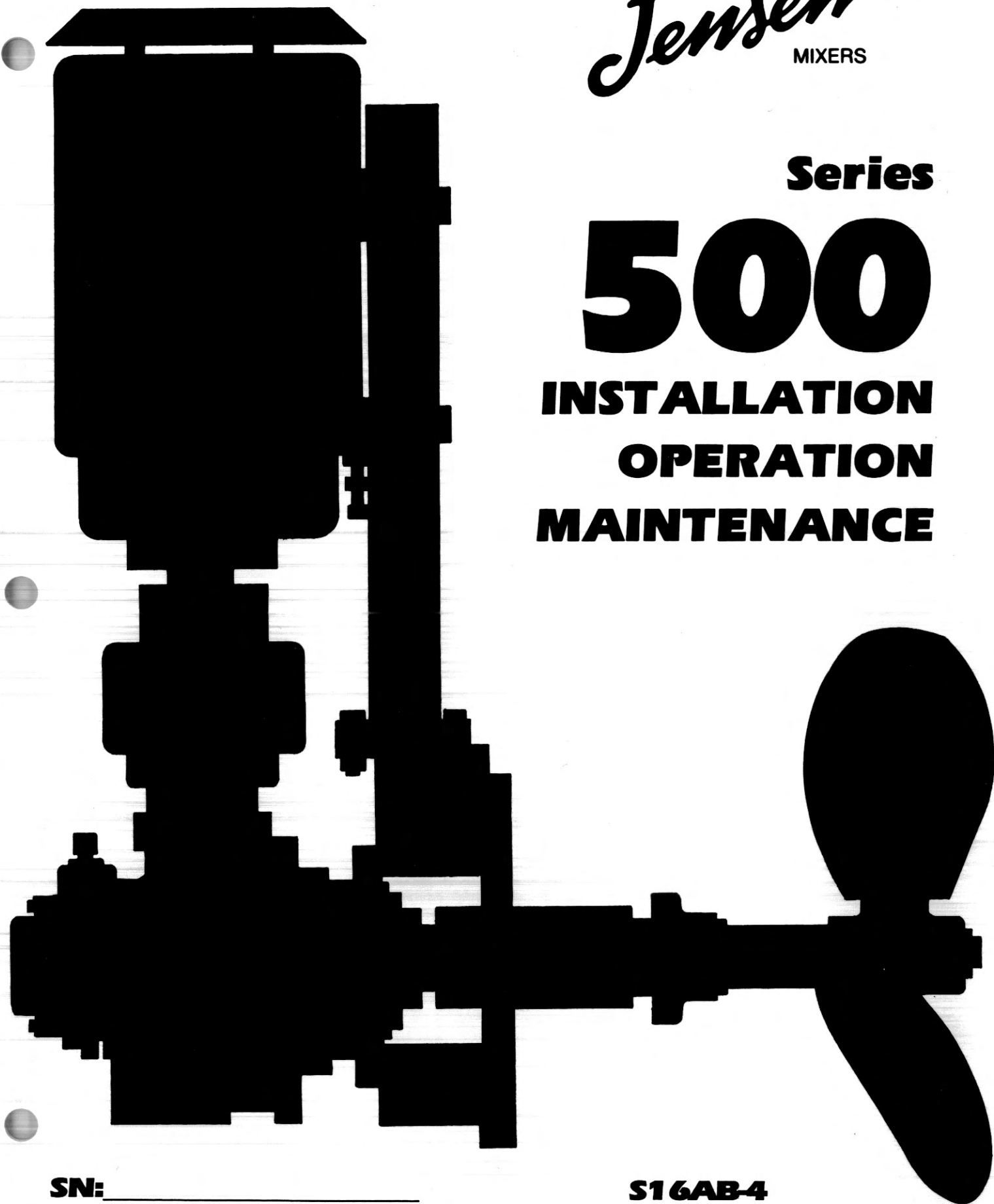


*Jensen*  
MIXERS

**Series**

**500**

**INSTALLATION  
OPERATION  
MAINTENANCE**



**SN:** \_\_\_\_\_

**S16AB4**

# INDEX

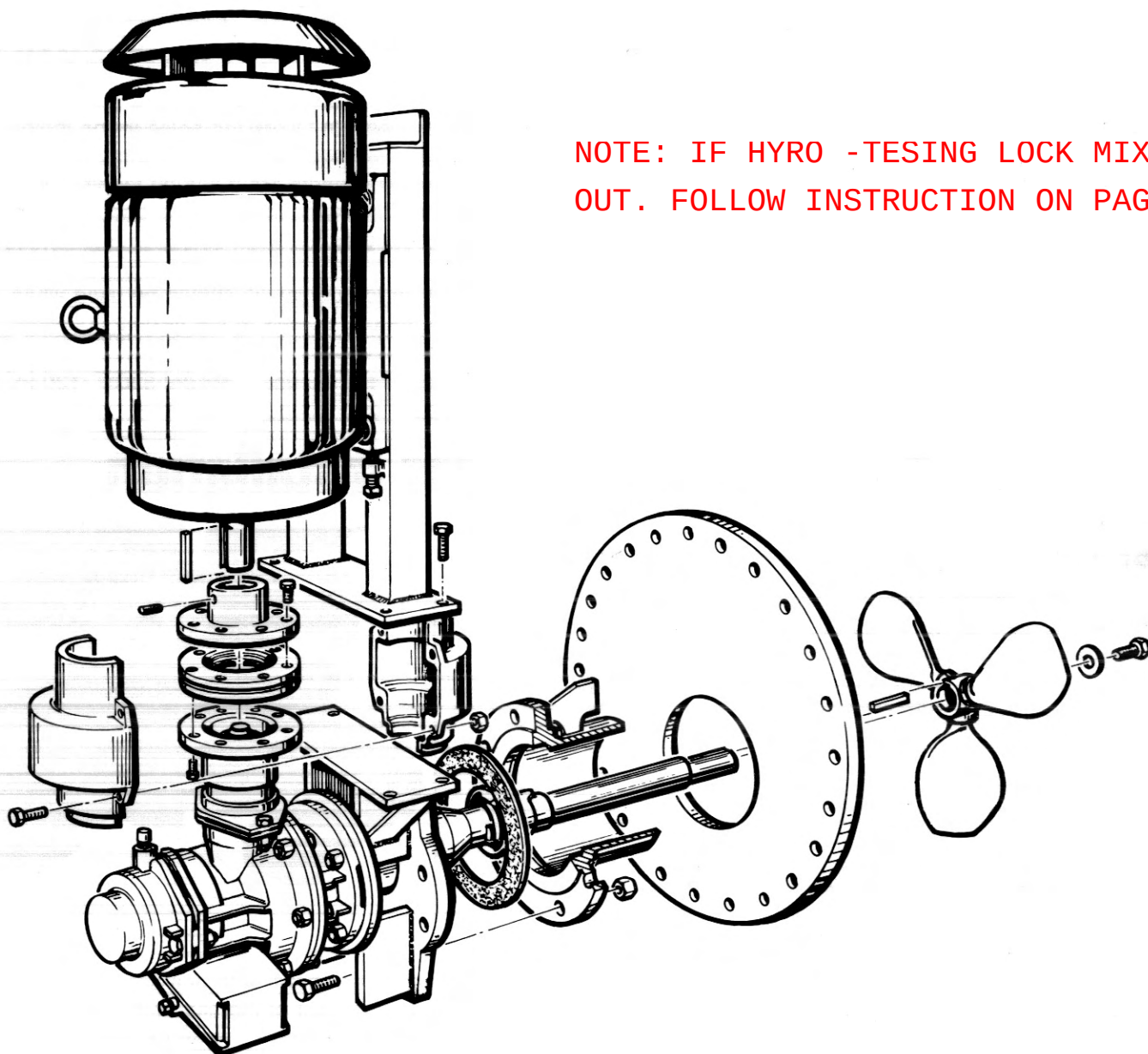
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# Installation

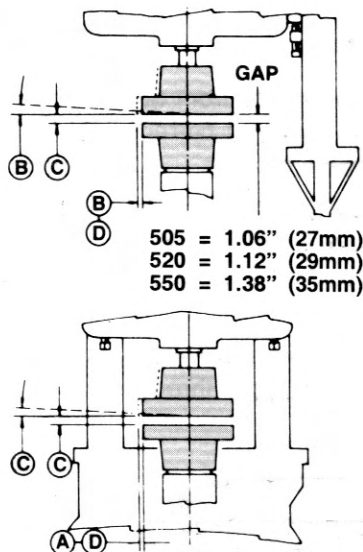
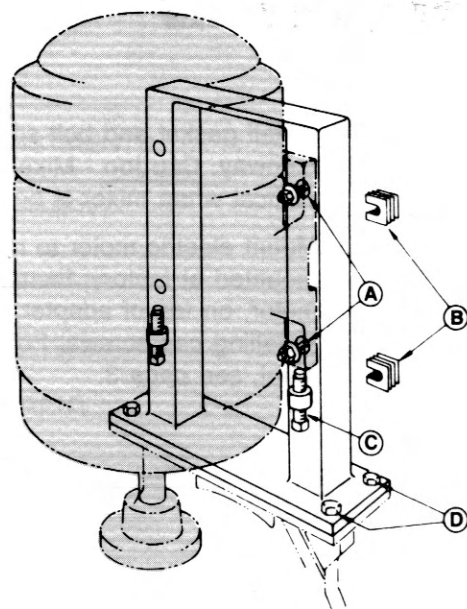
## 500 SERIES MIXERS

1. Remove blank coverplate from tank manway and check mixer coverplate for correct size, hole location and orientation.
2. Install nozzle gasket and bolt mixer to nozzle.  
**Caution** - The mixer pinion shaft must be in line with "top" stamped on the flange edge of the nozzle.
3. Mount propeller on shaft if manway is large enough for propeller to roll through.
4. Install gasket and bolt coverplate with mixer to manway. **Caution** - Mixer pinion shaft must be vertical when mixer is bolted to manway.
5. Mount electric motor to motor mount if not mounted at factory. Install motor mount, with motor, on top of adapter, lining up the holes and installing cap screws. For motor coupling alignment, see page 3.

NOTE: IF HYRO -TESING LOCK MIXER OUT. FOLLOW INSTRUCTION ON PAGE 5.



# Adjustments For Motor Coupling Alignment



Jensen Series 500 Mixer couplings have precisely machined edges for easy alignment using only a straightedge. The following adjustment points on the motor mount are used for coupling alignment:

(A) Oversized holes in motor mount and (B) shims under motor feet are used for parallel and angular alignment. (C) Set screws are used for angular alignment and adjustment of the gap between

coupling halves. (D) Oversized holes in the motor mount base are used for parallel alignment. Very small final adjustments are made by tapping or bumping the motor mount while the base bolts are snug but not tight.

The following torque values should be used when tightening the cap screws in the flexible coupling element:

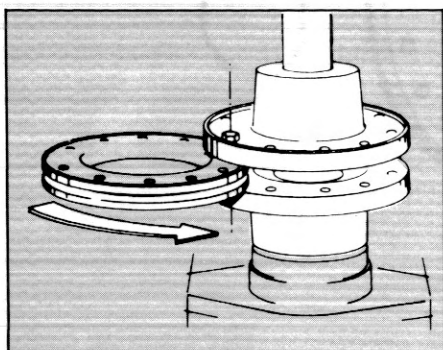
|                  |                     |                  |                     |
|------------------|---------------------|------------------|---------------------|
| <b>Model 505</b> | <b>120 in.-lb.,</b> | <b>Model 520</b> | <b>120 in.-lb.,</b> |
| <b>Model 550</b> | <b>240 in.-lb.</b>  |                  |                     |

## Flexible Coupling Element Installation

### For coupling element replacement

Remove the coupling cover.

Remove the bolts on the motor and gearbox coupling halves. The flexible element will now slide out. Note that when removing the gearbox (page 5) it is not necessary to remove the bolts in the gearbox half.



To install the flexible element, position as shown with one cap screw, then pivot the element into position. Insert the rest of the cap screws and tighten to the torque values shown on back cover. Tighten screws evenly to prevent stripping threads or bending cap screws.

# Initial Startup

1. Fill gear box with oil. See page 19 for oil interchangeability.
2. Make-up electrical wiring in accord with existing electrical codes for the area.
3. Turn motor on for 5 seconds maximum to check shaft or propeller rotation. The mixer shaft must turn clockwise when viewing mixer from behind, looking towards the tank.
4. Start mixer after tank contents are 4 feet (1.2 meters) above the propeller.
5. Check the motor current. With an ammeter, check both electrical legs to be sure that the amperage is less than that printed on the motor name tag.

**CAUTION:** Operation of mixer(s) without propellers fully submerged may result in mixer vibration and subsequent damages. Allow approximately 4 feet of fluid above propeller tip as minimum operating level.

## OPERATION:

Jensen Fixed Angle Mixers are recommended for blending in accordance with your company's specifications furnished at time of purchase. Blending times, fluid specifications, operating procedures, etc. are spelled out in this specification. If operating procedures have not been specified, Jensen recommends:

If fluids to be mixed are pumped into the tank at the same time, operate mixer during filling.

