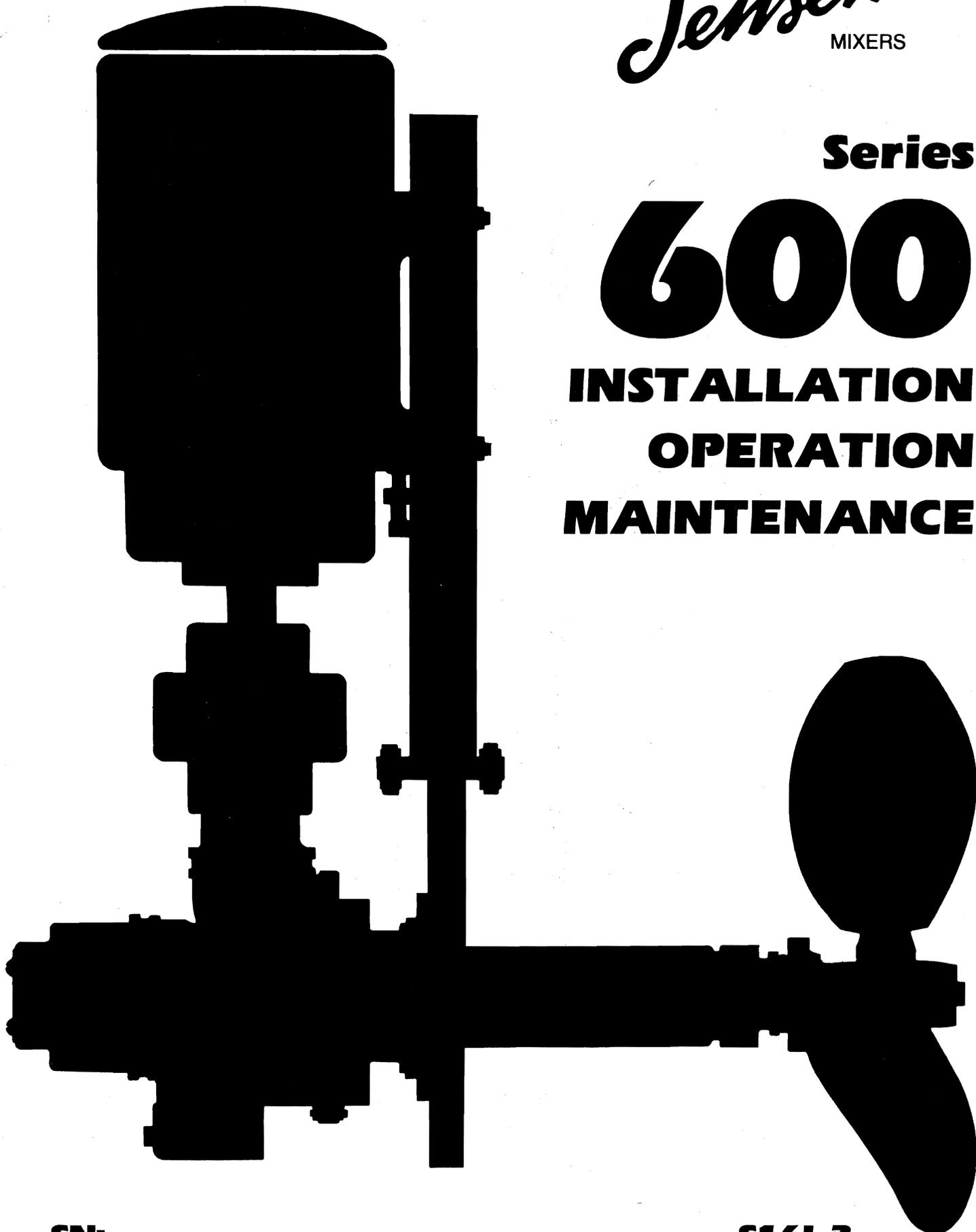


*Jensen*  
MIXERS

**Series**

**600**

**INSTALLATION  
OPERATION  
MAINTENANCE**



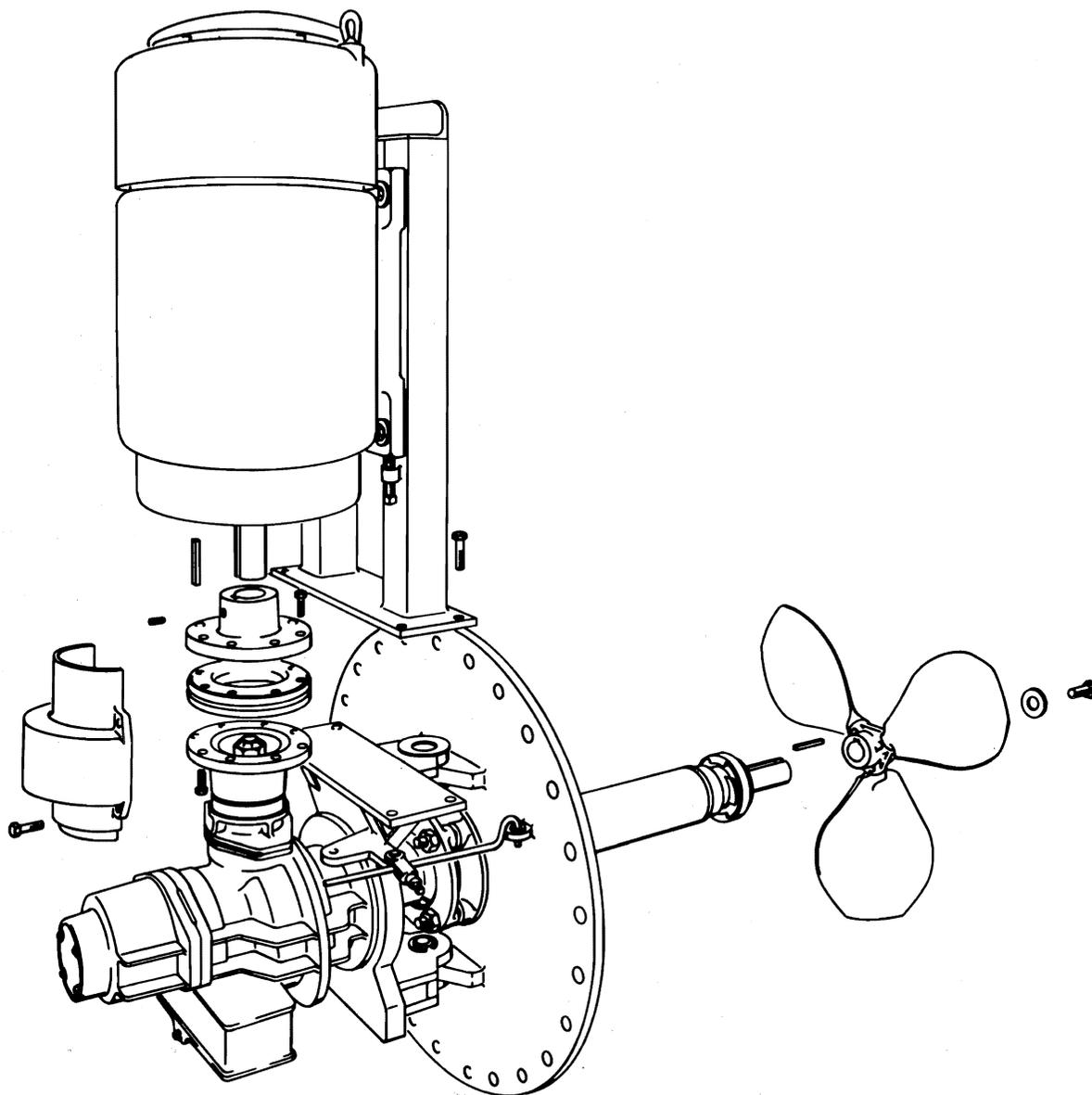
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**S16L-3**

# Installation

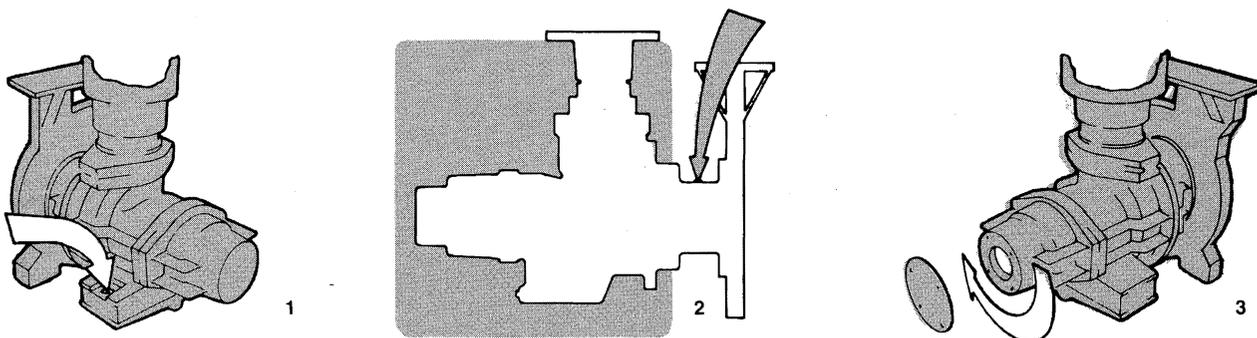
## SERIES 600 VARI-ANGLE MIXERS

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



# Pre-Startup

## SERIES 600 VARI-ANGLE PRE-STARTUP, OPERATION AND PERIODIC MAINTENANCE



### BEFORE INITIAL STARTUP:

1. When the fluid level is above the mixer, remove the upper vent plug and open the valve until all the trapped air has been released and the mixer is filled with tank fluid. **CLOSE THE VALVE AND REPLACE THE PLUG.**  
(WARNING: As the mixer fills, some tank fluid may escape through the vent tube.)
2. Fill gearbox with oil to the bottom of the threads on fill hole. Start the mixer and run for 10 minutes. While mixer is still running fill to bottom of the threads once again.
3. Confirm correct rotation direction.
4. Because the assembly of the mixer is done in a dry environment, some adjustment of the vari-angle ball packing will be necessary after the tank is filled with product. If excessive leakage occurs around the ball, simply tighten the four nuts at the packing gland evenly until the leakage is reduced to a minimum. Some tightening may be necessary after the machine has operated for a short while.

### RECOMMENDED OPERATION:

Mixers installed on tanks with existing sediment accumulation should be operated continuously as long as fluid level is 6 feet (2 meters) above the arc of the upper propeller tip and sediment content in outgoing stream is acceptable. *Angle variation from full left to full right and to center should be made periodically - once each day during continuous running.* Mixers equipped with Jensen Vari-Angle Actuators automatically reposition themselves.

For effective sediment control on clean tanks, start mixer 4 hours before pump-out and continue until tank is half full. This procedure will need to be modified to suit climate and conditions. *In controlling sediment, angle variation need be made only about once each month.* Mixers equipped with the Jensen Vari-Angle Actuator will automatically make all angle changes. No scheduling or other attention is necessary.

### PERIODIC MAINTENANCE:

Change oil (while hot) after first 10 hours operation.

Change oil once each year and inspect flexible coupling.

Change mixer angle once each month in accordance with "Operation" above.

