

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

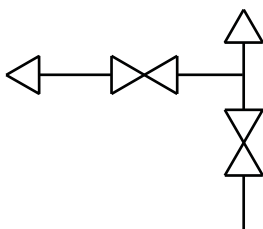
2603/2703 SERIES 2604/2704 SERIES



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 guaranteed performance and reliability
- Soft tip valves feature a patented Delrin® non-rotating soft tip stem, and a back-up metal-to-metal seal (**U.S. Patent 6,820,857**)
- 2603/2604 Series hard seat valves have 10,000 psi pressure rating @ 200 °F
- 2703/2704 Series soft tip valves have 6,000 psi pressure rating @ 200 °F
- 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
- 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 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

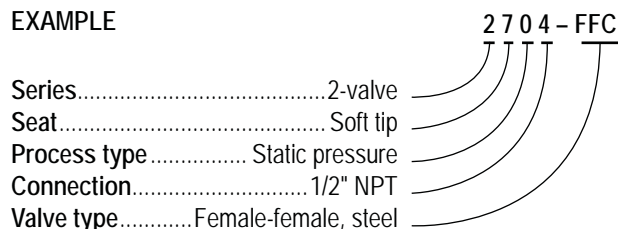
Materials	Zinc-nickel plated steel, electropolished 316 stainless steel
Connections	2603/2703 Series: 3/8" NPT 2604/2704 Series: 1/2" NPT, right venting optional
Pressure ratings	Hard seat: 10,000 psi @ 200 °F Soft tip: 6,000 psi @ 200 °F
Orifice size	0.156"
Flow coefficient	C _v 0.44
Stem seal & type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

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.

ORDERING INFORMATION			
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 FFS Female-Female, Stainless Steel	FFCR Female-Female, Steel, Right Vent FFSR Female-Female, Stainless Steel, Right Vent	

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 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 Grafoil [®] **		
STEM TIPS	T1 Non-rotating (316 stainless)** T2 Delrin [®] (Acetal)** T3 PCTFE***	T4 PEEK*** T5 Ball (440C stainless)** T6 Ball (carbide)**	T7 Ball (ceramic)** T8 Ball (Monel)** T9 Regulating hard**	T10 Regulating Delrin [®] *** T11 Regulating PCTFE*** T12 Regulating PEEK***
O-RINGS*	EM1 EPDM	KZ1 FFKM (Kalrez [®] 3018 or equivalent)	NB1	NBR
HANDLES	HL2 2-1/2" "T" HL3 1" Round knurled	HL4 1-3/8" Phenolic HL5 1-3/4" Phenolic		

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* Other o-ring materials available on request.

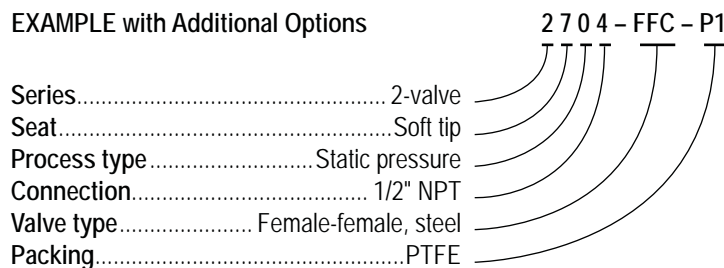
** Hard seat only.

*** Soft tip only.

Please note that the standard o-ring in all the NOSHOK valves is FKM and the standard handles are mini "T" handles (HL1).

