RAIN BIRD®

Landscape Irrigation Products

2014 Catalog

The Intelligent Use of Water.™

Proudly celebrating 80 years of irrigation innovation.

RAIN BIRD
1933
80 YRS
2013
OF INNOVATION

In 1933, we invented the first impact sprinkler. But we didn't stop there. For eighty years, we've been developing new and innovative products that water more intelligently. From the 1800® series to XFS subsurface dripline and HE-VAN nozzles, Rain Bird's award-winning products have not only kept landscapes green, they've also helped revolutionize an industry. Our work is far from over.

Our mission continues as we strive to offer you and your customers the best solutions and exceptional performance you can always count on.

Rain Bird products deliver superior results with less water. Keeping landscapes around the world beautiful while conserving water. That's The Intelligent Use of Water.™

It is our legacy to design and manufacture only those products of the highest value and quality. We work for long-term, responsible partnerships with our customers and our vendors. This is who we are, and this is how we wish to be perceived in the irrigation industry and our communities.

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For information about Impacts, please visit www.rainbird.com/impacts

Introducing New Rain Bird® Products for 2014

Every new product for 2014 demonstrates Rain Bird's ability to deliver irrigation solutions that enhance your productivity and profitability, while reinforcing the company's ongoing commitment to The Intelligent Use of Water™. Detailed product information and specifications can be found on the pages indicated.

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Rain Bird's Commitment to Water Conservation

Rain Bird is proud to support water conservation programs and technology that lead to more efficient means of applying water in the landscape. Look for Smart Approved and Water Sense label certified products in this catalog.

Smart Approved WaterMark™ is Australia's outdoor water-saving labeling program for products and services that help to reduce water use. Product certification by Smart Approved WaterMark is important since certification is achieved by independent assessment by a respected organization in a region that, due to water scarcity, is on the leading edge of adopting water-saving technologies. For more on Smart Approved WaterMark, please visit www.rainbird.com/SAWM.

Rain Bird is a proud EPA WaterSense Partner.

What is the WaterSense Label

The U.S. Environmental Protection Agency developed a WaterSense program to make it easier for consumers to:

- Recognize water saving products by labeling products that meet water conservation requirements.
- Gain access to new water saving innovations.
- Understand the value of water efficiency.
- Reduce strain on water resources.

" We've installed more than 100,000 Rain Bird 1800 Series Spray Heads because we trust their consistent quality.

We've been using Rain Bird 1800 Series Spray Heads and Nozzles exclusively for nearly 20 years. Rain Bird products serve our customers well and have helped us become one of the leading landscape companies in the Portland area."

***Rodney Reed,** President*
Green Earth Landscaping, Inc.

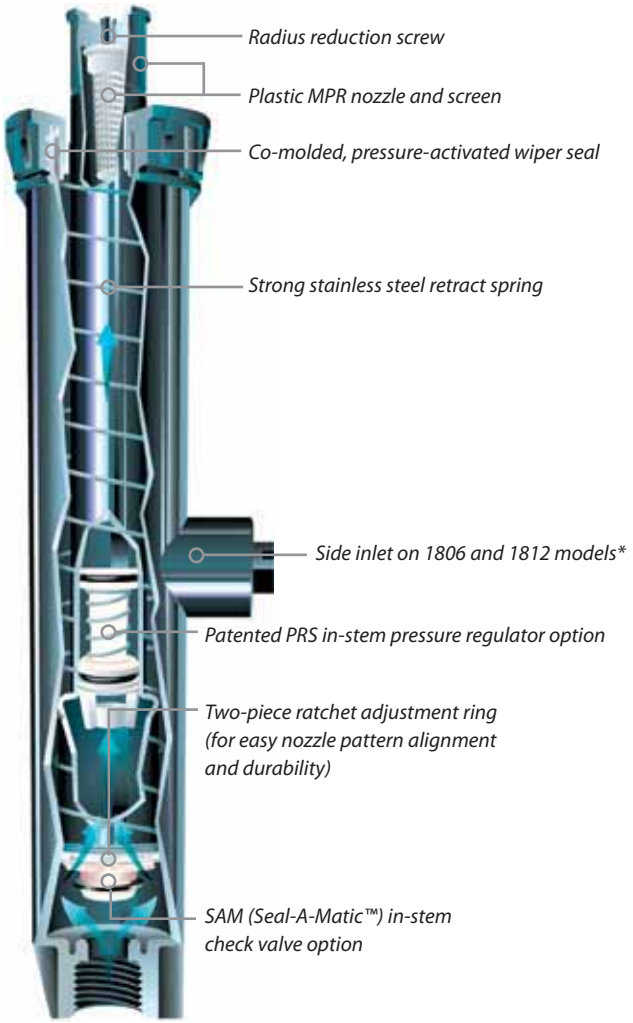
Major Products

Primary Applications	1802, 1804, 1806	1812	1800 PRS	1800 SAM	1800 SAM-PRS	1800 SAM-PRS-45	US-200, US-400	1300/ 1400 Bubblers	PA-80 PA-8S PA-8S-NP PA-8S-PRS	RD-04, RD-06	RD-12	RD1800 SAM	RD1800 SAM-PRS	RD1800 SAM-PRS-F	RD1800 SAM-PRS-45-F
Turfgrass	●		●	●	●	●	●			●		●	●	●	●
Slopes				●	●	●	●*					●	●	●	●
Ground Cover/Shrubs	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
High Pressure Systems			●		●	●		●	●	●	●	●	●	●	●
Low Pressure Systems	●	●					●	●	●	●	●				
High Wind Areas	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Non-Potable Water									●	●	●	●	●	●	●
Vandalism/Damage Prone														●	●
Dirty Water										●	●	●	●	●	●

**Optional US-SAM check valve is retrofittable on all UNI-Sprays.™*

Water Saving Tips

- The patented, built-in PRS regulator maintains optimal operating pressure and restricts water loss by up to 70% if a nozzle is removed or damaged. It also ends water waste by eliminating misting and fogging caused by high pressure.
- Save water, stop low head drainage, and reduce water hammer by preventing water from draining out of pipes after irrigation with 1800 Series Sprays featuring Seal-A-Matic™ (SAM) check valves.
- Exclusive Flow Shield Technology provides up to 90% reduction in water loss when a nozzle is removed, preventing potentially costly and unacceptable run-off.



1800® Series

2", 4", 6", 12" (5.1 cm; 10.2 cm; 15.2 cm; 30.5 cm)

- Co-molded wiper seal is molded into the cap and features 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
- Strong stainless steel spring provides reliable stem retraction
- Two-piece ratchet mechanism on all models allows easy nozzle pattern alignment and provides added durability

Features

- Precision controlled flush at pop-down clears debris from unit, assuring positive stem retraction in all soil types
  - Pre-installed orange 1800 Pop-Top™ flush plug blocks debris, larger than nozzle filter screen openings, from entering after flushing. Allows for easy nozzle installation
- Constructed of time-proven UV-resistant plastic and corrosion resistant stainless steel parts, assuring long product life
- All 1800 Spray components are removable from the top without special tools, providing for quick and easy flushing and maintenance
- Side and bottom inlets featured on 1806 and 1812 (non-SAM) models*
- Five-year trade warranty

Operating Range

- Spacing: 2.5 to 24 feet (0.8 to 7.3m)**
- Pressure: 15 to 70 psi (1.0 to 4.8 bar)

Specifications

- Flow-by: 0 gpm at 8 psi (0.6 bar) or greater; 0.10 gpm (0.02 m^3/h; 0.36 l/m) otherwise

Dimensions/Models

- ½" (15/21) NPT female threaded inlet
- Models and height:
  - 1802: 4" (10.2 cm) body height; 2" pop-up height (5.1 cm)
  - 1804: 6" (15.2 cm) body height; 4" pop-up height (10.2 cm)
  - 1806: 9⅜" (23.8 cm) body height; 6" pop-up height (15.2 cm)
  - 1812: 16" (40.6 cm) body height; 12" pop-up height (30.5 cm)
- Exposed surface diameter: 2¼" (5.7 cm)

** 1806 and 1812-SAM, SAMPRS, and SAM-PRS-45 units do not have a side inlet*

*** 2.5 to 18 feet with standard Rain Bird Spray Head Nozzles (SQ, MPR, VAN, USeries)13 to 24 feet with Rain Bird Rotary Nozzles*

How To Specify

1804

Pop-up Height
1802: 2" pop-up height (5.1 cm)
1804: 4" pop-up height (10.2 cm)
1806: 6" pop-up height (15.2 cm)
1812: 12" pop-up height (30.5 cm)

Model
1800 Series Spray Bodies

Water Saving

Precision controlled flush at pop-down clears debris from unit, assuring reliable performance and positive stem retraction in all soil types.

1800®-PRS Series

4", 6", 12" (10.2 cm, 15.2 cm, 30.5 cm)

- 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 (2.1 bar). Spray bodies and nozzles perform best at 30 psi. Ensures maximum spray body and nozzle performance, even with varying inlet pressures. Maintains constant pressure regardless of nozzle used
- Ends misting and fogging caused by high pressure. Stops water waste. Ensures necessary watering occurs in high pressure or wind conditions

Features

- 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
- Designed for use with all Rain Bird plastic spray head nozzles
- "PRS" stamped on cap for easy identification and maintenance
- Five-year trade warranty

Operating Range

- Spacing: 2.5 to 24 feet (0.8 to 7.3m)*
- Pressure: 15 to 70 psi (1.0 to 4.8 bar)

Specifications

- Regulates nozzle pressure to an average 30 psi (2.1 bar) with inlet pressures of up to 70 psi (4.8 bar) (see graph)
- Flow-by: 0 gpm at 8 psi (0.6 bar) or greater; 0.10 gpm (0.02 m^3/h; 0.36 l/m) otherwise
- Installation: side or bottom inlet
- Side inlet installation not recommended in freezing climates

Dimensions

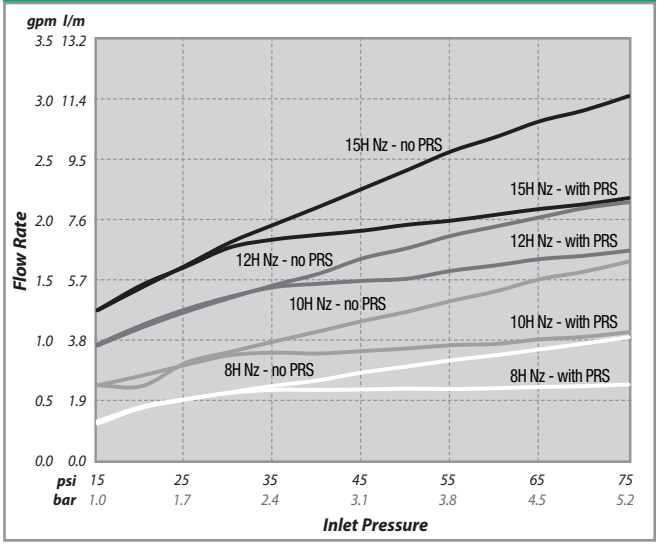
- ½" (15/21) female threaded inlets
- Body height:
  - 1804 PRS: 6" (15.2 cm)
  - 1806 PRS: 9⅜" (23.8 cm)
  - 1812 PRS: 16" (40.6 cm)
- Exposed surface diameter: 2¼" (5.7 cm)

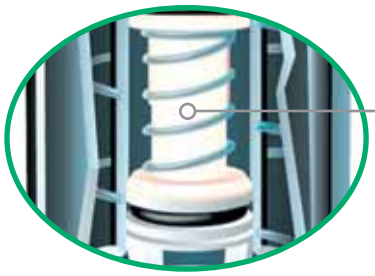
Models

- 1804 PRS: 4" pop-up height (10.2 cm)
- 1806 PRS: 6" pop-up height (15.2 cm)
- 1812 PRS: 12" pop-up height (30.5 cm)

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

Flow Rate v Inlet Pressure – 1800 PRS Sprays





Patented pressure regulator in stem compensates for high or fluctuating water pressure to ensure maximum performance

1800-PRS

How To Specify

1804- PRS

Feature
PRS: In-stem pressure regulation

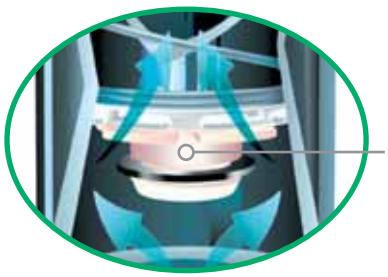
Pop-up Height
1804: 4" pop-up height (10.2 cm)
1806: 6" pop-up height (15.2 cm)
1812: 12" pop-up height (30.5 cm)

Model
1800 Series Spray Bodies

Water Saving

The patented pressure regulator maintains optimum outlet pressure to maximize nozzle efficiency and reduces excessive nozzle flow, misting, and fogging. Every 5 psi reduction in pressure reduces water use by 6-8%. Using PRS spray heads can provide more than 50% water savings when compared to non-pressure regulating sprays in high pressure installations regardless of fluctuating inlet pressures.

1800-SAM



Built in Seal-A-Matic check valve prevents low-head drainage, ideal for use in changing elevations

How To Specify

1804- SAM

Feature
SAM: Seal-A-Matic check valve

Pop-up Height
1804: 4" pop-up height (10.2 cm)
1806: 6" pop-up height (15.2 cm)
1812: 12" pop-up height (30.5 cm)

Model
1800 Series Spray Bodies

1800®-SAM Series

4", 6", 12" (10.2 cm, 15.2 cm, 30.5 cm)

- 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 14 feet (4.2 m). Reduces wear on system components by minimizing water hammer during start-up
- Even stronger retract spring to accommodate elevation changes up to 14 feet (4.2 m). One of the strongest springs in the industry

Features

- Prevents drainage from spray heads at lower elevations. Stops water waste. Ends landscape damage due to flooding and/or erosion
- Designed for use with all Rain Bird plastic spray head nozzles
- "SAM" stamped on cap for easy identification and maintenance
- Five-year trade warranty

Operating Range

- Spacing: 2.5 to 24 feet (0.8 to 7.3m)*
- Pressure: 25 to 70 psi (1.7 to 4.8 bar)

Specifications

- SAM capability: holds up to 14 feet (4.2 m) of head; 6 psi (0.4 bar)
- Flow-by: 0 gpm at 8 psi (0.6 bar) or greater; 0.50 gpm (0.11 m^3/h; 1.80 l/m) otherwise

Dimensions

- ½" (15/21) female threaded inlet
- Body height:
  - 1804-SAM: 6" (15.2 cm)
  - 1806-SAM: 9⅜" (23.8 cm)
  - 1812-SAM: 16" (40.6 cm)
- Exposed surface diameter: 2¼" (5.7 cm)

Models

- 1804-SAM: 4" pop-up height (10.2 cm)
- 1806-SAM: 6" pop-up height (15.2 cm)
- 1812-SAM: 12" pop-up height (30.5 cm)

** 2.5 to 18 feet with standard Rain Bird Spray Head Nozzles (SQ, MPR, VAN, USeries)*
13 to 24 feet with Rain Bird Rotary Nozzles

Water Saving

The built-in Seal-A-Matic™ check valve traps water in lateral pipes and prevents drainage from sprays at lower elevations; stopping water waste and damage due to flooding and erosion. It also reduces wear on system components by minimizing water hammer during start-up.

1800®-SAM-PRS Series

4", 6", 12" (10.2 cm, 15.2 cm, 30.5 cm)

Features

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

Operating Range

- Spacing: 2.5 to 24 feet (0.8 to 7.3m)*
- Pressure: 25 to 70 psi (1.7 to 4.8 bar)

Specifications

- SAM capability: holds up to 14 feet (4.2 m) of head; 6 psi (0.4 bar)
- Flow-by: 0 gpm at 8 psi (0.6 bar) or greater; 0.50 gpm (0.11 m^3/h; 1.80 l/m) otherwise

** 2.5 to 18 feet with standard Rain Bird Spray Head Nozzles (SQ, MPR, VAN, USeries) 13 to 24 feet with Rain Bird Rotary Nozzles*

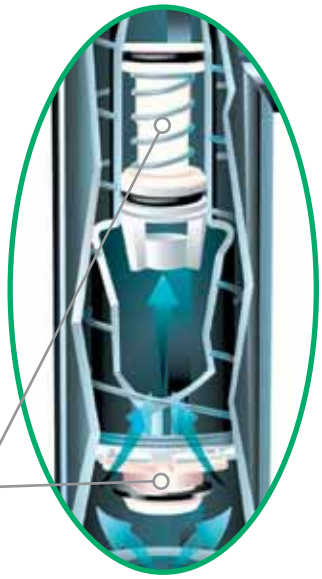
SAM-PRS

Dimensions

- ½" (15/21) female threaded inlet
- Body height:
  1804-SAM-PRS: 6" (15.2 cm)
  1806-SAM-PRS: 9⅜" (23.8 cm)
  1812-SAM-PRS: 16" (40.6 cm)
- Exposed surface diameter: 2 ¼" (5.7 cm)

Models

- 1804-SAM-PRS: 4" pop-up height (10.2 cm)
- 1806-SAM-PRS: 6" pop-up height (15.2 cm)
- 1812-SAM-PRS: 12" pop-up height (30.5 cm)



Top-of-the-line spray head includes all the features of the SAM and PRS series, ideal regardless of pressure or elevation

1800®-SAM-P45 Series

4", 6", 12" (10.2 cm, 15.2 cm, 30.5 cm)

Features

- Meets the needs of spray body applications using Rotary Nozzles regardless of changing elevation or water pressures. Incorporates 1800 Series SAM feature and regulates nozzle pressure at 45 psi (3.1 bar)
- Designed to maximize application efficiency when using Rotary Nozzles
- Maintains constant outlet pressure at 45 psi (3.1 bar) at varying inlet pressures. Ensures maximum spray body and nozzle performance, even with varying inlet pressures. Maintains constant pressure regardless of nozzle used
- "SAM-PRS-45" stamped on the cap for easy identification and maintenance
- Five-year trade warranty

Operating Range

- Spacing: 2.5 to 24 feet (0.8 to 7.3 m)*
- Pressure 25 to 70 psi (1.7 to 4.8 bar)

Specifications

- SAM capability: holds up to 14 feet (4.2 m) of head; 6 psi (0.4 bar)
- Flow-by: 0 gpm at 8 psi (0.6 bar) or greater; 0.50 gpm (0.11 m^3/h; 1.8 l/m) otherwise

Dimensions

- ½" (15/21) female threaded inlet
- Body height:
  - 1804-SAM-P45: 6" (15.2 cm)
  - 1806-SAM-P45: 9⅜" (23.8 cm)
  - 1812-SAM-P45: 16" (40.6 cm)
- Exposed surface diameter: 2 ¼" (5.7 cm)

Models

- 1804-SAM-P45: 4" pop-up height (10.2 cm)
- 1806-SAM-P45: 6" pop-up height (15.2 cm)
- 1812-SAM-P45: 12" pop-up height (30.5 cm)

** 2.5 to 18 feet with standard Rain Bird Spray Head Nozzles (SQ, MPR, VAN, U-Series); 13 to 24 feet with Rain Bird Rotary Nozzles*

SAM-P45

How To Specify

1804- SAM-P45

Feature
P45: 45 psi (3.1 bar) in-stem pressure regulation

Feature
SAM: Seal-A-Matic™ check valve

Pop-up Height
1804: 4" pop-up height (10.2 cm)
1806: 6" pop-up height (15.2 cm)
1812: 12" pop-up height (30.5 cm)

Model
1800 Series Spray Bodies

Note: *Specify sprinkler bodies and nozzles separately.*

RD1800 Series

RD1800™ Series Spray Heads

4", 6", 12" (10.2 cm; 15.2 cm; 30.5 cm)

- Designed for use with all Rain Bird plastic spray head nozzles – Rotary Nozzles, U-Series, MPR, VAN, HE-VAN and SQ Series
- Parts resistant to corrosion in treated recycled water containing chlorine and other chemicals
- Strong stainless steel spring provides reliable stem retraction and withstands corrosion

Features

- Patented, co-molded, pressure activated Triple-Blade Wiper Seal ensures a positive seal without excess "flow-by", which enables more heads to be installed on the same valve. The Triple-Blade Wiper Seal precisely balances flushing, flow-by and debris protection to optimize performance and durability at pop-up and retraction. Precision-controlled flushing at pop-up and retraction clears debris, assuring positive stem retraction in all soil types
- Debris pockets in the base of the spray body prevent recirculation of harmful debris during operation to reduce wear on wiper seal and stem
- Reinforced ratchet mechanism allows easy nozzle pattern alignment without tools, withstands chemicals in recycled water and prevents pattern misalignment over time
- Pre-installed 1800 Pop-Top™ flush plug blocks debris from entering after flushing and allows for easy nozzle installation
- Constructed of time-proven 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 inlets featured on non Seal-A-Matic™ (SAM) models only
- Five-year trade warranty

Operating Range

- Spacing: 2.5 to 24 feet (0.8 to 7.3 m)
- Pressure: 15 to 100 psi (1.0 to 6.9 bar)

Specifications

- Flow-by: SAM Models: 0 at 15 psi (1.0 bar) or greater; 0.5 gpm (0.1 m^3/h; 0.03 l/s) otherwise
  All Other Models: 0 at 10 psi (0.7 bar) or greater; 0.5 gpm (0.1 m^3/h; 0.03 l/s)otherwise

Dimensions / Models

- ½" (15/21) NPT female threaded inlet
- Models and height:
  - RD-06: 9 3/8" (24 cm) body height; 6" pop-up height (15.2 cm)
  - RD-12: 16" (40 cm) body height; 12" pop-up height (30.5 cm)
- Exposed surface diameter: 2 ¼" (5.7 cm)

How To Specify

RD-XX - X - Nozzle

Nozzle
See Rotary Nozzle, U-Series, MPR, VAN, HE-VAN and SQ Nozzle specifications for more information

Optional Features
S: Seal-A-Matic™ check valve
P30: 30 psi (2.1 bar) in-stem pressure regulation
P45: 45 psi (3.1 bar) in-stem pressure regulation
F: Flow-Shield™ Technology
NP: Non-potable water use indicating cover

Model
RD-06: 6" (15 cm) pop-up height
RD-12: 12" (40 cm) pop-up height

Notes:
SAM feature included with P45 models.
Flow-Shield™ Technology available in P30 and P45 models only.
Specify sprinkler bodies and nozzles separately.

Models

4" Models	
RD-04-NP	RD-04-S-P30-F
RD-04-S	RD-04-S-P30-F-N
RD-04-S-NP	RD-04-S-P45-F
RD-04-S-P30	RD-04-S-P45-F-N
6" Models	
RD-06	RD-06-S-P30-F
RD-06-NP	RD-06-S-P30-F-N
RD-06-S	RD-06-S-P45-F
RD-06-S-NP	RD-06-S-P45-F-N
RD-06-S-P30	
12" Models	
RD-12	RD-12-S-P30-F
RD-12-NP	RD-12-S-P30-F-N
RD-12-S	RD-12-S-P45-F
RD-12-S-NP	RD-12-S-P45-F-N
RD-12-S-P30	

Water Saving

The RD1800's Triple-Blade Wiper Seal and debris pockets combine to prevent water waste and eliminate stick-ups.

Exclusive Flow-Shield™ Technology

Exclusive Flow-Shield™ Technology provides up to 90% reduction in water loss when a nozzle is removed, preventing potentially costly and unacceptable run-off.

Patented Pressure Regulator

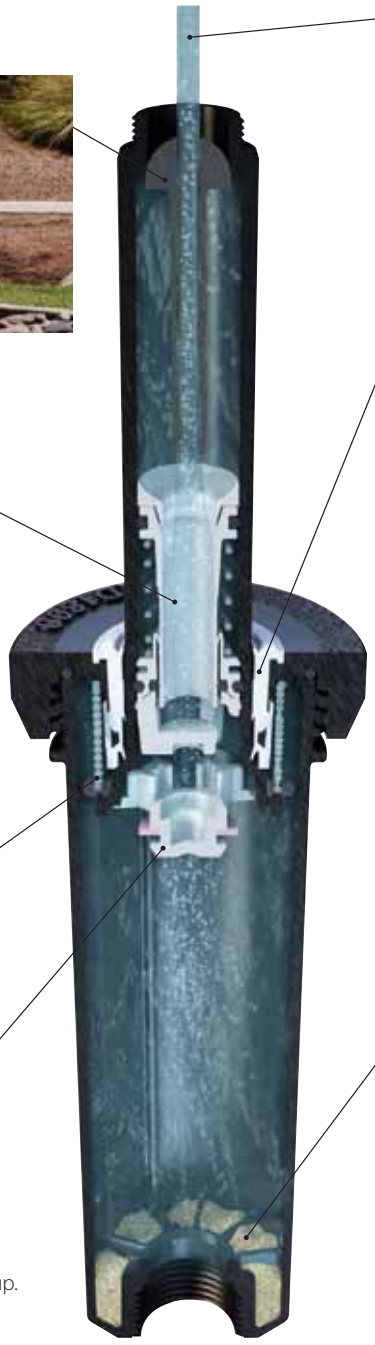
The RD1800's patented pressure regulator increases nozzle efficiency by up to 50% in high pressure applications.

Reinforced Ratchet Mechanism

The RD1800's ratchet mechanism was designed to improve ease of use and consistency, hold its setting over time, withstand years of chlorine exposure and provide greater debris resistance.

Seal-A-Matic™ (SAM) Check Valve

Exclusive to Rain Bird, the SAM Check Valve holds back up to 14 feet of head and helps eliminate low head drainage, erosion, run-off and water hammer at start-up.



Service Indication Stream

Exclusive Flow-Shield Technology delivers a low-flow service indication stream when a nozzle is removed. As a result, system performance is maintained, water is saved and you don't have to wait until you have brown grass or dead plants to notice something's wrong.

Patented Triple-Blade Wiper Seal

The RD1800™ Series features a patented Triple-Blade Wiper Seal. The top seal flushes during pop-up and wipes the stem clean during retraction, preventing external debris from entering. During operation, the primary seal combines with the stem's surface to eliminate flow-by. The exclusive Third Blade provides another line of defense, in case the primary seal is damaged.

Reclaimed Water Resistant

The RD1800 Series is designed with reclaim water resistant materials such as EPDM and Polyester. These materials resist degradation caused by chlorine in reclaimed water, ensuring a longer life.

Unique Debris Pockets

With each system start-up, the RD1800's unique debris pockets hold grit in place—removing it from circulation and preventing long-term damage.

RD1800™ SAM Series

4", 6", 12" (10.2 cm, 15.2 cm, 30.5 cm)

- 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
- Stronger retract spring to accommodate elevation changes up to 14' (4.2 m). One of the strongest springs in the industry
- Prevents drainage from spray heads at lower elevations. Stops water waste. Ends landscape damage due to flooding and erosion

Features

- Incorporates all RD1800 Series features
- Ideal for use in areas with changing elevations
- Retains water in lateral pipes which reduces wear on system components by minimizing water hammer during start-up
- "SAM" printed on the cap for easy identification and maintenance

Operating Range

- Spacing: 2.5 to 24 feet (0.8 to 7.3 m)
- Pressure: 15 to 100 psi (1.0 to 6.9 bar)

Specifications

- SAM capability: Holds up to 14 feet (4.2 m)of head; 6 psi (0.3 bar)
- Flow-by: 0 at 15 psi (1.0 bar) or greater; 0.5 gpm (0.1 m^3/h; 0.03 l/s) otherwise
- No side inlet

Dimensions / Models

- ½" (15/21) NPT female threaded inlet
- Models and height:
  - RD-04-S: 6" (15.2 cm) body height; 4" pop-up height (10.2 cm)
  - RD-06-S: 9 3/8" (23.8 cm) body height; 6" pop-up height (15.2 cm)
  - RD-12-S: 16" (40.6 cm) body height; 12" pop-up height (30.5 cm)
- Exposed surface diameter: 2 ¼" (5.7 cm)

RD1800™ SAM PRS Series

4", 6", 12" (10.2 cm, 15.2 cm, 30.5 cm)

- Incorporates all RD1800 Series SAM and PRS features
- Meets the needs of all spray areas, regardless of changing elevation or water pressures
- "SAM-PRS" stamped on the cap for easy identification and maintenance

Operating Range

- Spacing: 2.5 to 24 feet (0.8 to 7.3m)
- Pressure: 15 to 100 psi (1.0 to 6.9 bar)

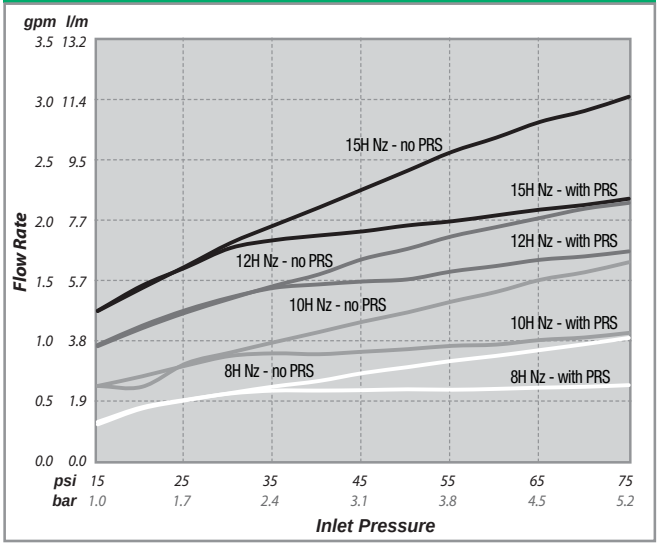
Specifications

- Flow by: 0 at 15 psi (1.0 bar) or greater; 0.5 gpm (0.1 m^3/h; 0.03 l/s) otherwise
- Regulates nozzle pressure to an average 30 psi (2.1 bar) with inlet pressures of up to 100 psi (6.9 bar)
- No side inlet

Dimensions / Models

- ½" (15/21) NPT female threaded inlet
- Models and height:
  - RD-04-S-P30: 6" (15.2 cm) body height; 4" pop-up height (10.2 cm)
  - RD-06-S-P30: 9 3/8" (23.8 cm) body height; 6" pop-up height (15.2 cm)
  - RD-12-S-P30: 16" (40.6 cm) body height; 12" pop-up height (30.5 cm)
- Exposed surface diameter: 2 ¼" (5.7 cm)

Flow Rate v Inlet Pressure – RD1800 PRS Sprays



Water Saving

Exclusive Flow-Shield™ Technology reduces water loss by up to 90% when a nozzle is removed.

RD1800™ Flow-Shield™ Series

4", 6", 12" (10.2 cm, 15.2 cm, 30.5 cm)

- Designed to save water and preserve system hydraulics to maintain proper operation throughout the irrigation zone. Provides protection against plant material loss and reduces likelihood of incurring costly fines as a result of excessive run-off when a nozzle has been removed
- Exclusive Flow-Shield Technology built into the stem. No parts to be installed at the site. Saves water, plant material, time, and money
- Restricts water loss by up to 90% if nozzle is removed from a non-PRS spray head, and up to 50% if nozzle is removed from a PRS spray head

Features

- Incorporates all RD1800 SAM and PRS features plus:
  - Reduces possibility of accidents and property damage. Recommended for high pressure and vandal-prone areas
  - Provides low flow vertical water jet visible from +200' line of sight when a nozzle has been removed. Height and low flow of vertical water jet causes water to dissipate during descent, reducing puddles and run-off
  - Low flow vertical water jet does not exceed 2 gpm (0.45 m^3/h; 0.13 l/s), even with varying inlet pressure
  - Low flow vertical water jet decreases likelihood of nozzle removal going unnoticed, prompting nozzle replacement to decrease probability of stressed turf and plant material losses
  - "F" printed on cap for easy identification and maintenance

Operating Range

- Spacing: 2.5 to 24 feet (0.8 to 7.3 m)
- Pressure: 15 to 100 psi (1.0 to 6.9 bar)

Specifications

- SAM capability: Holds up to 14 feet (4.2 m)of head; 6 psi (0.3 bar)
- Flow-by: SAM Models: 0 at 15 psi (1.0 bar) or greater; 0.5 gpm (0.1 m^3/h; 0.03 l/s) otherwise
  All Other Models: 0 at 10 psi (0.7 bar) or greater; 0.5 gpm (0.1 m^3/h; 0.03 l/s)otherwise

Dimensions / Models

- ½" (15/21) NPT female threaded inlet
- Models and height:
  - RD-04-S-P30-F, RD-04-S-P45-F: 6" (15.2 cm) body height; 4" pop-up height (10.2 cm)
  - RD-06-S-P30-F, RD-06-S-P45-F: 9 3/8" (23.8 cm) body height; 6" pop-up height (15.2 cm)
  - RD-12-S-P30-F, RD-12-S-P45-F: 16" (40.6 cm) body height; 12" pop-up height (30.5 cm)
- Exposed surface diameter: 2 ¼" (5.7 cm)

RD1800™ Non-Potable Water Series

4", 6", 12" (10.2 cm, 15.2 cm, 30.5 cm)

- Exclusive, non-potable water use indication on cover featuring purple Triple-Blade Wiper Seal, easy-to-read English "DO NOT DRINK", Spanish "NO BEBA" warnings, and international do not drink symbol
- Does not require the use of purple clip caps that can be removed by a vandal
- Does not require use of eye-catching purple molded covers that give away sprinkler location

Features

- The RD1800 Non-Potable Water Series offers all SAM, SAM PRS, and SAM PRS 45 Flow-Shield Series features
- Provides an alternative to clip-on caps and molded purple covers to identify non-potable water use

Operating Range

- Spacing: 2.5 to 24 feet (0.8 to 7.3 m)
- Pressure: 15 to 100 psi (1.0 to 6.9 bar)

Specifications

- SAM capability: Holds up to 14 feet (4.2 m)of head; 6 psi (0.3 bar)
- Flow-by: SAM Models: 0 at 15 psi (1.0 bar) or greater; 0.5 gpm (0.1 m^3/h; 0.03 l/s) otherwise
  All Other Models: 0 at 10 psi (0.7 bar) or greater; 0.5 gpm (0.1 m^3/h; 0.03 l/s)otherwise

Dimensions / Models

- ½" (15/21) NPT female threaded inlet
- Models and height:
  - RD-04-NP, RD-04-S-NP, RD-04-S-P30-F-N, RD-04-S-P45-F-N: 6" (15.2 cm) body height; 4" pop-up height (10.2 cm)
  - RD-06-NP, RD-06-S-NP, RD-06-S-P30-F-N, RD-06-S-P45-F-N: 9 3/8" (23.8 cm) body height; 6" pop-up height (15.2 cm)
  - RD-12-NP, RD-12-S-NP, RD-12-S-P30-F-N, RD-12-S-P45-F-N: 16" (40.6 cm) body height; 12" pop-up height (30.5 cm)
  - Exposed surface diameter: 2 ¼" (5.7 cm)

Standard Cover

Non-Potable Cover

UNI-Spray™ Series

2", 4" (5.1 cm, 10.2 cm)

- Pressure-activated wiper seal prevents excessive flow-by and water waste. Keeps debris from entering upon retraction
- Durable stem ratchet allows for quick and easy nozzle pattern alignment
- Rugged cover and body provide durability in high pressure and surge conditions

Features

- Small exposed cover makes the unit virtually invisible for more attractive landscapes
- UNI-Spray accepts all Rain Bird® Nozzles and accessories, which simplifies inventory management
  - VAN nozzle and screen are easily removable for flushing
- Internal parts removable from the top of the sprinkler for easy servicing
- Optional field installable Seal-A-Matic™ check valve prevents low-head drainage up to 5 feet (1.5 m) of elevation difference
- Plastic and stainless steel materials resist corrosion

Operating Range (for pre-installed nozzle choices)

- Spacing:
  - 10 VAN Series: 8 to 10 feet (2.4 to 3.0 m)
  - 12 VAN Series: 10 to 12 feet (3.0 to 3.7 m)
  - 15 VAN Series: 12 to 15 feet (3.7 to 4.6 m)
  - 18 VAN Series: 14 to 18 feet (4.3 to 5.5 m)
- Pressure: 15 to 70 psi (1.0 to 4.8 bar)
- Optimum pressure: 30 psi (2.1 bar)
- Adjustable nozzle arc range: 0° - 360°

Specifications

- Flow-by: 0 at 15 psi (1.03 bar) or greater; 0.25 gpm (0.06 m^3/h; 0.02 l/m) otherwise

Dimensions

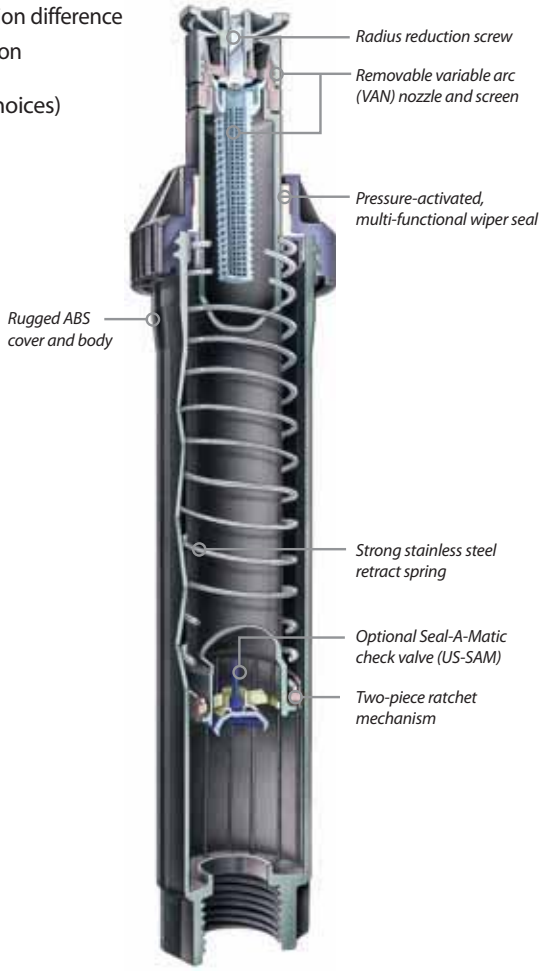
- ½" (15/21) NPT female threaded inlet
- Body height:
  - US-200: 3¾" (9.5 cm)
  - US-400: 5 ⅞" (14.9 cm)
- Exposed surface diameter: 1¼" (3.2 cm)

Models*

- US-400: 4" pop-up height (10.2 cm)
- US-410 VAN 4" pop-up height (10.2 cm) with 10-VAN attached
- US-212 VAN 2" pop-up height (5.1 cm) with 12-VAN attached
- US-412 VAN 4" pop-up height (10.2 cm) with 12-VAN attached
- US-215 VAN 2" pop-up height (5.1 cm) with 15-VAN attached
- US-415 VAN 4" pop-up height (10.2 cm) with 15-VAN attached
- US-418 VAN 4" pop-up height (10.2 cm) with 18-VAN attached

- US-SAM UNI-Spray field installed check valve

** The UNI-Spray accepts all Rain Bird nozzles*



UNI-Spray™

Variable Arc Nozzles
(10, 12, 15 or 18 feet) may be ordered pre-installed

How To Specify

US - 4 - 15VAN

- **Model**: UNI-Spray
- **Body**: 2"(5.1 cm), 4"(10.2 cm)
- **Nozzle Series/Pattern**: VAN nozzle with variable arc

Water Saving

Pressure-activated wiper seal reduces flow-by during operation.

1800® NP Cover

Non-Potable 1800 Spray Head Cover

Features

- Designed for excellent retention on 1800 Series Spray Body covers
- Purple plastic cover for easy identification of non-potable water system
- Marked with "Do Not Drink!" warning in both English and Spanish.
- Snaps onto all 1800® Series Spray Body covers

Model

- 1800-NPCAP

1800-NPCAP

1800®-EXT

Plastic Extension

Features

- UV-resistant thermoplastic construction for long life
- Fits all Rain Bird Spray Bodies and Nozzles. Exception: Cannot be used with bubblers
- Easy installed without any tools
- Can be reinstalled without damaging the threads if accidentally knocked off the riser or spray head
- Maximum recommended number: two extensions per spray body

Model

- 1800-EXT

1800-EXT

PA-80

Plastic Adapter

Features

- Adapts Rain Bird Spray Bodies for use with any 1/2" (15/21) FPT bubbler or spray nozzle
- Rugged, UV-resistant thermoplastic construction
- Easy to install; no tools required

Dimensions

- Height: 1½" (3.8 cm); 0.8" (2.0 cm) above 1800 cap

Model

- PA-80

PA-80

PA-8S

Plastic Shrub Adapter

Features

- Adapts Rain Bird Nozzles for use with ½" (15/21) MPT threaded risers
- Accepts protective, non-clogging 1800 Series filter screen (shipped with nozzle) and PCS Series screens
- Durable, non-corrosive plastic construction

Specifications

- ½" (15/21) female inlet threads
- Fine top threads accept all Rain Bird nozzles

Model

- PA-8S

PA-8S

PA-8S-NP

Non-Potable Plastic Shrub Adapter

Features

- Purple plastic shrub adapter for easy identification of non-potable water system
- Adapts Rain Bird Nozzles for use with ½" (15/21) MPT threaded risers
- Accepts protective, non-clogging 1800 Series filter screen (shipped w/ nozzle) and PCS Series screens
- Durable, non-corrosive plastic construction

Specifications

- ½" (15/21) female inlet thread
- Fine top threads accept all Rain Bird Nozzles

Model

- PA-8S-NP

PA-8S-NP

PA-8S-PRS

Pressure Regulating Shrub Adapter

Features

- Adapts nozzles for use with ½" (15/21) MPT threaded risers
- 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 (2.1 bar). Ensures maximum spray head and nozzle performance
  - Ends misting and fogging caused by high pressure. Prevents water waste and minimizes liability
  - Restricts water loss by up to 70% if nozzle is removed or damaged. Saves water and money. Reduces liability. Recommended for vandal-prone areas
- Fits all Rain Bird plastic nozzles
- Rugged thermoplastic construction resists UV rays
- Five-year trade warranty

Operating Range

- Pressure: 15 to 70 psi (1.0 to 4.8 bar)
- Flow: 0.2 to 4.0 gpm (0.05 to 0.91 m^3/h; 0.06 to 15.0 l/m)

Specifications

- ½" (15/21) female inlet threads
- Fine top threads accept all Rain Bird nozzles
- Height: 5¼" (13.3 cm)

Model

- PA-8S-PRS

PA-8S-PRS

1800 PCS

Pressure Compensating Screens

- Compensates* for pressure variations
- Eliminates fogging and water waste caused by high pressures
- Nozzles can be matched with screens to create short-throw, reduced-radius patterns and/or flush-mounted bubblers

Features

- 0.25 gpm (0.06 m^3/h; 1.2 l/m) screen allows greater flexibility in achieving 4', 6', and 7' radius patterns
- Color-coded for easy identification
- Use with all 1800 Series plastic nozzles (MPR, VAN, U-Series, Strips and Bubblers)
- Easily installed in new and retrofit applications. Simply replace standard screen with PCS screen

** With a pressure compensator, outlet pressure will be reduced, but will fluctuate as the inlet pressure changes. A pressure compensator cannot maintain outlet pressure at a constant rate. A pressure regulator establishes and maintains a constant outlet pressure of 30 psi (2.1 bar) as long as the inlet pressure at the spray head is greater than 30 psi (2.1 bar)*

Operating Range

- Flow: 0.20 to 0.90 gpm (0.05 to 0.20 m^3/h; 0.6 to 3.6 l/m)
- Pressure: 15 to 70 psi (1.0 to 4.8 bar)

Models

- PCS-020: 0.2 gpm (0.05 m^3/h; 0.6 l/m) - Brown
- PCS-025: 0.25 gpm (0.06 m^3/h; 1.2 l/m) - Pink
- PCS-030: 0.3 gpm (0.07 m^3/h; 1.2 l/m) - Silver
- PCS-040: 0.4 gpm (0.09 m^3/h; 1.8 l/m) - Orange
- PCS-060: 0.6 gpm (0.14 m^3/h; 2.4 l/m) - Black
- PCS-090: 0.9 gpm (0.20 m^3/h; 3.6 l/m) - White

Recommended Nozzle + PCS Combinations to Achieve 4', 6' and 7' Radii*

Nozzle	PCS	ft.	m
8Q-FLT	Pink	6'	(1.8)
8Q-FLT	Black	7'	(2.1)
8H-FLT	Pink	4'	(1.2)
8H-FLT	Silver	7'	(2.1)
8F-FLT	Black	4'	(1.2)
8F-FLT	White	7'	(2.1)

***Note:** Radius reduction data tested at 30 psi (1.5 bar). Individual results may vary based on site conditions*

1800 PCS Screens

1800 PCS Performance

	Flow (gpm) m^3/h (l/m) Color Distance	PCS-020 0.2 0.05 (60) Brown feet	 meters	PCS-025 0.25 0.06 (72) Pink feet	 meters	PCS-030 0.3 0.07 (84) Silver feet	 meters	PCS-040 0.4 0.09 (108) Orange feet	 meters	PCS-060 0.6 0.14 (144) Black feet	 meters	PCS-090 0.9 0.20 (216) White feet	 meters
U-Series	U-8Q	**6**	**(1.8)**	**7**	**(2.1)**								
	U-8T	**4**	**(1.2)**	**5**	**(1.5)**								
	U-8H	**4**	**(1.2)**	**5**	**(1.5)**								
	U-8F					1	(0.3)	3	(0.9)	**7**	**(2.1)**		
	U-10Q	**5**	**(1.5)**	**6**	**(1.8)**	**10'**	**(3.1)**						
	U-10T	4	(1.2)	4	(1.2)	**8**	**(2.4)**	**10'**	**(3.1)**				
	U-10H					**5**	**(1.5)**	**6**	**(1.8)**	**8**	**(2.4)**	**9**	**(2.7)**
	U-10F									4	(1.2)	**9**	**(2.7)**
	U-12Q	2'	(0.6)	4	(1.2)	**7'**	**(2.1)**	**12'**	**(3.7)**				
	U-12T			2	(0.6)	**6'**	**(1.8)**	**8'**	**(2.4)**	**12'**	**(3.7)**		
	U-12H					3'	(0.9)	4'	(1.2)	**7'**	**(2.1)**	**11'**	**(3.4)**
	U-12TT									**6'**	**(1.8)**	**9'**	**(2.7)**
	U-12TQ									5'	(1.5)	**8'**	**(2.4)**
	U-12F							3'	(0.9)	**6'**	**(1.8)**	**8'**	**(2.4)**
	U-15Q			3'	(0.9)	6'	(1.8)	**11'**	**(3.4)**	**15'**	**(4.6)**		
	U15T									**10'**	**(3.1)**	**13'**	**(4.0)**
	U-15H					2'	(0.6)	3'	(0.9)	5'	(1.5)	**9'**	**(2.7)**
	U15TT												
	U15TQ												
	U-15F									4'	(1.2)	6'	(1.8)
VAN	4 (90°)	1'	(0.3)			**3'**	**(0.9)**	**4'**	**(1.2)**				
	4 (180°)			1'	(0.3)	**2'**	**(0.6)**	**3'**	**(0.9)**	**4'**	**(1.2)**		
	4 (270°)					1'	(0.3)	**2'**	**(0.6)**	**4'**	**(1.2)**		
	4 (330°)					1'	(0.3)	**2'**	**(0.6)**	**4'**	**(1.2)**		
	6 (90°)			2'	(0.6)	**3'**	**(0.9)**	**6'**	**(1.8)**				
	6 (180°)					2'	(0.6)	**4'**	**(1.2)**	**6'**	**(1.8)**		
	6 (270°)					0.5'	(0.2)	1'	(0.3)	**3'**	**(0.9)**	**6'**	**(1.8)**
	6 (330°)					0.5'	(0.2)	1'	(0.3)	**3'**	**(0.9)**	**6'**	**(1.8)**
	8 (90°)					1'	(0.3)	3'	(0.9)	**8'**	**(2.4)**		
	8 (180°)					0.5'	(0.2)	2'	(0.6)	**4'**	**(1.2)**	**8'**	**(2.4)**
	8 (270°)							0.5'	(0.2)	3'	(0.9)	**5'**	**(1.5)**
	8 (330°)							0.5'	(0.2)	3'	(0.9)	**5'**	**(1.5)**
	10 (90°)					3'	(0.9)	**5'**	**(1.5)**	**10'**	**(3.1)**		
	10 (180°)							1'	(0.3)	**5'**	**(1.5)**	**7'**	**(2.1)**
	10 (270°)							1'	(0.3)	**4'**	**(1.2)**	**6'**	**(1.8)**
	10 (360°)					0.5'	(0.2)	1'	(0.3)	4'	(1.2)	**6'**	**(1.8)**
	12 (90°)	3'	(0.9)			**8'**	**(2.4)**	**10'**	**(3.1)**	**12'**	**(3.7)**		
	12 (180°)					1'	(0.3)	2'	(0.6)	5'	(1.5)	**8'**	**(2.4)**
	12 (270°)					0.5'	(0.2)	1'	(0.3)	3'	(0.9)	**6'**	**(1.8)**
	12 (360°)							1'	(0.3)	3'	(0.9)	5'	(1.5)
	15 (90°)					2'	(0.6)	5'	(1.5)	**11'**	**(3.4)**	**15'**	**(4.6)**
	15 (180°)					1'	(0.3)	3'	(0.9)	6'	(1.8)	**9'**	**(2.7)**
	15 (270°)											6'	(1.8)
	15 (360°)												
	18 (90°)					0.5'	(0.2)	2'	(0.6)	6'	(1.8)	**12'**	**(3.7)**
	18 (180°)							1'	(0.3)	3'	(0.9)	5'	(1.5)
	18 (270°)							0.5'	(0.2)	1'	(0.3)	3'	(0.9)
	18 (330°)							0.5'	(0.2)	1'	(0.3)	3'	(0.9)

Bold green type indicates recommended nozzle/screen combination to achieve catalog performance at 30 psi (2.1 bar)

Bold blue type indicates satisfactory nozzle/screen combination

Black type indicates a nozzle/screen combination that provides a throw reduction of more than 50%. With these nozzle/screen combinations a uniform spray pattern is not assured and a bubbler effect may result

Note: *Screens were tested at 50 psi (3.5 bar) for 10 minutes prior to taking distance measurements. Distances may vary slightly with higher pressures and longer run-times*

Note: *Refer to catalog notation for proper nozzle selection*

1800 PCS Performance

		PCS-020		PCS-025		PCS-030		PCS-040		PCS-060		PCS-090	
	Flow (gpm)	0.2		0.25		0.3		0.4		0.6		0.9	
	m^3/h (l/m)	0.05 (60)		0.06 (72)		0.07 (84)		0.09 (108)		0.14 (144)		0.20 (216)	
	Color	Brown		Pink		Silver		Orange		Black		White	
	Distance	feet	meters	feet	meters	feet	meters	feet	meters	feet	meters	feet	meters
MPR	5Q												
MPR	5T												
MPR	5H	5'	(1.5)	6'	(1.8)								
MPR	5F					5'	(1.5)						
MPR	8Q	8'	(2.4)	10'	(3.1)								
MPR	8T	6'	(1.8)	6.5'	(2.0)	7'	(2.1)	8'	(2.4)				
MPR	8H	5'	(1.5)	6'	(1.8)	7'	(2.1)	8'	(2.4)				
MPR	8F					2'	(0.6)	3'	(0.9)	8'	(2.4)		
MPR	10Q	6'	(1.8)	8'	(2.4)	8'	(2.4)	10'	(3.1)				
MPR	10T	4'	(1.2)	5'	(1.5)	9'	(2.7)	10'	(3.1)				
MPR	10H	3'	(0.9)	4'	(1.2)	6'	(1.8)	8'	(2.4)	10'	(3.1)		
MPR	10F							1'	(0.3)	4'	(1.2)	8'	(2.4)
MPR	12Q	3'	(0.9)	7'	(2.1)	8'	(2.4)	11'	(3.4)	12'	(3.7)		
MPR	12T	2'	(0.6)	4'	(1.2)	6'	(1.8)	10'	(3.1)	11'	(3.4)	12'	(3.7)
MPR	12H					4'	(1.2)	6'	(1.8)	10'	(3.1)	12'	(3.7)
MPR	12TT					2'	(0.6)	4'	(1.2)	6'	(1.8)	9'	(2.7)
MPR	12TQ					2'	(0.6)	3'	(0.9)	6'	(1.8)	8'	(2.4)
MPR	12F							2'	(0.6)	5'	(1.5)	7'	(2.1)
MPR	15Q	3'	(0.9)	4'	(1.2)	5'	(1.5)	9'	(2.7)	12'	(3.7)	15'	(4.6)
MPR	15T			2'	(0.6)	5'	(1.5)	7'	(2.1)	12'	(3.7)	14'	(4.3)
MPR	15H					3'	(0.9)	4'	(1.2)	7'	(2.1)	11'	(3.4)
MPR	15TT					1'	(0.3)	2'	(0.6)	4'	(1.2)	8'	(2.4)
MPR	15TQ											6'	(1.8)
MPR	15F											4'	(1.2)
Bubbler	5Q-B	2'	(0.6)	3	(0.9)	4'	(1.2)	5'	(1.5)				
Bubbler	5H-B					1'	(0.3)	2'	(0.6)	5'	(1.5)		
Bubbler	5F-B							1'	(0.3)	2'	(0.6)	3'	(0.9)
Bubbler	5CST-B	1'	(0.3)	2	(0.6)	3'	(0.9)	5'	(1.5)				
Strip	9SST											7' x 12'	(2.1 x 3.7)
Strip	15CST							4' x 12'	(1.2 x 3.7)	4' x 24'	(1.2 x 7.3)	4' x 30'	(1.2 x 9.1)
Strip	15SST							2' x 10'	(0.6x 3.1)	3' x 20'	(0.9 x 6.1)	4' x 26'	(1.2 x 7.9)
Strip	15EST					3' x 12'	(0.9 x 3.7)	4' x 15'	(1.2 x 4.6)				
Strip	15LCS	1' x 5'	(0.3 x 1.5)	1' x 7'	(0.3 x 2.1)	1' x 12'	(0.3 x 3.7)						
Strip	15RCS	1' x 5'	(0.3 x 1.5)	1' x 7'	(0.3 x 2.1)	1' x 12'	(0.3 x 3.7)						

Bold green type indicates recommended nozzle/screen combination to achieve catalog performance at 30 psi (2.1 bar)

Bold blue type indicates satisfactory nozzle/screen combination

Black type indicates a nozzle/screen combination that provides a throw reduction of more than 50%. With these nozzle/screen combinations a uniform spray pattern is not assured and a bubbler effect may result

Note: *Screens were tested at 50 psi (3.5 bar) for 10 minutes prior to taking distance measurements. Distances may vary slightly with higher pressures and longer run-times*

Note: *Refer to catalog notation for proper nozzle selection*

"The beauty of the HE-VAN is that with one simple change we got a lot of benefits, like saving money, water, and time. We also anticipate decreased liability and reduced system wear and tear. Now we can confidently meet industry regulations and environmental challenges while providing a lush landscape that all can enjoy. That's a lot of payback for just changing a nozzle!"

Brian Baker, *Landscape/Irrigation Engineer*
FLAGLER

Major Products

	Fixed ARC Sprays			Variable ARC Sprays		Rotary Nozzles	
Primary Applications	**MPR**	**SQ Nozzles**	**U-Series**	**VAN**	**HE-VAN**	**Rotary**	**R-VAN**
	Standard	Standard	Better	Standard	Best	Standard	Best
Turfgrass	●	●	●	●	●	●	●
Slopes						●	●
Narrow Strips	●	●					
Small Areas		●					
Landscape Beds	●	●	●	●	●	●	●
High Efficiency			●		●	●	●
High Winds			●		●	●	●
High Pressure					●	●	●

Water Saving Tips

- U-Series Nozzles are dual-orifice nozzles that have better, more uniform water distribution. Water flowing from both orifices combines to form a continuous water stream and eliminates gaps for more uniform coverage throughout the entire watering area.
- HE-VAN nozzles are fully adjustable from 0 to 360 degree with high uniformity and efficiency. HE-VAN nozzles can reduce the number of variations that need to be carried to cover just about any field challenge. Available in radii from 8' to 15', this high efficient nozzle has you covered.
- Rotary Nozzles have efficient water distribution through rotating streams that uniformly deliver water at a low precipitation rate, significantly reducing runoff and erosion.

MPR Nozzle and Screen

Rain Bird® MPR Nozzles,
The Industry Standard

Plastic MPR Nozzles

Matched Precipitation Rate Nozzles

- 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
- 5 Series nozzles meet small-area shrub or turf requirements
- 8 Series nozzles now have a lower water flow, which allows more spray heads per zone

Features

- 1800® Series white filter (0.035" x 0.035") screens (shipped with nozzles) maintain precise radius adjustment and prevent clogging (5 and 8 Series nozzles are shipped with blue fine-mesh (0.02" x 0.02") filter screens)
- Stainless steel adjustment screw to adjust flow and radius

Operating Range

- Spacing: 3 to 20 feet (0.9 to 4.6 m)
- Pressure: 15 to 30 psi (1 to 2.1 bar)
- Optimum pressure: 30 psi (2.1 bar)*

** Rain Bird recommends using 1800 PRS Spray Bodies to maintain optimum nozzle performance in higher pressure situations*

Models

- 5 Series
- 5 Series: Bubbler Nozzles
- 8 Series
- 8 FLT Series: Designed for lower trajectory applications, such as windy areas
- 10 Series
- 12 Series
- 15 Series
- 15 Strip Series

Re-Sealable Nozzle Packaging

Features

- Convenient re-sealable bags
- Tamper proof seal
- Hanging holes for easy display

Re-Sealable Nozzle Packaging

5 Series MPR

5° Trajectory

Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
5F	15	3	0.29	3.10	3.58
	20	4	0.33	1.99	2.29
	25	4	0.37	2.23	2.57
	30	5	0.41	1.58	1.83
5H	15	3	0.14	3.00	3.46
	20	4	0.16	1.93	2.22
	25	4	0.18	2.17	2.50
	30	5	0.20	1.54	1.78
5Q	15	3	0.07	3.00	3.46
	20	4	0.08	1.93	2.22
	25	4	0.09	2.17	2.50
	30	5	0.10	1.54	1.78

5 Series MPR METRIC

5° Trajectory

Nozzle	Pressure bar	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
5F	1.0	1.1	0.06	1.1	79	91
	1.5	1.3	0.08	1.4	51	58
	2.0	1.5	0.09	1.6	57	65
	2.1	1.5	0.09	1.6	40	46
5H	1.0	1.1	0.03	0.5	76	88
	1.5	1.3	0.04	0.7	49	56
	2.0	1.5	0.04	0.7	55	64
	2.1	1.5	0.05	0.9	39	45
5Q	1.0	1.1	0.02	0.4	76	88
	1.5	1.3	0.02	0.4	49	56
	2.0	1.5	0.02	0.4	55	64
	2.1	1.5	0.02	0.4	39	45

8 Series MPR

10° Trajectory

Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
8F	15	5	0.74	2.85	3.29
	20	6	0.86	2.30	2.66
	25	7	0.96	1.89	2.18
	30	8	1.05	1.58	1.82
8H	15	5	0.37	2.85	3.29
	20	6	0.42	2.25	2.59
	25	7	0.47	1.85	2.13
	30	8	0.52	1.56	1.81
8Q	15	5	0.18	2.77	3.20
	20	6	0.21	2.25	2.59
	25	7	0.24	1.89	2.18
	30	8	0.26	1.56	1.81

8 Series MPR METRIC

10° Trajectory

Nozzle	Pressure bar	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
8F	1.0	1.7	0.16	2.8	72	84
	1.5	2.1	0.20	3.4	58	68
	2.0	2.4	0.23	3.9	48	55
	2.1	2.4	0.24	4.0	40	46
8H	1.0	1.7	0.08	1.4	72	84
	1.5	2.1	0.10	1.7	57	66
	2.0	2.4	0.12	1.9	47	54
	2.1	2.4	0.12	2.0	40	46
8Q	1.0	1.7	0.04	0.7	70	81
	1.5	2.1	0.05	0.8	57	66
	2.0	2.4	0.06	1.0	48	55
	2.1	2.4	0.06	1.0	40	46

10 Series MPR

15° Trajectory

Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
10F	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
10H	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
10Q	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

10 Series MPR METRIC

15° Trajectory

Nozzle	Pressure bar	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
10F	1.0	2.1	0.26	4.2	58	67
	1.5	2.4	0.29	4.8	50	58
	2.0	3.0	0.35	6.0	39	45
	2.1	3.1	0.36	6.0	37	43
10H	1.0	2.1	0.13	2.4	58	67
	1.5	2.4	0.14	2.4	50	58
	2.0	3.0	0.18	3.0	39	45
	2.1	3.1	0.18	3.0	37	43
10Q	1.0	2.1	0.06	1.2	58	67
	1.5	2.4	0.07	1.2	50	58
	2.0	3.0	0.09	1.2	39	45
	2.1	3.1	0.09	1.2	37	43

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 body and nozzles separately.*
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
12F	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
12H	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
12Q	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

12 Series MPR — METRIC

30° Trajectory

Nozzle	Pressure bar	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
12F	1.0	2.7	0.40	6.8	55	63
	1.5	3.2	0.48	8.3	47	54
	2.0	3.6	0.59	9.7	46	53
	2.1	3.7	0.60	9.8	44	51
12H	1.0	2.7	0.20	3.4	55	63
	1.5	3.2	0.24	4.2	47	54
	2.0	3.6	0.30	4.9	46	53
	2.1	3.7	0.30	4.9	44	51
12Q	1.0	2.7	0.10	1.7	55	63
	1.5	3.2	0.12	2.1	47	54
	2.0	3.6	0.15	2.4	46	53
	2.1	3.7	0.15	2.5	44	51

15 Series MPR

30° Trajectory

Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
15F	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
15H	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
15Q	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

15 Series MPR — METRIC

30° Trajectory

Nozzle	Pressure bar	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
15F	1.0	3.4	0.60	9.8	52	60
	1.5	3.9	0.72	11.8	47	55
	2.0	4.5	0.84	13.7	41	48
	2.1	4.6	0.84	14.0	40	46
15H	1.0	3.4	0.30	4.9	52	60
	1.5	3.9	0.36	5.9	47	55
	2.0	4.5	0.42	6.8	41	48
	2.1	4.6	0.42	7.0	40	46
15Q	1.0	3.4	0.15	2.5	52	60
	1.5	3.9	0.18	2.9	47	55
	2.0	4.5	0.21	3.4	41	48
	2.1	4.6	0.21	3.5	40	46

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

15 Strip Series

30° Trajectory

Nozzle	Pressure psi	W x L ft.	Flow gpm
15EST	15	4 x 13	0.45
	20	4 x 14	0.50
	25	4 x 14	0.56
	30	4 x 15	0.61
15CST	15	4 x 26	0.89
	20	4 x28	1.00
	25	4x 28	1.11
	30	4 x 30	1.21
15RCS	15	3 x 11	0.35
	20	3 x 12	0.40
	25	4 x 14	0.45
	30	4 x 15	0.49
15LCS	15	3 x 11	0.35
	20	3 x 12	0.40
	25	4 x 14	0.45
	30	4 x 15	0.49
15SST	15	4 x 26	0.89
	20	4 x 28	1.00
	25	4 x 28	1.11
	30	4 x 30	1.21
9SST	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 body and nozzles separately.*

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

15 Strip Series METRIC

30° Trajectory

Nozzle	Pressure bar	W x L m	Flow m^3/h	Flow l/m
15EST	1.0	1.2 x 4.0	0.10	1.7
	1.5	1.2 x 4.3	0.11	2.0
	2.0	1.2 x 4.3	0.13	2.3
	2.1	1.2 x 4.6	0.14	2.3
15CST	1.0	1.2 x 7.9	0.20	3.4
	1.5	1.2 x 8.5	0.23	4.0
	2.0	1.2 x 8.5	0.25	4.5
	2.1	1.2 x 9.2	0.27	4.6
15RCS	1.0	0.8 x 3.2	0.08	1.3
	1.5	1.0 x 3.9	0.09	1.6
	2.0	1.2 x 4.5	0.11	1.8
	2.1	1.2 x 4.6	0.11	1.9
15LCS	1.0	0.8 x 3.2	0.08	1.3
	1.5	1.0 x 3.9	0.09	1.6
	2.0	1.2 x 4.5	0.11	1.8
	2.1	1.2 x 4.6	0.11	1.9
15SST	1.0	1.2 x 7.9	0.20	3.4
	1.5	1.2 x 8.5	0.23	4.0
	2.0	1.2 x 8.5	0.25	4.5
	2.1	1.2 x 9.2	0.27	4.6
9SST	1.0	2.7 x 4.6	0.30	5.1
	1.5	2.7 x 4.9	0.33	5.8
	2.0	2.7 x 5.5	0.36	6.5
	2.1	2.7 x 5.5	0.39	6.5

Performance data taken in zero wind conditions

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

8 FLT Series MPR METRIC

5° Trajectory

Nozzle	Pressure bar	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
8H-FLT	1.0	1.7	0.12	2.1	87	101
	1.5	2.1	0.15	2.6	71	82
	2.0	2.4	0.18	2.9	62	71
	2.1	2.4	0.18	3.0	60	70
8Q-FLT	1.0	1.7	0.06	1.1	86	100
	1.5	2.1	0.07	1.3	71	81
	2.0	2.4	0.09	1.4	61	71
	2.1	2.4	0.09	1.5	60	69

Note: *Specify spray body and nozzles separately.*

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

SQ Nozzle Installed on PolyFlex Riser with Nozzle Adapter

SQ Nozzles with Screens

One Nozzle…Two Throws

With a simple turn of the nozzle to the next preset stop, the Rain Bird SQ Nozzle adjusts from a 2.5' (0.8 m) throw to a 4' (1.2 m) throw. It's like having two nozzles in one.

Can be used on…

The SQ Nozzle is an ideal solution for a wide range of difficult-to-design areas, thanks to its compatibility with popular irrigation products.

1800® Series Spray Heads | Xeri-Pop Spray Heads | Polyflex Risers | Schedule 80 Risers

SQ Series, Square Pattern Nozzles

The Most Precise and Efficient, Low-Volume Spray Solution for Irrigation of Small Areas with Dense Plantings

- Square spray pattern and pressure compensation offer increased efficiency and control, reducing overspray, property damage and liability
- Simplify design and installation with the flexibility of applications: one nozzle throws 2.5' or 4' (0.8 m or 1.2 m) and can be used on a variety of spray heads and risers
- Meets micro irrigation system requirement for less than 26 gph flow rate at 30 psi

Features

- Square spray pattern with edge-to-edge coverage allows you to easily design and install in small spaces
- Pressure compensation design delivers uniform flow over the pressure range
- Available in 3 models—quarter, half and full patterns with matched precipitation rate
  - Virtual no-mist performance from 20 psi to 50 psi
  - Two throw distances in each nozzle. One simple click adjusts to 2.5' or 4' (0.8 m or 1.2 m)
  - Shipped with blue filter screen (0.02" x 0.02") to maintain precise distance of flow, and to prevent clogging
- Compatible with all 1800 Sprays, Xeri-Pops, New PolyFlex Riser Adapter, UNI-Spray and SCH 80 risers

Operating Range

- Pressure: 20 to 50 psi (1.4 to 3.5 bar)
- Flow rates: 6, 12 and 24 gph (22.7, 45.4 and 90.8 l/h)
- Required filtration: 40 mesh

Models

- SQ QTR: SQ Nozzle, quarter pattern
- SQ HLF: SQ Nozzle, half pattern
- SQ FUL: SQ Nozzle, full pattern
- SQ ADP12: SQ Nozzle Adapter with 12" PolyFlex Riser
- SQ ADP24: SQ Nozzle Adapter with 24" PolyFlex Riser
- SQ ADP: SQ PolyFlex Riser Adapter only

* ***Note:*** *A PA-8S Plastic Shrub Adapter (see page 13) is needed when using an SQ Series Nozzle mounted on a SCH 80 riser.*

Water Saving

SQ Series Nozzles provide a precise square wetting pattern and efficient water placement with pressure compensation – resulting in up to 65% water savings. They are great for narrow planting beds, parking lot islands, walkways, parkways, and street medians.

SQ Nozzle Performance

2.5 feet throw @ 6" height above grade

Nozzle	Pressure psi	Throw Radius ft.	Flow gph	Flow gpm	Precip. Rate w/no overlap in/h
Q	20	2.5	6.4	0.11	1.64
	30	2.5	7.4	0.12	1.90
	40	3.0	7.4	0.12	1.32
	50	3.0	7.4	0.12	1.32
H	20	2.5	10.2	0.17	1.31
	30	2.5	12.2	0.20	1.57
	40	3.0	13.7	0.23	1.22
	50	3.0	13.7	0.23	1.22
F	20	2.5	20.0	0.33	1.28
	30	2.5	24.2	0.40	1.55
	40	3.0	27.3	0.46	1.22
	50	3.0	27.3	0.46	1.22

SQ Nozzle Performance — METRIC

0.8 m throw @ 0.15 m height above grade

Nozzle	Throw Pressure bar	Radius m.	Flow lph	Flow lpm	Precip. Rate w/no overlap mm/h
Q	1.4	0.8	24	0.40	42
	2.1	0.8	28	0.47	48
	2.8	0.9	28	0.47	34
	3.4	0.9	28	0.47	34
H	1.4	0.8	39	0.65	33
	2.1	0.8	46	0.77	40
	2.8	0.9	52	0.87	31
	3.4	0.9	52	0.87	31
F	1.4	0.8	76	1.27	33
	2.1	0.8	92	1.53	39
	2.8	0.9	103	1.72	31
	3.4	0.9	103	1.72	31

SQ Nozzle Performance

4 feet throw @ 6" height above grade

Nozzle	Pressure psi	Throw Radius ft.	Flow gph	Flow gpm	Precip. Rate w/no overlap in/h
Q	20	4.0	6.4	0.11	0.64
	30	4.0	7.4	0.12	0.74
	40	4.5	7.4	0.12	0.59
	50	4.5	7.4	0.12	0.59
H	20	4.0	10.2	0.17	0.51
	30	4.0	12.2	0.20	0.61
	40	4.5	13.7	0.23	0.54
	50	4.5	13.7	0.23	0.54
F	20	4.0	20.0	0.33	0.50
	30	4.0	24.2	0.40	0.61
	40	4.5	27.3	0.46	0.54
	50	4.5	27.3	0.46	0.54

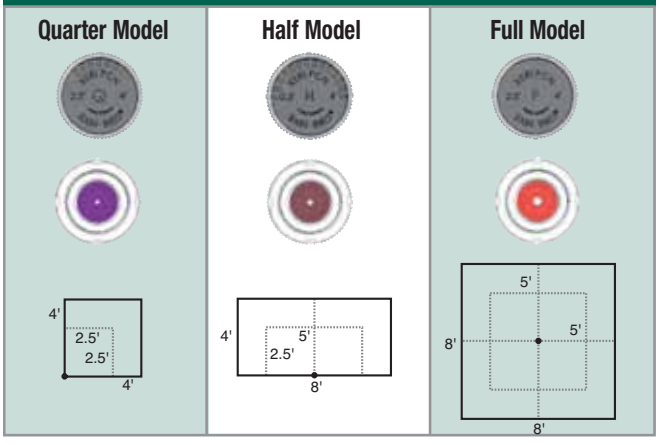
SQ Nozzle Performance — METRIC

1.2 m throw @ 0.15 m height above grade

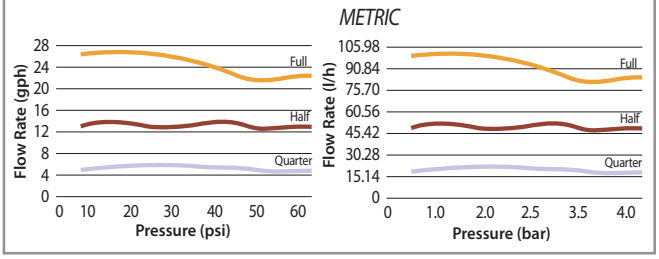
Nozzle	Throw Pressure bar	Radius m.	Flow lph	Flow lpm	Precip. Rate w/no overlap mm/h
Q	1.4	1.2	24	0.40	16
	2.1	1.2	28	0.47	19
	2.8	1.4	28	0.47	15
	3.4	1.4	28	0.47	15
H	1.4	1.2	39	0.65	13
	2.1	1.2	46	0.77	16
	2.8	1.4	52	0.87	14
	3.4	1.4	52	0.87	14
F	1.4	1.2	76	1.27	13
	2.1	1.2	92	1.53	15
	2.8	1.4	103	1.72	14
	3.4	1.4	103	1.72	14

Performance data taken in zero wind conditions

SQ Nozzles



SQ Nozzle Performance



U-Series Nozzles

Plastic U-Series Nozzles

Dual orifice spray nozzles that use 30% less water[1]

- Additional orifice for close-in watering. Minimizes brown spots around spray heads
- Low scheduling coefficient for efficient watering. Use up to 30% less water[2]
- Matched precipitation rate between sets and matched flow (gpm, m^3/h and l/m) and precipitation rates with Rain Bird MPR Nozzles

Features

- U-Series offers a full family of nozzles, providing greater flexibility
- Fine mesh screen protects bottom orifice from debris
- Stainless steel adjustment screw to adjust flow and radius
- Five-year trade warranty
- Fits all Rain Bird Spray Bodies and Shrub Adapters

[1] *When U-Series dual-orifice nozzles are installed instead of standard nozzles on every spray body in the zone. Results may vary based on site-specific conditions such as sprinkler spacing, wind, temperature, soil and grass type*

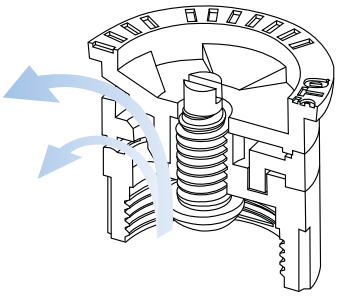
[2] *Scheduling Coefficient (SC) measures the efficiency of spray heads. SC measures how much more you must water your ENTIRE area for the driest sections to receive sufficient water. The lower the SC, the better the spray heads distribute water*

Operating Range

- Spacing: 5 to 15 feet (1.8 to 4.6 m)
- Pressure: 15 to 30 psi (1.0 to 2.1 bar)
- Optimum pressure: 30 psi (2.1 bar)[3]

[3] *Rain Bird recommends using 1800 PRS Spray Bodies to maintain optimum nozzle performance in higher pressure situations*

U-Series Nozzle with screen



Rain Bird® U-Series Nozzles produce spray patterns from two orifices to form a continuous water stream. The result is that gaps in coverage are eliminated so the entire watering area is more uniformly covered*

* *Based on tests conducted at the Rain Bird Product Research Center. Tests conducted on Rain Bird and principal competitors' part-circle nozzles*

How To Specify

U12H

Model
U-Series Nozzle

Radius Range
8: 8 feet (2.4 m)
12: 12 feet (3.7 m)
15: 15 feet (4.6 m)

Pattern
F: Full
H: Half
Q: Quarter
T: One-third
TT: Two-thirds
TQ: Three-quarter

Water Saving

Water flowing from both orifices results in a lower scheduling coefficient. This efficient design conserves water, saves money and reduces waste.

