

Metering Ball Valves



SERIES: SM

SIZES: 1/2" – 2"

ENDS: Threaded, Socket, Butt¹ or ChemFlare™²

SEATS: PTFE

O-RINGS: EPDM, FPM (Viton®)



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 are required, refer to SP Series Proportional ball valves.

Features

Precise Linear Flow Control

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

Full Size Range

- 6 valves sizes 1/2" to 2" offers a large selection of C_v values

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

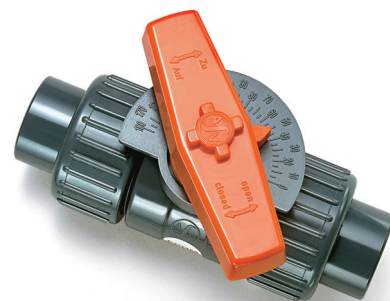
- Due to floating ball design and cushioned PTFE seats

Bidirectional

- Works with flow in either direction

CRN Registration number by province

- Ontario: OC14038.5

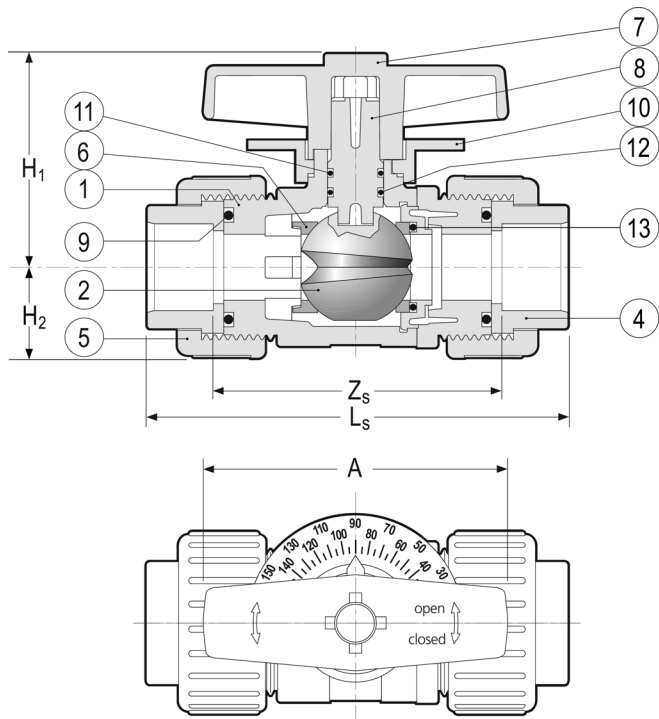


Integral 180° Scale with 5° Increments

- Fine linear flow control and settable flow rates

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

Metering Ball Valves



PARTS

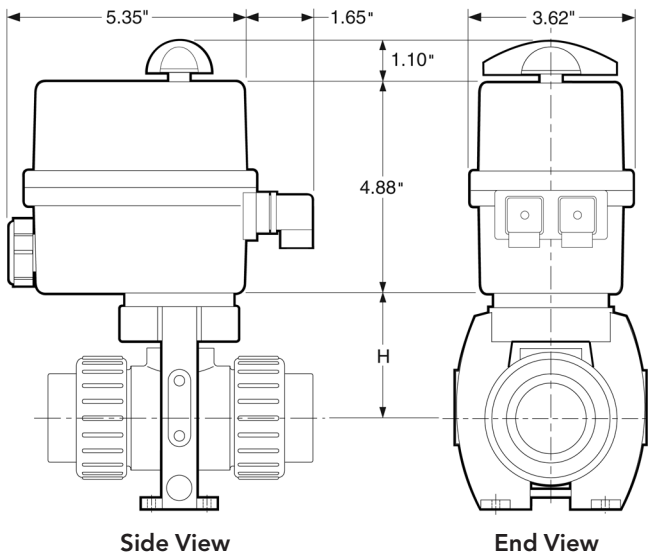
No.	Part ¹	Pcs.	Materials
1	Body	1	PVC, PP
2	Ball	1	PVC, PP
4	End Connector	1	PVC, PP
5	Union Nut	1	PVC, PP
6	Ball Seat	1	PTFE
7	Handle	2	PVC
8	Stem	1	PVC, PP
9	Face O-Ring	2	EPDM, FPM(Viton®)
10	Position Indicator Scale	2	PVC, PP
11	Upper Stem O-Ring	2	EPDM, FPM(Viton®)
12	Lower Stem O-Ring	2	EPDM,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

¹Parts are for identification only and cannot be replaced.

