



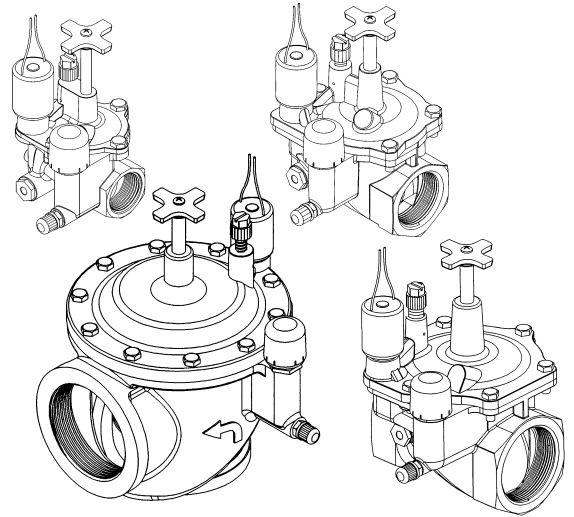
# P220 Series Plastic Valves

## Installation Instructions

### Introduction

Built on proven technologies and components, the ToroP 220 Series plastic valves are tough, have excellent performance and are extremely reliable. A self-cleaning metering system and 220 PSI rating assures years of trouble-free performance.

In commercial installations, it is advantageous to install the valves in a valve box. This enables the valve to be located, accessed and maintained easily. The use of clean aggregate in the the bottom of the box, and keeping valve box locations away from structures, potential hardscaping features (such as sidewalks) and large planting locations is recommended. Additionally, valve box locations generally should be in shrub beds and at right angles to structure locations. If the valves are installed below grade without a valve box, access to the top of the valve should be provided using a section of 4" PVC pipe and a Toro Valve Cover (Part No. 850-00) installed directly over each valve.



### Specifications

- Models:
  - 220 Series electric, 1", 1¼", 1½", 2", 2½", 3"
  - 220 Series electric pressure regulating, 1", 1¼", 1½", 2", 2½", 3"
- Flow range:
  - 1" — 5-40 GPM
  - 1¼" — 20-100 GPM
  - 1½" — 20-130 GPM
  - 2" — 30-180 GPM
  - 2½" — 60-250 GPM
  - 3" — 80-350 GPM
- Operating pressure:
  - Electric models: 10-220 PSI maximum
  - Pressure-regulating models:
    - Outlet: 5-30 PSI, ± 3 PSI (EZR-30)
    - 5-100 PSI, ± 3 PSI (EZR-100)
    - Inlet: 15-220 PSI
- Minimum pressure differential (between inlet and outlet): 10 PSI
- Burst pressure safety rating: 750 PSI
- Body styles:
  - Globe valve — 1", 1¼", 1½", 2" female threads
  - Angle valve — 2½", 3" female threads
  - BSP threads available
- Solenoid: 24 V a.c.
  - Inrush: 0.40 amps, 11.50 VA
  - Holding: 0.20 amps, 5.75 VA
- Dimensions:
  - 1" — 5¾" H x 5" W
  - 1¼" — 6½" H x 6" W
  - 1½" — 6½" H x 6" W
  - 2" — 7½" H x 5" W
  - 2½" — 8¾" H x 8½" W
  - 3" — 8¾" H x 8½" W
- 220 PSI maximum pressure rating
- Ingot brass and stainless-steel construction
- Removable, self-flushing, contamination-proof, 120-mesh, stainless-steel filter screen (electric models)

### Specifications (continued)

- Precise pressure control with compact EZReg dial design
- Pressure regulates in electric and manual modes, serviceable under pressure
- Schrader-type valve for pressure gauge attachment
- Manual flow control: adjustable to zero flow
- Manual bleed screw: bleeds internally downstream

