

MINIATURE NEEDLE VALVE



Miniature valves isolate instruments from system pressure in order that instruments can be removed without shutting down or disrupting the system. They are a compact, economical solution while still being rugged enough for demanding process conditions, and they can be added to other valve assemblies to provide convenient bleed-off capability.

FEATURES / BENEFITS

- Complies with MSS SP-99 and MSS SP-132 Standards Where Applicable
- Rolled Threads for Strength, Durability, and Ease of Use
- 316SS Body Option Complies with NACE MR0175
- Leak Tested Before Shipping
- Available Factory-Installed on Reotemp Instruments

SPECIFICATIONS

|                                       |                                                                  |
|---------------------------------------|------------------------------------------------------------------|
| Body Materials Available              | 316 Stainless Steel, Carbon Steel, Monel, Hastelloy C276, Brass  |
| Max Pressure Rating Available         | Hard Seat - 10,000 psi at 200°F, Soft Seat - 6,000 psi at 200°F. |
| Min/Max Temperature Ratings Available | -67°F to 1000°F                                                  |
| Seats Available                       | Hard, POM, PCTFE                                                 |
| Connections Available                 | 1/4" NPT, 1/8" NPT                                               |
| Bore                                  | Soft Seat - 0.138" Bore<br>Hard Seat - 0.172" Bore               |



Unidirectional Flow (Hard Seat)



Bidirectional Flow (Soft Seat or Soft Tip)

