

## 400 SERIES



- 100% helium leak tested to  $1 \times 10^{-4}$  ml/s for guaranteed performance and reliability
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE or Grafoil® packing optional (certain NPT sizes only)
- All stems are 316 stainless steel
- All stem threads are rolled for strength and ease of operation
- One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
- Slotted spring pin to prevent accidental loosening
- Vinyl dust cap for bonnet and stem (non-packing)

### SPECIFICATIONS

Materials	Zinc-nickel plated steel, electropolished 316 stainless steel*
Connections	1/4", 3/8", 1/2", 3/4", 1", 1-1/4" & 1-1/2" NPT 7/16"-20 UNF (#4 SAE, J1926) Male-female, Female-female, in-line and angled configurations
Pressure rating**	10,000 psi @ 200 °F for 1/4" NPT to 1/2" NPT 8,000 psi @ 200 °F for 3/4" NPT to 1-1/2" NPT
Orifice sizes	1/4" - 1/2" NPT: 0.187" 3/4" - 1-1/2" NPT: 0.438"
Flow coefficient	1/4" - 1/2" NPT: $C_v$ 0.44 3/4" - 1-1/2" NPT: $C_v$ 2.70
Stem seal & type	All 316 stainless steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional for 1/4", 3/8" & 1/2" NPT only
Options	Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips
Weight	Approximately 1.3 lb. up to 1/2" Approximately 4.5 lb. Large Hex, Female-Female Approximately 6 lb. Large Hex, Male-Female

\* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.

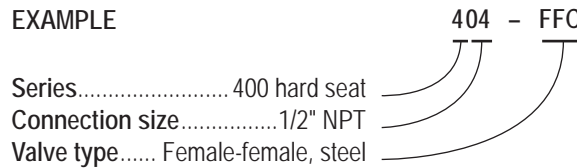
\*\* If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

NOTE: All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.

<b>SERIES</b>	4 400 Series, hard seat		
<b>CONNECTION SIZES</b>	02 1/4" NPT	06 3/4" NPT	12 1-1/2" NPT
	03 3/8" NPT	08 1" NPT	42 7/16"-20 UNF (#4 SAE, J1926)
	04 1/2" NPT	10 1-1/4" NPT	
<b>VALVE TYPES</b>	MFC Male-Female, Steel	MFS Male-Female, Stainless Steel	
	FFC Female-Female, Steel	FFS Female-Female, Stainless Steel	
	MFAC Male-Female Angle, Steel	MFAS Male-Female Angle, Stainless Steel	
	FFAC Female-Female Angle, Steel	FFAS Female-Female Angle, Stainless Steel	

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

**EXAMPLE**



To meet all of your specific application requirements, the following **additional options** are available for these needle valves. To order all or any of these options, simply add them to the part number as shown in the diagram below.

**NOTE 1:** The example shown includes ALL possible additional options. Please include ONLY the options required for your application when building your part number. (EXAMPLE: 404-FFC-PM2)

**NOTE 2:** When a packing option is selected, an o-ring option is NOT available.

**NOTE 3:** Packing options are NOT available on 3/4" NPT through 1-1/2" NPT valves.

<b>PACKINGS†</b>	P1 PTFE	P2 Grafoil®	
<b>STEM TIPS</b>	T1 Non-rotating (316 stainless)	T6 Ball (carbide)	T8 Ball (Monel)
	T5 Ball (440C stainless)	T7 Ball (ceramic)	T9 Regulating hard
<b>O-RINGS*</b>	EM1 EPDM	KZ1 FFKM (Kalrez® 3018 or equivalent)	NB1 NBR
<b>PANEL MOUNTINGS</b>	PM1 Panel mount (1 nut)	PM2 Panel mount (2 nuts)	
<b>HANDLES</b>	HL4 1-3/8" Phenolic	HL5 1-3/4" Phenolic	HL9 2-3/8" Phenolic**

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

† For 1/4", 3/8" and 1/2" NPT only. If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

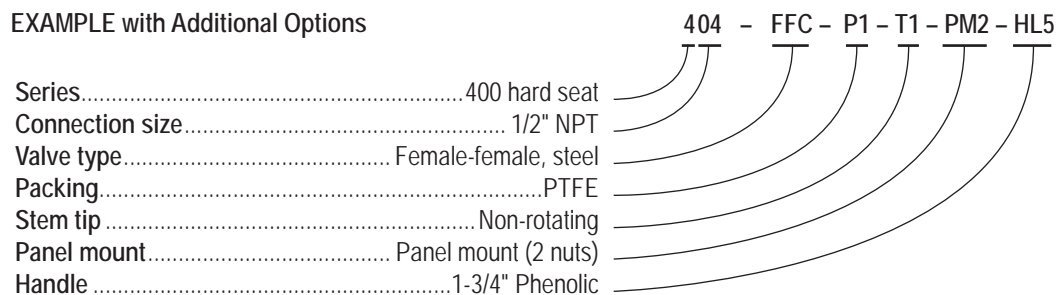
\* Other o-ring materials available on request.