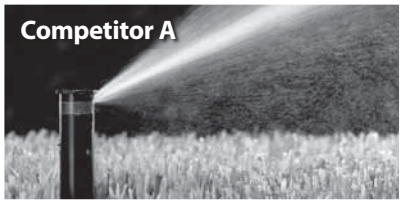
Models

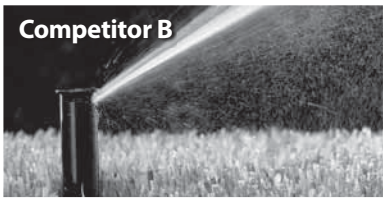
- U-8Q: 8-foot quarter-circle pattern nozzle
- U-8T: 8-foot one-third-circle pattern nozzle
- U-8H: 8-foot half-circle pattern nozzle
- U-8F: 8-foot full-circle pattern nozzle
- U-10Q: 10-foot quarter-circle pattern nozzles
- U-10T: 10-foot one-third-circle pattern nozzle
- U-10H: 10-foot half-circle pattern nozzle
- U-10F: 10-foot full-circle pattern nozzle
- U-12Q: 12-foot quarter-circle pattern nozzle
- U-12T: 12-foot one-third-circle pattern nozzle
- U-12H: 12-foot half-circle pattern nozzle
- U-12TT: 12-foot two-thirds-circle pattern nozzle
- U-12TQ: 12-foot three-quarter-circle pattern nozzle
- U-12F: 12-foot full-circle pattern nozzle
- U-15Q: 15-foot quarter-circle pattern nozzle
- U-15T: 15-foot one-third-circle pattern nozzle
- U-15H: 15-foot half-circle pattern nozzle
- U-15TT: 15-foot two-thirds-circle pattern nozzle
- U-15TQ: 15-foot three-quarter-circle pattern nozzle
- U-15F: 15-foot full-circle pattern nozzle

Going Head-to-Head Against the Competition

Patented U-Series

Water flowing from both orifices results in a lower scheduling coefficient. This efficient design conserves water, saves money and reduces waste





Competitor A and B nozzles fail to provide efficient close-in watering which results in a higher scheduling coefficient

U8 Series

10° Trajectory

Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
U-8F	15	5	0.74	2.85	3.29
	20	6	0.86	2.30	2.66
	25	7	0.96	1.89	2.18
	30	8	1.05	1.58	1.83
U8H	15	5	0.37	2.85	3.29
	20	6	0.42	2.25	2.59
	25	7	0.47	1.85	2.13
	30	8	0.52	1.58	1.83
U8T	15	5	0.25	2.89	3.34
	20	6	0.29	2.33	2.69
	25	7	0.32	1.89	2.18
	30	8	0.35	1.58	1.83
U8Q	15	5	0.18	2.77	3.20
	20	6	0.21	2.25	2.59
	25	7	0.24	1.89	2.18
	30	8	0.26	1.58	1.83

U8 Series METRIC

10° Trajectory

Nozzle	Pressure bar	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
U-8F	1.0	1.7	0.16	2.8	72	84
	1.5	2.1	0.20	3.4	58	68
	2.0	2.4	0.23	3.9	48	55
	2.1	2.4	0.24	4.0	40	46
U-8H	1.0	1.7	0.08	1.4	72	84
	1.5	2.1	0.10	1.7	57	66
	2.0	2.4	0.12	1.9	47	54
	2.1	2.4	0.12	2.0	40	46
U-8T	1.0	1.7	0.05	0.9	73	85
	1.5	2.1	0.07	1.1	59	68
	2.0	2.4	0.08	1.3	48	55
	2.1	2.4	0.08	1.3	40	46
U-8Q	1.0	1.7	0.04	0.7	70	81
	1.5	2.1	0.05	0.8	57	66
	2.0	2.4	0.06	1.0	48	55
	2.1	2.4	0.06	1.0	40	46

U10 Series

12° Trajectory

Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
U-10F	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
U-10H	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
U-10T	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
U-10Q	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

U10 Series METRIC

12° Trajectory

Nozzle	Pressure bar	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
U-10F	1.0	2.1	0.26	4.4	52	60
	1.5	2.6	0.30	5.3	47	55
	2.0	3.0	0.34	6.1	41	48
	2.1	3.1	0.37	6.2	40	46
U-10H	1.0	2.1	0.13	2.2	52	60
	1.5	2.6	0.15	2.6	47	55
	2.0	3.0	0.17	3.1	41	48
	2.1	3.1	0.19	3.1	40	46
U-10T	1.0	2.1	0.09	1.5	52	60
	1.5	2.6	0.10	1.8	47	55
	2.0	3.0	0.11	2.0	41	48
	2.1	3.1	0.12	2.1	40	46
U-10Q	1.0	2.1	0.07	1.1	52	60
	1.5	2.6	0.08	1.3	47	55
	2.0	3.0	0.08	1.5	41	48
	2.1	3.1	0.09	1.6	40	46

Note: *All U-Series 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

Radius refers to recommended product spacing. Actual radii along arc may vary

U12 Series					
23° Trajectory				■	▲
Nozzle	**Pressure psi**	**Radius ft.**	**Flow gpm**	**Precip In/h**	**Precip In/h**
U-12F	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
U-12TQ	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
U-12TT	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
U-12H	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
U-12T	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
U-12Q	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

U12 Series							METRIC
23° Trajectory						■	▲
Nozzle	**Pressure bar**	**Radius m**	**Flow m^3/h**	**Flow l/m**		**Precip mm/h**	**Precip mm/h**
U-12F	1.0	2.7	0.40	6.8		55	63
	1.5	3.2	0.48	8.3		47	54
	2.0	3.6	0.59	9.7		46	53
	2.1	3.7	0.60	9.8		44	51
U-12TQ	1.0	2.7	0.30	5.1		55	63
	1.5	3.2	0.36	6.3		47	54
	2.0	3.6	0.45	7.3		46	53
	2.1	3.7	0.45	7.4		44	51
U-12TT	1.0	2.7	0.26	4.5		55	63
	1.5	3.2	0.32	5.6		47	54
	2.0	3.6	0.40	6.5		46	53
	2.1	3.7	0.40	6.6		44	51
U-12H	1.0	2.7	0.20	3.4		55	63
	1.5	3.2	0.24	4.2		47	54
	2.0	3.6	0.30	4.8		46	53
	2.1	3.7	0.30	4.9		44	51
U-12T	1.0	2.7	0.13	2.3		55	63
	1.5	3.2	0.16	2.8		47	54
	2.0	3.6	0.20	3.2		46	53
	2.1	3.7	0.20	3.3		44	51
U-12Q	1.0	2.7	0.10	1.7		55	63
	1.5	3.2	0.12	2.1		47	54
	2.0	3.6	0.15	2.4		46	53
	2.1	3.7	0.15	2.5		44	51

Note: *All U-Series 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

Radius refers to recommended product spacing. Actual radii along arc may vary

U-Series Nozzle

U15 Series

23° Trajectory

Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
U-15F	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
U-15TQ	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
U-15TT	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
U-15H	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
U-15T	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
U-15Q	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

U15 Series METRIC

23° Trajectory

Nozzle	Pressure bar	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
U-15F	1.0	3.4	0.60	9.8	52	60
	1.5	3.9	0.72	11.8	47	55
	2.0	4.5	0.84	13.7	41	48
	2.1	4.6	0.84	14.0	40	46
U-15TQ	1.0	3.4	0.45	7.4	52	60
	1.5	3.9	0.54	8.8	47	55
	2.0	4.5	0.63	10.3	41	48
	2.1	4.6	0.63	10.5	40	46
U-15TT	1.0	3.4	0.40	6.6	52	60
	1.5	3.9	0.48	7.9	47	55
	2.0	4.5	0.55	9.2	41	48
	2.1	4.6	0.56	9.4	40	46
U-15H	1.0	3.4	0.30	4.9	52	60
	1.5	3.9	0.36	5.9	47	55
	2.0	4.5	0.42	6.9	41	48
	2.1	4.6	0.42	7.0	40	46
U-15T	1.0	3.4	0.20	3.3	52	60
	1.5	3.9	0.24	3.9	47	55
	2.0	4.5	0.28	4.6	41	48
	2.1	4.6	0.28	4.7	40	46
U-15Q	1.0	3.4	0.15	2.5	52	60
	1.5	3.9	0.18	2.9	47	55
	2.0	4.5	0.21	3.4	41	48
	2.1	4.6	0.21	3.5	40	46

Note: *All U-Series 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

Radius refers to recommended product spacing. Actual radii along arc may vary

U-Series nozzles offer better, more uniform water distribution. Water flowing from both orifices combines to form a continuous water stream. Eliminates gaps for more uniform coverage throughout the entire watering area

VAN Series Nozzles

Variable Arc Nozzles

- 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 the center collar increases or decreases arc setting
- 12, 15, and 18-VAN have matched precipitation rates with Rain Bird MPR Nozzles

Features

- Captured screw slot prevents screwdriver strippage
- No special tools required
- Stainless steel adjustment screw to adjust flow and radius
- Tactile left edge indicator
- Ideal for watering odd-shaped areas
- Shipped with blue filter screen (0.02" x 0.02") to maintain precise radius adjustment and prevent clogging

Operating Range

- Radius: *
  4-VAN: 3 to 4 feet (0.9 to 1.2 m)
  6-VAN: 4 to 6 feet (1.2 to 1.8 m)
  8-VAN: 6 to 8 feet (1.8 to 2.4 m)
  10-VAN: 8 to 10 feet (2.4 to 3.0 m)
  12-VAN: 10 to 12 feet (3.0 to 3.7 m)
  15-VAN: 12 to 15 feet (3.7 to 4.6 m)
  18-VAN: 14 to 18 feet (4.3 to 5.5 m)
- Pressure: 15 to 30 psi (1.0 to 2.1 bar)
- Optimum pressure: 30 psi (2.1 bar)**

** These ranges are based on proper pressure at nozzle*
*** Rain Bird recommends using 1800 PRS Spray Bodies to maintain optimum nozzle performance in higher pressure situations*

Models

- 4-VAN
- 6-VAN
- 8-VAN
- 10-VAN
- 12-VAN
- 15-VAN
- 18-VAN

VAN Series Nozzle

Easy to Adjust

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

4 Series VAN **METRIC**

0° Trajectory

Nozzle	Pressure bar	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
330° Arc	1.0	0.9	0.14	2.3	189	218
	1.5	1.0	0.17	2.8	183	215
	2.0	1.2	0.20	3.3	152	176
	2.1	1.2	0.20	3.3	152	176
270° Arc	1.0	0.9	0.12	2.0	198	229
	1.5	1.0	0.14	2.3	187	216
	2.0	1.2	0.16	2.7	148	171
	2.1	1.2	0.17	2.8	157	181
180° Arc	1.0	0.9	0.07	1.2	173	200
	1.5	1.0	0.09	1.5	180	208
	2.0	1.2	0.10	1.7	139	161
	2.1	1.2	0.10	1.7	139	161
90° Arc	1.0	0.9	0.05	0.8	247	285
	1.5	1.0	0.06	0.9	240	277
	2.0	1.2	0.06	1.1	167	193
	2.1	1.2	0.07	1.1	194	224

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

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

6 Series VAN METRIC

0° Trajectory

Nozzle	Pressure bar	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
330° Arc	1.0	1.2	0.19	3.2	144	166
	1.5	1.5	0.23	3.8	112	129
	2.0	1.8	0.27	4.5	91	105
	2.1	1.8	0.27	4.5	91	105
270° Arc	1.0	1.2	0.18	3.0	167	193
	1.5	1.5	0.21	3.5	124	143
	2.0	1.8	0.24	4.1	99	114
	2.1	1.8	0.25	4.2	103	119
180° Arc	1.0	1.2	0.10	1.6	139	161
	1.5	1.5	0.11	1.9	98	113
	2.0	1.8	0.13	2.2	80	92
	2.1	1.8	0.14	2.3	86	99
90° Arc	1.0	1.2	0.06	1.0	167	193
	1.5	1.5	0.07	1.2	124	143
	2.0	1.8	0.08	1.4	99	114
	2.1	1.8	0.08	1.4	99	114

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

8 Series VAN METRIC

5° Trajectory

Nozzle	Pressure bar	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
330° Arc	1.0	1.8	0.27	4.6	91	105
	1.5	2.1	0.32	5.4	79	91
	2.0	2.3	0.38	6.3	78	90
	2.1	2.4	0.39	6.4	74	86
270° Arc	1.0	1.8	0.25	4.2	103	119
	1.5	2.1	0.30	4.9	91	105
	2.0	2.3	0.34	5.8	86	99
	2.1	2.4	0.35	5.9	81	94
180° Arc	1.0	1.8	0.19	3.2	117	135
	1.5	2.1	0.23	3.8	104	120
	2.0	2.3	0.26	4.4	98	113
	2.1	2.4	0.27	4.5	94	109
90° Arc	1.0	1.8	0.12	1.9	148	171
	1.5	2.1	0.14	2.3	127	147
	2.0	2.3	0.16	2.7	121	140
	2.1	2.4	0.16	2.7	111	128

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

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

10 Series VAN METRIC

10° Trajectory

Nozzle	Pressure bar	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
360° Arc	1.0	2.1	0.44	7.3	96	111
	1.5	2.4	0.53	9.0	89	103
	2.0	2.7	0.57	9.8	76	88
	2.1	3.1	0.59	9.8	63	73
270° Arc	1.0	2.1	0.33	5.5	96	111
	1.5	2.4	0.4	6.8	89	103
	2.0	2.7	0.43	7.8	76	88
	2.1	3.1	0.48	7.9	68	79
180° Arc	1.0	2.1	0.22	3.7	96	111
	1.5	2.4	0.27	4.6	89	103
	2.0	2.7	0.29	5.3	76	88
	2.1	3.1	0.33	5.5	71	82
90° Arc	1.0	2.1	0.11	1.8	96	111
	1.5	2.4	0.13	2.3	89	103
	2.0	2.7	0.14	2.7	76	88
	2.1	3.1	0.17	2.8	73	85

12 Series VAN

15° Trajectory

Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
360° Arc	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
270° Arc	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
180° Arc	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
90° Arc	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

12 Series VAN METRIC

15° Trajectory

Nozzle	Pressure bar	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
360° Arc	1.0	2.7	0.35	5.80	48	55
	1.5	3.2	0.44	7.37	43	50
	2.0	3.6	0.52	8.75	41	47
	2.1	3.7	0.54	9.02	40	46
270° Arc	1.0	2.7	0.26	4.35	48	55
	1.5	3.2	0.33	5.53	43	50
	2.0	3.6	0.39	6.56	41	47
	2.1	3.7	0.41	6.76	40	46
180° Arc	1.0	2.7	0.17	2.90	48	55
	1.5	3.2	0.22	3.69	43	50
	2.0	3.6	0.26	4.37	41	47
	2.1	3.7	0.27	4.51	40	46
90° Arc	1.0	2.7	0.09	1.45	48	55
	1.5	3.2	0.11	1.84	43	50
	2.0	3.6	0.13	2.19	41	47
	2.1	3.7	0.14	2.25	40	46

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

15 Series VAN

23° Trajectory

Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
360° Arc	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
270° Arc	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
180° Arc	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
90° Arc	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

15 Series VAN METRIC

23° Trajectory

Nozzle	Pressure bar	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
360° Arc	1.0	3.4	0.60	9.8	52	60
	1.5	3.9	0.72	11.8	47	55
	2.0	4.5	0.84	13.7	41	48
	2.1	4.6	0.84	14.0	40	46
270° Arc	1.0	3.4	0.45	7.4	52	60
	1.5	3.9	0.54	8.8	47	55
	2.0	4.5	0.63	10.3	41	48
	2.1	4.6	0.63	10.5	40	46
180° Arc	1.0	3.4	0.30	4.9	52	60
	1.5	3.9	0.36	5.9	47	55
	2.0	4.5	0.42	6.9	41	48
	2.1	4.6	0.42	7.0	40	46
90° Arc	1.0	3.4	0.15	2.5	52	60
	1.5	3.9	0.18	2.9	47	55
	2.0	4.5	0.21	3.4	41	48
	2.1	4.6	0.21	3.5	40	46

18 Series VAN

26° Trajectory

Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
360° Arc	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
270° Arc	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
180° Arc	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
90° Arc	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

18 Series VAN METRIC

26° Trajectory

Nozzle	Pressure bar	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
360° Arc	1.0	4.3	0.96	15.9	52	60
	1.5	4.8	1.07	18.0	47	55
	2.0	5.4	1.20	19.8	41	48
	2.1	5.5	1.21	20.1	40	46
270° Arc	1.0	4.3	0.72	12.0	52	60
	1.5	4.8	0.80	13.5	47	55
	2.0	5.4	0.90	14.8	41	48
	2.1	5.5	0.91	15.1	40	46
180° Arc	1.0	4.3	0.48	8.0	52	60
	1.5	4.8	0.54	9.0	47	55
	2.0	5.4	0.60	9.9	41	48
	2.1	5.5	0.61	10.1	40	46
90° Arc	1.0	4.3	0.24	4.0	52	60
	1.5	4.8	0.27	4.5	47	55
	2.0	5.4	0.30	5.0	41	48
	2.1	5.5	0.30	5.0	40	46

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

HE-VAN Series Nozzles

NEW

High-Efficiency Variable Arc Spray Nozzles

- Easy arc adjustment from 0° to 360° with a simple twist of the center collar to increase or decrease arc setting
- ExactEdge™ takes the guesswork out of arc adjustment. As you turn the nozzle to the desired arc setting, you'll feel it lock into place for a clean, consistent edge every time
- Patent pending Flow Control Technology provides superior close-in watering and uniform coverage across the entire pattern

Available in popular 12' and 15' models

Now Available in 8' and 10' models

Features

- Thicker streams and large water droplets for greater wind resistance
- Matched precipitation rates with Rain Bird® MPR and U-Series Nozzles
- A strong top deflector to minimize nozzle damage due to normal wear and tear
- No special tools required
- Stainless steel adjustment screw to adjust flow and radius, up to a 25% reduction in radius
- Shipped with blue filter screens (0.02 x 0.02) to maintain precise radius adjustment and prevent clogging
- Fits on all Rain Bird® 1800® Series Spray Heads, UNI-Spray™ Series Spray Heads and Rain Bird Shrub Adapters

Rain Bird® HE-VAN Efficiency Ratings[1]

- Rain Bird® HE-VAN Nozzles deliver an average DU_{LQ} of 70%, more than a 40% improvement over typical variable arc spray nozzles
- Rain Bird® HE-VAN Nozzles deliver a SC ≤ 1.6, which is 35% lower than the typical variable arc spray nozzle

Operating Range

- Radius: [2]
  - HE-VAN-08: 6 to 8 feet (1.8 to 2.4 m)
  - HE-VAN-10: 8 to 10 feet (2.4 to 3.0 m)
  - HE-VAN-12: 9 to 12 feet (2.7 to 3.7 m)
  - HE-VAN-15: 12 to 15 feet (3.7 to 4.6 m)
- Pressure: 15 to 30 psi (1.0 to 2.1 bar)
- Optimum pressure: 30 psi (2.1 bar)[3]

Models

- HE-VAN-08
- HE-VAN-10
- HE-VAN-12
- HE-VAN-15

[1] *Distribution Uniformity (DU_{LQ}): DU in irrigation is a measure of how uniformly water is applied to the area being watered. DU_{LQ} is calculated by taking the volume in the lowest quarter of catch can measurements and dividing it by the average volume of all catch can measurements. Scheduling Coefficient (SC): SC is a measure of how long a zone must be run in order to provide adequate water to the driest spot.*

[2] *These ranges are based on proper pressure at nozzle*

[3] *Rain Bird recommends using 1800 PRS Spray Bodies to maintain optimum nozzle performance in higher pressure situations*

How To Specify

HE-VAN-15

Radius Range
15: 15 feet (4.6 m)

Feature
VAN: Variable Arc

Model
High Efficiency Nozzle

8 Series HE-VAN

24° Trajectory

Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
360° Arc	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
270° Arc	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
180° Arc	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
90° Arc	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

8 Series HE-VAN METRIC

24° Trajectory

Nozzle	Pressure bar	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
360° Arc	1.03	1.52	0.19	3.14	82	95
	1.38	1.83	0.22	3.62	66	76
	1.72	2.13	0.25	4.05	54	62
	2.07	2.44	0.27	4.43	45	52
270° Arc	1.03	1.52	0.14	2.35	82	95
	1.38	1.83	0.16	2.72	66	76
	1.72	2.13	0.18	3.04	54	62
	2.07	2.44	0.20	3.33	45	52
180° Arc	1.03	1.52	0.10	1.57	82	95
	1.38	1.83	0.11	1.81	66	76
	1.72	2.13	0.12	2.02	54	62
	2.07	2.44	0.13	2.22	45	52
90° Arc	1.03	1.52	0.05	0.78	82	95
	1.38	1.83	0.05	0.91	66	76
	1.72	2.13	0.06	1.01	54	62
	2.07	2.44	0.07	1.11	45	52

10 Series HE-VAN

27° Trajectory

Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
360° Arc	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
270° Arc	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
180° Arc	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
90° Arc	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

10 Series HE-VAN METRIC

27° Trajectory

Nozzle	Pressure bar	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
360° Arc	1.03	2.13	0.29	4.78	64	74
	1.38	2.44	0.34	5.52	56	65
	1.72	2.74	0.37	6.17	50	57
	2.07	3.05	0.41	6.76	44	51
270° Arc	1.03	2.13	0.22	3.59	64	74
	1.38	2.44	0.25	4.14	56	65
	1.72	2.74	0.28	4.63	50	57
	2.07	3.05	0.31	5.07	44	51
180° Arc	1.03	2.13	0.15	2.39	64	74
	1.38	2.44	0.17	2.76	56	65
	1.72	2.74	0.19	3.09	50	57
	2.07	3.05	0.21	3.38	44	51
90° Arc	1.03	2.13	0.07	1.20	64	74
	1.38	2.44	0.08	1.38	56	65
	1.72	2.74	0.09	1.54	50	57
	2.07	3.05	0.10	1.69	44	51

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

12 Series HE-VAN

23° Trajectory

Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
360° Arc	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
270° Arc	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
180° Arc	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
90° Arc	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

12 Series HE-VAN METRIC

23° Trajectory

Nozzle	Pressure bar	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
360° Arc	1.0	2.7	0.38	6.33	50.5	58.3
	1.4	3.0	0.44	7.31	47.3	54.6
	1.7	3.4	0.49	8.18	43.7	50.4
	2.1	3.7	0.54	8.96	40.2	46.4
270° Arc	1.0	2.7	0.28	4.75	50.5	58.3
	1.4	3.0	0.33	5.48	47.3	54.6
	1.7	3.4	0.37	6.16	43.7	50.4
	2.1	3.7	0.40	6.72	40.2	46.4
180° Arc	1.0	2.7	0.19	3.17	50.5	58.3
	1.4	3.0	0.22	3.66	47.3	54.6
	1.7	3.4	0.25	4.09	43.7	50.4
	2.1	3.7	0.27	4.48	40.2	46.4
90° Arc	1.0	2.7	0.09	1.58	50.5	58.3
	1.4	3.0	0.11	1.83	47.3	54.6
	1.7	3.4	0.12	2.04	43.7	50.4
	2.1	3.7	0.13	2.24	40.2	46.4

15 Series HE-VAN

25° Trajectory

Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
360° Arc	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
270° Arc	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
180° Arc	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
90° Arc	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

15 Series HE-VAN METRIC

25° Trajectory

Nozzle	Pressure bar	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
360° Arc	1.0	3.4	0.59	9.91	52.9	61.1
	1.4	3.7	0.69	11.44	51.3	59.3
	1.7	4.3	0.77	12.79	42.2	48.7
	2.1	4.6	0.84	14.01	40.2	46.5
270° Arc	1.0	3.4	0.45	7.43	52.9	61.1
	1.4	3.7	0.51	8.58	51.3	59.3
	1.7	4.3	0.58	9.59	42.2	48.7
	2.1	4.6	0.63	10.51	40.2	46.5
180° Arc	1.0	3.4	0.30	4.95	52.9	61.1
	1.4	3.7	0.34	5.72	51.3	59.3
	1.7	4.3	0.38	6.39	42.2	48.7
	2.1	4.6	0.42	7.00	40.2	46.5
90° Arc	1.0	3.4	0.15	2.48	52.9	61.1
	1.4	3.7	0.17	2.86	51.3	59.3
	1.7	4.3	0.19	3.20	42.2	48.7
	2.1	4.6	0.21	3.50	40.2	46.5

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

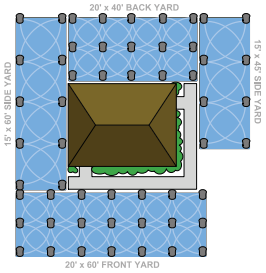
Rotary Nozzles

Full

Half

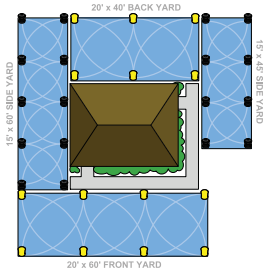
Quarter

With Conventional Spray Nozzles



- **Total 58 gpm**
- **6 zones required**

With Rotary Nozzles



- **Total 26 gpm**
- **3 zones required**

How To Specify

R13-18 Q

Pattern
F=Full
H=Half
Q=Quarter

Radius Range
13'-18' (4.0-5.5 m)
17'-24' (5.2-7.3 m)

Model
Rotary Nozzle

Note: Specify sprinkler bodies and nozzles separately. Installation on Rain Bird 1800®- SAM Spray Bodies recommended in sandy environments

Rotary Nozzles

0.60 in/hr Precipitation Rate from 13 to 24 Feet

Smart Approved WaterMark

- Low precipitation rate of 0.60 in/hr (15.2 mm/hr) reduces runoff and erosion
- With approximately 60% less flow than conventional spray nozzles, Rotary Nozzles allow more heads per zone, reducing overall system complexity and cost
- Multiple, rotating streams uniformly distribute water throughout the 13' to 24' radius range

Features

A Spray Nozzle with Rain Curtain Performance

- Large droplets for consistent performance
- Effective close-in watering
- Even distribution over the entire radius

Installation and Maintenance

- Designed for use on Rain Bird Spray Bodies
- Color-coded radius reduction plugs for easy identification
- Stainless steel radius reduction screw allows reduction down to 13' on the R13-18 and to 17' on the R17-24 to accommodate varying landscape needs

Design Solutions

- Matched precipitation rate across radii and pattern simplify the design process
- Precipitation rate matches Rain Bird 5000/5000 Plus MPR Rotor Nozzles allowing MPR irrigation designs from 13' to 35' (see page 52)
- Maintains highly efficient performance throughout the 20 to 55 psi pressure range, with no misting or fogging at high pressures
- Use in conjunction with 1800-SAM-P45 spray heads for maximum nozzle performance (see page 7 for more information)

Durability

- Rubber collar keeps out large debris particles while enabling small ones to exit easily to keep deflector clean and clear of debris
- Screen mesh size prevents large debris from entering nozzle through spray
- Three-year trade warranty

Operating Range

- Pressure range: 20-55 psi (1.4 to 3.8 bar)
- Spacing: 13 feet to 24 feet (4.0 m to 7.3 m)
  - Above spacing based on zero wind conditions

Models

- There are three different patterns available which are available in two radius* ranges:
  - 13'-18' (4.0m to 5.5m)
  - 17'-24' (5.2m to 7.3m)

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

Water Saving

The Rotary Nozzle has efficient water distribution through rotating streams that uniformly deliver water at a low precipitation rate, significantly reducing runoff and erosion

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
R13-18H	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
R13-18Q	20	13	0.33	0.75	0.86
	25	14	0.37	0.67	0.77
	30	16	0.40	0.61	0.70
	35	16	0.43	0.61	0.70
	40	17	0.46	0.61	0.70
	45	18	0.49	0.61	0.70
	50	18	0.52	0.61	0.70
	55	18	0.54	0.61	0.70

R13-18 Series (Black) METRIC

Arc	Pressure bar	Radius* m	Flow l/m	■ Precip mm/h	▲ Precip mm/h
R13-18F	1.4	4.0	4.95	19	22
	1.7	4.3	5.53	18	21
	2.1	4.8	6.06	15	18
	2.4	5.0	6.54	15	18
	2.8	5.2	6.99	15	18
	3.1	5.4	7.42	15	18
	3.4	5.5	7.82	15	18
	3.8	5.6	8.20	15	18
R13-18H	1.4	4.0	2.47	19	22
	1.7	4.3	2.76	18	21
	2.1	4.8	3.03	15	18
	2.4	5.0	3.27	15	18
	2.8	5.2	3.50	15	18
	3.1	5.4	3.71	15	18
	3.4	5.5	3.91	15	18
	3.8	5.6	4.10	15	18
R13-18Q	1.4	4.0	1.24	19	22
	1.7	4.3	1.38	18	21
	2.1	4.8	1.51	15	18
	2.4	5.0	1.64	15	18
	2.8	5.2	1.75	15	18
	3.1	5.4	1.85	15	18
	3.4	5.5	1.95	15	18
	3.8	5.6	2.05	15	18

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
R17-24H	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
R17-24Q	20	17	0.61	0.79	0.92
	25	19	0.68	0.71	0.82
	30	21	0.75	0.65	0.75
	35	22	0.81	0.65	0.75
	40	23	0.87	0.65	0.75
	45	23	0.92	0.65	0.75
	50	24	0.97	0.65	0.75
	55	24	1.02	0.65	0.75

R17-24 Series (Yellow) METRIC

Arc	Pressure bar	Radius* m	Flow l/m	■ Precip mm/h	▲ Precip mm/h
R17-24F	1.4	5.2	9.27	20	23
	1.7	5.8	10.37	18	21
	2.1	6.4	11.36	16	19
	2.4	6.7	12.26	16	19
	2.8	6.9	13.10	16	19
	3.1	7.1	13.89	16	19
	3.4	7.3	14.65	16	19
	3.8	7.4	15.37	16	19
R17-24H	1.4	5.2	4.62	20	23
	1.7	5.8	5.19	18	21
	2.1	6.4	5.68	16	19
	2.4	6.7	6.17	16	19
	2.8	6.9	6.55	16	19
	3.1	7.1	6.97	16	19
	3.4	7.3	7.34	16	19
	3.8	7.4	7.68	16	19
R17-24Q	1.4	5.2	2.31	20	23
	1.7	5.8	2.57	18	21
	2.1	6.4	2.84	16	19
	2.4	6.7	3.07	16	19
	2.8	6.9	3.29	16	19
	3.1	7.1	3.48	16	19
	3.4	7.3	3.67	16	19
	3.8	7.4	3.86	16	19

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*

Single row applications are not recommended
Do not reduce radius below 13' (4.0 m) on the R13-18 model and below 17' (5.2 m) on the R17-24 model
Installation on Rain Bird 1800®- SAM Spray Bodies recommended in sandy environments
Performance data derived from tests that conform with ASABE Standards; ASABE S398.1.
See page 205 for complete ASABE Test Certification Statement.

R-VAN Series Nozzle

R-VAN Series Nozzles

NEW

Variable arc rotary nozzles let you quickly adjust arc and radius by hand

- Hand-adjustable arc and radius – no special tools required.
- Low precipitation rate reduces run-off and the potential for erosion.
- High uniformity, thick wind resistant streams and larger water droplets ensure efficient performance, even in adverse conditions.

Features

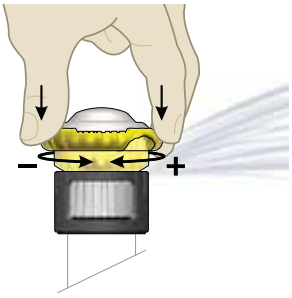
- Adjustable arc from 45° to 270°
- Meet tight watering windows – R-VAN's optimum precipitation rate strikes the perfect balance between rate of application and infiltration
- Color coded for easy identification of R-VAN model
- Compatible with all models of Rain Bird spray bodies in addition to a wide variety of risers and adapters
- Installing with Rain Bird 5000 Series Rotor matched precipitation rate (MPR) nozzles allows for MPR irrigation designs from 13' to 35' (4.0m 10.7m)
- Three year trade warranty

Operating Range

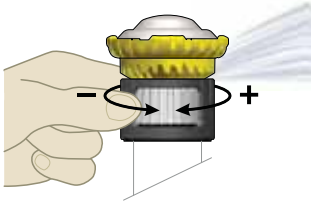
- Pressure Range: 20 to 55 psi (1.4 to 3.8 bar)
- Recommended Operating Pressure: 45 psi (3.1 bar)
- Spacing: 13' to 24' (4.0 to 7.3m)
- Adjustments: Arc and radius should be adjusted while water is running

Models

- **R-VAN1318**
  - Black Rotary Deflector
  - 13' to 18' (4.0 to 5.5m) radius
  - 45° to 270° arc
- **R-VAN1724**
  - Yellow Rotary Deflector
  - 17' to 24' (5.2 to 7.3m) radius
  - 45° to 270° arc



Arc Adjustment



Radius Adjustment

How To Specify

R-VAN- 1318

Radius Range
1318: 13' to 18' (4.0 to 5.5m)
1724: 17' to 24' (5.2 to 7.3m)

Model
R-VAN Adjustable Rotary Nozzle

Notes:

- *Single row applications are not recommended.*
- *Operation of radius below minimum radius (per model) is not recommended.*
- *Installation on Rain Bird 1800SAM-P45 spray bodies recommended in sandy environments.*
- *Performance data derived from tests that conform with ASABE Standards; ASABE S398.1. See page 205 for complete ASABE Test Certification Statement.*

R-VAN 1318 (Black)

Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
270° Arc	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	17	1.51	0.64	0.73
	50	18	1.57	0.60	0.69
	55	18	1.62	0.60	0.69
180° Arc	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	17	1.01	0.64	0.73
	50	18	1.07	0.60	0.69
	55	18	1.09	0.60	0.69
90° Arc	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	17	0.50	0.64	0.73
	50	18	0.54	0.60	0.69
	55	18	0.58	0.60	0.69

R-VAN 1318 (Black) METRIC

Nozzle	Pressure bar	Radius m	Flow l/m	■ Precip mm/h	▲ Precip mm/h
270° Arc	1.4	4.0	3.60	18	21
	1.7	4.3	4.24	18	20
	2.1	4.9	4.77	17	19
	2.4	4.9	5.11	16	19
	2.8	5.2	5.38	16	18
	3.1	5.2	5.72	16	18
	3.4	5.5	5.94	15	18
	3.8	5.5	6.13	15	18
180° Arc	1.4	4.0	2.84	18	21
	1.7	4.3	3.14	18	20
	2.1	4.9	3.22	17	19
	2.4	4.9	3.44	16	19
	2.8	5.2	3.71	16	18
	3.1	5.2	3.82	16	18
	3.4	5.5	4.05	15	18
	3.8	5.5	4.13	15	18
90° Arc	1.4	4.0	1.40	18	21
	1.7	4.3	1.48	18	20
	2.1	4.9	1.59	17	19
	2.4	4.9	1.78	16	19
	2.8	5.2	1.89	16	18
	3.1	5.2	1.89	16	18
	3.4	5.5	2.04	15	18
	3.8	5.5	2.20	15	18

R-VAN 1724 (Yellow)

Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
270° Arc	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	23	2.73	0.64	0.73
	50	24	2.76	0.61	0.70
	55	24	2.80	0.61	0.70
180° Arc	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	23	1.83	0.64	0.73
	50	24	1.91	0.61	0.70
	55	24	1.98	0.61	0.70
90° Arc	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	23	0.91	0.64	0.73
	50	24	0.98	0.61	0.70
	55	24	1.05	0.61	0.70

R-VAN 1724 (Yellow) METRIC

Nozzle	Pressure bar	Radius m	Flow l/m	■ Precip mm/h	▲ Precip mm/h
270° Arc	1.4	5.2	6.70	19	22
	1.7	5.8	7.53	18	21
	2.1	6.4	8.56	18	21
	2.4	6.7	9.05	17	19
	2.8	7.0	9.65	16	18
	3.1	7.0	10.33	16	18
	3.4	7.3	10.45	15	18
	3.8	7.3	10.60	15	18
180° Arc	1.4	5.2	4.69	19	22
	1.7	5.8	4.92	18	21
	2.1	6.4	5.34	18	21
	2.4	6.7	5.87	17	19
	2.8	7.0	6.40	16	18
	3.1	7.0	6.93	16	18
	3.4	7.3	7.23	15	18
	3.8	7.3	7.50	15	18
90° Arc	1.4	5.2	2.23	19	22
	1.7	5.8	2.54	18	21
	2.1	6.4	2.76	18	21
	2.4	6.7	2.95	17	19
	2.8	7.0	3.22	16	18
	3.1	7.0	3.44	16	18
	3.4	7.3	3.71	15	18
	3.8	7.3	3.97	15	18

Note: *Radius refers to recommended spacing to achieve optimal precipitation rate and distribution uniformity with head to head spacing.*

Performance data taken in zero wind conditions

■ *Square spacing based on 50% diameter of throw*

▲ *Triangular spacing based on 50% diameter of throw*

1300A-F

Adjustable Full-Circle Bubbler

Features

- Fully adjustable flow
- Shipped with SR-050 ½" (15/21) inlet filter screen for easy installation and resistance to debris
- Operates over a wide range of pressures
- Non-corrosive plastic and stainless steel construction for long life
- Five-year trade warranty

Operating Range

- Flow: 1.0 to 2.3 gpm (3.6 to 8.4 l/m)
- Spacing: 1 to 3 feet (0.3 to 0.9 m)
- Pressure: 10 to 60 psi (0.7 to 4.1 bar)

Dimensions

- Inlet: ½" (15/21) female threaded inlet
- Height: 1" (2.5 cm)
- Top diameter: 1" (2.5 cm)

Model

- 1300A-F

1300A-F		
Nozzle	Pressure psi	Flow gpm
F	10	1.0
	20	1.4
	30	1.7
	40	1.9
	50	2.1
	60	2.3

1300A-F METRIC			
Nozzle	Pressure bar	Radius m³/h	Flow l/m
F	0.7	0.23	3.6
	1.0	0.26	4.2
	1.5	0.30	4.8
	2.0	0.34	5.4
	2.5	0.39	6.0
	3.0	0.43	7.2
	3.5	0.48	7.8
	4.0	0.52	8.4
	4.1	0.53	8.4

1300A-F

1400 Series

Pressure Compensating Full-Circle Bubblers

Features

- Low flow rates allow water to be absorbed as needed. Reduces runoff
- Maintains consistent flow at pressures between 20 and 90 psi (1.4 to 6.2 bar)
- Flow is not adjustable, providing increased vandal resistance
- No adjustment required
- Corrosion-proof plastic and rubber construction for long life
- Five-year trade warranty
- Shipped with special SR-050 ½" (15/21) bubbler filter screen for easy installation and resistance to debris
- Trickle pattern on models 1401 and 1402; umbrella pattern on models 1404 and 1408

Operating Range

- Flow: 0.25 to 2.00 gpm (1.2 to 7.2 l/m)
- Spacing: 1 to 3 feet (0.3 to 0.9 m)
- Pressure: 20 to 90 psi (1.4 to 6.2 bar)

Dimensions

- Inlet: ½" (15/21) female threaded inlet
- Height: 1" (2.5 cm)
- Top diameter: 1" (2.5 cm)

Models

- 1401: 0.25 gpm (0.06 m³/h; 0.9 l/m); full-circle, trickle pattern
- 1402: 0.50 gpm (0.11 m³/h; 1.8 l/m); full-circle, trickle pattern
- 1404: 1.00 gpm (0.23 m³/h; 3.6 l/m); full-circle, umbrella pattern
- 1408: 2.00 gpm (0.46 m³/h; 7.2 l/m); full-circle, umbrella pattern

1400 Series

"Once my customers actually see the difference Rain Curtain nozzles make, they won't settle for anything but Rain Bird Rotors. They've really helped me build my business."

Dennis Hoffman
Grasshopper Irrigation, Inc.

Major Products	Closed Case Rotors					Open Case Rotor
Primary Applications	**3504 Series**	**5000 Series**	**5505 Series**	**8005 Series**	**Falcon™ 6504 Series**	**2045A Maxi-Paw™ Series**
Turfgrass 15' to 30'	●	●	●			
Turfgrass 25' to 50'		●	●	●	●	●
Turfgrass more than 50'			●	●	●	
Residential	●	●	●			●
Commercial		●	●	●	●	●
Vandalism/Damage Prone Areas			●	●		
Slopes	●	●	●	●	●	●
Ground Cover/Shrubs	●	●				
Athletic Fields			●	●	●	
Pressure Regulating		●				
High Wind Areas	●	●	●	●	●	●
Taller Turfgrass		●	●	●		
Non-Potable Water	●	●	●	●	●	●

Water Saving Tips

- Rain Curtain™ nozzle technology is the standard in water-saving nozzle performance. Rain Curtain™ performance is available in all Rain Bird Rotors.
- 5000 Series Rotors with PRS reduce water waste from 15%-45%. By eliminating pressure variation and/or over pressurization, you'll save water and deliver greener results.
- All rotors with Seal-a-Matic™ (SAM) check valves prevent drainage from heads at lower elevations, stop water waste and eliminate landscape damage due to flooding and/or erosion.

Whatever the residential or commercial application, Rain Bird Rotors have it covered.

Rain Bird Rotors set the standard for durability, and come stocked with features which ensure reliable performance. There's a Rain Bird rotor for every application -- for low pressure and steep slopes, in high wind areas, with non-potable water, even areas where vandalism could be a problem. Choose Rain Bird rotors to get the job done, and get the results you're seeking.

3500
15' to 35'
(4.6 m to 10.7 m)

5000
25' to 50'
(7.6 m to 15.2 m)

3500 Series

- 0.37 to 0.83 in/hr (9 to 21 mm/h)
- 25 to 55 psi (1.7 to 3.8 bar)
- 0.54 to 4.6 gpm (2.0 to 17.4 l/m) (0.12 to 1.04 m^3/h)
- 4" (10.2 cm)
  Shrub: 7" (17.8 cm)
  4": 6 5/8" (16.8 cm)
- ½" (20/27) NPT

5000 Series

- 0.20 to 1.01 in/hr (5 to 26 mm/h)
- 25 to 65 psi (1.7 to 4.5 bar)
- 0.76 to 9.63 gpm (3.0 to 36.6 l/m) (0.17 to 2.19 m^3/h)
- Shrub: 4" (10.2 cm)
  6" (15.2 cm)
- Shrub: 7 3/4" (19.7cm)
  4": 7 3/8" (18.5 cm)
  6": 9 5/8" (24.5 cm)
- 3/4" (20/27) NPT

Rain Curtain™ Nozzles – engineered to deliver superior coverage across the entire radius range.

Rain Curtain™ Nozzles produce larger water droplets that are far less susceptible to wind, and greatly minimize misting and airborne evaporation. This assures that the right amount of water goes where it needs to go, saving time, money and water.

Effective and gentle close-in watering eliminates dry spots around the rotor, and distribution uniformity compensates for varying environmental conditions assuring green grass results.

5505
17' to 55'
(5.2 m to 16.8 m)

6504
39' to 65'
(11.9 m to 19.8 m)

8005
39' to 81'
(11.9 m to 24.7 m)

5505 Series

- 0.21 to 1.48 in/hr (6.3 to 33.8 mm/h)
- 40 to 90 psi (2.8 to 6.2 bar)
- 1.2 to 15.5 gpm (4.5 to 58.9 l/m) (0.32 to 3.52 m^3/h)
- 5" (12.7 cm)
- 9¼" (23.5 cm)
- ¾" (20/27) NPT

Falcon® 6504 Series

- 0.37 to 1.14 in/hr (9 to 29 mm/h)
- 30 to 90 psi (2.1 to 6.2 bar)
- 2.9 to 21.7 gpm (10.8 to 82.2 l/m) (0.66 to 4.93 m^3/h)
- 4" (10.2 cm)
- 8½" (21.6 cm)
- 1" (26/34) NPT or BSP

8005 Series

- 0.48 to 1.23 in/hr (12 to 31 mm/h)
- 50 to 100 psi (3.5 to 6.9 bar)
- 3.8 to 36.3 gpm (14.4 to 137.4 l/m) (0.86 to 8.24 m^3/h)
- 5" (12.7 cm)
- 10⅛" (25.7 cm)
- 1" (26/34) NPT or BSP

Three steps to specification:

1. Choose your rotor model and size.
2. Choose arc setting PC/FC.
3. Add available options or pre-installed nozzles.

	Model/Size *(Choose 1)*	Part or Full Circle *(Choose 1)*	Available Options *(Optional Choices)*	Pre-Installed nozzles *(Optional Choices)*	Specification Notes
Closed Case Rotors	3500 (shrub) 3504		SAM NP		*Part circle & reversing full circle*
	5000 (shrub) 5004 5006	PC FC	SAM Plus PRS SS NP	2.0 3.0	*PC only on 5000 & 5006 models*
	5505		SS NP		*Part circle and non-reversing full circle in one head. SAM standard.*
	6504	PC FC	SS NP HS		*SAM standard.*
	8005		SS NP		*Part circle and non-reversing full circle in one head. SAM standard.*
Open Case Rotors	Maxi-Paw		SAM NP		*Part circle and non-reversing full circle in one head.*

PC Part Circle & Reversing Full Circle
FC Non-Reversing Full Circle
SAM Check valve
Plus Flow shut-off
PRS Pressure Regulation
SS Stainless Steel
NP Non-Potable ID
HS High Speed

3504-PC

3500 Series

Easy to Use, Tough to Beat

- Attached nozzle tree of six Rain Curtain™ Nozzles deliver superior performance
- Top-adjust arc adjustment requiring only a flathead screwdriver
- Radius adjustment screw allows up to 25% radius reduction without changing nozzles

Features

- Quick check arc/fast forward
- Easily removable filter screen
- Dual action, positive stop wiper seal protects internals from debris and assures positive pop-up and retraction
- 3 year trade warranty

Options

- **SAM Seal-A-Matic™** check valves prevent low head drainage and erosion
- **Purple cover (NP)** for easy identification of non-potable systems

Operating Range

- Precipitation rate: 0.37 to 0.83 inches per hour (9 to 21 mm/h)
- Radius: 15 to 35 feet (4.6 to 10.7 m)
- Radius may be reduced up to 25% with radius reduction screw
- Pressure: 25 to 55 psi (1.7 to 3.8 bar)
- Flow rate: 0.54 to 4.6 gpm (2.0 to 17.4 l/m)

Specifications

- ½" NPT female bottom threaded inlet
- Full- and part-circle adjustment 40° - 360°

Dimensions

- Pop up height: 4" (10.2 cm)
- Overall body height: Shrub: 7" (17.8 cm); 4": 6.6" (16.8 cm)
- Exposed surface diameter: 1.16" (2.9 cm)

Note: *Pop-up height measured from the cover to the nozzle. Overall body height is measured popped down*

Models

Part-circle units (PC) are adjustable from 40 -360 degrees.

- 3504-PC
- 3504-PC-SAM
- 3504-PC-SAM-NP
- 3500-S-SAM

Superior Distribution Uniformity

The 3500 Series Rotors with Rain Curtain Technology are engineered to deliver a uniform spray pattern, giving you a consistently green lawn throughout.

Water Saving

Like all Rain Bird rotors, 3500 Series Rotors use Rain Curtain™ nozzle technology to deliver the results you have come to expect while managing water wisely.

3504 Series Nozzle Performance

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 ASABE Standards; ASABE S398.1.
See page 205 for complete ASABE Test Certification Statement.

3504 Series Nozzle Performance METRIC

Pressure bar	Nozzle	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
1.7	0.75	4.6	0.12	2.04	12	14
	1.0	6.1	0.17	2.91	9	11
	1.5	7.0	0.24	4.01	10	11
	2.0	8.2	0.32	5.30	9	11
	3.0	8.8	0.49	8.21	13	15
	4.0	9.4	0.67	11.24	15	17
2.0	0.75	4.8	0.13	2.24	12	13
	1.0	6.2	0.19	3.14	10	11
	1.5	7.0	0.26	4.35	11	12
	2.0	8.2	0.34	5.74	10	12
	3.0	9.1	0.53	8.87	13	15
	4.0	9.7	0.73	12.17	16	18
2.5	0.75	5.2	0.16	2.58	12	13
	1.0	6.4	0.21	3.55	10	12
	1.5	7.0	0.30	4.94	12	14
	2.0	8.2	0.39	6.51	12	13
	3.0	9.4	0.60	10.03	13	16
	4.0	10.1	0.83	13.82	16	19
3.0	0.75	5.2	0.17	2.86	13	15
	1.0	6.4	0.24	3.93	12	13
	1.5	7.3	0.33	5.49	12	14
	2.0	8.2	0.43	7.17	13	15
	3.0	9.4	0.67	11.13	15	17
	4.0	10.6	0.92	15.32	16	19
3.5	0.75	5.4	0.19	3.09	13	15
	1.0	6.6	0.26	4.27	12	14
	1.5	7.3	0.36	5.97	13	15
	2.0	8.4	0.47	7.79	13	15
	3.0	9.6	0.71	11.90	15	18
	4.0	10.7	1.00	16.66	18	20
3.8	0.75	5.5	0.19	3.22	13	15
	1.0	6.7	0.27	4.47	12	14
	1.5	7.3	0.37	6.25	14	16
	2.0	8.5	0.49	8.14	13	15
	3.0	9.8	0.74	12.30	16	18
	4.0	10.7	1.04	17.41	18	21

5000 Series

Unmatched Performance for Residential and Light Commercial Applications

- Slip clutch left edge finder
- Self flushing port
- Rain Curtain nozzles

Features

- Standard and Low angle nozzles (included)
- 5 year warranty

Options

- **Plus (PL) Flow shutoff – "The Green Top."** Reduce downtime on jobs by flushing and nozzling rotors without running back and forth to the controller or valves
- **PRS (R)** with flow optimizer technology. The 45 psi pressure regulator lowers water bills, provides exact flow of each rotor, equalizes lateral lines, and eliminates misting and fogging
- **SAM Seal-A-Matic** check valve
- **Stainless steel (SS) riser** helps deter vandalism on public turf areas (available on 4 and 6" models)
- **Purple cover (NP)** for non-potable systems

Operating Range

- Precipitation rate: 0.20 to 1.01 inches per hour (5 to 26 mm/h)
- Radius: 25 to 50 feet (7.6 to 15.2 m)
- Radius may be reduced up to 25% with radius reduction screw
- Pressure: 25 to 65 psi (1.7 to 4.5 bar)
- Flow Rate: 0.76 to 9.63 gpm (3.0 to 36.6 l/m)

Specifications

- ¾" (20/27) NPT female bottom threaded inlet
- Reversing full and part-circle adjustment 40° – 360°
- Full-circle only adjustment 360°

Dimensions

- Pop-up height: Shrub; 4" (10.2 cm); 6" (15.2 cm)
- Overall body height: Shrub: 7 ¾" (19.7cm) 4": 7 ⅜" (18.5 cm); 6": 9 ⅝" (24.5 cm)
- Exposed surface diameter: 1 ⅝" (4.1 cm)

Note: *Pop-up height measured from the cover to the nozzle. Overall body height is measured popped down*

Models

Part-circle units (PC) are adjustable from 40 –360 degrees.
Full-circle units (FC) are 360 degrees only.

- 5004-(PC or FC)-(SAM)-(R)
- 5006-(PC)
- 5000-S-PL-(PC)-(SAM)-(R)-(NP) - standard with SAM
- 5004-PL-(PC or FC)-(SAM)-(R)-(NP)-(SS)
- 5006-PL-(PC)-(SAM)-(R)-(NP)-(SS)

Note: Many models are available with a 2.0 or 3.0 nozzle pre-installed.

5000 Series

Water Saving

Want the most water-efficient combination? Select 5000 Series with SAM, PRS and MPR nozzles. Whether you rely on Rain Curtain Nozzles to deliver water efficiently or MPR nozzles to ensure matched precipitation rates, the 5000 Series Rotor delivers solutions that manage water wisely.

The reliability and performance of the 5000 Series is available with these great features.

Plus (PL)
The Green Top

FLOW SHUT OFF

On

Off

- Turn the rotor on/off at the head for easier maintenance.
- Flush zone and nozzle the rotor without going back and forth to a valve or controller.
- Troubleshoot for leaks by turning off all the heads in that zone.

PRS (R)

PRESSURE REGULATION

Without PRS

With PRS

PRS with Flow Optimizer™ technology

- Conserve water and manage flow at each head by regulating pressure to precisely 45 psi.
- Eliminate wasteful misting and fogging.
- Ensure even distribution uniformity across the entire zone.

SAM

CHECK VALVE

Without SAM

With SAM

- Prevent low head drainage.
- Eliminate puddling or water stains on hardscape areas.
- Contain water in lateral lines for smoother start ups.

**In this conservative scenario, total system savings of 106,000 gallons based on landscape with 75 psi inlet pressure and watering that occurs 4 days a week, 40 weeks per year. System has 15 Rain Bird® 5000 PRS Rotors, each with a 3 gpm nozzle, and 20 Rain Bird® 1800® PRS Sprays, each with a 15H nozzle. Rotors run for 30 minutes a day, while sprays run for 15 minutes a day.*

5000 Series Std. Angle Rain Curtain™ Nozzle Performance

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	0.42
	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

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 ASABE Standards; ASABE S398.1.
See page 205 for complete ASABE Test Certification Statement.

5000 Series Std. Angle Rain Curtain™ Nozzle Performance

Pressure bar	Nozzle	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
2.0	1.5	10.2	0.28	4.8	5	6
	2.0	10.8	0.36	6.0	6	7
	2.5	10.9	0.44	7.2	7	9
	3.0	11.2	0.55	9.0	9	10
	4.0	11.6	0.71	12.0	11	12
	5.0	12.1	0.91	15.0	12	14
	6.0	12.4	1.05	17.4	14	16
	8.0	11.8	1.45	24.0	21	24
2.5	1.5	10.4	0.31	5.4	6	7
	2.0	11.0	0.41	6.6	7	8
	2.5	11.3	0.50	8.4	8	9
	3.0	11.2	0.62	10.2	9	11
	4.0	12.3	0.81	13.2	11	13
	5.0	12.7	1.03	17.4	13	15
	6.0	13.2	1.21	20.4	14	16
	8.0	13.3	1.63	27.0	19	21
3.0	1.5	10.6	0.34	6.0	6	7
	2.0	11.2	0.45	7.8	7	8
	2.5	11.3	0.56	9.6	9	10
	3.0	12.1	0.69	11.4	9	11
	4.0	12.7	0.89	15.0	11	13
	5.0	13.5	1.13	18.6	12	14
	6.0	13.9	1.34	22.2	14	16
	8.0	14.1	1.79	30.0	18	21
3.5	1.5	10.7	0.37	6.0	7	8
	2.0	11.3	0.49	8.4	8	9
	2.5	11.3	0.60	10.2	9	11
	3.0	12.2	0.74	12.6	10	12
	4.0	12.8	0.97	16.2	12	14
	5.0	13.7	1.23	20.4	13	15
	6.0	14.2	1.45	24.0	14	17
	8.0	14.9	1.93	32.4	18	20
4.0	1.5	10.6	0.40	6.6	7	8
	2.0	11.1	0.52	9.0	8	10
	2.5	11.3	0.64	10.8	10	12
	3.0	12.2	0.80	13.2	11	12
	4.0	12.8	1.04	17.4	13	15
	5.0	13.7	1.32	22.2	14	16
	6.0	14.9	1.55	25.8	15	17
	8.0	15.2	2.06	34.2	18	21
4.5	1.5	10.4	0.42	7.2	8	9
	2.0	10.7	0.55	9.0	10	11
	2.5	11.3	0.68	11.4	11	12
	3.0	12.2	0.84	13.8	11	13
	4.0	12.8	1.10	18.0	13	15
	5.0	13.7	1.40	23.4	15	17
	6.0	14.6	1.64	28.2	15	18
	8.0	15.2	2.19	36.6	19	22

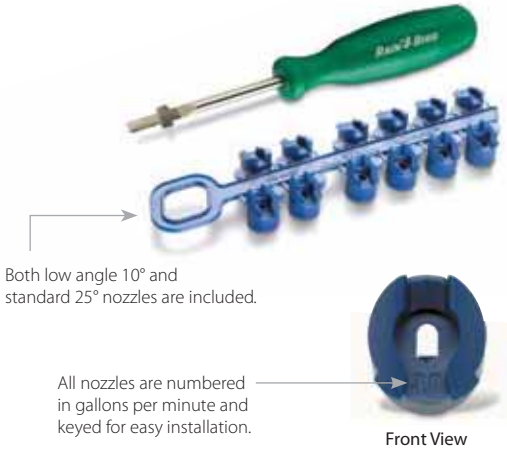
5000 Series Low Angle Nozzle Performance

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 ASABE Standards; ASABE S398.1.
See page 205 for complete ASABE Test Certification Statement.

5000 Series Low Angle Nozzle Performance METRIC

Pressure bar	Nozzle	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
1.7	1.0 LA	7.6	0.17	3.0	6	7
	1.5 LA	8.2	0.26	4.2	8	9
	2.0 LA	8.8	0.33	5.4	9	10
	3.0 LA	8.8	0.51	8.4	13	15
2.0	1.0 LA	8.0	0.18	3.0	6	6
	1.5 LA	8.6	0.28	4.8	8	9
	2.0 LA	9.1	0.36	6.0	9	10
	3.0 LA	9.3	0.55	9.0	13	15
2.5	1.0 LA	8.6	0.20	3.6	5	6
	1.5 LA	9.2	0.32	5.4	8	9
	2.0 LA	9.5	0.41	6.6	9	10
	3.0 LA	10.1	0.62	10.2	12	14
3.0	1.0 LA	8.8	0.22	3.6	6	7
	1.5 LA	9.4	0.35	6.0	8	9
	2.0 LA	9.7	0.45	7.8	10	11
	3.0 LA	10.6	0.68	11.4	12	14
3.5	1.0 LA	8.8	0.24	4.2	6	7
	1.5 LA	9.4	0.38	6.6	9	10
	2.0 LA	9.9	0.49	8.4	10	11
	3.0 LA	10.8	0.74	12.6	13	15
4.0	1.0 LA	8.8	0.26	4.2	7	8
	1.5 LA	9.4	0.41	6.6	9	11
	2.0 LA	10.1	0.52	9.0	10	12
	3.0 LA	11.0	0.80	13.2	13	15
4.5	1.0 LA	8.8	0.27	4.8	7	8
	1.5 LA	9.4	0.44	7.2	10	11
	2.0 LA	10.1	0.56	9.0	11	13
	3.0 LA	11.0	0.84	13.8	14	16



Both low angle 10° and standard 25° nozzles are included.

All nozzles are numbered in gallons per minute and keyed for easy installation.

Front View

5000 PRS Std. Angle Rain Curtain™ Nozzle Performance

Pressure psi	Nozzle	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
25	1.5	33	1.12	0.2	0.23
	2.0	35	1.5	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	5.9	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	3.5	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	0.7	0.81
55 – 75	1.5	35	1.59	0.25	0.29
	2.0	37	2.14	0.3	0.35
	2.5	37	2.6	0.37	0.42
	3.0	40	3.2	0.39	0.44
	4.0	42	4.15	0.45	0.52
	5.0	45	5.27	0.5	0.58
	6.0	46	6.22	0.57	0.65
	8.0	47	8.31	0.72	0.84

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 ASABE Standards; ASABE S398.1.
See page 205 for complete ASABE Test Certification Statement.

5000 PRS Std. Angle Rain Curtain™ Nozzle Performance METRIC

Pressure bar	Nozzle	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
1.7	1.5	10.1	0.25	4.2	5	6
	2.0	10.7	0.34	5.4	6	7
	2.5	10.7	0.41	6.6	7	8
	3.0	11.0	0.51	8.4	8	10
	4.0	11.3	0.66	10.8	10	12
	5.0	11.9	0.84	13.8	12	14
	6.0	11.9	0.97	16.2	14	16
	8.0	11.0	1.34	22.2	22	26
2.0	1.5	10.2	0.28	4.8	5	6
	2.0	10.8	0.36	6.0	6	7
	2.5	10.9	0.44	7.2	7	9
	3.0	11.2	0.55	9.0	9	10
	4.0	11.6	0.71	12.0	11	12
	5.0	12.1	0.91	15.0	12	14
	6.0	12.4	1.05	17.4	14	16
	8.0	11.8	1.45	24.0	21	24
2.5	1.5	10.4	0.31	5.4	6	7
	2.0	11.0	0.41	6.6	7	8
	2.5	11.3	0.50	8.4	8	9
	3.0	11.2	0.62	10.2	9	11
	4.0	12.3	0.81	13.2	11	13
	5.0	12.7	1.03	17.4	13	15
	6.0	13.2	1.21	20.4	14	16
	8.0	13.3	1.63	27.0	19	21
3.0	1.5	10.6	0.34	6.0	6	7
	2.0	11.2	0.45	7.8	7	8
	2.5	11.3	0.56	9.6	9	10
	3.0	12.1	0.69	11.4	9	11
	4.0	12.7	0.89	16.8	11	13
	5.0	13.5	1.13	18.6	12	14
	6.0	13.9	1.34	22.2	14	16
	8.0	14.1	1.79	30.0	18	21
3.5 – 5.2	1.5	10.6	0.35	6.0	6	7
	2.0	11.2	0.47	7.8	8	9
	2.5	11.3	0.58	10.2	9	11
	3.0	12.1	0.71	12.0	10	11
	4.0	12.7	0.92	15.6	12	13
	5.0	13.5	1.17	19.2	13	15
	6.0	13.9	1.39	22.8	14	17
	8.0	14.1	1.85	31.2	18	21

5000 PRS Low Angle Nozzle Performance

Pressure psi	Nozzle	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
25	1.0 LA	25	0.76	0.22	0.26
	1.5 LA	27	1.15	0.3	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	0.21	0.25
	1.5 LA	30	1.38	0.3	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	0.23	0.26
	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 – 75	1.0 LA	29	1.09	0.25	0.29
	1.5 LA	31	1.64	0.33	0.38
	2.0 LA	32	2.09	0.39	0.45
	3.0 LA	35	3.18	0.5	0.58

Precipitation rates based on half-circle operation

■ *Square spacing based on 50% diameter of throw*

▲ *Triangular spacing based on 50% diameter of throw*

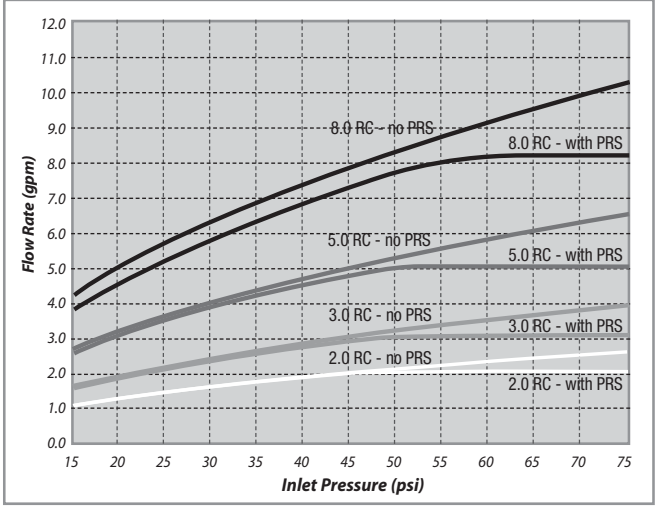
Performance data collected in zero wind conditions

Performance data derived from tests that conform with ASABE Standards; ASABE S398.1.
See page 205 for complete ASABE Test Certification Statement.

5000 PRS Low Angle Nozzle Performance METRIC

Pressure bar	Nozzle	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
1.7	1.0 LA	7.6	0.17	3.0	6	7
	1.5 LA	8.2	0.26	4.2	8	9
	2.0 LA	8.8	0.33	5.4	9	10
	3.0 LA	8.8	0.51	8.4	13	15
2.0	1.0 LA	8.0	0.18	3.0	6	6
	1.5 LA	8.6	0.28	4.8	8	9
	2.0 LA	9.1	0.36	6.0	9	10
	3.0 LA	9.3	0.55	9.0	13	15
2.5	1.0 LA	8.6	0.20	3.6	5	6
	1.5 LA	9.2	0.32	5.4	8	9
	2.0 LA	9.5	0.41	6.6	9	10
	3.0 LA	10.1	0.62	10.2	12	14
3.0	1.0 LA	8.8	0.22	3.6	6	7
	1.5 LA	9.4	0.35	6.0	8	9
	2.0 LA	9.7	0.45	7.8	10	11
	3.0 LA	10.6	0.68	11.4	12	14
3.5 – 5.2	1.0 LA	8.8	0.23	3.6	6	7
	1.5 LA	9.4	0.36	6.0	8	10
	2.0 LA	9.7	0.47	7.8	10	12
	3.0 LA	10.6	0.70	12.0	13	15

Flow Rate vs. Inlet Pressure – Rain Curtain™ Nozzles



How much water can you save each minute using Rain Bird® 5000 PRS Rotors with Flow Optimizer Technology?

Flow GPM	45	50	55	60	65	70	75	80
6	0	0.33	0.66	0.96	1.25	1.54	1.81	2.06
8	0	0.43	0.85	1.24	1.62	1.98	2.33	2.67
10	0	0.55	1.07	1.57	2.05	2.52	2.96	3.39
12	0	0.66	1.27	1.86	2.43	2.97	3.50	4.01
14	0	0.77	1.49	2.18	2.84	3.48	4.10	4.70
16	0	0.87	1.69	2.48	3.24	3.97	4.67	5.35
18	0	0.98	1.90	2.79	3.64	4.46	5.25	6.01
20	0	1.10	2.12	3.10	4.05	4.96	5.83	6.68
22	0	1.21	2.33	3.42	4.46	5.47	6.44	7.37
24	0	1.30	2.54	3.72	4.85	5.94	7.00	8.01
26	0	1.41	2.76	4.04	5.27	6.45	7.60	8.70
28	0	1.53	2.96	4.34	5.66	6.93	8.16	9.35
30	0	1.63	3.17	4.65	6.07	7.43	8.74	10.02

Total Zone Flow in GPM

Total gallons of water saved per minute of run time

Ex: At 70 psi a zone with 20 gpm of flow would save 4.96 gallons a minute with 5000 PRS

5000 Series MPR Nozzles

5000 Series MPR Nozzles

Faster Install and Audit with Color-Coded Matched Precipitation Rate Between 25' and 35'

- Greener grass with less water – Rain Curtain™ Nozzles deliver superior performance
- Design flexibility with a precipitation rate matching between sets and with the Rotary Nozzle
- Color-coded by radius for easy identification

Features

- Three nozzle trees of 25', 30', and 35' (7.6 m, 9.1 m, 10.7 m) radii
- Each tree contains a Q (90°), T (120°), H (180°), and F (360°) nozzle
- No fixed arc plate required
- Compatible with the 5000 Series Rotor
- Rain Curtain™ nozzle technology provides:
  - Large droplets for consistent performance
  - Effective close-in watering
  - Even distribution over the entire radius
- Precipitation rate of 0.60 in/hr (15.2 mm/hr) reduces runoff and erosion
- Nozzles are easy to insert and remove
- Stackable nozzle trees for convenient storage
- Precipitation rate matches Rain Bird Rotary Nozzle (see page 36)

5000-MPR-25 (Red)

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-25 (Red) METRIC

Nozzle	Pressure bar	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
Quarter	1.7	7.0	0.17	3.0	13.7	15.8
	2.4	7.3	0.20	3.6	14.9	17.3
	3.1	7.6	0.23	3.6	15.6	18.1
	3.8	7.6	0.25	4.2	17.4	20.1
	4.5	7.6	0.27	4.8	18.9	21.9
Third	1.7	7.0	0.23	3.6	13.9	16.0
	2.4	7.3	0.27	4.8	15.4	17.8
	3.1	7.6	0.31	5.4	16.2	18.7
	3.8	7.6	0.35	6.0	18.0	20.7
	4.5	7.6	0.38	6.6	19.6	22.6
Half	1.7	7.0	0.33	5.4	13.3	15.4
	2.4	7.3	0.39	6.6	14.7	17.0
	3.1	7.6	0.45	7.2	15.5	17.9
	3.8	7.6	0.50	8.4	17.3	20.0
	4.5	7.6	0.55	9.0	18.9	21.8
Full	1.7	7.0	0.63	10.8	12.8	14.8
	2.4	7.3	0.76	12.6	14.2	16.4
	3.1	7.6	0.87	14.4	14.9	17.3
	3.8	7.6	0.97	16.2	16.6	19.2
	4.5	7.6	1.05	17.4	18.1	20.9

Water Saving

5000 Series MPR Nozzles deliver matched precipitation rates within and between radii from 25' to 35'. This eliminates the risks of over- or underwatering.

5000-MPR-30 (Green)

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-30 (Green) METRIC

Nozzle	Pressure bar	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
Quarter	1.7	8.8	0.23	3.6	12.0	13.8
	2.4	9.1	0.28	4.8	13.4	15.4
	3.1	9.1	0.32	5.4	15.2	17.6
	3.8	9.1	0.35	6.0	17.0	19.6
	4.5	9.1	0.38	6.6	18.4	21.2
Third	1.7	8.8	0.30	4.8	11.7	13.5
	2.4	9.1	0.37	6.0	13.2	15.2
	3.1	9.1	0.42	7.2	15.1	17.4
	3.8	9.1	0.47	7.8	16.8	19.4
	4.5	9.1	0.51	8.4	18.3	21.1
Half	1.7	8.8	0.49	8.4	12.5	14.4
	2.4	9.1	0.59	9.6	14.1	16.2
	3.1	9.1	0.67	11.4	16.1	18.6
	3.8	9.1	0.75	12.6	17.9	20.7
	4.5	9.1	0.82	13.8	19.6	22.6
Full	1.7	8.8	0.96	16.2	12.3	14.2
	2.4	9.1	1.15	19.2	13.8	15.9
	3.1	9.1	1.31	21.6	15.7	18.1
	3.8	9.1	1.45	24.0	17.4	20.0
	4.5	9.1	1.57	26.4	18.8	21.7

5000-MPR-35 (Beige)

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

5000-MPR-35 (Beige) METRIC

Nozzle	Pressure bar	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
Quarter	1.7	9.8	0.32	5.4	13.4	15.4
	2.4	10.4	0.38	6.6	14.1	16.3
	3.1	10.7	0.44	7.2	15.3	17.7
	3.8	10.7	0.48	7.8	17.0	19.6
	4.5	10.7	0.52	9.0	18.4	21.3
Third	1.7	9.8	0.40	6.6	12.7	14.6
	2.4	10.4	0.49	8.4	13.6	15.8
	3.1	10.7	0.56	9.6	14.7	17.0
	3.8	10.7	0.62	10.2	16.4	18.9
	4.5	10.7	0.68	11.4	17.9	20.7
Half	1.7	9.8	0.62	10.2	13.1	15.2
	2.4	10.4	0.76	12.6	14.1	16.3
	3.1	10.7	0.87	14.4	15.2	17.6
	3.8	10.7	0.96	16.2	16.9	19.5
	4.5	10.7	1.05	17.4	18.4	21.3
Full	1.7	9.8	1.22	20.4	12.8	14.8
	2.4	10.4	1.50	25.2	14.0	16.2
	3.1	10.7	1.72	28.8	15.1	17.5
	3.8	10.7	1.91	31.8	16.8	19.4
	4.5	10.7	2.09	34.8	18.3	21.2

■ *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 ASABE Standards; ASABE S398.1.
See page 205 for complete ASABE Test Certification Statement.

5505 Series

5505 Series

Protect Your Turf with High Performance, Vandal and Abuse Resistant Rotors from 17' to 55'

- Vandal resistance
- Brass reinforced turret for increased side impact durability
- Non strippable gear drive

Features

- Memory Arc
- Part and Full Circle in one head
- Independent left and right edge adjustment
- SAM Seal-A-Matic check valve
- Rain Curtain nozzles
- 5 year warranty

Options

- **Stainless steel (SS) riser** helps deter vandalism on public turf areas
- **Purple cover (NP)** for non-potable systems

Operating Range

- Radius: 17 to 55 feet (5.2 to 16.8 m)
- Precipitation rate: 0.21 to 1.48 in/hr (6.3 to 33.8 mm/h)
- Pressure: 40 to 90 psi (2.8 to 6.2 bar)
- Flow: 1.2 to 15.5 gpm (0.32 to 3.52 m^3/h; 4.52 to 58.88 l/m)

Specifications

- ¾" (20/27) NPT female threaded inlet
- SAM check device holds up to 10 feet (3.1 m) of head
- Rain Curtain™ Nozzles: 2.0 - orange, 3.0 - red, 4.0 - black, 5.0 - yellow, 6.0 - light blue, 8.0 - dark green, 10.0 - grey, 12.0 - beige; and short throw nozzle tree 18s, 22s, 26s, 30s - aqua
- Nozzle outlet trajectory is 22°

Dimensions

- Exposed diameter: 1¾" (4.4 cm)
- Overall diameter: 2¾" (7.0 cm)
- Overall height:* 9¼" (23.5 cm)
- Pop-up height:* 5" (12.7 cm)

Models

- 5505: ¾" NPT female threaded inlet (5" plastic riser stem)
- 5505-SS: ¾" NPT female threaded inlet (5" stainless steel covered riser stem)

Water Saving

With Rain Curtain™ Nozzle performance and vandal and abuse resistant features, this family of rotors ensures that water ends up where it belongs.

5505 Nozzle Performance

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
	10	41	7.5	0.86	0.99
	12	39	10.1	1.28	1.48
50	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
	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
60	2	37	1.9	0.27	0.31
	3	41	3.3	0.38	0.44
	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
70	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
	10	53	11.1	0.76	0.88
	12	53	13.5	0.93	1.07
80	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
	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
90	10	55	13.1	0.83	0.96
	12	55	15.5	0.99	1.14

5505 Short Radius Nozzle Performance

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

5505 Short Radius Nozzles

5505 Nozzle Performance — METRIC

Pressure bar	Nozzle	Radius m	Flow m^3/h	Flow l/m	Precip ■ mm/h	Precip ▲ mm/h
2.1	2	10.1	0.32	4.54	6.3	7.3
	3	10.7	0.52	8.71	9.2	10.6
	4	11.3	0.59	9.08	9.3	10.7
	5	11.3	0.73	9.84	11.4	13.2
	6	11.3	0.86	15.90	13.6	15.7
	8	10.1	1.23	20.06	24.2	28.0
2.5	2	10.8	0.35	5.49	5.9	6.8
	3	11.4	0.58	9.65	8.9	10.2
	4	12.0	0.66	10.27	9.1	10.5
	5	12.0	0.81	11.97	11.2	12.9
	6	12.4	0.96	17.32	12.5	14.4
	8	11.2	1.37	22.67	21.8	25.2
3.0	2	11.3	0.38	6.19	6.0	6.9
	3	12.1	0.64	10.62	8.7	10.0
	4	12.7	0.74	11.51	9.1	10.5
	5	12.9	0.90	13.65	10.8	12.5
	6	13.3	1.07	18.97	12.1	13.9
	8	12.3	1.53	25.42	20.1	23.2
	10	13.1	1.74	30.25	20.1	23.2
	12	12.5	2.30	39.56	29.3	33.8
3.5	2	11.3	0.41	6.49	6.5	7.5
	3	12.5	0.69	11.44	8.8	10.2
	4	13.2	0.80	12.58	9.2	10.7
	5	13.8	0.98	14.67	10.4	12.0
	6	13.8	1.17	20.61	12.3	14.2
	8	13.2	1.67	27.89	19.3	22.3
	10	14.4	1.83	33.92	17.6	20.3
	12	13.9	2.54	42.36	26.5	30.6
4.0	2	11.3	0.45	7.04	7.0	8.1
	3	12.5	0.75	12.27	9.7	11.2
	4	13.6	0.85	13.40	9.2	10.6
	5	14.2	1.05	17.42	10.4	12.0
	6	14.2	1.25	22.26	12.4	14.3
	8	13.6	1.80	30.36	19.5	22.5
	10	15.3	2.12	36.11	18.1	20.9
	12	15.2	2.74	45.65	23.8	27.4
4.5	2	11.6	0.48	7.59	7.1	8.2
	3	12.8	0.80	12.89	9.7	11.2
	4	13.7	0.90	14.22	9.6	11.0
	5	14.3	1.12	18.77	10.9	12.6
	6	14.3	1.33	23.71	13.0	15.0
	8	14.0	1.92	32.23	19.5	22.5
	10	15.9	2.38	39.51	18.9	21.9
	12	15.9	2.94	48.95	23.3	26.9
5.0	2	11.9	0.51	8.14	7.2	8.3
	3	13.1	0.83	13.53	9.7	11.2
	4	13.7	0.95	15.05	10.1	11.6
	5	14.3	1.18	19.69	11.5	13.3
	6	14.5	1.41	25.08	13.4	15.5
	8	14.5	2.04	33.98	19.4	22.5
	10	16.3	2.60	42.97	19.5	22.5
	12	16.3	3.12	51.96	23.4	27.1
5.5	2	11.9	0.52	8.69	7.4	8.5
	3	13.1	0.88	14.36	10.3	11.9
	4	13.7	1.00	15.87	10.6	12.2
	5	14.3	1.25	20.78	12.2	14.0
	6	14.9	1.47	26.45	13.2	15.3
	8	14.9	2.15	35.90	19.3	22.3
	10	16.8	2.74	45.71	19.6	22.6
	12	16.8	3.27	54.43	23.3	26.9
6.0	10	16.8	2.91	48.46	20.7	23.9
	12	16.8	3.45	57.43	24.5	28.3
6.2	10	16.8	2.98	49.58	21.2	24.4
	12	16.8	3.52	58.66	25.1	28.9

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 ASABE Standards; ASABE S398.1.
See page 205 for complete ASABE Test Certification Statement.

5505 Short Radius Nozzle Performance — METRIC

Pressure bar	Nozzle	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
2.1	18S	5.2	0.32	5.3	23.7	27.3
	22S	5.8	0.32	5.3	19.0	21.9
	26S	7.6	0.32	5.3	11.0	12.6
	30S	7.6	0.39	6.4	13.3	15.4
2.5	18S	5.6	0.33	5.5	21.5	24.8
	22S	6.2	0.35	5.8	18.2	21.0
	26S	7.6	0.39	6.5	13.4	15.5
	30S	8.4	0.40	6.7	11.4	13.2
3.0	18S	6.0	0.36	6.1	20.2	23.3
	22S	6.6	0.38	6.3	17.3	20.0
	26S	8.0	0.45	7.5	13.8	16.0
	30S	9.1	0.42	7.1	10.4	12.0
3.5	18S	6.4	0.41	6.9	19.8	22.9
	22S	7.1	0.41	6.9	16.6	19.1
	26S	8.8	0.48	8.0	12.3	14.3
	30S	9.5	0.46	7.6	10.2	11.7
4.0	18S	6.9	0.45	7.4	18.8	21.7
	22S	7.5	0.45	7.4	15.8	18.3
	26S	8.8	0.53	8.9	13.6	15.7
	30S	9.9	0.49	8.2	9.9	11.5
4.5	18S	7.0	0.49	8.2	19.9	23.0
	22S	7.6	0.49	8.2	16.9	19.5
	26S	8.8	0.59	9.9	15.2	17.5
	30S	10.4	0.57	9.5	10.6	12.2
5.0	18S	7.2	0.53	8.9	20.8	24.0
	22S	7.8	0.53	8.9	17.7	20.4
	26S	8.8	0.65	10.9	16.7	19.3
	30S	10.7	0.65	10.9	11.5	13.3
5.5	18S	7.6	0.57	9.4	19.6	22.6
	22S	8.2	0.57	9.4	16.8	19.4
	26S	8.8	0.70	11.7	18.0	20.8
	30S	10.7	0.70	11.7	12.3	14.3

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 ASABE Standards; ASABE S398.1.
See page 205 for complete ASABE Test Certification Statement.

5500 Cutaway

5505 Series Nozzles

Falcon® 6504 Series

Reliable and Economical

- Ratcheting stem just like standard spray bodies
- 3-port, color-coded Rain Curtain nozzles for optimal long-range, mid-range, and close-in watering
- Easy arc adjustment (part-circle model) through top of rotor from 40° to 360°

Features

- SAM Seal-A-Matic check valve
- Self-adjusting stator does not require replacement when changing nozzles
- Heavy-duty, stainless steel retract spring ensures positive pop-down
- 5 year warranty

Options

- **Stainless steel (SS) riser** helps deter vandalism on public turf areas
- **Purple cover (NP)** for non-potable systems
- **High Speed (HS) "Tan Top"** version for dust suppression

Operating Range

- Precipitation rate: 0.37 to 1.14 inches per hour (9 to 29 mm/h)
- Radius: 39 to 65 feet (11.9 to 19.8 m)
- Pressure: 30 to 90 psi (2.1 to 6.2 bar)
- Flow: 2.9 to 21.7 gpm (0.66 to 4.93 m^3/h; 10.8 to 82.2 l/m)

Specifications

- 1" (26/34) female NPT or BSP threaded inlet
- SAM check device holds up to 10 feet (3.1 m) of elevation change
- Rain Curtain™ Nozzles: 04-black; 06-light blue; 08-dark green; 10-grey; 12-beige; 14-light green; 16-dark brown; 18-dark blue
- Nozzle outlet trajectory is 25°

Models

- F4-FC: Full-circle
- F4-PC: Part-circle
- F4-FC-NP: Full-circle, non-potable cover
- F4-PC-NP: Part-circle, non-potable cover
- F4-FC-SS: Full-circle, stainless steel
- F4-PC-SS: Part-circle, stainless steel
- F4-FC-SS-HS: Full-circle, stainless steel, high speed rotation
- F4-PC-SS-HS: Part-circle, stainless steel, high speed rotation
- F4-FC-SS-NP: Full-circle, stainless steel, non-potable cover
- F4-PC-SS-NP: Part-circle, stainless steel, non-potable cover

Note: *All models available with BSP threads*

Dimensions

- Overall height: 8½" (21.6 cm)
- Pop-up height: 4" (10.2 cm)
- Exposed surface diameter: 2" (5.1 cm)

Note: *Pop-up height is measured from cover to center of nozzle. Overall body height is measured popped down*

Falcon® 6504 Series

Falcon® 6504 Nozzle Performance

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	0.50
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	0.60	0.69
	12	53	9.7	0.66	0.77
	14	55	11.3	0.72	0.83
	16	55	12.6	0.80	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	0.70	0.81
	14	59	12.7	0.70	0.81
	16	61	14.3	0.74	0.85
	18	59	15.4	0.85	0.98
60	4	41	4.0	0.46	0.53
	6	47	6.0	0.52	0.60
	8	51	8.2	0.61	0.70
	10	55	10.0	0.64	0.73
	12	57	12.2	0.72	0.83
	14	61	14.0	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	0.50	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	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

High-Speed Falcon® 6504 Nozzle Performance

Pressure psi	Nozzle	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
30	4	37	3.0	0.42	0.49
	6	39	4.3	0.54	0.63
40	4	41	3.5	0.40	0.46
	6	43	6.0	0.62	0.72
	8	47	6.6	0.58	0.66
	10	47	8.1	0.71	0.82
	12	49	9.9	0.79	0.92
	14	53	11.4	0.78	0.90
	16	51	12.6	0.93	1.08
	18	53	13.9	0.95	1.10
50	4	41	3.7	0.42	0.49
	6	45	5.6	0.53	0.62
	8	49	7.5	0.60	0.69
	10	49	9.2	0.74	0.85
	12	53	11.2	0.77	0.89
	14	53	12.9	0.88	1.02
	16	53	14.3	0.98	1.13
	18	55	15.6	0.99	1.15
60	4	41	4.2	0.48	0.56
	6	45	6.2	0.59	0.68
	8	47	8.3	0.72	0.84
	10	49	10.2	0.82	0.94
	12	53	12.4	0.85	0.98
	14	53	14.2	0.97	1.12
	16	55	15.7	1.00	1.15
	18	59	17.2	0.95	1.10
70	4	41	4.6	0.53	0.61
	6	43	6.7	0.70	0.81
	8	49	9.0	0.72	0.83
	10	51	11.1	0.82	0.95
	12	55	13.5	0.86	0.99
	14	53	15.3	1.05	1.21
	16	57	17.1	1.01	1.17
	18	59	18.6	1.03	1.19
80	4	39	4.9	0.62	0.72
	6	43	7.1	0.74	0.85
	8	51	9.7	0.72	0.83
	10	49	11.9	0.95	1.10
	12	55	14.4	0.92	1.06
	14	53	16.5	1.13	1.31
	16	59	18.4	1.02	1.18
	18	59	20.0	1.11	1.28
90	18	61	21.3	1.10	1.27

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 ASABE Standards; ASABE S398.1.
See page 205 for complete ASABE Test Certification Statement.

Falcon® 6504 Nozzle Performance — METRIC

Pressure bar	Nozzle	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
2.1	4	11.9	0.66	10.98	9	11
	6	13.1	0.95	15.90	11	13
2.5	4	12.3	0.72	11.92	10	11
	6	13.5	1.05	17.56	12	13
	8	14.9	1.50	25.20	13	16
	10	15.5	1.84	30.60	15	18
	12	16.2	2.20	36.60	17	19
	14	16.8	2.57	42.60	18	21
	16	16.8	2.86	47.40	20	24
	18	18.0	3.11	51.60	19	22
3.0	4	12.5	0.78	13.02	10	12
	6	14.1	1.16	19.34	12	13
	8	15.1	1.56	26.04	14	16
	10	15.8	1.92	31.99	15	18
	12	16.4	2.31	38.44	17	20
	14	17.2	2.68	44.63	18	21
	16	17.4	3.00	49.95	20	23
	18	18.0	3.25	54.11	20	23
3.5	4	12.5	0.85	14.09	11	13
	6	14.9	1.26	20.96	11	13
	8	15.5	1.69	28.24	14	16
	10	16.2	2.08	34.70	16	18
	12	16.8	2.52	41.98	18	21
	14	18.0	2.91	48.45	18	21
	16	18.6	3.27	54.53	19	22
	18	18.1	3.53	58.78	22	25
4.0	4	12.5	0.89	14.91	11	13
	6	14.4	1.34	22.33	13	15
	8	15.5	1.83	30.44	15	17
	10	16.6	2.23	37.17	16	19
	12	17.3	2.72	45.28	18	21
	14	18.5	3.12	52.01	18	21
	16	19.1	3.50	58.37	19	22
	18	19.0	3.81	63.45	21	24
4.5	4	12.5	0.96	15.94	12	14
	6	14.6	1.40	23.33	13	15
	8	15.5	1.95	32.43	16	19
	10	17.1	2.37	39.44	16	19
	12	17.7	2.89	48.17	18	21
	14	18.6	3.32	55.38	19	22
	16	19.2	3.71	61.82	20	23
	18	19.5	4.03	67.12	21	24
5.0	4	12.7	1.01	16.84	13	15
	6	14.9	1.47	24.50	13	15
	8	15.7	2.05	34.16	17	19
	10	17.2	2.50	41.64	17	19
	12	18.1	3.04	50.72	19	21
	14	18.6	3.51	58.49	20	23
	16	19.2	3.91	65.11	21	24
	18	19.8	4.23	70.51	22	25
5.5	4	13.1	1.04	17.39	12	14
	6	14.9	1.56	25.79	14	16
	8	16.1	2.13	35.54	16	19
	10	16.8	2.63	43.84	19	22
	12	18.6	3.18	52.92	18	21
	14	18.6	3.67	61.23	21	25
	16	19.2	4.10	68.40	22	26
	18	19.8	4.44	74.07	23	26
6.0	18	19.8	4.79	79.77	24	28
6.2	18	19.8	4.93	82.13	25	29

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 ASABE Standards; ASABE S398.1.
See page 205 for complete ASABE Test Certification Statement.

High-Speed Falcon® 6504 Nozzle Performance — METRIC

Pressure bar	Nozzle	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
2.1	4	11.3	0.68	11.35	11	12
	6	11.9	0.98	15.90	14	16
2.5	4	12.0	0.75	12.54	10	12
	6	12.7	1.22	20.16	15	18
	8	14.2	1.49	25.20	15	17
	10	14.2	1.83	30.60	18	21
	12	14.8	2.24	37.20	20	24
	14	16.0	2.58	43.20	20	23
	16	15.4	2.85	47.40	24	28
	18	16.0	3.15	52.80	24	28
3.0	4	12.5	0.81	13.51	10	12
	6	13.3	1.33	22.18	15	17
	8	14.5	1.57	26.18	15	17
	10	14.5	1.93	32.12	18	21
	12	15.4	2.35	39.20	20	23
	14	16.2	2.71	48.09	21	24
	16	15.8	3.00	49.95	24	28
	18	16.4	3.29	54.87	25	28
3.5	4	12.5	0.85	14.15	11	13
	6	13.7	1.28	21.37	14	16
	8	14.9	1.72	28.62	16	18
	10	14.9	2.11	35.11	19	22
	12	16.2	2.56	42.74	20	23
	14	16.2	2.95	49.20	23	26
	16	16.2	3.27	54.53	25	29
	18	16.9	3.57	59.51	25	29
4.0	4	12.5	0.93	15.52	12	14
	6	13.7	1.38	23.02	15	17
	8	14.4	1.85	30.81	18	21
	10	14.9	2.27	37.86	20	24
	12	16.2	2.76	46.03	21	24
	14	16.2	3.17	52.77	24	28
	16	16.6	3.50	58.37	25	29
	18	17.7	3.83	63.90	24	28
4.5	4	12.5	1.00	16.69	13	15
	6	13.4	1.48	24.46	16	19
	8	14.6	1.97	32.81	18	21
	10	15.3	2.42	40.40	21	24
	12	16.5	2.95	49.13	22	25
	14	16.2	3.36	55.94	26	30
	16	17.1	3.73	62.22	26	30
	18	18.0	4.07	67.89	25	29
5.0	4	12.3	1.06	17.70	14	16
	6	13.1	1.56	25.74	18	21
	8	15.1	2.08	34.73	18	21
	10	15.4	2.57	42.78	22	25
	12	16.8	3.12	51.96	22	26
	14	16.2	3.54	59.06	27	31
	16	17.5	3.96	65.96	26	30
	18	18.0	4.30	71.74	27	31
5.5	4	11.9	1.11	18.52	16	18
	6	13.1	1.61	26.84	19	22
	8	15.5	2.20	36.65	18	21
	10	14.9	2.70	44.97	24	28
	12	16.8	3.27	54.43	23	27
	14	16.2	3.74	62.35	29	33
	16	18.0	4.17	69.53	26	30
	18	18.0	4.53	75.58	28	32
6.0	18	18.4	4.75	79.16	28	32
6.2	18	18.6	4.84	80.62	28	32

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 ASABE Standards; ASABE S398.1.
See page 205 for complete ASABE Test Certification Statement.

