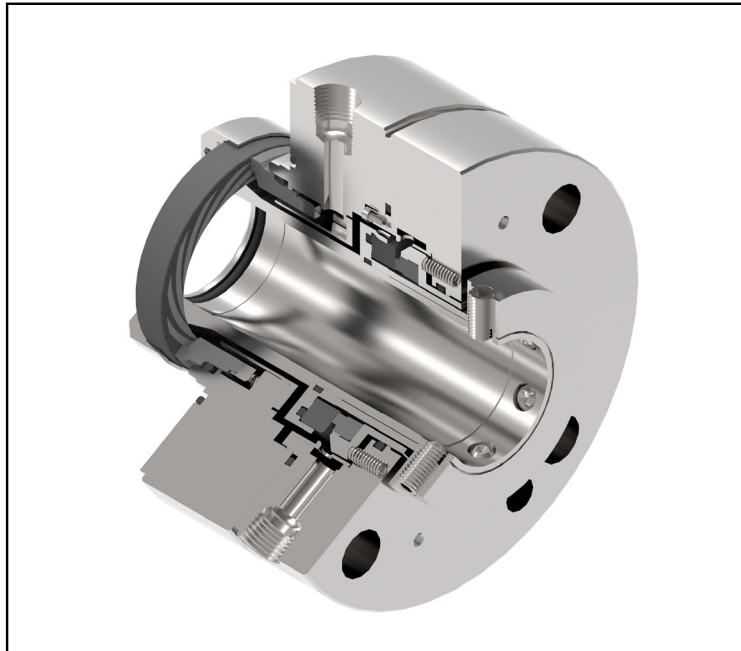


TYPE 588USP

HIGH DUTY CARTRIDGE O-RING SEAL

Technical Specification



Product description

- John Crane 588 USP seal is part of a family of upstream pumping products designed to provide reliable service in poor lubricating and dirty environments.
- The upstream pumping seal is ideally suited for abrasive services. Other applications are refineries, chemical/petrochemical processing, water treatment, mining, pulp & paper, and other industries where chemicals, low lubricity liquids, caustics, sour water, slurries and toxic products are pumped.
- The 588 USP upstream pumping seal provides the environmental protection of a pressurised double seal arrangement with the inherent safety and relative simplicity of a tandem seal arrangement.
- The standard cartridge was designed to fit API 610 pumps and features an SBOP seal head outboard.

Performance capabilities

- Temperatures: 80°C (176°F)
- Pressures: Up to 42 Barg (609 psig)
- Speed: From 2.5 m/s (500 fpm) up to 25 m/s (5,000 fpm)

Design features

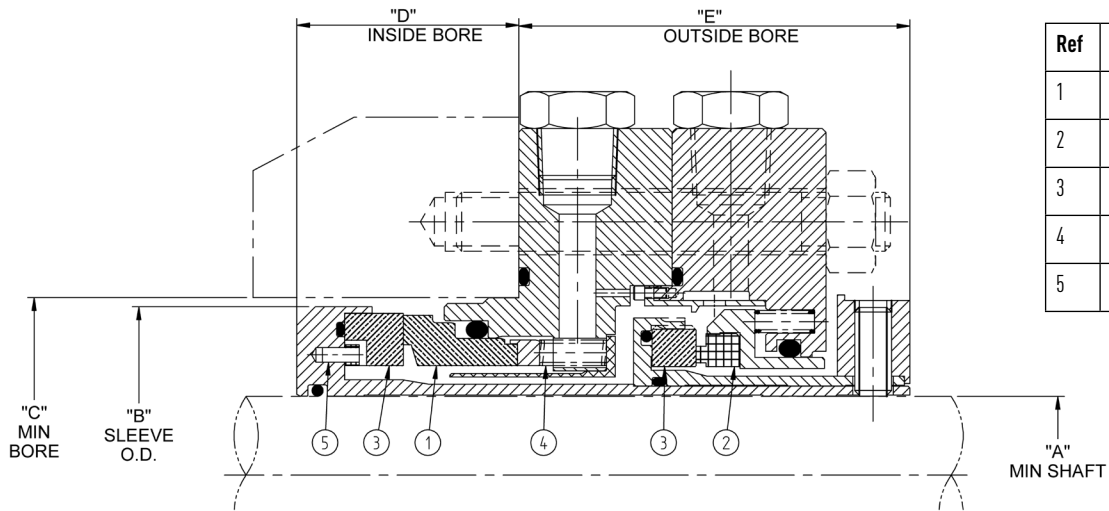
- Non-Contact Face Sealing - Provides reliable sealing for abrasive, low lubricity, and multi-phase liquids, because the upstream pumping effect keeps harmful particles away from the seal faces, and induces clean barrier fluid between them. Long life, low heat generation.
- Spiral Groove Technology - The non-contacting inboard seal uses patented John Crane spiral groove technology to pump a small quantity of a safe, product-compatible barrier liquid upstream to prevent leakage of the product being sealed.
- Low heat Generation - Seal reliability is enhanced by lower levels of seal heat generation
- Minimal seal exposure to process - The seal features springs outside of the process fluid, and a rotating mating ring with process at OD. Centrifugal forces aid in buffer fluid flow and help keep solids away from the faces.
- Robust drive pins, with mating ring drive pin sleeved.



