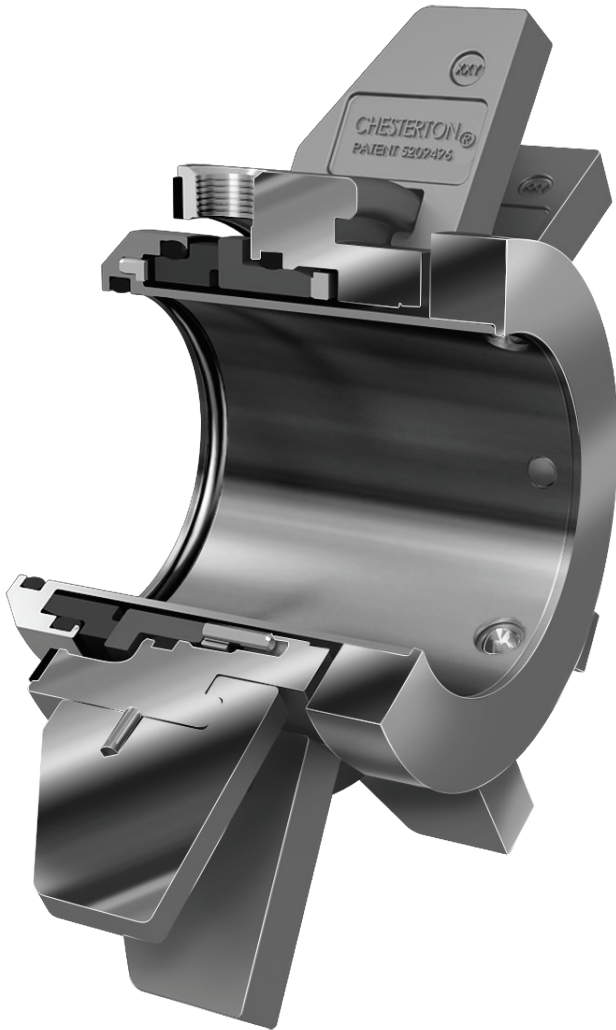




# 1510™ General Duty Single Cartridge Seal

## Installation, Operation and Rebuild Instructions



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#### Seal Data Reference

(From Box Label)

ITEM # \_\_\_\_\_

SEAL \_\_\_\_\_

(Example: 1510 1.750 SA CB/SSC S FKM)

INSTALLATION DATE \_\_\_\_\_

## 1.0 CAUTIONS

### 1.1 General

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, seek 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.

### 1.2 Label Warnings

635 SXC Synthetic, Extreme Pressure, Corrosion Resistant Grease. Chesterton International GmbH, Am Lenzenfleck 23, D85737, Ismaning, Germany – Tel. +49-89-996-5460.

These decisions are to be made by the user. The decision to use this seal or any other Chesterton seal in a particular service is the customer's responsibility.

Do not touch the mechanical seal for any reason while it is operating. Lockout or uncouple the driver prior to personal contact with the seal. Do not touch the mechanical seal while it is in contact with hot or cold fluids. Ensure that all the mechanical seal materials are compatible with the process fluid. This will prevent possible personal injury.

Contains Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts, Sulfonic acids, petroleum, calcium salts and Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts. May produce an allergic reaction. Safety Data Sheet available on request.

## 2.0 TRANSPORT AND STORAGE

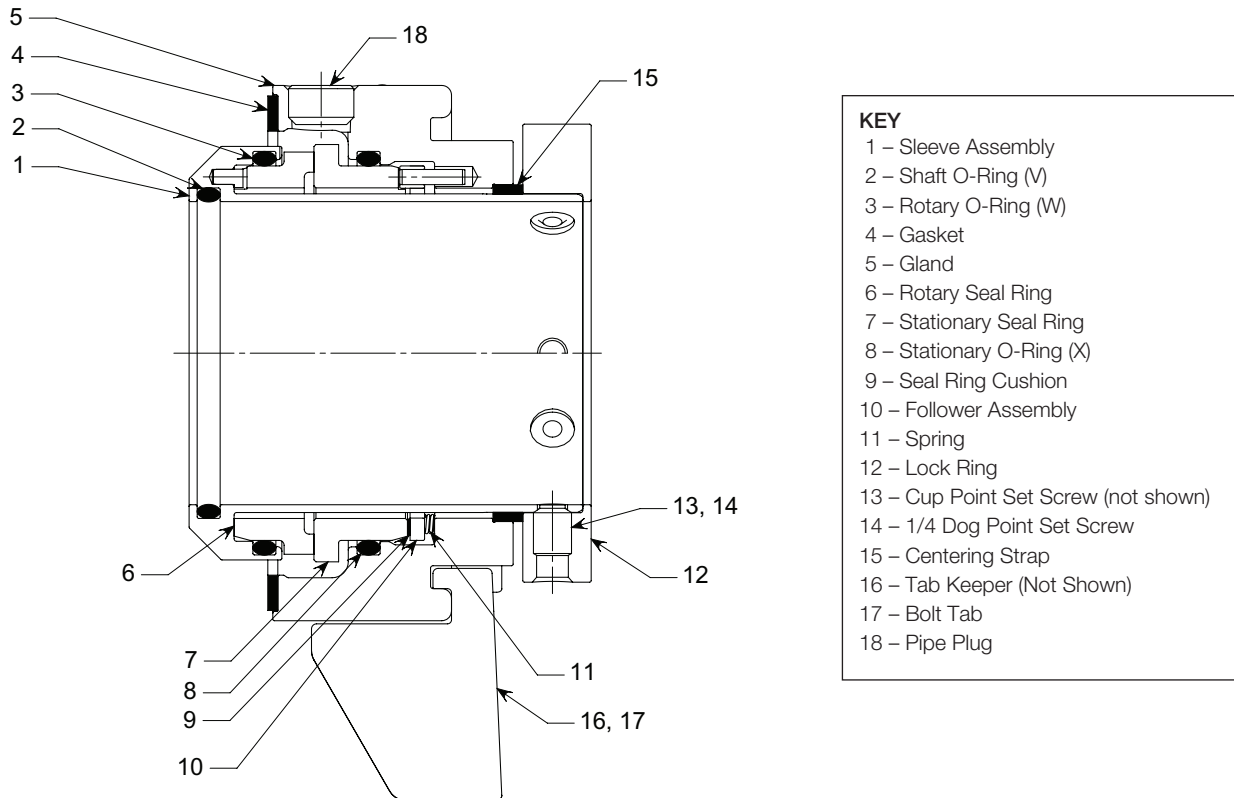
Transport and store seals in their original packaging. Mechanical seals contain components that may be subject to alteration and ageing. It is therefore important to observe the following conditions for storage:

- Dust free environment
- Moderately ventilated at room temperature
- Avoid exposure to direct sunlight and heat
- For elastomers, storage conditions according to ISO 2230 should be observed