\*\* For 3/4" NPT to 1-1/2" NPT only.

The standard o-ring in all the NOSHOK valves is FKM and the standard handles are "T" handles (HL2).

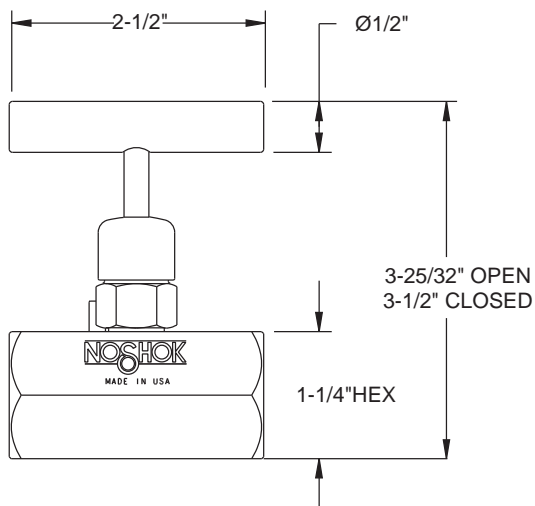
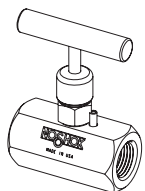
The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 404-FFC will be steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

**EXAMPLE with Additional Options**

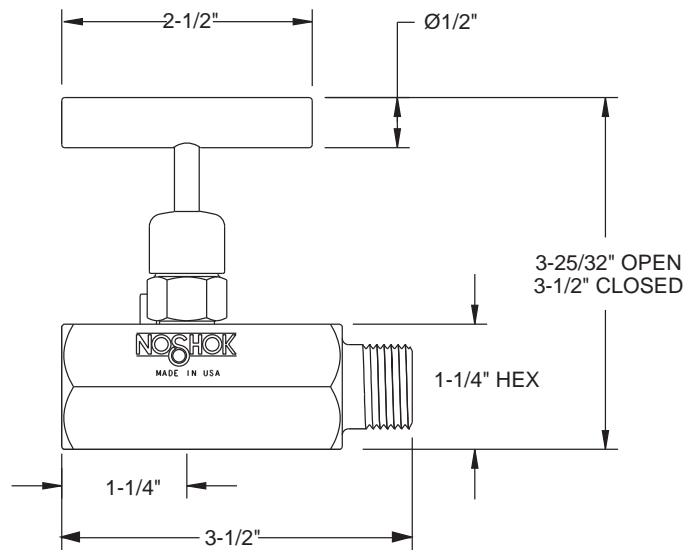
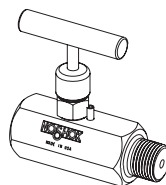


# Dimensions

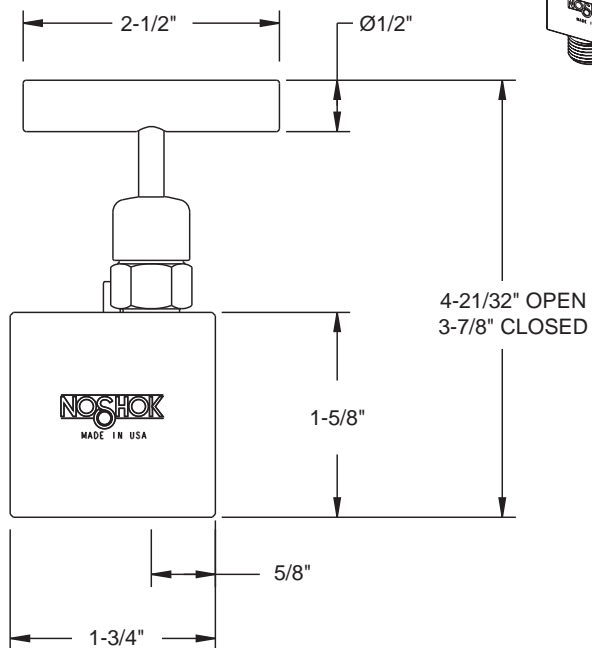
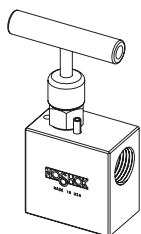
1/4" -1/2" Female-Female



