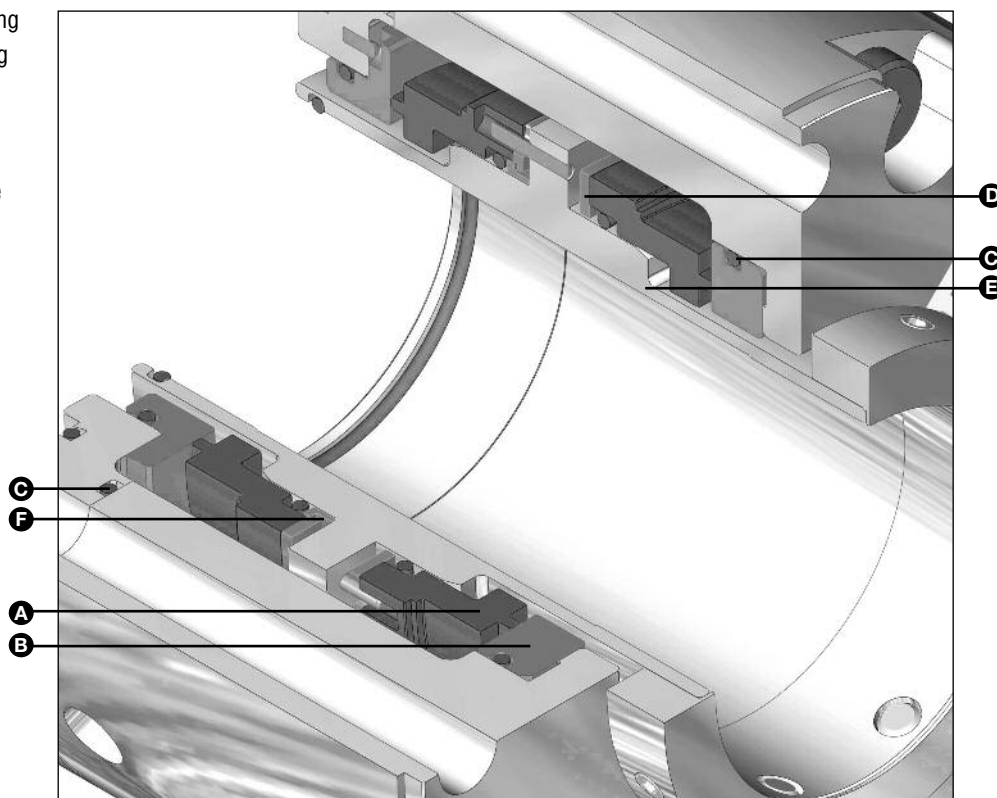


TYPE 7800 SERIES

7848D/7848W UNIVERSAL VESSEL SEAL

Technical Specification

- A – Face/Primary Ring
- B – Seat/Mating Ring
- C – O-ring
- D – Disc
- E – Sleeve
- F – Retaining Sleeve



Product Description

The Universal Vessel Seal 7800 Series is a modular cartridge seal for use in a wide variety of mixing and agitating equipment and covering a broad application range. The 7848D and 7848W are dry running and wet running heavy duty cartridge double seals. The Universal Vessel Seal uses modular hardware which provides maximum interchangeability. Four combinations of seal face technology provide the user with unmatched flexibility and value.

- Type 7848D is the latest proprietary face materials are used in a dry nitrogen barrier where seal faces exhibit virtually no wear. Robust drive system minimizes primary ring to hardware contact – eliminating seal face hang up while creating a highly flexible seal head. The seal is reverse pressure balanced and will remain closed in the event that barrier gas pressure is lost. Materials of construction are FDA approved.
- Where process or application conditions require a liquid barrier, the 7848W is a heavy duty cartridge double seal that is liquid lubricated. The 7848W uses hardware which is identical to the 7848D. All materials are FDA approved.

Performance Capabilities

- Temperature: -40°C to 205°C/-40°F to 400°F
- Pressure: vacuum to 14.5 bar g/210 psig barrier pressure*
- Speed: 0 to 400 fpm/2 m/s
- Runout: 3.18mm/0.125" max. radial
- Axial movement: 2.36mm/0.093" max.