## 3.0 DESCRIPTION

### 3.1 Parts Identification

Figure 1



### 3.0 DESCRIPTION cont.

---

#### 3.2 Operating Parameters

**Pressure Limits:**

1510 Seals can withstand operating pressures from full vacuum (710 mm or 28" Hg) to the maximum pressures at the conditions listed.  
25 mm – 120 mm (1.000" – 4.750") up to 20 barg (300 psig)

**Speed Limits:**

25 mm – 120 mm (1.000" – 4.750") up to 25 mps (5000 FPM)

**Temperature Limits:**

*Elastomers*

To 150°C (300°F) EPDM  
To 205°C (400°F) FEPM, FKM  
To 260°C (500°F) FFKM

**Standard Materials:**

*All Metal Parts:*

316 Stainless Steel/EN 1.4401

**Springs:** Alloy C-276/EN 2.4819

**Rotary Face:** CB; SSC; TC

**Stationary Face:** SSC; TC

**Elastomers\*:** FKM, EPDM, FEPM, or FFKM

*\* Other materials available upon request*

*Environmental controls may be required for the specific application.*

*Limits can change depending on operating conditions, size and seal ring material.*

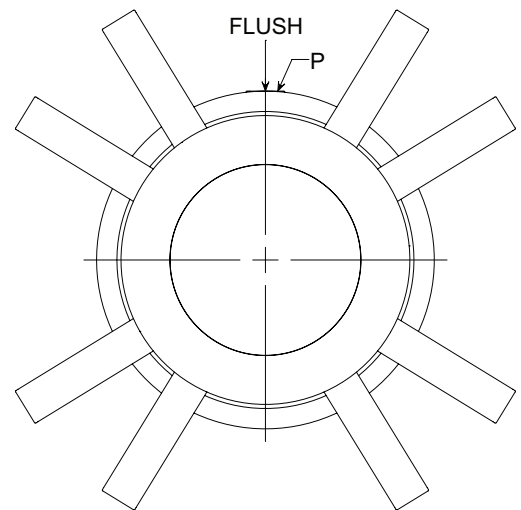
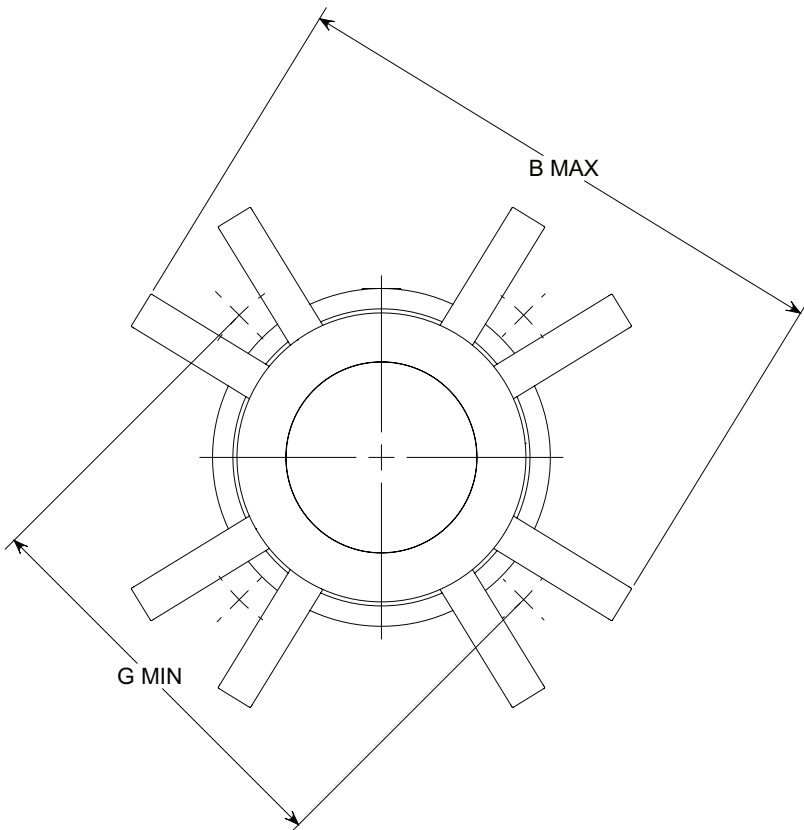
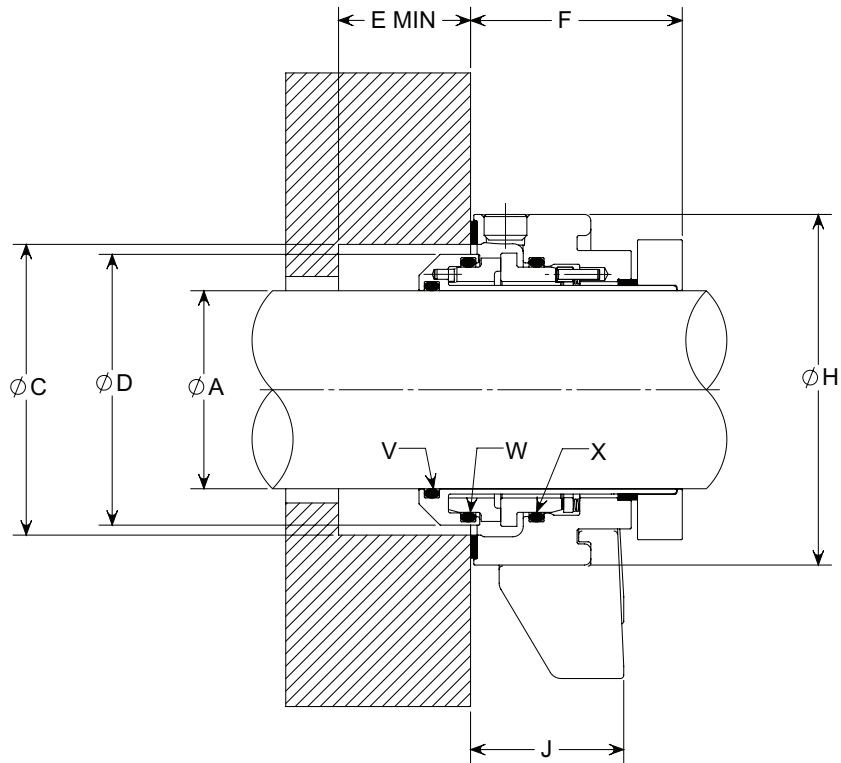
*Consult Chesterton Mechanical Seal Application Engineering for operating conditions outside of these published parameters.*

#### 3.3 Intended Use

The mechanical seal is to be operated within the operating parameters as specified. For use beyond the intended application and/or outside the operating parameters, consult Chesterton to confirm the suitability of the mechanical seal prior to putting the mechanical seal in operation.

