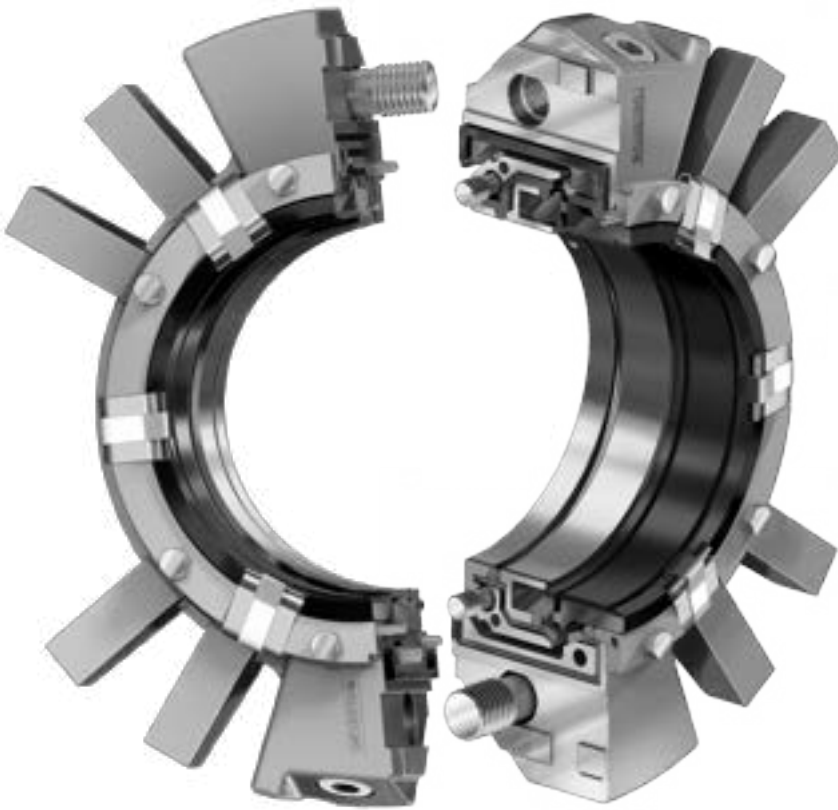


# 442C™ XL Cartridge Split Mechanical Seal

## Installation, Operation, and Rebuild Instructions



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#### Seal Data Reference

(Insert seal and equipment data here for future reference)

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

SEAL \_\_\_\_\_

(Example: 442C 5.000 SA RSC/CB S FKM)

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

## 1.0 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 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. Take care when disassembling mechanical seals. Internal components may be loaded by springs and can unexpectedly eject. Take appropriate steps to assess the needs for personal safety equipment. If you are unfamiliar with seal disassembly contact your nearest Chesterton authorized distributor or representative. This will reduce the likelihood of injury.

## 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:

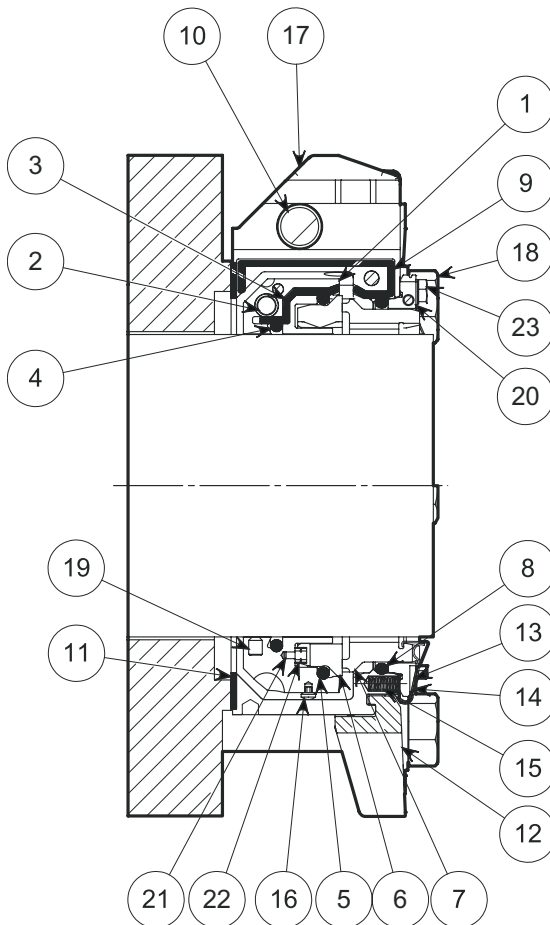
- Dust free environment
- Moderately ventilated at room temperature
- Avoid exposure to direct sunlight and heat

- For elastomers, storage conditions should conform to ISO 2230; particularly storage temperatures between 15°C (59°F) and 25°C (77°F). If stored outside these ranges, the seal assembly or spare parts should be unboxed in a clean environment, with ambient temperature within the previously stated ranges, and allowed to recover for at least 1 hour prior to installation. Failure to follow this step can impact the performance of the seal.

## 3.0 DESCRIPTION

### 3.1 Parts Identification

Figure 1



#### KEY

- 1 – Rotary Holder
- 2 – Holder Cap Screw (X)
- 3 – Holder Gasket
- 4 – Shaft O-Ring
- 5 – Rotary O-Ring
- 6 – Rotary Face
- 7 – Stationary Face
- 8 – Stationary O-Ring
- 9 – Gland Gasket
- 10 – Gland Cap Screw (Y)
- 11 – Stuffing Box Gasket
- 12 – Bolt Tab
- 13 – Spring
- 14 – Retaining Clip
- 15 – Coil Spring
- 16 – Centering Button
- 17 – Gland
- 18 – Stuffing Box Bolts (Z)\*
- 19 – Holder Set Screw
- 20 – Spring Plate
- 21 – Lug
- 22 – Tube
- 23 – Spring Plate Cap Screw

