

Instrument Valves and Manifolds



**Needle Valves • Instrument Valve • Orifice Block Valves • Gauge Block Valves
Block & Bleed Valves • Integral Block & Bleed Valves • Two Valve Manifolds
Three Valve Manifolds • Five Valve Manifolds • Power Valves**



A division of Richards Industries
3170 Wasson Road • Cincinnati, OH 45209 USA
513.533.5600 • 800.543.7311 • 513.871-0105 (f)
www.hexvalve.com • hex@richardsind.com

Instrument/Needle Valves

HN29 Series Needle Valve

The HN29 Series valve is targeted to the gas sampling, OEM, and reseller market.

All stainless steel valves are rated to 3000 psig @ 100°F (207 bar @ 38°C) with soft seats, Teflon packing and 1" diameter round knurled handles. Valves are available in 1/4" sizes.

All carbon steel valves are rated to 6000 psig @ 100°F (414 bar @ 38°C) with hard seats and 3000 psig @ 100°F (207 bar @ 38°C) with soft seats (Delrin), Teflon packing and either "T" handles or 1" diameter round knurled handles. Valves are available in 1/4" and 1/2" sizes.



HN39 Series Instrument Valve

The HN39 Instrument Valves are compact and economical high-pressure instrument valves. Panel manufacturers can use optional panel nut to secure valves to instrument panels. Valves are available with integral hard seats, 316 stainless steel body and trim and Teflon®/Grafoil packing. HN39 rated to 6000 psig @ 100°F (414 bar @ 38°C); 450°F (232,2°C) limit for Teflon-packed valves and 1000°F (537,8°C) limit for Grafoil-packed valves.



HN41 Series Instrument Valve

The HN41 Series is a straight-thru design with a Delrin seat, which provides bi-directional flow and the ability to "rod-out" the valve for cleaning.

These valves are specifically targeted for the oil and gas industry and are available only in 316 Stainless Steel per NACE MR-01-75.

Valves are rated at 6000 psig @ 200°F (413,7 bar @ 93,3°C).



HN49 Series Needle Valve

The HN49 is a heavy duty valve that features an industrial strength stem and bonnet, and enhanced packing arrangement, all designed to handle the tough conditions of high pressure and high temperature services. For corrosive or other volatile applications, the HN49 can be specified in a variety of materials including Monel®, Alloy 20, Titanium and Hastelloy®. These valves are also available with cryogenic bonnet extensions with temperatures as low as -450°F (-268°C) with proper insulation of piping. Packing temperature in extended bonnet should not be below -200°F (-129°C).



Primary/Orifice Block Valves

HG65 Series Orifice Block Valves

The HG65 orifice block valves are designed for compact side-by-side mounting on standard orifice flanges, condensate chambers, mercury traps and seal traps. Two outlet ports are provided for impulse line connections or for pressure gauge mounting. The HG65 is ideal for light hydrocarbons or utility service.



HG12 Series Orifice Block Valves

The HG12 features a built-in vent or bleed screw on the outlet side of the valve. In process line mounted instrument or signal line tubing, venting or line filling capabilities can be an added features.



H025 Series Orifice Block Valves

The H025 Series features an OS&Y bolted bonnet and two outlet connections. The H025 is more compact and has a shorter profile than model HG65 to reduce vibration.



Gauge/Block Valves

HG46 Series Gauge/Block Valve

The HG46 provides a quick, inexpensive and compact means of installing gauges and static pressure instrumentation. The HG46 features an OS&Y bolted bonnet with weld or threaded connections. The HG46 can be supplied with a bleed valve or needle valve threaded into one of the outlets to allow for combined block and bleed functions in a single, compact unit.



HG47 Series Gauge/Block Valve

The HG47 is a roddable, hard seated orifice valve that overcomes the drawbacks of conventional valve designs. The HG47 is ideal for use on high temperature, viscous services as it provides full port, unrestricted flow. The HG47 features an OS&Y bolted bonnet with weld or threaded connections. The accessible hard seat insert and non-rotating tip (NRT) stem are machined for precision fit, yet field-replaceable to allow for long service life.



HG48 Series Gauge/Block Valve

The HG48 gauge / block valve provides three outlet connections to facilitate the mounting of gauges and other static pressure instruments in a variety of positions. The HG48 can be supplied with an integral hard seat which matches the body material, or with a choice of soft seat materials including PPS, KEL-F, TFE or PEEK.



HG35 Series Gauge/Block Valve

The HG35 gauge valve, with a male inlet and a male outlet, meets the application requirement for a block and bleed valve without the need for a close nipple when connecting to a female port on a gauge pressure transmitter rated to 6980 psi (481 bar).

The HG35 configuration provides one less threaded connection by utilizing a male outlet for direction connection into a gauge pressure transmitter.



Block & Bleed Valves

HB50/51 Series Block & Bleed Valve

The HB50 features a fully packed and backseated block valve along with a bleed valve with directional discharge tube and stem stop. The HB50 can also be threaded into a Hex primary block valve (such as an HG65) to provide secondary block and bleed functions on multiple instrument installation.

The HB51 is similar to the HB50 but utilizes a bleed screw in lieu of a bleed valve.