# Installation

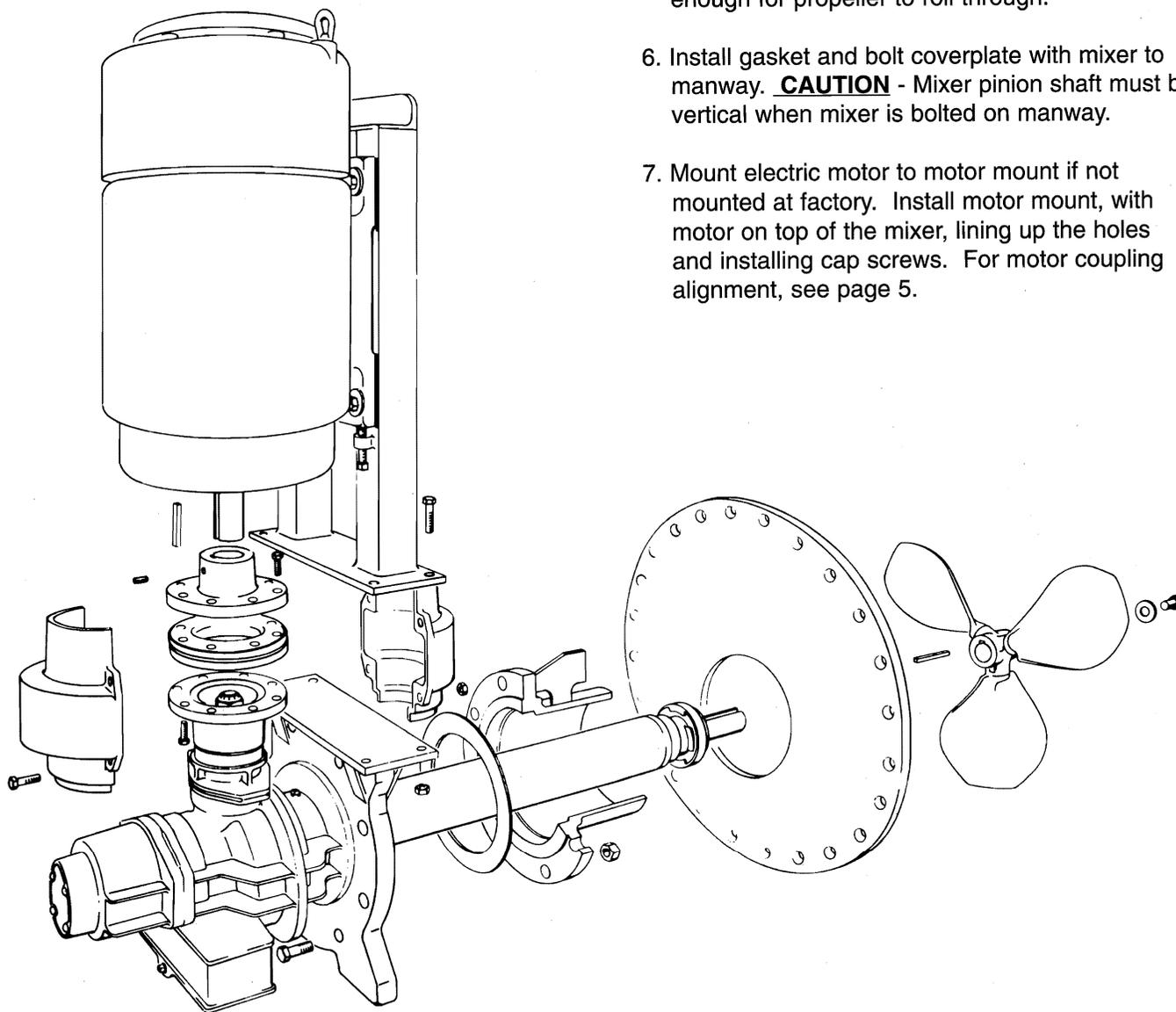
## SERIES 600 FIXED ANGLE MIXERS

1. Remove blank coverplate from tank manway and check mixer coverplate, if ordered from factory, for correct size, hole location and orientation.
2. If coverplate is not ordered from factory, burn hole for nozzle in the blank coverplate as follows:

Model	Nozzle	Hole
605	6" 150# 7°	6 7/8 I.D. (175 mm)
620	8" 150# 7°	8 7/8 I.D. (225 mm)
650	10" 150# 10°	11 1/8 I.D. (283 mm)
680	12" 150# 10°	13 1/8 I.D. (333 mm)

Allow at least 12" (309 mm) clearance between tip of propeller and tank floor. Nozzle may be mounted as low on plate as welding of nozzle and gussets permits, keeping proper propeller clearance in mind.

3. Insert nozzle in burned hole and weld after orienting "top" correctly.
4. Install Gasket and bolt mixer to nozzle. **CAUTION** - The mixer pinion shaft must be in line with "top" stamped on the thickness of the nozzle.
5. Mount propeller on shaft if manway is large enough for propeller to roll through.
6. Install gasket and bolt coverplate with mixer to manway. **CAUTION** - Mixer pinion shaft must be vertical when mixer is bolted on manway.
7. Mount electric motor to motor mount if not mounted at factory. Install motor mount, with motor on top of the mixer, lining up the holes and installing cap screws. For motor coupling alignment, see page 5.



# Pre-Startup

## SERIES 600 FIXED ANGLE MIXER PRE-STARTUP, OPERATION AND PERIODIC MAINTENANCE

### BEFORE INITIAL STARTUP:

1. When the fluid level is above the mixer, remove the upper vent plug and open the valve until all the trapped air has been released and the mixer is filled with tank fluid. **CLOSE THE VALVE AND REPLACE THE PLUG.**  
(WARNING: As the mixer fills, some tank fluid may escape through the vent tube.)
2. Fill gearbox with oil to the bottom of the threads on fill hole. Start the mixer and run for 10 minutes. While mixer is still running fill to bottom of the threads once again.
3. Confirm correct rotation direction.

### OPERATION:

Jensen Fixed Angle Mixers are recommended for blending in accordance with your company's specifications furnished at time of purchase. Blending times, fluid characteristics, 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.

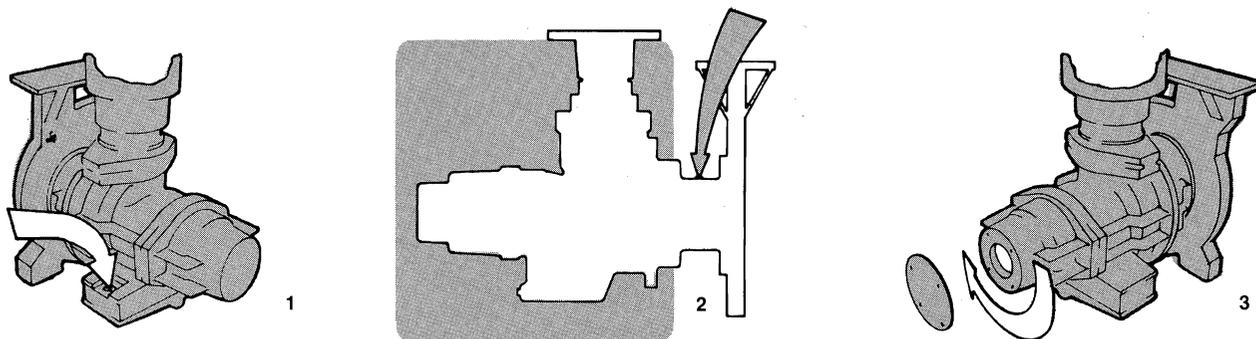
Where fluids are already blended and purpose of mixer is to prevent stratification, automatic timer control is recommended with a cycle of 2 hours on, 6 hours off.

If fixed angle mixers are to be used for reducing sediment deposits in crude oil storage tanks, use the operating procedure recommended under "Vari-Angle Mixers".

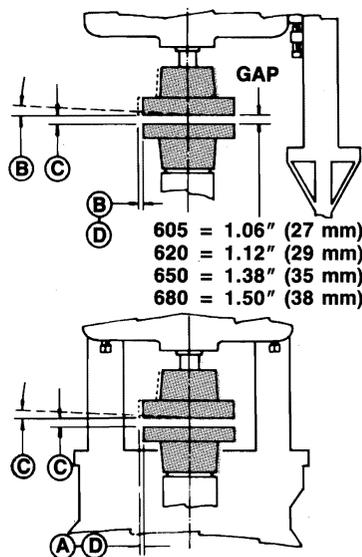
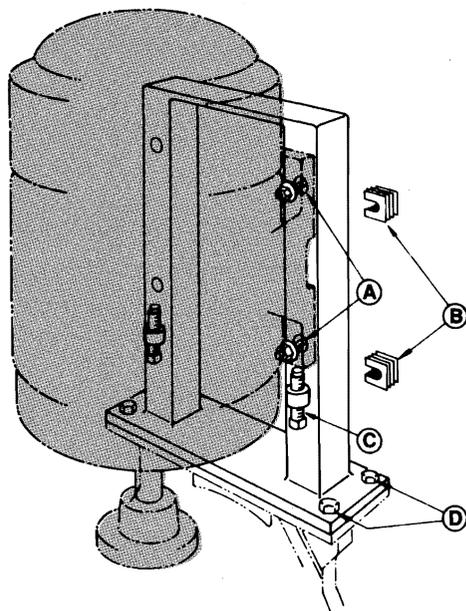
### PERIODIC MAINTENANCE:

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

Change oil once each year and inspect flexible coupling.



# Adjustment For Motor Coupling Alignment

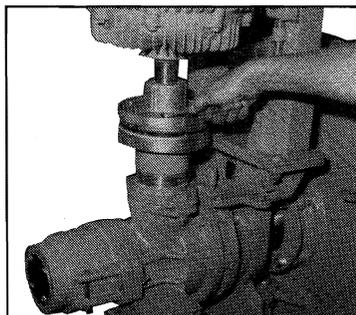


Jensen Series 600 Mixer couplings have precisely machined edges for easy alignment using only a straight edge. The following adjustment points on the motor mount are used for coupling alignment:

(A) Oversize holes in motor 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) Oversize holes in the motor mount base are used for parallel alignment. Very small final adjustment 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:

Model 605	120 lb-in
Model 620	120 lb-in
Model 650	240 lb-in
Model 680	240 lb-in



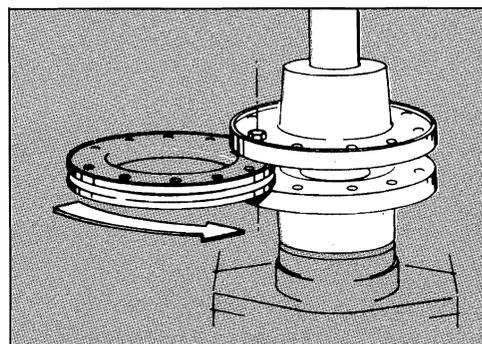
## FLEXIBLE COUPLING ELEMENT INSTALLATION

### For coupling element replacement

Remove the coupling cover.

Remove the bolts on the motor and gearbox coupling halves.

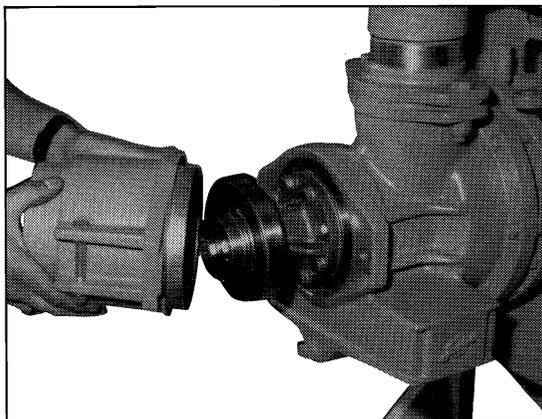
The flexible element will now slide out. Note that when removing the gearbox (page 9) it is not necessary to remove the bolts in the gearbox half.



