SM Series Metering Ball Valves

CHEMLINE PLASTICS
SUPERIOR FLOW SOLUTIONS

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.

PVC PP

CRN Registered Consult Chemline

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

Integral 180° Scale with 5° Increments
- Linear flow control and settable flow rates

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)

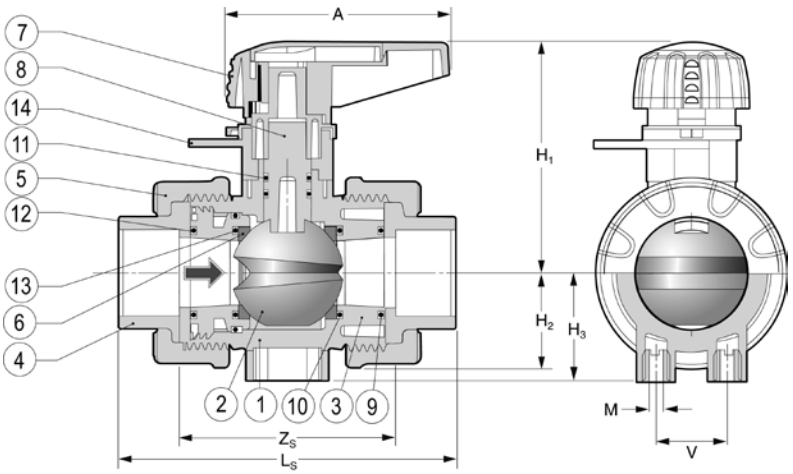
Low Stem Torques
- Due to floating ball design and cushioned PTFE seats

Bidirectional
- Works with flow in either direction

Ball Detail

[1]Butt ends for fusion to Chemline metric PP piping system
[2]For ChemFlare™ end connectors, consult Chemline

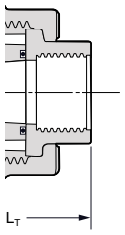
SM Series Metering Ball Valves



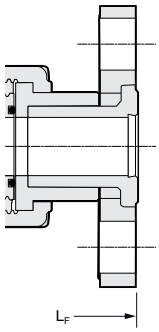
Socket

PARTS

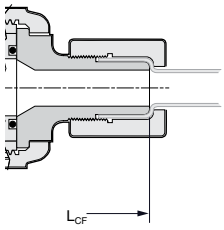
No.	Part	Pcs.	Materials
1	Body	1	PVC, PP
2	Ball	1	PVC, PP
3	Carrier	1	PVC, PP
4	End Connector	2	PVC, PP
5	Union Nut	5	PVC, PP
6	Ball Seat	2	PTFE
7	Handle	1	PVC
8	Stem	1	PVC, PP, PVDF
9	Face O-Ring	1	EPDM, FPM(Viton®)
10	Carrier O-Ring	1	EPDM, FPM(Viton®)
11	Stem O-Ring	2	EPDM, FPM(Viton®)
12	Face O-Ring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



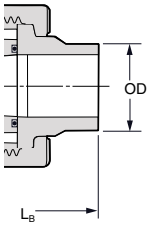
PVC Threaded



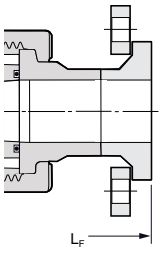
PVC Flanged



PVC ChemFlare™



PP Butt



PP Welded Flanged

DIMENSIONS INCHES

							PVC						PP					
Size	A	H1	H3	H	M	V	ZS	LS	LT	LF	LCF[1]	H2	ZS	LS	LB	LF	OD	H2
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

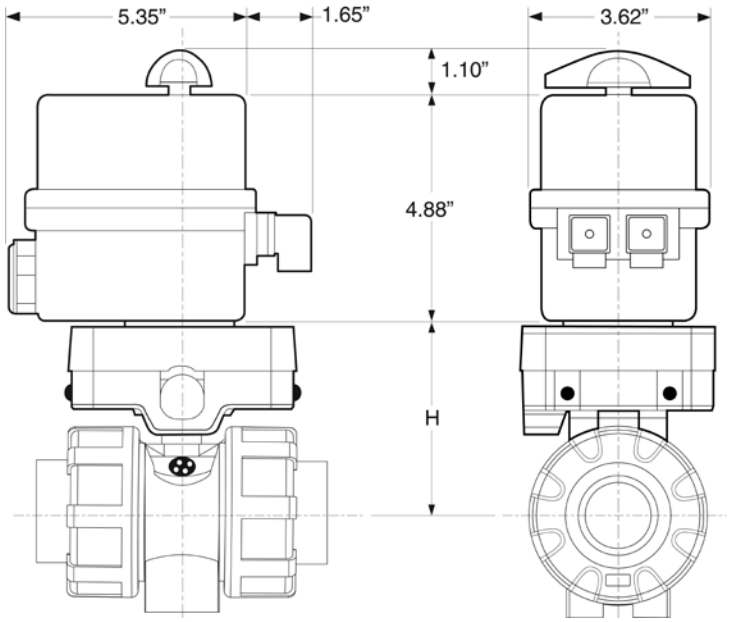
[1]ChemFlare™ ends are available for reduced tube sizes down to 1/4″