3.4 Dimensional Data (Drawings)

Figure 2



### 3.0 DESCRIPTION cont.

### 3.4 Dimensional Data cont.

Table 1

METRIC - Millimeters

SHAFT SIZE	BOLT TAB OD	STUFFING BOX BORE		IB SEAL DIA	SB DEPTH	OB LENGTH	BOLT CIRCLE BY BOLT SIZE					GLAND OD	STUFFING BOX TO BOLT SURFACE	NPT SIZE
		MIN	MAX				D MAX	E MIN	F MAX	G MIN				
A	B MAX			C		D MAX				E MIN	F MAX	8 mm	10 mm	12 mm
25	118,5	41,4	51,1	40,2	14,0	51,1	71,7	73,7	75,7	79,7	-	61,2	36,9	1/8 - 27
28	118,8	44,2	51,8	42,7	14,0	51,1	71,9	73,9	75,9	79,9	-	62,3	36,9	1/8 - 27
30	124,3	46,0	56,6	44,8	14,0	51,1	77,4	79,4	81,4	85,4	-	67,8	36,9	1/8 - 27
30 OS	135,5	59,2	68,3	44,7	14,0	51,1	88,6	90,6	92,6	96,6	-	79,0	36,9	1/8 - 27
32	124,9	48,0	57,7	46,8	14,0	51,1	78,1	80,1	82,1	86,1	-	68,5	36,9	1/8 - 27
33	124,7	49,0	58,7	47,8	14,0	51,1	77,9	79,9	81,9	85,9	-	68,3	36,9	1/8 - 27
35	128,4	51,1	59,2	49,6	14,0	51,1	81,6	83,6	85,6	89,6	-	72,0	36,9	1/8 - 27
38	133,2	57,2	66,8	55,9	14,0	51,1	86,4	88,4	90,4	94,4	-	76,8	36,9	1/8 - 27
40	134,7	59,2	68,3	57,7	14,0	51,1	87,9	89,9	91,9	95,9	-	78,3	36,9	1/8 - 27
40 OS	142,0	66,4	74,6	57,7	14,0	51,1	95,5	97,5	99,5	103,5	-	85,6	36,9	1/8 - 27
42	134,7	62,2	68,8	60,8	14,0	51,1	87,9	89,9	91,9	95,9	-	78,3	36,9	1/8 - 27
43	134,7	62,2	68,8	60,8	14,0	51,1	87,9	89,9	91,9	95,9	-	78,3	36,9	1/8 - 27
45	140,2	64,3	73,4	62,8	14,0	51,1	93,3	95,3	97,3	101,3	-	83,7	36,9	1/8 - 27
48	139,7	67,1	74,7	65,8	14,0	51,1	92,9	94,9	96,9	100,9	-	83,3	36,9	1/8 - 27
50	145,1	69,1	78,5	67,9	14,0	51,1	98,3	100,3	102,3	106,3	-	88,7	36,9	1/8 - 27
50 OS	164,1	84,8	96,7	67,8	14,0	51,1	117,6	119,6	121,6	125,6	-	107,7	36,9	1/8 - 27
53	153,8	73,2	87,4	71,7	14,0	51,1	107,0	109,0	111,0	115,0	-	97,4	36,9	1/8 - 27
55	150,2	74,2	83,6	72,7	14,0	51,1	103,3	105,3	107,3	111,3	-	93,7	36,9	1/8 - 27
58	160,0	79,5	91,2	78,0	14,0	51,1	113,2	115,2	117,2	121,2	-	103,6	36,9	1/8 - 27
60	160,0	79,5	91,2	78,0	14,0	51,1	113,2	115,2	117,2	121,2	-	103,6	36,9	1/8 - 27
60 OS	175,3	96,0	107,9	78,0	14,0	51,1	128,8	130,8	132,8	136,8	-	118,9	36,9	1/8 - 27
65	169,9	85,9	100,1	84,4	14,0	51,1	123,1	125,1	127,1	131,1	-	113,5	36,9	1/8 - 27
70	197,2	95,3	111,3	93,5	17,4	62,2	-	136,4	138,4	142,4	146,4	124,8	41,1	1/4 - 18
75	203,5	101,3	119,1	99,6	17,4	62,2	-	142,7	144,7	148,7	152,7	131,1	41,1	1/4 - 18
80	206,7	105,2	121,9	103,4	17,4	62,2	-	145,9	147,9	151,9	155,9	134,3	41,1	1/4 - 18
85	213,1	111,0	128,3	109,0	17,4	62,2	-	152,3	154,3	158,3	162,3	140,7	41,1	1/4 - 18
90	216,2	115,3	131,8	113,3	17,4	62,2	-	155,4	157,4	161,4	165,4	143,8	41,1	1/4 - 18
95	222,6	120,4	136,9	118,7	17,4	62,2	-	161,8	163,8	167,8	171,8	150,2	41,1	1/4 - 18
100	228,9	126,7	144,5	125,0	17,4	62,2	-	168,1	170,1	174,1	178,1	156,5	41,1	1/4 - 18
105	223,1	133,1	150,6	131,4	17,4	62,2	-	172,3	174,3	178,3	182,3	160,7	41,1	1/4 - 18
110	236,3	136,4	153,9	134,4	17,4	62,2	-	175,5	177,5	181,5	185,5	163,9	41,1	1/4 - 18
115	242,6	142,7	160,3	140,8	17,4	62,2	-	181,9	183,9	187,9	191,9	170,3	41,1	1/4 - 18
120	247,8	145,8	164,3	144,1	17,4	62,2	-	187,0	189,0	193,0	197,0	175,4	41,1	1/4 - 18

