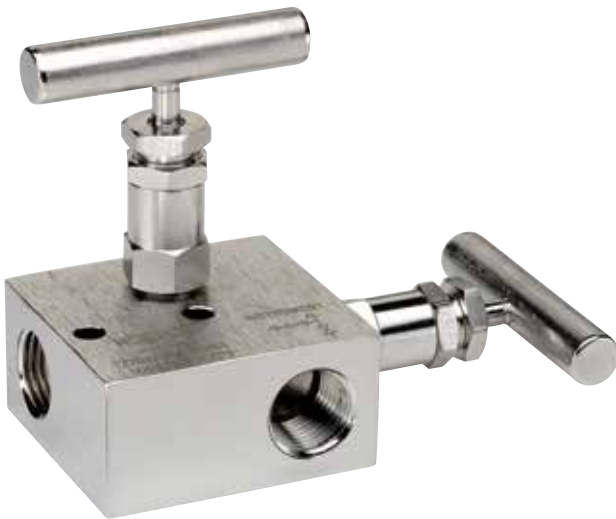


Block & Bleed, Hard & Soft Tip (0.156" Orifice)

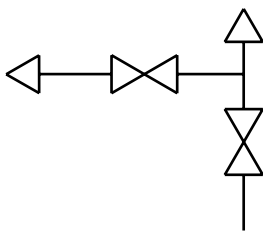
2603/2703 SERIES 2604/2704 SERIES



Note: Packing option shown.
HL2 handles shown,
HL1 is standard.

- Combines isolating and venting in a single valve, eliminating the need for tubing and fittings
- Block valve isolates the downstream process fluids and the bleed valve exhausts upstream fluids enabling static pressure transmitters, switches or gauges to be removed without disturbing the permanent piping installation
- Block valve is located on the right and the bleed valve is located on top in a 90° orientation, venting is to the left
- 100% helium leak tested to 1×10^{-4} ml/s for performance and reliability
- Soft tip valves feature a patented Acetal non-rotating soft tip stem, and a back-up metal-to-metal seal (**U.S. Patent 6,820,857**)
- 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 Graphite packing optional
- 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
- Color coded vinyl dust caps for bonnets and stems (non-packing)
- Patented body-to-bonnet, metal-to-metal seal is designed to significantly increase the pressure range of the valve (**U.S. Patent 7,758,014**)

Flow Schematic



SPECIFICATIONS

Materials	Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*
Connections	2603/2703 Series: 3/8" NPT 2604/2704 Series: 1/2" NPT, right venting optional
Pressure ratings**	Hard seat: 10,000 psi @ 200 °F Soft tip: 6,000 psi @ 200 °F
Orifice size	0.156"
Flow coefficient	C _v 0.44
Stem seal & type	All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Graphite packing optional
Options	Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips
Weight	Approximately 2.2 lb.

* 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.

WARNING: This product can expose you to chemicals including Lead and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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.

SERIES	2	2-valve	
SEATS	6	Hard seat	7 Soft tip
PROCESS TYPE	0	Static pressure	
CONNECTIONS	3	3/8" NPT	4 1/2" NPT
VALVE TYPES	FFC	Female-Female, Steel	FFCR Female-Female, Steel, Right Vent
	FFS	Female-Female, Stainless Steel	FFSR Female-Female, Stainless Steel, Right Vent

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

EXAMPLE

2 7 0 4 – FFC

Series.....2-valve
 Seat.....Soft tip
 Process type.....Static pressure
 Connection.....1/2" NPT
 Valve type.....Female-female, Steel

To meet all of your specific application requirements, the following **additional options** are available for these manifold 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: 2704-FFC-P1)

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

NOTE 3: The standard o-ring in all the NOSHOK manifold valves is FKM.

ORDERING INFORMATION - ADDITIONAL OPTIONS				
PACKINGS†	P1 PTFE	P2 Graphite**		
STEM TIPS	T1 Non-rotating (316 Stainless)**	T4 PEEK***	T7 Ball (ceramic)**	T10 Regulating Acetal***
	T2 Acetal (Acetal)***	T5 Ball (440C Stainless)**	T8 Ball (Monel)**	T11 Regulating PCTFE***
	T3 PCTFE***	T6 Ball (carbide)**	T9 Non-rotating regulating (316 Stainless)**	T12 Regulating PEEK***
O-RINGS*	EM1 EPDM	KZ1 FFKM (Perfluoroelastomer)	NB1 NBR	
HANDLES	HL2 2-1/2" "T"	HL4 1-3/8" Phenolic		
	HL3 1" Round knurled	HL5 1-3/4" Phenolic		

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

† 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.

** Hard seat only.

*** Soft tip only.

Please note that the standard o-ring in all the NOSHOK valves is FKM and the standard handles are block "T" handle (HL2) and bleed 1-3/8" mini "T" handle (HL7).