### Friction Loss

Model	Flow (GPM)																						
	5	10	15	20	30	40	50	60	70	80	100	120	150	170	180	200	250	300	350				
1"	2.0	2.5	1.5	2.5	5.5	7.0																	
1¼"				5.5	6.5	7.5	8.0	8.5	9.0	13.0	16.0												
1½"				4.0	5.2	5.4	6.0	6.5	7.0	8.0	10.0	15.0											
2"					1.0	2.0	2.0	2.5	3.0	3.5	6.0	7.5	10.0	12.0	14.0								
2½"								2.0	2.2	2.3	2.4	2.5	3.0	4.0	4.5	5.5	7.0						
3"														2.2	2.4	2.5	3.0	4.0	4.5	5.5	6.5	7.0	7.5

**Note:** For optimum performance, calculate total friction loss to ensure sufficient downstream pressure.

### Voltage Requirement (standard solenoid)

Voltage	Inlet Pressure
22.5 V a.c.	220 PSI
21.1 V a.c.	200 PSI
20.2 V a.c.	175 PSI
19.1 V a.c.	150 PSI
18.2 V a.c.	125 PSI
17.1 V a.c.	100 PSI
16.1 V a.c.	75 PSI
16.0 V a.c.	50 PSI

## Installation Guidelines

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- 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 wire, utilizing different color codes for each station control wire and one color for the common wire to all valves.
- Waterproof wire splice connectors are absolutely essential for proper electric control system operation. Follow the installation instructions provided with the connectors for optimum waterproof splice protection.
- Leaving a wire expansion loop at each valve location on long-run wire lengths is recommended.

## Valve Operation and Adjustment

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### Flow Control

The flow control is used to reduce the flow and pressure to valve outlet. By turning the control handle clockwise, the flow will gradually be reduced zero.

- For valve models **without** EZReg, adjust the flow control as necessary for optimum sprinkler performance.
- For valve models **with** EZReg, the flow control should remain in the fully open position. Use only for emergency shut off.

### Manual Bleed Knob

The manual bleed knob is used to manually operate the valve. Turning the knob counterclockwise 2–3 turns allows water to bleed downstream from the diaphragm chamber, relieving pressure from the top of the diaphragm which allows the valve to open. Turning the bleed knob clockwise until finger tight, shuts off the discharge enabling pressure to build within the diaphragm chamber, causing the valve to close.

### EZReg (pressure regulated models only)

An accurate, adjustable dial coupled with a forward-flow valve design allows the 220 series valve with EZReg to regulate downstream water pressure with precision. It can regulate accurately down to 5 GPM flow (1" model) and only requires 10 PSI differential pressure to operate. The EZReg will operate during powered and manual valve operation.

To adjust, remove the cover from the regulator dial. Turn the dial until the pointer is on the desired downstream pressure: 5–30 PSI (EZR-30) or 5–100 PSI (EZR-100).

**Note:** Due to the micro-adjustment feature of the EZReg, the dial requires several complete revolutions to move the pointer from the minimum to the maximum adjustment settings.

Operate the valve (electrically or manually). Check the flow control to confirm that it is in the fully open position. Adjust the regulator dial if necessary for optimum sprinkler operation.

To confirm the downstream pressure using a pressure gauge, remove the cap from the Schrader-type valve located directly below the EZReg. Attach a Toro pressure gauge (Model 995-51) to the Schrader-type valve for a direct reading. Adjust EZReg dial as necessary for the desired pressure.

**Note:** The valve will remain operational if removal of the EZReg assembly is required.

### Friction Loss

Model	Flow (GPM)																						
	5	10	20	30	40	50	60	70	80	90	100	110	120	130	140	180	200	225	250	275	300		
1" Globe	4.00	4.20	3.20	4.10	7.20	10.90																	
1" Angle	4.00	4.20	3.10	2.70	4.80	7.90																	
1½" Globe	4.00	4.20	3.10	2.70	4.80	7.90																	
1½" Angle					1.6	2.3	3.6	5.2	7.0	9.2	11.7	14.4	17.5										
2"					1.0	2.0	2.0	2.5	3.0	3.5	6.0	7.5	10.0	12.0	14.0								
3"										2.2	2.4	2.5	3.0	4.0	4.5	5.5	6.5	7.0	7.5				

**Note:** For optimum performance, calculate total friction loss to ensure sufficient downstream pressure.