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

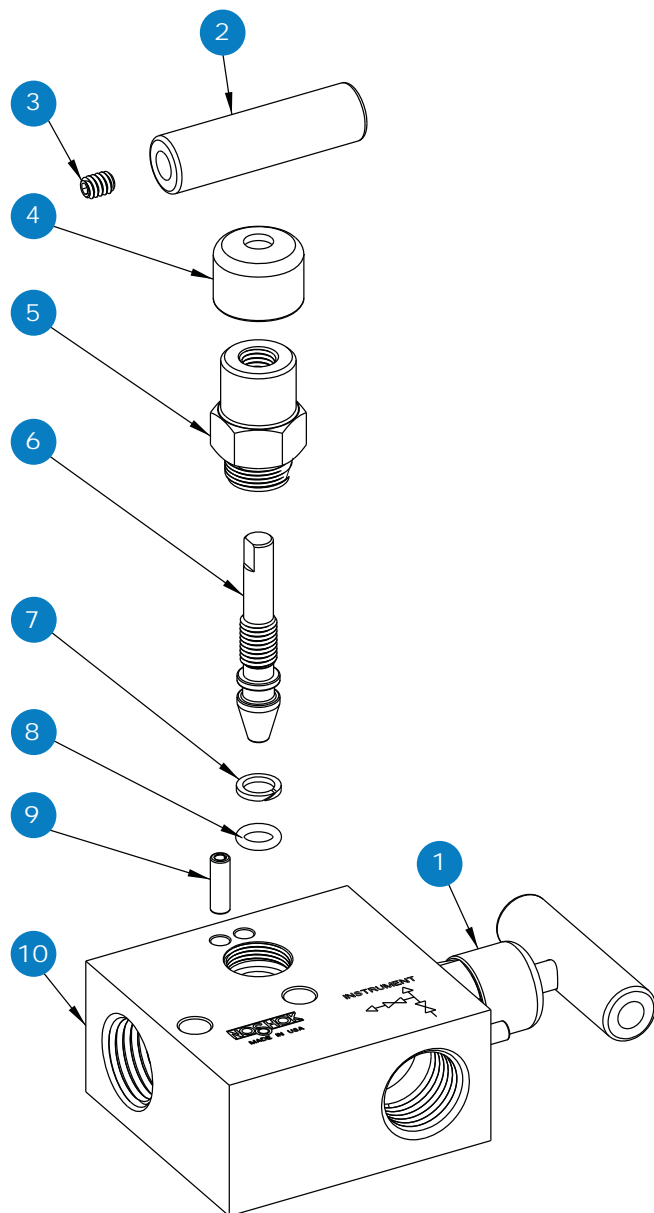


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Technical drawing of the top view of the 1/2 inch vent cap. The drawing shows a central vent pipe with a cap and a side vent connection. Dimensions include a 1/2 inch diameter for the top cap, a 3/8 inch or 1/2 inch NPT vent for the side connection, a 5/8 inch height for the side connection, and a 1-11/16 inch width for the main body.

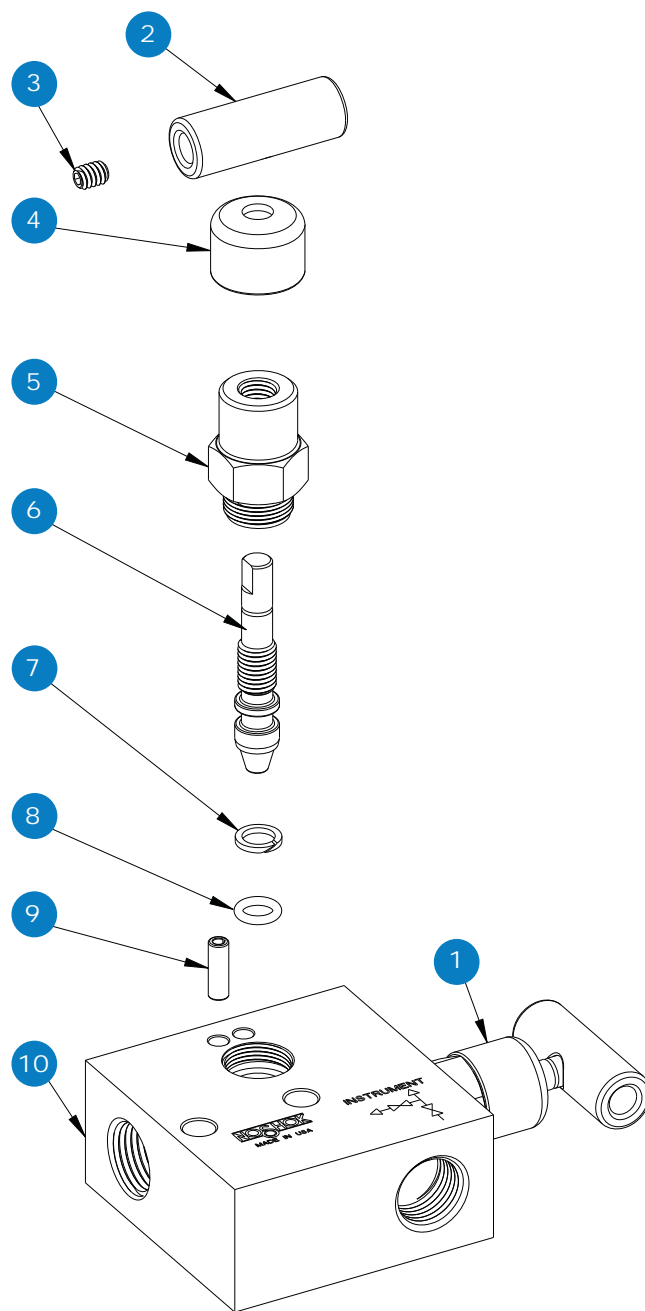
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Hard Seat



- 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