be used for mulching or composting**
- ◆ 1 gal. jug



### MECOME 2.5

- ◆ Premium MCPP-p formulation for enhanced broadleaf control in turfgrass including bentgrass
- ◆ **Excellent for extreme infestations of Clover – can be used alone or added to other broadleaf herbicides for inexpensive enhanced control**
- ◆ 2.5 gal jug



### FIESTA LAWN WEED KILLER

- ◆ A formulated iron chelate solution that selectively controls broadleaf weeds, moss and algae in turf
- ◆ **Approved by the EPA's Biopesticide Division and can be used in turf areas with pesticide bans/concerns**
- ◆ How it works: Broadleaf weed absorb chelated iron easily and in larger quantities than grass, which leads to cellular damage and ultimately plant death in broadleaf weeds while the grass remains unharmed
- ◆ Delivers visible same-day results, even in cool weather, and has no unpleasant odor
- ◆ 1 gal and 2.5 gal jug

**SEE TURFGRO COMBINATION FERTILIZERS FOR WEED & FEED OPTIONS ON PAGE 340**

### TURFLON ESTER

- ◆ For the control of Annual & Perennial Broadleaf weeds, as well as Kikuyugrass, in cool-season ornamental turfgrasses
- ◆ **Offers broad-spectrum control of the most stubborn, hard-to-control weeds such as Wild Violet, Oxalis, Spurge, Ground Ivy and many others**
- ◆ Also offers suppression of Bermudagrass to accelerate the transition to cool-season turf
- ◆ Active ingredient: Triclopyr
- ◆ 2.5 gal., 1 gal. and 1 qt. jugs



### SPURGE POWER

- ◆ 3-way selective broadleaf herbicide for use on residential turf
- ◆ MCPA + Triclopyr + Dicamba
- ◆ Controls Dandelion, Chickweed, Clover, Oxalis, Spurge, Wild Violet and many other broadleaf weeds
- ◆ Treat warm-season turf at lower use rates and only when temperatures are below 85°F, or at higher rates only if turf is completely dormant
- ◆ 1 qt. and 1 pt. bottles



### LONTREL/STAR THISTLE KILLER

- ◆ Superior control of Clover, Dandelion, Thistle and Dollarweed
- ◆ **Particularly effective on hard-to-control Yellow Starthistle, a noxious weed that infests many parts of California, is toxic to livestock, and chokes out native plant species**
- ◆ Labeled for use on both warm- and cool-season turf, but sets the standard for safety in closely-mowed Bentgrass and Bermudagrass fairways
- ◆ Ideal for use on warm-season varieties because it does not harm or discolor them the way some broadleaf herbicides do
- ◆ **Not for use on residential turf, and no clippings may be used for mulching or composting**
- ◆ Rain-fast within two hours
- ◆ Active ingredient: Clopyralid
- ◆ 1 qt. and 8oz. bottles



### SAPPHIRE

- ◆ Post-emergent control of annual and perennial broadleaf weeds, with **particular effectiveness on English Lawn Daisy and White Clover**
- ◆ Eliminates the need to tank-mix multiple herbicides
- ◆ Non-phenoxy herbicide – **May be used in 2,4-D restricted areas**
- ◆ Labeled for use on golf course fairways & roughs
- ◆ Active ingredient: Penoxsulam
- ◆ 1 pint tip-and-measure bottle



## TRICLOPYR 4EC (GARLON 4/REMEDY ULTRA)

- ◆ Selective control of woody plants such as Blackberry and Poison Oak, as well as broadleaf weeds
- ◆ Used primarily along right-of-ways for the control of brush & small undesirable trees
- ◆ May be used in grazing areas, rangeland & non-irrigated ditchbanks
- ◆ 1 gal. and 2.5 gal. jug

## CROSSBOW

- ◆ Targets woody plants & brush, plus an extended list of Annual and Perennial Broadleaf weeds, while leaving cool-season grasses unharmed
- ◆ Triclopyr + 2, 4-D Ester
- ◆ Appropriate for rangeland, permanent grass pastures, fencerows, non-irrigated ditchbanks, roadsides and industrial sites
- ◆ 2.5 gal., 1 gal. and 1 qt. jugs



## MONTEREY BRUSH & VINE CONTROL

- ◆ Controls woody plants such as Blackberry, Poison Ivy & Poison Oak in residential areas
- ◆ Can also be used in concentrate as a stump treatment
- ◆ 1 pt. bottle



## T-ZONE SE (PURPLE LABEL)

### Broadleaf Herbicide for Tough Weeds.

- ◆ Tough weed formulation – Applies nearly two times more triclopyr than many leading brands
- ◆ Solvent-free ester formula cuts through the cuticle of the toughest weeds
- ◆ Cool-weather weed control option (as low as 50°F)
- ◆ Suitable for applications up to 85°F
- ◆ Rain-fast in three hours
- ◆ Yellow nutsedge suppression
- ◆ Designed for residential, commercial and golf sites
- ◆ 2.5 gal., 1 gal. and 1 quart jugs



## POST-EMERGENT HERBICIDES – GRASSY & BROADLEAF WEED CONTROL

## Q4 PLUS (ORANGE LABEL)

- ◆ Versatile ALL-IN-ONE herbicide for use in cool-season turfgrass
- ◆ Fast-acting Broadleaf control + Crabgrass & Foxtail control + Yellow Nutsedge suppression
- ◆ Quinclorac + Sulfentrazone + 2,4-D + Dicamba
- ◆ Replacement for Trimec Plus following EPA ban of MSMA
- ◆ Rain-fast in six hours
- ◆ Can be applied up to 90°F
- ◆ 30 gal. drums, 2.5 gal. 1 gal. and 1 quart jugs



## QUINCEPT 80Z

- ◆ Broadleaf & Grassy weed control – Full strength formula in small 8-oz packaging
- ◆ 2, 4-D + Quinclorac + Dicamba



## QUALI-PRO MSM TURF 60 DF

- ◆ Highly selective control of certain broadleaf weeds and grassy weeds, including the removal of Bahiagrass from Bermudagrass and St. Augustinegrass
- ◆ Very low use rates and can be used on Sod Farms
- ◆ Manor equivalent
- ◆ Active ingredient: Metsulfuron methyl
- ◆ Include a non-ionic surfactant for maximum performance
- ◆ 8 oz bottle



## ATRAZINE 4L

- ◆ Post-Emergent broadleaf weed control that is safe in sensitive Bermudagrass, St. Augustinegrass, Zoysiagrass and Centipedegrass
- ◆ Also provides Pre-Emergent control of certain annual weeds
- ◆ 2.5 gal., 1 gal. and 1 quart jugs



SEE TURFGRO SPREADER-STICKER NON-IONIC SURFACTANT ON PAGE 380



### CERTAINTY

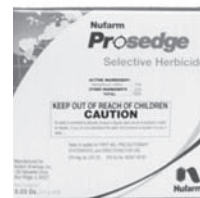
- ◆ Outstanding control of Purple & Yellow Nutsedge with one application
- ◆ Translocates through Nutsedge to attached Rhizomes, Nutlets and Tubers
- ◆ 95% to 100% control of emerged Nutsedge plants
- ◆ Also controls Kyllinga species and other Annual sedges, as well as 24 additional grass & Broadleaf weeds
- ◆ Excellent safety in all major warm-season grasses — Bermudagrass, Zoysiagrass, St. Augustinegrass, Buffalograss, Bahiagrass, Centipedegrass, Kikuyugrass and Seashore Paspalum
- ◆ Requires a non-ionic surfactant for expected performance
- ◆ Active ingredient: Sulfosulfuron
- ◆ 1.25 oz. bottle with single dose scoop



SEE TURFGRO BOOSTER MSO + ORGANOSILICONE AND TURFGRO SPREADER-STICKER NON-IONIC SURFACTANT ON PAGE 380

### PROSEEDGE/SEDGEHAMMER

- ◆ Post-emergent control of Purple & Yellow Nutsedge and certain tough broadleaves such as Horsetail
- ◆ Also suppresses Kyllinga species
- ◆ Safe application in warm- and cool-season turf — Bermudagrass, St. Augustinegrass, Kentucky Bluegrass, Tall & Fine Fescues, and Perennial Ryegrass
- ◆ Requires a non-ionic surfactant for expected performance
- ◆ Active ingredient: Halosulfuron-methyl; **Manage equivalent**
- ◆ 1.3 oz. bottle and 0.9 gram single-dose water soluble bag
- ◆ 13.5 gram single-dose "Sledgehammer Plus" contains non-ionic surfactant. No additional mixtures are necessary.



### NUTGRASS KILLER

- ◆ For control of Yellow Nutsedge & certain Broadleaf weeds in established turf
- ◆ Will not control Purple Nutsedge or any grasses
- ◆ Effective mainly through contact action, so only top-growth is affected
- ◆ Requires a crop oil concentrate for expected performance
- ◆ Active ingredient: Bentazon
- ◆ 1 pt. twin pack with Herbicide Helper crop oil concentrate



## POST-EMERGENT HERBICIDES - MOSS CONTROL

### MOSS OUT™ FOR LAWNS CONCENTRATE

- ◆ 35% Ferric Sulfate
- ◆ Keep away from sidewalks and driveway concrete, because it will stain the concrete
- ◆ 1 gal. and 1 qt. jugs



### MOSS OUT™ FOR ROOFS & WALKS

- ◆ Alkaline cleaner to remove moss, algae, mold, and mildew stains from decks, roofs, siding, windows, and other outdoor surfaces
- ◆ 1/2 gal. and 27 oz. bottles

### QUICKSILVER

- ◆ Quick burndown of Silvery Thread Moss & certain Broadleaf weeds in turf
- ◆ Active ingredient: Carfentrazone
- ◆ 8 oz. bottle

SEE FERTILIZER - BASICS FOR GRANULAR FERROUS SULFATE ON PAGE 330

## Quik-Fire

FAST ACTING • KILLS WEEDS, ALGAE AND MOSS

### QUIK-FIRE

- ◆ **Fast-acting moss & algae killer for use on structural surfaces**
- ◆ Does not stain concrete, pavement, stucco or wood
- ◆ Is non-selective and will also control many annual weeds and suppress perennial weeds growing around buildings, fences and driveways
- ◆ 2.5 gal jug

### ST GABRIEL ORGANIC MOSS KILLER ★

- ◆ Kills all types of moss
- ◆ Made from natural essential oils and soap
- ◆ **Spray directly on bricks, concrete anywhere moss is growing. Do not spray on grass**
- ◆ Kills overnight, just sweep away the dead moss in the morning
- ◆ Won't stain wood decks or bricks
- ◆ Safe to use around ponds and streams
- ◆ 1 gal. concentrate, and 1 gal and 24 oz. ready-to-use bottles



## PRE + POST-EMERGENT HERBICIDES

### GOAL2XL/QUALI-PRO OXYFLUORFEN 2SE

- ◆ **Combines residual (pre-emergence) and contact (post-emergence) activity** — provides knockdown and/or extended weed control depending upon use rate, can provide up to six months residual
- ◆ Outstanding control of "hard to kill" weeds
- ◆ Enhances activity of Glyphosate formulations — improves weed spectrum and speed of kill
- ◆ Safe in certain vegetable crops; **Not safe in turf**
- ◆ Binds tightly to soil — will not leach to groundwater
- ◆ 2.5 gal. jug



### POACONSTRICTOR

- ◆ Intended for professional use on various cool- and warm-season turfgrasses, for the control or suppression of specific weeds,
- ◆ **Has both pre- and post-emergence activity of certain weeds such as Poa annua, and works best in programs emphasizing both approaches**
- ◆ Active ingredient: Ethofumesate; **Prograss equivalent**
- ◆ 3/4 gal. jug



### PRODEUCE

- ◆ **Unique formulation combining pre- and post-emergent herbicides (Prodiamine + Glyphosate)** that deliver contact and residual control of a variety of weeds
- ◆ 3-ounce rate delivers up to three to six months control for a number of annual, grassy weeds
- ◆ As compared with soil sterilants, less concern for lateral movement and off target damage to trees and turf
- ◆ **Perfect for application to cracks and crevices in driveways & sidewalks, along fences & walls, around the base of trees, and on gravel areas**
- ◆ 1/2 gallon squeeze-and-measure container provides applicator convenience and reduces wasted product



### ROUNDUP CUSTOM

- ◆ **Where weeds & water meet — a non-selective, aquatic formulation of glyphosate that controls emerged vegetation in environments where water is present**
- ◆ Has favorable environmental characteristics, such as degradation over time in soil, sediment, and natural waters, and tight binding to most soils and sediment, which reduces bioavailability soon after application
- ◆ An excellent fit for golf courses, residential and commercial areas and in municipalities, roadside areas and irrigation districts
- ◆ **Formerly named “Aquamaster”**
- ◆ 2.5 gal. jug and 30 gal. drum



### RADIANCE

- ◆ **Prevents algae blooms in ponds, lakes & fountains and protects against re-infestation for up to a full month**
- ◆ A biologically active, self-dispersing form of copper held in a proprietary carrier that allows Radiance to stay suspended in water and maintain effective copper concentrations throughout the body of water being treated
- ◆ Requires no special equipment or application practices
- ◆ 1 gal., 2.5 gal. and 5 gal. jugs

### COPPER SULFATE

- ◆ 50lb. bag

### NUFARM DIQUAT SPC 2L

- ◆ Fast-acting, non-selective, non-systemic herbicide with an aquatic label
- ◆ Spreads quickly through the water and makes fast contact with aquatic weeds
- ◆ Water-soluble, so it is absorbed by target plants in just minutes, providing broad-spectrum control of floating, submersed and marginal weeds without any worry about groundwater contamination or toxicity to fish, other organisms or wildlife
- ◆ Also suitable for quick burndown of weeds in landscaped areas
- ◆ **Requires a non-ionic surfactant for expected performance**
- ◆ **Reward equivalent**
- ◆ 1 gal. jug



**POND BIOLOGICALS CAN BE FOUND ON PAGE 301**

**SEE TURFGRO SPREADER-STICKER NON-IONIC SURFACTANT ON PAGE 380**

### Insecticide Application Tip:

Selecting the proper rotation in an insecticide resistance program is critical. To develop an effective rotation, use insecticides with different Group Codes (from the IRAC - Insecticide Resistance Action Committee), which denote different insecticide families or classes. Be particularly cautious with insecticides containing "oil" or "sulfur" in their descriptions, as these may have a higher burn potential on certain plants. Always read product labels thoroughly before tank-mixing or applying any products.

#### QUALI-PRO CHLORPYRIFOS 4E

- ◆ Broad spectrum restricted use insecticide for commercial nursery and greenhouse, on golf course turf, industrial turf and ornamentals
- ◆ Proven long-lasting control of hundreds of insect pests, including Ants, Borers, Cutworms, Fall Webworms, Gypsy Moths, Leaf Feeding Beetles and Mole Crickets
- ◆ Stops pest feeding by inhibiting nervous system activity
- ◆ **RESTRICTED USE PESTICIDE: For retail sale to and use only by certified applicators or persons under their direct supervision**
- ◆ Dursban equivalent
- ◆ 2.5 gal. jug

IRAC Code
1B



#### ACEPHATE / 90SP

- ◆ For the control of ants and other nuisance pests such as Cockroaches, Crickets, Fleas, Firebrats, Earwigs, Pillbugs and Sowbugs
- ◆ Apply directly as pellets or dilute in a spray
- ◆ 1 lb. shaker cans & 5 lb. bag

IRAC Code
1B



#### 1 LB. MALATHION

- ◆ Non-systemic, organophosphate insecticide that is commonly used to control mosquitoes, plus a variety of sucking and chewing insects that attack fruits, vegetables, ornamentals, and shrubs
- ◆ Also effective control of household pests such as flies and cockroaches
- ◆ 1 quart

IRAC Code
1B

#### NUVAN PROSTRIPS

- ◆ **Controlled release vapor insecticide for use in enclosed target areas such as utility boxes, pump houses, sheds, trash bins, closets and attics**
- ◆ Effectively control ants (including fire ants), spiders, wasps, hornets and other pests.
- ◆ Each 16 gram strip treats a 100 to 200 cu. ft. area (approx.. 8' x 8' x 3' = 192 cu. ft.) and lasts up to 4 months
- ◆ Active ingredient: Dichlorvos

IRAC Code
1B



#### QUALI-PRO TAURUS G/FIPRONIL

- ◆ Season-long fire ant control
- ◆ **RESTRICTED USE PESTICIDE: For retail sale to and use only by certified applicators or persons under their direct supervision**
- ◆ May only be used in the following states: AL, AR, CA (Coachella Valley only), FL, GA, LA, MS, NM, NC, OK, SC, TN, TX, VA
- ◆ Active ingredient: Fipronil
- ◆ 30 lb. bag

IRAC Code
2B



#### QUALI-PRO LAMBDA GC-O/CSI CYONARA 9.7

- ◆ Broad-spectrum, fast knock-down control and long residual — at low use rates
- ◆ Offers protection against a wide range of nuisance pests such as Scorpions, Spiders, Ants, Cockroaches and flying insects, as well as surface feeding and foliar insects including Webworms, Leafminers, Spittlebugs, Thrips, Armyworms and Cutworms
- ◆ **Can be used virtually everywhere — broad label allows application to be made outdoors and indoors, for perimeter pest control, food handling areas, turf and ornamentals, and animal health housing**
- ◆ Active ingredient: Lambda-Cyhalothrin
- ◆ Same family of chemistry, and similar pest control as DeltaGard or Suspend (Deltamethrin), Talstar (Bifenthrin), and Tempo (Beta-Cyfluthrin)
- ◆ 1 qt. squeeze and measure bottle
- ◆ Lambda GC-O labeled for golf, nursery, non-residential turf

IRAC Code
3



#### CSI CYONARA L/P — LAWN AND PERIMETER GRANULES

- ◆ **Fast-acting control of many types of insects** — including ants (Carpenter, Field, Fire and others), Armyworms (Fall and Yellow-striped), Billbugs, Chinchbugs, Crickets, Cutworms, Earwigs, European Crane Flies, Fleas, Grubs, Roaches (German and American) and Sod Webworms — in lawns and as a barrier band treatment around house foundation
- ◆ **Convenient granular formulation** — 25lb. resealable bag treats up to 12,500 sq. ft.
- ◆ Active ingredient: Lambda-Cyhalothrin
- ◆ **Same family of chemistry, and similar pest control as DeltaGard or Suspend (Deltamethrin), Talstar (Bifenthrin), and Tempo (Beta-Cyfluthrin)**

IRAC Code
3



### QUALI-PRO BIFENTHRIN I/T 7.9% INSECTICIDE/TERMITICIDE

- ◆ Sure-fire control of the toughest pest problems, including termites, carpenter ants and all species of lawn ants — in and around homes, commercial and industrial buildings, recreational areas, athletic fields, lawns and ornamentals
- ◆ Dependable, long-lasting residual control of other turf and ornamental pests including Armyworms, Cutworms, Sod Webworms, Billbugs, Chinch Bugs, Crickets, Fleas, Ticks and Mole Crickets
- ◆ **For use by individual/firms licensed by the state to apply TERMITICIDE products**
- ◆ **Talstar equivalent**
- ◆ 1 gal. jug



IRAC Code
3

### MONTEREY BUG BUSTER II

- ◆ Synthetic pyrethroid insecticide — **quick knockdown with residual control** — for homeowner use
- ◆ Controls Spiders, Roaches, Ants, Crickets and other insects outside the house
- ◆ Controls Caterpillars, Worms and other insects on vegetables
- ◆ Odorless and non-staining
- ◆ Active ingredient: Esfenvalerate
- ◆ 1 pint ready-to-use



IRAC Code
3

### MONTEREY TAKE DOWN GARDEN SPRAY

- ◆ A dormant and growing season insect spray containing natural Pyrethrin plus canola oil
- ◆ **Combines the fast knockdown of Pyrethrin and the residual activity of horticultural oils**
- ◆ For use in home gardens and home greenhouses
- ◆ Good replacement for Chlorpyrifos or Diazinon products (higher safety rating)
- ◆ Use on vegetables, fruit trees, houseplants, ornamentals, etc.
- ◆ Controls Aphids, Beetles, Mealy Bugs, Caterpillars, Plant Bugs, etc.
- ◆ 1 pint. concentrate and 32 oz. ready-to-use spray



IRAC Code
3

### DELTAGARD G / SUSPEND SC

- ◆ **Quick knockdown and long residual control of more than 50 insect pests**, including: ants, cockroaches, fleas, mosquitoes, scorpions, spiders and ticks
- ◆ Flexible label allows application as perimeter control and for subsurface insect pests in and around lawns and landscapes
- ◆ Low odor, residue & dust
- ◆ Active ingredient: Deltamethrin
- ◆ Granular DeltaGard in 20 lb bag; Liquid Suspend in 1 pint bottle



IRAC Code
3A

### TENGARD / PERMETHRIN

- ◆ For use indoors and around buildings to control Subterranean termites, ants, bees, beetles, carpenter ants, cockroaches, crickets, earwigs, fleas, flies, firebrats, pillbugs, scorpions, silverfish, sowbugs, spiders, ticks and wasps
- ◆ **For use by individuals/firms licensed or registered by the state to apply TERMITICIDE products**
- ◆ 1 quart, 1.25 gal jugs



IRAC Code
3A

### ZYLAM 20 SC

- ◆ **Rapid control of damaging Turfgrass insects**
- ◆ Systemic control — Moves from the soil into the plant
- ◆ More soluble than Imidacloprid (Merit), so it **moves faster and can actually take care of a CURRENT insect problem, in addition to preventing**
- ◆ **Same active ingredient (Dinotefuran) as Safari**
- ◆ 2.7 lb jug treats 1 acre of turf



IRAC Code
4

### ZYLAM LIQUID

- ◆ **Rapid control of damaging Tree & Shrub insects**
- ◆ Systemic control — Moves from point of application or from soil into rest of the plant
- ◆ More soluble than Imidacloprid (Merit), so it **works faster and offers better control of tough insects like Scale and Boring Insects such as EAB**
- ◆ Can be applied as a foliar spray, a soil injection or drench, or in a bark banding application
- ◆ **Bark Banding applications REQUIRE a 100% Organosilicone Surfactant in the tank mix for expected performance**
- ◆ **Same active ingredient (Dinotefuran) as Safari**
- ◆ 1 quart tip and measure jug



IRAC Code
4

**MALLET/IMIDACLOPRID 0.5G**

- ◆ **For broad-spectrum, long-term, systemic control of soil inhabiting pests such as grubs in turfgrass and landscape plantings**
- ◆ Systemic product will be translocated upward within the plant
- ◆ Sufficient residual activity so that applications can be made preceding the egg laying activity of target pests
- ◆ Low use rates, designed specifically for soil application
- ◆ Controls Northern and Southern Masked Chafers, Asiatic Garden Beetle, European Chafer, Green June Beetle, May or June Beetles, Japanese and Oriental Beetles, Billbugs, Annual Bluegrass Weevil, Black Turfgrass Ataenius, European Crane Fly, Mole Crickets and will also suppress Cutworms and Chinchbugs
- ◆ Convenient granular formulation for broadcast application to turf and ornamentals
- ◆ **Merit 0.5G equivalent**
- ◆ 30lb. bag
- ◆ Group: 4A

IRAC Code

4A

**MALLET/IMIDACLOPRID 75WSB**

- ◆ **For foliar AND systemic insect control in turfgrass (including sod farms), landscape ornamentals, fruit and nut trees, and interior landscapes**
- ◆ Controls Northern and Southern Masked Chafers, Asiatic Garden Beetle, European Chafer, Green June Beetle, May or June Beetles, Japanese and Oriental Beetles, Billbugs, Annual Bluegrass Weevil, Black Turfgrass Ataenius, European Crane Fly, Mole Crickets and will also suppress Cutworms and Chinchbugs
- ◆ When soil applied through drenches, injection or broadcast sprays, the systemic product will be translocated upward into the plant system from root uptake — **This systemic activity in woody stems is delayed until active ingredient can reach all parts of the plant, so applications should be made prior to anticipated pest infestation**
- ◆ Foliar applications offer locally systemic activity against insect pests
- ◆ Low use rates for cost-efficient, highly-effective control
- ◆ Water-soluble packets simplify measuring and mixing
- ◆ **Merit 75 WSP equivalent**
- ◆ 4 X 1.6 oz. WSB packs and 48 X 1.6 oz. WSB drums

IRAC Code

4A

**MALLET/IMIDACLOPRID 2F**

- ◆ Same systemic AND foliar control as Imidacloprid 75WSB, in a **flowable formulation that is easy to measure and mix**
- ◆ For turf and ornamental use
- ◆ **Merit 2F equivalent**
- ◆ 1 qt. and 1 gal. jugs

