

Data Sheet

81 Bolt-thru Isolation Ring

FEATURES

- 360° Instrument rotation with SQR™ option
- Selection of 1" through 10" nominal pipe size
- Non-clogging/low maintenance
- Complete instrument protection
- Ensure reliable/accurate pressure readings
- Optional retrofit end plates to replace competitive units

TYPICAL USES

- Water and wastewater
- Mining



81 Bolt-thru Isolation Ring

Nominal Size: 1" to 10"

SPECIFICATIONS

| | |
|-----------------------------|---|
| Sizes: | 1" to 10" |
| Instrument Connection Size: | ¼ NPT Female, ½ NPT Female |
| Pressure Rating (MAWP): | Per customer flanges: ASME B16.5 150 or 300 Class Pressures |
| Fill: | Glycerin: 0°F to 400°F (-18°C to 204°C) Silicone (10Cst): -40°F to 500°F (-40°C to 260°C) Silicone (50Cst): -40°F to 600°F (-40°C to 316°C) Halocarbon®: -70°F to 300°F (-57°C to 149°C) |
| Instrument Removal: | Direct-mount, Needle valve, Safe Quick Release (SQR™), Needle valve and SQR™ (O2T conn.) |
| Added Tolerance: | ±0.5% typical |
| Approvals: | CRN |

WETTED COMPONENTS

| | |
|---|--|
| End Plate Material | Flexible Liner |
| Carbon steel, 316L SS, PVDF, Acetal, CPVC | Buna, PTFE, EPDM, Natural rubber, and Viton® |

NON-WETTED COMPONENTS

| | |
|-----------------------------------|---|
| Body | Instrument Fittings |
| Carbon Steel, 316 Stainless steel | Adapters: 316L SS Needle Valve: 316L SS SQR: Zinc-plated carbon steel |

MIN/MAX TEMPERATURE LIMITS

| Liner | Temperature Limits |
|----------------|---------------------------------|
| Buna-N | -30°F to 225°F (-34°C to 107°C) |
| Teflon | -15°F to 350°F (-25°C to 177°C) |
| Viton | -15°F to 350°F (-25°C to 177°C) |
| Natural Rubber | -30°F to 225°F (-34°C to 107°C) |
| EPDM | -40°F to 300°F (-40°C to 149°C) |

KEY BENEFITS

- Reliable when continuous pressure measurements are needed
- Non-clogging and low maintenance
- Complete instrument protection