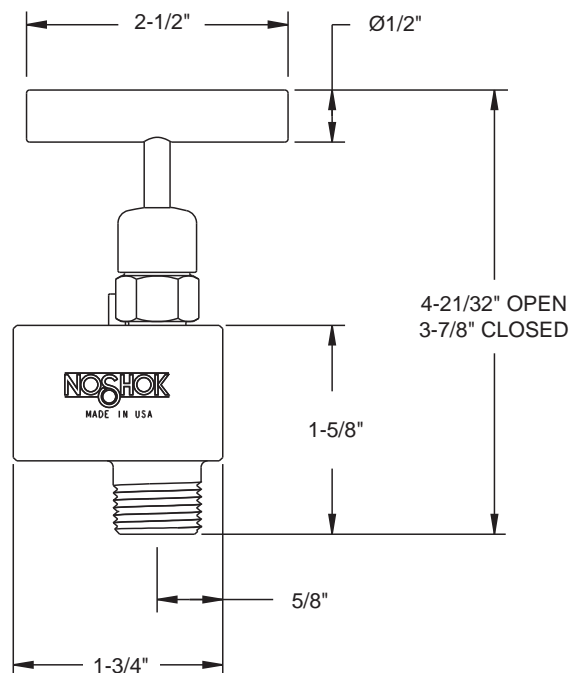
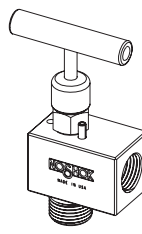
1/4" -1/2" Male-Female



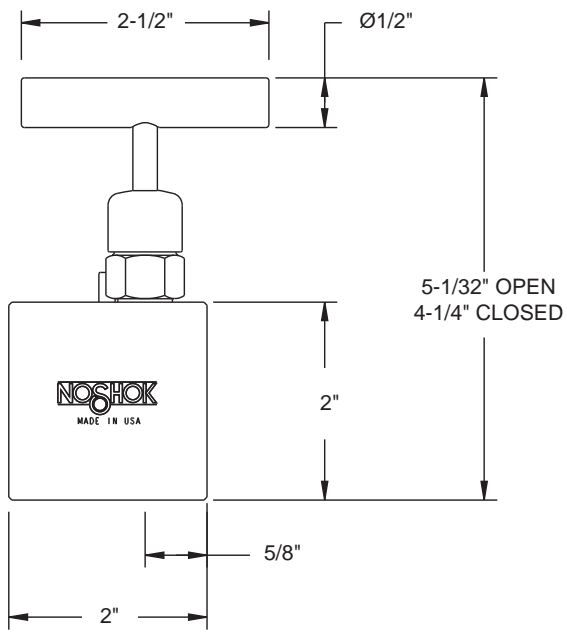
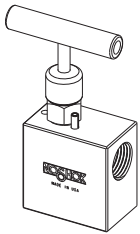
1/4" Female-Female Angle



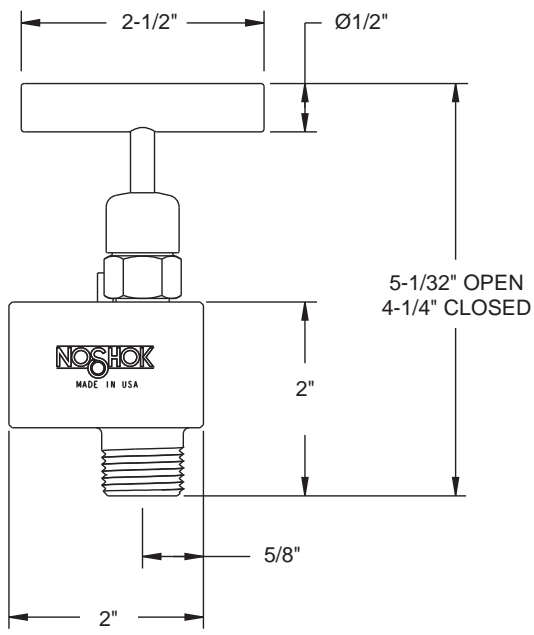
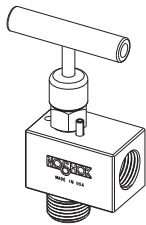
1/4" Male-Female Angle