\* Customer Supplied

### 3.0 DESCRIPTION cont.

#### 3.1 Parts Identification

Figure 2

#### KEY

NOT SHOWN AS PART OF INSTALLED SEAL

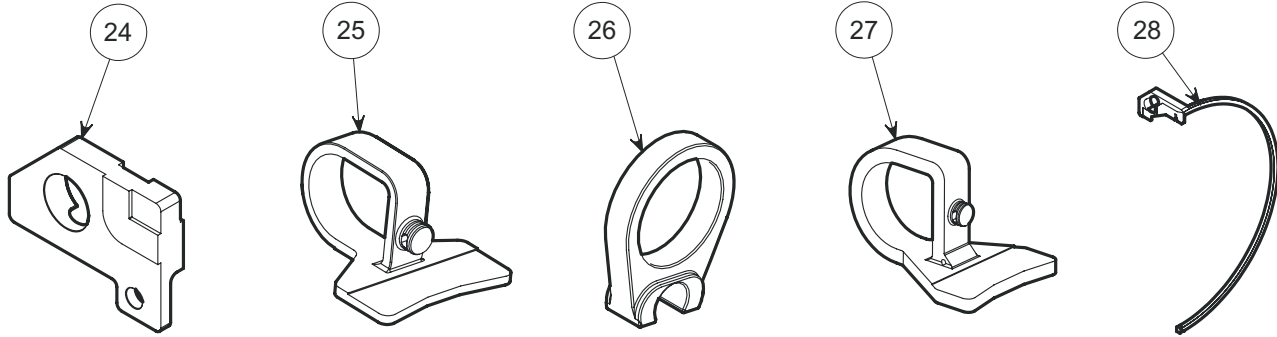
24 – Gland Shipping Spacer

25 – Gland Installation Tool

26 – Spring Plate Installation Tool

27 – Rotary Holder Installation Spacer

28 – Rotary Holder Shipping Spacer



#### 3.2 Operating Parameters\*

##### Pressure Limits:

All 442 Seals can withstand operating pressures from full vacuum (710 mm Hg /28") to the maximum pressures at the conditions listed.

##### Extra Large Sizes:

125 mm through 195 mm (4.875" through 7.750")

Reaction Bonded Silicon Carbide/Carbon – (875 RPM)

200 psig/14 bar g

##### Speed Limits:

To 20 m/s (4000 fpm)

##### Temperature Limits:

To 120°C (250°F)

\* Consult Chesterton Mechanical Seal Application Engineering for higher operating conditions.

#### 3.3 Intended Use

The mechanical seal is specifically designed for the intended application and 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.

