

# SM Series Metering Ball Valves

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.



**CHEMLINE**  
Plastics Limited

*Your Pipeline To Quality*

## PVC, PP

**SERIES:** SM

**SIZES:** 1/2" – 2"

**ENDS:** Threaded, Socket, Butt<sup>1</sup>  
or ChemFlare™<sup>2</sup>

**SEATS:** Teflon® PTFE

**O-Rings:** EPDM, FPM (Viton®)

## Fine Flow Control

## Full Size Range

### 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

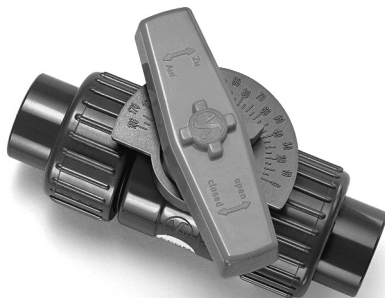
- Full Blocking design
- Double Stem O-Rings for safety
- Teflon® seats with elastomer cushion
  - Automatically compensates for seat wear or expansion
- 230 psi pressure rated (PVC)

#### Low Stem Torques

- Due to floating ball design and cushioned Teflon® seats

#### Compact

- Space saving



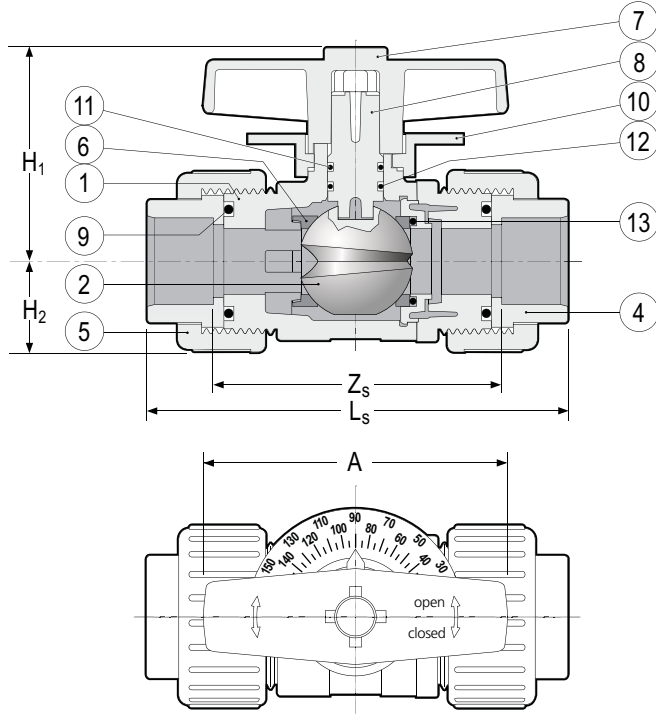
#### Integral 180° Scale with 5° Increments

- Fine linear flow control and settable flow rates

<sup>1</sup>Butt ends for fusion to Chemline metric PP or PVDF piping.

<sup>2</sup>For ChemFlare™ end connectors, consult Chemline.

# SM Series Metering Ball Valves



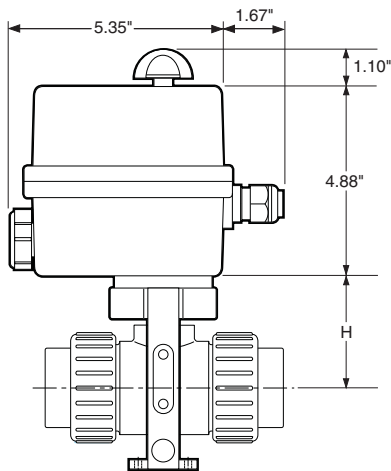
## PARTS

No.	Part	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®)

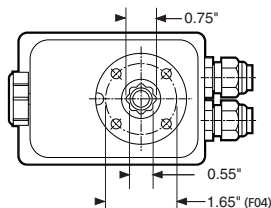
## DIMENSIONS INCHES

Size	PVC						PP					
	A	Z <sub>s</sub>	L <sub>s</sub>	H	H <sub>1</sub>	H <sub>2</sub>	A	Z <sub>s</sub>	L <sub>s</sub>	H	H <sub>1</sub>	H <sub>2</sub>
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 Actuation on a SM Series Ball Valve

