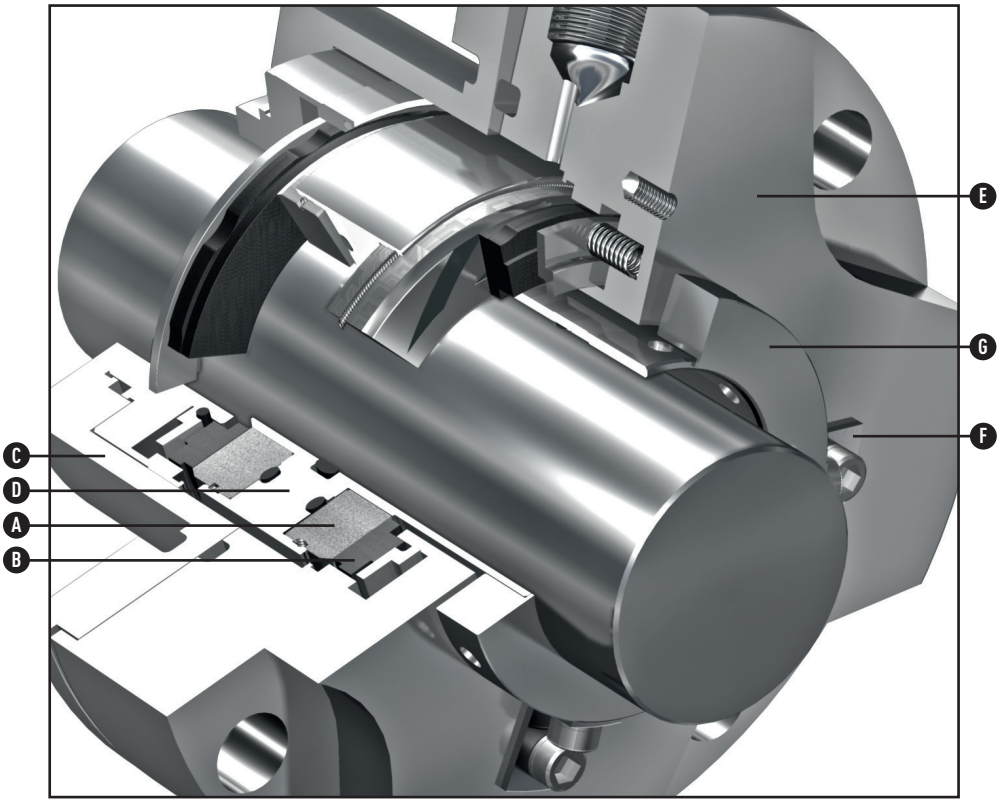
TYPE 2800XP

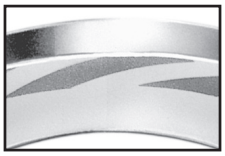
GAS LUBRICATED NON-CONTACTING DUAL SEAL

Technical Specification

A – Seat/Mating Ring
B – Face/Primary Ring
C – Inboard Gland Plate
D – Sleeve
E – Outboard Gland Plate
F – Setting Clips
G – Drive Collar



Spiral Groove Technology



Product Description

- Heavy duty, gas lubricated non-contacting dual seal where high differential pressures are encountered
- For use in large bore seal chambers
- Shaft sizes consistent with API 682
- For positive containment of volatile and hazardous fluids in chemical or petrochemical processes
- For high reliability sealing of high purity fluids with no potential for product contamination
- For sealing fluids that are sensitive to thermal gain or loss.

Design Features

- Dual pressurized seal arrangement insures zero product emissions
- Reverse pressure capability insures full process containment
- Heavy duty seal faces and hardware to accept elevated pressure applications
- Inboard seal exhibits high differential pressure capability
- State of the art spiral groove, non-contacting seal face technology
- Non-contacting operation provides extremely low parasitic horsepower losses.

Perfomance Capabilities*

- Temperature: -40°F to 500°F/-40°C to 260°C
- Pressure: up to 600 PSI g/42 Bar g max.
- Speed: 1,000 - 3,600 rpm.

* Conditions that vary from those listed above can be sealed using other Type 2800 series products. Consult John Crane.