IRAC Code

4A

**BAYER 2-IN-1 SYSTEMIC ROSE & FLOWER CARE**

- ◆ 6-9-6 Fertilizer plus Imidacloprid **feeds plants and protects against insects in 1 step**
- ◆ Controls Aphids, Japanese Beetles (adult), Leafminers, Whiteflies and more
- ◆ Rainproof protection lasts up to 8 weeks
- ◆ 10 lb. jug

IRAC Code

4A

**MONTEREY GARDEN INSECT SPRAY** ✦

- ◆ A bacterial product used on ornamentals, lawns, vegetables and fruit trees to control caterpillars, leafminers, thrips, borers and more
- ◆ **OMRI Listed (Certified Organic)**
- ◆ Active ingredient: Spinosad
- ◆ 1 quart jug

IRAC Code

5

**QUALI-PRO ABAMECTIN 0.15EC INSECTICIDE/MITICIDE**

- ◆ The "hub" product of Mite and Leafminer control measures in ornamentals
- ◆ Reliable, long-lasting control of Mites and Leafminers, along with suppression of Whitefly, Thrips and Aphids on foliage plants, woody ornamentals and Christmas trees grown in greenhouses or fields
- ◆ Outstanding plant safety record including end-of-crop cycles
- ◆ **Avid equivalent**
- ◆ 1 qt. squeeze and measure bottle, and 1 gal. jug

IRAC Code

6

**AMDRO FIRE ANT BAIT**

- ◆ Controls native and imported Fire Ants
- ◆ **Kills the queen and destroys the mound**
- ◆ Apply to individual mounds, or broadcast to large infested areas
- ◆ Active ingredient: Hydramethylnon
- ◆ 1lb. jug

IRAC Code

20



**LOOK FOR THE GREEN SYMBOL (✦) THROUGH-OUT THE SOURCE BOOK TO EASILY IDENTIFY GREEN PRODUCTS**

### AZATROL EC ★

- ◆ Broad-spectrum botanical insecticide with high efficacy on chewing and sucking insect pests such as White Flies, Leafrollers, Aphids and Mites, but low environmental impact
- ◆ **Multiple modes of action make it virtually impossible for insect resistance to develop,** and the perfect complement to an Integrated Pest Management program
- ◆ **Anti-feedant:** Insects will feed less or not at all on treated foliage, ultimately starving to death
- ◆ **Insect Growth Regulator:** Insects fail to mature and reproduce, reducing or eliminating populations over time
- ◆ **Anti-ovipository and Repellant:** The likelihood of insect infestation is greatly decreased in treated plants, adding a preventative aspect to treatment programs
- ◆ Does not provide the quick “knock-down” of contact poisons, but 21 days after treatment, insect control is comparable to the standards
- ◆ **Certified organic formulation (OMRI listed)**
- ◆ Does not harm beneficial insect populations including Predator Wasps, Ladybugs, Honeybees and Preying Mantis
- ◆ **Active ingredient: Azadirachtin (also found in neem oil)**
- ◆ 1 qt. and 1 gal. jugs



IRAC Code

UN

### ST GABRIEL SHARPSHOOTER ★

- ◆ **All natural made from Clove Oil and Peppermint Oil**
- ◆ Kills on contact, no noxious odor
- ◆ Can be used indoor around pantries, baseboards and stoves; and outdoor sprayed directly on plants
- ◆ Harmless to pets, humans and the environment
- ◆ Controls: Ants, Aphids, Leafhoppers, Mealybugs, Fleas, Mites, Whiteflies, Earwigs, Slugs, Mosquitoes, Caterpillars, Cockroaches, Palmetto bugs
- ◆ 1 gal. concentrate; 1 gal. and 1/2 gal. ready-to-use



IRAC Code

UN

### IMPEDE/INSECTICIDAL SOAP ★

- ◆ **Effective against soft-bodied insects and mites**, such as Aphids, Thrips, White Flies, Spider Mites and Immature Leafhoppers
- ◆ No residual activity, so repeated applications usually must be made, which can cause some burn on sensitive plants
- ◆ **Water hardness reduces effectiveness, so use a conditioning agent if necessary**
- ◆ 1 pt. and 2.5 gal. jugs

IRAC Code

UN

### HORTICULTURAL OIL/DORMANT OIL ★

- ◆ **Effective on Scales, Aphids, Mites that winter on the plant and Caterpillars that winter as eggs on the plant (Leafrollers, Tent Caterpillars)**
- ◆ Advantages as an insecticide alternative are safety, effectiveness and limited effects on beneficial insects
- ◆ Main limitation is the small but real potential to cause injury (phytotoxicity) to sensitive plants
- ◆ **Formerly known as Saf-T-Side**
- ◆ 1 qt., 1 gal. and 5 gal. jugs



IRAC Code

UN

### BRANDT NEMA-Q NEMATICIDE ★

- ◆ Controls Ectoparasitic and Endoparasitic Nematode species, by contact and through ingestion
- ◆ **OMRI Listed 100% Natural Bio-Pesticide**
- ◆ 5 gal jug

### HORNET AND WASP SPRAY

- ◆ Aerosol can



### WILCO GOPHER BAITS

#### Type I Bait

- ◆ Wilco .50% Type I Bait uses Milo grain,
- ◆ Patented attractant which draws the gopher to the bait
- ◆ Single feeding formulation
- ◆ 1lb. and 5lb. container

#### Type 2 Bait

- ◆ For 'Homeowner' use — does not require a permit Type II Bait
- ◆ The active ingredient in Wilco's Type 2 bait is an anti-coagulant
- ◆ **Essential that the gopher(s) consume (or eat) the bait three to four consecutive days**
- ◆ **Ag version is restricted material use label**
- ◆ 1lb., 5lb. 25lb. or 50lb. Container



### WILCO GROUND SQUIRREL BAIT

- ◆ An anti-coagulant, **requiring the ground squirrel to consume (or eat) the bait for three to four consecutive days**
- ◆ Contains no paraffin or moisture inhibitors, making it more efficacious to the ground squirrel
- ◆ This bait requires placement in a tamper resistant bait station
- ◆ 4lb. or 20lb. container



### EATON GOPHER BAIT BLOCKS

- ◆ This gopher bait is in 'block form' which makes it very easy to use and a popular alternative to grain baits
- ◆ The taste and aroma of these blocks are unusually irresistible to gophers
- ◆ **For best results, the block should be inserted into the gopher's main runway**
- ◆ 1lb. and 10lb. container



### MOLE AND GOPHER GASSER

- ◆ Kills gophers and squirrels

### TALPIRID MOLE BAIT

- ◆ 2 X 10 worm shaped baits
- ◆ One worm contains a lethal dose and can kill in 24 hours
- ◆ **TALPIRID's size, shape and feel let moles consume the bait in the same manner as its primary food source, the earthworm**
- ◆ Special enhancers ensure immediate attraction and excellent product acceptance
- ◆ Box of 20



### WILCO BAIT STATION FOR SQUIRRELS OR RATS

- ◆ Molded of heavy-duty dark green plastic that withstands abuse
- ◆ BSS design is ideal for ground squirrels, while discouraging non-target animals
- ◆ BSR has the same quality features as our ground squirrel bait station, except it is sized for rat/mouse control applications

### IRONFIST SLUG & SNAIL BAIT

- ◆ **Iron Fist is a less toxic bait – an alternative to the popular Metaldehyde**
- ◆ 2% Sodium Ferric EDTA is a stomach poison. Once ingested by the slug/snail, IRONFIST® immediately inhibits further feeding and kills them in 1-3 days.
- ◆ It is virtually harmless to higher animals including mammals, birds and fish, and it does not affect earthworms and other ground dwelling beneficials.
- ◆ The bait pellets are biodegradable, releasing iron into the soil for plant uptake.
- ◆ 25 lb and 50 lb bags

### CORRY'S SLUG AND SNAIL DEATH

- ◆ Contains 3.25% META® for fast, effective control of slugs and snails. Provides up to two weeks of plant protection
- ◆ Can be used around lawns, ground covers, fruit, vegetable, flower and ornamental plants
- ◆ 4lb. container

### SLUGGO SNAIL BAIT ✦

- ◆ Can safely be used around pets and wildlife
- ◆ Contains iron phosphate, which occurs naturally in soil
- ◆ 5lb. and 25lb.

### DEADLINE SLUG & SNAIL KILLER

- ◆ Deadline Bullets (50 lb.) bag contains 4% Metaldehyde. Remains effective after rain and watering
- ◆ Deadline Liquid (1 qt. bottle) can be used around flowers, lawns, ornamentals, vegetables and berries

LOOK FOR THE GREEN SYMBOL (✦)  
THROUGH-OUT THE SOURCE BOOK TO EASILY  
IDENTIFY GREEN PRODUCTS

## YELLOW JACKET TRAP AND ATTRACTANT

- ◆ Trap and attractant sold separately

## MACABEE GOPHER TRAP

- ◆ Easy to set, this trap requires no bait and lasts for an unlimited number of kills
- ◆ Safer and proven more effective than gases or poisons

## REPELLENTS

## EPIC REPELLENTS REGIONAL PEST MAP

- 
- Dominante:** Mole, Deer  
**Regional:** Vole very active in Eastern WA & Idaho, Utah in fall & early spring
- Dominante:** Mole, Gopher, Snakes  
**Region:** Deer in CO, So. MO, and KY, Omaha/Lincoln heavy in mole and vole
- Dominante:** Deer and Moles all States  
**Metro:** Detroit, Milwaukee, Minneapolis, & north side of Chicago have had Rabbit infestation  
**Region:** Southern Illinois and Indiana have Copperhead & other snake issues  
**Seasonal:** Vole: is a fall application program, all States
- Dominante:** Southern CA: Rabbit/ Central CA: Gopher  
 Northern CA: Mole & Gopher  
**Region:** Northern CA: Deer, Snakes in So. CA, NV & AZ. Rabbits in Phoenix AZ
- Dominante:** Mole, Armadillo, Snake, Gopher  
**Metropolitan areas:** Dallas: Rabbit  
 Austin/San Antonio: Deer  
 Houston: Snake and Deer
- Dominante:** Deer, Moles & Snakes  
**Special Note:** Mole is a protected species in North Carolina
- Dominante:** Moles, Snakes, Armadillo, Gopher  
**Region:** Deer in northern GA and east coast of FL



- ◆ Formulated to coat earthworms and tender roots, the main sources of food for moles, forcing moles to look elsewhere for food
- ◆ Provides 99% reduction in mole activity just 4 weeks after treatment
- ◆ Environmentally safe – will not harm vegetation
- ◆ 1 qt. ready-to-use and 1 gal. concentrate

## RABBIT – DUAL ACTION REPELLANT

- ◆ Repels with both scent and taste, for guaranteed effectiveness on high-density rabbit populations and difficult-to-repel baby rabbits
- ◆ Long lasting and rain resistant
- ◆ Dries odorless
- ◆ 40 oz. and 1 gal. concentrate

## SNAKE REPELLANT

- ◆ **Confuses the snake's senses of smell and taste, forcing it to look elsewhere to live**
- ◆ Naphthalene-free – does not pose health hazards like many other snake REPELLENTS
- ◆ Repellency is unique to the individual snake, not just the species or genus – so results may vary
- ◆ Formulated to penetrate deeply into cracks and crevices, where snakes like to hide
- ◆ 1 qt. concentrate

- ◆ Application to treated area makes the food supply very undesirable to geese, turkeys and ducks, causing them to look for another feeding location

- ◆ Will not harm animals when used as directed
- ◆ Works year round
- ◆ 1 qt., 1 gal. and 2.5 gal. concentrate

## REPELLENTS (CONT.)



### EZ FLO CRITTER CONTROL

- ◆ Organic control for use with EZ Flo Fertigation System
- ◆ Maintains a consistent barrier for better control
- ◆ Effective on deer, gophers, rabbits, moles and voles
- ◆ 1 qt., 1 gal., 2 gal., and 5 gal. sizes

## FUNGICIDES

Fungicide Application Tip: Selecting the proper tank mix or rotation partners in a fungicide resistance program is critical. To develop an effective tank mix or rotation, use fungicides with different Group Codes (from the FRAC - Fungicide Resistance Action Committee), which denote different fungicide families or classes. Second, always partner site-specific products with a multi-site inhibitor fungicide (Group Code M). Always read product labels thoroughly before tank-mixing or applying any products.

### CLEARY'S 3336

- ◆ Economical, cost-effective, broad-spectrum disease control for cool and warm season turf grasses, ornamentals, trees, shrubs, and flowers
- ◆ Systemic, preventative disease protection against major turf and ornamental diseases including: Brown Patch, Dollar Spot, Gray Leaf Spot, Anthracnose, Summer Patch, Fusarium Blight, Powdery Mildew, Leaf Spots & Blights, and Stem, Crown and Root Rots
- ◆ **Systemic mode of action allows movement of product upward through xylem to other parts of the plant**
- ◆ Excellent tank mix partner with most other fungicides
- ◆ Active ingredient: Thiophanate-Methyl
- ◆ 2.5 gal. flowable, 2lb. WP, 30lb. and 50lb. granular

FRAC Code
1

### QUALI-PRO THIOPHANATE-METHYL

- ◆ Cleary's 3336 equivalent
- ◆ 4.5 Flowable formulation in 2.5 gal jug; 85WDG formulation in 5.5 lb jug; 30 lb granular

FRAC Code
1



## FUNGICIDES (CONT.)

### QUALI-PRO TM/C WDG

- ◆ **A formulation of Chlorothalonil & Thiophanate-Methyl for both contact and systemic modes of action**
- ◆ Long-lasting, all purpose fungicide provides cost effective, broad-spectrum disease control for cool and warm season grasses, turf and ornamentals
- ◆ Systemic, preventative disease protection against major turf & ornamental diseases including Brown Patch, Dollar Spot, Gray Leaf Spot, Anthracnose, Summer Patch, Fusarium Blight, Powdery Mildew, Leaf Spots & Blights, and Stem, Crown and Root Rots
- ◆ **For use only by certified applicators or those under their immediate supervision; Not for use on home lawns**
- ◆ Excellent tank mix partner with most other fungicides
- ◆ **Spectro 90 equivalent**
- ◆ 5lb. jug — water dispersible granules



FRAC Code
1

### QUALI-PRO IPRODIONE 2SE

- ◆ Delivers fast-acting, long-lasting control of Brown Patch, Dollar Spot, Snow Molds, as well as other diseases in turf, plus unsurpassed control of Rhizoctonia, Botrytis, Fusarium, and alternaria in ornamentals
- ◆ Features contact and systemic control with 14 days or more of dependable residual
- ◆ Mode of Action: Foliar-applied flowable fungicide **that provides long-lasting preventive and curative disease control on contact and systemically** (Local Penetrant)
- ◆ Excellent choice for year round disease control
- ◆ **Not for use on home lawns and/or ornamentals**
- ◆ **26GT Flo equivalent**
- ◆ 2.5 gal. jug



FRAC Code
2

### QUALI-PRO PROPICONAZOLE 14.3

- ◆ Economical, broad-spectrum disease control for cool and warm season grasses, trees, shrubs, and flowers
- ◆ **Controls 49 turf & ornamental diseases** including Rusts, Pink & Gray Snowmolds, Gray Leaf Spot, Zoysia Patch, Dollar Spot, Summer Patch, Anthracnose, Leaf Spot, Brown Patch and Powdery Mildew
- ◆ Microemulsion formulation for less odor, better tank stability and excellent plant coverage
- ◆ **Locally systemic mode of action for long-lasting disease control**
- ◆ Excellent tank mix partner with most other fungicides
- ◆ **Banner Maxx equivalent**
- ◆ 1 qt., 1 gal. and 2.5 gal. jugs



FRAC Code
3

### MONTEREY FUNGI-FIGHTER

- ◆ **Less concentrated formulation of Propiconazole for homeowner use**
- ◆ Liquid systemic fungicide for use on lawns, roses, flowers, and fruit and nut trees
- ◆ **Prevents diseases such as Black Spot, Powdery Mildew, Rust, Brown Patch, Leaf Spot & many more**
- ◆ Absorbed into the plant — can't be washed off by rain after spray has dried
- ◆ Works up to four weeks for certain diseases
- ◆ Highly effective when used to prevent diseases or applied at the first sign of disease; Will not eliminate disease already present
- ◆ 1 pt. bottles



FRAC Code
3

### QUALI-PRO MYCLOBUTANIL 20EW/EAGLE 20 EW

- ◆ **Systemic, preventative and curative fungicide** for the control of Dollar Spot, Anthracnose, Summer Patch, Brown Patch, Powdery Mildew, Rust, Scab and other diseases
- ◆ For use on golf course fairways, roughs, tees and greens, commercial and residential stone fruit trees, apple trees and grapes, and other landscape ornamentals
- ◆ For use on ornamentals such as Chrysanthemums, Daylilies, Poinsettias and Roses in nurseries, landscapes and greenhouses
- ◆ Best control of labeled diseases is achieved when applied on a 7- to 10-day application schedule
- ◆ 1 gal. jug Myclobutanil and 1 pint Eagle



FRAC Code
2

### TEBUCONAZOLE

- ◆ Highly effective disease control for Golf Course Turf and Ornamentals
- ◆ **Not for use on residential lawns**
- ◆ Preventative and curative control with up to 3 weeks residual
- ◆ **Cleary's Torque equivalent**
- ◆ FRAC Code 3
- ◆ 1 gal. and 2.5 gal. jugs



FRAC Code
3

### BAYER FUNGUS CONTROL FOR LAWNS

- ◆ **Cures and prevents common diseases in home lawns** including Anthracnose, Brown Patch, Copper Spot, Dollar Spot, Powdery Mildew, Red Thread, Rust, Stripe Smut, Summer Patch & Frog-Eye Disease, and provides up to two months protection depending on disease type
- ◆ Watering after application carries the fungicide into the root zone where it enters the grass plant — rain or water cannot wash off this internal protection
- ◆ **Best results when applied preventatively (prior to hot, humid weather that favors many diseases), or at the very first sign of disease**
- ◆ Easy-to-use granules
- ◆ Active ingredient: Triadimefon
- ◆ 6lb. and 10lb. bags



FRAC Code
3

### QUALI-PRO MEFENOXAM 2AQ

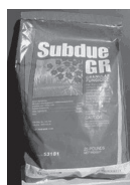
- ◆ An aqueous, flowable, systemic fungicide for use on selected Warm- and Cool-Season Turf, Nursery and Ornamental crops to control certain diseases caused by members of the Oomycete class of fungi. Other fungicides must be used to control diseases incited by other classes of fungi
- ◆ **Preventative disease control of Pythium, Phytophthora, Yellow Tuft, and Downy Mildew, as well as Damping-off and the Root & Stem Rot diseases of ornamentals caused by Pythium & Phytophthora**
- ◆ Systemic mode of action and translocation through the plant can provide up to three weeks protection
- ◆ Low odor compared to EC formulations
- ◆ Excellent tank mix partner with most other fungicides. Combine with Quali-Pro Chlorothalonil for added Brown Patch control during stressful summer decline months
- ◆ In ornamentals, it may be applied through irrigation systems, as a soil drench or as a soil surface spray, or incorporated into a soil mix
- ◆ **Subdue Maxx equivalent**
- ◆ 1 qt., 1 gal., and 2.5 gal. jugs



FRAC Code
4

**SUBDUE GR**

- ◆ Same systemic active ingredient — Mefenoxam — in a convenient granular formulation
- ◆ Use as a soil surface application or pre-potting growing media mix for soil-borne diseases (Pythium, Phytophthora) that cause Root and Stem Rots in ornamentals, or for treating Downy Mildew in turf
- ◆ 25lb. bag



FRAC Code

4

**PILLAR G INTRINSIC**

- ◆ Combination of pyraclostrobin (active ingredient in Insignia) and triticonazole (active ingredient in Trinity) on a granular carrier
- ◆ Controls more diseases than any other granular fungicide – including most patch diseases, dollar spot, anthracnose, snow molds and leaf spots
- ◆ Labeled for use on golf course turf AND lawns
- ◆ Clay granules are convenient to apply, and provide excellent spreading characteristics due to its density and uniform particle size
- ◆ Also shown to improve plant health in the form of stress management including drought/moisture and temperature extremes
- ◆ 30 lb bag

FRAC Codes

3 &amp; 11

**TURFCIDE / PCNB / PARFLO**

- ◆ A contact and preventative fungicide recommended for the control of certain soil-borne diseases
- ◆ In turf areas, including home lawns, it controls Gray and Pink Snow Mold, Brown Patch and Leaf Spot/Melting Out
- ◆ In ornamentals, it controls Root/Stem Rot, Damping Off, Neck Dry Rot, Bulb/Stem Rot, Crown Rot, Black Rot, Bulb Dry Rot, Petal Blight, Needle Blight and Flower Blight
- ◆ For best results, use as a preventative application before diseases appear, or apply at the first sign of the infection
- ◆ 50 lb bag in granular; Flowable in 2.5 gal jug and 30 gal drum

FRAC Code

14

**QUALI-PRO FOSETYL-AL 80WDG**

- ◆ True up-and-down systemic action for effective, preventative disease control in turf, ornamentals & bedding plants
- ◆ Controls Pythium Blight/Root Rot, Yellow Tuft, Phytophthora, Downy Mildew and Fire Blight
- ◆ Also suppresses Bacterial Blight and Summer Stress Complex when tank-mixed with other fungicides
- ◆ Stimulates defense mechanisms and enhances plant vigor
- ◆ Single application delivers up to 30 days protection
- ◆ Active ingredient: Aluminum-tris (O-ethyl phosphonate); Aliette WDG/Aliette Signature equivalent
- ◆ 5.5lb. jug and 4 oz. jar



FRAC Code

M

**MONTEREY AGRI-FOS**

- ◆ For the effective control of the following diseases in ornamentals, turf, conifers, vegetables and fruit trees:
  - Phytophthora diseases associated with Sudden Oak Death (S.O.D.)
  - Pythium in Turf
  - Downy Mildew
  - Fire Blight
  - Crown Rot and Root Rot
  - Damping off
- ◆ May be applied as a soil drench, foliar spray, soil incorporation or as a bare root dip, and works both as a curative and preventative treatment



FRAC Code

M

**MONTEREY AGRI-FOS W/ PENTRA-BARK**

- ◆ Systemic Fungicide for control and prevention of Sudden Oak Death (S.O.D.)
- ◆ For use on Oak trees
- ◆ To be used as a basal bark application — mix and apply uniformly to the trunk of tree from top down to ground level
- ◆ Labeled for use in California only
- ◆ Active ingredient: Phosphorous Acid
- ◆ 1/2 gal. container with Pentra-Bark Surfactant included



FRAC Code

M

**MONTEREY LIQUI-COP**

- ◆ Liquid Copper Fungicide spray for disease prevention
- ◆ Use to control Leaf Curl, Shothole, Brown Rot on almonds, apricots, peaches, nectarines, walnuts, citrus
- ◆ Economical replacement for Bordeaux mixture
- ◆ No oil or sticker required
- ◆ 1 qt. bottle



FRAC Code

M

**MANZATE PRO-STICK T&O 75 WDG**

- ◆ A protectant fungicide that provides a wide window of application, protecting against a wide range of diseases in turfgrasses and ornamentals
- ◆ No documented resistance of fungal diseases, making it perfect for use in resistance management programs
- ◆ Protects against Melting Out, Rust, Copper Spot, Fusarium, Red Thread, Slime Mold, Algae, Dollar Spot, Brown Patch, Pythium and more
- ◆ Active ingredient: Mancozeb; Dithane and Penncozeb equivalent
- ◆ 6lb. bag

FRAC Code

M

### PENTATHLON LF

- ◆ **Premium liquid flowable formulation of Mancozeb** — easy to measure, handle and mix; Excellent tank-mix compatibility
- ◆ **Same broad-spectrum fungicidal activity** — up to 14-days control of most major turf diseases such as Brown Patch, Dollar Spot, Melting Out, Rusts, Red Thread and Fusarium
- ◆ **Preventative, Non-systemic, Multi-site** — no resistance development, excellent choice for inclusion in mode of action resistance management programs
- ◆ Provides rainfastness and residual activity necessary for disease control
- ◆ No dye — Will not stain equipment or clothing
- ◆ 2.5 gal. jug

<b>FRAC Code</b>
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M
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### QUALI-PRO CHLOROTHALONIL