If fluids to be mixed are pumped in separately, operate mixer when starting pump-in of second fluid.

Where fluids are already blended and purpose of mixer is to prevent stratification, automatic timer control is recommended with a cycle of 2 hours on, 6 hours off.

Gear Box operating temperatures (above ambient)

|             | 505          | 520          | 550          |
|-------------|--------------|--------------|--------------|
| Gear Case - | 50F° or 28C° | 70F° or 39C° | 70F° or 39C° |
| Oil -       | 65F° or 36C° | 85F° or 47C° | 85F° or 47C° |

## PERIODIC MAINTENANCE:

Change oil (while hot) after first 10 hours of Operation.

Change oil once each year and inspect flexible coupling.

ONCE A QUARTER IF RAN 24/ 7 !!

### Gear Box Oil Capacities:

|     |                         |
|-----|-------------------------|
| 505 | 11/2 pints (.71 litres) |
| 520 | 2 pints (1.89 litres)   |
| 550 | 1 gal. (3.79 litres)    |

# Mechanical Seal Removal

1. Remove motor coupling covers and flexible coupling element. See Page 3.
2. Remove end cap of gear box. Turn pinion coupling half until arrow on end hub at rear of gear box is pointed up.
3. Remove 2 cap screws and install them in the jack screw holes provided in the end hub. Pull the end hub back (1) approximately 1/2" to 1 1/2" and rotate 1/4 turn counter clockwise until lock engages and shaft stops (90° or more) (2) This seals off the tank contents and holds the shaft securely. If the end hub is difficult to pull back by hand, jack screw holes in it may be used as a light duty puller only. If strong resistance is encountered, use a wheel or bearing puller.
4. Remove shaft bolt and end hub.
5. Remove the 4 cap screws holding the gear box to the adapter.

6. Support the gear box evenly and slide it off the propeller shaft.

With the gear box removed, the mechanical seal or stuffing box may be removed.

To reinstall mechanical seal or stuffing box, first clean the propeller shaft of any dirt or grit, then reverse the above steps.

## WARNING:

The seal replacement procedure should only be performed when tank fluid level is **BELOW THE MIXER SHAFT CENTERLINE**. The Jensen Tank shut-off device is provided as a "convenience" and is to be used at the operator's discretion and risk if the tank fluid level is above the mixer shaft centerline. **NEVER** attempt any maintenance procedure without first "locking out" the electric motor in the "OFF" position.

# Repairs

## Gear Box

For gear inspection, remove two bolts retaining the pinion assembly. If necessary, the housing may be pried upwards at the joint between the pinion housing flange and the gear case. The condition of

the gear set and bearings can be determined from the contact pattern on the gear teeth. (See gear contact pattern page 8)

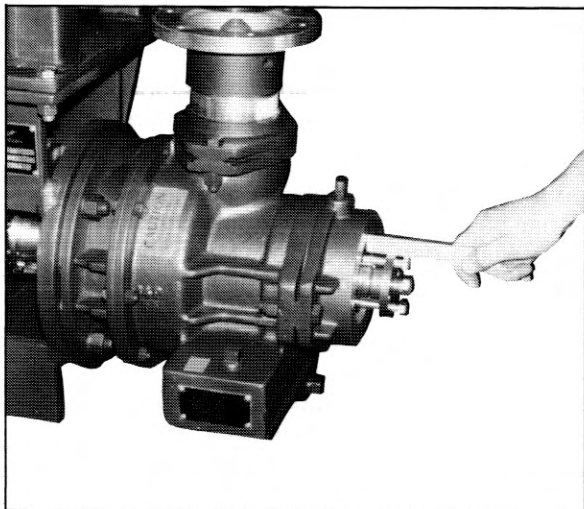


**Step 1**

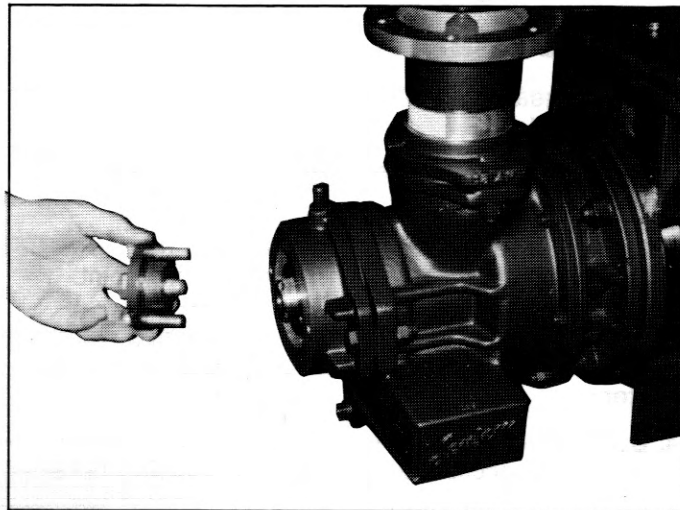


**Step 2**

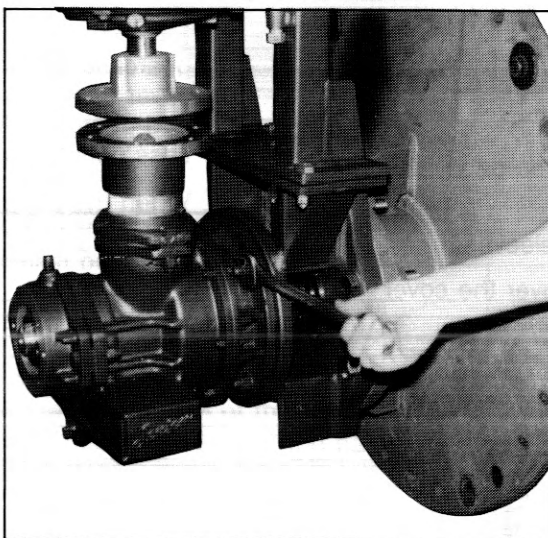
# Mechanical Seal Removal



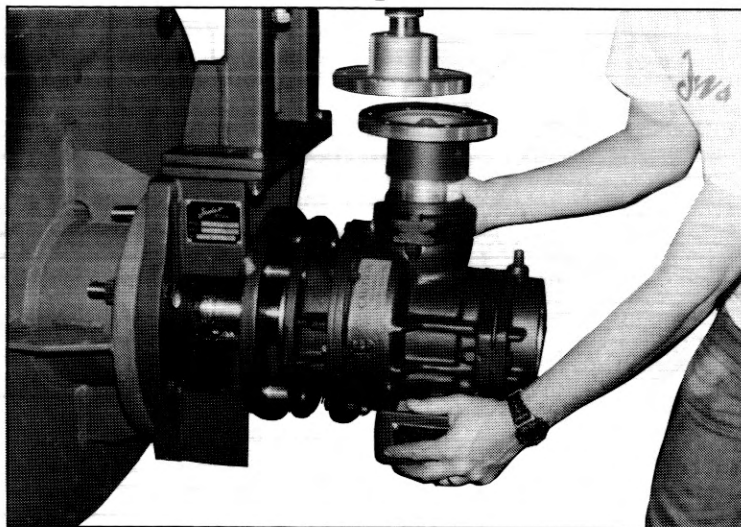
**Step 3**



**Step 4**



**Step 5**



**Step 6**

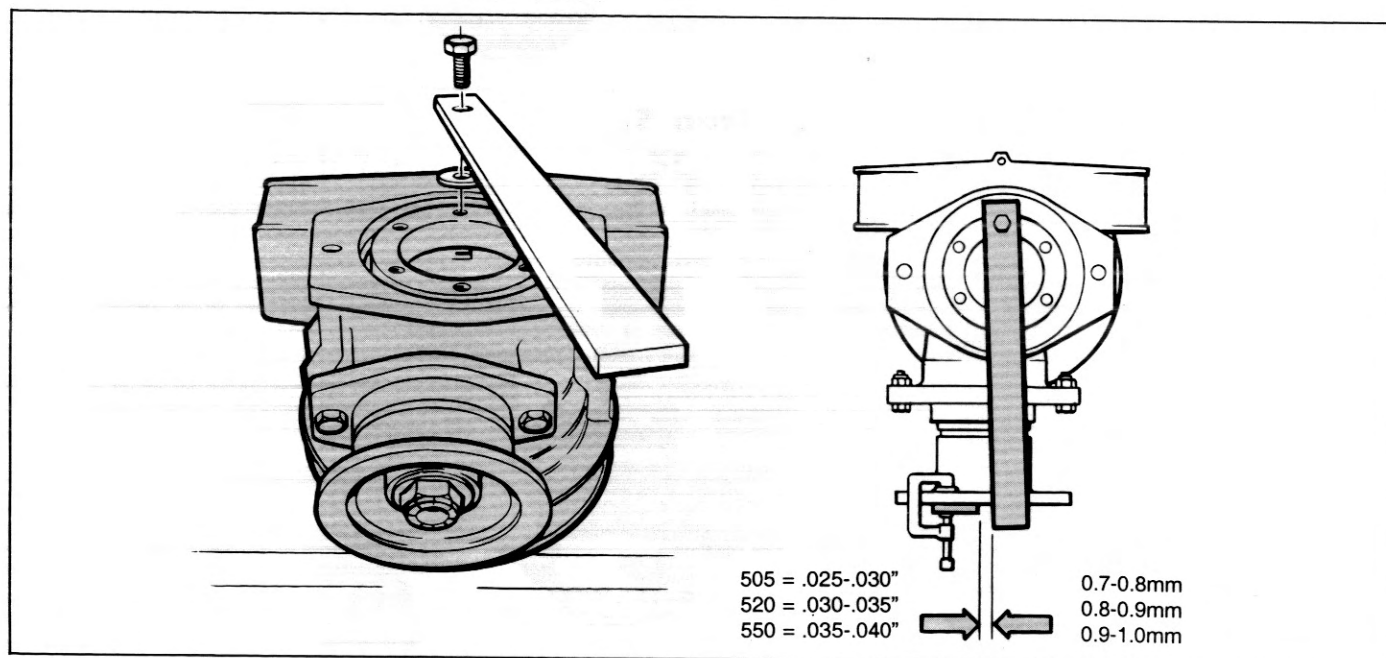
# Ring Gear And Main Bearing Replacement

## A. DISASSEMBLE

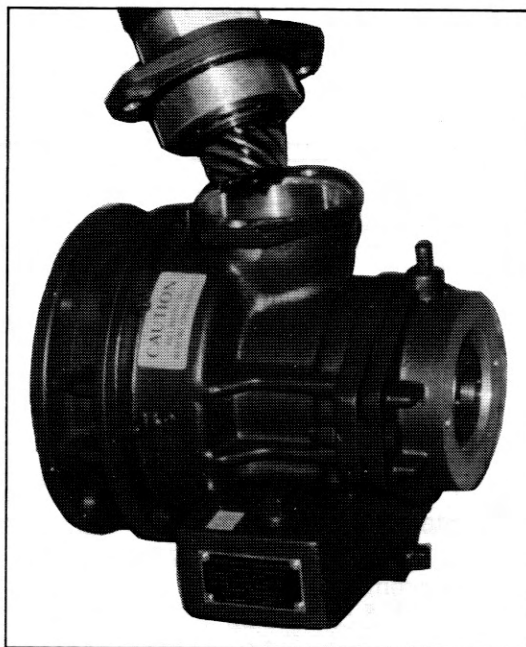
1. Clamp gearbox cover on workbench with the small end up.
2. Remove the case/cover bolts and lift off the gearcase.
3. Lift the drive sleeve up off the cover. The gear and bearings should be inspected at this point. If they are not excessively worn or loose, the gear-box should be reassembled. If replacement gears or bearings are required, proceed with the next steps.
4. Use a bearing puller to remove the main bearing. This gives access to the ring gear retaining bolts.
5. Remove the oil seal from the gearcase.
6. The thrust bearing is a press fit in the bearing ring. Use a bearing puller.

## B. REASSEMBLY - BACKLASH ADJUSTMENT

1. Bolt ring gear to drive sleeve. See page 22 for torque values.
2. Press main bearing onto drive sleeve.
3. Position the drive sleeve back over the cover without shims.
4. Position gearcase, with pinion assembly, over the drive sleeve. Do not install case/body bolts or the oil seal.
5. Bolt a bar to the drive sleeve as shown. Swing the bar back and forth through a short arc until the backlash gap can be felt. Move the bar clockwise until tooth contact can just be noticed. Carefully clamp a bar on the coupling half so that it barely touches the left side of the drive sleeve bar. Move the drive sleeve bar counterclockwise until tooth contact is just felt again. Measure the gap between the bars. When the backlash is correct, this gap will correspond to the values shown on the illustration.
6. Since no shims were installed this first time, they will probably have to be added now to bring the backlash down to the correct value. Remove the gearcase and the drive sleeve. Add shims on the cover bearing shoulder and reassemble sleeve and gearcase. Re-measure and repeat this process until the backlash is in the specified range.
7. When the adjustment is correct, remove the case and position the case/body o-ring, replace the case and fasten the case/body cap screws.
8. Install the oil seal.

