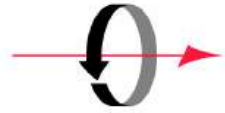


**Deublin Company  
Waukegan, IL USA**



LTR	REVISION	ECO	DATE	SIGN
NONE	INITIAL RELEASE	029874	08/14	EL

**Maintenance Instruction  
032-3001  
Rebuild Procedure for DMS  
Unions**

**E.I. 032-3001**

**SHT 1/34**

## **Purpose:**

This procedure will document the rebuild procedure for the DMS series unions.

## **Scope:**

This repair procedure applies to all DMS unions.

## **Equipment Required:**

- Ratchet and 13mm Socket
- 1/8", 3/16", 5/16", 3/8 Hex Wrench
- 6mm, 12mm Hex Wrench
- DMS Assembly Fixtures
- Internal Retaining Ring Pliers
- O-ring grease
- Anti-seize compound
- Rebuild Parts for DMS Union

## **Rebuild Parts**

- Gaskets
- Retaining Ring
- O-rings
- Springs
- Carbon Seals
- Counterface
- Screws
- C-Ring
- Slyd-Ring



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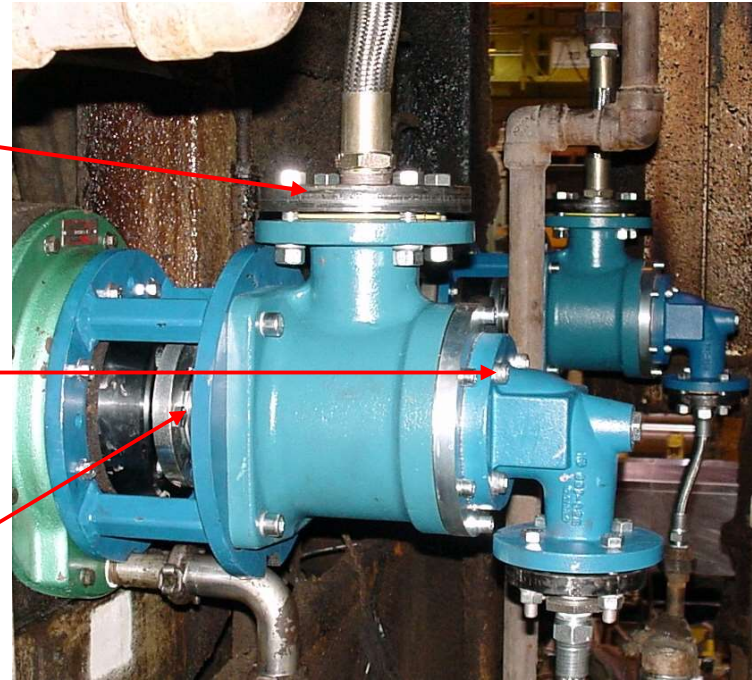
**SHT 2**

## **Instruction: Dis-Assemble Union**

**Step 1:** Dis-assemble Steam Inlet Hose from union.

**Step 2:** Remove Endcap by loosening 4 bolts on Endcap flange.

**Step 3:** Insert red rotor tabs onto front of union. Tabs should fit into wear groove on Rotor. Secure Tabs with screws and tighten snug.

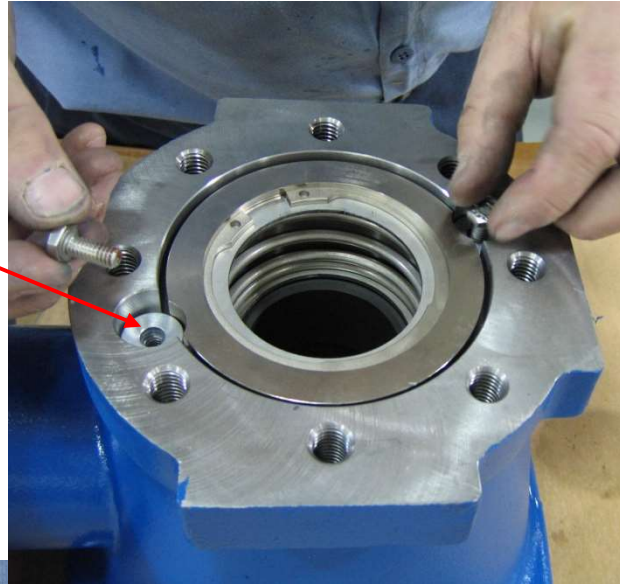


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**SHT 3**

## **Instruction (cont.):**

**Step 4:** To remove rear Seal Assembly, remove 2 screws and washers from rear of Housing.



**Step 5:** Carefully pull out rear Seal Assembly.



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**SHT 4**

## Instruction (cont.):

**Step 6:** Place rear Seal Assembly into fixture, Carbon Seal facing down.



**Step 7:** Place retaining plate over Spring under the nut. Plate should fit within the Retaining Ring.



**Step 8:** Tighten nut down to release pressure from Retaining Ring.



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**SHT 5**

## Instruction (cont.):

**Step 9:** Remove Retaining Ring.



**Step 10:** Loosen nut until spring pressure is released and slide retaining plate out.



**Step 11:** Remove the remaining parts from the fixture.



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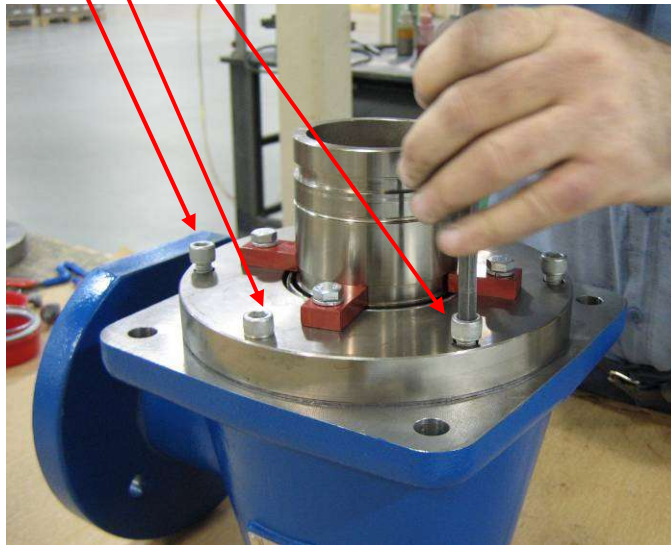
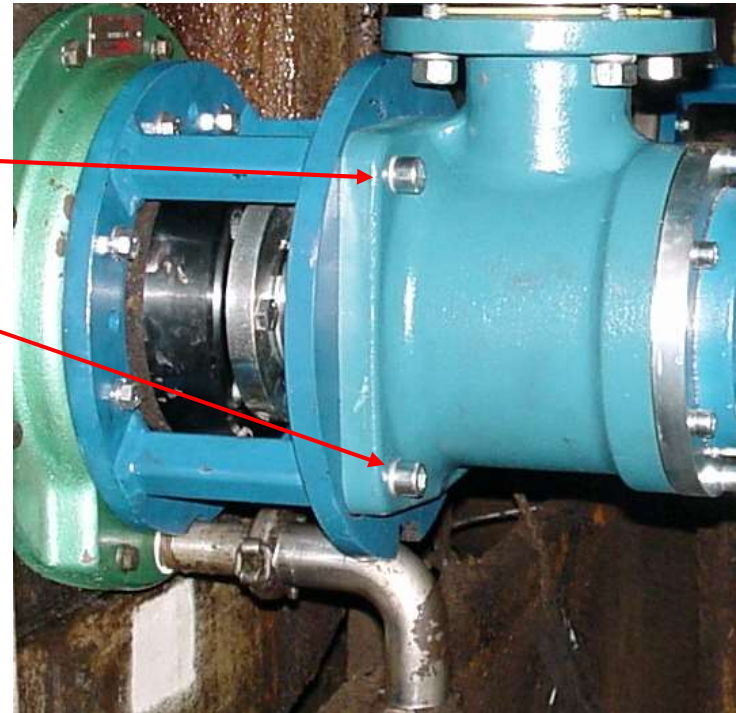
**SHT 6**