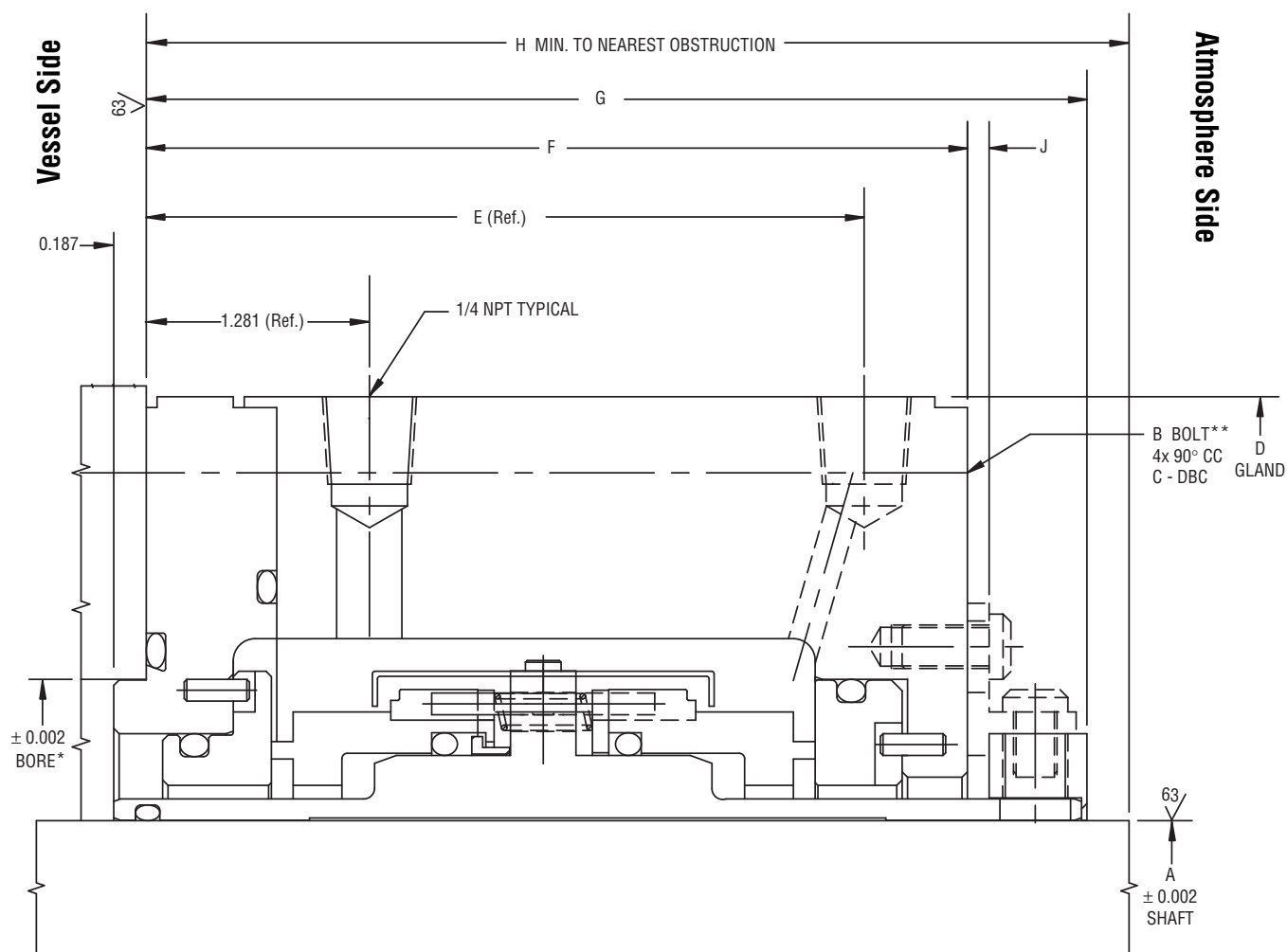
*For Higher Pressure Consult John Crane

Design Features

- John Crane's dry running experience and research have resulted in proprietary materials and optimized combinations ensuring superior wear characteristics even in rigorous applications.
- Double cartridge uses common springs allowing for self adjustment to axial motion. This maintains precise face loading to both seal faces in the presence of shaft movement.
- Optimized drive minimizes seal face to seal cartridge hardware interaction eliminating low speed hang-up.
- Completely modular design Universal Vessel Seal offers maximum application flexibility.