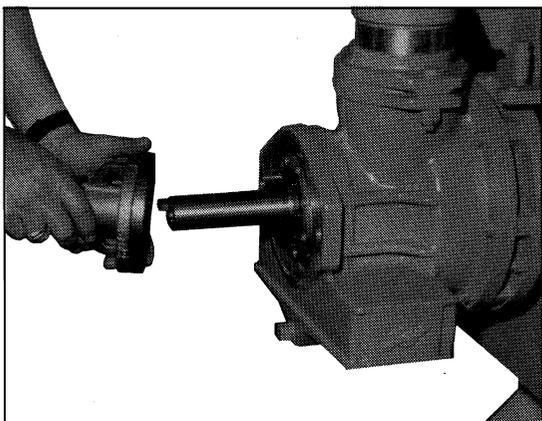
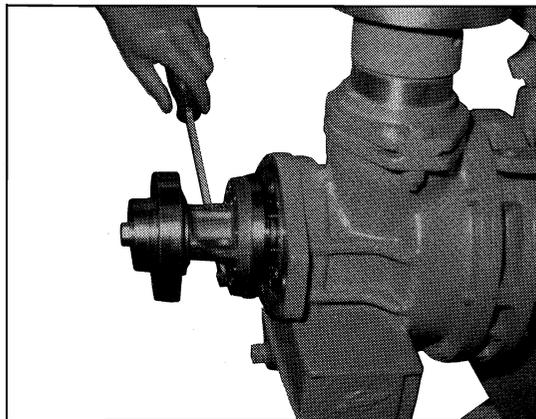
To install the flexible element, position as shown with one cap screw, then pivot the element into position. Insert the rest of the cap screws and tighten to the torque values shown. Tighten screws evenly to prevent stripping threads or bending of cap screws.

# Mechanical Seal Replacement

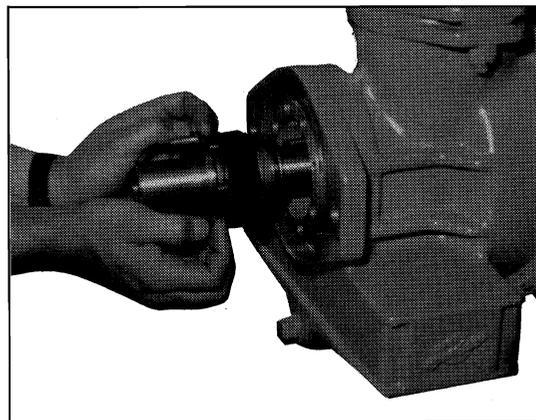
## JENSEN MODELS 605 AND 620



2. Pull the yoke back to stop (1/2" to 1-1/4"), then turn it counter-clockwise till lock engages and shaft stops (90° or more). This seals off the tank contents. If the yoke cannot be pulled back by hand, jack screw holes are provided in the yoke. ►



3. Remove shaft bolt, drive yoke and key. Mechanical seal may now be removed. When removing the seal, rotate it counter-clockwise only to avoid disturbing the tank sealing function at the outer end of the mixer.



4. To remove the seal, simply pull it off the shaft. Note that the seal drive pin is located over the shaft keyway. If the seal is to be replaced, push new seal onto shaft, also rotating the seal counter-clockwise only, and observe the rest of this procedure. Be sure that the seal drive pin extends into the hole above the keyway in the drive yoke. ►

Install the key and the yoke. NOTE THAT THE YOKE MUST BE A SLIDING FIT ON THE SHAFT.

Slide the thrust bearing over the shaft and the yoke, securing it with a capscrew to the end of the shaft.

Unlock the mixer shaft and slide it forward till the yoke engages with the drive sleeve fully. It will be forced away from the drive sleeve about 1/4 inches by the seal spring tension. DO NOT FORCE THE YOKE AGAINST THE DRIVE SLEEVE BY USING THE YOKE CAPSCREWS EXCEPT TO TAKE UP THE SEAL SPRING TENSION.

Bolt the yoke to the drive sleeve. Slip the yoke cover over the thrust bearing and secure it with the housing bolts.

Now vent the mixer by carefully opening the vent valve (or plug) and either filling with a light oil or some material compatible with the tank contents, then closing the valve or replacing the plug.

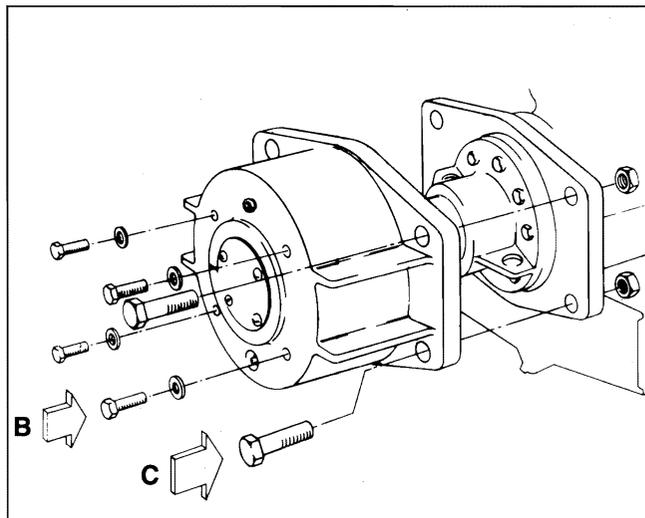
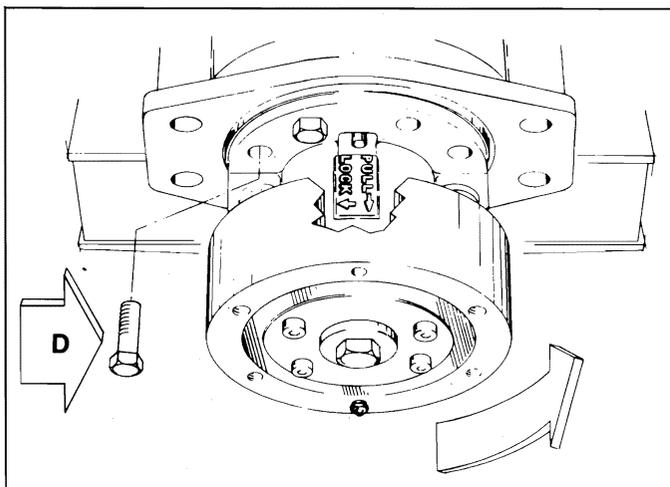
Do not tighten the pinch bolts (on 605/620/650 mixers) until after the mixer has had a chance to run for a few minutes. This stabilizes the location of the thrust bearing.

# Mechanical Seal Replacement

## JENSEN MODELS 650 AND 680

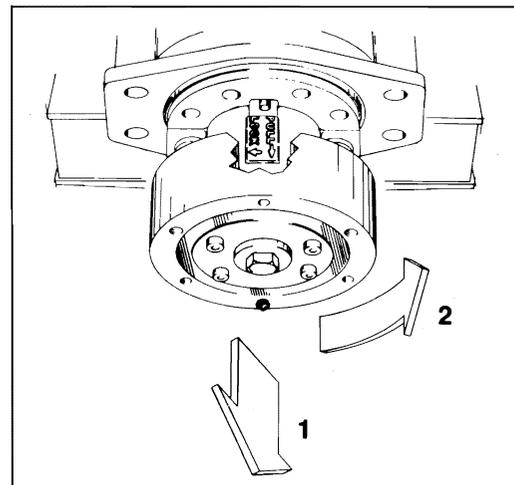
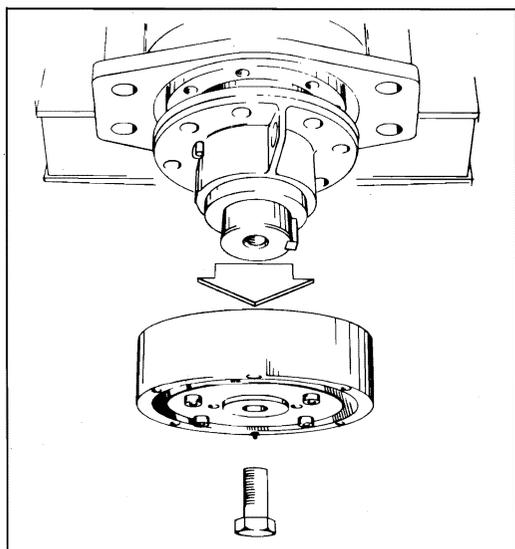
### MODEL 680 SHOWN

1. Loosen vertical pinch bolts on 650 bearing cap. ►  
Remove horizontal bearing housing-to-bearing cap screws on the 680. (B) Remove horizontal bearing cap-to-gearcase bolts (C) and take off bearing cap. Do not operate mixer with bearing cap removed.



- ◀ 2. Remove the yoke-to-drive sleeve bolts (D). Rotate the yoke so that "PULL-LOCK" on the yoke is facing up.

3. Pull the yoke back (1) approximately 1/2" to 1/4" 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 yoke is difficult to pull back by hand, jack screw holes in the yoke flange may be used as a light duty puller only. If strong resistance is encountered, use a wheel or bearing puller.



- ◀ 4. Remove the shaft bolt, then the thrust bearing assembly. Note that the thrust bearing assembly comes off as a unit. It is not necessary to disassemble the unit unless the bearing is to be replaced.

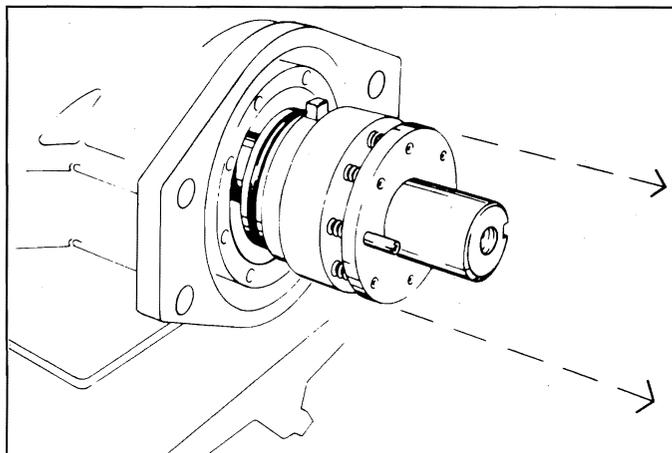
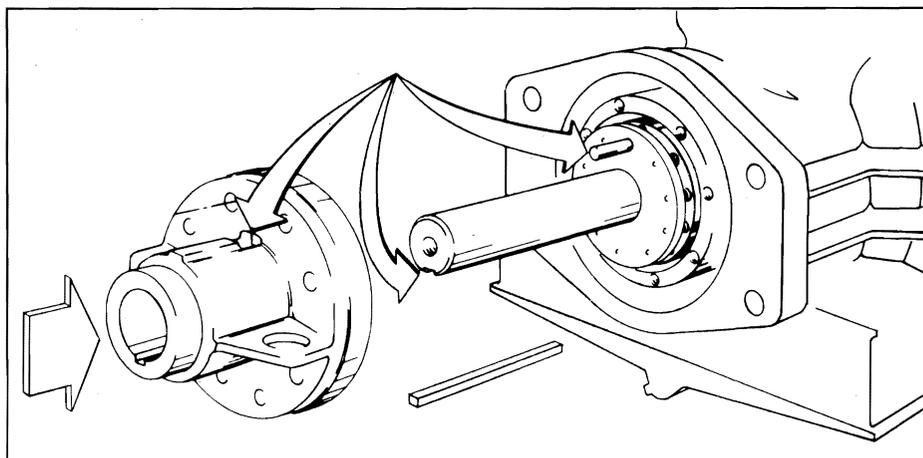
# Mechanical Seal Replacement

## JENSEN MODELS 650 and 680

### MODEL 680 SHOWN

5. Remove the yoke. Note the position of the seal drive pin opposite the shaft keyway. When reassembling the mixer, be sure that the seal pin slides freely into the matching hole in the yoke.