### 3.0 DESCRIPTION cont.

### 3.4 Dimensional Data cont.

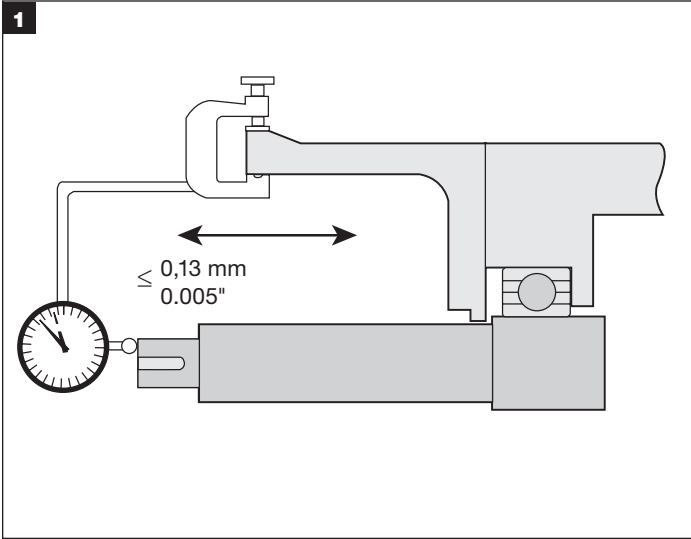
Table 2

INCH

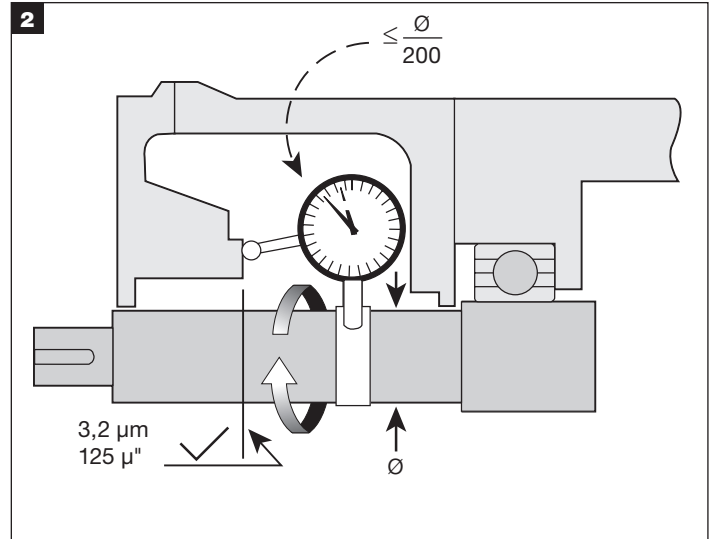
SHAFT SIZE	BOLT TAB OD	STUFFING BOX BORE		IB SEAL DIA	SB DEPTH	OB LENGTH	BOLT CIRCLE BY BOLT SIZE				GLAND OD	STUFFING BOX TO BOLT SURFACE	NPT SIZE
		A	B MAX				C		D MAX	E MIN			
MIN	MAX			3/8"	1/2"	5/8"	3/4"						
1.000	4.66	1.63	2.01	1.58	0.55	2.01	2.88	3.01	3.13	–	2.45	1.45	1/8 – 27
1.125	4.70	1.76	2.04	1.70	0.55	2.01	2.92	3.04	3.17	–	2.48	1.45	1/8 – 27
1.125 OS	5.37	2.39	2.75	1.70	0.55	2.01	3.59	3.71	3.84	–	3.15	1.45	1/8 – 27
1.250	4.92	1.89	2.27	1.84	0.55	2.01	3.13	3.26	3.38	–	2.70	1.45	1/8 – 27
1.375	5.05	2.01	2.33	1.95	0.55	2.01	3.27	3.40	3.52	–	2.84	1.45	1/8 – 27
1.375 OS	5.64	2.67	3.00	1.95	0.55	2.01	3.86	3.99	4.11	–	3.43	1.45	1/8 – 27
1.500	5.24	2.25	2.63	2.20	0.55	2.01	3.46	3.59	3.71	–	3.03	1.45	1/8 – 27
1.625	5.30	2.38	2.69	2.32	0.55	2.01	3.52	3.64	3.77	–	3.08	1.45	1/8 – 27
1.750	5.42	2.50	2.81	2.45	0.55	2.01	3.64	3.77	3.89	–	3.20	1.45	1/8 – 27
1.750 OS	6.71	3.47	3.75	2.45	0.55	2.01	4.93	5.05	5.18	–	4.49	1.45	1/8 – 27
1.875	5.54	2.63	2.94	2.57	0.55	2.01	3.76	3.89	4.01	–	3.32	1.45	1/8 – 27
1.875 OS	6.66	3.52	3.81	2.57	0.55	2.01	4.88	5.00	5.13	–	4.44	1.45	1/8 – 27
2.000	5.75	2.75	3.19	2.70	0.55	2.01	3.97	4.10	4.22	–	3.53	1.45	1/8 – 27
2.125	6.05	2.88	3.44	2.82	0.55	2.01	4.27	4.40	4.52	–	3.84	1.45	1/8 – 27
2.125 OS	7.38	3.85	4.25	2.82	0.55	2.01	5.60	5.73	5.85	–	5.17	1.45	1/8 – 27
2.250	6.16	3.00	3.56	2.95	0.55	2.01	4.38	4.50	4.63	–	3.94	1.45	1/8 – 27
2.375	6.30	3.13	3.59	3.07	0.55	2.01	4.52	4.64	4.77	–	4.08	1.45	1/8 – 27
2.375 OS	7.15	4.10	4.50	3.07	0.55	2.01	5.37	5.49	5.62	–	4.93	1.45	1/8 – 27
2.500	6.42	3.25	3.81	3.20	0.55	2.01	4.64	4.77	4.89	–	4.21	1.45	1/8 – 27
2.500 OS	8.21	4.47	5.25	3.20	0.55	2.01	6.43	6.56	6.68	–	6.00	1.45	1/8 – 27
2.625	6.69	3.38	3.94	3.32	0.55	2.01	4.91	5.03	5.16	–	4.47	1.45	1/8 – 27
2.625 OS	7.48	4.54	4.78	3.32	0.55	2.01	5.70	5.83	5.95	–	5.27	1.45	1/8 – 27
2.750	7.76	3.75	4.38	3.68	0.69	2.45	–	5.48	5.60	5.73	4.92	1.62	1/4 – 18
2.750 OS	8.14	4.34	4.78	3.68	0.69	2.45	–	5.83	5.95	6.08	5.27	1.62	1/4 – 18
2.875	7.89	3.87	4.49	3.79	0.69	2.45	–	5.60	5.73	5.85	5.04	1.62	1/4 – 18
3.000	8.01	3.99	4.69	3.92	0.69	2.45	–	5.73	5.85	5.98	5.17	1.62	1/4 – 18
3.000 OS	8.76	4.94	5.39	3.92	0.69	2.45	–	6.44	6.57	6.69	5.88	1.62	1/4 – 18
3.125	8.14	4.12	4.80	4.04	0.69	2.45	–	5.85	5.98	6.10	5.29	1.62	1/4 – 18
3.250	8.26	4.24	4.94	4.17	0.69	2.45	–	5.98	6.10	6.23	5.42	1.62	1/4 – 18
3.375	8.39	4.37	5.05	4.29	0.69	2.45	–	6.10	6.23	6.35	5.54	1.62	1/4 – 18
3.375 OS	8.64	4.88	5.27	4.29	0.69	2.45	–	6.33	6.45	6.58	5.76	1.62	1/4 – 18
3.500	8.51	4.49	5.19	4.42	0.69	2.45	–	6.23	6.35	6.48	5.67	1.62	1/4 – 18
3.625	8.64	4.62	5.30	4.54	0.69	2.45	–	6.35	6.48	6.60	5.79	1.62	1/4 – 18
3.750	8.76	4.74	5.39	4.67	0.69	2.45	–	6.48	6.60	6.73	5.92	1.62	1/4 – 18
3.750 OS	9.73	5.97	6.40	4.67	0.69	2.45	–	7.41	7.54	7.66	6.85	1.62	1/4 – 18
3.875	8.89	4.87	5.50	4.79	0.69	2.45	–	6.60	6.73	6.85	6.04	1.62	1/4 – 18
4.000	9.01	4.99	5.69	4.92	0.69	2.45	–	6.73	6.85	6.98	6.17	1.62	1/4 – 18
4.125	9.14	5.12	5.80	5.04	0.69	2.45	–	6.85	6.98	7.10	6.29	1.62	1/4 – 18
4.125 OS	9.64	5.84	6.27	5.04	0.69	2.45	–	7.33	7.45	7.58	6.76	1.62	1/4 – 18
4.250	9.18	5.24	5.93	5.17	0.69	2.45	–	6.89	7.02	7.14	6.33	1.62	1/4 – 18
4.375	9.30	5.37	6.06	5.29	0.69	2.45	–	7.02	7.14	7.27	6.46	1.62	1/4 – 18
4.500	9.43	5.49	6.18	5.42	0.69	2.45	–	7.14	7.27	7.39	6.58	1.62	1/4 – 18
4.500 OS	10.75	6.75	7.50	5.42	0.69	2.45	–	8.44	8.56	8.69	7.87	1.62	1/4 – 18
4.625	9.55	5.62	6.31	5.54	0.69	2.45	–	7.27	7.39	7.52	6.71	1.62	1/4 – 18
4.750	9.76	5.74	6.47	5.67	0.69	2.45	–	7.47	7.60	7.72	6.91	1.62	1/4 – 18
4.750 OS	11.36	7.22	7.65	5.67	0.69	2.45	–	9.04	9.16	9.29	8.48	1.62	1/4 – 18