Type 2800XP Highlights

The Type 2800XP is designed to deliver stable and reliable performance where high barrier pressures are required. The inboard seal embodies specific design elements intended to provide reliable and consistent barrier gas consumption in the presence of high differential pressure. Refer to the back page of this data sheet for standby pump piping and hot bypass recommendations.

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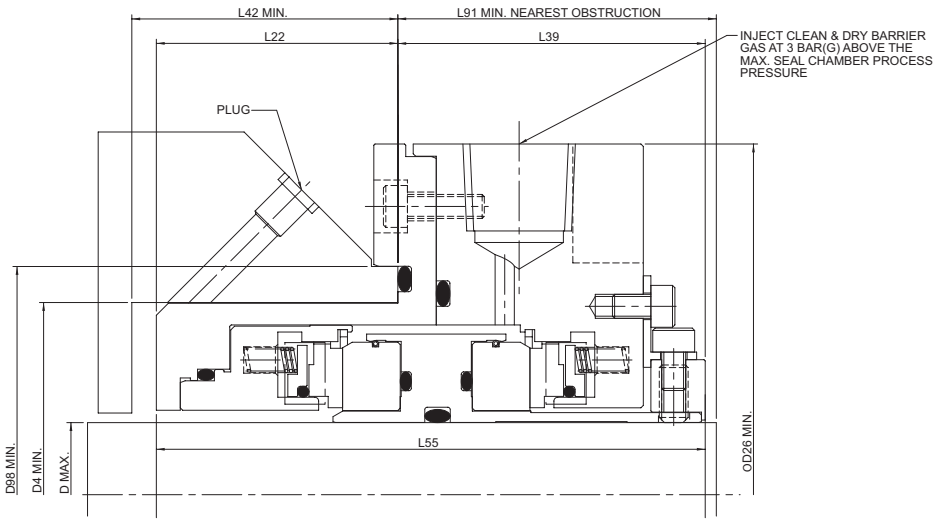
Type 2800XP Typical Arrangement



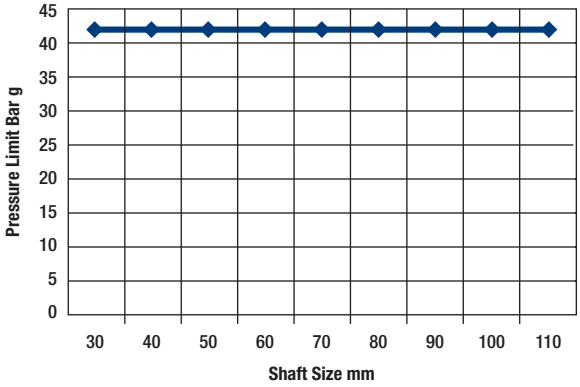
Type 2800XP Dimensional Data (mm)

Seal Size (mm)	D	D4	D26	L55	L39	L91 Min	L42 Min	L22 Inst. Ref.	D98 Min	Min. Stud Diam.	Gland Stud PCD
30mm	30.00	80.00	140.00	109.26	56.68	100.00	55.00	52.58	95.00	M12	115.00
38mm	38.00	76.20	139.70	109.75	57.63	60.63	55.12	52.12	95.20	M12	114.30
40mm	40.00	90.00	147.00	111.65	54.58	100.00	60.00	57.07	105.00	M12	125.00
43mm	43.00	88.90	165.10	116.15	66.33	69.33	52.82	49.82	110.24	M12	139.70
48mm	48.00	92.08	149.24	116.69	79.50	82.50	40.19	37.19	104.78	M12	127.00
50mm	50.00	100.00	166.00	115.05	64.98	110.00	55.00	50.07	115.00	M16	140.00
53mm	53.00	98.42	180.98	117.15	64.33	67.33	55.82	52.82	119.66	M16	152.40
60mm	60.00	120.00	185.00	115.37	56.30	110.00	60.00	59.07	135.00	M16	160.00
70mm	70.00	130.00	196.00	116.15	67.08	110.00	65.00	49.07	145.00	M16	170.00
80mm	80.00	140.00	206.00	118.17	71.80	110.00	70.00	46.37	155.00	M16	180.00
90mm	90.00	160.00	240.00	121.87	79.80	120.00	65.00	42.07	175.00	M20	205.00
100mm	100.00	170.00	248.00	117.87	74.80	120.00	70.00	43.07	185.00	M20	215.00
110mm	110.00	180.00	256.00	119.87	78.80	120.00	75.00	41.07	195.00	M20	225.00

Contact John Crane for other sizes.