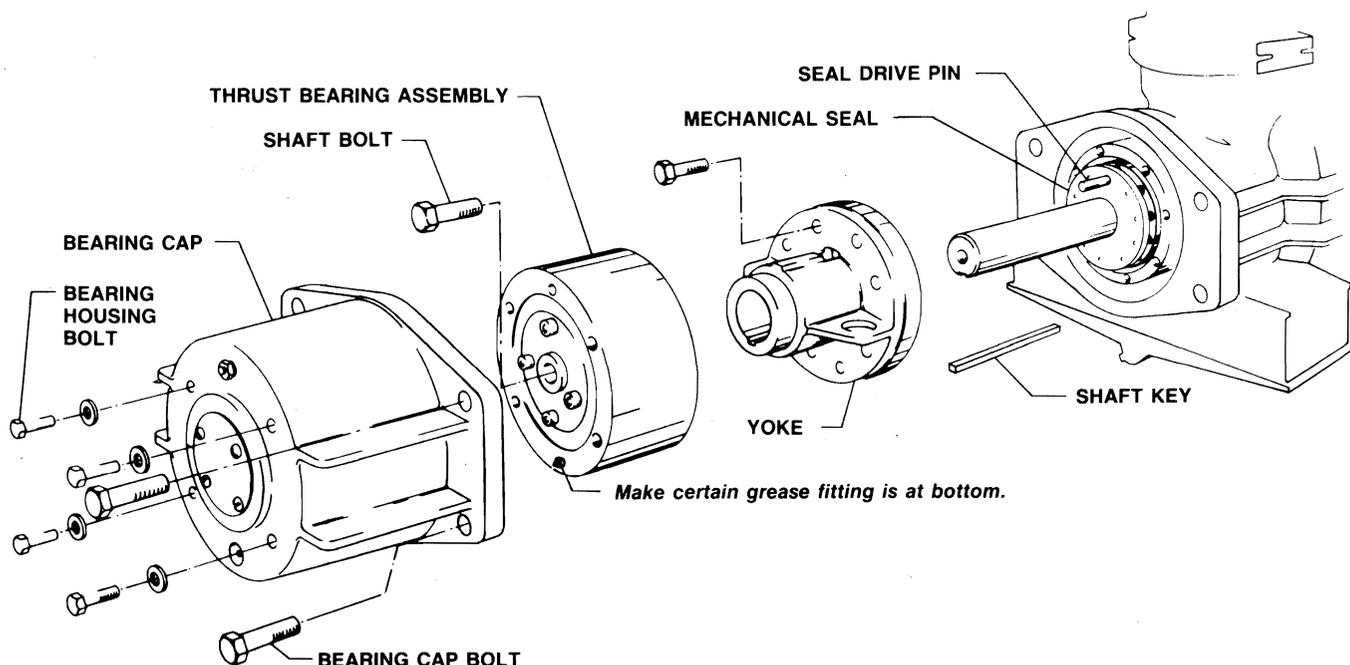
*If the drive pin and the yoke hole are not properly aligned, the mechanical seal will be destroyed.*



6. To remove the seal, simply pull it carefully off the shaft. When reinstalling the seal, lightly lubricate the exposed o-rings, push the seal onto the shaft with a counter-clockwise, twisting motion.

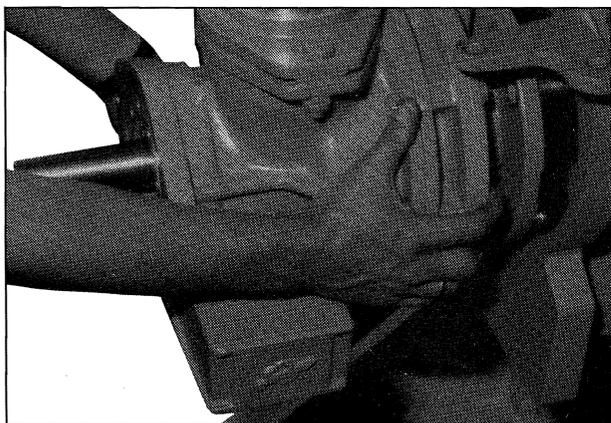
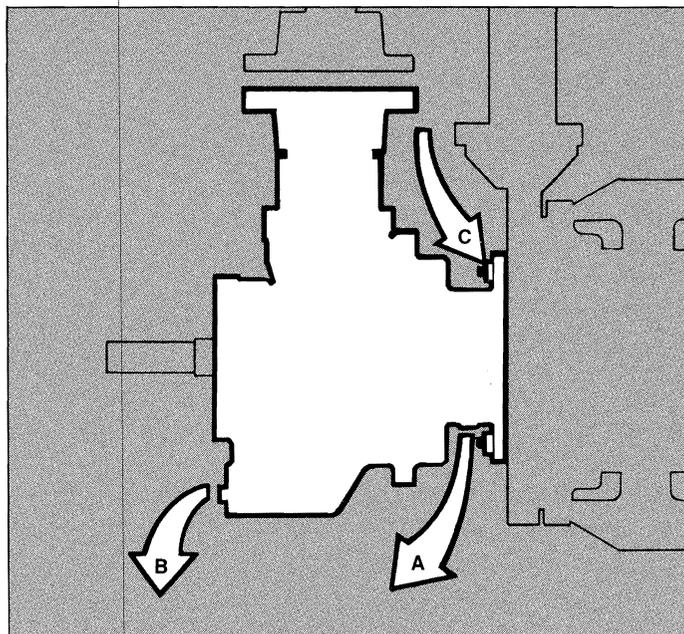
### REASSEMBLY NOTES

Be sure that the seal drive pin extends into the hole above the keyway in the drive yoke. Now follow the instructions for reassembly on page 6, paragraph 4, except that, on the 680, instead of pinch bolts, reinstall the horizontal bearing housing-to-bearing cap screws. The final reassembly step on the 650 is tightening the vertical bearing cap clamp bolts. Do not overtighten; use normal hand tools only. Extreme bolt pressure is not required.



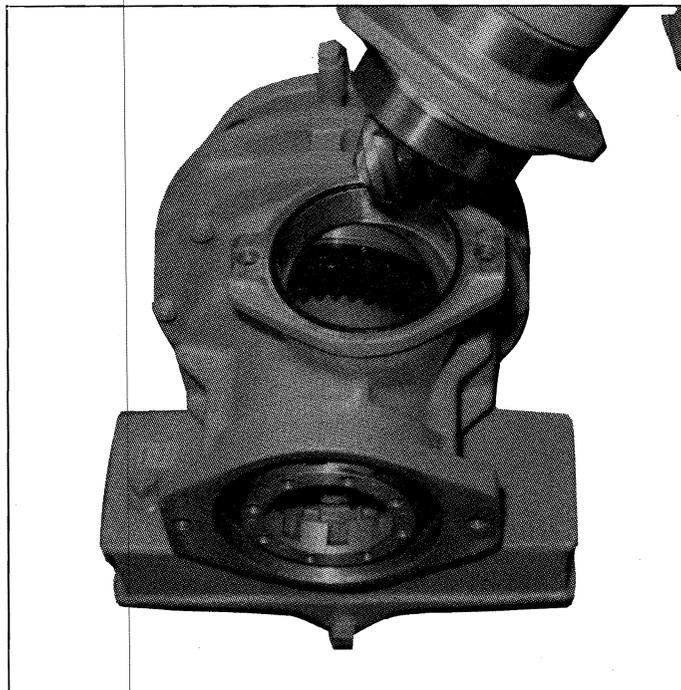
# Gearbox Removal

1. Remove mechanical seal.
2. Remove bolts in motor half of flexible coupling.
3. Drain shaft sleeve by removing plug shown at (A) of the illustration.
4. Drain the gearbox oil by removing plug at (B).
5. Remove the nuts from the mixer body at (C).



6. Support the gearbox evenly and slide it off the body studs. When it is free of the studs, slide it off the propeller shaft.

To re-install the gearbox, first clean the propeller shaft of any dirt or grit, then proceed as follows:



## GEAR INSPECTION

Remove two bolts retaining pinion assembly. Remove pinion assembly. If necessary, the housing may be pried upwards at the joint between the pinion housing flange and the gearcase. The condition of the gearset and bearings can be determined from the contact pattern on the gear teeth. The contact pattern is also used as a check on adjustment after rebuilding.

# Reinstalling Gearbox

Loosen the pinch bolts at the sides of the yoke cover, releasing the thrust bearing from the yoke cover. (The 680 gearbox has no pinch bolts, but requires the removal of the four hex-head capscrews on the back face of the yoke cover.) Remove the yoke cover, thrust bearing assembly and yoke from the gearbox.

Slide the gearbox over the mixer shaft carefully (so as not to unlock the tank seal) and reinstall the nuts at the mixer body.

Realign the gearbox to the motor, leveling the coupling upper face.

Install the mechanical seal, rotating it counter-clockwise only, noting drive pin location in relation to the yoke and the mixer shaft.

Install the key and the yoke. **NOTE THAT THE YOKE MUST BE A SLIDING FIT ON THE SHAFT.**

Slide the thrust bearing over the shaft and the yoke, securing it with a capscrew to the end of the shaft.

Unlock the mixer shaft and slide it forward till the yoke engages with the drive sleeve fully. It will be forced away from the drive sleeve about 1/4 inches by the seal spring tension. **DO NOT FORCE THE YOKE AGAINST THE DRIVE SLEEVE BY USING THE YOKE CAPSCREWS EXCEPT TO TAKE UP THE SEAL SPRING TENSION.**

Bolt the yoke to the drive sleeve. Slip the yoke cover over the thrust bearing assembly and secure it with the housing bolts.

Now vent the mixer by carefully opening the vent plug and either filling with a light oil or some material compatible with the tank contents, then replacing the plug.

Rotate the input coupling by hand four turns before turning on electric power to the motor.

Do not tighten the pinch bolts until after the mixer has had a chance to run for a few minutes, stabilizing the location of the thrust bearing.

