
# Valves

## Major Products

| Primary Applications | DV | DVF | ASVF | HV | HVF | PGA | PEB | PESB/PESB-R | EFB-CP | BPES | QC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manual Bleed | I/E | I/E | I/E | I/E | I/E | I | I/E | I/E | I/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 / DVF Series

Diaphragm Valve – The Industry Leader for Over 25 Years

## Features

- Double-filtered (diaphragm and solenoid) pilot-flow design for maximum reliability and grit resistance
- Buna-N, balanced pressure diaphragm with self-cleaning 90 mesh (200 micron) pilot water filter and captive spring
- Energy-efficient, low-power encapsulated solenoid with captured plunger and 90-mesh (200 micron) solenoid filter
- Unique, easy-to-turn pressure assisted flow control mechanism (DVF models only)
- External bleed to manually flush system of dirt and debris during installation and system start-up
- Internal bleed for spray-free manual operation
- Accepts Rain Bird TBOS latching solenoid for use with most battery-operated controllers
- Operates in low-flow and Landscape Drip applications when a 200 mesh filter is installed upstream
- **Not recommended for use with two-wire control systems**

## Specifications

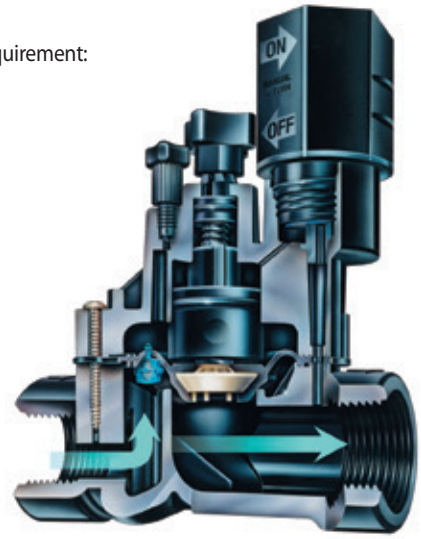
- Pressure: 15 to 150 psi (1,0 to 10,4 bar)
- 075-DV Non-Flow Control Model: 0.2 to 22 GPM (0,05 to 5,0 $m^3/h$; 0,01 to 1,39 l/s). For flows below 3 GPM (0,68 $m^3/h$; 0,19 l/s) or any Landscape Drip application, use a 200 mesh filter installed upstream
- 100-DV Non-Flow Control Model: 0.2 to 40 gpm (0,05 to 9,085 $m^3/h$; 0,01 to 2,52 l/s). For flows below 3 gpm (0,68 $m^3/h$; 0,19 l/s) or any Landscape Drip application, use a 200 mesh filter installed upstream
- 100-DVF Flow Control Model: 0.2 to 40 gpm (0,05 to 9.085 $m^3/h$; 0,01 to 2,52 l/s); For flows below 3 gpm (0,68 $m^3/h$; 0,19 l/s) or any Landscape Drip application, use a 200 mesh filter installed upstream
- Water Temperature: Up to 110° F (43° C)
- Ambient air temperature: Up to 125° F (52° C)
- 24 VAC 50/60 Hz (cycles per second) solenoid power requirement: 0.450A inrush current; 0.250A holding current
- Solenoid coil resistance: 38 Ohms

075-DV

100-DVF-MB

100-DV-A

100-DVF




DVF Cutaway

## How to Specify

**100 - DV - MB**

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

**Model**
DV: Remote Control Valve
DVF: Remote Control Valve with Flow Control

**Size**
075: ¾" (20/27);
100: 1" (26/34)

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

## DV / DVF Series (cont.)

### Dimensions

**DV Valves**

- 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)

**DVF Valves**

- Height: 5⅗" (14.2 cm)
- Length: 4⅜" (11.1 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
- 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.***

**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 | 075-DV ¾" psi | 100-DV/100-DVF 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 | 075-DV ¾" bar | 100-DV/100-DVF 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)*

# ASVF Series

Anti-siphon Valve with Flow Control – The Industry Leader for Over 20 Years

## Features

- Combination of the reliable DVF Angle valve and atmospheric backflow preventer in one unit
- Incorporates all features of DV/DVF Series valves
- I.A.P.M.O. and A.S.S.E listing approved
- City of Los Angeles listing approved
- **Not recommended for use with two-wire control systems**

## Specifications

- Pressure: 15 to 150 psi (1,0 to 10,4 bar)
- 075-ASVF Flow: 0.2 to 22 GPM (0,05 to 5,0 $m^3/h$; 0,01 to 1,39 l/s). For flows below 3 GPM (0,68 $m^3/h$; 0,19 l/s) or any Landscape Drip products application, use a 200 mesh filter installed upstream
- 100-ASVF Flow: 0.2 to 40 GPM (0,05 to 9,085 $m^3/h$; 0,01 to 2,52 l/s). For flows below 3 GPM (0,68 $m^3/h$; 0,19 l/s) or any Landscape Drip products application, use a 200 mesh filter installed upstream
- Water temperature: Up to 110° F (43° C)
- Ambient air temperature: Up to 125° F (52° C)
- 24 VAC 50/60 Hz (cycles per second) solenoid power requirement: 0.450A inrush current; 0.250A holding current
- Solenoid coil resistance: 38 Ohms

## Installation Notes

- Anti-siphon valve must be installed upright
- Anti-siphon unit 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 subjected to operating pressure for more than twelve (12) hours in any twenty-four (24) hour period
- Uniform Plumbing Code Table 603.2 Consult local codes

## Dimensions

- Height: 6¼" (15.8 cm)
- Length: 6 1/10" (15.5 cm)
- Width: 3⅕ " (8.1 cm)

## Models

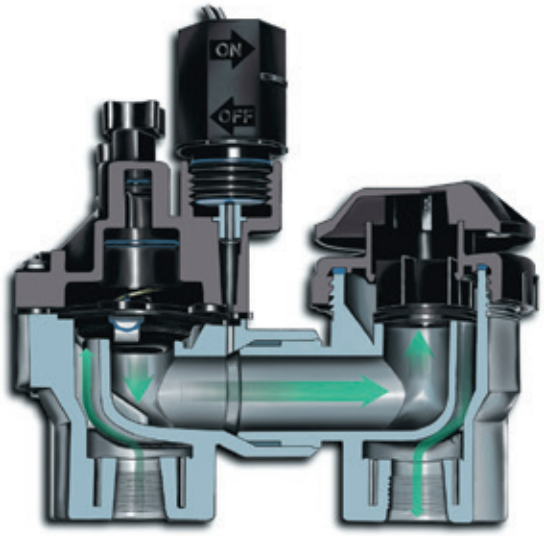
- 075-ASVF: ¾" (20/27)
- 100-ASVF: 1" (26/34)

*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.***

100-ASVF




ASVF Cutaway

**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*

## HV Series

High Value Valve. High Performance. Big Savings.