## Instruction (cont.):

**Step 12:** Remove Union from Bell Support by removing 4 mounting screws.

*Note: Have a second person support the housing while the screws are being removed.*

**Step 13:** Remove 6 screws from front face of Union.



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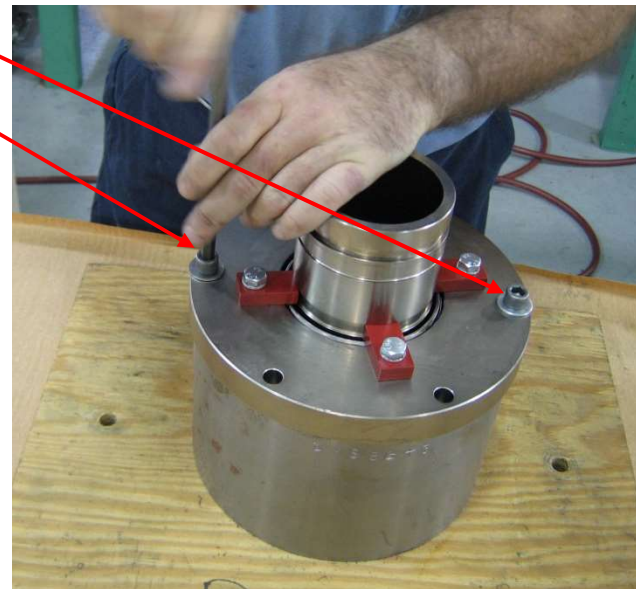
**SHT 7**

## Instruction (cont.):

**Step 14:** Carefully remove Rotor and front Seal Assembly from Housing.



**Step 15:** Place Rotor Assembly into the assembly fixture and secure with 2 screws.



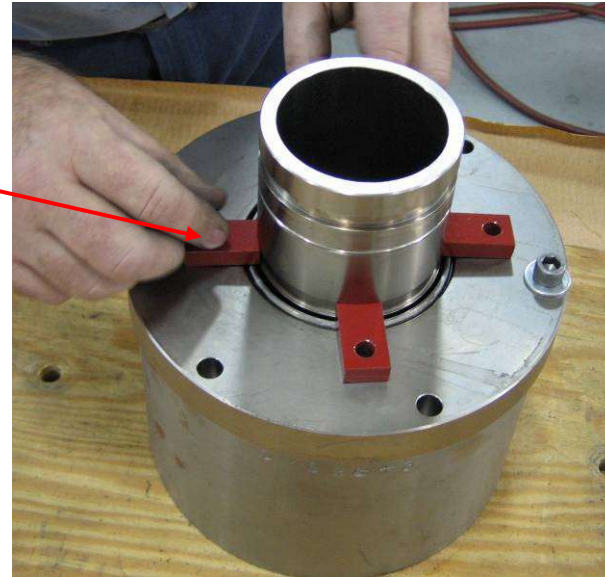
**E.I. 032-3001**

**SHT 8**

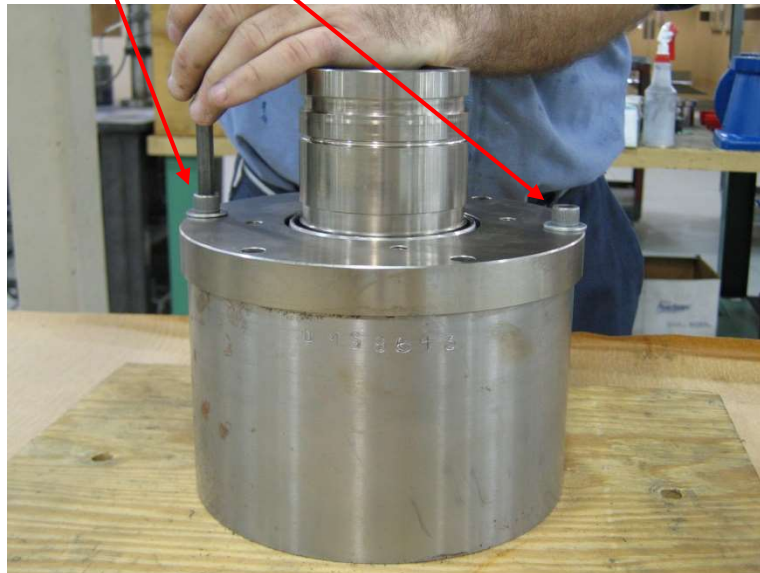


## Instruction (cont.):

**Step 16:** Remove 4 Rotor Tabs by removing 4 screws.



**Step 17:** Slowly remove 2 screws evenly, because Rotor is spring loaded. Hold down Rotor to relieve pressure on bolts and to keep Rotor from springing up.



