

**TORO**

Count on it.

# P-220G Series

## VALVES

The P220G Series provides a full family of plastic valves that can deliver the water to meet the challenging needs of today's courses. With pressure regulation as a standard feature these valves can ensure every sprinkler is operating at maximum performance. And the Spike Guard™ solenoid's 20,000 volt lightning rating minimizes down time and service costs even in the most severe lightning conditions.



### Features & Benefits

#### EZ-REG PRESSURE REGULATING SYSTEM

The EZ-Reg pressure regulating system is a standard feature on all P220G valves that provides the optimum operating pressure to the zone. From the low pressure/flow applications of drip to the high pressure/flow requirements of golf the EZ-Reg can be adjusted from 5-100 PSI to deliver the optimum pressure for every need.

#### SPIKE GUARD SOLENOID

With its 20,000 volt lightning rating, the industry's highest, the Spike Guard solenoid has virtually eliminated the need for solenoid replacements in high lightning environments. And with half the amperage draw of traditional solenoids you can run twice as many valves simultaneously, reduce the cost of wire during initial installation or increase the distance from controller to valve.

#### INTERNAL MANUAL BLEED

The internal manual bleed feature ensures the optimum pressure of the system even when being operated manually.

#### FABRIC REINFORCED DIAPHRAGM

The double beaded fabric reinforced diaphragm provides superior performance and extended life without tearing in high pressure golf applications.

#### SELF CLEANING METERING PIN

Water passing around the metering pin determines whether the valve turns on and off and how quickly that occurs. The P220G Series incorporates a self cleaning feature that operates two times every valve cycle ensuring smooth positive opening and closing.





# P-220G Series



## Operating Specifications

- Flow Range:
  - 25mm (1"): 18,9 - 132,5 LPM (5 - 35 GPM)
  - 40mm (1 1/2"): 113,6 - 416,4 LPM (30 - 110 GPM)
  - 50mm (2"): 302,8 - 681,4 LPM (80 - 180 GPM)
  - 75mm (3"): 567,8 - 1135,6 LPM (150 - 300 GPM)
- Operating Pressure: (15,2 bar (220 psi) maximum pressure rating):
  - Electric: 0,7 - 15,2 bar (10 - 220 psi)
- Pressure regulating:
  - Outlet: 0,3 - 6,9 bar (5 - 100 psi ± 3 psi)
  - Inlet: 0,7 - 15,2 bar (10 - 220 psi)
- Minimum pressure differential (between inlet and outlet) for pressure regulation: 0,7 bar (10 psi)
- Burst pressure safety rating: 51,7 bar (750 psi)
- Body styles:
  - Globe/Angle: 25mm, 40mm, 50mm and 75mm (1", 1 1/2", 2", 3") female threads
- Spike Guard™ Solenoid: 24 VAC (50/60 Hz) Standard
  - Inrush: 60 Hz: 0.12 amps
  - Holding: 60 Hz: 0.1 amps

## Additional features

- Glass-filled nylon and stainless steel construction
- Internal and External bleed
- No external tubing
- Standard, built-in Schrader-type valve for downstream pressure verification
- Flow control independent of solenoid
- Self-aligning bonnet to ensure correct installation
- Self-cleaning, stainless steel metering rod
- Low-flow capability down to 5 GPM
- Low-power requirement for longer wire runs

## Dimensions

- 25mm (1"): 146 x 127mm (5 3/4" H x 5" W)
- 40mm (1 1/2"): 165 x 152mm (6 1/2" H x 6" W)
- 50mm (2"): 191 x 178mm (7 1/2" H x 7" W)
- 75mm (3"): 223 x 216mm (8 3/4" H x 8 1/2" W)

## Warranty

- Five years

## Valve Wire Sizing Chart

Maximum One-way Distance (in ft.) Between Controller and Valve Using Spike-Guard™ Solenoid\*

Ground Wire	Control Wire						
	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

\* Solenoid Model: 24 V ac  
 Pressure: 150 psi  
 Voltage Drop: 4 V  
 Minimum Operating Voltage: 20 V  
 Amperage (peak): 0.12 A

## Specifying Information—P220G Series

Type	Body Style	Size	Optional
<b>P220G</b>	<b>27</b>	<b>X</b>	<b>XXX</b>
P220G—P220G Series Plastic Valve	27—NPT, Pressure-regulated (5–100 PSI)	4—1" (25mm) 6—1 1/2" (40mm)	8—2" (50mm) 0—3" (75mm) DL—DC Latching Solenoid E—Effluent
Example: A 1" (25mm) P220G Series plastic electric, pressure-regulating valve with a 60 Hz solenoid, would be specified as: <b>P220G-27-04</b>			

## P220G Series Friction Loss Data—Metric

Model	Type	LPM Flow																				
		25	50	75	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000	1200	1400	
25mm (1")	Electric	0,15	0,13	0,17	0,31	0,41	0,48															
32mm (1 1/4")	Electric			0,38	0,42	0,47	0,51	0,56	0,61	0,88	1,03											
40mm (1 1/2")	Electric			0,32	0,33	0,36	0,37	0,42	0,47	0,55	0,64	0,79	1,02									
50mm (2")	Electric					0,09	0,14	0,15	0,19	0,24	0,35	0,44	0,51	0,59	0,75	1,00						
65mm (2 1/2")	Electric								0,15	0,16	0,16	0,17	0,17	0,19	0,24	0,33	0,40	0,46				
75mm (3")	Electric									0,16	0,16	0,17	0,17	0,19	0,24	0,33	0,40	0,43	0,46	0,49	0,53	

Notes: For optimum performance when designing a system, calculate total friction loss to ensure sufficient downstream pressure. For optimum regulation performance, size regulating valves toward the higher flow ranges. Flow rates are recommended not to exceed 0,3 bar loss. Values shown in bar.

## P220G Series Friction Loss Data\*—U.S.

Size	Configuration	GPM Flow																						
		5	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	180	200	225	250	275	300	
25mm (1")	Globe	4.00	4.20	3.20	4.10	7.20																		
	Angle	4.00	4.20	3.10	2.70	4.80																		
40mm (1 1/2")	Globe				1.60	2.30	3.60	5.20	7.00	9.20	11.20	13.60	16.40											
	Angle				1.30	1.60	2.80	4.00	5.50	7.10	8.90	10.90	13.80											
50mm (2")	Globe								2.10	2.70	3.30	4.00	4.80	5.60	6.50	7.50	8.70							
	Angle								1.20	1.60	2.00	2.40	2.80	3.30	3.90	4.40	5.20							
75mm (3")	Globe															2.50	3.00	4.10	5.30	6.70	8.30	10.10		
	Angle															1.90	2.40	3.30	4.30	5.50	6.90	8.50		

Notes: For optimum performance when designing a system, be sure to calculate total friction loss to ensure sufficient downstream pressure. For optimum regulation performance, size regulating valves toward the higher flow ranges. Flow rates are recommended not to exceed 5 psi loss. Values shown in psi.