3.0 DESCRIPTION cont.

3.4 Dimensional Data (Drawings)

Figure 3

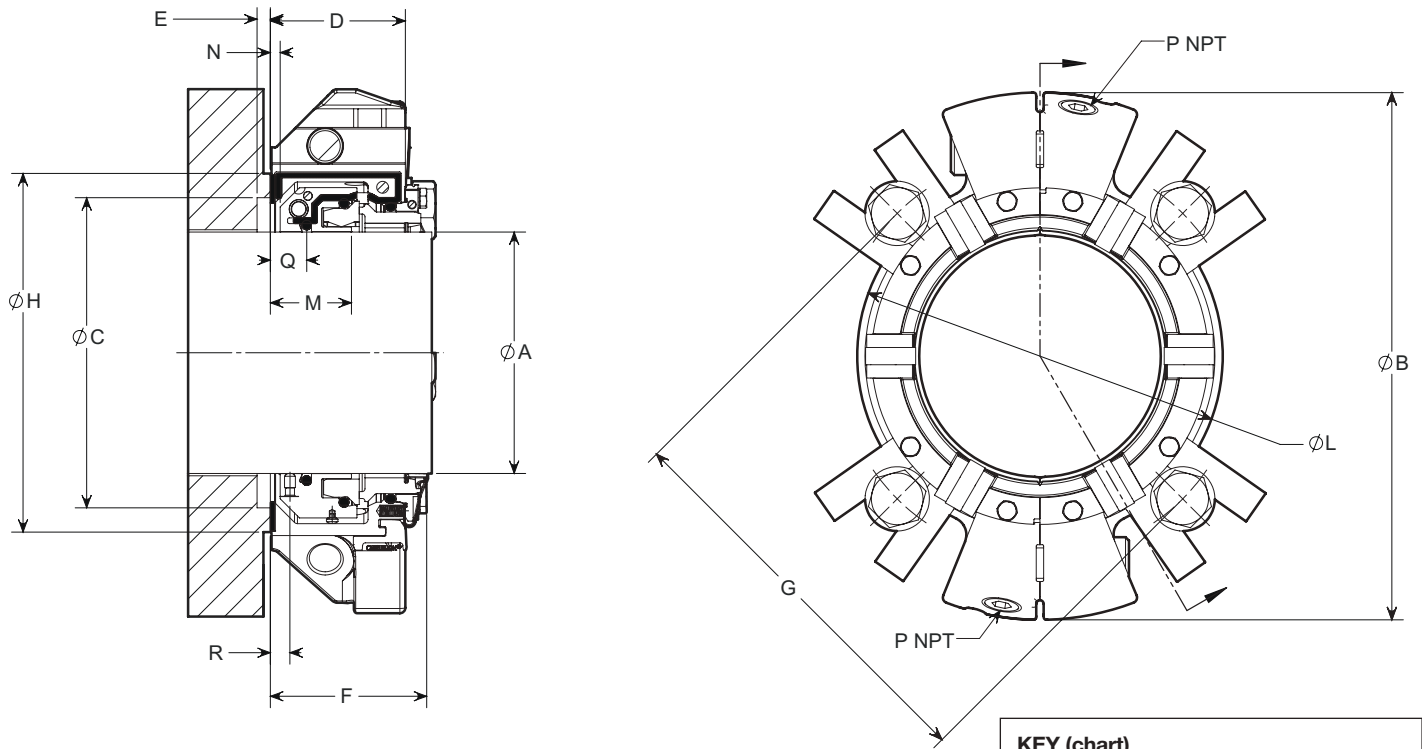


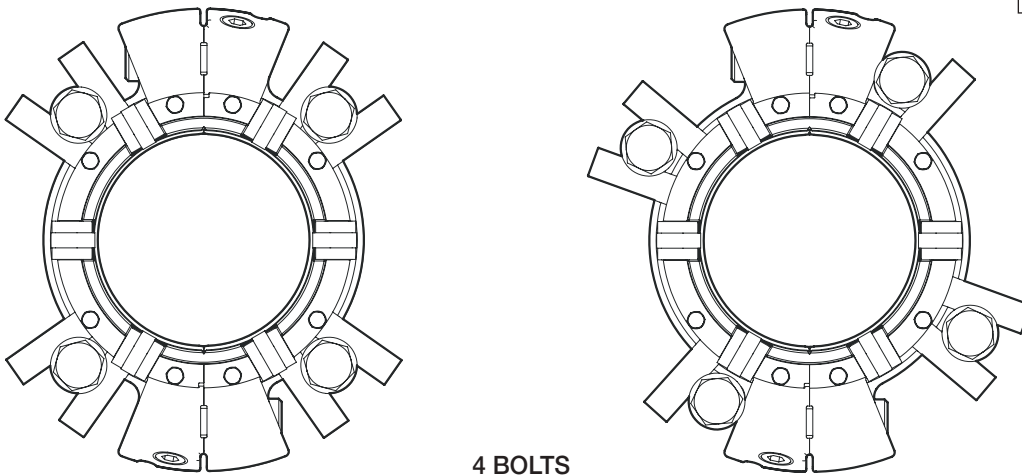
Table 1 – Dimensional Data (Metric and Inch)

SHAFT SIZE	M HOLDER INSIDE DIAMETER FROM BOX	N INSTALLATION DIM	P NPT SIZE	Q SHAFT O-RING FROM BOX	R SET SCREW FROM BOX	S SLEEVE LENGTH FROM BOX
125 mm to 195 mm (4.875" to 7.750")	44,1 mm (1.74")	4,8 mm (0.188")	1/2"	19,4 mm (0.76")	10,2 mm (0.40")	26,2 mm (1.03")

**KEY (chart)**

- A – Shaft Size
- B – Max. Gland Dia.
- C – Min./Max. Stuffing Box Diameter
- D – Gland Length
- E – Minimum Stuffing Box Depth
- F – Outboard Seal Length
- G – Min./Max. Bolt Circle by Bolt Size
- H – Min. Stuffing Box Face Outside Diameter
- L – Gland Hub Outside Diameter
- M – Holder End from Stuffing Box
- N – Installation Dimension
- P – NPT Size
- Q – Shaft O-Ring from Stuffing Box
- R – Set Screw from Stuffing Box
- S – Min. Sleeve Length from Stuffing Box

Figure 4 – Mounting Configurations with Bolt Tabs



4 BOLTS

### 3.0 DESCRIPTION cont.

Table 2 – Dimensional Data

**METRIC - Millimeters**

A	B MAX	C		D	E MIN	F*	G MIN				H MIN	L MAX
		MIN	MAX				16 mm	18 mm	20 mm	22 mm		
125,0	286,4	150,1	177,8	73,9	0,0	87,6	212,5	214,5	216,5	218,5	190,5	196,5
130,0	292,8	155,1	184,2	73,9	0,0	87,6	218,9	220,9	222,9	224,9	196,9	202,9
135,0	299,1	160,1	190,5	73,9	0,0	87,6	225,3	227,3	229,3	231,3	203,2	209,3
140,0	299,1	165,2	190,5	73,9	0,0	87,6	225,3	227,3	229,3	231,3	203,2	209,3
145,0	305,5	170,2	196,9	73,9	0,0	87,6	231,7	233,7	235,7	237,7	209,6	215,7
150,0	311,8	175,2	203,2	73,9	0,0	87,6	238,1	240,1	242,1	244,1	215,9	222,1
155,0	318,2	180,1	209,6	73,9	0,0	87,6	244,4	246,4	248,4	250,4	222,3	228,4
160,0	324,5	185,1	215,9	73,9	0,0	87,6	250,8	252,8	254,8	256,8	228,6	234,8
165,0	324,5	190,1	215,9	73,9	0,0	87,6	257,2	259,2	261,2	263,2	228,6	234,8
170,0	330,9	195,1	222,3	73,9	0,0	87,6	257,2	259,2	261,2	263,2	235,0	241,2
175,0	337,2	200,2	228,6	73,9	0,0	87,6	263,6	265,6	267,6	269,6	241,3	247,6
180,0	337,2	205,2	228,6	73,9	0,0	87,6	270,0	272,0	274,0	276,0	247,7	247,6
185,0	343,6	210,2	235,0	73,9	0,0	87,6	270,0	272,0	274,0	276,0	247,7	254,0
190,0	349,9	215,1	241,3	73,9	0,0	87,6	276,4	278,4	280,4	282,4	254,0	260,4
195,0	356,3	220,1	247,7	73,9	0,0	87,6	282,8	284,8	286,8	288,8	260,4	266,8

\* Add 10,2 mm for minimum first obstruction length.