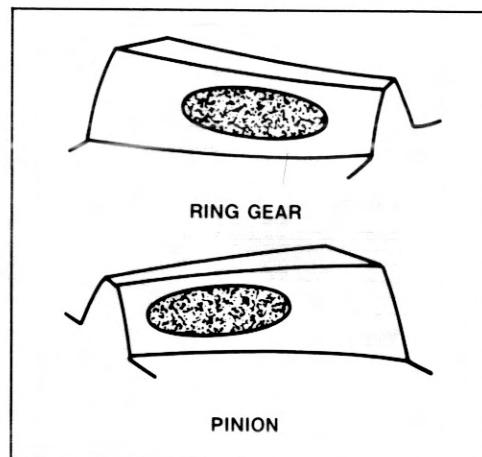
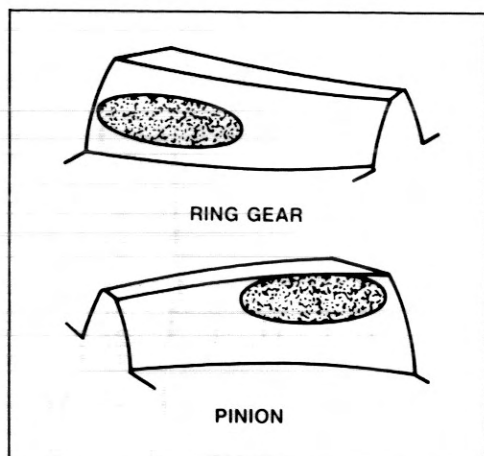


# Gear Set Contact Pattern

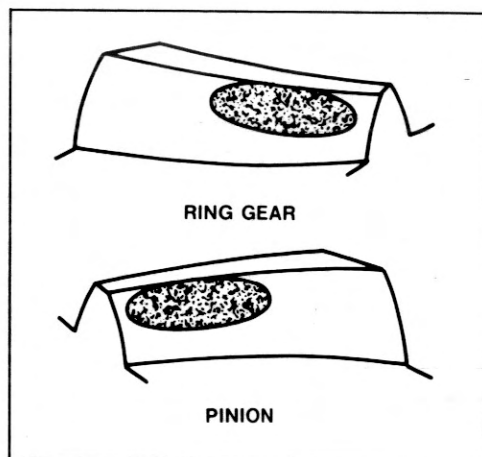


Using a suitable marking compound, check the contact pattern. If the markings look like the picture at right, the pattern is to accepted standards.

Gears are cut with a contact pattern about half the length of the tooth, the location slightly favoring the toe end of the tooth. Under load the pattern will shift somewhat toward the heel of the tooth, and thus become more central, under no circumstances must the pattern be concentrated on the ends of the teeth.



If the contact pattern looks like the picture to left, remove shims between the case and pinion bearing housing. This pattern indicates that the pinion is sitting too high.



If the contact pattern looks like the picture to right, add shims between the case and pinion bearing housing. This pattern indicates that the pinion is sitting too low.

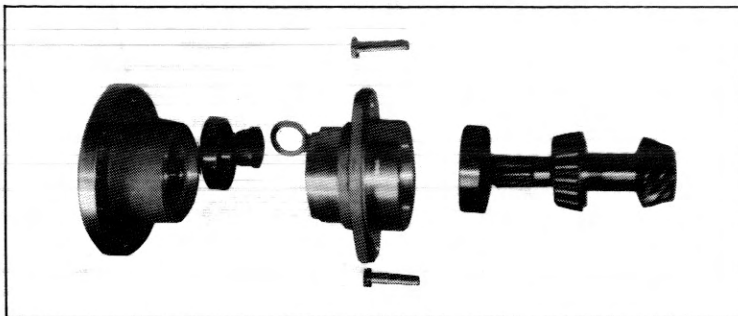
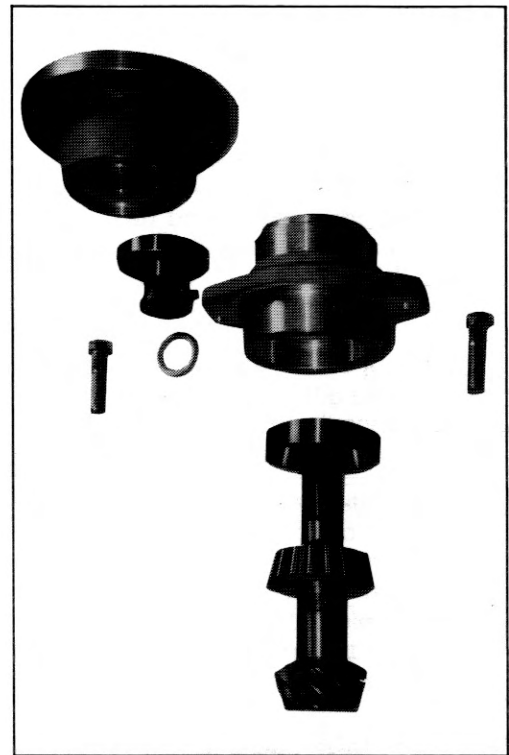
# Pinion Bearings And Gear Replacement

## A. DISASSEMBLY

1. Clamp pinion teeth in a vise equipped with soft jaws to prevent damage.
2. Remove pinion nut.
3. Remove coupling half. Pry between coupling and pinion housing or use a bearing puller to start it off.
4. Tap the housing upwards lightly with a rubber mallet, then lift it off.
5. Pull both bearings. If either bearing is damaged, replace both.

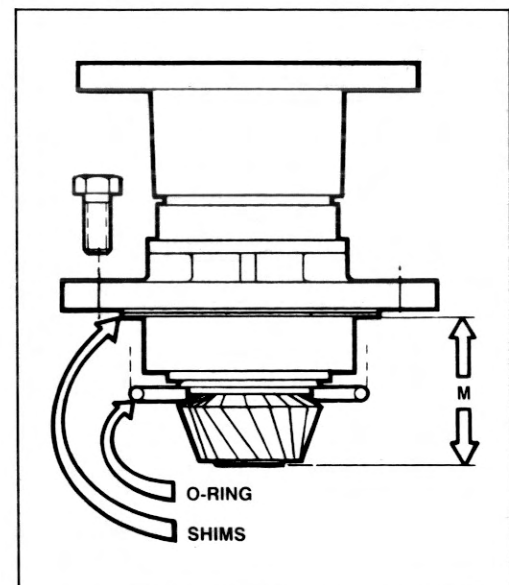
## B. REASSEMBLY

Reverse the procedure described above. Start by using the same shim thickness under the upper bearing as the original assembly; this will serve as a starting point. When reassembled, the pinion housing should turn freely, but with no slack that can be felt by rocking the housing. If it is too tight, disassemble and add shims under the upper bearing; if it is too loose, reduce shim thickness. There should be no measurable preload on this assembly.



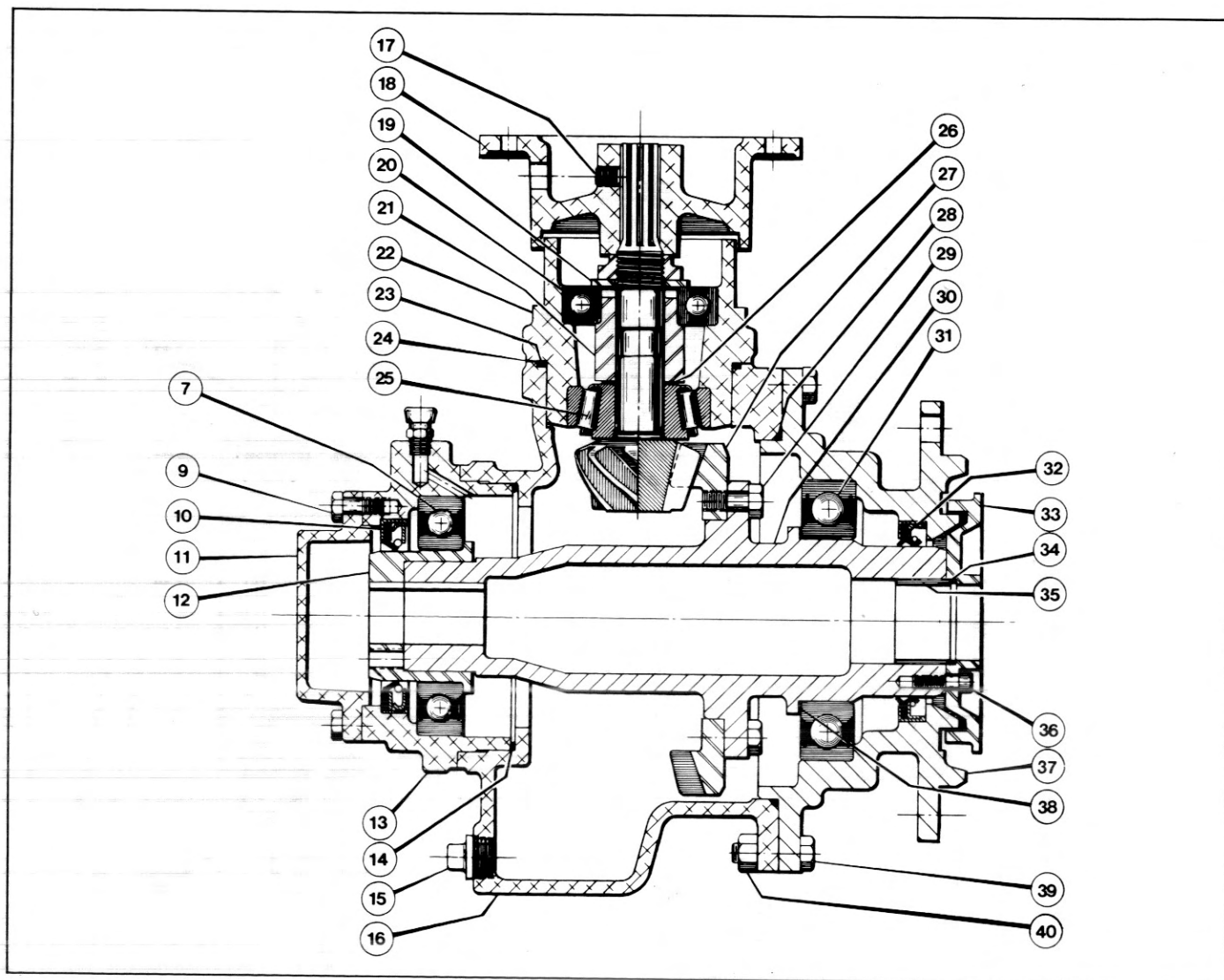
## C. PINION DEPTH ADJUSTMENT

1. The distance from the bottom of the pinion to the housing flange (M) must be:  
2.688" (68.275 mm) for Model 505  
3.000" (76.200 mm) for Model 520  
3.500" (88.900 mm) for Model 550  
If (M) is greater than it should be, shims must be added as shown.  
If the outside of the upper case flange is stamped with a number such as +002, add .002" to the shim requirement. If the stamped number is -001, deduct .001" from the shims required.
2. Replace O-Ring.
3. Put pinion assembly in gearcase and install bolts. Torque to values shown on page 22.