TYPE 588USP

HIGH DUTY CARTRIDGE O-RING SEAL

Technical Specification



Ref	Description
1	Primary ring
2	Primary ring ass'y
3	Mating ring
4	Spring
5	Mating ring pin sleeve

588USP typical dimensional Data (mm)

Seal size (mm)	A	B	C	D	E
0300	30	74	80	47	97.1
0400	40	84	90	47	97.1
0500	50	96	100	46	107.1
0600	60	114	120	51	107.1
0700	70	124	130	51	107.1
0800	80	134	140	51	107.1
0900	90	148	154	51	110.1
1000	100	158	164	51	110.1
1100	110	167	173	51	110.1
1200	120	177	183	51	110.1
1300	130	189	195	51	110.1
1400	140	202	208	51	110.1
1500	150	208	214	51	110.1

588USP typical dimensional data (inch)

Seal size (mm)	A	B	C	D	E
0300	1.181	2.913	3.150	1.850	3.823
0400	1.575	3.307	3.543	1.850	3.823
0500	1.969	3.780	3.937	1.811	4.217
0600	2.362	4.488	4.724	2.008	4.217
0700	2.756	4.882	5.118	2.008	4.217
0800	3.150	5.276	5.512	2.008	4.217
0900	3.543	5.827	6.063	2.008	4.335
1000	3.937	6.220	6.457	2.008	4.335
1100	4.331	6.575	6.811	2.008	4.335
1200	4.724	6.969	7.205	2.008	4.335
1300	5.118	7.441	7.677	2.008	4.335
1400	5.512	7.953	8.189	2.008	4.335
1500	5.906	8.189	8.425	2.008	4.335



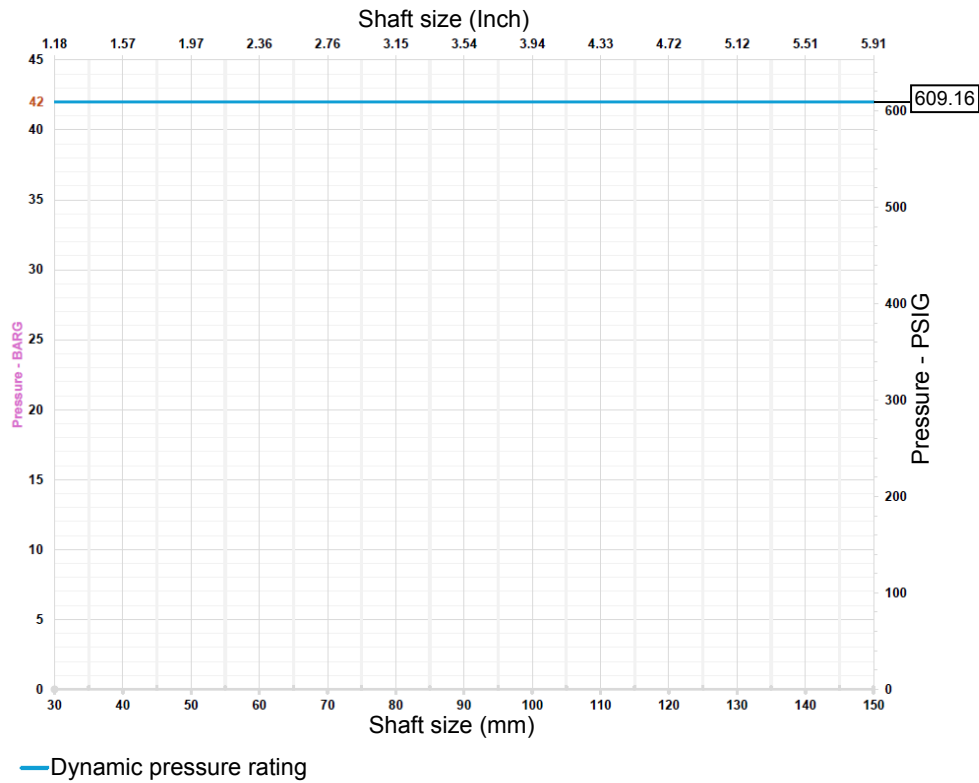
TYPE 588USP

HIGH DUTY CARTRIDGE O-RING SEAL

Technical Specification

Basic pressure rating

The dynamic sealing pressure rating for the standard 588USP components is 42 Barg (609 PSIG) across the full-size range. This rating assumes seal is running at sufficient speed to generate upstream flow, please contact JOHN CRANE for pressure rating based on actual shaft speed.



Materials of construction

Seal components	Materials	
	Standard	Options
Primary Ring (Inboard seal)	Self-Sintered Silicon Carbide	-
Primary Ring Ass'y (Outboard seal)	Carbon + 316 Stainless Steel	Carbon + Super Duplex Stainless Steel Carbon + Hastelloy C-276
Mating Ring (Inboard)	Self-Sintered Silicon Carbide	-
Mating Ring (Outboard)	Reaction Bonded Silicon Carbide	-
O-ring	Nitrile	Fluorocarbon Ethylene Propylene Perfluoroelastomer
Seal Adaptive Hardware	316 Stainless Steel	Super Duplex Stainless Steel Hastelloy C-276
Spring	Hastelloy C-276	-
Mating Ring Pin Sleeve	PTFE	-



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