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

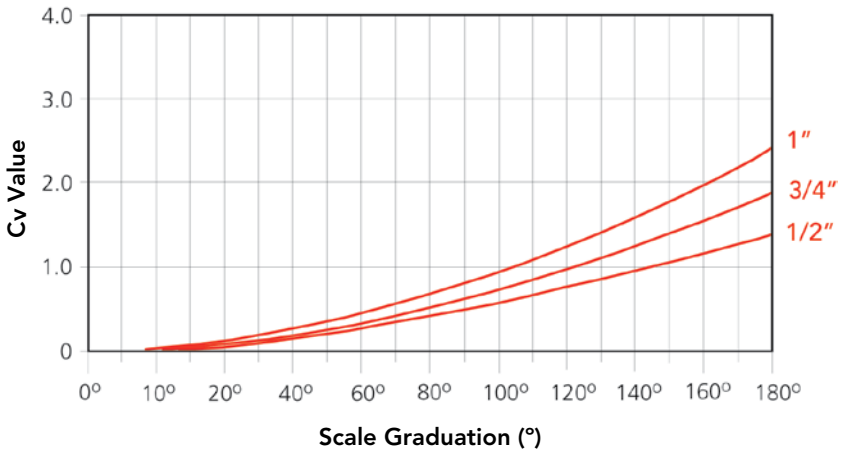
WORKING PRESSURES PSI

NET WEIGHTS LBS. Cv VALUES

Size	PVC 20°C 68°F	PVC 40°C 104°F	PVC 60°C 140°F	PP 20°C 68°F	PP 40°C 104°F	PP 60°C 140°F	PP 80°C 176°F	PVC	PP	USGPM Flow at 1 psi △P
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



VACUUM RATING

- 29.9 inches mercury

OPTIONS & ACCESSORIES

- **Reduced Ends**
- **ChemFlare™ Ends**
- **Electric Actuator with Positioner**
  – Operates as a linear control valve

SAMPLE SPECIFICATION

1. All plastic low flow control valves 1/2" to 1" will be Chemline SM Series Metering ball valves
2. PVC valves with EPDM or FPM (Viton®) seals will be 230 psi rated, suitable for temperatures up to 60°C/140°F.[1]
3. PP valves with EPDM or FKM (Viton®) seals will be 150 psi rated, suitable for temperatures up to 80°C/176°F.[1]
4. Ball will molded solid with an outer V-groove for linear flow control over a 180-degree range of handle rotation.
5. Valves will have a position indicating scale 0 to 180 degrees with 5-degree increments, to allow fine flow control and settable flow rates.
6. Valves will have a threaded-in seat carrier for two-way blocking design and blowout-proof stem with double o-rings for safety.
7. Ball seats will be PTFE with elastomer cushions for positive closure and long life.
8. Valves will have a base with stainless steel threaded inserts for screws to panel mount or anchor the valve.
9. **PVC Socket** ends shall be Schedule 80 and conform to ASTM D-2467.
10. **Threaded** ends shall be Schedule 80 and conform to ASTM D-2464.
11. **ChemFlare™** ends will be compatible with Chemline's ChemFlare leak-free tubing system.
12. **PP Butt fusion** ends in will be compatible with Chemline PP metric piping systems.
13. 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.

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

SM Series.DS.10.31

CHEMLINE PLASTICS
SUPERIOR FLOW SOLUTIONS

55 Guardsman Road, Thornhill, ON, L3T 6L2, Canada | ISO 9001:2015 Certified
1.800.930.2436 (CHEM) | fax.905.889.8553 | request@chemline.com | chemline.com