# Gear Box Assembly

## For Model 505 Mixer



| ITEM NO. | DESCRIPTION  | ITEM NO. | DESCRIPTION  |
|----------|--------------|----------|--------------|
| 7        | Bearing      | 28       | O-ring       |
| 10       | Oil Seal     | 30       | Drive Sleeve |
| 11       | Cap          | 31       | Bearing      |
| 12       | Ring         | 32       | Oil Seal     |
| 13       | Ring         | 33       | Ring         |
| 14       | O-ring       | 34       | O-ring       |
| 16       | Case         | 35       | Bushing      |
| 18       | Coupling Hub | 37       | Body         |
| 19       | Washer       | 38       | Shims        |
| 20       | Bearing      |          |              |
| 21       | Bushing      |          |              |
| 22       | Cap          |          |              |
| 23       | O-ring       |          |              |
| 24       | Shims        |          |              |
| 25       | Bearing      |          |              |
| 26       | Shims        |          |              |
| 27       | Gear Set     |          |              |

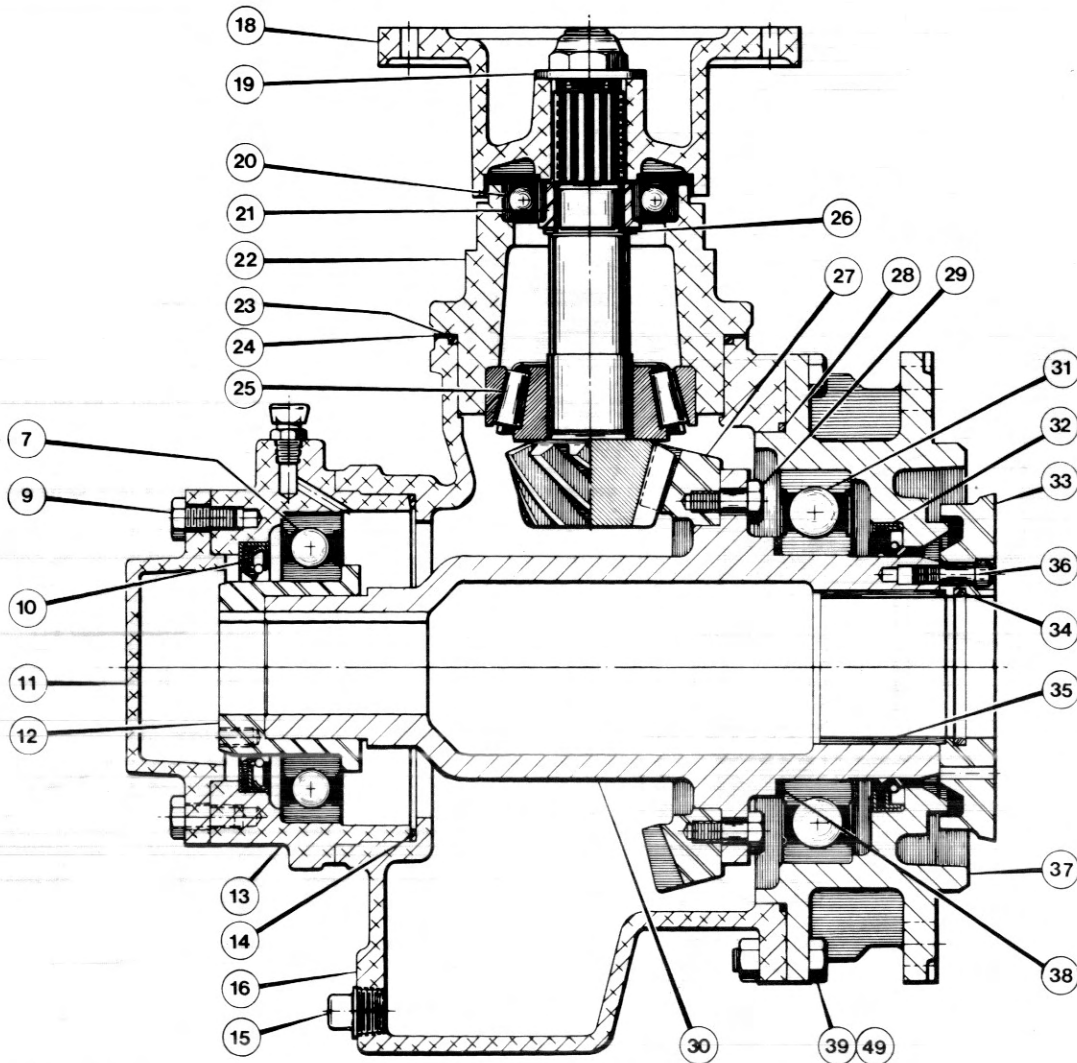
### IMPORTANT

When ordering parts, give:

Mixer Model  
Serial Number  
Item Number  
Part Name  
Part Dwg. No. S12N-1

# Gearbox Assembly

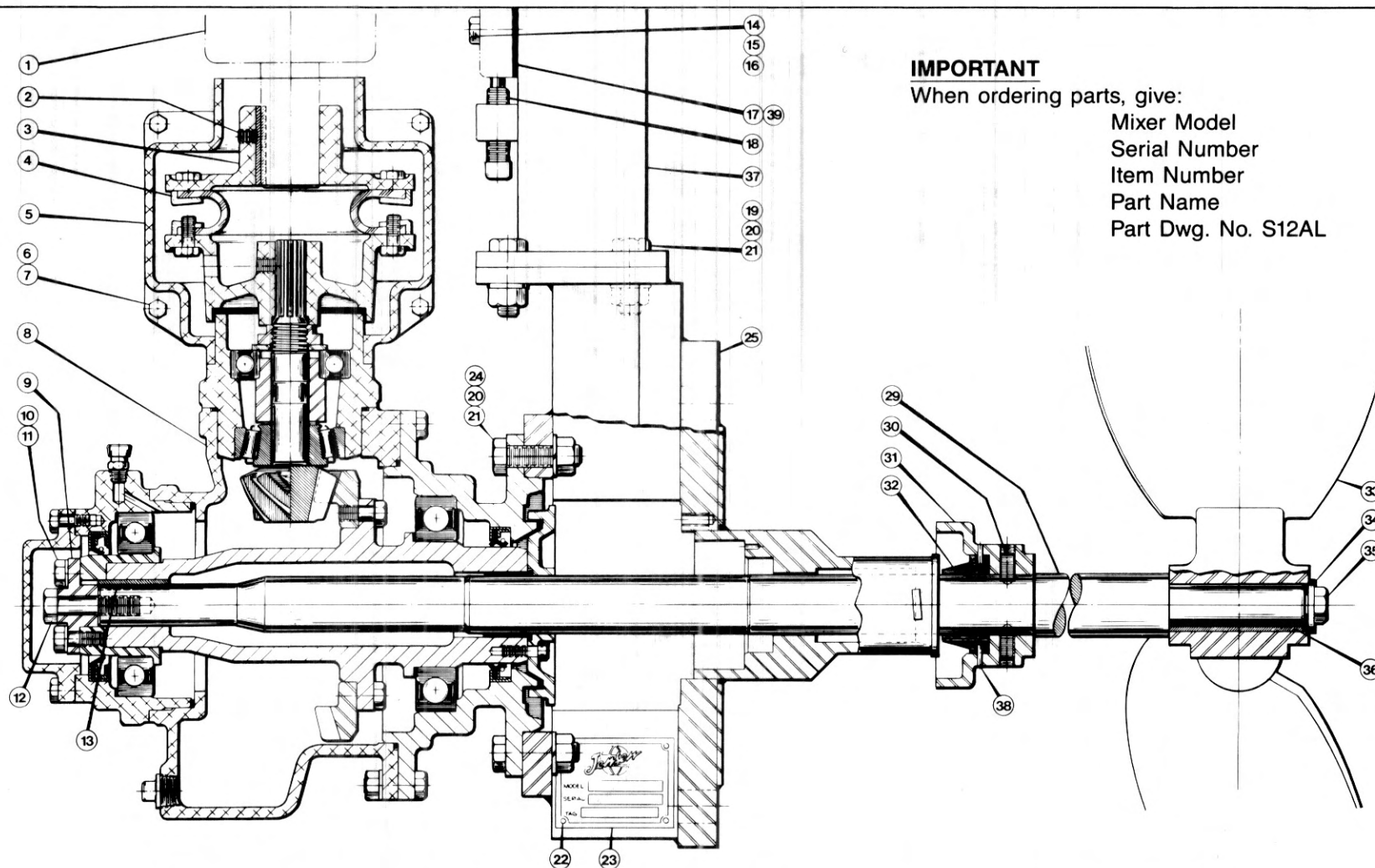
## For Model 520 and 550 Mixer



| ITEM NO. | DESCRIPTION  | ITEM NO. | DESCRIPTION  |
|----------|--------------|----------|--------------|
| 7        | Bearing      | 24       | Shims        |
| 10       | Oil Seal     | 25       | Bearing      |
| 11       | Cap          | 26       | Shims        |
| 12       | Ring         | 27       | Gear Set     |
| 13       | Ring         | 28       | O-ring       |
| 14       | O-ring       | 30       | Drive Sleeve |
| 16       | Case         | 31       | Bearing      |
| 18       | Coupling Hub | 32       | Oil Seal     |
| 19       | Washer       | 33       | Ring         |
| 20       | Bearing      | 34       | O-ring       |
| 21       | Bushing      | 35       | Bushing      |
| 22       | Cap          | 37       | Body         |
| 23       | O-ring       | 38       | Shims        |

### IMPORTANT

When ordering parts, give:  
 Mixer Model  
 Serial Number  
 Item Number  
 Part Name  
 Part Dwg. No. S12-BN

**IMPORTANT**

When ordering parts, give:

Mixer Model  
 Serial Number  
 Item Number  
 Part Name  
 Part Dwg. No. S12AL

**ITEM NO.****DESCRIPTION**

|    |                   |
|----|-------------------|
| 3  | Coupling Hub      |
| 4  | Coupling Element  |
| 5  | Coupling Covers   |
| 8  | Gear Box Assembly |
| 9  | Hub               |
| 12 | Cap Screw         |
| 13 | Key               |
| 25 | Adapter Weldment  |

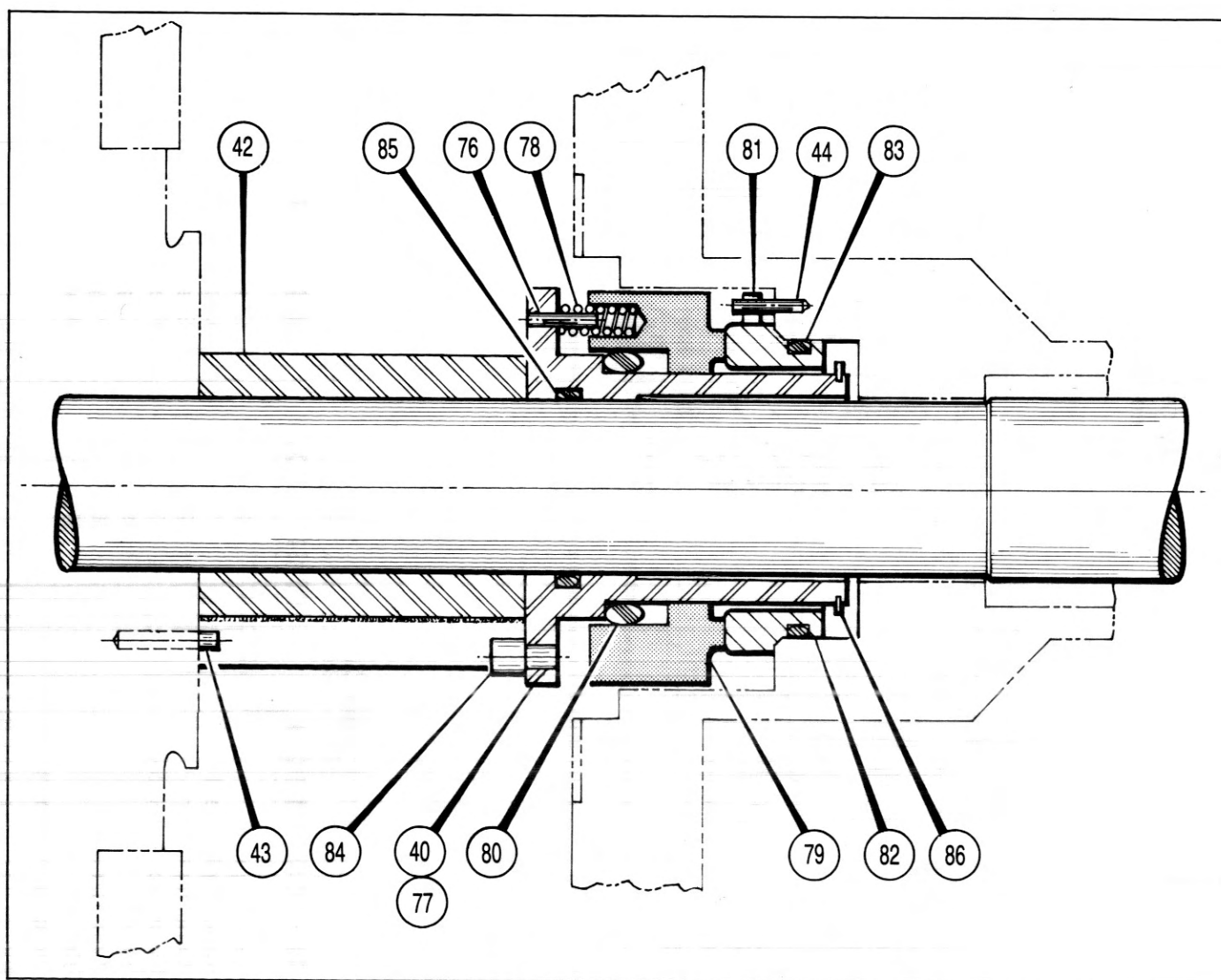
**ITEM NO.****DESCRIPTION**

|    |             |
|----|-------------|
| 29 | Shaft       |
| 31 | Lock Ring   |
| 32 | Seal Ring   |
| 33 | Propeller   |
| 35 | Cap Screw   |
| 36 | Key         |
| 37 | Motor Mount |

500 Series Mixer

# Type 'F' Single Mechanical Seal

## For 500 Series Mixers



| ITEM NO. | DESCRIPTION        | ITEM NO. | DESCRIPTION                                                      |
|----------|--------------------|----------|------------------------------------------------------------------|
| 40       | 'F' Seal Cartridge | 84       | Drive Pin                                                        |
| 42       | Spacer             | 85       | O-ring                                                           |
| 43       | Pin, Spring        | 86       | Snap Ring                                                        |
| 44       | Pin, Spring        | 87       | Wearing Parts Consisting of<br>Items: 78, 79, 80, 82, 83, 85, 86 |

