

# SP Series Proportional Ball Valves



SERIES: SP  
SIZES: 1/2" to 2"  
ENDS: Socket, Threaded, Butt<sup>1</sup> or ChemFlare™<sup>2</sup>  
SEATS: PTFE  
O-RINGS: EPDM or FPM (Viton®)



### Integral 90° Scale with 5° Increments

- Linear flow control and settable flow rates



Ball Detail



### 60° Position

- Partially open



### 90° Position

- Fully open

## Features

### Linear Flow Control

#### Full Size Range

- 1/2" to 2"

#### Integral Scale

- 5° increments from 0° to 90°

#### High End Ball Valve Features

- Full Blocking design
- Double Stem O-Rings for safety
- PTFE seats with elastomer cushion
  - Automatically compensates for seat wear or expansion
- 230 psi pressure rated (PVC and PVDF)

#### Low Stem Torques

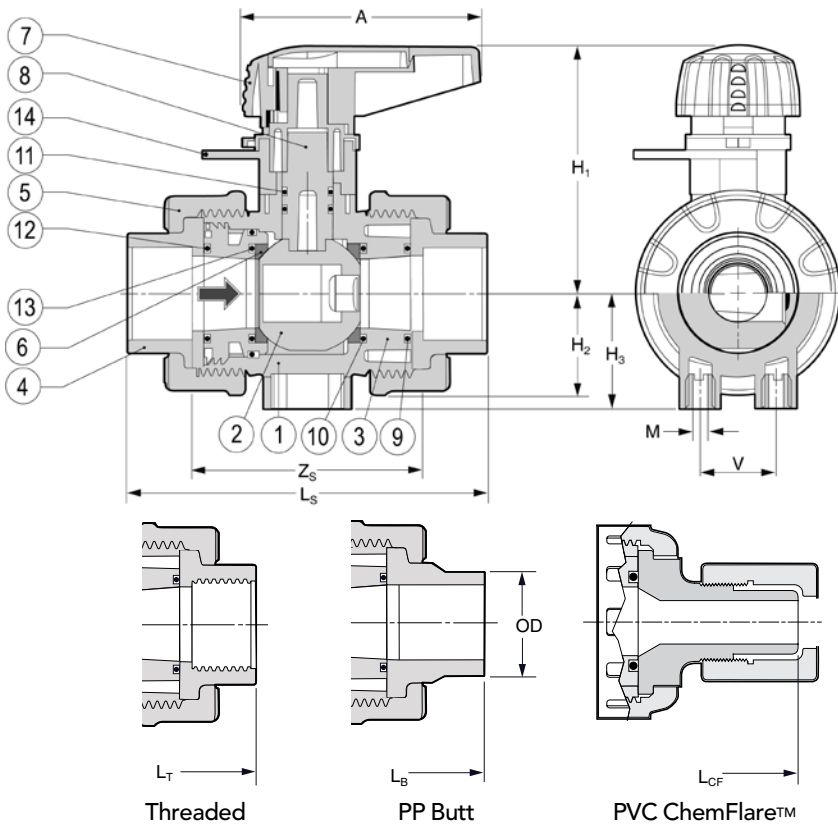
- Due to floating ball design and cushioned PTFE seats

#### Compact

- Space saving

<sup>1</sup>Butt ends for fusion to Chemline metric PP or PVDF piping  
<sup>2</sup>For ChemFlare™ end connectors, consult Chemline

# SP Series Proportional Ball Valves



## PARTS

No.	Part	Pcs.	Materials
1	Body	1	PVC, PP, PVDF
2	Ball	1	PVC, PP, PVDF
3	Carrier	1	PVC, PP, PVDF
4	End Connector	2	PVC, PP, PVDF
5	Union Nut	5	PVC, PP, PVDF
6	Ball Seat	2	PTFE
7	Handle	1	PVC
8	Stem	1	PVC, PP, PVDF
9	Carrier Face O-Ring	1	EPDM, FPM(Viton®)
10	Carrier O-Ring	1	EPDM, FPM(Viton®)
11	Stem O-Ring <sup>1</sup>	2	EPDM, FPM(Viton®)
12	Face O-Ring	1	EPDM, FPM(Viton®)
13	Seat Cushion <sup>1</sup>	2	EPDM, FPM(Viton®)
14	Position Indicator Scale	1	PVC