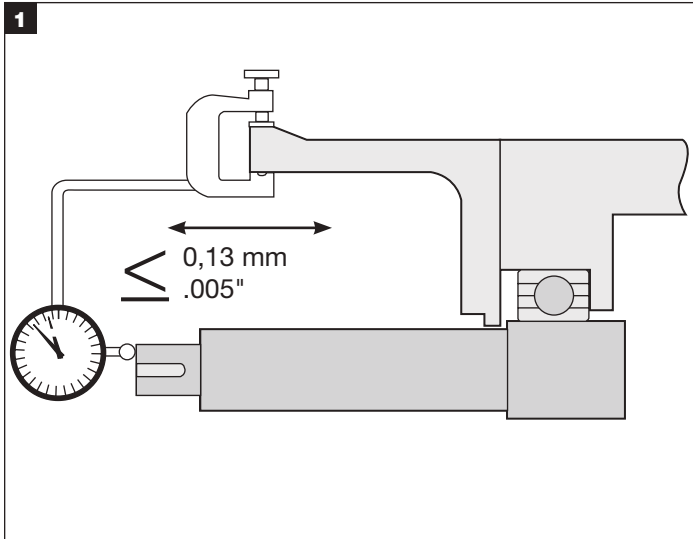
**INCH**

A	B MAX	C		D	E MIN	F*	G MIN			H MIN	L MAX
		MIN	MAX				5/8"	3/4"	7/8"		
4.875	11.28	5.87	7.00	2.91	0.0	3.45	8.41	8.54	8.66	7.50	7.74
5.000	11.28	5.99	7.00	2.91	0.0	3.45	8.41	8.54	8.66	7.50	7.74
5.125	11.53	6.12	7.25	2.91	0.0	3.45	8.66	8.79	8.91	7.75	7.99
5.250	11.53	6.24	7.25	2.91	0.0	3.45	8.66	8.79	8.91	7.75	7.99
5.375	11.78	6.37	7.50	2.91	0.0	3.45	8.91	9.04	9.16	8.00	8.24
5.500	11.78	6.49	7.50	2.91	0.0	3.45	8.91	9.04	9.16	8.00	8.24
5.625	12.03	6.62	7.75	2.91	0.0	3.45	9.16	9.29	9.41	8.25	8.49
5.750	12.03	6.74	7.75	2.91	0.0	3.45	9.16	9.29	9.41	8.25	8.49
5.875	12.28	6.87	8.00	2.91	0.0	3.45	9.41	9.54	9.66	8.50	8.74
6.000	12.28	6.99	8.00	2.91	0.0	3.45	9.41	9.54	9.66	8.50	8.74
6.125	12.53	7.12	8.25	2.91	0.0	3.45	9.66	9.79	9.91	8.75	8.99
6.250	12.53	7.24	8.25	2.91	0.0	3.45	9.66	9.79	9.91	8.75	8.99
6.375	12.78	7.37	8.50	2.91	0.0	3.45	9.91	10.04	10.16	9.00	9.25
6.500	12.78	7.49	8.50	2.91	0.0	3.45	9.91	10.04	10.16	9.00	9.25
6.625	13.03	7.62	8.75	2.91	0.0	3.45	10.17	10.30	10.42	9.25	9.50
6.750	13.03	7.74	8.75	2.91	0.0	3.45	10.17	10.30	10.42	9.25	9.50
6.875	13.28	7.87	9.00	2.91	0.0	3.45	10.42	10.55	10.67	9.50	9.75
7.000	13.28	7.99	9.00	2.91	0.0	3.45	10.42	10.55	10.67	9.50	9.75
7.125	13.53	8.12	9.25	2.91	0.0	3.45	10.67	10.80	10.92	9.75	10.00
7.250	13.53	8.24	9.25	2.91	0.0	3.45	10.67	10.80	10.92	9.75	10.00
7.375	13.78	8.37	9.50	2.91	0.0	3.45	10.92	11.05	11.17	10.00	10.25
7.500	13.78	8.49	9.50	2.91	0.0	3.45	10.92	11.05	11.17	10.00	10.25
7.625	14.03	8.62	9.75	2.91	0.0	3.45	11.17	11.30	11.42	10.25	10.50
7.750	14.03	8.74	9.75	2.91	0.0	3.45	11.17	11.30	11.42	10.25	10.50

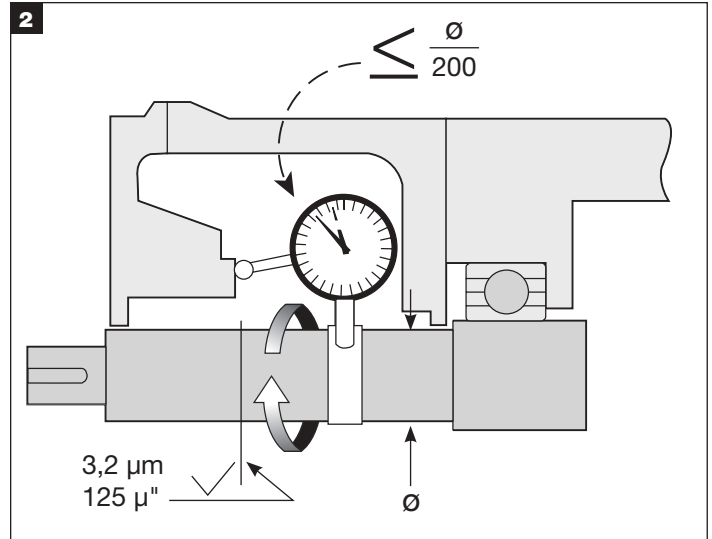
\* Add 0.40" for minimum first obstruction length.

## 4.0 PREPARATION FOR INSTALLATION

### 4.1 Equipment

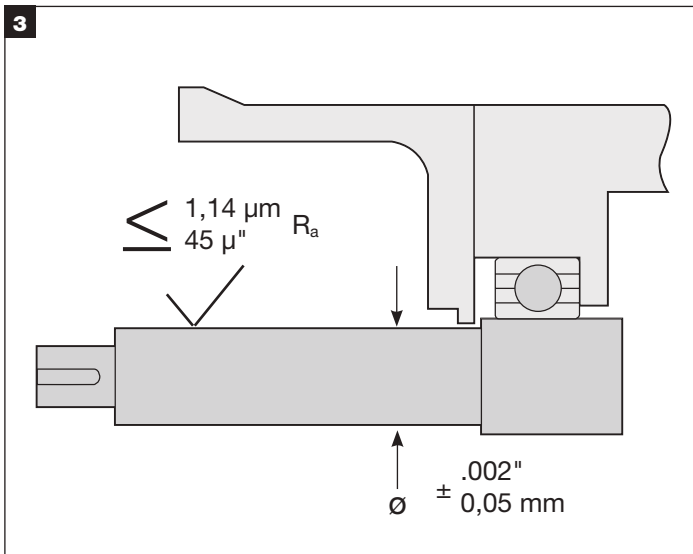


If practical, place the dial indicator tip on the end of the shaft sleeve or on a step in the shaft to measure end play. Alternately push and pull the shaft in the axial direction. If the bearings are in good condition, end play should not exceed 0,13 mm (.005").