1/2" Female-Female Angle

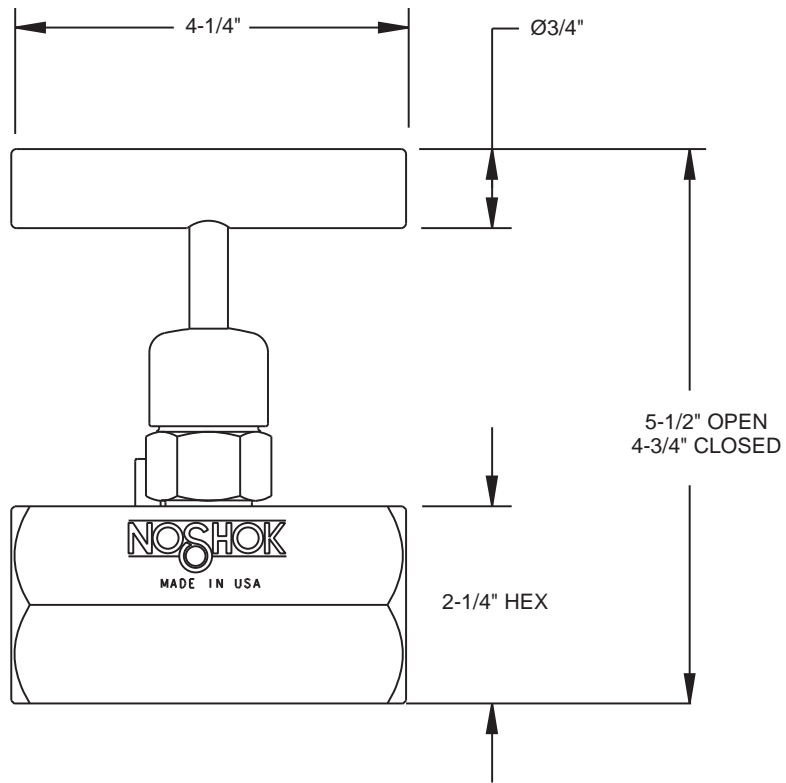
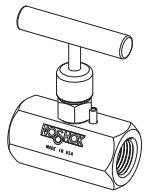


1/2" Male-Female Angle

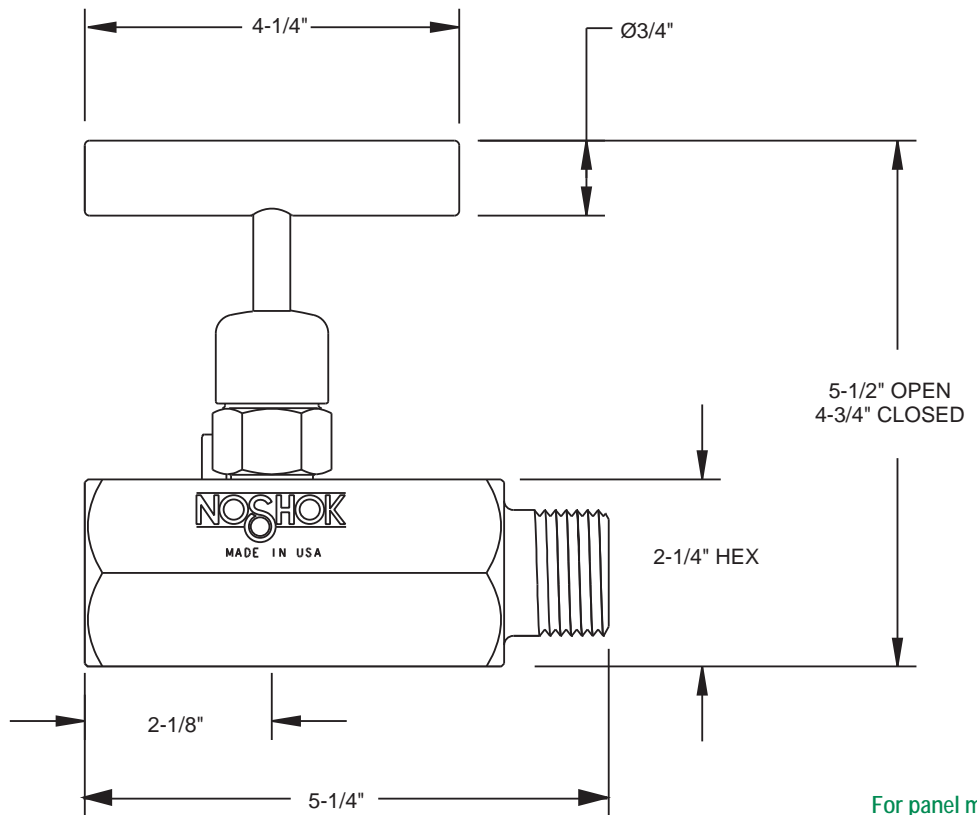
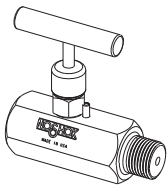


