



Instrumentation Isolation Rings



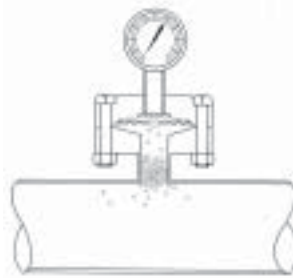
- Isolates gauge or switch from solids in process flow to assure accurate pressure readings
- Allows removal of gauge or switch for calibration, repair, or replacement without interrupting process flow

Instrumentation Isolation Ring

Unlike diaphragm seals, non-plugging Isolation Ring assures reliable pressure readings...

When a gauge or switch is screwed directly into a pipeline, solids from the process flow can quickly plug the pressure-sensing mechanism. *The result?* Erroneous pressure readings.

Using a diaphragm seal to isolate the gauge or switch from the process flow doesn't solve the problem either. That's because those solids will quickly clog the access port on the diaphragm seal, too. Again, the result is ... erroneous pressure readings.



Solids can easily plug the opening to diaphragm seals and cause inaccurate pressure readings.

With a Hex Isolation Ring, the gauge is in contact with captive liquid, not the process flow directly.

With the Hex Isolation Ring, clogging or fouling is never a problem. That's because of the flexible inner cylinder, behind which is a clean, captive liquid. Here's how it works...

As process liquid flows through the pipe, it exerts pressure, which is transmitted through the flexible cylinder to the captive liquid. The pressure exerted by the captive liquid is then monitored by the gauge's or switch's sensing mechanism.

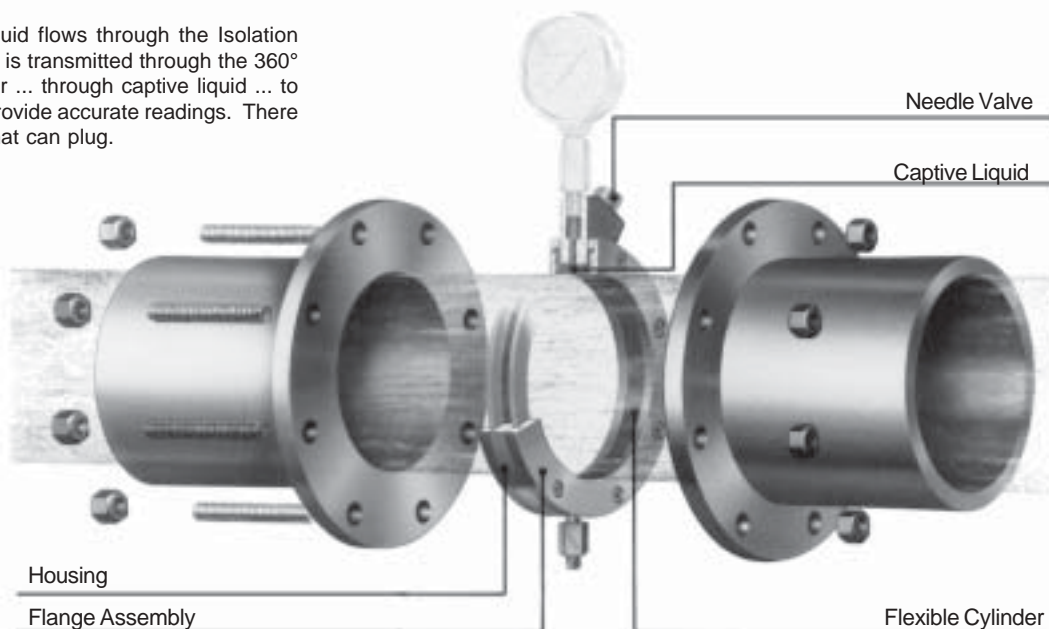
In other words, the sensing mechanism on the gauge or switch never comes in contact with the process liquid...it's completely isolated from the flow.

A 360° flexible cylinder means no plugging and assures a reliable and more accurate pressure readings than you'll find with conventional diaphragm seals.

Because there's no access port on the Isolation Ring, there's no collection point for solids to build-up and no openings to the plug, (as shown below). The inner flexible cylinder is the same diameter as the inner diameter of the piping, so it's continually cleaned by the flowing liquid. *The result?* You always get dependable pressure readings.

What's more, pressure readings that are obtained via the Isolation Ring represent the circumferential average of the pipe's internal pressure distribution - not just the pressure at a single point in the line like you'd get with a diaphragm seal. As a result, readings are more consistent.

As process liquid flows through the Isolation Ring, pressure is transmitted through the 360° flexible cylinder ... through captive liquid ... to the gauge to provide accurate readings. There are no ports that can plug.



