STANDARD DIN/ANSI DUAL CARTRIDGE SEALS

PATENTED

LD 388™ / 389™



SPECIFICALLY ENGINEERED FOR VOC EMISSION PREVENTION

Product Description

Conforming to DIN / ANSI standards, this preassembled and preset cartridge seal is compact and ready-to-fit, thereby speeding installation and maintenance, and eliminating setting errors.

With an SP-3GL seal reservoir installed, the seal can eliminate or minimize VOC emissions to comply with the environmental emission regulations, leading to improved air quality during a manufacturing process. In addition, this seal features balanced design for both pressure directions; it can be used with a pressurized barrier fluid or unpressurized buffer fluid, and thus is extremely successful in realizing near-zero emissions. The proven high performance of the seal ensures that customers have the right seal for their needs.

Applications

- Suitable for rotating equipment in compliance with DIN / ANSI standards and big bore / taper bore dimensions, such as chemical processing pumps, vertical pumps and large industrial pumps.
- Compatible with API 682 piping plans 52/53/54, this seal works well with a barrier / buffer fluid pressurized or unpressurized, depending on the application requirements.
- Designed for rotating equipment that needs resistance to the adverse effects of acidic, caustic, corrosive, volatile and toxic media, and requires a dual seal to prevent VOC emissions.
- Widely used in the alcohol (e.g. methanol and ethanol), bio-diesel and corn processing industries.
- Ideal for a wide variety of industrial applications, including food and beverage, pharmaceutical, petroleum, petrochemical, chemical, pipeline transportation, steel, semiconductor and power generation.

Operating Parameters

Temperature	-40 ~ 230˚C (-40 ~ 446 ˚F)
Pressure	Up to 355.6 psig (25 kg/cm^{2}G)
Surface Speed	Up to 5000 fpm (25 m/s)

Recommended Piping Plans

Between Seals	52 / 53 / 54

※ Custom designs are available to combine various compatible plans.

Design Standards

- Standard DIN/ANSI seal chambers.
- DIN/ANSI enlarged bore and tapered bore seal chambers.
- Custom designs are available upon request.

Auxiliaries and Components (Options)

- SP-3GL: 3-gallon external seal reservoir.
- SP-5GL: 5-gallon external seal reservoir.
- WCHE heat exchanger.



More Information for You

Material Selection

Seal Components	Standard Materials	Other Material Options
Stationary Rings	Carbon Graphite	Tungsten Carbide
Rotary Rings	Silicon Carbide	Silicon Carbide | Tungsten Carbide
Metal Parts	316 Stainless Steel	304 Stainless Steel | 316L Stainless Steel 316Ti Stainless Steel | Duplex Stainless | Alloy C-276 | Titanium | Monel®
Elastomeric O-rings	FKM	Aflas | NBR | EPDM | TV FFKM (Sceniraz™ / Chemraz® / Kalrez®)
Gland Gasket	Glass-Filled PTFE	Non- Asbestos | Spiral-Wound
Springs	316 Stainless Steel	Alloy C-276 | Inconel®

Specific Features

- Advanced cartridge-mounted transmission system: With drop-proof springs, the seal can readily be installed or replaced (applicable only to the LD388B™ series, which is compatible with big and taper bore pumps)
- High duty transmission mechanism: The transmission components can tolerate large shaft runout (radial movement) and vibration that occur predominantly during startup and shutdown.
- Non-clogging stationary springs: Providing an evenly distributed load on the sealing faces, our enhanced springs are mounted in the stationary section of the seal and completely isolated from the process medium during operation, therefore free from stress corrosion and damage caused by a crystallizing or clogging medium with solid particles, such as dirt and debris.
- Robust pressure-transmission compression rings: The proven cartridge design features rugged compact construction and long sealing face life, resulting in less downtime and extended MTBF(Mean Time Between Failures).
- High efficiency induced heat pumping: With the assistance of the rotating pumping ring, which is located directly under the venting outlet hole in the gland ring, in circulating the cooling fluid, this design provides the best possible cooling fluid supply to carry away seal-generated heat and thus the best cooling effect at the sealing faces.
- Self-aligning: Allows for shaft runout up to ±0.8 mm, increasing operational reliability.
- Solid one-piece sealing rings: Produced with high quality and accuracy, the API 682 compliant sealing rings are resistant to wear and deformation, ensuring high integrity sealing performance.
- Anti-collision washers: An added safety feature to avoid metal-to-metal collision sparks by using an impact absorbing washer eliminates the possibility of on-site catastrophic fire, promoting high safety in operation.
- Micro-polished outer surfaces of the sealing rings for anti-stick mounting: The seal outer surfaces on which the O-rings are mounted have been fine finished so that the O-rings can slide axially along the rotating shaft, avoiding hang-up problems with the dynamic O-rings.
- The LD389™ series is designed to have a shorter seal chamber than that of the LD388™ series so that it can share spares with the CarLife family seals.