- ◆ Economical, cost-effective, broad-spectrum disease control for cool and warm season grasses, trees, shrubs, and flowers
- ◆ **Effective for use in programs that attempt to minimize disease resistance to fungicides**
- ◆ Preventative disease protection against major turf and ornamental diseases including: Dollar Spot, Brown Patch, Algae, Leaf Spot, Anthracnose, Fusarium and Rust
- ◆ **Modes of Action:**
  - **Contact** — for quick results
  - **Multi-Site** — no disease resistance with repeated use
  - **Preventative**
- ◆ Excellent tank mix partner with most other fungicides
- ◆ **Daconil Weatherstik/Daconil Ultrex/Daconil ZN equivalents**
- ◆ 720 SFT formulation in 2.5 gal. jug; DF in 5lb. jug; 500ZN in 2.5 gal. jug



<b>FRAC Code</b>
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M
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### QUALI-PRO ENCLAVE

- ◆ **Quad-Control Technology utilizes multiple modes of action, offering superior disease control and resistance management**
- ◆ Delivers both preventative and curative control of many diseases including Anthracnose, Brown Patch, Dollar Spot and Snow Mold
- ◆ **Outstanding value per acre – Chlorothalonil, Iprodione, Thiophanate-methyl and Tebuconazole in ONE product**
- ◆ 2.5 gal flowable



<b>FRAC Codes</b>
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1, 2, 3, & M
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### GROWTH PRODUCTS

#### COMPANION BIOLOGICAL FUNGICIDE

- ◆ **A safe, 100% natural biological fungicide that both prevents and controls a broad spectrum of root and foliar diseases** such as Root Rot, Blight, Wilt, Bottom- and Stem-Rot, and Bacterial Leaf Spot (Phytophthora, Pythium, Fusarium, Rhizoctonia, Sclerotinia and Xanthomonas Campestris)
- ◆ Contains the naturally occurring beneficial bacterium known as *Bacillus Subtilis* GB03, which combats disease pathogens through multiple modes of action, quickly colonizes a plant's root hairs, and literally crowds out disease producing microbes in the soil
- ◆ Creates a beneficial Induced Systemic Resistance (ISR), whereby plants' own natural immune system is stimulated to better resist diseases
- ◆ **Companion's GB03 also acts as a Plant Growth Promoting Rhizobacterium (PGPR) and bio-stimulant — it naturally encourages plant growth and produces better rooting, branching and flowering on plants**
- ◆ 1 qt., 2.5 gal. and 5 gal. jugs



<b>FRAC Code</b>
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N/A (Biological)
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# **TURFGRO<sup>®</sup>**

## ADJUVANTS

The Edge  
Your  
Applications  
Need

### **TURFGRO<sup>®</sup> Booster**

Combination adjuvant for superior wetting and better penetration

### **TURFGRO<sup>®</sup> Tank Cleaner**

Reduce cross contamination and maintain equipment

### **TURFGRO<sup>®</sup> Spreader/Sticker**

Get it wetter and keep it wet

### **TURFGRO<sup>®</sup> Spray Indicator Blue**

Visual confirmation of application patterns

### **TURFGRO<sup>®</sup> Water Conditioning Agent**

Condition the largest part of every tank mix

**See your local Horizon Representative for more details.**



### **SPREADER-STICKER**

- ◆ Non-ionic Surfactant, Spreader-Activator and Defoaming Agent
- ◆ 90% active Non-ionic Surfactant breaks down the waxy cuticle of the leaf surface, for **maximum absorption and effectiveness insecticides, fungicides, and herbicides**
- ◆ Reduces surface tension, allowing spray to spread out on leaf surface for maximum coverage
- ◆ Improves adhesion between the pesticide and the plant surface, minimizing spray runoff
- ◆ Reduces foam during mixing
- ◆ **Required with certain herbicides, such as Certainty, Diquat, Fusilade & Sedgehammer**
- ◆ Compare to Activator 90 & No Foam A
- ◆ 1 qt. and 1 gal. jugs



### **BOOSTER**

- ◆ An activator formulated from a blend of Non-ionic **Organosilicone** surfactants & highly refined **Methylated Seed Oil**
- ◆ **Maximizes the performance of certain post-emergent herbicides** such as Quinclorac & Sethoxydim
- ◆ Modifies the deposition & wetting characteristics of the spray solution, resulting in a more uniform spray deposit
- ◆ 1 qt., 1 gal. and 2.5 gal jugs



### **HERBICIDE HELPER CROP OIL CONCENTRATE**

- ◆ A 100% active crop oil concentrate used as a spreader/activator/penetrant to increase the foliar absorption of various herbicides & systemic fungicides
- ◆ A blend of 83% Superior Paraffinic Oil & 17% Non-ionic Surfactant
- ◆ **Increases effectiveness of selective herbicides — commonly used with post-emergent grass control herbicides & Atrazine**
- ◆ 1 pt. bottle

### **HERBICIDE ACTIVATOR CROP OIL CONCENTRATE**

- ◆ A 100% active crop oil concentrate used as a spreader/activator/penetrant to **increase foliar absorption of various herbicides**
- ◆ Blend of 80% Petroleum Oil & 20% Non-ionic Surfactant
- ◆ Great for many systemic herbicides
- ◆ 1 gal. jug



## SPRAY INDICATORS

### TURFGRO



#### SPRAY INDICATOR

- ◆ A versatile, easy-to-use, non-toxic colorant for aquatic, industrial, municipal, utility, and rights-of-way applications of liquid pesticides and fertilizers
- ◆ Shows applicators where they have sprayed and will help avoid costly oversprays and skips
- ◆ Mixes completely with water soluble pesticides & fertilizers without affecting chemical efficacy, and dissipates quickly in wet and dry weather
- ◆ Blue color
- ◆ 1 qt. and 1 gal. jugs



#### TURFMARK SPRAY INDICATOR

- ◆ Blue indicator in larger packaging
- ◆ 2.5 gal. jug and 30 gal. drum

#### TURFMARK GREEN

- ◆ Green indicator for less conspicuous evidence of spraying
- ◆ 2.5 gal. jug

#### TURFMARK SPRAY INDICATOR – WSP

- ◆ Spray indicator in convenient water soluble packets
- ◆ Available in blue or green
- ◆ 40 WSPs per case

#### QUALI-PRO FOURSOME TURF PIGMENT

- ◆ Designed to enhance and extend the aesthetic appearance of the turf site following a pesticide application
- ◆ Also for use as a spray pattern indicator
- ◆ 1 qt. and 1 gal jugs

## OTHER TANK ADJUVANTS

### TURFGRO



#### TANK CLEANER

- ◆ A powerful, superior grade spray tank cleaner that will clean, rinse, and emulsify pesticide and adjuvant residues, and bond them to the rinse solution to allow for complete rinsing and system purging with ordinary water
- ◆ Tolerant of hard water that causes spray tanks to accumulate high levels of residue
- ◆ Soluble and compatible with most spray tank materials
- ◆ Solubilizes acid residues of pesticides, preparing the spray tank for the use of other products and preventing damage from occurring to non-target plants
- ◆ Extends the life of soft sprayer parts
- ◆ 1 qt. jug

#### WATER CONDITIONING AGENT

- ◆ A blend of Ammonium Sulfate and Ammoniacal Nitrogen, along with buffers, sequestrants and chelating agents to condition hard spray water
- ◆ Promotes herbicide performance by modifying elements such as pH and hardness of the spray water that can minimize herbicide uptake and effectiveness
- ◆ Especially important with Roundup (glyphosate)
- ◆ Not for use with herbicides that are not compatible in acidic/low pH conditions
- ◆ 1 qt. and 1 gal. jugs



#### TRIPLELINE FOAM-AWAY

- ◆ 1 qt. jugs

#### ODOR-MASK

- ◆ Concentrated odor masking agent based on Wintergreen Oil
- ◆ Masks undesirable odor of pesticides
- ◆ 1 qt. jug



### ATRIMMEC

- ◆ A systemic plant growth regulator spray-applied to retard growth of hedges, shrubs, trees and groundcovers
- ◆ **Reduces trimming, pruning and clean-up maintenance by 50% or more.** In many areas, one trimming and treatment controls growth all season long
- ◆ **Keeps plants the way you trimmed them longer** — whether you trim for a formal appearance or natural shape
- ◆ Enhances appearance of ornamentals by promoting branching, giving shrubs and bushes a fuller, more compact, uniform shape
- ◆ Groundcovers establish sooner, producing denser cover without encroaching on driveways, walks and walls
- ◆ **Can also reduce unwanted flowers and fruit** on ornamental olive trees, glossy privet, multiflora rose and Japanese holly
- ◆ **Check out the Trimming Cost Calculator on PBI Gordon's website and see how much you could save!** <http://www.pbigordon.com/pdfs/TrimmingCostCalculator.pdf>
- ◆ Active ingredient: Dikegulac-sodium
- ◆ 1 qt. and 1 gal. jugs



### MONTEREY FLOREL

- ◆ Less concentrated formulation of Ethephon
- ◆ **Prevents Nuisance Fruit on Ornamental Trees and Shrubs** such as Apple, Carob, Crabapple, Elm, Flowering pear, Flowering plum, Horsechestnut (Buckeye), Oak, Olive, Sour Orange, Sweetgum, Sycamore and others
- ◆ Removes Mistletoe from Ornamental Conifers and Deciduous Trees
- ◆ Increases Lateral Branching in Ornamentals
- ◆ 1 gal. jug



### MONTEREY SUCKER STOPPER

- ◆ **Prevents suckering and sprout growth** on trees such as apples, pears, citrus, olive, redwood and woody ornamental plants
- ◆ Convenient ready-to-use spray bottle (16 oz.)
- ◆ Treat only trees that are healthy, free from stress, and at least one year old

## PLANT GROWTH REGULATORS - TURF



### QUALI-PRO ETHEPHON

- ◆ Systemic, foliarly-absorbed PGR — Carried to other parts of the plant from point of application
- ◆ **Promotes lateral growth in turf** (Kentucky Bluegrass, Perennial Ryegrass, Tall and Fine Fescue, Bentgrass) while limiting top growth — reducing the required frequency of mowing and the volume of clippings collected
- ◆ **Suppresses seedheads of Poa annua and white clover**
- ◆ Also used for the removal of Dwarf and Leafy Mistletoe from trees, and for the **elimination of undesirable fruit** on Apple, Crabapple, Carob and Olive trees
- ◆ For commercial use only
- ◆ **Proxy equivalent**
- ◆ 2.5 gal. jug



### QUALI-PRO T-NEX

- ◆ Limits vertical growth of turfgrasses, reducing the frequency of mowing and the amount of grass clippings generated
- ◆ Improves rich color, lateral stems, root mass development and ability to withstand disease pressure and drought stress
- ◆ Labeled for all cool- and warm-season turfgrasses, including residential lawns and sod farms
- ◆ **Perfect for minimizing the need for edging of turfgrass along sidewalks, curbs, parking lots, driveways, flower beds, fences and around posts, storage sheds, and trees**
- ◆ Also great for mixing with marking paint on sports fields, to reduce growth of painted turf, and therefore the frequency of mowing and repainting
- ◆ Active ingredient: Trinexapac-ethyl; **Primo MAXX equivalent**
- ◆ 2.5 gal. and 1 gal. jugs





### EMBARK 2-S/EMBARK T+O

- ◆ Suppresses growth of turfgrasses and ornamentals
- ◆ Reduces grass clippings and ornamental trimming refuse
- ◆ **Reduced mowing, edging or trimming saves time, labor and equipment**
- ◆ **Best seedhead inhibitor available**
- ◆ Can be tank-mixed and applied with certain turf herbicides
- ◆ Active ingredient: Mefluidide
- ◆ 1 gal. jug



### TIDE PACLO 2SC

- ◆ **A systemic plant growth regulator that slows vertical grass growth and reduces mowing for up to 2 months after application**
- ◆ Frequency of mowing can be reduced by 50% during the period of effective retardation
- ◆ Use on fine turf should be accompanied by moderate-to-high fertility to maintain turfgrass appearance and reduce discoloration
- ◆ Active ingredient: Paclobutrazol (**Trimmit equivalent**)
- ◆ 1 gal jug

## COLORANTS



### GREEN LAWNGER

- ◆ **The fast, economical way to instantly restore natural green color to dormant or discolored turf**
- ◆ Will not wash or wear off turf after it has been applied — Color will last 10 to 14 weeks or until mowing removes the colored grass
- ◆ Blends in beautifully with most types of grasses since color shade is controlled by the amount applied
- ◆ 1 liter, 1 gal. and 2.5 gal. jugs, 30 gal. drum



### LAKE COLORANT

- ◆ Creates natural-appearing blue water in lakes, ponds, water hazards, or large fountains
- ◆ Water-soluble packets are easy to calculate, simple to dispense, and dissolve quickly and easily
- ◆ **Safe and non-toxic to fish, waterfowl and livestock. Treated water may be used for irrigation, swimming and other recreational sports**
- ◆ Will not discolor or leave residues on turf, concrete, or other surfaces
- ◆ Each packet treats one acre-foot of water
- ◆ Box of four packets



### ADMIRAL LAKE COLORANT/ALGAECIDE

- ◆ Delivers effective control of several types of aquatic weeds and algae, while aesthetically enhancing the color appearance of the water
- ◆ 1 gal. jug and box of 16 X 1 easy-to-handle WSP's



### BLACK ONYX LAKE COLORANT

- ◆ Specialized high-concentrate colorant **creates a natural, mirror-like appearance often associated with black-colored water**
- ◆ Adds a sense of mystic drama to featured bodies of water on golf courses and resort locations, or any aquatic landscape
- ◆ **Will not harm fish or aquatic waterfowl**
- ◆ 1 gal. jugs and boxes of 16 X 1 easy-to-handle WSP's



## PLANT PROTECTANTS

### LEAF SHIELD ANTI-TRANSPIRANT

- ◆ **Protects trees, shrubs and turf against winter desiccation damage**
- ◆ Is sprayed on and dries to a thin layer that will protect exposed plants against drying winter winds
- ◆ 1 gal. jug

### FREEZE PRUF FROST PROTECTOR

- ◆ Like "anti-freeze for plants," it improves healthy plants' natural cold tolerance by approximately 2 to 9 degrees F — the equivalent of adding a half-USDA zone to the cold tolerance range
- ◆ Protection lasts up to 4 weeks
- ◆ 1 quart and 1 gal. jugs

### CLOUD COVER PLANT PROTECTOR

- ◆ Protects plants from weather extremes
- ◆ Decreases watering frequency
- ◆ Reduces transplant shock
- ◆ Cleans and shines leaves
- ◆ 1 quart concentrate and 1 quart ready-to-use

## HEARING AND EYE PROTECTION

The roar of the lawn mower. The buzz of the chain saw. The whirl of the line trimmer. After awhile, they take their toll on your nerves and hearing!

**REMEMBER THAT HEARING LOSS IS THE #1 DISABILITY IN THE U.S. AND THAT NOISE-INDUCED HEARING LOSS IS 100% PREVENTABLE.**



### EAR PLUGS

- ◆ Disposable Foam Ear Plugs
- ◆ Disposable Corded Foam Ear Plugs
- ◆ Silicone Ear Plugs
- ◆ Corded Silicone Ear Plugs
- ◆ Banded Ear Caps
- ◆ EP6 Ear Plugs



### PROFESSIONAL HEARING PROTECTION

- ◆ Professional Earmuff
- ◆ Standard Earmuff
- ◆ Foldable Earmuff
- ◆ Digital AM/FM Radio Earmuff



### SAFETY GLASSES SHADED & CLEAR

- ◆ NSX Turbo
- ◆ NSX
- ◆ DB2
- ◆ Diamondbacks
- ◆ DB Carbon
- ◆ Sidewinders
- ◆ GTR
- ◆ Stingers



### OVER THE GLASS

- ◆ Hornets
- ◆ Worker Bees
- ◆ Visitor Specs



### GOGGLES

- ◆ Deluxe
- ◆ Overspray
- ◆ Standard
- ◆ Chemical-Splash



## HARD HATS & ACCESSORIES

### HARD HATS

- ◆ Hard Hat
- ◆ Full Brim Hard Hat
- ◆ Bump Cap
- ◆ Standard Face Shield
- ◆ Deluxe Face Shield
- ◆ Hard Hat/Earmuff/Face Shield Combo



### DISPOSABLE RESPIRATORS

- ◆ Dust Mask
- ◆ Particulate Respirator
- ◆ Valved Particulate Respirator
- ◆ Bandit Disposable



### REUSABLE RESPIRATORS

- ◆ Bandit Dual Cartridge
- ◆ Full-face
- ◆ Half Mask
- ◆ Professional Multi-Use
- ◆ Cartridges Available



### GLOVES



#### GLOVES

- ◆ Disposable - Latex
- ◆ Cotton
- ◆ Knit
- ◆ Nitrile
- ◆ Safety
- ◆ Neoprene
- ◆ Leather

### FIRST AID KITS

#### FIRST AID KITS

- ◆ Personal First Aid Kit
- ◆ 25 Person First Aid Kit
- ◆ 50 Person First Aid Kit



### ACCESSORIES



#### ACCESSORIES

- ◆ Safety Vest
- ◆ Safety Cone
- ◆ Safety Flare
- ◆ Straw Hat
- ◆ Coverall
- ◆ Rain Gear - Pants, Jackets, Hats & Boots



### WORK BOOTS



#### LAWN GRIPS

LawnGrips footwear makes landscaping, mowing and all other outdoor work safer, easier and more comfortable. The patented Grip-N-Go outsole provides great traction on freshly cut grass while easily shedding mud and clippings. The protective steel toe keeps your toes safe while the molded rubber overcoat keeps them dry. And with an upper made of double-stitched, water resistant, full-grain leather, LawnGrips are tough and long-lasting.

- ◆ Roomy steel toe with rubber overtoe that resists scuffing
- ◆ Water and stain-resistant full grain leather uppers
- ◆ Tough butyl rubber sole that holds up to shovel work

#### MEN'S CLASSIC

- ◆ 4" high slip on with hook and loop closure for easy on and off



#### MEN'S PRO

- ◆ 6" high lace-up for additional ankle protection



#### MUCK BOOTS™

The Original Muck Boot Company is a protective footwear brand which prides itself on building the most comfortable, high performance footwear on the market.

- ◆ Chore™ Hi All Conditions Work Boot
- ◆ The Chore Boot™ is the perfect boot to tackle the really dirty chores and is made for working long days
- ◆ CR flex-foam bootie with four-way stretch nylon, 100% waterproof, lightweight, flexible and buoyant
- ◆ Stretch-fit topline binding snugs calf to keep warmth in and cold out
- ◆ Additional achilles reinforcement for added protection
- ◆ The upper is triple reinforced in the toe area and quadruple reinforced in the heel area

### TURFGRO SPREADERS



#### P20-5010

- ◆ 50 lb. capacity
- ◆ Powder-coated frame
- ◆ Adjustable-height handle
- ◆ 10" x 4" Wheels
- ◆ Hard linkage shut-off
- ◆ Includes cover



#### P60-8020

- ◆ 80 lb. Capacity
- ◆ Powder-coated or Stainless Steel Frame
- ◆ Accu-Way™
- ◆ 13" x 5" Wheels
- ◆ Hard linkage shut-off
- ◆ Includes Screen
- ◆ Includes Cover

#### S60-12020

- ◆ 120 lb. Capacity
- ◆ Stainless Steel Frame
- ◆ Accu-Way™
- ◆ Extra-Large opening for bulk material
- ◆ 13" x 5" Wheels" with lubrication points
- ◆ Includes Screen
- ◆ Interchangeable Spinner Plate shaft

### EARTHWAY SPREADERS



#### 2150

The 3-position height adjustable handle and "T"-Speed lever provide total operator control and comfort for users of different heights. The EV-N-SPRED® 3-hole drop shut-off system ensures an even spread pattern and provides a feathered spreading edge for accurate applications.

- ◆ 50lb/23kg Hopper capacity
- ◆ EV-N-SPRED® 3-hole drop shut-off system
- ◆ 175lb/79kg Load bearing capacity - what the frame will support
- ◆ 13"/33cm diameter stud type tires on rust-proof poly rims
- ◆ Heavy-duty Epoxy Powder Coated "Diamond" chassis
- ◆ Super-duty gearbox for long life
- ◆ Debris screen to keep clumps from clogging the shut-off system
- ◆ 3-position height adjustable handle
- ◆ Optional 3-Sided Deflector - #60166R
- ◆ Optional Rain Cover - #77001
- ◆ 5-Year Limited Warranty
- ◆ Lifetime tech support



#### 2170

The 2170 is designed from the ground up for easy operation and long trouble-free service. Our patented EV-N-SPRED® 3-hole drop shut-off system will allow for balanced spreading of all types of granular material. The 2170 is a must have for any commercial material applicator.

- ◆ 100lb/45Kg Hopper capacity - rustproof poly construction
- ◆ EV-N-SPRED® 3-hole drop shut-off system
- ◆ 175lb/79Kg Load bearing capacity - what the frame will support
- ◆ 13"/33cm diameter stud type tires on rustproof poly rims
- ◆ Heavy-duty Epoxy Powder Coated Diamond chassis
- ◆ Super-duty gearbox for long life
- ◆ Debris screen to keep clumps from clogging the shut-off system
- ◆ 3-position height adjustable handle
- ◆ Optional Cover - #77002
- ◆ Optional 3-Sided Deflector - #60166R
- ◆ 5-Year Limited Warranty
- ◆ Lifetime tech support



## SHINDAIWA SPREADERS

shindaiwa

**RS76**

**Large capacity rugged spreader for heavy-duty, all-purpose use and includes a lifetime gear warranty.**

- ◆ Welded, Epoxy-coated Frame
- ◆ Finger-tip Adjustable Rate Control
- ◆ Lifetime Gear Warranty

**RS76S**

**Stainless steel frame built for the harshest use and long life including a lifetime gear warranty.**

- ◆ Stainless Steel Frame
- ◆ Finger-tip Adjustable Rate Control
- ◆ Lifetime Gear Warranty



SPECIFICATIONS	RS76	RS76S
DRY WEIGHT	26.8 lbs.	26.8 lbs.
HOPPER HEIGHT	27"	27"
HANDLE LENGTH	36"	36"
HOPPER CAPACITY	1.3 cu. ft.	1.3 cu. ft.
TIRES	13" diameter	13" diameter
FRAME	Metal	Stainless Steel

## HAND SPREADERS

EarthWay

**3100**

**The 3100 Professional Hand Crank Spreader is your ideal broadcast spreader when you need to spread granular material in wet areas, over uneven terrain, or in places a push spreader could not go.**

- ◆ 40lb/18kg Hopper capacity – rustproof poly construction
- ◆ Super-duty high-speed gearbox
- ◆ Epoxy Powder Coated Chassis
- ◆ EV-N-SPRED® PRO Dual Port Adjustable Shut-Off System
- ◆ Heavy-duty Rain Cover - #77000
- ◆ Rate Calculation Matrix included
- ◆ 5-Year Limited Warranty
- ◆ Lifetime tech support



## HAND SPREADERS (CONT.)

G pbi / GORDON

**SPRED-RITE® G GRAVITY FLOW GRANULE SPREADER**

**A quicker, easier and more precise way to spread granular herbicides, fungicides, insecticides and fertilizers in small landscape areas. The Spred-Rite G can be used anywhere and is especially handy where you have to reach around or under things - trees, shrubs, poles or railings.**

- ◆ 2 inch to 3 feet swath width
- ◆ No metal parts to corrode or rust
- ◆ Light weight - 6 ounces empty, 6 pounds full
- ◆ Application rate easily varied:
  - by changing walking speed
  - by varying the swath width
  - by choice from 3 orifices

**HHS100 5 LB. HANDHELD SPREADER****Commercial Heavy-Duty Design**

- ◆ 5 lb. Capacity
- ◆ 4 Season spreader
- ◆ Funnel shaped design tailored for ideal material flow
- ◆ Reinforced, contoured lip design for easy scooping
- ◆ Adjustable flow gate
- ◆ Ergonomic trigger handle



Want to save 10% on fertilizer costs? Stop fertilizing the sidewalk! Use a Border Patrol attachment to deflect fertilizer away from hard surfaces. Horizon carries a complete selection of accessories and parts for TurfGro, Spyker and Earthway spreaders.