Note: Seal sleeve dimensions are adjusted to accommodate imperial dimensions at D Max.
Cartridge Inboard gland plate dimensions are adjusted to accommodate D4 and D89 imperial dimensions.
Minimum stud diameter and gland stud PCD are adjusted to accommodate imperial equipment where necessary.

Seal Pressure Rating



Barrier pressure must be set at a minimum of 43.5 PSI g/3 Bar g above maximum seal chamber pressure.

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Materials of Construction

SEAL COMPONENT	MATERIAL	CODE
Primary Ring		
– Standard	Antimony Carbon	218
– Options	Antimony Carbon	348
	Nickel Chrome Carbon*	605*
Mating Ring		
– Standard	Tungsten Carbide	005
– Options	Silicon Carbide	277
O-Ring		
– Standard	Fluorocarbon	134
– Options	Perfluoroelastomer	394
	Nitrile	130

Other grades of WC/SiC/FFKM are also available

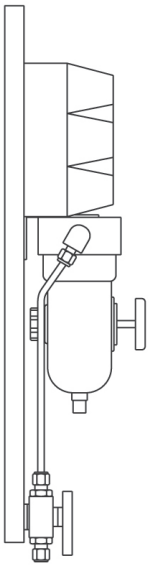
* For FDA Requirement Only

SEAL COMPONENT	MATERIAL	CODE
Springs		
– Standard	316 Stainless Steel	001
Other		
Typical Hardware		
– Standard	316 Stainless Steel	001
– Gland plate		
– Sleeve		
– Drive Collar		
– Retainer		
– Thrust Ring		
– Options	Hastelloy C-276 (UNS N 10276)	033
	Titanium	032

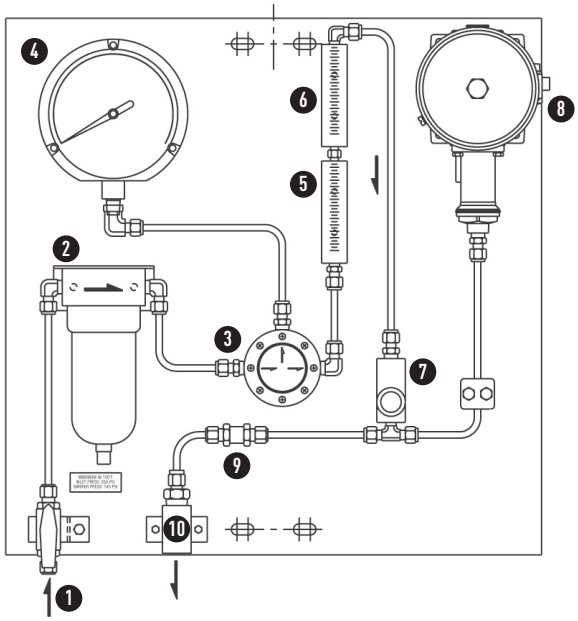
Gas Control Panel

Instrumentation requirements which differ from the panel pictured can be accommodated. Contact John Crane.

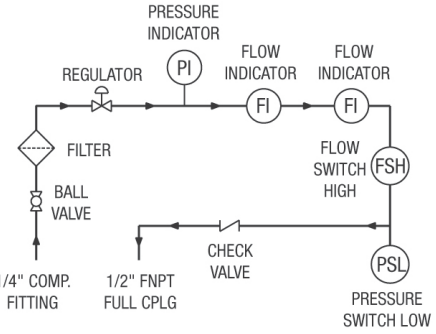
Side view



Front view



Gas Flow Schematic



1 – Ball valve
2 - Coalescing filter
3 - Regulator
4 - Pressure regulator
5 - Flow meter-normal flow
6 - Flow meter-high flow
7 - Flow switch
8 - Pressure switch
9 - Check valve
10 - Coupling to seal

Gas consumption is dependent on barrier pressure, shaft speed, and may be affected by other application conditions. Contact John Crane for specific advice.