ITEM NO. 40, "F" SEAL CARTRIDGE CONSISTING OF:

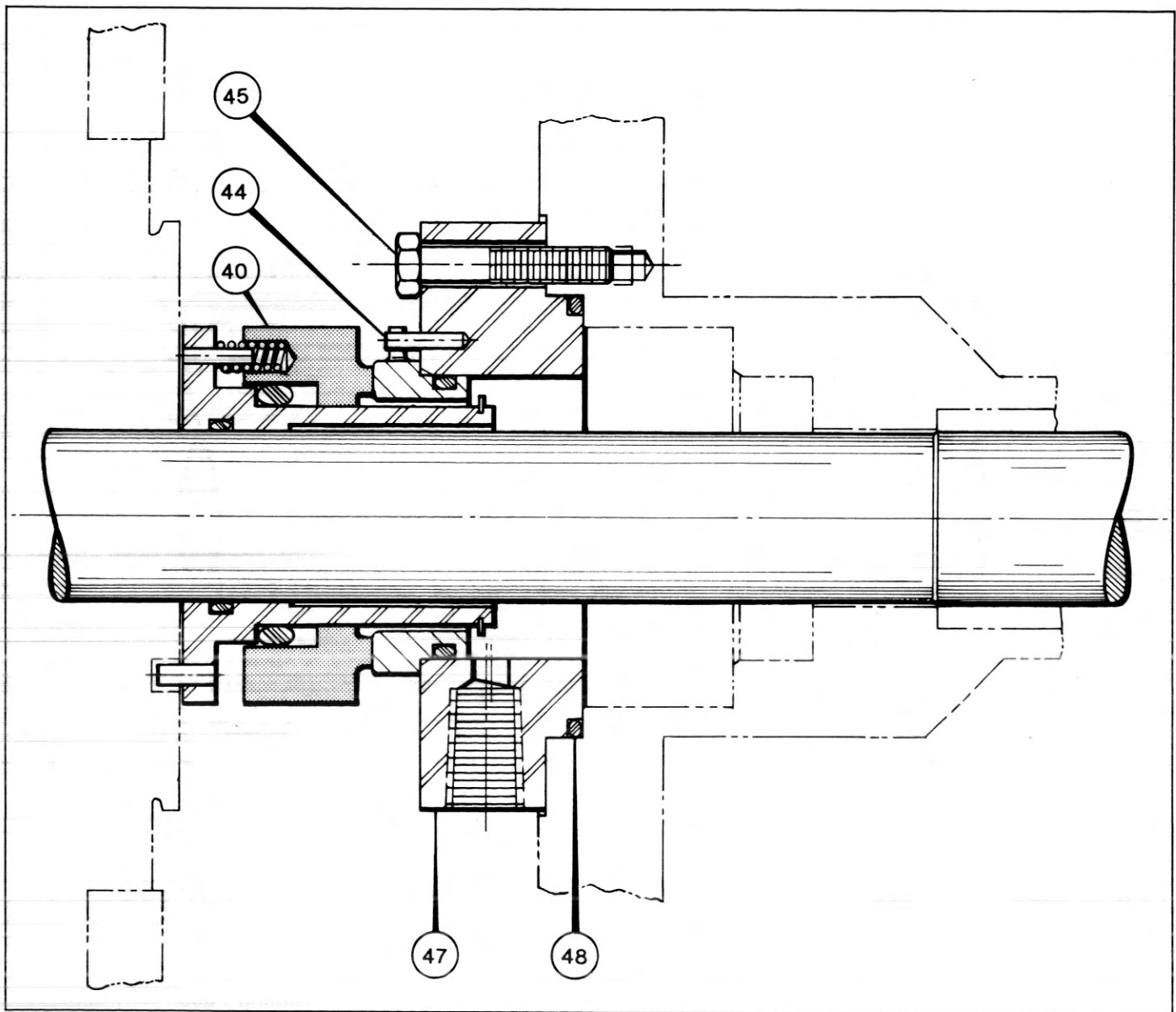
| ITEM NO. | DESCRIPTION   | ITEM NO. | DESCRIPTION     |
|----------|---------------|----------|-----------------|
| 76       | Pin           | 80       | O-ring          |
| 77       | Sleeve        | 81       | Drive Pin       |
| 78       | Spring        | 82       | Stationary Face |
| 79       | Rotating Face | 83       | O-ring          |

### IMPORTANT

When ordering  
parts, give:  
Mixer Model  
Serial Number  
Item Number  
Part Name

# Type 'F' Single Mechanical Seal With Flush

## For 500 Series Mixers



| <b>ITEM NO.</b> | <b>DESCRIPTION</b> |
|-----------------|--------------------|
|-----------------|--------------------|

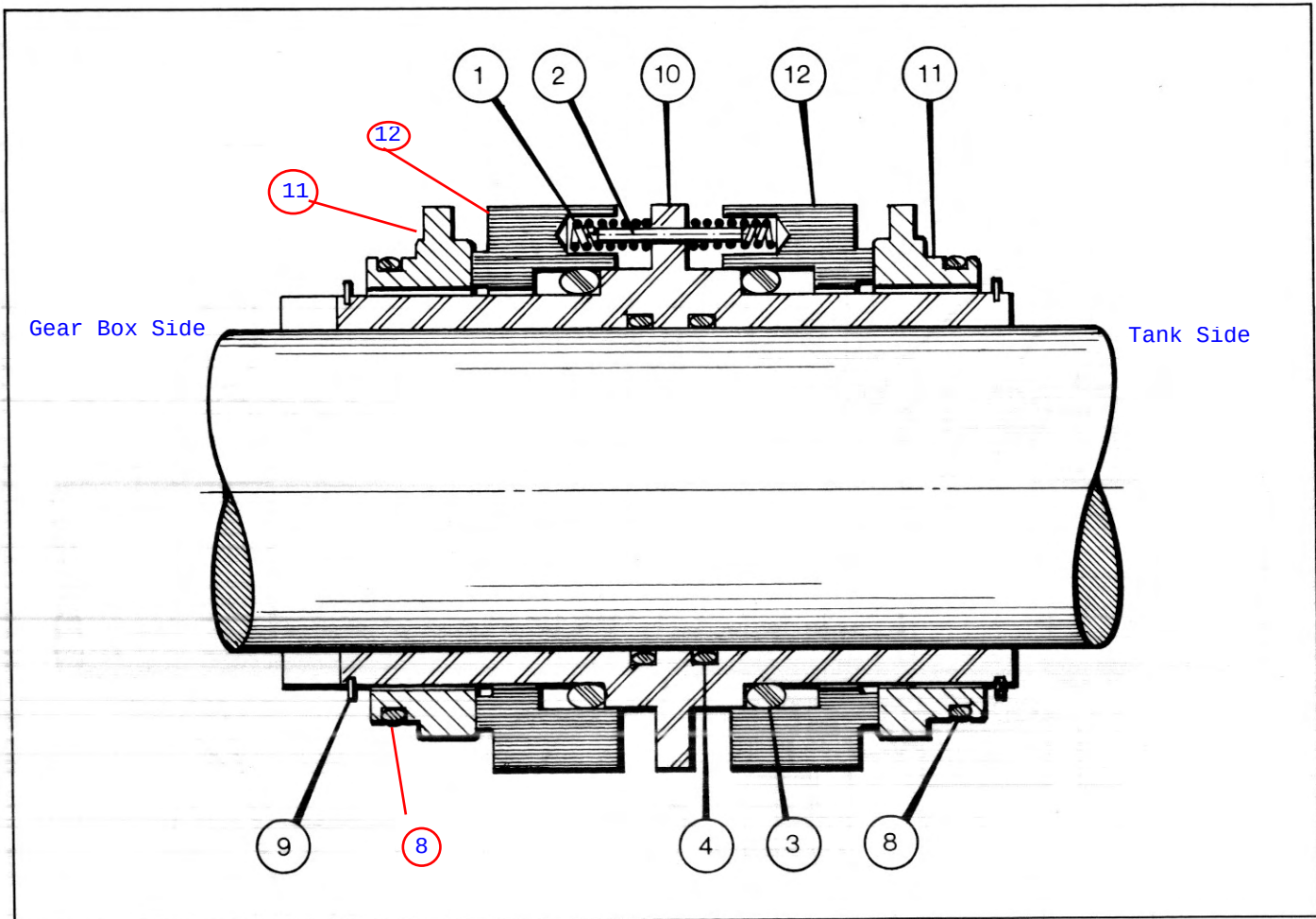
|    |                            |
|----|----------------------------|
| 40 | Type 'F' Seal<br>Cartridge |
| 44 | Pin, Spring                |
| 45 | Cap Screw                  |
| 47 | Body                       |
| 48 | O-ring                     |

### **IMPORTANT**

When ordering parts, give  
Mixer Model  
Serial Number  
Item Number  
Part Name  
Part Dwg. No. 3RG

# Type 'F' Double Seal Cartridge

## For 500 Series Mixers



### ITEM NO.

### DESCRIPTION

|   |           |
|---|-----------|
| 1 | Spring    |
| 2 | Pin       |
| 3 | O-ring    |
| 4 | O-ring    |
| 8 | O-ring    |
| 9 | Snap Ring |

### ITEM NO.

### DESCRIPTION

|    |                                                                |
|----|----------------------------------------------------------------|
| 10 | Sleeve                                                         |
| 11 | Stationary Face                                                |
| 12 | Rotating Face                                                  |
| 13 | Wearing Parts Consisting of<br>Items: 1, 2, 3, 4, 8, 9, 11, 12 |

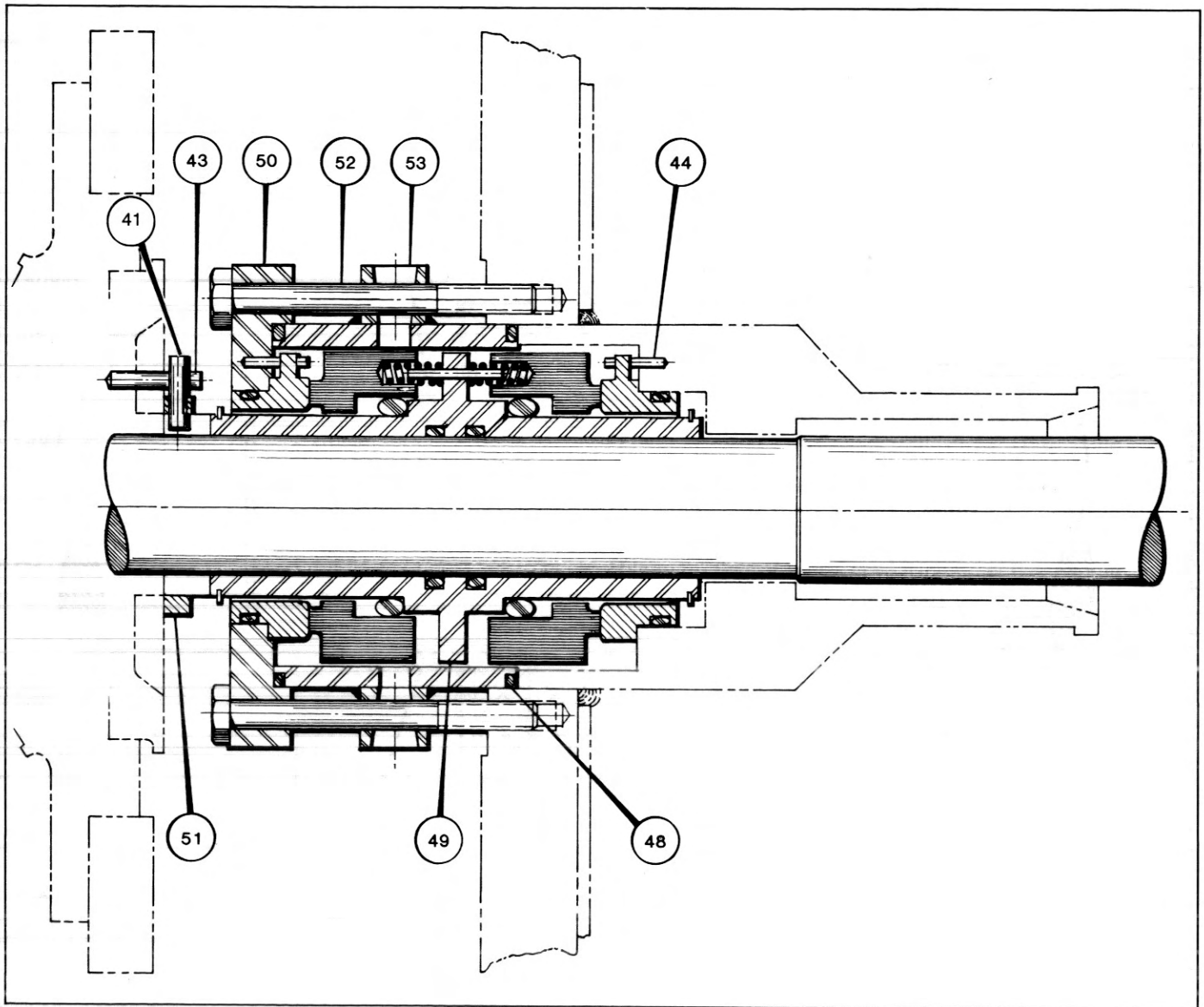
### IMPORTANT

When ordering parts, give

Mixer Model  
Serial Number  
Item Number  
Part Name  
Part Dwg. No. 3PL

# Type 'F' Double Mechanical Seal With Flush

## For 500 Series Mixers



### ITEM NO.

### DESCRIPTION

|    |                                |
|----|--------------------------------|
| 41 | Pin                            |
| 43 | Pin                            |
| 44 | Pin                            |
| 48 | O-ring                         |
| 49 | Type 'F' Double Seal Cartridge |
| 50 | Ring                           |
| 51 | Spacer                         |
| 52 | Cap Screw                      |
| 53 | Housing                        |

