

891™ ROTARY SEAL

SEAL INSTALLATION

Preparation

Remove the old sealing device such as packing, packing gland, or mechanical seal and prepare the equipment for installation.

A. Shaft or Sleeve

1. Remove all sharp corners, burrs, and scratches on the shaft, especially in areas where the O-ring will slide, and polish if necessary to achieve a 32 microinch (0,8 micron) AA finish. It should feel smooth when you run your fingernail along the shaft in the axial direction.
2. **Make sure the shaft or sleeve diameter is within .002" (0,05 mm) of nominal.** Example: a 1.75" (50 mm) shaft should not be larger than 1.752" (50,05 mm) or smaller than 1.748" (49,95 mm).
3. Use a dial indicator to measure the shaft runout in the area where the seal will be installed. **Runout should not exceed .001" TIR per inch (0,001 mm TIR per millimeter) of shaft diameter.**
4. If practical, place the dial indicator tip on the end of the shaft sleeve or on a step in the shaft to measure end play. Alternately push and pull the shaft in the axial direction. If the bearings are in good condition, **end play should not exceed .005" (0,13 mm) TIR.**

B. Stuffing Box or Seal Chamber

1. The stuffing box face must be flat and smooth enough to seal the stationary/gland. Typically, 125 microinches (3,2 microns) AA maximum for gaskets and 32 microinches (0,8 micron) AA for O-rings. Steps between halves of split case pumps should be machined flat. CHESTERTON Metal Repair System can be used to restore a damaged or corroded box face.
2. If practical, attach the dial indicator base to the shaft and slowly rotate the shaft and indicator to measure the runout of the stuffing box face. Misalignment of the stuffing box relative to the shaft should not exceed that specified by the stationary manufacturer. Typically, a maximum of .003 inch TIR per inch (0,003 mm TIR per millimeter) of shaft diameter is recommended.
3. Disassemble the pump according to the manufacturer's instructions.

C. O-Ring Compatibility

Check the chemical listing in "How to Use the Chemical Listing" Booklet included with the seal to determine if the standard fluoroelastomer O-rings installed in the seal are compatible with the fluid being sealed. A spare set of ethylene propylene O-rings is supplied with the seal.

Installation

1. Determine the seal installation length using the rotary operating length given on the other side and the stationary installation instructions for the particular CHESTERTON stationary being used with this rotary. The installation length will vary depending on the type of stationary and equipment being sealed.
2. Scribe a mark equal to the installation dimension (determined from the operating length and distance from stationary face to stuffing box face) away from the appropriate reference point (e.g. the stuffing box face).
3. Cover threads and keyway slots with a thin tape to prevent cutting the O-ring. Lubricate the seal sleeve O-ring and shaft with a clean, silicone based grease. A sufficient quantity of lubricant is provided with the seal.
4. Slide the rotary onto the shaft and bring the back of the rotary to the scribe mark. Set screw the seal to the shaft.
5. Reassemble the equipment (with the stationary and gland as required for the particular equipment). Proper installation of the rotary and stationary will set the 891 at its correct operating length without over or under compressing the seal.
6. Rotate the shaft by hand. The seal should turn freely without binding or using excessive force.
7. You are now ready to start the equipment. **Follow all normal safety procedures when starting the equipment.**

CAUTIONS

These instructions are general in nature. It is assumed that the installer is familiar with seals and certainly with the requirements of their plant for the successful use of mechanical seals. If in doubt, get assistance from someone in the plant who is familiar with seals or delay the installation until a seal representative is available. All necessary auxiliary arrangements for successful operation (heating, cooling, flushing) as well as safety devices must be employed. These decisions are to be made by the user. The chemical listing is intended as a **general** reference for this seal **only**. The decision to use this seal or any other Chesterton seal in a particular service is the customer's responsibility.

TECHNICAL DATA

Type

Single, Inside Mounted.

Materials

Metal Components:

316 Stainless Steel. (Available on special order in Alloy 20, Titanium, Monel*, Nickel or Hastelloy B** or C**).

Springs: Hastelloy C.

Seal Faces available:

Grade P658RC Carbon.
Reaction Bonded Silicon Carbide.
Solid Tungsten Carbide, with Nickel Binder.

O-Rings:

Fluoroelastomer installed.
Ethylene Propylene packaged as spares.
Chemraz*** or Kalrez**** available upon request.

Pressure

Depending on shaft size and speed
711 mm (28") Hg vacuum

Sizes 18 mm to 30 mm 21 BAR
(3/4" to 1 1/4") (300 PSI)

Sizes 40 mm to 110 mm 42 BAR
(1 3/8" to 4 1/2") (600 PSI)

Sizes 120 mm to 200 mm 28 BAR
(4 3/4" to 8") (400 PSI)

Temperature

To 205°C (400°F) with Fluoroelastomer.
To 150°C (300°F) with Ethylene Propylene.
0°F (-18°C) to 500°F (260°C) with Kalrez.
-20°F (-30°C) to 450°F (230°C) with Chemraz.