Model Variants

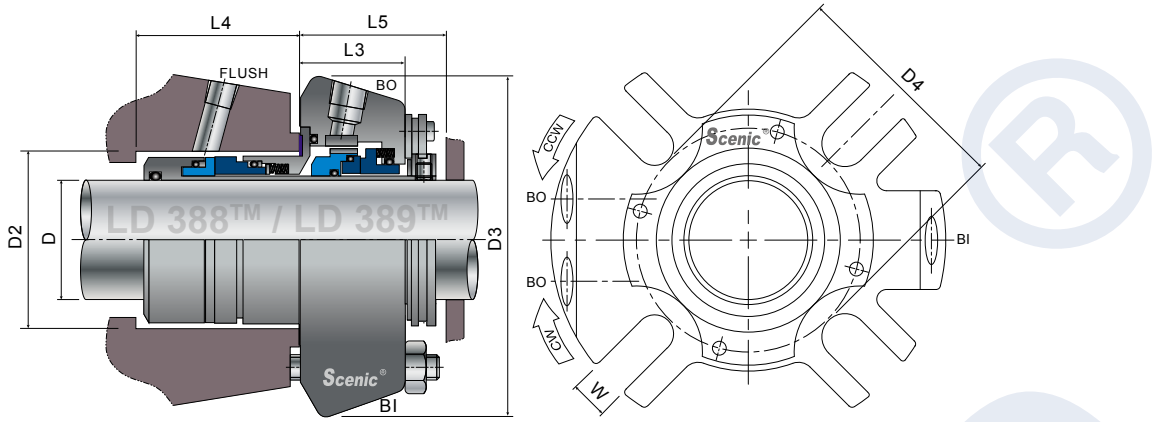


· **LD388™** – Standard Design



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Assembly Dimensions



※Listed are frequently used sizes. For custom sizes, please contact Scenic for details.

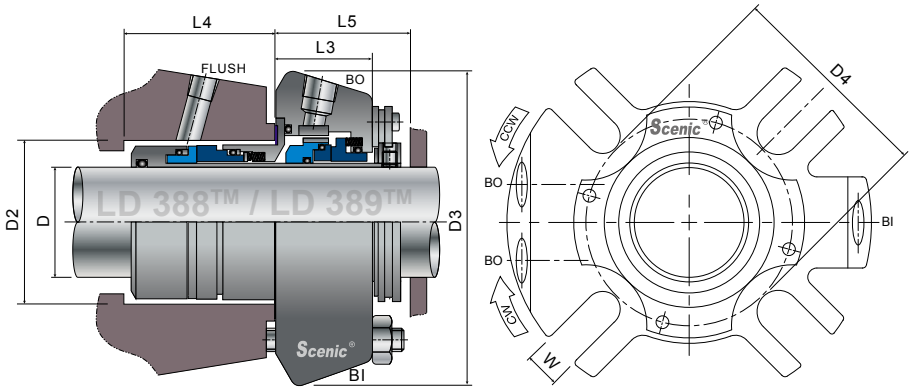
LD 388™ / 389™ - Standard sizes in mm

Seal Code	Shaft D	D2		D3	L3	L4 MIN.		L5	D4	W
		MIN.	MAX.			LD 388™	LD 389™	MIN.		
388-0028	28	44.5	51.0	98.0	36.5	49.0		49.0	62.0	11.0
388-0030	30	46.0	54.0	104.0	40.7	49.5		53.5	66.0	11.5
388-0032	32	48.0	54.0	108.0	40.7	49.0		53.6	65.5	11.0
388-0035	35	51.0	58.0	108.0	40.2	49.0		53.6	69.0	11.5
388-0038	38	58.0	63.0	120.0	40.7	49.5		53.6	76.0	15.0
388-0040	40	60.0	66.0	120.0	40.7	49.5		53.6	78.0	15.0
388-0043	43	64.0	70.0	127.0	39.5	55.5		53.0	82.5	14.3
388-0045	45	64.0	70.0	127.0	39.5	55.5	Each less than corresponding LD 388's	53.0	82.5	14.3
388-0048	48	67.0	73.0	130.0	39.5	55.5		53.0	84.2	14.3
388-0050	50	70.0	77.0	127.0	40.0	59.5		53.0	87.6	14.0
388-0055	55	75.0	82.0	155.0	48.0	52.5		61.0	94.0	18.0
388-0060	60	83.0	89.0	162.0	47.5	61.0		60.5	104	18.0
388-0063	63	86.0	92.0	165.0	47.5	59.0		60.5	112	18.0
388-0065	65	90.0	95.0	165.0	47.5	59.5		60.5	112	18.0
388-0070	70	95.0	102.0	178.0	41.5	59.5		62.0	115	17.5
388-0075	75	104.0	109.0	184.0	52.0	68.5		69.0	125.0	18.0
388-0085	85	114.0	122.0	190.0	56.2	68.5		72.0	137.5	18.0
388-0095	95	124.0	132.0	218.0	40.0	70.5		74.5	137.0	18.0

