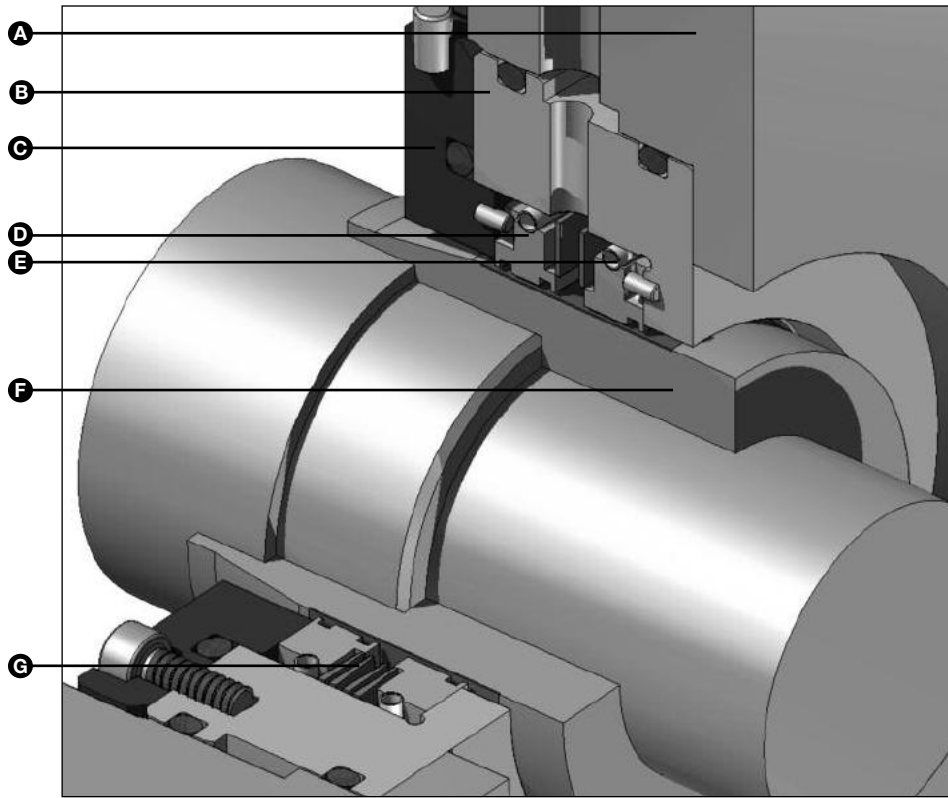


- A – Housing
- B – Retainer
- C – Clamp Plate
- D – Bushing Segment
- E – Radial Spring
- F – Sleeve
- G – Axial Spring



### Product Description

The Type 83 is a contacting carbon bushing designed to isolate the bearing oil from the dry gas seal cartridge.

- Normally supplied as a complete seal cartridge, unique inner and outer segments are specifically designed to prevent oil migration and minimize wear.
- Nitrogen is normally injected between the two segmented bushings effectively creating a pressure barrier between the bearing and DGS cavity.
- Advanced materials and design ensure minimal wear and promote long life. Unlike many contacting separation seals the Type 83 is designed to operate on cryogenically dry nitrogen.

### Design Features

- Low separation gas consumption
- Low wear for longer life and improved reliability
- Cartridge design for easy installation
- Universal design independent of shaft rotation
- Unique carbon bushing segment design with self-adjusting hydropads
- Specially designed segments minimize the separation gas consumption