8005 Series

8005 Series

Protect Your Turf with High Performance, Vandal and Abuse Resistant Rotors from 39' to 81'

- Vandal resistance
- Brass reinforced turret for increased side impact durability
- Non strippable gear drive

Features

- Memory Arc
- Part and Full Circle in one head
- Independent left and right edge adjustment
- SAM Seal-A-Matic check valve
- 3-port, color-coded Rain Curtain nozzles for optimal long-range, mid-range, and close-in watering
- 5 year warranty

Options

- **Stainless steel (SS) riser** helps deter vandalism on public turf areas
- **Purple cover (NP)** for non-potable systems

Operating Range

- Radius: 39 to 81 feet (11.9 to 24.7 m)
- 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: 3.8 to 36.3 gpm (0.86 to 8.24 m^3/h; 14.4 to 137.4 l/m)

Note: *Flow ranges of 7005 and 8005 are combined into 8005 rotor*

Specifications

- 1" (26/34) NPT or BSP female threaded inlet
- SAM check device holds up to 10 feet (3.1 m) of head
- Nozzle outlet trajectory is 25°
- Rain Curtain™ Nozzles: 04 - black; 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

Dimensions

- Exposed diameter: 1 7/8" (4.8 cm)
- Overall diameter: 3 1/8" (7.9 cm)
- Overall height:** 10 1/8" (25.7 cm)
- Pop-up height:** 5" (12.7 cm)

Models

- 8005: 1" NPT female threaded inlet (plastic riser stem)
- 8005-SS: 1" NPT female threaded inlet (5" stainless steel covered riser stem)
- Optional purple cover for easy identification of non-potable systems
- Optional Sod Cup

Note: *All models available with BSP threads*

** ***Note:*** *Pop-up height is measured from cover to the primary nozzle port. Overall body height is measured popped down*

8005 Nozzle Performance

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
	24	63	22.3	1.08	1.25
	26	65	24.3	1.11	1.28
60	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
	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
70	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
	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
80	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
	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
90	12	61	14.7	0.76	0.88
	14	65	17.9	0.82	0.94
	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
100	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 ASABE Standards; ASABE S398.1.
See page 205 for complete ASABE Test Certification Statement.

8005 Cutaway

Sod Cup for 8005

8005 Nozzle Performance — METRIC

Pressure bar	Nozzle	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
3.5	4	11.9	0.86	14.38	12	14
	6	13.7	1.28	21.34	14	16
	8	14.9	1.59	25.50	14	16
	10	16.1	2.10	35.43	16	19
	12	17.5	2.52	42.27	16	19
	14	18.0	2.89	48.18	18	21
	16	18.7	3.28	54.59	19	22
	18	19.2	3.69	61.43	20	23
	20	19.9	4.25	70.83	21	25
	22	20.0	5.08	79.07	25	29
	24	19.3	5.11	85.10	27	32
	26	20.0	5.57	92.67	28	32
4.0	4	11.9	0.93	14.38	13	15
	6	13.7	1.37	22.71	15	17
	8	14.9	1.75	30.44	16	18
	10	16.3	2.30	37.63	17	20
	12	17.7	2.70	44.74	17	20
	14	18.5	3.17	52.85	19	21
	16	19.6	3.54	58.98	18	21
	18	19.7	3.97	66.10	20	24
	20	20.3	4.50	74.95	22	25
	22	21.3	5.23	85.94	23	27
	24	20.7	5.50	91.69	26	30
	26	21.8	6.01	99.26	25	29
4.5	4	11.9	1.00	16.18	14	16
	6	13.7	1.45	24.28	15	18
	8	14.9	1.92	32.99	17	20
	10	16.5	2.40	40.22	18	20
	12	18.0	2.87	47.81	18	20
	14	18.9	3.37	56.12	19	22
	16	20.1	3.77	62.77	19	22
	18	20.1	4.22	70.36	21	24
	20	21.1	4.79	79.87	22	25
	22	22.0	5.51	91.80	23	26
	24	22.0	5.88	98.08	24	28
	26	22.6	6.42	106.44	25	29
5.0	4	11.9	1.06	18.08	15	17
	6	13.7	1.54	25.74	16	19
	8	14.9	2.09	34.83	19	22
	10	16.7	2.50	42.68	18	21
	12	18.3	3.05	50.92	18	21
	14	19.2	3.54	58.96	19	22
	16	20.4	3.99	66.44	19	22
	18	20.6	4.47	74.58	21	24
	20	21.6	5.11	85.08	22	25
	22	22.4	5.84	97.39	23	27
	24	23.0	6.26	104.29	24	27
	26	23.2	6.80	113.28	25	29
5.5	4	11.9	1.13	18.90	16	18
	6	13.7	1.62	26.84	17	20
	8	14.9	2.25	37.02	20	23
	10	16.8	2.70	44.60	19	22
	12	18.5	3.23	53.66	19	22
	14	19.2	3.72	61.98	20	23
	16	20.4	4.22	70.28	20	23
	18	21.0	4.74	78.97	21	25
	20	21.6	5.42	90.30	23	27
	22	22.8	6.19	103.15	24	28
	24	23.5	6.62	110.33	24	28
	26	24.1	7.14	119.05	25	28
6.0	12	18.6	3.30	55.07	19	22
	14	19.6	3.96	66.06	21	24
	16	20.9	4.45	74.12	20	24
	18	21.5	4.95	82.56	21	25
	20	22.1	5.65	94.18	23	27
	22	22.9	6.71	108.12	26	30
	24	23.9	6.92	115.31	24	28
	26	24.1	7.50	125.08	26	30
6.2	14	19.8	4.06	67.75	21	24
	16	21.0	4.54	75.70	21	24
	18	21.7	5.04	84.02	21	25
6.5	20	22.5	5.89	98.19	23	27
	22	23.4	6.84	112.73	25	29
	24	24.1	7.22	120.25	25	29
	26	24.3	7.91	131.76	27	31
6.9	20	22.9	6.09	101.43	23	27
	22	23.5	6.97	116.19	25	29
	24	24.1	7.45	124.14	26	30
	26	24.7	8.24	137.39	27	31

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 ASABE Standards; ASABE S398.1. See page 205 for complete ASABE Test Certification Statement.

8005 Rain Curtain™ Nozzles

Rain Curtain™ Nozzle Cross Reference Guide
Hunter® vs. Rain Bird

Hunter vs. Rain Bird – 3/4" Rotors

If replacing:	Use Rain Bird Nozzle	
	By Flow	By Radius
PGP	5000 Series	5000 Series
1	-	-
2	-	-
3	-	-
4	1.5	1.5
5	2.0	2.0
6	2.5	2.5
7	3.0	3.0
8	4.0	4.0
9	5.0	5.0
10	8.0	6.0
11	-	8.0
12	-	8.0

Hunter vs. Rain Bird – 3/4" Rotors

If replacing:	Use Rain Bird Nozzle			
	By Flow		By Radius	
I-20	5000 Series	5500	5000 Series	5500
0.5 SR	-	-	-	18S
1.0 SR	-	-	-	18S
2.0 SR	-	18S	-	18S
0.75 SR	-	-	-	22S
1.5 SR	-	22S	-	22S
3.0 SR	-	26S	-	22S
1.0	1.5	-	1.5	30S
1.5	1.5	2	1.5	30S
2.0	2.0	2	2.0	2
3.0	2.5	3	2.5	2
3.5	**3.0**	4	3.0	3
4.0	4.0	5	4.0	3
6.0	5.0	6	5.0	4
8.0	6.0	8	6.0	8

Hunter vs. Rain Bird – 1" Rotors

If replacing:	Use Rain Bird Nozzle			
	By Flow		By Radius	
I-25	6504	8005	6504	8005
4	4	4	4	4
5	6	6	6	6
7	8	8	6	8
8	10	10	8	8
10	12	12	10	10
13	12	12	12	12
15	14	14	14	12
18	16	16	16	14
20	18	18	18	14
23	-	22	-	16
25	-	24	-	20
28	-	26	-	22
I-40	**6504**	**8005**	**6504**	**8005**
40	8	8	6	8
41	12	12	10	10
42	12	12	10	12
43	16	16	14	14
44	18	20	18	16
45	-	22	-	20
I-35	**6504**	**8005**	**6504**	**8005**
9	8	8	8	8
12	12	12	10	10
15	14	14	12	12
18	16	16	14	14
21	18	18	14	14
24	-	22	16	16
27	-	24	16	16
30	-	26	-	20

Rain Curtain™ Nozzle Cross Reference Guide
Toro® vs. Rain Bird

Toro vs. Rain Bird – 3/4" Rotors

If replacing:	Use Rain Bird Nozzle	
	By Flow	By Radius
Super 800	5000 Series	5000 Series
0.5	-	-
0.75	-	-
1.0	1.5	1.5
2.0	2.5	2.0
2.5	3.0	2.5
3.0	4.0	2.5
4.0	5.0	3.0
6.0	6.0	4.0
8.0	8.0	5.0

Toro vs. Rain Bird – 3/4" Rotors

If replacing:	Use Rain Bird Nozzle			
	By Flow		By Radius	
TR50	5000 Series	5505	5000 Series	5505
1.0	-	-	-	-
1.5	1.5	2	1.5	2
2.0	2.0	2	2.0	3
3.0	3.0	3	3.0	3
4.5	4.0	5	4.0	3
6.0	5.0	6	4.0	4
7.5	6.0	8	4.0	4
9.0	8.0	10	5.0	4

Toro vs. Rain Bird – 1" Rotors

If replacing:	Use Rain Bird Nozzle			
	By Flow		By Radius	
Toro 2001	6504	8005	6504	8005
9	10	10	10	10
12	12	12	12	12
15	16	16	14	14
18	18	20	18	16
24	-	22	-	20
TR70	**6504**	**8005**	**6504**	**8005**
7	8	8	-	6
9	8	8	8	8
12	12	12	10	10
16	16	16	14	12
20	-	20	14	14
24	-	20	16	14
27	-	20	18	16
Toro 640	**6504**	**8005**	**6504**	**8005**
40	8	8	8	10
41	10	12	10	10
42	14	14	12	12
43	16	16	14	14
44	18	20	16	14

2045A Maxi-Paw™

Dirty Water Applications - Spacing Up to 45 Feet (13.7 m)

- Vandal resistance
- Brass reinforced turret for increased side impact durability
- Non strippable gear drive

Features

- Memory Arc
- Part and Full Circle in one head
- Independent left and right edge adjustment
- SAM Seal-A-Matic check valve
- 3-port, color-coded Rain Curtain nozzles for optimal long-range, mid-range, and close-in watering
- 5 year warranty

Options

- Internal Seal-A-Matic™ (SAM) prevents puddling and erosion caused by low-head drainage and saves water (holds back 10' (3.1 m) of head)
- Purple cover for easy identification of non-potable systems

Operating Range

- Precipitation rate: 0.28 to 1.21 inches per hour (7 to 31 mm/h)
- Spacing: 22 to 45 feet (6.7 to 13.7 m)
- Flow rate: 1.5 to 8.4 gpm (0.38 to 1.86 m^3/h; 6.0 to 31.2 l/m)
- Radius: 22 to 45 feet (6.7 to 13.7 m)
- Pressure: 25 to 60 psi (1.7 to 4.1 bar)

Specifications

- Combination ½" (15/21) or ¾" (20/27) female bottom inlet
- ½" (15/21) female side inlet
- Nozzles: 06-red; 07-black; 08-blue; 10-yellow; 12-beige
- Low angle nozzles: 07LA-black; 10LA-yellow (optional)
- Nozzle outlet trajectory is 23°
- Low angle nozzle outlet trajectory is 11°
- Side inlet installation is not recommended in freezing climates

Dimensions

- Overall height: 9 3/10" (23.6 cm)
- Top diameter: 5" (12.7 cm)

Models

- 2045A Maxi-Paw
- 2045A Maxi-Paw-SAM
- 2045A Maxi-Paw-SAM-NP

Available Nozzles

- Standard trajectory: 06, 07, 08, 10, 12
- Low angle: 07LA, 10LA

2045A Maxi-Paw

Maxi-Paw® Wrench

- For removing internal assembly from case

Model

- 42064

42064

Water Saving

With its straight through water flow and few moving parts, the Maxi-Paw provides superior water distribution in the harshest water conditions.

Maxi-Paw™ Performance

Pressure psi	Nozzle	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
25	06	-	-	-	-
	07 LA	22	1.5	0.60	0.69
	07	32	2.2	0.41	0.48
	08	35	2.8	0.44	0.51
	10 LA	25	3.4	1.05	1.21
	10	38	4.2	0.56	0.65
	12	39	5.5	0.70	0.80
35	06	37	2.0	0.28	0.32
	07 LA	23	1.9	0.69	0.80
	07	37	2.7	0.38	0.44
	08	38	3.3	0.44	0.51
	10 LA	29	4.0	0.92	1.06
	10	41	4.8	0.55	0.64
	12	42	6.3	0.69	0.79
45	06	38	2.3	0.31	0.35
	07 LA	25	2.1	0.65	0.75
	07	39	3.0	0.38	0.44
	08	40	3.7	0.45	0.51
	10 LA	31	4.5	0.90	1.04
	10	42	5.4	0.59	0.68
	12	44	7.1	0.71	0.82
55	06	38	2.5	0.33	0.39
	07 LA	25	2.3	0.71	0.82
	07	41	3.3	0.38	0.44
	08	41	4.1	0.47	0.54
	10 LA	32	5.0	0.94	1.09
	10	43	6.0	0.62	0.72
	12	45	7.9	0.75	0.87
60	06	38	2.6	0.35	0.40
	07 LA	25	2.4	0.74	0.85
	07	41	3.5	0.40	0.46
	08	42	4.2	0.46	0.53
	10 LA	32	5.4	1.02	1.17
	10	44	6.4	0.64	0.74
	12	45	8.4	0.80	0.92

Precipitation rates based on half-circle operation

■ *Square spacing based on 50% diameter of throw*

▲ *Triangular spacing based on 50% diameter of throw*

Maxi-Paw™ Performance METRIC

Pressure bar	Nozzle	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
2.0	6	-	-	-	-	-
	07 LA	6.8	0.38	6.0	16	19
	7	10.4	0.55	9.0	10	12
	8	11.0	0.68	11.4	11	13
	10 LA	8.1	0.83	13.8	25	29
	10	11.9	1.01	16.8	14	16
	12	12.3	1.32	22.2	18	20
2.5	6	11.3	0.46	7.8	7	8
	07 LA	7.1	0.44	7.2	17	20
	7	11.4	0.62	10.2	10	11
	8	11.7	0.76	12.6	11	13
	10 LA	8.9	0.92	15.6	23	27
	10	12.5	1.11	18.6	14	16
	12	12.9	1.45	24.0	18	20
3.0	6	11.5	0.51	8.4	8	9
	07 LA	7.5	0.47	7.8	17	19
	7	11.8	0.67	11.4	10	11
	8	12.1	0.83	13.8	11	13
	10 LA	9.4	1.01	16.8	23	27
	10	12.8	1.21	20.4	15	17
	12	13.3	1.59	26.4	18	21
3.5	6	11.6	0.55	9.0	8	9
	07 LA	7.6	0.50	8.4	17	20
	7	12.2	0.72	12.0	10	11
	8	12.4	0.89	15.0	12	13
	10 LA	9.6	1.09	18.0	23	27
	10	13.0	1.30	21.6	15	18
	12	13.6	1.72	28.8	19	21
4.0	6	11.6	0.58	9.6	9	10
	07 LA	7.6	0.54	9.0	18	21
	7	12.5	0.78	13.2	10	11
	8	12.7	0.94	15.6	12	14
	10 LA	9.8	1.19	19.8	25	29
	10	13.3	1.42	23.4	16	19
	12	13.7	1.86	31.2	20	23

Performance data collected in zero wind conditions

Performance data derived from tests that conform with ASABE Standards; ASABE S398.1.
See page 205 for complete ASABE Test Certification Statement.

2045A Maxi-Paw Nozzles

2045-PJ Maxi-Bird™

½" (15/21) Riser-Mounted Impact Head Used for Slope and Large-Area, Above-Grade Applications

- Flexibility – Straight-through flow for superior performance in dirty water
- Reliability – Proven impact drive
- Performance – 5 Matched Precipitation Rate (MPR) nozzles and 2 low-angle (LA) nozzles

2045-PJ-08 Maxi-Bird

Features

- Double-weighted arm for slower rotation and increased distance of throw. Powerful reverse action
- Adjustable arm spring for low-pressure and low-gallonage operation
- Precision Jet tube (PJ™) minimizes side splash
- Interchangeable, color-coded bayonet mount nozzles
  - No tools required to change nozzles
- FP trip permits full- or part-circle operation (20° to 340°)

Operating Range

- Pressure: 25 to 60 psi (1.7 to 4.1 bar)
- Flow: 1.5 to 8.4 gpm (0.38 to 1.86 m^3/h; 6.0 to 31.2 l/m)
- Radius: 22 to 45 feet (6.7 to 13.7 m)
- Precipitation rate: 0.28 to 1.21 inches per hour (7 to 31 mm/h)

Specifications

- ½" (15/21) male threaded inlet nozzles
- Nozzle outlet trajectory: 23° for 06, 07, 08, 10, and 12 nozzles
- 11° for 07 LA and 10 LA
- Standard trajectory angle nozzles: 06-red; 07-black; 08-blue; 10-yellow; 12-beige
- Low angle (LA) nozzles: 07 LA-black; 10 LA-yellow (optional)

Model

- 2045-PJ-08 Maxi-Bird

2045-PJ-08 Nozzles

Water Saving

From the company that invented the first impact sprinkler comes a full line of rugged impacts for every application. In long-lasting brass and stainless steel, in full- or part-circle models, Rain Bird impacts help you save water and keep landscapes lush and green all year long. Visit www.rainbird.com/impacts for a complete list of impact sprinklers available.

2045-PJ-08 Maxi-Bird Performance

Pressure psi	Nozzle	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
25	06	-	-	-	-
	07 LA	22	1.5	0.60	0.69
	07	32	2.2	0.41	0.48
	08 *	35	2.8	0.44	0.51
	10 LA	25	3.4	1.05	1.21
	10	38	4.2	0.56	0.65
	12	39	5.5	0.70	0.80
35	06	37	2.0	0.28	0.32
	07 LA	23	1.9	0.69	0.80
	07	37	2.7	0.38	0.44
	08 *	38	3.3	0.44	0.51
	10 LA	29	4.0	0.92	1.06
	10	41	4.8	0.55	0.64
	12	42	6.3	0.69	0.79
45	06	38	2.3	0.31	0.35
	07 LA	25	2.1	0.65	0.75
	07	39	3.0	0.38	0.44
	08 *	40	3.7	0.45	0.51
	10 LA	31	4.5	0.90	1.04
	10	42	5.4	0.59	0.68
	12	44	7.1	0.71	0.82
55	06	38	2.5	0.33	0.39
	07 LA	25	2.3	0.71	0.82
	07	41	3.3	0.38	0.44
	08 *	41	4.1	0.47	0.54
	10 LA	32	5.0	0.94	1.09
	10	43	6.0	0.62	0.72
	12	45	7.9	0.75	0.87
60	06	38	2.6	0.35	0.40
	07 LA	25	2.4	0.74	0.85
	07	41	3.5	0.40	0.46
	08 *	42	4.2	0.46	0.53
	10 LA	32	5.4	1.02	1.17
	10	44	6.4	0.64	0.74
	12	45	8.4	0.80	0.92

2045-PJ-08 Maxi-Bird Performance METRIC

Pressure bar	Nozzle	Radius m	Flow m^3/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
2.0	6	-	-	-	-	-
	07 LA	6.8	0.38	6.0	16	19
	7	10.4	0.55	9.0	10	12
	8 *	11.0	0.68	11.4	11	13
	10 LA	8.1	0.83	13.8	25	29
	10	11.9	1.01	16.8	14	16
	12	12.3	1.32	22.2	18	20
2.5	6	11.3	0.46	7.8	7	8
	07 LA	7.1	0.44	7.2	17	20
	7	11.4	0.62	10.2	10	11
	8 *	11.7	0.76	12.6	11	13
	10 LA	8.9	0.92	15.6	23	27
	10	12.5	1.11	18.6	14	16
	12	12.9	1.45	24.0	18	20
3.0	6	11.5	0.51	8.4	8	9
	07 LA	7.5	0.47	7.8	17	19
	7	11.8	0.67	11.4	10	11
	8 *	12.1	0.83	13.8	11	13
	10 LA	9.4	1.01	16.8	23	27
	10	12.8	1.21	20.4	15	17
	12	13.3	1.59	26.4	18	21
3.5	6	11.6	0.55	9.0	8	9
	07 LA	7.6	0.50	8.4	17	20
	7	12.2	0.72	12.0	10	11
	8 *	12.4	0.89	15.0	12	13
	10 LA	9.6	1.09	18.0	23	27
	10	13.0	1.30	21.6	15	18
	12	13.6	1.72	28.8	19	21
4.0	6	11.6	0.58	9.6	9	10
	07 LA	7.6	0.54	9.0	18	21
	7	12.5	0.78	13.2	10	11
	8 *	12.7	0.94	15.6	12	14
	10 LA	9.8	1.19	19.8	25	29
	10	13.3	1.42	23.4	16	19
	12	13.7	1.86	31.2	20	23

Precipitation rates based on half-circle operation

■ *Square spacing based on 50% diameter of throw*

▲ *Triangular spacing based on 50% diameter of throw*

* *Standard Nozzle Size*

Performance data collected in zero wind conditions

Performance data derived from tests that conform with ASABE Standards; ASABE S398.1.
See page 205 for complete ASABE Test Certification Statement.

TSJ-100-PRS

TSJ-12075, TSJ-12

TSJ/TSJ-PRS Series

Swing Joints Connect ¾" (1.9 cm) and 1" (2.5 cm) Rotors or Quick Coupler Valves to Lateral Pipes

- Patented swept elbow design minimizes turbulence and pressure loss while maximizing rotor performance
- No sharp inner corners or internal obstructions
- Patented double O-rings provide extra protection against leaks and keep threads clean of debris during installation

Features

- Preassembled units save the contractor time and reduce installation costs
- The structural integrity from the swept elbow design reduces costs associated with fatigue-related failures
- Oversized threaded inlets, extra large grips, and large visible stops make hand tightening trouble-free
- Patented low pressure relief vent prevents pressure from building up between the primary and secondary O-rings when the swing joint is assembled in water, eliminating blown O-rings
- Built to last from rigid PVC Type I, cell classifi cation 12454-B, conforming to ASTM D1784. All NPT threads, sockets, and spigots are PVC Schedule 80 per ASTM D2464 and D2467

TSJ-PRS Only Features

- Maintains a constant, uniform pressure into the rotor regardless of nozzle used:
  - 45 psi (3.1 bar) for ¾" swing joint
  - 70 psi (4.8 bar) for 1" swing joint
- Allows each rotor on a zone to operate at the same pressure, improving consistency and overall system performance
- Reduces misting, fogging, and other performance problems caused by high pressure
- Regulator housing is made of PVC that matches the high pressure rating of the Rain Bird turf swing joint and exceeds the pressure rating of rotors
- Diaphragm is made of a durable fabric reinforced elastomer for long life
- Porous filter provides atmospheric reference without allowing contamination to enter, enabling the system to be buried in any kind of soil

Water Saving

TSJ-PRS Series conserves water by reducing misting, fogging, and other performance problems caused by high pressure systems.

Operating Range

- Pressure rating: 315 psi at 73º F (21.7 bar at 22.8º C) (per ASTM D3139)
  - Tested without leakage for 60 minutes at 790 psi (54,5 bar)
  - Tested without leakage for short term exposure at 1000 psi (68,9 bar)
- ¾" joint pressure loss: 0.3 psi at 6 gpm (0.02 bar at 0.4 l/s)
- 1 " joint pressure loss: 1.5 psi at 18 gpm; 2.5 psi at 23 gpm (0.1 bar at 1,1 l/s; 0.2 bar at 1.5 l/s)
- TSJ-PRS maximum flow: 22 gpm (1.41 l/s)
- High operating pressure rating (315 psi; 21.6 bar) is perfect for use in constant pressure situations
- Spigot inlet available on 1" (2.5 cm) swing joints
- See charts for pressure loss comparison and pressure regulation

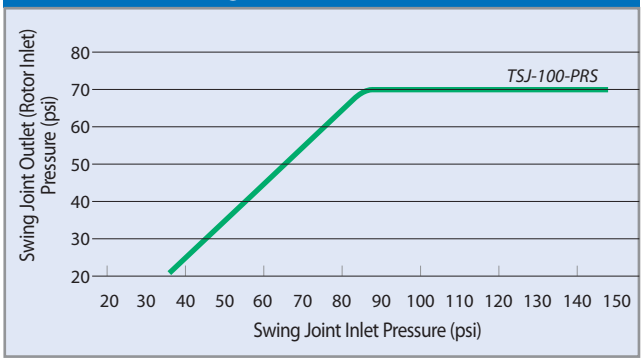
TSJ-PRS Application Information

- The TSJ-PRS is not recommended for use in systems where the pressure in the lateral lines is equal to or less than the nominal regulation pressure, as the increased pressure drop may adversely affect the performance of such systems.
- To reduce the effects of water hammer, Rain Bird recommends flow rates in the supply line not exceed 5 ft/sec (1.5 m/s). The TSJ-PRS is not intended to function as a water hammer prevention device.
- There are no user-serviceable parts inside. The internal spring is under compression. Do not open the PRS unit under any circumstances.

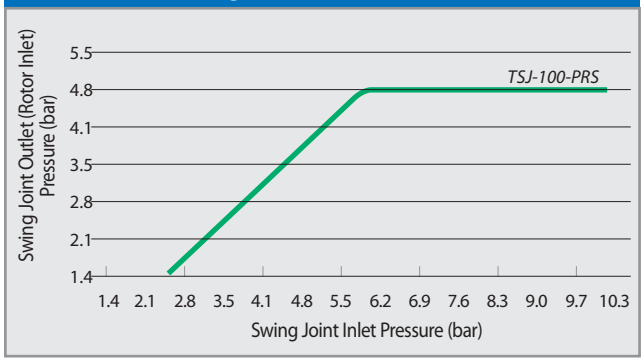
Models

- TSJ-12075: 12" (30.5 cm) long, ¾" (20/27) M x M NPT swing joint
- TSJ-12: 12" (30.5 cm) long, 1" (26/34) M x M NPT swing joint
- TSJ-100-PRS: 1" swing joint with 70 psi pressure regulator, 12" (30.5 cm) long, 1" (26/34) M x M NPT inlet and outlet

TSJ-PRS Pressure Regulation



TSJ-PRS Pressure Regulation METRIC



Swing Joint Specifications

Model Number	Length		Inlet		Outlet		Thread	Pressure Regulation	
	US	METRIC	US	METRIC	US	METRIC		US	METRIC
TSJ-12075	12"	30.5 cm	¾" M	20/27 M	¾" M	20/27 M	NPT	n/a	n/a
TSJ-12	12"	30.5 cm	1" M	26/34 M	1" M	26/34 M	NPT	n/a	n/a
TSJ-100-PRS	12"	30.5 cm	1" M	26/34 M	1" M	26/34 M	NPT	70 psi	70 psi

Holdup Tool with Bubble Level

Features

- Combination holdup tool/ bubble level makes proper installation easier
- Works with 5000, 5500, Falcon® 6504, and 8005

HOLDUPTOOL

ROTORTOOL

Features

- Flat blade screwdriver and pull-up tool all in one

Model

- ROTORTOOL

ROTORTOOL

Online Water-Savings Calculators

Rain Bird has several online calculators available that will help you show your customers the potential water savings of using water-efficient Rain Bird rotors and nozzles:

- 5000/5000Plus PRS Rotors
- 5000/5000Plus MPR Rotor Nozzles
- TSJ-PRS Swing Joints

Availability

www.rainbird.com/calculators

The Toughest, Most Reliable Valves In their Class

Relentless research, testing and retesting have led to a product you can stand behind. the Rain Bird® PGA valve is the preferred valve for high-end residential and light commercial jobs.

Major Products

Primary Applications	DV	DVF	ASVF	HV	HVF	PGA	PEB	PESB/PESB-R	EFB-CP	BPE	BPES	QC
Manual Bleed	I/E	I/E	I/E	I/E	I/E	I	I/E	I/E	I/E	E	E	
Flow Control		●	●	●	●	●	●	●	●	●	●	
Bottom Inlet	DV-A		●		●	●				●	●	●
Low Flow	●	●	●	●	●		●	●	●			
PRS-Dial Compatible						●	●	●	●	●	●	
Dirty Water								●	●		●	
Non-Potable Water						●	●	●	●	●	●	●
Sites Requiring Brass									●	●	●	●
Sites Requiring Plastic	●	●	●	●	●	●	●	●				
Decoder System Compatible						●	●	●	●	●	●	

• DV/DVF available in globe, angle, slip x slip, and male x barb configurations. • Flows below 3 gpm (0.68 m^3/h; 0.19 l/s) install 200 mesh filter upstream. • I/E = Internal/External
• The PESB-R and EFB-CP are specifically designed with chlorine-resistant components for reclaimed water applications.

Water Saving Tips

- The PRS-Dial is an excellent means of regulating outlet pressure at the valve regardless of incoming pressure fluctuations. It helps ensure optimal pressure performance at the head.
- Rain Bird valves provide excellent filtration characteristics for maximum reliability in a wide range of environments.
- PESB-R and EFB-CP reclaimed valves provide reliable operation in all water conditions. Valve diaphragms are composed of EPDM, a rubber material which is chlorine and chemical resistant.

DV Series

¾", 1" (20/27, 26/34) Plastic Residential Valves

- Double-filtered pilot-flow design for maximum reliability
- Balanced-pressure diaphragm for long life
- Energy-efficient, low-power encapsulated solenoid with captured plunger and 90 mesh (200 micron) solenoid filter

Features

- External bleed to manually flush system of dirt and debris during installation and system start-up
- Internal bleed for spray-free manual operation
- Buna-N diaphragm with self-cleaning 90 mesh (200 micron) pilot water filter and captive spring
- Operates in low-flow and landscape drip applications when a 200 mesh filter is installed upstream. An option for low flow (3 gpm or less; 0.68 m^3/h; 11.4 l/m) applications is to use a LFV-100/075 Low Flow Valve (see page 176), or Drip Control Zone Kit (see page 169)
- 1¼" (3.2 cm) stainless steel phillips/square drive screws
- Five-year trade warranty

Options

- Slip-by-slip configuration for low-cost, solvent-weld installations
- Male by barb configuration for installation with poly pipe
- Angle configuration for flexible installations especially when submains are deep
- Accepts latching solenoid for use with Rain Bird battery-operated controllers

Operating Range

- Pressure: 15 to 150 psi (1.03 to 10.34 bar)
- 075-DV flow: 0.2 to 22 gpm (0.05 to 5.0 m^3/h; 0.76 to 83.3 l/m).
- 100-DV flow: 0.2 to 40 gpm (0.05 to 9.08 m^3/h; 0.76 to 151.4 l/m).
- Water temperature: Up to 110° F (43° C)
- Ambient temperature: Up to 125° F (52° C)

Electrical Specifications

- 24 VAC 50/60 Hz (cycles/sec) solenoid
- Inrush current: 0.30 A (7.2 VA) at 60 Hz
- Holding current: 0.19 A (4.6 VA) at 60 Hz
- Coil resistance: 42-55 ohms

Dimensions

- Height: 4½" (11.4 cm)
- Height (Angle): 5½" (14 cm)
- Length: 4⅜" (11.1 cm)
- Length (Angle): 3¾" (9.5 cm)
- Length (MB): 5¾" (14.6 cm)
- Width: 3⅓" (8.4 cm)

Models

- 075-DV: ¾" (20/27) NPT
- 100-DV: 1" (26/34) NPT female x female*
- 100-DV-SS: 1" (26/34) slip x slip
- 100-DV-A: 1" (26/34) NPT female x female
- 100-DV-MB: 1" (26/34) male x barb

** Available with BSP threads*

Recommendations

1.Rain Bird recommends flow rates that result in discharge velocities in the supply line not to exceed 7.5 ft/sec (2.3 m/s) in order to reduce the effects of water hammer.
2. Rain Bird residential valves cannot be used with PRS pressure regulating modules.
3. Not recommended for use with two-wire systems.

075-DV

100-DV

100-DV-MB

100-DV-A

100-DV-SS

How To Specify

100 - DV - MB

Optional Configuration:
MB: Male x Barb
A: Angle
SS: Slip x Slip

Model
DV: Remote Control Valve
ASV: Anti-siphon valve

Size
075: ¾" (20/27);
100: 1" (26/34)

This specifies a 100-DV valve; 1" (26/34) male x barb with flow control. ***Note:*** *For non-U.S. applications it is necessary to specify NPT or BSP thread type (1" only).*

DVF Series

1" (26/34) Plastic Residential Valves with Flow Control

- Economical irrigation valve for residential and light commercial applications where flow control is required
- Incorporates all features of DV Series Valves
- 60% easier system tuning with power steering flow control, a unique, easy-to-turn, patented pressure assisted mechanism
- Flow control handle is removable for vandal resistance

Operating Range

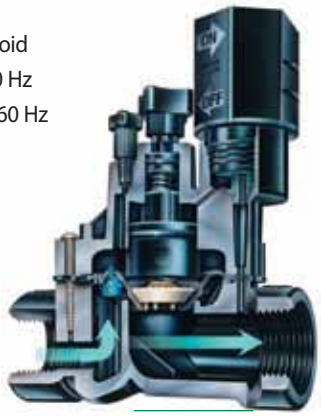
- Pressure: 15 to 150 psi (1.03 to 10.34 bar)
- 100-DVF flow: 0.2 to 40 gpm (0.05 to 9.08 m^3/h; 0.76 to 151.40 l/m)
- Water temperature: Up to 110° F (43° C)
- Ambient temperature: Up to 125° F (52° C)

Electrical Specifications

- 24 VAC 50/60 Hz (cycles/sec) solenoid
- Inrush current: 0.30 A (7.2 VA) at 60 Hz
- Holding current: 0.19 A (4.6 VA) at 60 Hz
- Coil resistance: 42-55 ohms

Dimensions

- Height: 5⅗" (14.2 cm)
- Height (Angle): 6⅛" (15.5 cm)
- Length: 4⅜" (11.1 cm)
- Length (Angle): 3¾" (9.5 cm)
- Length (MB): 5¾" (14.6 cm)
- Width: 3⅓" (8.4 cm)



DVF Cutaway

Models

- 100-DVF: 1" (26/34) NPT female x female*
- 100-DVF-SS: 1" (26/34) slip x slip
- 100-DVF-MB: 1" (26/34) male x barb

** Available with BSP threads*

Recommendations

1.Rain Bird recommends flow rates that result in discharge velocities in the supply line not to exceed 7.5 ft/sec (2.3 m/s) in order to reduce the effects of water hammer.
2. Rain Bird residential valves cannot be used with PRS pressure regulating modules.
3. Not recommended for use with two-wire systems.

100-DVF-SS

100-DVF

DV and DVF Valve Pressure Loss (psi)

Flow gpm	075-DV ¾" psi	100-DV/100-DVF 1" psi
1	3.2	3.3
3	3.9	3.6
5	4.2	3.8
10	5.0	3.8
20	7.7	5.1
30	-	6.4
40	-	8.6

DV and DVF Valve Pressure Loss (bar) METRIC

Flow m^3/h	l/m	075-DV ¾" bar	100-DV/100-DVF 1" bar
0.23	4	0.22	0.23
0.60	10	0.26	0.24
1.20	20	0.29	0.26
3.60	60	0.45	0.32
4.50	75	0.53	0.35
6.00	100	-	0.41
9.00	150	-	0.59

100-DV Angle, MxB Valve Pressure Loss (psi)

Flow gpm	Angle 1" psi	Male x barb 1" psi
1	2.8	2.5
3	3.0	2.9
5	3.2	3.0
10	3.9	3.1
20	4.3	4.3
30	5.4	7.4
40	8.2	12.7

100-DV Angle, MxB Valve Pressure Loss (bar) METRIC

Flow m^3/h	l/m	Angle 1" bar	Male x barb 1" bar
0.23	4	0.19	0.17
0.60	10	0.20	0.19
1.20	20	0.22	0.21
3.60	60	0.28	0.26
4.50	75	0.30	0.30
6.00	100	0.35	0.44
9.00	150	0.56	0.86

Note: *DV/DVF Male x barb not recommended for flows exceeding 30 gpm (6.81 m^3/h, 113.56 l/m)*

100-DVF-MB

Valves

ASVF Series

¾", 1" (20/27, 26/34) Plastic Residential Valves with Atmospheric Backflow Preventer

- Combination reliable DVF Valve and atmospheric vacuum breaker in one unit
- I.A.P. M.O. and A.S.S.E. listing approved
- City of Los Angeles listing approved and Canadian Standards Association (CSA) listing approved

Features

- Incorporates all features of DV and DVF Series valves

Operating Range

- Pressure: 15 to 150 psi (1.03 to 10.34 bar)
- 075-ASVF flow: 0.2 to 22 gpm (0.05 to 5.0 m^3/h; 0.76 to 83.3 l/m). An option for low flow (3 gpm or less; 0.68 m^3/h; 11.36 l/m) applications is to use a ASVF-LF-075 Low Flow Anti-siphon Valve (see page 171), or Drip Control Zone Kit (see page 169)
- 100-ASVF flow: 0.2 to 40 gpm (0.05 to 9.09 m^3/h; 0.76 to 151.42 l/m)
- Water temperature: Up to 110° F (43° C)
- Ambient temperature: Up to 125° F (52° C)

Electrical Specifications

- 24 VAC 50/60 Hz (cycles/sec) solenoid
- Inrush current: 0.30 A (7.2 VA) at 60 Hz
- Holding current: 0.19 A (4.6 VA) at 60 Hz
- Coil resistance: 42-55 ohms

Codes

- Anti-siphon must be installed at least 6" (15.2 cm) above the highest point of water in the pipe and sprinklers it serves
- No valve can be located downstream of the anti-siphon valve
- Anti-siphon valves must not be operated continuously for more than twelve (12) hours
- Consult local codes

Dimensions

- Height: 6¼" (15.8 cm)
- Length: 6 1/10" (15.5 cm)
- Width: 3⅕" (8.1 cm)
- Center line dimension inlet/outlet: 3.825"

Models

- 075-ASVF: ¾" (20/27)
- 100-ASVF: 1" (26/34)

Models available in NPT threads only

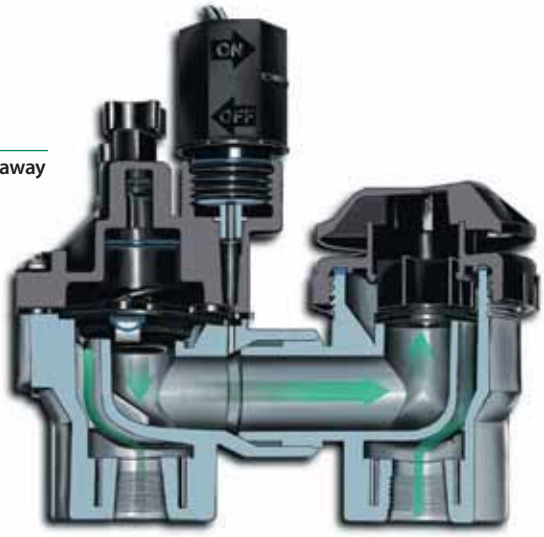
Recommendations

1. Rain Bird recommends flow rates that result in discharge velocities in the supply line not to exceed 7.5 ft/sec (2.3 m/s) in order to reduce the effects of water hammer.
2. Rain Bird residential valves cannot be used with PRS pressure regulating modules.
3. Not recommended for use with two-wire systems.

ASVF Valve Pressure Loss (psi)		
Flow gpm	**075-ASVF ¾" psi**	**100-ASVF 1" psi**
1	2.8	2.9
3	3.4	3.1
5	3.8	3.3
10	4.6	3.9
20	6.5	5.0
30	-	7.8
40	-	13.4

ASVF Valve Pressure Loss (bar)			METRIC
Flow m^3/h	**l/m**	**075-ASVF ¾" bar**	**100-ASVF 1" bar**
0.23	3.8	0.19	0.20
0.6	10	0.23	0.21
1.2	20	0.26	0.23
3.6	60	0.39	0.31
4.5	75	0.45	0.34
6.0	100	-	0.47
9.0	150	-	0.91

* *Rain Bird recommends flow rates in the supply line not to exceed 7.5 ft/sec (2.3 m/s) in order to reduce the effects of water hammer*



ASVF Cutaway

100-ASVF

HV Series

NEW

1" (26/34) Plastic Residential Valves
High Value. Outstanding Convenience.

- Only four durable, captured bonnet screws
- Your choice of tools to open valve (nut driver, Phillips head screwdriver, slotted head screwdriver)
- Compact design, 2.54" spin radius for tight installations

Features

• Reliability

- Glass-filled polypropylene body for strength
- Reverse flow normally closed design
- Trouble-free service with few parts
- Buna-N diaphragm with self-cleaning 90-mesh (200 micron) pilot water filter and stainless steel spring

• Versatility

- All the popular model configurations available
- Operates in low-flow and Xerigation® applications when a 200 mesh filter is installed upstream.
- External bleed to manually flush system of dirt and debris during installation and system start-up
- Internal bleed for spray-free manual operation

• Ease of Service

- Captive multi-drive screws for easier maintenance
- Quick access to diaphragm with only four screws
- Diaphragm locating post for reliable service

Operating Range

- Pressure: 15 to 150 psi (1.0 to 10.34 bar)
- 0.2 to 30 gpm (0.05 to 6.82 m^3/h; 0.01 to 1.89 l/s); for flows below 3 gpm (0,68 m^3/h; 0.19 l/s) or any Xerigation® application, use a 200 mesh filter installed upstream
- Water temperature: Up to 110° F (43° C)
- Ambient temperature: Up to 125° F (52° C)

Electrical Specifications

- 24 VAC 50/60 Hz solenoid

Note: For additional up-to-date electrical specifications, please refer to: www.rainbird.com/valves

Dimensions

- Height: 4.62" (11.7 cm)
- Length: 4.4" (11.2 cm)
- Height (MB): 4.50" (11.4 cm)
- Length (MB): 5.68" (14.4 cm)
- Width: 3.1" (7.9 cm)

100-HV-MB

100HV

100-HV-SS

HV Valve Pressure Loss (psi)

Flow (gpm)	1" HV (psi)	1" HV-MB (psi)
1	1.57	1.73
3	2.07	2.03
5	2.38	2.25
10	3.33	2.80
20	4.59	4.45
30	6.14	7.85
40	8.23	13.68

HV Valve Pressure Loss (psi) METRIC

Flow (m^3/h)	Flow (l/s)	1" HV (bar)	1" HV-MB (bar)
0.25	0.06	0.11	0.12
0.75	0.21	0.14	0.14
1.00	0.28	0.16	0.16
2.00	0.56	0.23	0.19
5.00	1.39	0.32	0.31
7.50	2.08	0.42	0.54
9.10	2.52	0.57	0.94

* *Rain Bird recommends flow rates in the supply line not to exceed 7.5 ft/sec (2.3 m/s) in order to reduce the effects of water hammer*

Models

- 100-HV-NPT: 1" (26/34) NPT female x female*
- 100-HV-SS: 1" (26/34) slip x slip
- 100 HV-MB: 1" (26/34) male x barb
- 100 HVF: 1" (26/34) NPT female x female*
- 100 HVF-SS: 1" (26/34) slip x slip

**Available with BSP threads*

Recommendations

1. *Rain Bird recommends flow rates that result in discharge velocities in the supply line not to exceed 7.5 ft/sec (2.3 m/s) in order to reduce the effects of water hammer.*
2. *Rain Bird residential valves cannot be used with PRS pressure regulating modules.*
3. *Not recommended for use with two-wire systems.*

100 HVF

How To Specify

100 - HV - SS

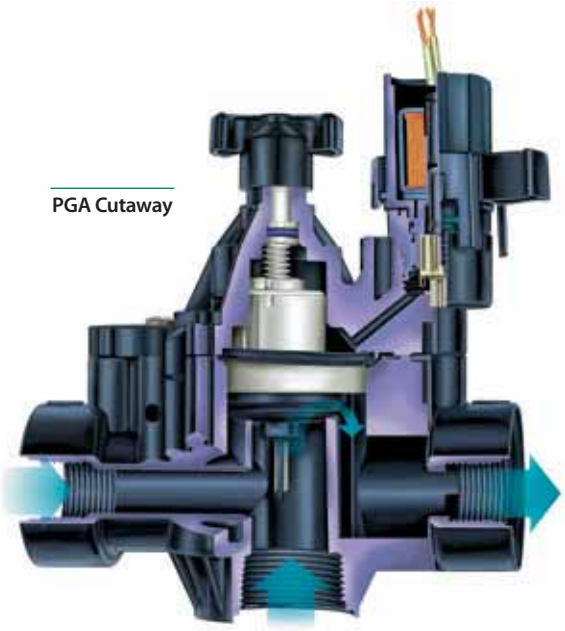
Optional Configuration:
SS: Slip x Slip
MB: Male x Barb

Model
HV: High Value Valve
HVF: High Value Valve w/Flow Control

Size
100: 1" (26/34)

Note: For non-U.S. applications it is necessary to specify NPT or BSP thread type (1" only)

Valves



PGA Cutaway

150-PGA

How To Specify

100 - PGA - PRS-D

Size
100: 1" (26/34)
150: 1½" (40/49)
200: 2" (50/60)

Model
PGA

Optional Feature
PRS-Dial: pressure regulating module *(must be ordered separately)*

Note: Valve and PRS-Dial module must be ordered separately. For non-U.S. applications, it is necessary to specify NPT or BSP thread type.

PGA Series

1", 1½", 2" (26/34, 40/49, 50/60) Plastic Globe/Angle Valves
The Toughest, Most Reliable Valves In their Class.

- Water-tight seal between the body and bonnet for maximum confidence, even in the most extreme conditions
- Multi-drive screws (Phillips, flathead, hexagonal) for easy maintenance
- Robust electrical design for quiet, reliable performance

Features

- Globe and angle configuration for flexibility in design and installation
- Slow closing to prevent water hammer and subsequent system damage
- One-piece solenoid with captured plunger and spring for easy servicing. Prevents loss of parts during field service
- Non-rising flow control handle adjusts water flow as needed
- Manual internal bleed operates the valve without allowing water into the valve box. Allows pressure regulator adjustment without turning on the valve at the controller
- Normally closed, forward flow design

Options

- Accommodates field installed PRS-Dial pressure regulating module to ensure optimum sprinkler performance. Regulates up to 100 psi (6.9 bar)
- Purple flow control handles for easy identification of non-potable water systems
  - PGA-NP-HAN1 (1" and 1½")
  - PGA-NP-HAN2 (2")
- Accepts latching solenoid for use with Rain Bird battery-operated controllers up to 150 psi (10.4 bar)
- Compatible with ESP-LXD decoders

Operating Range

- Pressure: 15 to 150 psi (1.04 to 10.4 bar)
- PRS-Dial regulates up to 100 psi (6.9 bar)
- Flow: 2 to150 gpm (0.45 to 34.05 m^3/h; 7.8 to 568 l/m)
- Flow with PRS-Dial: 5 to 150 gpm (1.14 to 34.05 m^3/h; 19.2 to 568 l/m)
- Water temperature: Up to 110° F (43° C) - refer to chart
- Ambient temperature: Up to 125° F (52° C)

Electrical Specifications

- 24 VAC 50/60 Hz (cycles/sec) solenoid
- Inrush current: 0.56 A (13.44 VA) at 60 Hz
- Holding current: 0.28 A (6.72 VA) at 60Hz
- Coil resistance: 30-39 ohms

Dimensions

Model	Height	Length	Width
• 100-PGA	7 ¼" (18.4 cm)	5 ½" (14.0 cm)	3 ¼" (8.3 cm)
• 150-PGA	8" (20.3 cm)	6 ¾" (17.2 cm)	3 ½" (8.9 cm)
• 200-PGA:	10" (25.4 cm)	7 ¾" (19.7 cm)	5" (12.7 cm)

Note: *PRS-Dial adds 2" (5.1 cm) to valve height*

Models

- 100-PGA: 1" (26/34)
- 150-PGA: 1 ½" (40/49)
- 200-PGA: 2" (50/60)

BSP threads available; specify when ordering

Recommendations

1. *Rain Bird recommends flow rates in the supply line not to exceed 7.5 ft/sec (2.29 m/s) in order to reduce the effects of water hammer*
2. *For flows below 5 gpm (1.14 m^3/h; 19.2 l/m), Rain Bird recommends use of upstream filtration to prevent debris from collecting below the diaphragm*
3. *For flows below 10 gpm (2.27 m^3/h; 37.8 l/m) Rain Bird recommends the flow control stem be turned down two full turns from the fully open position*

Extreme Durability

The PGA valve maintains a strong, worry-free seal between the body and bonnet, no matter the conditions. PGA valves were exposed to extreme temperature swings and intense pressures. The result—zero leaks.*

Pressure-Resistant Seal

The PGA valve's body-to-bonnet seal is built to overcome the intense water pressure typical of many commercial sites. Faced with repeated pressure surges well into the triple digits, our valves outlasted the nearest competitor more than 2 ½ times to 1.*

** Based on 2013 testing conducted at Rain Bird's Product Research Facility in Tucson, AZ.*

Notes

1. *Loss values are with flow control fully open*
2. *PRS-Dial recommended for use in shaded area only*

PGA Series Valve Pressure Loss (psi)

Flow gpm	100-PGA Globe 1"	100-PGA Angle 1"	150-PGA Globe 1½"	150-PGA Angle 1½"	200-PGA Globe 2"	200-PGA Angle 2"
1	5.1	4.3	-	-	-	-
5	5.5	5.0	-	-	-	-
10	5.9	5.5	-	-	-	-
20	6.0	5.6	-	-	-	-
30	6.4	5.5	1.9	1.3	-	-
40	7.0	7.5	3.2	2.0	1.2	1.0
50	-	-	4.8	3.0	1.5	0.9
75	-	-	11.1	6.5	3.0	1.7
100	-	-	19.2	11.7	5.5	3.0
125	-	-	-	-	8.6	4.8
150	-	-	-	-	12.0	6.5

PGA Series Valve Pressure Loss (bar) METRIC

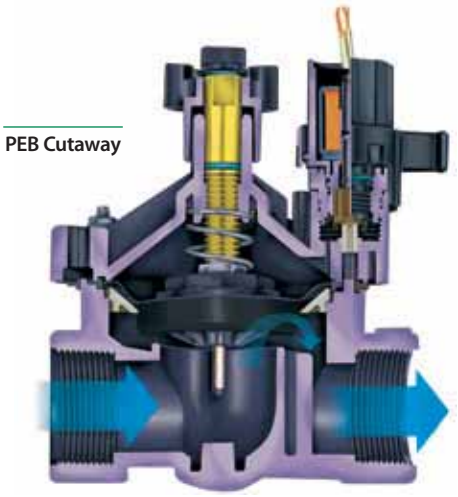
Flow m^3/h	Flow l/m	100-PGA Globe 2.5 cm	100-PGA Angle 2.5 cm	150-PGA Globe 3.8 cm	150-PGA Angle 3.8 cm	200-PGA Globe 5.1 cm	200-PGA Angle 5.1 cm
0.23	3.8	0.35	0.30	-	-	-	-
0.6	10	0.36	0.32	-	-	-	-
1.2	20	0.38	0.35	-	-	-	-
3	50	0.41	0.38	-	-	-	-
6	100	0.43	0.38	0.10	0.07	-	-
9	150	0.48	0.51	0.22	0.14	0.08	0.07
12	200	-	-	0.38	0.23	0.12	0.07
15	250	-	-	0.61	0.36	0.17	0.10
18	300	-	-	0.86	0.51	0.24	0.13
21	350	-	-	1.16	0.70	0.33	0.18
24	400	-	-	-	-	0.43	0.23
27	450	-	-	-	-	0.54	0.30
30	500	-	-	-	-	0.66	0.36
34	568	-	-	-	-	0.83	0.45

PGA Series Temperature Rating

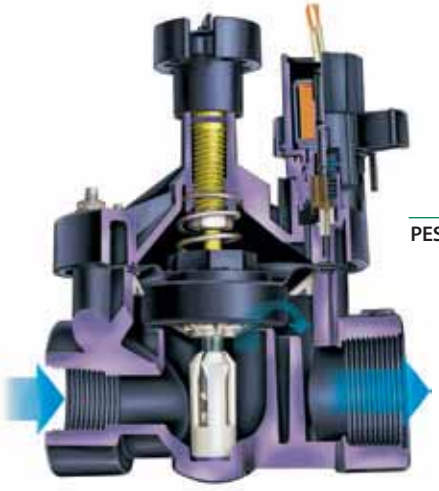
Water Temperature	Continuous Pressure
73˚ F	150 psi
80˚ F	132 psi
90˚ F	112 psi
100˚ F	93 psi
110˚ F	75 psi

PGA Series Temperature Rating METRIC

Water Temperature	Continuous Pressure
23˚ C	10.4 bar
27˚ C	9.1 bar
32˚ C	7.7 bar
38˚ C	6.4 bar
43˚ C	5.2 bar



PEB Cutaway



PESB Cutaway

PEB/PESB Series

1", 1½", 2" (26/34, 40/49, 50/60) Plastic Industrial Valves

- Valve constructed of durable glass-filled nylon 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
- Fabric-reinforced diaphragm for longer life

Features

- Low flow operating capability for a wide range of applications
- Plastic scrubber on the PESB valve scrapes the stainless steel screen to clean and break down grit and plant material. Prevents debris build-up and clogging
- One-piece solenoid with captured plunger and spring for easy servicing. Prevents loss of parts during field service
- Flow control handle adjusts water flow as needed
- Manual internal bleed operates the valve without allowing water into the valve box. Allows pressure regulator adjustment without turning on the valve at the controller
- Manual external bleed permits flushing debris from the system. Recommended for system start up and after repairs.
- Normally closed, forward flow design
- Globe configuration

Options

- Accommodates field installed PRS-Dial pressure regulating module to ensure optimum sprinkler performance. Regulates up to 100 psi (6.9 bar)
- Purple flow control handles for easy identification of non-potable water systems (sold separately)
  - PEB-NP-HAN1(1")
  - PEB-NP-HAN2 (1½" and 2")
- Accepts latching solenoid for use with Rain Bird battery-operated controllers up to 150 psi (10.4 bar)
- Compatible with ESP-LXD decoders

How To Specify

100 - PEB - PRS-D

Size
100: 1" (26/34)
150: 1½" (40/49)
200: 2" (50/60)

Model
PEB

Optional Feature
PRS-Dial: pressure regulating module *(must be ordered separately)*

Note: Valve and PRS-Dial module must be ordered separately. For non-U.S. applications, it is necessary to specify NPT or BSP thread type.

200-PEB

200-PESB

Operating Range

- Pressure: 20 to 200 psi (1.38 to 13.8 bar)
- PRS-Dial regulates up to 100 psi (6.9 bar)
- Flow: 0.25 to 200 gpm (0.06 to 45.40 m^3/h; 1.2 to 757 l/m)
- Flow with PRS-Dial: 5 to 200 gpm (1.14 to 45.40 m^3/h; 19.2 to 757 l/m)
- Water temperature: Up to 150° F (66° C)
- Ambient temperature: Up to 150° F (66° C)

Electrical Specifications

- 24 VAC 50/60 Hz (cycles/sec) solenoid
- Inrush current: 0.56 A (13.44 VA) at 60 Hz
- Holding current: 0.28 A (6.72 VA) at 60Hz
- Coil resistance: 30-39 ohms

Dimensions

Model	Height	Length	Width
• 100-PEB and 100-PESB:	6½" (16.5 cm)	4" (10.2 cm)	4" (10.2 cm)
• 150-PEB and 150-PESB:	8" (20.3 cm)	6" (15.2 cm)	6" (15.2 cm)
• 200-PEB and 200-PESB:	8" (20.3 cm)	6" (15.2 cm)	6" (15.2 cm)

Note: *The PRS-Dial option adds 2" (5.1 cm) to valve height*

Models

- 100-PEB and 100-PESB: 1" (26/34)
- 150-PEB and 150-PESB: 1½" (40/49)
- 200-PEB and 200-PESB: 2" (50/60)

BSP threads available; specify when ordering

Recommendations

1. *Rain Bird recommends flow rates in the supply line not to exceed 7.5 ft/sec (2.29 m/s) in order to reduce the effects of water hammer*
2. *For flows below 5 gpm (1.14 m^3/h; 19.2 l/m), Rain Bird recommends use of upstream filtration to prevent debris from collecting below the diaphragm*
3. *For flows below 10 gpm (2.27 m^3/h; 37.8 l/m) Rain Bird recommends the flow control stem be turned down two full turns from the fully open position*
4. *For PRS-Dial applications, Rain Bird recommends the installation of a pressure-regulating master valve or inline pressure regulator when the inlet pressure exceeds 100 psi (6.9 bar)*

PEB and PESB Series Valve Pressure Loss (psi)

Flow gpm	100-PEB 1"	150-PEB 1½"	200-PEB 2"
0.25	0.8	-	-
0.5	1.0	-	-
1	1.3	-	-
5	1.7	-	-
10	1.8	-	-
20	2.9	3.9	-
30	5.6	3.6	-
40	10.0	3.5	-
50	15.6	3.6	4.8
75	-	5.4	4.5
100	-	9.6	5.2
125	-	14.6	8.2
150	-	21.2	11.8
175	-	-	15.5
200	-	-	19.5

PEB and PESB Series Valve Pressure Loss (bar) METRIC

Flow m^3/h	Flow l/m	100-PEB 2.5 cm	150-PEB 3.8 cm	200-PEB 5.1 cm
0.06	1	0.06	-	-
0.3	5	0.09	-	-
0.6	10	0.10	-	-
1.2	20	0.12	-	-
3	50	0.15	-	-
6	100	0.32	0.26	-
9	150	0.68	0.24	-
12	200	-	0.26	0.33
15	250	-	0.33	0.32
18	300	-	0.42	0.32
21	350	-	0.57	0.34
24	400	-	0.74	0.41
27	450	-	0.92	0.51
30	500	-	1.14	0.64
33	550	-	1.38	0.77
36	600	-	-	0.90
39	650	-	-	1.04
42	700	-	-	1.18
45	757	-	-	1.34

Notes

1. *Loss values are with flow control fully open*
2. *PRS-Dial recommended for use in shaded area only*

PESB-R Cutaway

PESB-R Series Valves

1", 1½", 2" (26/34, 40/49, 50/60) Durable Chlorine-Resistant Valves for Reclaimed Water Applications

- Reliable operation even in heavily chlorinated water. Valve diaphragm composed of EPDM, a rubber material which is chlorine and chemical resistant
- Valve constructed of durable glass-filled nylon for long life and heavy-duty performance at 200 psi (13.8 bar) pressure
- One-piece solenoid design with captured plunger and spring for easy servicing. Prevents loss of parts during field service e

Features

- PESB-R conversion kits also available to convert existing PEB and PESB valves to reclaimed water valve. Kit includes NP handle, sticker, diaphragm assembly, scraper and snap washer
- Stainless steel studs molded into the body. Bonnet can be attached and removed easily without damaging threads
- External bleed protects the solenoid ports from debris when system is flushed.
- Internal bleed operates the valve without allowing water into the valve box; allows pressure regulator to be adjusted without turning on the valve at the controller first
- Low-flow operating capability (0.25 gpm; 0.06 m^3/h; 1.2 l/m) for a wide range of applications
- Slow closing to prevent water hammer and subsequent system damage
- Scrubber mechanism scrapes stainless steel screen clean to break down grit and plant material
- Purple flow control handle standard on PESB-R Series valves

150-PESB-R

How To Specify

100 - PESBR - PRS-D

Size
100: 1" (26/34)
150: 1½" (40/49)
200: 2" (50/60)

Model
PESB-R: scrubber model

Optional Feature
PRS-Dial: pressure regulating module *(must be ordered separately)*

Note: Valve and PRS-Dial module must be ordered separately.

Options

- Accommodates optional, field installed PRS-Dial pressure regulating module to ensure optimum sprinkler performance
- Accepts latching solenoid for use with Rain Bird battery-operated controllers up to 150 psi (10.4 bar)
- Compatible with ESP-LXD decoders

Operating Range

- Pressure: 20 to 200 psi (1.38 to 13.8 bar)
- Flow: 0.25 to 200 gpm (0.06 to 45.40 m^3/h; 1.2 to 757 l/m)
- Flow with PRS-Dial: 5 to 200 gpm (1.14 to 45.40 m^3/h; 19.2 to 757 l/m)
- Temperature: Up to 150° F (66° C)

Electrical Specifications

- Power: 24 VAC 50/60 cycle solenoid
- Inrush current: 0.56 A (13.44 VA) at 60 Hz
- Holding current: 0.28 A (6.72 VA) at 60 Hz
- Coil resistance: 30 - 39 ohms

Dimensions

Model	Height	Length	Width
• 100-PESB-R	6½" (16.5 cm)	4" (10.2 cm)	4" (10.2 cm)
• 150-PESB-R	8" (20.3 cm)	6" (15.2 cm)	6" (15.2 cm)
• 200-PESB-R	8" (20.3 cm)	6" (15.2 cm)	6" (15.2 cm)

Note: The PRS-Dial option adds 2" (5.1 cm) to valve height

Models

- 100-PESB-R: 1" (26/34)
- 150-PESB-R: 1½" (40/49)
- 200-PESB-R: 2" (50/60)
- 100-PESB-R-WK: 1" (26/34) Conversion Kit
- 150-PESB-R-WK: 1½" (40/49) Conversion Kit
- 200-PESB-R-WK: 2" (50/60) Conversion Kit

BSP threads available, specify when ordering

Recommendations

1. Rain Bird recommends flow rates in the supply line not to exceed 7.5 ft/sec (2.29 m/s) in order to reduce the effects of water hammer

2. For flows below 5 gpm (1.14 m^3/h; 19.21 l/m), Rain Bird recommends use of upstream filtration to prevent debris from collecting below the diaphragm

3. For flows below 10 gpm (2.27 m^3/h; 37.8 l/m) Rain Bird recommends the flow control stem be turned down two full turns from the fully open position

PESB-R Series Valve Pressure Loss (psi)

Flow gpm	100-PESB-R 1"	150-PESB-R 1½"	200-PESB-R 2"
0.25	1.6	-	-
0.5	3.0	-	-
1	1.8	-	-
5	2.9	-	-
10	2.9	-	-
20	2.6	3.5	-
30	5.8	3.1	-
40	10.2	2.3	-
50	16.0	2.1	3.7
75	-	4.3	3.3
100	-	7.5	4.7
125	-	11.9	8.6
150	-	17.0	12.6
175	-	-	14.8
200	-	-	18.9

PESB-R Series Valve Pressure Loss (bar) METRIC

Flow m^3/h	Flow l/m	100-PESB-R 2.5 cm	150-PESB-R 3.8 cm	200-PESB-R 5.1 cm
0.06	1	0.11	-	-
0.3	5	0.13	-	-
0.6	10	0.15	-	-
1.2	20	0.20	-	-
3	50	0.19	-	-
6	100	0.32	0.22	-
9	150	0.69	0.16	-
12	200	-	0.16	0.25
15	250	-	0.24	0.24
18	300	-	0.33	0.25
21	350	-	0.45	0.30
24	400	-	0.59	0.38
27	450	-	0.75	0.53
30	500	-	0.91	0.67
33	550	-	1.10	0.82
36	600	-	-	0.92
39	650	-	-	1.00
42	700	-	-	1.13
45	757	-	-	1.30

Notes

1. Loss values are with flow control fully open

2. PRS-Dial recommended for use in shaded area only

EFB-CP Cutaway

EFB-CP Series Brass Valves

1", 1¼", 1½", 2" (26/34, 33/42, 40/49, 50/60)

- Reliable performance even in dirty water applications. Self-flushing filter resists debris build-up
- Rugged red brass construction for longer life
- Durable, fabric-reinforced diaphragm composed of EPDM, a rubber material which is chlorine and chemical resistant

Features

- Normally closed, reverse flow design ensures valve will fail in the closed position if a tear or rip in the diaphragm occurs. Prevents flooding, water waste and landscape damage
- Slow closing to prevent water hammer and subsequent system damage
- One-piece solenoid with captured plunger and spring for easy servicing. Prevents loss of parts during field service
- Flow control handle adjusts water flow as needed
- Manual internal bleed operates the valve without allowing water into the valve box. Allows pressure regulator adjustment without turning on the controller
- Manual external bleed permits flushing debris from the system. Recommended for system start up and other repairs
- 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
- Globe configuration
- **Reclaimed Water Compatible:** All models now feature EPDM diaphragms and chlorine-resistant parts as standard equipment
- Purple handle cover included to designate non-potable water

Purple handle cover included to designate non-potable water

125-EFB-CP

How To Specify

100 - EFB-CP - PRS-D

Size
100: 1"
125: 1¼"
150: 1½"
200: 2"

Model
EFB-CP

Optional Feature
PRS-Dial: pressure regulating module *(must be ordered separately)*

Note: Valve and PRS-Dial module must be ordered separately.

Options

- Accommodates field installed PRS-Dial pressure regulating module to ensure optimum sprinkler performance. Regulates up to 100 psi (6.9 bar)
- Latching solenoid for use with Rain Bird battery-operated controllers up to 150 psi (10.4 bar)
- Compatible with ESP-LXD decoders

Operating Range

- Pressure: 15 to 200 psi (1.04 to 13.8 bar)
- PRS-Dial regulates up to 100 psi (6.9 bar)
- Flow with/without PRS-Dial: 5 to 200 gpm (1.14 to 45.40 m^3/h; 19.2 to 757 l/m)
- Water temperature: Up to 150° F (66° C)
- Ambient temperature: Up to 150° F (66° C)

Electrical Specifications

- 24 VAC 50/60 Hz (cycles/sec) solenoid
- Inrush current: 0.56 A (13.44 VA) at 60 Hz
- Holding current: 0.28 A (6.72 VA) at 60Hz
- Coil resistance: 30-39 ohms

Dimensions

Model	Height	Length	Width
• 100-EFB-CP:	6" (15.2 cm)	4½" (11.4 cm)	3¼" (8.3 cm)
• 125-EFB-CP:	5¾" (14.6 cm)	5" (12.7 cm)	3¼" (8.3 cm)
• 150-EFB-CP:	6½" (16.5 cm)	5½" (14 cm)	4½" (11.4 cm)
• 200-EFB-CP:	7" (17.8 cm)	6¾" (17.1 cm)	5¾" (14.6 cm)

Note: *The PRS-Dial option adds 2" (5.1 cm) to the valve height*

Models

- 100-EFB-CP: 1" (26/34)*
- 125-EFB-CP: 1¼" (33/42)
- 150-EFB-CP: 1½" (40/49)*
- 200-EFB-CP: 2" (50/60)*

* *BSP threads available; specify when ordering*

Recommendations

1. *Rain Bird recommends flow rates in the supply line not to exceed 7.5 ft/sec (2.29 m/s) in order to reduce the effects of water hammer*
2. *For flows below 5 gpm (1.14 m^3/h; 19.21 l/m), Rain Bird recommends use of upstream filtration to prevent debris from collecting below the diaphragm*
3. *For flows below 10 gpm (2.27 m^3/h; 37.8 l/m) Rain Bird recommends the flow control stem be turned down two full turns from the fully open position*

EFB-CP Series Valve Pressure Loss (psi)

Flow gpm	100 EFB-CP 1"	125 EFB-CP 1¼"	150 EFB-CP 1½"	200 EFB-CP 2"
5	0.2	-	-	-
10	0.7	-	-	-
15	1.2	-	-	-
20	2.1	1.4	2.3	0.5
30	5	2.3	2.9	0.6
40	8.2	4.1	2	0.8
50	13	6.8	3.3	1.1
60	-	9.8	4.6	1.8
80	-	16.5	7.5	2.4
100	-	-	11.8	3.8
120	-	-	16.6	5.9
140	-	-	-	7.8
160	-	-	-	10
180	-	-	-	12.5
200	-	-	-	15.8

EFB-CP Series Valve Pressure Loss (bar) METRIC

Flow m^3/h	Flow l/m	100 EFB-CP 2.5 cm	125 EFB-CP 3.2 cm	150 EFB-CP 3.8 cm	200 EFB-CP 5.1 cm
1	19	0.01	-	-	-
3	50	0.07	-	-	-
6	100	0.27	0.14	0.19	0.04
9	150	0.56	0.28	0.14	0.05
12	200	-	0.53	0.25	0.09
15	250	-	0.82	0.38	0.14
18	300	-	1.12	0.51	0.16
21	350	-	-	0.70	0.23
24	400	-	-	0.91	0.30
27	450	-	-	1.13	0.40
30	500	-	-	-	0.49
33	550	-	-	-	0.58
36	600	-	-	-	0.68
39	650	-	-	-	0.79
42	700	-	-	-	0.92
45	757	-	-	-	1.09

Notes

1. *Loss values are with flow control fully open*
2. *PRS-Dial module recommended for all flow rates*

300-BPE/300-BPES Brass Valves

3" (80/90)

- The reliable brass body and glass-filled nylon bonnet equips these valves to withstand extreme pressure surges, effluent water and clogging debris. For additional protection, the BPES model features a patented scrubber mechanism to actively fight dirt and particles
- Unique hybrid construction featuring durable red brass body and glass-filled nylon bonnet for long life at a value price
- Durable, fabric-reinforced diaphragm for longer life

Features

- Slow closing to prevent water hammer and subsequent system damage
- **BPES only:** Patented nylon scrubber scrapes a stainless steel screen to clean and break down grit and plant material. Prevents debris build-up and clogging
- Globe and angle configuration for flexibility in design and installation
- Normally closed, forward flow design
- Robust solenoid provides dependable performance even during constant operation
- Flow control handle adjusts water flows as needed and incorporates a brass thread insert for longer life
- Manual external bleed permits flushing debris from the system. Recommended for system start up and repairs
- Highly efficient operation with extremely low pressure loss.

Options

- Accommodates field-installed PRS-Dial pressure regulating module to ensure optimum sprinkler performance. Regulates up to 100 psi (6.9 bar)
- Purple flow control handle for non-potable water applications. (BPE-NP-HAN)
- Accepts latching solenoid for use with Rain Bird battery-operated controllers up to 150 psi (10.4 bar)
- Compatible with ESP-LXD decoders

Operating Range

- Pressure: 20 to 200 psi (1.38 to 13.8 bar)
- PRS-Dial regulates up to 100 psi (6.9 bar)

How To Specify

300 - BPE - PRS-D

- **Size** 3" (80/90)
- **Model** BPE
- **Optional Feature** PRS-Dial: pressure regulating module *(must be ordered separately)*

Note: Valve and PRS-Dial module must be ordered separately. For non-U.S. applications, it is necessary to specify NPT or BSP thread type.

300-BPES

BPE and BPES 3" Valve Pressure Loss (psi)

Flow gpm	Globe	Angle
60	6.6	6.8
80	5.1	5.9
100	3.2	3.5
120	1.8	1.8
140	1.8	2.1
160	2.0	2.1
180	2.2	2.0
200	2.7	2.5
250	4.0	3.4
300	4.9	4.5

BPE and BPES 3" Valve Pressure Loss (bar) METRIC

Flow m^3/h	Flow l/m	Globe	Angle
13.6	227	0.46	0.47
24	400	0.19	0.21
36	600	0.14	0.14
48	800	0.21	0.19
60	1000	0.29	0.26
68	1136	0.34	0.31

Notes

1. Loss values are with flow control fully open

2. PRS-Dial module recommended for all flow rates

- Flow with/without PRS-Dial: 60 to 300 gpm (13.62 to 68.10 m^3/h; 227 to 1136 l/m)
- Temperature: Up to 150° F (66° C)

Electrical Specifications

- 24 VAC 50/60 Hz (cycles/sec) solenoid
- Inrush current: 0.41 A (9.84 VA) at 60Hz
- Holding current: 0.28 A (6.72 VA) at 60Hz
- Coil resistance: 28 ohms, nominal

BPES Cutaway

Dimensions

Model	Height	Length	Width
• 300	13⅝" (34.61 cm)	8" (20.32 cm)	7" (17.78 cm)

Models

- 300-BPE: 3" (80/90)
- 300-BPES: 3" (80/90)

BSP threads available; specify when ordering

Recommendations

1. Rain Bird recommends flow rates in the supply line not to exceed 7.5 ft/sec (2.29 m/s) in order to reduce the effects of water hammer

2. For flows below 5 gpm (1.14 m3/h; 19.2 l/m), Rain Bird recommends use of upstream filtration to prevent debris from collecting below the diaphragm.

3. For flows below 10 gpm (2.27 m3/h; 37.8 l/m) Rain Bird recommends the flow control stem be turned down two full turns from the fully open position.

PRS-Dial

Pressure Regulating Module

- The PRS-Dial is an excellent means of regulating outlet pressure at the valve regardless of incoming pressure fluctuations. The visible scale makes adjustment quick and easy. The regulator fits all Rain Bird PGA, PEB, PESB, PESB-R, EFB-CP, BPE and BPES series valves
- Regulates and maintains constant outlet pressure between 15 and 100 psi (1.04 to 6.9 bar) within ±3 psi (±0.21 bar)
- Adjustment knob with detents permits fine-tune setting in 1⁄3 psi (0.02 bar) increments. Dial cartridge makes installation and adjustment quick, easy and accurate

Features

- Improved spike reduction capabilities reduce water hammer
- Ergonomic design with snap-tight cover to prevent vandalism
- Waterproof dial cartridge eliminates fogging and binding
- Dial cartridge retrofits into all existing PRS-B units
- Schrader valve connects pressure hose gauge, ordered separately
- Easy field installation. PRS-Dial threads underneath the solenoid and adapter
- Corrosion-resistant glass-filled nylon for rugged performance

Operating Range

- Pressure: Up to 100 psi (6.9 bar)*
- Regulation: 15 to 100 psi (1.04 to 6.9 bar)
- Flow: Refer to chart

* *While the PRS-Dial unit can withstand pressures up to 200 psi (13.8 bar), accurate pressure regulation can be maintained only up to 100 psi (6.9 bar)*

Model

- PRS-D

Application Information

- Proper operation requires inlet pressure to be a minimum of 15 psi (1.04 bar) higher than desired outlet pressure
- For areas with very high pressure or uneven terrain, install sprinklers with PRS pressure regulating stems and/or SAM check valves
- When inlet pressure exceeds 100 psi (6.9 bar), a pressure regulating master valve or inline pressure regulator is required
- Rain Bird does not recommend using the pressure regulating module for applications outside the recommended flow ranges
- To reduce the effects of water hammer, Rain Bird recommends flow rates in the supply line not to exceed 7.5 ft/sec (2.29 m/s)
- For flows below 10 gpm (2.27 m^3/h; 37.8 l/m), Rain Bird recommends the flow control stem be turned down two full turns from the fully open position

† Note: Valve and PRS-Dial module must be ordered separately.

Valve Flow Ranges*

Model	gpm	m^3/h	l/m
100-PGA	5-40	1.14-9.08	19.2-151
150-PGA	30-100	6.81-22.70	113-378
200-PGA	40-150	9.08-34.05	151-568
100-PEB	5-50	1.14-11.35	19.2-189
150-PEB	20-150	4.54-34.05	76-568
200-PEB	75-200	17.03-45.40	284-757
100-PESB/PESB-R	5-50	1.14-11.35	19.2-189
150-PESB/PESB-R	20-150	4.54-34.05	76-568
200-PESB/PESB-R	75-200	17.03-45.40	284-757
100-EFB-CP	5-50	1.14-11.35	19.2-189
125-EFB-CP	20-80	4.54-18.16	76-302
150-EFB-CP	20-120	4.54-31.78	76-529
200-EFB-CP	20-200	4.54-45.40	76-757
300-BPE	60-300	13.62-68.10	227-1136
300-BPES	60-300	13.62-68.10	227-1136

** These are the valve flow ranges. The PRS-Dial regulates only up to 100 psi (6.9 bar)*

PRS-Dial

PRS-Dial cutaway

150-PESB-R with PRS-Dial Installation†

300-BPE with PRS-Dial Installation†

Quick-Coupling Valves

- Industrial-strength brass quick-coupling valves for convenient water access in potable and non-potable systems
- Rugged, red brass construction for long life and reliable performance
- Reliable operation with strong corrosion-resistant stainless steel spring

Features

- Optional locking cover on models 33-DLRC, 44-LRC, 5-LRC, 33-DNP, 44-NP and 5-NP (use 2049 key to unlock). Metal cover on model 7 only
- One-piece body design (models 3-RC, 5-RC, and 7).
- Two-piece body design for easy servicing (models 33-DRC, 44-LRC, 44-RC, 33-DNP, and 44-NP).
- Strong corrosion-resistant stainless steel spring prevents leakage
- Thermoplastic cover for durability
- 33-DNP, 44-NP and 5-NP covers marked with "Do Not Drink!" warnings in English and Spanish

Operating Range

- Pressure: 5 to 125 psi (0.35 to 8.63 bar)
- Flow: 10 to 125 gpm (2.27 to 28.38 m³/h; 37.8 to 473 l/m)
- 33-DNP, 44-NP and 5-NP flow: 10 to 70 gpm (2.27 to 15.89 m³/h; 37.8 to 265 l/m)

Dimensions (height)

- 3-RC: 4¼" (10.8 cm)
- 33-DRC: 4⅜" (11.1 cm)
- 33-DLRC: 4⅝" (11.7 cm)
- 44-RC: 6" (15.2 cm)
- 44-LRC: 6" (15.2 cm)
- 5-RC: 5½" (14.0 cm)
- 5-LRC: 5½" (14.0 cm)
- 7: 5¾" (14.6 cm)
- 33-DNP: 4⅜" (11.1 cm)
- 44-NP: 6" (15.2 cm)
- 5-NP: 5½" (14.0 cm)

Models

- 3-RC: 3⁄4" (20/27) Rubber Cover, 1-Piece Body
- 33-DRC: 3⁄4" (20/ 27) Double Track Key Lug, Rubber Cover, 2-Piece Body
- 33-DLRC: 3⁄4" (20/27) Double Track Key Lug, Locking Rubber Cover, 2-Piece Body
- 44-RC: 1" (26/34) Rubber Cover, 2-Piece Body
- 44-LRC: 1" (26/34) Locking Rubber Cover, 2-Piece Body
- 5-RC: 1" (26/34) Rubber Cover, 1-Piece Body
- 5-LRC: 1" (26/34) Locking Rubber Cover, 1-Piece Body
- 7: 1 1⁄2" (40/49) Metal Cover, 1-Piece Body
- 5-RC-BSP: 1" (26/34) Rubber Cover, 1-Piece Body, BSP threaded
- 5-LRC-BSP: 1" (26/34) Locking Rubber Cover, 1-Piece Body, BSP threaded
- 33-DNP: 3⁄4" (20/27) Non-potable, Purple Locking Rubber Cover, 2-Piece Body
- 44-NP: 1" (26/34) Non-potable, Purple Locking Rubber Cover, 2-Piece Body
- 5-NP: 1" (26/34) Non-potable, Purple Locking Rubber Cover, 1-Piece Body

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

Quick-Coupling Valves Pressure Loss (psi)

Flow	3-RC	33-DRC 33-DLRC 33-DNP	44-RC 44-LRC 44-NP	5-RC 5-LRC 5-NP	7
gpm	¾"	¾"	1"	1"	1½"
10	1.8	2	-	-	-
15	4.7	4.3	2.2	-	-
20	7.2	7.6	4.4	-	-
30	-	-	11.5	4.1	-
40	-	-	-	7.3	-
50	-	-	-	11	1.7
60	-	-	-	15.7	2.5
70	-	-	-	21.5	3.6
80	-	-	-	-	4.9
100	-	-	-	-	8.4
125	-	-	-	-	14

Quick-Coupling Valves Pressure Loss (bar) **METRIC**

Flow		3-RC	33-DRC 33-DLRC 33-DNP	44-RC 44-LRC 44-NP	5-RC 5-LRC 5-NP	7
m³/h	l/m	1.9 cm	1.9 cm	2.5 cm	2.5 cm	3.8 cm
2.3	38	0.12	0.12	-	-	-
4	67	0.41	0.42	0.23	-	-
5	83	0.57	0.62	0.40	-	-
6	100	-	-	0.62	-	-
7	117	-	-	0.83	0.30	-
8	133	-	-	-	0.40	-
9	150	-	-	-	0.50	-
10	167	-	-	-	0.61	-
12	200	-	-	-	0.85	0.13
14	233	-	-	-	1.15	0.18
16	267	-	-	-	1.50	0.25
22	367	-	-	-	-	0.54
28	473	-	-	-	-	0.97

Quick-Coupling Valve Cutaway

Quick Coupling Valves

Valve Keys

Quick-Coupling Keys

Features

- Key threads into top of quick-coupling valve to provide water access

Models

- 33-DK: ¾" (20/27)
- 44-K: 1" (26/34)
- 55-K-1: 1" (26/34)*
- 7-K: 1½" (40/49)*

* *Available with BSP threads; specify when ordering*

55-K-1

Corresponding Valve Keys

Valve	Key	Top Pipe Threads Male	Female
3-RC	33-DK	¾"	½"
33-DRC/33-NP	33-DK	¾"	½"
44-RC/44-NP	44-K	1"	¾"
5-RC/5-NP	55-K-1	1"	-
7	7-K	1½"	1¼"

Corresponding Valve Keys METRIC

Valve	Key	Top Pipe Threads Male	Female
3-RC	33-DK	20/27	15/21
33-DRC/33-NP	33-DK	20/27	15/21
44-RC/44-NP	44-K	26/34	20/27
5-RC/5-NP	55-K-1	26/34	-
7	7-K	40/49	33/42

SH Series

Hose Swivel

Features

- Attaches water hose to quick-coupling valve key
- Swivels up to 360°
- Allows hose to be pulled in any direction
- Prevents hose damage

Specifications

- SH-0: ¾" (20/27) female pipe thread x ¾" (20/27) male hose thread
- SH-1: 1" (26/34) female pipe thread x ¾" (20/27) male hose thread
- SH-2: 1" (26/34) female pipe thread x 1" (26/34) male hose thread
- SH-3: 1½" (40/49) female pipe thread x 1" (26/34) male hose thread

Models

- SH-0
- SH-1
- SH-2*
- SH-3

**Available with BSP threads*

SH-0

Locking Cover Key

Features

- Locks and unlocks the optional locking cover on quick-coupling valves
- Operates the valve marker compression lock
- Compatible with models 33-DLRC, 33-DNP, 44-LRC, 44-NP, 5-LRC, and 5-NP

Model

- 2049 Cover Key

2049

SPLICE-1

Wire Splice

Features

- Fast, reliable splicing
- UV resistant black housing is pre-filled with non-toxic lithium grease

Specifications

- Splices low voltage electrical control wires: 30 V max
- Fits wires up to
  - 5 #18, #20, or #22 AWG
  - 4 #16 AWG
  - 2 #14 AWG

Model

- SPLICE-1

SPLICE-1

Purple Valve Handle Assembly

Features

- Purple flow control handle identifies valve as part of a non-potable system
- Easily field installed
- Sizes for all Rain Bird Commercial Valves

Models

- PGA-NP-HAN1 (1" and 1½" PGA Valves)
- PGA-NP-HAN2 (2" PGA Valves)
- PEB-NP-HAN1 (1" PEB/PESB Valves)
- PEB-NP-HAN2 (1½" and 2" PEB/PESB Valves)
- BPE-NP-HAN (3" BPE/BPES Valves)

PEB-NP-HAN PGA-NP-HAN

BPE-NP-HAN

24 VAC Solenoid Valves Wire Sizing – 50Hz

9.8 VA Valves (EZ) with 26.5 Volt Transformers - Equivalent Feet of Circuit

80 psi (5.5 bar) Water Pressure at Valve

Common Wire Size	Control Wire Size 18 •	16 •	14 •	12 •	10 •	8 •	6 •	4 •
18	2800							
16	3400	4400						
14	4000	5400	7100					
12	4400	6300	8700	11200				
10	4800	7100	10100	13800	17800			
8	5000	7600	11300	16100	21900	28400		
6	5200	8000	12200	17900	25500	34700	44700	
4	5300	8300	12900	19400	28600	40600	55000	71500

100 psi (6.9 bar) Water Pressure at Valve

Common Wire Size	Control Wire Size 18 •	16 •	14 •	12 •	10 •	8 •	6 •	4 •
18	2400							
16	2900	3800						
14	3400	4700	6100					
12	3900	5500	7500	9700				
10	4200	6200	8800	12000	15500			
8	4400	6600	9800	14000	19100	24700		
6	4500	7000	10600	15600	22200	30200	38900	
4	4600	7200	11200	16900	24900	35300	47900	62200

125 psi (8.6 bar) Water Pressure at Valve

Common Wire Size	Control Wire Size 18 •	16 •	14 •	12 •	10 •	8 •	6 •	4 •
18	2000							
16	2500	3300						
14	2900	4000	5200					
12	3300	4700	6400	8300				
10	3600	5300	7500	10200	13300			
8	3700	5700	8400	11900	16300	21100		
6	3900	6000	9100	13300	19000	25800	33200	
4	4000	6200	9600	14400	21200	30200	40900	53200

150 psi (10.4 bar) Water Pressure at Valve

Common Wire Size	Control Wire Size 18 •	16 •	14 •	12 •	10 •	8 •	6 •	4 •
18	1800							
16	2200	2800						
14	2500	3500	4500					
12	2900	4100	5600	7200				
10	3100	4600	6500	8900	11500			
8	3200	4900	7300	10400	14200	18300		
6	3400	5200	7900	11600	16500	22400	28900	
4	3400	5400	8300	12500	18500	26300	35600	46300

200 psi (13.8 bar) Water Pressure at Valve

Common Wire Size	Control Wire Size 18 •	16 •	14 •	12 •	10 •	8 •	6 •	4 •
18	1300							
16	1600	2100						
14	1900	2600	3400					
12	2100	3000	4100	5300				
10	2300	3400	4800	6600	8500			
8	2400	3600	5400	7700	10500	13600		
6	2500	3800	5800	8600	12200	16600	21400	
4	2500	4000	6100	9300	13700	19500	26400	34300

Commercial Valve Wire Sizing Procedure

Step 1

Determine actual distance, along wire run, from controller out to the first valve on a circuit and between each succeeding valve on a multiple valve circuit. Example: (Two watt solenoid, 26.5 volt transformer, 50Hz, at 150 psi water pressure at valves.)