## Recommended Fastener Torque Values

FASTENER LOCATION	605		620		650-680	
	SIZE	TORQUE	SIZE	TORQUE	SIZE	TORQUE
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

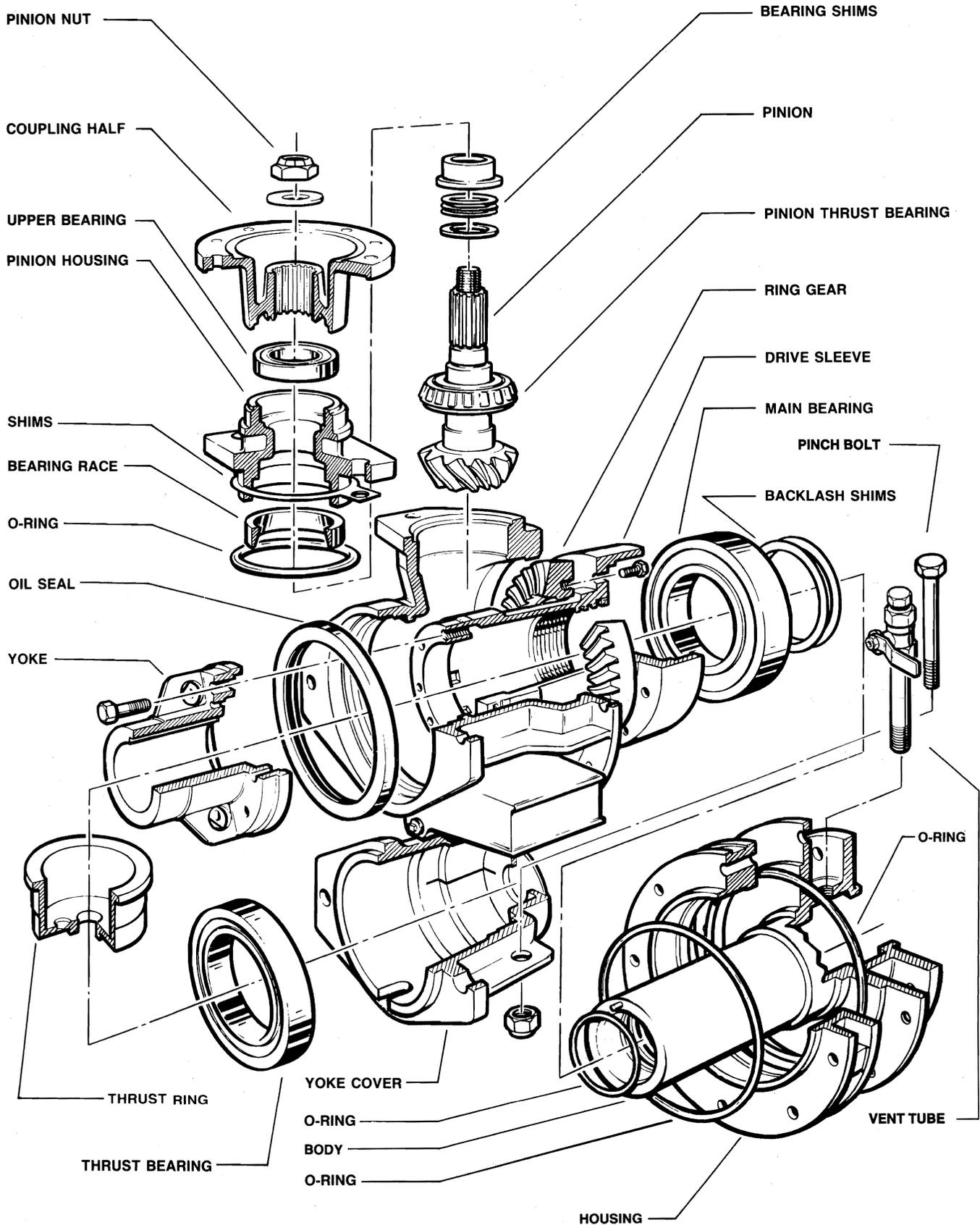
### FIELD DISASSEMBLY TOOL LIST

Field service and inspection on Jensen Series 600 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

# Model 620 Gearbox

## Shown



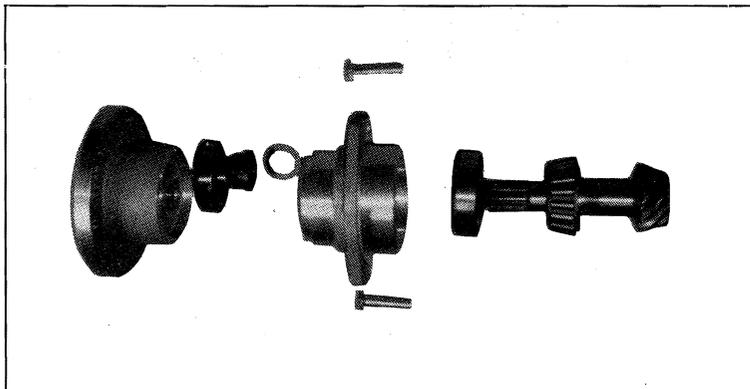
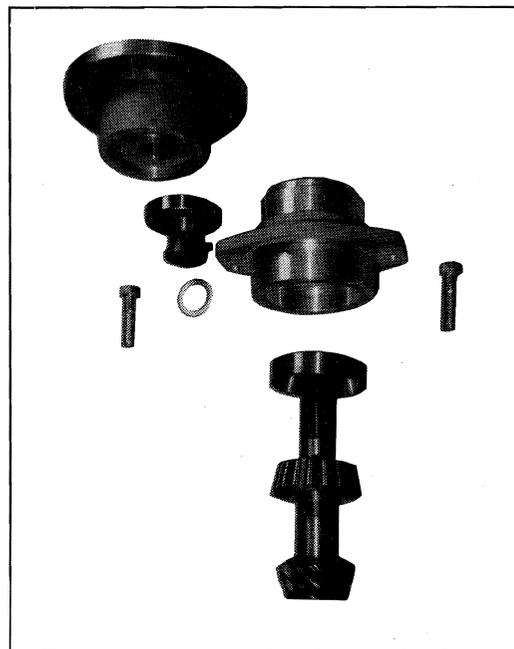
# Pinion Bearings And Gear Replacement

## 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.

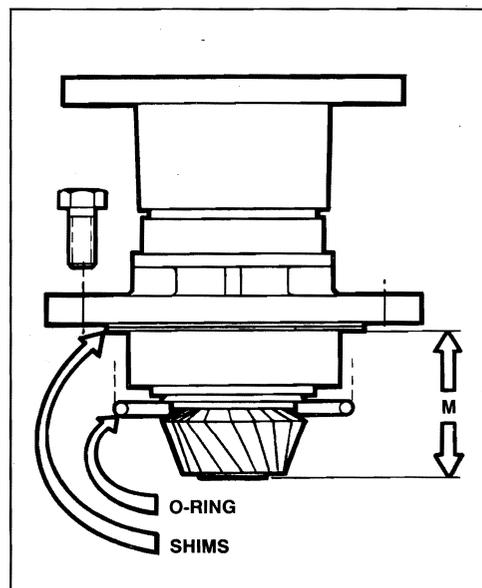
## REASSEMBLY

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 measureable preload on this assembly.

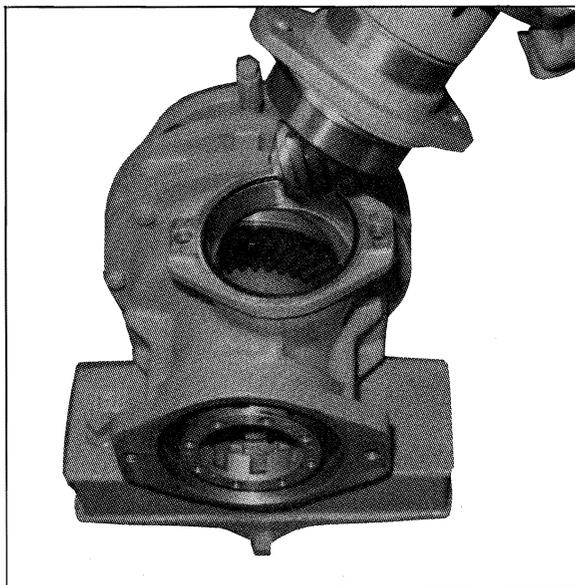


## PINION DEPTH ADJUSTMENT

1. The distance from the bottom face of the pinion to the housing flange (M) must be:
  - 2.688" (68.275 mm) for Model 605
  - 3.000" (76.200 mm) for Model 620
  - 3.500" (88.900 mm) for Model 650 and 680.
 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 10.

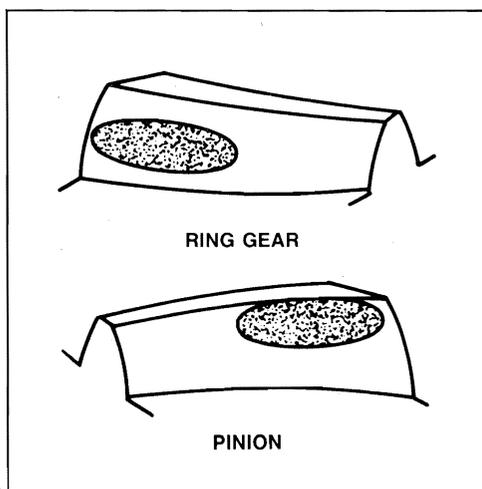
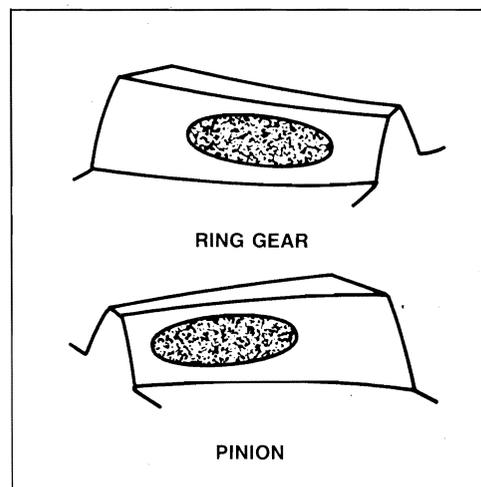


# Gear Set Contact Pattern

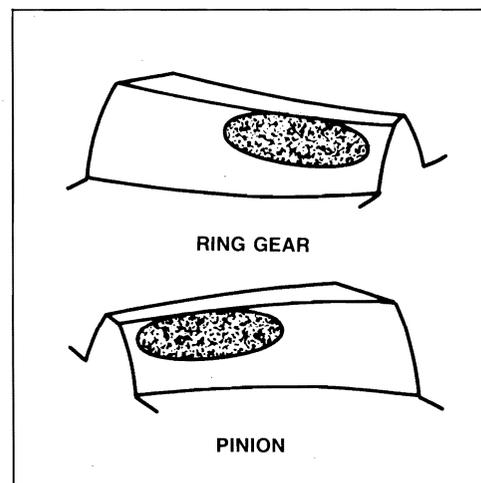


Using a suitable marking compound, check the contact pattern. If the markings look like the picture to the right, the pattern is to accepted standards.

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 the 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 the right, add shims between the case and pinion bearing housing. This pattern indicates that the pinion is sitting too low.