### Features

- Patented, eccentric, balanced pressure, Buna-N diaphragm with self-cleaning 90-mesh (200 micron) pilot water filter and captured stainless steel spring – Eccentric design provides smoother closing, less water hammer
- Only four durable, captured multi-drive bonnet screws that come out with half the number of turns for fast and easy servicing – at least twice as fast as the competition
- Glass-filled polypropylene body for strength (slip by slip model bodies are PVC)
- All popular model configurations available
- Compact design, 2.54" spin radius for tight installations
- Reverse flow, normally closed design
- External bleed to manually flush system of dirt and debris during installation and system start-up
- Internal bleed for spray-free manual operation
- Operates in low-flow and Landscape Drip applications when a 200 mesh filter is installed upstream

### Specifications

- Pressure: 15 to 150 PSI (1,0 to 10,3 bar)
- Flow: 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 Landscape Drip application, use a 200 mesh filter installed upstream
- Operating Temperatures: Water temperature up to 110° F (43° C); ambient temperature up to 125° F (52° C)
- 24 VAC 50/60 Hz (cycles/sec.) solenoid
- Inrush current: 0.290A at 60 Hz
- Holding current: 0.091A at 60 Hz
- Solenoid  Coil resistance: 70-85 Ohms (40° F - 110° F)


| 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 $m^3/h$ | 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*

### Dimensions

- Height: 4.62" (11.7 cm)
- Height (F): 5.62" (14.3 cm)
- Height (MB): 4.50" (11.4 cm)
- Length: 4.4" (11.2 cm)
- Length (MB): 5.68" (14.4 cm)
- Width: 3.1" (7.9 cm)

### 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.***

### 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)

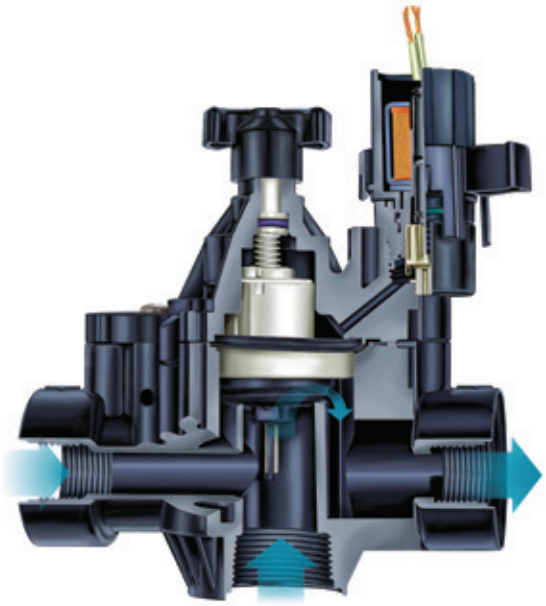
*Note: For non-U.S. applications it is necessary to specify NPT or BSP thread type (1" only)*

# PGA Series

Plastic Globe and Angle Valves. The Toughest, Most Reliable Valves In their Class

## Features

- Water-tight seal between the body and bonnet for maximum confidence, even in the most extreme conditions
- Robust construction and electrical design for quiet performance you can count on
- Filtered pilot flow to resist debris and clogging
- Slow closing to prevent water hammer and subsequent system damage
- Normally closed, forward flow design Accepts latching solenoid for use with Rain Bird battery-operated controllers
- Multi-drive screws (Phillips, flathead, hexagonal) for easy maintenance*
- Manual internal bleed operates the valve without allowing water into the valve box. This allows the pressure regulator to be adjusted without turning the valve on at the controller
- One-piece solenoid design with captured plunger and spring for easy servicing. Prevents loss of parts during field service
- Three-year trade warranty
- Accommodates optional, field-installed PRS-D pressure regulating dial to ensure optimum sprinkler performance
- Accepts latching solenoid for use with Rain Bird battery-operated controllers
- Optional purple flow control handle for non-potable water applications PGA-NP-HAN1 (1" and 1 1/2"); PGA-NP-HAN2 (2")



PGA Cutaway

150-PGA


### 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.*

### 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 (cont.)

### Options

- Accommodates optional, field installed PRS-D pressure regulating module to ensure optimum sprinkler performance. Regulates up to 100 psi (6.9 bar)
- Accepts latching solenoid for use with Rain Bird battery-operated controllers up to 150 psi (10,35 bar)
- Compatible with ESP-LXD decoders

### Specifications

- Pressure: 15 to 150 psi (1.04 to 10.4 bar)
- Flow without PRS-D option: 2 to150 gpm (0.45 to 34.05 $m^3$/h; 7.8 to 568 l/m)
- Flow with PRS-D option: 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)
- 24VAC 50/60Hz (cycles/sec) solenoid power requirement
- Inrush current: 0.41A (9.9VA) at 60Hz
- Holding current: 0.14A (3.43VA) at 60Hz
- Solenoid coil resistance: 30-39 Ohms, nominal