DIMENSIONS INCHES

Size	PVC						PP					
	A	Z _s	L _s	H	H ₁	H ₂	A	Z _s	L _s	H	H ₁	H ₂
1/2"	2.60	2.76	4.02	1.97	2.05	0.81	2.60	2.71	3.86	1.97	2.05	0.90
3/4"	3.07	3.23	4.72	2.36	2.44	1.00	3.07	3.19	4.45	2.36	2.44	1.10
1"	3.46	3.43	5.16	2.60	2.80	1.14	3.46	3.35	4.76	2.60	2.80	1.30
1-1/4"	3.86	3.86	5.91	2.91	3.23	1.42	3.86	3.82	5.43	2.91	3.23	1.55
1-1/2"	4.25	3.98	6.42	3.76	3.54	1.57	4.25	3.98	5.83	3.76	3.54	1.71
2"	4.64	4.76	7.75	4.90	4.33	1.97	4.64	4.76	6.93	4.90	4.33	2.11

E Series Electric Actuator on a SM Series Ball Valve



ELECTRICALLY ACTUATED

The metering ball valve becomes a proportional control valve with the addition of an E Series electric actuator with on-board positioner

- Thermoplastic housing and mounting bracket
- Manual override
- Position indication
- Mechanical travel stops
- Two external DIN plugs (one for power and one for signal) are pre-wired to the terminal strip. The actuator may be wired up without opening the lid.
- Different voltages are available

Metering Ball Valves



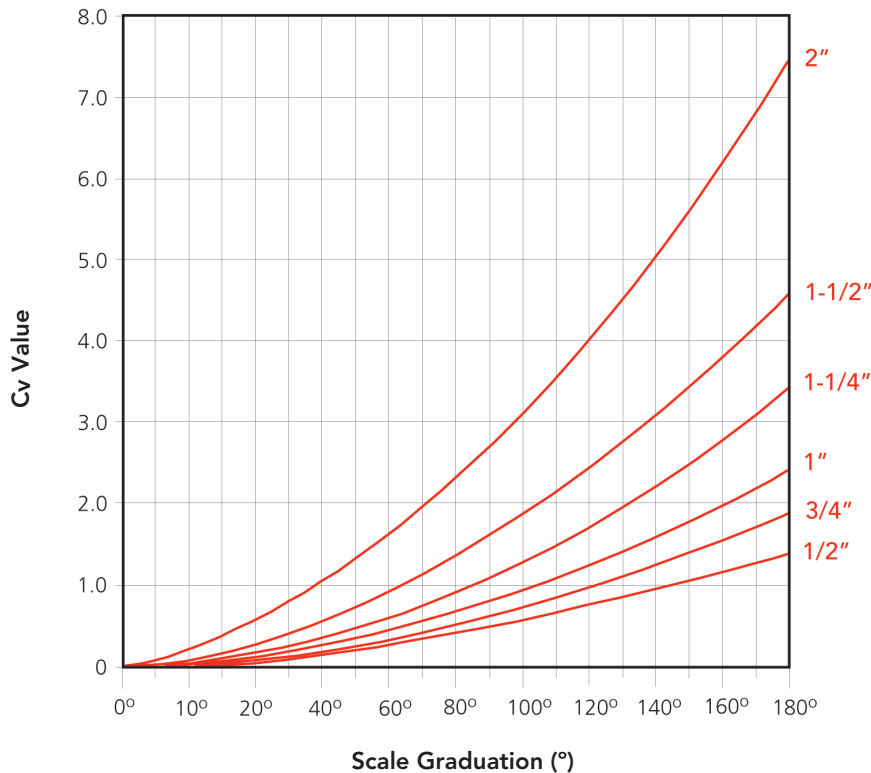
WORKING PRESSURES PSI

NET WEIGHTS LB. 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
1-1/4"	230	130	30	150	100	65	20	1.50	1.04	3.4
1-1/2"	230	130	30	150	100	65	20	2.10	1.63	4.5
2"	230	130	30	150	100	65	20	3.70	2.60	7.4

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

1. All low flow control valves, 1/2" to 2", will be Chemline SM Series metering ball valves.
2. Body material will be PVC or PP, and o-rings will be EPDM or FPM (Viton®).
3. Body will be full blocking design with double stem o-rings for safety, rated at 230 psi maximum working pressure for PVC and 150 psi for PP material.
4. Ball will be floating design, molded solid with a V-groove for linear flow control over a 180° range of handle rotation.
5. Seats will be PTFE with elastomer cushions for positive closure with minimum stem torques and automatic compensation for seat wear and expansion.
6. Position indicating scale will be 0° to 180° with 5° increments for fine flow control and settable flow rates.
7. End connections will be 1/2" to 2" ANSI socket or FNPT threaded or 150 lb flanged or butt fusion for Chemline metric PP, PVDF or ECTFE (Halar®) pipe or ChemFlare™ for PFA tubing.

ORDERING EXAMPLE

Chemline Metering Ball Valves				SM	A	010	E	S
Valve Material		A – PVC	B – PP					
Size	005 – 1/2"	007 – 3/4"	010 – 1"					
	012 – 1-1/4"	015 – 1-1/2"	020 – 2"					
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 and PVDF metric butt fusion ends (1/2" to 2") connect to Chemline PP and PVDF piping systems.

VACUUM RATING

- 29.9 inches mercury

OPTIONS & ACCESSORIES

- Reduced Ends
- Electric Actuator with Positioner
 - Operates as a linear control valve



CHEMLINE PLASTICS
SUPERIOR FLOW SOLUTIONS

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