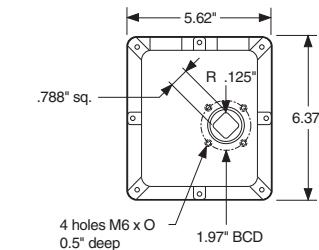
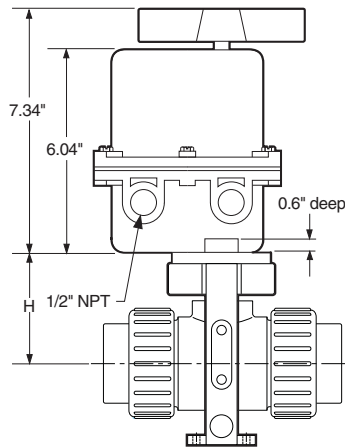


Side View



Bottom View

### Q Series Electric Actuation 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
- Different voltages are available

# SM Series Metering Ball Valves



## WORKING PRESSURES PSI

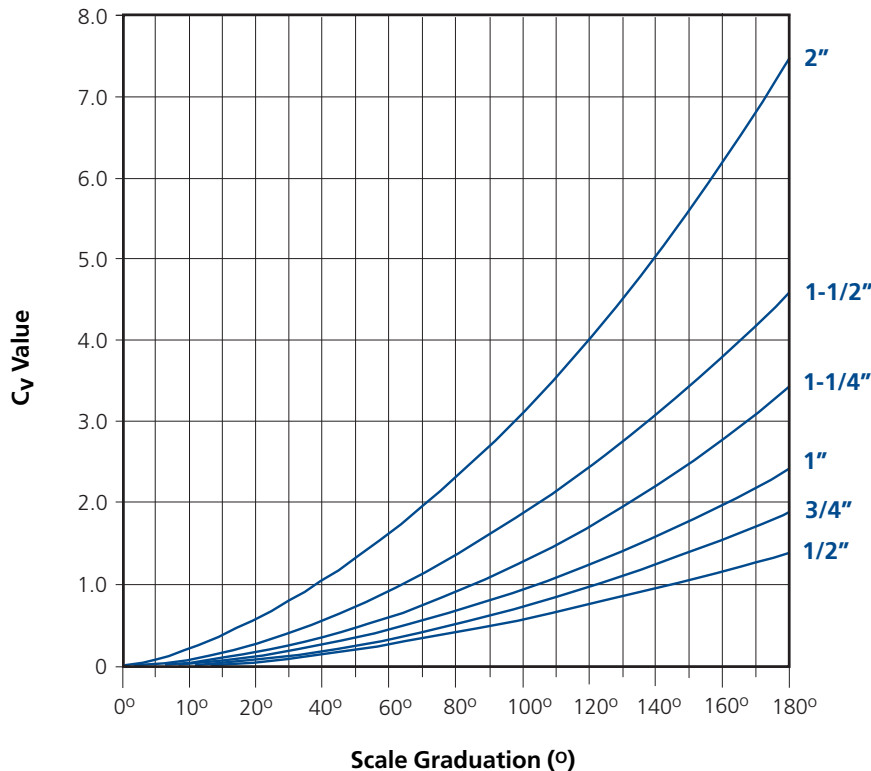
## NET WEIGHTS LB.

## C<sub>v</sub> 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).

## C<sub>v</sub> 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. Seats will be Teflon® PTFE with elastomer cushions for positive closure with minimum stem torques and automatic compensation for seat wear and expansion.
4. 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.
5. Ball will be floating design, molded solid with a V-groove for linear flow control over a 180° range of handle rotation.
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, FNPT threaded, 150 lb flanged, butt fusion for Chemline metric PP pipe or ChemFlare for Chemline Teflon tubing.

## ORDERING EXAMPLE

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

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

<sup>1</sup> 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 liner control valve



55 Guardsman Road, Thornhill, Ontario, Canada, L3T 6L2  
 Tel: 905-889-7890 request@chemline.com  
 Fax: 905-889-8553 www.chemline.com

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