Step 2

Calculate the equivalent circuit length for each valve circuit on the controller. (See chart to left)

Step 3

Selecting Common Wire Size: Using the longest equivalent length calculated above, go to the appropriate valve chart and select a common wire and a control wire that are as close to the same size as possible (the common wire size should always be equal to or one size larger than the control wire size.) In the example above, the circuit for station #3 has the longest equivalent length, 7000 feet. In the chart (for this example use the chart for 150 psi water pressure at the valve and a 26.5 volt transformer) select a wire size combination of size 14 and 12 wire. Select common wire as size 12 wire. Since one common wire shall be used for all valves on the controller, you have now established the common wire size for that controller as size 12 wire.

Step 4

Sizing Circuit Control Wires: Reading only from the row for the common wire size selected in Step 3 (size 12), proceed to select each control wire size from the chart using the calculated equivalent length for each circuit.

Station #1: Equiv. Length = 1 valve x 2000 ft. = 2000 ft. select size 18 control wire

Station #2: Equiv. Length = (1 valve x 1000 ft.) + (2 valves x 2000 ft.) = 5000 ft. select size 16 control wire

Station #3: Equiv. Length = (1 valve x 500 ft.) + (2 valves x 1000 ft.) + (3 valves x 1500 ft.) = 7000 ft. select size 14 control wire

24 VAC Solenoid Valves Wire Sizing – 60Hz

9.8 VA Valves (EZ) with 26.5 Volt Transformers - Equivalent Feet of Circuit

80 psi (5.5 bar) Water Pressure at Valve

Common Wire Size	Control Wire Size 18 •	16 •	14 •	12 •	10 ●	8 ●	6 ●	4 ●
18	2200							
16	2800	3600						
14	3200	4400	5800					
12	3600	5200	7100	9100				
10	3900	5800	8300	11200	14600			
8	4100	6200	9200	13100	17900	23200		
6	4300	6600	10000	14600	20800	28300	36500	
4	4400	6800	10500	15800	23300	33200	44900	58400

100 psi (6.9 bar) Water Pressure at Valve

Common Wire Size	Control Wire Size 18 •	16 •	14 •	12 •	10 ●	8 ●	6 ●	4 ●
18	2000							
16	2500	3300						
14	2900	4000	5200					
12	3300	4700	6400	8300				
10	3500	5200	7500	10200	13200			
8	3700	5700	8400	11900	16200	21000		
6	3900	6000	9000	13300	18900	25700	33200	
4	4000	6200	9500	14400	21200	30100	40800	53100

125 psi (8.6 bar) Water Pressure at Valve

Common Wire Size	Control Wire Size 18 •	16 •	14 •	12 •	10 ●	8 ●	6 ●	4 ●
18	1700							
16	2100	2700						
14	2500	3400	4400					
12	2700	3900	5400	7000				
10	3000	4400	6300	8600	11100			
8	3100	4700	7000	10000	13600	17700		
6	3200	5000	7600	11200	15900	21600	27800	
4	3300	5200	8000	12100	17800	25300	34300	44600

150 psi (10.4 bar) Water Pressure at Valve

Common Wire Size	Control Wire Size 18 •	16 •	14 •	12 •	10 ●	8 ●	6 ●	4 ●
18	1400							
16	1800	2300						
14	2100	2900	3700					
12	2300	3300	4600	5900				
10	2500	3700	5400	7300	9500			
8	2700	4000	6000	8500	11600	15100		
6	2800	4300	6500	9500	13600	18400	23800	
4	2800	4400	6800	10300	15200	21600	29300	38000

200 psi (13.8 bar) Water Pressure at Valve

Common Wire Size	Control Wire Size 18 •	16 •	14 •	12 •	10 ●	8 ●	6 ●	4 ●
18	900							
16	1200	1500						
14	1400	1900	2400					
12	1500	2200	3000	3900				
10	1600	2400	3500	4800	6200			
8	1700	2600	3900	5600	7600	9900		
6	1800	2800	4200	6300	8900	12100	15600	
4	1800	2900	4500	6800	10000	14200	19200	25000

Commercial Valve Wire Sizing Procedure

Step 1

Determine actual distance, along wire run, from controller out to the first valve on a circuit and between each succeeding valve on a multiple valve circuit. Example: (Two watt solenoid, 26.5 volt transformer, 60Hz, at 150 psi water pressure at valves.)

Step 2

Calculate the equivalent circuit length for each valve circuit on the controller. (See chart to left)

Step 3

Selecting Common Wire Size: Using the longest equivalent length calculated above, go to the appropriate valve chart and select a common wire and a control wire that are as close to the same size as possible (the common wire size should always be equal to or one size larger than the control wire size.) In the example above, the circuit for station #3 has the longest equivalent length, 7000 feet. In the chart (for this example use the chart for 150 psi water pressure at the valve and a 26.5 volt transformer) select a wire size combination of size 12 and 10 wire. Select common wire as size 10 wire. Since one common wire shall be used for all valves on the controller, you have now established the common wire size for that controller as size 10 wire.

Step 4

Sizing Circuit Control Wires: Reading only from the row for the common wire size selected in Step 3 (size 10), proceed to select each control wire size from the chart using the calculated equivalent length for each circuit.

Station #1: Equiv. Length = 1 valve x 2000 ft. = 2000 ft. select size 18 control wire

Station #2: Equiv. Length = (1 valve x 1000 ft.) + (2 valves x 2000 ft.) = 5000 ft. select size 14 control wire

Station #3: Equiv. Length = (1 valve x 500 ft.) + (2 valves x 1000 ft.) + (3 valves x 1500 ft.) = 7000 ft. select size 12 control wire

The new Rain Bird® PVB Professional series offers rugged, no-nonsense dependability, but with a price tag that can meet any budget. Coupled with the Rain Bird® VB Specification series, you have a full range of reliable valve boxes that deliver strength and value to any project.

Water Saving Tips

- By monitoring the amount of moisture at the root zone, the SMRT-Y Soil Moister Sensor Kit delivers significant water savings while promoting healthy landscapes. Designed to interface with virtually any irrigation controller, the SMRT-Y is an economical way to achieve "Smart Irrigation Control".
- Rain Bird Swing Assemblies connect heads to lateral pipes. This low-cost, reliable, and flexible connection prevents heads or pipes from breaking when run over by equipment and allows easy adjustment of the heads to grade.
- Reputations are built on hard work, not shortcuts — just like PVB Professional series valve boxes. Made-in-America tough, these boxes are loaded with the features you need to get the job done right, without cutting corners. Even standard installations deserve professional performance.

SMRT-Y Soil Moisture Sensor Kit

Accurate • Reliable • Smart

- Easy to install add-on to any standard irrigation system that provides over 40% water savings by optimizing water at the root zone
- Assures lush healthy landscapes free from overwatering
- Turns any controller into a water saving smart controller

Features and Benefits

- Healthier landscapes less prone to nutrient depletion, fungus and shallow root growth
- No maintenance sensor never needs calibration – Just bury and forget
- Digital TDT Sensor enables highly accurate readings that are independent of soil temperature and electrical conductivity (EC)
- Displays soil moisture, temperature, EC, and watering history

Operating Specifications

- 24VAC @ 50/60 Hz
- Operating temperature: -4°F to 158°F (-20°C to 70°C)
- Survival temperature: -40°F to 185°F (-40°C to 85°C)
- UL, CUL, C-TICK certifications

Dimensions

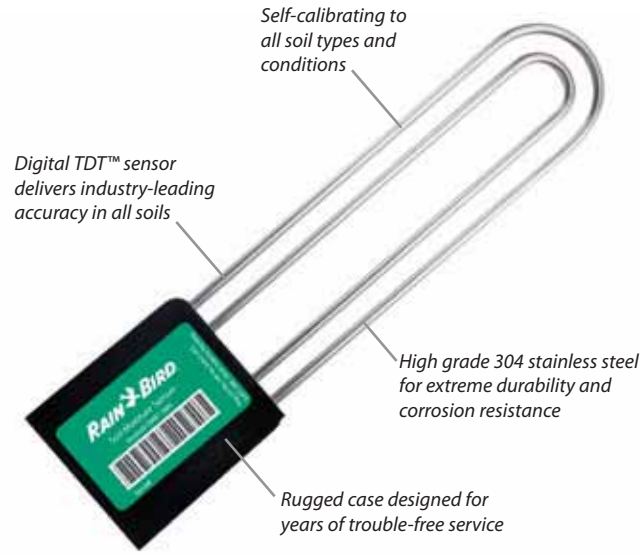
- **Sensor Control**
  - Width: 3.0" (76mm); H: 3.0" (76mm); D: 0.75" (19mm)
- **In-Ground Soil Moisture Sensor** (without wires)
  - W: 2.0" (50mm); L: 8.0" (200mm); D: 0.5" (12mm)

SMRT-Y Kit

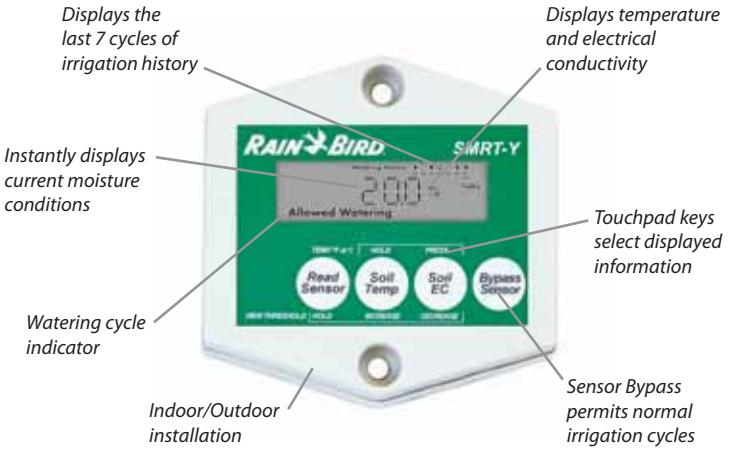
- **Includes**
  - Controller User Interface
  - In-Ground Soil Moisture Sensor
  - Anodized, rust-proof screws, 1.5"(two per package)
  - Wire nuts – 5 blue, 2 gray, 1 yellow
  - Multilingual instruction manual, "Quick Start" Guide and Soil Moisture sticker

Models

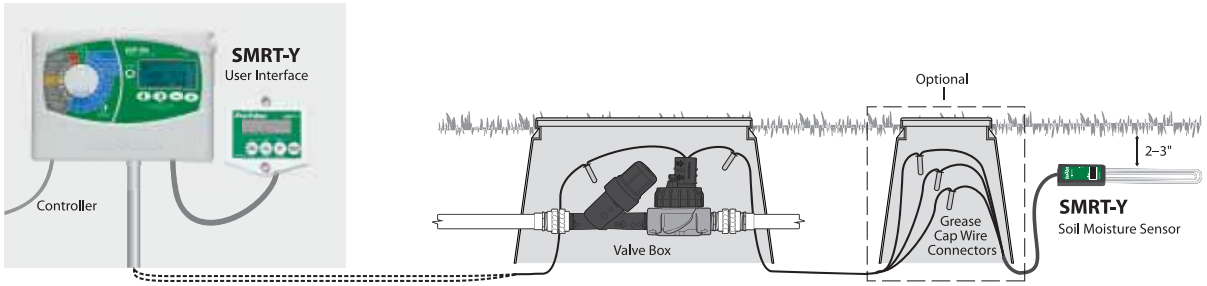
- SMRT-Y: Soil Moisture Sensor Kit
- SMRT-YI: International Soil Moisture Sensor Kit



Sensor



Controller



SA Series

Swing Assemblies Connect Heads to Lateral Pipes

- Quality alternative to locally assembled swing pipe/spiral ba fittings that do not carry a manufacturer's warranty
- Comprehensive range of products support a variety of lands solutions
- Complementary engineered fittings and spray heads instill confidence in product specification

Specifications

The operating range of the Rain Bird Swing Assemblies matches exceeds the operating range for most ½" (1.3 cm) sprays and ¾" (1.9 cm) rotors

- Operating pressure: Up to 80 psi (5.5 bar)
- Surge pressure: Up to 240 psi (15.5 bar)
- Temperature: Up to 110° F (43° C)
- Maximum flow: 8 gpm (0.5 l/sec)

Unique Rain Bird system offering: Swing Assemblies and Spray Heads

SA Series

How To Specify

SA 12 5050

Inlet/Outlet
050: ½" x ½"
5050: ½" x ½"
5075: ½" x ¾"
7575: ¾" x ¾"

Length
18"
12"
6"

Model
Swing Assembly

SA Series Swing Assemblies Specifications

Model Number	Part Number	Length		Inlet		Outlet	
		US	METRIC	US	METRIC	US	METRIC
SA-6050	A48030	6"	15.2 cm	½"	1.3 cm	½"	1.3 cm
SA-65075	A48055	6"	15.2 cm	½"	1.3 cm	¾"	1.9 cm
SA-125050	A48035	12"	30.5 cm	½"	1.3 cm	½"	1.3 cm
SA-125075	A48045	12"	30.5 cm	½"	1.3 cm	¾"	1.9 cm
SA-127575	A48050	12"	30.5 cm	¾"	1.9 cm	¾"	1.9 cm
SA-185050	A48065	18"	45.7 cm	½"	1.3 cm	½"	1.3 cm

SPX Series Swing Pipe

Swing Pipe with Spiral Barb Fittings Provides a Flexible Swing Assembly for Sprays and Rotors

Features and Benefits

- **SPX-FLEX100**
  - Superior flexibility allows pipe to be efficiently routed around hardscape, terraces, and uneven terrain to turn landscape design into reality
  - Textured surface makes product easier to handle, contributing to labor efficiency, especially under wet conditions
  - Up to 30% more flexible than competitive flexible pipe*
  - Resists kinking
  - Quick and easy installation lowers material and labor costs
  - Installs quickly leaving time for additional system installations and incremental revenue opportunities

** Based on tests conducted at the Rain Bird Product Research Center. Tests conducted on Rain Bird and principal competitors' swing pipe*

Up to 30% more flexible than competitors

SPX-FLEX100

Specifications

- Inside diameter: 0.49" (1.24 cm)
- Operating pressure: Up to 80 psi (5.5 bar)
- Temperature: Up to 110° F (43° C)

Models

- SPX-FLEX-100: 100' (30 m) coil
- SPX-FLX-330: 330' (100 m) coil

SB Series Spiral Barb Fittings

A Natural Product Complement to SPX Series Swing Pipe

Features and Benefits

- Fittings are made of robust acetal material to make connecting swing pipe fast and easy
- Easy twist-in insertion – no glue or clamps needed for installation
- Aggressive barb lip makes a secure connection that is less likely to leak
- Broad range of shapes and sizes allow the contractor to choose the best fitting for the application
- Extended length and aggressive barb lip prevent blow outs, reducing likelihood of contractor call backs

Specifications

- Operating pressure: Up to 80 psi (5.5 bar)
- Temperature: Up to 110° F (43° C)

Models

- SBE-050: ½" M NPT x ½" barb elbow
- SBE-050B: ½" M NPT x ½" barb elbow - bulk package
- SBE-075: ¾" M NPT x ½" barb elbow
- SBE-075B: ¾" M NPT x ½" barb elbow - bulk package
- SBA-050: ½" M NPT x ½" barb adapter
- SBA-075: ¾" M NPT x ½" barb adapter
- SB-TEE: ½" barb x ½" barb x ½" barb tee
- SB-CPLG: ½" barb x ½" barb coupling
- SBFE-050: ½" F NPT x ½" barb elbow
- SB-NPT-TEE: ½" M NPT x ½" barb x ½" spiral barb tee

PVB Professional Series Valve Boxes

NEW

The PVB Series valve box provides rugged, no-nonsense dependability, with a price tag that can meet any budget

- Proven Reliability — From reinforced sidewalls and bottom flanges to skid-resistant lids, the PVB Professional series is manufactured to our own exacting testing and quality standards, using quality materials and rigorously tested for durability.
- Four Colors and a Variety of Size Configurations — Available in green, black, and tan, the PVB Professional Series valve box and lids blend into any landscape. For reclaimed water projects – no problem. There is a purple option as well.
- Affordability — Competitively priced to ensure every installation can have Rain Bird quality, regardless of budget.
- Environmentally Friendly — An environmentally responsible product, the PVB Professional series can help grow your green certification level.

Primary Application

Protects in-ground irrigation valves. Functions as a durable enclosure that provides easy access to valves for maintenance. Used in turf applications to house single valves, valve manifolds, wiring junctions, drip zone control kits or other subsurface components of an irrigation system.

Features

- Durable construction
- Side ridges for additional side wall support
- Pre-molded pipe slots
- Bottom flanges to prevent sinking and provide stability
- Four colors: available in green, black, tan and purple
- Lids seal tightly yet allow for easy maintenance of valves

Dimensions and Additional Features by Model

Rain Bird offers a full line of professional grade rectangular and round valve boxes. Below are the model numbers and brief descriptions of each.

PVB PROFESSIONAL SERIES 6" ROUND VALVE BOX

- Dimensions: 6.0" Top D x 9.0" H x 8.6" Bottom D (15.2 cm x 22.9 cm x 21.8 cm)
- Snap-in overlapping T-lid
- Lids have skid-resistant texture
- Body built with three ridges for additional sidewall support
- PVB6RND: 6" round black body & overlapping green lid
- PVB6RNDP: 6" round black body & overlapping purple lid
- PVB6RNDT: 6" round black body & overlapping tan lid


6" Round


10" Round


Mini Standard


Standard Rectangular


Jumbo Rectangular


Standard 6" Extension


Jumbo 6" Extension

PVB PROFESSIONAL SERIES 10" ROUND VALVE BOX

- Dimensions: 10.0" Top D x 10.0" H x 12.8" Bottom D (25.4 cm x 25.4 cm x 32.5 cm)
- Overlapping T-lid with bolt hole and twist lock
- Lids have skid-resistant texture
- Body built with double ridges for additional sidewall support

- PVB10RND: 10" round black body & overlapping green lid
- PVB10RNDG: 10" round green body & overlapping green lid
- PVB10RNDP: 10" round purple body & overlapping purple lid
- PVB10RNDT: 10" round tan body & overlapping tan lid

PVB PROFESSIONAL SERIES MINI STANDARD VALVE BOX

- Dimensions: Height: 10" (25.4 cm); Top: 15" L x 9½" W (38.1 cm x 24.1 cm); Bottom: 18" L x 12½" W (45.7 cm x 31.8 cm)
- Our compact alternative to a standard size box
- Drop-in lid
- Lids have skid-resistant texture

- PVBMST: 10" mini-standard black body & drop-in green lid
- PVBMSTP: 10" mini-standard black body & drop-in purple lid
- PVBMSTT: 10" mini-standard black body & drop-in tan lid

PVB PROFESSIONAL SERIES STANDARD VALVE BOX

- Dimensions: Height: 12" (30.5 cm); Top: 18¼" L x 13" W (46.5 cm x 33.0 cm); Bottom: 21¼" L x 15 15⁄16" W (54.1 cm x 40.6 cm)
- Drop-in lockable lid
- Lids have skid-resistant texture
- Double ledge lid support
- Reinforced sidewalls for additional strength

- PVBSTD: 12" standard black body & drop-in green lid
- PVBSTDG: 12" standard green body & drop-in green lid
- PVBSTDP: 12" standard purple body & drop-in purple lid
- PVBSTDT: 12" standard tan body & drop-in tan lid

PVB PROFESSIONAL SERIES STANDARD EXTENSION

- Dimensions: Height: 6.8" (17.3 cm); Top: 17" L x 11¾" W (43.2 cm x 30.0 cm); Bottom: 18⅞" L x 13⅝" W (48.0 cm x 34.5 cm)
- Overlapping lockable T-lid
- Lids have skid-resistant texture
- STDEXT body can extend the Standard Valve box by 6″ in height
- STDEXT body can be used as a 6″ deep box to reduce digging

- PVBSTDEXT: 6" black body & overlapping green lid
- PVBSTDEXTG: 6" green body & overlapping green lid
- PVBSTDEXTP: 6" purple body & overlapping purple lid
- PVBSTDEXTT: 6" tan body & overlapping tan lid

PVB PROFESSIONAL SERIES JUMBO VALVE BOX

- Dimensions: Height: 12.0" (30.5 cm); Top: 22¼" L x 16⅜" W (56.6 cm x 41.7 cm); Bottom: 25¼" L x 19⅜" W (64.3 cm x 49.3 cm)
- Drop-in lockable lid
- Lids have skid-resistant texture
- Double ledge lid support
- Reinforced sidewalls for additional strength

- PVBJMB: 12" black body & drop-in green lid
- PVBJMBG: 12" green body & drop-in green lid
- PVBJMBP: 12" purple body & drop-in purple lid
- PVBJMBT: 12" tan body & drop-in tan lid

PVB PROFESSIONAL SERIES JUMBO EXTENSION

- Dimensions: Height: 6.6" (16.8 cm); Top: 21⅜" L x 15⅞" W (54.4 cm x 40.4 cm); Bottom: 22 15⁄16" L x 16⅜" W (58.2 cm x 41.7 cm)
- Overlapping lockable T-lid
- Lids have skid-resistant texture
- JMBEXT body can extend the Jumbo Valve box by 6″ in height
- JMBEXT body can be used as a 6″ deep box to reduce digging

- PVBJMBEXT: 6" black body & overlapping green lid
- PVBJMBEXTG: 6" green body & overlapping green lid
- PVBJMBEXTP: 6" purple body & overlapping purple lid
- PVBJMBEXTT: 6" tan body & overlapping tan lid

Four Colors: Green, black and tan to blend seamlessly into a variety of landscapes. Purple option for reclaimed water projects.

A variety of valve box sizes and shapes makes it easy to choose the right box for the job. Black bodies and lids are made of 100% recycled materials

Interlocking Bottoms for Deep Installations

International non-potable symbol and language

VB Series Valve Boxes

When the project calls for a commercial grade box, look no further than Rain Bird® VB Specification series valve boxes. They are loaded with a rich set of industry-leading features that ensure strength, durability and fast installations. The VB Specification series can save you time, money and reduce the need for unscheduled service calls.

- Wide flange with corrugated structure provides superior box strength for better valve protection
- Unique shovel access slot provides superior accessibility for service
- Lids with no holes reduce danger from bees, spiders, and snakes
- Earth-friendly LEED-compliant material made of 100% recycled materials (black boxes/lids only)

Features and Benefits

These features apply to the **Standard, Jumbo, Super Jumbo, Maxi Jumbo, and 7 and 10" Round** Valve Boxes:

- Unique bolt hole knock-out design in lid keeps hazardous insects and pests out of the box
- Shovel access on body allows for easy lid removal
- Knock-out retainers securely hold removed knock-outs above the pipe, keeping dirt out during backfill
- Beveled lid edges help prevent damage to lids from lawn equipment
- Interlocking bottoms allow boxes to mate securely together bottom-to-bottom for deep installations
- Customized valve box labels available. Ask your Rain Bird Sales person for details

Dimensions and Additional Features by Model

STANDARD RECTANGULAR SERIES (VB-STD)

- Dimensions: 21.8" L x 16.6" W x 12.0" H (55.4 cm x 42.2 cm x 30.5 cm)
- Two large center knock-outs accommodate up to 3½" (8.9 cm) diameter pipe and eleven knock-outs accommodate up to 2" (5.0 cm) diameter pipe
- VB-STD: Black body and green lid
- VB-STDP: Black body and purple lid with bilingual non-potable warning
- VB-STD-B: Black body only
- VB-STD-L: Green lid
- VB-STDP-L: Purple lid with bilingual non-potable warning
- VB-STDBKL: Black lid
- VB-STD-H: Black body and green lid with locking hex bolt

Standard 6" extension dimensions: 20.0" L x 14.75" W x 6.75" H (50.8 cm x 37.5 cm x 17.1 cm)

- VB-STD-6EXT: 6" standard extension black body and green lid
- VB-STD-6EXT-B: 6" standard extension black body only

JUMBO RECTANGULAR SERIES (VB-JMB)

- Dimensions: 26.3" L x 19.8" W x 12.1" H (66.8 cm x 50.3 cm x 30.7 cm)
- Two large center knock-outs accommodate up to 3½" (8.9 cm) diameter pipe. (Extension does not have knock-outs)
- VB-JMB: Black body and green lid
- VB-JMBP: Black body and purple lid with bilingual non-potable warning
- VB-JMB-B: Black body only
- VB-JMB-L: Green lid
- VB-JMBP-L: Purple lid with bilingual non-potable warning
- VB-JMBBKL: Black lid
- VB-JMB-H: Black body and green lid with locking hex bolt

- Jumbo 6" extension dimensions: 24.4" L x 17.9" W x 6.75" H (62.0 cm x 45.5 cm x 17.1 cm)
- VB-JMB-6EXT: 6" jumbo extension black body and green lid
- VB-JMB-6EXT-B: 6" jumbo extension black body only

SUPER JUMBO RECTANGULAR SERIES (VB-SPR)

- Dimensions: 33.1" L x 23.8" W x 15.0" H (84.1 cm x 60.5 cm x 38.1 cm)
- Fourteen knock-outs accommodate up to 3½" (8.9 cm) diameter pipe
- Includes two stainless steel bolts and clips to securely fasten the lid to the body
- VB-SPR-H: Black body and green lid with 2 locking hex bolts
- VB-SPR-L: Green lid

MAXI JUMBO RECTANGULAR SERIES (VB-MAX)

- Dimensions: 40.3" L x 27.1" W x 18.0" H (102.4 cm x 68.8 cm x 45.7 cm)
- Eighteen knock-outs accommodate up to 3½" (8.9 cm) diameter pipe
- Includes two stainless steel bolts and clips to securely fasten the lid to the body
- VB-MAX-H: Black body and green lid with 2 locking hex bolts
- VB-MAX-L: Green lid
- VB-MAX-B: Black body only

10" ROUND SERIES (VB-10RND)

- Dimensions: 10.25" Top D x 10.0" H x 13.75" Bottom D (26.0 cm x 25.4 cm x 34.9 cm)
- Four equally spaced knock-outs accommodate up to 2" (5.0 cm) diameter pipe. (Extension does not have knock-outs)
- VB-10RND: Black body and green lid
- VB-10RND-B: Black body only
- VB-10RND-L: Green lid
- VB-10RNDP-L: Purple lid with bilingual non-potable warning
- VB-10RNDBKL: Black lid
- VB-10RND-H: Black body and green lid with locking hex bolt

7" ROUND SERIES (VB-7RND)

- Dimensions: 6.4" Top D x 9.0" H x 9.8" Bottom D (16.3 cm x 22.9 cm x 24.9 cm)
- Two pre-molded side openings accommodate up to 2" (5.0 cm) diameter pipe
- VB-7RND: Black body and green lid
- VB-7RNDP: Black body and purple lid
- VB-7RNDBK: Black Body and black lid

LOCKING SYSTEMS

VANDAL RESISTANT

- VB-LOCK-H: Hex head ⅜" x 2¼" (1.0 x 5.7 cm) bolt, washer, and clip
- VB-LOCK-P: Penta head ⅜" x 2¼" (1.0 x 5.7 cm) bolt, washer, and clip

VB-STD

VB-JMB

VB-SPR

VB-MAX

VB-10RND

VB-7RND

VB-STD-6EXT

Valve Box Lids - Green, Purple (to Indicate Non-potable Water), Black

DB Series Wire Connectors

Connections Made Easy

- Install Faster – DB Series Wire Connectors are quick to install and provide reliable moisture sealing for controller and valve electrical connections you can count on
- Simplify Inventory – This is the only wire connector you'll need! It is ideal for use on two wire decoder control systems
- Avoid Call Backs – Locating and repairing a corroded wire splice costs your business time and money. Avoid unnecessary service call backs

DBRY20

DBT020

Features and Benefits

- Use for standard controllers, valve boxes and soil moisture sensors
- Wire combinations ranging from 22ga to 8ga
- Use on connections from 24 VAC to 600 VAC
- UL 486D certified for direct burial
- The Strain Relief ensures wires are secure and won't pull apart
- Waterproof silicone sealant protects against corrosion
- UV-resistant material ensures product performance does not degrade even after long periods of exposure to sunlight

Models

- DBT020: Direct Bury Silicone Tube, Tan Wire Nut, Bag of 20
- DBRY20: Direct Bury Silicone Tube, Red Yellow Wire Nut, Bag of 20

Wire Combinations (for solid and stranded wire)

DBT020	
1-2 #10	2-6 #18
1-4 #12	1 #8 w/2 #14
1-5 #14	3 #12 w/3 #18
2-6 #16	3 #14 w/2 #18

DBRY20	
2-3 #10	2#18
2-5 #12	1 #8 w/2 #18
2-5 #14	3 #10 w/1 #18
4-6 #16	3 #12 w/3 #18
3 #14 w/2 #18	

The combinations listed are only a sample of the most common wire combinations.

16A-FDV / 16A-FDV-075

Drain Valves Evacuate Lateral Lines After Each Irrigation Cycle to Reduce Damage Caused by Freezing

Features and Benefits

- Automatically drains water lines to prevent freezing
- Plastic perforated cap screens out large particles
- Dispersion pad filters out small particles

16A-FDV

Specifications

- Pressure: Up to 125 psi (8.5 bar)
- Flow: 1 gpm (0.23 m^3/h; 0.06 l/s) maximum rate before sealing
- Average opening pressure when installed vertically: 2.5 psi (0.2 bar)
- Average closing pressure when installed vertically: 5.5 psi (0.4 bar)
- Diameter: 1 3/8" (3.5 cm), Length: 1" (2.5 cm)

Models

- 16A-FDV: ½" (15/21) male threaded inlet
- 16A-FDV-075: ¾" (20/27) male threaded inlet

"The ESP-Me is a significant addition to the Rain Bird family of irrigation controllers. Its expanded station capability adds flexibility in choosing a controller for larger residential or smaller commercial systems. Programming this controller is no more complicated than the ESP-Modular, with all features easy to find and understand. The Smart Panel upgrade can also be an option for water conservation needs".

Michael Thompson, *Certified Irrigation Contractor*
Irrigation Service Manager
Michael Hatcher & Associates
Memphis, TN

Water Saving Tips

- A Seasonal Adjust feature is available on all Rain Bird AC-powered controllers, allowing users to easily adjust irrigation schedules to changing seasonal landscape water requirements. The ESP-LX Series Controllers also feature an automated Monthly Seasonal Adjust feature to help save water through automatic adjustments every month of the year.
- Water savings can also be optimized through daily irrigation schedule adjustments which fine-tune watering based on current weather. All ESP-LX series controllers can easily be upgraded to include smart weather-based/ET or soil moisture irrigation control capability by adding the Rain Bird ET Manager Cartridge.
- All Rain Bird controllers simplify conservation through a variety of flexible programming features. With the touch of a button, the ESP-Me can recall a previously saved "Contractor Default" irrigation program; the ESP-LX Series "Delayed Recall" feature automatically reverts to typical watering programs after a user-set time period.

Major Products

Primary Applications	ESP-RZX	ESP-Me	ESP-SMTe	ESP-LXME	ESP-LXMEF	ESP-LXD	TBOS II™
Residential	●	●	●				●
Light Commercial		●	●	●	●	●	●
Commercial/Industrial				●	●	●	●
Type of Controller							
Hybrid	●	●	●	●	●	●	
Solid State							●
Battery Operated							●
Indoor Location	●	●	●	●	●	●	
Outdoor Location	●	●	●	●	●	●	
Features							
Stations (up to)	8	22	22	48	48	200	4
Programs (up to)	8	4	22	4	4	4	3
Station Timing (up to)	199 min[1]	6 hr[1]	weather-based	12 hr[1]	12 hr[1]	12 hr[1]	12 hr
Number of Starts per Program (up to)	6[3]	6	N/A	8	8	8	8
Surge protection	●	●	●	●	●	●	
230VAC Option	●	●		●	●	●	
Master Valve/Pump Start	●	●	●	●[2]	●[2]	●[2]	
Water Budgeting	●	●	●	●[6]	●[6]	●[6]	
Individual Program/Zone Shut-Off	●	●	●	●	●	●	
Rain Delay		●	●	●	●	●	
Battery Programmable	●	●	●	●	●	●	●
Sensor Terminals, Status Indicator and Override	●	●	●	●	●	●	
Delay Between Stations (up to)		9 hrs	9 hrs	0 - 10 min.	0 - 10 min.	0 - 10 min.	
Flow Sensing				●	●	●	
Simultaneous Multi-Station Operation				●	●	●	●
Cycle + Soak™			●	●	●	●	
Overlapping Programs				●	●	●	
Manual On/Off	●	●	●	●	●	●	●
Remote Control Compatible	●	●	●	●	●	●	
Diagnostic Test			●	●	●	●	
Diagnostic Circuit Breaker	●	●	●	●	●	●	
Out-of-Valve Box Programming							●
Submersible (up to)							3.3 ft (1 m)
Vandal/Tamper Resistant							●
Self-Cleaning Solenoid							●
Low Battery Indicator							●
Save / Restore Programs	●	●	●				●
Master Valve ON/OFF by Station		●	●				●
Total Run Time Calculator by Program		●					●
Bypass Rain Sensor by Station	●	●	●				
Programming Schedule							
7 Day-of-Week	●	●	●	●	●	●	●
1-7 Variable Cycle		●	●				●
1-31 Variable Cycle	●	●	●	●	●	●	
Odd/Even Cycle	●	●	●	●	●	●	
Odd 31st		●	●	●	●	●	●
365-Day Calendar	●	●	●	●	●	●	
Event Day Off			●	●	●	●	
Central Control Compatibility							
Maxicom²® and SiteControl Upgradeable							
IQ™ Upgradeable				●	●	●	
Cabinet							
Plastic-Indoor	●	●	●				
Plastic-Outdoor	●	●	●	●	●	●	●
Powder-Coated Metal Outdoor				●	●	●	
Stainless Steel Pedestal				●	●	●	
Powder-Coated Metal Pedestal				●	●	●	
Hardware/Accessories							
Two-Wire Decoders and Accessories						●	
Rain Sensor	●	●		●	●	●	●
Flow Sensor					●	●	
ET Manager™ Cartridge				●	●	●	

[1] With water budgeting, timing can be extended [2] Programmable by station [3] 6 independent start times per zone [4] Selectable for each program and by month

ESP-RZX Series Controller

NEW

4, 6, 8 Fixed Station Indoor or Outdoor Contractor Grade Controller for Residential Use

- Flexible scheduling features make the controller ideal for a wide variety of applications including residential and light-commercial irrigation systems
- Zone-based scheduling allows every valve to be scheduled independently; no more explaining "programs" to end users, virtually eliminating call-backs
- Large LCD display shows all of the programming for each zone at the same time

Features

- Simple user interface is easy to explain and presents every controller feature on a single screen
- Requires only two mounting screws.
- A guide for ½" or ¾" conduit allows for professional installation of field wires into the cabinet
- Large LCD display with easy to navigate user interface
- Weather Sensor input with software override
- Master valve/pump start circuit
- Non-Volatile (100- year) program memory
- Programmable under battery power

Scheduling Features

- 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

Advanced Features

- Electronic diagnostic circuit breaker
- Contractor Rapid Programming™ and "Copy previous Zone" for faster initial set up
- Contractor Default™ Save / Restore Schedule
- Rain Sensor bypass

Controller Hardware

- Plastic wall-mount case
- 4, 6 or 8 station units
- 2 x AAA batteries for time and date backup (included)

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
- Manual SINGLE zone
- Manual ALL zones

Electrical Specifications

- Input required: 120 VAC ± 10%, 60Hz
  International models; 230 VAC ± 10%, 50Hz
- Output: 24 VAC 650mA
- Power back-up: 2 x AAA batteries maintain time and date while nonvolatile memory maintains the programming

Certifications

- UL, cUL, CE, C-Tick, FCC Part 15, Industry Canada ICES-03, IRAM S-Mark, India STQC, Israel, SII, Saudi Arabia SASA, South Africa SABS

Dimensions

- Width: 6.65 in. (16.9 cm)
- Height: 5.90 in. (15.0 cm)
- Depth: 1.54 in. (3.9 cm)

Models

Indoor Models

- RZX4i-120V: 4 station, 120 V
- RZX6i-120V: 6 station – 120 V
- RZX8i-120V: 8 station – 120 V
- RZX4i-230V: 4 station – 230 V
- RZX6i-230V: 6 station – 230 V
- RZX8i-230V: 8 station – 230 V

Outdoor Models

- RZX4-120V: 4 station – 120 V
- RZX6-120V: 6 station– 120 V
- RZX8-120V: 8 station– 120 V
- RZX4-230V: 4 station– 230 V
- RZX6-230V: 6 station– 230 V
- RZX8-230V: 8 station– 230 V

Argentina Indoor Models

- RZX4i-ARG: 4 station – 230 V
- RZX6i-ARG: 6 station – 230 V
- RZX8i-ARG: 8 station – 230 V

Australia Outdoor Models

- RZX4-AUS: 4 station– AUS
- RZX6-AUS: 6 station– AUS
- RZX8-AUS: 8 station– AUS

ESP-RZX Indoor

ESP-Me Series Controllers

NEW

America's favorite modular controller, the ESP-Modular, has an all new design and an enhanced feature set to provide contractors with the industry's most flexible irrigation controller solution. The ESP-Me Controller supports up to 22 stations, 4 programs and 6 start times.

- 4 to 22 station capability
- Program based scheduling allows 4 individual programs with 6 independent start times per program for 24 total start times
- Advanced diagnostics and short detection with LED alert
- Total Run Time Calculator by program

Features

- Large LCD display with easy to navigate user interface
- Rain Sensor input with override capability
- Master valve/pump start circuit
- Non-Volatile (100 year) storage memory
- Remotely Programmable under 9V battery power (not included)
- Watering schedule options: By days of week, ODD calendar days, EVEN calendar days, or Cyclic (every 1 – 30 days)
- Contractor Default™ Program Save/ Restore saved program(s)
- Rain Sensor bypass by Station
- Total run time calculator by program
- One Touch manual watering
- Delay Watering up to 14 days (applies only to stations not set to ignore Rain Sensor)
- Manual Watering option by program or station
- Seasonal Adjust applied to all programs or individual program
- Adjustable delay between valves (default set to 0)
- Master Valve on/off by station

Operating Specifications

- Station timing: 1 minute to 6 hours
- Seasonal Adjust: 5% to 200%
- Max operating temperature: 149°F (65°C)

Electrical Specifications

- Input Required: 120VAC ± 10%, 60Hz
  (International models: 230/240VAC ± 10%, 50/60Hz)
- Master Valve/Pump Start Relay
- Operating Voltage: 24VAC 50/60Hz
- Max Coil Inrush: 11VA
- Max Coil Holding: 5VA
  - Idle/Off power draw 0.06 amps at 120VAC
- Power back-up not required. Nonvolatile memory permanently saves the current programming and a 10 year life lithium battery maintains the controllers time and date during power outages.

Certifications

- UL, cUL, CE, CSA, C-Tick, FCC Part 15b, WEEE, S-Mark, IP24

Dimensions

- Width: 10.7" (27,2 cm)
- Height: 7.7" (19,5 cm)
- Depth: 4.4" (11,2 cm)

North America Models (120VAC)

- Controller Base Models
  - ESP4MEI: 4 station indoor model
  - ESP4ME: 4 station outdoor model*
- Modules
  - ESPSM3: 3 station module
  - ESPSM6: 6 station module (compatible with ESP-Me Series controllers only)

Accessories

- PIGTAIL: UL approved pig tail

**Also available in 230VAC and 240VAC models*

ESP-Me Series Controller and Modules

Water Saving

The ESP-Me Total Run Time Calculator feature tells you how long your total watering time is by program, to comply with any watering restrictions that support conserving water by allowing a maximum total run time to be predetermined prior to irrigating.

ESP-SMTe Smart Modular Control System

NEW

4 to 22 Station Indoor or Outdoor Smart Modular Control System for Residential and Light Commercial Use

The ESP-SMTe integrates technology used by top golf courses for decades and puts it into a user friendly controller

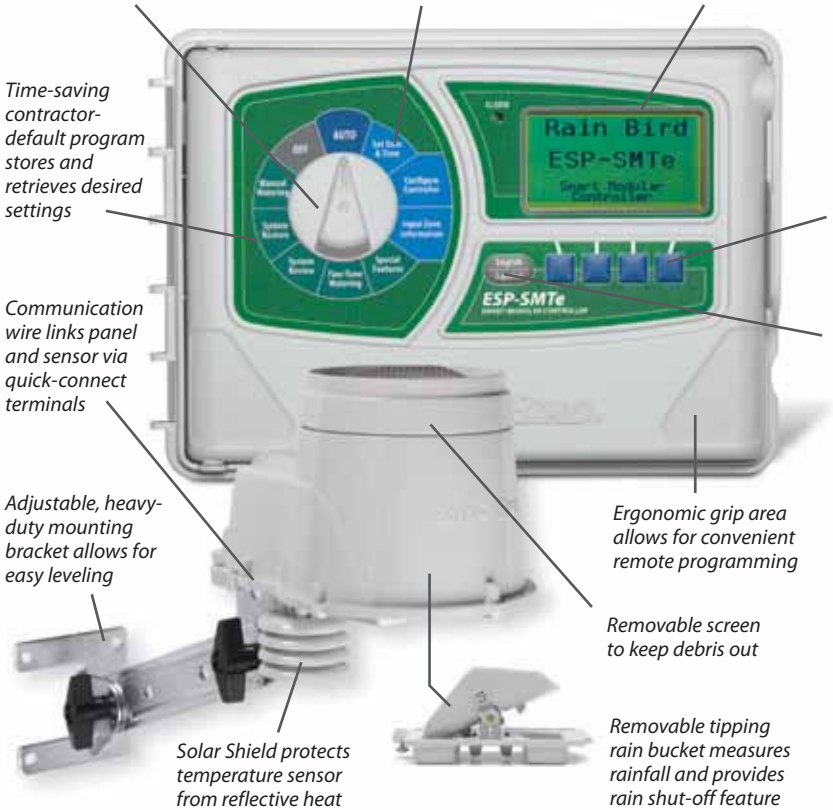
- The ESP-SMTe is the first controller from a full line irrigation manufacturer to earn the Environmental Protection Agency's (EPA) WaterSense label
- On-site rainfall data - The ESP-SMTe collects site rainfall amounts and uses this information to re-calculate run times for each zone
- Historical weather data – The internal memory of the ESP-SMTe contains over 8 years of historical weather data. This data, along with the onsite rainfall and temperature information is used to adjust watering run times on a daily basis.
- Reduced water run-off –The ESP-SMTe Cycle and Soak™ feature allows the controller to adjust zone run times based on soil conditions and slope to reduce/eliminate water run-off

Features

- Typically provides water savings of 20% to 50% over traditional time-based controllers
- The ESP-SMTe saves water by making real time irrigation schedule adjustments based on a daily reference Evapotranspiration (ET) value that is determined by the weather parameters collected by the on-site weather sensor
- Tipping bucket rain sensor measures the amount of rainfall and the timing of the rain to account for usable rainfall, thereby preventing over-watering
- Each zone's soil moisture balance is maintained at the optimum level using the proven Maximum Allowed Depletion (MAD) irrigation scheduling method
- Separate grow-in period allows the user to set up an initial time-based program to establish the plant material for a pre-set number of days. Once this time period expires, the zone will automatically revert to weather –based scheduling
- Rain Suspend is activated when the tipping rain bucket has measured the user-set rain threshold, preventing irrigation from occurring during a rain event

ESP-SMTe with 2 6-station expansion modules installed

Hot-swappable 3-station and 6-station expansion modules



Ten-position dial simplifies programming

Color-coded set-up positions promote ease of use

Large, back-lit display increases readability

Time-saving contractor-default program stores and retrieves desired settings

Communication wire links panel and sensor via quick-connect terminals

Adjustable, heavy-duty mounting bracket allows for easy leveling

Solar Shield protects temperature sensor from reflective heat

Ergonomic grip area allows for convenient remote programming

Removable screen to keep debris out

Removable tipping rain bucket measures rainfall and provides rain shut-off feature

Convenient navigation buttons enable quick and easy programming

English/Spanish button offers one-touch switching of display text language

English text

Spanish text

Plant maturity selection feature ensures effective watering of both established and newly planted vegetation

Water Saving

The EPA WaterSense label certifies this controller is at least 20% more efficient than other controllers, without sacrificing performance.

ESP-SMTe Smart Modular Control System (cont.)

- Automatic Cycle and Soak™ timing determined by the soil type and severity of the slope prevents surface run-off
- Contractor Default™ Program allows the contractor to save prescribed default program in the controller's memory and easily retrieve it with the simple push of a button if a homeowner has altered the contractor's original program
- Reduced irrigation system component damage and liability as the ESP-SMTe controller will interrupt irrigation during freezing conditions at the site
- Non-volatile memory maintains the controller settings indefinitely even in the event of a prolonged power-outage
- Integral lithium battery maintains the current date and time for a cumulative life of 5 years during power outages
- Programmable delay between stations allows additional time between zones for water well recovery or slow closing valves
- Master valve/pump-start circuit programmable by station allows operation of connected pump as needed
- Each zone can be set to acknowledge or bypass the tipping rain bucket settings. This is ideal for irrigating plant material that is located under a covered patio or for non-irrigation functions such as landscape lighting
- Fuseless, diagnostic circuit breaker identifies a zone with wiring short problems and continues to water all operable zone while identifying the faulty zone
- Valve Test Terminal allows the user to test the valve wires during installation to determine the valve wire that corresponds to each zone
- Easily upgrades from a 4-station base model to 22 stations with the addition of 3 or 6 station expansion hot-swappable modules allowing for station expansion without disconnecting power to the controller
- Backlit graphic dot-matrix display is easy to read in dimly lit areas. The large display text is easy to read and can be changed from English to Spanish by the simple touch of the English/Spanish button located on the face of the controller
- Spacious, heavy-duty cabinet with internal junction box (outdoor model) provides lots of room for wiring. Outdoor model comes with a key locking cabinet

Electrical Specification

- Input Required: 120VAC +/- 10%, 60 Hz
- 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

Dimensions

- Controller
  - Width: 10.7" (27.2 cm)
  - Height: 7.7" (19.5 cm)
  - Depth: 4.4" (11.2 cm)
- Sensor *(Largest Area Across)*
  - Width: 6.0" (15.2 cm)
  - Length: 8.8" (22.4 cm)
  - Height : 5.9" (15.0 cm)
- Mounting Bracket
  - Maximum reach: 7.0" (17.8 cm)

Models

- Control System Base Models *(includes ESP-SMTe controller & weather sensor)*
  - ESP4SMTEi – 4 station indoor* - 120V
  - ESP4SMTE – 4 station outdoor* -120V
- Upgrade Model *(includes ESP-SMTe controller panel & weather sensor)*
  - ESPSMTEUPG – Kit to Upgrade existing ESP-Modular or ESP-Me Controllers**
- Modules
  - ESPSM3 – 3-station expansion module
  - ESPSM6 - 6 station expansion module

** To expand up to 22 stations, use ESPSM3 or ESPSM6 modules – Station Expansion Modules*
*** Applies to ESP-M controllers manufactured after April, 2005*

Note: *All ESP-SMTe models come with a heavy-duty adjustable bracket and 25 feet of 18-2 UV-rated non-burial wire for connection between the controller panel and the weather sensor pod. Up to 200 feet of appropriate wire may be spliced to extend range.*

Controller Panel Fits ESP-Modular Chassis For Easy Upgrades

In seconds, upgrade an existing ESP-Modular or ESP-Me to the ESP-SMTe Smart Control System just by switching panels.

ESP-LXME Controller

8 to 48 Station Capable Commercial Controller

- Simple - ESP Extra Simple Programming
- Modular - Easily expandable from 8 or 12 stations to 48 stations with 4-, 8-, and 12-station modules
- Upgradeable to Smart Controller or Central Control

ESP-LXME Controller

Features

- Large LCD display with easy to navigate softkey user interface
- Hot-swappable modules, no need to power down the controller to add/remove modules
- Dynamic station numbering eliminates station numbering gaps
- Weather Sensor input with override switch
- Master valve/pump start circuit
- 6 user-selectable languages
- Non-Volatile (100- year) program memory
- Standard 10kV surge protection
- Front panel is removable and programmable under battery power
- Upgradable to IQ v2.0 central control, see page 124

Water Management Features

- Optional Flow Smart Module™ with Learn Flow utility and flow usage totalizer
- FloWatch™ 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
- SimulStations™ are programmable to allow up to 5 stations to operate at the same time
- Station sequencing by station numbers or station priorities
- Water Windows by program plus Manual MV Water Window
- Cycle+Soak™ by station
- Rain Delay
- 365-Day Calendar Day Off
- Programmable Station Delay by program
- Normally Open or Closed Master Valve programmable by station
- Weather Sensor programmable by station to prevent or pause watering
- Program Seasonal Adjust
- Global Monthly Seasonal Adjust

12-Station, 8-Station, and 4-Station Modules

Water Saving

The Contractor Default Delayed Recall feature automates the change back to a normal irrigation schedule after heavier watering of new seed or sod – with no user input necessary.

ESP-LXME Controller (cont.)

Diagnostic Features

- Alarm light with external case lens
- Electronic diagnostic circuit breaker
- Program summary and review
- Variable test program
- RASTER™ station wiring test

Operating Specifications

- 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, & Cyclical dates
- Manual station, program, test program

Electrical Specifications

- Input required: 120 VAC ± 10%, 60Hz (International models: 230 VAC ± 10%, 50Hz; Australian models: 240 VAC ± 10%,50Hz)
- Output: 26.5 VAC 1.9A
- Power back-up: Lithium coin-cell battery maintains time and date while nonvolatile memory maintains the programming
- Multi-valve capacity: Maximum five 24 VAC, 7VA solenoid valves simultaneous operation including the master valve, maximum two solenoid valves per station
- Certifications
  - UL, cUL, CE, CSA, C-Tick, FCC Part 15

Dimensions

- Width: 14.32 in. (36,4 cm)
- Height:12.69 in. (32,2 cm)
- Depth: 5.50 in. (14,0 cm)

Optional Accessories

- LIMR-Kit: LIMR remote control Kit for Rain Bird Controllers (see page 114)
- Painted Metal and Stainless Steel Pedestal/Enclosure Options available (see page 121)
- ETC-LX: ET Manager Cartridge (see page 113)
- IQ Communication Cartridge (see page 126)
- See page 117 for information on Rain Bird FS-Series Flow Sensors

Models

- Controller Base Models
  - ESP8LXME: 8-station, 120 VAC
  - ESP12LXME: 12-station, 120 VAC
  - I8LXME: 8-station for international markets, 230 VAC
  - I12LXME: 12-station for international markets, 230 VAC
  - I8LXMEEU: 8-station for Europe, 230 VAC
  - I12LXMEEU: 12-station for Europe, 230 VAC
  - I8LXMEAU: 8-station for Australia, 240 VAC
  - I12LXMEAU: 12-station for Australia, 240 VAC
- Models with Flow Sensing
  - ESP8LXMEF: 8-station, 120 VAC
  - ESP12LXMEF: 12-station, 120 VAC
  - I8LXMEF: 8-station for international markets, 230 VAC
  - I12LXMEF: 12-station for international markets, 230 VAC
  - I8LXMEEUF: 8-station for Europe, 230 VAC
  - I12LXMEEUF: 12-station for Europe, 230 VAC
  - I8LXMEAUF: 8-station for Australia, 240 VAC
  - I12LXMEAUF: 12-station for Australia, 240 VAC

Modules

- ESPLXMSM4: 4-station module
- ESPLXMSM8: 8-station module
- ESPLXMSM12: 12-station module
- FSMLXME: Flow Smart Module

ESP-LXME Controller in Optional LXMM Metal Cabinet

Optional LXMMPED Metal Pedestal

ESP-LXD Decoder Controller

50 – 200 station capable Two-Wire Decoder Commercial Controller

- Simple – uses the same proven Extra Simple Programming as other ESP-LX controllers
- Flexible – easily expandable from 50 – 200 stations with support for 5 Master Valves, 5 flow sensors, 4 weather sensors and a variety of upgrades
- Proven Technology – uses the same FD-TURF two-wire decoders used by the MDC and MDC2 controllers with more than half a million decoders installed worldwide over the past 20 years
- Upgradable to IQ v2.0 Central Control, see page 124

ESP-LXD Decoder Controller

ESPLXD-SM75 Module

ESPLXD-M50 Module

Features

- **Rain Bird's Intuitive ESP (Extra Simple Programming)**
  - Uses the same programming interface as other ESP controllers
  - Six user-selectable languages, including English, Spanish, French, Italian, German and Portuguese
  - Two-wire diagnostics to simplify and expedite troubleshooting
  - Four independent programs with capability to overlap
- **Flexible Control**
  - Spacious case with eight lugs to support up to four two-wire paths (all managed as a single two-wire path)
  - UV-resistant, outdoor-rated plastic locking wall-mountable case
  - Uses the same decoder hardware as MDC/MDC2 and SiteControl. Supported decoders include FD-101TURF, FD-102TURF, FD-202TURF, FD-401TURF & FD-601TURF; also supports SD-210TURF sensor decoders and LSP-1 line surge protectors (see page 111)
  - Pre-coded decoder addresses eliminate confusion associated with user-defined decoder addressing; new barcode scanner-based decoder address input with the optional PBC-LXD cartridge
  - User-adjustable SimulStations™ at the program and controller level allows control of simultaneous station operation
  - Station sequencing by station number or station priority
  - ESP-LXD is compatible with the LIMR remote control
  - Controller includes 50 stations; expandable to 200 stations by adding 1 – 2 ESPLXD-SM75 station expansion modules (each station expansion module adds an additional 75 stations)
- **Water Conservation and Management**
  - Cycle+Soak™ by station
  - Rain Delay and Calendar Day Off
  - Programmable Station Delay by Program
  - Program-level and monthly Seasonal Adjust
  - Up to 5 Master Valves/Pump Starts programmable by station plus up to 5 flow sensors
  - Up to 4 Weather Sensors programmable by station

How To Specify

ESP-LXD - SM75

Controller
ESP-LXD: 120V Outdoor
IESP-LXD: 230V International
IESPLXDEU: 230V European
IESP-LXDA: 240V Australian

Modules & Cartridges
SM75: 75-station expansion module
PBC-LXD: Program Backup Cartridge (see next page)

ESP-LXD Decoder Controller (cont.)

- **Flow Management**
  - FloManager™ for management of your system's hydraulic capacity (flow sensors not required)
  - FloWatch™ for SEEF (Seek and Eliminate Excessive Flow) and SELF (Seek and Eliminate Low Flow) for automatic diagnosis and management of mainline breaks or underflow
  - Learn Flow and User-Entered flow supports automatic learning or user-estimated flow rates
  - Flow logging for monitoring and conservation of water consumption
  - Supports English (GPM) and Metric (LPM, LPS, M3/s) flow rate measurement

Dimensions, Electrical Specifications & Certifications

- Dimensions (W x H x D): 14.32" x 12.69" x 5.5" (36.4 x 32.2 x 14.0 cm)
- Electrical input required: 120VAC +/- 10%, 60 Hz; International models 230VAC +/- 10%, 50 Hz; Australian models 240VAC +/- 10%, 50 Hz
- Certifications: UL, CE, CUL, C-Tick
- Lithium coin-cell battery and nonvolatile memory maintain date, time and programming
- Multi-valve capable: up to 2 solenoid valves per station (FD-102 or FD-202 decoders required) with user-adjustable simultaneous operation of up to eight valves and/or Master Valves

Model

- ESP-LXD: 50-station, 120 VAC
- IESPLXD: 50-station for international markets, 230 VAC
- IESPLXDEU: 50-station for Europe, 230 VAC
- IESPLXDAU; 50-station for Australia, 240 VAC

Optional Accessories

- ESPLXD-SM75: 75-station module for ESP-LXD
- PBC-LXD: Program Backup Cartridge for ESP-LXD
- LIMR-KIT: LIMR remote control kit for Rain Bird controllers (see pg. 114)
- FD-TURF: two-wire decoders (see pg. 111)
- SD-210TURF: two-wire sensor decoder (see pg. 111)
- LSP1TURF: two-wire line surge protection (see pg. 111)
- DPU-210: two-wire decoder programming unit (see pg. 112)
- Painted Metal and Stainless Steel Pedestal/Enclosure Options available (see pg. 121)
- ETC-LX: ET Manager™ Cartridge for ESP-LX series controllers (see page 113)
- IQ-NCC: Network Communication Cartridge for ESP-LX Series Controllers (see page 126)
- See page 117 for information on Rain Bird FS-Series Flow Sensors

[1] *FD-TURF decoders include peel-off barcode address labels*

[2] *Barcode scanning pen not included – sold separately; Unitech MS100-2 recommended (www.ute.com)*

PBC-LXD Programming Backup Cartridge for ESP-LXD

Provides program backup and restore and barcode scanning capability for the ESP-LXD controller

Upgrade Kit Features

- Provides 8 full backups, including all programs, flow information and decoder addresses – allows you to easily archive 8 different controllers – restoring all information typically takes two minutes or less
- Snaps into the back of the ESP-LXD front panel; installs without tools; no additional enclosures or external wiring required
- Kit includes cable for interface to barcode scanning pen (pen not included) – allows you to quickly scan decoder addresses into the ESP-LXD controller during installation to save you time

Model

- PBC-LXD (works with all versions of the ESP-LXD controller)

PBC-LXD Cartridge

FD-TURF Two-Wire Decoders

SiteControl and ESP-LXD with Support for 1, 2, 4 or 6 Decoder Addresses

- Easy, cost-effective installation, expansion and upgrade between ESP-LXD and/or SiteControl systems
- Installed out of sight and protected from the elements and vandalism
- Enables advanced diagnostic and sensor features

Decoders

Operating Specifications

Select different two-wire decoders to operate one, two, four, or six valves. Five different decoder options let you choose the precise amount of landscape irrigation control you need.

Decoders

- FD-101TURF Field Decoder interfacing signal line and valve
- FD-102TURF Field Decoder interfacing signal line and valve or one pair of valves
- FD-202TURF Field Decoder interfacing signal line and 2 valves or 2 pair of valves
- FD-401TURF Field Decoder interfacing signal line and up to 4 individual valves
- FD-601TURF Field Decoder interfacing signal line and up to 6 individual valves
- LSP-1TURF Line Surge Protection
- SD-210TURF Sensor Decoder interfacing signal line and analog or digital decoders
- Pump Start Relay. Use Field Decoder to interface between pump relay and two-wire line

- **Output Power:** Adjustable from controller – Inrush and holding current values adjustable at controller.
- **Encapsulation:** Fully waterproof
- **Address:** Pre-coded from factory (i.e., no switches)
- **Electrical Input:**
  - Nominal voltage: 34Vpp (24V AC) from two-wire line
  - Minimum voltage: 21 Vpp (15V AC)
- **Standby Current:** FD-101TURF, FD-102TURF: 0.5 mA FD-202TURF, FD-401TURF and FD-601TURF: 1 mA
- **Mounting:** In valve box (recommended) or direct burial
- **Power Draw:**
  - FD-101TURF: 0.5 mA (idle) 18 mA (per active solenoid)
  - FD-102TURF: 0.5 mA (idle) 18 mA (per active solenoid)
  - FD-202TURF: 1 mA (idle) 18 mA (per active solenoid)
  - FD-401TURF: 1 mA (idle) 18 mA (per active solenoid)
  - FD-601TURF: 1 mA (idle) 18 mA (per active solenoid)

How To Specify

FD - 101 - TURF

Application
TURF - for ESP-LXD or SiteControl

Decoder Type
101: Single Address (1 solenoid)
102: Single Address (up to 2 solenoids)
202: Dual Address (up to 4 solenoids)
401: Four Addresses (up to 4 solenoids)
601: Six Addresses (up to 6 solenoids)

Model
FD - Field Decoder

FD-TURF Two-Wire Decoders (cont.)

- **Dimensions:**
  - FD-101TURF: Length: 2.77 in. (70 mm), Diameter: 1.5 in. (40 mm)
  - FD-102TURF: Length: 3.35 in. (85 mm), Diameter: 1.77 in. (45 mm)
  - FD-202TURF: Length: 3.35 in. (85 mm), Diameter: 1.97 in. (50 mm)
  - FD-401TURF: Length: 3.94 in. (100 mm), Diameter: 2.56 in. (65 mm)
  - FD-601TURF: Length: 3.94 in. (100 mm), Diameter: 2.56 in. (65 mm)
- **Solenoids:**
  - FD-101TURF: 1 with individual control
  - FD-102TURF: 1 or 2 simultaneously
  - FD-202TURF: 1 to 4 simultaneously
  - FD-401TURF: 1 to 4 with individual control
  - FD-601TURF: 1 to 6 with individual control
- **Wires:**
  - FD-101TURF: Blue to cable, white to solenoid
  - FD-102TURF: Blue to cable, white to solenoid
  - FD-202TURF: Blue to cable, white and brown to solenoids
  - FD-401TURF: Blue to cable, color-coded to solenoids
  - FD-601TURF: Blue to cable, color-coded to solenoids
- **Surge Protection: One of the following is required every 500 ft. along two-wire path (40 V, 1.5 kW transil)**
  - LSP-1 Line Surge Protector
  - FD-401TURF with built in surge protection
  - FD-601TURF with built in surge protection

Note: *Minimum 10ohms resistance grounding required at controller and each surge protector*

- **Input Fuse (FD-401TURF and FD-601TURF only):** 300-500 mA, thermal
- **Electrical Input:**
  - Maximum voltage: 36 Vpp
  - Maximum load:
    - FD-101TURF: 1 Rain Bird solenoid (one per address)
    - FD-102TURF: 2 Rain Bird solenoids (two per address)
    - FD-202TURF: 4 Rain Bird Solenoids (two per address)
    - FD-401TURF: 4 Rain Bird Solenoids (one per address)
    - FD-601TURF: 6 Rain Bird solenoids (one per address)
- **Maximum Cable Runs:**
  - 14 gauge
    - Star: 1.65 miles
    - Loop: 6.61 miles
- **Decoder/Solenoid Wires:**
  - Electrical resistance: Max. 3 ohms
- **Maximum Distance Decoder/Solenoids:**
  - Cable length: 14 gauge, 456 feet
- **Wiring:** MAXI-Cable 14-2UF double jacketed
- **Environment:**
  - Working range: 32° to 122° F (0° to 50° C)
  - Storage range: -4° to 158° F (-20 to 70° C)
  - Humidity: 100%

Note: *Rain Bird recommends using 3M DBR/DBY waterproof connectors for all connections.*
Note: *FD-Series Decoders are not compatible with residential valves like the Rain Bird HV, DV, DVF, ASVF, JTV, & JTVF.*

DPU-210 Decoder Programming Unit

For ESP-LXD, MDC/MDC2 and SiteControl FD-Turf Two-Wire Decoders

- Decoder Programming Unit tests and verifies operation of the ESP-LXD, MDC/MDC2, or SiteControl FD Series Field Decoders. Also allows for re-programming decoder addresses for maximum site set-up flexibility

DPU-210

ET Manager™ Cartridge

Upgrades Any ESP-LX Series Controller to an ET/Weather-Based Irrigation Controller

Features

Water Saving Benefits

- The ET Manager™ Cartridge saves water by making real-time adjustments to the irrigation schedule based on hourly weather information
- Water savings of 20% – 50% over traditional time-based irrigation control
- Measures the four key components of ET: solar radiation, relative humidity, wind, and temperature, as well as effective rainfall
- Adjusts program run-times and the frequency of irrigation
- Four separate moisture balances are maintained, one for each program or hydrozone to efficiently water varied plant types (example: turf, shrubs, trees, annuals, etc)

Easy Installation

- Installs in seconds with no tools into all ESP-LX Series controllers; snaps into a dedicated bay on the back of the controller faceplate
- Antenna mounts on NPS nipple
- Setup Wizard walks user through all key setup parameters

Reduced Liability

- Minimum temperature interrupt to prevent irrigation during freezing conditions reducing liabilities associated with walkway icing

Additional ETC-LX Features

- The ET Manager™ Cartridge uses the Weather Reach™ signal
- Eliminates the need to travel to controller sites to make adjustments or programming changes, contributing to significant labor savings
- Ribbon cable connects ETC-LX cartridge to the controller
- Antenna cable connects with snap in connector
- Status LEDs show current status of communication
- ETC-LX kit includes ET Manager™ Cartridge, receiver antenna, manual, and ET Manager™ Resource CD which will help schedule irrigation run times based on landscape parameters

ESP-ET Series

- The popular ESP-LXME and ESP-LXD Controllers are now available with a pre-installed ET Manager Cartridge and are now EPA WaterSense® certified.

– Save money buying the all in one unit than buying ESP-LX Controller and ET Manager Cartridge separately

Operating Specifications

- Electrical power is provided by the LX Controller
- Operating Temperature Range 5° F-149° F (Radio reception operating temperature: 32° F - 122° F)
- Tipping Rain Gauge wire: 18 – 26 AWG

Models

- ETC-LX: ET Manager Cartridge for LX Controllers
- ESPLXME-ET: ESP12LXME with ETCLX EPA Water Sense Certified
- ESPLXD-ET: ESPLXD wtih ETCLX EPA Water Sense Certified
- ETM-RMK: Remote antenna mount for ETC-LX*
- ETM-RG: Tipping Rain Gauge
- ETM-PS: ET Manager Programming Software

** Allows the antenna to be remotely mounted for better signal reception. ET Manager™ has a built in antenna but locations with a weak paging signal may require an external antenna*

For more information call the ET Manager™ Hotline: 1-877-351-6588

ETC-LX
ET Manager™ Cartridge

Landscape Irrigation and Maintenance Remote 3.0 (LIMR)

The Remote. Reborn.

The Rain Bird® Landscape Irrigation & Maintenance Remote (LIMR) was designed for usability, performance and reliability. Every feature will save you time and money in maintaining efficient Rain Bird irrigation system operation and head alignment. Using less water while getting more done.

Irrigation remote compatible with the all new ESP-Me, ESP-SMTe, and ESP-RZX, ESP-SMT, ESP-LX, ESP-LX+, ESP-LXME, ESP-LXMEF, ESP-LXD, and ESP-LX Modular Controllers

- Permanently install the quick connect cable to quickly attach a receiver whenever you visit a jobsite
- For commercial applications, permanently mount a receiver and easily connect to it with your handheld transmitter
- Capable of operating multiple receivers simultaneously with the same handheld transmitter

Features

- Simple interface and easy-to-follow, on-screen instructions, such as:
  - Run a system test
  - Activate a zone
  - Run a program (6 Pin controllers only)
  - Skip to any zone by entering its number
- Save time and money as you maintain efficient Rain Bird system operation and head alignment
- Maintaining Rain Bird system operation and head alignment is easier and faster than ever because you no longer have to walk to the controller to turn zones on or off
- A single crew member can activate zones, blow out systems and perform other winterization or maintenance tasks reducing your cost of doing business
- Install the receiver in seconds with just one hand and operate up to 255 zones
- Skip to any zone by entering its number. No need to scroll through zones in consecutive order
- Run a system test, specifying how many minutes, which zone to start with and which zone to end with
- Two-way communication between the remote and the controller allows remote activity information to be displayed on the handheld device
- Custom names can be assigned to 20 different receivers for easy identification. Each handheld remote can control up to 128 different receivers simultaneously
- Operating range of up to 1.5 miles (2.4 km) line of sight
  - Actual range will vary depending on site terrain and obstacles that block the line of sight. Obstructions such as buildings and walls as well as the strength of interfering signals can affect range

Specifications

- Operating range: Up to 1.5 miles (2.4 Km) line of sight
- Two-way communication using FCC certified 900MHz radios
- UL Recognized
- Zone capability: 1 to 255
- Battery type: 3 – AA Alkaline
- Custom names can be assigned to 20 different receivers for easy identification
- Each handheld remote can control up to 128 different receivers simultaneously

Dimensions

- KIT: 12″ (30.5cm) H x 16.75″ (42.5cm) W x 2.75″ (7.0cm) D
- TX: 11.2″ (28.5 cm) H x 3.6″ (9.3cm) W x 1.6″ (4.1cm) D
- RX: 6.2″ (15.8 cm) H x 4.1″ (10.5cm) W x 1.22″ (3.1cm) D

Models (US and Canada only)

- LIMRKIT: includes TX, RX, QC603, QC503, batteries and a durable plastic carrying case
- LIMRTX: Transmitter
- LIMRRX: Receiver
- LIMRQC503: 5 pin Quick Connect, 3 feet long
- LIMRQC530: 5 pin Quick Connect, 30 feet long
- LIMRQC603: 6 pin Quick Connect, 3 feet long
- LIMRQC630: 6 pin Quick Connect, 30 feet long

Landscape Irrigation and Maintenance Remote (LIMR)

TBOS-II™

NEW

Commercial Level of Advanced Control for Battery-Powered Systems

- The TBOS-II battery-operated line of buriable controllers which allows the use of automatic irrigation in challenging areas where AC power is not available
- Water saving programming features maximize water efficiency by building highly-customized programs
- Advanced programing features capable of highly specific irrigation programs that reduce ongoing trip and adjustments

TBOS-II Control Module and Field Transmitter

Features

- **Advanced Water Management**
  - Seasonal Adjust: Automatically adjusts station run times for each month
  - Master Valve: Extra support for stations that require a back-up to minimize water leaks or need extra water pressure
- **Time-Saving Programming**
  - Review Programs: Automatically verifies if the system is correctly programmed
  - Programming Templates: Save commonly-used programs as a template that can be transferred to other controllers
  - Test All Valves: Automatically tests if the system is correctly programmed and wired
  - Contractor Default Program: Save a customized default program that can be automatically restored at a later date
  - Naming Stations: Identify valves and their function without turning on the system programs
- **Flexible Programming**
  - Run-time from 1 minute to 12 hours in 1-minute increments
  - Basic programming includes 3 independent programs with flexible days cycles including custom even, odd, odd-31 and 1-6 day program cycles for maximum flexibility
  - 8 start times per program per day
  - Independent station operation allows simultaneous start times or sequential start times based on system hydraulic capacity
- **Easy to Use Interface**
  - Battery indicator reports battery status in the TBOS Field Transmitter
  - The TBOS field transmitter has a large Liquid Crystal Display (LCD) with self-explanatory function icons. Each function is indicated by an easy-to-understand symbol
  - The 7-key keypad is equipped with a "beep" sound to confirm that a key has been pressed for fast and sure programming

Water Saving

TBOS-II offers both fixed and interval day watering schedules to facilitate both water conservation and adherence to municipal watering restriction schedules.

TBOS-II™ (cont.)

- One TBOS field transmitter programs an unlimited number of TBOS Control Modules
- Field transmitter and control module have external infrared connectors for easy plug-in
- It is possible to transmit information even if the module is under water

• **Valve Compatibility**

- TBOS potted latching solenoid is compatible with all Rain Bird valves in the DV, DVF, ASVF, PGA, PEB, PESB, GB, EFB-CP, BPE and BPES series
- The TBOS solenoid adapters will adapt the potted latching solenoid for use in retrofit applications with non-Rain Bird valves such as Irritrol® (Hardie/Richdel) and Buckner® valves or Champion® and Superior® valve actuators

TBOS-II Control Module

- Available in 4 models: 1, 2, 4 and 6 stations
- Operates one valve per station
- Station timing: 1 minute to 12 hours in 1-minute increments with a 365-day calendar. Stations can be assigned to multiple programs
- Active sensor connection accommodates Rain Bird® RSD-BEx Rain Sensor
- Operates with only one 9V alkaline battery (Energizer™ and Duracell™ are recommended) type 6AM6 (international standard) or 6LR61 (European standard): battery not included
- Battery life is one year with a high-quality 9V alkaline battery
- IP-68 rated waterproof case for reliable operation under water
- Dimensions: 3.8 x 5.1 x 2 inches (9.5 x 13.0 x 5.3 cm)
- Weight: 17.64 ounces (500 g)
- Maximum wire run between the module and solenoid:

Wire Size	Maximum Distance
18 AWG (0.75 mm^2)	32 ft (10 m)
16 AWG (1.5 mm^2)	100 ft (30 m)

- C-Tick approved

TBOS-II Field Transmitter

- Field transmitter required for programming control module
- Dimensions: 2.8 x 6.3 x 1.2 inches (7.0 x 16.0 x 3.0 cm)
- Weight: 8.81 ounces (250 g)
- Operating temperature: 14 to 149° F (-10° to 65° C)
- C-Tick approved

TBOS Potted Latching Solenoid

- Two 18 gauge (0.75 mm^2) wires are supplied: 23.6 inches (60 cm) long
- Fits Rain Bird valves: DV, DVF, ASVF, PGA, PEB, PESB, GB, EFB-CP, BPE and BPES Series
- 150 psi (10 bar) maximum operating pressure
- Dimensions: 1.4 x 2.4 x 1.5 inches (4.0 cm x 6.0 cm x 4.2 cm)

TBOS Solenoid Adapters

- Easy to install
- Black adapter for plastic valves allows the TBOS potted latching solenoid to be used with selected Irritrol (Hardie/Richel) and Buckner valves
- Brown adapter for brass valves allows the TBOS potted latching solenoid to be used with selected Champion and Superior valve actuators

Models

- TBOS-II Control Modules:
  - TBOS2CM1: 1 station control module
  - TBOS2CM2: 2 station control module
  - TBOS2CM4: 4 station control module
  - TBOS2CM6: 6 station control module
- TBOS-II Field Transmitter:
  - TBOS2FTUS: Field Transmitter (US)
  - TBOS2FTSAU: Field Transmitter (AUS)

TBOS Potted Latching Solenoid and Solenoid Adapters

Flow Sensors and Transmitters

Maxicom,[2]® SiteControl, IQ, ESP-LX Series Controllers or IQ™

Features (Sensors)

- Simple six-bladed impeller design
- Designed for outdoor or underground applications
- Available in PVC, brass or stainless steel construction
- Pre-installed in tee or saddle mounted insert versions

Features (Transmitters)

- Reliable solid-state design, available with or without LCD display
- Easy-to-program, menu-driven design
- Programmable from a computer (PT322 – Maxicom and SiteControl Systems only – not required for ESP-LXMEF or ESP-LXD)
- Operates with MAXILink,™ and (hard-wire) two-wire satellite systems
- Mounted in optional NEMA enclosure (PT3002 only)

Operating Specifications (Sensors)

- Accuracy: +- 1% (full scale)
- Velocity: 1/2-30 feet (0.15 - 9.2 meters) per second depending on model
- Pressure: 400 psi (27.5 bars) (max) on metal models; 100 psi (6.9 bars) (max) on plastic models
- Temperature: 220° F (105° C) (max) on metal models; 140° F (60° C) (max) on plastic models

Operating Specifications (Transmitters)

- Input required:
  - 12-30 VDC/VAC on PT322
  - 10.5-26 VAC (12-24 VAC rec.) on PT 1502
  - 12-24 VAC/VDC on PT 3002
- Output: Pulse output
- Operating Temp: -4° F-158° F (-20° C to 70° C)
- Units: Domestic and International units available on PT3002

Dimensions

- PT322: 3.65" x 1.75" x 1.0" (93mm x 44m x 25mm)
- PT3002: 3.78" x 3.78" x 2.21" (96mm x 96mm x 56mm)
- FS050P: 3.06" x 3.85" x 0.84" (78mm x 98mm x 21mm)
- FS075P: 3.31" x 3.85" x 1.05" (84mm x 98mm x 27mm)
- FS100P: 3.50" x 3.94" x 1.315" (89mm x 100mm x 33mm)
- FS150P: 5.0" x 5.16" x 2.38" (127mm x 131mm x 60mm)
- FS200P: 5.63" x 5.64" x 2.88" (143mm x 143mm x 73mm)
- FS300P: 6.50" x 6.83" x 4.23" (165mm x 173mm x 107mm)
- FS400P: 7.38" x 7.83" x 5.38" (187mm x 199mm x 137mm)
- FS100B: 5.45" x 4.94" x 2.21" (138mm x 126mm x 56mm)
- FS150B: 6.5" x 5.19" x 2.5" (165mm x 132mm x 64mm)
- FS200B: 4.25" x 8.35" x 2.94" (108mm x 212mm x 75mm)
- FS350B: 7.13" x 3"(diameter) (181mm x 76mm (diameter))
- FS350SS: 7.13" x 3"(diameter) (181mm x 76mm (diameter))

Flow Sensors

Flow Sensor Transmitters and Accessories

Flow Sensors and Transmitters (cont.)

Configuration

- **For (Hard Wire) Two-Wire Satellite Systems (Maxicom²® and SiteControl),** the Flow Sensor is installed with a Pulse Transmitter and a Rain Bird Pulse Decoder (DECPULLR)
- **For Link Radio Satellite Systems (Maxicom² and SiteControl),** the Flow Sensor is installed with a Pulse Transmitter (no pulse decoder required)
- **For ESP-SITE Satellite Systems (Maxicom²),** the Flow Sensor is installed with a Pulse Transmitter (no decoder required)
- **For SiteControl Decoder Systems,** the Flow Sensor is installed with a Two-Wire Decoder Sensor Decoder (SD210TURF)
- **For ESP-LXD Decoder Systems,** the Flow Sensor is installed with a Two-Wire Decoder Sensor Decoder (SD210TURF)
- **For ESP-LXMEF Systems,** the Flow Sensor is attached to the FSM-LXME Flow Smart Module
- Surge protection (FSSURGEKIT) is recommended for Maxicom & SiteControl systems – One at the Pulse Transmitter, and if more than 50' of wire run, one at the Flow Sensor. FSSURGEKIT is not compatible with ESP-LXMEF and ESP-LXD Controllers

Models

Brass TEE's

- FS200B: 2" (50mm) Brass Tee Flow Sensor
- FS150B: 1 1/2" (40mm) Brass Tee Flow Sensor
- FS100B: 1" (25mm) Brass Tee Flow Sensor

Plastic TEE's

- FS400P: 4" (110mm) PVC Tee Flow Sensor
- FS300P: 3" (75mm) PVC Tee Flow Sensor
- FS200P: 2" (50mm) PVC Tee Flow Sensor
- FS150P: 1 1/2" (40mm) PVC Tee Flow Sensor
- FS100P: 1" (25mm) PVC Tee Flow Sensor
- FS075P: 3/4" (20mm) PVC Tee Flow Sensor
- FS050P: 1/2" (12mm) PVC Tee Flow Sensor

Inserts

- FS350SS: 3" and higher, Stainless Steel Insert
- FS350B: 3" and higher, Brass Insert
- FSTINSERT: Replacement insert for Tee type sensors

Pulse Transmitters (not necessary with LX Controllers)

- PT322: Pulse Transmitter, no display
- PT3002: Pulse Transmitter, LCD display
- PT322SW: PT322 Pulse Transmitter programming software

Accessories

PTPWRSUPP: Pulse Transmitter power supply

NEMACAB: NEMA Enclosure for PT3002

FSSURGEKIT: Flow Sensor surge protection kit

DECPULLR: Pulse Decoder for two-wire satellites

SD210TURF: Sensor Decoder for decoder systems

FSM-LXME: Flow Smart Module for ESP-LXME Series Controllers

Rain Bird Flow Sensor Suggested Operating Range

The following tables indicate the suggested flow range for Rain Bird Flow Sensors. Rain Bird Sensors will operate both above and below the indicated flow rates. However, good design practice dictates the use of this range for best performance. Sensors should be sized for flow rather than pipe size.

Model	Suggested Operating Range (Gallons / Minute)	Suggested Operating Range (Liters / Minute)	Suggested Operating Range (Cubic Meters / Hour)
FS050P	1.9 - 18.9	7.2 - 71.7	0.43 - 4.3
FS075P	3.3 - 33.2	12.6 - 125.8	0.75 - 7.5
FS100P	5.4 - 53.9	20.4 - 204	1.2 - 12.2
FS150P	5 - 100	18 - 378	1.1 - 22.7
FS200P	10 - 200	36 - 756	2.3 - 45.4
FS300P	20 - 300	78 - 1134	4.5 - 68.1
FS400P	40 - 500	150 - 1890	9.1 - 113.6
FS100B	2 - 40	6 - 150	0.5 - 9
FS150B	2 - 82.6	6.3 - 313	0.4 - 18.7
FS200B	4.9 - 294	18.5 - 1112	1.1 - 66.7
FS350B	Depends on Pipe Type and Size - please reference Flow Sensors tech spec (D37137F)		
FS350SS			

WR2 Series Wireless Rain/Freeze Sensors

Smart Approved WaterMark

Saving water and so much more.

Rain and rain/freeze sensors are becoming "must have" components for irrigation systems these days. Rain Bird designed the new WR2 wireless sensor to exceed the standard. With revolutionary features, this sensor saves time, improves system performance and enhances your reputation as a water management expert. Reliable signal transmission and other innovations deliver superior responsiveness to rainfall and cold temperatures, while user-friendly features cut installation and programming time in half. Choose your own rainfall set points and save up to 35% on water usage while promoting lush, beautiful landscapes.