### 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*

**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" |
|---|---|---|---|---|---|---|
| 2 | 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 (psi)**

| Flow $m^3$/h | Flow l/m | 100-PGA Globe 2.5cm | 100-PGA Angle 2.5cm | 150-PGA Globe 3.8cm | 150-PGA Angle 3.8cm | 200-PGA Globe 5.1cm | 200-PGA Angle 5.1cm |
|---|---|---|---|---|---|---|---|
| 0.5 | 7.6 | 0.35 | 0.30 | - | - | - | - |
| 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 Valve Pressure Loss (psi)**

| 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 Valve Pressure Loss (bar)** **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 / PESB Series

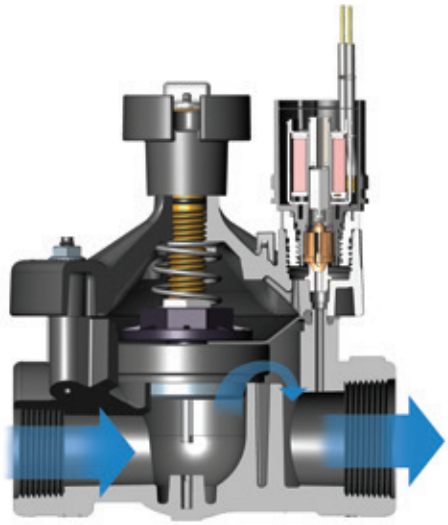
Best-in-class Professional Series Plastic Irrigation Valves

## Features

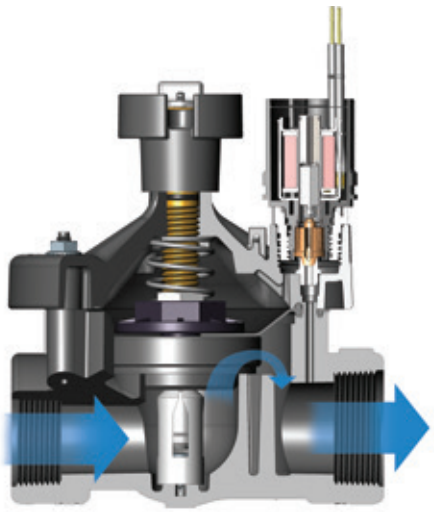
- Durable glass-filled nylon construction with fabric-reinforced rubber diaphragm for long life and reliable performance
- Globe configuration
- Normally closed, forward flow design
- Slow closing to prevent water hammer and subsequent system damage
- Low flow capability for a wide range of applications
- One-piece solenoid design with captured plunger and spring for easy servicing. Prevents loss of parts during field service
- Flow control handle adjusts water flows as needed
- Manual internal bleed manually operates the valve without allowing water into the valve box; allows pressure regulator to be adjusted without turning the valve on at the controller first
- Manual external bleed permits flushing debris from the system. Recommended for system start up and after repairs
- Stainless steel studs molded into the body. Bonnet can be attached and removed more easily and more often without damaging threads
- Nylon scrubber scrapes a stainless steel screen to clean and break down grit and plant material. Prevents debris build-up and clogging (PESB Series only)
- Five-year trade warranty

## Specifications

- Pressure: 20 to 200 psi (1.4 to 13.8 bar)
- Flow without PRS-D option: 0.25 to 200 GPM (0.06 to 45 $m^3/h$; 0.02 to 12.60 l/s)
- Flow with PRS-D option: 5 to 200 GPM (1.14 to 45 $m^3/h$; 0.32 to 12.60 l/s)
- Temperature: Up to 150° F (66° C)
- 24VAC 50/60Hz (cycles/sec) solenoid power requirement
- Inrush current: 0.41A (9.9VA) at 60Hz
- Holding current: 0.14A (3.43VA) at 60Hz
- Solenoid coil resistance: 30-39 Ohms, nominal



PEB Cutaway



PESB Cutaway



150-PEB

150-PESB

## 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.*

## PEB / PESB Series (cont.)

### Options

- Accommodates optional, field installed PRS-D pressure regulating module to ensure optimum sprinkler performance. Regulates up to 100 psi (6.9 bar)
- Accepts latching solenoid for use with Rain Bird battery-operated controllers up to 150 psi (10,35 bar)
- Compatible with ESP-LXD decoders
- Optional purple flow control handle for non-potable water applications PEB-NP-HAN1 (1"); PEB-NP-HAN2 (1 1/2" and 2")

### 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 2.5cm | 150-PEB 3.8cm | 200-PEB 5.1cm |
|---|---|---|---|---|
| 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 Series Valves

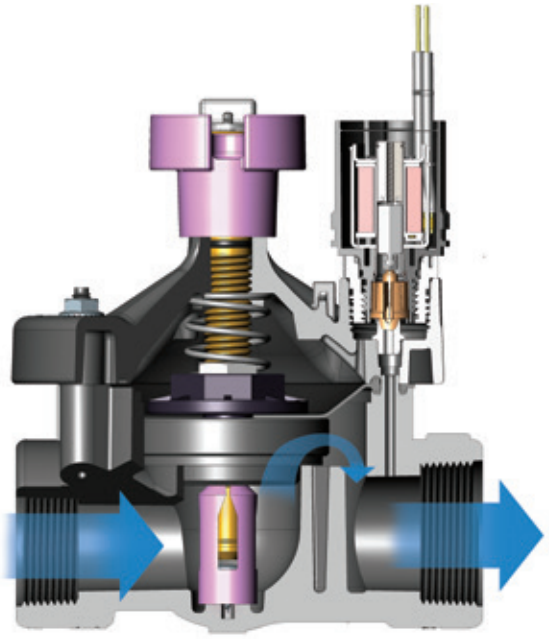
Durable Plastic – chlorine resistant Professional Plastic Irrigation Valves for reclaimed water irrigation applications

## Features

- Plastic diaphragm and scrubber components molded of chlorine- and chemical-resistant plastic material
- Durable glass-filled nylon construction for long life and heavy-duty performance at 200 psi (13.80 bars) pressure
- Stainless steel studs molded into the body. Bonnet can be attached and removed easily without damaging threads
- One-piece solenoid design with captured plunger and spring for easy servicing. Prevents loss of parts during field service
- 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
- 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
- Five-year trade warranty