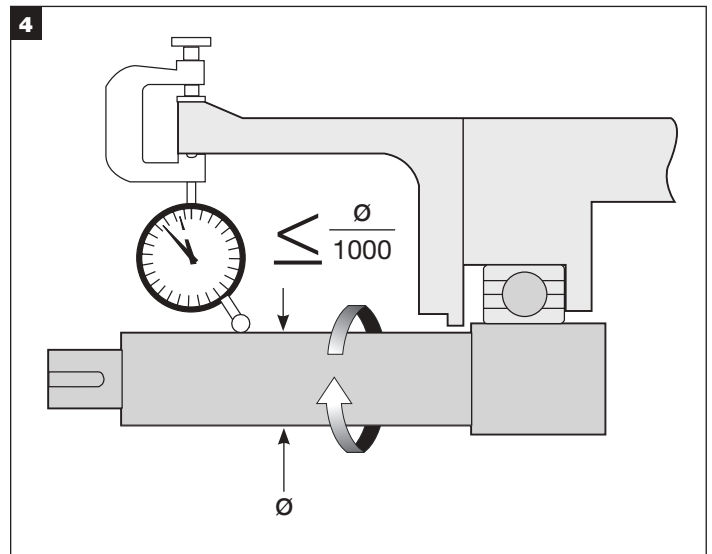


If possible, attach a base dial indicator to the shaft and rotate both the indicator and shaft slowly while reading the runout of the stuffing box face. Misalignment of the stuffing box face relative to the shaft should not exceed 0,005 mm TIR per mm (.005 in per inch) of shaft diameter.

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 1,14 micron (45 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 1,14 micron (45 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 442C XL Cartridge Split Mechanical Seal

Review seal packaging ensuring no damage or shortage has occurred to the contents.

Review the seal fit dimensions in Tables 1 and 2 to ensure the equipment to be sealed has the required dimensions.

Record the seal Item Number and Name found on the label for referencing when contacting A.W. Chesterton Application Engineering.

Installation is straightforward, provided the parts are handled and installed carefully. Make sure your hands are clean. Prepare a clean work surface on which to place parts.

#### NOTES:

- The gland and rotary holder halves are matched pairs by the same number stamped on each half; face halves are matched pairs; mixing components from different seals will result in seal failure.
- Greasy fingerprints on seal faces, dirt particles on the faces seal faces/splits or misaligned face splits may cause leakage. Do not bring the assembly halves together before actual installation. Damage to the seal ring splits may occur.

#### REQUIRED FOR INSTALLATION

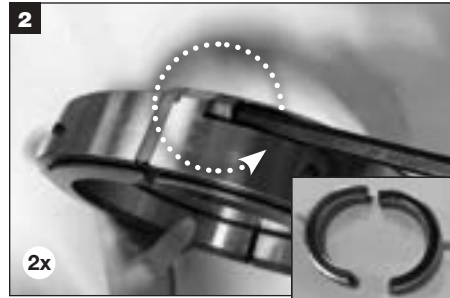
*(Items are provided with seal):*

- Hex key wrenches
- Grease
- Cleaning wipes
- Installation spacers
- Ratchet wrench
- Installation tools

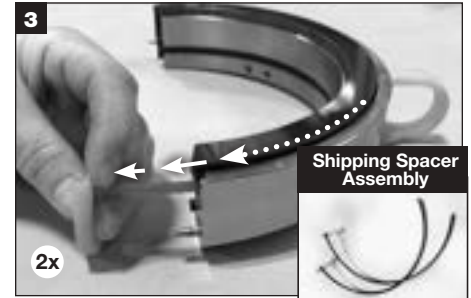
## 4.0 PREPARATION FOR INSTALLATION cont.



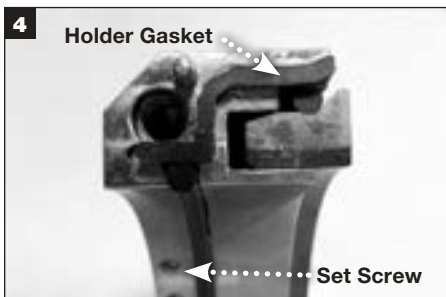
Remove seal from packaging and place on clean work surface. Ensure installation spacers are seated on outside diameter of rotary holder halves. **Important: DO NOT** glue any O-Rings, holder or gland half gaskets!



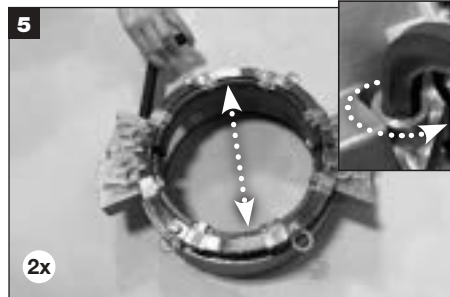
Disengage rotary holder screws and separate rotary holder halves.



**Important!** Remove entire shipping spacer assembly from each holder half by pulling on tab; retain for future use. **Caution:** Do not push on the rotary faces. Re-install shipping spacers to reposition face if this occurs.



Ensure that the holder gaskets are lubricated and seated in their grooves. **Important:** Set screws should not protrude past the inside diameter.



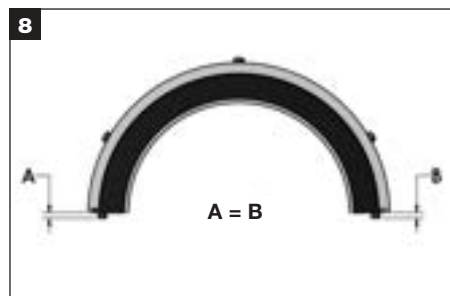
Disengage gland cap screws and separate gland halves.



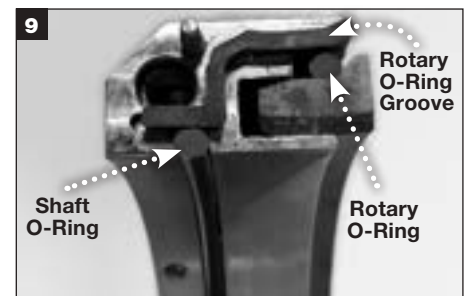
Remove gland split shipping spacers from each gland half.



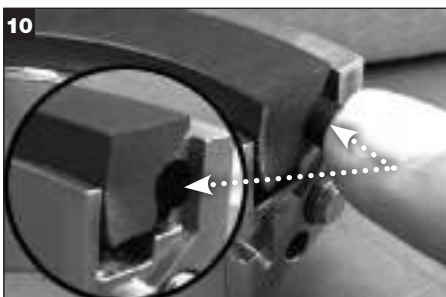
Ensure that the gland gaskets are lubricated and seated in their grooves.



Ensure that the rotary holder shaft O-Ring is properly seated in its groove with both ends protruding evenly. Apply grease to shaft O-Ring only where it contacts the shaft.