### Performance Capabilities

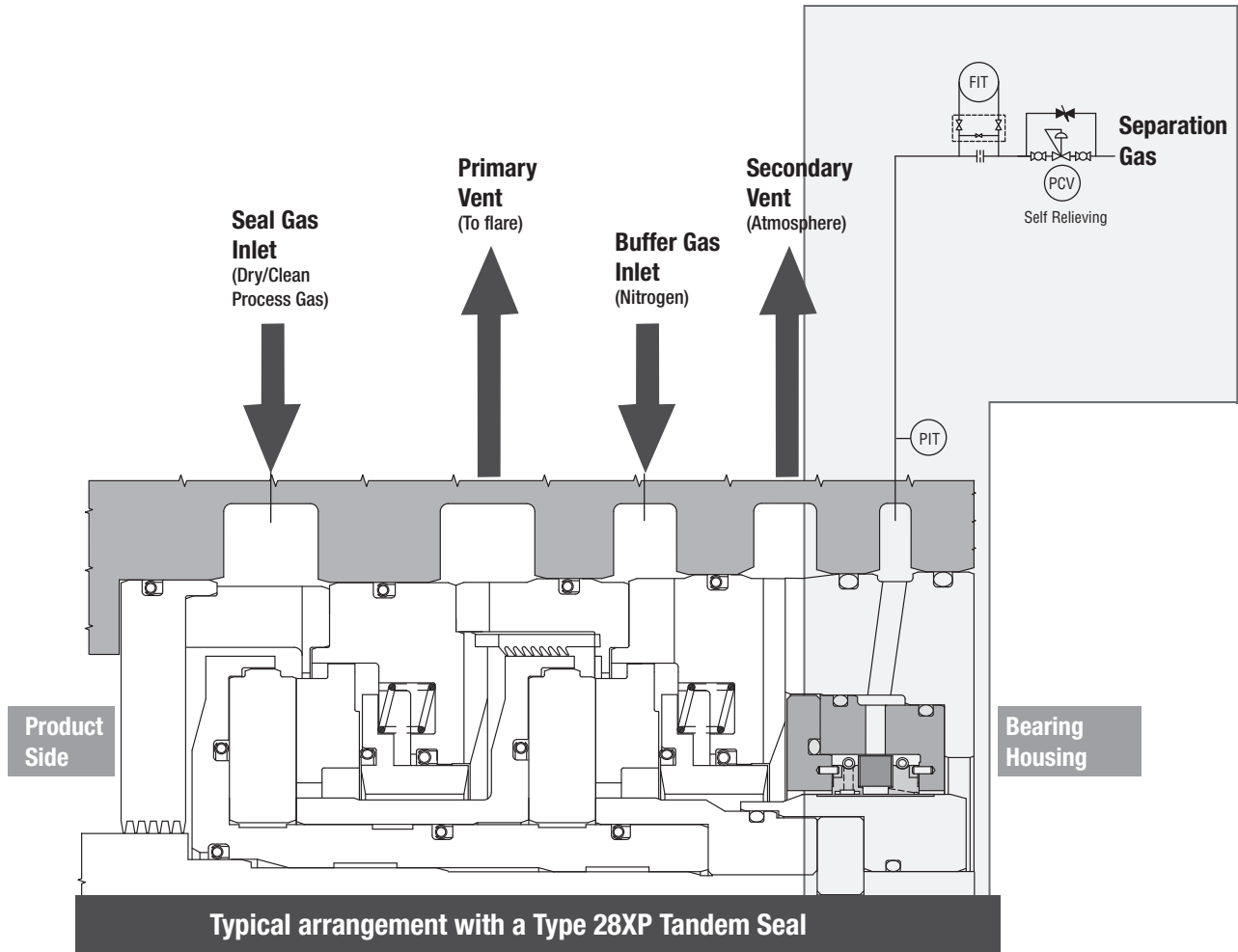
- Temperature: -20°F to 400°F/-30°C to 200°C
- Speed: up to 430 fps/130 m/s
- Operating pressure range: 3 to 15 psig/0.2 to 1.0 bar g
- Normal separation gas supply pressure: 5 to 7 psi/0.3 to 0.5 bar
- Gases: nitrogen, air
- Vibration levels to API617

For alternative conditions, consult John Crane.