**E.I. 032-3001**

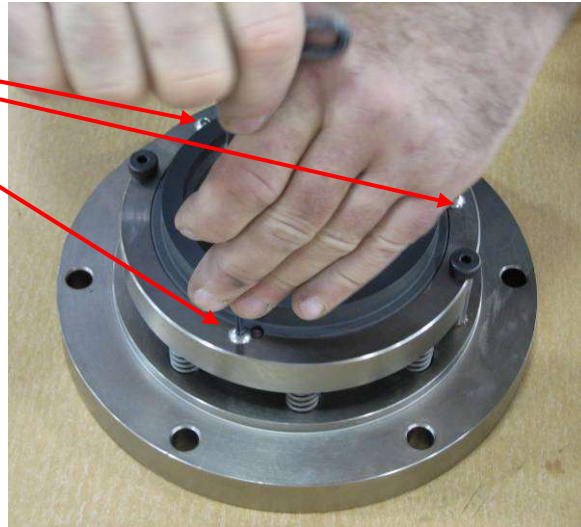
**SHT 9**

## Instruction (cont.):

**Step 18:** Remove Seal Assembly from Rotor by lifting up on Flange.



**Step 19:** Remove the 3 screws to remove the front Carbon Seal.

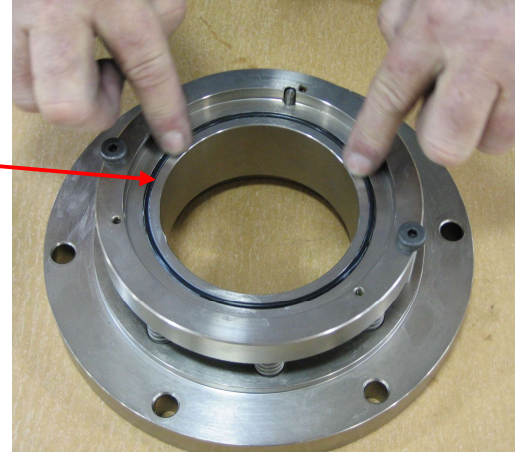


**E.I. 032-3001**

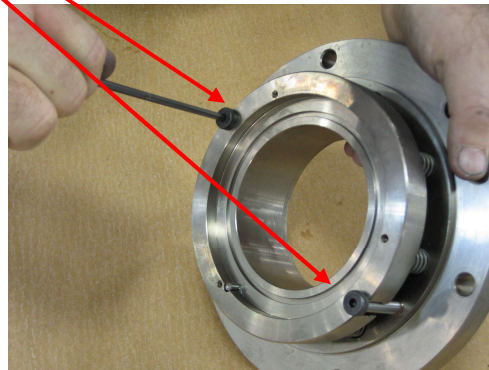
**SHT 10**

## Instruction (cont.):

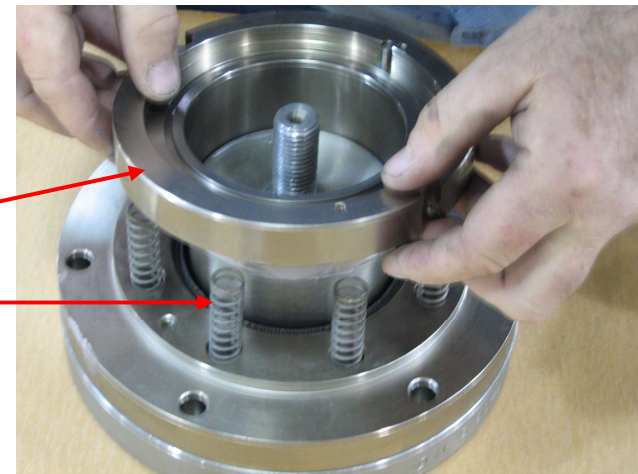
**Step 20:** Remove O-ring from Carrier.



**Step 21:** Slowly remove the 2 screws holding the Carrier down. The Springs will try to push the Carrier off.



**Step 22:** Remove Carrier and Springs from Flange.

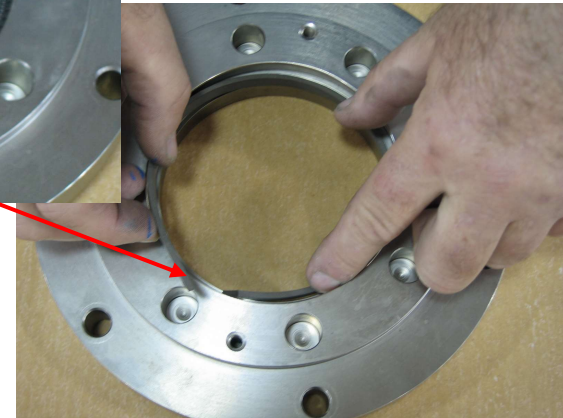
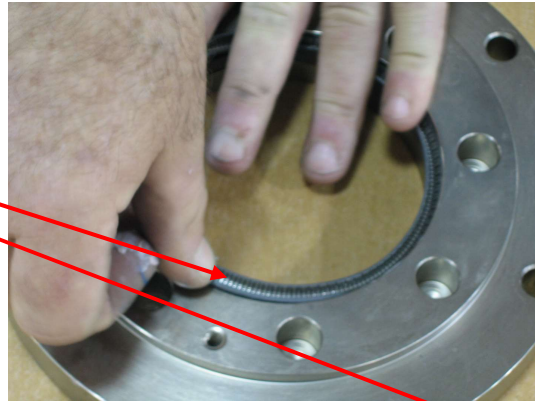


**E.I. 032-3001**

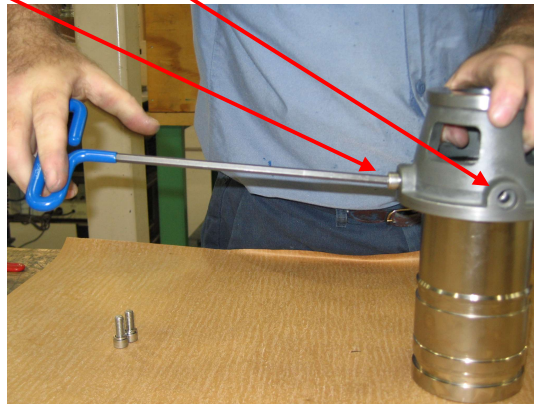
**SHT 11**

## Instruction (cont.):

**Step 23:** Remove Carrier from fixture.  
Remove C-ring and Slyd-ring from Flange.

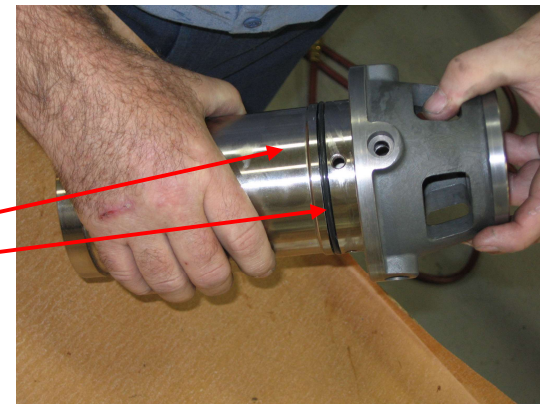


**Step 24:** Remove 4 screws to separate  
Counterface from Rotor.



**Step 25:** Pull Counterface and Rotor apart.  
Remove O-ring from rotor.

*Note: Parts may be difficult to remove, use  
rubber mallet if necessary.*



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**SHT 12**

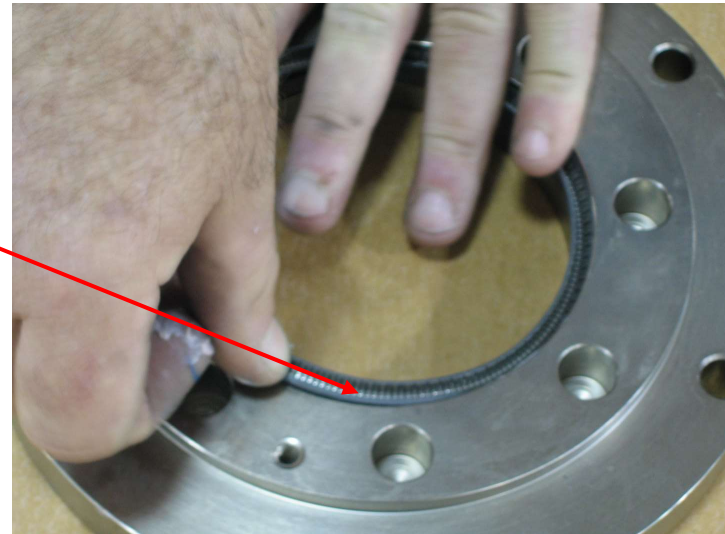
## **Instruction: Re-Assemble Union (with new parts supplied)**

**Step 26:** Clean Carrier with light abrasive pad and wipe clean with isopropyl alcohol.

Insert new Slyd-ring into inner counterbore of Flange.