Ensure the rotary O-Rings are positioned in holder O-Ring detent. If O-Rings are not in the holder detent, reinstall shipping spacer.



Ensure that the rotary face O-Ring ends are flush with but not below the face splits. Push on O-Ring ends if they protrude past the face splits.



Ensure that the stationary O-Ring ends are flush with but not below the stationary face splits. Carefully push on O-Ring ends if they protrude past the face splits. Preparation complete; go to **Seal Installation**



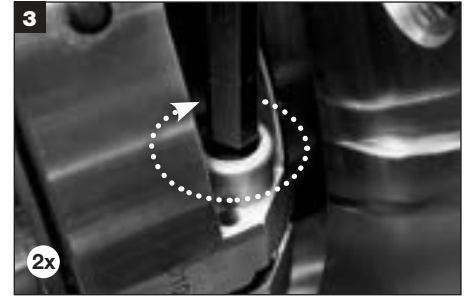
## 5.0 SEAL INSTALLATION



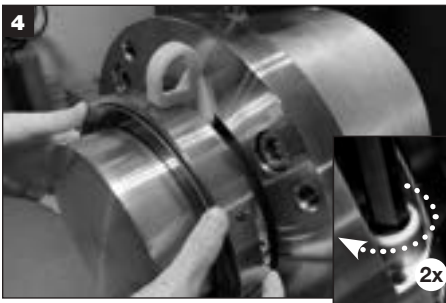
Equipment shaft should be cleaned and greased prior to rotary holder installation. Apply supplied grease only to face splits. Do not apply grease to O-Ring ends. **Caution:** Dirt particles on seal face splits may cause leakage. The rotary holder should not be rotated on the shaft during Steps 2 through 4 as it may lead to shaft leakage and/or face damage.



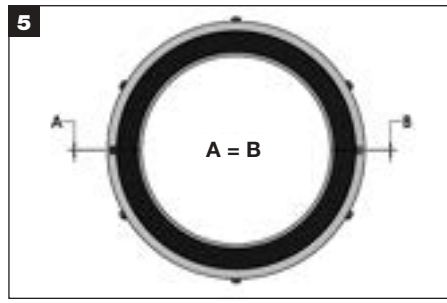
Bring rotary holder assembly halves together over shaft, engaging the pins. **Caution: DO NOT** use holder installation spacers as handles. **Note:** If shaft cannot be rotated manually, the holder split line **should not** align with the gland split line (refer to steps 11 and 16).



Use hex wrench and alternately tighten holder cap screws snug to allow holder to slide along the shaft. **Caution:** Care should be taken not to rotate the rotary holder on the shaft.



Push holder assembly so that plastic installation spacers (27) contact the stuffing box face. Use hex wrench and alternately tighten holder cap screw (Refer to Table 3 - Holder Screw Torque Values). Ensure gaps at holder splits are equal on both sides (see step 5). **Caution: DO NOT** push directly on seal face.



Gaps at holder splits should be equal on both sides.



Remove rotary holder installation spacers; retain for future use.



Alternately tighten 4 holder set screws (2 per holder half) (refer to Table 3 - Holder Screw Torque Values).



Clean rotary face with supplied cleaning wipe, ensuring there is no debris at splits. **Caution:** Do not push on seal face – it may cause the seal face to misalign.



Apply supplied grease only to stationary face splits. Do not apply grease to O-Ring ends. **Caution:** Dirt particles on seal face splits may cause leakage.



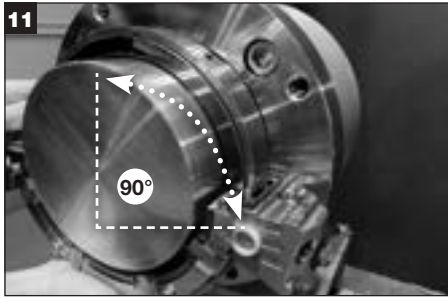
Clean stationary face with cleaning wipe, ensuring that there is no debris at splits.

**Table 3**  
Holder Screw Torque Values

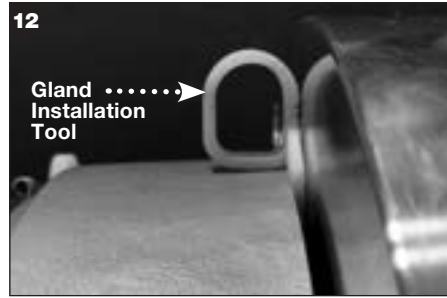
125 mm to 195 mm (4.875" to 7.750")	HOLDER CAP SCREW*	HOLDER SET SCREW
<b>TORQUE</b>	36,8 Nm (27 ft-lbf)	5,7 – 6,8 Nm (50 – 60 in-lbf)
<b>WRENCH SIZE (supplied)</b>	5/16"	3 mm

\* Recommended maximum

## 5.0 SEAL INSTALLATION *cont.*



Position the gland splits approximately 90 degrees from the rotary holder splits. Check that all gland installation tools (6x) are installed properly.



Bring the first gland half squarely into position by sliding the gland installation tools against the stuffing box surface, ensuring the stationary face does not make contact with the rotary face.



Bring the second gland half **squarely** into position sliding the gland installation tools against the stuffing box face, ensuring the alignment pins and gland bolts engage.



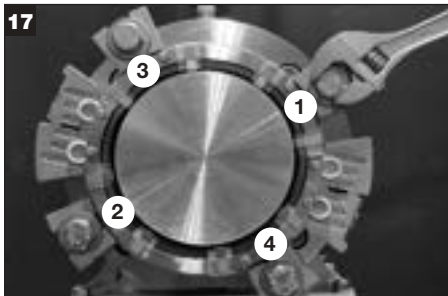
Alternately tighten gland cap screws to specified torque (refer to Table 4 – Gland Screw Torque Values).



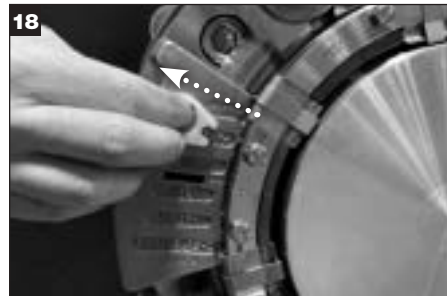
Carefully remove the (6x) gland installation tools, taking care not to dislodge the gland stuffing box gasket. Retain gland installation tools for future use.



