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Model 4170 Series
High Accuracy Needle Valves



Description
The High Accuracy Needle Valves are ideal in gas delivery applications requiring a reliable and accurate adjustment of very low flow rates. These Needle Valves have valve bodies that are available in brass or 316 stainless steel. Each valve features a non-rising stem design utilizing a threaded valve stem to operate a direct mechanical drive of the sliding flat tapered needle. In addition, six (6) interchangeable valve cartridges are available to provide maximum flexibility of flow rate selection. The inlet and outlet connections on each valve are 1/8" FPT.

Design Features
- Stable, accurate adjustment of very low flow rates.
- Non-rotating stem design has a threaded valve stem to provide direct mechanical drive for adjustment of the sliding flat tapered needle.
- Six (6) easily interchangeable valve cartridges for maximum flexibility of flow rate selection.
- Inlet and outlet connections are 1/8" FPT .
- Non-rising control knob

Specifications

Valve Body	Valve Needle	O-Ring Seals	Max. Pressure at 70°F	Max. Operating Temperature
Brass	316 Stainless Steel	Buna-N	250 psig (1725 kPa)	225° F (107°C)
316 Stainless Steel	316 Stainless Steel	Viton A	250 psig (1725 kPa)	400° F (204°C)

Shipping Weight: 1 lb

Ordering Information

Complete Valves

Valve Body	Orifice Size*	Model No.
Brass	1	**4171-1505**
Brass	2	**4172-1505**
Brass	3	**4173-1505**
Brass	4	**4174-1505**
Brass	5	**4175-1505**
Brass	6	**4176-1505**
Stainless Steel	1	**4171-2505**
Stainless Steel	2	**4172-2505**
Stainless Steel	3	**4173-2505**
Stainless Steel	4	**4174-2505**
Stainless Steel	5	**4175-2505**
Stainless Steel	6	**4176-2505**

** See Flow Capacity Table*

Replacement Valves

For conversion of valves in service to a different flow range or repair of worn unit.

	Model No. *(Cartridges Only)*	Orifice Size*
Brass	**VLV-0121-BA**	1
Brass	**VLV-0122-BA**	2
Brass	**VLV-0123-BA**	3
Brass	**VLV-0124-BA**	4
Brass	**VLV-0125-BA**	5
Brass	**VLV-0126-BA**	6
Stainless Steel	**VLV-0121-SA**	1
Stainless Steel	**VLV-0122-SA**	2
Stainless Steel	**VLV-0123-SA**	3
Stainless Steel	**VLV-0124-SA**	4
Stainless Steel	**VLV-0125-SA**	5
Stainless Steel	**VLV-0126-SA**	6

** See Flow Capacity Table*

Flow Capacity Table

Needle/Orifice Size	Capacities (scc/min.) Helium	Air	Water
1	200	100	2
2	850	400	12
3	2800	1200	54
4	7600	3300	132
5	24,600	10,000	480
6	80,000	30,000	1170

Values given are the maximum flows measured with an inlet pressure of 10 psig and exhausted to atmosphere. Flow capacities will vary for different gases, liquids, and pressures. Consult Matheson for further information.

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