

Needle Valves

Medium Pressure

15SM Series

Pressures to 15,000 psi (1034 bar)

Since 1945 Autoclave Engineers has designed and built premium quality valves, fittings and tubing. This commitment to engineering and manufacturing excellence has earned Autoclave a reputation for reliable efficient product performance. Autoclave Engineers has long been established as the world leader in high pressure fluid handling components for the chemical/petrochemical, waterblast, research, and oil and gas industries.

Medium Pressure Valve Features:

- Largest-port valve available for medium pressure applications.
- Tubing size 1-1/2".
- Rising stem/barstock body design.
- Non-rotating stem prevents stem/seat galling.
- New one piece stem design permits ease of assembly and packing replacement.
- Metal-to-metal seating achieves bubble-tight shut-off, longer stem/seat life in abrasive flow, greater durability for repeated on/off cycles and excellent corrosion resistance.
- PTFE (Teflon) encapsulated packing provides dependable stem and body sealing.
- Stem sleeve and packing gland materials have been selected to achieve extended thread cycle life and reduced handle torque.
- Choice of Vee or Regulating stem tip.
- Available in two body patterns.

Autoclave valves are complemented by a complete line of fittings and tubing. The SM Series uses Autoclave's Medium pressure coned and threaded connection.



**Autoclave
Engineers** 

Fluid Components
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Needle Valves - SM Series
Medium Pressure

Needle Valves - 15SM Series

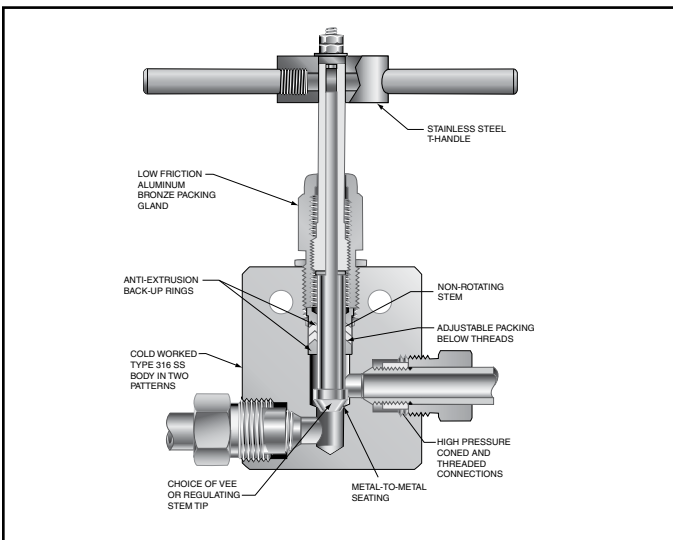
Pressures to 15,000 psi (1034 bar)

| Tube Outside Diameter Size Inches | Connection Type | Orifice Size Inches (mm) | Rated C_V * | Pressure Rating psi (bar) @ Room Temperature** |
|-----------------------------------|-----------------|--------------------------|---------------|--|
| 1-1/2 | SF1500CX | .937 (23.80) | 14 | 15,000 (1034) |

Notes:

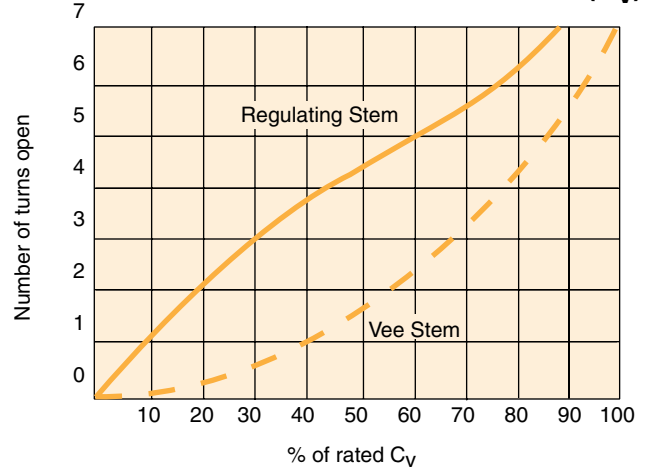
* C_V values shown are for 2-way straight valve pattern. For 2-way angle patterns, increase C_V value 50%. (Based on water)

** For complete temperature ratings see pressure/temperature rating guide in Technical Information section.



To ensure proper fit use Autoclave tubing

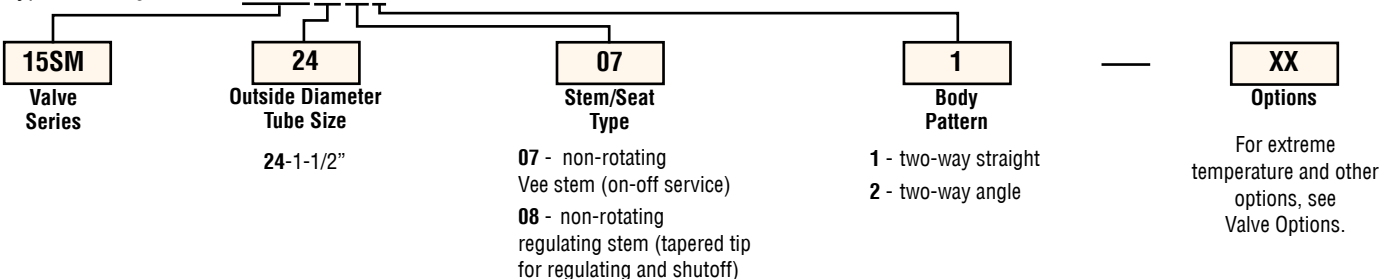
Generalized Flow Coefficient Curves (C_V)



Ordering Procedure

For complete information on available stem types, optional connections and additional valve options, see Needle Valve Options section or contact your Sales Representative. 15SM Series valves are furnished complete with connection components, unless otherwise specified.