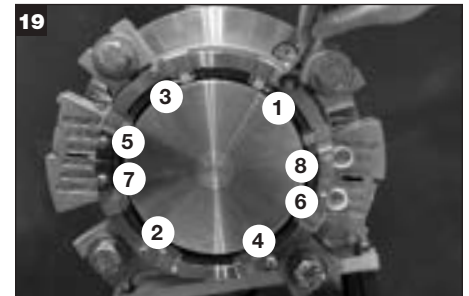
If possible rotate gland together with shaft when aligning gland bolt tab slots with the stuffing box bolt holes (refer to step 11).



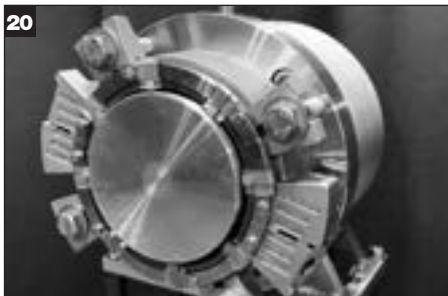
Install and alternately tighten stuffing box bolts to recommended torque (refer to Table 4 – Gland Screw Torque Values). Note: Up to (4x) spring plate tools may be removed if they interfere with stuffing box bolt installation.



Remove (8x) spring plate tools and retain for future use.



Alternately tighten spring plate bolts using supplied wrench in star pattern in three (or more) passes to final torque (refer to Table 4 - Gland Screw Torque Values). Note: Do not fully tighten spring plate bolts in one pass.



Seal installation complete (refer to **EQUIPMENT STARTUP**).

**Table 4**  
Gland Screw Torque Values

125 mm to 195 mm (4.875" to 7.750")	GLAND CAP SCREW	STUFFING BOX BOLTS*	SPRING PLATE BOLTS
<b>TORQUE</b>	23 – 34 Nm (17 – 25 ft-lbf)	27 – 40 Nm (20 – 30 ft-lbf)	4,5 – 6,2 Nm (40 – 55 in-lbf)
<b>WRENCH SIZE (supplied)</b>	5/8"	–	10 mm

\* Typical Values: Torque necessary to seat stuffing box gasket varies with application.

## 5.0 SEAL INSTALLATION *cont.*

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### 5.1 442C INSTALLATION VIDEO

To view an instructional installation video, please scan the QR Code with your mobile device or go to our web page at [www.chesterton.com/442C\\_Videos](http://www.chesterton.com/442C_Videos) and click on the desired video.



## 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. A slight drag may be found due to the seal faces and the centering buttons but the shaft should rotate freely.
2. Attach appropriate plumbing/environmental controls to the seal. Take all necessary precautions and follow normal safety procedures before starting the equipment.
3. Depending on how carefully the seal components were handled during installation, split seals may drip on startup. For example, greasy fingerprints on the faces or misaligned face splits may cause leakage. This type of leakage usually decreases and stops over a period of time. If the leakage remains steady, check O-Rings and gaskets for proper installation and check the faces for chips, scratches and proper alignment.

*Please Contact Chesterton Mechanical Seal Application Engineering for assistance regarding split seals.*

## 7.0 DECOMMISSIONING / EQUIPMENT SHUT DOWN

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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. Disassemble the 442C split seal and remove from equipment in the reverse order from installation instructions. In case of disposal, ensure the local regulations and requirements for disposal or recycling of the different components in the seal are adhered to.

## 8.0 SPARE PARTS

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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 recorded seal data from cover page.

## 9.0 SEAL MAINTENANCE AND REPAIR

A correctly installed and operated mechanical seal requires little maintenance. It is recommended to periodically check the seal for leakage. Also check the Spring Plate Bolts torque (per table 4 - Gland Screw Torque Values). Wearing components of a mechanical seal such as 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 spare parts kit be held in stock to allow for quick repair.

1. Only the gland, spring plate, and rotary holder are reused.

**Caution:** The gland, spring plate, rotary holder, face halves, and O-Rings are matched pairs; do not mix halves from different seals since this will cause seal failure.

2. The following items, in addition to wrenches, grease, and cleaning wipes, will be required for rebuild:
  - Small pliers (remove centering buttons)
  - Plastic tipped mallet or hammer (replace centering buttons)
  - Site approved cleaning solvent (clean elastomer/gasket surfaces)
  - Site approved anti-seize compound
3. 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.
4. Clean all elastomer and gasket surfaces with cleaning solvent.



1 Prepare a clean work surface for seal disassembly and rebuild.



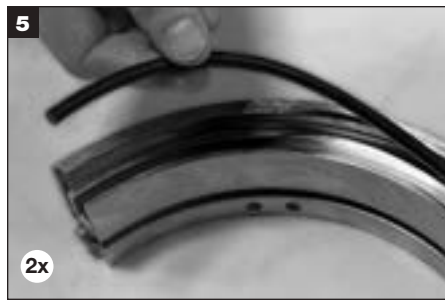
2 Remove rotary holder gaskets.



3 Remove shaft O-Ring halves.



4 Remove rotary face halves (2x) by pushing on end of face and sliding out of rotary holder half. On the half with the lug, lift out the rotary seal ring, do not try and push as the seal ring will break.



5 Remove rotary face O-Ring halves.



6 Remove holder set screws from rotary holder.



7 Remove holder cap screws from holder halves.



8 Remove centering buttons from (6x) outside diameter of rotary holder.



9 Remove drive tube from holder lug.

## 9.0 SEAL MAINTENANCE AND REPAIR cont.



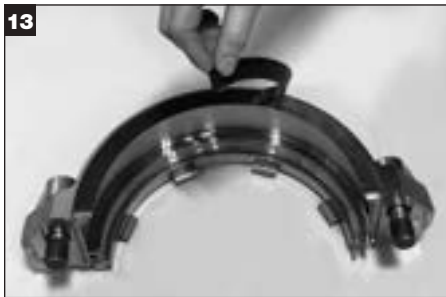
Remove gland gaskets from gland grooves.



Remove (6x – 8x) spring retainers from gland halves. **Note:** When last retainer is removed the stationary seal ring can be removed.



