

## Engineering Specification

Job Name \_\_\_\_\_

Contractor \_\_\_\_\_

Job Location \_\_\_\_\_

Approval \_\_\_\_\_

Engineer \_\_\_\_\_

Contractor's P.O. No. \_\_\_\_\_

Approval \_\_\_\_\_

Representative \_\_\_\_\_

# Carbon Steel or Stainless Steel SURE CHECK™ Valves

## Model 78, Class 1500

Sizes: 2"– 12" (50 – 300mm)

### Typical Service

- Designed for liquids and gases where flow reversal can cause surge and water hammer.

### Features

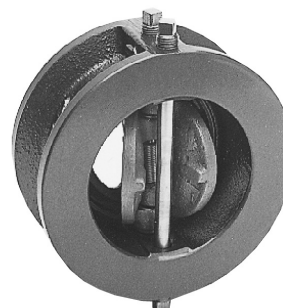
- Compact design with short face-to-face dimensions for minimum space requirements.
- Dual shaft design allows interchangeability of shafts.
- Torsion springs close the valve prior to flow reversal.
- Torsion springs exert a lifting motion on the discs, enabling the center "heel" to open first. This prevents excessive wear of the seat in this area, and provides a consistent wear pattern and long sealing capability.
- Downstream stop shaft stabilizes the discs at high flow rates and prevents them from striking each other, which can cause premature wear, stress on the shaft, and chattering.

### Construction

- Robust cast body is wafer style, featuring compact face-to-face dimensions.
- Designed to fit within ANSI bolt circles.
- Variety of trim and seat materials are available.
- High pressure elastomer seats are available for sizes 4" and up.

### Installation

- Can be installed horizontally or vertically.
  - Consult factory for downward vertical flow applications.
  - In horizontal applications, shaft should be in vertical orientation.
- Good piping practice recommends installing a distance of 5 to 10 pipe diameters from elbows, pumps, or others turbulence-creating devices.



Model 78

### Pressure/Temperature – Non-Shock

Model	Material	Rating
78D	Carbon Steel	3705psi @ -20°F to 100°F, 255.45 bar @ 37.78°C
		1595psi @ 850°F, 109.97 bar @ 454.44°C
78H	Stainless Steel	3600psi @ -20°F to 100°F, 248.21 bar @ 37.78°C
		2090psi @ 850°F, 144.1 bar @ 454.44°C

\*Seat and/or Spring Materials may limit temperature.

- Mueller Steam Specialty strongly recommends the installation of a strainer ahead of the pump to ensure protection of both the pump and the valve from foreign particles.
- Consult factory for applications such as pump suction and volatile liquids.

### Special Coatings and Treatments

- For Stainless Steel, pickling and passivation available on request, consult factory.

### Approvals/Specifications

- Applicable ASTM, ANSI, and API standards

### Testing

- API 598

### NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

Mueller Steam Specialty product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Mueller Steam Specialty Technical Service. Mueller Steam Specialty reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Mueller Steam Specialty products previously or subsequently sold.

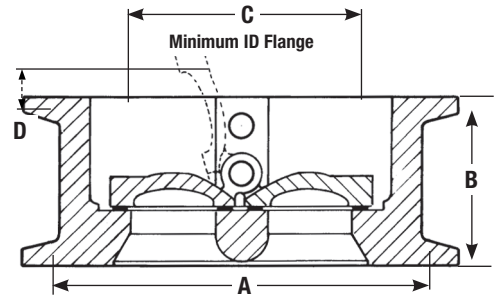
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## Materials

	78D	78H
Body	Carbon Steel ASTM A216 Gr. WCB	Stainless Steel ASTM A351 Gr. CF8M
Disc	Carbon Steel ASTM A216 Gr. WCB	Stainless Steel ASTM A351 Gr. CF8M
Shaft/spring	316 SS	316 SS
Seat	Metal to Metal	Metal to Metal

See SURE CHECK™ Valves section of the Mueller Steam Specialty Engineering binder for alternate materials and How to Order options.



**Model 78**

## Dimensions and Weights

SIZE		DIMENSIONS								WEIGHT	
in.	mm	A		B		C		D		lbs.	kgs.
		in.	mm	in.	mm	in.	mm	in.	mm		
2	50	5 <sup>5</sup> / <sub>8</sub>	142.8	2 <sup>3</sup> / <sub>4</sub>	69.9	1 <sup>1</sup> / <sub>16</sub>	42.9	—	—	12	5.4
2 <sup>1</sup> / <sub>2</sub>	65	6 <sup>1</sup> / <sub>2</sub>	165.1	3 <sup>1</sup> / <sub>4</sub>	82.6	2 <sup>1</sup> / <sub>8</sub>	54.0	—	—	16	7.3
3	80	6 <sup>5</sup> / <sub>8</sub>	168.3	3 <sup>1</sup> / <sub>4</sub>	82.6	2 <sup>5</sup> / <sub>8</sub>	66.8	3 <sup>3</sup> / <sub>8</sub>	9.5	23	10.4
4	100	8 <sup>7</sup> / <sub>8</sub>	206.4	4	101.6	3 <sup>7</sup> / <sub>16</sub>	87.3	1 <sup>1</sup> / <sub>32</sub>	8.7	42	19.0
6	150	11 <sup>1</sup> / <sub>8</sub>	282.6	6 <sup>1</sup> / <sub>4</sub>	158.8	5 <sup>3</sup> / <sub>16</sub>	131.8	1 <sup>1</sup> / <sub>32</sub>	8.7	110	50.0
8	200	13 <sup>7</sup> / <sub>8</sub>	352.4	8 <sup>3</sup> / <sub>8</sub>	206.4	6 <sup>13</sup> / <sub>16</sub>	173	1 <sup>7</sup> / <sub>32</sub>	13.5	210	95.2
10	250	17 <sup>1</sup> / <sub>8</sub>	435	9 <sup>3</sup> / <sub>4</sub>	247.7	8 <sup>1</sup> / <sub>2</sub>	215.9	1 <sup>1</sup> / <sub>32</sub>	26.2	370	168
12	300	20 <sup>1</sup> / <sub>2</sub>	498.5	12	304.8	10 <sup>1</sup> / <sub>8</sub>	257.2	1 <sup>1</sup> / <sub>8</sub>	28.6	650	295
14	350	Larger Sizes On Application									
16	400										
18	450										
20	500										
24	600										
30	750										

Apply for Certified Drawings.

**Limited Warranty:** Mueller Steam Specialty warrants each product to be free from defects in material and workmanship under normal usage for a period of one year from the date of original shipment. In the event of such defects within the warranty period, the Company will, at its option, replace or recondition the product without charge. This shall constitute the sole and exclusive remedy for breach of warranty, and the Company shall not be responsible for any incidental, special or consequential damages, including without limitation, lost profits or the cost of repairing or replacing other property which is damaged if this product does not work properly, other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemical, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication or improper installation of the product. **THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** Any implied warranties that are imposed by law are limited in duration to one year.

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