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** Haynes International, Inc. Registered Trademark

*** Greene, Tweed & Co. Registered Trademark

**** DuPont's Registered Trademark

KEY

A - Inner Diameter
B - Outer Diameter
C - Operating Length
D - Static O-Ring
E - Dynamic O-Ring

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DIMENSIONAL DATA

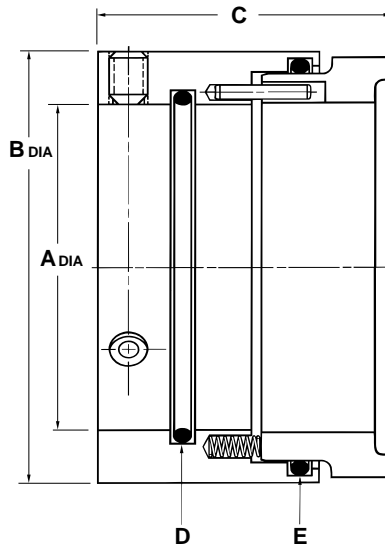


Figure 1
Sizes 16 mm to 100 mm and .750" to 4.500"

INCH

SHAFT	A	B	C	D	E
.750	.754	1.323	1.375	116	122
.875	.879	1.448	1.375	118	124
1.000	1.004	1.573	1.375	120	126
1.125	1.129	1.698	1.375	122	128
1.250	1.254	1.823	1.750	124	130
1.375	1.379	1.948	1.750	126	132
1.500	1.504	2.143	1.750	128	134
1.625	1.629	2.268	1.750	130	136
1.750	1.754	2.393	1.750	132	138
1.875	1.879	2.518	1.750	134	140
2.000	2.004	2.643	1.750	136	142
2.125	2.129	2.768	1.750	138	144
2.250	2.254	2.893	1.750	140	146
2.375	2.379	3.018	1.750	142	148
2.500	2.504	3.143	1.750	144	150
2.625	2.629	3.268	1.750	146	151
2.750	2.754	3.625	2.000	232	236
2.875	2.879	3.750	2.000	233	237
3.000	3.004	3.875	2.000	234	238
3.125	3.129	4.000	2.000	235	239
3.250	3.254	4.125	2.000	236	240
3.375	3.379	4.250	2.000	237	241
3.500	3.504	4.375	2.000	238	242
3.625	3.629	4.500	2.000	239	243
3.750	3.754	4.625	2.000	240	244
3.875	3.879	4.750	2.000	241	245
4.000	4.004	4.875	2.000	242	246
4.125	4.129	5.000	2.000	243	247
4.250	4.254	5.125	2.000	244	248
4.375	4.379	5.250	2.000	245	249
4.500	4.504	5.375	2.000	246	250
4.750	4.758	6.000	3.625	351	356
5.000	5.008	6.250	3.625	353	358
5.250	5.258	6.500	3.625	355	360
5.500	5.508	6.750	3.625	357	362
5.750	5.758	7.000	3.625	359	363
6.000	6.008	7.250	3.625	361	364
6.250	6.258	7.500	3.625	362	365
6.500	6.508	7.750	3.625	363	366
6.750	6.758	8.000	3.625	364	367
7.000	7.008	8.250	3.625	365	368
7.250	7.258	8.500	3.625	366	369
7.500	7.508	8.750	3.625	367	370
7.750	7.758	9.000	3.625	368	371
8.000	8.008	9.250	3.625	369	372

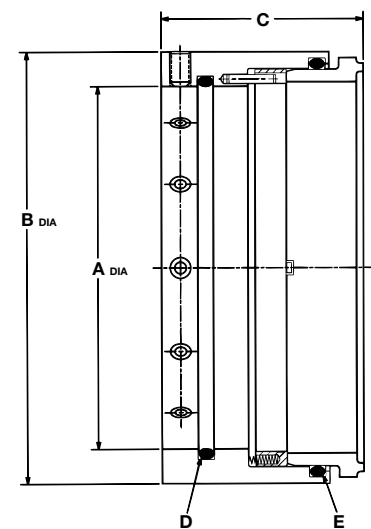


Figure 2
Sizes 120 mm to 200 mm and 4.750" to 8.000"

METRIC

SHAFT	A	B	C	D	E
16	16,10	30,45	35,00	115	120
18	18,11	32,28	35,00	116	121
20	20,11	34,29	35,00	117	122
22	22,11	36,30	35,00	118	123
24	24,11	38,30	35,00	119	125
25	25,11	39,29	35,00	120	125
28	28,11	42,29	35,00	122	127
30	30,11	44,30	35,00	123	128
32	32,11	46,30	44,45	124	130
33	33,11	47,90	44,45	125	131
35	35,11	49,48	44,45	126	132
38	38,11	54,28	44,45	128	134
40	40,11	56,08	44,45	129	135
43	43,11	59,08	44,45	131	137
45	45,11	61,09	44,45	133	139
48	48,11	64,11	44,45	134	141
50	50,11	66,09	44,45	136	142
55	55,11	71,07	44,45	139	145
60	60,11	77,14	44,45	142	148
65	65,11	83,01	44,45	145	151
70	70,11	86,08	44,45	148	152
75	75,11	98,43	50,80	234	238
80	80,11	104,78	50,80	236	240
85	85,11	107,95	50,80	237	241
90	90,11	114,30	50,80	239	243
95	95,11	117,48	50,80	240	244
100	100,11	123,83	50,80	242	246
110	110,11	133,35	50,80	246	249
120	120,19	152,40	92,07	351	356
125	125,19	158,75	92,07	353	358
130	130,19	165,10	92,07	354	360
135	135,19	171,45	92,07	356	362
140	140,19	171,45	92,07	357	362
145	145,19	177,80	92,07	359	363
150	150,19	184,15	92,07	361	364
155	155,19	190,50	92,07	361	365
160	160,19	196,85	92,07	363	366
165	165,19	196,85	92,07	363	366
170	170,19	203,20	92,07	364	367
175	175,19	209,55	92,07	365	368
180	180,19	215,90	92,07	366	369
185	185,19	215,90	92,07	366	369
190	190,19	222,25	92,07	367	370
195	195,19	228,60	92,07	368	371
200	200,19	234,95	92,07	369	372

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