Note: Modular bearing housing and debris well are optional on both seals.

Type 7848D/7848W Typical Arrangement



* Turn diameter designed to fit specific equipment.

** Bolting pattern to be customized to specific unit dimension.

Type 7848D/7848W Dimensional Data (inches)

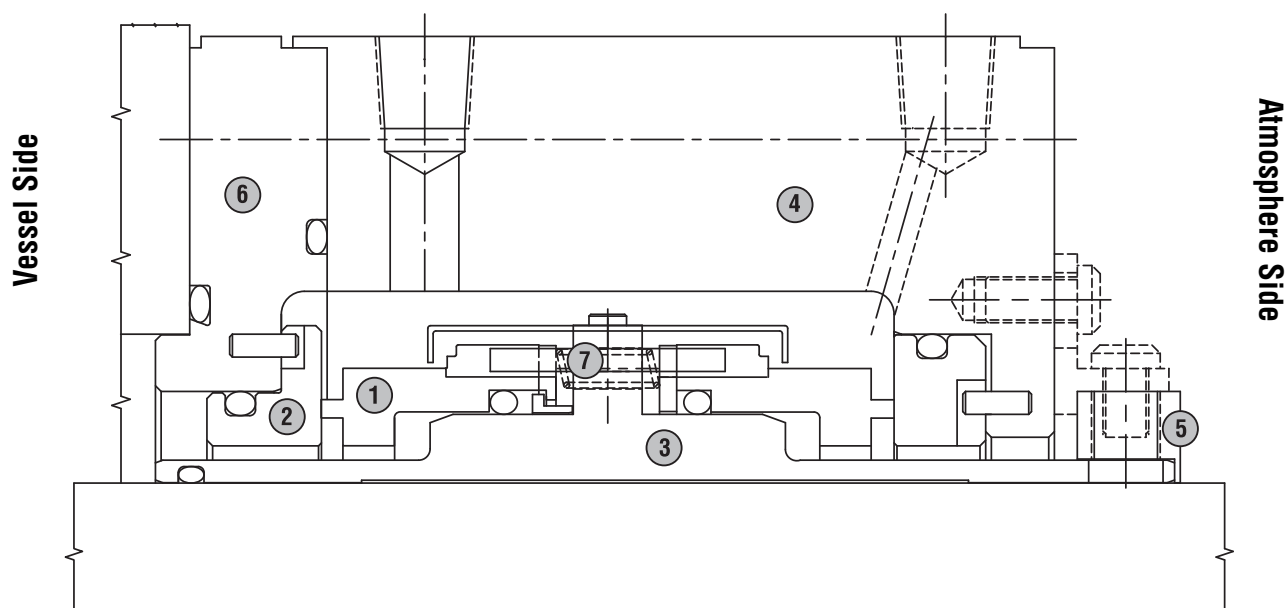
| Shaft Size Range | A | B | C | D | E | F | G | H | J |
|------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Up to 1.500 | 1.500 | 0.375 | 4.625 | 5.343 | 3.375 | 3.968 | 4.656 | 4.781 | 0.094 |
| 1.625 – 2.000 | 2.000 | 0.500 | 5.500 | 6.500 | 4.125 | 4.718 | 5.437 | 5.562 | 0.125 |
| 2.125 – 2.500 | 2.500 | 0.500 | 6.000 | 7.000 | 4.125 | 4.718 | 5.437 | 5.562 | 0.125 |
| 2.625 – 3.000 | 3.000 | 0.500 | 6.500 | 7.500 | 4.125 | 4.718 | 5.437 | 5.562 | 0.125 |
| 3.125 – 3.500 | 3.500 | 0.500 | 7.000 | 8.000 | 4.125 | 4.718 | 5.437 | 5.562 | 0.125 |
| 3.625 – 4.000 | 4.000 | 0.500 | 7.500 | 8.500 | 4.125 | 4.718 | 5.437 | 5.562 | 0.125 |
| 4.125 – 4.500 | 4.500 | 0.500 | 8.000 | 9.000 | 4.125 | 4.718 | 5.437 | 5.562 | 0.125 |
| 4.625 – 5.000 | 5.000 | 0.500 | 9.000 | 9.875 | 4.125 | 4.718 | 5.437 | 5.562 | 0.125 |