## DIMENSIONS INCHES

Size	A	H <sub>1</sub>	H <sub>3</sub>	H	M	V	PVC					PP					PVDF				
							Z <sub>s</sub>	L <sub>s</sub>	L <sub>T</sub>	L <sub>CF</sub> <sup>1</sup>	H <sub>2</sub>	Z <sub>s</sub>	L <sub>s</sub>	L <sub>B</sub>	OD	H <sub>2</sub>	Z <sub>s</sub>	L <sub>s</sub>	L <sub>B</sub>	OD	H <sub>2</sub>
1/2"	2.62	2.48	1.10	2.50	M5	0.98	2.48	3.74	3.75	C.F.	0.99	2.64	3.74	5.16	0.79	1.06	2.60	3.64	5.12	0.79	1.06
3/4"	3.21	3.03	1.20	2.70	M5	0.98	2.83	4.33	4.36	C.F.	1.16	3.03	4.29	5.65	0.98	1.18	3.03	4.21	5.65	0.98	1.18
1"	3.21	3.39	1.60	3.00	M6	1.02	3.11	4.84	4.92	C.F.	1.39	3.27	4.69	5.98	1.26	1.57	3.27	4.69	5.98	1.26	1.57
1-1/4"	3.60	4.33	1.80	3.40	M8	1.77	3.70	5.75	5.78	C.F.	1.69	3.94	5.55	6.77	1.57	1.81	3.92	5.44	6.77	1.57	1.81
1-1/2"	3.60	4.57	2.20	3.60	M8	1.77	3.78	6.22	6.43	C.F.	1.96	4.17	5.98	7.56	1.97	2.17	4.15	5.85	7.56	1.97	2.17
2"	5.63	5.94	2.80	4.30	M8	1.77	4.25	7.24	7.24	C.F.	2.48	4.61	6.73	8.74	2.48	2.76	4.61	6.59	8.74	2.48	2.76

<sup>1</sup>ChemFlare™ ends are available for reduced tube sizes down to 1/4"

## ELECTRICALLY OR PNEUMATICALLY ACTUATED

The metering ball valve becomes a proportional control valve with the addition of an electric or pneumatic actuator with 4-20 mA positioner

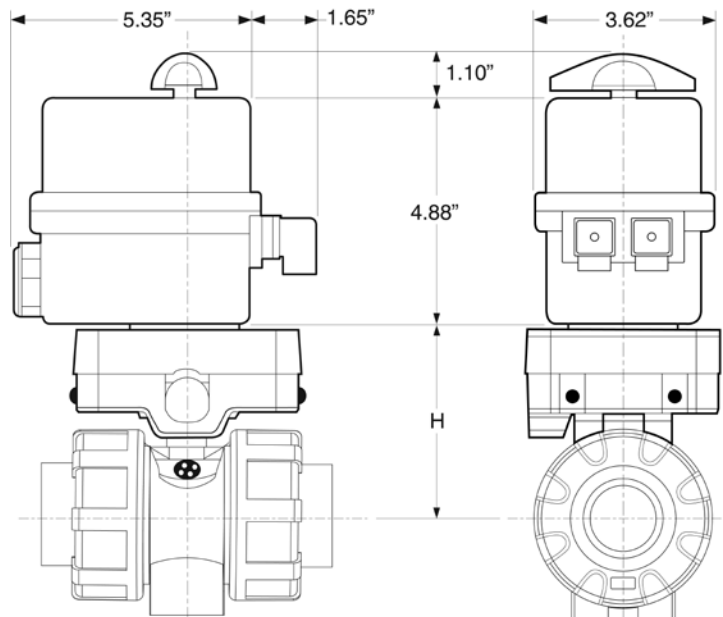
- Thermoplastic housing and mounting bracket
- Manual override
- Position indication
- Plug in electrical connections
- Actuator is prewired inside