The handle material will always match the material of the valve, unless otherwise specified. For example, the mini "T" handle (HL1) on the 2704-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

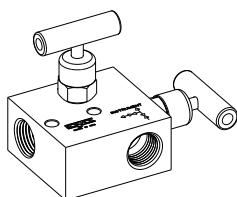
EXAMPLE with Additional Options

2 7 0 4 – FFC – P1

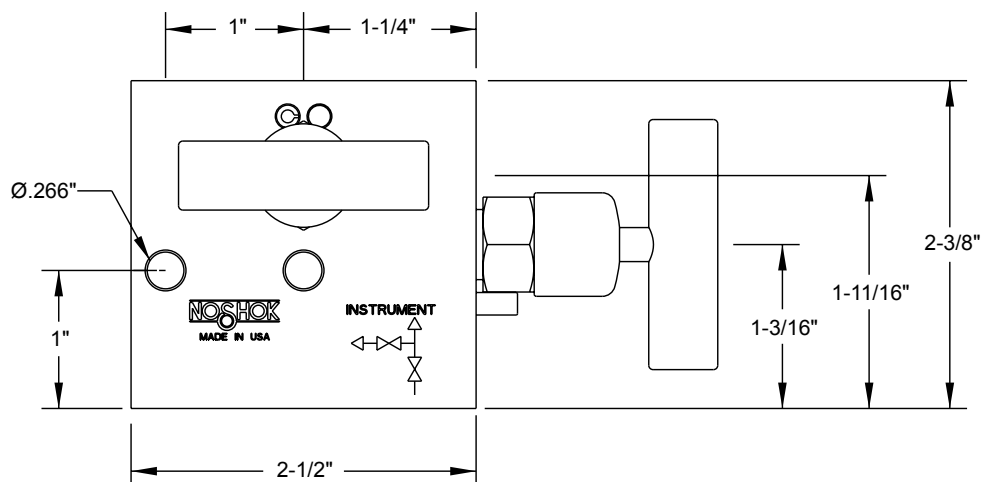
Series.....2-valve
 Seat.....Soft tip
 Process type.....Static pressure
 Connection.....1/2" NPT
 Valve type.....Female-female, Steel
 Packing.....PTFE