## 4.0 PREPARATION FOR INSTALLATION

### 4.1 Equipment

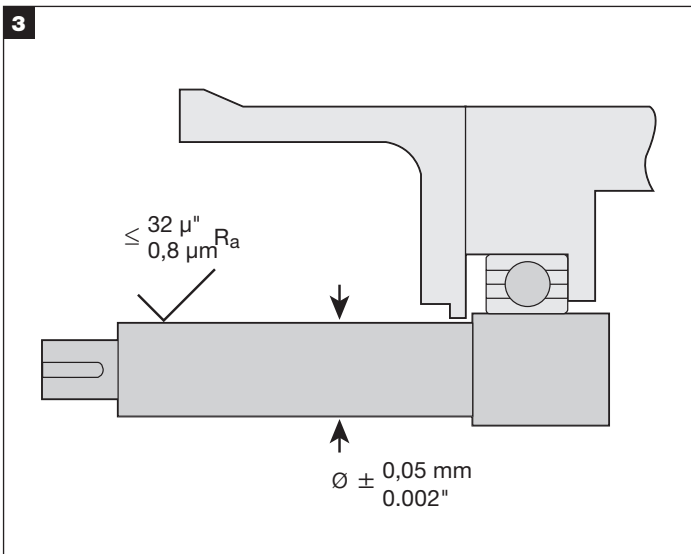


If practical, place the dial indicator tip on the end of the shaft sleeve or on a step in the shaft to measure end play. Alternately push and pull the shaft in the axial direction. If the bearings are in good condition, end play should not exceed 0,13 mm (.005").

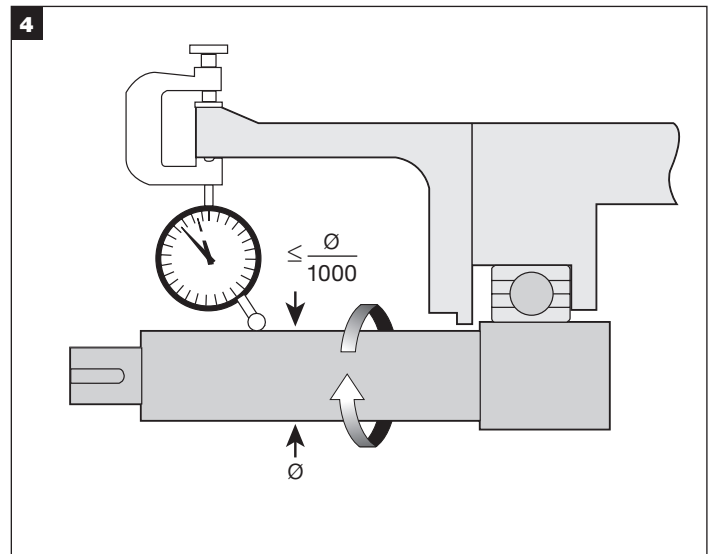


If possible, attach a base dial indicator to the shaft and rotate both the indicator and shaft slowly while reading the runout of the stuffing box face. Misalignment of the stuffing box face relative to the shaft should not exceed 0,005 mm TIR per mm (.005 in per inch) of shaft diameter.

The stuffing box face must be flat and smooth enough to seal the gland. Surface roughness should be 3,2 microns (125 microinch) Ra maximum for gaskets and 0,8 micron (32 microinch) Ra for O-Rings. Steps between halves of split case pumps should be machined flat. Make sure the stuffing box is clean and clear along its entire length.



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 0,8 micron (32 microinch) Ra finish. Make sure the shaft or sleeve diameter is within 0,05 mm (.002") of nominal.



Use a dial indicator to measure the shaft runout in the area where the seal will be installed. Runout should not exceed 0,001 mm TIR per millimeter (.001 inch TIR per inch) of shaft diameter.

## 4.0 PREPARATION FOR INSTALLATION *cont.*

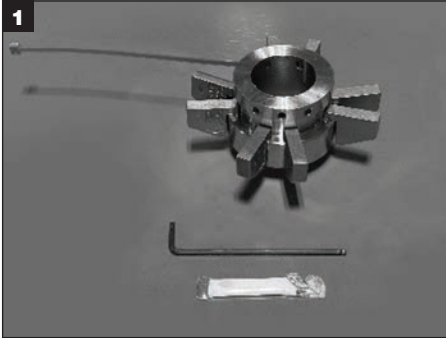
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### 4.2 Mechanical Seal

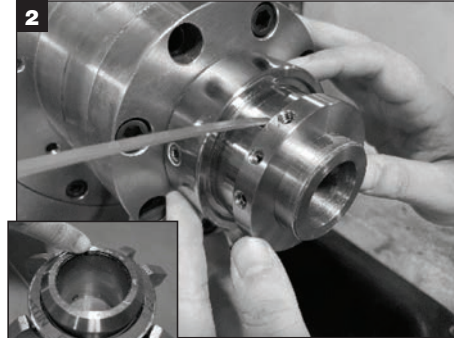
1. Review seal packaging ensuring no damage or shortage has occurred to the contents.
2. Review the seal fit dimensions in Tables 1 and 2 to ensure the equipment to be sealed has the required dimensions.
3. Record the seal Item Number and Name found on the label for referencing when contacting A.W. Chesterton Application Engineering.
4. Check to ensure that the O-Rings installed in this seal are compatible with the fluid being sealed.
5. The 1/4 dog set screws go into the smaller holes in the sleeve.  
The dimples on the outside diameter of the lock ring indicate the position of the 1/4 dog set screws. Do not disengage these screws from the sleeve when positioning the seal. The cup point set screws go through the larger holes in the sleeve. Make sure all screws are engaged in the sleeve but do not protrude into the inside diameter bore.



## 5.0 SEAL INSTALLATION



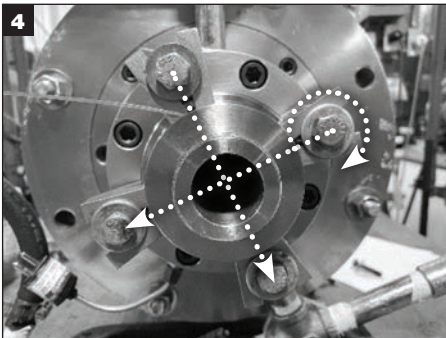
Tools required for installation: Hex key and clear grease (**supplied with seal**); open end or socket wrench (size dependent on mounting bolt size; **supplied by customer**).