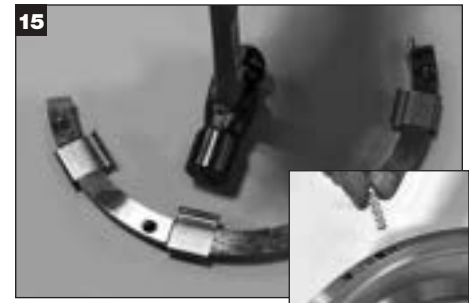
Remove stationary O-Ring halves.



Remove stuffing box gasket from gland recess. Remove all adhesive residue.



Remove (8x) hex head bolts that connect the spring plate to the gland. Remove spring plate halves from gland halves.



Remove coil springs from gland and springs from spring plate halves. The springs can be removed by tapping them from the spring plate half inside diameter with a small hammer.



Remove gland cap screws. Ensure the gland, holder, and spring plate are free from debris, grease, and damage.



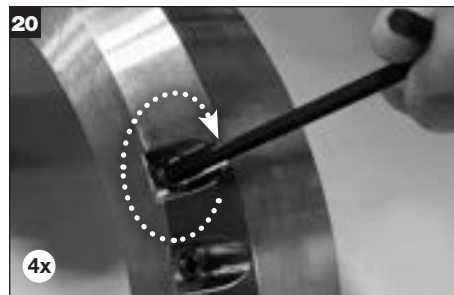
Remove all spare parts kit components from packaging and place on the clean work surface.



Install new centering buttons (6x) on outside diameter of rotary holder. **Important:** Make sure buttons are fully seated without deforming or cracking the exposed heads.



Pick up the drive tube (use tweezers if necessary) and install onto the holder lug. Ensure the drive tube is fully seated on the lug.



Lubricate threads with a recommended anti-seize compound and install new holder set screws (4x) in rotary holder. **Important:** Prior to installing the rotary holder on the shaft/sleeve, ensure set screws do not protrude past the inside diameter.



Lubricate threads with a recommended anti-seize compound and install holder cap screws in rotary holder half.

## 9.0 SEAL MAINTENANCE AND REPAIR cont.



Apply a thin film of grease and install shaft O-Ring halves in rotary holder halves. O-Rings must protrude evenly from both holder half ends. (Refer to step 9 on page 8).



Install rotary shipping spacers in rotary holder halves to hold the rotary O-Ring in place. Spacers should align as shown.



Apply a thin film of grease and install rotary O-Ring halves in rotary holder halves.



Install rotary face halves in rotary holder halves. Important: Manually press to seat the rotary face in the holder halves while keeping pressure on the plastic spacer and protruding O-Ring to ensure the O-Ring position is maintained. Align lug slot on rotary face with lug on rotary holder.



Ensure that the rotary O-Ring ends are flush (not below) with the face splits. Push on O-Ring ends if they protrude past the face splits.



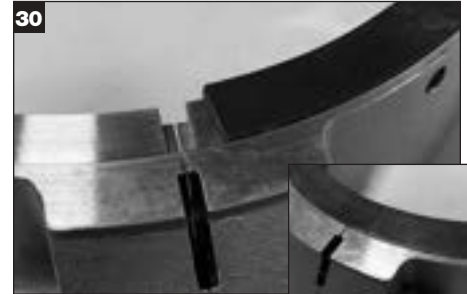
Apply a thin film of grease and install holder gaskets (1 per holder half).



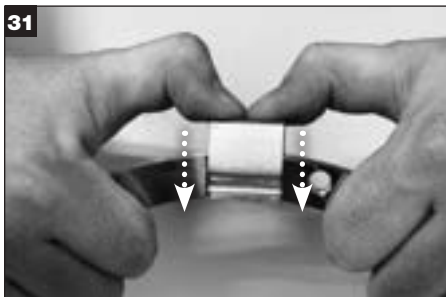
Install rotary holder installation spacers (27) on outside diameter of holder halves.



Clean rotary face halves with cleaning wipe. Set rotary halves aside.



Bring gland halves together. After peeling off protective backing, seat one gasket half in the gland recess ensuring that cut end leaves a gap before the split as shown. Seat second gasket half into gland recess, ensuring that it butts up to cut ends of first half.



Install springs (6x – 8x) into slots on spring plate. Use a plastic tipped mallet if needed to ensure springs are seated into place.



Install the (8x) coil springs (15) into the non-threaded gland halves. **Note:** Holes also line up with the shallow slots in the gland.



Install spring plate halves onto gland halves using the spring plate bolts (8x) and spring plate installation tools (8x) per gland half. Tighten spring plate bolts finger snug to hold installation tools in place.

## 9.0 SEAL MAINTENANCE AND REPAIR cont.



Install gland cap screws in gland halves (2x).  
**Note:** Gland cap screws are installed in one end of each gland half, in the ends away from the mounting bolt slot.



Apply a thin film of grease to the stationary O-Ring halves and install in gland halves; Ensure that O-Ring splits are protruding evenly on both sides.



Install stationary face halves into gland halves, engaging the springs into the stationary slots.



Stationary face half installed in gland half.  
**Important:** Ensure that O-Ring splits are still protruding evenly at both sides.



Install spring retainers (6x – 8x) in gland halves, holding the stationary seal ring half in the gland.



Spring retainer installed.



Ensure that the stationary face O-Ring ends are flush (not below) with the stationary face splits. Push on O-Ring ends if they protrude past the stationary face splits.



Apply a thin film of grease to gland gaskets and install in grooves of gland halves. **Note:** Gland gaskets must be installed on gland end where stuffing box face gasket protrudes.



Wipe stationary face halves with cleaning wipe to ensure there is no debris on face and at splits.



Install (6x) gland installation tools (25) into the holes on the outside of the gland halves near the stuffing box gasket.



Seal components are ready for installation. Proceed to Seal Installation Instructions.

## 9.0 SEAL MAINTENANCE AND REPAIR *cont.*

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### 9.1 442C SEAL REPAIR INSTRUCTION VIDEO

To view an instructional video on how to repair the 442C, please scan the QR Code with your mobile device or go to our web page at [www.chesterton.com/442C\\_Videos](http://www.chesterton.com/442C_Videos) and click on the desired video.



### 9.2 RETURNING SEALS FOR REPAIR AND HAZARD COMMUNICATION REQUIREMENTS

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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