**Step 27:** Grease outside of new C-ring. Insert C-ring into outer counterbore of Flange.



**E.I. 032-3001**

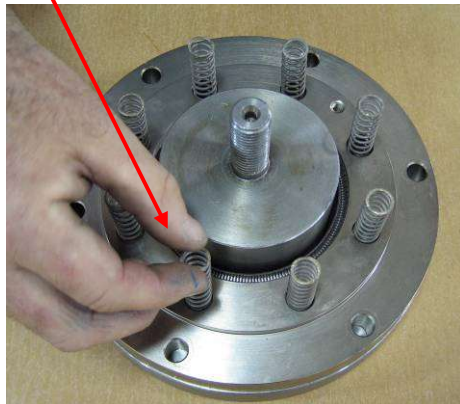
**SHT 13**

## Instruction (cont.):

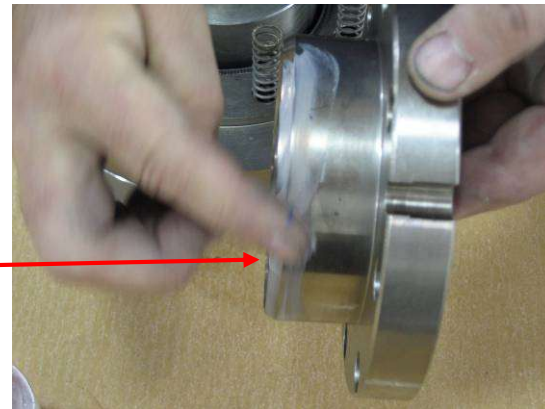
**Step 28:** Clean Flange with light abrasive pad and wipe clean with isopropyl alcohol.

Place flange over assembly fixture with C-ring facing up.

**Step 29:** Insert new Springs into small counterbores in Flange.



**Step 30:** Grease the smaller outer diameter of the Carrier.

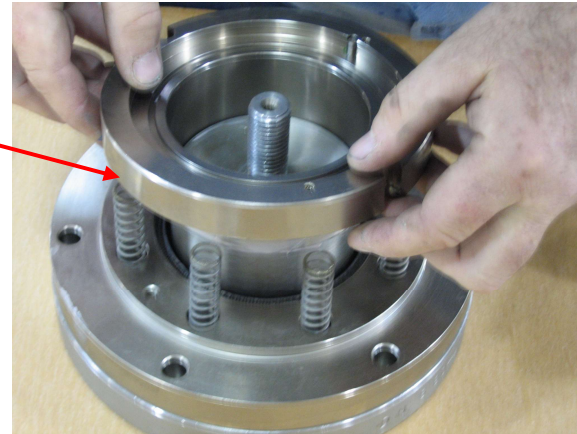


**E.I. 032-3001**

**SHT 14**

## Instruction (cont.):

**Step 31:** Assemble Carrier over Springs.  
Make sure Springs are seated in counterbores  
at either end.



**Step 32:** Place fixture cover over  
Carrier and thread nut down on shaft to  
partially compress Springs.



**Step 33:** Place anti-seize compound on  
2 screws that hold Carrier to Flange.



**E.I. 032-3001**

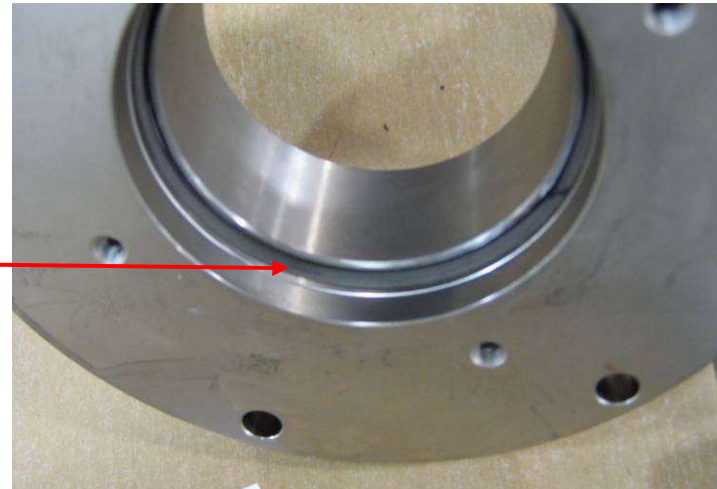
**SHT 15**

## Instruction (cont.):

**Step 34:** Insert 2 screws into Flange. Thread screws in only 2 turns so that screw holds in hole.



**Step 35:** Lift assembly off of fixture and look at C-ring from bottom. Ensure Slyd-ring is seated properly and not hung up on Flange.