Data Sheet

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| ORDERING CODE | Example: | 81 | 02 | E | B | B | 02T | N | 300 | XCK | H3 | NH |
|---|----------|----|----|---|---|---|-----|---|-----|-----|----|----|
| Seal Type | | | | | | | | | | | | |
| 81 - Bolt-thru isolation ring | | 81 | | | | | | | | | | |
| Process Connection Size | | | | | | | | | | | | |
| 02 - 2" (see table 2 on page 3) | | | 02 | | | | | | | | | |
| Inner Flexible Wall | | | | | | | | | | | | |
| E - Buna-N | | | | E | | | | | | | | |
| T - PTFE (available in 1" to 10") | | | | | | | | | | | | |
| Y - Viton® | | | | | | | | | | | | |
| R - Natural rubber | | | | | | | | | | | | |
| P - EPDM | | | | | | | | | | | | |
| End Plate Material | | | | | | | | | | | | |
| A - Acetal, (150-class only) | | | | | | | | | | | | |
| B - Carbon steel | | | | | B | | | | | | | |
| S - 316L Stainless steel | | | | | | | | | | | | |
| K - CPVC (available in 1", 1.5" and 2" sizes), (150-class only) | | | | | | | | | | | | |
| F - PVDF, (150-class only) | | | | | | | | | | | | |
| Body Material | | | | | | | | | | | | |
| B - Carbon steel | | | | | | B | | | | | | |
| S - 316L Stainless steel | | | | | | | | | | | | |
| Instrument Connection Size | | | | | | | | | | | | |
| 02T - ¼ NPT Female | | | | | | | 02T | | | | | |
| 04T - ½ NPT Female (ring body tapped with ¼ NPT connection; 04T connection utilizes ¼-½ NPT adapter) | | | | | | | | | | | | |
| Instrument Removal Option | | | | | | | | | | | | |
| N - Direct-mount | | | | | | | | N | | | | |
| V - Needle valve | | | | | | | | | | | | |
| Q - Safe Quick Release (SQR™) | | | | | | | | | | | | |
| Z - Needle valve and SQR (requires 02T instrument connection) | | | | | | | | | | | | |
| Pressure Class | | | | | | | | | | | | |
| 150 - 150-class ASME | | | | | | | | | | | | |
| 300 - 300-class ASME | | | | | | | | | 300 | | | |
| Options (if choosing option(s) must include an "X") | | | | | | | | | | X__ | | |
| Fill Fluid (see table 3 on page 3 for more available fill fluids) | | | | | | | | | | | | |
| CG - Glycerin | | | | | | | | | | | | |
| CK - Silicone 50cSt | | | | | | | | | | CK | | |
| CF - Halocarbon® | | | | | | | | | | | | |
| CT - 50/50 Ethylene Glycol/water | | | | | | | | | | | | |
| Multiple Instrument Assemblies (contact factory for additional arrangements or custom orientations.) | | | | | | | | | | | | |
| H3 - ¼ NPT gauge/ ¼ NPT Male transducer/ 02T isolation ring | | | | | | | | | | | H3 | |
| H5 - ½ NPT gauge/ ½ NPT Male switch/ 04T isolation ring | | | | | | | | | | | | |
| H6 - ½ NPT gauge/2 ½ NPT Male switches/ 02T isolation ring | | | | | | | | | | | | |
| H7 - ¼ NPT gauge/ ¼ NPT Female switch/ 02T isolation ring | | | | | | | | | | | | |
| Optional Features | | | | | | | | | | | | |
| IR - Retrofit end plates (custom end plates widths for drop-in replacements) | | | | | | | | | | | | |
| NH - Stainless steel tag wired to ring | | | | | | | | | | | | NH |
| Q8 - Elbow for vertical pipe installation (02T connection only) | | | | | | | | | | | | |

Consult factory for multiple instrument assemblies, welded assembly options, additional process connection sizes and fill fluids

Data Sheet

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TABLE 2 – PROCESS CONNECTION TABLE

| Process Connection Code (Nominal Size) | Type 81 (Ordering Code) |
|---|----------------------------|
| 1" | 01 |
| 1.5" | 15 |
| 2" | 02 |
| 3" | 03 |
| 4" | 04 |
| 5" | 05 |
| 6" | 06 |
| 8" | 08 |
| 10" | 10 |

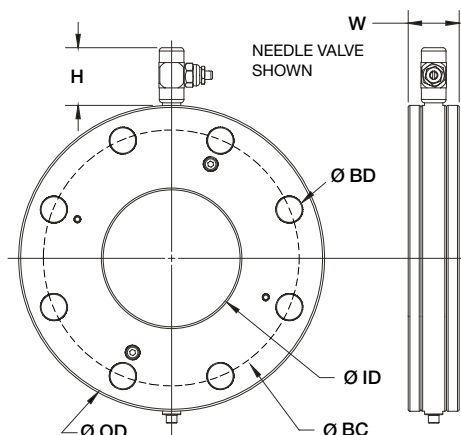
Consult factory for larger sizes

TABLE 3 – FILL FLUID TABLE

| Fill Fluid | Temperature Range | Code |
|-----------------------------|---------------------------------|------|
| Glycerin | 0°F to 400°F (-18°C to 204°C) | CG |
| Silicone 10cSt | -40°F to 500°F (-40°C to 260°C) | DJ |
| Silicone 50cSt | -40°F to 500°F (-40°C to 260°C) | CK |
| Halocarbon® | -80°F to 390°F (60°C to 200°C) | CF |
| 50/50 Ethylene Glycol/Water | -25°F to 190°F (-32°C to 88°C) | CT |