Typical catalog number: **15SM24071**



Valve Options

Extreme Temperatures

Standard Autoclave valves with Teflon packing may be operated from 0°F (-17.8°C) to 450°F (232°C). High temperature packing and/or extended stuffing box are available for service from -423°F (-252°C) to 1200°F (649°C) by adding the following suffixes to catalog order number.

TG standard valve with Teflon glass packing to 600°F (316°C).

GY standard valve with graphite braided yarn packing to 800°F (427°C).

Note: 3/4" rated 8000 psi (552 bar) and 1" rated 6000 psi (412 bar) maximum with graphite yarn packing.

HT extended stuffing box valve with graphite braided yarn packing to 1200°F (649°C).

B standard valve with cryogenic trim materials and Teflon packing to -100°F (-73°C).

LT extended stuffing box valve with Teflon packing and cryogenic trim materials to -423°F (-252°C).

K anti-vibration collet and gland assembly

See needle valve options for stem and seat coating for erosive service.

Valve Maintenance

Repair Kits: add "R" to the front of valve catalog number for proper repair kit.
(Example: **R15SM24071**)

Valve Bodies: Valve bodies are available. Order using the eight (8) digit part number found on the valve drawing or contact your Sales Representative for information.

Consult your Autoclave representative for pricing on repair kits and valve bodies. Refer to the Tools, Installation, Operation and Maintenance section for proper maintenance procedures.

Note: Caution should be exercised in proper selection of medium pressure tubing based on actual operating conditions. Two tubing series available in some sizes: 15,000 psi (1034 bar) and 20,000 psi (1380 bar).

| Catalog Number | Stem Type | Pipe Size | Orifice Dia. | Dimensions - inches (mm) | | | | | | | | | | | | Block Thickness | Fitting Pattern |
|----------------|-----------|-----------|--------------|--------------------------|---|---|---|----|---|---|---|----|---|---|---|-----------------|-----------------|
| | | | | A | B | C | D | D' | E | F | G | G' | H | M | N | | |

2-Way Straight

| | | | | | | | | | | | | | | | | | |
|-----------|-----|---------|---------|----------|---------|---------|----------|---------|----------|----------|--|---------|----------|---------|---------|---------|------------|
| 15SM24071 | VEE | 1-1/2 | 0.937 | 5.75 | 2.88 | 1.00 | 5.25 | 3.75 | 6.38 | 23.75 | | 0.75 | 10.98 | 1.88 | 1.50 | 2.25 | See Fig. 1 |
| 15SM24081 | REG | (38.10) | (23.80) | (146.05) | (73.03) | (25.40) | (133.35) | (95.25) | (161.93) | (603.25) | | (19.05) | (278.79) | (47.63) | (38.10) | (57.15) | |

2-Way Angle

| | | | | | | | | | | | | | | | | | |
|-----------|-----|---------|---------|----------|---------|---------|---------|--|----------|----------|--|---------|----------|---------|---------|---------|------------|
| 15SM24072 | VEE | 1-1/2 | 0.937 | 5.75 | 2.88 | 1.00 | 3.75 | | 6.75 | 23.75 | | 0.75 | 11.35 | 1.88 | 1.50 | 2.25 | See Fig. 2 |
| 15SM24082 | REG | (38.10) | (23.80) | (146.05) | (73.03) | (25.40) | (95.25) | | (171.45) | (603.25) | | (19.05) | (288.32) | (47.63) | (38.10) | (57.15) | |

G - Packing gland mounting hole drill size

G₁ - Bracket mounting hole size

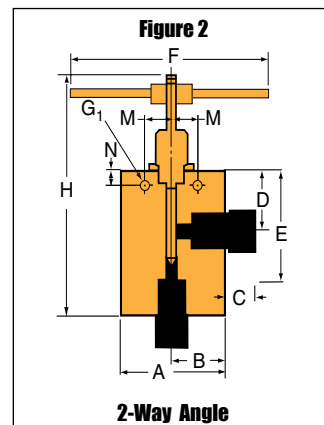
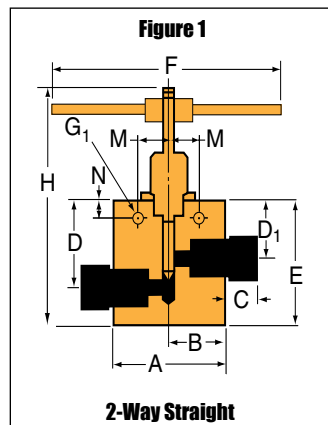
Panel mounting drill size: 0.75" all valves.

* H Dimension is with stem in closed position.

All dimensions for reference only and subject to change.

For prompt service, Autoclave stock select products.

Consult factory.



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