## Options

- Accommodates optional, field installed PRS-D pressure regulating module to ensure optimum sprinkler performance. Regulates up to 100 psi (6.9 bar)
- Accepts latching solenoid for use with Rain Bird battery-operated controllers up to 150 psi (10.35 bar)
- Compatible with ESP-LXD decoders



PESB-R Cutaway

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.*

## PESB-R Series (cont.)

### Specifications

- Pressure: 20 to 200 psi (1.38 to 13.80 bar)
- Flow: 0.25 to 200 gpm (0.06 to 45.40 $m^3/h$; 0.02 to 12.60 l/s)
- Flow with PRS-Dial: 5 to 200 gpm (1.14 to 45.40 $m^3/h$; 0.32 to 12.60 l/s)
- Temperature: Up to 150° F (66° C)
- 24VAC 50/60Hz (cycles/sec) solenoid power requirement
- Inrush current: 0.41A (9.9VA) at 60Hz
- Holding current: 0.14A (3.43VA) at 60Hz
- Solenoid coil resistance: 30-39 Ohms, nominal

### 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)

*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 2.5cm | 150-PESB-R 3.8cm | 200-PESB-R 5.1cm |
|---|---|---|---|---|
| 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 Series Brass Valves

Highly durable Brass Irrigation Valves - Globe Configuration

## Features

- 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
- 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 design with captured plunger and spring for easy servicing. Prevents loss of parts during field service
- 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
- Reclaimed water compatible: all models now feature EPDM diaphragms and chlorine-resistant parts as standard equipment
- Three-year trade warranty

## Options

- Accommodates optional, field installed PRS-D pressure regulating module to ensure optimum sprinkler performance. Regulates up to 100 psi (6.9 bar)
- Accepts latching solenoid for use with Rain Bird battery-operated controllers up to 150 psi (10.35 bar)
- Compatible with ESP-LXD decoders

## Specifications

- Pressure: to 200 psi (1.04 to 13.80 bar)
- Flow with/without PRS-D: 5 to 200 GPM (1.14 to 45.40 $m^3/h$; 0.32 to 12.60 l/s)
- Temperature: up to 150° F (66° C)
- 24VAC 50/60Hz (cycles/sec) solenoid power requirement
- Inrush current: 0.41A (9.9VA) at 60Hz
- Holding current: 0.14A (3.43VA) at 60Hz
- Solenoid coil resistance: 30-39 Ohms, nominal

## Dimensions

| Model | Height | Length | Width |
|---|---|---|---|
| • 100-EFB-CP: | 6" (15.2 cm) | 4½" (11.4 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

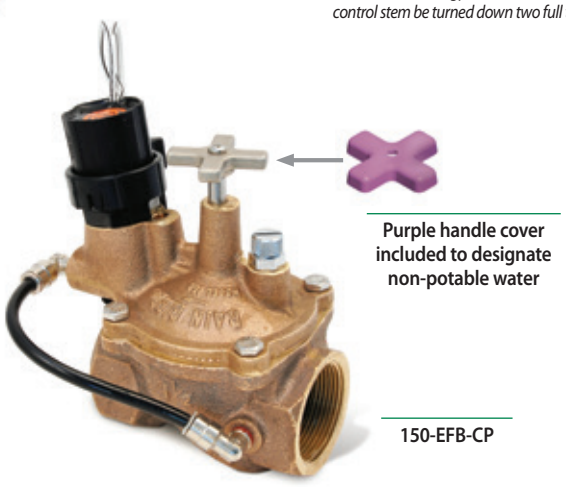
- 100-EFB-CP: 1" (26/34)*
- 150-EFB-CP: 1½" (40/49)*
- 200-EFB-CP: 2" (50/60)*

* *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 Cutaway



Purple handle cover included to designate non-potable water

150-EFB-CP

## How to Specify

**100 - EFB-CP - PRS-D**

**Size**
100: 1"
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.*

## EFB-CP Series (cont.)

**EFB-CP Series Valve Pressure Loss (psi)**

| Flow gpm | 100-EFB-CP 1" | 150-EFB-CP 1½" | 200-EFB-CP 2" |
|---|---|---|---|
| 5 | 0.2 | - | - |
| 10 | 0.7 | - | - |
| 15 | 1.2 | - | - |
| 20 | 2.1 | 2.3 | 0.5 |
| 30 | 5 | 2.9 | 0.6 |
| 40 | 8.2 | 2 | 0.8 |
| 50 | 13 | 3.3 | 1.1 |
| 60 | - | 4.6 | 1.8 |
| 80 | - | 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 2.5cm | 150-EFB-CP 3.8cm | 200-EFB-CP 5.1cm |
|---|---|---|---|---|
| 1 | 19 | 0.01 | - | - |
| 3 | 50 | 0.07 | - | - |
| 6 | 100 | 0.27 | 0.19 | 0.04 |
| 9 | 150 | 0.56 | 0.14 | 0.05 |
| 12 | 200 | - | 0.25 | 0.09 |
| 15 | 250 | - | 0.38 | 0.14 |
| 18 | 300 | - | 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-BPES Brass Valves

3" Brass Master Valve - Globe and angle configuration

### Features

- Unique hybrid construction featuring durable red brass body and glass-filled nylon bonnet for long life at a value price
- Normally closed, forward flow design
- Slow closing to prevent water hammer and subsequent system damage
- 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 internal bleed operates the valve without allowing water into the valve box. Allows pressure regulator adjustment without turning the valve on at the controller
- Manual external bleed permits flushing debris from the system. Recommended for system start up and repairs
- Highly efficient operation with extremely low pressure loss
- Patented nylon scrubber scrapes a stainless steel screen to clean and break down grit and plant material. Prevents debris build-up and clogging
- Three-year trade warranty

### Options

- Accommodates field-installed PRS-D pressure regulating module to ensure optimum sprinkler performance
- Purple flow control handle for non-potable water applications (BPE-NP-HAN)
- Latching solenoid for use with Rain Bird battery-operated controllers up to 150 psi (10.4 bar)