TYPE 7800 SERIES

7848D/7848W UNIVERSAL VESSEL SEAL

Technical Specification

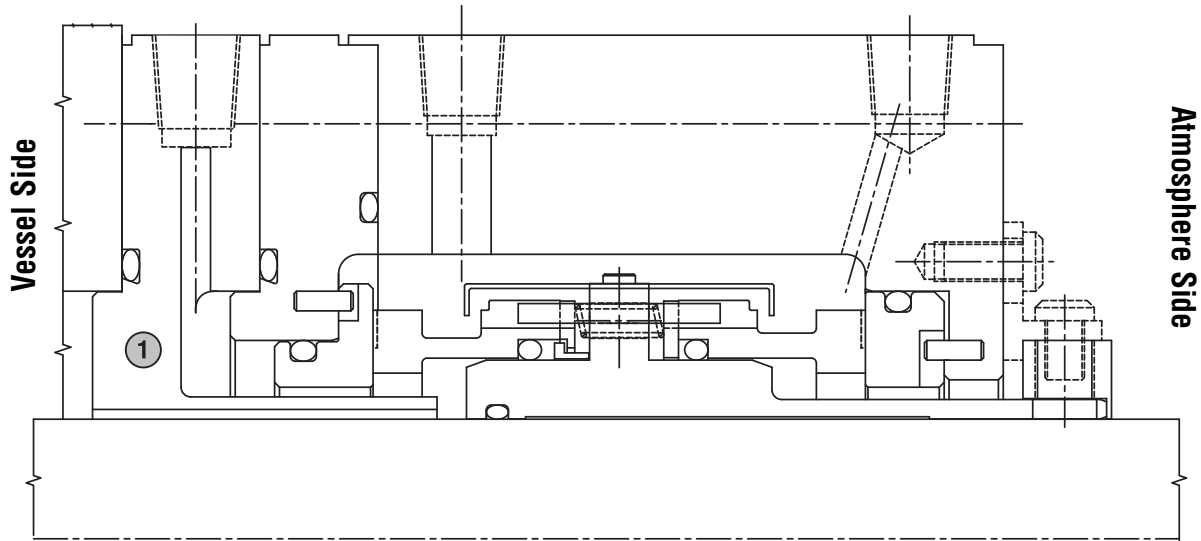
Type 7848D/7848W Typical Arrangement



Materials of Construction

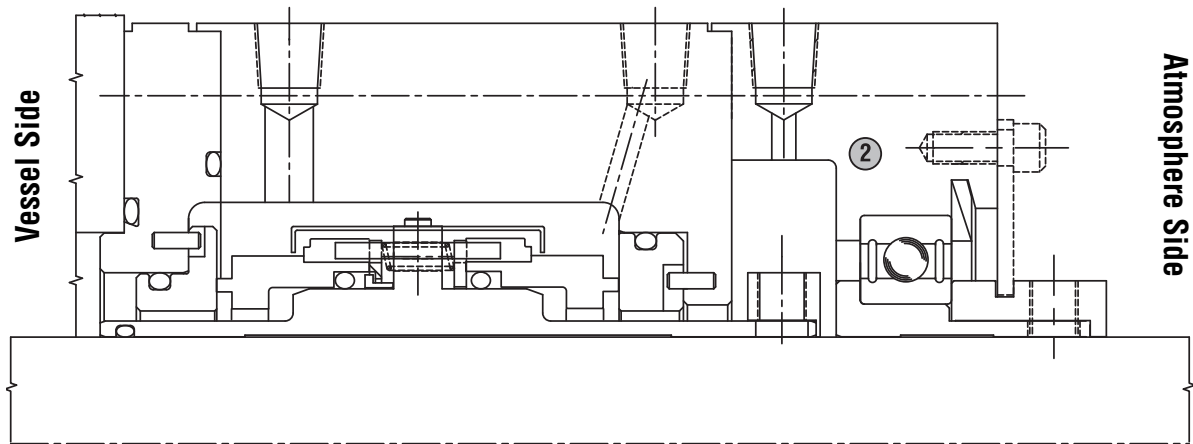
| SEAL COMPONENTS | MATERIALS | |
|-----------------------|---------------------|------------------|
| | Standard | Options |
| Description | | |
| 1 - Face/Primary Ring | Carbon | — |
| 2 - Seat/Mating Ring | Silicon Carbide | Tungsten Carbide |
| 3 - Sleeve | 316 Stainless Steel | Alloy C-276 |
| 4 - Gland Plate | 316 Stainless Steel | Alloy C-276 |
| 5 - Collar | 316 Stainless Steel | Alloy C-276 |
| 6 - Inner Gland | 316 Stainless Steel | Alloy C-276 |
| 7 - Springs | 316 Stainless Steel | — |