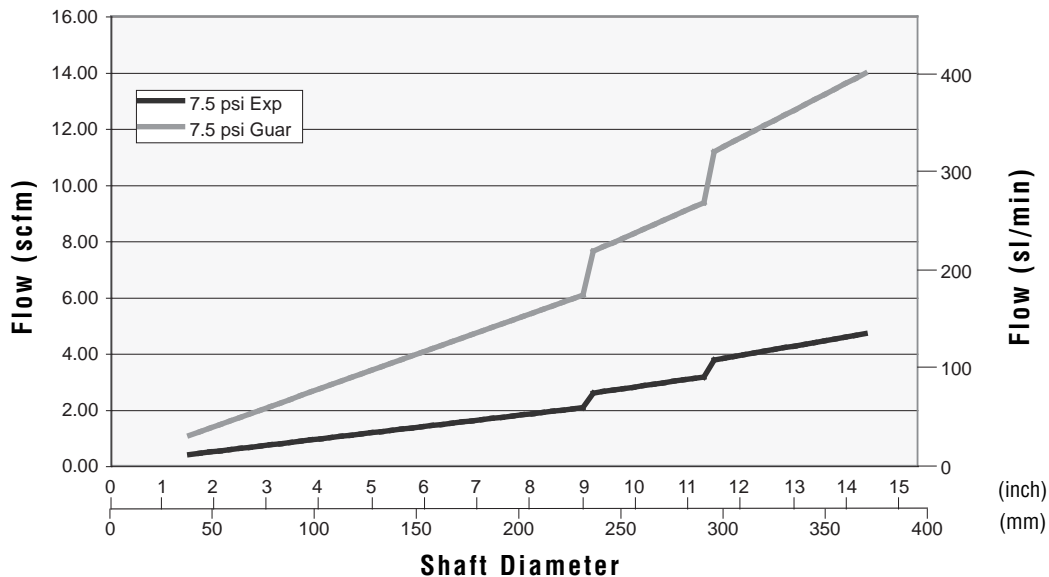
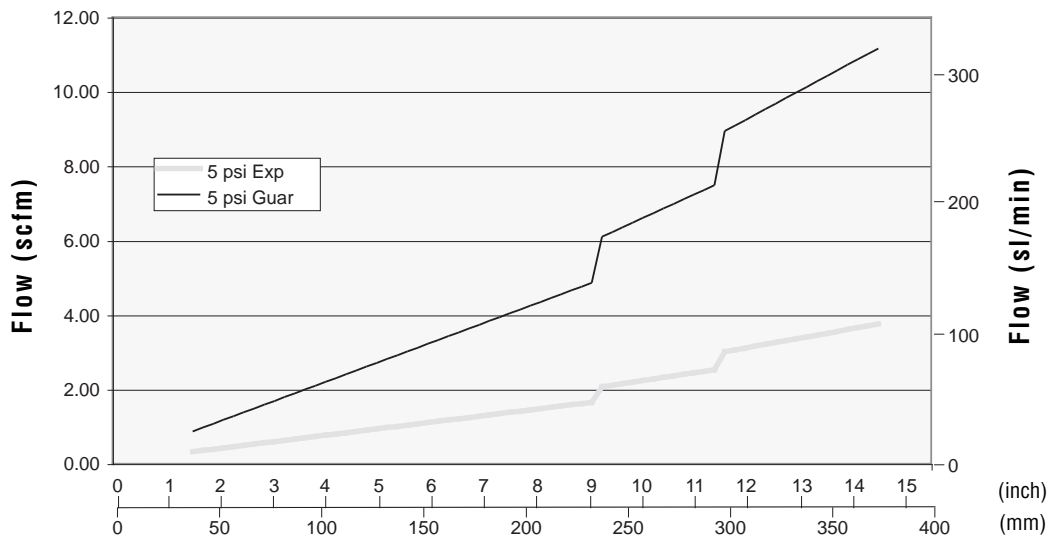
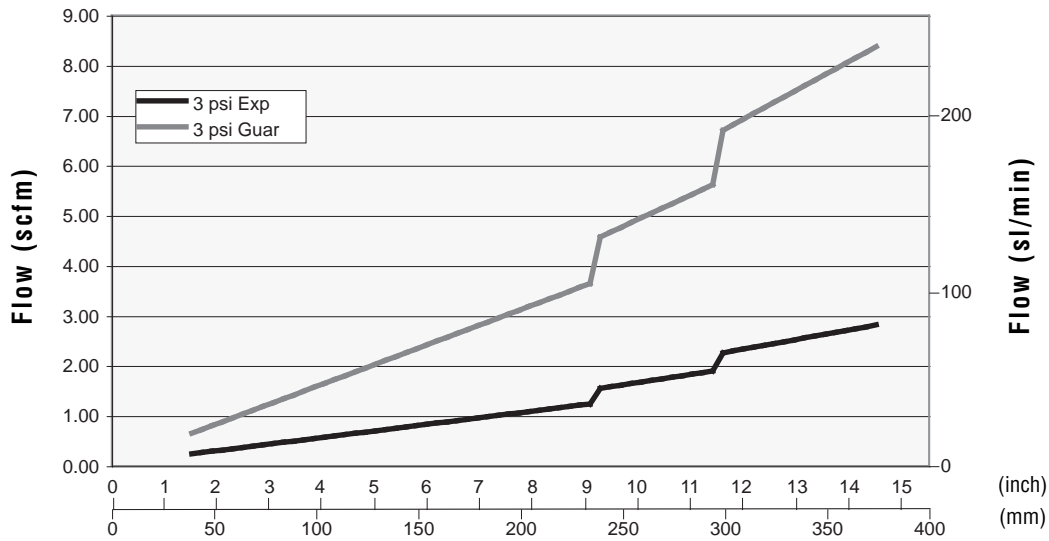
# TYPE 83

## SEPARATION SEAL

### Required Installation and P&ID for Type 83 Separation Seal



### Type 83 Leakage Rates



NOTE: Leakages are for a double seal cartridge as shown on page 2.

# TYPE 83

## SEPARATION SEAL

### Materials of Construction

SEAL COMPONENT DESCRIPTION	STANDARD MATERIALS
Bushing Segments	Carbon
Axial Spring	Stainless Steel
Radial Springs	Stainless Steel
Housing Assembly Clamp Plate Assembly	Stainless Steel
Secondary Sealing Elements	Fluoroelastomer

Alternative materials are available, consult John Crane.

### Performance Recommendations

- Separation Gas Specification:  
Filtration: 3 microns and dry.  
Proper consideration must be given as to the possibility of explosive mixtures.

Note: suitable for nitrogen with a dew point down to -90°C.

- Operating Environment:  
Vibration levels within API 617.  
Bearing housing should be well drained.  
Bearing housing should not be pressurized.  
Consideration should be given to the secondary vent piping as not to cause an excessive back pressure.  
Oil exiting the bearing cavity directed at the separation seal should be noted at design.

### Alternative Applications

The Type 83 is normally supplied as a double separation seal as depicted in this data sheet however they can be supplied as individual carbon rings for use on other applications where an effective barrier is required i.e. bearing chambers, fans, blowers, gearboxes and other high speed low pressure applications. Please consult John Crane.