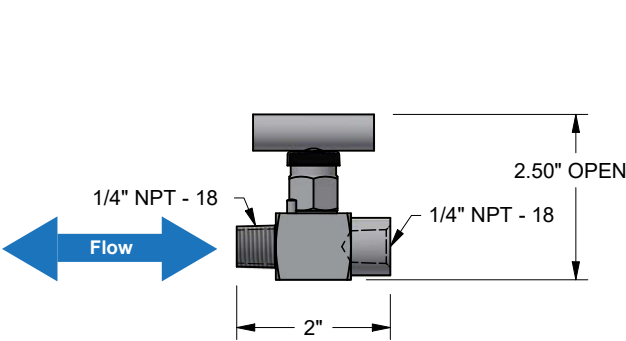
## MINIATURE NEEDLE VALVE

**HOW TO ORDER:** Choose options to build a part number. For example: **M12SFP44S-HT**

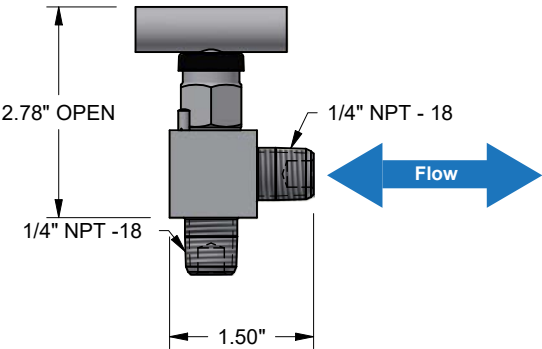
| M12                                                                                     | S                                                       | F                                                                                                                                                                                                                                                                                  | P                                                                                                                                                                                                                                                                                                                                        | 44                                                                                                                                                                   | S                                                                                                                                                                                               | -HT                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MODEL                                                                                   | SEAT                                                    | STEM SEAL                                                                                                                                                                                                                                                                          | SEAT/TIP                                                                                                                                                                                                                                                                                                                                 | CONNECTIONS                                                                                                                                                          | BODY MATERIAL                                                                                                                                                                                   | OPTIONS                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>M12</b> = Process Mini Needle Valve<br><b>MA2</b> = Angled Process Mini Needle Valve | <b>H</b> = Hard Seat (Integral)<br><b>S</b> = Soft Seat | <b>T</b> = PTFE Packing<br><b>V</b> = HP FKM O-Ring Seal - Standard for Hard Seat<br><b>F</b> = FKM O-Ring Seal - Standard for Soft Seat<br><b>G</b> = Graphite Packing <sup>2</sup><br><b>F</b> = FEPM O-Ring Seal<br><sup>2</sup> Only available in hard seat with no soft tips. | <b>X</b> = Hard Seat (Integral)<br><b>P</b> = POM - Standard Soft Seat <sup>4</sup><br><b>C</b> = PCTFE Soft Seat <sup>5</sup><br><b>R</b> = Hard Seat with POM Tip<br><b>M</b> = Hard Seat with PCTFE Tip<br><b>E</b> = Hard Seat with PEEK Tip<br><sup>4</sup> POM comparable to Delrin.<br><sup>5</sup> PCTFE is equivalent to Kel-F. | <b>44</b> = 1/4" MxF NPT<br><b>4F</b> = 1/4" FxF NPT<br><b>4M</b> = 1/4" MxM NPT<br><b>88</b> = 1/8" MxF NPT<br><b>8F</b> = 1/8" FxF NPT<br><b>8M</b> = 1/8" MxM NPT | <b>S</b> = 316SS<br><b>M</b> = Monel 400<br><b>H</b> = Hastelloy C-276<br><b>C</b> = Carbon Steel<br><b>B</b> = Brass <sup>1</sup><br><sup>1</sup> Brass comes with a round handle as standard. | <b>OX</b> = Cleaned for Oxygen Service <sup>3</sup><br><b>M4</b> = Panel Mounting<br><b>HT</b> = Internal Hydrostatic Test<br><b>PM</b> = Positive Material Test<br><b>MR</b> = MTR for Body<br><b>HS</b> = SS Round Handle<br><b>HA</b> = Aluminum Round Handle<br><b>T1</b> = Non-rotating Stem Tip<br><b>TS</b> = Stainless Steel Tag<br><sup>3</sup> Max pressure is 6,000 psi at 140°F. |

**Note:** Not all combinations in the above table are possible. Conversely, if a combination is desired but not seen, ask your Reotemp Sales Representative. Additional configurations and options are available upon request.

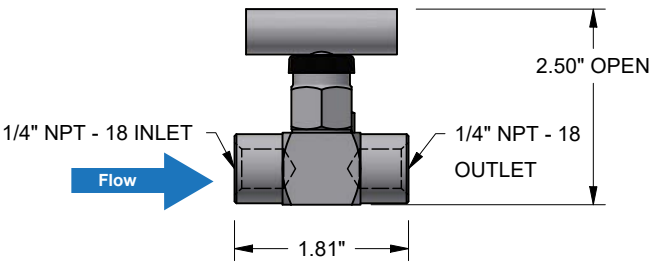
MINIATURE NEEDLE VALVE



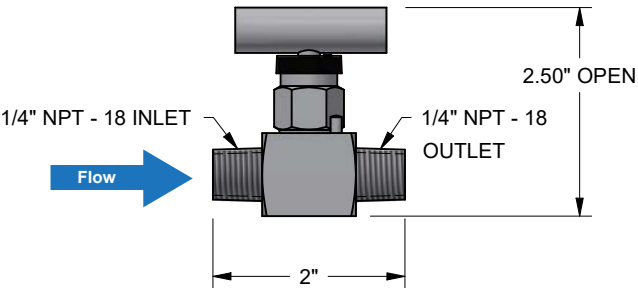
M12SFP44S



MA2SFP4MS



M12HVX4FS



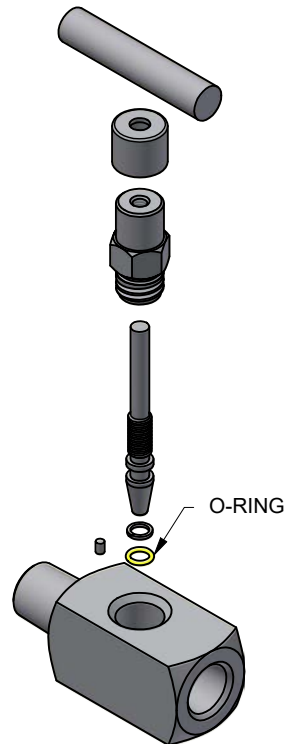
M12HVX4MS

**Note:** Dimensions are given as examples for reference. Contact your Reotemp sales representative for more exact and detailed drawings.