Type 7848D/7848W With Debris Well Typical Arrangement



The debris well ① option is available where applications demand periodic cleaning and product purity.

Type 7848D/7848W With Bearing Housing Typical Arrangement



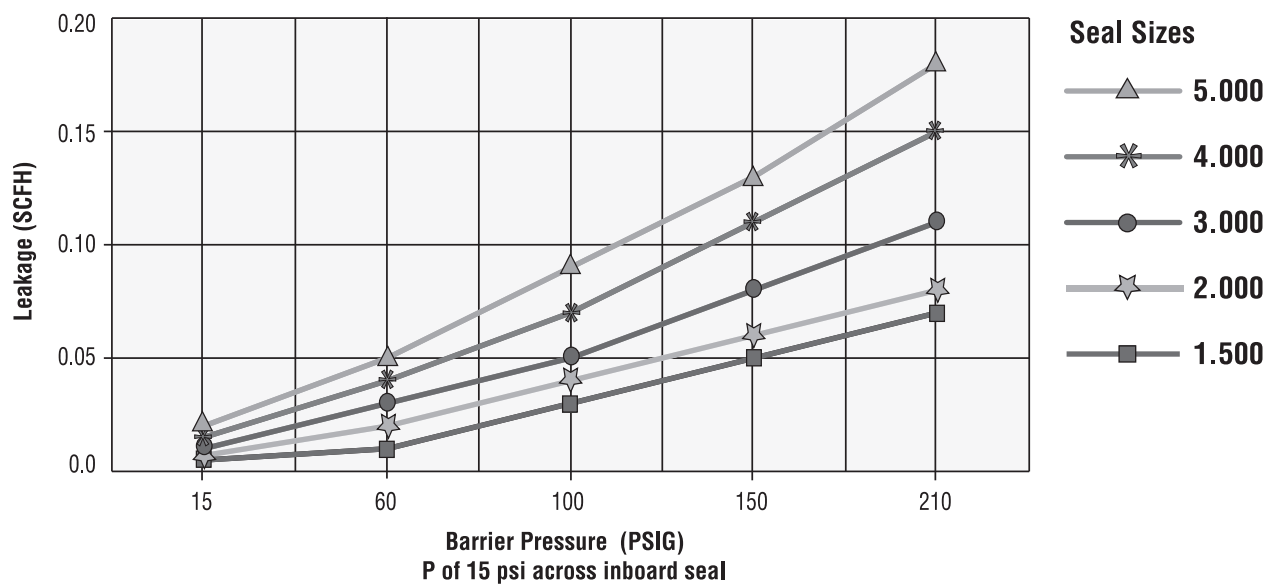
The bearing housing ② is a modular option available where additional shaft stability is desired.