### Specifications

- Pressure: 20 to 200 psi (1.4 to 13.8 bar)
- Flow with/without PRS-D option: 60 to 300 gpm (13.6 to 68.1 $m^3/h$; 3.78 to 18.90 l/s)
- Temperature: up to 140° F (60° C)
- Power: 24 VAC 50/60 Hz (cycles per second) solenoid
- Inrush current: 0.41 A (9.8 VA) at 60Hz
- Holding current: 0.28 A (6.7 VA) at 60Hz
- Coil resistance: 28 Ohms, nominal

**How to Specify**

**300 - BPES - PRS-D**

- **Size** 3" (80/90)
- **Model** BPES
- **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

| 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 |

| BPES 3" Valve Pressure Loss (bar) | | | METRIC |
|---|---|---|---|
| Flow $m^3/h$ | l/s | 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*

### Dimensions

| Model | Height | Length | Width |
|---|---|---|---|
| • 300 | 13 5/8" (34.61 cm) | 8" (20.32 cm) | 7" (17.78 cm) |

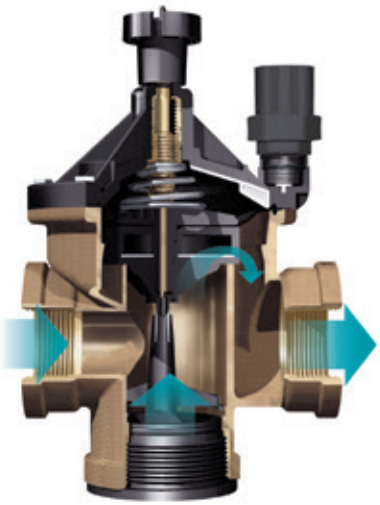
### Models

• 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 $m^3/h$; 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.*



BPES Cutaway

## WC Series Wire Connector

Connections Made Easy

### Features and Benefits

- Install Faster – the WC Series Wire Connectoris quick to install and provides 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
- 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

- WC20: Direct Bury Silicone Tube, Red Yellow Wire Nut, Bag of 20

WC20

| Wire Combinations (for solid and stranded wire) | |
|---|---|
| WC20 | |
| 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.*

# PRS-Dial

Pressure Regulating Module

## Features

- 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, 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 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-D 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-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-PEB with PRS-Dial Installation†

300-BPES with PRS-Dial Installation†

# Quick-Coupling Valves

Convenient water access in potable and non-potable systems

## Features

- Optional locking cover on models 33-DLRC, 44-LRC, 5-LRC, 33-DNP, 44-NP, 44-NP ACME, 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, 44-NP ACME, 33-DNP, and 44-NP)
- Strong corrosion-resistant stainless steel spring prevents leakage
- Thermoplastic cover for durability
- 33-DNP, 44-NP, 44-NP ACME, and 5-NP covers marked with "Do Not Drink!" warnings in English and Spanish
- Three-year trade warranty

## Specifications

- 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, 44-NP ACME 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
- 44-NP ACME: 1" (26/34) Non-potable, Purple Locking Rubber Cover, 2-Piece Body, ACME thread
- 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 44-NP ACME | 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 (psi)**

| Flow | | 3-RC | 33-DRC 33-DLRC 33-DNP | 44-RC 44-LRC 44-NP 44-NP ACME | 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 | 0.4 | - | - |
| 6 | 100 | - | - | 0.62 | - | - |
| 7 | 117 | - | - | 0.83 | 0.3 | - |
| 8 | 133 | - | - | - | 0.4 | - |
| 9 | 150 | - | - | - | 0.5 | - |
| 10 | 167 | - | - | - | 0.61 | - |
| 12 | 200 | - | - | - | 0.85 | 0.13 |
| 14 | 233 | - | - | - | 1.15 | 0.18 |
| 16 | 267 | - | - | - | 1.5 | 0.25 |
| 22 | 367 | - | - | - | - | 0.54 |
| 28 | 473 | - | - | - | - | 0.97 |

Quick-Coupling Valve Cutaway

Quick Coupling Valves

## Valve Keys

Quick-Coupling Keys

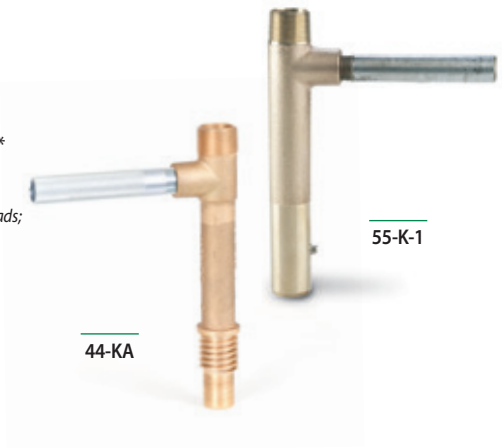
### Features

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

### Models

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

* *Available with BSP threads; specify when ordering*



55-K-1

44-KA

**Corresponding Valve Keys**

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

**Corresponding Valve Keys — METRIC**

| Valve | Key | Top Pipe Threads Valve | Valve |
|---|---|---|---|
| 3-RC | 33-DK | 20/27 | 15/21 |
| 33-DRC/33-NP | 33-DK | 20/27 | 15/21 |
| 44-RC/44-NP | 44-K/44-KA | 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, 44-NP ACME, 5-LRC, and 5-NP