- Designed for 24 VAC residential and commercial irrigation systems, this high-quality product saves water and extends irrigation system life by automatically sensing precipitation and interrupting irrigation during rain and low temperature events
- Highly intuitive icon-driven controller interface simplifies programming
- Enhanced antenna array provides superior signal reliability that overcomes most line-of-sight obstructions

WR2 Series Wireless Rain/Freeze Sensors

Features and Benefits

- Sensor signal strength indicator enables one person set up, reducing installation time
- Convenient adjustment and monitoring of rain or freeze settings at the controller interface
- Programming logic can suspend irrigation using the "Quick Shut Off" feature or when the amount of rainfall exceeds the rainfall set point
- Wireless Rain / Freeze Sensor will suspend irrigation when the system reaches a programmed low temperature set point
- Simple battery replacement requiring no tools or need to disassemble sensor
- Easy to install, self-leveling sensor bracket mounts to flat surfaces or rain gutters
- Antennas concealed within the units for greater visual appeal and product robustness

Electrical Specifications

- Application suitable for use with Rain Bird and competitor 24VAC controllers (with or without pump start / master valve)
- Electrical rating suitable for use with up to six 24VAC 7VA solenoids plus an additional master valve or pump start that does not exceed 53VA
- Controller Interface Wire: 30" (76 cm) length of #22 gauge (0.64 mm) UV resistant extension wire
- UL, cUL, CE, C-Tick, and WEEE certifications

How To Specify

WR2 - RC

Model
WR2

North America (916 MHz)
RC: Rain Combo
RFC: Rain/Freeze Combo
RFI: Rain/Freeze Controller Interface Only

WR2 Series Wireless Rain/Freeze Sensors (cont.)

- FCC approved spread spectrum 2 way radio transceivers with FCC Class B approvals
- Signal transmission distance of 700' line of sight
- Battery life: up to 4 years under normal operating conditions
- 6 KV surge / lighting protection

Mechanical Properties

- Adjustable rainfall settings from 1/8" – 1/2" (3 – 13 mm)
- Adjustable low temperature settings from 33°F – 41°F (0.5° – 5°C)
- Three irrigation modes to select: Programmed, Suspend Irrigation for 72 hours, Override sensor for 72 hours
- High-grade, UV resistant polymer units resist harmful environmental affects
- "Quick Shut Off" suspends active irrigation cycle within approximately two minutes
- Not compatible with ESP-SMT or ESP-SMTe controllers

Dimensions

- **WR2 Controller Interface**
  - Width: 3.1" (7.9 cm)
  - Length: 6.8" (17.2 cm)
  - Depth: 1.7" (4.3 cm)
  - Distance between Mounting Holes: 6.25" (15.9 cm)
- **WR2 Sensor Assembly**
  - Sensor Length: 5.8" (14.7 cm)
  - Attachment Bracket Length: 4.6" (11.7 cm)
  - Distance between Mounting Holes: 4.25" (10.8 cm)
  - Horizontal displacement (bracket + fixed ball arm): 5.5" (14.0 cm)

Models

- WR2-RC: Rain Combo
- WR2-RFC: Rain/Freeze Combo
- WR2-RFI: Rain/Freeze Controller Interface Only

Step 1

Program in seconds

Step 2

Determine best sensor location

Step 3

Install sensor easily using mounting bracket

RSD-BEx / RSD-CEx

Wired Rain Sensor

Smart Approved WaterMark

Features and Benefits

- 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
- Latching hinge maintains alignment

Mechanical Properties

- Multiple rainfall settings from ⅛"– ¾" (5 - 20 mm) are quick and easy with just the twist of a dial
- Adjustable vent ring helps control drying time
- High-grade, UV resistant polymer body resists the elements
- Available in rugged bracket version (RSD-BEx model comes with 5" latching aluminum bracket) or conduit version (RSD-CEx) for a clean and professional look
- Not compatible with ESP-SMT or ESP-SMTe controllers

Electrical Specifications

- Application: Suitable for low voltage 24 VAC control circuits and 24 VAC pump start relay circuits*
- Switch electrical rating: 3A @ 125/250 VAC
- Capacity: Electrical rating suitable for use with up to ten 24 VAC, 7 VA solenoid valves per station, plus one master valve
- Wire: 25' (7.6 m) length of #20, 2 conductor UV resistant extension wire
- UL, cUL listed; CE, C-Tick approved

* *Not recommended for use with high voltage pump start, pump start relay circuits or devices.*

Latching Hinge Maintains Alignment

RSD-BEx

RSD-CEx

Dimensions

- RSD-BEx
  - Overall length: 6.5" (16.5 cm)
  - Overall height: 5.4" (13.7 cm)
  - Bracket hole pattern: 1.25" (3.2 cm)
- RSD-CEx
  - Overall length: 3" (7.6 cm)
  - Overall height: 2.75" (7 cm)

Models

- RSD-BEx: Rain sensor w/ latching bracket, extension wire
- RSD-CEx: Rain sensor w/ threaded adapter, extension wire

How To Specify

RSD - BEx

- **Extension Wire** 25' (7.6 m) length
- **Mounting** BE: Metal Bracket CE: Conduit Version
- **Model** RSD: Rain Sensing Device

Controllers

Rain Check™

Automatic Rain Shutoff

Features

- Adjustable stainless steel sensing probes offer the flexibility of triggering the rain shutoff with as little as ⅛" (3.2 mm) of precipitation
- Water in the rain collector pan evaporates faster than soil moisture to permit watering if required
- Electronic design eliminates micro switches and water absorbing disks which may rust and/or wear out
- UV resistant plastic construction increases operating life in harsh environments
- Works with almost all 24 VAC controllers for maximum versatility

Specifications

- Input required: wires to valve common wire (wire not included)
- Fuse: 3 Amp
- Collector pan can be removed for cleaning
- Multi-valve capacity: Up to three 24 VAC solenoid valves per station
- Not recommended for use with direct acting (non-flow switch) pump start relays
- Not compatible with ESP-Me, ESP-SMT, ESP-SMTe and ESP-RZX Series controllers

Dimensions

- Length: 8" maximum (20.3 cm)
- Height 4" maximum (10.2 cm)
- Width: 2½" maximum (6.4 cm)

Model

- Rain Check

Rain Check

Pigtail

Features

- 6-feet (1.8 m) long
- Three 16 gauge stranded conductor wires
- 90 degree molded plug type NEMA 5-15P
- Gray color

Model

- PIGTAIL

PIGTAIL

Controller Pedestals

Pedestals for ESP-LX Series, ESP-MC, ESP-SAT, ESP-SITE, and CCU

Features

- Includes all necessary mounting bolts, nuts, and washers

Specifications

- Material: Powder-coated steel and stainless steel
- Field wiring connection: In controller

Dimensions

Model	Height	Width	Depth
• PED-DD16	23½" (59.7 cm)	10½" (26.7 cm)	5" (12.7 cm)
• LXMM	12⅞" (32.7 cm)	14½" (36.8 cm)	7¾" (19.7 cm)
• LXMMPED	28" (71.1 cm)	14¼" (36.2 cm)	7¼" (18.4 cm)
• LXMMSS	12⅞" (32.7 cm)	14½" (36.8 cm)	7¾" (19.7 cm)
• LXMMSSPED	28" (71.1 cm)	14¼" (36.2 cm)	7¼" (18.4 cm)
• LXSSADAPTR	28" (71.1 cm)	14¼" (36.2 cm)	7¼" (18.4 cm)

Model

- PED-DD16: Pedestal for ESP-SAT, ESP-SITE, and CCU
- LXMM: Metal Cabinet for ESP-LX Series Controllers*
- LXMMPED: Metal Pedestal for ESP-LX Series Controllers*
- NEW • LXMMSS: Stainless Steel Metal Wall Mount Enclosure for ESP-LX Series Controllers
- NEW • LXMMSSPED: Stainless Steel Metal Pedestal for ESP-LX Series Controllers
- NEW • LXSSADAPTR: Retrofit Kit to adapt ESP-MC Stainless Steel Pedestal to accept ESP-LX Series Stainless Wall Mount

** **Note:** Metal cabinets and pedestals are not standard on ESP-LX Series controllers and must be purchased separately. LXMMPED requires LXMM, and LXMMSSPED requires LXMSS.*

PED-DD16 Shown with ESP-12 SAT-2W

LXMMPED Shown with ESP-LXME in LXMM Metal Cabinet

Controllers

Central Controls

"We recommend Maxicom²® to our clients because the system is the most efficient and effective method for controlling individual zones within complex irrigation systems. Maxicom² analyzes weather conditions from the previous 24 hours and adjusts the amount of water needed for the conditions and for each specific zone. Our clients reap the benefits – lower costs for labor and water, plus healthier plants and turf."

Ellen Beighley, *President*

Irrigation Management Systems

Water Saving Tips

- Maxicom², SiteControl, and IQ™ Systems provide fully-automated ET (evapotranspiration) adjustment of irrigation programs for maximum water savings.
- Maxicom² and IQ™ Systems provide the tools to efficiently water dozens or even hundreds of irrigation systems across multiple remote sites from a single computer.
- Maxicom² and IQ™ FloWatch™ utility monitors and records real-time flow and automatically diagnoses and eliminates flow problems caused by broken pipes, vandalism or stuck valves.

Major Products

Primary Applications	IQ™	SiteControl	Maxicom²®
Multi-Site Central Control	●		●
Single Site Central Control	●	●	
Satellite Controller System	●	●	●
Two-Wire Decoder System	●	●	
Hybrid Satellite/Decoder System	●	●	
Features			
Computer Programming	●	●	●
Computer Monitoring	●	●	●
Computer Manual Operation	●	●	●
Interactive Map Interface		●	
ET Programming	●	●	●
Automatic ET Adjustment	●	●	●
Smart Weather Reaction		●	
Programming Dry-Run	●	●	●
Flow Management	●	●	●
Flow Monitoring	●	●	●
Search/Eliminate Problem Flow	●	●	●
High Flow Shut-off	●	●	●
Low Flow Shut-off	●		●
Rain Watch		●	●
Rain Shutoff	●	●	●
Cycle + Soak	●	●	●
Hardware			
Computer Included with Software		●	●
CCU - ESP-SAT Interface			●
TWI - ESP-SAT Interface		●	
SDI/LDI - Decoder Interface		●	
FD-TURF Two-Wire Decoders	●	●	
ESP-SAT Satellite		●	●
ESP-SITE-SAT Site Satellite			●
ESP-MIB Upgrade Kit		●	●
ESP-SITE-U Upgrade Kit			●
ESP-LX Series Satellite	●		
IQ-NCC Upgrade Kit	●		
LINK Radio/Modem Kit		●	●
FREEDOM Remote Control		●	●
DEC Sensor-Pulse Decoders		●	●
RSD Rain Shut-off Device	●	●	●
FS Flow Sensors	●	●	●
WSPRO2 Weather Station	●	●	●
WSPRO LT Weather Station	●	●	
RAINGAUGE Rain Sensor		●	●
ANEMOMETER Wind Sensor	●	●	●

About Central Control Systems

Irrigation central control is computer-based and enables the programming, monitoring and operation of an irrigation system from a central location. Central control systems are designed to allow a single site (college campus, corporate headquarters) or a set of sites (school district, parks and recreation department) to control all their irrigation from one central computer. Central control can monitor and automatically adapt system operation and irrigation run-times in response to conditions in the system and surrounding area (weather change, pipe breaks, etc) as well as parameters defined by the operator.

Rain Bird Central Control

Rain Bird developed the original computer based central control system in the 1970s and today has thousands of systems installed worldwide.

Satellite Controllers and Field Decoders

Rain Bird offers a variety of systems to match the needs of the customer, budget, site or application. Select from systems designed specifically for single sites, multiple sites, small or large. Rain Bird central control systems can utilize satellite controllers, two-wire decoders, or a combination of both.

Key Features

Centralized Programming

A central control system allows programming from a single computer location, saving the time and money usually spent traveling to the controllers. Program changes to multiple controllers across multiple sites can be made in just minutes. Irrigation run-times can automatically be adjusted with the addition of a weather station or sensors.

System Communication

Communication options between the central computer, irrigation controllers, decoders, sensors and weather stations can include hardwire, direct-connect, phone, cellular, radio, fiber-optics, Ethernet, and Wi-Fi.

System Operation and Monitoring

The central control system monitors itself and can make use of flow, rain, wind, moisture and other sensors to adjust operation or take action in real time. System operational logs and any alarms for problems that occur are communicated back to the central computer, where reports can be generated.

Rain Bird Multi-Site Central Control Systems

Maxicom²®

Maxicom² is a feature-packed irrigation management tool for control of multiple, small to large, remote irrigation systems. Maxicom² offers superior water management features utilizing satellite controller technology. Maxicom² is the tool of choice for water managers, park and recreation departments, school districts and theme parks worldwide.

IQ™

IQ offers a simple, easy to learn modular software program and modular hardware for control of satellite controllers across multiple sites. IQ includes many water and time saving features that eliminate the need to travel to the site to reprogram or monitor the irrigation system. IQ is the ideal tool for a wide variety of commercial applications.

Rain Bird Single Site Central Control Systems

SiteControl

SiteControl offers powerful central control features for single, large, contiguous sites. SiteControl provides interactive map-based control and real-time communication between the field and the central computer. It can control two-wire decoders, satellite controllers or both for unmatched expandability and flexibility. SiteControl is ideal for property developments, sports field complexes, shopping malls, cemeteries, resorts and hotels.

IQ v2.0 Software

IQ™ v2.0 Central Control Software

Modular Multi-Site Central Control

- State-of-the-art command and control features in an easy to learn and use interface
- Provides advanced water management features saving money and time
- IQ Software has modular satellite controller capacity and features. Purchase only what is needed and upgrade as needs change in the future

IQ provides remote programming, management, and monitoring of ESP-LX Series Controllers from the computer in your office. IQ is the perfect irrigation control solution for parks departments, school districts, property managers, landscape maintenance contractors, and water managers. IQ can manage small single-controller sites as well as large multi-controller sites and supports both ESP-LX Series traditionally wired and 2-wire decoder controllers.

IQ v2.0 Software Package

- The IQSTARTCD Base Software Package provides 5-satellite controller capacity and a basic set of features. IQ software satellite controller capacity can be upgraded in 5-satellite increments with the IQ5SATSWU Upgrade to any total satellite capacity required. Advanced features are available in IQ Software Feature Packs. Feature Packs include a bundle of related features that expand the capabilities of the IQ Base Software Package.
- IQ Base Software and Feature Packs include a context-sensitive help system. Click on the help icon available in most screens and be taken directly to the help topic feature you are using. The software offers multiple language, date/time, and units support allowing the user to interface with the software in their primary language. User selectable languages include English, Spanish, French, German, Italian, and Portuguese.

Base Software Package Features

- Software 5-satellite controller capacity upgradable in 5-satellite increments
- IQNet 5-satellite client capacity upgradable in 5-satellite increments
- Compatible with ESP-LXME & ESP-LXMEF traditionally-wired and ESP-LXD 2-wire decoder controllers (see pages 107 - 109)
- Site, satellite, and station names
- Programming in seconds, minutes, and hours
- Daily or Monthly Seasonal Adjust % or ET station run time adjustments by site
- Dry-Run™ Graphical Program Review
- User initiated Synchronize and Retrieve Logs communication
- Manual Program, Test Program, Station starts
- Detailed logs and reports

How To Specify

IQ V2.0 SOFTWARE & FEATURE PACKS

IQSTARTCD:	Base Software Package, 5-Satellite Capacity
IQ5SATSWU:	Software 5-Satellite Capacity Upgrade
IQ5SATNCCU:	IQNet 5-Satellite Client Capacity Upgrade
IQACOMFP:	Advanced Communications Feature Pack
IQAPGMFP:	Advanced Programming Feature Pack
IQAETFP:	Advanced ET Feature Pack
IQAFSENFP:	Advanced Flow Sensing Feature Pack
IQADVCEDCD:	5-Satellite Capacity with 4 advanced feature packs included

Water Saving

Evapotranspiration (ET) is the combination of water lost from the soil and the plant's use due to evaporation and plant transpiration. Total water use can be reduced by using ET feature on IQ to determine when and how much to irrigate.

Recommended Computer Requirements

- Operating System: Windows® XP or 7 32-bit or 64-bit
- Processor: Intel I5-540M or equivalent
- RAM Memory: 3 GB minimum
- Available Hard Disk Space: 10 GB
- CD-ROM Drive: 8X speed minimum
- Display Resolution: 1024 x 768 minimum
- 56K Flex Phone Modem (Phone communication)
- Network Connection (for Ethernet, WiFi, GPRS communication)
- Serial Port or USB to Serial Adapter (for Direct Connect and External Modem communication)

Additional 5-Satellite Capacity Upgrade

- IQ Software and IQNet satellite client controller capacity can be upgraded in 5-satellite increments
- Additional capacity is added through a purchased software activation keycode

IQ Feature Packs

- Feature Packs are enabled through a purchased software activation keycode
- Feature Pack features are enabled for all sites and satellites in the IQ Software

Advanced Communications Feature Pack

- Automated satellite Synchronize & Retrieve Logs and Weather Source Retrieve Weather Data communication
- Satellite IQ Call-in™ (satellite initiates communication, NCC-PH Phone Cartridge only)
- Automated Email Alarm/Warning and Satellite Station Run Time Reports

Advanced Programming Feature Pack

- Satellite PIN-Code Protection (4-digit PIN-Code required to make programming changes at the satellite)
- Satellite 2-Way Programming (changes made at the satellite can be viewed and accepted in the IQ software)
- Copy/Move Satellite Utility (copy or move a satellite to another site)

Advanced ET Feature Pack

- Automated MAD (Management Allowed Depletion) Irrigation Scheduling adjustments
- Software uses Irrigation Association terminology and formulas
- ET/Rainfall Weather Sources include:
  - CIMIS Internet Service (California only)
  - ETMI ET Manager Weather Reach Service (North America only)
  - Rain Bird WSPROLT Weather Station
  - Rain Bird WSPRO2 Weather Station
- 4 ET Checkbooks per satellite controller
- Export to Microsoft Excel® for customized reports

Advanced Flow Sensing Feature Pack

- Retrieves minute-by-minute flow logs from flow sensor equipped ESP-LXMEF and ESP-LXD Satellite Controllers
- Flow Logs vs. Projected Flow Graphical Report (identifies which programs & stations where running at any point in time)
- Actual Flow Totals added to Satellite Station Run Time Report (included in Automated Email Reports)

IQ NCC Network Communication Cartridge

Upgrades any ESP-LX Series Controller to an IQ Central Control Satellite Controller

- IQ is the perfect irrigation control solution for parks departments, school districts, property managers, landscape maintenance contractors, and water managers
- IQ can manage small single-controller sites as well as large multi-controller sites
- IQ NCC cartridges are compatible with the ESP-LXME traditionally-wired controllers with 1 to 48 station capacity and ESP-LXD 2-wire controllers with 1 to 200 station capacity

Direct Satellites

- Single controller sites would use an IQ NCC cartridge configured as a Direct satellite. A Direct satellite has an IQ central computer communication connection but no network connections to other satellites in the system

Server & Client Satellites

- Multi-controller sites would use one IQ NCC cartridge configured as a Server satellite and the other NCC cartridges configured as Client satellites. The Server satellite has an IQ central computer communication connection and shares this communication connection with the Client satellites though high-speed data cable or radios. The communication connection between Server and Client satellites is called the IQNet™
- Satellites on a common IQNet can share weather sensors and master valves
- Server and Client satellites using high-speed data cable for IQNet communication require installation of an IQ CM Communication Module. Server and Client satellites using radio communication for IQNet communication require installation of an IQSSRADIO radio. Each cartridge kit includes cables to connect the NCC cartridge to connection module and/or radio

IQ NCC-PH Phone Cartridge

- Includes embedded 56K Telco Analog Phone Modem with RJ-11 port
- Includes RJ-11 modular phone cable (analog phone line required)

IQ NCC-GP GPRS/Cellular Cartridge

- Includes embedded GPRS/Cellular Data Modem with antenna connector
- Includes internal antenna for plastic controller enclosures (optional external antenna available for metal case controller enclosures)
- Requires GPRS/Cellular data service plan with static IP address from Cellular Service Provider
- Available with 1st year of communication service included. Cartridge with included communication service not offered in all areas

NOTE: *Wireless communication devices require a wireless site survey*
(Models: IQNCC-GP, IQNCCWF, IQSSRADIO)

IQ NCC-EN Ethernet Cartridge

- Includes embedded Ethernet Network Modem with RJ-45 port
- Includes RJ-45e patch cable (requires LAN network static IP address)

IQ NCC-WF WiFi Cartridge

- Includes embedded WiFi Wireless Network Modem with antenna connector, and internal antenna for plastic controller enclosures (requires LAN wireless network static IP address; optional external antenna available for metal case controller enclosures)
- WPA/WPA2 encryption supported

IQ NCC-RS RS232 Cartridge

- Includes RS-232 Port for IQ Direct Cable or External Modem communication connection to the IQ central computer, and external modem cable (IQ Direct Cable provided with IQ Software Package)
- Used for Direct or Server Satellite applications requiring direct cable connection or external modem (radio or other 3rd-party device) communication with the IQ central computer, and for Client Satellite applications requiring IQNet high-speed data cable or radio communication with the Server Satellite

IQ FSCM-LXME Flow Smart Connection Module

- Provides IQNet high-speed data cable connections for ESP-LXME Controller
- Includes Flow Smart Module and Base Module functions
- Replaces standard ESP-LXME Base Module

IQ CM-LXD Connection Module

- Provides IQNet high-speed data cable connections for ESP-LXD Controller
- Installs in ESP-LXD 0 (zero) module slot

IQ SS-Radio Radio Modem

- Provides IQNet wireless radio communication between Server and Client satellite controllers
- Can also be used with the IQ NCC-RS RS232 Cartridge for IQ central computer to Direct or Server satellite radio communication
- Includes power supply and external antenna (programming software and cable provided separately)

IQ NCC Network Communication Cartridge

SiteControl

A Full-Featured Central Control System for Single Site Applications

- Interactive, map-based software is easy to use and provides real-time decision making
- Unparalleled communications flexibility with decoders and/or satellites
- Advanced water management features maximize landscape conditions and water savings

Features

- From the SiteControl Central Controller, the irrigation system can be scheduled for days to water, run-times, linking schedules, sensor starts, cycle and soak schedules, ET sensitized scheduling, etc.
- Interactive map allows for maximum control yet easy programming, monitoring and troubleshooting for operator
- Verify programming down to station level with the intuitive dry run feature
- Manual operation of system from central computer via direct manual access (DMA)
- Operation of non-irrigation applications such as lighting, security gates, fountains, pumps, sensors, etc.

Advanced Graphical Mapping

- Maps generated by GPS technology, AutoCAD or overhead photography recreate your site
- Interactive mapping and on-screen graphics show your complete site with location of individual valves and sprinklers. Extensive status reporting is a click away
- Map utilities software module allows you to measure distances and areas from your map

Hybrid System

- Expand your system with the purchase of the hybrid software module and an additional interface
- Same system can operate ESP-SAT satellites and/or FD series decoders

Smart Weather™

- Designed to take complete advantage of Rain Bird's most advanced line of weather stations
- Track ET rates with a weather station and react to current weather conditions through logical sequential steps
- Advanced warning system accepts user-defined sensor thresholds. System operator can be immediately alerted if thresholds are exceeded

SiteControl

Water Saving

SiteControl Smart Weather and RainWatch features allow the operator to configure pre-defined weather conditions and corresponding system reactions to save water with automatic program start, pause, resume, or cancel in reaction to wind, temperature, rain, solar radiation and humidity.

SiteControl (cont.)

Automatic ET Features

- Automatically adjusts run-times in relation to changes in evapotranspiration values
- Minimum ET (patent pending) allows setting threshold for irrigation to occur, promoting deep watering

RainWatch™ (Patent Pending)

- Provides rain shutdown and then adjusts run-times based on measured rainfall

Remote System Control

- Take control of you're your system and operate SiteControl from anywhere on your site using the Rain Bird FREEDOM System. Available via phone or cellular phone. Additional software key code required
- MI Mobile Interface provides remote irrigation control via web enabled cell phone. Additional software keycode required. Customer supplies smart phone

Superior Monitoring and Programming

- Flo-Graph™ provides real-time graphics with individual station information presented in colorful charts
- Flo-Manager™ balances system demands and maximum capacities with efficiency, helping to lower water demand, reduce system wear and tear, and save energy
- Cycle + Soak™ better controls the application of water on slopes and in areas with poor drainage
- QuickIRR™ and SimpleIRR™ provide quick and easy methods to build irrigation schedules and programs based on your parameters
- Print Office feature prints all monitor log and site information in a clean and concise format for easy site monitoring and troubleshooting
- SmartSensors™ allows monitoring flow and other conditions, as well as setting specific reactions selected by the user

Other Features

- Up to 200 points of connection
- Up to 200 pulse sensors
- Water usage logs
- Station run-time logs
- Posted and dry run logs
- ET spreadsheet
- 1 year Global Service Plan included

Models

- SCON: Desktop PC with SiteControl software, includes 1 year Global Support Plan (GSP)

Software Module Options

- Smart Weather
- Rain Bird Messenger (for Smart Weather)
- Automatic ET
- Hybrid Module
- Smart Sensor
- Map Utilities
- Freedom
- 8 Additional Locations
- Additional Wire-Path (2nd)
- Additional Wire-Path (3rd)
- Additional Wire-Path (4th)
- SiteControl Plus
- Smart Pump
- MI (Mobile Interface)

GSP Features

- Toll-free phone support (see page 134)
- Remote system diagnostics
- Extended warranty
- Next business day hardware replacement
- Future upgrades to SiteControl software at no charge
- Training or on-site support rebates
- Incident and other support
- Board Exchange Program discounts

SiteControl Hardware

TWI Satellite Interface

- Allows real-time, two-way communication between SiteControl Central Controller and field satellites
- Allows use of advanced in-field capabilities of ESP-SAT twowire or LINK versions
- Modular capacity can grow with the site

Two-Wire Decoder Interface

- Allows real-time, two-way communication between SiteControl Central Controller and decoders
- Connects the powerful capabilities of SiteControl with the ease of installation and security of a two-wire decoder system
- System can be set up and expanded according to project needs

ESP-SAT Satellite Controller

- 12, 24, 40 Stations Satellite Controller
- Field Satellite Controller for Maxicom2 or SiteControl Central Control systems
- The power of an advanced water-management tool, in an easy-to-use package
- All the features and stand-alone capabilities of the Rain Bird ESP-MC Controller line

Spread Spectrum Radio

- Frequency hopping to avoid interference
- Reduced cost of ownership, no FCC license required
- No FCC restrictions on antenna height (User should check local laws)
- Radios can be set up as repeater to achieve great distances and overcome obstacles

Ethernet Devices

- Use Ethernet networks to:
  - Communicate from Central Control Computer to CCUs, SiteSats, TWIs and weather stations
  - Communicate from CCU and TWIs to ESP-Sats

Freedom for Central Control

- Uses standard telephone interface
- Single cellular phone can control entire central control system
- Standard land-line telephones can also control system

WS-PRO Weather Stations

- Scientific accuracy sensors located three meters above the ground for added vandal-resistance
- Powerful, internal micro-logger for climatic data collection, logging and analysis, constant communication with weather sensors, and storage of 30 days of data
- Rugged yet lightweight metal construction;

Sensor-Pulse Decoders

- Complete feedback system
- Extends central control system versatility
- Color-coded wire leads for ease of installation
- Programmable address codes for individual operation

RAINGAUGE Rain Sensor

- Accurate rain counter switch counts rainfall in 1/100th inch increments
- Heavy-duty metal construction
- Mounting bracket
- Debris screen

ANEMOMETER Wind Sensor

- Accurate wind speed measurement for high-wind shutdown or interrupt of irrigation programs
- Heavy-duty metal mounting bracket
- Requires PT322 or PT3002 Pulse Transmitter for use with Maxicom^2 System

Maxi Interface Boards

- Upgrades an ESP-MC Controller (wall mount or pedestal) to an ESP-SAT or ESP-SITE Satellite Controller
- No additional enclosures or external wiring required
- Installs on stand-offs on controller output board

MSP-1 Surge Protection

- Protects central control components from electrical surges on a two-wire communication path
- Can be installed in satellite or CCU pedestal or in valve box in conjunction with MGP-1 (Maxicom$^{2®}$ Grounding Plate)

MGP-1 Surge Grounding Plate

- Provides a mounting location for MSP-1 or other grounding wires directly to a grounding rod or pipe
- Installed on grounding rod or pipe

Maxicom2®

Multi-Site Central Control Ideal for Large Commercial Systems

- Multi-site Central Control system for commercial or industrial irrigation applications
- Conserves water via advanced ET-based irrigation features
- Flexible programming allows system to react to sensors and work within watering restrictions

System Features

- Maxicom2® Central Controller Package comes with Maxicom2 software, pre-configured computer, Global Service Plan (GSP), and training
- Control hundreds of ESP-SITE-SAT Satellites (single controller sites) and Cluster Control Units (CCUs) which can each control up to 28 individual ESP-SAT Satellite Controllers on multi-controller sites
- Monitor dozens of Weather Sources including WSPRO2 Weather Stations, ET Managers, or rain counting sensors (Raingauge)
- Freedom Remote Control allows manual operation of system through a cellular phone or radio
- Multiple log and water usage reports are generated automatically to track system operation and water savings

Water Management Features

- Cross satellite schedule operation; 999 separate schedules per CCU provides precision watering of areas and microclimates
- ET Checkbook™ manages Evapotranspiration (ET) and automatically adjusts Satellite Controller station run-time or day cycle intervals to match the landscapes water requirements
- FloManager™ manages the total flow demand placed on the water source(s), optimizing both the available water and watering window
- FloWatch™ monitors flow sensors at each water source, records flow, and automatically reacts to problem flows by shutting down the effected portion of the system (individual valve or mainline)
- RainWatch™ monitors rain counting sensors, records rainfall, and automatically reacts to rainfall by interrupting irrigation, waiting to see how much rain has fallen, and determines if the irrigation should be resumed or cancelled

Operational Features

- Communication Control Engine automatically sends updated programming to sites before watering begins and retrieves logs after irrigation is completed; manual operation can be performed at any time
- Start day cycles: Custom (day of the week), Odd/Even, Odd31, or Cyclical and include Event Day Off Calendar scheduling
- Station run-times programmable from 1 minute to 16 hours
- Cycle + Soak™ optimizes water application to soil infiltration rate, reducing runoff and puddling
- Control non-irrigation functions such as lighting, fountains, door locks and gates

Maxicom2 Communications Options

- Central Controller to CCU: Phone, direct connect, radio, cellular, network (Ethernet, Wi-Fi, fiber-optics)
- CCU to ESP-SAT2: Two-wire path
- CCU to ESP-SATL: Radio, MasterLink, network (Ethernet, Wi-Fi, fiber-optics)

Global Service Plan (GSP) Features (see page 134)

- Toll-free phone support
- Remote systems diagnostics
- Customer satisfaction policy on covered central control components and next business day hardware replacement
- Free software service packs
- Training and on-site support rebates
- Board Exchange Program discounts

Models

- MC2GOLD1: New System - Desktop PC with Maxicom software, includes 1 year Global Support Plan (GSP)
- GSPMCPL3: Current GSP Or Expired GSP Subscribers, Desktop PC with Maxicom software, includes 3 Years Platinum Plus Global Support Plan
- GSPMXPPCIA: Current GSP Subscribers, Desktop PC with Maxicom software, based on 3 Year Platinum Plus Global Support Plan, includes year 1 GSP, requires year 2 and 3 GSP to be purchased separately (M95543A2)
- GSPMXPPCIM: Current GSP Subscribers, Desktop PC with Maxicom software, based on 3 Years Platinum Plus Global Support Plan, includes month 1 GSP, requires month 2 - 36 GSP to be purchased separately (M95544M2)
- GSPMXPPNIA: New GSP or Expired GSP Subscribers, Desktop PC with Maxicom software, based on 3 Years Platinum Plus Global Support Plan, includes year 1 GSP, requires year 2 and 3 GSP to be purchased separately (M95541A2)
- GSPMXPPNIM: New GSP or Expired GSP Subscribers, Desktop PC with Maxicom software, based on 3 Years Platinum Plus Global Support Plan, includes month 1 GSP, requires month 2 - 36 GSP to be purchased separately (M95542M2)
- MC2UPG: Maxicom Upgrade Software - CD Only, upgrade existing Maxicom 1.X, 2.X and 3.X system to latest Maxicom Version

Maxicom2

Water Saving

Maxicom2 ET Checkbook manages soil moisture in the same way you manage money in your checking account. Daily water loss from ET is a withdrawal while irrigation and rainfall are deposits of moisture into the soil.

Maxicom²® Hardware

Cluster Control Unit CCU Interface

- Runs real-time operations of a site consisting of up to 28 satellites
- Adapts station sequence to changing conditions for maximum efficiency
- Instantly responds to unexpected conditions and sensor inputs

ESP-SAT Satellite Controller

- 12, 24, 40 Stations Satellite Controller
- Field Satellite Controller for Maxicom2 or SiteControl Central Control systems
- The power of an advanced water-management tool, in an easy-to-use package
- All the features and stand-alone capabilities of the Rain Bird ESP-MC Controller line

ESP-SITE-SAT Satellite Controller

- 12, 24, 40 Stations Satellite Controller
- Combines power of a Cluster Control Unit (CCU) with capabilities of a single ESP-Satellite controller for small Maxicom2 sites
- Advanced water-management tool, in an easy-to-use package
- All the features and stand-alone capabilities of the Rain Bird ESP-MC Controller line

Spread Spectrum Radio

- Frequency hopping to avoid interference
- Reduced cost of ownership, no FCC license required
- No FCC restrictions on antenna height (User should check local laws)
- Radios can be set up as repeater to achieve great distances and overcome obstacles

Ethernet Devices

- Use Ethernet networks to:
  - Communicate from Central Control Computer to CCUs, SiteSats, TWIs and weather stations
  - Communicate from CCU and TWIs to ESP-Sats

Freedom for Central Control

- Uses standard telephone interface
- Single cellular phone can control entire central control system
- Standard land-line telephones can also control system

WS-PRO Weather Stations

- Scientific accuracy sensors located three meters above the ground for added vandal-resistance
- Powerful, internal micro-logger for climatic data collection, logging and analysis, constant communication with weather sensors, and storage of 30 days of data
- Rugged yet lightweight metal construction;

Sensor-Pulse Decoders

- Complete feedback system
- Extends central control system versatility
- Color-coded wire leads for ease of installation
- Programmable address codes for individual operation

RAINGAUGE Rain Sensor

- Accurate rain counter switch counts rainfall in 1/100th inch increments
- Heavy-duty metal construction
- Mounting bracket
- Debris screen

ANEMOMETER Wind Sensor

- Accurate wind speed measurement for high-wind shutdown or interrupt of irrigation programs
- Heavy-duty metal mounting bracket
- Requires PT322 or PT3002 Pulse Transmitter for use with Maxicom² System

Maxi Interface Boards

- Upgrades an ESP-MC Controller (wall mount or pedestal) to an ESP-SAT or ESP-SITE Satellite Controller
- No additional enclosures or external wiring required
- Installs on stand-offs on controller output board

MSP-1 Surge Protection

- Protects central control components from electrical surges on a two-wire communication path
- Can be installed in satellite or CCU pedestal or in valve box in conjunction with MGP-1 (Maxicom²® Grounding Plate)

MGP-1 Surge Grounding Plate

- Provides a mounting location for MSP-1 or other grounding wires directly to a grounding rod or pipe
- Installed on grounding rod or pipe

WS-PRO Weather Stations

Maxicom²® (WS-PRO2 only), SiteControl, IQ™ (WS-PRO2 and WSPROLT)

Features

- Scientific accuracy sensors located three meters above the ground for added vandal-resistance
- Powerful, internal micro-logger for climatic data collection, logging and analysis, constant communication with weather sensors, and storage of 30 days of data
- Rugged yet lightweight metal construction;
- Self-diagnostic test mechanisms: internal moisture, battery voltage level, test port for local sensor check, and simple-to-service sensors and internal components
- State-of-the-art weather software calculates ET values, stores daily and historic ET values, monitors and displays current weather conditions, and graphically displays weather parameters

SiteControl Features

- WS-PRO2 and WS-PRO-LT Weather Station compatibility is standard for SiteControl v3.0 or later software
- SiteControl can interface with up to 6 weather stations
- Automatic communication between Central Controller and Weather Station requires SiteControl Automatic ET Software Module
- SiteControl Smart Weather Software Module enables automatic, user defined reactions to weather events (rain, freeze, high wind, etc.)

IQ v2.0 Features

- WS- PRO2 or WS-PRO-LT Weather stations are compatible with IQ v2.0 or later software with advanced ET Feature Pack (IQAETFP)
- Automatic communication between the IQ v2.0 central and weather station requires the communcation feature pack (IQACOMFP)
- Weather data retrieval hourly or custom retrieval times up to 5 per day
- IQ can interface with 100 weather stations

Maxicom²® Features (WS-PRO2 only)

- WS-PRO2 Weather Station compatibility is standard for Maxicom²® v3.6 or later software
- Each site can have its own Weather Station or can share between sites
- Automatic communication standard
- Up to 24 automatic weather data retrievals can be configured per day

Weather Station Sensors

- Air Temperature
- Solar Radiation
- Relative Humidity
- Wind Speed
- Wind Direction
- Rainfall

System Compatibility

- Maxicom² (WS-PRO2 only)
- SiteControl (requires Automatic ET Software Module)
- IQ v2.0 with Advanced ET Feature Pack
- ET Manager Weather Reach Server Software

Models

- WS-PRO2-DC Direct Connect model – 2-pair wire connection with Central Controller via short-haul modem
- WS-PRO2-PH Phone Connect model – dial-up phone modem for phone communication with Central Controller
- WS-PRO2-PHS Phone Connect, Solar Power model – dial-up phone modem for phone communication with Central Controller, solar powered
- WS-PRO-LT-SH Short Haul model – 2-pair wire connection with Central Controller via short-haul modem
- WS-PRO-LT-WL Wireless model – wireless connection with Central Controller via 916 MHz radio (only available in the U.S. and Canada)
- WS-PRO-LT-WLS Wireless model – wireless connection with Central Controller via 916 MHz radio, solar powered (only available in the U.S. and Canada)

Spread Spectrum Radio

Maxicom[2®], SiteControl or IQ™

Features

- Frequency hopping to avoid interference
- Reduced cost of ownership, no FCC license required
- No FCC restrictions on antenna height (User should check local laws)
- Radios can be set up as repeater to achieve great distances and overcome obstacles

Installation Requirements

- Site Survey required prior to ordering and must be submitted with order
- RADTN9MIB mounts directly onto ESP-SAT MIB; RADTN9TWI connects with ribbon cable
- Antenna and antenna cable required (sold separately by Rain Bird Production and Service Center)

Models

- **Radios – For IQ Primary & Secondary Communication and For Maxicom and Site Control Primary Communication**
  - IQSSRADIO: 900 MHz Spread Spectrum radio – Allows communication between Central Computer and IQ Direct or IQ Server Satellite, and between IQ Server Satellite and IQ Client Satellites. Also can be used for communication between Maxicom Central Computer and CCU or Site Satellite, between Site Control Central Computer and TWI / SDI or LDI, and between a Central Computer and weather station
- **Radios – For Maxicom and Site Control Secondary Communication**
  - RADTN9MIB: license free wireless radio (902-928 MHz) between CCU and satellites
  - RADTN9TWI: license free wireless radio (902-928 MHz) between TWI and satellites

ANEMOMETER Wind Sensor

Maxicom,[2®] SiteControl, IQ™, ESP-LXME, ESP-LXD

Features

- Accurate wind speed measurement for high-wind shutdown or interrupt of irrigation programs
- Heavy-duty metal mounting bracket
- Requires PT322 or PT3002 Pulse Transmitter for use with Maxicom[2] System
- Requires PT3002 Pulse Transmitter for use with SiteControl, IQ Systems, ESP-LXME, ESP-LXD

Model

- ANEMOMETER

ANEMOMETER

Central Control Global Service Plans

Maxicom²®, Site Control Systems, IQ and Stand Alone Controllers
Gold Level/ Platinum Level/Platinum Plus Level

- GSP members enjoy a host of benefits such as special discounts on GSP services like the Board Exchange Program,lower cost of maintaining their Rain Bird Central Control System with our Platinum level hardware support feature, and expert remote technical support from our GSP engineers for troubleshooting assistance or when learning how to maximize the performance of their system

Features and Benefits

- **Maxicom²® and SiteControl Service Plans**
  - **Gold Level Service Plan**
    - Software and hardware troubleshooting
      - Toll-free support, 8am - 5pm, local business hours, normal business days
    - Remote software assistance support
      - Symantec pcAnywhere® or GoToAssist™ software allows support engineers to remotely access your central control system when issues cannot be resolved over the phone
    - Board Exchange Program Discounts
      - Provides you with the opportunity to obtain selected replacement hardware with Next Day Shipping at a discounted price
    - Software point releases
      - Provides you with the newest central control service packs for your level of service at no extra charge!
  - **Platinum Level Service Plan**

    All of the features of the Gold Service Plan plus:
    - Software enhancements and major new releases
      - Reduces the expense of adding new features and functions and upgrading your system to the newest versions of your central control software
    - Hardware loaner program*
      - Ensures that if any Rain Bird Central Control hardware component covered under the Global Service Plan becomes inoperable, a loaner will be shipped to your site via a next business day delivery service at no extra charge!
  - **Platinum Plus Level Service Plan**

    All of the features of the Platinum Service Plan plus:
    - PC Upgrade
      - Reduces the expense of upgrading your system to the latest Rain Bird Central Control computer system
- **IQ and ESP-LXD Service Plans**
  - Hardware loaner program*
  - Software enhancements and major new releases
  - GSP Software and hardware troubleshooting
- **Incident and Other Support**
  - For non-GSP customers, Rain Bird offers telephone support services which are charged per incident. Call us at 1-866-GSP-XPRT for more information

** **Note:** Platinum and Platinum Plus loaner programs are limited to 10 registered sites (based on CCU, Site-Sat, TWI, LDI, or SDI serial numbers). Loaner privileges for additional sites may be purchased for an additional fee.*

Commercial Global Service Plans

Features	Gold	Platinum	Platinum Plus
New Rain Bird Irrigation Computer			•
Next Business Day Hardware Replacement Program		•	•
Remotely Secured Database Back-Up Service		•	•
Free Software Point Releases	•	•	•
Toll-Free Remote Technical Support	•	•	•
Remote System Diagnostics	•	•	•
Board Exchange Program Discounts	•	•	•
Major New Software Releases		•	•
Rain Bird Services Corporation - Rain Bird Academy Discounts	•	•	•
MDC Database Conversion Service Discounts (Stand Alone Controller Gold Plan Only)	•		

Renewal Options - Maxicom²® Systems

Subscription	Payment Frequency	Part #
Platinum Plus Plan - Standard GSP + PC		
3 Year	Lump Sum	M95540
3 Year	Annual	M95543A1
3 Year	Monthly	M95544M1
Plantinum Plan - Standard GSP		
3 Year	Lump Sum	M95530
3 Year	Annual	M95530A1
2 Year	Lump Sum	M95520
2 Year	Annual	M95520A1
Gold Plan - Limited GSP		
1 Year	Lump Sum	M95560

Renewal Options - SiteControl Systems

Subscription	Payment Frequency	Part #
Platinum Plus Plan - Standard GSP + PC		
3 Year	Lump Sum	M97540
3 Year	Annual	M97543A1
3 Year	Monthly	M97544M1
Plantinum Plan - Standard GSP		
3 Year	Lump Sum	M97530
3 Year	Annual	M97530A1
2 Year	Lump Sum	M97520
2 Year	Annual	M97520A1
Gold Plan - Limited GSP		
1 Year	Lump Sum	M97560

Renewal Options - Stand Alone Controllers

Subscription	Payment Frequency	Part #
IQ - Limited GSP		
2 Year	Lump Sum	I95200
ESP-LXD - Limited GSP		
2 Year	Lump Sum	M001351

If you would like to know more about our Central Control Global Service Plans contact your local Rain Bird Central Control Distributor or call GSP at (866) GSP – XPRT.

""Having grown up in Tucson, saving water is my passion! I became intrigued with 'Drip-in-Turf' after seeing its success at a corporate building in Del Mar, and a College in San Diego. I wanted to experience it myself, so I retro-fitted my own backyard. My turf has an irregular shape, so overspray was a big issue. Applying water directly to the root zone worked efficiently, my turf looks great, and I'm saving water. I am now a true believer and specify 'Drip-in-Turf' whenever I can!"

***Marian Marum,** ASLA, LEED AP*
Marum Partnership Landscape Architecture
San Diego, California

Water Saving Tips

- Drip products deliver water directly to the root zone. Use dripline for dense plantings where it's cost effective to distribute low-volume water evenly. Use a system of precise emitter devices for sparse plantings where it's cost effective to separately irrigate each plant.
- Use drip to eliminate overspray, and you'll eliminate waste. Eliminate unsightly spray stains on buildings and fences. Eliminate soil erosion, water runoff, and potential litigation. Walkways, roads, and vehicles stay dry.
- Ask your tax advisor about capital depreciation when calculating your return-on-investment for a drip retrofit. Save water, and save money at the same time.

Xerigation®/ Landscape Drip System Overview

Targeted Watering with Xerigation® / Landscape Drip

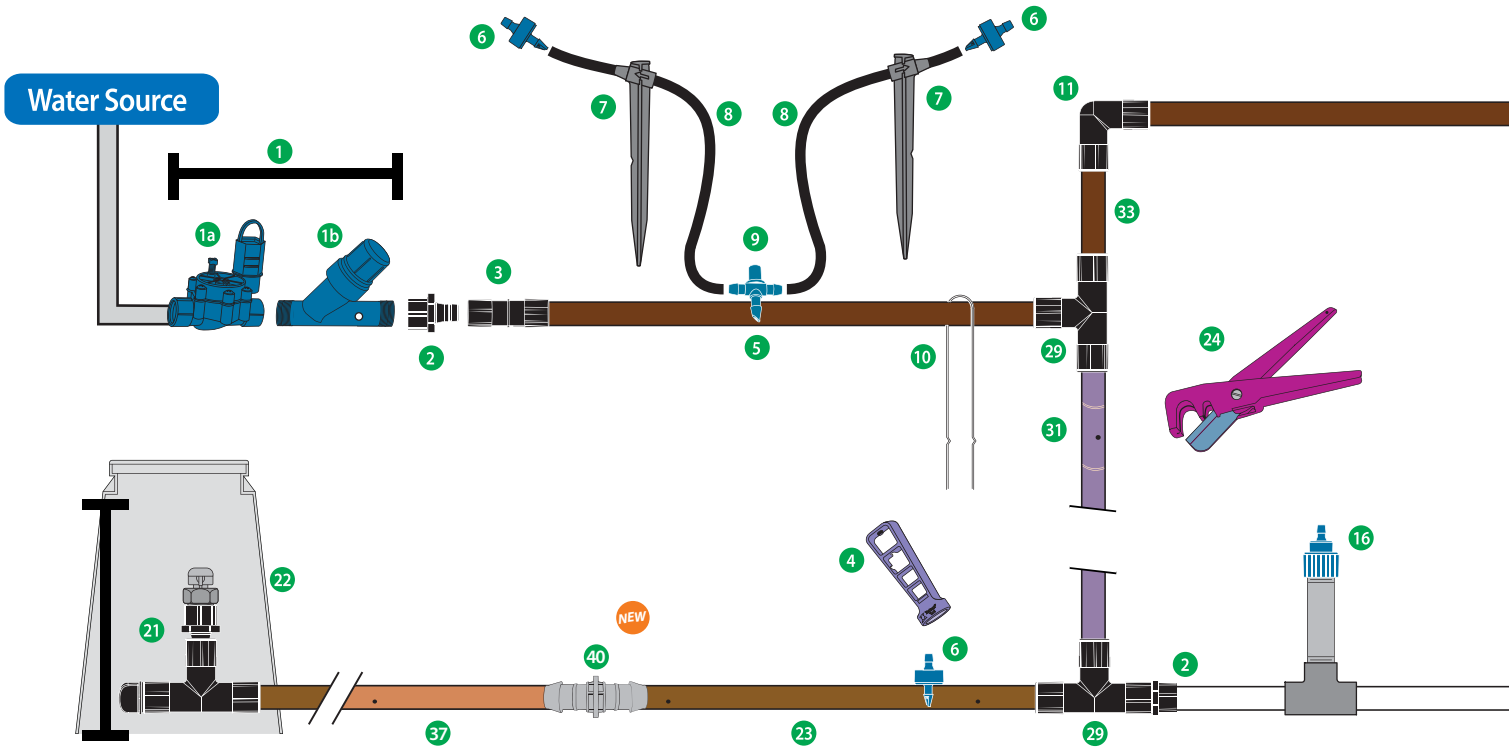
Rain Bird Xerigation/Landscape Drip products are made especially for low-volume irrigation systems. By delivering water at or near the plants' root zones, Rain Bird Xerigation products offer targeted watering with the following advantages:

- Water conservation
- Greater efficiency (target each plant)
- Design flexibility; simple construction and easily expandable
- Healthier plants
- Reduced liability (e.g. no overspray, no runoff)
- Minimization of weed growth
- Cost savings

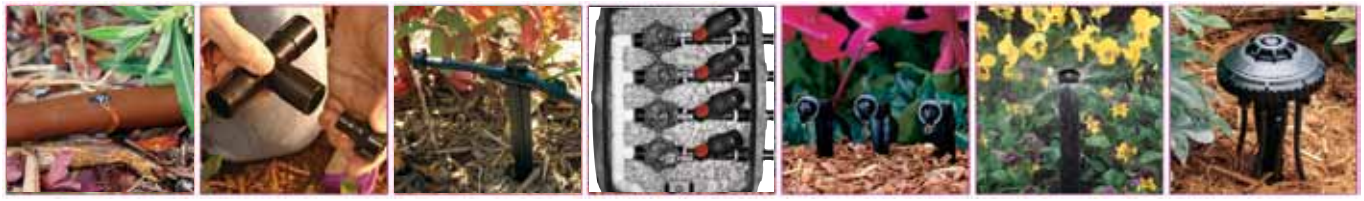
Broadest Product Line in the Industry

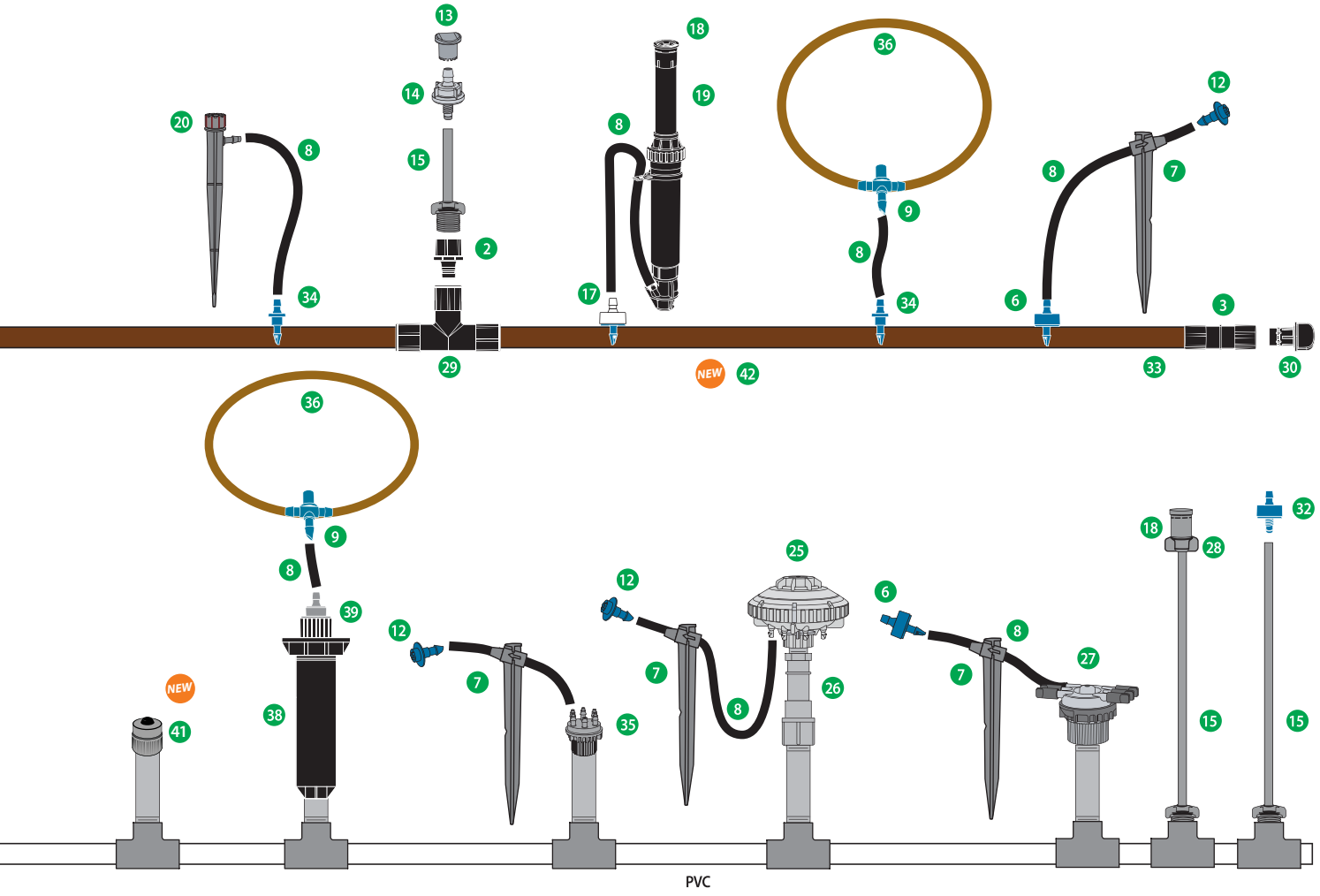
With over 150 products, Rain Bird has the products needed for your application. Systems can be designed to meet any site requirements and offer many exclusive Rain Bird advances including:

- Flexible XF Series dripline with advanced polymers that provide kink-resistance and reduced coil memory for easier installation.
- Compact Control Zones with combined pressure regulator and filter to reduce parts, potential leak problems, and allow for fitting more Control Zones in a valve box.
- Precision low volume SQ spray nozzles that offer a square wetting pattern and adjust to either 2.5' or 4' throw distances.
- Point-source emitters that provide pressure compensation with a wide selection of flow rates and three inlet options (Barb, 1032 threaded, and ½" FPT).
- XFS dripline with Copper Shield Technology™ for use in sub-surface applications under turf or shrub and groundcover areas. The copper chip effectively protects the emitter from root intrusion.



1. Control Zone Kit (pg. 169)
1a. Low Flow Valve (pg. 176)
1b. Pressure Regulating Filter (pg. 177)
2. Easy Fit Female Adapter (pg. 161)
3. Easy Fit Coupling (pg. 161)
4. Xeriman Tool (pg. 167)
5. XF Series Blank Tubing (pg. 163)
6. Xeri-Bug Emitter (pg. 138)
7. ¼" Tubing Stake (pg. 150)
8. XQ ¼" Distribution Tubing (pg. 165)
9. ¼" Barb Tee (pg. 166)
10. Tie-Down Stake (pg. 166)
11. Easy Fit Elbow (pg. 161)
12. Diffuser Bug Cap (pg. 150)
13. PC Emitter Diffuser Cap (pg. 150)
14. PC Module-1032 (pg. 142)
15. PolyFlex Riser Assembly (pg. 151)
16. Xeri-Bug Emitter - ½" FPT (pg. 138)
17. ¼" Self-Piercing Barb Connector (pg. 140)
18. SQ Series Square Nozzle (formerly XPCN) (pg. 144)
19. Xeri-Pop (pg. 146)

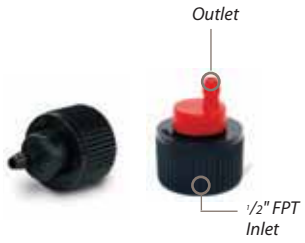




20. Xeri-Bubbler SPYK (pg. 147)
21. ARV050 Air Relief Valve Kit (pg. 162)
22. SEB-7X Emitter Valve Box (pg. 166)
23. XFD Dripline (pg. 154)
24. Tubing Cutter (pg. 166)
25. Xeri-Bird 8 (pg. 141)
26. Inline Pressure Regulator (pg. 182)
27. 6 Outlet Manifold (pg. 140)
28. SQ Series Nozzle Adapter (pg. 144)
29. Easy Fit Tee (pg. 161)
30. Easy Fit Flush Cap (pg. 161)
31. Purple XF Dripline (pg. 154)
32. Xeri- Bug Emitter - 1032 (pg. 138)
33. XF Series Blank Tubing (pg. 163)
34. ¼" Barb Connector (pg. 166)
35. Multi-Outlet Xeri-Bug (pg. 140)
36. ¼" Landscape Dripline (pg. 165)
37. XFS Sub-Surface Dripline with Copper Shield Technology
38. RETRO-1800 Spray-to-Drip Retrofit Kit
39. XT-025 ½" FPT x Barb Grey Transfer Fitting
NEW 40. XFF Coupling (pg. 160)
NEW 41. PCT Bubbler (pg. 142)
NEW 42. XFCV Dripline with Heavy-Duty check valve (pg. 156)

XB-05PC, XB-10PC, XB-20PC

XB-05PC-1032, XB-10PC-1032, XB-20PC-1032
1032-threaded models are specifically designed to be used with PolyFlex Risers, 1032 thread adapters (1032-A), or 1800 Xeri-Bubbler Adapter (XBA-1800)



XBT-10, XBT-20

Xeri-Bug™ Emitters

Point-Source Low-Flow Emitters for Watering the Root Zones of Plants, Trees, and Container Plants

- The only emitters with self-piercing barbs, making them the easiest to install using the Xeriman™ tool
- Widest selection of pressure-compensating emitters, with 3 flow rates and 3 inlet options
- Most compact and unobtrusive emitters

Features

- Flow-rates of 0.5, 1.0 and 2.0 gph (1.89, 3.79 and 7.57 l/h)
  - Pressure-compensating design delivers uniform flow throughout a wide pressure range (15 to 50 psi; 1.0 to 3.5 bar)
- Available with 3 different inlets (1.0 and 2.0 models):
  - Self-piercing barb for quick, one-step insertion into ½" or ¾" drip tubing
  - 10-32 threaded inlet that easily threads into a PolyFlex Riser (see page 151), 1032 Thread adapter (page 151) or 1800 Xeri-Bubbler Adapter (page 151)
  - ½" FPT inlet that easily threads onto a ½" PVC riser (1.0 and 2.0 gph models)
- Outlet barb securely retains ¼" Distribution Tubing (XQ)
- Design makes installation and maintenance easy
  - Self-flushing action minimizes clogging
  - Robust design made from highly inert materials that are resistant to chemicals
  - Durable plastic construction is UV-resistant
- Color-coded to identify flow rate

Operating Range

- Flow: 0.5 to 2.0 gph (1.89 to 7.57 l/h)
- Pressure: 15 to 50 psi (1.0 to 3.5 bar)
- Required filtration: 150 to 200 mesh (75 to 100 micron)

Models: barb inlet x barb outlet

- XB-05PC: Blue, 0.5 gph (1.89 l/h)
- XB-10PC: Black, 1.0 gph (3.79 l/h)
- XB-20PC: Red, 2.0 gph (7.57 l/h)

Models: 10-32 thread inlet x barb outlet

- XB-05PC-1032: Blue, 0.5 gph (1.89 l/h)
- XB-10PC-1032: Black, 1.0 gph (3.79 l/h)
- XB-20PC-1032: Red, 2.0 gph (7.57 l/h)

Models: ½" FPT inlet x barb outlet

- XBT-10: Black, 1.0 gph (3.79 l/h)
- XBT-20: Black, 2.0 gph (7.57 l/h)

How To Specify

XB - T - 05 - PC - 1032

- **Model**: Xeri-Bug
- **Optional**: ½" FPT inlet
- **Flow**: 05 = 0.5 gph (1.89 l/h); 10 = 1.0 gph (3.79 l/h); 20 = 2.0 gph (7.57 l/h)
- **Pressure Compensating**
- **Optional**: 1032 threaded inlet

Water Saving

Use a 1032-threaded emitter on a polyflex riser cut just above grade for high traffic areas. This configuration will ensure proper emitter alignment and healthy plants, despite the foot traffic.

Xeri-Bug Emitter Specifications and Models

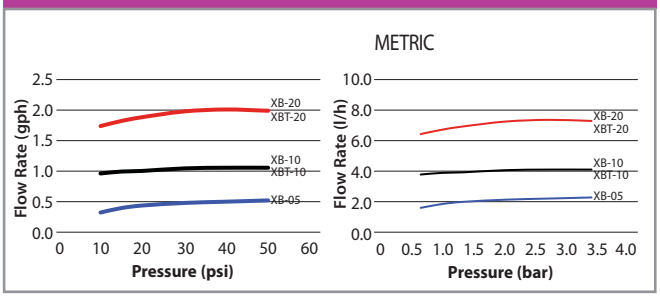
Model	Inlet Type/ Color	Nominal Flow gph	Filtration Required mesh
XB-05PC	Barb/Blue	0.5	200
XB-10PC	Barb/Black	1.0	150
XB-20PC	Barb/Red	2.0	150
XB-05PC1032	10-32T/Blue	0.5	200
XB-10PC1032	10-32T/Black	1.0	150
XB-20PC1032	10-32T/Red	2.0	150
XBT-10PC	½" FPT/Black	1.0	150
XBT-20PC	½" FPT/Black	2.0	150

Xeri-Bug Emitter Specifications and Models METRIC

Model	Inlet Type/ Color	Nominal Flow l/h	Filtration Required micron
XB-05PC	Barb/Blue	1.89	75
XB-10PC	Barb/Black	3.79	100
XB-20PC	Barb/Red	7.57	100
XB-05PC1032	10-32T/Blue	1.89	75
XB-10PC1032	10-32T/Black	3.79	100
XB-20PC1032	10-32T/Red	7.57	100
XBT-10PC	½" FPT/Black	3.79	100
XBT-20PC	½" FPT/Black	7.57	100

Xeri-Bug™ Emitter, TS025-1/4" stake, and DBC025 Diffuser Bug Cap

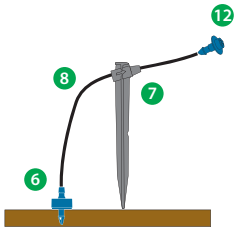
Xeri-Bug Emitter Performance



(For reference numbers below, please see the Xerigation System Overview page 136)

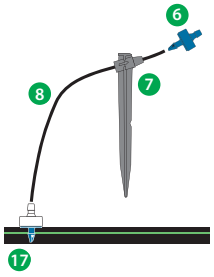
Installation Option 1

Using a Xeriman Tool, insert an emitter directly into ½" or ¾" drip tubing or between dripline emitters as needed.



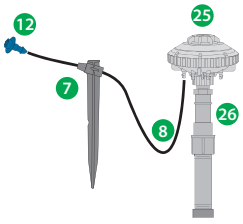
Installation Option 2

For more precise water placement, use ¼" distribution tubing, a ¼" tubing stake, and a bug cap.



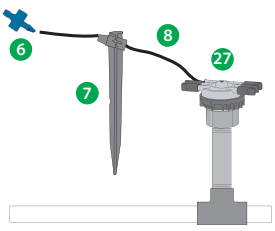
Installation Option 3

For precise water placement, a barbed connector can be punched into distribution tubing. The emitter is then placed at the end of the ¼" distribution tubing. NOTE: should the emitter become dislodged, unregulated flow will occur.



Installation Option 4

The Xeri-Bird 8 provides a centralized location for up to eight emitters. A mix of Xeri-Bug and/ or PC emitters can be used to provide the flow rates needed for different plant materials. Tentacles of ¼" distribution tubing, ¼" tubing stakes, and bug caps allow for precise water placement.



Installation Option 5

The 6 Outlet Manifold provides a centralized water distribution connection for up to six emission devices. Connect the ¼" distribution tubing to one of the outlets. Use a ¼" tubing stake to ensure precise water placement. The emitter is placed on the end of the 1/4" distribution tubing to regulate the water flow. NOTE: should the emitter become dislodged, unregulated flow will occur.

Multi-Outlet Xeri-Bug™

Features

- Pressure compensating design delivers uniform flow throughout a wide pressure range (15 to 50 psi; 1.0 to 3.5 bar)
- Six-outlet emitter supplied with one outlet opened. Simply clip the outlet tips open with snips or clippers for additional operational ports
- Barbed outlets retain ¼" Distribution Tubing (XQ)
- Self-flushing action minimizes clogging
- Durable, UV-resistant color-coded plastic housing

Operating Range

- Flow: 0.5, 1.0 or 2.0 gph (1.89, 3.79 or 7.57 l/h)
- Pressure: 15 to 50 psi (1.0 to 3.5 bar)
- Filtration: 150-mesh (100-microns)

Models: barb inlet x barb outlet

- XB-05-6: Blue, 0.5 gph (1.89 l/h)
- XB-10-6: Black, 1.0 gph (3.79 l/h)
- XB-20-6: Red, 2.0 gph (7.57 l/h)

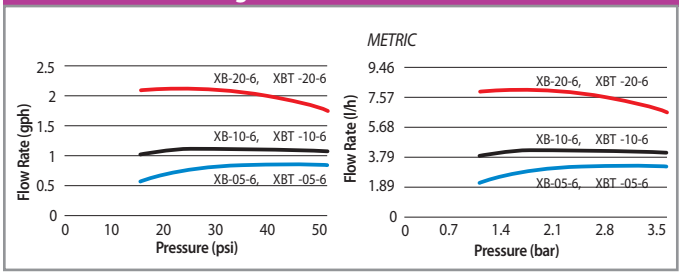
Models: ½" FPT inlet x barb outlet

- XBT-05-6: Blue, 0.5 gph (1.89 l/h)
- XBT-10-6: Black, 1.0 gph (3.79 l/h)
- XBT-20-6: Red, 2.0 gph (7.57 l/h)

XB-05-6, XB-10-6, XB-20-6

XBT-05-6, XBT-10-6, XBT-20-6

Multi-Outlet Xeri-Bug Emitter Performance



6 Outlet Manifold - EMT-6XERI

Features

- ½" FPT inlet threads onto ½" riser and provides a manifold with six free-flowing ¼" 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
- Attach ¼" Distribution Tubing (XQ) onto each outlet for use with: Xeri-Bugs, PC Modules, Xeri-Pops, Xeri-Sprays, and Xeri-Bubblers

Operating Range

- Pressure: 15 to 50 psi (1.0 to 3.5 bar)

Model

- EMT-6XERI

EMT-6XERI

¼" Self-Piercing Barb Connector

Features

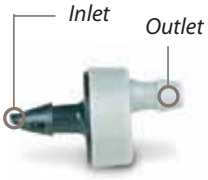
- Used to connect ¼" Distribution Tubing into ½" or ¾" distribution tubing
- Self-piercing barb inlet is easily inserted into ½" or ¾" distribution tubing using a Xeriman™ Tool (XM-Tool)
- Outlet barb accepts ¼" Distribution Tubing (XQ). Gray outlet barb indicates unit has unrestricted flow

Operating Range

- Pressure: 0 to 50 psi (0 to 3.5 bar)

Model

- SPB-025



SPB-025

½" FPT x Barb Grey Transfer Fitting

Features

- Grey outlet to designate open flow
- ½" FPT inlet can be easily attached to a schedule 80 riser or the top of an 1800 Retro
- Barbed outlet so ¼" distribution tubing or ¼" drip tubing can be easily and securely attached

Operating Range

- Pressure: 0 to 50 psi (0 to 3.5 bar)

Model

- XT025

XT025

Xeri-Bird™ 8 Multi-Outlet Emission Device

The Most Flexible and Feature-Rich Multi-Outlet Device on the Market, Ideal for New Projects and Retrofit Applications

- The only multi-outlet device on the market with 8 configurable ports and 10 flow options for each port for maximum flexibility
- XBD-80 and XBD-81 models each contain a built-in filter. Makes retro-fitting easy when installed with the optional in-stem pressure regulator (PRS-050 page 182)
- Easy to maintain, because body can be easily removed from riser

Features

- Threads onto any ½" riser and delivers water to multiple locations for increased system flexibility
- Each port accepts a Xeri-Bug™ Emitter or PC Module for independent flows from 0.5 to 24 gph (1.89 to 90.84 l/h) or use a self-piercing barb connector (SPB-025) for unrestricted flow
- XBD-80 and XBD-81 models each feature an integral 200 mesh (75 micron) filter which is easily serviceable from the top of the unit
- Eight bottom-mounted, sure-grip barbed outlets securely retain ¼" Distribution Tubing (XQ)
- Unique union base nut allows removal of Xeri-Bird 8 body from riser for easy installation and maintenance
- Emitters must be installed inside the Xeri-Bird to prevent excess back pressure

Operating Range

- Flow: 0 to 24 gph (0 to 90.84 l/h) per outlet
- Pressure: 15 to 50 psi (1.0 to 3.5 bar)

Models

- XBD-80: Xeri-Bird 8 unit (includes 7 removable port plugs and filter)
- XBD-81: Xeri-Bird 8 unit (includes eight 1 gph (3.79 l/h) Xeri-Bug emitters factory installed, and filter)

Replacement Parts:

- XBD8SCRN: replacement screen and two o-rings

XBD-80

XBD-80 With 8 Xeri-Bugs and In-Stem Regulator Shown Installed (Order Xeri-Bugs and In-Stem Pressure Regulator Separately)

Helpful Hint: Always install emitters with the pointed end (inlet barb) or threaded end up, as shown

Water Saving

Use a mix of Xeri-Bug and Pressure Compensating Module emitters in a Xeri-Bird 8 to accommodate the watering needs of different plant materials. When mixing emitters, be sure to note the system run-time to prevent over- or under-watering.

PC-05, PC-07, PC-10

PC-12, PC-18, PC-24

PC-05-1032, PC-07-1032, PC-10-1032
10-32-threaded models are specifically designed to be used with PolyFlex Risers, 10-32 thread adapters (1032-A), or 1800 Xeri-Bubbler Adapter (XBA-1800)

NEW

PCT-05, PCT-07, PCT-10
½" FPT inlet that easily threads onto a ½" PVC riser

How To Specify

PC - T - 05 - 1032

- **Model** — PC: Pressure-Compensating
- 1/2" FPT Inlet
- **Flow** — 5 gph (18.93 l/h)
- **Optional** — 1032 threaded inlet

Pressure-Compensating Modules

Point-Source Medium-Flow Emitters for Watering Larger Shrubs and Trees

- The only emitters with self-piercing barbs, making them the easiest to install using the Xeriman™ tool
- Widest selection of pressure-compensating emitters, with 6 flow rates and 3 inlet options
- Most compact and unobtrusive emitters

Features

- Flow rates from 5 to 24 gph (18.93 to 90.84 l/h)
- Pressure-compensating design delivers uniform flow throughout a wide pressure range (10 to 50 psi; 0.7 to 3.5 bar)
- Available with 3 different inlets:
  - Self-piercing barbs for quick one-step emitter insertion into ½" or ¾" drip tubing
  - 10-32 threaded inlet that easily threads into a PolyFlex Riser (see page 151), 1032 Thread adapter (page 151) or 1800 Xeri-Bubbler Adapter (page 151)
  - ½" FPT inlet that easily threads onto a ½" PVC riser
- Robust design - durable plastic construction is UV-resistant and color-coded to identify flow rate

Operating Range*

- Flow: 5 to 24 gph (18.93 to 90.84 l/h)
- Pressure: 10 to 50 psi (0.7 to 3.5 bar)
- Required filtration: 100 mesh (150 micron)

* ***Note:*** *Use a PC Diffuser Cap to eliminate squirting water when using a PC Module staked at the end of 1/4" Distribution Tubing (XQ) or on a PolyFlex Riser (PFR/FRA)*

Models: barb inlet x barb outlet

- PC-05: Light brown, 5 gph (18.93 l/h)
- PC-07: Violet, 7 gph (26.50 l/h)
- PC-10: Green, 10 gph (37.85 l/h)
- PC-12: Dark brown, 12 gph (45.42 l/h)
- PC-18: White, 18 gph (68.13 l/h)
- PC-24: Orange, 24 gph (90.84 l/h)

Models: 10-32 thread inlet x barb outlet

- PC-05-1032: Light brown, 5 gph (18.93 l/h)
- PC-07-1032: Violet, 7 gph (26.50 l/h)
- PC-10-1032: Green, 10 gph (37.85 l/h)

Models: 1/2" FPT thread Inlet

- PCT-05: Light Brown, 5 gph (18.93 l/h)
- PCT-07: Violet, 7 gph (26.50 l/h)
- PCT-10: Green, 10 gph (37.85 l/h)

Pressure-Compensating Modules

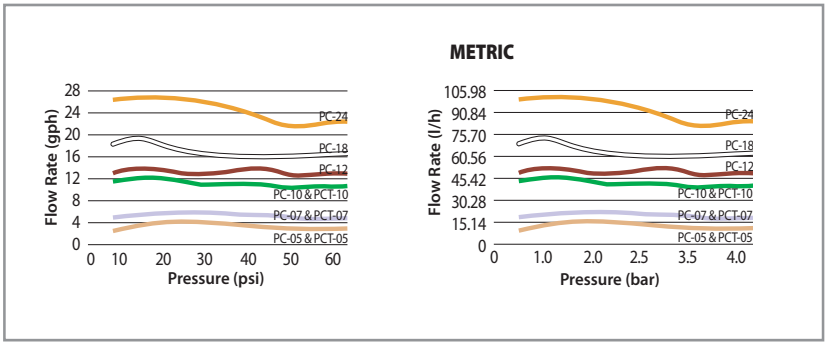
Pressure-Compensating Module Models

Model	Inlet Type/ Outlet/Color	Nominal Flow gph	Filtration Required mesh
PC-05	Barb / light brown	5	100
PC-07	Barb / violet	7	100
PC-10	Barb / green	10	100
PC-12	Barb / dark brown	12	100
PC-18	Barb / white	18	100
PC-24	Barb / orange	24	100
PC-05-1032	10-32T / light brown	5	100
PC-07-1032	10-32T / violet	7	100
PC-10-1032	10-32T / green	10	100
PCT-05	NPT / light brown	5	100
PCT-07	NPT / violet	7	100
PCT-10	NPT / green	10	100

Pressure-Compensating Module Models | METRIC

Model	Inlet Type/ Outlet/Color	Nominal Flow l/h	Filtration Required micron
PC-05	Barb / light brown	18.93	150
PC-07	Barb / violet	26.50	150
PC-10	Barb / green	37.85	150
PC-12	Barb / dark brown	45.42	150
PC-18	Barb / white	68.13	150
PC-24	Barb / orange	90.84	150
PC-05-1032	10-32T / light brown	18.93	150
PC-07-1032	10-32T / violet	26.50	150
PC-10-1032	10-32T / green	37.85	150
PCT-05	NPT / light brown	18.93	150
PCT-07	NPT / violet	26.50	150
PCT-10	NPT / green	37.85	150

Pressure-Compensating Modules & Bubblers Performance



PC Diffuser Caps

PC Diffuser

PC Diffuser Caps are designed to fit onto outlet of pressure-compensating drip modules

Models: (see page 150 for complete information)

- PC Diffuser: Black
- PC-DIFF-PPL: Purple, to designate non-potable water

PC Module with PC Diffuser Cap on PolyFlex Riser (PolyFlex Risers available in 12" and 24" models)

SQ Nozzle Installed on PolyFlex Riser with Nozzle Adapter

SQ Nozzles with Screens

One Nozzle…Two Throws

With a simple turn of the nozzle to the next preset stop, the Rain Bird SQ Nozzle adjusts from a 2.5' (0.8 m) throw to a 4' (1.2 m) throw. It's like having two nozzles in one.

Can be used on…

The SQ Nozzle is an ideal solution for a wide range of difficult-to-design areas, thanks to its compatibility with popular irrigation products.

1800® Series Spray Heads | Xeri-Pop Spray Heads | Polyflex Risers | Schedule 80 Risers

SQ Series, Square Pattern Nozzles

The Most Precise and Efficient, Low-Volume Spray Solution for Irrigation of Small Areas with Dense Plantings

- Square spray pattern and pressure compensation offer increased efficiency and control, reducing overspray, property damage and liability
- Simplify design and installation with the flexibility of applications: one nozzle throws 2.5' or 4' (0.8 m or 1.2 m) and can be used on a variety of spray heads and risers
- Meets micro irrigation system requirement for less than 26 gph flow rate at 30 psi

Features

- Square spray pattern with edge-to-edge coverage allows you to easily design and install in small spaces
- Pressure compensation design delivers uniform flow over the pressure range
- Available in 3 models—quarter, half and full patterns with matched precipitation rate
  - Virtually no-mist performance from 20 psi to 50 psi
  - Two throw distances in each nozzle. One simple click adjusts to 2.5' or 4' (0.8 m or 1.2 m)
  - Shipped with blue filter screen (0.02" x 0.02") to maintain precise distance of flow, and to prevent clogging
- Compatible with all 1800 Sprays, Xeri-Pops, New PolyFlex Riser Adapter, UNI-Spray and SCH 80 risers

Operating Range

- Pressure: 20 to 50 psi (1.4 to 3.5 bar)
- Flow rates: 6, 12 and 24 gph (22.7, 45.4 and 90.8 l/h)
- Required filtration: 40 mesh

Models

- SQ QTR: SQ Nozzle, quarter pattern
- SQ HLF: SQ Nozzle, half pattern
- SQ FUL: SQ Nozzle, full pattern
- SQ ADP12: SQ Nozzle Adapter with 12" PolyFlex Riser
- SQ ADP24: SQ Nozzle Adapter with 24" PolyFlex Riser
- SQ ADP: SQ PolyFlex Riser Adapter only

* ***Note:*** *A PA-8S Plastic Shrub Adapter (see page 13) is needed when using an SQ Series Nozzle mounted on a SCH 80 riser.*

Water Saving

SQ Series Nozzles provide a precise square wetting pattern and efficient water placement with pressure compensation – resulting in up to 65% water savings. They are great for narrow planting beds, parking lot islands, walkways, parkways, and street medians.

SQ Nozzle Performance

2.5 feet throw @ 6" height above grade

Nozzle	Pressure psi	Throw Radius ft.	Flow gph	Flow gpm	Precip. Rate w/no overlap in/h
Q	20	2.5	6.4	0.11	1.64
	30	2.5	7.4	0.12	1.90
	40	3.0	7.4	0.12	1.32
	50	3.0	7.4	0.12	1.32
H	20	2.5	10.2	0.17	1.31
	30	2.5	12.2	0.20	1.57
	40	3.0	13.7	0.23	1.22
	50	3.0	13.7	0.23	1.22
F	20	2.5	20.0	0.33	1.28
	30	2.5	24.2	0.40	1.55
	40	3.0	27.3	0.46	1.22
	50	3.0	27.3	0.46	1.22

SQ Nozzle Performance — METRIC

0.8 m throw @ 0.15 m height above grade

Nozzle	Pressure bar	Throw Radius m.	Flow lph	Flow lpm	Precip. Rate w/no overlap mm/h
Q	1.4	0.8	24	0.40	42
	2.1	0.8	28	0.47	48
	2.8	0.9	28	0.47	34
	3.4	0.9	28	0.47	34
H	1.4	0.8	39	0.65	33
	2.1	0.8	46	0.77	40
	2.8	0.9	52	0.87	31
	3.4	0.9	52	0.87	31
F	1.4	0.8	76	1.27	33
	2.1	0.8	92	1.53	39
	2.8	0.9	103	1.72	31
	3.4	0.9	103	1.72	31

SQ Nozzle Performance

4 feet throw @ 6" height above grade

Nozzle	Pressure psi	Throw Radius ft.	Flow gph	Flow gpm	Precip. Rate w/no overlap in/h
Q	20	4.0	6.4	0.11	0.64
	30	4.0	7.4	0.12	0.74
	40	4.5	7.4	0.12	0.59
	50	4.5	7.4	0.12	0.59
H	20	4.0	10.2	0.17	0.51
	30	4.0	12.2	0.20	0.61
	40	4.5	13.7	0.23	0.54
	50	4.5	13.7	0.23	0.54
F	20	4.0	20.0	0.33	0.50
	30	4.0	24.2	0.40	0.61
	40	4.5	27.3	0.46	0.54
	50	4.5	27.3	0.46	0.54

SQ Nozzle Performance — METRIC

1.2 m throw @ 0.15 m height above grade

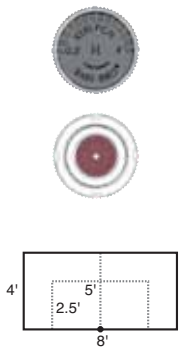
Nozzle	Pressure bar	Throw Radius m.	Flow lph	Flow lpm	Precip. Rate w/no overlap mm/h
Q	1.4	1.2	24	0.40	16
	2.1	1.2	28	0.47	19
	2.8	1.4	28	0.47	15
	3.4	1.4	28	0.47	15
H	1.4	1.2	39	0.65	13
	2.1	1.2	46	0.77	16
	2.8	1.4	52	0.87	14
	3.4	1.4	52	0.87	14
F	1.4	1.2	76	1.27	13
	2.1	1.2	92	1.53	15
	2.8	1.4	103	1.72	14
	3.4	1.4	103	1.72	14

Performance data taken in zero wind conditions

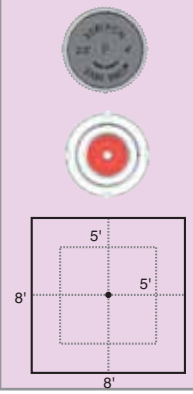
SQ Nozzles

Quarter Model

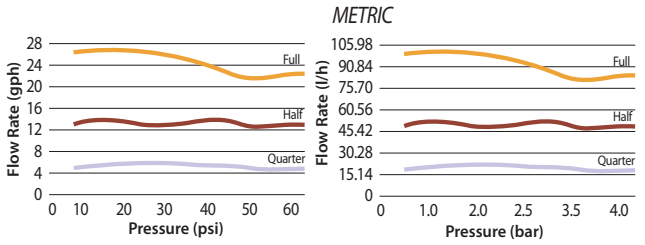
Half Model



Full Model



SQ Nozzle Performance



Landscape Drip

Xeri-Pop™ Micro-Spray

The Xeri-Pop™ Micro-Spray Makes It Easy to Integrate a Durable Micro-Spray into a Low-Volume Irrigation Design

- The only pop-up spray that works in low-volume low-pressure application, and this is the perfect solution to vandal-prone areas
- Xeri-Pops can be installed and located in nearly any location and are ideal for small, odd-shaped planting beds; the 12" version is perfect for annual flower beds
- Xeri-Pops work with Rain Bird 5' and 8' MPR nozzles and SQ Series Nozzles — nozzles with square spray patterns and adjustable throws of 2.5' and 4'

Features

- The Xeri-Pop can operate with 20 to 50 psi base pressure when water is supplied via ¼" Distribution Tubing (XQ)
- The flexibility of ¼" tubing allows the Xeri-Pop to be easily located and relocated as planting conditions dictate
- A durable, plastic snap-collar (on 4" and 6" models) secures the ¼" tubing to the outside of the Xeri-Pop case
- The Xeri-Pop's ¼" Distribution Tubing can readily connect to ½" or ¾" polyethylene tubing or to a multi-outlet manifold (EMT-6XERI). Connections to polyethylene tubing are accomplished with either an SPB-025 ¼" Self-piercing barb Connector or an XBF1CONN ¼" barb Connector
- External parts are UV-resistant and available in 4", 6" and 12" pop up heights

Operating Range

- Pressure: 20 to 50 psi (1.4 to 3.5 bar)
- Filtration: Depends on nozzle used with Xeri-Pop

Models

- XP-400X: 4-inch pop-up
- XP-600X: 6-inch pop-up
- XP-1200X: 12-inch pop-up

Nozzle Options

- SQ Series Nozzles (page 144)
- 5 Series MPR Nozzle (all configurations)
- 5 Series Plastic Bubbler
- 8 Series MPR Nozzle (8H, 8T and 8Q)

12" Xeri-Pop in planting bed

XP-400X

XP-600X

XP-1200X

How To Specify

XP - 600X

Model
Xeri-Pop

Pop-Up Height
400X = 4" Pop-up
600X = 6" Pop-up
1200X = 12" Pop-up

Always install a PCS-010, -020, 030, or -040 Pressure-Compensating Screen whenever a 5B Bubbler Nozzle is installed on a Xeri-Pop.

