

# Elster Perfection PSV Polyethylene Shut-off Valves





## PSV Polyethylene Shut-off Valves

Elster Perfection's PSV family of polyethylene shut-off valves offers proven performance and total compatibility with all PE gas distribution systems.

PSV valves are an excellent choice for replacing non-PE plastic curb valves and metallic valves, as well as for new installations. The polyethylene construction of PSV valves eliminates the need for metal-to-plastic transitions, as well as corrosion inhibiting coatings, cathodic protection, federally mandated corrosion control inspection, and record keeping required of metallic valves.

## PSV polyethylene shut-off valves for gas service lines

### Benefits

- Large port design for maximum gas flow
  - Quarter turn actuation
  - Maintenance-free operation requires no cathodic protection, corrosion inhibiting coatings, federally mandated inspection and record keeping
  - Permasert® mechanical couplings or fusion outlets
  - Compatible with standard PE distribution systems
  - Available in PE 2406/2708 and 3408/4710
  - Sizes 1/2" CTS through 8" IPS (Metric sizes available from 20mm to 225mm)
  - Facilitates fullport, branch saddle hot taps
- Combo Valve: PSV polyethylene shut off valve with integral Elster Perfection Excess Flow Valve



Elster Perfection's PSV shut-off valves are available in sizes ranging from 1/2" through 8". Permasert or fusion outlets are available for valves 2" and smaller while valves 3" and larger have fusion outlets only. The PSV is molded from distribution pipe grade polyethylene materials that meet or exceed the requirements of ASTM D 2513, US DOT Part 192, ISO 4437 and ANSI B16.40. Elster Perfection's PSV valves are pressure rated, per ANSI B16.40, to be equivalent to the SDR pressure rating of the PE piping. Operating temperatures for the PSV range from -20° F to 100° F (-29° C to 38° C).

### Safe, reliable operation for replacement or new valve applications

Elster Perfection's PSV operate with a low torque, one-quarter turn actuator with positive stops for dependable, fail-safe on-off operation. In addition, we designed the PSV to withstand excessive torque, backfilling, soil loading, and "operating key" abuse. The valve's structural integrity combined with Elster Perfection's commitment to quality make the PSV a safe, reliable alternative to gas distribution system valves.

Elster Perfection's PSV for service lines are designed with flexibility to facilitate both new and replacement installations. The compact design of the PSV makes them easier to install in tight replacement applications. PSV also fit a variety of commercially available curb valve boxes. The variety of outlet end configurations available make the PSV ideal for new installations.



Only Elster Perfection has developed a complete mechanical polyethylene gas distribution system taking you from main to meter.

### Design advantages

All PSVs feature a large port opening which ensures maximum gas flow and minimizes pressure drop. Depending on PSV size, either a plug or ball-type mechanism is incorporated which provides an obstruction-free port area.

In order to achieve the compact physical size of the plug-type PSV, Elster Perfection utilizes a totally encapsulated metallic sleeve. By integrating this sleeve with our proprietary molding process we are able to maintain a compact overall size. The long term reliability of our small diameter PSV valves is enhanced with our one piece actuator/plug design.

The full port design of the larger PSVs (size 2"-6" and reduced port 8) allows installers to make full port branch hot taps into gas main lines.

### Testing and compliance

Elster Perfection's research and development laboratory performed extensive qualification testing to verify the performance characteristics of the PSV. Testing covered areas such as operation, temperature resistance, sustained pressure capability, flow capacity, short term rupture, and elevated temperature. In addition, all PSVs are subjected to in process production testing to assure performance compliance.