**E.I. 032-3001**

**SHT 16**

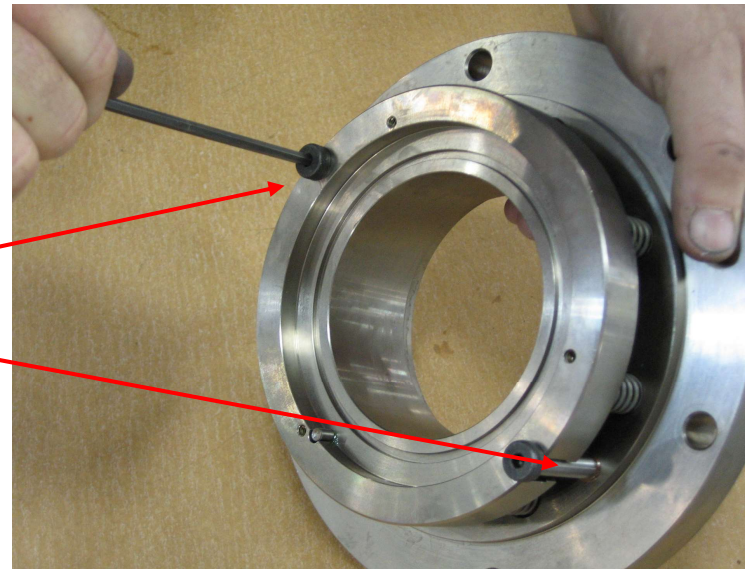


## Instruction (cont.):

**Step 36:** Back off nut and remove fixture cover.



**Step 37:** Tighten down 2 screws until sleeve on screw bottoms on Flange and Carrier.

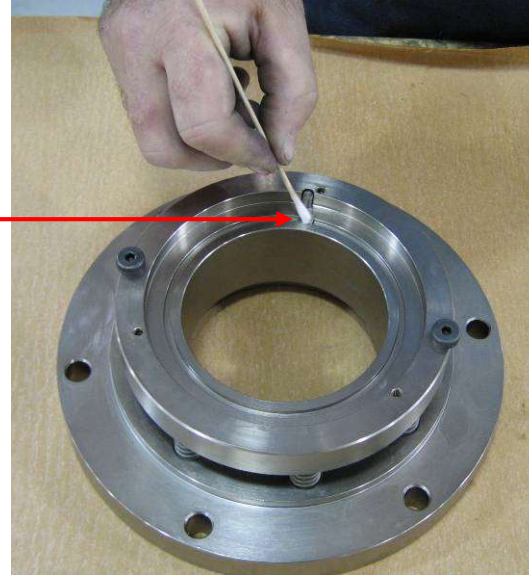


**E.I. 032-3001**

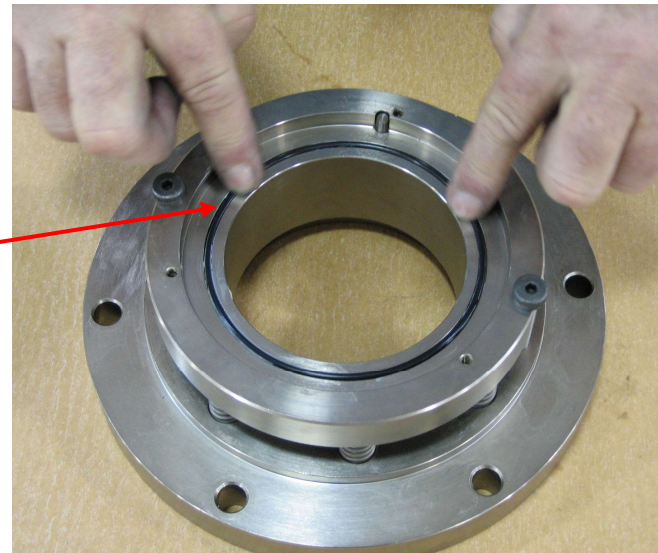
**SHT 17**

## Instruction (cont.):

**Step 38:** Clean counterbore in Carrier. Use a cotton tipped applicator dipped in isopropyl alcohol to clean counterbore



**Step 39:** Lubricate O-ring and then assemble O-ring into counterbore of Carrier.



**E.I. 032-3001**

**SHT 18**

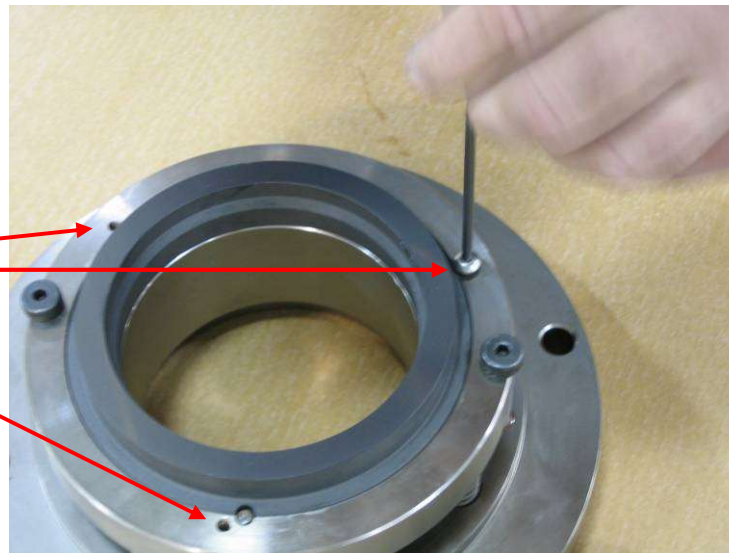
## Instruction (cont.):

**Step 40:** Assemble Carbon Seal into Carrier.  
Align slot in Seal with pins in Carrier.



**Step 41:** Place anti-seize compound on  
3 button head screws and insert screws  
into Carrier to hold down Carbon Seal.  
Tighten down gently.

*Note: Do not over tighten as this can  
crack the seal.*



**E.I. 032-3001**

**SHT 19**

## Instruction (cont.):

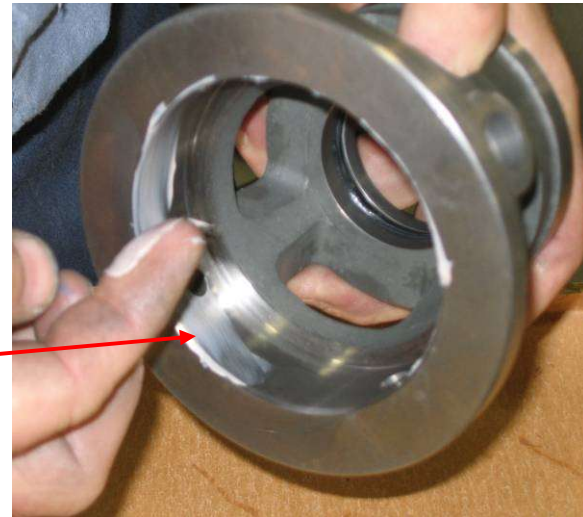
**Step 42:** Clean rotor with isopropyl alcohol.  
Grease o-ring and assemble over Rotor.