### HANDHELD SPRAYERS



#### SOLO 1-GAL SPRAYER:

- ◆ Chemical resistant seals for extended use with harsh chemicals
- ◆ Multi-directional nozzle allows spraying from all positions
- ◆ Unique drift/drip guard provides added control for spot treatment
- ◆ Locking trigger reduces user fatigue
- ◆ Pressure relief valve releases excess pressure



### BACKPACK SPRAYERS



#### SOLO 3 GALLON

- ◆ Large 4.5" filler opening makes filling and clean up safe and easy
- ◆ Chemically resistant Viton® seals throughout

Product Code	Description
457	3 gal. Backpack



#### SOLO 4 GALLON BACKPACK

- ◆ High-density polyethylene tank with ultra-violet inhibitors allows for unmatched durability and ultra-violet protection
- ◆ Large 4.25" opening for easy filling and cleaning
- ◆ Shut-off valve and wand with an overall length of 28" for hard-to-reach places

Product Code	Description
425	4 gal. Backpack



#### SOLO 4 GALLON BACKPACK

- ◆ Capable of producing up to 60 psi, with its rugged connecting rod actuated diaphragm pump
- ◆ The diaphragm is made of high-quality Viton® for its resistance to harsh chemicals and abrasion and its long life expectancy

Product Code	Description
475	4 gal. Backpack



### BACKPACK SPRAYERS



#### HD400 INTERNAL PUMP BACKPACK SPRAYER

- ◆ Lightweight
- ◆ Wide Filling Opening
- ◆ 4 Gallon Ergonomically Curved Tank
- ◆ Built-In Agitator
- ◆ 4' 5" High Pressure Hose
- ◆ Heavy-Duty Trigger Valve
- ◆ Reinforced Nylon Spray Lance
- ◆ Comes With 3 Different Nozzles
- ◆ Flat Bottom Base
- ◆ Easy Operating Pumping Lever
- ◆ Internal, High-Efficiency Piston Pump



#### SP416 BACKPACK SPRAYER

- ◆ 4 gallon capacity
- ◆ Complete interchangeability of parts except for the tank.
- ◆ Poly piston pump has hydraulic agitation and comes with a chemical resistant Santoprene pump seal.
- ◆ Santoprene offers exceptional wear characteristics and reduced pumping effort.
- ◆ Great value for the operator who may need different capacities for different applications but still wants performance, durability and great features.



**BACKPACK SPRAYERS (CONT.)**



**MS-41BP (4 GALLON)**

- ◆ 4.0 gallon capacity
- ◆ Wider 6" tank mouth
- ◆ Tank with UV inhibitors
- ◆ Tank marked in both gallons and liters
- ◆ Piston-style pump pressurizes up to 90 PSI
- ◆ 30" wand



**FIMCO 25 GALLON SPRAYER**

- ◆ 12V, 25 gal. Fimco ATV sprayer covers more around in less time
- ◆ Perfect for spraying mosquitoes, ditches, pastures, fence rows, bean and corn crops, yards, parks and sports fields
- ◆ Uses three adjustable nozzles that let you customize your spray pattern to the right, center, left or use all three to spray a full 30' swath
- ◆ A powerful 3.8 GPM diaphragm pump with adjustable pressure up to 45 psi



Product Code	Description
LG25SM	25 gal. Sprayer

**BACKPACK SPRAYERS (CONT.)**

We also carry:

*Smithco*



See your local Horizon Location for availability.

**HORIZON CARRIES A COMPLETE SELECTION OF SPRAYER REPLACEMENT PARTS FOR ALL MAJOR BRANDS.**

## SHOVELS TOUGHER THAN THE HELL YOU PUT THEM THROUGH

Aerospace grade steel shafts and heavy duty 12-gauge blades, these professional shovels can take whatever you dish out. They're simply the toughest, earth-moving shovels on Earth.



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## EASYLIFTER®

**SOMETIMES A NAME  
TELLS YOU EVERYTHING  
YOU NEED TO KNOW.**

Our innovative built-in fulcrum bars make it easier to dump a 6 cubic foot load. And that means it's easier on you. Made with heavy-duty steel and reinforcements throughout, EasyLifter® is tough as nails and designed to take whatever you throw at it, season after season.



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**BP 3160 3/4" CLASSIC CUT® BYPASS PRUNERS**

- ◆ Fully forged steel construction for maximum strength
- ◆ Resharpenable high-carbon steel blades
- ◆ High-precision pivot bolts and locking nuts keep blades and hooks aligned
- ◆ Non-slip grips for greater control

**BP 3180 1" CLASSIC CUT® BYPASS PRUNERS**

- ◆ Fully forged steel construction for maximum strength
- ◆ Resharpenable high-carbon steel blades
- ◆ High-precision pivot bolts and locking nuts keep blades and hooks aligned
- ◆ Non-slip grips for greater control
- ◆ Replacement blade - 3180-1 sold separately

**BP3670 1" LANDSCAPE – IRRIGATION BYPASS PRUNER**

- ◆ Forged high-carbon steel forms a stronger, more durable cutting tool
- ◆ Resharpenable, forged steel blade for long service life
- ◆ Ergonomic angled pruning head for added comfort and reduced hand stress
- ◆ Sprinkler adjustment feature included on tip of hook
- ◆ Contoured handles with comfortable, non-slip grips

**BP4250 1" BYPASS PRUNER, ALUMINUM**

- ◆ More affordable, lightweight version of BP 6250
- ◆ Lightweight forged aluminum handles
- ◆ High-carbon steel blade and hook
- ◆ Separate hook instead of one-piece aluminum hook

**BP6250 1" FORGED ALUMINUM 1**

- ◆ Lightweight forged aluminum construction
- ◆ Slant-ground, narrow-profile hook with self-cleaning sap groove
- ◆ Shock-absorbing bumper
- ◆ Easy-to-replace steel blade 6250-1T and spring 6250-5T are interchangeable with the Felco® 2

**Did you know?**

Horizon carries a complete selection of replacement handles and blades for Corona, Felco & Lenox tools.

**BP 6170 3/4" ANGLED BYPASS PRUNERS**

- ◆ Angled pruning heads for added comfort and reduced hand stress
- ◆ Fully forged steel construction for maximum strength
- ◆ Replaceable, resharpenable high-carbon steel blade- 6170-1
- ◆ Built-in bumpers for impact absorption

**RP3230 3/4" RATCHET PRUNER**

- ◆ 3/4" diameter cutting capacity
- ◆ Power multiplying ratchet action for easy cutting
- ◆ Suitable for right and left hand use

**AC7220 LEATHER SCABBARD**

- ◆ Top grain leather, stitched and riveted
- ◆ Belt clip and loops
- ◆ Fits most hand pruners

**AC8300 SHARPENING TOOL**

- ◆ 5" Super carbide file
- ◆ Ideal for sharpening all straight blades (excludes saw blades)
- ◆ Easy to fit in pocket or scabbard
- ◆ Non-slip grip for easy use



SWISS MADE

**FELCO2 CLASSIC MODEL PRUNER**

- ◆ 1" cutting capacity
- ◆ Solid-forged metal alloy handles
- ◆ Hardened bolt and nut assure exact adjustment of both the cutting and anvil blades

**PARTS & ACCESSORIES**

- ◆ Replacement blade
- ◆ Spring kit



### AH6950 FORGED ALUMINUM LONG HANDLE HEDGE SHEAR

- ◆ 8 1/2" resharpenable, forged steel alloy blades
- ◆ Lightweight, high-strength elliptical aluminum handles
- ◆ 21" handles
- ◆ Fully heat-treated for strength
- ◆ Precision-made pivot bolt for smoother cutting action



### AH6970 FORGED ALUMINUM HANDLE HEDGE SHEAR

- ◆ 10 1/2" resharpenable, forged steel alloy blades
- ◆ Lightweight, high-strength elliptical aluminum handles
- ◆ Slant-ground, narrow profile blade
- ◆ Limb notch in lower blade



### GS6750 PRO FORGED GRASS SHEAR

- ◆ Professional scissor cutting action
- ◆ Resharpenable, forged Coronium™ steel alloy blades
- ◆ Cuts tough sod and ground cover



### HS3911 HEDGE SHEAR – 8 1/4"

- ◆ Resharpenable, forged 8 1/4" steel alloy blades
- ◆ Top-grade 9 1/2" hardwood handles
- ◆ Fully heat-treated for strength
- ◆ Limb notch for larger branches



### HS 6920 8" FORGED SERRATED BLADE HEDGE SHEAR

- ◆ 8" resharpenable forged steel alloy blades
- ◆ Fully heat treated for strength
- ◆ Serrated top blade
- ◆ Limb notch
- ◆ ShockStop® bumper reduces shoulder fatigue



### HS 6930 FORGED LONG HANDLE HEDGE SHEAR

- ◆ 8" resharpenable forged steel alloy blades
- ◆ Serrated top blade
- ◆ Limb notch
- ◆ ShockStop® bumper reduces shoulder fatigue
- ◆ Bolt-on extended 21" hardwood handles for extra reach



### HS6960 10" FORGED HEDGE SHEAR

- ◆ 10" resharpenable forged steel alloy blades
- ◆ Fully heat treated for strength
- ◆ Limb notch
- ◆ ShockStop® bumper reduces shoulder fatigue



#### Did you know?

Keeping your blade clean and sharp will help the performance and life of the tool.



### AL8120 21" BYPASS LOPPER STRATASHEAR BLADE

- ◆ 1 1/2" diameter cutting capacity with 21" length
- ◆ Lightweight, high-strength elliptical aluminum handles
- ◆ Resharpenable, replaceable Radial Arc® bypass forged steel alloy
- ◆ Patented StrataShear3® blade technology that reduces friction and improves force to cut
- ◆ Forged slant-ground hook with self-cleaning deep sap groove



### AL 6512 FORGED HIGH-TORQUE BYPASS LOPPERS

- ◆ Maximum high-torque cutting action
- ◆ Now with replacement handles
- ◆ Resharpenable Radial Arc® bypass blade of fully heat-treated forged steel alloy
- ◆ Deeply curved, forged, slant-ground hook with self-cleaning, deep sap groove



### FORGED HIGH-PERFORMANCE ORCHARD LOPPERS 2 1/4" CUT CAPACITY

- ◆ Easier adjustments with new and improved design that **eliminates nut-retaining clip**
- ◆ Unmatched blade design dramatically reduces force-to-cut
- ◆ Lightweight, high-strength elliptical aluminum handles
- ◆ Resharpenable, replaceable, Dual Arc™ bypass blade of fully heat-treated forged steel



### FL3420 COMPOUND ACTION ANVIL LOPPER – 32"

- ◆ Compound Action Anvil Lopper with 1 1/2" cut capacity
- ◆ 4-Bar compound linkage triples your cutting power
- ◆ Resharpenable, PTFE non-stick coated high-carbon steel anvil blade
- ◆ Replaceable blade and anvil
- ◆ Extra-long 8" non-slip foam grips



### WL6361 FORGED 26" BYPASS LOPPER

- ◆ 1 1/2" diameter cutting capacity with 26" overall length
- ◆ Resharpenable, replaceable Radial Arc® forged steel alloy blade
- ◆ Forged hook with self-cleaning sap groove
- ◆ Precision-made, self-aligning pivot bolt
- ◆ Forged-in bumper cups with Alcryn® ShockStop® bumpers



### WL6461 32" BYPASS LOPPER HEAVY DUTY

- ◆ 2 1/4" diameter cutting capacity with 32" overall length
- ◆ Resharpenable, replaceable Radial Arc® forged steel alloy blade
- ◆ Heavy-duty, forged hook with self-cleaning sap groove
- ◆ Precision-made, self-aligning pivot bolt
- ◆ Forged-in bumper cups with Alcryn® ShockStop® bumpers



### WL6321 26" BYPASS LOPPER

- ◆ Designed for close quarters cutting of grape vines and dense shrubs, or detail pruning of roses, patio trees and shrubs
- ◆ Radial Arc® ground alloy steel bypass blade for the cleanest, closest cut, and longer edge retention
- ◆ Tapered hickory hardwood handles
- ◆ Comfortable, non-slip grips



### ACCESSORIES

Product Code	Description
8461-1	Blade for AL8442/AL8462/AL8482
630040	Bumper for lopper WL6321

#### Did you know?

Use an anvil lopper or pruner on dead plants and a bypass lopper or pruner on live plants.



### PS4040 8" FOLDING PRUNING SAW

- ◆ For small to medium branches
- ◆ 8" folding blade
- ◆ Curved blade design for faster cut
- ◆ Tempered steel alloy blade
- ◆ Seven precision-ground teeth per inch



### PS4050 10 1/2" FOLDING PRUNING SAW

- ◆ For small to medium branches
- ◆ 10 1/2" folding blade
- ◆ Curved blade design for faster cutting
- ◆ Tempered steel alloy blade
- ◆ Six precision-ground teeth per inch



### PS7020 14" FOLDING PRUNING SAW

- ◆ For small to medium branches
- ◆ 14" tempered steel alloy folding blade
- ◆ Curved blade design for faster cutting
- ◆ Six precision-ground teeth per inch
- ◆ Rigid, precision-milled hardwood handle



### RS7120 RAZOR TOOTH SAW - 13"

- ◆ For medium to large branches
- ◆ 2x faster cut
- ◆ 3-sided impulse-hardened teeth stay sharper longer



### RS7160 21" RAKER RAZOR TOOTH® SAW

- ◆ For large branches and limbs
- ◆ Raker tooth pattern/razor tooth blade creates the fastest cutting hand saw available
- ◆ 3-sided razor teeth
- ◆ Self-cleaning Raker pattern
- ◆ Impulse hardened teeth for longer life
- ◆ Precision-milled laminated wood D-style handle



### RS7395 RAZOR TOOTH® PRUNING SAW - 14"

- ◆ For large branches
- ◆ 3-Sided razor teeth for efficient cutting
- ◆ Replaceable, curved, taper-ground 14" blade
- ◆ Impulse-hardened teeth for long service life
- ◆ Ergonomically designed, comfortable, co-molded handle



### QS7800/QS7900 QUICKSAW®

- ◆ Cuts 20% faster on average than comparable professional saws
- ◆ Patent-pending tooth pattern helps keep the cut channel free of sawdust
- ◆ Dual cutting positions; one for regular cuts, and another for difficult to reach branches
- ◆ Locking blade with aluminum handle and release button makes it lightweight and easy to carry
- ◆ Lightly textured elastomer grip helps reduce hand fatigue so you can cut longer



QS7800 - 7" folding saw

QS7900 - 13 inch blade - fixed saw

### ACCESSORIES

Product Code	Description
7160-4	Replacement handle for RS7160
7395-1	Replacement blade for RS7395
7360-41	Replacement nut and screw for RS7395
7395-4	Replacement handle for RS7395
7800-1	Replacement blade for QS7800
7900-1	Replacement blade for QS7900



### F600 FOLDING SAW

- ◆ Blade is thinner at top, keeping teeth in contact with material
- ◆ Prevents clogging and binding
- ◆ Cuts branches up to 4" in diameter

### F610 PRUNING SAW

- ◆ Pull-stroke action produces a clean, precise and easy cut
- ◆ Steel blades are heat treated and covered with hard chromium-plating for an extra tough, rust resistant, wipe-clean blade
- ◆ Cuts branches up to 4" in (10 cm) in diameter



## PRUNING TOOLS - TREE PRUNERS


**TP 3811 COMPOUND ACTION TREE PRUNER –  
5 FT - 10 FT**

- ◆ Die-cast zinc alloy pruning head with non-stick tempered steel blade and **rope drive** cuts up to 1 inch
- ◆ Tempered steel 15' conventional saw blade
- ◆ Lightweight fiberglass pole telescopes from 5 ft to 10 ft with twist lock adjustment


**TP 6850- DUAL COMPOUND ACTION TREE PRUNER –  
7 FT - 14 FT**

- ◆ Pruning head with 3X cutting power features a compound action pulley system and heavy-duty **chain drive**
- ◆ Die-cast zinc alloy pruning head with non-stick tempered steel blade cuts up to 1 1/4 inches
- ◆ Exclusive Powerglide™ rope pull system for smooth action
- ◆ 13" Tempered steel **conventional** saw blade
- ◆ Lightweight fiberglass pole telescopes from 7 ft to 14 ft with twist lock adjustment
- ◆ Comfortable 28 inch foam grip


**TP 6870 DUAL COMPOUND ACTION TREE PRUNER –  
7 FT - 14 FT**

- ◆ Pruning head with 3X cutting power features a compound action pulley system and heavy-duty chain drive
- ◆ Heavy-duty zinc alloy pruning head with non-stick tempered steel blade cuts up to 1 1/4 inches
- ◆ Exclusive Powerglide™ rope pull system for smooth action
- ◆ 13" Razor Tooth Saw® blade with 3-sided teeth cuts 2X faster than conventional saws
- ◆ • Lightweight fiberglass pole telescopes from 7 ft to 14 ft with twist lock adjustment
- ◆ Comfortable 28 inch foam grip


**ACCESSORIES**

Product Code	Description
6800-6	Conventional saw blade for TP3811
6801-6	Conventional saw blade for TP6850, TP6870
AC7241	Razor Tooth® saw blade for TP 6850, TP6870

*Ask about the other replacement parts for Corona Tree Pruners*

## CUTTING TOOLS



### MA60041/MA60042 – 18"/22" MACHETE

- ◆ Tempered steel blade for greater strength and longer service life
- ◆ Heat treated to achieve maximum blade flexibility while impeding breakage
- ◆ Blade extends completely throughout the handle



Product Code	Description
AC7310	18" Scabbard for machete
AC7330	22" Scabbard for machete

## STRIKING TOOLS

### ST40001 FORGED 10LBS. SLEDGEHAMMER, HICKORY HANDLE

- ◆ Durable forged, tempered steel head breaks through concrete, asphalt, masonry, drywall...virtually any material
- ◆ Dual ground and polished convex striking faces help you finish your work faster by minimizing deflections
- ◆ Naturally shock-absorbing 36" Hickory wood handle
- ◆ Replacement handle 40001-4



### ST70021 FORGED 8LBS. SLEDGEHAMMER, SOLID-CORE FIBERGLASS HANDLE

- ◆ Durable forged, tempered steel head breaks through concrete, asphalt, masonry, drywall...virtually any material
- ◆ Dual ground and polished convex striking faces help you finish your work faster by minimizing deflections
- ◆ Shock absorbing 32" solid-core fiberglass handle



### BR70090 FORGED 14LBS. SAN ANGELO BAR

- ◆ Forged, tempered steel hardened for prying strength, toughness, safety and longer service life
- ◆ Point for breaking concrete and rock
- ◆ Chisel edge for straight-line concrete breaking, smoothing of rough edges, and prying



### BR71090 FORGED 17LBS. DIGGING BAR

- ◆ Forged, tempered steel hardened for prying strength, toughness, safety and longer service life
- ◆ Wide, thick blade for efficient digging in dense, heavy and rocky soils
- ◆ Tamp for compacting soils around fence posts, forms, etc.



## STRIKING TOOLS (CONT.)

### PM42000 FORGED PICK MATTOCK

- ◆ Forged, tempered steel hardened for maximum strength, toughness, safety and longer service life
- ◆ Extra wide mattock blade for more efficient breaking of dense, heavy soils
- ◆ Point for fracturing, prying rock
- ◆ Head connected through eye-hole, allowing easy replacement of head
- ◆ 36" Hickory wood handle with Poly Guard
- ◆ Mattock width: 3 1/2"



### PM40000 FORGED RAILROAD PICK WITH HICKORY WOOD HANDLE

- ◆ Forged, tempered steel hardened for maximum strength, toughness, safety and longer service life
- ◆ Point for fracturing rock and concrete
- ◆ Chisel for smoothing of rough edges and light
- ◆ Head connected through eye-hole, allowing easy replacement of head
- ◆ 36" Hickory wood handle with Poly Guard
- ◆ Chisel width: 1 5/8"



### AX70020 FORGED MICHIGAN AXE WITH SOLID FIBERGLASS HANDLE

- ◆ Forged, tempered steel hardened for maximum strength, toughness, superior wear, impact resistance, safety and longer service life
- ◆ Extra sharp roll ground and polished blade edge, ready for use, cuts cleaner and with less effort
- ◆ Ground polished butt end, or poll, for even distribution of striking force when used for occasional light hammering of wood or plastic
- ◆ 34" Solid core fiberglass handle with thick molded poly jacket for maximum strength, longer service life, less breakage from overstrikes, and dampening of striking vibrations



### AX71020 FORGED PULASKI ROOT GRUBBING TOOL

- ◆ Forged, tempered steel hardened for maximum strength, toughness, superior wear, impact resistance, safety and longer service life
- ◆ Extra sharp axe blade with steep bevel angle to hold edge while cutting roots in soil
- ◆ Extra sharp, triangular shape mattock blade for excavating along side and underneath large roots
- ◆ 34" Solid core fiberglass handle with thick molded poly jacket for maximum strength, longer service life, less breakage from overstrikes, and dampening of striking vibrations



Product Code	Description
40000-8	Forged Railroad Pick Head
41000-8	Forged Pick Mattock Head
42000-8	Forged Cutter Mattock Head
41000-4	36" Hickory Wood Handle with Poly Guard

## UTILITY TOOLS



### **UT20000 1/2 MOON EDGER**

- ◆ Semicircular edging knife for straight, even edges, and borders
- ◆ Tempered steel blade and socket for longer life
- ◆ Large forward turned steps for firmer footing
- ◆ 48" Long ash wood handle



### **UT60053 10 X 10 DIRT TAMP**

- ◆ Heavy duty all steel cast construction for long service life
- ◆ 1/4" thick steel plate face and gussets for maximum strength, even tamping
- ◆ 10" square face and 58" long shaft for efficient tamping of trenches, specimen tree holes and base materials



### **UT 67001- 2 1/4" INSIDE DIAMETER- 21LBS.**

- ◆ Handles are aligned for best control and more ergonomically gripping position
- ◆ All steel construction for rugged use and long life
- ◆ High quality welded construction for superior strength



### **UT67002- 3 1/2" INSIDE DIAMETER- 27LBS**

- ◆ Handles are aligned for best control and more ergonomically gripping position
- ◆ All steel construction for rugged use and long life
- ◆ High quality welded construction for superior strength



## HAND HACKSAWS



### **LX4012 HIGH-TENSION HAND HACKSAW**

- ◆ Ergonomically designed; large space fits gloved hand
- ◆ Handle holds up to five 12" hacksaw blades for quick change outs
- ◆ Multi-purpose for flush cutting or jab saw
- ◆ Tensions up to 30,000 psi



### **LX2012 LIGHTWEIGHT, ALL-METAL HACKSAW**

- ◆ Affordable frame offers highest blade tension in its class
- ◆ Uses wing nuts to adjust tension quickly



### **LX3618 METAL CUTTING TRI-FOLD SAW**

- ◆ Convenient blade storage
- ◆ Compact design fits easily into pocket or tool box
- ◆ Push button design locks blade into three different positions for multipurpose cutting applications



### **LX975 HACKSAW**

- ◆ Ruggedly designed with heavy duty aluminum handle
- ◆ Designed for hard-to-get places
- ◆ Cuts bots, wire, tubing and plastic



### **PVC/ABS PLASTIC PIPE HAND SAW**

- ◆ Unique pull-cutting teeth cut quickly through all plastic pipe and wood
- ◆ Rigid carbon blade with hardened teeth for long life
- ◆ Comfortable handle fits gloved hand



Product Code	Description
HSF12	12" blade & handle
HSF18	18" blade & handle



### CL326 6" LONG NOSE PLIER WITH SIDE CUTTER

- ◆ Cross-hatching on jaws grabs work tightly
- ◆ Precision made of fine polished, high carbon drop forged steel
- ◆ Perfectly mated cutters, scientifically heat-treated to hold their edge



### CL447 7.75" CURVED DIAGONAL CUTTING PLIER

- ◆ Curved diagonal for maximum pulling leverage
- ◆ Perfectly mated cutter, heat-treated to hold its edge
- ◆ Polished high carbon drop-forged steel



### TONGUE AND GROOVE PLIERS

- ◆ Right angle teeth grip in all directions for maximum bite and minimum wear
- ◆ Patented undercut tongue and groove design assures, no slip jaw action
- ◆ Patented reinforcing edge minimizes stress breakage



Product Code	Description
CL422	9.5" V-jaw tongue and groove
CL442	12" V-jaw tongue and groove

### V - JAW TONGUE AND GROOVE PLIER

- ◆ V - jaw design for use on round stock and tubing
- ◆ Right angle teeth grip in all directions for maximum bite and minimum wear
- ◆ Patented undercut tongue and groove design assures, no slip jaw action
- ◆ Patented reinforcing edge minimizes stress breakage



Product Code	Description
CL422	9.5" V-jaw tongue and groove
CL442	12" V-jaw tongue and groove

### CL347 7" LINEMEN'S PLIER WITH ROUNDED NOSE

- ◆ Heavy duty construction
- ◆ Perfectly mated cutters, scientifically heat treated to hold its edge
- ◆ Round nose design
- ◆ Precision made of fine polished high carbon drop forged steel



### CL526 6" SLIP JOINT PLIER-WIRE CUTTING SHEAR

- ◆ Thick Nose Pliers
- ◆ Shear-type wire cutter
- ◆ Patented PermaLock® fastener eliminates nut and bolt failures.