Xeri-Bubblers™

Ideal for Shrub Plantings, Trees, Containers, and Flower Beds

Features

- Adjust flow and radius by turning outer cap
- Clean by completely unscrewing cap from base unit
- Three convenient installation connections available for design flexibility: 10-32 self-tapping thread, ¼" barb, and 5" spike

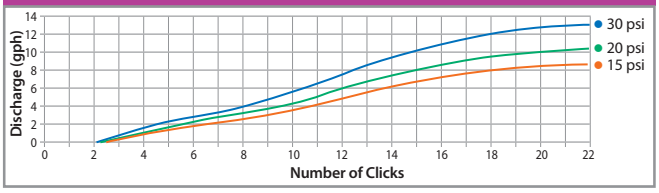
Operating Range

- SXB Series flow: 0 to 13 gph (0 to 49.21 l/h)
- UXB Series flow: 0 to 35 gph (0 to 132.48 l/h)
- Pressure: 15 to 30 psi (1.0 to 2.1 bar)

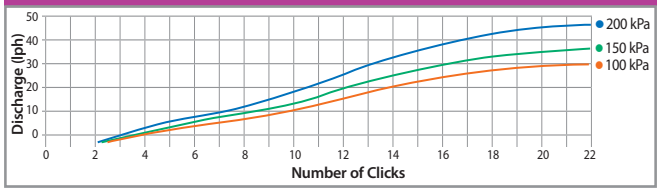
Models

- SXB-180-1032: Half-circle, 5 streams, 10-32 thread
- SXB-180-025: Half-circle, 5 streams, ¼" barb
- SXB-180-SPYK: Half-circle, 5 streams, 5" spike; includes barb x barb coupler
- SXB-360-1032: Full-circle, 8 streams, 10-32 thread
- SXB-360-025: Full-circle, 8 streams, ¼" barb
- SXB-360-SPYK: Full-circle, 8 streams, 5" spike includes barb x barb coupler
- UXB-360-1032: Full-circle, umbrella, 10-32 thread
- UXB-360-025: Full-circle, umbrella, ¼" barb
- UXB-360-SPYK: Full-circle, umbrella, 5" spike includes barb x barb coupler

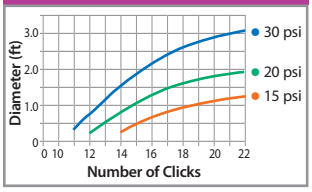
SXB Flow Rate 360° and 180°

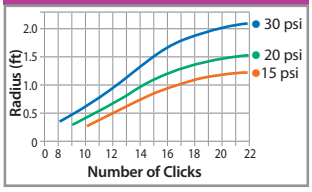


SXB Flow Rate 360° and 180° METRIC

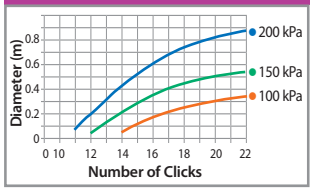


SXB Diameter of Throw 360°

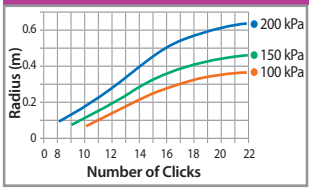


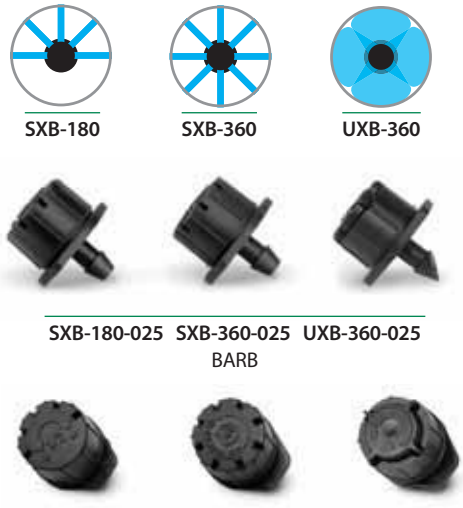


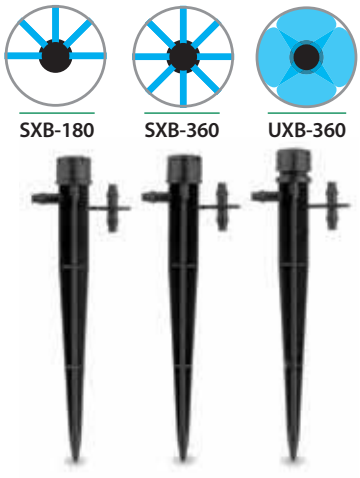
SXB Diameter of Throw 360° METRIC



SXB Radius of Throw 180° METRIC







How To Specify

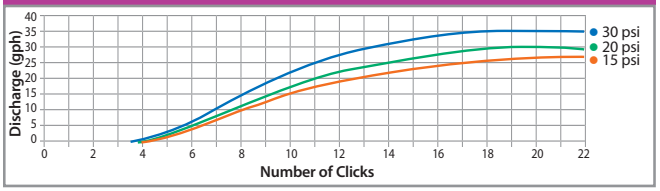
SXB - 180 - 1032

Connection
1032: 10-32 self-tapping thread
025: 1/4" barb
SPYK: 5" spike

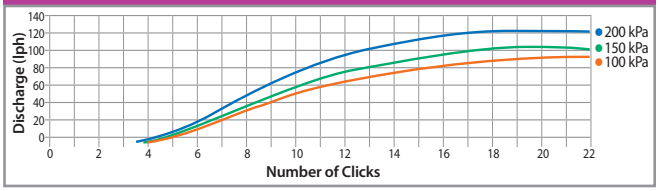
Pattern
180 = Half circle
360 = Full-circle

Model
SXB: Stream Bubbler
UXB: Umbrella Bubbler

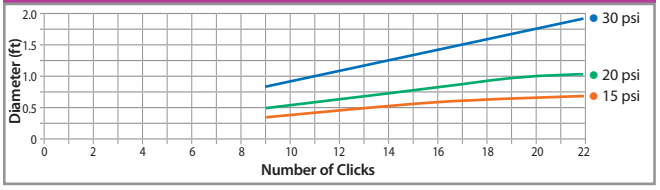
UXB Flow Rate



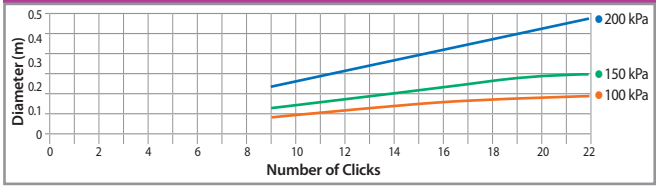
UXB Flow Rate METRIC



UXB Diameter of Throw



UXB Diameter of Throw METRIC



Xeri-Sprays™ and Misters

Ideal for Ground Cover, Mass Plantings, Annual Flower Beds, and Containers

Features

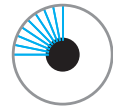
- Adjust flow/radius by turning integral ball valve
- Uniform emission pattern provides excellent distribution
- 10-32 self-tapping threads fit into ½" x 10-32 adapter (10-32A); 1800 Xeri-Bubbler™ adapter (XBA-1800); and PolyFlex Riser (PFR-12)

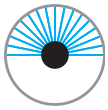
Operating Range

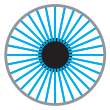
- Flow: 0 to 31 gph (0 to 117.34 l/h)
- Pressure: 10 to 30 psi (0.75 to 2.1 bar)
- Radius: 0 to 13.4 feet (0 to 4.1 m) full-circle; 0 to 10.6 feet (0 to 3.2 m) quarter- and half-circle

Models

- XS-090: Quarter-circle, spray
- XS-180: Half-circle, spray
- XS-360: Full-circle, stream spray
- X360 ADJMST: Full-circle, mist


XS-090


XS-180


XS-360


XS-090


XS-180


XS-360


360 ADJMST

Xeri-Spray™ 360° True Spray

Ideal for Mass Plantings, Ground Cover, Annual Flower Beds and Containers

Features

- True micro-spray with full-circle fan spray pattern
- Adjust flow/radius by turning outer cap
- Three convenient installation connections for design flexibility: 10-32 self-tapping thread, ¼" barb and 5" spike
- Easily cleaned by completely unscrewing cap from base unit

Operating Range

- Flow: 0 to 24.5 gph (0 to 92.7 l/h)
- Pressure: 15 to 30 psi (1.0 to 2.1 bar)
- Radius: 0 to 6.7 feet (0 to 2.0 m)

Models

- XS-360TS-1032: 10-32 threads
- XS-360TS-025: ¼" barb
- XS-360TS-SPYK: 5" spike; includes barb x barb coupler


XS-360TS


XS-360TS-SPYK


XS-360TS-025


XS-360TS-1032

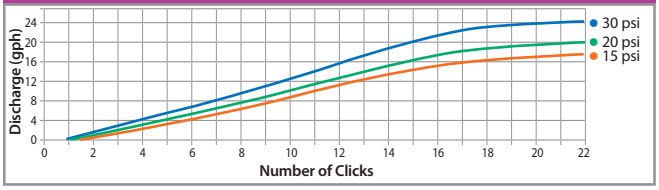
Xeri-Sprays™ and Misters Performance

Pressure psi	Flow gph	XS-90 Radius of Throw ft.	XS-180 Radius of Throw ft.	XS-360 Radius of Throw ft.	360 Mister Radius of Throw ft.
10	0-16.7	0-6.4	0-6.7	0-9.2	0-1.5
15	0-21.0	0-8.1	0-8.1	0-11.3	0-1.3
20	0-24.5	0-9.4	0-9.5	0-12.9	0-1.5
25	0-28.0	0-9.8	0-10.1	0-13.2	0-1.4
30	0-31.0	0-10.3	0-10.6	0-13.4	0-1.3

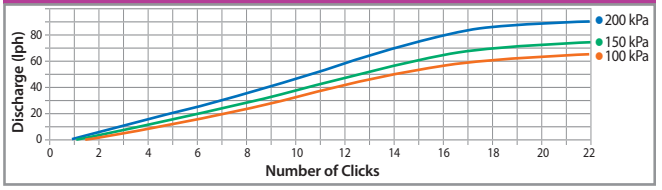
Xeri-Sprays™ and Misters Performance — METRIC

Pressure bar	Flow l/h	XS-90 Radius of Throw m.	XS-180 Radius of Throw m.	XS-360 Radius of Throw m.	360 Mister Radius of Throw m.
0.7	0-63.21	0-2.0	0-2.0	0-2.8	0-0.46
1.0	0-79.49	0-2.5	0-2.5	0-3.4	0-0.40
1.4	0-92.73	0-2.9	0-2.9	0-3.9	0-0.44
1.7	0-105.98	0-3.0	0-3.1	0-4.0	0-0.43
2.1	0-117.34	0-3.1	0-3.2	0-4.1	0-0.40

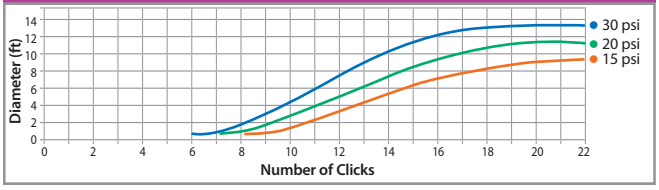
Xeri-Spray 360° True Spray Flow Rate



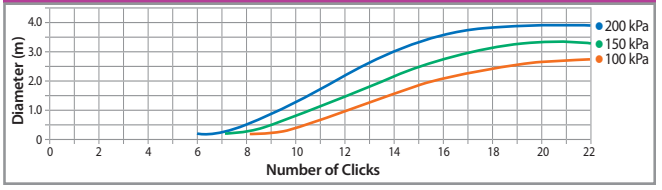
Xeri-Spray 360° True Spray Flow Rate — METRIC



Xeri-Spray 360° True Spray Diameter of Throw



Xeri-Spray 360° True Spray Diameter of Throw — METRIC



Diffuser Bug Cap

Features

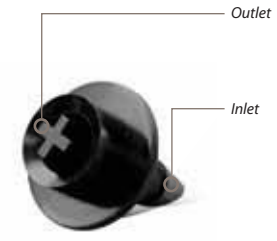
- Prevents bugs and other debris from clogging ¼" Distribution Tubing
- Barbed inlet fits into ¼" Distribution Tubing (XQ)
- Flanged shield diffuses water to minimize soil erosion at emission point

Operating Range

- Pressure: 0 to 50 psi (0 to 3.5 bar)

Models

- DBC-025: Black



DBC-025

PC Diffuser Cap

Features

- Cap snaps securely onto the PC Module and XB emitter outlet to create bubbler effect and prevent wash out
- Designed for quick and easy installation
- Made of UV-resistant polyethylene material

Models

- PC Diffuser: Black
- PC-DIFF-PPL: Purple to designate non-potable water

PC Diffuser

PC-DIFF-PPL

Suggested Applications

A. 1/4" tubing, 1/4" stake, PC Module, Diffuser Bug Cap. Used for runs greater than 5 feet from main line

B. 1/4" tubing, 1/4" stake, Diffuser Bug Cap. Used for runs up to 5 feet from main line

(Drip emitter not shown – installed directly into lateral line)

Universal ¼" Tubing Stake

Features

- Holds ¼" Distribution Tubing and emitter or Diffuser Bug Cap firmly in place at the root zone of the plant
- Designed to securely hold Rain Bird and other manufacturers' ¼" Distribution Tubing — 0.16" to 0.18" I.D. and 0.22" to 0.25" O.D.
- Rigid stake featuring a flat enlarged head designed to withstand hammering into tough soil

Note: If emitter is installed at inlet to distribution tubing, use a Diffuser Bug Cap (DBC-025) at outlet of tubing to prevent bugs from clogging tubing and to help hold tubing in place

Model

- TS-025

TS-025

¼" Tubing Stake with Cap

Features

- Locking cap holds tubing in place
- Used for holding ¼" Distribution Tubing (XQ) in place at the plant root zone
- Accepts ¼" Distribution Tubing from 0.19 O.D. to 0.256 O.D.
- Bug cap included
- Constructed of UV-resistant plastic material

Model

- TS-025WCAP

TS-025WCAP

12" PolyFlex Riser

Features

- 12" riser that is used with any 10-32 threaded emission device to deliver water directly to a plant. These include Xeri-Bugs, PC Modules, Xeri-Bubblers and Xeri-Sprays
- Extremely rugged and reliable – constructed of thick-walled, high-density polyethylene
- Can be used with a riser-stake (RS-025T)

Operating Range

- Pressure: 15 to 50 psi (1.0 to 3.5 bar)

Model

- PFR-12

PFR-12

PolyFlex Riser and Adapter Assemblies

Features

- 12" or 24" riser that is pre-assembled with a ½" male threaded base that simplifies installation
- Use with any 10-32 threaded emission device to deliver water directly to a plant. These include Xeri-Bugs, PC Modules, Xeri-Bubblers and Xeri-Sprays
- Newly-designed adapter with larger tabs makes installation quicker and easier; can be used on PVC laterals, or with any ½" female threaded adapter
- Adapter made of heavy-duty Marlex®, which requires no Teflon® tape, saving time during installation
- Extremely rugged and reliable PolyFlex Riser constructed of thick-walled, high-density polyethylene

Operating Range

- Pressure: 15 to 50 psi (1.0 to 3.5 bar)

Models

- PFR-FRA: 12" (30.5 cm) PolyFlex Riser and adapter
- PFR-FRA24: 24" (61.0 cm) PolyFlex Riser and adapter

PFR-FRA

PolyFlex Riser and Stake Assembly

Features

- 12" riser that is pre-assembled with a 7" (30.5 cm) stake
- Use with any 10-32 threaded emission device to deliver water directly to a plant. These include Xeri-Bugs, PC Modules, Xeri-Bubblers and Xeri-Sprays
- Saves time and money when installing a low-volume irrigation system
- Extremely rugged and reliable PolyFlex Riser constructed of thick-walled, high-density polyethylene

Operating Range

- Pressure: 15 to 50 psi (1.0 to 3.5 bar)

Model

- PFR-RS: 12" (30.5 cm) PolyFlex Riser and 7" (30.5 cm) stake

PFR-RS

Riser Stake-Threaded

Features

- Rugged 5" (12.7 cm) stake for use with PolyFlex Risers
- Constructed of UV-resistant plastic material
- Barbed side inlet accepts ¼" Distribution Tubing (XQ)
- 10-32 threaded outlet permits easy threading of 12" (30.5 cm) PolyFlex Riser (PFR-12)

Operating Range

- Pressure: 15 to 50 psi (1.0 to 3.5 bar)

Model

- RS-025T

RS-025T

10-32 Thread Adapter

Features

- Inlet: ½" FPT that screws onto any ½" MPT riser
- Outlet: 10-32 threads that accept Xeri-Bugs, PC Modules, Xeri-Bubblers and Xeri-Sprays with 10-32 threads
- Constructed of UV-resistant plastic material

Operating Range

- Pressure: 15 to 50 psi (1.0 to 3.5 bar)

Model

- 10-32A

10-32A

1800 Xeri-Bubbler Adapter

Features

- Inlet: ½" female threads that screw onto a Rain Bird 1800 series or UNI-Spray or shrub adapter
- Outlet: 10-32 threads that accept any emission device with 10-32 threads including Xeri-Bugs, PC Modules, Xeri-Bubblers and Xeri-Sprays
- Sits at grade when installed on a spray head for a robust installation

Operating Range

- Pressure: 15 to 50 psi (1.0 to 3.5 bar)

Model

- XBA-1800

XBA-1800

RWS-B-1401

RWS-M-B-1401

RWS-S-B-1401

RWS-Sock
Designed to fit over the RWS and RWS-Mini units. Ideal for use in fine soil to deter soil from infiltrating into the RWS canister

RWS integrated collar and locking grate retainer

RWS (Root Watering System)

Root Watering System promotes deep root growth and healthy tree development

- Subsurface aeration and irrigation prevents tree and shrub transplant shock
- Subsurface deep root watering and aeration ensures tree health and promotes accelerated growth
- Highest efficiency solution for tree irrigation - up to 95% emission uniformity with minimal wind, evaporation, or edge control losses

Features and Benefits

- Aesthetically designed subsurface bubbler contributes to a landscape's natural appearance
- Locking grate at grade deters vandals
- Helps prevent shallow root growth and hardscape damage
- Aesthetically attractive below grade installation
- Self-contained and factory assembled units for assured reliability
- Variety of models available to accommodate design flexibility:

For the RWS Model:

- 4" (10.2 cm) retaining cap and vandal resistant locking grate tops a 36" (91.4 cm) semi-rigid mesh tube
- Factory installed swing assemblies (excluding RWS) with a 1401 (0.25 gpm; 0.95 l/m), 1402 (0.5 gpm; 1.9 l/m), or 1404 (1.00 gpm; 3.8 l/m) bubbler on a fixed riser makes connecting to lateral lines easy
- Optional check valve included to keep the lines from draining
- Optional sock is ideal for use in sandy soil

For the RWS - Mini:

- 4" (10.2 cm) retaining cap and vandal resistant locking grate tops a 18" (45.7 cm) semi-rigid mesh tube
- Factory installed ½" spiral barb elbow with a 1401 or 1402 bubbler makes connecting to lateral lines easy
- Optional check valve included to keep the lines from draining
- Optional sand sock is ideal for use in fine soils

For the RWS - Supplemental:

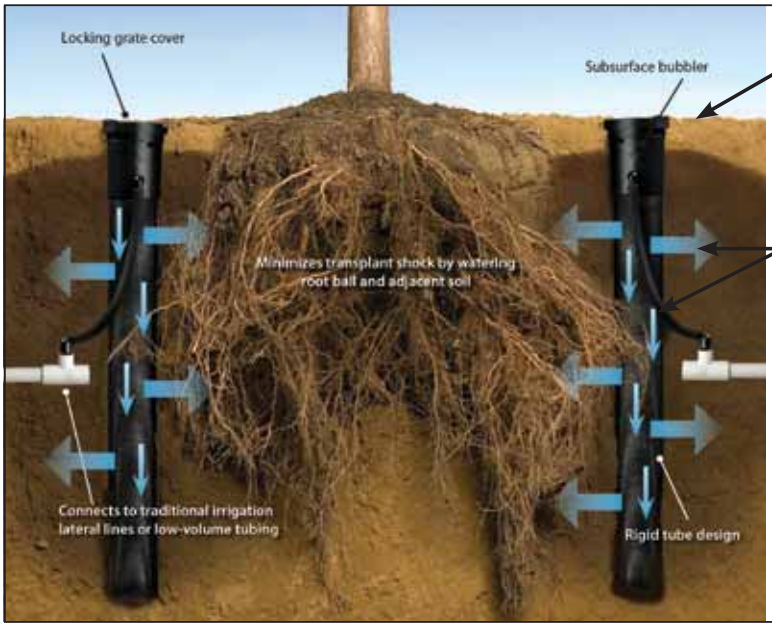
- 2" (5.1 cm) snap-on cap and base cap enclose a 10" (25.4 cm) semi-rigid mesh tube
- Factory installed ½" spiral barb elbow with 1401 bubbler makes connecting to lateral lines easy
- Optional check valve included to keep the lines from draining
- Right size for shrubs

Dimensions

- Root Watering System: 4" (10.2 cm) diameter x 36" (91.4 cm) length
- Root Watering System – Mini: 4" (10.2 cm) diameter x 18" (45.7 cm) length
- Root Watering System – Supplemental: 2" (5.1 cm) diameter x 10" (25.4 cm) length

Models /Specifications

Model	Bubbler	Check Valve	Swing Assembly w/ ½" (15/21) M NPT inlet	Spiral Barb Elbow w/ ½" (15/21) M NPT inlet
Root Watering System (with 4" (10.2 cm) vandal-resistant locking grate)				
RWS-B-C-1401	0.25 gpm (0.95 l/m)	✔	✔	–
RWS-B-1401	0.25 gpm (0.95 l/m)	–	✔	–
RWS-B-X-1401	0.25 gpm (0.95 l/m)	–	✔ (18")	–
RWS-B-C-1402	0.50 gpm (1.9 l/m)	✔	✔	–
RWS-B-1402	0.50 gpm (1.9 l/m)	–	✔	–
RWS-B-C-1404	1.00 gpm (3.8 l/m)	✔	✔	–
Root Watering System - Mini (with 4" (10.2 cm) vandal-resistant locking grate)				
RWS-M-B-C-1401	0.25 gpm (0.95 l/m)	✔	–	✔
RWS-M-B-1401	0.25 gpm (0.95 l/m)	–	–	✔
RWS-M-B-C-1402	0.50 gpm (1.9 l/m)	✔	–	✔
RWS-M-B-1402	0.50 gpm (1.9 l/m)	–	–	✔
Root Watering System - Supplemental (with 2" (5.1 cm) snap-on cap and base)				
RWS-S-B-C-1401	0.25 gpm (0.95 l/m)	✔	–	✔
RWS-S-B-1401	0.25 gpm (0.95 l/m)	–	–	✔
Root Watering - Accessories				
RWS-SOCK (Root Watering Sock)				
RWS- GRATE-P (Root Watering System Purple Grate for RWS and RWS Mini)				



How To Specify

RWS - x - x - x - xxxx

- **Bubbler Model**: 1401, 1402, 1404
- **Optional Check Valve**: C: Check Valve pre-installed
- **Optional Bubbler**: B: Bubbler pre-installed
- **Other Size**: M: RWS-Mini (4" (10.2 cm) x 18" (45.7 cm)); S: RWS-Supplemental (2" (5.1 cm) x 10" (25.4 cm))
- **Model**: RWS Root Watering System

XFD Dripline

Available in Purple for Non-Potable water

XFD On-Surface Dripline

The Most Flexible, Pressure-Compensating In-line Emitter Tubing Available to Irrigate Ground Cover, Dense Plantings, Hedge Rows and More

- Extra flexible tubing for fast, easy installation
- Dual-layered tubing (brown over black or purple over black) provides unmatched resistance to chemicals, UV damage and algae growth
- Patent pending emitter design provides for increased reliability
- Longer lateral runs than competition

Features

- Unique material offers significantly greater flexibility, allowing tighter turns with fewer elbows for easier installation
- Choice of flow rates, spacing and coil lengths provides design flexibility for a variety of non-turfgrass applications
- Accepts Rain Bird Easy Fit Compression Fittings (pg 161), XF Dripline Insert Fittings (pg 160) and 17mm insert fittings (pg 160)
- Use an Air/Vaccum Relief Valve Kit when installation is below soil (pg 162)

Operating Range

- Pressure: 8.5 to 60 psi (0.58 to 4.1 bar)
- Flow rates: 0.4 gph, 0.6 gph and 0.9 gph (1.6 l/h, 2.3 l/h and 3.5 l/h)
- Temperature: Water up to 100° F (37.8C); Ambient up to 125° F (51.7C)
- Required filtration: 120 mesh

Specifications

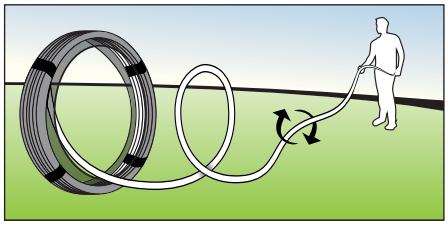
- Outside diameter: 0.634" (16.1 mm)
- Inside diameter: 0.536" (13.6 mm)
- Wall thickness: 0.049" (1.2 mm)
- Spacing: 12", 18" or 24"
- Lengths: 100', 250', and 500' coils
- Use with XF Dripline Insert Fittings (see page 160), Rain Bird Easy Fit Compression Fittings (see page 161) and 17mm Insert Fittings

XFD Dripline Offers Improved Flexibility for Kink Resistance and Easy Installation

How To Specify

XFD - P - 09 - 12 - 100

- **Model**: XFD Dripline
- **Optional**: Purple
- **Flow Rate**: 04 = .42 gph (1.6 l/h); 06 = .61 gph (2.3 l/h); 09 = .92 gph (3.5 l/h)
- **Emitter Spacing**: 12 = 12" (30.5 cm); 18 = 18" (45.7 cm); 24 = 24" (61.0 cm)
- **Length of Tubing**: 100 = 100' (30.5 m); 250 = 250' (76.2 m); 500 = 500' (152.4 m)



Self-Dispensing Coil Reduces Layout Time and Improves Ease of Installation

XFD Dripline

Water Saving

XFD Dripline offers up to 60% water savings due to zero wind loss. It can be installed at grade, just below grade, or under mulch.

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
XFDP-04-12-500 (Purple)	0.40	12	500
XFDP-04-18-500 (Purple)	0.40	18	500
XFDP-06-12-500 (Purple)	0.60	12	500
XFDP-06-18-500 (Purple)	0.60	18	500
XFDP-09-12-500 (Purple)	0.90	12	500
XFDP-09-18-500 (Purple)	0.90	18	500

XFD On-Surface Dripline Models METRIC

Model	Flow l/h	Spacing cm	Coil Length m
XFD-04-12-100	1.60	30.5	250
XFD-04-12-500	1.60	30.5	250
XFD-04-18-100	1.60	45.7	250
XFD-04-18-500	1.60	45.7	250
XFD-06-12-100	2.30	30.5	30.5
XFD-06-12-250	2.30	30.5	76.5
XFD-06-12-500	2.30	30.5	152.9
XFD-06-18-100	2.30	45.7	30.5
XFD-06-18-250	2.30	45.7	76.5
XFD-06-18-500	2.30	45.7	152.9
XFD-06-24-500	2.30	61.0	152.9
XFD-09-12-100	3.50	30.5	30.5
XFD-09-12-250	3.50	30.5	76.5
XFD-09-12-500	3.50	30.5	152.9
XFD-09-18-100	3.50	45.7	30.5
XFD-09-18-250	3.50	45.7	76.5
XFD-09-18-500	3.50	45.7	152.9
XFD-09-24-500	3.50	61.0	152.9
XFDP-04-12-500 (Purple)	1.60	30.5	152.9
XFDP-04-18-500 (Purple)	1.60	45.7	152.9
XFDP-06-12-500 (Purple)	2.30	30.5	152.9
XFDP-06-18-500 (Purple)	2.30	45.7	152.9
XFDP-09-12-500 (Purple)	3.50	30.5	152.9
XFDP-09-18-500 (Purple)	3.50	45.7	152.9

XFD On-Surface Dripline Maximum Lateral Lengths (Feet)

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

XFD On-Surface Dripline Maximum Lateral Lengths (Meters) METRIC

Inlet Pressure bar	Maximum Lateral Length (Meters) 30.5 cm Nominal Flow (l/h): 1.6	2.3	3.4	45.7 cm Nominal Flow (l/h): 1.6	2.3	3.4	61.0 cm Nominal Flow (l/h): 2.3	3.4
1.0	107.2	83.2	47.2	114	95.7	76.2	129.2	98.2
1.4	121.6	96.9	51.5	127.1	107.6	89.6	154.8	112.2
2.1	136.2	109.7	70.1	146.6	125.9	106.7	178.6	123.2
2.8	148.7	120.4	77.7	161.5	141.7	122.5	198.7	144.5
3.5	153.9	127.1	86.9	185.9	160.9	128.0	219.5	148.7
4.1	174.6	140.2	88.4	223.7	181.7	138.7	237.7	156.7

XFD On-Surface Dripline Flow(per 100 Feet of Tubing)

Emitter Spacing	0.4 gph Emitter		0.6 gph Emitter		0.9 gph Emitter	
12"	42.0 gph	0.70 gpm	61.0 gph	1.02 gpm	92.0 gph	1.53 gpm
18"	28.0 gph	0.47 gpm	41.0 gph	0.68 gpm	61.0 gph	1.02 gpm
24"	------ gph	----- gpm	31.0 gph	0.51 gpm	46.0 gph	0.77 gpm

XFD On-Surface Dripline Flow(per 100 Meters of Tubing)

Emitter Spacing	1.6 l/h Emitter		2.3 l/h Emitter		3.4 l/h Emitter	
0.30 meter	531.1 l/h	8.85 l/m	757.9 l/h	12.6 l/m	1136.7 l/h	18.9 l/m
0.46 meter	351.8 l/h	5.86 l/m	502.2 l/h	8.4 l/m	741.3 l/h	12.4 l/m
0.61 meter	------- l/h	----- l/m	378.7 l/h	6.3 l/m	559.0 l/h	9.3 l/m

NEW

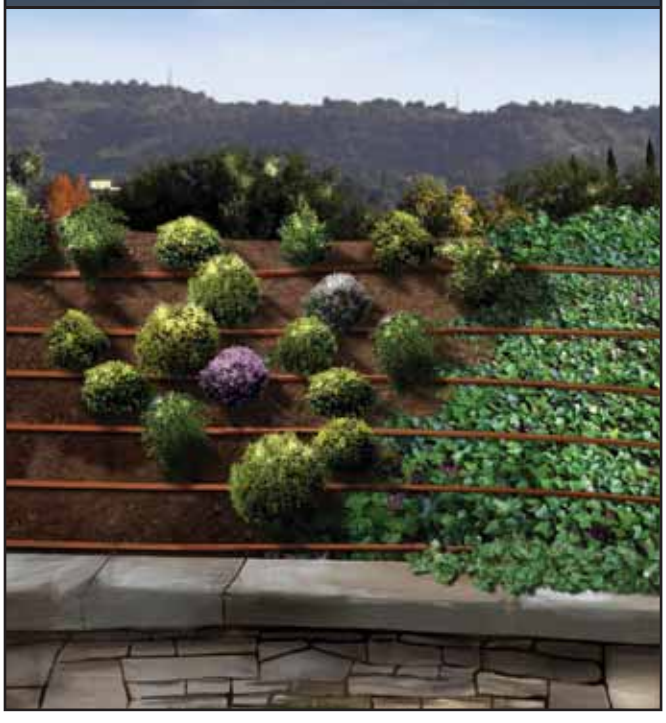
XFCV Dripline for Elevated Applications

XFCV Dripline with Heavy-Duty Check Valve

- Rain Bird® XFCV Dripline with a heavy-duty 3.5 psi check valve for on-surface applications adds a valuable member to the Rain Bird XF Series of Dripline. The XFCV is the most effective dripline in the industry and is ideal for areas where no other dripline will work. When used in applications where elevation changes exist, the patent-pending check valve keeps the dripline charged, holding 8 feet of hold back. Rain Bird's XFCV offers better uniformity and helps to prevent over-watering at the low-point in the zone, avoiding puddling and water draining from the dripline.

  It accepts Rain Bird Easy Fit Compression Fittings, XF Dripline Barbed Insert Fittings and other 17 mm barbed insert fittings.

With XFCV's built-in 3.5 check valve, all lines are kept charged and up to 8 feet of water is held back



Features

Simple

- Rain Bird's patent-pending 3.5 psi check valve technology keeps the dripline charged with water at all times, increasing uniformity of watering, and conserves water by eliminating the need to recharge the line at the beginning of each watering cycle.
- Through the use of a proprietary tubing material, the XFCV Dripline with heavy-duty check valve is the most flexible dripline tubing in the industry, making it the easiest dripline to design with and install
- It accepts Rain Bird Easy Fit Compression Fittings, XF Dripline Barbed Insert Fittings and other 17 mm barbed insert fittings
- Rain Bird's low-profile emitter design reduces in-line pressure loss, allowing longer lateral runs, simplifying design and reducing installation time
- Variety of emitter flow rates, emitter spacing and coil lengths provide design flexibility for on-surface areas with or without elevation changes

Made with Recycled Content

- All Rain Bird XF Dripline (XFD, XFS, XFCV) qualify for LEED credit 4.2 because they contain at least 20% Polyethylene post consumer recycled material by cost. These come in an assortment of coil sizes, flow rates and emitter spacing

Reliable

- The pressure-compensating emitter design provides a consistent flow over the entire lateral length ensuring higher uniformity for increased reliability in the pressure range of 20 to 60 psi

Durable

- Dual-layered tubing (brown over black) provides unmatched resistance to chemicals, algae growth and UV damage

Grit Tolerant

- Rain Bird's proprietary emitter design resists clogging by use of an extra wide flow path combined with a self-flushing action

How To Specify

XFCV - 06 - 12 - 100

Model
XFCV Dripline with Heavy-Duty Check Valve

Flow Rate
06 = .61 gph (2.3 l/h)
09 = .92 gph (3.5 l/h)

Emitter Spacing
12 = 12" (30.5 cm)
18 = 18" (45.7 cm)

Length of Tubing
100 = 100' (30.5 m)
500 = 500' (152.4 m)

Operating Range

- Opening Pressure: 14.5 psi
- Pressure: 20 to 60 psi (1.38 to 4.14 bar)
- Flow rates: 0.6 and 0.9 gph (2.3 l/hr and 3.5 l/hr)
- Temperature:
  - Water: Up to 100°F (37.8° C)
  - Ambient: Up to 125°F (51.7° C)
- Required Filtration: 120 mesh

Specifications

- Dimensions:

OD: 0.634" (16mm)

ID: 0.536" (13.6mm);

Thickness: 0.049" (1.2mm)

- 12" & 18" (30.5 cm, 45.7 cm) spacing
- Available in 100' and 500' (30.5 m and 152.4 m) coils
- Coil Color: Brown
- Use with XF Dripline Insert Fittings (see page 160), Rain Bird Easy Fit Compression Fittings (see page 161) and 17mm Insert Fittings

XFCV Dripline Models

Model	Flow gph	Spacing in.	Coil Length ft.
XFCV-06-12-100	0.60	12	100
XFCV-06-12-500	0.60	12	500
XFCV-06-18-100	0.60	18	100
XFCV-06-18-500	0.60	18	500
XFCV-09-12-100	0.90	12	100
XFCV-09-12-500	0.90	12	500
XFCV-09-18-100	0.90	18	100
XFCV-09-18-500	0.90	18	500

XFCV Dripline Models METRIC

Model	Flow l/h	Spacing cm	Coil Length m
XFCV-06-12-100	2.30	30.5	30.5
XFCV-06-12-500	2.30	30.5	152.4
XFCV-06-18-100	2.30	45.7	30.5
XFCV-06-18-500	2.30	45.7	152.4
XFCV-09-12-100	3.50	30.5	30.5
XFCV-09-12-500	3.50	30.5	152.4
XFCV-09-18-100	3.50	45.7	30.5
XFCV-09-18-500	3.50	45.7	152.4

XFCV Dripline Maximum Lateral Lengths (Feet)

Inlet Pressure psi	Maximum Lateral Length (feet) 12" Spacing		18" Spacing	
	Nominal Flow (gph): 0.6	0.9	Nominal Flow (gph): 0.6	0.9
20	276	180	306	255
30	336	215	385	326
40	377	269	444	383
50	411	293	509	405
60	450	320	583	445

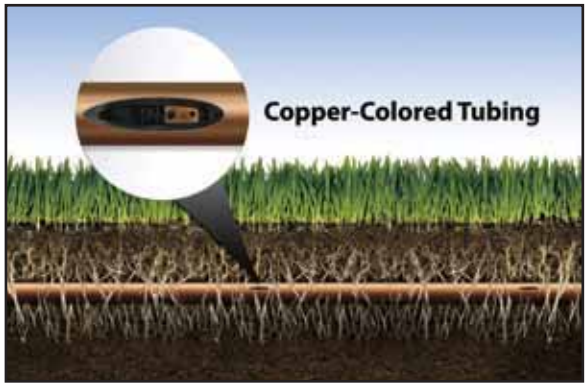
XFCV Dripline Maximum Lateral Lengths (Meters) METRIC

Inlet Pressure bar	Maximum Lateral Length (Meters) 30.5 cm		45.7 cm	
	Nominal Flow (l/h): 2.3	3.5	Nominal Flow (l/h): 2.3	3.5
1.38	84	45	93	78
2.07	102	65	117	99
2.76	115	74	135	117
3.45	125	84	155	123
4.14	137	86	178	136

XFS Sub-Surface Dripline

Irrigation Association Show Winner

XFS Dripline offers increased flexibility for easy installation



XFS Sub-Surface Dripline with Copper Shield™ Technology

How To Specify

XFS - P - 09 - 12 - 100

- **Model**: XFS Sub-Surface Dripline
- **Optional**: P = Purple over black
- **Flow Rate**: 06 = .61 gph (2.3 l/h); 09 = .92 gph (3.5 l/h)
- **Emitter Spacing**: 12 = 12" (30.5 cm); 18 = 18" (45.7 cm); 24 = 24" (61.0 cm)
- **Length of Tubing**: 100 = 100' (30.5 m); 500 = 500' (152.4 m)

XFS Sub-Surface Dripline with Copper Shield™ Technology

Sub-Surface Drip Irrigation (SDI) perfect for small, narrow and tight planting areas, switchbacks, as well as all turf landscapes

- Rain Bird® XFS Sub-Surface Copper-Colored Dripline with Copper Shield™ Technology is the latest innovation in the Rain Bird Xerigation® Family. Rain Bird's patent-pending Copper Shield Technology protects the emitter from root intrusion, creating a long-lasting, low maintenance sub-surface drip irrigation system for use under turf grass or shrub and groundcover areas
- A proprietary tubing material makes the XFS Sub-Surface Dripline with Copper Shield the most flexible tubing in the industry, and the easiest sub-surface dripline to design with and install
- It accepts Rain Bird's Easy Fit Compression Fittings, XF Dripline Fittings and other 17 mm insert fittings

Features

Simple

- Rain Bird's low-profile emitter design reduces in-line pressure loss, allowing longer lateral runs, simplifying design and reducing installation time
- Variety of emitter flow rates, emitter spacing and coil lengths provide design flexibility for either sub-surface turf or sub-surface shrub and groundcover applications

Reliable

- XFS Sub-Surface Dripline emitters are protected from root intrusion by Rain Bird's patent-pending Copper Shield™ Technology resulting in a system that does not require maintenance or replacement of chemicals to prevent root intrusion
- The pressure-compensating emitter design provides a consistent flow over the entire lateral length ensuring higher uniformity for increased reliability in the pressure range of 8.5 to 60 psi

Durable

- Dual-layered tubing (copper over black) provides unmatched resistance to chemicals, algae growth and UV damage
- Grit Tolerant: Rain Bird's proprietary emitter design resists clogging by use of an extra-wide flow path combined with a self-flushing action

Operating Range

- Pressure: 8.5 to 60 psi (0.58 to 4.14 bar)
- Flow rates: 0.6 and 0.9 gph (2.3 l/hr and 3.5 l/hr)
- Temperature:
  - Water: Up to 100°F (37.8° C)
  - Ambient: Up to 125°F (51.7° C)
- Required Filtration: 120 mesh

Specifications

- Dimensions: OD: 0.634" (16mm); ID: 0.536" (13.6mm); Thickness: 0.049" (1.2mm)
- 12", 18", 24" (30.5 cm, 45.7 cm, 61.0 cm) spacing
- Available in 100' and 500' (30.5 m and 152.4 m) coils
- Coil Color: Copper

XFS Sub-Surface Dripline Models

Model	Flow gph	Spacing in.	Coil Length ft.
XFS-06-12-100	0.60	12	100
XFS-06-12-500	0.60	12	500
XFS-06-18-100	0.60	18	100
XFS-06-18-500	0.60	18	500
XFS-06-24-500	0.60	24	500
XFS-09-12-100	0.90	12	100
XFS-09-12-500	0.90	12	500
XFS-09-18-100	0.90	18	100
XFS-09-18-500	0.90	18	500
XFS-09-24-500	0.90	24	500
XFSP-06-12-500 (Purple)	0.60	12	500
XFSP-06-18-500 (Purple)	0.60	18	500
XFSP-09-12-500 (Purple)	0.90	12	500
XFSP-09-18-500 (Purple)	0.90	18	500

XFS Sub-Surface Dripline Models — METRIC

Model	Flow l/h	Spacing cm	Coil Length m
XFS-06-12-100	2.30	30.5	30.5
XFS-06-12-500	2.30	30.5	152.9
XFS-06-18-100	2.30	45.7	30.5
XFS-06-18-500	2.30	45.7	152.9
XFS-06-24-500	2.30	61.0	152.9
XFS-09-12-100	3.50	30.5	30.5
XFS-09-12-500	3.50	30.5	152.9
XFS-09-18-100	3.50	45.7	30.5
XFS-09-18-500	3.50	45.7	152.9
XFS-09-24-500	3.50	61.0	152.9
XFSP-06-12-500 (Purple)	2.30	30.5	152.9
XFSP-06-18-500 (Purple)	2.30	45.7	152.9
XFSP-09-12-500 (Purple)	3.50	30.5	152.9
XFSP-09-18-500 (Purple)	3.50	45.7	152.9

XFS Sub-Surface Dripline Maximum Lateral Lengths (Feet)

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

XFS Sub-Surface Dripline Maximum Lateral Lengths (Meters) — METRIC

Inlet Pressure bar	Maximum Lateral Length (Meters) 30.5 cm Nominal Flow (l/h): 2.3	3.4	45.7 cm Nominal Flow (l/h): 2.3	3.4	61.0 cm Nominal Flow (l/h): 2.3	3.4
1.0	83.2	47.2	95.7	76.2	129.2	98.2
1.4	96.9	51.5	107.6	89.6	154.8	112.2
2.1	109.7	70.1	125.9	106.7	178.6	123.2
2.8	120.4	77.7	141.7	122.5	198.7	144.5
3.5	127.1	86.9	160.9	128.0	219.5	148.7
4.1	140.2	88.4	181.7	138.7	237.7	156.7

XFS-Sub-surface Dripline Flow (per 100 Feet of Tubing)

Emitter Spacing	0.6 gph Emitter		0.9 gph Emitter	
12"	61.0 gph	1.02 gpm	92.0 gph	1.53 gpm
18"	41.0 gph	0.68 gpm	61.0 gph	1.02 gpm
24"	31.0 gph	0.51 gpm	46.0 gph	0.77 gpm

XFS-Sub-surface Dripline Flow (per 100 Meters of Tubing)

Emitter Spacing	2.3 l/h Emitter		3.4 l/h Emitter	
0.30 meter	757.9 l/h	12.6 l/m	1136.7 l/h	18.9 l/m
0.46 meter	502.2 l/h	8.4 l/m	741.3 l/h	12.4 l/m
0.61 meter	378.7 l/h	6.3 l/m	559.0 l/h	9.3 l/m

XF Dripline Insert Fittings

Features

- Complete line of 17mm insert fittings to simplify installation of XF Series 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 compliment natural earth tones

Operating Range

- Pressure: 0 to 50 psi (1.0 to 3.5 bar) if using 60 psi (4.1 bar) clamps will be required

Models

- XFF-COUP: 17mm Barb x Barb Coupling
- XFF-ELBOW: 17mm Barb x Barb Elbow
- XFF-MA-050: 17mm Barb x 1/2" MPT Male Adapter
- XFF-TEE: 17mm Barb x Barb x Barb Tee
- XFF-TMA-050: 17mm Barb x 1/2" MPT x 17mm Barb Tee Male Adapter
- XFF-MA-075: 17mm Barb x 3/4" MPT Male Adapter
- XFD-CROSS: Barb cross 17mm x 17mm x 17mm x 17mm
- XFD-TFA-075: Barb tee female adapter 17mm x 3⁄4"FPT x 17mm
- LD16STK: 7 ¾" barbed tubing plastic stake
- FITINS-TOOL: XF Fitting Insertion Tool. Compatible with XFF-COUP, XFF-ELBOW, and XFF-TEE

NEW FITINS-TOOL

Easy Fit Compression Fitting System

Complete system of compression fittings and adapters for all tubing connection needs in a low-volume system

- Reduces inventory costs: Multi-diameter compression fittings work with a wide range of 16mm - 17mm tubing or dripline
- Saves time and effort: 50% less force is required to connect tubing and fittings versus competitive compression fittings. Adapters swivel for easy installation
- Provides increased flexibility: Just three Easy Fit Fittings and five Easy Fit Adapters are needed to make over 160 combinations of connections, accommodating countless installation and maintenance situations

Friction Loss per Fitting

Flow gpm	Loss psi	METRIC Flow l/h	Loss bar
0.00	0.00	0.00	0.00
1.00	0.39	227.1	0.03
2.00	0.64	454.3	0.04
3.00	0.82	681.4	0.06
4.00	1.45	908.5	0.10
5.00	1.90	1135.6	0.13
6.00	2.57	1362.8	0.18

Note: *Use of fittings at flows shown in dark shaded area is not recommended.*

Features

- Works with all 16-17mm dripline and blank tubing
- Patented fittings and adapters are molded from UV-resistant and durable ABS materials
- Removable flush caps can be used to flush end of line and temporarily cap off lines for later expansion

Operating Range

- Pressure: 0 to 60 psi (0 to 4.1 bar)
- Accepts tubing O.D. of 0.630" to 0.669" (16-17mm)

Models

- **Easy Fit Fittings**
  - MDCFCOUP: Coupling
  - MDCFEL: Elbow
  - MDCFTEE: Tee
- **Easy Fit Adapters**
  - MDCF50MPT: ½" Male Pipe Thread Adapter
  - MDCF75MPT: ¾" Male Pipe Thread Adapter
  - MDCF50FPT: ½" Female Pipe Thread Adapter
  - MDCF75FPT: ¾" Female Pipe Thread Adapter
  - MDCF75FHT: ¾" Female Hose Thread Adapter
  - MDCFCAP: Removable Flush Cap For Easy Fit Fittings (Black)
  - MDCFPCAP: Removable Flush Cap For Easy Fit Fittings (Purple, to designate non-potable water)

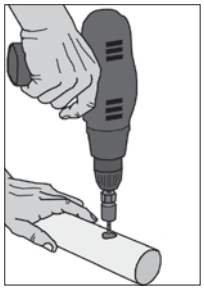
Note: *Easy Fit Adapters are not barbed fittings*
They are to be used only with Easy Fit Compression Fittings

XF Series Dripline Insert Adapter for 1", 1½" or larger PVC

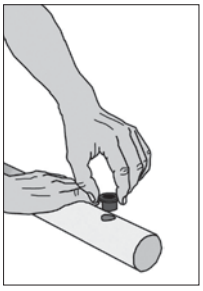
- Connects XF Series Dripline and Blank Tubing to PVC mainlines at low pressures.
- UV stabilized for long life
- Easy-to-use Ratchet Clamp secures tubing to adapter

Model

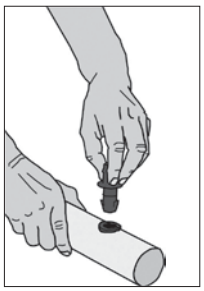
- XFPVCADP: Adaptor for use with 1" PVC pipe
- XFPVCBIT: Drill bit for use with XFPVCADP 1" adapter NEW
- XFD-INPVC: Adaptor for use with 1 1/2" PVC pipe or larger NEW



Drill hole using 5/8" hole saw size.* Use low speed drill. Remove burrs from hole



Remove shavings and place appropriate grommet firmly in hole with flange facing out



Push XF Series Dripline Insert Adapter into grommet until flange and grommet are flush

XFPVCADP

XFDPVCBIT

* *XFPVCBIT drill bit should be used for drilling holes for the XFPVCADP 1" Adapter. Bit to be used in PVC or PE pipe only. Not suitable for any other materials.*

XFD-INPVC

Air/Vacuum Relief Valve Kit

Features

- Use with Rain Bird XF-Series or Landscape Dripline inline emitter tubing when installation is below soil*
- Made of quality rust-proof materials
- Fits inside an SEB 7XB emitter box

**Rain Bird recommends XFS dripline with Copper Shield™ for subsurface installations, including installations under turf grass.*

Model

- ARV050: ½" Air Relief Valve

Maximum Length of Dripline Useable with the ARV		
	1/2" ARV	
Emitter Spacing	0.6 GPH	0.9 GPH
12"	639'	424'
18"	958'	636'
24"	1278'	848'
ARV Capacity		
Total Flow (GPM)	6.5	
Total Flow (GPH)	390	

Maximum Length of Dripline Useable with the ARV METRIC		
	1/2" ARV	
Emitter Spacing	2.3 l/h	3.4 l/h
0.30 m	195	129
0.46 m	292	194
0.61 m	390	258
ARV Capacity		
Total Flow (l/m)	24.6	
Total Flow (l/h)	1476	

ARV050

Install Air/Vacuum Relief Valves correctly by:

Locate at the highest point(s) of the dripline zone. Install the valve in an exhaust header or a line that runs perpendicular to the lateral rows to ensure all rows of the dripline can take advantage of the air/vacuum relief valve

Drip System Operation Indicator

Features

- Stem rises 6" for clear visibility
- When stem is extended, drip system is charged to a minimum of 20 psi
- VAN Nozzle is tightened to no flow but can be opened to observe wetting pattern
- Includes 16" of ¼" distribution tubing with connection fitting pre-installed

Model

- OPERIND

OPERIND

XF Series Blank Tubing

Features:

- Greater flexibility is easier to install and saves time
- Brown color matches landscape and blends with mulch. Matches XF Series Dripline inline emitter tubing
- Compatible with XF Series Dripline (0.536" I.D. x 0.634" O.D.)
- Accepts Rain Bird Easy Fit Compression Fittings, XF Dripline Insert Fittings, and 17mm insert fittings
- Not compatible with 16 mm fittings

Specifications

- Outside Diameter: 0.634" (16.1mm)
- Inside Diameter: 0.536" (13.6mm)
- Wall Thickness: 0.049" (1.2mm)

XFD100

Models:

- XFD100: 100 ft. coil (30m)
- XFD250: 250 ft. coil (76m)
- XFD500: 500 ft. coil (152m)

Tubing Friction Loss Characteristics

O.D. .634" I.D. .536"			*O.D. 16.1mm I.D. 13.6mm METRIC*		
Flow gpm	**Velocity fps**	**Loss psi**	**Flow l/h**	**Velocity m/s**	**Loss bar**
0.50	0.70	0.27	113.56	0.21	0.06
1.00	1.40	0.97	227.12	0.43	0.22
1.50	2.10	2.06	340.69	0.64	0.46
2.00	2.80	3.50	454.25	0.85	0.79
2.50	3.50	5.29	567.81	1.07	1.20
3.00	4.20	7.42	681.37	1.28	1.68
3.50	4.90	9.87	794.94	1.49	2.23
4.00	5.60	2.64	908.50	1.71	2.86
4.50	6.30	15.72	1022.06	1.92	3.56
5.00	7.00	19.11	1135.62	2.13	4.32
5.50	7.70	22.80	1249.19	2.35	5.16
6.00	8.40	26.78	1362.75	2.56	6.06

Psi Loss Per 100 Feet of Pipe (psi/100ft.) *bar Loss per 100 Meters of Pipe (bar/100m)*

Note: *Use of tubing at flows shown in dark shaded area is not recommended, as velocities exceed 5 ft/sec (1.5 m/s)*

XT-700 Distribution Tubing

Durable, thick-walled distribution tubing stands up to harsh conditions and performs well in all climates

Features

- Thick-walled, flexible tubing resists kinks and damage caused by routine landscape maintenance activities
- Extruded from UV-resistant polyethylene resin materials

Operating Range

- Pressure: 0 to 60 psi (0 to 4.1 bar)

Specifications

- Outside diameter: 0.700" (18 mm)
- Inside diameter: 0.580" (15 mm)
- Wall thickness: 0.06" (1.5 mm)

Models

- XT-700-100: 100-foot coil (30 m)
- XT-700-500: 500-foot coil (152 m)

Note: For both water conservation and appearance, it is recommended that a 2" to 3" (5 to 8 cm) mulch cover be placed on top of the tu

XT-700-100

XT-700 Tubing Friction Loss Characteristics

O.D. .700" I.D. .580"			*O.D. 18 mm I.D. 15 mm METRIC*			
Flow gpm	**Velocity fps**	**Loss psi**	**Flow m^3/h**	**Flow l/h**	**Velocity m/s**	**Loss bar**
0.50	0.61	0.19	0.11	0.03	0.19	0.01
1.00	1.21	0.69	0.23	0.06	0.37	0.05
1.50	1.82	1.45	0.34	0.09	0.56	0.10
2.00	2.43	2.47	0.45	0.13	0.74	0.17
2.50	3.03	3.74	0.57	0.16	0.92	0.26
3.00	3.64	5.24	0.68	0.19	1.11	0.36
3.50	4.24	6.97	0.79	0.22	1.29	0.48
4.00	4.85	8.93	0.91	0.25	1.48	0.62
4.50	5.46	11.10	1.02	0.28	1.67	0.77
5.00	6.06	13.50	1.14	0.32	1.85	0.93
5.50	6.67	16.10	1.25	0.35	2.03	1.11
6.00	7.28	18.92	1.36	0.38	2.22	1.31

psi Loss per 100 Feet of Pipe (psi/100ft.) *bar Loss per 100 Meters of Pipe (bar/100m)*

Note: *Use of tubing at flows shown in dark shaded area is not recommended, as velocities exceed 5 ft/sec (1.5 m/s)*

XBS - Black Stripe Tubing

High quality, flexible tubing for use in any low-volume irrigation system

- ½" & ¾" blank tubing extruded from polyethylene resin materials for consistent durability
- Available in five color stripes to differentiate zones
- UV-resistant for installations at or below grade

Features

• Compact coils for easy storage and shipping

Specifications

½" Tubing Models

• Outside diameter: 0.705" (18 mm)
• Inside diameter: 0.615" (15.6 mm)
• Wall thickness: 0.045" (1.2 mm)
• Lengths: 500' coils

¾" Tubing Models

• Outside diameter: 0.940" (24 mm)
• Inside diameter: 0.820" (21 mm)
• Wall thickness: 0.060" (1.5 mm)
• Lengths: 500' coils only

Operating Range

• Pressure: 0 to 60 psi (0 to 4.1 bar)

Models

1/2" Models

- XBS100: 1/2" tubing, 100 foot (30 m) coil with green striping
- XBS500: 1/2" tubing, 500 foot (152 m) coil with green striping
- XBS100B: 1/2" tubing, 100 foot (30 m) coil with black striping
- XBS500B: 1/2" tubing, 500 foot (152 m) coil with black striping
- XBS500R: 1/2" tubing, 500 foot (152 m) coil with red striping
- XBS500Y: 1/2" tubing, 500 foot (152 m) coil with yellow striping
- XBS500P: 1/2" tubing, 500 foot (152 m) coil with purple striping

3/4" Tubing Models

- XBS075500G: 3/4" tubing, 500 foot (152 m) coil with green striping
- XBS075500P: 3/4" tubing, 500 foot (152 m) coil with purple striping

1/2" XBS - Tubing Friction Loss Characteristics

O.D. .705" I.D. .615"			*O.D. 18 mm I.D. 15.5 mm*			*METRIC*
Flow gpm	**Velocity fps**	**Loss psi**	**Flow m^3/h**	**Flow l/h**	**Velocity m/s**	**Loss bar**
0.50	0.54	0.14	0.11	113.6	0.16	0.03
1.00	1.08	0.52	0.23	227.1	0.33	0.12
1.50	1.62	1.09	0.34	340.7	0.49	0.25
2.00	2.16	1.86	0.45	454.3	0.66	0.42
2.50	2.70	2.81	0.57	567.8	0.82	0.64
3.00	3.24	3.94	0.68	681.4	0.99	0.89
3.50	3.78	5.24	0.79	794.9	1.15	1.19
4.00	4.31	6.71	0.91	908.5	1.32	1.52
4.50	4.85	8.35	1.02	1022.1	1.48	1.89
5.00	5.39	10.15	1.14	1135.6	1.64	2.30
5.50	5.93	12.11	1.25	1249.2	1.81	2.74
6.00	6.47	14.22	1.36	1362.8	1.97	3.22

3/4" XBS - Tubing Friction Loss Characteristics

OD .940" I.D. 820"			*OD 23.9mm ID 20.8mm*			**METRIC**
Flow gpm	**Velocity fps**	**Loss psi**	**Flow m^3/h**	**Flow l/h**	**Velocity m/s**	**Loss bar**
0.50	0.30	0.03	0.11	113.6	0.09	0.01
1.00	0.61	0.11	0.23	227.1	0.19	0.03
1.50	0.91	0.24	0.34	340.7	0.28	0.05
2.00	1.22	0.40	0.45	454.2	0.37	0.09
2.50	1.52	0.61	0.57	567.8	0.46	0.14
3.00	1.82	0.86	0.68	681.4	0.56	0.19
3.50	2.13	1.14	0.79	794.9	0.65	0.26
4.00	2.43	1.46	0.91	908.5	0.74	0.33
4.50	2.74	1.81	1.02	1022.1	0.83	0.41
5.00	3.04	2.20	1.14	1135.6	0.93	0.50
5.50	3.34	2.63	1.25	1249.2	1.02	0.59
6.00	3.65	3.09	1.36	1362.7	1.11	0.70
6.50	3.95	3.58	1.48	1476.3	1.20	0.81
7.00	4.25	4.11	1.59	1589.9	1.30	0.93
7.50	4.56	4.67	1.70	1703.4	1.39	1.06
8.00	4.86	5.26	1.82	1817.0	1.48	1.19
8.50	5.17	5.88	1.93	1930.6	1.57	1.33
9.00	5.47	6.54	2.04	2044.1	1.67	1.48
9.50	5.77	7.23	2.16	2157.7	1.76	1.64
10.0	6.08	7.95	2.27	2271.2	1.85	1.80

Psi Loss Per 100 Feet of Pipe (psi/100ft.) bar Loss per 100 Meters of Pipe (bar/100m)
***Note:** Use of tubing at flows shown in dark shaded area is not recommended, as velocities exceed 5 ft/sec (1.5 m/s)*

Black Stripe Tubing

XQ ¼" Distribution Tubing

The strongest and most flexible ¼" Distribution Tubing available to extend emitter outlets to desirable discharge locations

- 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

Features

- Fits over barbed outlet ports and all Xerigation emission devices and ¼" transfer fittings
- Extruded from UV-resistant polyethylene resin materials

Specifications

- Outside Diameter: 0.25" (6.3 mm)
- Inside Diameter: 0.17" (4.3 mm)
- Wall Thickness: .04" (1.0 mm)
- Lengths: 100' and 1000' coils

Operating Range

- Pressure: 0 to 60 psi (0 to 4.1 bar)

Models

- XQ-100: 100-foot (30m) coil ¼" distribution tubing
- XQ-1000: 1000-foot (305m) coil ¼" distribution tubing
- XQ-1000-B: 1000-foot (305m) coil ¼" distribution tubing in a bucket

XQ ¼" Distribution Tubing Friction Loss Characteristics

O.D. .25" I.D. .17"			*O.D. 6.3mm I.D. 4.3mm METRIC*			
Flow gph	**Velocity fps**	**Loss psi**	**Flow m^3/h**	**Flow l/h**	**Velocity m/s**	**Loss bar**
1	0.27	0.16	0.00	3.79	0.08	0.01
3	0.80	1.24	0.01	11.6	0.24	0.09
5	1.33	3.20	0.02	18.92	0.41	0.22
7	1.86	5.97	0.03	26.50	0.57	0.41
9	2.39	9.50	0.03	34.07	0.73	0.66
11	2.92	13.79	0.04	41.64	0.89	0.95
13	3.45	18.75	0.05	49.21	1.05	1.29
15	3.98	24.43	0.06	56.78	1.21	1.69
17	4.52	30.80	0.06	64.35	1.38	2.13
18	4.78	34.23	0.07	68.13	1.46	2.36
19	5.05	37.83	0.07	71.92	1.54	2.61
20	5.31	41.60	0.08	75.70	1.62	2.87
25	6.64	62.86	0.09	94.63	2.03	4.34
30	7.97	88.08	0.11	113.55	2.43	6.08

Psi Loss Per 100 Feet of tubing; C=150 bar Loss per 100 Meters of tubing
Note: *Use of tubing at flows shown in dark shaded area is not recommended, as velocities exceed 5 ft/sec (1.5 m/s)*

XQ-100 and XQ-1000 ¼" Tubing

XQ-1000-B ¼" Tubing

¼" Landscape Dripline

Rain Bird ¼" Dripline is a perfect choice for small-sized areas such as planter boxes, container gardens, loops around trees, vegetable gardens and shrubs

Features

- Simple to use, as the flexible tubing makes watering pots and container gardens easy
  - Clog resistance through built-in filtration and two outlet holes, 180 degrees apart
- Brown tubing complements Rain Bird XF Dripline
- Works with Rain Bird ¼" barbed Fittings

Operating Range

- 10 to 40 psi (0.7 to 2.7 bar)
- Flow rate at 30 psi (2.0 bar): 0.8gph (3.0 l/h)
- Required filtration: 200 mesh (75 micron)

Specifications

- Outside diameter: 0.250" (6 mm)
- Inside diameter: 0.170" (4 mm)
- Wall thickness: 0.040" (1 mm)
- Spacing: 6" or 12" (15.25 cm and 30.5 cm)
- Length: 100' (30.5 m) coils

Models

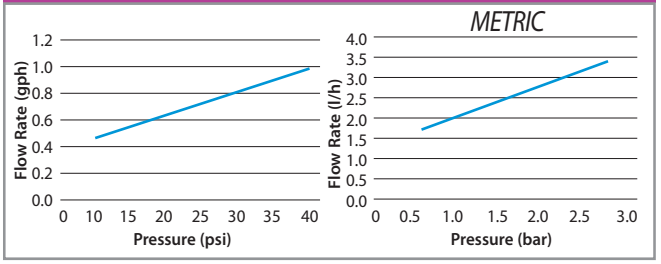
- LDQ0806100
- LDQ0812100

LDQ-08-06-100

Flow Characteristics

Model	Flow at 30 psi (gph)	(l/h)	Spacing (in.)	(cm)	Coil Length (ft.)	(m)
LDQ0806100	0.8	3.0	6	15.25	100	30.50
LDQ0812100	0.8	3.0	12	30.5	100	30.5

¼" Landscape Dripline Performance



Maximum Length of Run (Feet)

Emitter Spacing	Maximum Length of Run	Flow per Ft. @ 15 psi
6"	19 feet	1 gph/ft.
12"	33 feet	0.5 gph/ft.

¼" Barb Transfer Fittings

Features

- Used to connect ¼" Distribution Tubing (XQ) in different configurations or attach ¼" tubing to ½" or ¾" tubing
- Newly designed connectors have self-piercing barbs that easily puncture ½" or ¾" tubing
- Stem on fittings allows simple, quick installation using Xeriman™ Tool (XM-TOOL)
- Rugged plastic construction

Operating Range*

- Pressure: 0 to 50 psi (0 to 3.5 bar)

** with polyethylene tubing*

Models

- XBF1CONN: ¼" barb connector
- XBF2EL: ¼" barb x barb elbow
- XBF3TEE: ¼" barb x barb x barb tee

XBF1CONN

XBF2EL

XBF3TEE

Subterranean Emitter Box

Features

- Provides convenient access to subsurface emitter while protecting against vandalism. Ideal for multi-outlet devices (such as Xeri-Bird 8) and Air Vacuum Relief Valve Kit
- New larger body allows more room for components and distribution tubing
- Rugged, UV-resistant thermoplastic construction
- Available with black top

Dimensions

- Height: 9.0" (22.9 cm)
- Top Diameter: 6.4" (16.3 cm)
- Base Diameter: 9.8" (24.9 cm)

Model

- SEB 7XB

SEB 7XB

Galvanized Tie-Down Stake

Features

- 12-gauge galvanized steel rod comes pre-bent to staple distribution tubing, XF Dripline or XBS Tubing to finished grade
- Notched sides help secure stake in ground
- Sturdy, long-lasting and corrosion-resistant

Model

- TDS-050 w/bend

TDS-050 w/bend

Tubing Goof Plug

Features

- Used to plug unwanted holes in tubing
- New design works with Xeriman™ Tool (XM-TOOL) for a quick, easy installation

Model

- EMA-GPX

EMA-GPX

Tubing Cutter

Features

- Re-designed Xerigation Tubing Cutter allows for easier and cleaner cuts of all low-volume tubing
- Unique design provides two different-sized wells (one for ½" - ¾" tubing and one for ¼" tubing:, giving more leverage so less force is needed to cut any tubing
- Tubing Cutter is lightweight with stainless steel blades. Replacement blades available (PPC-200XBLD)

Model

- PPC-200X: Tubing cutter
- PPC-200XBLD: Replacement blade

Improved Dual-well Design Allows for Clean Cuts

PPC-200X

Xeriman™ Tool

Features

- Provides fast, easy, one-step installation of Xeri-Bug™ emitters and PC Modules directly into ½" or ¾" drip tubing, XF Dripline or Landscape Dripline
- Cuts emitter installation time
- All-in-one tool inserts emitters, removes emitters, inserts ¼" barbed fittings and installs goof plugs

Model

- XM-TOOL

One Step Xeri-Bug™ Insertion

Xeri-Bug™ Removal

Goof Plug Insertion

XM-TOOL

Xeri-Caps™ for Spray Heads

Features

- Helps to retrofit a spray head system to a drip system by capping off any unused spray heads

Operating Range

- Pressure: Up to 70 psi (4.8 bar)

Dimension

- Width: 2¼" (5.7 cm)

Models

- XC-1800: fits Rain Bird 1800 Series Spray Bodies

Rain Bird® XC-1800

Spray-to-Drip Retrofit Kit

Simple kit that easily converts a conventional spray zone to a low-volume irrigation zone

Features

- 1800 Series Spray Body that contains a filter, pressure regulator, and ½" male threaded outlet
- Permits convenient conversion to drip tubing when used with Easy Fit Fitting and female adapter
  - Can be installed above or below grade
- Internal assembly can be removed and easily dropped into any 1804, 1806 or 1812 Spray Head Body to easily retrofit existing system to Xerigation products
- Provides 30 psi (2.1 bar) pressure regulation and 200-mesh (75-micron) screen
- If retrofit flow is less than 3 gpm, replace electronic valve with a Rain Bird Low Flow Valve

Operating Range

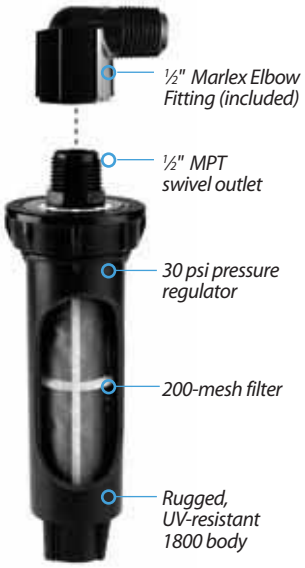
- Flow: 0.50 to 4.00 gpm (1.9 to 15.1 l/m)
- Inlet pressure: 15 to 70 psi (1.0 to 4.8 bar)
- Regulated pressure: 30 psi (2.1 bar)
- Filtration: 200 mesh (75 micron)

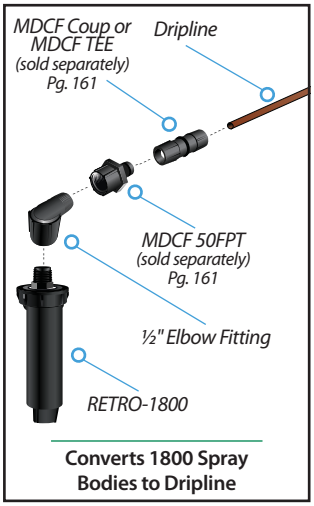
Model

- RETRO-1800

Dimensions

- ½" female-threaded inlet
- ½" male-threaded swivel outlet
- Height: 7" (17.8 cm)
- Width: 2" (5.1 cm)





Converts 1800 Spray Bodies to Dripline

Water Saving

Designed specifically for areas with water restrictions, our Spray-to-Drip Retrofit Kit allows use of existing 1800 Series Spray Bodies as drip irrigation connection points.

Control Zone Kit Selection Guide

This easy-to-use selection tool is available at www.rainbird.com/CZK and will help identify the most appropriate Control Zone Kit for the application.

XCZ-150-PRB-COM
FLOW: 15 - 40 gpm

FLOW: 15 - 40 gpm — Page 175

XCZ-100-PRB-COM
FLOW: 3 - 20 gpm

XCZ-100-PRB-LC
FLOW: 3 - 20 gpm

XCZ-100-PRBR
FLOW: 3 - 20 gpm

FLOW: 3 - 20 gpm — Pages 173 - 174

XCZ-100-PRF
FLOW: 3 - 15 gpm

XCZF-100-PRF
FLOW: 3 - 15 gpm

XACZ-100-PRF
FLOW: 3 - 15 gpm

XCZF-175-PRF
FLOW: 3 - 10 gpm

FLOW: 3 - 15 gpm | **3 - 10 gpm** — Pages 171 - 172

XCZ-075-PRF
FLOW: 0.2 - 5 gpm

XCZ-LF-100
FLOW: 0.2 - 5 gpm

XACZ-075-PRF
FLOW: 0.2 - 5 gpm

FLOW: 0.2 - 5 gpm — Pages 170 - 171

Online Control Zone Kit Selection Guide

Rain Bird Control Zone Kits provide all of the components necessary for on/off control, filtration and pressure regulation of a low-volume irrigation zone, making the kits simple to order and easy to install.

This quick selection tool will help you find the appropriate control zone kit for your application. By answering a few simple questions, the selection guide will provide recommended control zone kits best suited for your application. Simply click on the kit image for detailed information and specifications.

Features

- Includes detailed drawings and specifications for each kit
- Available at www.rainbird.com/CZK

Control Zone Kits

Rain Bird Control Zone Kits provide all of the components necessary for on/off control, filtration, and pressure regulation in a single package, making them simple to order and easy to install.

- Rain Bird Control Zone Kits are the most reliable kits and contain revolutionary products such as the Low Flow Valve, Pressure Regulating (PR) Filter, Quick Check Basket Filter, and the Pressure Regulating (PR) Quick Check Basket Filter
- All kits in every category use the innovative PR Filter which combines the filter and pressure regulator into one unit. The PR Filter eliminates a separate component to help avoid leaks either during installation or over the life of the kit in the field. Most PR Filter kits come assembled to save installation time and avoid in-field mistakes
- Rain Bird offers the most complete line of Control Zone Kits, giving contractors and specifiers the flexibility to meet every need from 0.2 to 40 gpm. Choose from:
- ¾", 1" or 1½" inlet opening
- Low Flow Valve, Anti-Siphon Valve, DV Valve, or PESB Valve
- Pressure Regulating RBY Filter, Pressure Regulating Quick Check Basket Filter, or Quick Check Basket Filter

Use the chart below to identify the most appropriate kit or see pages 194-206 for specific detailed information on these kits and their individual components. Also available is the interactive Control Zone Kit Pyramid Selection Guide for selection and detailed specification information; found at www.rainbird.com/CZK

Control Zone Selection Chart

Model	Size (Inlet x Outlet)	Flow Range	Inlet Pressure Range	Valve	Filter	Outlet Pressure
COMMERCIAL HIGH FLOW: 15–40 gpm						
XCZ-150-PRB-COM	1½" x 2 @ 1"	15 -40 gpm	20 - 200 psi	150-PESB	1" Quick Check PR Basket Filter (2)	40 psi
COMMERCIAL MEDIUM FLOW: 3–20 gpm						
XCZ-100-PRB-COM[1]	1" x 1"	3 - 20 gpm	15 - 150 psi	100-PESB	1" Quick Check PR Basket Filter	40 psi
XCZ-100-PRBR[1]	1" x 1"	3 - 20 gpm	15 - 150 psi	100-PESBR	1" PR Basket Filter	40 psi
XCZ-100-PRB-LC[1]	1" x 1"	3 - 20 gpm	15 - 150 psi	100-PGA	1" PR Basket Filter	40 psi
RESIDENTIAL/LIGHT COMMERCIAL MEDIUM FLOW: 3–15 gpm						
XCZF-100-PRF	1" x 1"	3 - 15 gpm	15 - 150 psi	100-DVF	1" PR RBY Filter	40 psi
XCZF-175-PRF	1" x ¾"	3 - 10 gpm	15 - 120 psi	100-DVF	3/4" PR RBY Filter	30 psi
XCZ-100-PRF	1" x 1"	3 - 15 gpm	15 - 150 psi	100-DV	1" PR RBY Filter	40 psi
XACZ-100-PRF	1" x 1"	3 - 15 gpm	15 - 150 psi	100-ASVF	1" PR RBY Filter	40 psi
RESIDENTIAL/LIGHT COMMERCIAL LOW FLOW: 0.2–5 gpm						
XCZ-LF-100	1" x ¾"	0.2 - 5 gpm	15 - 120 psi	LFV-100	3/4" PR RBY Filter	30 psi
XCZ-075-PRF	1" x ¾"	0.2 - 5 gpm	15 - 120 psi	LFV-075	3/4" PR RBY Filter	30 psi
XACZ-075-PRF	1" x ¾"	0.2 - 5 gpm	15 - 120 psi	ASV-LFV-075	3/4" PR RBY Filter	30 psi

**Available with BSP threads*

[1] For flows below 5gpm Rain Bird recommends use of upstream filtration to prevent debris from collecting below the diaphragm.

Water Saving $ Combine a Xerigation Control Zone Kit with a Rain Bird controller product to precisely regulate zone watering times.

Low Flow Control Zone Kits with PR Filter

- Reliable Control Zone Kits that include the Low Flow Valve, the only valve on the market that can handle low flows (below 3 gpm) without weeping
- Shorter kits with only two components (valve plus pressure-regulating filter) mean that you can fit more Control Zone Kits in a valve box, saving time and money
- These PR Filter kits provide on/off control, filtration, and pressure regulation with fewer components; so there is less chance of leakage at the connections, both at installation and over the life of the system

Operating Range

- Flow: 0.20 to 5.0 gpm (0.8 to 18.9 l/m)
- Inlet pressure: 20 to 150 psi (1.4 to 10.3 bar)
- Regulated pressure: 30 psi (2.1 bar)
- Filtration: 200 mesh stainless steel screen (75 micron)

Models

- XCZ-075-PRF: ¾" Low Flow Valve with ¾" PR RBY Filter (Assembled)
- XCZ-LF-100-PRF: 1" Low Flow Valve with ¾" PR RBY Filter

Replacement Screen

- RBY-200SSMX (200 mesh stainless steel screen)

Minimum Inlet Pressure for 30 psi Outlet Pressure

	Inlet Pressure (psi)	
Flow (gpm)	XCZ-075-PRF	XCZ-LF-100-PRF
0.2	34.4	34.6
1.0	36.1	36.5
3.0	38.1	38.1
5.0	43.4	42.0

Minimum Inlet Pressure for 2.1 bar Outlet Pressure

	Inlet Pressure (bar)	
Flow (l/m)	XCZ-075-PRF	XCZ-LF-100-PRF
0.8	2.4	2.4
3.8	2.5	2.5
11.4	2.6	2.6
18.9	3.0	2.9

XCZ-075-PRF

Four Control Zone Kits in a Standard Valve Box

XCZ-LF-100

Low Flow Control Zone Kits with Anti-Siphon Valve and PR Filter

- Reliable Control Zone Kits that include the Low Flow Valve, the only valve on the market that can handle low flows (below 3 gpm) without weeping
- Complete, two-piece Control Zone Kits include the field-proven Low Flow Anti-Siphon Valve that has an atmospheric vacuum breaker for backflow prevention and an IAPMO rating
- These PR Filter kits provide on/off control, filtration, and pressure regulation with only two parts; so there is less chance of leakage at the connections, both at installation and over the life of the system

Operating Range

- Flow: 0.20 to 5.0 gpm (0.8 to 18.9 l/m)
- Inlet pressure: 20 to 150 psi (1.4 to 10.3 bar)
- Filtration: 200 mesh stainless steel screen (75 micron)
- Regulated pressure: 30 psi (2.1 bar)

Models

- XACZ-075-PRF: ¾" Low Flow Anti-Siphon Valve with ¾" PR RBY Filter

Replacement Screen

- RBY-200SSMX (200 mesh stainless steel screen)

Stainless Steel Screen

XACZ-075-PRF

Minimum Inlet Pressure for 30 psi Outlet Pressure

Flow (gpm)	Inlet Pressure (psi) XACZ-075-PRF
0.2	37.4
1.0	39.1
3.0	40.0
5.0	49.7

Minimum Inlet Pressure for 2.1 bar Outlet Pressure

Flow (l/m)	Inlet Pressure (bar) XACZ-075-PRF
0.8	2.6
3.8	2.7
11.4	2.8
18.9	3.4

Medium Flow Control Zone Kits with Anti-Siphon Valve and PR Filter

- Complete, two-piece Control Zone Kits include the field-proven ASVF valve which has an atmospheric vacuum breaker for backflow prevention and an IAPMO rating
- These PR Filter kits provide on/off control, filtration, and pressure regulation with only two parts; so there is less chance of leakage at the connections, both at installation and over the life of the system

Operating Range

- Flow: 3.0 to 15.0 gpm (11.4 to 56.8 l/m)
- Inlet pressure: 20 to 150 psi (1.4 to 10.3 bar)
- Filtration: 200 mesh stainless steel screen (75 micron)
- Regulated pressure: 40 psi (2.8 bar)

Models

- XACZ-100-PRF: 1" ASVF with 1" PR RBY Filter

Replacement Screen

- RBY-200SSMX (200 mesh stainless steel screen)

Stainless Steel Screen

XACZ-100-PRF

Minimum Inlet Pressure for 40 psi Outlet Pressure

Flow (gpm)	Inlet Pressure (psi) XACZ-100-PRF
3.0	43.3
5.0	44.7
7.0	46.2
9.0	47.3
11.0	50.8
13.0	55.4
15.0	59.7

Minimum Inlet Pressure for 2.8 bar Outlet Pressure

Flow (l/m)	Inlet Pressure (bar) XACZ-100-PRF
11.4	3.0
18.9	3.1
26.5	3.2
34.1	3.3
41.6	3.5
49.2	3.8
56.8	4.1

Medium Flow Control Zone Kits with PR Filter, Flow Control

- Reliable Control Zone Kit that includes a DV valve with flow control for easier system tuning
- These PR Filter kits provide on/off control, filtration, and pressure regulation with only two parts; so there is less chance of leakage at the connections, both at installation and over the life of the system

Operating Range

- Flow: 3.0 to 10.0 gpm (11.4 to 37.9 l/m)
- Inlet pressure: 20 to 120 psi (1.4 to 8.3 bar)
- Filtration: 200 mesh stainless steel screen (75 micron)
- Regulated pressure: 30 psi (2.1 bar)

Models

- XCZF-175-PRF: 1" DVF Valve with 3/4" PR Filter, and MDCF fitting (16-17mm tubing)

Replacement Screen

- RBY-200SSMX (200 mesh stainless steel screen)

XCZF-175-PRF

Medium Flow Control Zone Kits with PR Filter

- Shorter kits with only two components (valve plus pressure-regulating filter) mean that you can fit more Control Zone Kits in a valve box, saving time and money
- These PR Filter kits provide on/off control, filtration, and pressure regulation with only two parts; so there is less chance of leakage at the connections, both at installation and over the life of the system

Operating Range

- Flow: 3.0 to 15.0 gpm (11.4 to 56.8 l/m)
- Inlet pressure: 20 to 150 psi (1.4 to 10.3 bar)
- Filtration: 200 mesh stainless steel screen (75 micron)
- Regulated pressure: 40 psi (2.8 bar)

Models

- XCZ-100-PRF: 1" DV Valve with 1" PR Filter (Assembled)*
- XCZF-100-PRF: 1" DV Valve with 1" PR Filter, and MDCF fitting (16-17mm tubing)*

** Available with BSP threads*

Replacement Screen

- RBY-200SSMX (200 mesh stainless steel screen)

XCZ-100-PRF

XCZF-100-PRF

Minimum Inlet Pressure for 30 psi Outlet Pressure

Flow (gpm)	Inlet Pressure (psi) XCZF-175-PRF
3.0	32.7
5.0	36.4
10.0	56.7
15.0	75.5

Minimum Inlet Pressure for 40 psi Outlet Pressure

Flow (gpm)	Inlet Pressure (psi) XCZ-100-PRF	Inlet Pressure (psi) XCZF-100-PRF
3.0	42.9	40.3
5.0	44.1	42.1
10.0	48.5	54.2
15.0	55.5	68.6

Minimum Inlet Pressure for 2.1 bar Outlet Pressure

Flow (l/m)	Inlet Pressure (bar) XCZF-175-PRF
11.4	2.3
18.9	2.5
37.9	3.9
56.8	5.2

Minimum Inlet Pressure for 2.8 bar Outlet Pressure

Flow (l/m)	Inlet Pressure (bar) XCZ-100-PRF	Inlet Pressure (bar) XCZF-100-PRF
11.4	3.0	2.8
18.9	3.0	2.9
37.9	3.3	3.7
56.8	3.8	4.7

Medium Flow Light Commercial Control Zone Kit with Pressure Regulating, Basket Filter

NEW

- Complete kit is the simplest, smallest and most reliable Control Zone Kit for light commercial applications between 5 and 20 gpm (11 and 76 l/m)
- Contains the reliable, flexible and proven PGA valve with the rugged pressure regulating basket filter
- This PR Filter kit provides on/off control, filtration, and pressure regulation with only two parts; so there is less chance of leakage at the connections, both at installation and over the life of the system
- The "No Spill" feature of the basket filter ensures dirt does not fall back into the filter during cleanup operation. The threaded filter top with 0-ring makes it easy to remove and clean that stainless steel filter screen

Minimum Inlet Pressure for 40 psi Outlet Pressure

Flow (gpm)	Inlet Pressure (psi) XCZ-100-PRB-LC
5.0	43.0
10.0	48.0
15.0	56.0
20.0	65.0

Minimum Inlet Pressure for 2.8 bar Outlet Pressure

Flow (l/m)	Inlet Pressure (bar) XCZ-100-PRB-LC
18.9	2.9
37.9	3.3
56.8	3.8
75.7	4.5

Operating Range

- Flow: 3 to 20 gpm (11,4 to 75.7 l/m)*
- Inlet Pressure: 15 to 150 psi (1,0 to 10,3 bar)
- Regulating Pressure: 40 psi (2,7 bar)
- Filtration: 200 mesh (75 micron) stainless steel
- Temperature: Up to 150 degree F (66 degree C)

Model

- XCZ-100-PRB-LC: 1" PGA Valve with 1" Pressure Regulating (40 psi), Basket Filter

Replacement Filter Screens

- QKCHK-100M: 100 mesh stainless steel screen, red
- QKCHK-200M: 200 mesh stainless steel screen, white

Replacement Cap

- BFCAP (Complete cap with body o-ring)

**For flows below 5gpm Rain Bird recommends use of upstream filtration to prevent debris from collecting below the diaphragm*

Stainless Steel Screen

XCZ-100-PRB-LC

Medium Flow Commercial Control Zone Kit with Pressure Regulating, Basket Filter

NEW

- Complete kit is the simplest, smallest and most reliable Control Zone Kit for commercial applications between 3 and 20 gpm (11 and 76 l/m)
- Contains the reliable, proven PESB Valve which provides patented scrubbing action, making this kit ideal for commercial dirty water applications
- Includes the Pressure Regulating, Quick-Check Basket Filter that has a clear indicator which goes from green to red, telling you when to clean the filter. This reduces maintenance and takes the guesswork out of cleaning the filter. In addition, the threaded top makes it easy to remove and clean the stainless steel screen
- Basket Filter and Pressure Regulator have been combined for one smaller Pressure Regulating, Quick-Check Basket filter that is 24% smaller than the previous unit

Minimum Inlet Pressure for 40 psi Outlet Pressure

Flow (gpm)	Inlet Pressure (psi) XCZ-PRB-100-COM	Inlet Pressure (psi) XCZ-100-PRBR
3	42.0	—
5	44.0	45.0
10	47.3	49.0
15	53.0	57.0
20	62.5	—

Minimum Inlet Pressure for 2.8 bar Outlet Pressure

Flow (l/m)	Inlet Pressure (bar) XCZ-PRB-100-COM	Inlet Pressure (bar) XCZ-100-PRBR
11.4	2.9	—
18.9	3.0	3.1
37.9	3.3	3.4
56.8	3.6	3.9
75.7	4.3	—

Operating Range

- Flow: 3.0 to 20.0 gpm (11.4 to 75.7 l/m)*
- Inlet Pressure: 15 to 150 psi (1,0 to 10,3 bar)
- Regulating Pressure: 40 psi (2,7 bar)
- Filtration: 200 mesh (75 micron) stainless steel
- Temperature: Up to 150º F (66º C)

Model

- XCZ-PRB-100-COM: 1" Ball Valve with 1" PESB Valve and 1" Pressure Regulating (40 psi), Quick-Check Basket Filter
- XCZ-100-PRBR: 1" PESBR Valve and 1" Pressure Regulating (40psi) Basket Filter

Replacement Screen

- QKCHK100M (100 mesh stainless steel screen)
- QKCHK200M (200 mesh stainless steel screen)

Replacement Cap

- QKCHKCAP (Complete cap with body o-ring)

**For flows below 5gpm Rain Bird recommends use of upstream filtration to prevent debris from collecting below the diaphragm*

XCZ-100-PRBR

XCZ-PRB-100-COM

High Flow Commercial Control Zone Kit with 2 Pressure Regulating, Basket Filters

NEW

- Highest flow Control Zone Kit on the market for large, commercial drip zones 15.0 to 40.0 gpm (56,8 to 151,4 l/m)
- Contains the reliable, proven 1 ½"PESB Valve which provides patented scrubbing action, making this kit ideal for commercial dirty water applications
- Includes 2 Pressure Regulating, Quick-Check Basket Filter that have a clear indicator which goes from green to red, telling you when to clean the filter. This reduces maintenance and takes the guesswork out of cleaning the filter. In addition, the threaded top makes it easy to remove and clean the stainless steel screen
- Basket Filter and Pressure Regulator have been combined for one smaller Pressure Regulating, Quick-Check Basket filter that is 22% smaller than the previous unit

Operating Range

- Flow: 15.0 to 40.0 gpm (56,8 to 151,4 l/m)
- Inlet Pressure: 20 to 150 psi (1,4 to 10,3 bar)
- Regulating Pressure: 40 psi (2,7 bar)
- Filtration: 200 mesh (75 micron) stainless steel
- Temperature: Up to 150º F (66º C)

Models

- XCZ-PRB-150-COM: 1 1/2" PESB Valve with two 1" Pressure Regulating (40 psi), Quick-Check Basket Filters

Replacement Screen

- QKCHK100M (100 mesh stainless steel screen)
- QKCHK200M (200 mesh stainless steel screen)

Replacement Cap

- QKCHKCAP (Complete cap with body o-ring)

Minimum Inlet Pressure for 40 psi Outlet Pressure

Flow (gpm)	Inlet Pressure (psi) XCZ-PRB-150-COM
15.0	40.0
20.0	49.0
25.0	50.2
30.0	53.5
35.0	56.1
40.0	60.7

Minimum Inlet Pressure for 2.8 bar Outlet Pressure

Flow (l/m)	Inlet Pressure (bar) XCZ-PRB-150-COM
56.8	2.8
75.7	3.4
94.7	3.5
113.6	3.7
132.5	3.9
151.4	4.2

XCZ-PRB-150-COM

Low Flow Valves

Valves designed exclusively for the low flow rates of a drip irrigation system (0.2 - 8.0 gpm; 0.6 to 30 l/m)

- The only valves in the industry made specifically for drip irrigation systems, making these the only valves that can effectively handle particles at low flow rates – patented design
- These valves contain all of the features of reliable Rain Bird DV or ASVF valves, coupled with a unique diaphragm design that allows particles to pass through at extremely low flow rates, thereby preventing weeping of the valve
- Allows the filter to be safely placed downstream of the valve since these valves handle all sizes of particles

Features

- Unique "double-knife" diaphragm coupled with ½" diameter seat for flawless operation at low flow rates
- Low Flow Valve is available in ¾" In-line model, and ¾" Anti-Siphon Valve
- Double-filtered pilot flow design for maximum reliability
- External bleed to manually flush the system of dirt and debris during installation and system start-up
- Internal bleed for spray-free manual operation.