... and unlike other isolation rings, ours permits gauge removal for calibration without interrupting process flow

A unique feature on Hex Isolation Ring is a built-in threaded needle valve, which permits the removal of a pressure instrument for calibration, repair, or replacement without shutting down the process flow. Here's how it works:

When the needle valve is in the open position (as shown below right), pressure is transmitted into the access chamber by the captive liquid. It's then monitored by a gauge or switch.

When the needle valve is in the closed position, it blocks the entrance to the access chamber. This allows you to remove the pressure instrument while your system remains on stream and without concern for loss of the captive liquid.

Integral design eliminates accidental breakage.

On other isolation rings, you'll often find 2-way valves mounted on 1/4" piping serving as an instrument removal device. Because these "stacks" are cumbersome and unwieldy they're subject to breakage in transit, during installation, and in service. But the needle valve in Hex Valve's Isolation Ring is actually an integral part of the unit's housing. As such, breakage is virtually impossible.

Needle valve serves as snubber

By adjusting the needle valve to a "nearly closed" position, it also acts as a snubber. This dampens any pressure spikes that may occur, such as during system upsets, protecting pressure instruments from damage.

Lightweight compared to other isolation rings

Isolation rings made by other manufacturers are inherently much heavier than Hex Valve's Isolation Ring. For example, our 8" unit weighs just 16 pounds. Other designs weigh more than 3-1/2 times as much — up to 58 pounds! And this weight difference increases as unit sizes increase. That means higher shipping costs for other rings. It also means higher installation costs because extra pipe hangers and supports are needed, and extra labor is needed to install them.

Adaptable to variety of process conditions and applications

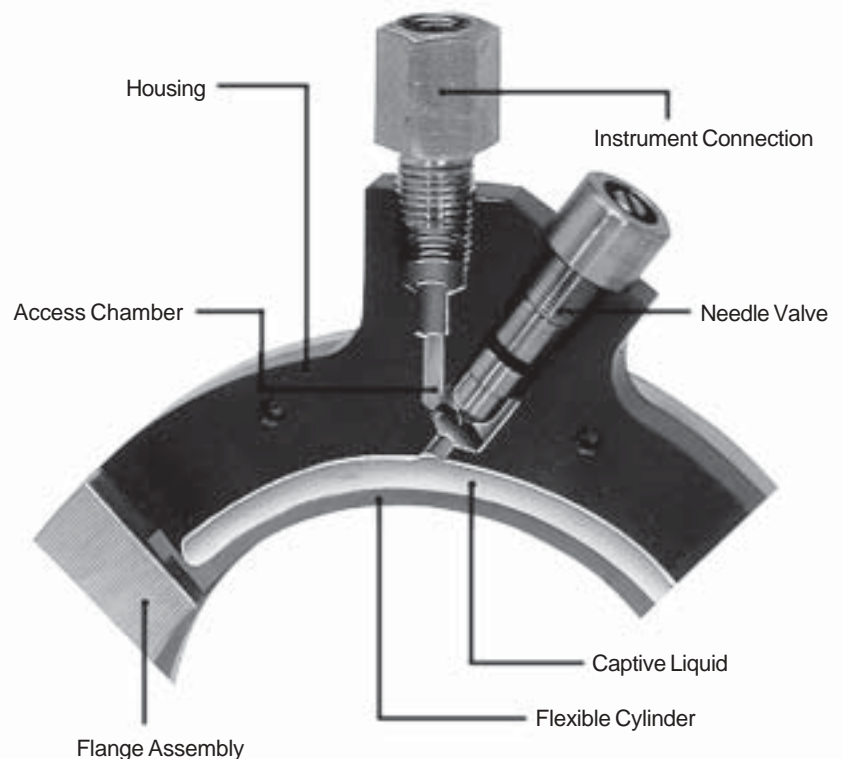
Isolation Rings can be used with a simple pressure gauge for protection of delicate, expensive instrumentation such as switches, transmitters, recorders, and

transducers. Recalibrating gauges are available from Hex. See back page for details.

Hex Valve's Isolation Ring, which fits between customer-supplied piping flanges like many butterfly valves, is available for piping diameters from 2" to 20". It can be used at any pressure within the limitations of ANSI Classes 150 and 300, and even in most vacuum applications.