**Step 43:** Grease o-ring and  
assemble into inner diameter of  
Counterface.



**Step 44:** Grease inside of larger  
inner diameter of Counterface.



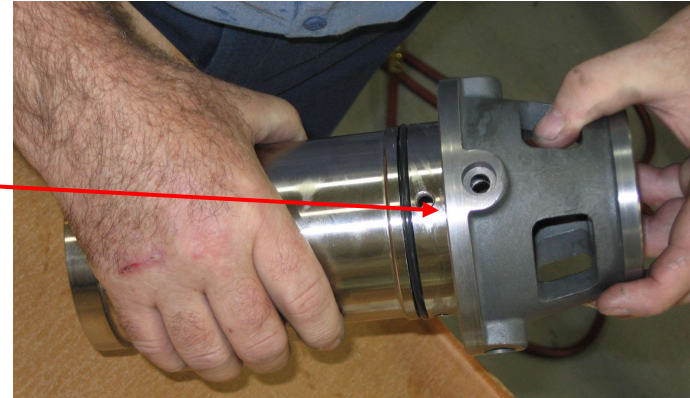
**E.I. 032-3001**

**SHT 20**

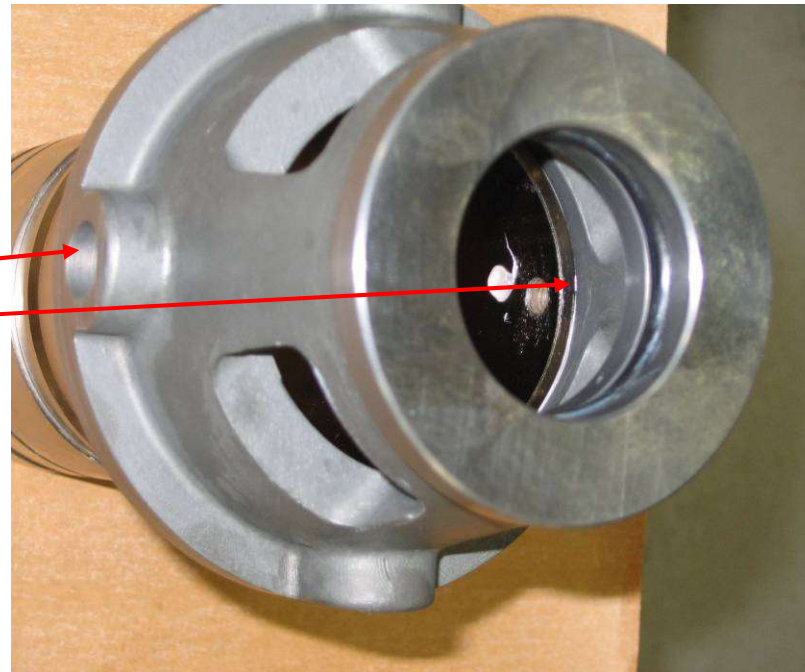
## Instruction (cont.):

**Step 45:** Assemble Counterface over Rotor.

*Note: The fit between the two parts is tight.  
Keep both parts aligned as best as possible.  
Use a rubber mallet to evenly push  
counterface down over rotor.*



**Step 46:** Visually inspect that Rotor is butted up against shoulder in Counterface and holes in side are aligned.

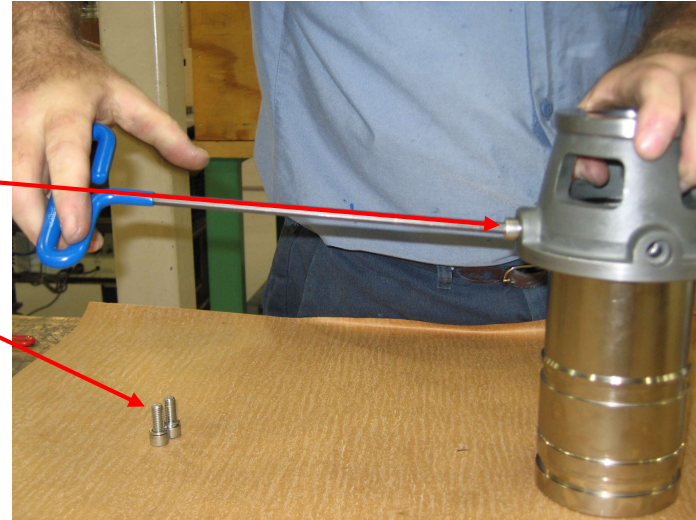


**E.I. 032-3001**

**SHT 21**

## Instruction (cont.):

**Step 47:** Place anti-seize on 4 screws.  
Assemble lockwasher onto screw and tighten  
into four holes in Counterface.



**Step 48:** Place Rotor into assembly  
fixture and wipe Counterface clean with  
rag and isopropyl alcohol.

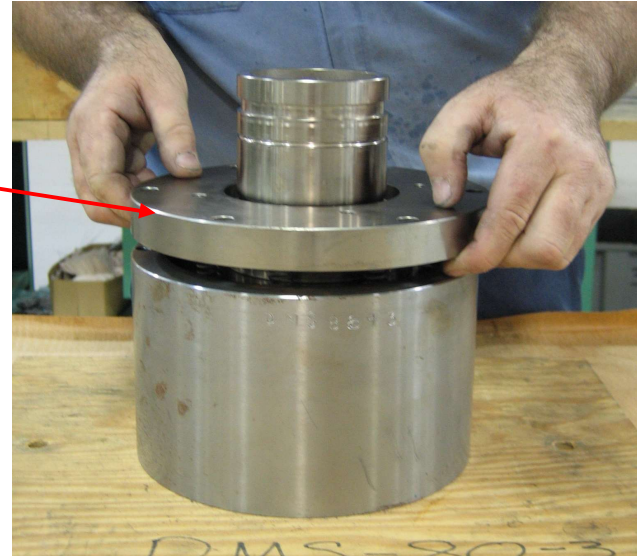


**E.I. 032-3001**

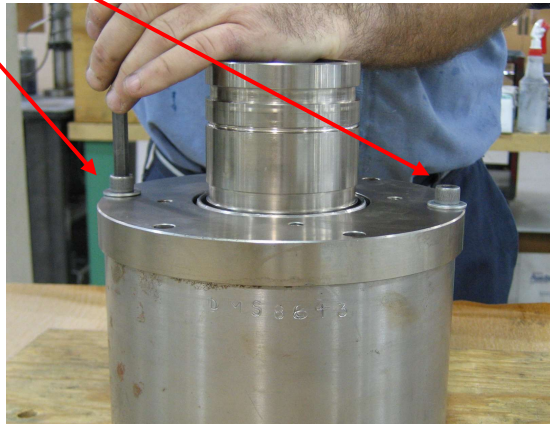
**SHT 22**

## Instruction (cont.):

**Step 49:** Carefully place Seal Assembly over Rotor.



**Step 50:** Tighten 2 bolts down evenly. This will compress the springs in the Seal Assembly.



**Step 51:** Insert 4 Red Rotor Tabs onto Flange and slide end of Tabs into groove in Rotor.



**E.I. 032-3001**

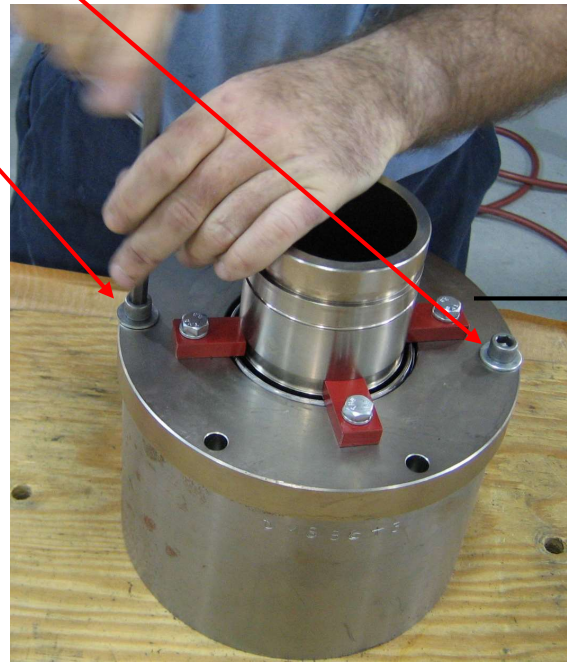
**SHT 23**

## Instruction (cont.):

**Step 52:** Tighten 4 screws of Tabs hand tight.



**Step 53:** Remove 2 bolts from Flange and remove Rotor Assembly from fixture.



**E.I. 032-3001**

**SHT 24**



## Instruction (cont.):

**Step 54:** Clean Carbon Retaining Flange with a light abrasive pad and wipe clean with isopropyl alcohol.

Insert Pin into hole on inner diameter of Carbon Retaining Flange.