Operating Range

- Flow: 0.20 to 8.0 gpm (0.6 to 30.0 l/m)
- Pressure: 15 to 150 psi (1.0 to 10.3 bar)

Electrical Specifications

- 24 VAC 50/60 Hz (cycles/sec) solenoid
- Inrush current: 0.30 (7.2 VA) at 60 Hz
- Holding current: 0.19 A (4.56 VA)

Models

- LFV-075: ¾" Low Flow DV Valve
- LFV-100*: 1" Low Flow DV Valve
- ASV-LF-075: ¾" Low Flow Anti-Siphon Valve

**Available with BSP threads*

Replacement Diaphragm

- LFVDIAPHRM: Low Flow Valve Diaphragm Spare Part

Pressure Loss Characteristics

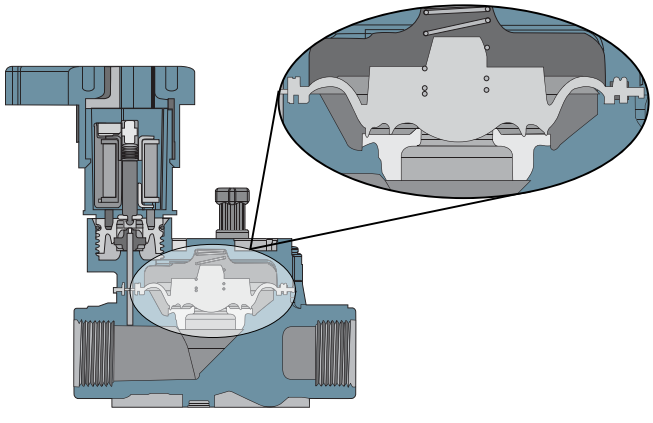
Flow gpm	LFV-075 psi	LFV-100 psi	ASV-LF-075 psi
0.2	3.0	3.0	2.5
1.0	3.2	3.2	3.1
2.0	3.3	3.3	3.7
4.0	3.6	3.6	4.6
6.0	4.2	4.2	5.3
8.0	5.1	5.1	5.7

Pressure Loss Characteristics METRIC

Flow l/m	LFV-075 bar	LFV-100 bar	ASV-LF-075 bar
0.6	0.21	0.21	0.17
3.6	0.22	0.22	0.22
7.8	0.23	0.23	0.27
15.0	0.25	0.25	0.31
22.8	0.28	0.28	0.35
30.0	0.35	0.35	0.39

ASV-LF-075

LFV-075



Unique Diaphragm Design

Inline RBY Filter

Static filter helps prevent plugging in a drip irrigation system

- A simple and reliable filter for low-volume irrigation systems
- Simple to clean, as cap has a sealing O-ring and unthreads to provide access to the stainless steel filter element
- Strong and reliable due to its robust design and glass-filled polypropylene construction

Features

- Male x Male threaded connections for direct connection to valves and pressure regulators
- Replacement stainless steel elements are available in 200 mesh (75 micron)

Operating Range

- Flow:
  - ¾" units: 0.20 to 12.0 gpm (0.8 to 45.4 l/m)
  - 1" units: 0.20 to 18.0 gpm (0.8 to 68.1 l/m)
- Pressure: 20 to 150 psi (1.4 to 10.3 bar)
- Filtration: 200 mesh (75 micron)

Models

- RBY075MPTX: ¾" Inline RBY Filter with 200 Mesh Screen
- RBY100MPTX: 1" Inline RBY Filter with 200 Mesh Screen*

Replacement screen:

- RBY-200SSMX (200 mesh stainless steel screen)

RBY075MPTX

Pressure Loss Characteristics

Flow Rate gpm	l/m	RBY075MPTX psi	bar	RBY100MPTX psi	bar
1.00	0.8	0.1	0.00	0.1	0.00
3.00	3.8	0.4	0.01	0.3	0.01
5.0	11.4	1.1	0.03	0.5	0.02
7.0	18.9	1.6	0.08	0.8	0.03
9.0	26.5	2.7	0.11	1.4	0.06
12.0	34.1	4.5	0.19	2.2	0.10
14.0	45.4	--	0.31	3.0	0.15
16.0	53.0	--	--	3.8	0.21
18.0	60.6	--	--	4.7	0.26
	68.1	--	--	--	0.32

Note: *Pressure loss for 200 mesh filter screen*

Pressure-Regulating Filter (RBY)

Unique, compact unit that works with all valves to create a simple, efficient control zone. Combines filtration and pressure regulation in one piece for protection of downstream components in a low-volume irrigation system

- Reduces the number of components in a control zone, making it smaller and easier to install. More control zones can fit in one valve box!
- Combination unit comes with 200 mesh (75 micron) stainless steel reduces the number of connections, making installation easier and faster

Features

- Static RBY filter regulates pressure to a nominal 30 or 40 psi (2.0 or 2.8 bar) - PR RBY Filter Cap has sealing O-ring and unthreads to provide access to the filter element for easy cleaning
- 30 or 40 psi pressure regulator is integrated into the filter body
- Robust body and cap are made of glass-filled polypropylene and provide 150 psi (10.3 bar) pressure rating

Operating Range

- Flow - ¾" units: 0.20 to 5.0 GPM (0.8 to 18.9 l/m)
  - 1" units: 3.0 to 15.0 GPM (11.4 to 56.8 l/m)
- Inlet pressure: 20 to 150 psi (1.4 to 10.3 bar)
- Regulated pressure: - ¾" units: 30 psi (2.1 bar)
  - 1" units: 40 psi (2.8 bar)

Components of Control Zone Kits Found on pg. 170-175

Models

- PRF-075-RBY: ¾" PR RBY Filter
- PRF-100-RBY: 1" PR RBY Filter

Stainless Steel Screen

Replacement Screen

- RBY-200SSMX (200 mesh stainless steel screen)

PRF-075-RBY and PRF-100-RBY

Pressure Loss Characteristics

Flow gpm	l/m	PRF-075-RBY psi	bar	PRF-100-RBY psi	bar
0.2	0.8	3.0	0.21	N/A	N/A
1.0	3.8	4.0	0.28	N/A	N/A
3.0	11.4	6.1	0.42	0.8	0.06
5.0	18.9	10.0	0.69	2.0	0.14
8.0	30.3	N/A	N/A	3.8	0.26
10.0	37.9	N/A	N/A	5.2	0.36
15.0	56.8	N/A	N/A	12.0	0.83

Note: *Pressure loss for 200 mesh filter screen*

Quick-Check Basket Filter

The only commercial-grade filter with a clean/dirty indicator for low-volume irrigation zones

- Reduces maintenance and labor costs — the indicator tells you when to clean the filter, taking the guesswork out of cleaning the filter
- Provides increased reliability – "No-spill" feature ensures dirt does not fall back into the filter during cleanup operation
- Simplifies installation and maintenance – threaded top with O-ring makes it easy to remove and clean the screen

Features

- Available in ¾" and 1" models
- Comes pre-assembled with 200 mesh (75 micron) stainless steel screen (other screen sizes available)
- Also available in Commercial Control Zone Kits (XCZ-PRB-100-COM and XCZ-PRB-150-COM)

Operating Range

- Flow
  - ¾" Basket Filter: 0.20 to 12.0 gpm (0.8 to 45.4 l/m)
  - 1" Basket Filter: 3.0 to 20.0 gpm (11.4 to 75.7 l/m)
- Pressure: 0-150 psi (0 to 10.3 bar)

Models

- QKCHK-075: ¾" Basket Filter with 200 mesh screen
- QKCHK-100*: 1" Basket Filter with 200 mesh stainless steel screen

** Available with BSP threads*

Replacement Filter Screens

- QKCHK-100M: 100 mesh screen, red
- QKCHK-200M: 200 mesh stainless steel screen, white

Replacement Cap

- QKCHKCAP (Complete cap with body o-ring)

Pressure Loss Characteristics - QKCHK-075

Flow Rate gpm	200/150 mesh screen psi
0.20	0.0
2.00	0.0
4.00	0.1
6.0	0.4
8.0	0.9
10.0	1.3
12.0	2.0

Pressure Loss Characteristics - QKCHK-075 METRIC

Flow Rate l/m	75/100 micron screen bar
0.8	0.00
7.6	0.00
15.1	0.01
22.7	0.03
30.3	0.06
37.9	0.09
45.4	0.14

Pressure Loss Characteristics - QKCHK-100

Flow Rate gpm	200/150 mesh screen psi
3.0	0.0
5.0	0.0
7.0	0.4
9.0	0.7
11.0	1.1
14.0	1.6
17.0	2.3
20.0	3.2

Pressure Loss Characteristics - QKCHK-100 METRIC

Flow Rate l/m	75/100 micron screen bar
11.4	0.01
18.9	0.01
26.5	0.03
34.1	0.05
41.6	0.08
53.0	0.11
64.4	0.16
75.7	0.22

Note: *Pressure loss for 200 mesh filter screen*

Pressure Regulating, and Quick-Check Pressure Regulating Basket Filters

The only commercial-grade filter with built in pressure regulator for low-volume irrigation zones. Also available with a clean/dirty indicator.

- Reduces maintenance and labor costs - 40% larger filter surface than standard filters means less frequent cleaning
- Provides increased reliability – "No Spill" feature ensures dirt does not fall back into the filter during cleanup operation
- Simplifies installation and maintenance – threaded top with 0-ring makes it easy to remove and clean that stainless steel filter screen
- Efficient design – combines filtration and pressure regulation in one compact unit with fewer connections

Features

- Available in 1" model
- Comes pre-assembled with 200 mesh (75 micron) stainless steel screen (other screen sizes available)
- Built-in 40 psi (2,7 bar) pressure regulator
- Also available in Light Commercial Control Zone Kits
  XCZ-100-PRB-LC (without Quick-Check feature)
  XCZ-PRB-100-COM (with Quick-Check)
  XCZ-PRB-150-COM (with Quick-Check)

Components of Control Zone Kits Found on pg. 170-175

Operating Range

- Flow: 5.0 to 20 gpm (18.9 to 75.7 l/m)
- Inlet Pressure: 15 to 150 psi (1,0 to 10,3 bar)
- Regulating Pressure: 40 psi (2,7 bar)
- Filtration: 200 mesh (75 micron) stainless steel
- Temperature: Up to 150 degree F (66 degree C)

Models

- PRB-100: 1" Basket Filter with built-in Pressure Regulator (40 psi) and 200 mesh (75 micron) stainless steel screen
- PRB-QKCHK-100: 1" Basket Filter with built-in Pressure Regulator (40 psi) and 200 mesh (75 micron) stainless steel screen

Replacement Filter Screens

- QKCHK-100M: 100 mesh stainless steel screen, red
- QKCHK-200M: 200 mesh stainless steel screen, white

Replacement Cap

- QKCHKCAP (Complete cap with body o-ring)

Minimum Inlet Pressure for 40 psi Outlet Pressure

Flow (gpm)	Inlet Pressure (psi) PRB-100
3.0	40.0
5.0	40.0
10.0	42.6
15.0	48.2
20.0	60.0

Minimum Inlet Pressure for 2.8 bar Outlet Pressure

Flow (l/m)	Inlet Pressure (bar) PRB-100
11.4	2.8
18.9	2.8
37.9	2.9
56.8	3.3
75.7	4.1

Stainless Steel Screen

PRB-100

PRB-QKCHK-100

Large-Capacity Filters

NEW

Large-Capacity and low maintenance with a solid build

- Provides extra large filtration capacity for residential, commercial, and municipal applications
- Durable Filters can be easily removed for cleaning, significantly reducing cleaning time
- The filter body and cover are made of high grade, high impact, thermo plastic, rated to withstand water up to 140° F and pressures up to 116 psi

Features

- Disc Filters can decompress for easy cleaning
- Available with 120 mesh Stainless Steel Screen Filters or 120 mesh disc filters
- Auxiliary connection with a threaded cap can be drilled to allow draining or depressurization
- Larger filters for higher flow and lower maintenance

Operating Range

- 1" Model: Maximum flow: Up to 26 gpm (6 m^3/hr)
  Filtering surface (disc): 28 in^2 (180cm^2)
- 1.5" Models: Maximum flow: Up to 88 gpm (20 m^3/hr)
  Filtering surface (disc): 83 in^2 (535 cm^2)
  Filtering surface (screen): 76 in^2 (490 cm^2)
- 2" Models: Maximum flow: Up to 110 gpm (25 m^3/hr)
  Filtering surface (disc): 81 in^2 (525 cm^2)
  Filtering surface (screen): 75 in^2 (485 cm^2)

Maximum Pressure: 116 psi (8 bar)
Maximum Temperature: Up to 140° F (60° C)

Models

- **LCRBY100D** - 1" Large-Capacity Disc Filter
- **LCRBY150S** - 1.5" Large-Capacity Screen Filter
- **LCRBY150D** - 1.5" Large-Capacity Disc Filter
- **LCRBY200S** - 2" Large-Capacity Screen Filter
- **LCRBY200D** - 2" Large-Capacity Disc Filter

Spare Parts

- **SMFC120MS** - ¾" - 1" SCRN CART LG CAP 120M
- **SMFC120MD** - ¾" - 1" DISC CART LG CAP 120M
- **LGFC120MS** - 1½" - 2" SCRN CRT LG CAP 120M
- **LGFC120MD** - 1½" - 2" DISC CRT LG CAP 120M

LCRBY200D

Disc & Screen Filters

Specifications

- Inlet / Outlet Size:
  1" Models: 1" NPT
  1.5" Models: 1.5" NPT
  2" Models: 2" NPT

Filtration

*Screen Filter: 120 Mesh (130 Micron)
Plastic Filter Discs: 120 Mesh (130 Micron)

Screen Filter:

The 120 mesh screen filters are easy to clean and provide reliable filtration.

Plastic Filter Discs:

These filters are made up of over a hundred grooved discs that allow water to pass while trapping debris. Less maintenance required due to large surface area.

** Screen not available in 1" model*

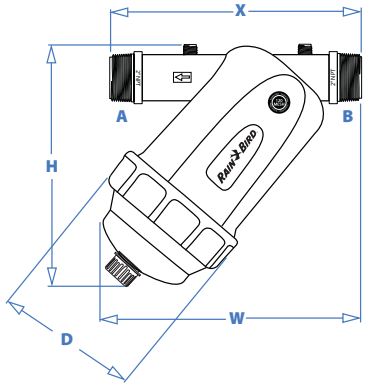
Pressure Loss Characteristics - DISC FILTER							
Flow Rate		1" Filter		1.5" Filter		2" Filter	
gpm	l/m	psi	bar	psi	bar	psi	bar
5	18.93	0.60	0.04	0.08	0.01	0.10	0.01
11	41.67	1.16	0.08	0.18	0.01	0.10	0.01
22	83.33	2.61	0.18	0.40	0.03	0.10	0.01
33	125.0	4.35	0.30	0.73	0.05	0.24	0.02
44	166.67	—	—	1.05	0.07	0.40	0.03
55	208.33	—	—	1.50	0.10	0.60	0.04
66	250.00	—	—	2.18	0.15	0.82	0.06
77	291.67	—	—	3.10	0.21	1.10	0.08
88	333.33	—	—	3.95	0.27	1.60	0.11
99	375.00	—	—	—	—	2.03	0.14
110	416.67	—	—	—	—	2.47	0.17

Disc Filter

Pressure Loss Characteristics - SCREEN FILTER							
Flow Rate		1" Filter		1.5" Filter		2" Filter	
gpm	l/m	psi	bar	psi	bar	psi	bar
5	18.93	0.80	0.06	0.00	0.00	0.00	0.00
11	41.67	1.74	0.12	0.00	0.00	0.00	0.00
22	83.33	2.90	0.20	0.50	0.03	0.20	0.01
33	125.0	4.06	0.28	0.95	0.07	0.25	0.02
44	166.67	—	—	1.45	0.10	0.44	0.03
55	208.33	—	—	1.89	0.13	0.60	0.04
66	250.00	—	—	2.32	0.16	0.87	0.06
77	291.67	—	—	2.76	0.19	1.16	0.08
88	333.33	—	—	3.19	0.22	1.45	0.10
99	375.00	—	—	—	—	1.89	0.13
110	416.67	—	—	—	—	2.32	0.16

Screen Filter

Filter Housing Dimensions					
Model	A-B	H	W	X	D
1″	1″ NPT	6.81″	7.48″	6.22″	3.27″
1.5″	1.5″ NPT	9.53″	10.28″	9.92″	5.67″
2″	2″ NPT	9.76″	10.63″	10.51″	5.67″



Inline Pressure Regulators

Features

- Can be installed above or below grade
- Preset outlet pressures: 30 psi (2.0 bar) and 40 psi (2.8 bar)
- ¾" or 1" NPT female-threaded inlet and outlet

Operating Range

- Flow
  - PSI-L30X-075: 0.10 to 5.0 gpm; 6 to 300 gph (0.4 to 18.9 l/m)
  - PSI-M30X-075, psi-M40X-075: 2.0 to 10.0 gpm; 120 to 600 gph (7.8 to 37.9 l/m)
  - PSI-M40X-100: 2.0 to 20.0 gpm; 120 to 900 gph (7.8 to 56.8 l/m)
- Inlet Pressure: 10-150 psi (0.7 to 10.3 bar)

Models

- PSI-L30X-075: ¾" 30 psi (2.1 bar) regulator for low flow (red label)
- PSI-M30X-075: ¾" 30 psi (2.1 bar) regulator for medium flow (yellow label)
- PSI-M40X-075: ¾" 40 psi (2.8 bar) regulator for medium flow (yellow label)
- PSI-M40X-100: 1" 40 psi (2.8 bar) regulator for medium flow

Retrofit Pressure Regulator

Features

- Provides convenient 30 psi (2.1 bar) pressure regulation at the riser for any ½" FPT emission device or compression adapter
- Can be installed above or below grade
- Can be used with Xeri-Bird™ 8 Multi-Outlet Emission Device (see page 141)

Operating Range

- Flow: 0.50 to 4.00 gpm; 30 to 240 gph (1.9 to 15.1 l/m)
- Inlet Pressure: 15 to 70 psi (1.0 to 4.8 bar)

Dimensions

- ½" female-threaded inlet
- Height: 4" (10 cm)

Model

- PRS-050-30

PSI-L30X-075, PSI-M40X-075, PSI-M40X-100

PRS-050-30

Water Saving Tips

- Newer high-efficiency motors are able to convert a higher percentage of their electric input to useful mechanical work resulting in energy and cost savings.
- Rain Bird Variable Frequency Drive (VFD) pump stations save energy while delivering the water pressure necessary to ensure maximum water use efficiency.
- Rain Bird designs pump stations specifically for the application, ensuring that the pump runs at maximum efficiency. Delivering the right pressure as demanded by the system ensures your irrigation system is efficient and effective. For assistance call 520-806-5620 or email pumps@rainbird.com.

Rain Bird® LC Series

NEW

¾ to 3 hp; Up to 60 psi (4.1 bar); Up to 115 gpm (26.1 m³/h)

- Revolutionary complete pump package that includes a professional-grade pump, the highest quality pump protection and simple to install and operate fixtures all housed in a unique enclosure designed specifically for a pump
- Heavy duty pump available in ¾, 1, 1½, 2, and 3 hp offers brass impellers, cast iron housing & stainless steel bolts & ports for pressure, temperature probe & priming
- PSRPT for Shut-down protection. Provides protection if pump experiences loss of pressure or high temperature situations. The PSRPT is housed in a powder coated steel enclosure
- Aesthetically pleasing powder coated enclosure. Provides safe and vandal proof encasement of pump and controls

Features

- Clam shell powder coated steel enclosure. Offers full accessibility to pump and electrical controls
- Quick disconnecting coupling on discharge and suction provides simple on-off connections to speed the hook-up and winterization processes
- Cooling louvres provide ample air to prevent motor and pump from overheating
- 1.5" PVC adapter and pan drain, discharge line through bottom of enclosure insures against theft
- Discharge option through bottom of enclosure or side of enclosure
- Quick disconnecting piggy-tail power cord assures at-pump safety
- 230 volt main power plug
- Padlock ring for security

Electrical Power Specification

- 60Hz, 1-phase power: 208V, 230V

Applications

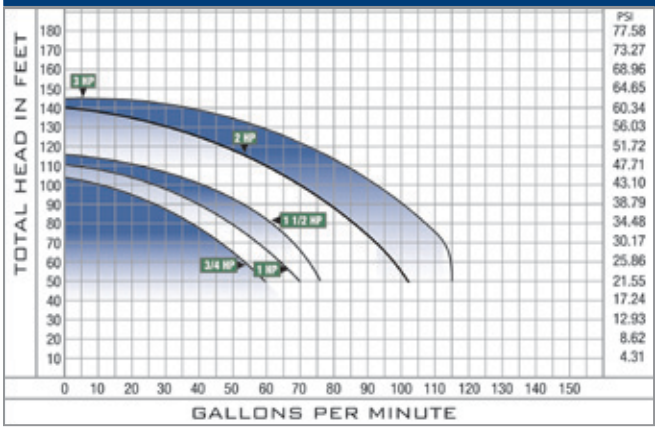
- Suction Lift or Boost
- Potable or Reclaimed Water Supply
- Residential, Light Commercial, Parks, or Recreational

Capacity US gpm based on 5ft. Suction Lift

HP	Discharge psi								
	20	25	30	35	40	45	50	55	60
1	73	65	57	47	35	18	-	-	-
1.5	75	70	68	60	48	35	-	-	-
2	102	98	92	82	74	61	52	40	-
3	115	114	112	105	100	88	72	56	30

LC Series

LC Series Pump Performance Curves



Low Profile Pump Stations – LP Series

Rain Bird's LP Series Horizontal End Suction and Vertical multistage pump stations are designed for small to midsize boost, flooded suction and suction lift applications such as city parks and buildings, sports fields, commercial buildings, small home owner's associations and large residential sites. Its low profile design, durable centrifugal or vertical multistage pump configuration, and choice of options make it an ideal choice for Turf irrigation applications.

- Cost effective – Standardized VFD driven pump system in enclosure delivers high performance with minimum investment
- Low Profile – Compact aluminum enclosure with powder coated skid and piping
- Energy efficient – Variable Frequency Drive (VFD) maintains constant pressure at varying flow demand
- Reliability – Simple, standard design, easy installation and maintenance

Standard Features

• Mechanical Features
  - Inlet Butterfly Isolation Valve
  - Discharge Butterfly Isolation Valve
  - Silent Check Valve
• Enclosures / External Connections
  - Marine Grade Aluminum Enclosure
  - Polyester Powder-Coated Steel Deck and Piping
  - Thermostat and Fan on Mechanical Enclosure
• Pump Control
  - Pump Start Relay
  - VFD - Variable Frequency Drive for Control of Pressure
• Display
  - Monochrome Touch Screen Display

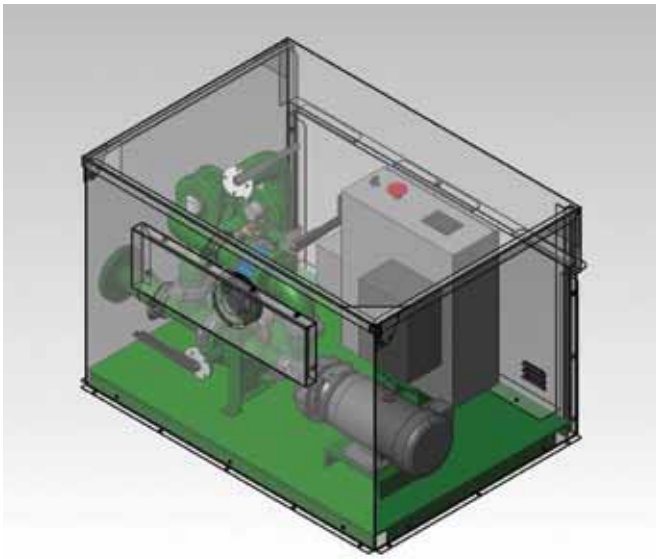
Optional Features and Accessories

Visit:www.rainbird.com/landscape/products/pumps

Models

• Horizontal End Suction - LP Series
  - 5 to 10 HP; Up to 100 psi (6.9 bar); Up to 200 gpm (12.6 lps, 45.4 m^3/h)

• Vertical Multistage - LP Series
  - 1 to 2 HP; Up to 50 psi (3.5 bar); Up to 60 gpm (3.8 lps, 13.6 m^3/h)



Horizontal End Suction - LP Series Shown
5 to 10 HP; Up to 100 psi (6.9 bar);
Up to 200 gpm (12.6 lps, 45.4 m^3/h)

LP Series – Horizontal End Suction - 1 Pump – Aluminum Enclosure			
Motor Size	**5 HP**	**7.5 HP**	**10 HP**
Pump Type	Horizontal End Suction		
Power Requirement	480/60/3 V/HZ/PH		
	208-230/60/3 V/HZ/PH		
	208-230/60/1 V/HZ/PH		
Inlet Pressure Requirement	Suction Lift or Boost Applications		
Outlet Pressure	Up to 100 psi (6.9 bar) (1)		
Outlet Flow	Up to 200 gpm (12.6 lps, 45.4 m^3/h) (1)		
Concrete Slab Dimensions (min)	65" x 49" (165 cm x 125 cm)		
Platform Skid Dimensions (min)	53" x 39.75" (135 cm x 101 cm)		
Inlet / Discharge Size	2" Flange Fitting (adapter)	3" Flange Fitting	4" Flange Fitting (adapter)
Cabinet Height (from slab)	35" (89 cm)		

LP Series – Vertical Multistage – 1 Pump – Aluminum Enclosure			
Motor Size	**1 HP**	**1.5 HP**	**2 HP**
Pump Type	Vertical Multistage		
Power Requirement	480/60/3 V/HZ/PH		
	208-230/60/3 V/HZ/PH		
	208-230/60/1 V/HZ/PH		
Inlet Pressure Requirement	Suction Lift or Boost Applications		
Outlet Pressure	Up to 50 psi (3.5 bar) (1)		
Outlet Flow	Up to 60 gpm (3.8 lps, 13.6 m^3/h) (1)		
Concrete Slab Dimensions (min)	65" x 49" (165 cm x 125 cm)		
Platform Skid Dimensions (min)	53" x 39 3/4" (135 cm x 101 cm)		
Inlet / Discharge Size	2" flange fillting standard - 3" and 4" adapters availabe		
Cabinet Height (from slab)	35" (89 cm)		

(1) Refer to pump performance curves, provided upon request from pumps@rainbird.com

Low to Medium Flow Pump Stations – D-Series

Rain Bird's single pump, Vertical Multi-Stage and Horizontal End Suction stations in powder-coated green enclosures are designed for small to midsize boost, flooded suction and suction lift applications such as city parks and buildings, sports fields, commercial buildings, small home owner's associations and large residential sites. Its small footprint, durable centrifugal or multistage pump configuration, and choice of options make it an ideal choice for Turf irrigation applications.

- Reliability – Integrated Plug-n-Pump provide single source responsibility for the entire pumping system insuring trouble-free installation and operation.
- Energy efficient – Variable Frequency Drive (VFD) maintains constant pressure at varying flow demand.
- Inlet and discharge isolation valves for easier mechanical serviceability.
- Easy Start-up – All stations are water-tested at the factory prior to shipment.

Standard Features

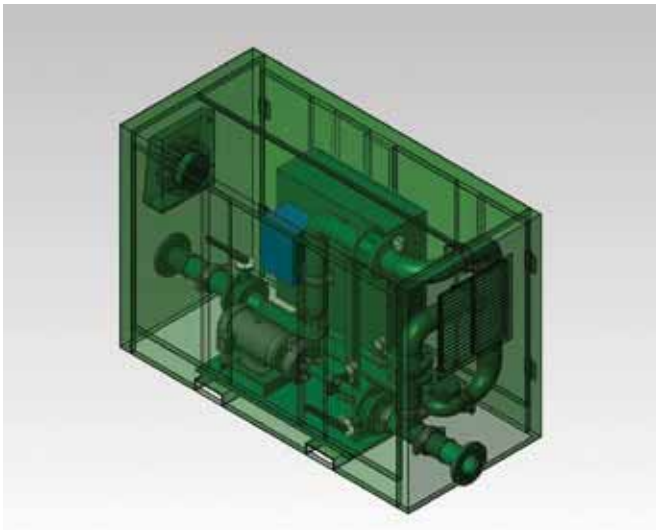
- Mechanical Features
  - Inlet Butterfly Isolation Valve
  - Discharge Butterfly Isolation Valve
  - Silent Check Valve
- Pressure / Flow
  - Stainless Steel Pressure Transducer
  - Flow Switch
- Enclosures / External Connections
  - Polyester Powder Coated Steel Enclosure
  - Polyester Powder-Coated Steel Deck and Piping
  - Re-Prime Piping (Suction Lift only)
  - Thermostat and Fan on Mechanical Enclosure
- Pump Control
  - Pump Start Relay
  - VFD - Variable Frequency Drive for Control of Pressure
- Display
  - Monochrome Touch Screen Display

Optional Features and Accessories

Visit:www.rainbird.com/landscape/products/pumps

Models

- **Vertical Multistage – 1 Pump – D Series**
  - 3 to 15 HP; Up to 115 psi (7.9 bar); Up to 200 gpm (12.6 lps, 45.4 m^3/h)
- **Horizontal End Suction - 1 Pump - D Series**
  - 5 to 20 HP; Up to 130 psi (9.0 bar); Up to 350 gpm (22.1 lps, 79.5 m^3/h)



Horizontal End Suction - 1 Pump - D Series shown
5 to 20 HP; Up to 130 psi (9.0 bar);
Up to 350 gpm (22.1 lps, 79.5 m^3/h)

D-Series – Vertical Multistage – 1 Pump – Green Enclosure					
Motor Size	**3 HP**	**5 HP**	**7 ½ HP**	**10 HP**	**15 HP**
Pump Type	Vertical Multi-Stage				
Power Requirement	480/60/3 V/HZ/PH				
	208-230/60/3 V/HZ/PH				
	208-230/60/1 V/HZ/PH				
Inlet Pressure Requirement	Suction Lift or Boost Applications				
Outlet Pressure	Up to 115 psi (7.9 bar) (1)				
Outlet Flow	Up to 200 gpm (12.6 lps, 45.4 m^3/h) (1)				
Concrete Slab Dimensions (min)	90" x 48" (229 cm x 122 cm)				
Platform Skid Dimensions (min)	78" x 36" (198 cm x 91 cm)				
Inlet / Discharge Size	4" Standard - 2", 3", and 6" adapters available				
Cabinet Height (from slab)	52" (132 cm)				

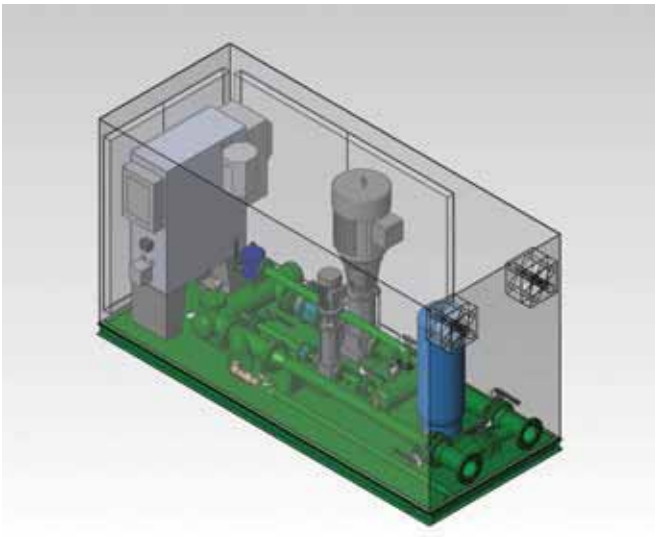
D-Series – Horizontal End Suction – 1 Pump – Green Enclosure					
Motor Size	**5 HP**	**7 ½ HP**	**10 HP**	**15 HP**	**20 HP**
Pump Type	Horizontal End Suction				
Power Requirement	480/60/3 V/HZ/PH				
	208-230/60/3 V/HZ/PH				
	230/60/1 V/HZ/PH			208/60/1 V/HZ/PH	
Inlet Pressure Requirement	Suction Lift (up to 3 ft. lift), or Boost Applications				
Outlet Pressure	Up to 130 psi (9.0 bar) (1)				
Outlet Flow	Up to 350 gpm (22.1 lps, 79.5 m^3/h) (1)				
Concrete Slab Dimensions (min)	90" x 48" (229 cm x 122 cm)				
Platform Skid Dimensions (min)	78" x 36" (198 cm x 91 cm)				
Inlet / Discharge Size	4" standard - 2", 3" and 6" adapters are external accessories				
Cabinet Height (from slab)	52" (132 cm)				

(1) Refer to pump performance curves, provided upon request from pumps@rainbird.com

Medium Flow Pump Stations – M-Series

Rain Bird's single pump, Vertical Multi-Stage station in a medium enclosure is designed for medium-flow boost, flooded suction and suction lift applications, such as; parks, sports complexes, golf courses, turf farms and other agricultural projects. Its mid-sized design, durable centrifugal or multistage pump configuration, choice of options and enclosures make it an ideal choice for Turf irrigation applications.

- High Performance Control Package – Options include a cost-effective monochrome touch-panel display or high resolution color touch-panel display for improved user interfaced and remote monitoring via VNC (Virtual Network Computing)
- Energy efficient – Variable Frequency Drive (VFD) maintains constant pressure at varying flow demand.
- Enhanced Serviceability – Modern electrical design utilizing industrial breaker motor protection instead of fuses. Industrial circuit breakers are quickly reset and designed for an extended service life.
- Inlet and discharge isolation valves for easier mechanical serviceability.



Vertical Multi-Stage – 1 Pump – M Series shown
15 to 60 HP; Up to 155 psi (10.7 bar);
Up to 500 gpm (31.5 lps, 114 m^3/h)

Standard Features

• Mechanical Features
  - Inlet Butterfly Isolation Valve
  - Discharge Butterfly Isolation Valve
  - Pump Isolation Valve
  - Silent Check Valve
  - Hose Bib
• Pressure / Flow
  - Stainless Steel Pressure Transducer
  - Paddlewheel Flow Meter
• Enclosures / External Connections
  - Marine Grade Aluminum Enclosure
  - Polyester Powder-Coated Steel Deck and Piping
  - Thermostat and Fan on Mechanical Enclosure
• Pump Control
  - Pump Start Relay
  - VFD - Variable Frequency Drive for Control of Pressure
• Display
  - Monochrome Touch Screen Display

Optional Features and Accessories

Visit:www.rainbird.com/landscape/products/pumps

Models

• Vertical Multi-Stage – 1 Pump – M Series
  - 15 to 60 HP; Up to 155 psi (10.7 bar); Up to 500 gpm (31.5 lps, 114 m^3/h)

• Horizontal End Suction - 1 Pump - M Series
  - 20 to 50 HP; Up to 120 psi (8.3 bar); Up to 600 gpm (37.9 lps, 136 m^3/h)

M-Series – Vertical Multi-Stage – 1 Pump – Medium Enclosure

Motor Size	15 HP	20 HP	25 HP	30 HP	40 HP	50 HP	60 HP
Pump Type	Vertical Multi-Stage						
Power Requirement (Other power configurations available upon request)	480/60/3 V/HZ/PH						
	208-230/60/3 V/HZ/PH						
	380/50/3 V/HZ/PH						
	580/60/3 V/HZ/PH						
Inlet Pressure Requirement	Suction Lift or Boost Applications						
Outlet Pressure	Up to 155 psi (10.7 bar) (1)						
Outlet Flow	Up to 500 gpm (31.5 lps, 114 m^3/h) (1)						
Concrete Slab Dimensions (min)	13'6" x 6'0" (411.5 cm x 183 cm)						
Platform Skid Dimensions (min)	12'6" x 5'0" (4.8 m x 152.5 cm)						
Inlet / Discharge Size	6" Standard - 4" and 8" adapters						

M-Series – Horizontal End Suction – 1 Pump – Medium Enclosure

Motor Size	20 HP	25 HP	30 HP	40 HP	50 HP
Pump Type	Horizontal End Suction				
Power Requirements: (Other power configurations available upon request)	480/60/3 V/HZ/PH				
	208-230/60/3 V/HZ/PH				
Inlet Pressure Requirement	Suction Lift (up to 3 ft. lift), or Boost Applications				
Outlet Pressure	Up to 120 psi (8.3 bar) (1)				
Outlet Flow	600 gpm (37.9 lps, 136 m^3/h) (1)				
Concrete Slab Dimensions (min)	162" x 72" (412 cm x 183 cm)				
Platform Skid Dimensions (min)	150" x 60" (381 cm x 152 cm)				
Inlet / Discharge Size	6" or 8" Flange Fitting				

(1) Refer to pump performance curves, provided upon request from pumps@rainbird.com

Main Irrigation Pump Stations

Flows Up to 2400 GPM at 110 psi.

Reliable Variable Frequency Drive Pump Stations designed to serve as the main irrigation pump station for golf courses and large commercial sites. Rain Bird's Pump Station Platforms are designed for both new construction projects and renovation projects

Available in the following configurations:

- Vertical Turbine Pump Stations for Wet-well Applications
- Horizontal End Suction for Flooded Suction and Pressure Boosting Applications
- Multistage Pumps for Flooded Suction, Suction Lift, and Pressure Boosting Applications

Benefits:

- Enhanced Serviceability: Modern electrical design utilizing industrial breaker motor protection instead of time-wasting fuses. Industrial circuit breakers are quickly reset and designed for an extended service life.
- Reduced Downtime: Industrial circuit breakers are good for thousands of trips.
- Easy Operator Training: English and Spanish color touch-screen that is easy to learn.
- Reduced Cost: Our powder coat paint earned the highest rating on ASTM corrosion tests. Less corrosion equals longer pipe, skid, and manifold life, reducing cost.
- No-Hassle Buying: Get everything you need for your irrigation system construction or renovation from the only manufacturer dedicated to irrigation for over seven decades.
- Real-Time Communication: The pump station communications in real-time with the central, allowing the central to make immediate decisions to maximize the efficiency of the entire irrigations systems.

Electrical Power Specifications:

- 60 Hz, 3-Phase Power: 208V - 230V (up to 60HP per pump), 460V, 575V
- 50 Hz, 3-Phase Power: 380V, 415V
- Other power configurations available upon request

Options:

- Air Conditioned Electrical Panel Cooling System
- Enclosures: Aluminum, Painted Steel (Government Specified Colors)
- Fertigation Systems
- Filtration: Backwashing Screen Filters and Suction Scan Filters (Hydraulic or Electric)
- Heater, Skid Mounted 5KW
- Intake Box Screen with 3 Stainless Steel Screens
- Intermediate Pump, 10-25HP
- Lake Level Control: Float Switch and Ultrasonic
- Magnetic Flow Meter
- Modem, Radio or Hard-wired
- Power Zones: 3, 5, or 10KVA
- Premium Efficient Motors
- VFD per pump
- Wye Strainer with Auto Back-flush
- Z Discharge Pipe

Pump Manager with SmartPump™

Combine a Rain Bird Pump Station and central control software to fully integrate pump station operation with your central control. This combination allows the pump station and central control to respond to changes in the system and irrigation immediately, providing the highest level of efficiency.

Smart Pump™ matches the irrigation system operation with the real capacity of the pump station, shortening the water window by an average of 20 percent and decreasing energy consumption. In addition, Smart Pump alerts the superintendent in real time of irrigation and pump station problems via cell phone text messaging. When an issue occurs such as an irrigation pipe break, the system verifies the break, shuts down the system and notifies the superintendent. Other systems cannot respond in a timely manner and can lose an hour of irrigation time trying to recover from a system fault.

Need Help Specifying a Pump?

Email pumps@rainbird.com or call 520-806-5620 for assistance with quotes and specifications

PSR, PSRP and PSRPL Pump Start Relays

NEW

For Optimum Pump Performance and Protection

- Universal Rain Bird Pump start relays (PSR's) provide worry free performance for your irrigation system and are compatible with all Rain Bird and other reliable irrigation controllers
- Choose the PSRP for dry-run protection. An added pressure switch ensures additional protection in the event that you lose water pressure from the source
- The PSRPL is ideal for systems operating through a water harvesting system or some other source that requires level control. This control feature prevents the pump from running if the source is depleted

PSR Universal Pump Start Relay Features

- Works with a lawn controller's start/stop command to facilitate the electrical path from the breaker box to the pump motor
- Provide "pilot duty"operation for all types of electrically driven pump equipment with available coil voltages of 24, 110 and 220 VAC
- 40 AMP certified relay
- Quick connect terminals with wire nuts
- Grounding provision
- Compatible with 24 VAC timed lawn controllers
- Compatible with 110 or 220 VAC 3/4 hp thru 5 hp* single phase pumps
- Grey "baked-on" powder coating, for long life in difficult environments
- UL Listed as "Enclosed Industrial Control Panels" and backed by a limited two-year warranty
- Housed in compact NEMA 3R weather tight enclosures

PSRP Pump Start Relay Features

- Monitors an irrigation system through the use of a pressure sensor located on the discharge side of a pump to protect the pump from damage due to low pressure. If pressure has not recovered over the timer cycle, the pump shuts down to save itself before damage occurs.
- Automatic pressure sensor reset
- 40 AMP certified relay
- 4-wire color coded wiring for easy installation
- Grounding Provision
- Completely automatic pump protection
- Adjustable time delay
- Bridges the gap between 24 VAC lawn controllers and 110/220V pump motors
- One model works for all pumps from 3/4 hp to 5 hp*
- Low pressure sensor protects the pump if the inlet water flow is restricted, reduced, or completely blocked
- Housed in NEMA 3R weathertight enclosures with "baked-on" powder coating for long life in difficult environments

PSR, PSRP and PSRPL Pump Start Relays

PSRPL Rain Water Harvesting Pump Control Features

- Monitors the balance of available water in a rainwater harvesting system against the water level needed to assure proper pump performance.
- Using simple float controls, the Rain Bird PSRPL provides efficient pump control for rainwater harvesting by synchronizing source water with pump requirements. If rainwater is available, the Rain Bird PSRPL uses the stored water first, if no rainwater is available, the Rain Bird PSRPL utilizes a domestic or alternate source to provide water to the pump during a run cycle. Float control (lower) is used to verify water is available during pump run cycle.
- Float control (upper) is used to supplement harvested water supply through the use of a 24 VAC domestic solenoid valve. (Solenoid to be supplied by others.)
- Low pressure sensor protects the pump if the inlet water flow is restricted, reduced, or completely blocked.
- High temperature sensor protects the pump if the discharge is closed or blocked.
- All sensors and in-tank floats use safe 24 VAC power.
- Completely automatic and hands-free pump protection.
- Bridges the gap between 24 VAC lawn controllers and 110/220V pump motors.
- Serves as a pump start relay plus offers pump shut-down protection if source water is not available.
- One model works for all pumps from 3/4 HP to 5 HP
- Terminal block wiring for easy installation
- Low Pressure Sensor – fixed at 20 psi
- High Temperature Sensor – fixed at 105°
- Housed in NEMA 3R, weather tight enclosure
- Grey "baked-on" powder coating, for long life in difficult environments
- UL Listed as "Enclosed Industrial Control Panels" and backed by a limited two-year warranty.

** when thermal protection is present*

"G-Series" Hydraulic Suction Scanning Screen Filter

MADE IN THE U.S.A.

Economy and Value with Lower Backwash Volumes

Features

- Provides worry free medium-flow rate filtered water quality
- Powered by source line water pressure, the filter's backwashing system produces a concentrated high velocity and low volume reverse water flow to systematically clean the screen of any entrapped contaminants
- Models are available as a filter unit only, or as a filter assembly including bypass plumbing and valves for fast and easy installation on site
- Heavy-duty, durable, SS woven wire mesh screen filtration element with PVC support is supplied standard. Other screen construction including multi-layer sintered SS and wedgewire are also optionally available upon request.
- Standard SS woven screens are available in 50, 80, 100, 125, 150, 200 or 300 micron.
- Standard flow rates from 25 to 3,500 GPM
- Standard maximum operating pressure of 150 PSI (higher pressures optionally available)
- Filtered, clean water backwashing initiated automatically by time or pressure differential via integrated Rain Bird controller
- Flanged inlet and outlet standard except on models HS-V-01 and HS-G-02 filter only configurations which are threaded. Grooved inlet and outlet configuration optionally available.

G-Series
Shown with integrated bypass assembly for fast and easy installation.

"G-Series" Suction Scanning Screen Filter Performance Data

Powder Coated Carbon Steel Model Number	Stainless Steel Model Number	Maximum Flow US GPM	m^3/Hour	Max Pressure (psi)	Inlet / Outlet Flange Size (in)	Flush Line Size (in)	Minimum Inlet Pressure During Rinse Cycle (psi)
Filter Only							
HS-V-01-LE-M	HS-V-01-LE-S-M	25	5.7	150	2	2	30
HS-G-02-LE-M	HS-G-02-LE-S-M	100	22.7	150	2	2	30
HS-G-03-LE-M	HS-G-03-LE-S-M	200	45.4	150	3	2	30
HS-G-04-LS-M	HS-G-04-LS-S-M	300	68.1	150	4	2	30
HS-G-04-LE-M	HS-G-04-LE-S-M	400	90.9	150	4	3	30
HS-G-06-LS-M	HS-G-06-LS-S-M	650	147.6	150	6	3	30
HS-G-06-LE-M	HS-G-06-LE-S-M	850	193.1	150	6	3	30
HS-G-08-LS-M	HS-G-08-LS-S-M	1300	295.3	150	8	3	30
HS-G-10-LS-M	HS-G-10-LS-S-M	1750	397.5	150	10	3	30
Filter Assembly with Bypass Manifold							
HS-V-01-LE-B-M	HS-V-01-LE-S-B-M	25	5.7	150	2	2	30
HS-G-02-LE-B-M	HS-G-02-LE-S-B-M	100	22.7	150	2	2	30
HS-G-03-LE-B-M	HS-G-03-LE-S-B-M	200	45.4	150	3	2	30
HS-G-04-LS-B-M	HS-G-04-LS-S-B-M	300	68.1	150	4	2	30
HS-G-04-LE-B-M	HS-G-04-LE-S-B-M	400	90.9	150	4	3	30
HS-G-06-LS-B-M	HS-G-06-LS-S-B-M	650	147.6	150	6	3	30
HS-G-06-LE-B-M	HS-G-06-LE-S-B-M	850	193.1	150	6	3	30
HS-G-08-LS-B-M	HS-G-08-LS-S-B-M	1300	295.3	150	8	3	30
HS-G-10-LS-B-M	HS-G-10-LS-S-B-M	1750	397.5	150	10	3	30
DS-G-060-LE-B-M	DS-G-06-LE-S-B-M	1700	386.2	150	10	3	30
DS-G-080-LS-B-M	DS-G-08-LS-S-B-M	2600	590.6	150	10	3	30
DS-G-100-LS-B-M	DS-G-10-LS-S-B-M	3500	795.0	150	12	3	30

-M denotes Commercial model number. Contact Rain Bird for drawings or visit www.rainbird.com to download.

Filter flow is based on 200 micron or greater filtration of clear irrigation water. Appropriate flow de-ratinig is required for excessive debris loads (silt, organics, algae, etc.), reclaim water and finer screens. Contact Rain Bird for filter selection assistance for these applications.

"I-Series" Hydraulic Suction Scanning Screen Filter

MADE IN THE U.S.A.

The High Performance Standard in Scanning Filtration

Features

- Provides worry free high-flow rate filtered water quality
- Powered by source line water pressure, the filter's backwashing system produces a concentrated high velocity reverse water flow to systematically clean the mesh screen of any entrapped contaminants
- Models are available as a filter unit only, or as a filter assembly including bypass plumbing and valves for fast and easy installation on site
- Heavy-duty, durable, SS woven wire mesh screen filtration element with PVC support is supplied standard. Other screen construction including multi-layer sintered SS and wedgewire are also optionally available upon request
- Optional SS screen sizes available for 50, 80, 100, 150, 200 or 300 micron
- Standard flow rates from 400 to 5,000 GPM
- Standard maximum operating pressure of 150 PSI (higher pressures optionally available)
- Filtered, clean water backwashing initiated automatically by time or pressure differential via integrated Rain Bird controller
- Flanged inlet and outlet standard. Grooved inlet and outlet configuration optionally available

I-Series

"I-Series" Suction Scanning Screen Filter Performance Data

Powder Coated Carbon Steel Model Number	Stainless Steel Model Number	Maximum Flow US GPM	m^3/Hour	Max Pressure (psi)	Inlet / Outlet Flange Size (in)	Flush Line Size (in)	Minimum Inlet Pressure During Rinse Cycle (psi)
Filter Only							
HS-I-04-PE-M	HS-I-04-PE-S-M	400	90.9	150	4	4	30
HS-I-06-PE-M	HS-I-06-PE-S-M	650	147.6	150	6	4	30
HS-I-08-PS-M	HS-I-08-PS-S-M	1200	272.6	150	8	4	30
HS-I-08-PE-M	HS-I-08-PE-S-M	1500	340.7	150	8	4	30
HS-I-10-PS-M	HS-I-10-PS-S-M	1750	397.5	150	10	4	30
HS-I-10-PE-M	HS-I-10-PE-S-M	2000	454.3	150	10	4	30
HS-I-12-PS-M	HS-I-12-PS-S-M	2500	567.9	150	12	4	30
Filter Assembly with Bypass Manifold							
HS-I-04-PE-B-M	HS-I-04-PE-S-B-M	400	90.9	150	4	4	30
HS-I-06-PE-B-M	HS-I-06-PE-S-B-M	650	147.6	150	6	4	30
HS-I-08-PS-B-M	HS-I-08-PS-S-B-M	1200	272.6	150	8	4	30
HS-I-08-PE-B-M	HS-I-08-PE-S-B-M	1500	340.7	150	8	4	30
HS-I-10-PS-B-M	HS-I-10-PS-S-B-M	1750	397.5	150	10	4	30
HS-I-10-PE-B-M	HS-I-10-PE-S-B-M	2000	454.3	150	10	4	30
HS-I-12-PS-B-M	HS-I-12-PS-S-B-M	2500	567.9	150	12	4	30
DS-I-08-PE-B-M	DS-I-08-PE-S-B-M	3000	681.5	150	12	4	30
DS-I-10-PS-B-M	DS-I-10-PS-S-B-M	3500	795.0	150	12	4	30
DS-I-10-PE-B-M	DS-I-10-PE-S-B-M	4000	908.6	150	14	4	30
DS-I-12-PS-B-M	DS-I-12-PS-S-B-M	5000	1135.8	150	14	4	30

** Filter flow is based on 200 micron filtration of clear irrigation water. Appropriate flow de-rating is required for excessive debris loads (silt, organics, algae, etc.), reclaim water and finer screens. Contact Rain Bird for filter selection assistance for these applications. -M denotes Commercial model number Contact Rain Bird for drawings or visit www.rainbird.com to download.*

Automatic Backwashing Screen Filter

MADE IN THE U.S.A.

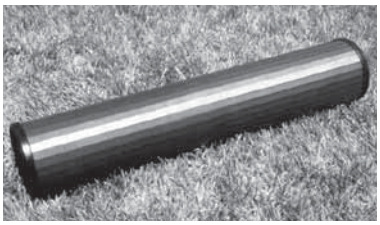
High Performance with Fewer Moving Parts

Features

- Available as filter only (no bypass plumbing) or as a complete assembly with bypass plumbing and valves for easy installation
- Heavy-duty, durable, wedge-wire screen filtration element
- Flow rates from 250 to 4,000 GPM
- Standard maximum operating pressure: 150 PSI (higher pressures optionally available)
- Optional screen sizes available for 40, 60, 80, 100 or 150 mesh
- Vertical configuration designed for limited space applications
- Large screen area provides long runs between backwash cycles
- Filtered, clean water backwashing automatically initiated by time or pressure differential
- Flanged inlet and outlet standard. Grooved inlet and outlet configuration optionally available
- Optional solar package and DC latching solenoid available. Solar package includes a solar panel, battery pack, metering system, wiring harness and enclosure box
- No moving parts inside the filter canister to wear out

Automatic Backwashing Screen Filter (shown as filter only)

Rain Bird's cast valves feature durable fusion epoxy lining, stainless steel trim and molded polyurethane seals



The stainless steel filter cartridge requires limited seasonal maintenance

Automatic Backwashing Screen Filter Performance Data

Model Number	Maximum Flow US GPM	m^3/Hour	Max Pressure (PSI)	Inlet / Outlet Flange Size (in)	Flush Line Size (in)
Filter Only					
BSF6-2-M	250	56.8	150	4	2
BSF8-2-M	500	113.6	150	6	2
BSF8-3-M	750	170.4	150	6	2
BSF10-2-M	1000	227.2	150	8	4
BSF10-3-M	1500	340.7	150	8	4
BSF10-4-M	2000	454.3	150	10	4
BSF10-5-M	2500	567.9	150	10	4
BSF10-6-M	3000	681.5	150	12	4
BSF10-7-M	3500	567.9	150	12	4
BSF10-8-M	4000	908.6	150	14	4
Filter Assembly with Bypass Manifold					
BSF6-2-B-M	250	56.8	150	4	2
BSF8-2-B-M	500	113.6	150	6	2
BSF8-3-B-M	750	170.4	150	6	2
BSF10-2-B-M	1000	227.2	150	8	4
BSF10-3-B-M	1500	340.7	150	8	4
BSF10-4-B-M	2000	454.3	150	10	4
BSF10-5-B-M	2500	567.9	150	10	4
BSF10-6-B-M	3000	681.5	150	12	4
BSF10-7-B-M	3500	567.9	150	12	4
BSF10-8-B-M	4000	908.6	150	14	4

Filter flow is based on 250 micron filtration of clear irrigation water. Appropriate flow de-rating is required for excessive debris loads (silt, organics, algae, etc.), reclaim water and finer screens. Contact Rain Bird for filter selection assistance for these applications.

-M denotes Commercial model number Contact Rain Bird for drawings or visit www.rainbird.com to download.

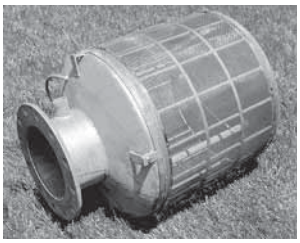
Self-Cleaning Pump Suction Screen

MADE IN THE U.S.A.

Keep Debris Out of Your Pump and Irrigation System

Features

- Galvanized, Self-Cleaning Pump Suction Screen removes large trash and debris from water sources, saving time and money in energy, pumping efficiency and maintenance costs
- Heavy 12 or 24 mesh stainless steel screen increases your pump efficiency for many years to come
- All water must pass through the pump suction screen attached to the end of the pump suction line before entering the pump intake pipe. A small, side-stream from the pump discharge plumbing drives two spray bars that continually rotate, jetting water at the screen and blasting debris away



Self-Cleaning Pump Suction Screen Performance Data

Model Number	Flow US GPM	Flow m^3/Hour	Screen Length (in)	Total Length (in)	Screen Diameter (in)	Flange Size (in)	Return Inlet Pipe Size (in)	Operating Pressure (min - max psi)	Weight Lbs.	Cleaning Spray (GPM)
12 Mesh Filter										
PSS200-M	325	73.8	11	25	16	4	1.5	35-100	38	20
PSS400-M	550	124.9	15	28.8	16	6	1.5	40-100	57	20
PSS600-M	750	170.3	16	32.5	24	8	1.5	40-100	101	20
PSS800-M	950	215.7	18	34.5	24	10	1.5	45-100	108	20
PSS1000-M	1350	306.5	23	39.5	24	10	1.5	50-100	116	24
PSS1400-M	1650	374.6	26	42.5	24	12	1.5	55-100	128	24
PSS1700-M	1950	442.7	28	44.5	26	12	1.5	55-100	148	24
PSS2000-M	2350	533.5	32	48.5	26	14	1.5	60-100	160	24
PSS2400-M	2600	590.2	35	52.5	30	16	1.5	65-100	223	28
PSS3000-M	3000	681.0	40	57.5	30	16	1.5	40-65	236	44
PSS3500-M	3500	794.5	40	59.5	36	18	1.5	40-65	283	44
PSS4000-M	4000	908.0	40	63.5	42	18	1.5	40-65	358	44
24 Mesh Filter										
PSS20024-M	225	51.1	11	25	16	4	1.5	35-100	38	20
PSS40024-M	400	90.8	15	28.8	16	6	1.5	40-100	57	20
PSS60024-M	525	119.2	16	32.5	24	8	1.5	40-100	101	20
PSS80024-M	700	158.9	18	34.5	24	10	1.5	45-100	108	20
PSS100024-M	950	215.7	23	39.5	24	10	1.5	50-100	116	24
PSS140024-M	1200	272.4	26	42.5	24	12	1.5	55-100	128	24
PSS170024-M	1400	317.8	28	44.5	26	12	1.5	55-100	148	24
PSS200024-M	1650	374.6	32	48.5	26	14	1.5	60-100	160	24
PSS240024-M	1800	408.6	35	52.5	30	16	1.5	65-100	223	28
PSS300024-M	2075	471.0	40	57.5	30	16	1.5	40-65	236	44
PSS350024-M	2420	549.3	40	59.5	36	18	1.5	40-65	283	44
PSS400024-M	2765	627.7	40	63.5	42	18	1.5	40-65	358	44

-M denotes Commercial model number *Contact Rain Bird for drawings or visit www.rainbird.com to download.*

Centrifugal Sand Separator

MADE IN THE U.S.A.

Remove contaminants to minimize required maintenance and increase efficiency

Features

- Capacities of 4 to 8300 gpm
- Simple installation (no electrical power required)
- Efficient pre-filter to reduce sand load on downstream components
- Rain Bird Centrifugal Sand Separators are designed to separate abrasive particles before they can enter the irrigation system, keeping equipment clean and clear of debris, which minimizes the amount of maintenance required and increases operational efficiency
- The separator removes sand and particles that are heavier than water (materials with a specific gravity of 2 or greater)
- Liquids and solids enter the unit and begin traveling in a circular flow. This centrifugal action throws heavier particulates towards the filter walls and eventually downward in a spiral motion to the separation chamber. The particulates collect in the separation chamber and are purged manually from the system. The filtered water is then drawn to the separator's vortex and through the outlet
- An optional automatic purge controller and valve can be used on all applications to automate the purge process, which eliminates the need for manual flushing. Small vertical design separators may be wall mounted or supported by the system piping

Centrifugal Sand Separator

Centrifugal Sand Separators Performance Data

Model Number	Flow* US GPM	Flow m^3/Hour	Inlet / Outlet Line Size (in)	Length (in)	Length (cm)	Weight Lbs.	Max. Particle Size (in)	Flush Valve Size (in)
Vertical Separators								
VCS-R5V-M	4 -10	0.9 - 2.3	0.5	20	50.8	13	0.625	1
VCS-R7V-M	10 - 20	2.3 - 4.6	0.75	20	50.8	15	0.375	1
VCS-R10V-M	18 - 38	4 - 8.7	1	30.5	77.5	26	0.5	1
VCS-R12V-M	26 - 52	6 - 12	1.25	30.5	77.5	26	0.5	1
VCS-R15V-M	38 - 79	8.7 - 18	1.5	30.5	77.5	26	0.5	1
VCS-R20V-M	63 - 120	14.5 - 27.6	2	36	91.4	44	0.5	2
VCS-R25V-M	100 - 180	23 - 41.4	2.5	44	111.8	55	0.5	2
VCS-R30V-M	125 - 260	28.8 - 59.8	3	48	121.9	75	0.5	2
VCS-R40V-M	190 - 345	43.7 - 79.4	4	52	132.1	120	0.5	2
Angled Separators								
ACS-R40LA-M	200 - 525	46 - 120	4	80	221	280	1.5	2
ACS-R60LA-M	365 - 960	84 - 220	6	106.25	293.4	493	1.5	2
ACS-R80LA-M	800 - 1600	184 - 369	8	114	316.9	722	1.5	2
ACS-R100LA-M	1300 - 2300	299 - 529	10	123.5	342.9	840	1.5	2
ACS-R120LA-M	2025 - 3400	465 - 782	12	139	396.2	1400	1.5	2
ACS-R140LA-M	2975 - 5000	684 - 1150	14	148	424.2	1550	2	2
ACS-R160LA-M	4000 - 6200	920 - 1426	16	160	462.3	1850	2	2
ACS-R180LA-M	5100 - 8300	1173 - 1909	18	177	462.3	2400	2	3

Filter flow is based on 200 micron or greater filtration of clear irrigation water. Appropriate flow de-ratinig is required for excessive debris loads (silt, organics, algae, etc.), reclaim water and finer screens. Contact Rain Bird for filter selection assistance for these applications.

The newest name in drainage is the one you already trust.

For decades, we've been finding new ways to use water more intelligently. We're proud to introduce a few more: Rain Bird drainage products. Ruggedly constructed and designed to work together, these drainage grates,basins, adapters and accessories can help you efficiently manage water run-off for virtually any residential, commercial or municipal site. Put them in the ground. You'll see why they're the first drainage products worthy of the Rain Bird name.

Water Saving Tips

- Installing a well-designed drainage system will result in the collection and capture of rain, runoff water and standing water from the site.
- The collected water can then be directed to an on-site storage tank, treated (if required) and pumped on an "as needed" basis to feed a Rain Bird water efficient irrigation system.
- Drainage systems can reduce damage to structures by directing water away from the foundation of the structure to a more desirable area on the site.
- A Rain Bird Drainage Pop-Up Valve (DPUV) can be installed at the lowest point of the piping network to allow for the collected water to slowly percolate into the soil and recharge the ground water supply.
- A properly installed drainage system can eliminate issues on the site caused by rushing or standing water which can result in soil erosion, plant disease and structural damage.
- Remember, water always runs downhill. Make sure that there is at least a 2% elevation difference between the high-end and the low-end of the drainage system.

New Product Category. Same Toughness.

No shortcuts here. Our grates, basins and drainage accessories were engineered with the same exacting standards of a Rain Bird spray head, valve or controller.

Proven Reliability

We have a reputation to protect. Rain Bird drainage products are built using the highest quality materials and rigorously tested for durability.

Three-Year Warranty

You need products that will last long after the job's done. That's why we stand behind our drainage products with the longest warranty in the drainage product category.

Color, Size and Style are Optional. Loose Fits are Not.

No matter the job, you'll have the equipment you need to do it right. We offer grates and basins of varying dimensions, shapes and colors—all designed to fit together for tight, worry-free connections.

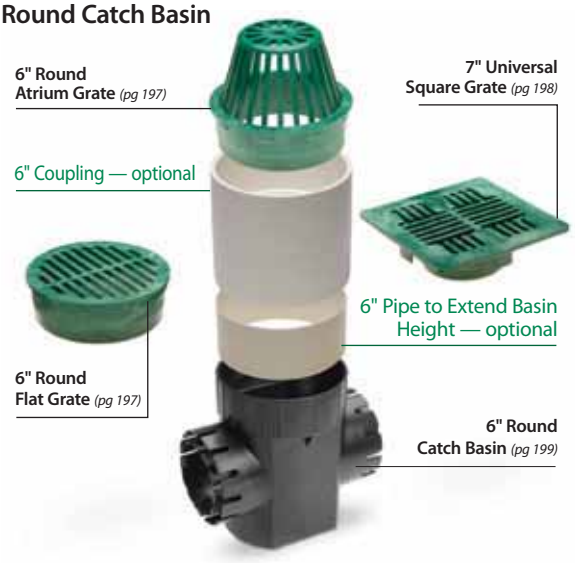
Four Colors

Out of sight, out of mind. Available in green, black, sand and gray, our grates easily blend into any landscape, escaping notice and protecting overall aesthetics.

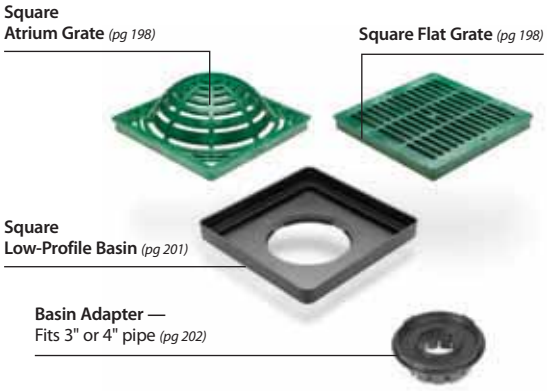
Full Compatibility

Any way you put them together, our grates and basins will give you the best fit. For easy upgrades and quick replacements, our products are also compatible with components from most other drainage manufacturers.

Round Catch Basin



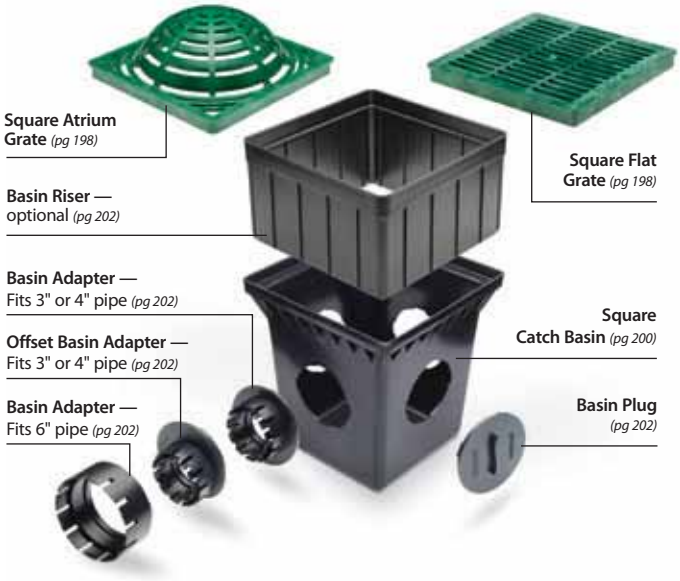
Low-Profile Basin



Compatible Drainage Pipe

(not manufactured by Rain Bird)

Square Catch Basin



Plastic Round Grates

Features

- Manufactured from structurally foamed High-Density Polyethylene (HDPE)
- UV stabilized to protect from sun degradation
- Flat and atrium (domed) profiles
- Flat grates available in green, black, sand and gray
- Atrium grates available in green, black and sand
- Each grate has three stepped diameters to fit Sewer and Drain (S & D) Pipe and Fittings, Triple Wall Pipe and Corrugated Pipe
- Textured anti-skid surface [1]
- Load rated for pedestrian traffic [1, 2]
- Load rated for autos and light trucks at speeds less than 20 mph [1, 2]
- ADA compliant [1]
- Made in the USA

Flat

3"
DG3RFG

4"
DG4RFG

6"
DG6RFG

Atrium

3"
DG3RAG

4"
DG4RAG

6"
DG6RAG

Model Number	Color	Each Diameter Fits			Open Slot Width	Open Surface Area	Maximum Flow Rating	Maximum Load
		Small	Medium	Large				
3" Round Flat								
DG3RFG	Green	3" Triple Wall Pipe	3" S & D Pipe (ASTM D2729) 3" Corrugated Pipe	3" S & D Fittings (SDR 35)	3/16"	3 sq in	3 GPM	500 lbs
DG3RFB	Black							
DG3RFS	Sand							
DG3RFC	Gray							
4" Round Flat								
DG4RFG	Green	4" Triple Wall Pipe	4" S & D Pipe (ASTM D2729) 4" Corrugated Pipe	4" S & D Fittings (SDR 35)	1/4"	5 sq in	6 GPM	750 lbs
DG4RFB	Black							
DG4RFS	Sand							
DG4RFC	Gray							
6" Round Flat								
DG6RFG	Green	6" Sewer Pipe (ASTM D3034, SDR 35)	6" S & D Pipe (ASTM D2729) 6" Corrugated Pipe	6" S & D Fittings (SDR 35) 6" Round Catch Basins (DB6R1 & DB6R2)	5/16"	13 sq in	16 GPM	1,000 lbs
DG6RFB	Black							
DG6RFS	Sand							
DG6RFC	Gray							
3" Round Atrium								
DG3RAG	Green	3" Triple Wall Pipe	3" S & D Pipe (ASTM D2729) 3" Corrugated Pipe	3" S & D Fittings (SDR 35)	1/4"	9 sq in	12 GPM	NA
DG3RAB	Black							
DG3RAS	Sand							
4" Round Atrium								
DG4RAG	Green	4" Triple Wall Pipe	4" S & D Pipe (ASTM D2729) 4" Corrugated Pipe	4" S & D Fittings (SDR 35)	5/16"	16 sq in	20 GPM	NA
DG4RAB	Black							
DG4RAS	Sand							
6" Round Atrium								
DG6RAG	Green	6" Sewer Pipe (ASTM D3034, SDR 35)	6" S & D Pipe (ASTM D2729) 6" Corrugated Pipe	6" S & D Fittings (SDR 35) 6" Round Catch Basins (DB6R1 & DB6R2)	3/8"	28 sq in	36 GPM	NA
DG6RAB	Black							
DG6RAS	Sand							

[1] *Flat grate only*

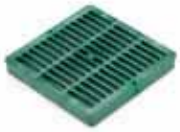
[2] *Maximum load rating based on basin encased in concrete and weight uniformly applied across entire grate surface*

Plastic Square Grates

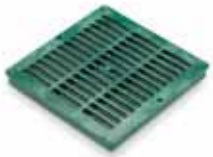
Features

- Manufactured from structurally foamed High-Density Polyethylene (HDPE)
- UV stabilized to protect from sun degradation
- Flat and atrium (domed) profiles
- Flat grates available in green, black, sand and gray
- Atrium grates available in green and black
- Fits 9", 12" and 18" Square Catch Basins
- Fits 9" and 12" Square Low-Profile Basins
- Textured anti-skid surface [1]
- Load rated for autos and light trucks at speeds less than 20 mph [1, 2]
- Includes two screw holes to secure to basin [3]
- ADA compliant [1]
- Made in the USA

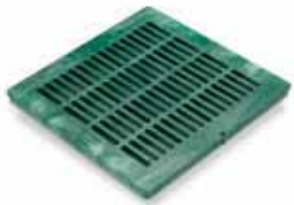
Flat



9"
DG9SFG



12"
DG12SFG



18"
DG18SFG

Atrium

9"
DG9SAG

12"
DG12SAG

Model Number	Color	Fits	Open Slot Width	Open Surface Area	Maximum Flow Rating	Maximum Load
9" Square Flat						
DG9SFG	Green	9" Square Catch Basin (DB9S2) 9" Low-Profile Basin (DB9SLP)	3/8"	38 sq in	50 GPM	2,000 lbs
DG9SFB	Black					
DG9SFS	Sand					
DG9SFC	Gray					
12" Square Flat						
DG12SFG	Green	12" Square Catch Basins (DB12S2 & DB12S4) 12" Low-Profile Basin (DB12SLP)	7/16"	53 sq in	70 GPM	3,000 lbs
DG12SFB	Black					
DG12SFS	Sand					
DG12SFC	Gray					
18" Square Flat						
DG18SFG	Green	18" Square Catch Basins (DB18S2 & DB18S4)	15/32"	92 sq in	120 GPM	4,000 lbs
DG18SFB	Black					
DG18SFS	Sand					
DG18SFC	Gray					
9" Square Atrium						
DG9SAG	Green	9" Square Catch Basin (DB9S2) 9" Low-Profile Basin (DB9SLP)	3/8"	31 sq in	40 GPM	NA
DG9SAB	Black					
12" Square Atrium						
DG12SAG	Green	12" Square Catch Basins (DB12S2 & DB12S4) 12" Low-Profile Basin (DB12SLP)	7/16"	50 sq in	65 GPM	NA
DG12SAB	Black					

[1] Flat grate only
[2] Maximum load rating based on basin encased in concrete and weight uniformly applied across entire grate surface
[3] Use #6 1.5" long Phillips flat head stainless screws

Universal Square Grates

Features

- Manufactured from structurally foamed High-Density Polyethylene (HDPE)
- UV stabilized to protect from sun degradation
- Available in green, black, sand and gray
- Textured anti-skid surface
- Load rated for pedestrian traffic[1]
- ADA compliant
- Made in the USA

DG7USG

Model Number	Color	Fits	Open Slot Width	Open Surface Area	Maximum Flow Rating	Maximum Load
7" Universal Square Flat						
DG7USG	Green	• 6" Round Catch Basin (DB6R1, DB6R2) • 3" or 4" S & D Pipe (ASTM D2729) • 3" or 4" Corrugated Pipe • 3" or 4" Triple Wall Pipe • 3", 4" or 6" S & D Fittings (SDR 35)	¼"	13 sq in	11 GPM	250 lbs
DG7USB	Black					
DG7USS	Sand					
DG7USC	Gray					

[1]Maximum load rating based on basin encased in concrete and weight uniformly applied across entire grate surface

Round Catch Basins

Features

- Manufactured from High-Impact Polystyrene (HIPS)
- UV stabilized to protect from sun degradation
- Available in both one and two outlet models
- Accepts 6" Flat Grates, 6" Atrium Grates and 7" Universal Grates
- Universal outlet(s) used to connect to 3" or 4" Sewer and Drain Pipe (ASTM D2729), 3" or 4" Corrugated Pipe and 3" or 4" Triple Wall Pipe
- Includes a sump to allow sediment to settle in basin to minimize clogging of pipes
- To extend height of basin, use 6" PVC Pipe (ASTM D2729 and ASTM D3034, SDR 35) as a riser
- Made in the USA

DB6R1

DB6R2

Model Number	Number of Outlets	Inlet (Top) Accepts	Outlet (Side) Fits	Capacity	Sump Capacity
6" Round, 1 Outlet					
DB6R1	1	• 6" Round Flat and Atrium Grates • 7" Universal Square Grates • 6" PVC Pipe (ASTM D2729, ASTM D3034, SDR 35)	• 3" or 4" Corrugated Pipe • 3" or 4" Triple Wall Pipe • S & D Pipe (ASTM D2729)	0.80 gals	0.20 gals
6" Round, 2 Outlets					
DB6R2	2	• 6" Round Flat and Atrium Grates • 7" Universal Square Grates • 6" PVC Pipe (ASTM D2729, ASTM D3034, SDR 35)	• 3" or 4" Corrugated Pipe • 3" or 4" Triple Wall Pipe • S & D Pipe (ASTM D2729)	0.80 gals	0.20 gals

Square Catch Basins

Features

- Manufactured from High-Density Polyethylene (HDPE)
- UV stabilized to protect from sun degradation
- 12" and 18" basins have two or four outlets plus an optional perforated outlet at the bottom of the basin
- Use a 3" and 4" Basin Adapter to connect basin to 3" or 4" Corrugated Pipe and 3" or 4" Triple Wall Pipe
- Use a 6" Basin Adapter to connect basin to 6" PVC Pipe (ASTM D2729 and ASTM D3034, SDR 35) and 6" Corrugated Pipe
- Use a Basin Plug to plug unused outlets
- Use 9" or 12" Square Basin Riser(s) to extend height of 9" and 12" Square Catch Basins by 6" in height, respectively
- Accepts 9", 12" or 18" Square Flat and Square Atrium Grates
- Includes a sump to allow sediment to settle in basin to minimize clogging of pipes
- Includes four screw holes to enable grates to be secured to basin
- Made in the USA

Model Number	Number of Outlets	Inlet (Top) Accepts	Outlet (Side) Fits	Capacity	Sump Capacity
9" Square, 2 Outlets					
DB9S2	2	• 9" Square Flat Grates • 9" Square Atrium Grates • 9" Square Basin Riser (DBRE9)	• Basin Plug (DBAAP) • 3" & 4" Basin Adapter (DBAA34 or DBAAO34) • 6" Basin Adapter (DBAA6)	2.20 gals	0.45 gals
12" Square, 2 Outlets					
DB12S2	2	• 12" Square Flat Grates • 12" Square Atrium Grates • 12" Square Basin Riser (DBRE12)	• Basin Plug (DBAAP) • 3" & 4" Basin Adapter (DBAA34 or DBAAO34) • 6" Basin Adapter (DBAA6)	5.10 gals	1.25 gals
12" Square, 4 Outlets					
DB12S4	4	• 12" Square Flat Grates • 12" Square Atrium Grates • 12" Square Basin Riser (DBRE12)	• Basin Plug (DBAAP) • 3" & 4" Basin Adapter (DBAA34 or DBAAO34) • 6" Basin Adapter (DBAA6)	5.10 gals	1.25 gals
18" Square, 2 Outlets					
DB18S2	2	• 18" Square Flat Grates	• Basin Plug (DBAAP) • 3" & 4" Basin Adapter (DBAA34 or DBAAO34) • 6" Basin Adapter (DBAA6)	16.70 gals	4.90 gals
18" Square, 4 Outlets					
DB18S4	4	• 18" Square Flat Grates	• Basin Plug (DBAAP) • 3" & 4" Basin Adapter (DBAA34 or DBAAO34) • 6" Basin Adapter (DBAA6)	16.70 gals	4.90 gals

Square Low-Profile Basins

Features

- Manufactured from High-Impact Polystyrene (HIPS)
- UV stabilized to protect from sun degradation
- One bottom outlet designed to accept all Basin Adapters
- Use a 3" and 4" Basin Adapter to connect to 3" or 4" Corrugated Pipe and 3" or 4" Triple Wall Pipe
- Use a 6" Basin Adapter to connect to 6" PVC Pipe (ASTM D2729 and ASTM D3034, SDR 35) and 6" Corrugated Pipe
- Accepts 9" and 12" Square Flat Grates
- Accepts 9" and 12" Square Atrium Grates
- Includes two screw holes to enable grates to be secured to Low-Profile Basin
- Made in the USA

DB9SLP

DB12SLP

Model Number	Inlet (Top) Accepts	Outlet (Side) Fits
9" Square		
DB9SLP	• 9" Square Flat Grates • 9" Square Atrium Grates • 9" Square Basin Riser (DBRE9)	• 3" & 4" Basin Adapter (DBAA34 or DBAAO34) • 6" Basin Adapter (DBAA6)
12" Square		
DB12SLP	• 12" Square Flat Grates • 12" Square Atrium Grates • 12" Square Basin Riser (DBRE12)	• 3" & 4" Basin Adapter (DBAA34 or DBAAO34) • 6" Basin Adapter (DBAA6)

Square Basin Kits

For your convenience, Basin Kits are available with the most popular basin, grate and adapter components required on most jobs.