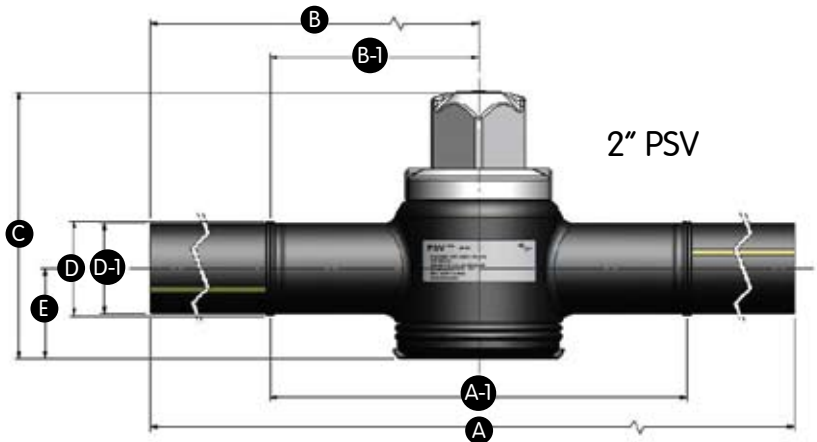
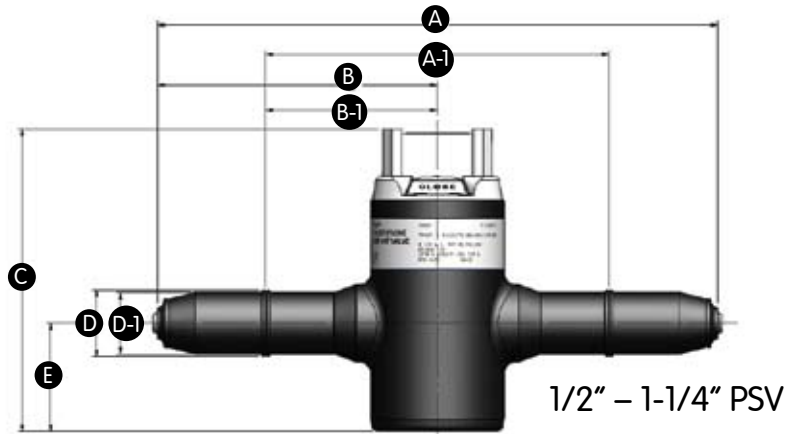
All Elster Perfection PSV polyethylene shut-off valves meet or exceed the requirements of US DOT Part 192, ANSI B16.40, ASTM D 2513 and CSA B137.4.

### Complete polyethylene gas distribution system

Only Elster Perfection has developed a complete mechanical polyethylene gas distribution system taking you from main to meter. These easy-to-install products allow you to make fast and safe field connections without the use of tools or expensive equipment.

Our complete system includes mechanical fittings, anodeless service line risers, transition fittings, polyethylene shut-off valves, mechanical tapping tees, excess flow valves, and meter set piping. All of our products meet or exceed the requirements of ASTM D 2513, ANSI B16.40, US DOT Part 192, and CSA B137.4.

# 1/2"-2" PSV Polyethylene Shut-off valves



## Specifications†

Valve Size	Flow Data				Dimensions (in)								Weight (lbs)	
	Port Size (in)	Equivalent Length (ft)	K	C <sub>v</sub>	A coupling	A-1 fusion	B coupling	B-1 fusion	C	D	D-1	E	Coupling Outlets	Fusion Outlets
1/2 CTS	.89	3	3.3	3.2	11.63	*	5.81	*	6.25	1.42	.63	2.33	1.8	***
1/2 IPS	.89	1	0.6	18.3	12.38	*	6.19	*	6.25	2.00	.84	2.33	2.1	***
3/4 CTS	.89	4	1.8	10.6	12.38	*	6.19	*	6.25	2.00	.88	2.33	2.1	***
3/4 IPS	.89	4	1.5	18.3	12.38	7.38	6.19	3.69	6.25	2.00	1.05	2.33	2.1	1.7
1 CTS	.89	4	1.4	19.9	12.50	9.38	6.25	4.69	6.25	2.03	1.13	2.33	2.1	1.7
1 IPS	.89	4	1.0	34.9	13.00	*	6.50	*	6.25	2.47	1.32	2.33	2.7	***
1-1/4 CTS	.89	5	1.4	32.3	13.00	*	6.50	*	6.25	2.47	1.38	2.33	2.7	***
1-1/4 IPS	.89	7	1.6	44.0	25.88	9.38	12.94	4.69	6.25	3.17	1.67	2.33	4.3	1.7
2 IPS	1.74	3	0.4	184.9	30.44	**24.44	15.22	**12.22	6.75	4.15	2.38	2.19	8.3	3.7

†Flow data in chart above is based on PSV valves with fusion outlets. Other outlet end configurations will produce different data. Dimension data for PSV valves with fusion outlets is based on butt fusion outlets

\*Valve sold with pups only (customer specified lengths)

\*\*Valve sold with 7-inch pups

\*\*\*Valve weight varies with pup lengths

## Plug Valve Design 1/2" – 1-1/4" PSV

### 1 Valve Actuator/Plug

A one-piece design for simplicity of construction and operation.