LD 388™ / 389™ - Standard sizes in inches

Seal Code	Shaft D	D2		D3	L3	L4 MIN.		L5	D4	W
		MIN.	MAX.			LD 388™	LD 389™	MIN.		
388-1125	1.125	1.750	2.000	3.858	1.437	1.930		1.930	2.441	0.433
388-1250	1.250	1.875	2.125	4.252	1.602	1.930		2.110	2.579	0.433
388-1375	1.375	2.000	2.250	4.252	1.583	1.930		2.110	2.717	0.453
388-1500	1.500	2.250	2.500	4.724	1.602	1.950		2.110	2.992	0.591
388-1625	1.625	2.375	2.625	4.724	1.602	1.950		2.110	3.071	0.591
388-1750	1.750	2.500	2.750	5.000	1.555	2.185		2.185	3.248	0.563
388-1875	1.875	2.625	2.875	5.118	1.555	2.185		2.185	3.315	0.563
388-2000	2.000	2.750	3.000	5.000	1.575	2.345	Each less than corresponding LD 388's	2.185	3.449	0.551
388-2125	2.125	2.875	3.125	6.102	1.890	2.070		2.402	3.701	0.709
388-2250	2.250	3.000	3.250	6.260	1.575	2.345		2.185	3.819	0.709
388-2375	2.375	3.250	3.500	6.378	1.870	2.402		2.382	4.094	0.709
388-2500	2.500	3.375	3.625	6.496	1.870	2.323		2.382	4.409	0.709
388-2625	2.625	3.500	3.750	6.496	1.870	2.345		2.382	4.409	0.709
388-2750	2.750	3.750	4.062	7.008	1.634	2.345		2.441	4.528	0.689
388-3000	3.000	4.000	4.312	7.244	2.047	2.700		2.717	4.921	0.709
388-3250	3.250	4.375	4.687	7.480	2.094	2.700		2.717	5.630	0.709
388-3375	3.375	4.500	4.812	7.480	2.213	2.700		2.835	5.413	0.709
388-3750	3.750	4.875	5.187	8.583	1.575	2.776		2.933	5.394	0.709

Assembly Dimensions



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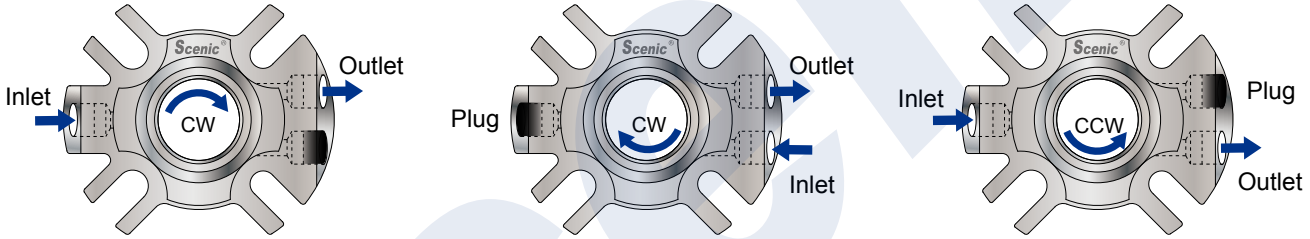
LD 388™ / 389™ - Big bore / Taper bore sizes in inches

Seal Code	Shaft D	D2		D3	L3	L4 MIN.		L5	D4	W
		MIN.	MAX.			LD 388™	LD 389™	MIN.		
388B-1375	1.375	2.875	3.023	5.236	1.461	1.930		2.110	3.543	0.551
388B-1750	1.750	3.500	3.925	6.457	1.634	2.185		2.224	4.252	0.689
388B-1875	1.875	3.625	3.734	6.457	1.634	2.185		2.224	4.252	0.689
388B-2125	2.125	3.875	4.250	7.087	1.693	2.070		2.402	4.803	0.709
388B-2500	2.500	4.750	5.000	7.874	1.870	2.421		2.402	5.394	0.709
388B-2625	2.625	4.625	4.740	7.756	1.811	2.345		2.402	4.283	0.689
388B-2750	2.750	4.750	4.875	7.756	1.811	2.345		2.402	5.394	0.709

Each less than corresponding LD 388's

Guide to Piping Installation

Note: Viewed from the pump's drive end



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2016/5_REV_1

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