Model Number	Each Kit Includes	
9" Square Basin Kit		
DB9KITG	• 9" Square Basin with two outlets (DB9S2) • Two 3" and 4" Adapters (DBAA34)	• Basin Plug (DBAAP) • 9" Square Flat Grate, GREEN (DG9SFG)
DB9KITB	• 9" Square Basin with two outlets (DB9S2) • Two 3" and 4" Adapters (DBAA34)	• Basin Plug (DBAAP) • 9" Square Flat Grate, BLACK (DG9SFB)
12" Square Basin Kit *(not shown)*		
DB12KITG	• 12" Square Basin with two outlets (DB12S2) • Two 3" and 4" Adapters (DBAA34)	• Basin Plug (DBAAP) • 12" Square Flat Grate, GREEN (DG12SFG)
DB12KITB	• 12" Square Basin with two outlets (DB12S2) • Two 3" and 4" Adapters (DBAA34)	• Basin Plug (DBAAP) • 12" Square Flat Grate, BLACK (DG12SFB)

DB9KITG

Drainage Pop-Up Valves

Features

- Available in four configurations
- Pop-up valve body manufactured from structurally foamed High-Density Polyethylene (HDPE)
- Elbow (where applicable) manufactured from PVC
- Adapter (where applicable) manufactured from High Impact Polystyrene (HIPS)
- UV stabilized to protect from sun degradation
- Spring-loaded cover rises ½" to discharge excess water in system
- Spring automatically retracts cover to closed position after excess water is discharged
- Can be used in both vertical and horizontal position
- Stainless steel spring to prevent rusting
- PVC elbows (where applicable) include a ¼" drain hole to eliminate standing water
- Made in the USA

Model Number	Color	Description	Connects To
DPUV0	Green	Drainage Pop-Up Valve	• 3" or 4" S & D Fittings (SDR 35)
DPUV3E	Green	Drainage Pop-Up Valve with 3" PVC Elbow	• 3" S & D Pipe (ASTM D2729) • 3" Triple Wall Pipe
DPUV4E	Green	Drainage Pop-Up Valve with 4" PVC Elbow	• 4" S & D Pipe (ASTM D2729 & D3034) • 4" Triple Wall Pipe
DPUV4EHUB	Green	Drainage Pop-Up Valve with 4" PVC Elbow and Adapter (DPAFHA34)	• 3" or 4" Corrugated Pipe • 3" or 4" Triple Wall Pipe • 3" or 4" S & D Pipe (ASTM D2729)

Basin Adapters and Accessories

Model Number	Description	Use
DBAAP	Basin Plug	• Blocks 9", 12" & 18" Square Basin side outlets
DBAA34	3" and 4" Basin Adapter	• Adapts 9", 12" and 18" Square Basin side outlets and 9" & 12" Low-Profile Basin outlets to 3" or 4" PVC and Corrugated Pipe
DBAAO34	3" and 4" Offset Basin Adapter	• Adapts 9", 12" & 18" Square Basin side outlets and 9" & 12" Low-Profile Basin outlets to 3" or 4" PVC and Corrugated Pipe
DBAA6	6" Basin Adapter	• Adapts 9", 12" & 18" Square Basin side outlets and 9" & 12" Low-Profile Basin outlets to 6" PVC and Corrugated Pipe
DPAFH34	Fitting Adapter	• Adapts 3" or 4" Triple Wall Pipe to 3" or 4" PVC and Corrugated Pipe
DBRE9	9" Square Basin Riser	• Extends height of 9" Square Basin or 9" Low-Profile Basin by 6"
DBRE12	12" Square Basin Riser	• Extends height of 12" Square Basin or 12" Low-Profile Basin by 6"

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The Rain Bird website is your one-stop source for the latest product information and news updates from Rain Bird. Stop by anytime, day or night, and download exactly what you need to be more effective on the job. Learn about the newest Rain Bird products, look up performance charts, download CAD detail drawings and much more.

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Rain Bird Training Services

- Rain Bird Training Services has the classes you need.
- All instructors are credentialed and experienced irrigation professionals.
- All classes are pre-approved for Irrigation Association (IA) CEUs.
- Flexible training options: regional classes, customized classes and private classes.

Two Programs to Meet Your Needs

Rain Bird Academy

General Irrigation Skills Training

- Receive top quality training using products from many manufacturers
- Prepare for Irrigation Association (IA) certification exams
- Learn to design, install and maintain irrigation systems at our 4.5-day Boot Camp

Why the Rain Bird Academy Boot Camp?

- The Boot Camp focuses on helping you gain an additional revenue-generating advantage
- Participants will receive an extensive and comprehensive technical training experience centering on irrigation installation, troubleshooting, scheduling and design
- The Rain Bird Academy Boot Camp will assist irrigators in preparation for the IA's Certified Irrigation Technician (CIT) Exam

Rain Bird Factory Trained Program

Comprehensive training on Rain Bird products

- Become Factory Trained and differentiate yourself from the competition
- Learn to efficiently install, operate and maintain Rain Bird products and systems
- Be one of the first in your area to be Rain Bird Factory Trained

Why Rain Bird Factory Trained?

- The Rain Bird Factory Trained Program is exclusive to Rain Bird products, and the installation, operation and maintenance best practices for Rain Bird systems.
- You will be eligible to receive a Rain Bird Factory Trained designation, which you can promote as recognition of receiving the highest level of in-depth training on Rain Bird products and systems.

For pricing and course registration, please visit: www.rainbirdservices.com/training

How to Use This Catalog

Precipitation Rates

Rain Bird has calculated for you the precipitation rates for our comprehensive lines of impacts, sprays, and rotors. These rates are an indication of the approximate rate at which water is being applied. The equations used to calculate the precipitation rates are as follows:

■

Square Spacing

U.S.: $PR = \frac{96.3 \times gpm}{S \times S}$

Metric: $PR = \frac{1000 \times m^3/h}{S \times S}$

▲

Triangular Spacing

U.S.: $PR = \frac{96.3 \times gpm}{S \times L}$

Metric: $PR = \frac{1000 \times m^3/h}{S \times L}$

96.3 = Constant (inches/square foot/hour)
1000 = Constant (millimeter/square meter/hour)
gpm = Gallons per minute (applied to area by sprinklers)
m^3/h = Cubic meters per hour (applied to area by sprinklers)
S = Spacing between sprinklers
L = Spacing between rows (S x 0.866)

Specification Information

The information in this catalog was accurate at the time of printing and may be used for proper specification of each product. For the most up-to-date information, go to the Rain Bird web site at www.rainbird.com.

ASABE Test Certification Statement

Rain Bird Corporation certifies that pressure, flow rate, and radius data for its products were determined and listed in accordance with ASABE Standard S398.1, Procedure for Sprinkler Testing and Performance Reporting, and are representative of performance of production sprinklers at the time of publication. Actual product performance may differ from the published specifications due to normal manufacturing variations and sample selection. All other specifications are solely the recommendations of Rain Bird Corporation.

Reference Charts

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Rain Bird Technical Support has the answers to your specific product and water-management questions. Call our toll-free Technical Service or Spec Hotline numbers, or for maximum convenience, access the Rain Bird web site. You'll get expert advice and the right solutions.

Technical Service	Spec Hotline	Internet Address
1-800-RAINBIRD (1-800-724-6247)	1-800-458-3005	www.rainbird.com

Pressure Loss Through Water Meters

Pressure Loss: psi
Nominal Size

Flow gpm	5/8"	3/4"	1"	1 1/2"	2"	3"	4"
1	0.2	0.1					
2	0.3	0.2					
3	0.4	0.3					
4	0.6	0.5	0.1				
5	0.9	0.6	0.2				
6	1.3	0.7	0.3				
7	1.8	0.8	0.4				
8	2.3	1.0	0.5				
9	3.0	1.3	0.6				
10	3.7	1.6	0.7				
11	4.4	1.9	0.8				
12	5.1	2.2	0.9				
13	6.1	2.6	1.0				
14	7.2	3.1	1.1				
15	8.3	3.6	1.2				
16	9.4	4.1	1.4	0.4			
17	10.7	4.6	1.6	0.5			
18	12.0	5.2	1.8	0.6			
19	13.4	5.8	2.0	0.7			
20	15.0	6.5	2.2	0.8			
22		7.9	2.8	1.0			
24		9.5	3.4	1.2			
26		11.2	4.0	1.4			
28		13.0	4.6	1.6			
30		15.0	5.3	1.8			
32			6.0	2.1	0.8		
34			6.9	2.4	0.9		
36			7.8	2.7	1.0		
38			8.7	3.0	1.2		
40			9.6	3.3	1.3		
42			10.6	3.6	1.4		
44			11.7	3.9	1.5		
46			12.8	4.2	1.6		
48			13.9	4.5	1.7		
50			15.0	4.9	1.9	0.7	
52				5.3	2.1		
54				5.7	2.2		
56				6.2	2.3		
58				6.7	2.5		
60				7.2	2.7		
65				8.3	3.2	1.1	
70				9.8	3.7	1.3	
75				11.2	4.3	1.5	
80				12.8	4.9	1.6	0.7
90				16.1	6.2	2.0	0.8
100				20.0	7.8	2.5	0.9
110					9.5	2.9	1.0
120					11.3	3.4	1.2
130					13.0	3.9	1.4
140					15.1	4.5	1.6
150					17.3	5.1	1.8
160					20.0	5.8	2.1
170						6.5	2.4
180						7.2	2.7
190						8.0	3.0
200						9.0	3.2
220						11.0	3.9
240						13.0	4.7
260						15.0	5.5
280						17.3	6.3
300						20.0	7.2
350							10.0
400							13.0
450							16.2
500							20.0

PVC Class 160 IPS Plastic Pipe

(1120, 1220) SDR 26 C=150

psi Loss per 100 Feet of Pipe (psi/100 ft.)

Sizes 1" through 6" Flow 1 through 600 gpm

Size	1"		1 1/4"		1 1/2"		2"		2 1/2"		3"		4"		6"	
O.D.	1.315		1.660		1.900		2.375		2.875		3.500		4.500		6.625	
I.D.	1.195		1.532		1.754		2.193		2.655		3.230		4.154		6.115	
Wall Thk	0.06		0.064		0.073		0.091		0.110		0.135		0.173		0.255	
Flow gpm	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss
1	0.29	0.02	0.17	0.01	0.13	0.00	0.08	0.00	0.06	0.00	0.04	0.00	0.02	0.00	0.01	0.00
2	0.57	0.06	0.35	0.02	0.27	0.01	0.17	0.00	0.12	0.00	0.08	0.00	0.05	0.00	0.02	0.00
3	0.86	0.14	0.52	0.04	0.40	0.02	0.25	0.01	0.17	0.00	0.12	0.00	0.07	0.00	0.03	0.00
4	1.14	0.23	0.70	0.07	0.53	0.04	0.34	0.01	0.23	0.00	0.16	0.00	0.09	0.00	0.04	0.00
5	1.43	0.35	0.87	0.11	0.66	0.05	0.42	0.02	0.29	0.01	0.20	0.00	0.12	0.00	0.05	0.00
6	1.72	0.49	1.04	0.15	0.80	0.08	0.51	0.03	0.35	0.01	0.23	0.00	0.14	0.00	0.07	0.00
7	2.00	0.66	1.22	0.20	0.93	0.10	0.59	0.03	0.41	0.01	0.27	0.01	0.17	0.00	0.08	0.00
8	2.29	0.84	1.39	0.25	1.06	0.13	0.68	0.04	0.46	0.02	0.31	0.01	0.19	0.00	0.09	0.00
9	2.57	1.05	1.57	0.31	1.20	0.16	0.76	0.05	0.52	0.02	0.35	0.01	0.21	0.00	0.10	0.00
10	2.86	1.27	1.74	0.38	1.33	0.20	0.85	0.07	0.58	0.03	0.39	0.01	0.24	0.00	0.11	0.00
11	3.15	1.52	1.91	0.45	1.46	0.23	0.93	0.08	0.64	0.03	0.43	0.01	0.26	0.00	0.12	0.00
12	3.43	1.78	2.09	0.53	1.59	0.28	1.02	0.09	0.70	0.04	0.47	0.01	0.28	0.00	0.13	0.00
14	4.00	2.37	2.44	0.71	1.86	0.37	1.19	0.12	0.81	0.05	0.55	0.02	0.33	0.01	0.15	0.00
16	4.58	3.04	2.78	0.91	2.12	0.47	1.36	0.16	0.93	0.06	0.63	0.02	0.38	0.01	0.17	0.00
18	5.15	3.78	3.13	1.13	2.39	0.58	1.53	0.20	1.04	0.08	0.70	0.03	0.43	0.01	0.20	0.00
20	5.72	4.59	3.48	1.37	2.66	0.71	1.70	0.24	1.16	0.09	0.78	0.04	0.47	0.01	0.22	0.00
22	6.29	5.48	3.83	1.64	2.92	0.85	1.87	0.29	1.27	0.11	0.86	0.04	0.52	0.01	0.24	0.00
24	6.87	6.44	4.18	1.92	3.19	1.00	2.04	0.34	1.39	0.13	0.94	0.05	0.57	0.01	0.26	0.00
26	7.44	7.47	4.53	2.23	3.45	1.15	2.21	0.39	1.51	0.15	1.02	0.06	0.62	0.02	0.28	0.00
28	8.01	8.57	4.87	2.56	3.72	1.32	2.38	0.45	1.62	0.18	1.10	0.07	0.66	0.02	0.31	0.00
30	8.58	9.73	5.22	2.91	3.98	1.50	2.55	0.51	1.74	0.20	1.17	0.08	0.71	0.02	0.33	0.00
35	10.01	12.95	6.09	3.87	4.65	2.00	2.97	0.68	2.03	0.27	1.37	0.10	0.83	0.03	0.38	0.00
40	11.44	16.58	6.96	4.95	5.31	2.56	3.40	0.86	2.32	0.34	1.57	0.13	0.95	0.04	0.44	0.01
45	12.87	20.62	7.83	6.16	5.98	3.19	3.82	1.08	2.61	0.42	1.76	0.16	1.07	0.05	0.49	0.01
50	14.30	25.07	8.70	7.48	6.64	3.87	4.25	1.31	2.90	0.52	1.96	0.20	1.18	0.06	0.55	0.01
55	15.73	29.91	9.57	8.93	7.30	4.62	4.67	1.56	3.19	0.62	2.15	0.24	1.30	0.07	0.60	0.01
60	17.16	35.14	10.44	10.49	7.97	5.43	5.10	1.83	3.48	0.72	2.35	0.28	1.42	0.08	0.66	0.01
65	18.59	40.75	11.31	12.17	8.63	6.30	5.52	2.12	3.77	0.84	2.55	0.32	1.54	0.09	0.71	0.01
70	20.02	46.75	12.18	13.96	9.29	7.23	5.95	2.44	4.06	0.96	2.74	0.37	1.66	0.11	0.76	0.02
75			13.05	15.86	9.96	8.21	6.37	2.77	4.35	1.09	2.94	0.42	1.78	0.12	0.82	0.02
80			13.92	17.87	10.62	9.25	6.80	3.12	4.64	1.23	3.13	0.47	1.89	0.14	0.87	0.02
85			14.79	20.00	11.29	10.35	7.22	3.49	4.93	1.38	3.33	0.53	2.01	0.16	0.93	0.02
90			15.66	22.23	11.95	11.51	7.64	3.88	5.22	1.53	3.52	0.59	2.13	0.17	0.98	0.03
95			16.53	24.57	12.61	12.72	8.07	4.29	5.51	1.69	3.72	0.65	2.25	0.19	1.04	0.03
100			17.41	27.02	13.28	13.99	8.49	4.72	5.80	1.86	3.92	0.72	2.37	0.21	1.09	0.03
110			19.15	32.24	14.61	16.69	9.34	5.63	6.37	2.22	4.31	0.86	2.60	0.25	1.20	0.04
120					15.93	19.61	10.19	6.61	6.95	2.61	4.70	1.01	2.84	0.30	1.31	0.05
130					17.26	22.74	11.04	7.67	7.53	3.03	5.09	1.17	3.08	0.34	1.42	0.05
140					18.59	26.08	11.89	8.80	8.11	3.47	5.48	1.34	3.31	0.39	1.53	0.06
150					19.92	29.64	12.74	10.00	8.69	3.94	5.87	1.52	3.55	0.45	1.64	0.07
160							13.59	11.27	9.27	4.44	6.26	1.71	3.79	0.50	1.75	0.08
170							14.44	12.60	9.85	4.97	6.66	1.92	4.02	0.56	1.86	0.09
180							15.29	14.01	10.43	5.53	7.05	2.13	4.26	0.63	1.97	0.10
190							16.14	15.49	11.01	6.11	7.44	2.35	4.50	0.69	2.08	0.11
200							16.99	17.03	11.59	6.72	7.83	2.59	4.73	0.76	2.18	0.12
225							19.11	21.18	13.04	8.36	8.81	3.22	5.33	0.95	2.46	0.14
250									14.49	10.16	9.79	3.91	5.92	1.15	2.73	0.18
275									15.94	12.12	10.77	4.67	6.51	1.37	3.00	0.21
300									17.39	14.24	11.75	5.48	7.10	1.61	3.28	0.25
325									18.83	16.51	12.73	6.36	7.69	1.87	3.55	0.29
350											13.70	7.30	8.29	2.15	3.82	0.33
375											14.68	8.29	8.88	2.44	4.10	0.37
400											15.66	9.34	9.47	2.75	4.37	0.42
425											16.64	10.45	10.06	3.07	4.64	0.47
450											17.62	11.62	10.65	3.42	4.92	0.52
475											18.60	12.85	11.24	3.78	5.19	0.58
500											19.58	14.13	11.84	4.15	5.46	0.63
550													13.02	4.96	6.01	0.76
600													14.20	5.82	6.55	0.89

Note: Dark shaded area of chart indicates velocities over 5' per second. Use with caution

The velocity values were derived using the following equation $V = \frac{0.4085 \times Q_{gpm}}{d^2}$

Table are based upon the following Hazen-Williams equation: $H_f = 0.2083 \times \left(\frac{100}{C}\right)^{1.852} \times \frac{Q^{1.852}}{D^{4.8655}}$ for change in psi per foot of elevation. Pressure loss for uphill elevation and pressure gain for downhill elevation changes.

PVC Class 200 IPS Plastic Pipe

(1120, 1220) SDR 21 C=150

psi Loss per 100 Feet of Pipe (psi/100 ft.)

Sizes 3/4" through 6" Flow 1 through 600 gpm

Size	3/4"		1"		1 1/4"		1 1/2"		2"		2 1/2"		3"		4"		6"	
O.D.	1.050		1.315		1.660		1.900		2.375		2.875		3.500		4.500		6.625	
I.D.	0.930		1.189		1.502		1.720		2.149		2.601		3.166		4.072		5.993	
Wall Thk	0.060		0.063		0.079		0.090		0.113		0.137		0.167		0.214		0.316	
Flow gpm	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss
1	0.47	0.06	0.29	0.02	0.18	0.01	0.14	0.00	0.09	0.00	0.06	0.00	0.04	0.00	0.02	0.00	0.01	0.00
2	0.94	0.22	0.58	0.07	0.36	0.02	0.28	0.01	0.18	0.00	0.12	0.00	0.08	0.00	0.05	0.00	0.02	0.00
3	1.42	0.46	0.87	0.14	0.54	0.04	0.41	0.02	0.27	0.01	0.18	0.00	0.12	0.00	0.07	0.00	0.03	0.00
4	1.89	0.79	1.16	0.24	0.72	0.08	0.55	0.04	0.35	0.01	0.24	0.01	0.16	0.00	0.10	0.00	0.05	0.00
5	2.36	1.19	1.44	0.36	0.91	0.12	0.69	0.06	0.44	0.02	0.30	0.01	0.20	0.00	0.12	0.00	0.06	0.00
6	2.83	1.67	1.73	0.51	1.09	0.16	0.83	0.08	0.53	0.03	0.36	0.01	0.24	0.00	0.15	0.00	0.07	0.00
7	3.31	2.23	2.02	0.67	1.27	0.22	0.97	0.11	0.62	0.04	0.42	0.01	0.29	0.01	0.17	0.00	0.08	0.00
8	3.78	2.85	2.31	0.86	1.45	0.28	1.10	0.14	0.71	0.05	0.48	0.02	0.33	0.01	0.20	0.00	0.09	0.00
9	4.25	3.55	2.60	1.07	1.63	0.34	1.24	0.18	0.80	0.06	0.54	0.02	0.37	0.01	0.22	0.00	0.10	0.00
10	4.72	4.31	2.89	1.30	1.81	0.42	1.38	0.22	0.88	0.07	0.60	0.03	0.41	0.01	0.25	0.00	0.11	0.00
11	5.20	5.14	3.18	1.56	1.99	0.50	1.52	0.26	0.97	0.09	0.66	0.03	0.45	0.01	0.27	0.00	0.13	0.00
12	5.67	6.04	3.47	1.83	2.17	0.59	1.66	0.30	1.06	0.10	0.72	0.04	0.49	0.02	0.30	0.00	0.14	0.00
14	6.61	8.04	4.05	2.43	2.54	0.78	1.93	0.40	1.24	0.14	0.85	0.05	0.57	0.02	0.34	0.01	0.16	0.00
16	7.56	10.29	4.62	3.11	2.90	1.00	2.21	0.52	1.42	0.17	0.97	0.07	0.65	0.03	0.39	0.01	0.18	0.00
18	8.50	12.80	5.20	3.87	3.26	1.24	2.49	0.64	1.59	0.22	1.09	0.09	0.73	0.03	0.44	0.01	0.20	0.00
20	9.45	15.56	5.78	4.71	3.62	1.51	2.76	0.78	1.77	0.26	1.21	0.10	0.82	0.04	0.49	0.01	0.23	0.00
22	10.39	18.56	6.36	5.62	3.98	1.80	3.04	0.93	1.95	0.32	1.33	0.12	0.90	0.05	0.54	0.01	0.25	0.00
24	11.34	21.80	6.93	6.60	4.35	2.12	3.31	1.09	2.12	0.37	1.45	0.15	0.98	0.06	0.59	0.02	0.27	0.00
26	12.28	25.29	7.51	7.65	4.71	2.45	3.59	1.27	2.30	0.43	1.57	0.17	1.06	0.07	0.64	0.02	0.30	0.00
28	13.22	29.01	8.09	8.78	5.07	2.82	3.87	1.46	2.48	0.49	1.69	0.19	1.14	0.07	0.69	0.02	0.32	0.00
30	14.17	32.96	8.67	9.97	5.43	3.20	4.14	1.65	2.65	0.56	1.81	0.22	1.22	0.09	0.74	0.02	0.34	0.00
35	16.53	43.85	10.11	13.27	6.34	4.26	4.83	2.20	3.10	0.75	2.11	0.29	1.43	0.11	0.86	0.03	0.40	0.01
40	18.89	56.16	11.56	16.99	7.24	5.45	5.52	2.82	3.54	0.95	2.42	0.38	1.63	0.14	0.99	0.04	0.45	0.01
45			13.00	21.14	8.15	6.78	6.21	3.51	3.98	1.19	2.72	0.47	1.83	0.18	1.11	0.05	0.51	0.01
50			14.45	25.69	9.05	8.24	6.90	4.26	4.42	1.44	3.02	0.57	2.04	0.22	1.23	0.06	0.57	0.01
55			15.89	30.65	9.96	9.83	7.59	5.08	4.86	1.72	3.32	0.68	2.24	0.26	1.35	0.08	0.63	0.01
60			17.34	36.01	10.86	11.55	8.28	5.97	5.31	2.02	3.62	0.80	2.45	0.31	1.48	0.09	0.68	0.01
65			18.78	41.76	11.77	13.40	8.98	6.93	5.75	2.34	3.92	0.93	2.65	0.36	1.60	0.10	0.74	0.02
70			20.23	47.90	12.68	15.37	9.67	7.95	6.19	2.69	4.23	1.06	2.85	0.41	1.72	0.12	0.80	0.02
75					13.58	17.46	10.36	9.03	6.63	3.06	4.53	1.21	3.06	0.46	1.85	0.14	0.85	0.02
80					14.49	19.68	11.05	10.18	7.08	3.44	4.83	1.36	3.26	0.52	1.97	0.15	0.91	0.02
85					15.39	22.02	11.74	11.39	7.52	3.85	5.13	1.52	3.46	0.58	2.09	0.17	0.97	0.03
90					16.30	24.48	12.43	12.66	7.96	4.28	5.43	1.69	3.67	0.65	2.22	0.19	1.02	0.03
95					17.20	27.05	13.12	13.99	8.40	4.73	5.74	1.87	3.87	0.72	2.34	0.21	1.08	0.03
100					18.11	29.75	13.81	15.38	8.85	5.21	6.04	2.06	4.08	0.79	2.46	0.23	1.14	0.04
110					19.92	35.49	15.19	18.35	9.73	6.21	6.64	2.45	4.48	0.94	2.71	0.28	1.25	0.04
120							16.57	21.56	10.61	7.30	7.25	2.88	4.89	1.11	2.96	0.33	1.36	0.05
130							17.95	25.01	11.50	8.46	7.85	3.34	5.30	1.28	3.20	0.38	1.48	0.06
140							19.33	28.69	12.38	9.71	8.45	3.84	5.71	1.47	3.45	0.43	1.59	0.07
150									13.27	11.03	9.06	4.36	6.11	1.67	3.70	0.49	1.71	0.08
160									14.15	12.43	9.66	4.91	6.52	1.89	3.94	0.55	1.82	0.08
170									15.04	13.91	10.27	5.50	6.93	2.11	4.19	0.62	1.93	0.09
180									15.92	15.46	10.87	6.11	7.34	2.35	4.43	0.69	2.05	0.11
190									16.81	17.09	11.47	6.75	7.74	2.59	4.68	0.76	2.16	0.12
200									17.69	18.80	12.08	7.43	8.15	2.85	4.93	0.84	2.27	0.13
225									19.90	23.38	13.59	9.23	9.17	3.55	5.54	1.04	2.56	0.16
250											15.10	11.22	10.19	4.31	6.16	1.27	2.84	0.19
275											16.61	13.39	11.21	5.15	6.77	1.51	3.13	0.23
300											18.11	15.73	12.23	6.05	7.39	1.78	3.41	0.27
325											19.62	18.25	13.25	7.01	8.01	2.06	3.70	0.31
350													14.26	8.04	8.62	2.36	3.98	0.36
375													15.28	9.14	9.24	2.69	4.27	0.41
400													16.30	10.30	9.85	3.03	4.55	0.46
425													17.32	11.52	10.47	3.39	4.83	0.52
450													18.34	12.81	11.09	3.77	5.12	0.57
475													19.36	14.16	11.70	4.16	5.40	0.63
500															12.32	4.58	5.69	0.70
550															13.55	5.46	6.26	0.83
600															14.78	6.41	6.82	0.98

Note: Dark shaded area of chart indicates velocities over 5' per second. Use with caution

The velocity values were derived using the following equation $V = \frac{0.4085 \times Q_{gpm}}{d^2}$

Table are based upon the following Hazen-Williams equation: $H_f = 0.2083 \times \left(\frac{100}{C}\right)^{1.852} \times \frac{Q^{1.852}}{D^{4.8655}}$ for change in psi per foot of elevation. Pressure loss for uphill elevation and pressure gain for downhill elevation changes.

PVC Class 315 IPS Plastic Pipe

(1120, 1220) SDR 13.5 C=150

psi Loss per 100 Feet of Pipe (psi/100 ft.)

Sizes 1/2" through 6" Flow 1 through 600 gpm

Size	1/2"		3/4"		1"		1 1/4"		1 1/2"		2"		2 1/2"		3"		4"		6"	
O.D.	0.840		1.050		1.315		1.660		1.900		2.375		2.875		3.500		4.500		6.625	
I.D.	0.716		0.894		1.121		1.414		1.618		2.023		2.449		2.982		3.834		5.643	
Wall Thk	0.062		0.078		0.097		0.123		0.141		0.176		0.213		0.259		0.333		0.491	
Flow gpm	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss
1	0.80	0.22	0.51	0.07	0.33	0.02	0.20	0.01	0.16	0.00	0.10	0.00	0.07	0.00	0.05	0.00	0.03	0.00	0.01	0.00
2	1.59	0.78	1.02	0.27	0.65	0.09	0.41	0.03	0.31	0.01	0.20	0.00	0.14	0.00	0.09	0.00	0.06	0.00	0.03	0.00
3	2.39	1.65	1.53	0.56	0.98	0.19	0.61	0.06	0.47	0.03	0.30	0.01	0.20	0.00	0.14	0.00	0.08	0.00	0.04	0.00
4	3.19	2.82	2.04	0.96	1.30	0.32	0.82	0.10	0.62	0.05	0.40	0.02	0.27	0.01	0.18	0.00	0.11	0.00	0.05	0.00
5	3.98	4.26	2.56	1.45	1.63	0.48	1.02	0.16	0.78	0.08	0.50	0.03	0.34	0.01	0.23	0.00	0.14	0.00	0.06	0.00
6	4.78	5.97	3.07	2.03	1.95	0.67	1.23	0.22	0.94	0.11	0.60	0.04	0.41	0.02	0.28	0.01	0.17	0.00	0.08	0.00
7	5.58	7.95	3.58	2.70	2.28	0.90	1.43	0.29	1.09	0.15	0.70	0.05	0.48	0.02	0.32	0.01	0.19	0.00	0.09	0.00
8	6.37	10.17	4.09	3.45	2.60	1.15	1.63	0.37	1.25	0.19	0.80	0.06	0.54	0.03	0.37	0.01	0.22	0.00	0.10	0.00
9	7.17	12.65	4.60	4.30	2.93	1.43	1.84	0.46	1.40	0.24	0.90	0.08	0.61	0.03	0.41	0.01	0.25	0.00	0.12	0.00
10	7.97	15.38	5.11	5.22	3.25	1.74	2.04	0.56	1.56	0.29	1.00	0.10	0.68	0.04	0.46	0.01	0.28	0.00	0.13	0.00
11	8.77	18.35	5.62	6.23	3.58	2.07	2.25	0.67	1.72	0.35	1.10	0.12	0.75	0.05	0.51	0.02	0.31	0.01	0.14	0.00
12	9.56	21.56	6.13	7.32	3.90	2.43	2.45	0.79	1.87	0.41	1.20	0.14	0.82	0.05	0.55	0.02	0.33	0.01	0.15	0.00
14	11.16	28.68	7.16	9.74	4.55	3.24	2.86	1.05	2.18	0.54	1.40	0.18	0.95	0.07	0.64	0.03	0.39	0.01	0.18	0.00
16	12.75	36.73	8.18	12.47	5.20	4.15	3.27	1.34	2.50	0.70	1.60	0.23	1.09	0.09	0.74	0.04	0.44	0.01	0.21	0.00
18	14.34	45.68	9.20	15.51	5.85	5.16	3.68	1.67	2.81	0.87	1.80	0.29	1.23	0.12	0.83	0.04	0.50	0.01	0.23	0.00
20	15.94	55.52	10.22	18.85	6.50	6.27	4.09	2.03	3.12	1.05	2.00	0.35	1.36	0.14	0.92	0.05	0.56	0.02	0.26	0.00
22	17.53	66.24	11.24	22.49	7.15	7.48	4.49	2.42	3.43	1.25	2.20	0.42	1.50	0.17	1.01	0.06	0.61	0.02	0.28	0.00
24	19.12	77.83	12.27	26.42	7.80	8.79	4.90	2.84	3.74	1.47	2.40	0.50	1.63	0.20	1.10	0.08	0.67	0.02	0.31	0.00
26			13.29	30.64	8.45	10.19	5.31	3.29	4.06	1.71	2.60	0.58	1.77	0.23	1.19	0.09	0.72	0.03	0.33	0.00
28			14.31	35.15	9.10	11.69	5.72	3.78	4.37	1.96	2.79	0.66	1.91	0.26	1.29	0.10	0.78	0.03	0.36	0.00
30			15.33	39.94	9.75	13.28	6.13	4.29	4.68	2.23	2.99	0.75	2.04	0.30	1.38	0.11	0.83	0.03	0.38	0.01
35			17.89	53.14	11.38	17.67	7.15	5.71	5.46	2.96	3.49	1.00	2.38	0.39	1.61	0.15	0.97	0.04	0.45	0.01
40					13.00	22.63	8.17	7.31	6.24	3.80	3.99	1.28	2.72	0.51	1.84	0.19	1.11	0.06	0.51	0.01
45					14.63	28.15	9.19	9.09	7.02	4.72	4.49	1.59	3.06	0.63	2.07	0.24	1.25	0.07	0.58	0.01
50					16.25	34.21	10.22	11.05	7.80	5.74	4.99	1.94	3.41	0.76	2.30	0.29	1.39	0.09	0.64	0.01
55					17.88	40.82	11.24	13.19	8.58	6.85	5.49	2.31	3.75	0.91	2.53	0.35	1.53	0.10	0.71	0.02
60					19.50	47.96	12.26	15.49	9.36	8.04	5.99	2.71	4.09	1.07	2.76	0.41	1.67	0.12	0.77	0.02
65							13.28	17.97	10.14	9.33	6.49	3.15	4.43	1.24	2.99	0.48	1.81	0.14	0.83	0.02
70							14.30	20.61	10.92	10.70	6.99	3.61	4.77	1.42	3.22	0.55	1.95	0.16	0.90	0.02
75							15.32	23.42	11.70	12.16	7.49	4.10	5.11	1.62	3.45	0.62	2.08	0.18	0.96	0.03
80							16.34	26.40	12.48	13.70	7.99	4.62	5.45	1.82	3.68	0.70	2.22	0.21	1.03	0.03
85							17.37	29.53	13.26	15.33	8.48	5.17	5.79	2.04	3.90	0.78	2.36	0.23	1.09	0.04
90							18.39	32.83	14.04	17.04	8.98	5.75	6.13	2.27	4.13	0.87	2.50	0.26	1.15	0.04
95							19.41	36.29	14.82	18.84	9.48	6.35	6.47	2.51	4.36	0.96	2.64	0.28	1.22	0.04
100									15.60	20.71	9.98	6.99	6.81	2.76	4.59	1.06	2.78	0.31	1.28	0.05
110									17.16	24.71	10.98	8.33	7.49	3.29	5.05	1.26	3.06	0.37	1.41	0.06
120									18.72	29.03	11.98	9.79	8.17	3.86	5.51	1.48	3.33	0.44	1.54	0.07
130											12.98	11.36	8.85	4.48	5.97	1.72	3.61	0.51	1.67	0.08
140											13.97	13.03	9.54	5.14	6.43	1.97	3.89	0.58	1.80	0.09
150											14.97	14.80	10.22	5.84	6.89	2.24	4.17	0.66	1.92	0.10
160											15.97	16.68	10.90	6.58	7.35	2.53	4.45	0.74	2.05	0.11
170											16.97	18.66	11.58	7.37	7.81	2.83	4.72	0.83	2.18	0.13
180											17.97	20.75	12.26	8.19	8.27	3.14	5.00	0.92	2.31	0.14
190											18.97	22.93	12.94	9.05	8.73	3.47	5.28	1.02	2.44	0.16
200											19.96	25.22	13.62	9.95	9.19	3.82	5.56	1.12	2.57	0.17
225													15.32	12.38	10.34	4.75	6.25	1.40	2.89	0.21
250													17.03	15.05	11.48	5.77	6.95	1.70	3.21	0.26
275													18.73	17.95	12.63	6.89	7.64	2.03	3.53	0.31
300															13.78	8.09	8.34	2.38	3.85	0.36
325															14.93	9.38	9.03	2.76	4.17	0.42
350															16.08	10.76	9.73	3.17	4.49	0.48
375															17.23	12.23	10.42	3.60	4.81	0.55
400															18.38	13.78	11.12	4.06	5.13	0.62
425															19.52	15.42	11.81	4.54	5.45	0.69
450																	12.51	5.05	5.77	0.77
475																	13.20	5.58	6.09	0.85
500																	13.89	6.13	6.41	0.94
550																	15.28	7.32	7.06	1.12
600																	16.67	8.60	7.70	1.31

Note: Dark shaded area of chart indicates velocities over 5' per second. Use with caution

The velocity values were derived using the following equation $V = \frac{0.4085 \times Q_{gpm}}{d^2}$

Table are based upon the following Hazen-Williams equation: $H_f = 0.2083 \times \left(\frac{100}{C}\right)^{1.852} \times \frac{Q^{1.852}}{D^{4.8655}}$ for change in psi per foot of elevation. Pressure loss for uphill elevation and pressure gain for downhill elevation changes.

PVC Schedule 40 IPS Plastic Pipe

(1120, 1220) C=150

psi Loss per 100 Feet of Pipe (psi/100 ft.)

Sizes 1/2" through 6" Flow 1 through 600 gpm

Size	1/2"		3/4"		1"		1 1/4"		1 1/2"		2"		2 1/2"		3"		4"		6"	
O.D.	0.840		1.050		1.315		1.660		1.900		2.375		2.875		3.500		4.500		6.625	
I.D.	0.622		0.824		1.049		1.380		1.610		2.067		2.469		3.068		4.026		6.065	
Wall Thk	0.109		0.113		0.133		0.140		0.145		0.154		0.203		0.216		0.237		0.280	
Flow gpm	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss
1	1.06	0.43	0.60	0.11	0.37	0.03	0.21	0.01	0.16	0.00	0.10	0.00	0.07	0.00	0.04	0.00	0.03	0.00	0.01	0.00
2	2.11	1.55	1.20	0.39	0.74	0.12	0.43	0.03	0.32	0.02	0.19	0.00	0.13	0.00	0.09	0.00	0.05	0.00	0.02	0.00
3	3.17	3.28	1.80	0.84	1.11	0.26	0.64	0.07	0.47	0.03	0.29	0.01	0.20	0.00	0.13	0.00	0.08	0.00	0.03	0.00
4	4.22	5.59	2.41	1.42	1.48	0.44	0.86	0.12	0.63	0.05	0.38	0.02	0.27	0.01	0.17	0.00	0.10	0.00	0.04	0.00
5	5.28	8.45	3.01	2.15	1.86	0.66	1.07	0.17	0.79	0.08	0.48	0.02	0.34	0.01	0.22	0.00	0.13	0.00	0.06	0.00
6	6.34	11.84	3.61	3.01	2.23	0.93	1.29	0.25	0.95	0.12	0.57	0.03	0.40	0.01	0.26	0.01	0.15	0.00	0.07	0.00
7	7.39	15.76	4.21	4.01	2.60	1.24	1.50	0.33	1.10	0.15	0.67	0.05	0.47	0.02	0.30	0.01	0.18	0.00	0.08	0.00
8	8.45	20.18	4.81	5.14	2.97	1.59	1.72	0.42	1.26	0.20	0.76	0.06	0.54	0.02	0.35	0.01	0.20	0.00	0.09	0.00
9	9.50	25.10	5.41	6.39	3.34	1.97	1.93	0.52	1.42	0.25	0.86	0.07	0.60	0.03	0.39	0.01	0.23	0.00	0.10	0.00
10	10.56	30.50	6.02	7.76	3.71	2.40	2.15	0.63	1.58	0.30	0.96	0.09	0.67	0.04	0.43	0.01	0.25	0.00	0.11	0.00
11	11.61	36.39	6.62	9.26	4.08	2.86	2.36	0.75	1.73	0.36	1.05	0.11	0.74	0.04	0.48	0.02	0.28	0.00	0.12	0.00
12	12.67	42.76	7.22	10.88	4.45	3.36	2.57	0.89	1.89	0.42	1.15	0.12	0.80	0.05	0.52	0.02	0.30	0.00	0.13	0.00
14	14.78	56.89	8.42	14.48	5.20	4.47	3.00	1.18	2.21	0.56	1.34	0.16	0.94	0.07	0.61	0.02	0.35	0.01	0.16	0.00
16	16.89	72.84	9.63	18.54	5.94	5.73	3.43	1.51	2.52	0.71	1.53	0.21	1.07	0.09	0.69	0.03	0.40	0.01	0.18	0.00
18	19.01	90.60	10.83	23.06	6.68	7.12	3.86	1.88	2.84	0.89	1.72	0.26	1.21	0.11	0.78	0.04	0.45	0.01	0.20	0.00
20	21.12	110.12	12.03	28.03	7.42	8.66	4.29	2.28	3.15	1.08	1.91	0.32	1.34	0.13	0.87	0.05	0.50	0.01	0.22	0.00
22			13.24	33.44	8.17	10.33	4.72	2.72	3.47	1.29	2.10	0.38	1.47	0.16	0.95	0.06	0.55	0.01	0.24	0.00
24			14.44	39.29	8.91	12.14	5.15	3.20	3.78	1.51	2.29	0.45	1.61	0.19	1.04	0.07	0.60	0.02	0.27	0.00
26			15.64	45.57	9.65	14.08	5.58	3.71	4.10	1.75	2.49	0.52	1.74	0.22	1.13	0.08	0.66	0.02	0.29	0.00
28			16.85	52.27	10.39	16.15	6.01	4.25	4.41	2.01	2.68	0.60	1.88	0.25	1.22	0.09	0.71	0.02	0.31	0.00
30			18.05	59.39	11.14	18.35	6.44	4.83	4.73	2.28	2.87	0.68	2.01	0.29	1.30	0.10	0.76	0.03	0.33	0.00
35					12.99	24.41	7.51	6.43	5.52	3.04	3.35	0.90	2.35	0.38	1.52	0.13	0.88	0.04	0.39	0.00
40					14.85	31.26	8.58	8.23	6.30	3.89	3.82	1.15	2.68	0.49	1.74	0.17	1.01	0.04	0.44	0.01
45					16.71	38.88	9.65	10.24	7.09	4.84	4.30	1.43	3.02	0.60	1.95	0.21	1.13	0.06	0.50	0.01
50					18.56	47.26	10.73	12.44	7.88	5.88	4.78	1.74	3.35	0.73	2.17	0.26	1.26	0.07	0.56	0.01
55							11.80	14.85	8.67	7.01	5.26	2.08	3.69	0.88	2.39	0.30	1.39	0.08	0.61	0.01
60							12.87	17.44	9.46	8.24	5.74	2.44	4.02	1.03	2.60	0.36	1.51	0.10	0.67	0.01
65							13.94	20.23	10.24	9.56	6.21	2.83	4.36	1.19	2.82	0.41	1.64	0.11	0.72	0.02
70							15.02	23.21	11.03	10.96	6.69	3.25	4.69	1.37	3.04	0.48	1.76	0.13	0.78	0.02
75							16.09	26.37	11.82	12.46	7.17	3.69	5.03	1.56	3.25	0.54	1.89	0.14	0.83	0.02
80							17.16	29.72	12.61	14.04	7.65	4.16	5.36	1.75	3.47	0.61	2.02	0.16	0.89	0.02
85							18.23	33.25	13.40	15.70	8.13	4.66	5.70	1.96	3.69	0.68	2.14	0.18	0.94	0.02
90							19.31	36.96	14.18	17.46	8.61	5.18	6.03	2.18	3.91	0.76	2.27	0.20	1.00	0.03
95									14.97	19.30	9.08	5.72	6.37	2.41	4.12	0.84	2.39	0.22	1.06	0.03
100									15.76	21.22	9.56	6.29	6.70	2.65	4.34	0.92	2.52	0.25	1.11	0.03
110									17.34	25.32	10.52	7.51	7.37	3.16	4.77	1.10	2.77	0.29	1.22	0.04
120									18.91	29.74	11.47	8.82	8.04	3.71	5.21	1.29	3.02	0.34	1.33	0.05
130											12.43	10.23	8.71	4.31	5.64	1.50	3.28	0.40	1.44	0.05
140											13.39	11.73	9.38	4.94	6.08	1.72	3.53	0.46	1.55	0.06
150											14.34	13.33	10.05	5.62	6.51	1.95	3.78	0.52	1.67	0.07
160											15.30	15.02	10.72	6.33	6.94	2.20	4.03	0.59	1.78	0.08
170											16.25	16.81	11.39	7.08	7.38	2.46	4.28	0.66	1.89	0.09
180											17.21	18.69	12.06	7.87	7.81	2.74	4.54	0.73	2.00	0.10
190											18.17	20.65	12.73	8.70	8.25	3.02	4.79	0.81	2.11	0.11
200											19.12	22.71	13.40	9.57	8.68	3.32	5.04	0.89	2.22	0.12
225													15.08	11.90	9.76	4.14	5.67	1.10	2.50	0.15
250													16.75	14.46	10.85	5.03	6.30	1.34	2.78	0.18
275													18.43	17.25	11.93	6.00	6.93	1.60	3.05	0.22
300															13.02	7.05	7.56	1.88	3.33	0.26
325															14.10	8.17	8.19	2.18	3.61	0.30
350															15.19	9.37	8.82	2.50	3.89	0.34
375															16.27	10.65	9.45	2.84	4.16	0.39
400															17.36	12.00	10.08	3.20	4.44	0.44
425															18.44	13.43	10.71	3.58	4.72	0.49
450															19.53	14.93	11.34	3.98	5.00	0.54
475																	11.97	4.40	5.28	0.60
500																	12.60	4.84	5.55	0.66
550																	13.86	5.77	6.11	0.79
600																	15.12	6.78	6.66	0.92

Note: Dark shaded area of chart indicates velocities over 5' per second. Use with caution

The velocity values were derived using the following equation $V = \frac{0.4085 \times Q_{gpm}}{d^2}$

Table are based upon the following Hazen-Williams equation: $H_f = 0.2083 \times \left(\frac{100}{C}\right)^{1.852} \times \frac{Q^{1.852}}{D^{4.8655}}$ for change in psi per foot of elevation. Pressure loss for uphill elevation and pressure gain for downhill elevation changes.

PVC Schedule 80 IPS Plastic Pipe

(1120, 1220) C=150

psi Loss per 100 Feet of Pipe (psi/100 ft.)

Sizes 1/2" through 6" Flow 1 through 600 gpm

Size	1/2"		3/4"		1"		1 1/4"		1 1/2"		2"		2 1/2"		3"		4"		6"	
O.D.	0.840		1.050		1.315		1.660		1.900		2.375		2.875		3.500		4.500		6.625	
I.D.	0.546		0.742		0.957		1.278		1.500		1.939		2.323		2.900		3.826		5.761	
Wall Thk	0.147		0.154		0.179		0.191		0.200		0.218		0.276		0.300		0.337		0.432	
Flow gpm	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss
1	1.37	0.81	0.74	0.18	0.45	0.05	0.25	0.01	0.18	0.01	0.11	0.00	0.08	0.00	0.05	0.00	0.03	0.00	0.01	0.00
2	2.74	2.92	1.48	0.66	0.89	0.19	0.50	0.05	0.36	0.02	0.22	0.01	0.15	0.00	0.10	0.00	0.06	0.00	0.02	0.00
3	4.11	6.19	2.23	1.39	1.34	0.40	0.75	0.10	0.54	0.05	0.33	0.01	0.23	0.01	0.15	0.00	0.08	0.00	0.04	0.00
4	5.48	10.54	2.97	2.37	1.78	0.69	1.00	0.17	0.73	0.08	0.43	0.02	0.30	0.01	0.19	0.00	0.11	0.00	0.05	0.00
5	6.85	15.93	3.71	3.58	2.23	1.04	1.25	0.25	0.91	0.12	0.54	0.03	0.38	0.01	0.24	0.00	0.14	0.00	0.06	0.00
6	8.22	22.33	4.45	5.02	2.68	1.46	1.50	0.36	1.09	0.16	0.65	0.05	0.45	0.02	0.29	0.01	0.17	0.00	0.07	0.00
7	9.59	29.71	5.19	6.68	3.12	1.94	1.75	0.47	1.27	0.22	0.76	0.06	0.53	0.03	0.34	0.01	0.20	0.00	0.09	0.00
8	10.96	38.04	5.94	8.55	3.57	2.48	2.00	0.61	1.45	0.28	0.87	0.08	0.61	0.03	0.39	0.01	0.22	0.00	0.10	0.00
9	12.33	47.32	6.68	10.64	4.01	3.08	2.25	0.76	1.63	0.35	0.98	0.10	0.68	0.04	0.44	0.01	0.25	0.00	0.11	0.00
10	13.70	57.51	7.42	12.93	4.46	3.75	2.50	0.92	1.82	0.42	1.09	0.12	0.76	0.05	0.49	0.02	0.28	0.00	0.12	0.00
11	15.07	68.61	8.16	15.43	4.91	4.47	2.75	1.09	2.00	0.50	1.20	0.14	0.83	0.06	0.53	0.02	0.31	0.01	0.14	0.00
12	16.44	80.61	8.90	18.12	5.35	5.26	3.00	1.29	2.18	0.59	1.30	0.17	0.91	0.07	0.58	0.02	0.33	0.01	0.15	0.00
14			10.39	24.11	6.24	6.99	3.50	1.71	2.54	0.79	1.52	0.23	1.06	0.09	0.68	0.03	0.39	0.01	0.17	0.00
16			11.87	30.88	7.14	8.95	4.00	2.19	2.90	1.01	1.74	0.29	1.21	0.12	0.78	0.04	0.45	0.01	0.20	0.00
18			13.36	38.40	8.03	11.14	4.50	2.73	3.27	1.25	1.96	0.36	1.36	0.15	0.87	0.05	0.50	0.01	0.22	0.00
20			14.84	46.68	8.92	13.53	5.00	3.31	3.63	1.52	2.17	0.44	1.51	0.18	0.97	0.06	0.56	0.02	0.25	0.00
22			16.32	55.69	9.81	16.15	5.50	3.95	3.99	1.81	2.39	0.52	1.67	0.22	1.07	0.07	0.61	0.02	0.27	0.00
24			17.81	65.43	10.70	18.97	6.00	4.64	4.36	2.13	2.61	0.61	1.82	0.25	1.17	0.09	0.67	0.02	0.30	0.00
26			19.29	75.88	11.60	22.00	6.50	5.39	4.72	2.47	2.82	0.71	1.97	0.29	1.26	0.10	0.73	0.03	0.32	0.00
28					12.49	25.24	7.00	6.18	5.08	2.83	3.04	0.81	2.12	0.34	1.36	0.11	0.78	0.03	0.34	0.00
30					13.38	28.68	7.50	7.02	5.45	3.22	3.26	0.92	2.27	0.38	1.46	0.13	0.84	0.03	0.37	0.00
35					15.61	38.15	8.75	9.34	6.35	4.28	3.80	1.23	2.65	0.51	1.70	0.17	0.98	0.05	0.43	0.01
40					17.84	48.86	10.00	11.96	7.26	5.49	4.35	1.57	3.03	0.65	1.94	0.22	1.12	0.06	0.49	0.01
45							11.25	14.88	8.17	6.82	4.89	1.96	3.41	0.81	2.19	0.28	1.26	0.07	0.55	0.01
50							12.51	18.08	9.08	8.29	5.43	2.38	3.78	0.99	2.43	0.34	1.40	0.09	0.62	0.01
55							13.76	21.57	9.99	9.90	5.98	2.84	4.16	1.18	2.67	0.40	1.53	0.10	0.68	0.01
60							15.01	25.34	10.89	11.63	6.52	3.33	4.54	1.38	2.91	0.47	1.67	0.12	0.74	0.02
65							16.26	29.39	11.80	13.48	7.06	3.87	4.92	1.61	3.16	0.55	1.81	0.14	0.80	0.02
70							17.51	33.72	12.71	15.47	7.61	4.44	5.30	1.84	3.40	0.63	1.95	0.16	0.86	0.02
75							18.76	38.31	13.62	17.58	8.15	5.04	5.68	2.09	3.64	0.71	2.09	0.18	0.92	0.03
80							20.01	43.18	14.52	19.81	8.69	5.68	6.06	2.36	3.89	0.80	2.23	0.21	0.98	0.03
85									15.43	22.16	9.24	6.36	6.43	2.64	4.13	0.90	2.37	0.23	1.05	0.03
90									16.34	24.63	9.78	7.06	6.81	2.93	4.37	1.00	2.51	0.26	1.11	0.04
95									17.25	27.23	10.32	7.81	7.19	3.24	4.61	1.10	2.65	0.29	1.17	0.04
100									18.16	29.94	10.87	8.59	7.57	3.56	4.86	1.21	2.79	0.31	1.23	0.04
110									19.97	35.72	11.95	10.24	8.33	4.25	5.34	1.45	3.07	0.38	1.35	0.05
120											13.04	12.04	9.08	5.00	5.83	1.70	3.35	0.44	1.48	0.06
130											14.12	13.96	9.84	5.80	6.31	1.97	3.63	0.51	1.60	0.07
140											15.21	16.01	10.60	6.65	6.80	2.26	3.91	0.59	1.72	0.08
150											16.30	18.20	11.35	7.55	7.29	2.57	4.19	0.67	1.85	0.09
160											17.38	20.51	12.11	8.51	7.77	2.89	4.47	0.75	1.97	0.10
170											18.47	22.94	12.87	9.52	8.26	3.24	4.74	0.84	2.09	0.11
180											19.56	25.50	13.63	10.59	8.74	3.60	5.02	0.93	2.22	0.13
190													14.38	11.70	9.23	3.98	5.30	1.03	2.34	0.14
200													15.14	12.87	9.71	4.37	5.58	1.14	2.46	0.16
225													17.03	16.01	10.93	5.44	6.28	1.41	2.77	0.19
250													18.92	19.45	12.14	6.61	6.98	1.72	3.08	0.23
275													20.82	23.21	13.36	7.89	7.67	2.05	3.38	0.28
300															14.57	9.27	8.37	2.41	3.69	0.33
325															15.79	10.75	9.07	2.79	4.00	0.38
350															17.00	12.33	9.77	3.20	4.31	0.44
375															18.21	14.01	10.46	3.64	4.62	0.50
400															19.43	15.79	11.16	4.10	4.92	0.56
425																	11.86	4.59	5.23	0.63
450																	12.56	5.10	5.54	0.70
475																	13.26	5.64	5.85	0.77
500																	13.95	6.20	6.15	0.85
550																	15.35	7.39	6.77	1.01
600																	16.74	8.69	7.38	1.19

Note: Dark shaded area of chart indicates velocities over 5' per second. Use with caution

The velocity values were derived using the following equation $V = \frac{0.4085 \times Q_{gpm}}{d^2}$

Table are based upon the following Hazen-Williams equation: $H_f = 0.2083 \times \left(\frac{100}{C}\right)^{1.852} \times \frac{Q^{1.852}}{D^{4.8655}}$ for change in psi per foot of elevation. Pressure loss for uphill elevation and pressure gain for downhill elevation changes.

Polyethylene (PE) SDR Pressure Rated Tube

(2306, 3206, 3306) SDR 7, 9, 11.5, 15 C=140

psi Loss per 100 Feet of Pipe (psi/100 ft.)

Sizes 1/2" through 6" Flow 1 through 600 gpm

Size I.D.	1/2" 0.622		3/4" 0.824		1" 1.049		1 1/4" 1.380		1 1/2" 1.610		2" 2.067		2 1/2" 2.469		3" 3.068		4" 4.026		6" 6.065	
Flow gpm	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss
1	1.06	0.49	0.60	0.12	0.37	0.04	0.21	0.01	0.16	0.00	0.10	0.00	0.07	0.00	0.04	0.00	0.03	0.00	0.01	0.00
2	2.11	1.76	1.20	0.45	0.74	0.14	0.43	0.04	0.32	0.02	0.19	0.01	0.13	0.00	0.09	0.00	0.05	0.00	0.02	0.00
3	3.17	3.73	1.80	0.95	1.11	0.29	0.64	0.08	0.47	0.04	0.29	0.01	0.20	0.00	0.13	0.00	0.08	0.00	0.03	0.00
4	4.22	6.35	2.41	1.62	1.48	0.50	0.86	0.13	0.63	0.06	0.38	0.02	0.27	0.01	0.17	0.00	0.10	0.00	0.04	0.00
5	5.28	9.60	3.01	2.44	1.86	0.76	1.07	0.20	0.79	0.09	0.48	0.03	0.34	0.01	0.22	0.00	0.13	0.00	0.06	0.00
6	6.34	13.46	3.61	3.43	2.23	1.06	1.29	0.28	0.95	0.13	0.57	0.04	0.40	0.02	0.26	0.01	0.15	0.00	0.07	0.00
7	7.39	17.91	4.21	4.56	2.60	1.41	1.50	0.37	1.10	0.18	0.67	0.05	0.47	0.02	0.30	0.01	0.18	0.00	0.08	0.00
8	8.45	22.93	4.81	5.84	2.97	1.80	1.72	0.47	1.26	0.22	0.76	0.07	0.54	0.03	0.35	0.01	0.20	0.00	0.09	0.00
9	9.50	28.52	5.41	7.26	3.34	2.24	1.93	0.59	1.42	0.28	0.86	0.08	0.60	0.03	0.39	0.01	0.23	0.00	0.10	0.00
10	10.56	34.66	6.02	8.82	3.71	2.73	2.15	0.72	1.58	0.34	0.96	0.10	0.67	0.04	0.43	0.01	0.25	0.00	0.11	0.00
11	11.61	41.35	6.62	10.53	4.08	3.25	2.36	0.86	1.73	0.40	1.05	0.12	0.74	0.05	0.48	0.02	0.28	0.00	0.12	0.00
12	12.67	48.59	7.22	12.37	4.45	3.82	2.57	1.01	1.89	0.48	1.15	0.14	0.80	0.06	0.52	0.02	0.30	0.01	0.13	0.00
14	14.78	64.64	8.42	16.45	5.20	5.08	3.00	1.34	2.21	0.63	1.34	0.19	0.94	0.08	0.61	0.03	0.35	0.01	0.16	0.00
16	16.89	82.77	9.63	21.07	5.94	6.51	3.43	1.71	2.52	0.81	1.53	0.24	1.07	0.10	0.69	0.04	0.40	0.01	0.18	0.00
18	19.01	102.95	10.83	26.20	6.68	8.10	3.86	2.13	2.84	1.01	1.72	0.30	1.21	0.13	0.78	0.04	0.45	0.01	0.20	0.00
20			12.03	31.85	7.42	9.84	4.29	2.59	3.15	1.22	1.91	0.36	1.34	0.15	0.87	0.05	0.50	0.01	0.22	0.00
22			13.24	38.00	8.17	11.74	4.72	3.09	3.47	1.46	2.10	0.43	1.47	0.18	0.95	0.06	0.55	0.02	0.24	0.00
24			14.44	44.64	8.91	13.79	5.15	3.63	3.78	1.72	2.29	0.51	1.61	0.21	1.04	0.07	0.60	0.02	0.27	0.00
26			15.64	51.78	9.65	16.00	5.58	4.21	4.10	1.99	2.49	0.59	1.74	0.25	1.13	0.09	0.66	0.02	0.29	0.00
28			16.85	59.39	10.39	18.35	6.01	4.83	4.41	2.28	2.68	0.68	1.88	0.29	1.22	0.10	0.71	0.03	0.31	0.00
30			18.05	67.49	11.14	20.85	6.44	5.49	4.73	2.59	2.87	0.77	2.01	0.32	1.30	0.11	0.76	0.03	0.33	0.00
35					12.99	27.74	7.51	7.30	5.52	3.45	3.35	1.02	2.35	0.43	1.52	0.15	0.88	0.04	0.39	0.01
40					14.85	35.52	8.58	9.35	6.30	4.42	3.82	1.31	2.68	0.55	1.74	0.19	1.01	0.05	0.44	0.01
45					16.71	44.18	9.65	11.63	7.09	5.50	4.30	1.63	3.02	0.69	1.95	0.24	1.13	0.06	0.50	0.01
50					18.56	53.70	10.73	14.14	7.88	6.68	4.78	1.98	3.35	0.83	2.17	0.29	1.26	0.08	0.56	0.01
55							11.80	16.87	8.67	7.97	5.26	2.36	3.69	1.00	2.39	0.35	1.39	0.09	0.61	0.01
60							12.87	19.82	9.46	9.36	5.74	2.78	4.02	1.17	2.60	0.41	1.51	0.11	0.67	0.01
65							13.94	22.99	10.24	10.86	6.21	3.22	4.36	1.36	2.82	0.47	1.64	0.13	0.72	0.02
70							15.02	26.37	11.03	12.46	6.69	3.69	4.69	1.56	3.04	0.54	1.76	0.14	0.78	0.02
75							16.09	29.96	11.82	14.15	7.17	4.20	5.03	1.77	3.25	0.61	1.89	0.16	0.83	0.02
80							17.16	33.77	12.61	15.95	7.65	4.73	5.36	1.99	3.47	0.69	2.02	0.18	0.89	0.03
85							18.23	37.78	13.40	17.85	8.13	5.29	5.70	2.23	3.69	0.77	2.14	0.21	0.94	0.03
90							19.31	42.00	14.18	19.84	8.61	5.88	6.03	2.48	3.91	0.86	2.27	0.23	1.00	0.03
95									14.97	21.93	9.08	6.50	6.37	2.74	4.12	0.95	2.39	0.25	1.06	0.03
100									15.76	24.11	9.56	7.15	6.70	3.01	4.34	1.05	2.52	0.28	1.11	0.04
110									17.34	28.77	10.52	8.53	7.37	3.59	4.77	1.25	2.77	0.33	1.22	0.05
120									18.91	33.80	11.47	10.02	8.04	4.22	5.21	1.47	3.02	0.39	1.33	0.05
130											12.43	11.62	8.71	4.90	5.64	1.70	3.28	0.45	1.44	0.06
140											13.39	13.33	9.38	5.62	6.08	1.95	3.53	0.52	1.55	0.07
150											14.34	15.15	10.05	6.38	6.51	2.22	3.78	0.59	1.67	0.08
160											15.30	17.07	10.72	7.19	6.94	2.50	4.03	0.67	1.78	0.09
170											16.25	19.10	11.39	8.05	7.38	2.80	4.28	0.75	1.89	0.10
180											17.21	21.23	12.06	8.94	7.81	3.11	4.54	0.83	2.00	0.11
190											18.17	23.47	12.73	9.89	8.25	3.44	4.79	0.92	2.11	0.12
200											19.12	25.81	13.40	10.87	8.68	3.78	5.04	1.01	2.22	0.14
225													15.08	13.52	9.76	4.70	5.67	1.25	2.50	0.17
250													16.75	16.43	10.85	5.71	6.30	1.52	2.78	0.21
275													18.43	19.61	11.93	6.81	6.93	1.82	3.05	0.25
300															13.02	8.01	7.56	2.13	3.33	0.29
325															14.10	9.28	8.19	2.47	3.61	0.34
350															15.19	10.65	8.82	2.84	3.89	0.39
375															16.27	12.10	9.45	3.23	4.16	0.44
400															17.36	13.64	10.08	3.64	4.44	0.50
425															18.44	15.26	10.71	4.07	4.72	0.55
450															19.53	16.96	11.34	4.52	5.00	0.62
475																	11.97	5.00	5.28	0.68
500																	12.60	5.50	5.55	0.75
550																	13.86	6.56	6.11	0.89
600																	15.12	7.70	6.66	1.05

Note: Dark shaded area of chart indicates velocities over 5' per second. Use with caution

The velocity values were derived using the following equation $V = \frac{0.4085 \times Q_{gpm}}{d^2}$

Table are based upon the following Hazen-Williams equation: $H_f = 0.2083 \times \left(\frac{100}{C}\right)^{1.852} \times \frac{Q^{1.852}}{D^{4.8655}}$ for change in psi per foot of elevation. Pressure loss for uphill elevation and pressure gain for downhill elevation changes.

Schedule 40 Standard Steel Pipe

C=100

psi Loss per 100 Feet of Pipe (psi/100 ft.)

Sizes 1/2" through 6" Flow 1 through 600 gpm

Size	1/2"		3/4"		1"		1 1/4"		1 1/2"		2"		2 1/2"		3"		4"		6"	
O.D.	0.840		1.050		1.315		1.660		1.900		2.375		2.875		3.500		4.500		6.625	
I.D.	0.622		0.824		1.049		1.380		1.610		2.067		2.469		3.068		4.026		6.065	
Wall Thk	0.109		0.113		0.133		0.140		0.145		0.154		0.203		0.216		0.237		0.280	
Flow gpm	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss
1	1.06	0.91	0.60	0.23	0.37	0.07	0.21	0.02	0.16	0.01	0.10	0.00	0.07	0.00	0.04	0.00	0.03	0.00	0.01	0.00
2	2.11	3.28	1.20	0.84	0.74	0.26	0.43	0.07	0.32	0.03	0.19	0.01	0.13	0.00	0.09	0.00	0.05	0.00	0.02	0.00
3	3.17	6.95	1.80	1.77	1.11	0.55	0.64	0.14	0.47	0.07	0.29	0.02	0.20	0.01	0.13	0.00	0.08	0.00	0.03	0.00
4	4.22	11.84	2.41	3.01	1.48	0.93	0.86	0.25	0.63	0.12	0.38	0.03	0.27	0.01	0.17	0.01	0.10	0.00	0.04	0.00
5	5.28	17.91	3.01	4.56	1.86	1.41	1.07	0.37	0.79	0.18	0.48	0.05	0.34	0.02	0.22	0.01	0.13	0.00	0.06	0.00
6	6.34	25.10	3.61	6.39	2.23	1.97	1.29	0.52	0.95	0.25	0.57	0.07	0.40	0.03	0.26	0.01	0.15	0.00	0.07	0.00
7	7.39	33.39	4.21	8.50	2.60	2.63	1.50	0.69	1.10	0.33	0.67	0.10	0.47	0.04	0.30	0.01	0.18	0.00	0.08	0.00
8	8.45	42.76	4.81	10.88	2.97	3.36	1.72	0.89	1.26	0.42	0.76	0.12	0.54	0.05	0.35	0.02	0.20	0.00	0.09	0.00
9	9.50	53.18	5.41	13.54	3.34	4.18	1.93	1.10	1.42	0.52	0.86	0.15	0.60	0.06	0.39	0.02	0.23	0.01	0.10	0.00
10	10.56	64.64	6.02	16.45	3.71	5.08	2.15	1.34	1.58	0.63	0.96	0.19	0.67	0.08	0.43	0.03	0.25	0.01	0.11	0.00
11	11.61	77.12	6.62	19.63	4.08	6.06	2.36	1.60	1.73	0.75	1.05	0.22	0.74	0.09	0.48	0.03	0.28	0.01	0.12	0.00
12	12.67	90.60	7.22	23.06	4.45	7.12	2.57	1.88	1.89	0.89	1.15	0.26	0.80	0.11	0.52	0.04	0.30	0.01	0.13	0.00
14	14.78	120.54	8.42	30.68	5.20	9.48	3.00	2.50	2.21	1.18	1.34	0.35	0.94	0.15	0.61	0.05	0.35	0.01	0.16	0.00
16	16.89	154.35	9.63	39.29	5.94	12.14	3.43	3.20	2.52	1.51	1.53	0.45	1.07	0.19	0.69	0.07	0.40	0.02	0.18	0.00
18	19.01	191.98	10.83	48.87	6.68	15.10	3.86	3.98	2.84	1.88	1.72	0.56	1.21	0.23	0.78	0.08	0.45	0.02	0.20	0.00
20			12.03	59.39	7.42	18.35	4.29	4.83	3.15	2.28	1.91	0.68	1.34	0.29	0.87	0.10	0.50	0.03	0.22	0.00
22			13.24	70.86	8.17	21.89	4.72	5.76	3.47	2.72	2.10	0.81	1.47	0.34	0.95	0.12	0.55	0.03	0.24	0.00
24			14.44	83.25	8.91	25.72	5.15	6.77	3.78	3.20	2.29	0.95	1.61	0.40	1.04	0.14	0.60	0.04	0.27	0.01
26			15.64	96.55	9.65	29.83	5.58	7.85	4.10	3.71	2.49	1.10	1.74	0.46	1.13	0.16	0.66	0.04	0.29	0.01
28			16.85	110.76	10.39	34.22	6.01	9.01	4.41	4.26	2.68	1.26	1.88	0.53	1.22	0.18	0.71	0.05	0.31	0.01
30			18.05	125.85	11.14	38.88	6.44	10.24	4.73	4.84	2.87	1.43	2.01	0.60	1.30	0.21	0.76	0.06	0.33	0.01
35					12.99	51.73	7.51	13.62	5.52	6.43	3.35	1.91	2.35	0.80	1.52	0.28	0.88	0.07	0.39	0.01
40					14.85	66.24	8.58	17.44	6.30	8.24	3.82	2.44	2.68	1.03	1.74	0.36	1.01	0.10	0.44	0.01
45					16.71	82.38	9.65	21.69	7.09	10.25	4.30	3.04	3.02	1.28	1.95	0.44	1.13	0.12	0.50	0.02
50					18.56	100.14	10.73	26.37	7.88	12.46	4.78	3.69	3.35	1.56	2.17	0.54	1.26	0.14	0.56	0.02
55							11.80	31.46	8.67	14.86	5.26	4.41	3.69	1.86	2.39	0.64	1.39	0.17	0.61	0.02
60							12.87	36.96	9.46	17.46	5.74	5.18	4.02	2.18	2.60	0.76	1.51	0.20	0.67	0.03
65							13.94	42.87	10.24	20.25	6.21	6.00	4.36	2.53	2.82	0.88	1.64	0.23	0.72	0.03
70							15.02	49.17	11.03	23.23	6.69	6.89	4.69	2.90	3.04	1.01	1.76	0.27	0.78	0.04
75							16.09	55.87	11.82	26.39	7.17	7.83	5.03	3.30	3.25	1.15	1.89	0.31	0.83	0.04
80							17.16	62.97	12.61	29.74	7.65	8.82	5.36	3.71	3.47	1.29	2.02	0.34	0.89	0.05
85							18.23	70.45	13.40	33.28	8.13	9.87	5.70	4.16	3.69	1.44	2.14	0.38	0.94	0.05
90							19.31	78.32	14.18	36.99	8.61	10.97	6.03	4.62	3.91	1.61	2.27	0.43	1.00	0.06
95									14.97	40.89	9.08	12.12	6.37	5.11	4.12	1.77	2.39	0.47	1.06	0.06
100									15.76	44.96	9.56	13.33	6.70	5.62	4.34	1.95	2.52	0.52	1.11	0.07
110									17.34	53.64	10.52	15.91	7.37	6.70	4.77	2.33	2.77	0.62	1.22	0.08
120									18.91	63.02	11.47	18.69	8.04	7.87	5.21	2.74	3.02	0.73	1.33	0.10
130											12.43	21.67	8.71	9.13	5.64	3.17	3.28	0.85	1.44	0.12
140											13.39	24.86	9.38	10.47	6.08	3.64	3.53	0.97	1.55	0.13
150											14.34	28.25	10.05	11.90	6.51	4.14	3.78	1.10	1.67	0.15
160											15.30	31.84	10.72	13.41	6.94	4.66	4.03	1.24	1.78	0.17
170											16.25	35.62	11.39	15.00	7.38	5.21	4.28	1.39	1.89	0.19
180											17.21	39.60	12.06	16.68	7.81	5.80	4.54	1.55	2.00	0.21
190											18.17	43.77	12.73	18.43	8.25	6.41	4.79	1.71	2.11	0.23
200											19.12	48.13	13.40	20.27	8.68	7.05	5.04	1.88	2.22	0.26
225													15.08	25.21	9.76	8.76	5.67	2.34	2.50	0.32
250													16.75	30.64	10.85	10.65	6.30	2.84	2.78	0.39
275													18.43	36.56	11.93	12.71	6.93	3.39	3.05	0.46
300															13.02	14.93	7.56	3.98	3.33	0.54
325															14.10	17.31	8.19	4.62	3.61	0.63
350															15.19	19.86	8.82	5.29	3.89	0.72
375															16.27	22.57	9.45	6.02	4.16	0.82
400															17.36	25.43	10.08	6.78	4.44	0.92
425															18.44	28.46	10.71	7.58	4.72	1.03
450															19.53	31.63	11.34	8.43	5.00	1.15
475																	11.97	9.32	5.28	1.27
500																	12.60	10.25	5.55	1.40
550																	13.86	12.23	6.11	1.67
600																	15.12	14.36	6.66	1.96

Note: Dark shaded area of chart indicates velocities over 5' per second. Use with caution

The velocity values were derived using the following equation $V = \frac{0.4085 \times Q_{gpm}}{d^2}$

Table are based upon the following Hazen-Williams equation: $H_f = 0.2083 \times \left(\frac{100}{C}\right)^{1.852} \times \frac{Q^{1.852}}{D^{4.8655}}$ for change in psi per foot of elevation. Pressure loss for uphill elevation and pressure gain for downhill elevation changes.

Type K Copper Water Tube

C=140

psi Loss per 100 Feet of Tube (psi/100 ft.)

Sizes 1/2" through 3" Flow 1 through 600 gpm

Size	1/2"		5/8"		3/4"		1 "		1 1/4"		1 1/2"		2 "		2 1/2"		3"	
O.D.	0.625		0.750		0.875		1.125		1.375		1.625		2.125		2.625		3.125	
I.D.	0.5270		0.652		0.745		0.995		1.245		1.481		1.959		2.435		2.907	
Wall Thk	0.049		0.049		0.065		0.065		0.065		0.072		0.083		0.095		0.109	
Flow gpm	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss	Velocity fps	psi Loss
1	1.47	1.09	0.96	0.39	0.74	0.20	0.41	0.05	0.26	0.02	0.19	0.01	0.11	0.00	0.07	0.00	0.05	0.00
2	2.94	3.94	1.92	1.40	1.47	0.73	0.83	0.18	0.53	0.06	0.37	0.03	0.21	0.01	0.14	0.00	0.10	0.00
3	4.41	8.35	2.88	2.96	2.21	1.55	1.24	0.38	0.79	0.13	0.56	0.05	0.32	0.01	0.21	0.00	0.15	0.00
4	5.88	14.23	3.84	5.05	2.94	2.64	1.65	0.65	1.05	0.22	0.74	0.09	0.43	0.02	0.28	0.01	0.19	0.00
5	7.35	21.51	4.80	7.64	3.68	3.99	2.06	0.98	1.32	0.33	0.93	0.14	0.53	0.04	0.34	0.01	0.24	0.01
6	8.83	30.14	5.77	10.70	4.42	5.59	2.48	1.37	1.58	0.46	1.12	0.20	0.64	0.05	0.41	0.02	0.29	0.01
7	10.30	40.11	6.73	14.24	5.15	7.44	2.89	1.82	1.84	0.61	1.30	0.26	0.75	0.07	0.48	0.02	0.34	0.01
8	11.77	51.36	7.69	18.23	5.89	9.53	3.30	2.33	2.11	0.78	1.49	0.34	0.85	0.09	0.55	0.03	0.39	0.01
9	13.24	63.88	8.65	22.68	6.62	11.85	3.71	2.90	2.37	0.97	1.68	0.42	0.96	0.11	0.62	0.04	0.44	0.02
10	14.71	77.64	9.61	27.56	7.36	14.41	4.13	3.52	2.64	1.18	1.86	0.51	1.06	0.13	0.69	0.05	0.48	0.02
11	16.18	92.63	10.57	32.88	8.10	17.19	4.54	4.21	2.90	1.41	2.05	0.61	1.17	0.16	0.76	0.05	0.53	0.02
12	17.65	108.82	11.53	38.63	8.83	20.19	4.95	4.94	3.16	1.66	2.23	0.71	1.28	0.18	0.83	0.06	0.58	0.03
14			13.45	51.40	10.30	26.87	5.78	6.57	3.69	2.21	2.61	0.95	1.49	0.24	0.96	0.08	0.68	0.04
16			15.38	65.82	11.78	34.40	6.60	8.42	4.22	2.83	2.98	1.22	1.70	0.31	1.10	0.11	0.77	0.05
18			17.30	81.86	13.25	42.79	7.43	10.47	4.74	3.52	3.35	1.51	1.92	0.39	1.24	0.13	0.87	0.06
20			19.22	99.50	14.72	52.01	8.25	12.72	5.27	4.28	3.72	1.84	2.13	0.47	1.38	0.16	0.97	0.07
22					16.19	62.05	9.08	15.18	5.80	5.10	4.10	2.19	2.34	0.56	1.52	0.20	1.06	0.08
24					17.66	72.90	9.90	17.84	6.33	5.99	4.47	2.58	2.55	0.66	1.65	0.23	1.16	0.10
26					19.14	84.55	10.73	20.69	6.85	6.95	4.84	2.99	2.77	0.77	1.79	0.27	1.26	0.11
28							11.55	23.73	7.38	7.97	5.21	3.43	2.98	0.88	1.93	0.30	1.35	0.13
30							12.38	26.96	7.91	9.06	5.59	3.89	3.19	1.00	2.07	0.35	1.45	0.15
35							14.44	35.87	9.22	12.05	6.52	5.18	3.73	1.33	2.41	0.46	1.69	0.19
40							16.50	45.94	10.54	15.44	7.45	6.63	4.26	1.70	2.76	0.59	1.93	0.25
45							18.57	57.13	11.86	19.20	8.38	8.25	4.79	2.12	3.10	0.73	2.18	0.31
50									13.18	23.33	9.31	10.03	5.32	2.57	3.44	0.89	2.42	0.38
55									14.49	27.84	10.24	11.96	5.85	3.07	3.79	1.06	2.66	0.45
60									15.81	32.71	11.17	14.06	6.39	3.60	4.13	1.25	2.90	0.53
65									17.13	37.93	12.11	16.30	6.92	4.18	4.48	1.45	3.14	0.61
70									18.45	43.51	13.04	18.70	7.45	4.79	4.82	1.66	3.38	0.70
75									19.77	49.44	13.97	21.25	7.98	5.45	5.17	1.89	3.63	0.80
80											14.90	23.95	8.52	6.14	5.51	2.13	3.87	0.90
85											15.83	26.79	9.05	6.87	5.86	2.38	4.11	1.01
90											16.76	29.78	9.58	7.64	6.20	2.65	4.35	1.12
95											17.69	32.92	10.11	8.44	6.55	2.93	4.59	1.24
100											18.62	36.20	10.64	9.28	6.89	3.22	4.83	1.36
110													11.71	11.07	7.58	3.84	5.32	1.62
120													12.77	13.01	8.27	4.52	5.80	1.91
130													13.84	15.09	8.96	5.24	6.28	2.21
140													14.90	17.31	9.65	6.01	6.77	2.54
150													15.97	19.67	10.33	6.83	7.25	2.88
160													17.03	22.17	11.02	7.69	7.73	3.25
170													18.10	24.80	11.71	8.61	8.22	3.63
180													19.16	27.57	12.40	9.57	8.70	4.04
190															13.09	10.58	9.18	4.47
200															13.78	11.63	9.67	4.91
225															15.50	14.46	10.88	6.11
250															17.22	17.58	12.08	7.42
275															18.95	20.97	13.29	8.86
300																	14.50	10.41
325																	15.71	12.07
350																	16.92	13.84
375																	18.13	15.73
400																	19.34	17.73
425																		
450																		
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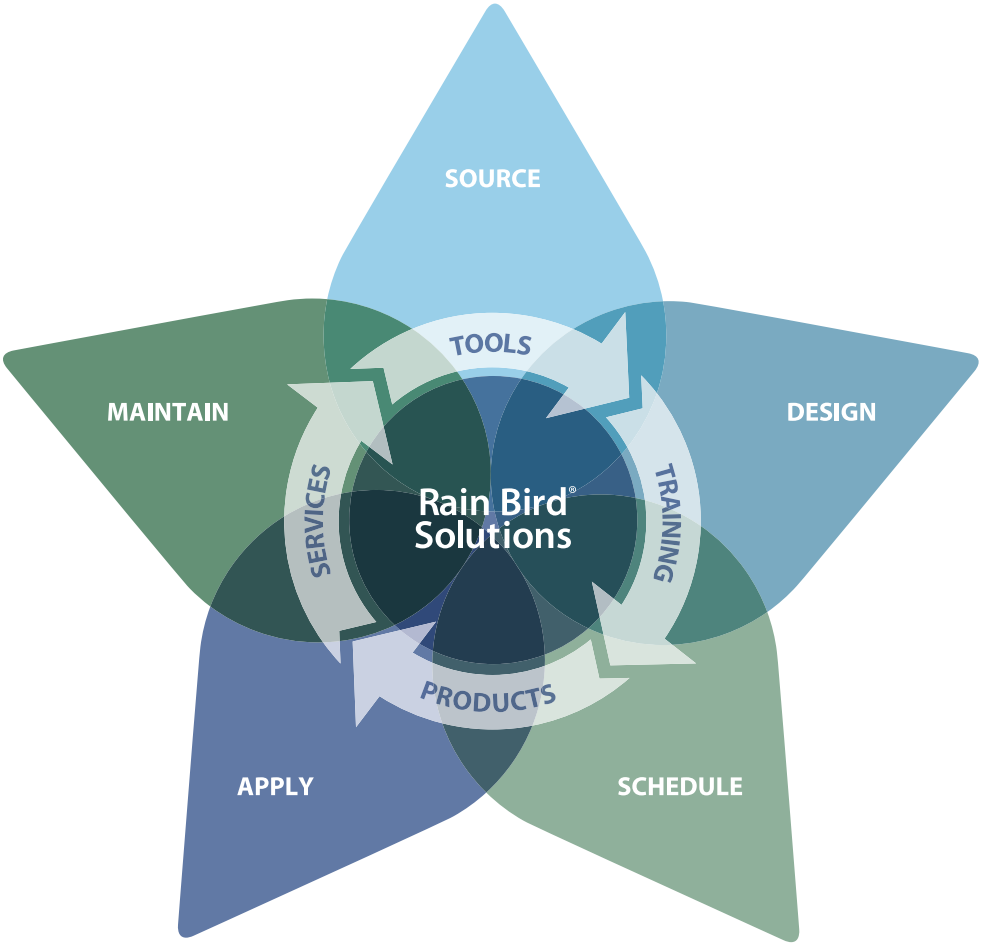

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At Rain Bird, we believe it is our responsibility to develop products and technologies that use water efficiently. Our commitment also extends to education, training and services for our industry and our communities.

The need to conserve water has never been greater. We want to do even more, and with your help, we can. Visit www.rainbird.com for more information about The Intelligent Use of Water.™

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