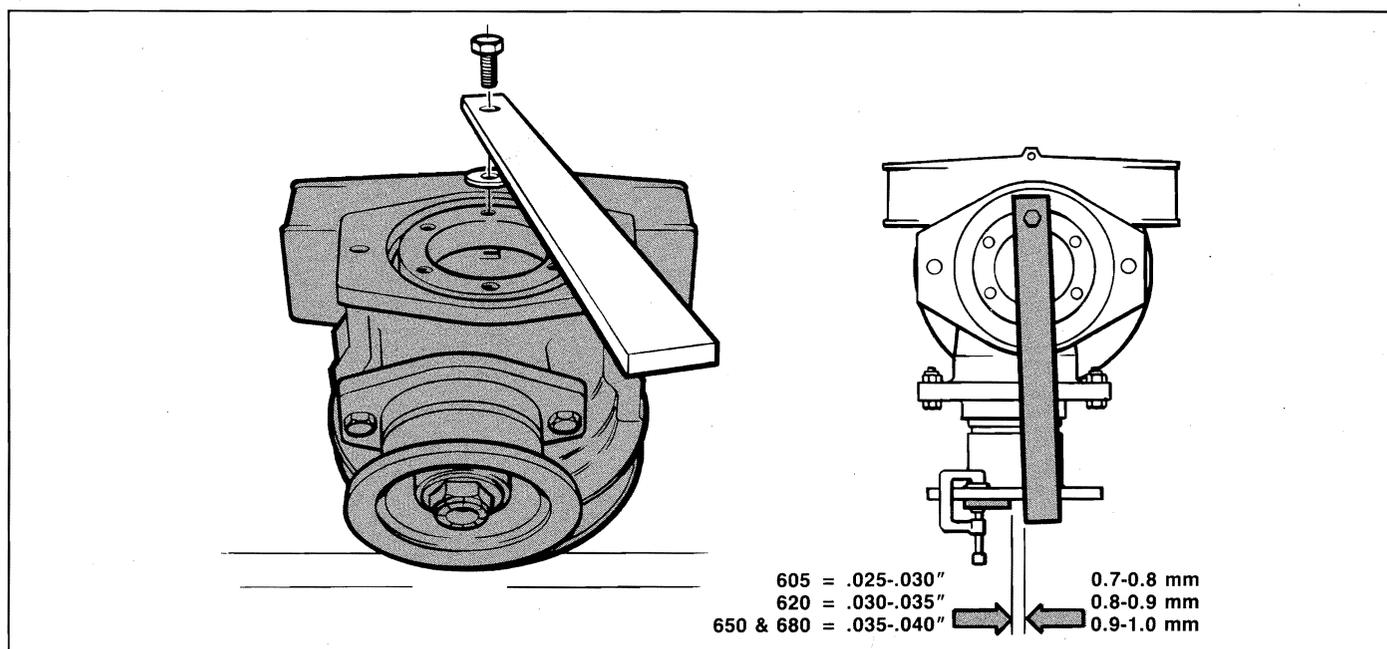
# Ring Gear and Main Bearing Replacement

## DISASSEMBLY

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 body. The gear and bearings should be inspected at this point. If they are not excessively worn or loose, the gearbox 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.

## REASSEMBLE - BACKLASH ADJUSTMENT

1. Bolt ring gear to drive sleeve. See page 10 for torque values.
2. Press main bearing onto drive sleeve.
3. Position the drive sleeve back over the body 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.



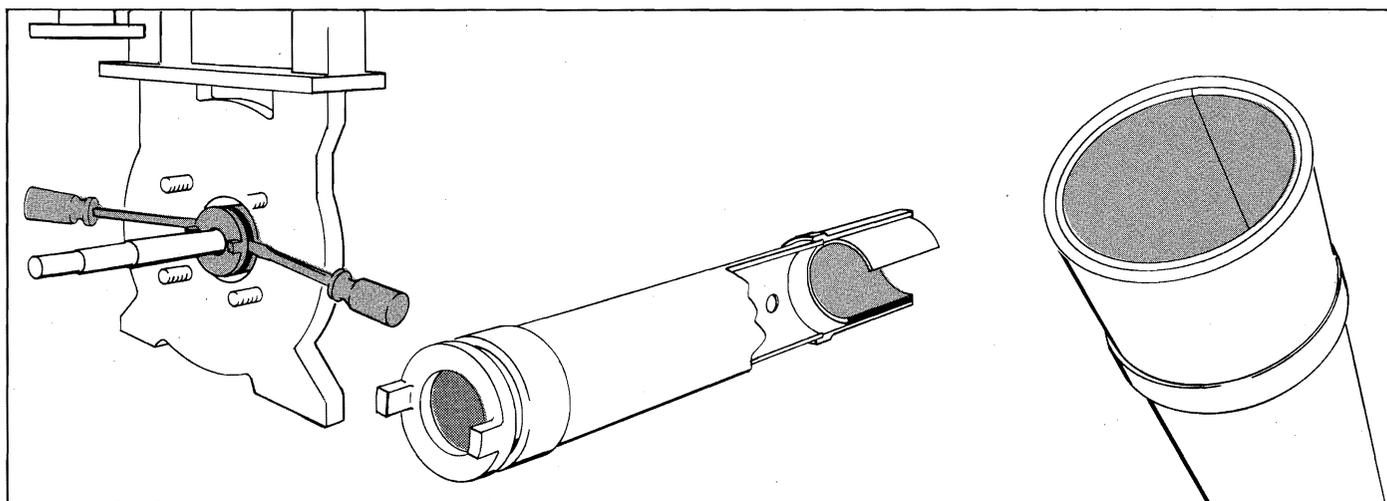
# Shaft Bearing Inspection

When the gearbox is removed for repairs, it is important that the shaft bearing be inspected. PROCEED AS FOLLOWS:

1. Once the gearbox has been removed, the inner sleeve which holds the shaft bearing can be removed. A groove is provided on the exposed end of the inner sleeve; a pair of screwdrivers may be used here to start the sleeve out.
2. The shaft bearing is located inside the inner sleeve at the propeller end. If it is badly worn or scored, it should be replaced.
3. The bushing material is solid tungsten carbide for greatest resistance to wear in the most abrasive

environments. If it is worn it will be necessary to replace the entire inner tube assembly.

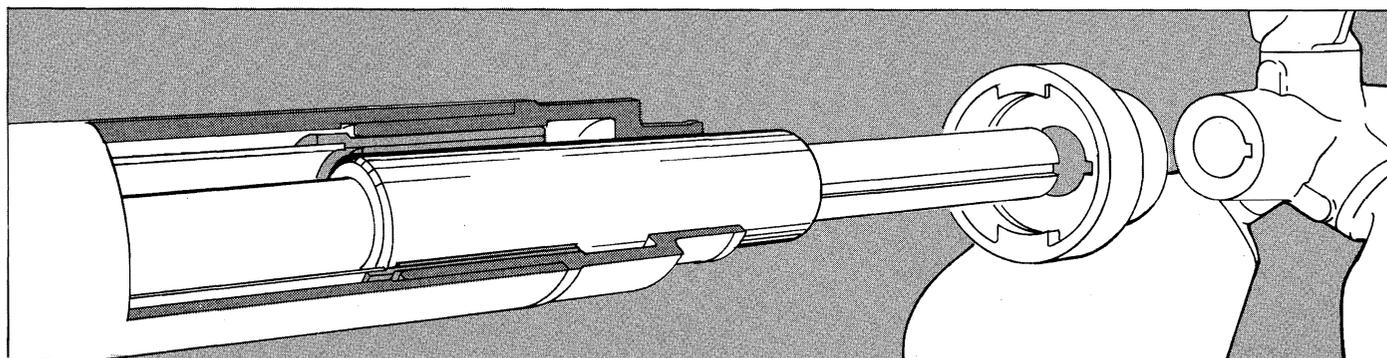
4. To reinstall the inner sleeve, position the lugs on the gearbox end of the sleeve vertically, then push the sleeve in until it stops. Replace the o-ring on the outside of the sleeve.
5. WE RECOMMEND THAT, WHEN MIXING LIGHT PRODUCTS SUCH AS GASOLINE OR MATERIALS CONTAINING ABRASIVE MATTER, THE INNER SLEEVE BE REMOVED AND THE TC BUSHING INSPECTED AT LEAST ONCE EVERY TWO YEARS.



## SHAFT WEAR SLEEVE

All standard JENSEN Series 600 mixers are equipped with a reversible shaft wear sleeve (not the HT model). When the tank is out of service for periodic maintenance, the wear sleeve should be inspected. If it is badly worn or scored, it should be

reversed or replaced. To change the sleeve, remove the propeller and shaft lock bushing, reverse the wear sleeve and reassemble. See Para. 5 under Shaft Bearing Inspection.



# Shaft Lock Securing Device

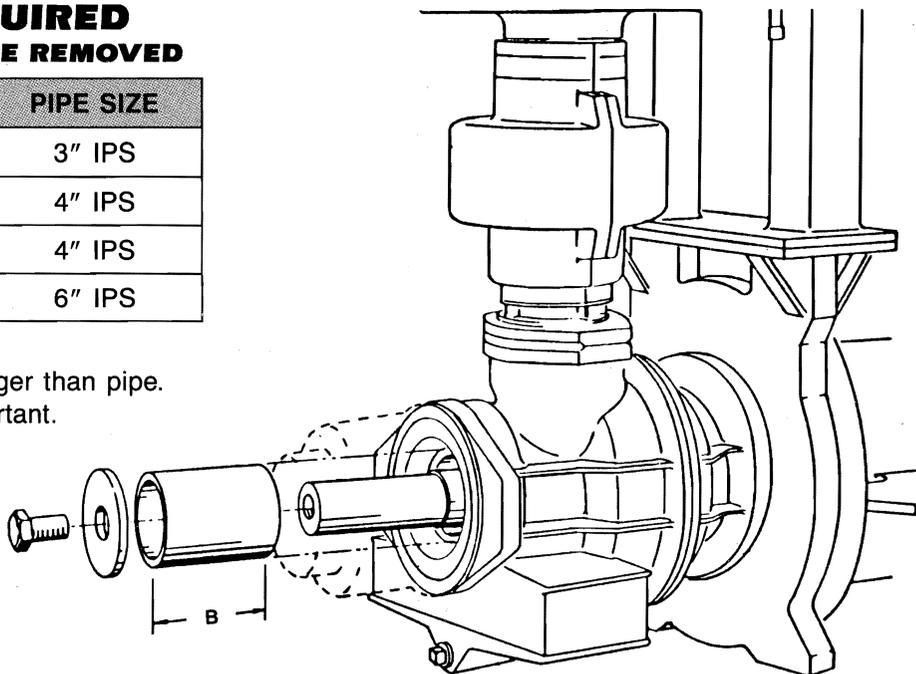
## SERIES 600 MIXERS

### DIMENSIONS REQUIRED IF CAP, YOKE AND SEAL ARE REMOVED

MODEL	B	PIPE SIZE
605	3 7/8"	3" IPS
620	5 1/8"	4" IPS
650	5 7/8"	4" IPS
680	6 3/8"	6" IPS

WASHER: 5/8" dia. hole. OD larger than pipe.  
Size and shape unimportant.

Install as shown. Use standard shaft cap screw in end of shaft. Screw should be snug - not tight.



