

SM Series Metering Ball Valves



SERIES: SM
SIZES: 1/2" to 1"
ENDS: Socket, Threaded, Butt¹ or ChemFlare™²
SEATS: PTFE
O-RINGS: EPDM or FPM (Viton®)



Integral 180° Scale with 5° Increments

- Linear flow control and settable flow rates

Chemline **SM Series** Metering Ball Valve is designed for fine linear flow control of chemicals or clean fluids. The ball is solid with graduated V-groove cut on the outside surface. Precise linear flow control is accomplished through 180° rotation of the handle. With a positioning electric actuator, this becomes an inexpensive control valve. If higher C_v values (higher flow rates) are required, refer to SP Series Proportional ball valves.

Features

Precise Linear Flow Control

- Provided by a special V-groove ball and wide range of handle rotation (0° to 180°)

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)

Low Stem Torques

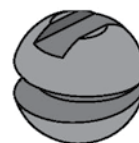
- Due to floating ball design and cushioned PTFE seats

Bidirectional

- Works with flow in either direction

NSF Approval³

- PVC valves are certified to NSF/ANSI Standard 61 for contact with drinking water



Ball Detail

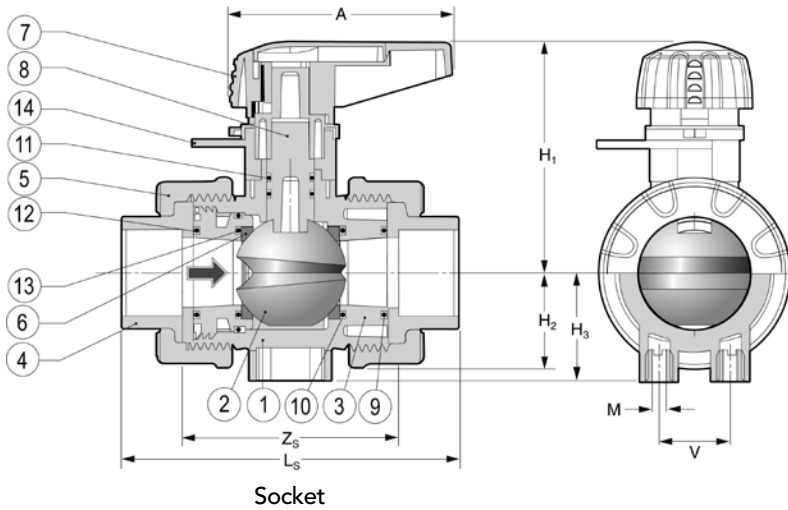


¹ Butt ends for fusion to Chemline metric PP piping system

² For ChemFlare™ end connectors, consult Chemline

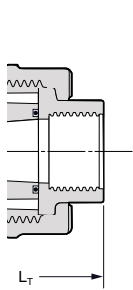
³ PVC valves with EPDM or FKM (Viton®) seals are certified under NSF/ANSI Standard 61 for contact with drinking water

SM Series Metering Ball Valves

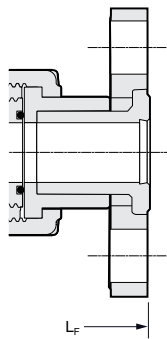


PARTS

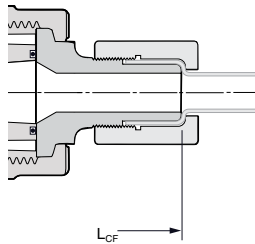
No.	Part	Pcs.	Materials
1	Body	1	PVC, PP
2	Ball	1	PVC, PP
3	Carrier	1	PVC, PP
4	End Connector	2	PVC, PP
5	Union Nut	5	PVC, PP
6	Ball Seat	2	PTFE
7	Handle	1	PVC
8	Stem	1	PVC, PP, PVDF
9	Face O-Ring	1	EPDM, FPM(Viton®)
10	Carrier O-Ring	1	EPDM, FPM(Viton®)
11	Stem O-Ring	2	EPDM, FPM(Viton®)
12	Face O-Ring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



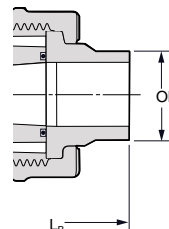
PVC Threaded



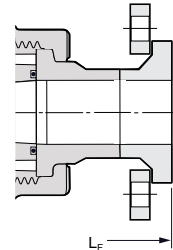
PVC Flanged



PVC ChemFlare™



PP Butt



PP Welded Flanged

DIMENSIONS INCHES

Size	A	H ₁	H ₃	H	M	V	PVC					PP						
							Z _s	L _s	L _T	L _F	L _{CF} ¹	H ₂	Z _s	L _s	L _B	L _F	OD	H ₂
1/2"	2.62	2.48	1.10	2.50	M5	0.98	2.48	3.74	3.66	4.8	5.41	0.99	2.64	3.74	5.16	8.8	0.79	1.06
3/4"	3.21	3.03	1.20	2.70	M5	0.98	2.83	4.33	4.33	5.5	5.77	1.16	3.03	4.29	5.65	9.3	0.98	1.18
1"	3.21	3.39	1.60	3.00	M6	1.02	3.11	4.84	4.83	6.1	6.35	1.39	3.27	4.69	5.98	9.7	1.26	1.57