## WRENCHES AND SCREWDRIVERS



### ADJUSTABLE WRENCH

- ◆ Measurement scales (in. on front mm on reverse) are handy for sizing nuts, pipe and tube diameters
- ◆ Perfectly parallel jaw surfaces grip safely and reduce possibility of damage
- ◆ Non-protruding jaw with thinner jaw profile permits easier use in more confined spaces

Product Code	Description
CL806	6" Adjustable wrench
CL808	8" Adjustable wrench
CL810	10" Adjustable wrench
CL812	12" Adjustable wrench

### SCREWDRIVERS

No.	Hex Diameter	Blade Length	Overall Length
CL56	3/16"	6"	9.5"
CL74	1/4"	4"	8"
CLP24	1/4"	4"	8.25"

### CL908 CHANNELLOCK WIRING TOOL 8 1/2

- ◆ Strips AWG wire sizes: 10, 12, 14, 16, 18, 20 and 22
- ◆ Strips mm wire sizes: .80, 1.0, 1.3, 1.6, 2.0, 2.6
- ◆ Precision holes for wire stripping
- ◆ Cuts machine bolts without damaging threads
- ◆ Sizes: 4-40, 5-40, 6-32, 8-32, 10-32 and 10-24



### CL56EZ SCREWDRIVER 56EZ SLOTTED

- ◆ Magnetic Tips
- ◆ Go-Thru steel blades for added strength
- ◆ High torque, 3-sided Code Blue® grips



### KWIKCUT™ PIPE CUTTERS

**Plastic pipe and hose cutter designed to meet the needs of the professional.**

- ◆ No shavings or cutting residue
- ◆ Clean, smooth cut allows for quick and easy connections
- ◆ Blade closes into its own handle for safe carrying and handling



Product Code	Description
T100	1" (Replacement blade BT100)
T135	1 1/4" (Replacement blade BT135)

## LONG HANDLE TOOLS STAINLESS STEEL



### **AS 90010 STEEL SPADE, 12" STRAIGHT BLADE, 26" STEEL HANDLE, D GRIP**

- ◆ Designed for the professional who needs MAXIMUM digging and prying power
- ◆ Made for spading, planting, prying, cutting roots, installing edging and digging
- ◆ 12 inch pre-sharpened straight blade, 26" steel handle, D grip
- ◆ Large D handles made from aerospace grade steel for durability
- ◆ Heat treated, extra HEAVY DUTY - 12 gauge blade
- ◆ FREE rubber footpad to reduce fatigue and shoe damage



### **AS 90300 #2 ROUND POINT SHOVEL, 48" HANDLE**

- ◆ Designed for the professional who needs MAXIMUM digging and prying power
- ◆ Made for spading, planting, prying, cutting roots and digging
- ◆ # Round point pre-sharpened blade, 48" steel handle
- ◆ Handles made from aerospace grade steel for durability
- ◆ Solid steel end cap under the red grip allows for tamping
- ◆ Heat treated, extra HEAVY DUTY - 12 gauge blade
- ◆ FREE rubber footpad to reduce fatigue and shoe damage



### **AS 90400 WIRE & EDGING TRENCHER, 45" OVERALL LENGTH**

- ◆ Use to install wire for landscape lighting, edging and more
- ◆ Designed for the professional who needs MAXIMUM digging and prying power
- ◆ Extra large steps on 8.25 X 10 inch pre-sharpened blade, 45" overall length
- ◆ Handles made from aerospace grade steel for durability
- ◆ Heat treated, extra HEAVY DUTY - 12 gauge blade



### **AS 90310 CAPROCK SHOVEL, 10" FLAT BOWL, 48 INCH HANDLE - 1" HANDLE LIFT**

- ◆ Designed for the professional who needs MAXIMUM digging and prying power
- ◆ Made for spading, planting, prying, cutting roots, installing edging and digging
- ◆ 10" pre-sharpened flat bowl blade, 48" steel handle
- ◆ 1" blade lift allows for a nearly vertical cut
- ◆ Handles made from aerospace grade steel for durability
- ◆ Solid steel end cap under the red grip allows for tamping
- ◆ Heat treated, extra HEAVY DUTY - 12 gauge blade

## LONG HANDLE TOOLS - SPADES



### **SS62010 DRAIN SPADE WITH WOOD D-GRIP HANDLE**

- ◆ Tapered, round nose, slightly cupped blade for efficient digging of deep, round bottom drains and trenches
- ◆ Thick, 14-gauge tempered steel blade for longer service life
- ◆ Welded, closed back design for greater strength
- ◆ Large forward turned steps for firmer footing
- ◆ 30" steel and American ash wood D-grip handle



### **SS62020/SS62030 DRAIN SPADE WITH SOLID 48"/30" FIBERGLASS HANDLE**

- ◆ Tapered, round nose, slightly cupped blade for efficient digging of deep, round bottom drains and trenches
- ◆ Thick, 14-gauge tempered steel blade for longer service life
- ◆ Welded, closed back design for greater strength
- ◆ Large forward turned steps for firmer footing
- ◆ 48" solid-core handle- SS62020. 30" solid-core handle - SS62030



### **SS62130 DRAIN SPADE WITH SOLID FIBERGLASS D-GRIP HANDLE**

- ◆ Tempered round nose, slightly cupped 14" blade for efficient digging of deep, round bottom drains and trenches
- ◆ Welded, closed back design for greater strength
- ◆ Large forward turned steps for firmer footing
- ◆ 30" Solid core fiberglass D-grip handle with thick molded poly jacket for maximum strength and long service life



### **SS2900 GARDEN SPADE**

- ◆ 15-gauge tempered steel blades
- ◆ Rounded edges penetrate ground easily, slice through small roots
- ◆ Textured epoxy finishes protect heads



#### ***Did you know?***

The LARGER the gauge, the thinner and lighter the blade.

## LONG HANDLE TOOLS ROUND POINT SHOVELS

### **SS10000 LIGHT DUTY #2 ROUND POINT SHOVEL**

- ◆ Strong, 16-gauge tempered steel blade
- ◆ Round point allows easy penetration of a variety of materials
- ◆ Large forward turned steps for firmer footing, 46" long wood handle



### **SS26000 #2 ROUND POINT SHOVEL**

- ◆ 15-gauge tempered steel blade
- ◆ Round points allow easy penetration of a variety of materials
- ◆ Large, forward-turned steps for firmer footing
- ◆ 48 inch Ash wood handle



### **SS26020 #2 ROUND POINT SHOVEL**

- ◆ 15-gauge tempered steel blades
- ◆ Round points allow easy penetration of a variety of materials
- ◆ Large, forward-turned steps for firmer footing
- ◆ 48 inch hollow fiberglass handle



### **SS65000 #2 ROUND POINT SHOVEL WITH WOOD HANDLE**

- ◆ Thick, 14-gauge tempered steel blade for longer service life
- ◆ Large forward turned steps for firmer footing
- ◆ Sharpened blade edge penetrates ground easily, slices through small roots
- ◆ 48" ash handle



### **SS65020 #2 ROUND POINT SHOVEL WITH SOLID FIBERGLASS HANDLE**

- ◆ Thick, 14-gauge tempered steel blade for longer service life
- ◆ Large forward turned steps for firmer footing
- ◆ Sharpened blade edge penetrates ground easily, slices through small roots
- ◆ 48" Solid core fiberglass handle for maximum strength and long service life



## LONG HANDLE TOOLS SQUARE POINT SHOVELS



### S11000 SQUARE POINT SHOVEL LIGHT DUTY #2 SQUARE POINT SHOVEL

- ◆ Strong, 16-gauge tempered steel blade
- ◆ Square head design for efficient lifting and moving of materials
- ◆ Large forward turned steps for firmer footing
- ◆ 46" wood handle



### SS26000 #2 SQUARE POINT SHOVEL

- ◆ 15-gauge tempered steel blade
- ◆ Round points allow easy penetration of a variety of materials
- ◆ Large, forward-turned steps for firmer footing
- ◆ 48 inch Ash wood handle



### SS61020 CLOSED BACK #2 SQUARE POINT SHOVEL WITH SOLID FIBERGLASS HANDLE

- ◆ Thick, 14-gauge tempered steel blade for longer service life
- ◆ Welded, closed back design for greater strength
- ◆ Large forward turned steps for firmer footing
- ◆ Square head design for efficient lifting and moving of materials
- ◆ 48" Solid core fiberglass handle with thick molded poly jacket for maximum strength and long service life



### SS66000 HOLLOW BACK #2 SQUARE POINT SHOVEL WITH WOOD HANDLE

- ◆ Thick, 14-gauge tempered steel blade for longer service life
- ◆ Large forward turned steps for firmer footing
- ◆ Square head design for efficient lifting and moving of materials
- ◆ 48" ash handle



### SS66020 HOLLOW BACK #2 SQUARE POINT SHOVEL WITH SOLID FIBERGLASS HANDLE

- ◆ Thick, 14-gauge tempered steel blade for longer service life
- ◆ Large forward turned steps for firmer footing
- ◆ Square head design for efficient lifting and moving of materials



## LONG HANDLE TOOLS - SCOOP SHOVELS

### SS42001/SS42011 #12 SCOOP SHOVEL - POLY 48"/30" HANDLE

- ◆ Plastic head, wood handle
- ◆ Heavy-duty gauge plastic for greater strength and long service life
- ◆ Designed for efficient moving of light, loose material
- ◆ Western-style scoop head with reinforced ribs for heavy-duty applications
- ◆ For general light duty use and clean up
- ◆ 48" wood handle- SS42001. 30" wood handle, D-Grip SS42011



### SS68000 #10 ALUMINUM SCOOP SHOVELS - WESTERN

- ◆ High-strength, Western style, 12-gauge aluminum heads reduce workload to a minimum while giving longer service life
- ◆ Large, square-nose designs for efficient moving of light, loose material
- ◆ 48 inch Ash wood handle



### SS68010 #10 ALUMINUM SCOOP SHOVELS - WESTERN

- ◆ High-strength, Western style, 12-gauge aluminum heads reduce workload to a minimum while giving longer service life
- ◆ Large, square-nose designs for efficient moving of light, loose material
- ◆ 30 inch steel and Ash wood D-Grip



## LONG HANDLE TOOLS - TRENCHING SHOVELS

### SS 64223 - 3 INCH, 35 DEGREE FOR CLEANING

- ◆ Easily pick up loose soil and debris with 35° angled head
- ◆ Heavy-duty 12-gauge tempered steel blades
- ◆ V-shaped beveled blades for easy soil penetration
- ◆ 48 inch solid-core fiberglass handle



### SS 64223 - 4 INCH, 35 DEGREE FOR CLEANING

- ◆ Easily pick up loose soil and debris with 35° angled head
- ◆ Heavy-duty 12-gauge tempered steel blades
- ◆ V-shaped beveled blades for easy soil penetration
- ◆ 48 inch solid-core fiberglass handle



## LONG HANDLE TOOLS TRENCHING SHOVELS (CONT.)

### SS 64225 - 5 INCH, 35 DEGREE FOR CLEANING

- ◆ Easily pick up loose soil and debris with 35° angled head
- ◆ Heavy-duty 12-gauge tempered steel blades
- ◆ V-shaped beveled blades for easy soil penetration
- ◆ 48 inch solid-core fiberglass handle



### SS 64226 - 6 INCH, 35 DEGREE FOR CLEANING

- ◆ Easily pick up loose soil and debris with 35° angled head
- ◆ Heavy-duty 12-gauge tempered steel blades
- ◆ V-shaped beveled blades for easy soil penetration
- ◆ 48 inch solid-core fiberglass handle



### SS 64103 - 3 INCH, 35 DEGREE FOR CLEANING

- ◆ Easily pick up loose soil and debris with 35° angled head
- ◆ Heavy-duty 12-gauge tempered steel blades
- ◆ V-shaped beveled blades for easy soil penetration
- ◆ 48 inch ASH handle



### SS 64104 - 4 INCH, 35 DEGREE FOR CLEANING

- ◆ Easily pick up loose soil and debris with 35° angled head
- ◆ Heavy-duty 12-gauge tempered steel blades
- ◆ V-shaped beveled blades for easy soil penetration
- ◆ 48 inch ASH handle



### SS 64105 - 5 INCH, 35 DEGREE FOR CLEANING

- ◆ Easily pick up loose soil and debris with 35° angled head
- ◆ Heavy-duty 12-gauge tempered steel blades
- ◆ V-shaped beveled blades for easy soil penetration
- ◆ 48 inch ASH handle



### SS 64106 - 6 INCH, 35 DEGREE FOR CLEANING

- ◆ Easily pick up loose soil and debris with 35° angled head
- ◆ Heavy-duty 12-gauge tempered steel blades
- ◆ V-shaped beveled blades for easy soil penetration
- ◆ 48 inch ASH handle



## LONG HANDLE TOOLS HOES/CULTIVATORS



### FH71002- FORGED EYE HOE

- ◆ Forged, tempered steel blades for maximum strength, long service life and superior sharpness
- ◆ Sharpened-blade edges penetrate ground easily, slice through weeds easily
- ◆ 60 inch Ash wood handles withstand heavy weed chopping • Ox-eye connections for extra-thick handles



### CV70004-FORGED CULTIVATOR

- ◆ Heavy-duty forged steel heads for weeding, cultivating, and aerating the hardest soils
- ◆ Tines with oval cross sections to reduce pulling effort
- ◆ Durable Ash wood tapered handles, 2X varnished for weather resistance



### SH60001 OSCILLATING HOE - 5"

- ◆ Heavy-duty construction blade design for long service life
- ◆ Hoe automatically angles slightly downward on both forward and back stroke to slice weeds just below surface
- ◆ Concave 5" blade sharpens during use
- ◆ 60" Long Northern Ash wood handle allows working in upright position, reduces back strain



### SH60061 - OSCILLATING HOE

- ◆ Heavy-duty, double-edged blade for push/pull weed cutting
- ◆ Slice weeds just below the surface with automatically angling blade
- ◆ 60 inch lightweight aluminum, non-slip, 2X bolt-thru handle
- ◆ 60061-8 - Replacement head



#### Did you know?

Four prong cultivators like CV70004 are great for repairing lawns: just loosen soil, apply grass seed, level area and water

## LONG HANDLE TOOLS - BOW RAKES



### **RK65001-BOW HEAD RAKE- 14 INCH/14 TINE**

- ◆ Tempered single piece head for greater durability and longer service life
- ◆ Curved tines efficiently gather and move soil
- ◆ Bow serves as spring for better control of tine depth
- ◆ Extra-long 60 inch ASH handles lets you work upright, reduce back strain



### **RK65002-BOW HEAD RAKE- 16 INCH/16 TINE**

- ◆ Tempered single piece head for greater durability and longer service life
- ◆ Wide head for rapid working of large areas
- ◆ Curved tines efficiently gather and move soil
- ◆ Bow serves as spring for better control of tine depth
- ◆ Extra-long 60 inch ASH handles lets you work upright, reduce back strain



### **RK65021-BOW HEAD RAKE- 14 INCH/14 TINE**

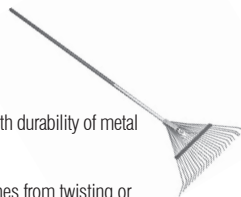
- ◆ Tempered, single-piece head for greater durability and long service life
- ◆ Curved tines efficiently gather and move soil
- ◆ Bow serves as spring for better control of tine depth
- ◆ 60" Solid-core fiberglass handle with thick, molded poly jacket for maximum strength and long service life



## LONG HANDLE TOOLS LANDSCAPE RAKES

### **RK24061-SPRING BRACE RAKE- ALUMINUM HANDLE 24 INCH/24 TINE**

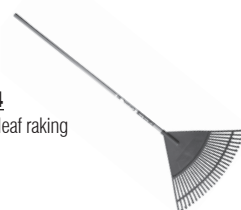
- ◆ A-shaped head combines flexible tines with durability of metal
- ◆ Bolt-thru head to handle connection
- ◆ Stress distribution bar prevents the 24 tines from twisting or breaking
- ◆ Tines and spring are made of high carbon steel-
- ◆ Powder-coated frame and tines resist rust
- ◆ 54" long aluminum handle



62060-4 Replacement aluminum handle  
24003-4 Replacement wood handle

### **RK25024 - POLY LEAF RAKE 24**

- ◆ 24" poly head allows for medium-capacity leaf raking and general cleanup
- ◆ 48" wood handle



## LONG HANDLE TOOLS LANDSCAPE RAKES (CONT.)

### **RK61061 ALUMINUM LANDSCAPE RAKE — 24 INCH/24 TINE**

- ◆ All aluminum construction combines durability with ease of use during finish grading process
- ◆ Extra thick tine tips for longer service life
- ◆ 60" Lightweight aluminum handle with anti-slip vinyl sleeved handle for gripping comfort in extreme heat or cold



### **RK61062 ALUMINUM LANDSCAPE RAKE — 36 INCH/36 TINE**

- ◆ 36" width for grading in wide open areas
- ◆ All aluminum construction combines durability with ease of use during finish grading process
- ◆ Extra thick tine tips for longer service life
- ◆ 60" Lightweight aluminum handle with anti-slip vinyl sleeved handle for gripping comfort in extreme heat or cold



### **RK62000 FIXED TINE SHRUB RAKE — 8"/11 TINES**

- ◆ Tempered spring steel for greater durability and longer service life
- ◆ Bi-curved bow gives even pressure to all tines for maximum raking efficiency
- ◆ Tines apply light pressure for debris removal without damage to plant feeder roots
- ◆ Narrow head for working between closely spaced plants
- ◆ Three rivets hold head to handle
- ◆ Double crimps hold tines in place
- ◆ 54" Long wood handle



### **RK62060 FIXED TINE SHRUB RAKE — 8"/11 TINES**

- ◆ Tempered spring steel for greater durability and longer service life
- ◆ Bi-curved bow gives even pressure to : efficiency
- ◆ Tines apply light pressure for debris removal without damage to plant feeder roots
- ◆ Narrow head for working between closely spaced plants
- ◆ Three rivets hold head to handle
- ◆ Double crimps hold tines in place
- ◆ 54" Lightweight metal handle with anti-slip vinyl grip



### **RK62061 FIXED TINE LEAF RAKE — 19"/25 TINES**

- ◆ Tempered spring steel for greater durability and longer service life
- ◆ Bi-curved bow gives even pressure to all tines for maximum raking efficiency
- ◆ Tines apply light pressure for debris removal without damage to plant feeder roots
- ◆ 25 extra wide tines
- ◆ 54" Lightweight metal handle with anti-slip vinyl grip
- ◆ Double crimps hold tines in place



## LONG HANDLE TOOLS LANDSCAPE RAKES (CONT.)



### **RK63003 WIDE HEAD LEAF RAKE — 30 INCH/30 TINES**

- ◆ 30" wide head for maximum leaf gathering efficiency
- ◆ Extra thick vinyl with UV stabilizers for longer service life
- ◆ Closely spaced, tightly curved tines sweep leaves clear in a single pass
- ◆ Lightweight, tough 48 inch bamboo handle



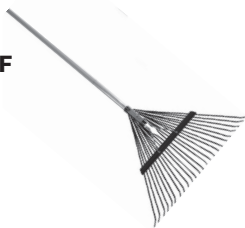
### **RK24003 SPRING BRACE RAKE — 24 INCH/24 TINE**

- ◆ Fan-shaped head combines flexible tines with durability of metal
- ◆ Stress distribution bar that prevents tines from twisting or breaking when pressed on
- ◆ Coated frame and tines resist rust 62060-4 Replacement aluminum handle  
24003-4 Replacement wood handle
- ◆ 54" Long wood handle



### **CF24A SPRING ACTION LEAF RAKE**

- ◆ 24" Metal Head
- ◆ 48" AlumiLite Handle
- ◆ 24 Continuous Tines
- ◆ Chrome Plated Spring Coil
- ◆ "Bolt Thru" Handle Connection



### **CF24W SPRING ACTION LEAF RAKE**

- ◆ 24" Metal Head
- ◆ 48" Wood Handle
- ◆ 24 Continuous Tines
- ◆ Chrome Plated Spring Coil
- ◆ "Bolt Thru" Handle Connection
- ◆



### **LAR136 HULA-HO PRO LANDSCAPE RAKE**

- ◆ 36" Aluminum Head
- ◆ 66" Aluminum Handle



## LONG HANDLE TOOLS LEVEL RAKES

### **RK64002 LEVEL HEAD RAKE — 16 INCH/ 14 TINES**

- ◆ Wide head for rapid, accurate tilling and leveling
- ◆ Extra thick, tempered single piece head for greater durability, and longer service life
- ◆ Flat head design for smooth tamping of seed beds
- ◆ 60" Extra long American ash handle allows working in upright position, reducing back strain



## LONG HANDLE TOOLS - BROOMS

### **BM61002- PUSH BROOM — 2 BRISTLE, 24 INCH**

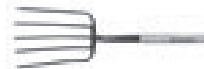
- ◆ 24" Wide head ideal for sidewalks, concrete slabs and floors
- ◆ Replaceable hardwood head with coarse and medium poly bristles for efficient, single-pass removal of unwanted material
- ◆ Scraper blade for removing congealed dirt, gum and other residues from concrete walks and pavers
- ◆ Steel braces prevent head wobble and uneven bristle wear
- ◆ 60" Long wood handle



## LONG HANDLE TOOLS - FORKS

### **FK72005- FORGED MANURE FORK**

- ◆ Forged, tempered steel heads for maximum strength and long service life
- ◆ Heavy-duty forks for moving manure, compost, planting mix and other dense, damp material
- ◆ Oval tines for greater lifting strength • 54 inch Ash wood handle





## **WB2506K/2606K 6 CU FT HEAVY-DUTY WHEELBARROWS**

- ◆ 1.4 mm wrinkle-free, extra-heavy-duty steel tray
- ◆ Reinforced steel front tray braces for added support and stability
- ◆ 16 inch pneumatic 2-ply tire
- ◆ Steel bushings for years of smooth performance and grease fittings for easy lubricating
- ◆ Quick connect system for faster assembly
- ◆ WB2506K- 60 inch contractor-grade hardwood handles
- ◆ WB2606K- 60 inch **steel handles** with comfort grips



## **WB2806 - EASYLIFTER® WHEELBARROW - STEEL HANDLES**

- ◆ Heavy-duty all-steel frames and 6 cubic foot trays
- ◆ Effortless pouring with built-in fulcrum action
- ◆ Easy cleaning and storage, stand vertically on their own
- ◆ Lift with less effort by aligning wheel with center of gravity
- ◆ Adjust ground clearance to job site conditions by changing wheel position
- ◆ Optional dual-wheel configuration - AC2806 sold separately
- ◆ Convenient transport with innovative removable handles
- ◆ Easy storage – just mount handles onto built-in storage brackets until next use
- ◆ 16 inch pneumatic 2-ply tire with steel bushings† and grease fitting



## **WB2706- HEAVY-DUTY CONTRACTOR WHEELBARROW WOOD HANDLES**

- ◆ 1.4 mm wrinkle-free, extra-heavy-duty steel tray
- ◆ Squared holes in tray makes tightening easier, helps avoid loosening during heavy work
- ◆ 60 inch hardwood handles feature 10% larger cross-section than in standard pro wheelbarrows
- ◆ Bolt-through design helps legs sustain loads better than with tabbed cross-braces
- ◆ 6 cubic foot class tray balances carrying capacity with typical worker's lifting ability
- ◆ 16 inch pneumatic 2-ply tire with steel bushings† and grease fitting



## **M6T22KB JACKSON WHEELBARROW**

- ◆ 6 cu. ft. Heavy-Duty Steel Wheelbarrow with Flat Free Tire
- ◆ Ideal for professional contractor use
- ◆ Heavy duty contractor grade steel tray
- ◆ Leg stabilizers make wheelbarrow 40% more tip-resistant
- ◆ 60" heavy duty wood handles and 16" flat free tire
- ◆ Wood handles



## **MILLER CONTRACTOR WHEELBARROW**

- ◆ 6 cu. ft. capacity
- ◆ Steel handle
- ◆ Narrow tray allows all models to clear a 27" doorway or gate
- ◆ Easy end pour with 80% of load capacity over the wheel
- ◆ Standard tubeless 8" tire



## **NORTHSTAR EXCAVATOR 6 CU. FT. WHEELBARROW**

- ◆ All-steel design that assembles in less than 10 minutes.
- ◆ Steel tray reinforced at the bottom with a 1/4" solid steel "H" strap and an all-steel undercarriage to prevent damage when used for hauling rock or concrete.
- ◆ Front roll bar supports heavy loads when dumping and the cross bar location does not impede when stepping.
- ◆ Comes with flat-free or standard knobby tires



### METHOD #1

1. Fill spreader with a weighed amount of fertilizer.
2. Layout calibration area in length. 100', 50', 200', etc.
3. Apply the fertilizer the length of the run.
4. Measure the width of the spread.
5. Weigh the remaining fertilizer in the spreader and subtract this amount from the amount you started with.