## MINIATURE NEEDLE VALVE



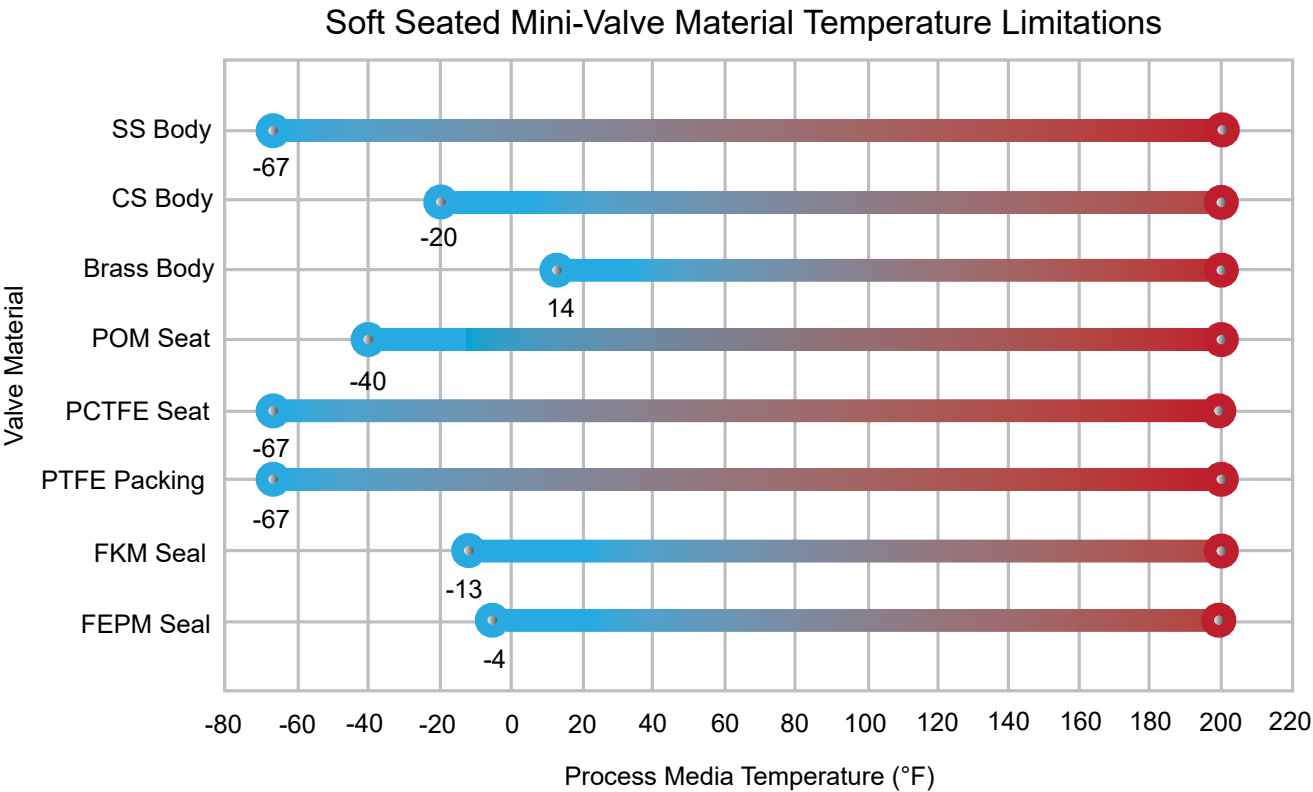
Packed Bonnet Seal Example



O-Ring Example

MINIATURE NEEDLE VALVE

Soft Seat

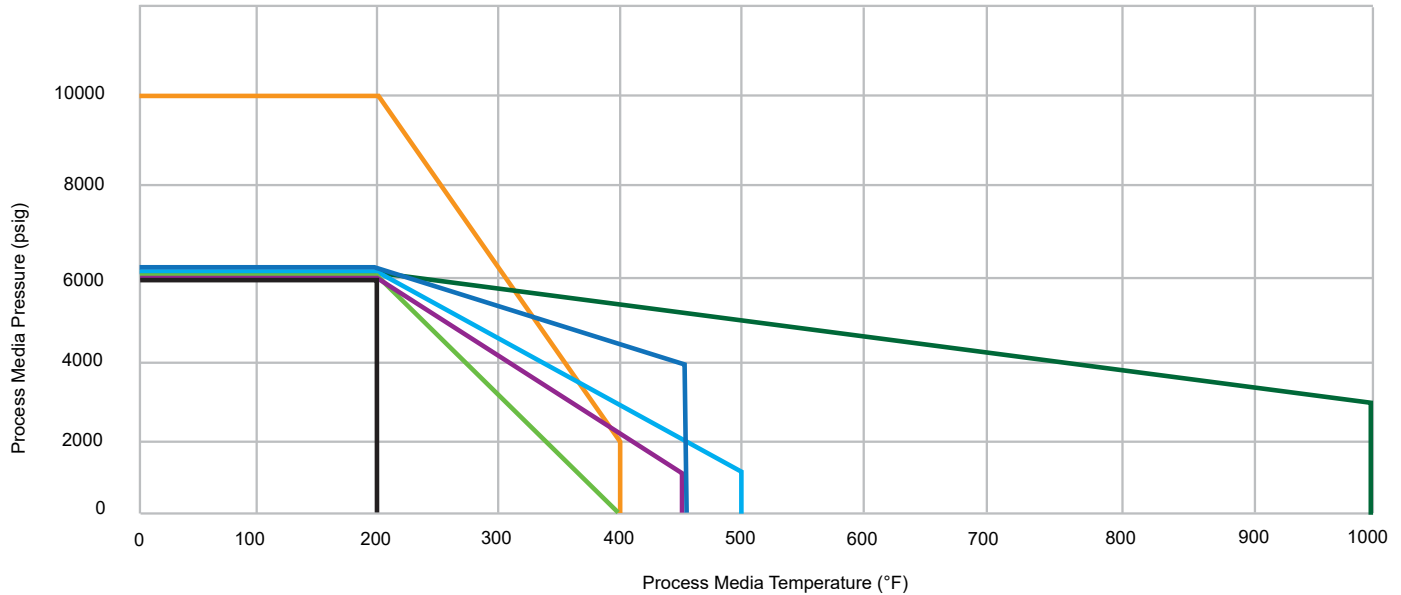


| Soft Seat Ratings Mini Valve |                   |
|------------------------------|-------------------|
| Brass Body                   | 3,000psi at 200°F |
| All Other Standard Materials | 6,000psi at 200°F |

## MINIATURE NEEDLE VALVE

## Hard Seat

Pressure Vs. Temperature



VALVES

Hard Seat Ratings Mini Valve

|                                         |                                          |
|-----------------------------------------|------------------------------------------|
| PTFE Packing SS or CS Body              | 6,000psi at 200°F<br>4,000psi at 450°F   |
| HP FKM O-Ring Bonnet and SS or CS Body  | 10,000psi at 200°F<br>2,000psi at 392°F  |
| HP FKM O-Ring Bonnet and Brass Body     | 6,000psi at 200°F                        |
| PTFE or Graphite Packing and Brass Body | 6,000psi at 200°F<br>1,000psi at 450°F   |
| Graphite Packing and SS Body            | 6,000psi at 200°F<br>1,500psi at 1,000°F |
| Graphite Packing and CS Body            | 6,000psi at 200°F<br>1,500psi at 500°F   |
| Soft Tip (POM, PCTFE, or PEEK)          | 6,000psi at 200°F                        |