### 2 Moisture Seal

Protects the one-quarter turn valve stop chamber from outside contamination.

### 3 Quarter Turn Open/Close

Incorporates fail-safe stop design.

### 4 Proprietary "Float Encapsulated" Tubular Steel Support Sleeve

Provides unmatched dimensional stability throughout the life of the valve.

### 5 Unrestricted Full Flow

Plug valve design.

### 6 Proprietary Port Seals

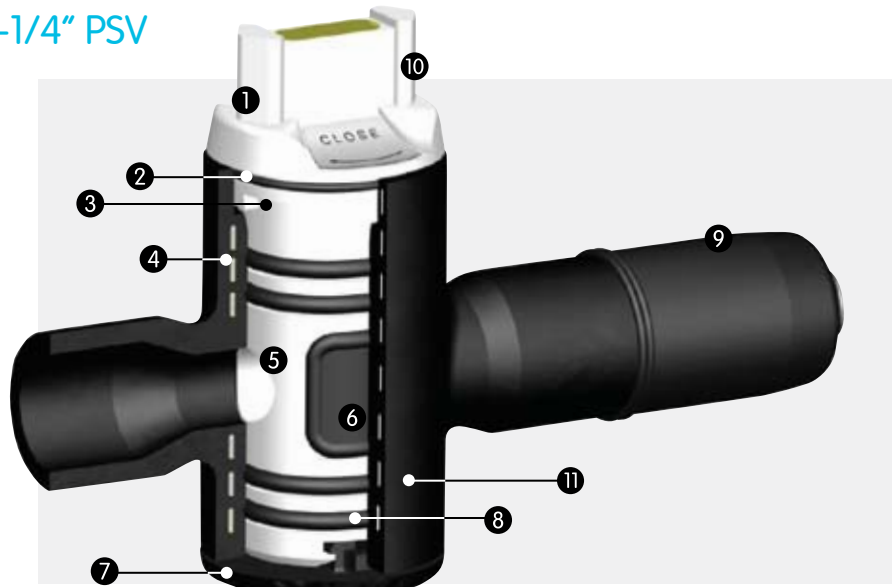
Designed to provide a leak-free seal over the life of valve.

### 7 Plug Retainer Cap

Provides secure tamper proof retention of the plug in the PSV body.

### 8 Shaft Seal

Primary and secondary seals at the top and bottom of the plug provide outstanding leak-free performance.



### 10 Flow/No Flow

The flow indicating operating head fits standard valve key designs. Reflective marking makes it easy to quickly locate and determine port position under adverse curb box conditions.

### 11 Valve Body Shell

Constructed of polyethylene materials that meet or exceed the requirements of ANSI B16.40, ASTM D 2513, ISO 4437 and US DOT Part 192. It is available in both PE 2406/2708 and PE 3408/4710 materials.

### 9 Outlet Ends

Available with Permasert® mechanical couplings, butt fusion and socket fusion outlets. These outlet ends meet the requirements of ASTM D 2513, ASTM D 3261, or ASTM D 2683. PSV fusion ends are compatible with either PE 2406/2708 and PE 3408/4710 polyethylene gas piping systems. Mix and match any combination of Permasert, butt fusion and socket fusion outlet ends.

## Modified Ball Valve (MBV) Design 2" PSV

### 1 Valve Operator

Designed for simplicity of construction and operation. The operating head fits standard valve key designs.

### 2 Quarter Turn Open/Close

Incorporates fail-safe stop design.