TYPE 7800 SERIES

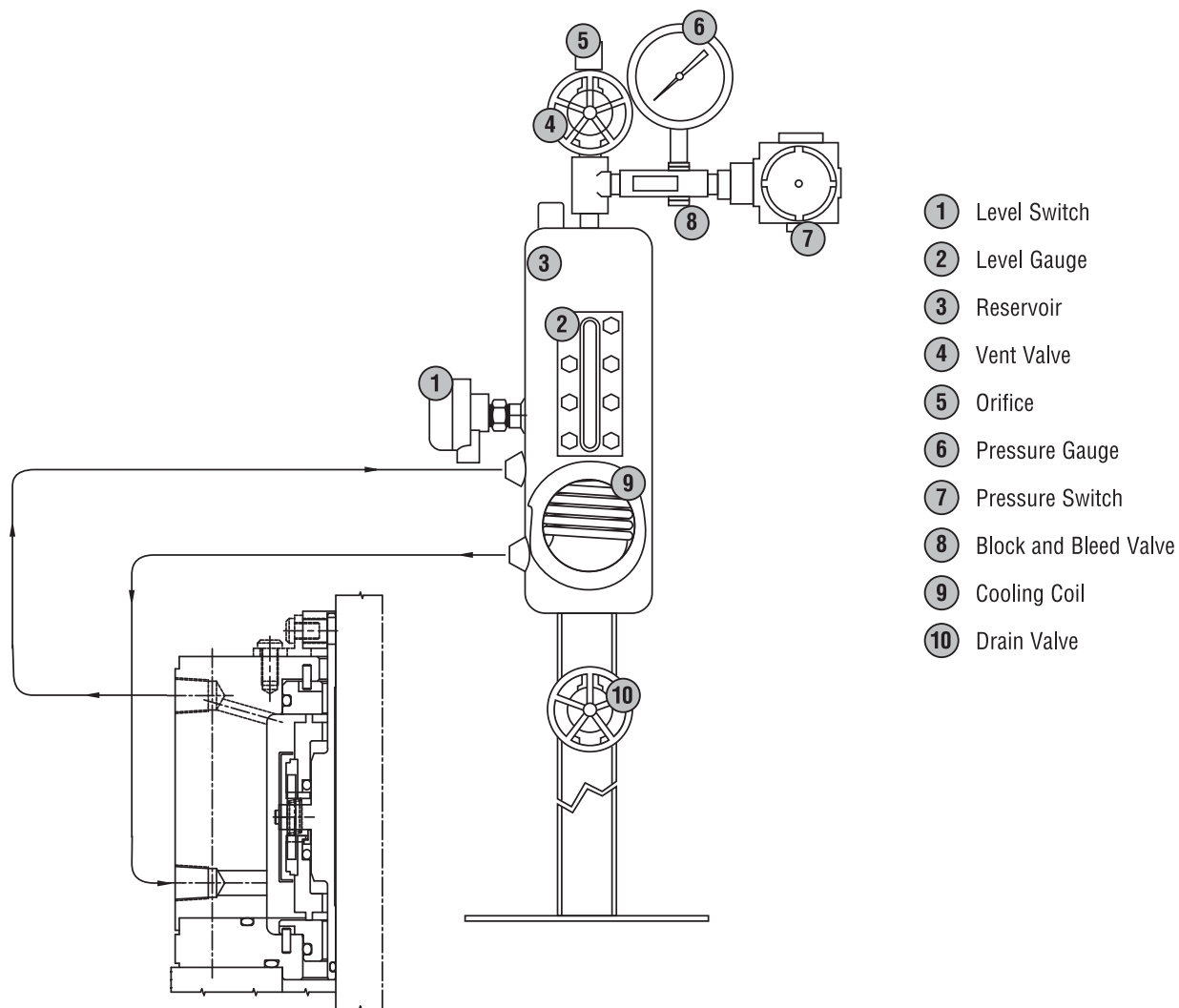
7848D/7848W UNIVERSAL VESSEL SEAL

Technical Specification

Type 7848D/7848W Estimated Total Barrier Gas Consumption



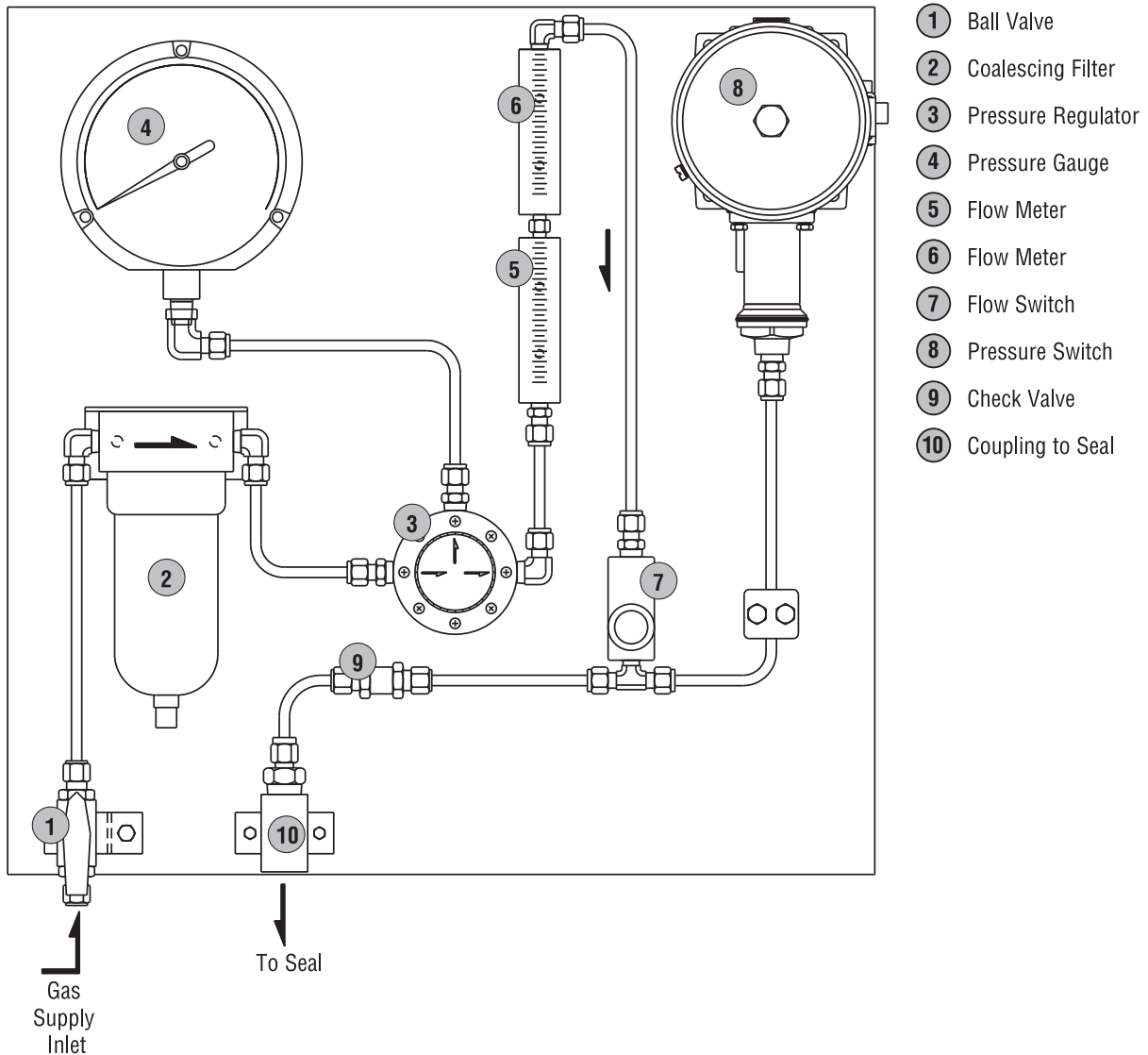
Type 7848D/7848W Seal Support System



Type 7848D/7848W Seal Support Gas Panel

The diagram below shows a typical Type 7848D support panel. The instrumentation pictured is intended to provide maximum insight regarding vessel pressure and seal cartridge control. Instrumentation and control preferences vary among end users.

Contact John Crane with specific requirements.



john crane

TYPE 7800 SERIES

7848D/7848W UNIVERSAL VESSEL SEAL

Technical Specification