HB52 Series Bleed Tee

The HB52 bleed tee is ideal for modernizing outdated, non-bleed gauge installations. During instrument maintenance, simply thread the HB52 into the outlet of an existing block valve. An instrument is then threaded into the HB52 outlet to complete the installation. A second 1/2" side outlet accommodates a gauge or tube fitting for a remote auxiliary instrument.



HB59 Series Integral Block & Bleed Valve

The HB59 is ideal for critical services and combines a fully packed backseated block valve and a fully packed backseated bleed valve into a single, streamlined assembly that minimizes threaded connections. The HB59 is typically used on applications where waste must be returned to the line or holding vessel, as is common with hazardous media or EPA-targeted hydrocarbons.



HB 24/25/26/27 Series Bleed Valves

The HB 24/25/26/27 Series Bleed Valves are available individually, or optionally threaded into an unused outlet port on a variety of Hex Valve models. Used for bleeding off high pressure media, the HB24 & HB25 incorporate backout stops to prevent inadvertent removal of the stem; the HB26 allows for stem removal to facilitate calibration through the valve; and the HB27 is a bleed valve that uses a mini bonnet, and is the only one with stem packing.



Two Valve Manifolds

HM50 Series Static Pressure Manifold

The HM50 is a single flanged static pressure manifold that incorporates a primary block valve, a bleed valve and a secondary shutoff valve into a single valve assembly. The secondary shutoff and bleed valve also allows the gauge and transmitter to be removed or bled without requiring additional valving. The HM50 provides separate instrument bleed and a calibration entry port to allow for fast, accessible zeroing and calibration of gauge pressure transmitters. With the installation of a tube fitting/cap or a quick connect coupling, zeroing and calibration can be performed without a wrench with a substantial reduction in the time required to perform this procedure. The HM50 features a threaded inlet and flanged outlet, allowing the transmitter to bolt directly to the manifold.



HM59 Series Static Pressure Manifold

The HM59 is a line-mounted two valve manifold that functions as a shutoff and bleed valve for static pressure instrumentation. Compared to traditional piping methods that use an arrangement of nipples, pipes, elbows and tees, and gate valves, the HM59 Series will provide a low cost, easy-to-install unit that performs the same functions traditionally performed by a number of piping components. The HM59 provides separate instrument bleed and a calibration entry port to allow for fast, accessible zeroing and calibration of gauge pressure transmitters. The use of the HM59 Series also reduces the number of threaded connections, resulting in fewer potential leak points.



HM58 Series Level Manifold

The HM58 Series is a simplified, lower cost alternative to D/P level installations. The HM58 allows the user to construct a level installation with minimum components. This method eliminates the need for tubing, fittings, instrument pipe stands and their associated installation costs. With a universal design, the HM58 can be used for vented or closed tank, bottom or top side-mounted installations or for tank top mounted bubbler installations.



Three Valve Manifolds

HM45 Series In-Line Manifold

The HM45 is a general purpose instrument manifold designed for connecting differential pressure transmitters to impulse line tubing. Connectors are 1/2" NPT on industry standard 2-1/8" center-to-center dimensions (models for 2-3/16" & 2-1/4" center-to-center dimensions are also available).



HM46 Series In-Line Manifold with Vent

The same design as the HM45, but also incorporating a vent valve allowing a technician to perform instrument bleed or blowdown procedures. Both models provide one compact valve assembly to perform the block and equalizing functions required to calibrate your instruments. They feature backseated, inside rising stem construction to prevent accidental stem removal and to isolate the packing from the process. For added protection, the bonnets are pinned to prevent inadvertent removal.



HM53 Series Single Flanged Manifold

The HM53 is a three valve manifold used to perform the block, equalizing and vent requirements of differential pressure transmitter applications. The single mounting flange allows the transmitter to bolt directly to the manifold, eliminating the piping of excess tubing and nipples. A mounting kit may also be specified to allow for installation to a pipe stand.



HM54 Series Double Flanged Manifold

The HM54 is a double flanged instrument manifold that is used to perform the block, equalizing and vent requirements of differential pressure transmitters. For compact, close-coupled installations, the manifold bolts directly to the instrument and can be mated directly to the orifice flange using futbol flanges and short nipples. For remote installation, tube adaptors are used with futbol making the installation similar to the HM53.



Five Valve Manifolds

HM56 Series Blowdown Manifold

The HM56 Series performs the block and equalizing functions of a standard three valve manifold and provides two additional block valves to be used for blowdown purposes. The design of the HM56 allows the user to install just one compact assembly that eliminates eight nipples, four tees, and two shutoff valves that are required for a conventional blowdown valve installation. In addition, the HM56 incorporates a single flange, which enables the installer to mount the transmitter directly to the mounting flange.



HM55 Series Blowdown Manifold

The HM55 Series performs the block and equalizing functions of a standard three valve manifold and provides two additional block valves to be used for blowdown purposes. The HM55 is identical to the HM56 except both the process and instrument connections are threaded for in-line installations.