### IMPORTANT

When ordering parts, give:

Mixer Model  
Serial Number  
Item Number  
Part Name  
Part Dwg. No. 3PM

- #48 BODY O-RING P/N 741AH

#64 RETAINING RING P/N 28NT

#65 GLAND P/N 21BP

#66 DRIVE RING P/N 28RD

#67 SET SCREW P/N 685F
- #68 SLEEVE O-RING P/N 741K

#69 WEAR SLEEVE P/N 31HK

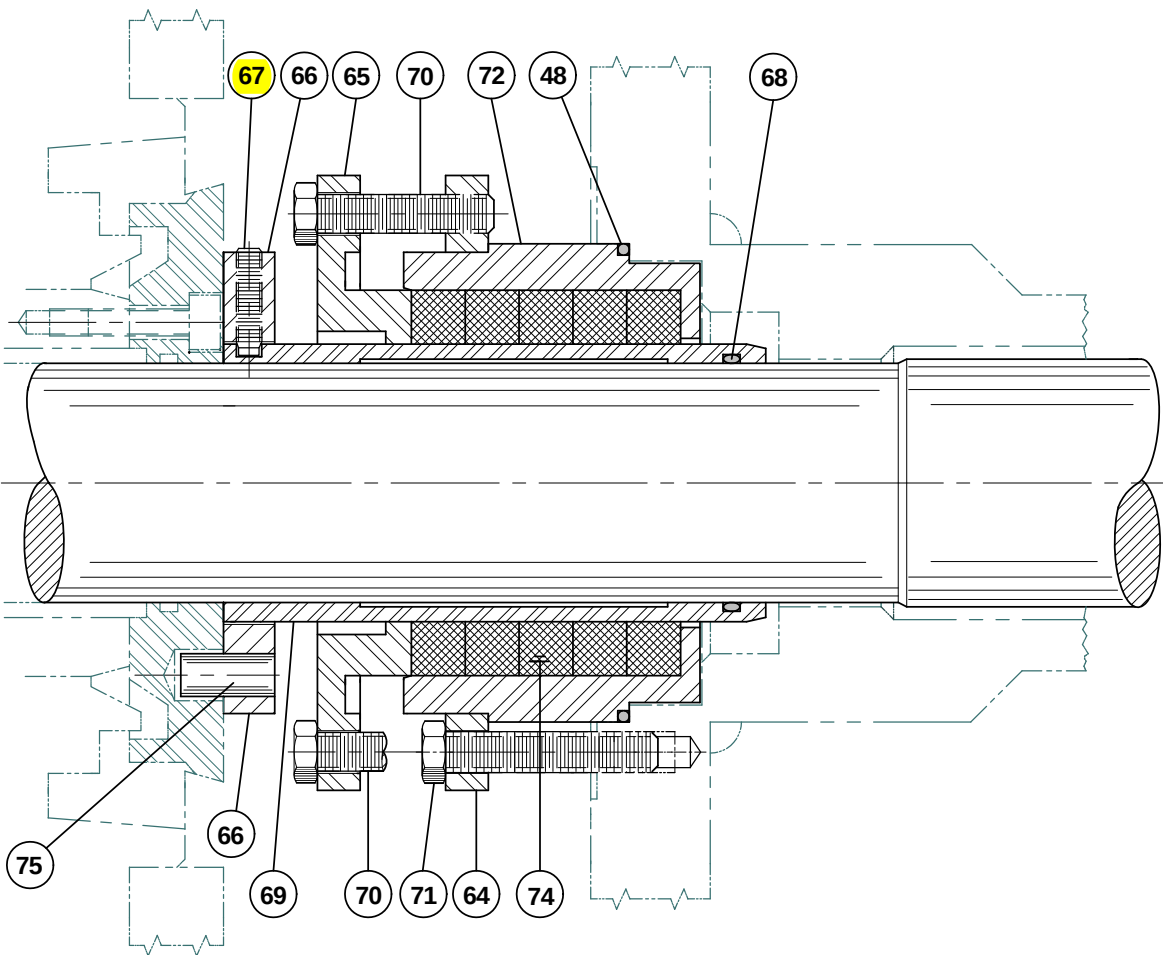
#70 CAP SCREW P/N 717A

#71 CAP SCREW P/N 617DG

#72 BODY P/N 11EX

#74 PACKING P/N 79BH1PJ

COMPLETE UNIT P/N B657D



500 SERIES STUFFING BOX & SELF ADJUSTING PACKING SYSTEM

WHEN THE JENSEN 500 MIXER IS SUPPLIED WITH A STUFFING BOX, IT IS FURNISHED WITH A HARDENED WEAR SLEEVE AND A STUFFING BOX HOUSING. REFER TO THE DRAWING 3RX FOR THE MODEL NUMBER 505, 520 AND 550 MIXERS.

THE PACKING IS A BRAIDED CARBON FIBER-REINFORCED GRAPHITE, DRY RUNNING, SELF-ADJUSTING MATERIAL DESIGNED FOR LEAK FREE ROTARY SERVICE. GRAPHITE FROM IT COATS THE WEAR SLEEVE AND FORMS ITS OWN LUBRICANT.

THE PACKING IS PRE COMPRESSED IN INDIVIDUAL RINGS SO THE COMPRESSION OF THE PACKING AT STARTUP IS MINIMAL. THE PACKING ALSO RECEIVE SOME MINIMAL TIGHTENING AT OUR FACTORY IN FINAL ASSEMBLY BUT A FINAL ADJUSTMENT MUST BE DONE IN THE FIEL AT STARTUP. THE GEARBOX INPUT COUPLING SHOULD BE TURNED BY HAND DURING INSTALLATION TO MAKE SURE UNIT IS FREE TO TURN.

THE ADJUSTMENT CAN BE ACCOMPLISHED BY TIGHTENING THE #70 CAPSCREWS AGAINST THE #65 GLAND. THIS WILL CREATE SOME HEAT WHEN STARTING UP AND SOME SMOKE MAY APPEAR. AS LONG AS THE TEMPEATURE OF THE SLEEVE AND HOUSING DOES NOT APPEAR EXCESSIVE THE MIXER SHOULD BE PERMITTED TO RUN. IF EXCESSIVE HEATING DOES OCCUR, LOOSEN THE #70 CAPSCREWS SLIGHTLY AND PROCEED. NO LEAKAGE SHOULD OCCUR WITHING THE FIRST HOUR. IF PRODUCT LEAKAGE IS OBSERVED, THE PACKING SHOULD BE TIGHTENED SLIGHTLY AT THE END OF THE HOUR.

CAUTION: THE #69 PACKING WEAR SLEEVE SHOULD BE POSITIONED AGAINST THE FACE OF THE SLINGER RING OF THE GEAR BOX (NOT NUMBERED IN THE REFERENCE DRAWINGS), AND ENGAGED WITH THE #66 DRIVE RING. WHEN THE MIXER IS TO BE SERVICED WITH THE TANK LOCKED OFF, THE SHAFT WILL BE PULLED BACK. BE SURE THAT WHEN THE SHAFT IS RETURNED TO THE OPERATING POSITION, THE PACKING WEAR SLEEVE DOES NOT SLIDE FORWARD, DISENGAGE THE #66 DRIVE RING PIN FROM THE HOLE IN SLINGER RING OF GEARBOX.

REFERENCES

~~505 - B303~~  
~~520 - B300~~  
**550 - B657 \***

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|                                  |                                        |                                                                                                               |                                                                                   |                        |
|----------------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------|
| 2                                | ADDED ITEM 75 CALLOUT                  |                                                                                                               | <b>Jensen Mixers International, Inc.</b><br>P.O. BOX 470368 TULSA, OKLAHOMA 74147 |                        |
| 1                                | REDRAWN IN S.E. NETWORK 5-10 00 (R.M.) | 505, 520, & 550                                                                                               |                                                                                   |                        |
|                                  | ORIGINALLY DRAWN ON VELLUM 8/97 (R.M.) | NEXT ASSEMBLY                                                                                                 | CHECKED:                                                                          | SCALE: N.T.S.          |
| REVISIONS                        |                                        | DIMENSION TOLERANCE                                                                                           | DRAWN: 8 - 15 - 97                                                                | BY: R. MCD.            |
| MATERIAL:<br>SEE DESIGNATED B.M. |                                        | 0.00 +/- .010<br>0.000 +/- .005<br>0.0000 +/- .001<br>FRACT. +/- 1/64<br>ANGLES +/- 1 DEG.<br>BREAK ALL EDGES | TITLE: STUFFING BOX ASSEMBLY FOR<br>500 SERIES MIXER                              |                        |
|                                  |                                        |                                                                                                               | SHT. 1 OF 1                                                                       | DRAWING NO: <b>3RX</b> |
|                                  |                                        |                                                                                                               |                                                                                   | REV. 1                 |

- #48 BODY O-RING P/N 741AC

#64 RETAINING RING P/N 28FJ

#65 GLAND P/N 21BN

#66 DRIVE RING P/N 28RC

#67 SET SCREW P/N 685F

#68 SLEEVE O-RING P/N 741AE

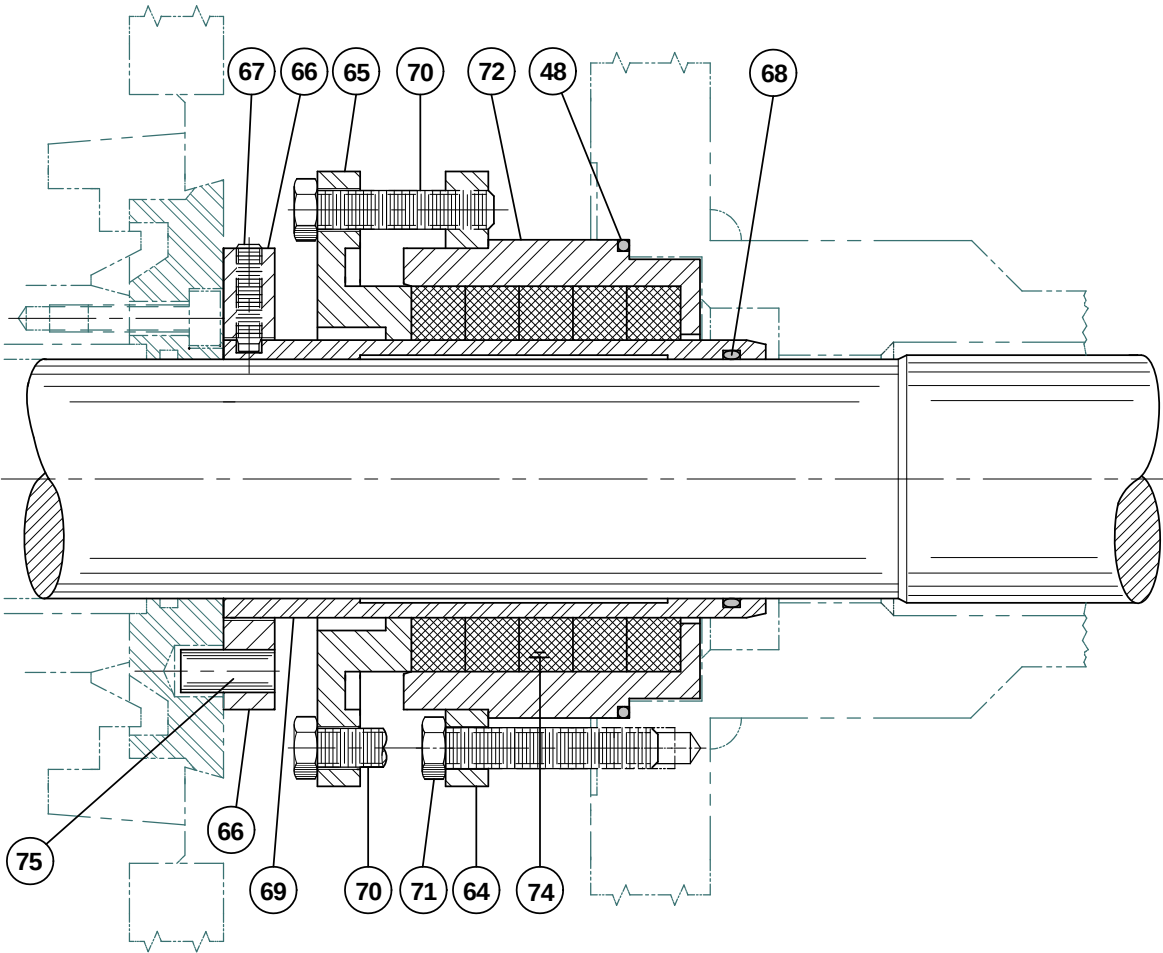
#69 WEAR SLEEVE P/N 31HW

#70 CAP SCREW P/N 617F

#71 CAP SCREW P/N 640AE

#72 BODY P/N 11EV

#74 PACKING P/N 79BE1PJ
- COMPLETE UNIT P/N B300C



REFERENCES

~~506X B30X~~  
**520 - B300**  
~~550X B65X~~

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500 SERIES STUFFING BOX & SELF ADJUSTING PACKING SYSTEM

WHEN THE JENSEN 500 MIXER IS SUPPLIED WITH A STUFFING BOX, IT IS FURNISHED WITH A HARDENED WEAR SLEEVE AND A STUFFING BOX HOUSING. REFER TO THE DRAWING 3RX FOR THE MODEL NUMBER 505, 520 AND 550 MIXERS.

