

P220G Series Plastic Valves Installation and Operating Instructions

Introduction

The P220G Series provides a full family of plastic valves are designed specifically to meet the challenging needs of today's golf course irrigation systems. Featuring precision pressure regulation, the P220G Series valve delivers the optimum pressure and flow to every sprinkler on the zone, ensuring maximum uniformity of the water to the turf.

The EZ-Reg pressure regulating system, a standard feature on all P220G valves, provides constant operating pressure. From low-pressure/flow applications of drip irrigation, to the high-pressure/flow requirements of high-volume sprinklers, the EZ-Reg adjusts easily with the micro-adjust dial and indicator, to provided constant downstream pressure 5–100 psi.

Also standard on the P220G series, is the heavy-duty SpikeGuard™ solenoid. Providing 20,000-volt lightning protection – the SpikeGuard solenoid has proven to minimize down time and service costs, even in the severe lightning-prone regions.

Note: The P220G valve should be installed below grade in a valve box or vault to provide service access and vandal resistance. The valve installation site should be readily accessible by grounds maintenance personnel and well clear of hardscape features, cart paths and foot traffic areas.



Specifications

- **Configuration:**
 - Globe/Angle
 - Glass-filled nylon and steel construction
 - 1", 1½", 2" and 3" NPT female thread models
 - 24 VAC electric actuation
 - Pressure regulating
 - 1" - 6¼" H x 3¾" W ■ 2" - 9½" H x 6½" W
 - 1½" - 7¼" H x 3¾" W ■ 3" - 10¾" H x 6½" W
- **Flow Range:**
 - 1" - 5—60 GPM ■ 2" - 80—180 GPM
 - 1½" - 30—120 GPM ■ 3" - 150—300 GPM
- **Operating Pressure Range:**
 - Inlet: 10—220 psi
 - Outlet: 5—100 ± 3 psi
 - Inlet/outlet minimum pressure differential: 10 psi
 - Burst pressure safety rating: 750 psi
- **EZReg Pressure Regulator:**
 - Compact, precision-dial design
 - Regulates during automatic and manual operation
 - Serviceable while valve is pressurized
 - Schrader-type poppet valve enabling easy verification of downstream pressure
- **Manual Bleed:**
 - Manual on/off control
 - Internal (downstream) bleed control (below solenoid) relieves water internally
 - External (atmospheric vent) bleed control (on flow control handle) relieves water to atmosphere
- **SpikeGuard Solenoid:**
 - 24 VAC, 50/60 Hz
 - Inrush - 0.12 amps
 - Holding - 0.10 amps
- **DC-latching Solenoid** (optional)
 - For Golf Decoder Control (GDC) applications
- **Diaphragm:**
 - Double-beaded, fabric-reinforced
- **Filter Screen:**
 - Stainless steel, 120-mesh
 - Self-flushing, contamination resistant and serviceable
- **Manual Flow Reduction Control:**
 - Adjustable downstream flow reduction to zero flow (off)

■ Friction Loss Chart

Flow (GPM)	5	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	180	200	225	250	275	300	
Size – Config.																							
1" Globe	4.0	4.2	3.2	4.1	7.2																		
	Angle	4.0	4.2	3.1	2.7	4.8																	
1½" Globe				1.6	2.3	3.6	5.2	7.0	9.2	11.7	14.4	17.5											
	Angle			1.3	1.6	2.8	4.0	5.5	7.1	9.0	11.0	13.3											
2" Globe									2.1	2.7	3.3	4.0	4.8	5.6	6.5	7.5	8.7						
	Angle								1.2	1.6	2.0	2.4	2.8	3.3	3.9	4.4	5.2						
3" Globe																	2.5	3.0	4.1	5.3	6.7	8.3	10.1
	Angle																1.9	2.4	3.3	4.3	5.5	6.9	8.5

Note: Friction loss values shown in psi. Operating valve outside indicated flow range is not recommended.