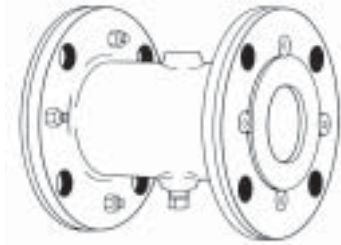
Several elastomeric materials can be used for the inner flexible cylinder, each with its own temperature limitations and chemical and abrasion-resistant characteristics. Similarly, a variety of captive sensing liquids are offered to satisfy temperature and other requirements. See details on back page.

Needle valve shown in open position. When closed, it blocks the entrance to access chamber thereby allowing gauge removal without process flow interruption.



Isolation Spool for small diameter piping

Designed to provide a large sensing area in the smaller pipe diameters from 1" to 4", the patented Isolation Spool is offered in both NPT threaded and flanged models. Available with flat or raised face.



Specifications

	Iso-Ring	Iso-Spool
Housing	Carbon Steel 316 Stainless Steel	Carbon Steel
Assembly Flanges	Carbon Steel 316 Stainless Steel CPVC	Carbon Steel 316 Stainless Steel CPVC Teflon ¹ enveloped
Inner Flexible Wall	Buna N Teflon ² Silicone ³ Viton ¹ White Neoprene Natural Rubber	up to 225°F (107°C) up to 350°F (177°C) up to 450°F (232°C) up to 350°F (177°C) up to 225°F (107°C) up to 225°F (107°C)
Captive Sensing Liquid	50% Water/50% Prop. Glycol Silicone Oil (FDA Approved) Fluorosilicone Mineral Oil Distilled Water	-20°F to 200°F (-29°C to 93°C) -20°F to 450°F (-29°C to 232°C) -20°F to 450°F (-29°C to 107°C) 35°F to 225°F (1,7°C to 107°C) 35°F to 200°F (1,7°C to 93,3°C)

¹ Trademark of E.I. Dupont de Nemours and Company ² Not available in sizes 12" or larger ³ Iso-Spool only

Dimensions

Type	Pipe Size	A	B	Approx. Shipping Wt.		
 Iso-Ring*	2"	6-15/16" (176mm)	2" (51mm)	3 lbs (1,4 kg)		
	3"	8-3/16" (208mm)	2" (51mm)	6 lbs (2,7 kg)		
	4"	9" (229mm)	1-1/2" (38mm)	8 lbs (3,6 kg)		
	5"	10-1/4" (260mm)	1-1/2" (38mm)	10 lbs (4,5 kg)		
	6"	11-3/16" (284mm)	1-1/2" (38mm)	12 lbs (5,4 kg)		
	8"	13-3/8" (340mm)	1-1/2" (38mm)	16 lbs (7,3 kg)		
	10"	15-9/16" (395mm)	1-1/2" (38mm)	20 lbs (9,1 kg)		
	12"	17-9/16" (446mm)	1-3/4" (44mm)	25 lbs (11,4 kg)		
	14"	19-15/16" (506mm)	1-3/4" (44mm)	50 lbs (22,7 kg)		
	16"	21-15/16" (557mm)	2" (51mm)	60 lbs (27,2 kg)		
	18"	24-3/16" (614mm)	2" (51mm)	70 lbs (31,8 kg)		
20"	26-1/16" (662mm)	2" (51mm)	80 lbs (36,3 kg)			
 Iso-Spool (threaded)	1"	3-9/16" (90mm)	7-5/8" (194mm)	10 lbs (4,5 kg)		
	1-1/2"	4-3/8" (111 mm)	7-7/8" (200mm)	12 lbs (5,4 kg)		
 Iso-Spool (flanged)		Class 150	Class 300		Class 150	Class 300
	1"	4-1/4" (108mm)	4-7/8" (124mm)	5-3/8" (136mm)	8 lbs (3,6 kg)	9 lbs (4,1 kg)
	1-1/2"	5" (127mm)	6-1/8" (156mm)	5-3/8" (136mm)	10 lbs (4,5 kg)	12 lbs (5,4 kg)
	2"	6" (152mm)	—	5-3/8" (136mm)	15 lbs (6,8 kg)	—
	3"	7-1/2" (191mm)	—	5-3/8" (136mm)	22 lbs (10,0 kg)	—
	4"	9" (229 mm)	—	5-3/8" (136mm)	27 lbs (12,2 kg)	—

* Centering gauges supplied with Iso-Ring

Gauges

2-1/2", Glycerin-filled
1. Bronze 0-60 psi (4.2 kg/cm ²)
2. Bronze 0-100 psi (7.0 kg/cm ²)
3. Bronze 0-200 psi (14 kg/cm ²)
4. Bronze 0-400 psi (28 kg/cm ²)
5. Bronze 0-600 psi (42 kg/cm ²)



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