Now you have all the variables for calculation. Length, width, and amount of fertilizer used.

### Calculation

#### Length x width = sq.ft. of area

Example: 7' spread x 100' run = 700 sq.ft. of area

If you applied 5 lbs. of fertilizer in this area, then you applied 5#/700 sq.ft.

You can then use a ratio to find the rate/1000 sq.ft. or rate/acre.

### Example:

You spread 5#/700 sq.ft.

5#/700': X/1000' cross multiply the ratio 700 x X = 5 x 1000 or 700X = 5000 then: X = 5000/700 and X = 7.14

Thus: you applied a little more than 7 lbs. of fertilizer per 1000 sq.ft.

If you were using Turf Supreme then the spreader setting would need to be closed to apply the recommended rate of 6.25#/1000.

### METHOD #2

1. Fill spreader with fertilizer.
2. Run spreader over a pre-marked area.
  - a. Area must be smaller than the spread pattern.
  - b. Use a small tarp to collect the applied fertilizer.
3. Collect and weight the fertilizer that was applied to the tarp.
4. The formula for the pounds of fertilizer that was applied is:  
Pounds per 1000 sq.ft. = Amount collected x 1000

### CONVENIENT CONVERSION FACTORS

MULTIPLY	BY	TO GET	MULTIPLY	BY	TO GET
Pounds	7,000	Grains	Square Inches	0.00694	Square Feet
	453.5924	Grams	Square Miles	640	Acres
	16	Ounces		28,876,400	Square Feet
	0.0005	Tons		3,097,600	Square Yards
Pounds of Water	0.01602	Cubic Feet	Square Yards	0.0002066	Acres
	27.68	Cubic Inches		9	Square Feet
	0.1198	Gallons		1,296	Square Inches
Quarts (dry)	0.03125	Bushels			
	67.20	Cubic Inches	Temperature		Temperature, °F
	0.125	Picks	(°C)+17.98	1.8	
	2	Pints (dry)	Temperature		Temperature, °C
Quarts (liquid)	57.75	Cubic Inches	(°F)-32	5/9 or 0.5555	
	0.25	Gallons	Ton	907.1849	Kilograms
	0.9463	Liters		32,000	Ounces
	32	Ounces (liquid)		2,000	Pounds
	2	Pints (liquid)	Yards	3	Feet
Rods	16.5	Feet		36	Inches
Square Feet	144	Square Inches		0.9144	Meters
	0.11111	Square Yards		0.000568	Miles

### TABLE OF EQUIVALENTS FOR LIQUID MEASURE (VOLUME)

(For equivalent amounts, read horizontally in either direction on any given line)

Gallons	Quarts	Pints	Fluid Ounces	Cups	Tablespoons	Teaspoons	Milliliters	Liters
1	4	8	128	16	256	768	3785	3.785
	1	2	32	4	64	192	946	.946
		1	16	2	32	96	473	.473
			1	1/8	2	6	29.6	.030
				1	16	48	235	.236
					1	3	15	.015
						1	5	.005
							1	.001

### CONVERSION TABLE For Smaller Areas

RATE PER ACRE	RATE PER 1,000 SQUARE FEET	RATE PER 100 SQUARE FEET
LIQUID MATERIALS		
1 pt.	¾ tbsp.	¼ tsp.
1 qt.	1½ tbsp.	½ tsp.
1 gal.	6 tbsp.	2 tsp.
25 gal.	4½ pts.	1 cup
50 gal.	4½ qts.	1 pt.
75 gal.	6½ qts.	1½ pts.
100 gal.	9 qts.	1 qt.
DRY MATERIALS		
1 lb.	2½ tsp.	¼ tsp.
3 lbs.	2¼ tbsp.	¾ tsp.
4 lbs.	3 tbsp.	1 tsp.
5 lbs.	4 tbsp.	1¼ tsp.
6 lbs.	4½ tbsp.	1½ tsp.
8 lbs.	2/5 cup	1¾ tsp.
10 lbs.	½ cup	2 tsp.
100 lbs.	2¼ lbs.	¼ lb.
125 lbs.	2½ lbs.	1/3 lb.
150 lbs.	3½ lbs.	1/3 lb.
175 lbs.	4 lbs.	2/5 lb.
200 lbs.	4½ lbs.	½ lb.
225 lbs.	5 lbs.	½ lb.
250 lbs.	5½ lbs.	3/5 lb.
275 lbs.	6½ lbs.	3/5 lb.
300 lbs.	7 lbs.	¾ lb.

# CONVENIENT CONVERSION FACTORS

MULTIPLY	BY	TO GET	MULTIPLY	BY	TO GET
Acres	43,560	Square Feet	Kilometers	3,281	Feet
	4,840	Square Yards		1,000	Meters
Bushels	2,150.42	Cubic Inches		0.6214	Miles
	4	Pecks		1,094	Yards
	64	Pints	Liters	1,000	Cubic Centimeters
	32	Quarts		0.0353	Cubic Feet
Centimeters	0.3937	Inches		61.02	Cubic Inches
	0.01	Meters		0.001	Cubic Meters
	10	Millimeters		0.2642	Gallons
Cubic Feet	1,728	Cubic Inches		2.113	Pints (liquid)
	0.0374	Cubic Yards		1.057	Quarts (liquid)
	7.4805	Gallons	Meters	100	Centimeters
	59.84	Pints (liquid)		3.281	Feet
	29.92	Quarts (liquid)		39.37	Inches
Cubic Inches	16.39	Cubic Centimeters		0.001	Kilometers
Cubic Meters	1,000,000	Cubic Centimeters		1,000	Millimeters
	35.31	Cubic Feet		1.094	Yards
	61,023	Cubic Inches	Miles	5,280	Feet
	1.308	Cubic Yards		320	Rods
	264.2	Gallons		1,760	Yards
	2,113	Pints (liquid)	Miles per Hour	88	Feet per Minute
	1,057	Quarts (liquid)		1.467	Feet per Second
Cubic Yards	27	Cubic Feet	Miles per Minute	88	Feet per Second
	46,656	Cubic Inches		60	Miles per Hour
	0.7646	Cubic Meters	Ounces (dry)	437.5	Grains
	202	Gallons		28.3495	Grams
	1,616	Pints (liquid)		0.0625	Pounds
	807.9	Quarts (liquid)	Ounces (liquid)	1.805	Cubic Inches
Feet	30.48	Centimeters		0.0078125	Gallons
	12	Inches		29.573	Milliliters (cubic centimeters)
	3.048	Meters		0.0625	Pints (liquid)
	1/3 or 0.33333	Yards		0.03125	Quarts (liquid)
Feet per minute	0.01667	Feet per second	Parts per Million	0.0584	Grains per U.S. Gallon
	0.01136	Miles per hour		0.001	Grams per Liter
Gallons	3.785	Cubic Centimeters		8.345	Pounds per Million Gallons
	0.1337	Cubic Feet	Pecks	0.25	Bushels
	231	Cubic Inches		537.605	Cubic Inches
	128	Ounces (liquid)		16	Pints (dry)
	8	Pints (liquid)		8	Quarts (dry)
	4	Quarts (liquid)	Pints (dry)	0.015625	Bushels
Gallons of Water	8.3453	Pounds of Water		33.6003	Cubic Inches
Grains	0.0648	Grams		0.0625	Pecks
Grams	15.43	Grains		0.5	Quarts (dry)
	0.001	Kilograms	Pints (liquid)	28.875	Cubic Inches
	1,000	Milligrams		0.125	Gallons
	0.0353	Ounces		0.4732	Liters
Grams per Liter	1,000	Parts per Million		16	Ounces (liquid)
Inches	2.54	Centimeters		0.5	Quarts (liquid)
	0.08333	Feet			
	0.02778	Yards			
Kilograms	1,000	Grams			
	2.205	Pounds			

# Landscape

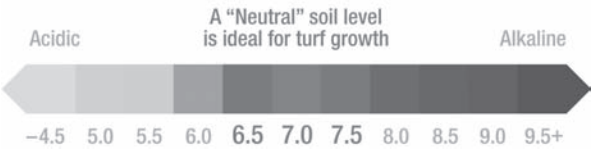
## TESTING THE SOIL

Every lawn or landscape has different soil conditions, because the soils don't have the same amounts of organic matter, nutrients, clay, etc. So to get the best results from a fertilizer, it helps to know what the soil on each specific property needs.

A professional soil test will tell you if a landscape has low levels of the key nutrients: Nitrogen, Phosphorus and Potassium. That makes it easier to choose the right fertilizer.

Testing also shows the soil's pH level, which is its balance of acidity and alkalinity. Soil pH affects plants' ability to absorb nutrients. Most lawns and landscapes need a "neutral" soil, which is a pH of 6.5 to 7.5.

Turf pH scale



To get soil tested, bring a few scoops of earth (from different places on the lawn) to your Horizon dealer, and we'll have it tested.

Horizon can then provide the exact fertilizer or pH balancing product that the lawn needs to look its best.

## READING A FERTILIZER LABEL

The three numbers displayed on a fertilizer bag refer to the percentages of Nitrogen (usually the highest number), Phosphate (Phosphorus) and Potash (Potassium) contained in that product, and they're always in the same order, listed as N-P-K. For example, a 24-5-11 fertilizer means it contains 24% Nitrogen, so 50lbs. of that product would have 12lbs. of actual N. The percentages of Phosphorus and Potassium are based on the actual weight of ingredients because they are compounds which contain Oxygen.

## THE IMPORTANCE OF FERTILIZERS

### MACRONUTRIENTS

Nitrogen, Phosphorus and Potassium are very important to landscapes, sometimes in large quantities, and they are called macronutrients.

#### Nitrogen (chemical symbol N)

- + Improves plants' color, strength, growth and stress tolerance.
- Nitrogen deficiency causes yellowing (chlorosis), thinning, and slow growth.

#### Phosphorus (P)

- + Promotes establishment and growth of roots.
- + New low-Phosphorus programs reduce annual weed growth and lessen run-off damage.

#### Potassium (K)

- + Improves plants' stress tolerance and disease resistance.

### MICRONUTRIENTS

Several other minerals may be needed in smaller quantities on different landscapes, depending on soil conditions. These micronutrients include:

#### Sulfur (S)

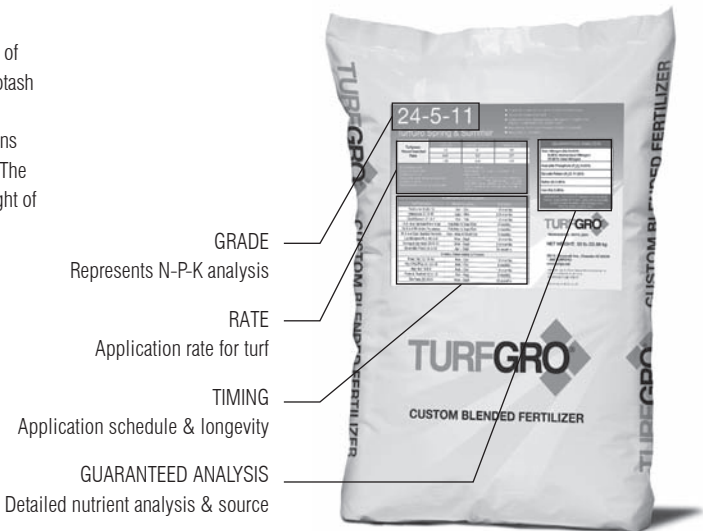
- + Improves plant growth, and helps lower high pH.
- + Only needed in Sulfur-deficient areas such as Florida and Pacific Coast regions.

#### Iron (Fe)

- + Necessary for chlorophyll production.
- Iron is the most common deficiency in turf.

#### Manganese (Mn)

- + Important for photosynthesis, but Manganese deficiencies are rare.



## WOOD FIBER MULCH

When applied over the soil surface, the fibers tend to twist and lock with each other as they dry. This forms a protective mulch mat to aid in erosion control, hold seeds in place, and provide a micro-climate to aid seed germination. After the seedlings have grown to sufficient size, they will protect the soil surface to greatly reduce erosion and soil loss. In the final stage the fibers decompose, adding organic matter to the soil.

## WOOD FIBER MULCH WITH TAC

Rainier Fiber + TAC is virgin wood fiber mulch for use in hydraulic planting with the extra holding power of a tacifier. It is high quality wood mulch, to which 3% high grade organic tacifier is added to enhance erosion protection. Constant production control checks insure that the fiber is consistent in size and texture for the most optimum performance.

When applied over the soil surface, the fibers tend to twist and lock with each other as they dry. With tacifier, the holding power of the fiber to the soil is stronger, thus providing increased erosion protection. The tacifier also holds the seeds in place and gives extra lubricity to the slurry, which makes pumping and application easier.

## RAINIER SUPREME

RAINIER SUPREME™ consists of extra long strand virgin wood fibers along with a special formulated high-strength, non-toxic, cross-linked organic binder. This combination gives superior erosion protection without the addition of man-made synthetic fibers which are not naturally biodegradable. The system sprays on like mulch and forms a blanket that adheres to the soil surface immediately upon application. When dry, the blanket is porous, erosion resistant and protects the soil surface. The blanket retains its integrity and soil protection despite re-wetting for well beyond 12 months. The extra long, wooly wood fibers form tent-like pockets which aids germination and plant growth. When applied over the soil surface, the wood fibers twist and interlock with each other and the soil as they dry. With the high-strength binder, the holding power of the fiber to the soil is much stronger than other BFM's, thus providing superior erosion protection. RAINIER SUPREME™ is 100% naturally biodegradable and is non-toxic to fish and wildlife.

Product Code	Description
101	Rainier 50# wood fiber hydraulic mulch
301	Rainier 50# wood fiber with TAC
401	Rainier 50# BFM hydraulic mulch
501	Rainier 50# supreme BFM hydraulic mulch
601	Rainier 50# mulch blend, 50/50 wood and straw



## TERRA-MULCH WOOD FIBER (DYNAF)

- ◆ Contains 100% of the highest quality wood fiber
- ◆ Now with UltraGro™, a proprietary biostimulant to ensure healthy growth even in harsh environments
- ◆ Thermally Refined™ wood fiber delivers up to 50% more water holding capacity than atmospherically refined wood mulches



Product Code	Description
DYNAF	Terra Mulch Wood Fiber, 50lb. bag

## HYDROBLANKET

- ◆ Available for your toughest jobs, delivering a much higher level of performance than any standard hydraulic mulch on the market today
- ◆ Ideal for projects where blankets are impractical and/or too expensive and conventional hydraulic mulches are ineffective



Product Code	Description
HYDROBLANKET	Bonded Fiber Matrix, 50lb. bag

## HYDRAULIC MULCHES

## NATURE'S OWN PAPER MULCH

- ◆ Works in all hydro-seeding equipment
- ◆ Gives you 20% more loading capacity than wood mulch
- ◆ Fast to load from easy to handle bales
- ◆ Mixes easily with water and virtually eliminates clogs or plugging
- ◆ 100% recycled paper



Product Code	Description
HPAPER	50lb. Paper mulch

## NATURE'S OWN X9000 BFM

A cellulose fiber mulch manufactured from clean recycled newspaper and the toughest agricultural fibers. Made for all erosion control projects:

- ◆ Fast to load from easy-to-handle bales
- ◆ Mixes easily with water and virtually eliminates clogs or plugs
- ◆ Flows smoothly and gives you uniform distribution

## Application rate:

Hydro-Seeding  
3:1 to 2:1 — 3000lb./acre  
Greater than 2:1 — 3500 to 4000lb./acre

Product Code	Description
X9000	Bonded Fiber Matrix, 50lb. bag

### EVOLUTION70

- ◆ Nature's Own Evolution
- ◆ Fast to load from easy to handle bales
- ◆ Mixes easily with water and virtually eliminates clogs or plugging
- ◆ Flows smoothly and gives you uniform distribution



### Typical Projects:

Highways  
Golf Courses  
Reclamation  
Residential and Commercial Landscaping

### Typical Application Rate:

Hydro-Seeding:  
Mod. to 3:1 1500lb./acre  
3:1 to 2:1 2000lb./acre  
Greater than 2:1 2500lb./acre  
Strawtacking: 750lb./acre

Product Code	Description
DYNAP	Terra Mulch Wood Fiber, 50lb. bag

### HYDROSTRAW

- ◆ An hydraulically applied straw alternative to straw blowing
- ◆ You can appease the air quality and water quality control boards with one product



Product Code	Description
HYDROSTRAW	50lb. Hydraulic straw mulch



### HYDRO-SEEDING COMPOST

- ◆ Multi-purpose Hydro-Seeding Compost can be used by the Commercial Hydro-Seeding Professional as well as the Weekend Gardening Enthusiast
- ◆ Available in a 3 cu. ft. bale or tote

### Ingredients:

Premium Screened Composted Forest Products

### Usage:

In commercial applications add product to Hydro-Seeding blend until desired consistency is achieved. For home use mix product with seeds then spread material approximately 1/8 deep across area to be landscaped

Product Code	Description
HPAPER	50lb. Paper mulch



## TACKIFIERS



### EARTHGUARD FIBER MATRIX

- ◆ EarthGuard® is a soil stabilizing emulsion specifically formulated to reduce erosion and sediment runoff
- ◆ Non-toxic, 100% biodegradable, and conforms to the State of California Department of Transportation Standard Specifications Section 07-382 E A05-30-06 for "Polymer Stabilized Fiber Matrix (PSFM)"
- ◆ One-step spray application, combining EarthGuard® and wood/cellulose fiber
- ◆ Chemically engineered to be effective at low rates while absorbing the impact of raindrops, and providing immediate dust control, erosion control, and soil stabilization until permanent vegetation is established or construction has resumed
- ◆ EarthGuard® FM's versatility allows it to be highly effective in many applications: erosion control, slope stabilization, dust abatement, landscape design, storm water runoff, fire burn rehabilitation, land development, and golf course construction

Product Code	Description
EGFM	#50 Caltrans Fiber Matrix Prep

### PLANTAGO TACKIFER

- ◆ All natural, non toxic, biodegradable and hydrates rapidly
- ◆ May applied as a wet slurry to the surface of the soil
- ◆ Dries to form a firm but rewettable membrane that binds soil particles together and permits germination and growth of seed

Product Code	Description
X9000	Bonded Fiber Matrix, 50lb. bag

### SOILFLOC™ DRY TACK

- ◆ Polyacrylamide Tackifiers with the highest active content available

Product Code	Description
HYDROSTRAW	50lb. Hydraulic straw mulch

### J3000™ GUAR GUM TACKIFIER

- ◆ High quality, coarse granulation guar gum designed for ease of use as tackifier
- ◆ Its high quality gum content assures that the network of fiber, adhesive and soil will bond into a soil holding matrix to:
  - Anchor Mulch, seed, and fertilizer in place until vegetation can take root
  - Prevent Soil and sand erosion and fugitive dust

Product Code	Description
X9000	Bonded Fiber Matrix, 50lb. bag

**TRIPLETACK**

An organic biodegradable tackifier that disperses rapidly in cold water and cures immediately after application

**Typical Application Rate:**

Hydro-Seeding:

Moderate to 6:1 20lb./acre

4:1 to 2:1 30lb./acre

Greater than 1:1 60lb./acre

**Strawtacking:**

50lb. III tack/20lb. fiber/ 1000 gal. water per acre

Product Code	Description
TRIPLETACK	Triple Tackifier, 25lb. bag

**STORMKLEAR® GEL FLOC™ SOCK**

- ◆ A patented, geosynthetic sock filled with a dry-flake soluble form of chitosan
- ◆ With a chitosan content of about 50%, the StormKlear GelFloc Sock contains a much higher percentage of chitosan than any liquid formula
- ◆ Segmentation in the sock prevents bunching and ensures a more consistent dissolution rate
- ◆ One GelFloc Full Size bucket\* treats 500,000 — 2 million gals. of sediment laden water

Product Code	Description
STORMKLEAR	One GelFloc bucket contains four segmented socks

**CORN STARCH TACKIFIER**

- ◆ 100% organic tackifier

Product Code	Description
STARTAC	Corn starch organic tackifier

**HYDROSEEDER ADDITIVES****FIBERLOCK**

- ◆ Uniquely manufactured polyester fibers, exactly 1/2" in length and individually crimped to exponentially increase the mechanical bond within all types of hydraulic mulches
- ◆ FiberLock's unique crimp interlock with each other allowing the fiber mulch matrix the ability to withstand higher rates of surface flow energy
- ◆ 10lb. box



Product Code	Description
FIBERLOCK	Fiberlock Crimped Poly Fibers, 10lb.

**SLIK COLOR #11**

- ◆ Additive for hydro-seeding to enhance the color for great curb appeal. Improves visual metering when applying seed and fertilizer alone
- ◆ The only marker dye with the added plus of a slickifier to improve shooting
- ◆ Apply at a rate of 1lb. per 1500lbs. of fiber Mulch — 3lb. per acre for visual metering
- ◆ Water Soluble Bags 11-1lb. bags per case

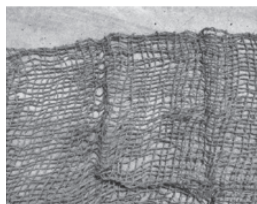


Product Code	Description
SLIK 11	Slikcolor, 11lb. jug
SLIKBAG	Case of 11, 1lb. jug

**WATTLES****WATTLES**

- ◆ Earth Saver Rice Straw Wattles are made from recycled, certified weed-free California rice straw
- ◆ The wattles imitate natural stabilization by reducing the rate of flow, absorbing water and filtering sediment runoff
- ◆ By trapping silt and seed, the wattles allow native vegetation and brush to begin to revegetate and restore root integrity within one year
- ◆ Stabilization of the hillside will eventually transition to the reformed growth as the Earth Saver Wattles decay
- ◆ The wattles also form a durable containment area to prevent polluted runoff from reaching surface waters
- ◆ All wattles meet Cal Trans standard specifications
- ◆ Biodegradable wattles available

Product Code	Description
SW925	190 mm X 25'
SW1218	11.5" X 18' (nominal) rice straw wattles
SW208	19" X 8' (nominal) rice straw wattles
WW	Weighted wattle



### COIR MATS

- ◆ Two to five years longevity allows full vegetation establishment
- ◆ Provides effective erosion control of steep slopes and in channels
- ◆ High tensile strength and durability make it suitable for the most severe erosion control problems.
- ◆ More durable around water than other natural materials
- ◆ Open mesh construction allows for installing the mat and seeding into the mesh. This provides an excellent opportunity for the establishment of vegetation.
- ◆ Adds fertility to the soil after biodegrading

Product Code	Description
4000-4420	13.5 x 82' Coir Matting 400GM

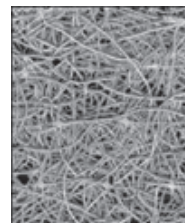
### EXCELSIOR BLANKETS

- ◆ Our Excelsior blankets are comprised of 100% Rocky Mountain Aspen, machine produced excelsior
- ◆ Single net, double net, heavy duty and all natural materials are available.
- ◆ Single and double net products are produced in Regular weight (R) and Superior weight (S).
- ◆ Machine-produced fibers allow for specific dimensions and result in a blanket matrix that is more uniform than other ECBs. Because they are more consistent, our excelsior blankets yield greater open areas for the establishment of vegetation, all with less tenting.
- ◆ Our high-altitude fibers are naturally drier and offer greater strength, resiliency and absorbency for improved performance.