### Model

- 2049 Cover Key

2049

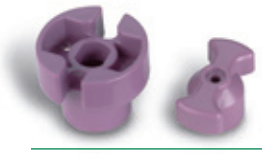
## Purple Valve Handle Assembly

### 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

BPES-NP-HAN

# PVB Professional Series Valve Boxes

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

### Features

- Light & durable construction
- Side ridges for additional side wall support
- Pre-molded pipe slots
- Bottom flanges to help prevent sinking
- Four colors: available in green, black, tan and purple
- Multiple configurations designed to provide tight seals and easy maintenance access
- Earth-friendly, LEED-compliant material made of 100% recycled materials (black boxes and black lids only)



| 6" Round Valve Box | 10" Round Valve Box | Mini Standard Valve Box | Standard Valve Box | Standard Extension | Jumbo Valve Box | Jumbo Extension |
|---|---|---|---|---|---|---|
| **SIZE** | | | | | | |
| Top Opening: 6 ⅛" diameter<br>Bottom Opening: 8 ⅝" diameter | Top Opening: 10" diameter<br>Bottom Opening: 12 ¹³⁄₁₆" diameter | Top Opening: 15" L x 9 ½" W<br>Bottom Opening: 18" L x 12 ½" W x 10" H | Top Opening: 18 ¼" L x 13" W<br>Bottom Opening: 21 ¼" L x 15 ¹³⁄₁₆" W x 12" H | Top Opening: 17" L x 11 ¾" W<br>Bottom Opening: 18 ⅞" L x 13 ⅜" W x 6 ¾" H | Top Opening: 22 ¼" L x 16 ⅜" W<br>Bottom Opening: 25 ¼" L x 19 ⅜" W x 12" H | Top Opening: 21 ⅜" L x 15 ⅞" W<br>Bottom Opening: 22 ⅛" L x 16 ⅜" W x 6 ⅝" H |
| **ADDITIONAL FEATURES** | | | | | | |
| • Snap-in overlapping lid<br>• Skid-resistant texture<br>• Body built with three ridges for additional sidewall support | • Overlapping lid with bolt hole and twist lock<br>• Skid-resistant lid texture<br>• Body built with double ridges for additional sidewall support | • Our compact alternative to a standard size box<br>• Drop-in lid<br>• Skid-resistant lid texture | • Drop-in lockable lid<br>• Skid-resistant lid texture<br>• Double ledge lid support<br>• Ridge adds additional support to sidewalls | • Overlapping lockable lid<br>• Skid-resistant lid texture<br>• Body can be used to extend the PVB Standard series<br>• Body can be used as a 6" deep box | • Drop-in lockable lid<br>• Skid-resistant lid texture<br>• Double ledge lid support<br>• Ridge adds additional support to sidewalls | • Overlapping lockable lid<br>• Skid-resistant lid texture<br>• Body can be used to extend the PVB Jumbo series<br>• Body can be used as a 6" deep box |
| **MODELS** | | | | | | |
| • PVB6RND: 6" round black body & overlapping green lid<br>• PVB6RNDP: 6" round black body & overlapping purple lid<br>• PVB6RNDT: 6" round black body & overlapping tan lid | • PVB10RND: 10" round black body & overlapping green lid<br>• PVB10RNDP: 10" round purple body & overlapping purple lid<br>• PVB10RNDT: 10" round tan body & overlapping tan lid | • PVBMST: 10" mini-standard black body & drop-in green lid | • PVBSTD: 12" standard black body & drop-in green lid<br>• PVBSTDP: 12" standard purple body & drop-in purple lid<br>• PVBSTDT: 12" standard tan body & drop-in tan lid | • STDEXT body can extend the Standard Valve box by 6" in height<br>• STDEXT body can be used as a 6" deep box to reduce digging<br>• PVBSTDEXT: 6" black body & overlapping green lid<br>• PVBSTDEXTT: 6" tan body & overlapping tan lid | • PVBJMB: 12" black body & drop-in green lid<br>• PVBJMBP: 12" purple body & drop-in purple lid<br>• PVBJMBT: 12" tan body & drop-in tan lid | • PVBJMBEXT: 6" black body & overlapping green lid<br>• PVBJMBEXTP: 6" purple body & overlapping purple lid<br>• PVBJMBEXTT: 6" tan body & overlapping tan lid |

**6" Round Lids**
PVB6RNDGL:
6" round green lid

**10" Round Lids**
PVB10RNDGL:
10" round green lid

**12" Standard Lids**
PVBSTDGL:
12" standard green lid

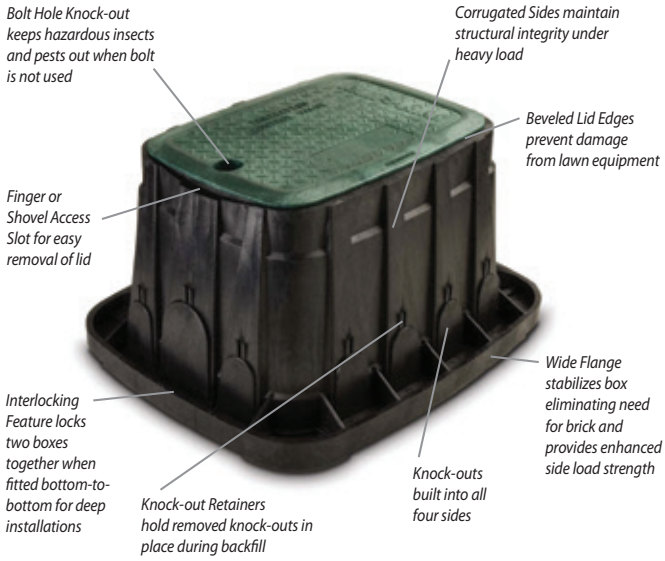
**12" Jumbo Lids**
PVBJMBGL:
12" jumbo green lid

## VB Series Valve Boxes

Commercial grade boxes that are loaded with a rich set of industry-leading features

### Features

- Strength and Stability – Multiple sizes and shapes are designed with corrugated sides and wide flange bases for maximum durability, compression strength, and stability
- Smart Lid Design – Designed with no holes to keep out pests, beveled edges to minimize damage potential from turf equipment, and for easy hand and shovel access
- Flexible Installations – Interlocking stacking capabilities, extension models and pipe hole knockouts support deeper and flexible installations
- Environmentally Friendly – Earth-friendly, LEED-compliant material made of 100% recycled materials (black boxes and black lids only)