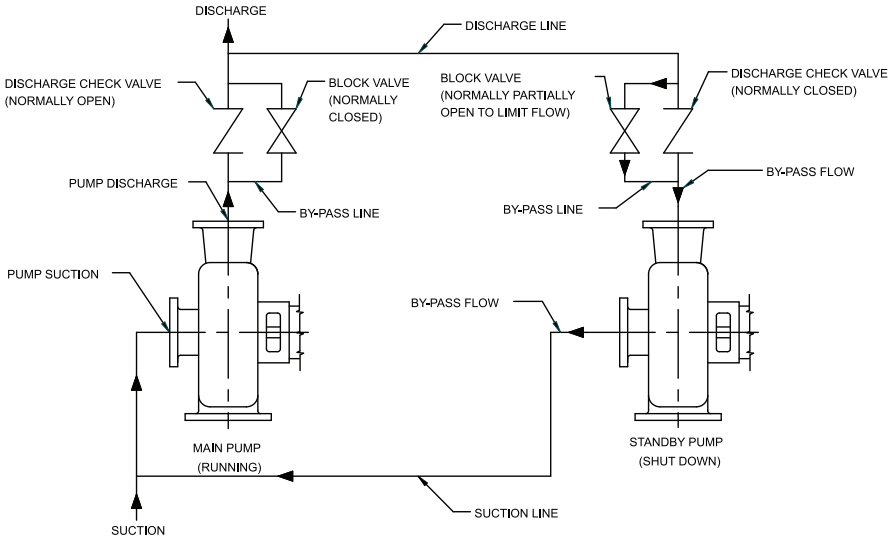
TYPE 2800XP

GAS LUBRICATED NON-CONTACTING DUAL SEAL

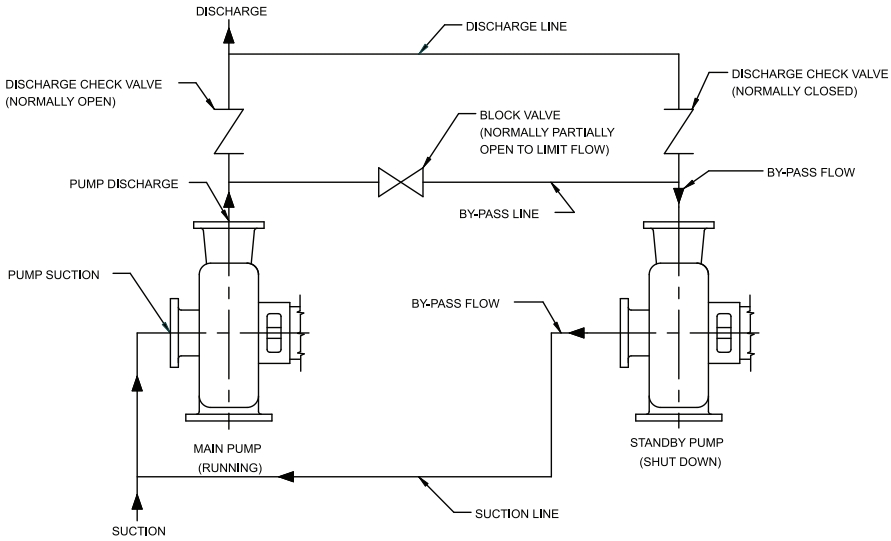
Technical Specification

Piping Options for Hot Standby Pumps (also applies to Types 2874, 2874NE & 2800)

HOT BY-PASS FOR A STANDBY PUMP - OPTION 1



HOT BY-PASS FOR A STANDBY PUMP - OPTION 2



Often gas lubricated seals are installed on primary and standby pumps. Above are the recommended piping plans that allow standby pumps to manage barrier collection in static conditions. Both diagrams offer continuous circulation of pumped fluid in order to maintain temperature and avoid cavitation upon start-up of standby equipment. Detailed information and recommendations for specific applications are available from John Crane.

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Middle East & Africa
United Arab Emirates
Tel: 971-481-27800

Asia Pacific
Singapore
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