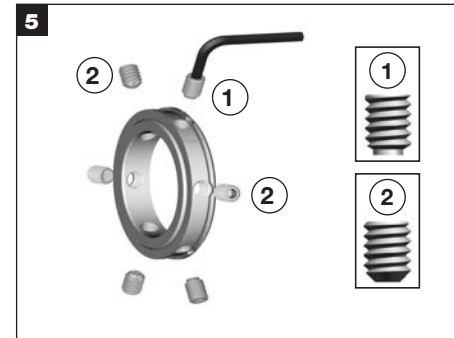
Apply a thin film of clear grease to the shaft/O-Ring (V) and slide seal onto the shaft by pushing on the lock ring. **CAUTION: Ensure that all set screws are engaged through the sleeve but do not protrude into the sleeve inside diameter bore.**



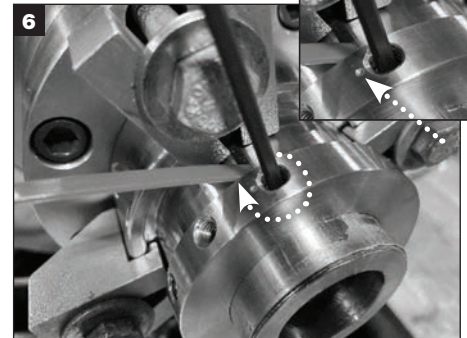
Reassemble the pump and make necessary shaft alignments and impeller adjustments. The impeller can be reset at any time, as long as the centering strap is in place and the seal set screws are loosened while the shaft is being moved.



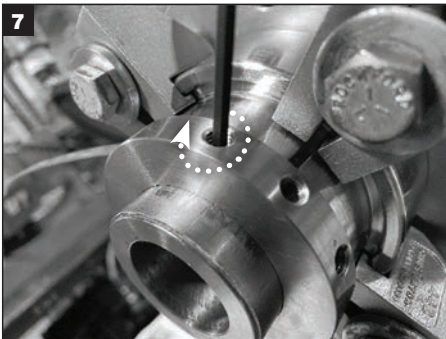
Put bolt tabs onto the gland and tighten the gland bolts evenly. **IMPORTANT: The gland bolts must be tightened before tightening the set screws onto the shaft. Gland bolt torque is dependent on application. IMPORTANT: Piping connections should not be made prior to tightening the gland bolts.**



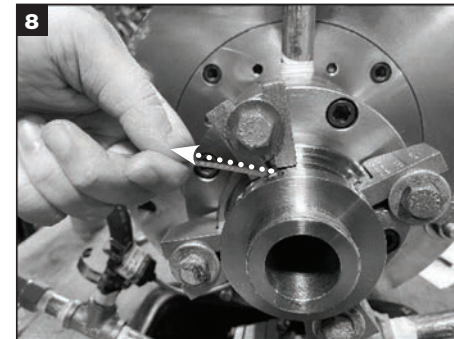
**IMPORTANT: 1/4 dog set screws ① must be tightened FIRST and cup point set screws ② must be tightened last.** 1/4 dog set screw locations are marked with a dimple on the outside diameter of the lock ring, next to the screw holes.



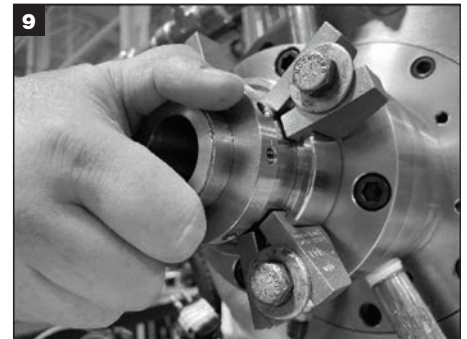
Tighten three 1/4 dog set screws ① (see inset image, marked with a dimple) evenly with the hex key provided.



Tighten cup point set screws ② evenly with the hex key provided. **IMPORTANT: After all sets screws have been tightened by hand, retighten with a torque wrench:**  
**Sizes 25 mm – 65 mm (1.000" – 2.625")**  
 to 5,5 – 6,5 Nm (50 – 60 in.-lbs.)  
**Sizes 70 mm – 120 mm (2.750" – 4.750")**  
 to 12 – 13 Nm (105 – 115 in.-lbs.)



After the cup point screws have been tightened pull out the strap and save it. If the strap is lost after seal installation, a standard wire wrap, 0.068" thick by 0.300" wide (1,73 mm thick by 7,62 mm wide) can be used.



**IMPORTANT: To ensure that the gland is properly centered over the sleeve turn the shaft by hand and make sure the seal turns freely. If you hear/feel metal to metal contact within the seal, it was improperly centered.**

### To re-center:

- Start the centering strap through the slot in the hub gland.
- Loosen the gland bolts and set screws.
- Push the strap in until it completely surrounds the seal sleeve.
- Re-tighten the gland bolts and set screws.
- Remove the centering strap. **If metal to metal contact still exists check the centering of the stuffing box.**

## 6.0 COMMISSIONING / EQUIPMENT START-UP

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1. Rotate the shaft by hand, if possible, to ensure no metal-to-metal contact within the seal.
2. Attach appropriate plumbing/environmental controls to the seal.
3. Take all necessary precautions and follow normal safety procedures before starting the equipment.

## 7.0 DECOMMISSIONING / EQUIPMENT SHUT DOWN

---

Ensure that the equipment is electrically isolated. If the equipment has been used on toxic or hazardous fluids, ensure that the equipment is correctly decontaminated and made safe prior to commencing work. Ensure that the pump is isolated and check that the stuffing box is drained from any fluid and pressure is fully released. **IMPORTANT: Replace centering strap prior to seal removal from equipment!**

Remove the seal from equipment in the reverse order from installation instructions. In case of disposal, adhere to the local regulations and requirements for disposal or recycling of the different components in the seal.

## 8.0 SPARE PARTS

---

Use only Chesterton original spare parts. Use of non-original spare parts represents risk of failure, danger to persons/ equipment and voids the product warranty.

Spare Parts Kit can be purchased from Chesterton, referencing the (as manufactured) seal data from recorded data on the cover page of these instructions.

## 9.0 SEAL REBUILD

A correctly installed and operated mechanical seal requires little maintenance. It is recommended to periodically check the seal for leakage. Some components of a mechanical seal such as seal faces, O-Rings, etc., require replacement over time. While a seal is installed and operating, maintenance is not possible. Therefore it is recommended that a spare seal unit or a spare parts be held in stock to allow quick repair.

1. Note the condition of the parts, including elastomer surfaces and gland springs. Analyze the cause of failure and correct the problem, if possible, before reinstalling the seal.
2. Inspect all components after disassembly for reuse. Ensure all components are capable of performing their required duty and meet specifications prior to rebuild.
3. Clean all elastomer and gasket surfaces with an approved cleaning solvent that complies with local and site regulations.