HM57 Series Metering Manifold

The HM57 Series combines two shutoff valves, two equalizing valves, and a vent/calibration valve into a single, compact assembly. The double equalizing arrangement insures against measurement error than can occur from equalizer leakage between high and low pressure connections, making the HM57 ideal for custody transfer applications.



HM77 Series Metering Manifold

The HM77 Series is similar to the HM57 except for the use of a larger 3/8" bore and with soft seats. This larger bore reduces pulsation induced spikes to the transmitter. Note: ratings are 1500 psig @ 100°F (103 bar @ 38°C) and 500 psig @ 200°F (34,5 bar @ 93°C).



Specialty Manifolds

HE44 Series Equalizing Manifold

The HE44 Series has a streamlined body to mount between the transmitter and the fuel flanges that are normally supplied with the transmitter. It features a backseated, inside rising stem with a choice of a needle or non-rotating tip. The smaller body and use of transmitter fuel flanges make this a very economical selection.



HM40 Series Instru-Mount Manifold

The HM40 Series is a double instrument-mount manifold that allows two instruments to be mounted on one assembly. The HM40 reduces the number of components and leak points associated with conventional static pressure instrument piping. The piping configuration is simplified by combining the functions of block and bleed, as well as providing vent/calibration access in a single, remote mounted block style manifold. The HM40 requires only one pipe tap even though two sets of block and bleed valves are provided. (Shown with optional steam block).



HM20 Series Instru-Mount Manifold

The HM20 Series manifold combines shutoff and bleed functions, along with calibration access into one compact, well supported unit that can be mounted on a 2" pipestand. Emissions are reduced because all valves are integral to the barstock body, thereby eliminating externally threaded bleed valves as supplied on other manifold designs.



HA Series Distribution Manifold

The HA Series is a soft seated multi-valve manifold that allows you to connect one air/gas source to the inlet for distribution up to twelve separate work stations. If additional work stations are required, simply attach another HA06 with nipples. The HA Series is used in place of conventional methods for the distribution of plan air and purge gases and feature o-ring seals and backseated bonnets to insure against stem leakage when the valves are fully open.



Power Valves

PM50 Series Two Static Pressure

The PM50 combines a primary block valve, a bleed valve, and a secondary shutoff valve into one small unit. With the integral secondary shutoff valve and a bleed valve (not integral), the gauge and transmitter can be removed or bled without requiring additional valving. The PM50 features a threaded inlet and flanged outlet, allowing the transmitter to bolt directly to the manifold.



PM59 Series Two-Valve Static Pressure

The PM59 is a line-mounted two valve manifold that functions as a shutoff and bleed valve for static pressure instrumentation. The use of the PM59 reduces the number of threaded connections, resulting in fewer potential leak points.



PM45/46/51/53/54 Series Differential Pressure

Hex Valve produces a complete line of three valve instrument manifolds which combines two block valves and one equalizing valve in a single compact assembly.

- PM45/46 for in line, thread by thread, installations
- PM53 single flanged for mounting to a remotely located differential pressure transmitter
- PM54 double flanged for direct mounting to the orifice flange or for remote transmitter locations
- PM51 direct mounted compact wafer valve



PM45 Series

PM75 Series Differential Pressure

The PM75 is designed for remote mounting of differential pressure transmitters and includes two isolation valves, one test valve, and two test/purge valves. The manifold can be mounted via pipe stand or instrument rack. The 1/2" process connection is located on bottom of manifold and instrument connection is located on back.



PM75 Series

Power Valves

PM76 Differential Pressure

The PM76 is similar to the PM75 but is designed for direct mounting to transmitter by unique design. The compact design eliminates the requirement for additional tubing or piping from manifold to transmitter.



PG65 Series Orifice Block Valve

The PG65 Series block valve is designed for compact side-by-side mounting on orifice flanges and orifice settings, as well as for use with condensate chambers, mercury traps, and seal traps. The slim design enables side-by-side mounting on 2-1/8" centers without staggering the valves with unequal length nipples as required with other valves. This valve provides two outlet ports for use as impulse line connections, pressure gauge mounting or level gauge mounting.



PN49/PB59 Series Needle/Bleed Valves

The PN49 Series is a fully packed needle valve for high pressure and high temperature applications. Produced in a wide variety of inlet and outlet sizes.

For critical services, the PB59 block and bleed valve features a fully packed and backseated block valve along with a fully packed integral bleed valve.



PB59 Series

PG46/47/48 Series Gauge/Block Valves

The PG46 Series features the backseated OS&Y bolted bonnet, while the PG48 is supplied with a backseated screwed bonnet.

The PG47 provides a full port and unrestricted flow, which allows the use of a rod-out tool. Note: there is a pressure limitation of 1500 psi @ -20°F to 100°F (103 bar @ -29°C to 38°C) regardless of material.



PG46 Series



A division of Richards Industries

U.S.A. Headquarters

3170 Wasson Road • Cincinnati, OH 45209 USA
513.533.5600 • 800.543.7311 • 513.871-0105 (f)

China Offices

Suite 2107, Overseas Chinese Mansion
129 Yan An Road (W)
200040 Shanghai • PR China
86.21.6249 1718 (p) • 86.21.6249 1721

www.hexvalve.com • hex@richardsind.com