**E Series Electric with positioner**



**PA Series Pneumatic with positioner**



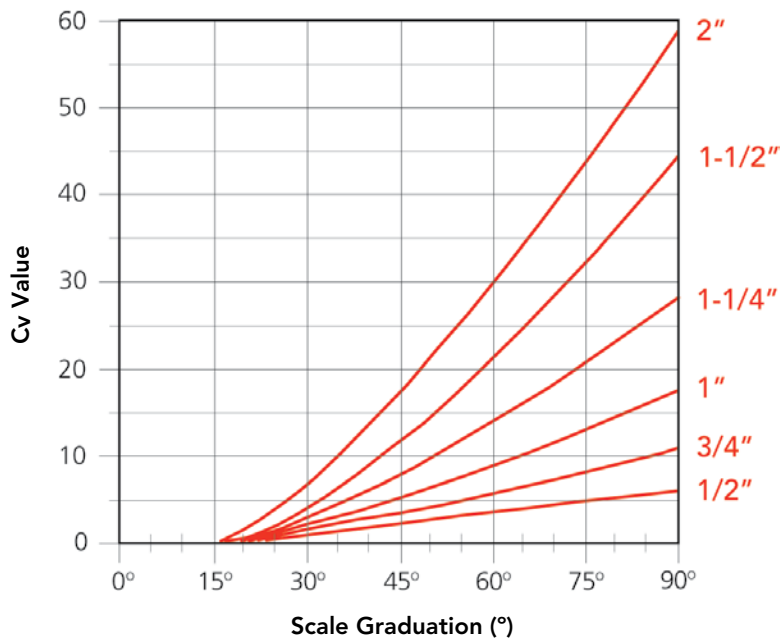
# SP Series Proportional Ball Valves



Size	WORKING PRESSURES PSI												NET WEIGHTS LB. VALUES			Cv		
	PVC			PP				PVDF					PVC	PP	PVDF	USGPM Flow at 1 psi ΔP		
	20°C 68°F	40°C 104°F	60°C 140°F	20°C 68°F	40°C 104°F	60°C 140°F	80°C 176°F	20°C 68°F	40°C 104°F	60°C 140°F	80°C 176°F	100°C 212°F					120°C 248°F	140°C 284°F
1/2"	230	130	30	150	100	65	29	230	190	150	116	87	65	50	0.35	0.29	0.50	6.0
3/4"	230	130	30	150	100	65	29	230	190	150	116	87	65	50	0.62	0.55	0.70	11.0
1"	230	130	30	150	100	65	29	230	190	150	116	87	65	50	0.80	0.77	1.06	17.5
1-1/4"	230	130	30	150	100	65	29	230	190	150	116	87	65	50	1.58	1.25	1.98	28.0
1-1/2"	230	130	30	150	100	65	29	230	190	150	116	87	65	50	2.20	1.43	2.90	44.0
2"	230	130	30	150	100	65	29	230	190	150	116	87	65	50	3.75	2.84	4.54	59.0

Temperature Ranges: PVC 0 to 60°C (32 to 140°F), PP 10 to 80°C (50 to 176°F), PVDF -30 to 140°C (-22 to 284°F).

## Cv VALUE vs. VALVE OPENING



## SAMPLE SPECIFICATION

- All plastic low flow control valves 1/2" to 1" will be Chemline SP Series Proportional ball valves.
- PVC valves with EPDM or FPM (Viton®) seals will be 230 psi rated, suitable for temperatures up to 60°C/140°F.<sup>1</sup>
- PP valves with EPDM or FKM (Viton®) seals will be 150 psi rated, suitable for temperatures up to 80°C/176°F.<sup>1</sup>
- PVDF valves with FKM (Viton®) seals will be 230 psi rated, suitable for temperatures up to 140°C/248°F.
- Ball port will be hydraulically designed for linear flow control over a 90-degree range of handle rotation.
- Valves will have a position indicating scale 0 to 90 degrees with 5-degree increments, to allow fine flow control and settable flow rates.
- Valves will have a threaded-in seat carrier for two-way blocking design and blowout-proof stem with double o-rings for safety.
- Ball seats will be PTFE with elastomer cushions for positive closure and long life.
- Valves will have a base with stainless steel threaded inserts for screws to panel mount or anchor the valve.
- PVC Socket ends shall be Schedule 80 and conform to ASTM D-2467.
- Threaded ends shall be Schedule 80 and conform to ASTM D-2464.
- ChemFlare™ ends will be compatible with Chemline's ChemFlare leak-free tubing system.
- PP Butt fusion ends in will be compatible with Chemline PP metric piping systems.
- Every valve will undergo a factory hydrostatic pressure test to assure quality.

<sup>1</sup> At maximum temperatures, pressure ratings are lower than the maximums stated. Refer to the Chemline data sheet.

## VACUUM RATING

- 29.9 inches mercury

## OPTIONS & ACCESSORIES

- Reduced Ends
- ChemFlare™ Ends
- Electric or Pneumatic Actuator with Positioner
  - Operates as a linear control valve

## ORDERING EXAMPLE

<b>Chemline SP Series Proportional Ball Valves</b>	<b>SP2</b>	<b>A</b>	<b>010</b>	<b>E</b>	<b>S</b>
Valve Material	<b>A</b> – PVC	<b>B</b> – PP	<b>K</b> – PVDF		
Size	<b>005</b> – 1/2"	<b>007</b> – 3/4"	<b>010</b> – 1"		
	<b>012</b> – 1-1/4"	<b>015</b> – 1-1/2"	<b>020</b> – 2"		
Seals	<b>E</b> – EPDM	<b>V</b> – FPM (Viton®)			
Ends	<b>S</b> – Socket	<b>T</b> – Threaded	<b>B</b> – Butt <sup>1</sup>	<b>CF</b> – ChemFlare™	

Example: SP Series Ball Valve, PVC, 1", EPDM seals, socket ends

<sup>1</sup> PP and PVDF metric butt fusion ends connect to Chemline PP and PVDF piping systems.

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