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

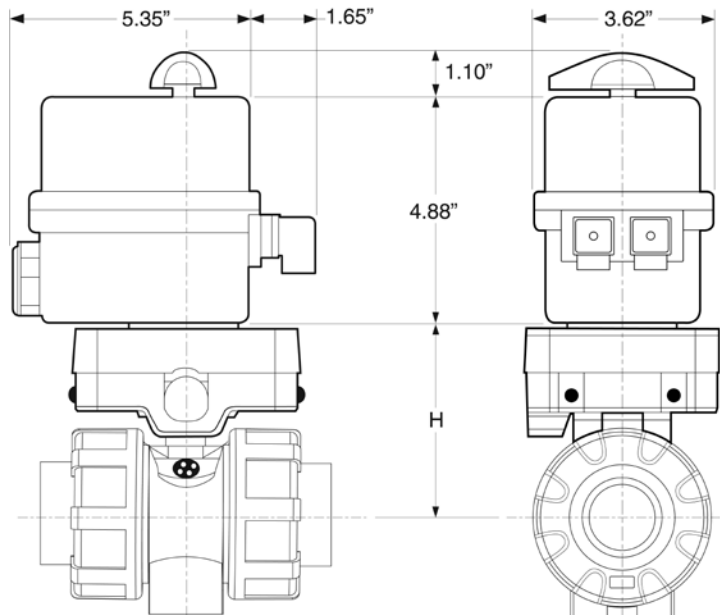
ELECTRICALLY ACTUATED

The metering ball valve becomes a proportional control valve with the addition of an E Series electric 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



SM Series Metering Ball Valves



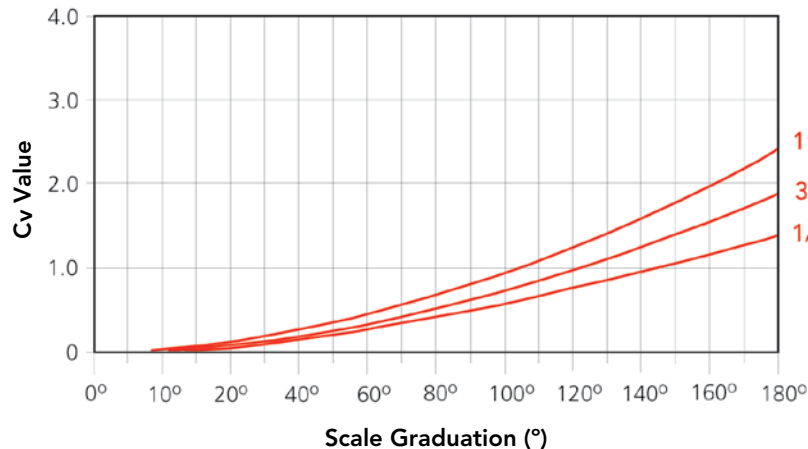
WORKING PRESSURES PSI

NET WEIGHTS LBS. Cv VALUES

Size	PVC			PP				PVC	PP	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			
1/2"	230	130	30	150	100	65	20	0.35	0.29	1.4
3/4"	230	130	30	150	100	65	20	0.60	0.44	1.9
1"	230	130	30	150	100	65	20	0.84	0.64	2.3

Temperature Ranges: PVC 0 to 60°C (32 to 140°F), PP 0 to 95°C (32 to 203°F)

Cv VALUE vs. VALVE OPENING



SAMPLE SPECIFICATION

- All plastic low flow control valves 1/2" to 1" will be Chemline SM Series Metering ball valves
- PVC valves with EPDM or FPM (Viton®) seals will be 230 psi rated, suitable for temperatures up to 60°C/140°F.¹
- PP valves with EPDM or FKM (Viton®) seals will be 150 psi rated, suitable for temperatures up to 80°C/176°F.¹
- Ball will molded solid with an outer V-groove for linear flow control over a 180-degree range of handle rotation.
- Valves will have a position indicating scale 0 to 180 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.

¹ 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 Actuator with Positioner**
 - Operates as a linear control valve

ORDERING EXAMPLE

Chemline SM Series Metering Ball Valves	SM2	A	010	E	S
Valve Material	A – PVC	B – PP			
Size	005 – 1/2"	007 – 3/4"	010 – 1"		
Seals	E – EPDM	V – FPM (Viton®)			
Ends	S – Socket	T – Threaded	B – Butt ¹	CF – ChemFlare™	

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

¹ PP metric butt fusion ends (1/2" to 2") connect to Chemline PP piping systems

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