

TORO

Count on it.

220G Series Brass

VALVES

The 220G Series provides a full family of brass valves that provide extra durability in the most challenging environments on the course. 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 220G valves that provides the most 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 provide the optimum operating pressure for every need.



SPIKE GUARD SOLENOID

With its 20,000 volt lightning rating, the industries 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 the high pressure applications of the golf course industry.



SELF FLUSHING AND SERVICEABLE STAINLESS STEEL FILTER

Filtered water controls the on and off function of the 220G series. A 120 mesh stainless steel screen in the flow of water is continually being cleaning any time the valve is in operation. Serviceable from the side of the valve the filter can be easily removed for servicing without further valve disassembly.





220G Series Brass



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)

Operating Specifications

- Flow Range:
 - 25mm (1"): 19 – 95 lpm (5 – 25 gpm)
 - 40mm (1 1/2"): 75 – 227 lpm (20 – 60 gpm)
 - 50mm (2"): 150 – 303 lpm (40 – 80 gpm)
 - 75mm (3"): 303 – 681 lpm (80 – 180 gpm)
- Operating Pressure (220 psi maximum pressure rating):
 - Electric — 0,7–15 Bar (10–220 psi)
- Pressure regulating:
 - Outlet: EZR-30
 - 0,3–2,0 Bar, ± 0,2 Bar (5–30 PSI, ± 3 PSI)
 - Outlet: EZR-100
 - 0,3–7,0 Bar, ± 0,2 Bar (5–100 PSI, ± 3 PSI)
- Inlet: 1,0–15 Bar (15–220 PSI)
- Minimum pressure differential (between inlet and outlet) for pressure regulation: 0,7 Bar (10 PSI)
- Burst pressure safety rating: 52 Bar (750 PSI)
- Body style:
 - Globe valve – 1", 1 1/4", 1 1/2", 2" female threads
- Spike Guard™ Solenoid: 24 VAC (50/60 Hz) Standard
- – Inrush: 60 Hz: 0.12 amps
- – Holding: 60 Hz: 0.1 amps
- Inrush: 0,30 amps, 7,2 VA

Additional Features

- Diaphragm stem guide
- Ingot brass and stainless steel construction
- Pressure regulates in electric and manual modes, serviceable under pressure
- Forward-flow design for more precise regulation
- Standard, built-in Schrader-type valve for downstream pressure verification
- Anti-vandal dust cap on pressure-regulating models
- No external tubing
- External manual bleed for system flushing
- Manual flow control: adjustable to zero flow
- Tough, double-beaded, fabric-reinforced rubber diaphragm
- Stainless steel diaphragm support ring for minimum wear
- Stainless steel solenoid seat for longer life and positive shutoff
- Low-power requirement for longer wire runs

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

Warranty

- Five years

Specifying Information—220G Series

220G-XX-X-X			
Type	Body Style	Solenoid	Size
220G	XX	X	X
220G— 220G Series Brass Valve	21—Hydraulic (Brass models only) 23—BSP, Electric 26—NPT, Electric	0—60 Hz Solenoid 5—50 Hz Solenoid 6—Less Solenoid	4—25mm (1") 6—40mm (1 1/2") 8—50mm (2") 0—75mm (3")

Example: A 25mm (1") 220G Series brass electric valve with a 50 Hz solenoid BSP threads, would be specified as: **220G-23-54**

220G Series Friction Loss Data (Metric – LPM)

Model - Electric	19	38	57	76	114	151	189	227	265	303	378	454	568	644	681	757	946	1136	1325
25mm (1")	0,14	0,17	0,10	0,17	0,38	0,61													
40mm (1 1/2")				0,27	0,29	0,32	0,34	0,36	0,38	0,50									
50mm (2")					0,07	0,14	0,14	0,17	0,21	0,24	0,41	0,52	0,69	0,83	0,97				
75mm (3")										0,15	0,17	0,17	0,21	0,22	0,24	0,26	0,28	0,31	0,34
Model - Hydraulic																			
25mm (1")	0,01	0,07	0,10	0,17	0,38	0,48													
40mm (1 1/2")				0,07	0,10	0,17	0,21	0,31	0,41	0,55									
50mm (2")					0,03	0,07	0,08	0,10	0,17	0,21	0,38	0,48	0,69	0,79	1,00				

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 0.34 Bar (5 psi) loss.

220 Series Friction Loss Data (English – GPM)

Model - Electric	5	10	15	20	30	40	50	60	70	80	100	120	150	170	180	200	250	300	350
1" (25mm)	2.0	2.5	1.5	2.5	5.5	8.9													
1 1/2" (40mm)				3.9	4.2	4.6	4.9	5.2	5.5	7.2									
2" (50mm)					1.0	2.0	2.0	2.5	3.0	3.5	6.0	7.5	10.0	12.0	14.0				
3" (75mm)										2.2	2.4	2.5	3.0	3.2	3.5	3.7	4.0	4.5	5.0
Model - Hydraulic																			
1" (25mm)	<1.0	<1.0	1.5	2.5	5.5	7													
1 1/2" (40mm)				<1.0	1.5	2.5	3	4.5	6.0	8.0									
2" (50mm)					<1.0	1.0	1.1	1.5	2.5	3.0	5.5	7.0	10.0	11.5	14.5				

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 0.34 Bar (5 psi) loss.

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