### 3 Molded Seal

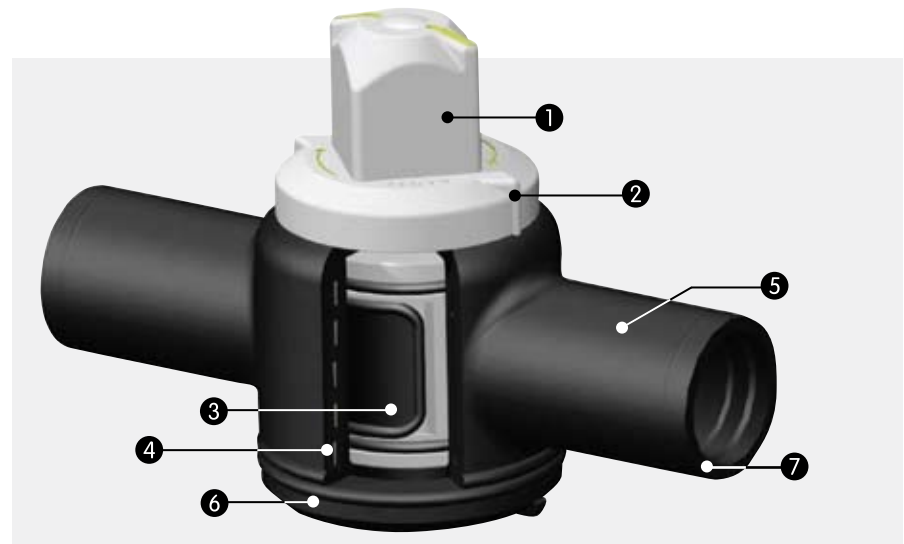
Designed to provide a tight seal over the life of the valve.

### 4 Proprietary "Float Encapsulated" Tubular Steel Support Sleeve

Provides unmatched dimensional stability throughout the life of the valve.

### 5 Unrestricted Full Flow

Modified ball valve design.



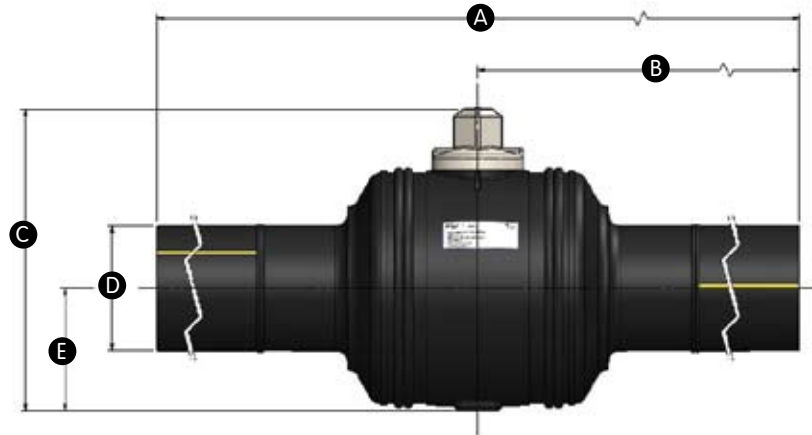
### 6 Valve Body Shell

Constructed of polyethylene materials that meet or exceed the requirements of ANSI B16.40, ASTM D 2513, ISO 4437 and US DOT Part 192. It is available in both PE 2406/2708 and PE 3408/4710 materials.

### 7 Outlet Ends

Available with PERMASERT® mechanical couplings, butt fusion and socket fusion outlets. See 9 above.