**Step 55:** Insert Carbon Bearing into Retaining Flange. Slot in Carbon Bearing must be aligned with Pin for Carbon Bearing to fully seat.

*Note: Polished end of Carbon Bearing should be facing out.*



**E.I. 032-3001**

**SHT 25**

## Instruction (cont.):

**Step 56:** Insert Carbon Bearing and Retaining Flange into assembly fixture, Carbon facing down.



**Step 57:** Grease O-ring and insert into groove on inner diameter of Retaining Flange.

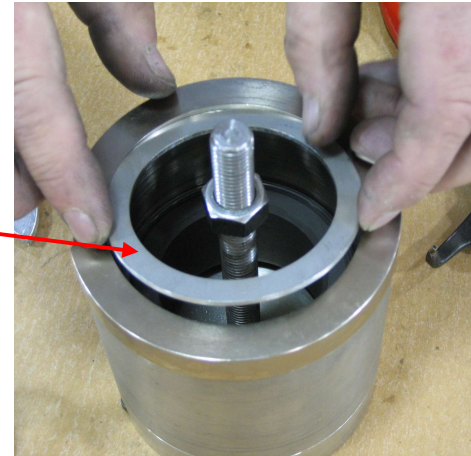


**E.I. 032-3001**

**SHT 26**

## Instruction (cont.):

**Step 58:** Insert first Spring Disc, Spring, and second Spring Disc into Retaining Flange.



**Step 59:** Push Spring down and slide retaining plate under nut.



**E.I. 032-3001**

**SHT 27**

## Instruction (cont.):

**Step 60:** Tighten down nut until groove in housing is visible over Spring Disc.



**Step 61:** Insert Retaining Ring into groove in Retaining Flange. Verify visually that Retaining Ring is fully seated.

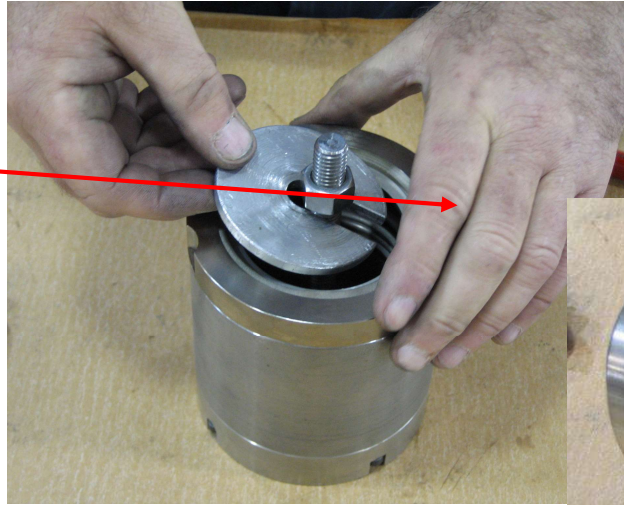


**E.I. 032-3001**

**SHT 28**

## Instruction (cont.):

**Step 62:** Loosen nut and remove retaining plate. Remove rear Seal Assembly from fixture.



**Step 63:** Grease O-ring and slide over outer diameter of Retaining Flange until O-ring is butted up against shoulder.



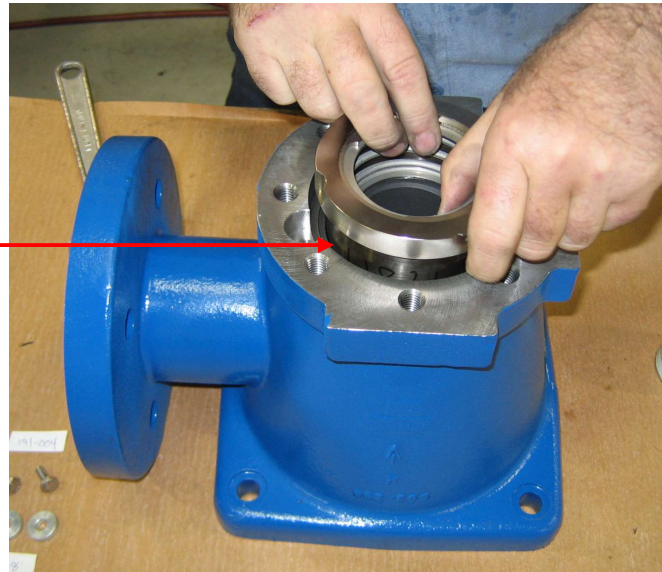
**E.I. 032-3001**

**SHT 29**

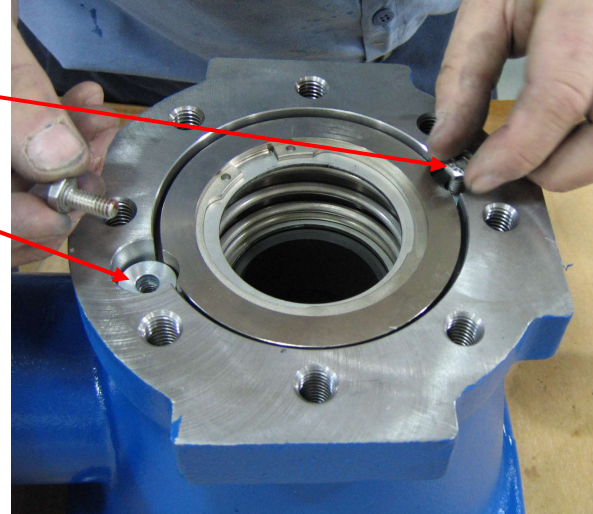
## Instruction (cont.):

**Step 64:** Clean rear face of Housing with light abrasive pad or scraper and wipe clean with isopropyl alcohol.

Insert rear Seal Assembly into rear of Housing.



**Step 65:** Place 2 washers into counterbores. Place anti-seize on 2 bolts and inset into tapped holes.

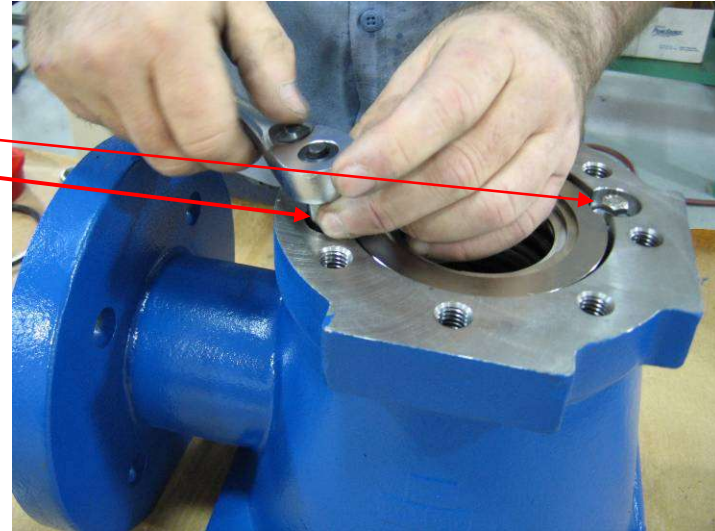


**E.I. 032-3001**

**SHT 30**

## Instruction (cont.):

**Step 66:** Tighten down 2 bolts.



**Step 67:** Clean front face of Housing with light abrasive pad or scraper and wipe clean with isopropyl alcohol.

Place Gasket into counterbore on front of Housing. Align holes in gasket with tapped hole on Housing.