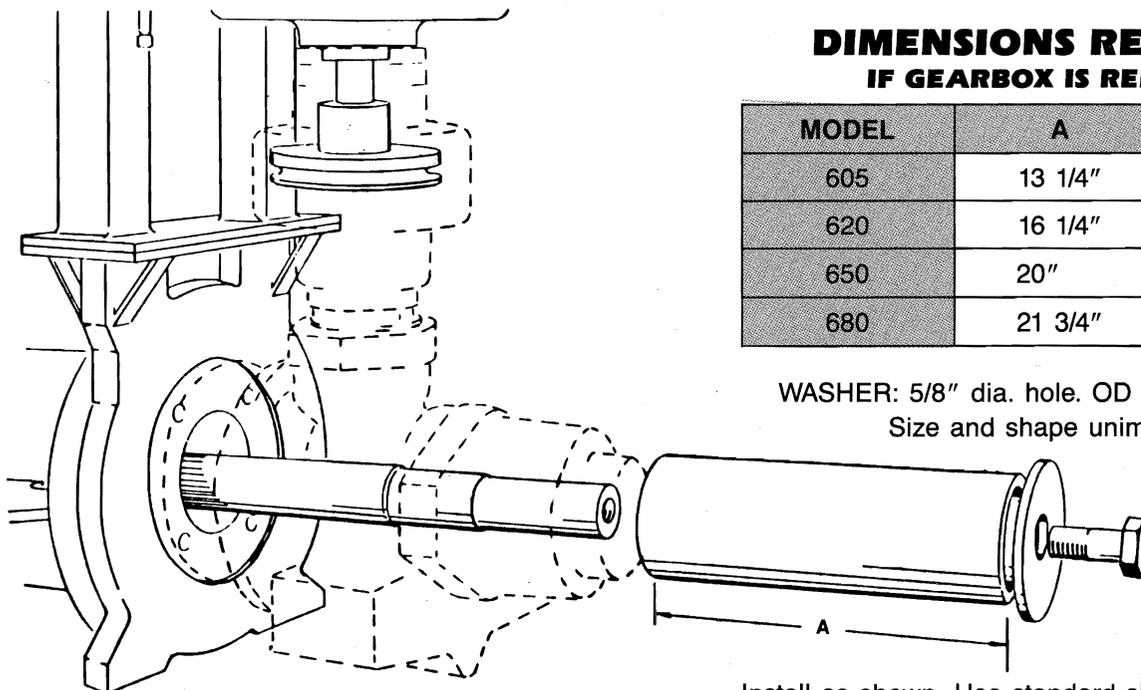
For all normal maintenance the shaft lock ring will provide adequate security for the tank shutoff device. If it becomes necessary during mechanical seal or gearbox maintenance to leave the mixer unattended for any appreciable length of time, we recommend that this shaft lock securing device be

fabricated and installed. We particularly recommend this procedure where two or more mixers are installed in a tank. The fluid flow from one mixer may tend to turn the propeller of the mixer being serviced, causing the tank shutoff device to disengage.

### DIMENSIONS REQUIRED IF GEARBOX IS REMOVED

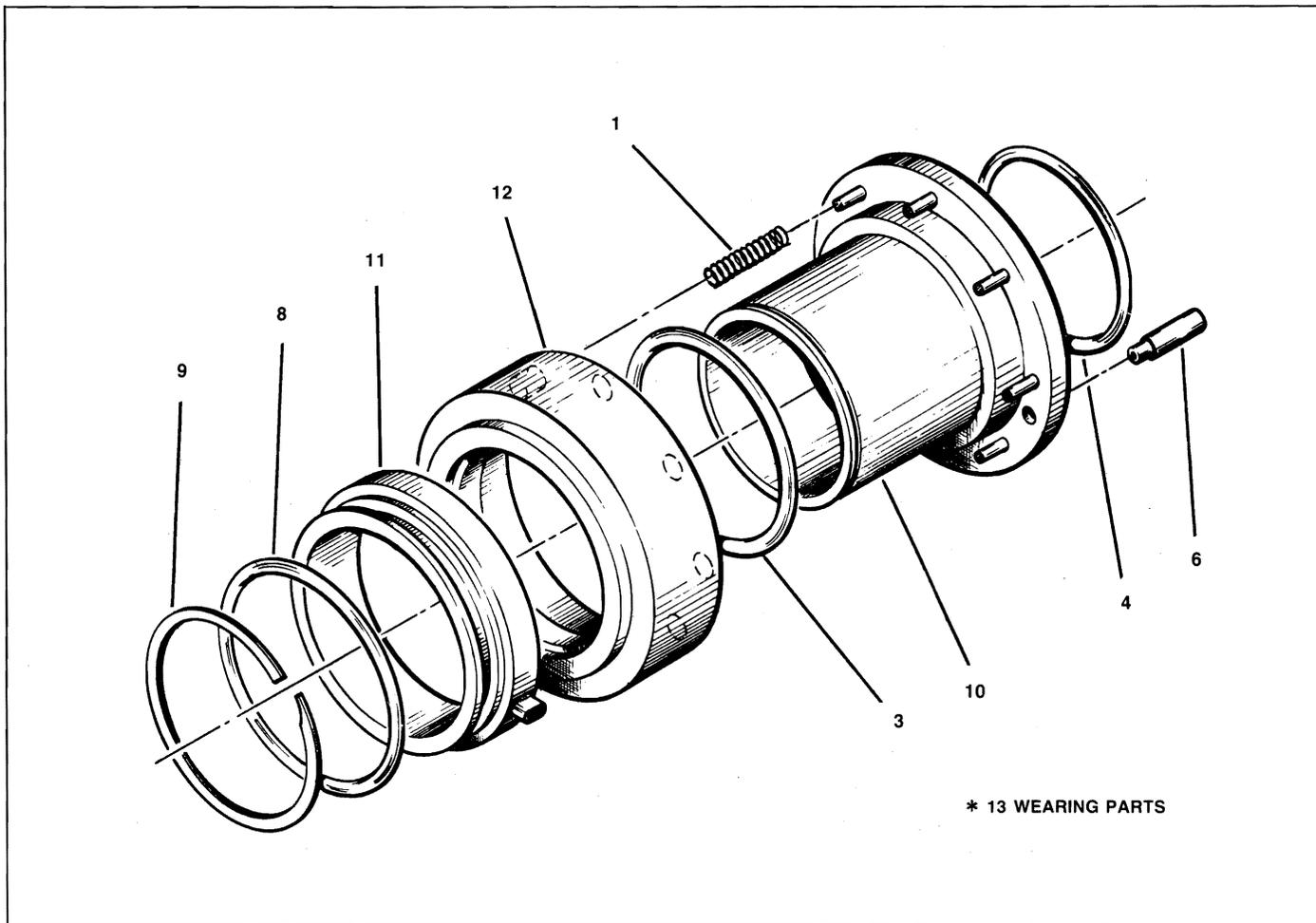
MODEL	A	PIPE
605	13 1/4"	3" IPS
620	16 1/4"	4" IPS
650	20"	4" IPS
680	21 3/4"	6" IPS

WASHER: 5/8" dia. hole. OD larger than pipe.  
Size and shape unimportant



Install as shown. Use standard shaft cap screw in end of shaft. Screw should be snug - not tight.

# Type "F" Mechanical Seal Parts Drawing



\* 13 WEARING PARTS

## S12J7

ITEM	DESCRIPTION	STAND. MAT'L
1	Spring Set	Inconel 600
3	"O" Ring	Viton A
4	"O" Ring	Viton A
6	Drive Pin	316SS
8	"O" Ring	Viton A
9	Snap Ring	304SS
10	Sleeve	316SS
11	Stationary Seal	Ni-Resist
12	Rotating Face	Carbon
*13	Wearing Parts	N/A

### IMPORTANT

When ordering replacement parts give: Mixer Model & Serial No., Item No., Part Name, Part Drawing Number and material if not standard.

### NOTES:

Number of springs will vary depending upon seal bore.

\* Item 13, consists of items 1, 3, 4, 8, 9, 11 & 12

# Jensen Mechanical Actuator

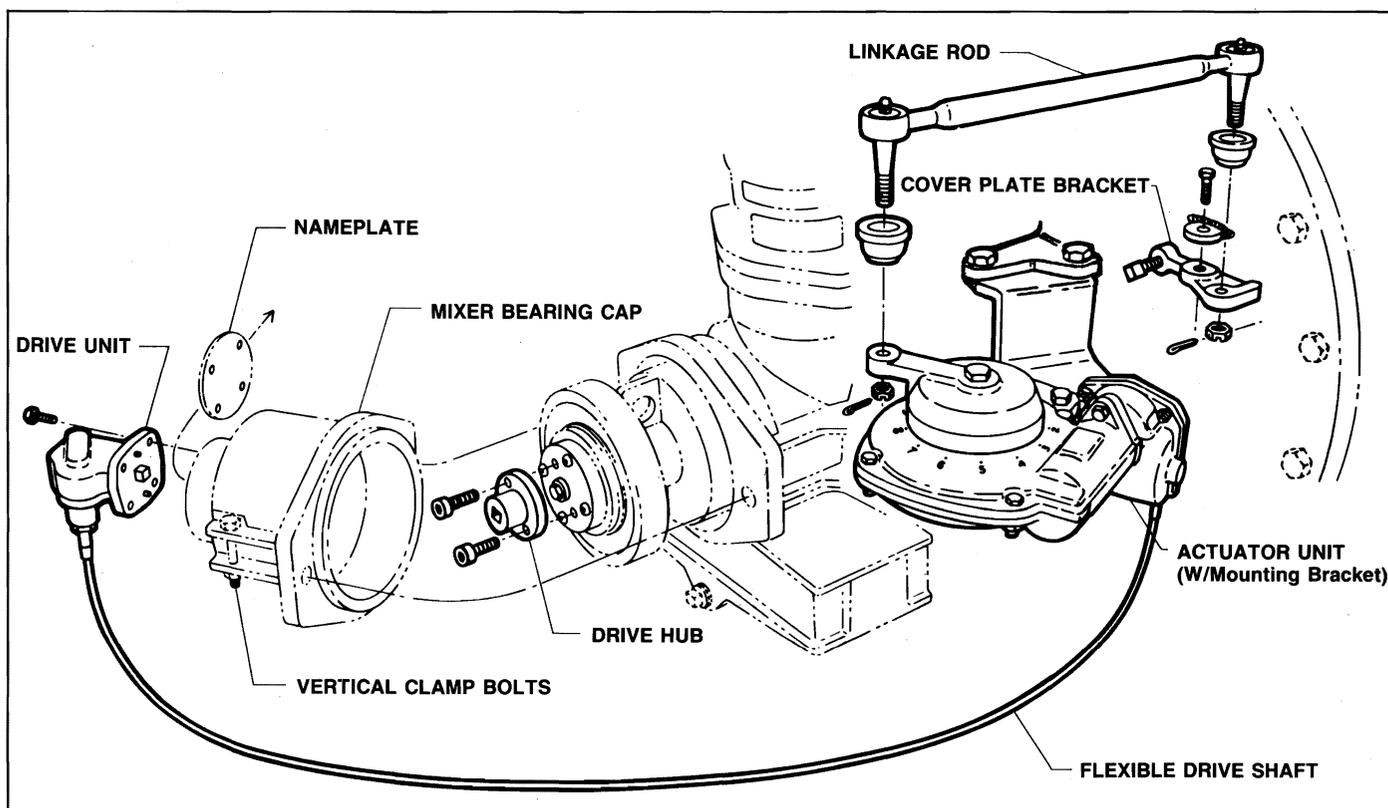
## INSTALLATION

### THE DRIVE UNIT

1. Remove the mixer bearing cap and take the nameplate off. Remove and discard the nameplate and screws. Note that on units with vertical pinch bolts on the bearing cap, the vertical bolts must be loosened first.
2. Fasten the drive hub to the thrust bearing assembly as shown, with the cap screws provided.
3. Bolt the mixer bearing cap back on the gearbox.
4. Bolt the mechanical actuator drive unit to the bearing cap with the hex head screws and lock washers provided. Be sure that the two locating pins fit the two holes in the bearing cap, and the square on the drive assembly properly engages the square socket in the drive hub.
5. On mixers with vertical clamp bolts on the bearing cap, tighten these bolts securely.