### 9.1 Seal Disassembly



Tools required for disassembly of seal: Hex key (**supplied with seal**); tweezers and a curved pick (**supplied by customer; for removal of O-Rings**).



Remove all cup point and 1/4 dog set screws from the lock ring and discard.



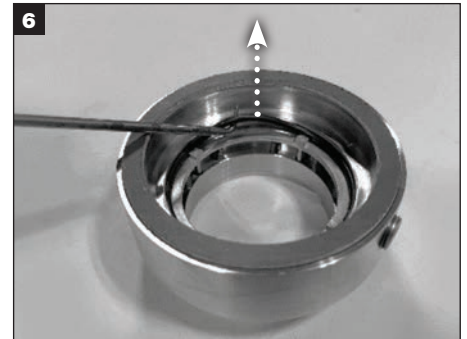
Remove the lock ring from sleeve and set aside. Remove centering strap.



Separate the sleeve from the gland and set the sleeve aside.



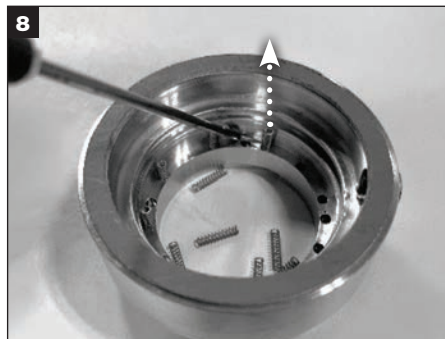
Remove the stationary seal ring from the gland and discard.



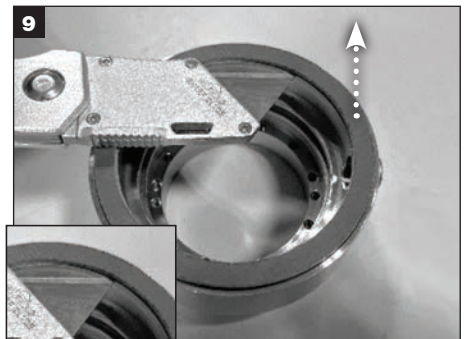
Remove the O-Ring (X) from the gland O-Ring groove and discard.



Remove the follower assembly from the gland and set it aside.



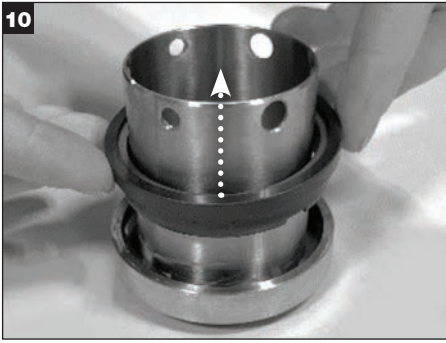
Remove all springs from the gland spring holes and discard.



Remove the stuffing box face gasket from the gland and discard.

## 9.0 SEAL REBUILD cont.

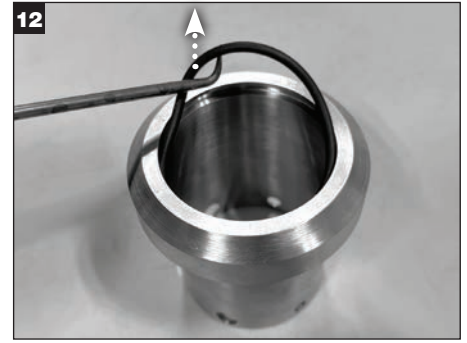
### 9.1 Seal Disassembly cont.



10 Remove rotary seal ring from sleeve and discard.



11 Remove the O-Ring (W) from the sleeve O-Ring groove and discard.

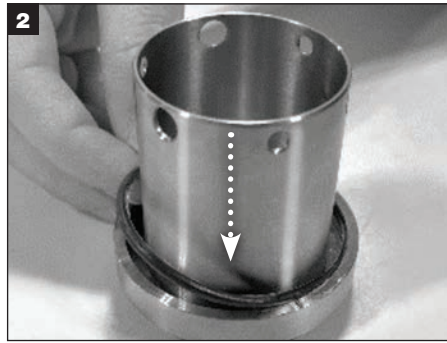


12 Remove the shaft O-Ring (V) from the sleeve and discard.

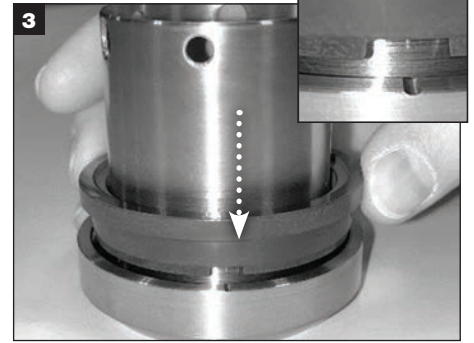
9.2 Seal Assembly



Tools required for assembly of seal: Hex key and two types of grease (supplied with seal); lint-free cloth, tweezers or a thin pick (supplied by customer; for installation of O-Rings). Clean all metal components with an approved solvent, including all gasket and O-Ring surfaces. Place metal components and all spare seal components on a clean dry surface.



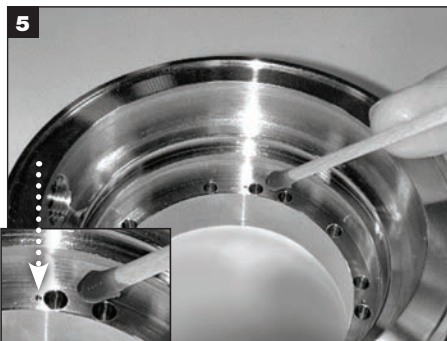
Apply a thin film of clear grease to the rotary O-Ring (W) and install into the groove.



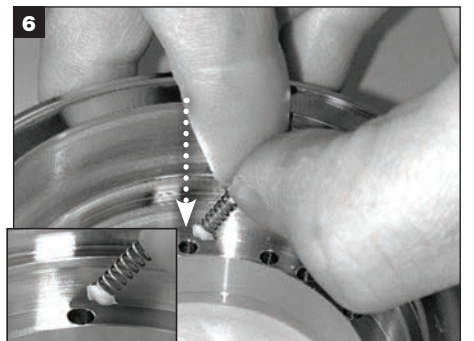
Align the slots on the rotary face with the drives in the sleeve, using the mark on the sleeve to help with alignment. Slide the rotary face down to the sleeve and gently compress until it is seated. The sleeve drive lugs should engage the slots on the rotary face.



Clean the rotary face with an approved solvent and a lint-free cloth.



Fill the four (or two, based on the seal size) evenly spaced holes, marked by dimples, with the 635 SXC grease supplied with the kit. Wipe off excess grease. **Helpful Hint:** Use the follower plate as a guide to confirm that grease will be applied to the correct holes.