**E.I. 032-3001**

**SHT 31**

## Instruction (cont.):

**Step 68:** Clean rear of Counterface with a wipe and isopropyl alcohol.



**Step 69:** Carefully insert Rotor Assembly into front of Housing. Align holes in Flange with holes in Gasket.



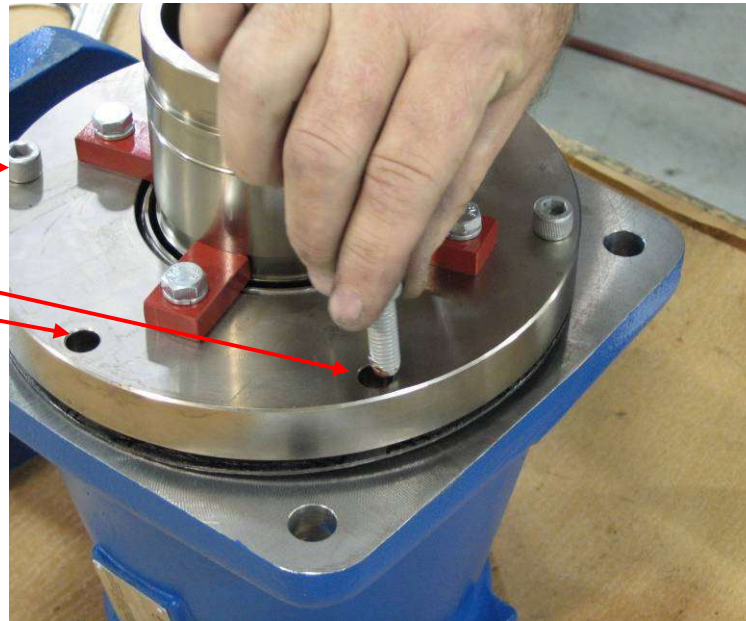
**E.I. 032-3001**

**SHT 32**

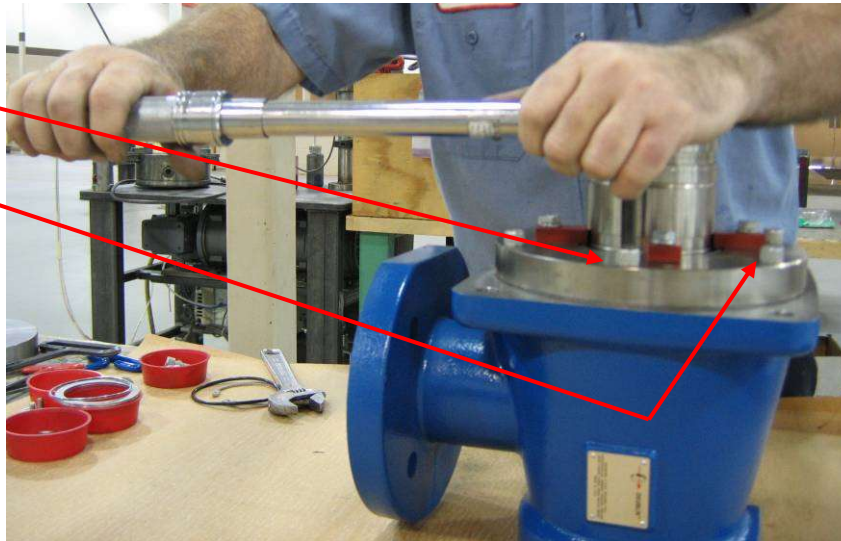


## Instruction (cont.):

**Step 70:** Place anti-seize on 6 bolts and inset bolts into Flange.



**Step 71:** Tighten down and torque 6 bolts to 35 ft-lbs.



**E.I. 032-3001**

**SHT 33**

## Instruction (cont.):

**Step 72:** Clean face of Bell Support with abrasive pad or scraper and wipe clean with isopropyl alcohol.

Insert Shims and re-attach Union to Bell Support with 4 bolts.

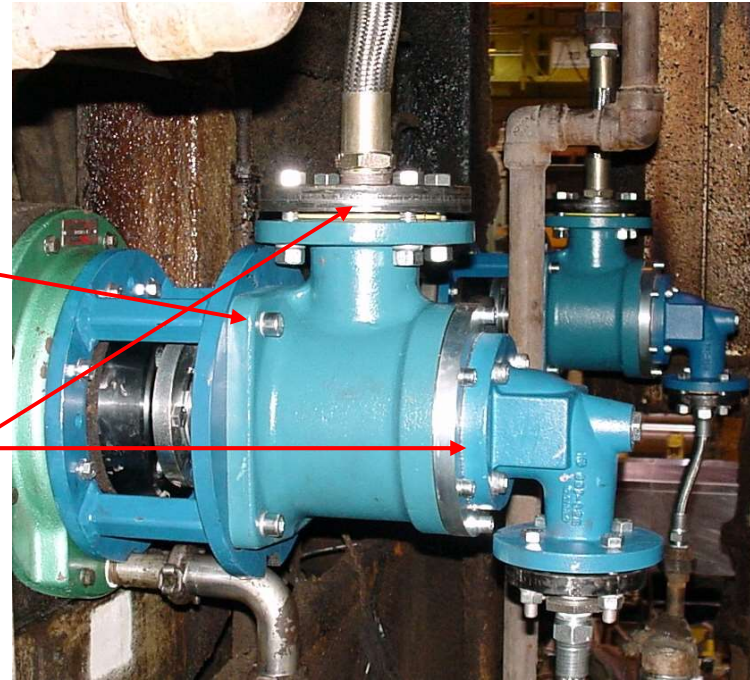
**Step 73:** Clean face of End Cap with abrasive pad or scraper and wipe clean with isopropyl alcohol.

Insert new Gasket and re-attach Endcap with 4 bolts.

**Step 74:** Clean face of Housing Port with light abrasive pad and wipe clean with isopropyl alcohol.

Place new gasket on flange and re-attach steam inlet hoses.

**Step 75:** Loosen Bolts for 4 Red Rotor Tabs and rotate Tabs 90 degrees away from Rotor. Retighten bolts for Tabs.



**COMPLETED**

E.I. 032-3001

SHT 34