

## 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
- NSF-61 Compliant (316L Stainless steel / EPDM Only)

### TYPICAL USES

- Water and wastewater
- Mining

### SPECIFICATIONS

|                             |                                                                                                                                                                                                                   |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sizes:                      | 1" to 10"                                                                                                                                                                                                         |
| Instrument Connection Size: | ¼ NPT Female, ½ NPT Female                                                                                                                                                                                        |
| Pressure Rating (MAWP):     | Per customer flanges:<br>ASME B16.5 150 or 300 Class Pressures                                                                                                                                                    |
| Fill:                       | Glycerin: 0 °F to 400 °F (-18 °C to 204 °C)<br>Silicone (10Cst): -40 °F to 500 °F (-40 °C to 260 °C)<br>Silicone (50Cst): -40 °F to 600 °F (-40 °C to 316 °C)<br>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™ (02T conn.)                                                                                                                          |
| Added Tolerance:            | ±0.5% typical                                                                                                                                                                                                     |
| Approvals:                  | CRN, NSF-61 (316L Stainless steel/EPDM Only)                                                                                                                                                                      |

### WETTED COMPONENTS

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

### NON-WETTED COMPONENTS

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

### MIN/MAX TEMPERATURE LIMITS

| Liner          | Temperature Limits                  |
|----------------|-------------------------------------|
| Buna-N         | -30 °F to 225 °F (-34 °C to 107 °C) |
| PTFE           | -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) |



### 81 Bolt-thru Isolation Ring

Nominal Size: 1" to 36"



### KEY BENEFITS

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

## Data Sheet

### 81 Bolt-thru Isolation Ring

| ORDERING CODE                                                                                        | Example: | 81 | 02 | E | B | B | 02T | N | 300 | XCK | H3 | NH |
|------------------------------------------------------------------------------------------------------|----------|----|----|---|---|---|-----|---|-----|-----|----|----|
| <b>Seal Type</b>                                                                                     |          |    |    |   |   |   |     |   |     |     |    |    |
| 81 - Bolt-thru isolation ring                                                                        |          | 81 |    |   |   |   |     |   |     |     |    |    |
| <b>Process Connection Size</b>                                                                       |          |    |    |   |   |   |     |   |     |     |    |    |
| 02 - 2" (see table 2 on page 3)                                                                      |          |    | 02 |   |   |   |     |   |     |     |    |    |
| <b>Inner Flexible Wall</b>                                                                           |          |    |    |   |   |   |     |   |     |     |    |    |
| E - Buna-N                                                                                           |          |    |    | E |   |   |     |   |     |     |    |    |
| T - PTFE (available in 2" to 10")                                                                    |          |    |    |   |   |   |     |   |     |     |    |    |
| Y - Viton™                                                                                           |          |    |    |   |   |   |     |   |     |     |    |    |
| R - Natural rubber                                                                                   |          |    |    |   |   |   |     |   |     |     |    |    |
| P - EPDM (NSF-61 Compliant)                                                                          |          |    |    |   |   |   |     |   |     |     |    |    |
| <b>End Plate Material</b>                                                                            |          |    |    |   |   |   |     |   |     |     |    |    |
| A - Acetal, (150-class only)                                                                         |          |    |    |   |   |   |     |   |     |     |    |    |
| B - Carbon steel                                                                                     |          |    |    |   | B |   |     |   |     |     |    |    |
| S - 316L Stainless steel (NSF-61 Compliant)                                                          |          |    |    |   |   |   |     |   |     |     |    |    |
| K - CPVC (available in 1", 1.5" and 2" sizes), (150-class only)                                      |          |    |    |   |   |   |     |   |     |     |    |    |
| F - PVDF, (150-class only)                                                                           |          |    |    |   |   |   |     |   |     |     |    |    |
| <b>Body Material</b>                                                                                 |          |    |    |   |   |   |     |   |     |     |    |    |
| B - Carbon steel                                                                                     |          |    |    |   | B |   |     |   |     |     |    |    |
| S - 316L Stainless steel                                                                             |          |    |    |   |   |   |     |   |     |     |    |    |
| <b>Instrument Connection Size</b>                                                                    |          |    |    |   |   |   |     |   |     |     |    |    |
| 02T - ¼ NPT Female                                                                                   |          |    |    |   |   |   | 02T |   |     |     |    |    |
| 04T - ½ NPT Female (ring body tapped with ¼ NPT connection; 04T connection utilizes ¼-½ NPT adapter) |          |    |    |   |   |   |     |   |     |     |    |    |
| <b>Instrument Removal Option</b>                                                                     |          |    |    |   |   |   |     |   |     |     |    |    |
| N - Direct-mount (1" to 8")                                                                          |          |    |    |   |   |   |     | N |     |     |    |    |
| V - Needle valve (1" to 8")                                                                          |          |    |    |   |   |   |     |   |     |     |    |    |
| Q - Safe Quick Release (SQR™)                                                                        |          |    |    |   |   |   |     |   |     |     |    |    |
| Z - Needle valve and SQR                                                                             |          |    |    |   |   |   |     |   |     |     |    |    |
| <b>Pressure Class</b>                                                                                |          |    |    |   |   |   |     |   |     |     |    |    |
| 150 - 150-class ASME                                                                                 |          |    |    |   |   |   |     |   |     |     |    |    |
| 300 - 300-class ASME                                                                                 |          |    |    |   |   |   |     |   | 300 |     |    |    |
| <b>Options</b> (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                                                                     |          |    |    |   |   |   |     |   |     |     |    |    |
| <b>Multiple Instrument Assemblies</b>                                                                |          |    |    |   |   |   |     |   |     |     |    |    |
| 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                                            |          |    |    |   |   |   |     |   |     |     |    |    |
| Refer to <a href="#">Assembly Guide</a> for additional assembly options                              |          |    |    |   |   |   |     |   |     |     |    |    |
| <b>Optional Features</b>                                                                             |          |    |    |   |   |   |     |   |     |     |    |    |
| 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                                                            |          |    |    |   |   |   |     |   |     |     |    |    |

## Data Sheet

### 81 Bolt-thru Isolation Ring

**TABLE 2 – PROCESS CONNECTION TABLE**

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

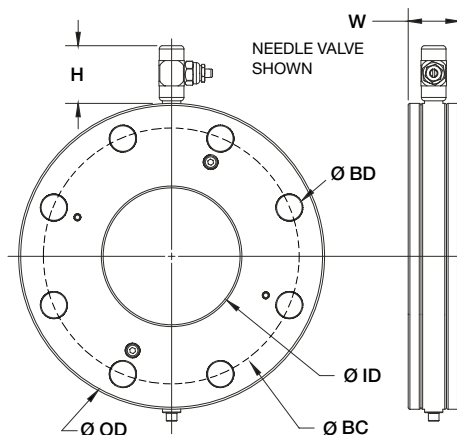
Consult factory for larger sizes

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

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



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