Product Code	Description
4000-1450	8' x 90' Excel DBL NET BIO S-2
4000-1400	8' x 90' Excelsior Blanket 2Side
4000-1210	8' x 90' BLKT SING NET EXCELS R1
4000-1225	8' x 90' BIO SING NET EXCEL R1
4000-4650	Rice Straw Bale 75# Approximate
4000-1800	7.5' x 120' Straw SNGL NET PHO
4000-1850	8' x 112.5' BIO SING NET Straw
4000-1875	8' x 112.5' SS-2 DBL NET STW PHO
4000-1880	8' x 112.5' BIO DBL NET Straw
4000-1900	7.5' x 120' CC-4 COCO PHOTO-NET
4000-1950	7.5' x 120' CS-3 COCO Straw DBL
4000-2000	8' x 112.5' BIO-NET 1 COCO CC
4000-2050	8' x 112.5' COCO Straw NATL CS-3
4000-5000	8' x 112.5' Synthetic Mat PPS-8

American  
Excelsior  
Company®  
Earth Science Division



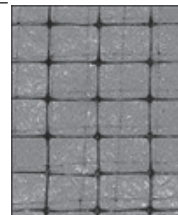
### CURLEX EXCELSIOR BLANKETS

- ◆ Curlex Excelsior Blankets are specifically designed to actually promote ideal growing conditions for grass seed, while simultaneously protecting topsoil from wind and water erosion
- ◆ By design, Curlex Blankets have a built-in swell factor — wet curled excelsior fibers slightly expand in thickness and interlock to form a strong, fiber matrix

Product Code	Description
CURLEX1	8' X 101.25' Single net
CURLEX2	8' X 101.25' Double net
CURLEX3	8' X 67.5' Heavy duty net
CURLEXNF	8' X 101.25' Net-free excelsior blanket

### CURLEX HIGH VELOCITY BLANKET

- ◆ Curlex High Velocity (HV) erosion control blanket consists of a specific cut of 100% weed seed free Great Lakes Aspen curled wood excelsior with 80% six-inch fibers or greater fiber length
- ◆ It is of consistent thickness with fibers evenly distributed throughout the entire area of the blanket
- ◆ The top and bottom of each blanket is covered with heavy duty black net
- ◆ Curlex HV has a design C-factor (USLE Cover Management Factor) of .022 and is typically suitable for slopes up to .75:1. Curlex HV is rated for channel flows up to 10 ft/s (3 m/s) and 3lb./ft2 (144 Pa) shear stress



Product Code	Description
CURLEXHV	8' X 50' High Velocity blanket

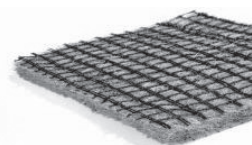
### FUTERRA EROSION CONTROL BLANKET

Product Code	Description
FUTERRAGR	82" X 135' Green blanket
FUTERRANAT	82" X 135' Natural blanket
F4GREEN	78" X 90' Net-Free Futerra green blanket



### PERMANENT TURF REINFORCEMENT MATS

- ◆ Greenfix America offers a variety of TRM products specifically configured to satisfy the many different approaches to slope and channel designing practices
- ◆ Our TRM product development and material qualification program specifically emphasizes reducing hydraulic sediment loss during the pre-vegetated life cycle of a project application
- ◆ Greenfix America composite TRMs are measurably stronger and more flexible allowing for easier installation and a lower level of supervision and inspection management



## EROSION CONTROL BLANKETS (CONT.)



### POLLUTION SOLUTIONS

- ◆ Sediment control device, has both filtration and high-flow materials in one bag

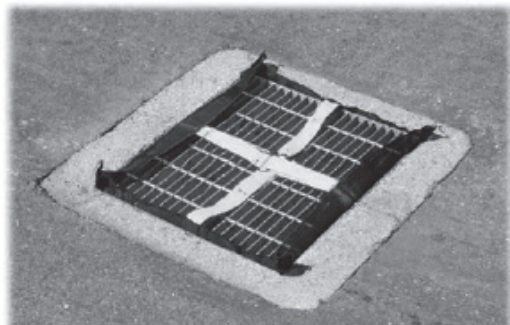


Product Code	Description
Silt Sifter	30 x 16 x 6 Silt Sifter Silt Sifter LG. 30 x 16 x 6
Silt Sifter	23 x 16 x 6 Silt Sifter Silt Sifter SM. 23 x 16 x 6
SS TUBE	SSTUBE Pollution Solutions 5' Weighted Wattle

## DRAIN FILTERS

### DRAIN INLET FILTER

- ◆ Simple to install and maintain. Webbing secures the filter to the grate and doubles as straps for lifting to easily remove.



Product Code	Description
YJ22	Polution Solutions 2' x 2' Drain Inlet Prot
YJ23	Polution Solutions 2' x 3' Drain Inlet Prot
YJ24	Polution Solutions 2' x 4' Drain Inlet Prot
YJ34	Polution Solutions 3' x 4' Drain Inlet Prot

## FENCING & ACCESSORIES

### FENCING

Product Code	Description
SFENCE	36" X 100' silt fence with stakes
OSFENCE	36" X 100' orange silt fence with stakes
SFENCE0	36" X 600' orange silt fence w/o stakes
SFNS	36" X 500' silt fence w/o stakes
SFENCESTAKE	48" silt fence stake
OCFENCE13	Orange construction fence, 13lb., 4' X 100'
OCFENCE85	Orange construction fence, 85lb., 4' X 100'
TPOST	5' metal T-post
WSP24	24" X 100' wire-back silt fence
WSP36	36" X 100' wire-back silt fence
SFENCE6PNP	36" X 100' pocket silt fence 6' o.c. with stakes
SFENCE8PNP	36" X 100' pocket silt fence 8' o.c. with stakes

### ACCESSORIES

Product Code	Description
WSTAKE12	1" X 12" wattle stake
WSTAKE18	1" X 18" wattle stake
WSTAKE24	1" X 24" wattle stake
JSQ	6" X 11" gauge blanket staple
JS8	8" X 8" gauge blanket staple
JS12	12" X 11" gauge blanket staple
RT611	6" X 11" gauge round top staples (1000/case)
RT68	6" X 8" gauge round top staples (500/case)
RT88	6" X 8" gauge round top staples (500/case)
RTDRIVER	Round top staple driver

## EDGING



### BEND-A- BOARD

- ◆ Available in 1 X 4, 2 X 4, 1 X 6 — 20' lengths
- ◆ Color: Mendocino Redwood
- ◆ Flexible and durable
- ◆ Versatile and easy to install
- ◆ Slip joint
- ◆ Three profiles
- ◆ Non-structural uses
- ◆ 100% recycled plastic



Product Code	Description
DYNAF	Terra Mulch Wood Fiber, 50lb. bag

### EPIC EDGE

- ◆ Straight runs and limited curves
- ◆ Above-ground installations and pathways
- ◆ Recycled plastic and wood content
- ◆ Nominal thermal expansion
- ◆ Limits weed migration
- ◆ Available in 1 X 6 and 1 X 4 — 20' lengths
- ◆ Four Designer Earth Tone Colors: Mendocino Redwood, Pacifica Grey, Sedona Sand, Carmel Brown
- ◆ All accessories for Epic products available



## LAWN EDGING



### EDGEX® CONTRACTOR GRADE LAWN EDGING

- ◆ Durable plastic material stands the test of time
- ◆ Pliability makes it ideal for a variety of projects
- ◆ Strength withstands weather and the human element
- ◆ Professional quality
- ◆ Made in the USA
- ◆ Galvanized stakes and couplers available
- ◆ Attractive feature for any project
- ◆ Lasts longer than other lawn edging products
- ◆ Waterproof
- ◆ Won't rot, split or crack
- ◆ Fast and easy to install
- ◆ Simplifies lawn maintenance
- ◆ Flexible 20" lengths can bend to fit any landscape design



### SURELOC EDGING

Sure-loc CrispEdge professional aluminum landscape edging is primarily used in residential and light commercial applications where greater flexibility is desired.

- ◆ Fully rigid and grooved design allows edging to retain solid grip in the ground
- ◆ Dual punch out pockets for stakes allows stakes to be driven down in a straight line
- ◆ Wider more rigid stake design will ensure a lifetime of performance
- ◆ Extra long stakes are available when extra depth is required for sandy soil



Product Code	Description
S-16-04-16	Sure-Loc Steel Edging 3/16" X 4" X 16'
S-14-05-16	Sure-Loc Steel Edging 1/4" X 5" X 16'
S-36	Sure-Loc Steel Stake

## LANDSCAPE FABRIC



### 3.0 OZ FLAT BOND POLYESTER

- ◆ Constructed from polyester fibers spunbond into a swirling web pattern
- ◆ Exceptional strength to weight ratio and the natural qualities of polyester provide ultraviolet stability
- ◆ Excellent water and air permeability
- ◆ Perfect for landscape weed control, patio underlying and drainage line wrap
- ◆ Superior weed control
- ◆ Easy to cut and handle



Product Code	Description
4404	Bond Landscape fabric 3' X 50'
4423	Bond Landscape fabric 3' X 300'
4437	Bond Landscape fabric 4' X 100'
4461	Bond Landscape fabric 6' X 100'
4447	Bond Landscape fabric 4' X 300'
4471	Bond Landscape fabric 6' X 300'
4473	Bond Landscape fabric 9' X 300'
4483	Bond Landscape fabric 12' X 300'

### 4.2 OZ WOVEN NEEDLE PUNCHED

- ◆ Black, needle-punched, woven landscape fabric
- ◆ Provides exceptional strength and toughness and has a very high UV resistance
- ◆ Consistent opening size prevents weed growth and allows water and air exchange with the soil
- ◆ Perfect as a landscape weed control, patio underlying and soil separator
- ◆ Strong with good water and air permeability
- ◆ Stays flexible for easy handling

Product Code	Description
5422	4.2 oz. Woven 3' X 250'
5470	4.2 oz. Woven 6' X 250'
5482	4.2 oz. Woven 12' X 250'
5404	4.2 oz. Woven 3' X 50'
5446	4.2 oz. Woven 4' X 250'

## ARBOR PRODUCTS



### TREE ROOT BARRIER PANELS

An innovative system that directs tree and shrub root systems down, protecting hardscapes and landscapes from disruption caused by surface roots.



- ◆ Commonly used in areas where trees are planted near sidewalks, patios, curbs, parkways and other street tree applications
- ◆ For trees with maximum mature caliper of 24"

Product Code	Description
EP1250	12" Root barrier
EP1850	18" Root barrier
EP2450	24" Root barrier

### TEMPORARY WATERING BAGS

- ◆ Slow release watering bag
- ◆ Uses a patented design to provide an effective watering that efficiently delivers deep water saturation in less than 12 hours
- ◆ Just fill up a bag in the morning, and it will efficiently water your trees before the end of the day!
- ◆ Provides deep water saturation with each application
- ◆ Only fill it once a week for most new tree plantings

Product Code	Description
44010	20 gal. watering bag

### TREE TRUNK PROTECTOR

- ◆ Prevents damage to young tree trunks by trimmers, lawn mowers and rodents
- ◆ Will expand as the tree grows. With breathing holes
- ◆ For trees up to 4" caliper and 9" height

Product Code	Description
TP128	8" Arbor guard protector

### TREE STAKES/LODGE POLES

- ◆ Pressure treated tree stakes feature conical point for easy installation
- ◆ Chamfered top eliminates splitting and cracking

Product Code	Description
TREE8	8'
TREE10	10'
TREE308	3" diameter X 8'
TREE310	3" diameter X 10'
LP28	2" X 8' Lodge Pole
LP210	2" X 10' Lodge
LP310	3" X 10' Lodge
LP38	3" X 8' Lodge
LP312	3" X 12' Tree

## ARBOR PRODUCTS (CONT.)

### CINCH-TIE TREE TIES

- ◆ Effectively single or double stake young trees
- ◆ Made from a strong, UV-resistant vinyl material

Product Code	Description
CT18	18"
CT24	24"
CT32	32"

### TREE TIE TAPE

Product Code	Description
010TTT	1" Tree Tie Tape
007TTT	3/4" Tree Tie Tape
005TTT	1/2" Tree Tie Tape

### TWIST-BRACE TREE TIE SYSTEM

- ◆ Provides a superior support system to resist environmental stress
- ◆ Assures tree stability for optimum growth
- ◆ Reduces liability while providing excellent strong wind protection

Product Code	Description
TB18	18"
TB24	24"

### BULK PLASTIC GARDEN TIES

- ◆ Strong plastic ribbon that will not break, shred or tear
- ◆ Bulk pack

Product Code	Description
TREETIE05	1/2" wide X 150' roll
TREETIE100	1" wide X 150' roll

### GRO-STRAIT CORDED RUBBER TREE TIE

- ◆ Extra durable corded rubber provides a strong and flexible tree tie
- ◆ Figure 8 wrap is recommended with nailing to the back of the stake

Product Code	Description
9012	12"
9018	18"
9024	24"
9030	30"

KEEPING TREES STRONG, HEALTHY  
AND BEAUTIFUL

## TREE ANCHORING KITS

Provide reliable anchoring of medium and large trees. Also used to secure equipment, picnic tables or other items to reduce theft.



### MODEL 40 DTS

- ◆ For trees up to 3" caliper with 300lb. capacity and includes 12' of 1/16" galvanized steel cable connected to each anchor
- ◆ Includes three 12' tree collars and three cable clamps

Product Code	Description
DB40DTSC	Clear coated guy wires
DB40DTSW	White coated guy wires

### MODEL 68 DTS

- ◆ For trees from 3" to 6" caliper with 1,100lb. holding capacity
- ◆ Kit includes 13' of 1/8" cable with each anchor, three turnbuckles, three tree collars, and 6 1/8" cable clamps

Product Code	Description
DB68DB1	Standard with cable
DB68DTSC	Clear coated guy wires
DB68DTSW	White coated guy wires

### MODEL 88 DTS

- ◆ For trees over 6" caliper with 3,000lb. holding capacity
- ◆ Includes 15' of cable with each anchor, three turnbuckles, three tree collars, and six 3/16" cable clamps

Product Code	Description
DB88DTSC	Clear coated guy wires
DB88DTSW	White coated guy wires

## ACCESSORIES

Product Code	Description
DBDR2	2' driving rod for installing Duckbill Model 40 kits
DBDR1	3' driving rod for installing Duckbill Model 68 kits
DBDR3	4' driving rod for installing Duckbill Model 88 kits

## COOL SEASON GRASSES - PERENNIAL RYES

### NOTE:

For best results, apply a starter fertilizer before dropping seed, such as TurfGro 6-20-20, TurfGro 15-15-15, or TurfGro 16-16-16



### **TURFGRO OVERSEEDER 3-WAY PERENNIAL RYEGRASS BLEND**

- ◆ Quality seed at a value price
- ◆ TurfGro Overseeder contains varieties that have performed well in University trials, including those for color rating, fine texture, density, and spring transition
- ◆ Guaranteed to be free of Poa Annua in a 50 gram test
- ◆ A sunny lawn blend or for use as winter overseed of warm-season lawns
- ◆ 50 lb. and 25 lb. bags



### **3-WAY BLEND PERENNIAL RYEGRASS BLEND**

- ◆ Sunny Lawn Blend
- ◆ Provides a dark, dense, durable turf
- ◆ Ideal winter overseed for southern lawns, like Bermuda
- ◆ 10 lb. bags



### **CHAMPION GQ**

- ◆ The industry standard when it comes to Perennial Ryegrass blends
- ◆ Champion GQ is blended from the highest quality varieties for rapid germination, establishment, recovery, texture, color, winter activity, stress resistance, disease resistance, and salt tolerance
- ◆ Quite simply Champion GQ exhibits all of the best qualities that a professional looks for
- ◆ It is **well adapted for both permanent turf and winter overseeding**, and it has the highest level of Gray Leaf Spot (GLS) resistance of any Ryegrass blend
- ◆ 50 lb. and 10 lb. bag



## INTERMEDIATE AND ANNUAL RYES

### **FORMULA 1 PERENNIAL / INTERMEDIATE RYEGRASS BLEND**

- ◆ 67% Perennial / 33% Intermediate Blend
- ◆ Quick fall establishment and transition back to Bermudagrass in spring - good for overseeding
- ◆ 50 lb. bag

### **SOLSTICE II INTERMEDIATE RYEGRASS**

- ◆ A variety crossed between perennial and annual ryegrasses
- ◆ Similar performance characteristics to perennials, but with markedly less persistence as temperatures rise and Bermudagrass exits winter dormancy
- ◆ 50 lb. bag

### **BREAKOUT ITALIAN RYEGRASS**

- ◆ A transitional ryegrass used for winter cover of warm-season grasses
- ◆ Has a texture more similar to perennial ryegrass than most annual ryes
- ◆ 50 lb. bag

## COOL SEASON GRASSES - TALL FESCUES



### **TURFGRO WATERSMART 3-WAY TURF TYPE TALL FESCUE BLEND**

- ◆ Quality seed at a value price
- ◆ TurfGro Watersmart contains tall fescue varieties chosen for aggressive tillering, lower water use, stress and pest tolerance, color, and overall appearance and persistence over a wide range of conditions and environments
- ◆ 50lb. bag



### **SURVIVOR TURF TYPE TALL FESCUE**

- ◆ The extremely long root system is the secret to Survivor's drought tolerance. This means less frequent irrigation because the roots can reach deeply into the soil to absorb water
- ◆ Survivor has exhibited excellent wear tolerance and very good cold tolerance
- ◆ It will perform best in a fertile, well drained loam soil, but can tolerate less than perfect conditions
- ◆ Survivor will withstand soils that have a heavy clay content or are compacted
- ◆ It also has good resistance to many insects and fungal diseases
- ◆ 50 lb. and 10 lb. bags

### COOL SEASON GRASSES - TALL FESCUES (CONT.)

#### **TROPHY XRE TURF TYPE TALL FESCUE BLEND**

- ◆ Consisting of tall fescues with rhizomatous qualities, this blend has the ability to spread densely across large areas, binding a lawn together and quickly filling in any damaged or open spots
- ◆ **It has superior wear tolerance and recovers faster from injury and stress than other tall fescue blends**
- ◆ Trophy XRE is adapted from the cool season turfgrass areas of the North, through the transition zone, into the upper Southern states and across the Western states
- ◆ It is ideal for sports turf, sod production, and any high traffic or low maintenance areas where top quality Tall Fescue is desired
- ◆ 50 lb. bag

#### **SR 8550 DWARF TURF TYPE TALL FESCUE**

- ◆ SR 8550 forms a very dark green high quality turf with improved wear tolerance
- ◆ The dwarf growth form combined with the ability to rapidly repair damage makes it ideal for all uses
- ◆ Its high Brown Patch and Leaf Spot resistance enables it to look good all year, and it recovers rapidly if damage does occur
- ◆ With its high disease resistance levels, plus moderate rhizome expression, SR 8550 is a persistent, long lived variety
- ◆ 50 lb. and 10 lb. bags

### COOL SEASON GRASSES - FINE FESCUES



#### **TRADITION FINE FESCUE MIXTURE**

- ◆ SR's premium blend of top performing Fine Fescues — Hard, Chewings, Blue & Creeping Red Fescue
- ◆ **Perfect for shady and mixed shade sites**, native and reclamation plantings, and other high performance turfgrass applications
- ◆ 50 lb. bag

#### **SR 3150 HARD FESCUE**

- ◆ Selected for a dwarfing growth habit to reduce the number and frequency of mowings and clipping yields
- ◆ **In low maintenance areas it forms an attractive, dark green, dense turf requiring minimal water and fertilization in both sun and shade**
- ◆ Resistant to a number of turf insects including Billbugs, Sod Webworms, Chinch Bugs and Armyworms; and to many turfgrass diseases including Red Thread, Summer Patch, Dollar Spot, Leaf Spot and Powdery Mildew
- ◆ SR 3150 is ideally suited for environmentally sensitive sites where chemical applications are limited or not desired
- ◆ 50 lb. bag

#### **SR 5250 STRONG CREEPING RED FESCUE**

- ◆ **Thrives in both sun and shade and with high or low maintenance**
- ◆ Naturally present endophyte provides protection against many insects, disease and stress
- ◆ Blends well with other fine fescues, bluegrasses or perennial ryegrasses
- ◆ 50 lb. bag

### COOL SEASON GRASSES - KENTUCKY BLUEGRASS



#### **SR 2100 KENTUCKY BLUEGRASS**

- ◆ The extensive rhizome development on SR 2100 sod gives it the ability to establish rapidly, withstand adversity and recover quickly
- ◆ **The high sod tensile strength allows sod containing this variety to be easily lifted and at a younger age**
- ◆ The sod will also establish rapidly when placed on site
- ◆ SR 2100 has shown excellent drought resistance and rapid recovery
- ◆ These traits are important for sod growers, home owners and professional turf managers
- ◆ It has shown excellent resistance to and recovery from several turf diseases, which combined with its drought tolerance and recovery make it a good choice for lower maintenance sites
- ◆ 50 lb. bag

### COOL SEASON GRASSES - POA TRIVIALIS (ROUGH BLUEGRASS)



#### **MAXIMUM POA TRIVIALIS**

**Ideal for winter overseeding of dormant Bermudagrass putting greens and tees**

- ◆ Quick fall establishment
- ◆ Excellent putting surface
- ◆ Maintains good winter color
- ◆ Good recuperative ability
- ◆ Improved Bermuda green recovery
- ◆ 50 lb. bag



#### **STARLITE II POA TRIVIALIS**

- ◆ **Bred with intended use of overseeding dormant Bermudagrass greens and fairways – its density and fine leaf texture accommodate very close mowings**
- ◆ Dark in color for better compatibility with surrounding ryegrass areas
- ◆ Less competitive with bermudagrass regrowth in the spring, so it transitions out more easily
- ◆ 50 lb bag



*The germination of ideas*

# High Performance Seed for All Uses: Sports Fields, Landscape & Golf.

## CHAMPION GQ

PERENNIAL RYEGRASS

The Standard of Excellence  
for Over 25 Years!

## CHAMPION EZEE

RYEGRASS MIXTURE

Transitional Combination  
featuring Transfix

[www.sroseed.com](http://www.sroseed.com)

### COOL SEASON GRASSES - BENT GRASSES



#### **TYEE**

- ◆ Tyee means "superior" or "leader" in the language of the Pacific Northwest Indians
- ◆ Tyee is the new Creeping Bentgrass leader in performance on greens, and tops the NTEP in quality ratings on a sand green, winter color, fall density, and leaf texture
- ◆ The rewards from using Tyee are a superior putting surface, reduced syringing, less herbicides, and reduced thatch production when compared to other high density Bentgrasses
- ◆ 50 lb. bag

#### **007**

- ◆ Enhanced Dollar Spot resistance and superior turf quality make this variety the perfect choice for all levels of golf course projects, especially those located in stressful environments
- ◆ Tops the NTEP in quality ratings in all test locations (it performs in various environments), performance in a greens seeding trial, quality ratings at low mowing heights, quality ratings on a soil green, and percent establishment
- ◆ 50 lb. bag



#### **DOMINANT X-TREME 7**

- ◆ A blend of two of the best Creeping Bentgrasses available, 007 and SR 1150, selected to compliment each others strengths and weaknesses, with similar appearances and growth habits
- ◆ Developed for extreme disease resistance, specifically to Pythium, Brown Patch, and Dollar Spot
- ◆ 25 lb. bucket



#### **DOMINANT PLUS**

- ◆ A blend of three of the best Creeping Bentgrasses available. Selected to compliment each others strengths and weaknesses, with similar appearances and growth habits
- ◆ The broad genetic base offers superior heat, cold, and salt tolerance along with extreme resistance to disease
- ◆ 50 lb. bag

### COOL SEASON GRASSES - COOL SEASON MIXES



#### **CHAMPION FINE**

- ◆ Certified mixture of 70%-90% Champion GQ perennial ryegrass blend and 10%-30% SR 5130 Chewings fescue
- ◆ Appropriate for both permanent perennial ryegrass areas and for overseeding dormant Bermudagrass
- ◆ **The addition of Chewings fescue increases the genetic diversity of the stand, so disease problems are less likely than with straight Perennial Rye**
- ◆ 50 lb. bag

#### **CHAMPION SPORTS TURF MIX**

- ◆ 80% Champion GQ Ryegrass, 20% Kentucky Bluegrass mix
- ◆ **Meets the most important needs of sports turf: quick establishment and repair, and high wear tolerance**
- ◆ 50lb. bag

#### **TROPHY 90 / 10 MIX**

- ◆ 90% Tall Fescue, 10% Kentucky Bluegrass mix
- ◆ Combined benefits of overall low maintenance plus improved wear tolerance from Bluegrass rhizomes
- ◆ 50 lb. bag and 10 lb. bucket

#### **TROPHY 95 / 5 MIX**

- ◆ 95% Tall Fescue, 5% Kentucky Bluegrass mix
- ◆ Combined benefits of overall low maintenance plus improved wear tolerance from Bluegrass rhizomes
- ◆ 50 lb. bag

#### **CHAMPION BLUE MIX**

- ◆ Champion® Blue incorporates the very best Perennial Ryegrasses available (including SR 4220, SR 4420, SR 4500 and Hawkeye) with advanced Kentucky Bluegrass varieties (SR 2284, Arcadia, Showcase and Odyssey)
- ◆ Mixing these two turf types offers rapid establishment of repaired areas as well as long-term durability
- ◆ 50 lb. and 10 lb. bags

## COOL SEASON GRASSES - COOL SEASON MIXES

**CRUSADER MIX**

- ◆ Perennial Ryegrass/Fine Fescue mix
- ◆ Top performing Perennial Ryegrasses provide rapid establishment while SR 3150 — the standard for Hard Fescues — offers **lower maintenance requirements and superior performance in shade**
- ◆ 50 lb. and 10 lb. bags

**SURGE MIX**

- ◆ 70% 3-Way Perennial Rye/15% Chewings Fescue/15% Creeping Red Fescue
- ◆ Rapid establishment, lower maintenance & tolerance to shade
- ◆ 50lb., 25lb., 10lb. and 5lb. bags

**FRONTIER MIX**

- ◆ 60% 3-Way Kentucky Bluegrass/40% 2-Way Perennial Rye
- ◆ Long-lasting, durable Bluegrass with a percentage of Perennial Ryegrass to aid in quick establishment and repair of damaged areas
- ◆ **Perfect mix for lawns in Rocky Mountain regions**
- ◆ 50 lb. and 25 lb. bags

## WARM SEASON GRASSES- BERMUDAS

**LAPRIMA CERTIFIED BLEND**

- ◆ The first Certified blend of improved, turf-type seeded Bermudagrass varieties
- ◆ Fast germination for rapid cover
- ◆ Consistent, high quality turf with uniform growth
- ◆ Durable and wear tolerant
- ◆ Adapted for all maintenance levels
- ◆ **Tolerates poor quality/effluent water, with continued high performance in the Southwest**
- ◆ Drought tolerant
- ◆ Withstands variable soil conditions
- ◆ 25 lb. bag

## WARM SEASON GRASSES- BERMUDAS (CONT.)

**LAPRIMA XD BLEND**

- ◆ LaPrimaXD Bermudagrass Blend with X-treme Density is a blend of superior Bermudagrass cultivars selected for fast germination and establishment, combined with the highest turf quality
- ◆ **This blend combines Yukon, a Bermudagrass with high turf quality and cold tolerance, with cultivars such as Princess 77 or Veracruz selected for superior turf quality, and LaPaloma, which adds fast establishment and rapid divot recovery**
- ◆ The cultivars selected for this blend are adapted for superior performance under a broad range of environmental conditions
- ◆ 50 lb. bag

**POSTCARD BERMUDA GRASS**

- ◆ Fast germination for quick establishment
- ◆ Excellent wear and traffic tolerance
- ◆ Low water use, drought and salt tolerant
- ◆ 25 lb. and 2 lb. bags

**COMMON BERMUDA, HULLED**

- ◆ Common Bermudagrass is used for erosion control, roadsides, or general pasture areas
- ◆ **Hulled seed has had part of the protective coating removed, to speed up germination**
- ◆ 50 lb. bag

**COMMON BERMUDA, UNHULLED**

- ◆ Unhulled seeds still have the seed coats attached
- ◆ Some seed may germinate early while others will lie dormant until conditions are more favorable for germination
- ◆ 50 lb. bag

## FORAGES &amp; NATIVES

Horizon has an extensive offering of forage and native seeds used for erosion control, roadsides, and pastures. Because your project is likely unique in specifications, please contact your local Horizon store or Account Representative for a specialized quote.