| 7 Inch Round Valve Box | 10 Inch Round Valve Box | Standard Valve Box | Standard Extension | Jumbo Valve Box | Jumbo Extension | Super Jumbo Valve Box | Maxi Jumbo Valve Box |
|---|---|---|---|---|---|---|---|
| **SIZE** | | | | | | | |
| Bottom Diameter: 9.9 inches (25,1 cm) Height: 9.0 inches (22,9 cm) | Bottom Diameter: 13.75 inches (34,9 cm) Height: 10.0 inches (25,4 cm) | Length: 21.8 inches (55,4 cm) Width: 16.6 inches (42,2 cm) Height: 12.0 inches (30,5 cm) | Length: 20.0 inches (50,8 cm) Width: 14.75 inches (37,5 cm) Height: 6.75 inches (17,1 cm) | Length: 26.3 inches (66,8 cm) Width: 19.8 inches (50,3 cm) Height: 12.1 inches (30,7 cm) | Length: 24.4 inches (62,0 cm) Width: 17.9 inches (45,5 cm) Height: 6.75 inches (17,1 cm) | Length: 33.1 inches (84,1 cm) Width: 23.8 inches (60,5 cm) Height: 15.0 inches (38,1 cm) | Length: 40.3 inches (102,4 cm) Width: 27.1 inches (68,8 cm) Height: 18.0 inches (45,7 cm) |
| **ADDITIONAL FEATURES** | | | | | | | |
| • Easily removable knock-outs simplify pipe placement and reduce installation time<br>• Four equally spaced knock-outs accommodate up to 2.0" diameter pipe | • Easily removable knock-outs simplify pipe placement and reduce installation time<br>• Four equally spaced knock-outs accommodate up to 2.0" diameter pipe | • Two large center knock-outs accommodate up to 3 1/2" ( 8.9 cm) diameter pipe and eleven knock-outs accommodate up to 2" (5.0 cm) diameter pipe | • Extension models support deeper and more flexible installations | • Easily removable knock-outs simplify pipe placement and reduce installation time<br>• Two large center knock-outs accommodate up to 3.5" diameter pipe. (Extensions do not have knock-outs) | • Extension models support deeper and more flexible installations | • Easily removable knock-outs simplify pipe placement and reduce installation time<br>• Thirteen large knock-outs accommodate up to 3.5" diameter pipe | • Easily removable knock-outs simplify pipe placement and reduce installation time. Six large knock-outs on the ends accommodate up to 5.0" diameter pipe and 12 knock-outs on the sides accommodate up to 3.0" diameter pipe |
| **MODELS** | | | | | | | |
| • VB7RND: 7" Round Body & Green Lid | • VB10RND: 10" Round Body & Green Lid<br>• VB10RNDB: 10" Round Body Only<br>• VB10RNDGL: Green Lid<br>• VB10RNDPL: Purple Lid<br>• VB10RNDBKL: Black Lid<br>• VB10RNDH: 10" Round Body & Locking Green Lid | • VBSTD: Standard Body & Green Lid<br>• VBSTDB: Standard Body Only<br>• VBSTDGL: Green Lid<br>• VBSTDPL: Purple Lid<br>• VBSTDBKL: Black Lid<br>• VBSTDH: Standard Body & Locking Green Lid | • VBSTD6EXTB: Standard Extension Body Only | • VBJMB: Jumbo Body & Green Lid<br>• VBJMBB: Jumbo Body Only<br>• VBJMBGL: Green Lid<br>• VBJMBPL: Purple Lid<br>• VBJMBBKL: Black Lid<br>• VBJMBH: Jumbo Body & Locking Green Lid | • VBJMB6EXTB: Jumbo Extension Body Only | • VBSPRH: Super Jumbo Body & 2 Lock Green Lid<br>• VBSPRPH: Super Jumbo Body & 2 Lock Purple Lid | • VBMAXH: Maxi-Jumbo Body & 2 Lock Green Lid<br>• VBMAXPH: Maxi-Jumbo Body & 2 Lock Purple Lid |

**LOCKING SYSTEMS**

- VB-LOCK-H: Hex head 3/8" x 2 1/4" (1.0 x 5.7 cm) bolt, washer, and clip
- VB-LOCK-P: Penta head 3/8" x 2 1/4" (1.0 x 5.7 cm) bolt, washer, and clip

VANDAL RESISTANT

## 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 | 3700 | | | | | | | |
| 16 | 4600 | 6000 | | | | | | |
| 14 | 5400 | 7400 | 9600 | | | | | |
| 12 | 6000 | 8600 | 11800 | 15200 | | | | |
| 10 | 6500 | 9600 | 13700 | 18700 | 24200 | | | |
| 8 | 6900 | 10400 | 15400 | 21800 | 29700 | 38500 | | |
| 6 | 7100 | 10900 | 16600 | 24300 | 34600 | 47100 | 60600 | |
| 4 | 7300 | 11300 | 17500 | 26300 | 38800 | 55100 | 74600 | 97000 |

**100 psi (6.9 bar)** Water Pressure at Valve

| Common Wire Size | Control Wire Size 18 • | 16 • | 14 • | 12 • | 10 • | 8 • | 6 • | 4 • |
|---|---|---|---|---|---|---|---|---|
| 18 | 3200 | | | | | | | |
| 16 | 4000 | 5200 | | | | | | |
| 14 | 4700 | 6400 | 8300 | | | | | |
| 12 | 5200 | 7400 | 10200 | 13200 | | | | |
| 10 | 5600 | 8300 | 11900 | 16200 | 20900 | | | |
| 8 | 5900 | 9000 | 13300 | 18900 | 25700 | 33300 | | |
| 6 | 6100 | 9500 | 14300 | 21100 | 29900 | 40700 | 52400 | |
| 4 | 6300 | 9800 | 15100 | 22800 | 33500 | 47700 | 64600 | 83900 |

**125 psi (8.6 bar)** Water Pressure at Valve

| Common Wire Size | Control Wire Size 18 • | 16 • | 14 • | 12 • | 10 • | 8 • | 6 • | 4 • |
|---|---|---|---|---|---|---|---|---|
| 18 | 2900 | | | | | | | |
| 16 | 3500 | 4600 | | | | | | |
| 14 | 4100 | 5700 | 7400 | | | | | |
| 12 | 4600 | 6600 | 9000 | 11700 | | | | |
| 10 | 5000 | 7400 | 10500 | 14400 | 18600 | | | |
| 8 | 5300 | 8000 | 11800 | 16800 | 22800 | 29600 | | |
| 6 | 5400 | 8400 | 12700 | 18700 | 26600 | 36200 | 46600 | |
| 4 | 5600 | 8700 | 13400 | 20200 | 29800 | 42300 | 57300 | 74600 |