THE PACKING IS A BRAIDED CARBON FIBER-REINFORCED GRAPHITE, DRY RUNNING, SELF-ADJUSTING MATERIAL DESIGNED FOR LEAK FREE ROTARY SERVICE. GRAPHITE FROM IT COATS THE WEAR SLEEVE AND FORMS ITS OWN LUBRICANT.

THE PACKING IS PRE COMPRESSED IN INDIVIDUAL RINGS SO THE COMPRESSION OF THE PACKING AT STARTUP IS MINIMAL. THE PACKING ALSO RECEIVE SOME MINIMAL TIGHTENING AT OUR FACTORY IN FINAL ASSEMBLY BUT A FINAL ADJUSTMENT MUST BE DONE IN THE FIEL AT STARTUP. THE GEARBOX INPUT COUPLING SHOULD BE TURNED BY HAND DURING INSTALLATION TO MAKE SURE UNIT IS FREE TO TURN.

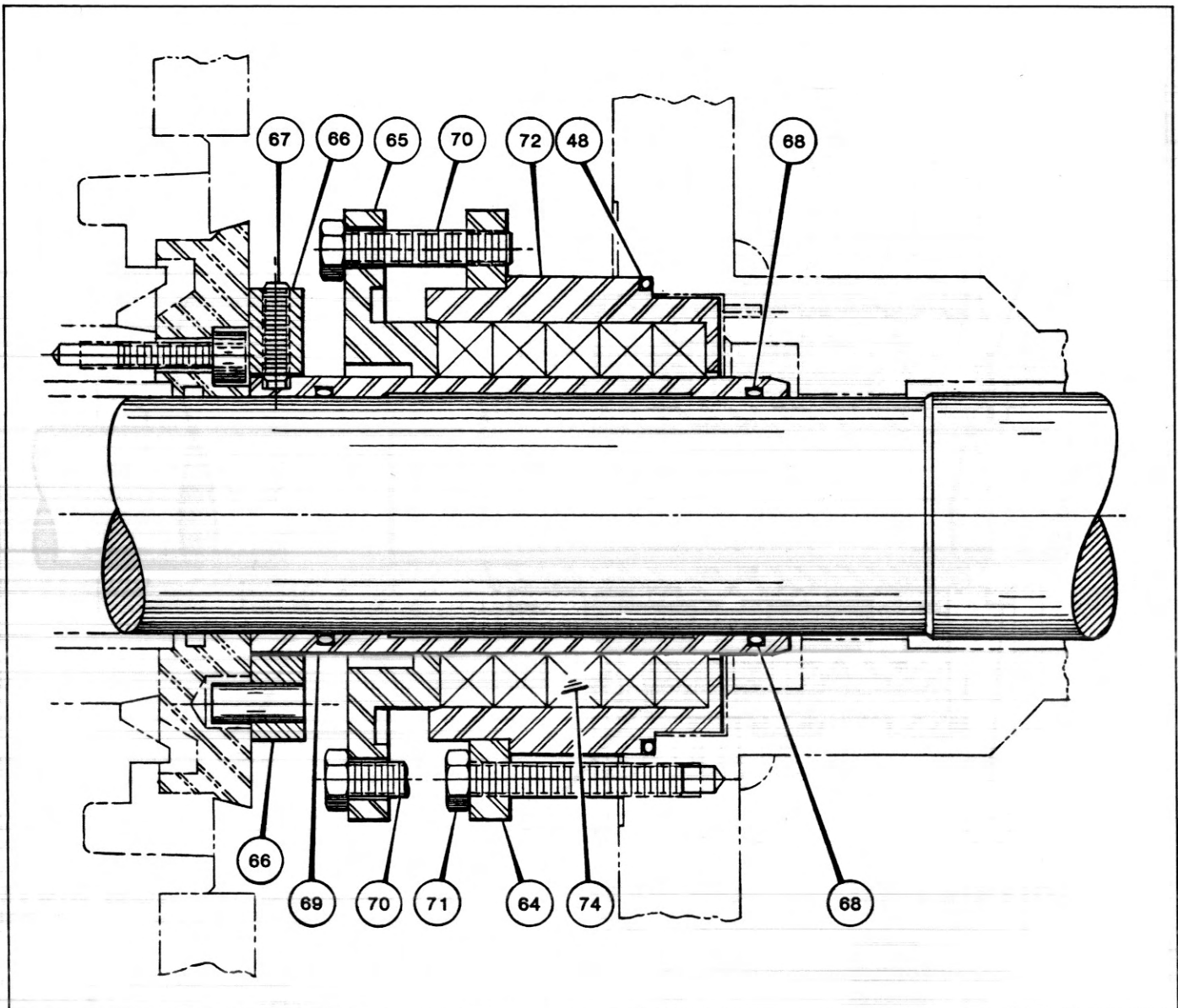
THE ADJUSTMENT CAN BE ACCOMPLISHED BY TIGHTENING THE #70 CAPSCREWS AGAINST THE #65 GLAND. THIS WILL CREATE SOME HEAT WHEN STARTING UP AND SOME SMOKE MAY APPEAR. AS LONG AS THE TEMPEATURE OF THE SLEEVE AND HOUSING DOES NOT APPEAR EXCESSIVE THE MIXER SHOULD BE PERMITTED TO RUN. IF EXCESSIVE HEATING DOES OCCUR, LOOSEN THE #70 CAPSCREWS SLIGHTLY AND PROCEED. NO LEAKAGE SHOULD OCCUR WITHIN THE FIRST HOUR. IF PRODUCT LEAKAGE IS OBSERVED, THE PACKING SHOULD BE TIGHTENED SLIGHTLY AT THE END OF THE HOUR.

CAUTION: THE #69 PACKING WEAR SLEEVE SHOULD BE POSITIONED AGAINST THE FACE OF THE SLINGER RING OF THE GEAR BOX (NOT NUMBERED IN THE REFERENCE DRAWINGS), AND ENGAGED WITH THE #66 DRIVE RING. WHEN THE MIXER IS TO BE SERVICED WITH THE TANK LOCKED OFF, THE SHAFT WILL BE PULLED BACK. BE SURE THAT WHEN THE SHAFT IS RETURNED TO THE OPERATING POSITION, THE PACKING WEAR SLEEVE DOES NOT SLIDE FORWARD, DISENGAGE THE #66 DRIVE RING PIN FROM THE HOLE IN SLINGER RING OF GEARBOX.

|                                  |                                        |                                                                                                               |                                                                                   |                        |
|----------------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------|
| 2                                | ADDED ITEM 75 CALLOUT                  |                                                                                                               | <b>Jensen Mixers International, Inc.</b><br>P.O. BOX 470368 TULSA, OKLAHOMA 74147 |                        |
| 1                                | REDRAWN IN S.E. NETWORK 5-10 00 (R.M.) | 505, 520, & 550                                                                                               |                                                                                   |                        |
|                                  | ORIGINALLY DRAWN ON VELLUM 8/97 (R.M.) | NEXT ASSEMBLY                                                                                                 | CHECKED:                                                                          | SCALE: N.T.S.          |
| REVISIONS                        |                                        | DIMENSION TOLERANCE                                                                                           | DRAWN: 8 - 15 - 97                                                                | BY: R. MCD.            |
| MATERIAL:<br>SEE DESIGNATED B.M. |                                        | 0.00 +/- .010<br>0.000 +/- .005<br>0.0000 +/- .001<br>FRACT. +/- 1/64<br>ANGLES +/- 1 DEG.<br>BREAK ALL EDGES | TITLE: STUFFING BOX ASSEMBLY FOR<br>500 SERIES MIXER                              |                        |
|                                  |                                        |                                                                                                               | SHT. 1 OF 1                                                                       | DRAWING NO: <b>3RX</b> |
|                                  |                                        |                                                                                                               |                                                                                   | REV. 1                 |

# Stuffing Box Assembly

**For Model 505, 520 and 550 Mixer**



## **ITEM NO.**

## **DESCRIPTION**

|    |                |
|----|----------------|
| 48 | O-Ring         |
| 64 | Retaining Ring |
| 65 | Gland          |
| 66 | Drive Ring     |
| 68 | O-Ring         |
| 69 | Sleeve         |
| 70 | Cap Screw      |
| 71 | Cap Screw      |
| 72 | Body           |
| 74 | Packing Rings  |

### **IMPORTANT**

When order parts, give:  
 Mixer Model  
 Serial Number  
 Item Number  
 Part name  
 Part Dwg. No. 3PT

# S16M Jensen Mixers

## RECOMMENDED LUBRICATION PROCEDURES

### RECOMMENDED LUBRICANTS:

Yearly Temperature Range

|                               |                                |
|-------------------------------|--------------------------------|
| -20°F (-29°C) to 100°F (38°C) | SAE 80 Multi-purpose gearlube  |
| 0°F (-18°C) to 120°F (49°C)   | SAE 90 Multi-purpose gearlube  |
| 32°F (0°C) up                 | SAE 140 Multi-purpose gearlube |

| COMMON DESIGNATION<br>Oil Company | SAE 80*<br>Multi-Purpose Gear Lube<br>MIL-L-2105B | SAE 90*<br>Multi-Purpose Gear Lube<br>MIL-L-2105B | SAE 140<br>Multi-Purpose Gear Lube<br>MIL-L-2105B |
|-----------------------------------|---------------------------------------------------|---------------------------------------------------|---------------------------------------------------|
| Amoco                             | Multi-Purpose Gear Lube 80                        | Multi-Purpose Gear Lube 90                        | Multi-Purpose Gear Lube 140                       |
| Arco                              | Gear Oil HD 80                                    | Gear Oil HD 90                                    | Gear Oil HD 140                                   |
| B.P.                              | Extra Duty Gear Oil 80                            | Extra Duty Gear Oil 90                            | Extra Duty Gear Oil 140                           |
| Chevron                           | Universal Gear Lube 80                            | Universal Gear Lube 90                            | Universal Gear Lube 140                           |
| Citgo                             | Premium Gear Oil MP-80                            | Premium Gear Oil MP-90                            | Premium Gear Oil MP-140                           |
| Conoco                            | Universal Gear Lube 80                            | Universal Gear Lube 90                            | Universal Gear Lube 140                           |
| Exxon                             | Gear Oil GX-80                                    | Gear Oil GX-90                                    | Gear Oil GX-140                                   |
| Gulf Oil                          | Multi-Purpose Gear Lube 80                        | Multi-Purpose Gear Lube 90                        | Multi-Purpose Gear Lube 140                       |
| Mobil                             | Mobilube HD 80-90                                 | Mobilube HD 80-90                                 | Mobilube HD 140                                   |
| Phillips                          | Philube SMP Gear Oil 80                           | Philube SMP Gear Oil 90                           | Philube SMP Gear Oil 140                          |
| Shell                             | Spirax HD 80                                      | Spirax HD 90                                      | Spirax HD 140                                     |
| Sun Oil                           | Multi-Purpose Gear Lube GL5+80                    | Multi-Purpose Gear Lube GL5+90                    | Multi-Purpose Gear Lube GL5+140                   |
| Texaco                            | Multigear Lube EP 80                              | Multigear Lube EP 90                              | Multigear Lube EP 140                             |
| Unocal                            | MP Gear 80                                        | MP Gear 90                                        | MP Gear 140                                       |

**RUNNING IN:** Jensen mixers do not require any special running in procedure. However, gearbox oil should be changed (while hot) after the first 10 hours operation.