Dip the ends of the springs into clear grease and insert into each spring hole. **IMPORTANT: DO NOT** insert springs into the four (two) evenly spaced holes marked by dimples and previously filled with 635 SXC grease.



Align the pins on the follower plate with the marked, 635 SXC grease filled holes in the gland and press down the plate into the gland until the follower plate rests on the springs.



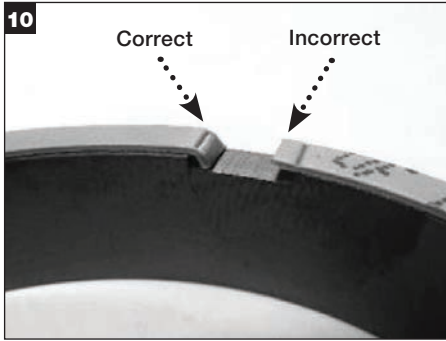
Apply a thin film of clear grease to the stationary O-Ring (X) and install into the groove in the gland above the follower plate assembly.



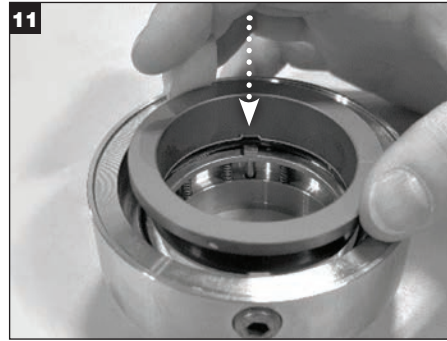
Remove backing from cushion and adhere between drive lug slots. Ensuring the cushion ends overhang evenly into the drive slots.

## 9.0 SEAL REBUILD cont.

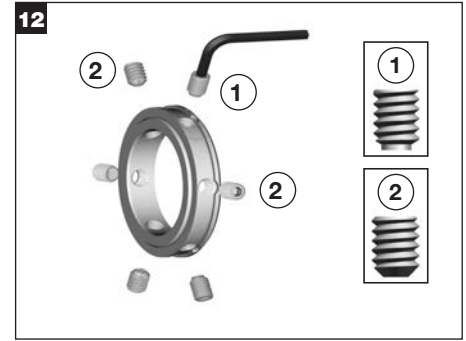
### 9.2 Seal Assembly cont.



Fold tab ends into drive slots ensuring the fold bends at the crease for proper alignment.



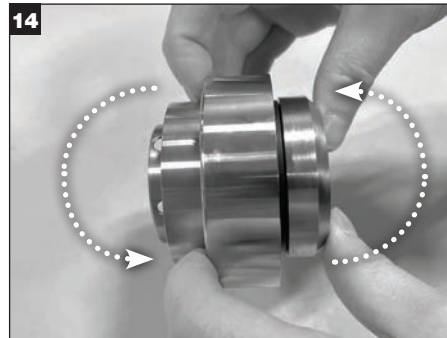
Align the slots on the stationary face with the lugs on the follower plate and gently compress the stationary face down until it is fully seated. **CAUTION: Improper alignment will result in chipping at the slot edges of the face.** Clean the stationary face with a lint-free cloth and an approved cleaning solvent that complies with local and site regulations.



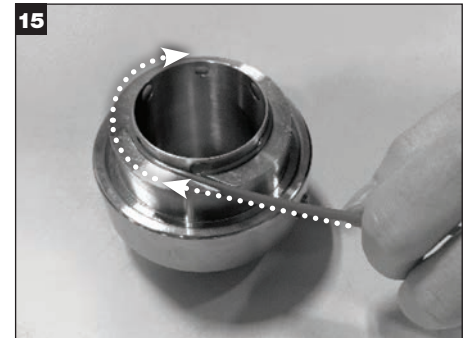
Install the 1/4 dog set screws ① into the screw holes marked with a dimple on the outside diameter of the lock ring. Install the cup point set screws ② into the remaining holes in the lock ring. **IMPORTANT: The screws should not protrude into the inner diameter of the lock ring prior to installing onto the seal sleeve.**



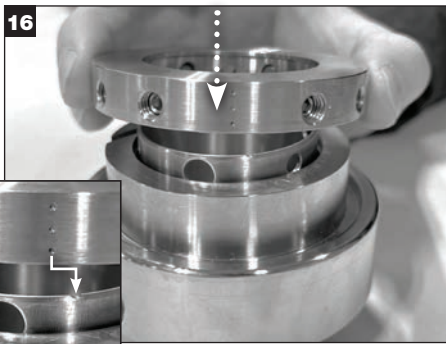
Invert the sleeve assembly and insert it into the gland bore.



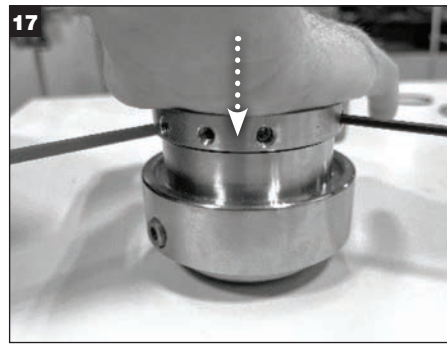
Lift up on the gland and hold the sleeve to invert and gently set down to initiate contact between the stationary and rotary faces.



Push the centering strap through the slot in the hub gland. Push the strap in until it **completely surrounds** the seal sleeve. It will pilot between the hub gland and seal sleeve.



Place the lock ring on top of the sleeve and align the three vertical dimples on the outer diameter of the lock ring with the notch on the top edge of the sleeve.



Gently press down on the top of the lock ring and tighten the 1/4 dog set screws and then the cup point screws with the hex key supplied with the seal. **IMPORTANT: The set screws should be tightened just enough to ensure that they are engaged but should not protrude into the inner diameter of the sleeve.**

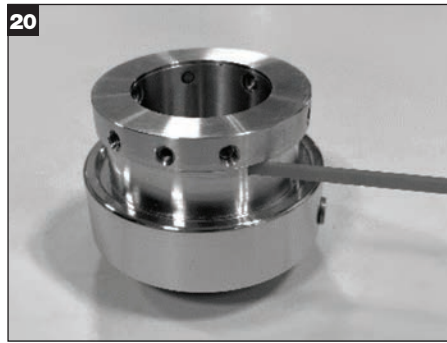


Apply a thin film of **clear** grease to the shaft O-Ring (V) and install on the sleeve inside diameter O-Ring groove.

9.2 Seal Assembly cont.



Peel off the adhesive backing from the gland gasket and install in the gland gasket recess.



The seal is ready for installation.  
Gland Tabs to be installed during seal installation  
(See Section 5.0).

## 10.0 MECHANICAL SEAL RETURNS AND HAZARD COMMUNICATION REQUIREMENTS

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Any mechanical seal returned to Chesterton that has been in operation, must comply with our Hazard Communication requirements.

Please scan the QR Code with your mobile device or go to our web page at **[www.chesterton.com/Mechanical\\_Seal>Returns](http://www.chesterton.com/Mechanical_Seal>Returns)** to obtain information required for returning seals for repair or seal analysis.



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