**150 psi (10.4 bar)** Water Pressure at Valve

| Common Wire Size | Control Wire Size 18 • | 16 • | 14 • | 12 • | 10 • | 8 • | 6 • | 4 • |
|---|---|---|---|---|---|---|---|---|
| 18 | 2600 | | | | | | | |
| 16 | 3200 | 4100 | | | | | | |
| 14 | 3700 | 5000 | 6600 | | | | | |
| 12 | 4100 | 5900 | 8100 | 10400 | | | | |
| 10 | 4500 | 6600 | 9400 | 12800 | 16600 | | | |
| 8 | 4700 | 7100 | 10500 | 15000 | 20400 | 26400 | | |
| 6 | 4900 | 7500 | 11400 | 16700 | 23800 | 32300 | 41600 | |
| 4 | 5000 | 7800 | 12000 | 18100 | 26600 | 37800 | 51300 | 66600 |

**200 psi (13.8 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 | 3800 | 5500 | 7500 | 9700 | | | | |
| 10 | 4100 | 6100 | 8800 | 11900 | 15500 | | | |
| 8 | 4400 | 6600 | 9800 | 13900 | 19000 | 24600 | | |
| 6 | 4500 | 7000 | 10600 | 15500 | 22100 | 30100 | 38700 | |
| 4 | 4600 | 7200 | 11100 | 16800 | 24800 | 35200 | 47700 | 62000 |

## 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.

**EXAMPLE:**

**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 | 3200 | | | | | | | |
| 16 | 4000 | 5200 | | | | | | |
| 14 | 4700 | 6400 | 8300 | | | | | |
| 12 | 5200 | 7500 | 10200 | 13200 | | | | |
| 10 | 5700 | 8300 | 11900 | 16200 | 21000 | | | |
| 8 | 6000 | 9000 | 13300 | 18900 | 25800 | 33400 | | |
| 6 | 6200 | 9500 | 14400 | 21100 | 30100 | 40900 | 52600 | |
| 4 | 6300 | 9800 | 15200 | 22900 | 33700 | 47800 | 64800 | 84200 |

**100 psi (6.9 bar)** Water Pressure at Valve

| Common Wire Size | Control Wire Size 18 • | 16 • | 14 • | 12 • | 10 • | 8 • | 6 • | 4 • |
|---|---|---|---|---|---|---|---|---|
| 18 | 2900 | | | | | | | |
| 16 | 3500 | 4600 | | | | | | |
| 14 | 4100 | 5600 | 7300 | | | | | |
| 12 | 4600 | 6600 | 9000 | 11700 | | | | |
| 10 | 5000 | 7400 | 10500 | 14300 | 18600 | | | |
| 8 | 5300 | 8000 | 11800 | 16700 | 22800 | 29500 | | |
| 6 | 5400 | 8400 | 12700 | 18700 | 26500 | 36100 | 46500 | |
| 4 | 5600 | 8700 | 13400 | 20200 | 29700 | 42200 | 57200 | 74400 |

**125 psi (8.6 bar)** Water Pressure at Valve

| Common Wire Size | Control Wire Size 18 • | 16 • | 14 • | 12 • | 10 • | 8 • | 6 • | 4 • |
|---|---|---|---|---|---|---|---|---|
| 18 | 2400 | | | | | | | |
| 16 | 3000 | 3900 | | | | | | |
| 14 | 3500 | 4800 | 6300 | | | | | |
| 12 | 3900 | 5600 | 7700 | 9900 | | | | |
| 10 | 4300 | 6300 | 9000 | 12200 | 15800 | | | |
| 8 | 4500 | 6800 | 10000 | 14300 | 19400 | 25200 | | |
| 6 | 4600 | 7100 | 10800 | 15900 | 22700 | 30800 | 39700 | |
| 4 | 4700 | 7400 | 11400 | 17200 | 25400 | 36100 | 48800 | 63500 |

**150 psi (10.4 bar)** Water Pressure at Valve

| Common Wire Size | Control Wire Size 18 • | 16 • | 14 • | 12 • | 10 • | 8 • | 6 • | 4 • |
|---|---|---|---|---|---|---|---|---|
| 18 | 2200 | | | | | | | |
| 16 | 2700 | 3500 | | | | | | |
| 14 | 3100 | 4300 | 5600 | | | | | |
| 12 | 3500 | 5000 | 6800 | 8800 | | | | |
| 10 | 3800 | 5600 | 8000 | 10900 | 14100 | | | |
| 8 | 4000 | 6000 | 8900 | 12700 | 17300 | 22400 | | |
| 6 | 4100 | 6300 | 9600 | 14100 | 20100 | 27400 | 35300 | |
| 4 | 4200 | 6600 | 10200 | 15300 | 22600 | 32100 | 43400 | 56500 |

**200 psi (13.8 bar)** Water Pressure at Valve

| Common Wire Size | Control Wire Size 18 • | 16 • | 14 • | 12 • | 10 • | 8 • | 6 • | 4 • |
|---|---|---|---|---|---|---|---|---|
| 18 | 1800 | | | | | | | |
| 16 | 2300 | 2900 | | | | | | |
| 14 | 2600 | 3600 | 4700 | | | | | |
| 12 | 3000 | 4200 | 5800 | 7500 | | | | |
| 10 | 3200 | 4700 | 6800 | 9200 | 12000 | | | |
| 8 | 3400 | 5100 | 7600 | 10800 | 14700 | 19000 | | |
| 6 | 3500 | 5400 | 8200 | 12000 | 17100 | 23300 | 30000 | |
| 4 | 3600 | 5600 | 8600 | 13000 | 19200 | 27300 | 36900 | 48000 |

## 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 below, 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 size 12 wire for both common and control 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.

**EXAMPLE:**

**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 12 control wire