DIMENSIONS in inches

For reference only, consult Ashcroft for specific dimensional drawings



| ANSI ASME Class | Nom. Pipe Size | Inner Dia. (ID) | Outer Dia. (OD) | Width (W) (Metalic Endplates only) | Width (W) *see note | Bolt Circle (BC) | Bolt Dia. (BD) | No. Of Bolt Holes | Instrument Removal (H) | | | Weight Lbs. (Std. CS/SS end plates) |
|-----------------|----------------|-----------------|-----------------|------------------------------------|---------------------|------------------|----------------|-------------------|------------------------|--------------------|--------------|-------------------------------------|
| | | | | | | | | | Direct | Safe Quick Release | Needle Valve | |
| 150 | 1" | 1.05 | 4.25 | 2.00 | 2.13 | 3.12 | 0.625 | 4 | 0 | 2.04 | 1.70 | 5.7 |
| | 1.5" | 1.61 | 5.00 | 2.00 | 2.13 | 3.88 | 0.625 | 4 | 0 | 2.04 | 1.70 | 7.9 |
| | 2" | 2.07 | 6.00 | 2.00 | 2.13 | 4.75 | 0.75 | 4 | 0 | 2.04 | 1.70 | 12.0 |
| | 3" | 3.07 | 7.50 | 2.00 | 2.13 | 6.00 | 0.75 | 4 | 0 | 2.04 | 1.70 | 18.4 |
| | 4" | 4.03 | 9.00 | 1.50 | 2.13 | 7.50 | 0.75 | 8 | 0 | 2.04 | 1.70 | 18.6 |
| | 5" | 5.05 | 10.00 | 1.50 | 2.25 | 8.50 | 0.88 | 8 | 0 | 2.04 | 1.70 | 21.0 |
| | 6" | 6.07 | 11.00 | 1.50 | 2.25 | 9.50 | 0.88 | 8 | 0 | 2.04 | 1.70 | 23.9 |
| | 8" | 7.98 | 13.50 | 1.50 | 2.50 | 11.75 | 0.88 | 8 | 0 | 2.04 | 1.70 | 34.5 |
| 10" | 10.02 | 16.00 | 1.50 | 2.75 | 14.25 | 1.00 | 12 | 0 | 2.04 | 1.70 | 44.5 | |
| 300 | 2" | 2.07 | 6.50 | 2.00 | 2.13 | 5.00 | 0.75 | 8 | 0 | 2.04 | 1.70 | 13.8 |
| | 3" | 3.07 | 8.25 | 2.00 | 2.13 | 6.62 | 0.88 | 8 | 0 | 2.04 | 1.70 | 22.0 |
| | 4" | 4.03 | 10.00 | 1.50 | 2.13 | 7.88 | 0.88 | 8 | 0 | 2.04 | 1.70 | 24.5 |
| | 5" | 5.05 | 11.00 | 1.50 | 2.25 | 9.25 | 0.00 | 8 | 0 | 2.04 | 1.70 | 32.0 |
| | 6" | 6.07 | 12.50 | 1.50 | 2.25 | 10.62 | 0.88 | 12 | 0 | 2.04 | 1.70 | 34.9 |
| | 8" | 7.98 | 15.00 | 1.50 | 2.50 | 13.00 | 1.00 | 12 | 0 | 2.04 | 1.70 | 47.1 |
| | 10" | 10.02 | 17.50 | 1.50 | 2.75 | 15.25 | 1.13 | 16 | 0 | 2.04 | 1.70 | 58.8 |

*Widths for all rings ordered with XIR retrofit option, and all K, F, and A endplate materials.

When selecting an instrument, refer to the [Min/Max Guide](#) for compatibility with this isolation ring or scan the QR code to the right.