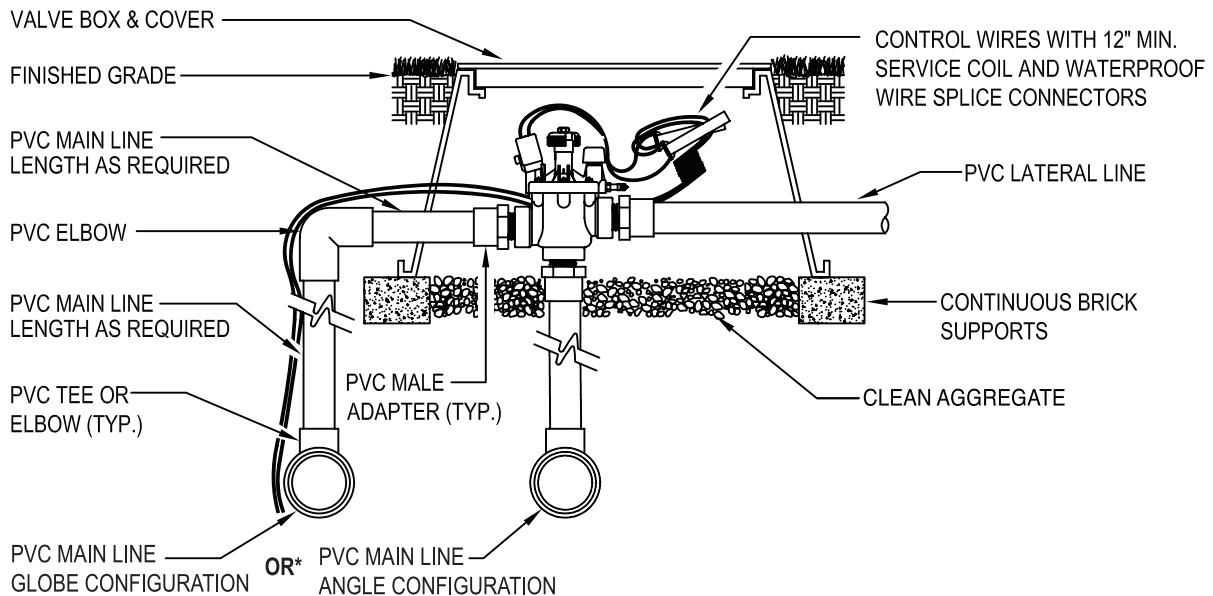
Installation Guidelines

- Note the flow direction arrow in the side of the valve body and install accordingly.
- The valve can be installed at any angle without affecting operation.
- Use direct-burial irrigation control wire for connection from the controller to valves.
- Leave a 12" wire expansion loop at each valve location on long-run wire lengths.
- Waterproof wire splice connectors are absolutely essential for proper electric control system operation. Follow the installation instructions provided by the connector manufacturer for optimum performance.

Common Wire Gauge Size	Control Wire Gauge Size						
	18	16	14	12	10	8	6
18	2040	2520	2940	3280	3540	3720	3860
16	2520	3260	4000	4660	5220	5620	5920
14	2940	4000	5180	6360	7420	8300	8960
12	3280	4660	6360	8240	10100	11800	13180
10	3540	5220	7420	10100	13180	16060	18770
8	3720	5260	8300	11800	16060	20800	25540
6	3860	5960	8960	13180	18700	25540	33080

Note: Values indicate maximum, one-way distance (in feet) between controller and valve solenoid under the following conditions: minimum voltage - 20 VAC, maximum amperage - 0.12A and operating pressure - 150 psi.

Typical Installation Detail



*SUPPLIED CAP PLUG MUST BE INSTALLED ON UNUSED INLET.

Valve Adjustment Procedures

- Close the valve by turning the Flow Control Handle fully clockwise, *just until resistance is felt - do not overtighten!*
- Remove the EZReg dial protective cover (if installed). Turn the control dial until the pointer indicates the desired downstream pressure (5 to 100 psi).
Note: One revolution of the control dial adjusts the pressure setting approximately 10 psi. A minimum of 10 psi pressure differential between the valve inlet and outlet is required for proper EZReg operation.
- Pressurize the main supply line to the valve. Confirm that all pipe connections are properly sealed.
- Actuate the valve either electrically at the controller, or manually by turning the Internal Bleed Handle counterclockwise to the ON position.
Note: EZReg operation is bypassed when the valve is manually actuated using the External Bleed Cap.
- Turn the Flow Control Handle slowly counterclockwise to adjust sprinkler operation.
- To confirm outlet pressure, remove the poppet valve cap, located directly below the EZReg. Attach a water-pressure test gauge to the poppet valve for a direct reading. Adjust pressure as preferred.

⚠ Important: The EZReg assembly can be removed for service while the valve is pressurized. However, the valve must not be operated with the EZReg assembly removed.