# Dimensions

## 3/4" - 1-1/2" Female-Female

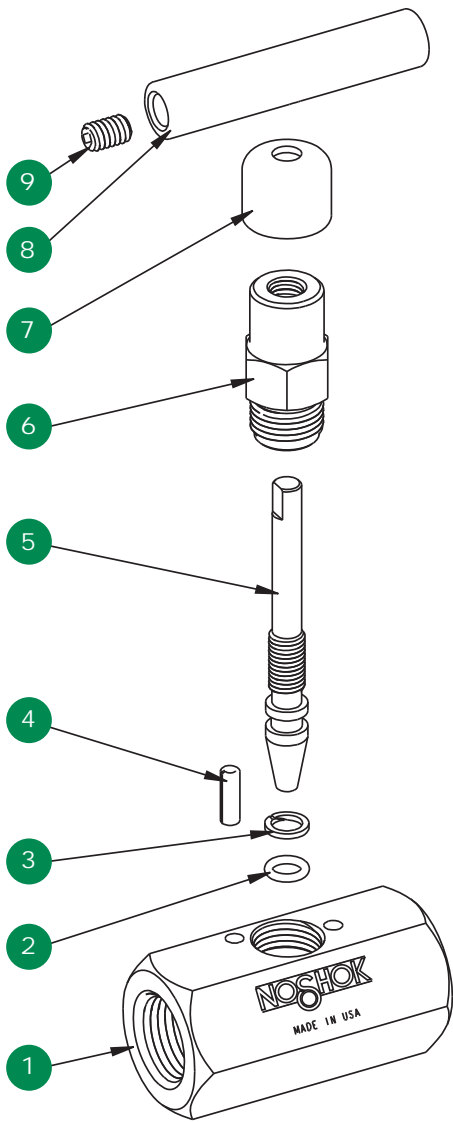


## 3/4" - 1-1/2" Male-Female

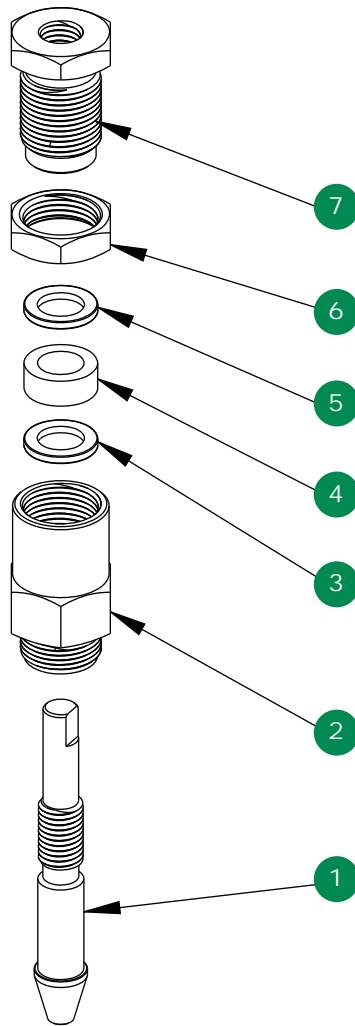


For panel mount, packing, & stem tip dimensions, see pgs. 64-67.

Standard, Hard Seat      Option With Packing



- 1 Valve body
- 2 FKM o-ring
- 3 PTFE back-up ring
- 4 Slotted spring pin
- 5 Valve stem
- 6 Valve bonnet
- 7 Dust cap
- 8 Valve "T" handle
- 9 Set screw



- 1 Valve packing stem
- 2 Valve packing bonnet
- 3 Packing washer
- 4 Packing
- 5 Packing washer
- 6 Jam nut
- 7 Packing adjustment screw