### THE ACTUATOR UNIT

1. Bolt the actuator unit and mounting bracket assembly under the "L" shaped plate on the right side of the mixer flange with two 1/2 - 13 NC by 2 inch long bolts and lockwashers provided.  
**CAUTION:** The flexible drive shaft connecting the drive unit to the actuator unit must be free of all kinks and must not touch the ground.
2. Bolt the coverplate bracket onto the "eye" that is already welded on the coverplate. Tighten the square head set screw.
3. Loosen the top bolt holding the actuator lever to the actuator unit. Raise lever to rotate.
4. Install the linkage rod assembly. Make sure the linkage rod assembly model number agrees with the mixer model number on the serial plate. Serious damage to the actuator would result if the numbers do not agree. Tighten the top bolt holding the actuator lever to the actuator unit. Tighten linkage rod nuts and install cotter pins.

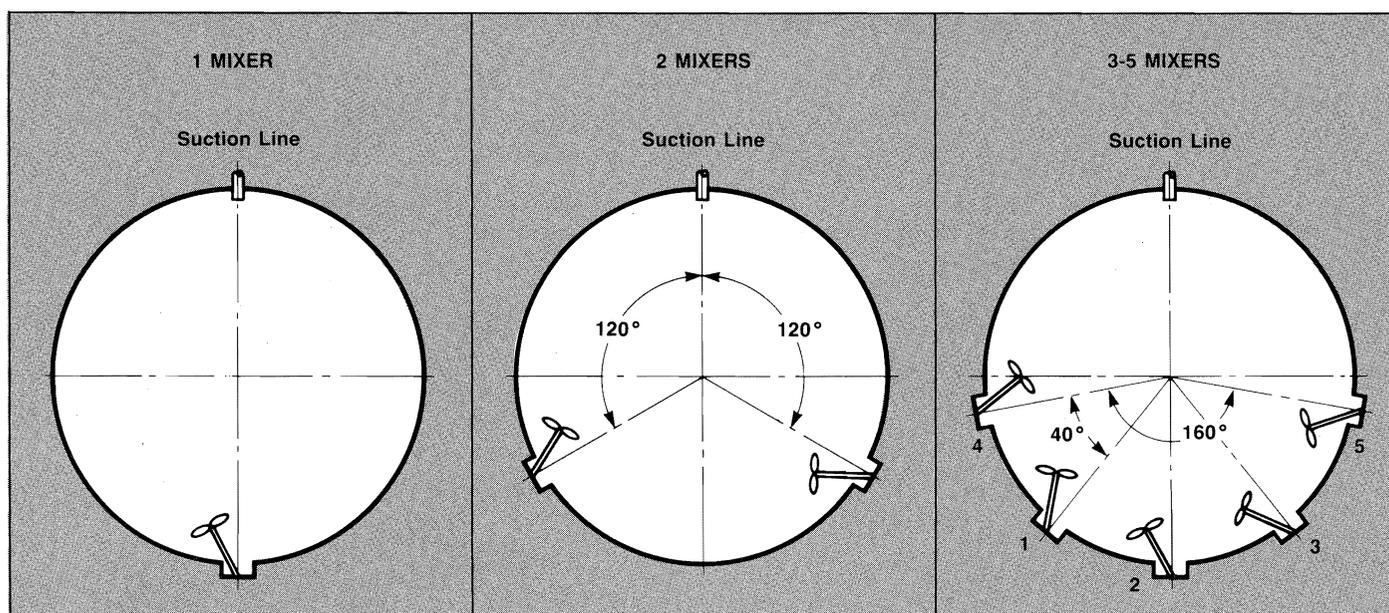


# Jensen Mechanical Actuator

## SYNCHRONIZATION — TWO OR MORE MIXERS

If there are two or more mixers per tank, the mixers and actuators must be synchronized to operate together. To synchronize mixers on the tank, loosen the bolt on top of the actuator lever so that the serrations under the lever skirt can be disengaged. Raise lever 1/8 inch and move the mixers until the arrows marked on the lever skirts are pointing to the same number on all actuator units. When this is accomplished, tighten all the bolts until the lever serrations are tight. All the mixers on the tank should now be aligned properly. (See Figure below).

Under normal operation, an individual will not be able to see the actuator and mixer move. After mixers are started, check in about an hour or more to see if the arrow marker has moved at least one mark on the actuator unit. The mixers will remain synchronized as long as all units start at the same instant and run the same amount of time. In time, it may be necessary to re-adjust the mixers to align them again. A brief check of the mixers on a monthly basis will insure proper mixer(s) orientation.



## LUBRICATION SCHEDULE

Your Jensen Mixers International, Inc., mechanical actuator has been lubricated and grease-packed with high quality Moly E.P. semi-synthetic grease at the factory.

For maximum protection and long life, grease regularly as specified with the recommended lubricant or equivalent.

### GREASE LUBRICATION INTERVALS

UNIT	CHECK	REPACK
Drive Unit	Every 6 Months	Every 2 Years
Actuator Unit	Every 6 Months	Every 2 Years
Linkage Rod Zerks	Every 6 Months	Every 6 Months

# 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 Oil Company	SAE 80* Multi-Purpose Gear Lube MIL-L-2105B	SAE 90* Multi-Purpose Gear Lube MIL-L-2105B	SAE 140 Multi-Purpose Gear Lube 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 seasonally, 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. Then start mixer and again 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

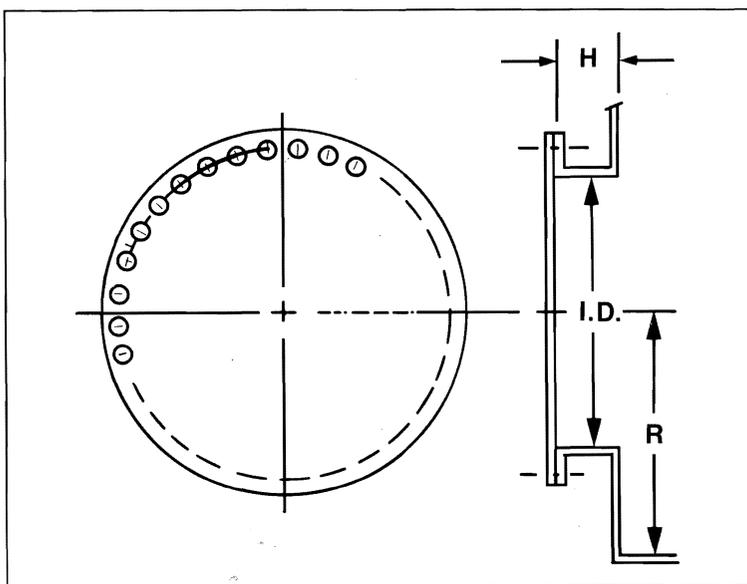
H	Propeller Diameter					
	20	23	26	29	32	35
4	14	16	17	19	20	22
5	15	16	18	19	21	22
6	16	17	19	20	22	24
7	16	17	19	22	24	25
8	18	19	20	23	25	26
9	18	19	20	24	26	28
10	18	20	22	24	27	29
11	18	21	22	25	27	30
12	19	21	22	25	28	30
13	19	21	22	26	29	32
14	21	22	24	27	30	34
15	21	22	25	28	30	34

## 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

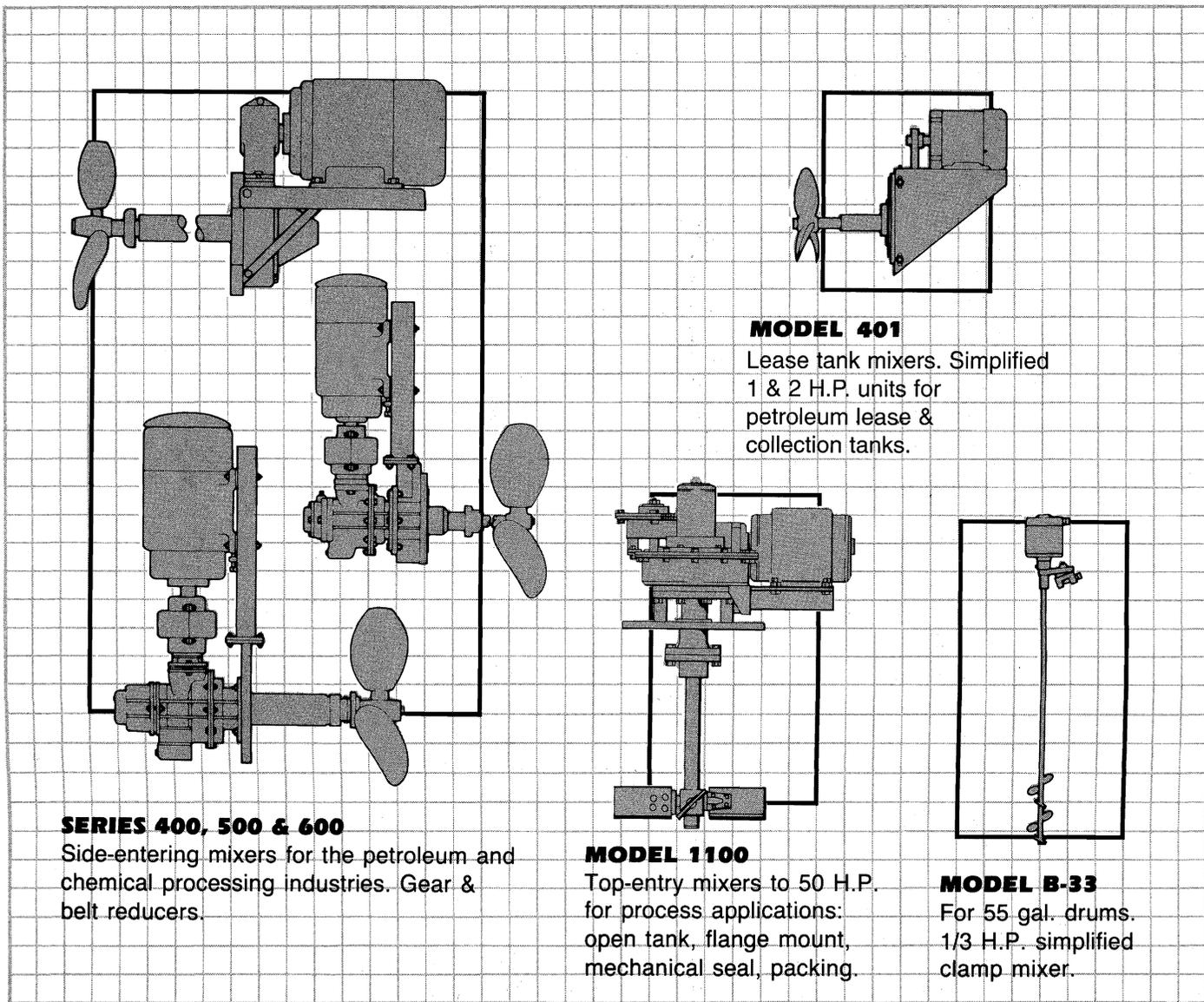
**“H” Dimension is the measurement from the inside of the tank wall to the outer face of the manway at top or bottom of manway.**

**All dimensions are in inches.**





# 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.