**NORMAL OPERATION:** Change once each year, inspect regularly.

**TO INSPECT OIL LEVEL:** Remove filler plug. If indicator bar inside gear box is visible, oil is too low. Fill to bottom of threads.

**TO CHANGE OIL:** While oil is hot, remove drain plug and drain. Replace plug and fill to bottom of threads.

*\*For those oil manufacturers who make a multi-vis oil, the following substitutes may be made: SAE 80-90 for SAE 80 or 90; SAE 90-140 for SAE 90 or SAE 140.*

# Jensen Mixers

## SMALLEST OPENING THAT PROPELLER WILL GO THROUGH WHEN MOUNTED ON MIXER

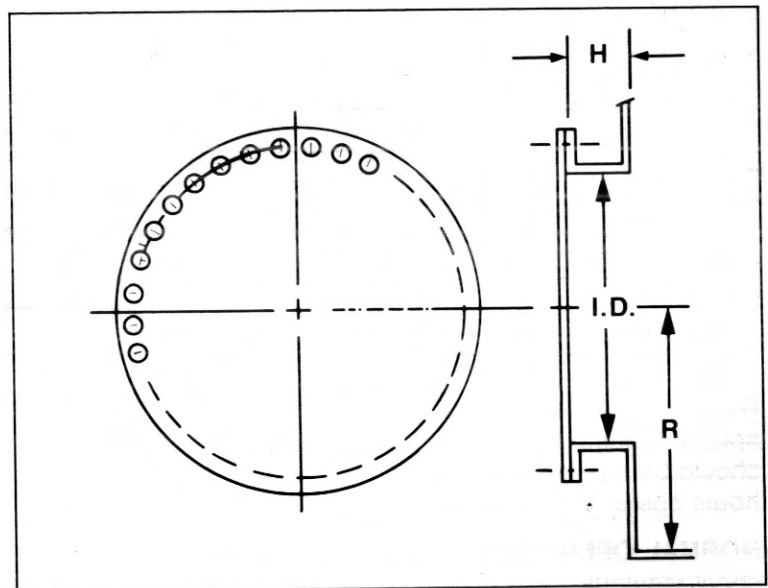
| H  | Propeller Diameter |    |    |    |    |    |
|----|--------------------|----|----|----|----|----|
|    | 20                 | 23 | 26 | 29 | 32 | 35 |
| 4  | 14                 | 16 | 17 | 19 | 20 | 22 |
| 5  | 15                 | 16 | 18 | 19 | 21 | 22 |
| 6  | 16                 | 17 | 19 | 20 | 22 | 24 |
| 7  | 16                 | 17 | 19 | 22 | 24 | 25 |
| 8  | 18                 | 19 | 20 | 23 | 25 | 26 |
| 9  | 18                 | 19 | 20 | 24 | 26 | 28 |
| 10 | 18                 | 20 | 22 | 24 | 27 | 29 |
| 11 | 18                 | 21 | 22 | 25 | 27 | 30 |
| 12 | 19                 | 21 | 22 | 25 | 28 | 30 |
| 13 | 19                 | 21 | 22 | 26 | 29 | 32 |
| 14 | 21                 | 22 | 24 | 27 | 30 | 34 |
| 15 | 21                 | 22 | 25 | 28 | 30 | 34 |

## SMALLEST OPENING THAT PROPELLER WILL ROLL THROUGH NOT ON MIXER

| H  | Propeller Diameter |    |    |    |    |    |
|----|--------------------|----|----|----|----|----|
|    | 20                 | 23 | 26 | 29 | 32 | 35 |
| 4  | 13                 | 15 | 16 | 18 | 20 | 22 |
| 5  | 13                 | 16 | 17 | 19 | 21 | 22 |
| 6  | 14                 | 17 | 17 | 20 | 22 | 24 |
| 7  | 16                 | 17 | 17 | 21 | 23 | 25 |
| 8  | 16                 | 17 | 18 | 23 | 25 | 26 |
| 9  | 17                 | 18 | 20 | 23 | 26 | 28 |
| 10 | 17                 | 20 | 20 | 24 | 26 | 28 |
| 11 | 17                 | 21 | 22 | 24 | 27 | 29 |
| 12 | 17                 | 21 | 22 | 25 | 27 | 30 |
| 13 | 17                 | 21 | 23 | 25 | 28 | 30 |
| 14 | 17                 | 21 | 23 | 26 | 28 | 30 |
| 15 | 17                 | 21 | 23 | 26 | 28 | 30 |

**"H" Dimension is  
the measurement from  
the inside of the tank wall  
to the outer face of the  
manway at top or bottom  
of manway.**

**All dimensions are in  
inches.**



# Material Specifications For 500 Series Mixers

| PARTS & MATERIAL                                                                                          | MATERIAL STANDARDS                                                            |               |                      |
|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|---------------|----------------------|
|                                                                                                           | AMERICAN                                                                      | BRITISH       | GERMAN               |
| <b>Gears</b><br>AISI 8620 Steel                                                                           | ASTM A322-5T                                                                  |               |                      |
| <b>Gear Case</b><br>Aluminum Casting 356-T6                                                               | ASTM B108 Cl. SG70A                                                           |               | DIN 1725             |
| <b>Covers &amp; Housings</b><br>Aluminum Casting 356-T6<br>Aluminum Casting 319F                          | ASTM B108 Cl. SG70A<br>ASTM B108 Cl. CS64D                                    |               | DIN 1725<br>DIN 1725 |
| <b>Body &amp; Drive Sleeve</b><br>Iron Casting                                                            | ASTM A48 Cl. 25                                                               |               | DIN 1693             |
| <b>Adapter</b><br>Carbon Steel Plate<br>Stainless Steel Bar Type 316<br>Stainless Steel Sheet Type 316    | ASTM A283 Gr. D<br>ASTM A276<br>ASTM A167                                     | BS. 4360      | DIN 17100            |
| <b>Motor Mount</b><br>Carbon Steel Plate<br>Carbon Steel Square Type<br>Weld Filler Rod                   | ASTM A283 Gr. D<br>ASTM A500 Gr. B<br>ASTM A33 Type 24<br>ASTM A316 Type 7018 | BS. 4360      | DIN 17100            |
| <b>Cover Plate</b><br>Carbon Steel Plate                                                                  | ASTM A283 Gr. D                                                               | BS. 4360      | DIN 17100            |
| <b>Shaft</b><br>Stainless Steel Type 316                                                                  | ASTM A276                                                                     |               | DIN 17742            |
| <b>Propeller</b><br>Stainless Steel Casting Type 316 L<br>Stainless Steel Bar Type 316<br>Weld Filler Rod | ASTM A351 Gr. CF8M<br>ASTM A276<br>ASTM A371 Type 310                         | BS. 1504-84-5 |                      |
| <b>Lock Ring</b><br>Stainless Steel Casting Type 316                                                      | ASTM A351 Gr. CF8M                                                            |               |                      |
| <b>Bushings</b><br>Teflon - Glass Filled                                                                  |                                                                               |               |                      |
| <b>Bolts &amp; Nuts</b><br>Carbon Steel Gr. 2<br>Alloy Steel Gr. 5<br>Stainless Steel Type 316            | ASTM A307<br>ASTM A449<br>ASTM A276                                           |               | DIN 1711             |
| <b>O-Rings</b><br>Buna 'N' (not in contact with tank fluid)<br>Viton 'A' (in contact with tank fluid)     | ASTM D2000-70b<br>Spec. AMS 3215<br>ASTM D2000-70b<br>Spec. AMS 7278          |               |                      |

# Recommended Fastener Torque Values

| <b>FASTENER<br/>LOCATION</b> | <b>505<br/>SIZE TORQUE</b> |           | <b>520<br/>SIZE TORQUE</b> |           | <b>550<br/>SIZE TORQUE</b> |           |
|------------------------------|----------------------------|-----------|----------------------------|-----------|----------------------------|-----------|
| Coupling Element             | 1/4                        | 120 in-lb | 1/4                        | 120 in-lb | 5/16                       | 240 in-lb |
| Yoke/Drive Sleeve            | 5/16                       | 75 in-lb  | 3/8                        | 120 in-lb | 1/2                        | 360 in-lb |
| GB Case/Cover                | 3/8                        | 120 in-lb | 3/8                        | 120 in-lb | 3/8                        | 120 in-lb |
| Yoke Cap                     | 1/2                        | 30 ft-lb  | 1/2                        | 30 ft-lb  | 5/8                        | 70 ft-lb  |
| Pinion Housing               | 1/2                        | 30 ft-lb  | 1/2                        | 30 ft-lb  | 5/8                        | 70 ft-lb  |
| Yoke & Prop/Shaft            | 1/2                        | 30 ft-lb  | 1/2                        | 30 ft-lb  | 1/2                        | 30 ft-lb  |
| GB/Mixer Flange              | 1/2                        | 30 ft-lb  | 5/8                        | 70 ft-lb  | 5/8                        | 70 ft-lb  |
| Ring Gear                    | 3/8                        | 40 ft-lb  | 3/8                        | 40 ft-lb  | 1/2                        | 100 ft-lb |
| Pinion Nut                   |                            | 80 ft-lb  |                            | 140 ft-lb |                            | 160 ft-lb |

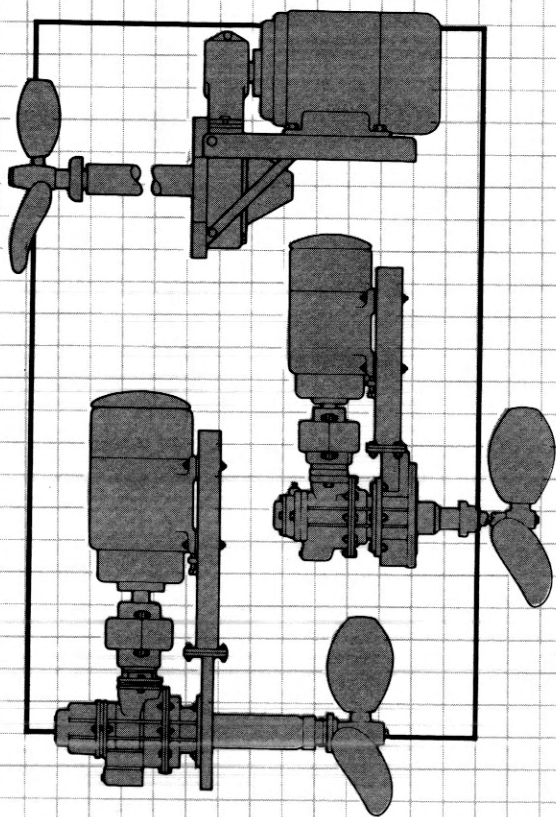
## FIELD DISASSEMBLY TOOL LIST

Field service and inspection on Jensen Series 500 Mixers requires only basic hand tools. The following list will allow removal of all major components.

Wrenches (2 each) 7/16", 1/2", 9/16", 3/4", 15/16"  
 One adjustable wrench (3/4 jaw opening)  
 Two large screwdrivers

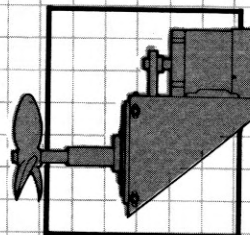
# Notes

# JENSEN



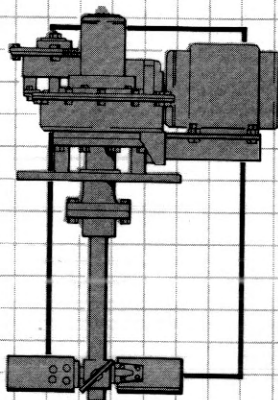
## **SERIES 400, 500 & 600**

Side-entering mixers for the petroleum and chemical processing industries. Gear & belt reducers.



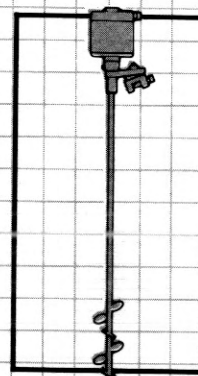
## **MODEL 401**

Lease tank mixers. Simplified 1 & 2 H.P. units for petroleum lease & collection tanks.



## **MODEL 1100**

Top-entry mixers to 50 H.P. for process applications: open tank, flange mount, mechanical seal, packing.



## **MODEL B-33**

For 55 gal. drums. 1/3 H.P. simplified clamp mixer.

## **LIMITED WARRANTY**

Jensen Mixers are warranted against defects in materials or workmanship for a period of 12 months following date of purchase. This warranty is limited to replacement or repair of the agitator by Jensen only and does not cover consequential damages, removal, freight or re-installation. Electric motors are warranted by their respective manufacturers and are excluded from the Jensen warranty.

Represented by

*Jensen*

MIXERS INTERNATIONAL, INC.  
P.O. Box 470368  
Tulsa, OK 74147-0368 U.S.A.  
(918) 627-5770 • (800) 826-5646  
FAX (918) 663-4939