Dimensions

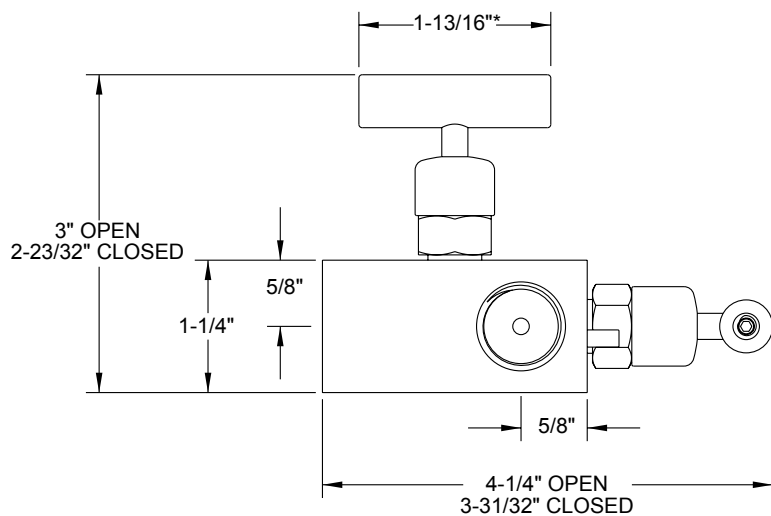
Female-Female



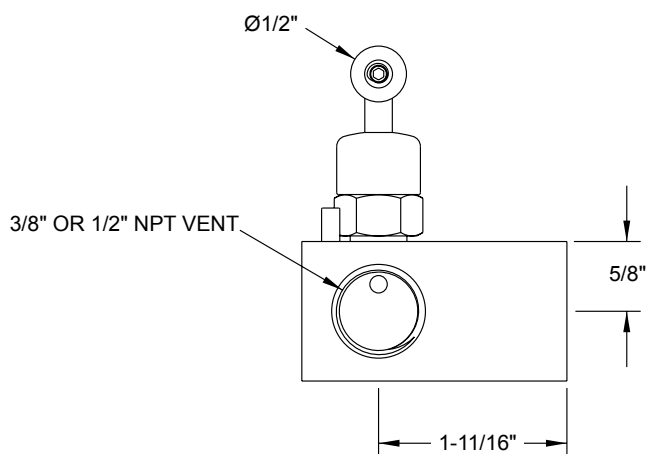
Top View



Front View

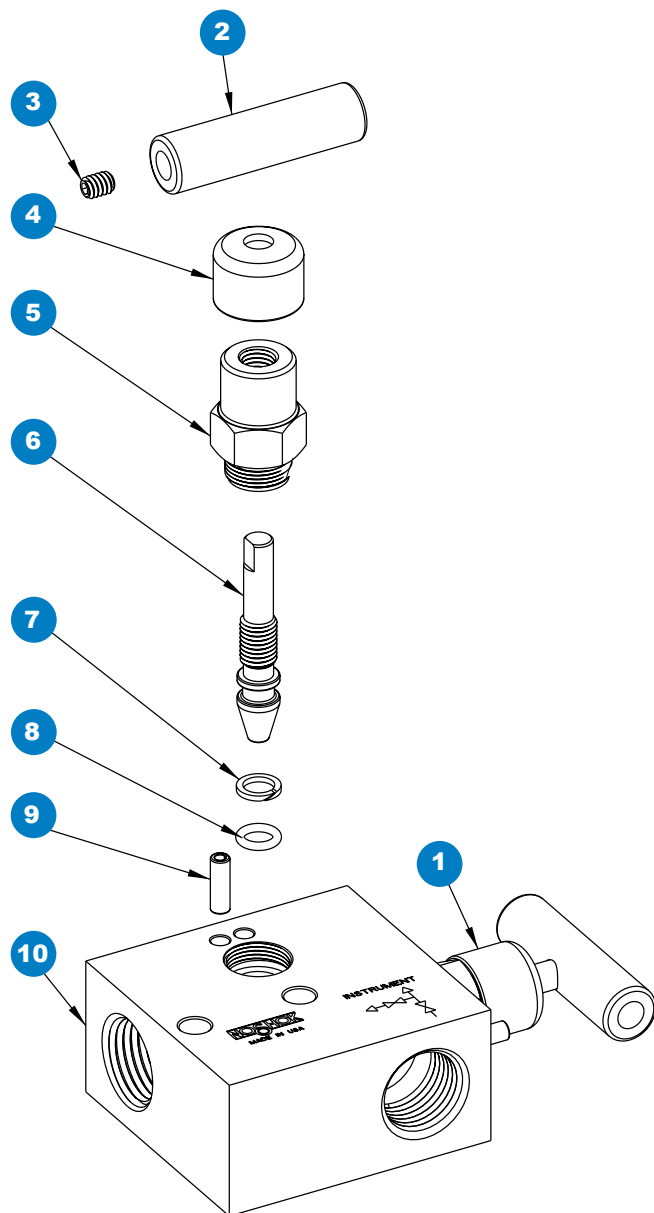


Side View



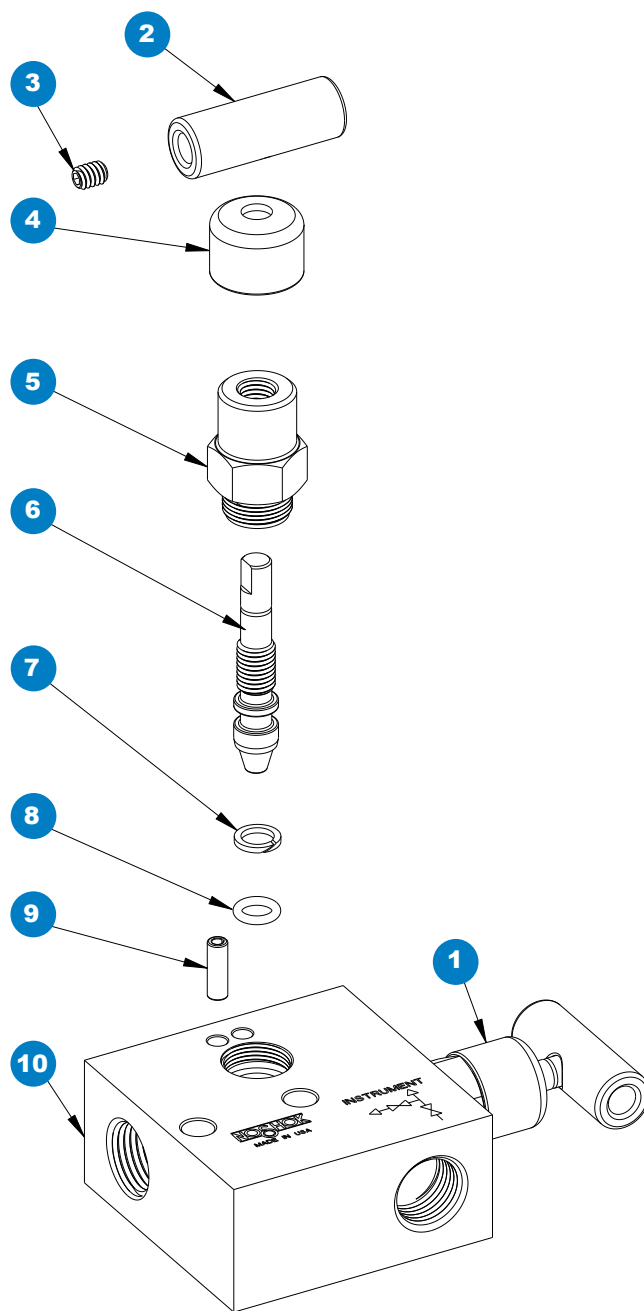
For panel mount or packing dimensions, see pg. 66.

Hard Seat



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

Soft Tip



- 1 Blue dust cap
- 2 Mini valve "T" handle
- 3 Set screw
- 4 Red dust cap
- 5 Mini valve bonnet
- 6 Soft tip stem
- 7 PTFE back-up ring
- 8 FKM o-ring
- 9 Slotted spring pin
- 10 Valve body