# 3", 4", 6", 8" PSV Polyethylene Shut-off Valves

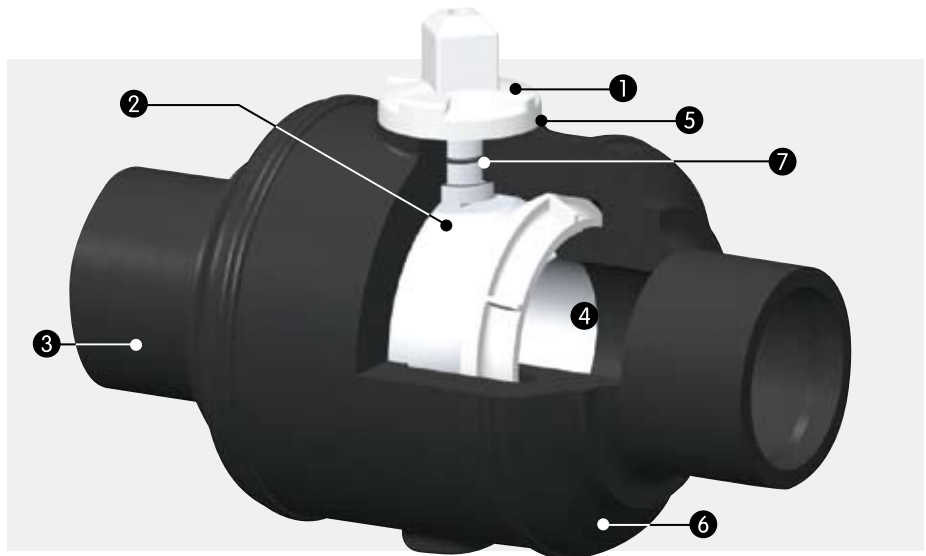


## Specifications

Valve Size	Flow Data				Dimensions (in)					Weight (lbs)
	Port Size (in)	Equivalent Length (ft)	K	C <sub>v</sub>	A	B	C	D	E	
3	3.54	10	0.8	272.8	39.81	19.91	13.00	3.50	4.62	24.0
4	3.54	9	0.5	583.7	39.81	19.91	13.00	4.50	4.62	23.2
6 Reduced	3.54	38	1.4	732.0	40.50	20.25	13.00	6.62	4.62	29.0
6	5.75	14	0.5	1277.5	71.00	37.12	17.25	6.62	6.37	72.7
8 Reduced	5.75	36	0.9	1535.3	71.00	36.25	17.25	8.62	6.37	84.6

## 3", 4", 6", 8" PSV

- 1** Quarter Turn On/Off  
Incorporates fail-safe stop design.
- 2** Cartridge Mechanism  
Design provides consistent face seal compression assuring leak-free performance over the life of the valve.
- 3** Outlet Ends  
Butt fusion outlet ends designed to accommodate SDR 9.3, 11 or 11.5 pipe. Can be installed using butt fusion, electrofusion or mechanical connections. Metric outlet ends also available.
- 4** Full Port  
Cartridge-style ball mechanism provides unrestricted gas flow.
- 5** Moisture Seal  
Protects the one-quarter turn valve stop chamber from outside contamination.



- 6** Valve Body  
Constructed of polyethylene materials that meet or exceed the requirements of ANSI B16.40, ASTM D 2513, ISO 4437 and US DOT Part 192. Available in both PE 2406/2708 and PE 3408/4710 materials.

- 7** Gas Seals  
Primary and secondary seals provide outstanding leak-free performance.

## About Elster Group

A world leader in advanced metering infrastructure, integrated metering, and utilization solutions to the gas, electricity and water industries. Elster's systems and solutions reflect over 170 years of knowledge and experience in measuring precious resources and energy.

Elster provides solutions and advanced technologies to help utilities more easily, efficiently and reliably obtain and use advanced metering intelligence to improve customer service, enhance operational efficiency, and increase revenues. Elster's AMI solutions enable utilities to cost-effectively generate, deliver, manage, and conserve the life-essential resources of gas, electricity, and water.

Elster has over 7,500 staff and operations in 38 countries in North and South America, Europe, and Asia.

Elster Perfection  
222 Lake Street  
Madison, OH 44057  
USA

T +1 440 428 1171  
F +1 866 828 6862

[www.elster-perfection.com](http://www.elster-perfection.com)

© Registered Trademark of Elster Perfection Corporation  
© 2008 Elster Perfection. All right reserved

Information contained herein is subject to change without notice. Product specifications may change. Contact your Elster Perfection representative for the most current product information. Printed in the United States.

EP-BR0010-EN-P - July 2008  
Supersedes LITB3-02300

This technical information is furnished without charge or obligation and for informational purposes only. Acceptance, use and/or reliance on this information is at the recipient's sole risk. Nothing contained in this document shall be considered an endorsement of any particular material or equipment. The material presented in this document in no way modifies, amends, enlarges or creates any contract, agreement, specification, warranty or promise.