- ◆ Bromes
- ◆ Oats
- ◆ Fescues
- ◆ Wildflowers
- ◆ Barley
- ◆ Poppies
- ◆ Clovers & more

**Horizon offers a variety of sod from local sod growers.**

## **NORTHERN CALIFORNIA**



### **Pacific Sod**

- ◆ Bonzai
- ◆ Medallion Tall Fescue
- ◆ Medallion Plus 90% Fescue & 10% Bluegrass
- ◆ No Mow Fine Fescue
- ◆ PennBlue 60% Rye & 40% Bluegrass
- ◆ PennBlue Sports Turf



### **Delta Bluegrass Sod**

- ◆ 9010 Fescue & Bluegrass
- ◆ Bolero
- ◆ Bolero Plus
- ◆ 100% Rye
- ◆ Mow Free Fescue
- ◆ Tifway Hybrid Bermuda
- ◆ Bluegrass



### **Mello Sod**

- ◆ Emerald Fescue Blend
- ◆ Jade (80% Fescue & 20% Rye)
- ◆ Kentucky Bluegrass
- ◆ Blue/Rye 80% Bluegrass & 20% Rye
- ◆ 80% Fescue & 20% Kentucky Bluegrass

## **SOUTHERN CALIFORNIA**



### **West Coast Turf**

- ◆ Tall Fescue
- ◆ Bluegrass/Ryegrass
- ◆ Bulls-Eye Bermuda
- ◆ Bob Sod

## **NEVADA**



### **Valley Sod Farm**

- ◆ Dwarf Tall Fescue/Bluegrass
- ◆ Tifway Hybrid Bermuda

## **ARIZONA**



### **Evergreen Turf**

- ◆ Celebration Bermuda
- ◆ Midiron
- ◆ Palmetto St. Augustine
- ◆ Tifgreen Bermuda for Greens
- ◆ Tifgreen Bermuda for Fairway

## **COLORADO**

### **Greenlawn**

- ◆ Kentucky Bluegrass
- ◆ Tall Fescue
- ◆ Blue Rye/Fescue
- ◆ Colorado Native

## **NORTH TEXAS**

### **Texoma Sod**

- ◆ Tifway Bermuda/Overseeded
- ◆ U3 Bermuda Grass/Overseeded



### **Two State Sod**

- ◆ Bermuda
- ◆ Zoysia
- ◆ Fescue

## **WASHINGTON & OREGON**



### **JB Instant Lawn**

- ◆ 3-Way Rye

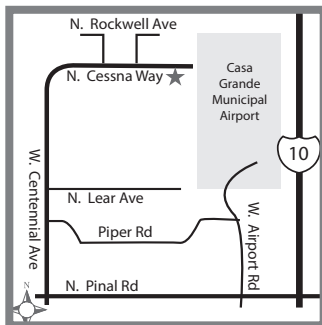
# Index

**Store Maps**  
**Alphabetical Product Listing**



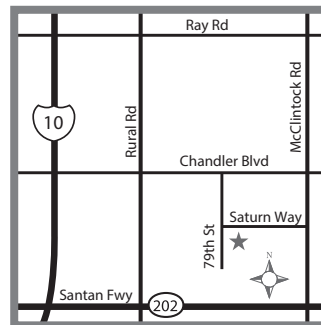
### Anthem

41802 N. Vision Way  
Phoenix, AZ 85086  
Ph: 623.551.6868  
Fax : 623.551.4433



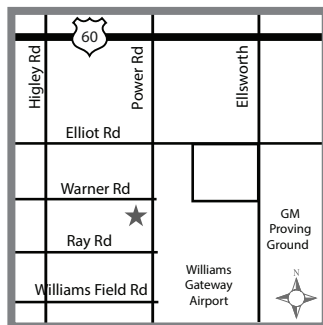
### Casa Grande

3128 N. Cessna Ave.  
Casa Grande, AZ 85222  
Ph: 520.876.5697  
Fax: 520.876.5698



### Chandler

4055 W. Saturn Way  
Chandler, AZ 85226  
Ph: 480.961.3311  
Fax: 480.961.3376



### Gilbert

4615 E. Warner Rd.  
Gilbert, AZ 85296  
Ph: 480.279.2404  
Fax: 480.279.2412



### Goodyear

13920 W. El Cielo  
Goodyear, AZ 85338  
Ph: 623.882.3200  
Fax: 623.882.3223



### Mesa

201 W. Juanita Ave.  
Mesa, AZ 85210  
Ph: 480.964.1616  
Fax: 480.964.1515



### Peoria

8746 W. Kelton Ln.  
Peoria, AZ 85382  
Ph: 623.876.9200  
Fax: 623.876.9292



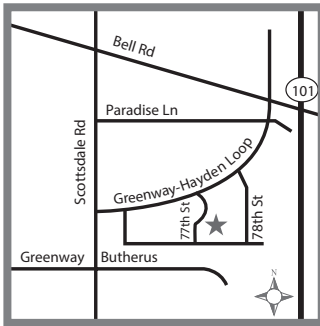
### North Phoenix

17826 N. Tatum Blvd., #2  
Phoenix, AZ 85032  
Ph: 602.992.2702  
Fax: 602.992.0375

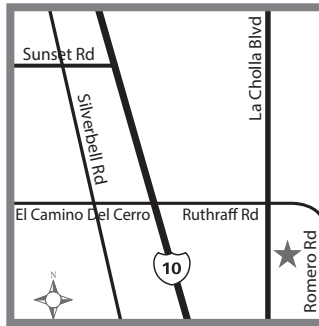


### Phoenix

5214 S. 30th St.  
Phoenix, AZ 85040  
Ph: 602.305.6046  
Fax: 602.305.6047

**Scottsdale**

15517 N. 77th St.  
Scottsdale, AZ 85260  
Ph: 480.596.8711  
Fax: 480.596.8712

**Tucson**

4740 N. La Cholla Blvd.  
Tucson, AZ 85705  
Ph: 520.408.1000  
Fax: 520.408.2000

**CALIFORNIA****Concord**

1880 Arnold Industrial Pl.  
Concord, CA 94520  
Ph: 925.825.3344  
Fax: 925.798.9436

**Dublin**

7144 Regional St.  
Dublin, CA 94568  
Ph: 925.551.8383  
Fax: 925.551.5968

**Fresno**

349 W. Bedford Ave.  
Fresno, CA 93711  
Ph: 559.431.8007  
Fax: 559.431.2714

**Menlo Park**

4060 Campbell Ave.  
Menlo Park, CA 94025  
Ph: 650.323.5161  
Fax: 650.323.2011

**Merced**

3065 N. Highway 59  
Merced, CA 95348  
Ph: 209.383.3330  
Fax: 209.383.0770

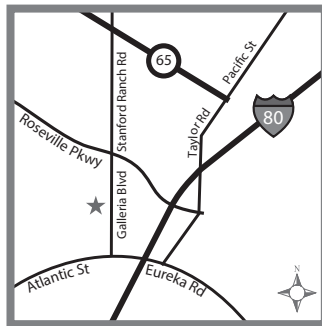
**Napa**

3229 California Blvd.  
Napa, CA 94558  
Ph: 707.255.7575  
Fax: 707.258.0401



### Rancho Cordova

11380-A Sunrise Park Dr.  
Rancho Cordova, CA 95742  
Ph: 916.638.7744  
Fax: 916.638.8844



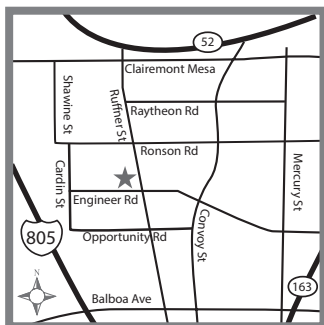
### Roseville

861 Galleria Blvd.  
Roseville, CA 95678  
Ph: 916.780.2033  
Fax: 916.780.2034



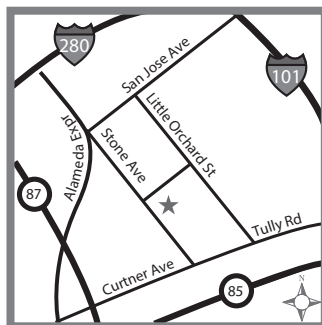
### Sacramento

301 Broadway  
Sacramento, CA 95818  
Ph: 916.492.1000  
Fax: 916.492.1057



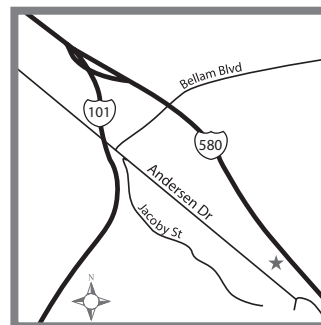
### San Diego

7366 Engineer Rd.  
San Diego, CA 92111  
Ph: 858.278.5151  
Fax: 858.278.5252



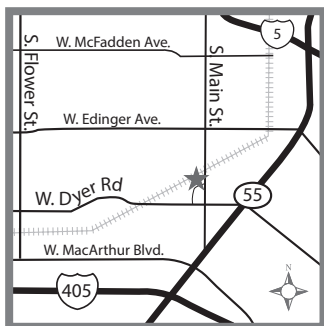
### San Jose

1990 Stone Ave.  
San Jose, CA 95125  
Ph: 408.287.7882  
Fax: 408.287.1336



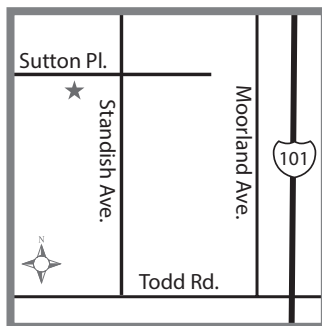
### San Rafael

1261 Andersen Dr.  
San Rafael, CA 94901  
Ph: 415.454.4313  
Fax: 415.456.4238



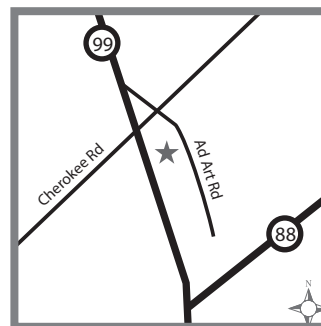
### Santa Ana

2710 S. Main St.  
Santa Ana, CA 92707  
Ph: 714.279.8060  
Fax: 714.279.8095



### Santa Rosa

344 Sutton Pl.  
Santa Rosa, CA 95407  
Ph: 707.584.7272  
Fax: 707.584.5590



### Stockton

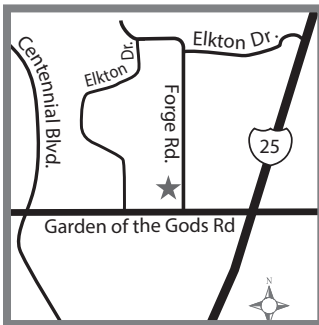
3355 N. Ad Art Rd.  
Stockton, CA 95215  
Ph: 209.931.8555  
Fax: 209.931.6539


**Vacaville**

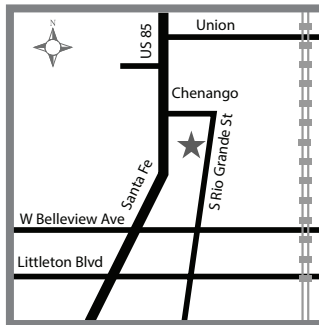
1232 Callen St.  
Vacaville, CA 95688  
Ph: 707.447.7773  
Fax: 707.448.7542


**Vista**

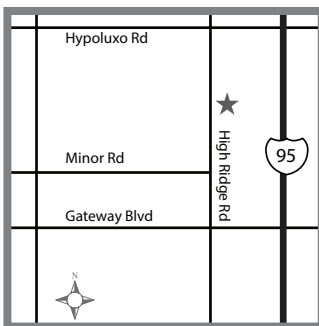
975 Poinsettia Ave.  
Vista, CA 92081  
Ph: 760.291.1916  
Fax: 760.291.1917

**COLORADO**

**Colorado Springs**

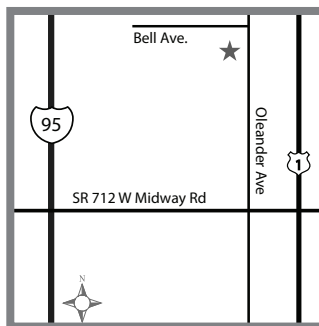
4630 Forge Rd.  
Colorado Springs, CO 80907  
Ph: 719.623.4133  
Fax: 719.466.2194


**Littleton**

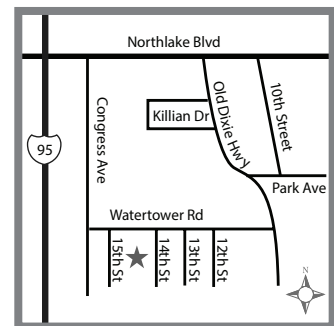
4971 S. Rio Grande St.  
Littleton, CO 80120  
Ph: 303.934.3200  
Fax: 303.934.3700

**FLORIDA**

**Boynton Beach**

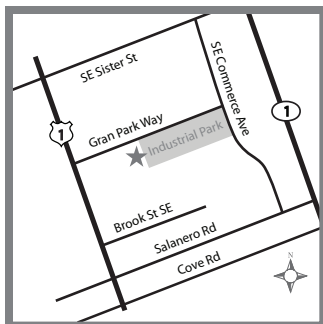
7700 High Ridge Rd.  
Boynton Beach, FL 33426  
Ph: 561.533.1481  
Fax: 561.533.1514


**Fort Pierce**

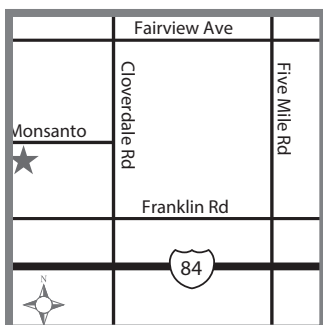
3605 Oleander Ave.  
Fort Pierce, FL 34982  
Ph: 772.465.1966  
Fax: 772.461.2915


**Lake Park**

850 15th St.  
Lake Park, FL 33403  
Ph: 561.863.5580  
Fax: 561.844.5019

**Stuart**

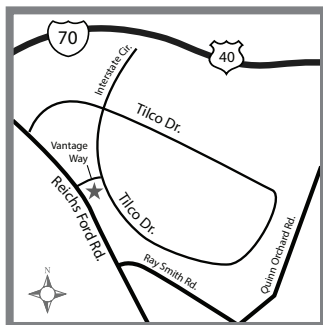
3066 SE Gran Park Way  
 Stuart, FL 34997  
 Ph: 772.287.9905  
 Fax: 772.220.8955

**IDAHO****Boise**

12423 W. Monsanto St.  
 Boise, ID 83713  
 Ph: 208.376.4449  
 Fax: 208.376.4464

**Hayden**

1849 W. Hayden Ave.  
 Hayden, ID 83835  
 Ph: 208.762.3399  
 Fax: 208.762.3398

**MARYLAND****Frederick**

1569 Tilco Dr.  
 Frederick, MD 21704  
 Ph: 301.948.2000  
 Fax: 301.948.5367

## NEVADA

## Index



### Henderson

371 Julia St.  
Henderson, NV 89014  
Ph: 702.435.9471  
Fax: 702.435.8965



### Las Vegas

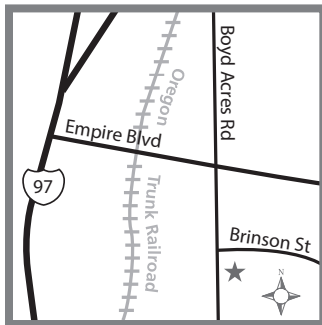
8298 Arville St., Ste. 101  
Las Vegas, NV 89139  
Ph: 702.362.4224  
Fax: 702.362.3270



### Las Vegas North

6164 W. Alexander Rd.  
Las Vegas, NV 89108  
Ph: 702.656.8150  
Fax: 702.656.1595

## OREGON



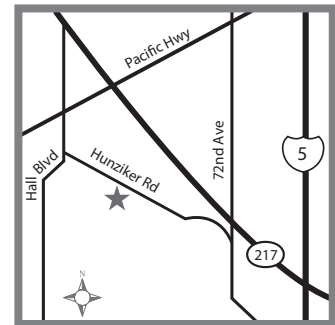
### Bend

62860 NE Boyd Acres Rd.  
Bend, OR 97701  
Ph: 541.382.9333  
Fax: 541.382.3828



### Milwaukie

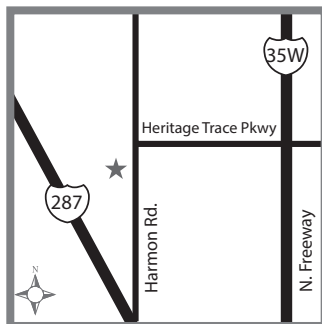
8155 SE Deer Creek Ln.  
Milwaukie, OR 97222  
Ph: 503.652.0800  
Fax: 503.652.0808



### Tigard

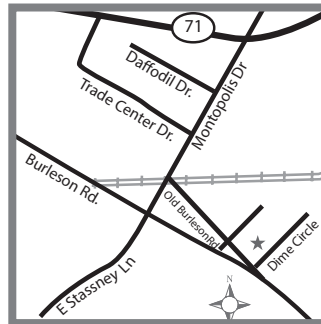
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Tigard, OR 97223  
Ph: 503.670.9949  
Fax: 503.670.9948

## TEXAS



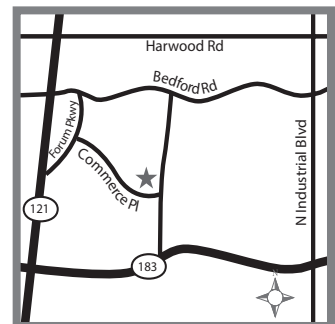
### Alliance

9557 Harmon Rd.  
Fort Worth, TX 76177  
Ph: 817.232.3380  
Fax: 682.432.9724



### Austin

3716 Dime Cr.  
Austin, TX 78744  
Ph: 512.282.2331  
Fax: 512.282.5151



### Bedford

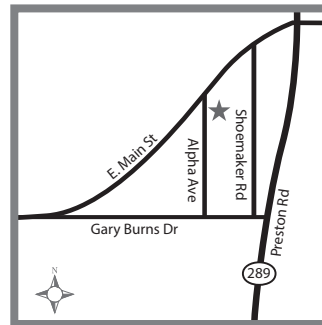
3717 Commerce Pl.  
Bedford, TX 76021  
Ph: 817.545.7756  
Fax: 817.545.9407

**Corpus Christi**

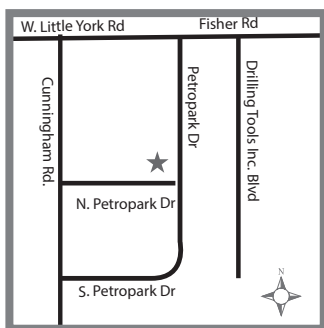
4630 Corona Dr.  
Corpus Christi, TX 78411  
Ph: 361-808-4654  
Fax: 361-806-2872

**Dallas**

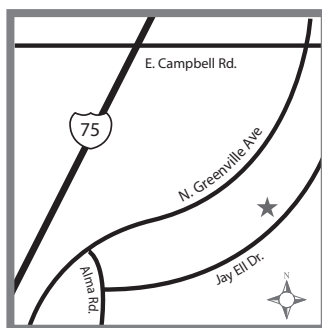
11085 Denton Dr.  
Dallas, TX 75229  
Ph: 972.466.1600  
Fax: 972.242.1724

**Frisco**

8950 Alpha Ave.  
Frisco, TX 75034  
Ph: 972.712.5000  
Fax: 972.712.5001

**Houston**

6601 Petro Park Rd.  
Houston, TX 77041  
Ph: 713.934.9500  
Fax: 713.934.9555

**Richardson**

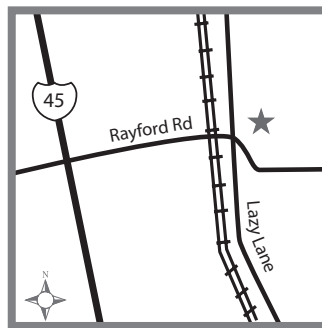
1776 Jay Ell Dr.  
Richardson, TX 75081  
Ph: 972.680.0007  
Fax: 972.680.2142

**Round Rock**

1100 N. Industrial Blvd.  
Round Rock, TX 78681  
Ph: 512.255.1990  
Fax: 512.255.1995

**San Antonio**

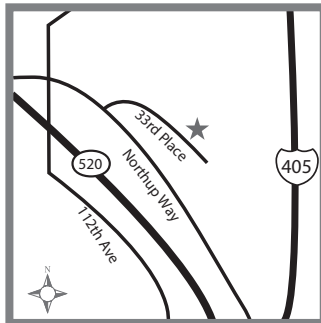
17645 Blanco Rd.  
San Antonio, TX 78232  
Ph: 210.408.9090  
Fax: 210.408.8282

**Spring**

924-B Rayford Rd.  
Spring, TX 77386  
Ph: 281.681.0600  
Fax: 281.681.0633


**Richmond**

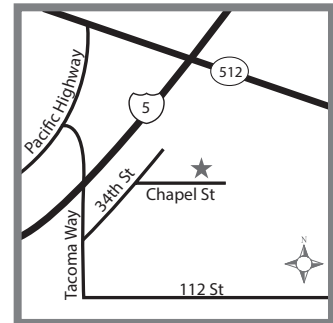
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