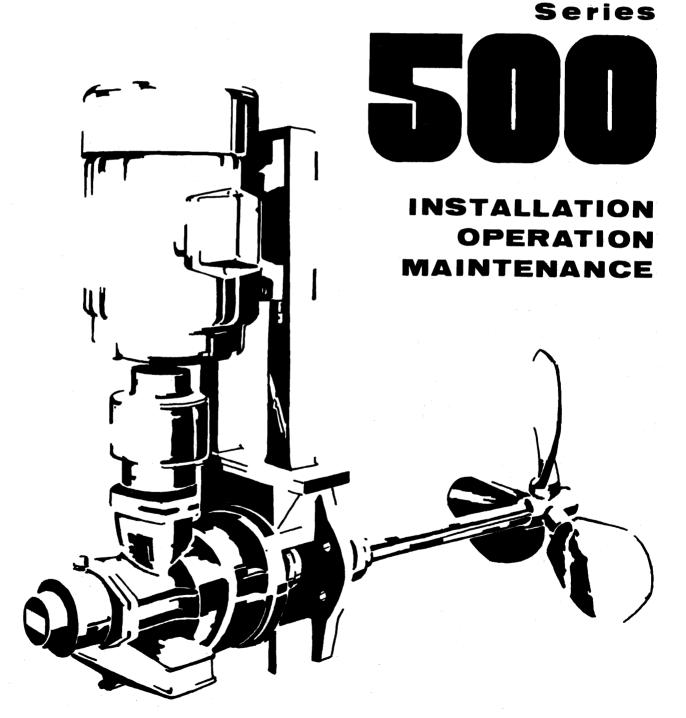
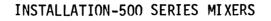
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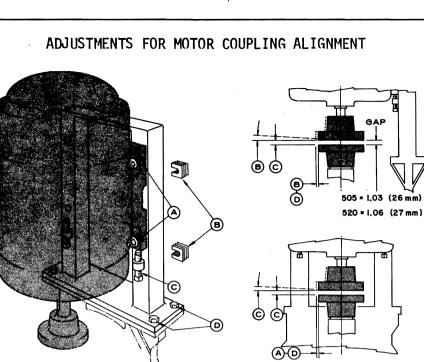
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- 1. Remove blank coverplate from tank manway and check mixer coverplate for correct size, hole location and orientation.
- 2. Install nozzle gasket and bolt mixer to nozzle. <u>Caution-The mixer pinion</u> shaft must be in line with "top" stamped on the thickness of the nozzle.
- 3. Mount propeller on shaft if manway is large enough for propeller to roll thru.
- 4. Install gasket and bolt coverplate with mixer to manway. <u>Caution-Mixer</u>
 - 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.

ୖୢ



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

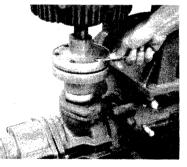
(A) Oversize holes in motor mount and (B) shims under motor feet are used for parallel and angular alignment. (C) Set screws are used for angular alignment and adjustment of the gap between coupling halves. (D) Oversize holes in the motor mount base are used for parallel alignment. Very small final adjustments are made by tapping or bumping the motor mount while the base bolts are snug but not tight.

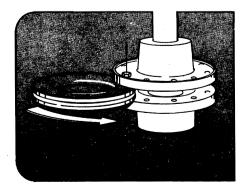
The following torque values should be used when tightening the cap screws in the flexible coupling element:

Model 505 120 lb-in Model 520 120 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 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 of cap screws.

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INITIAL STARTUP

- 1. Fill gear box with oil. See page 19 for oil interchangeability.
- 2. Makeup electrical wiring in accord with exsisting 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: Do not operate mixers with less than 4 feet fluid above the propeller.

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 seperately, 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
Gear Case	-	$50^{\circ}F$ or $10^{\circ}C$	70 ⁰ F	or 21°C
0il -		65 ⁰ F or 19 ⁰ C	85 ⁰ F	or 30°C

PERIODIC MAINTENANCE:

Change oil (while hot) after first 10 hours of Operation. Change oil once each year and inspect flexible coupling.

Gear Box oil capacities: $505-1\frac{1}{2}$ pints (.71 litres) $520-\frac{1}{2}$ Gallon (1.89 litres)

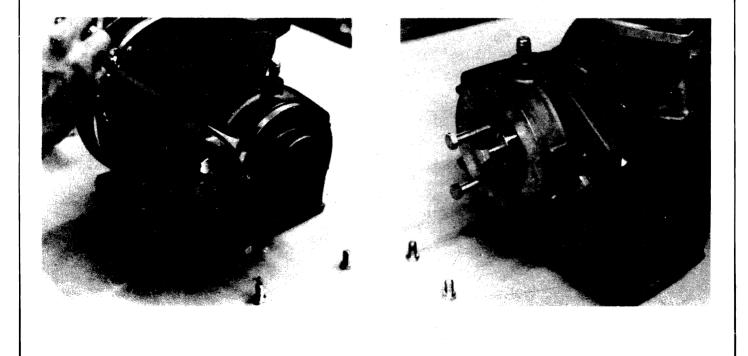
MECHANICAL SEAL REMOVAL

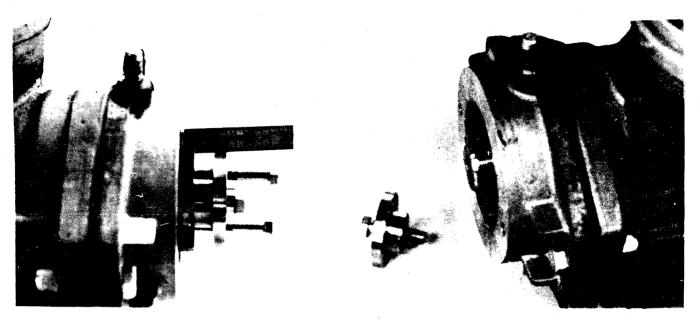
- 1. Remove motor coupling covers and flexible coupling element. See page 3.
- 2. Remove end cap of gear box. Turn pinion c**ou**pling half until arrow on end hub at rear of gear box is pointed up.
- 3. Remove 2 cap screws and install them in the jack screw holes provided in the end hub. Pull end hub back approximately 3/4 inches and rotate ½ turn counter-clockwise This seals off the tank contents and holds the shaft securely. If the end hub is difficult to pull back, screw the 2 cap screws in; this acts as a 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.
- 7. With the gear box removed, the mechanical seal or stuffing box may be removed.
- 8. To reinstall mechanical seal or stuffing box, first clean the propeller shaft of any dirt or grit, then reverse the above steps.

REPAIRS

Gear Box

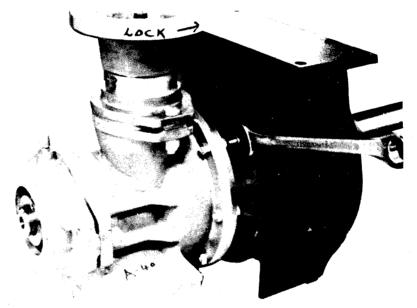
For gear inspection, remove two bolts retaining the pinion assembly. If necessary, the housing may be pried upwards at the joint between the pinion housing flange and the gear case. The condition of the gear set and bearings can be determined from the contact pattern on the gear teeth. (See gear contact pattern page 8)



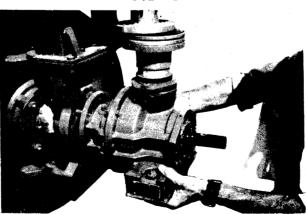


STEP 3









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 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.

B. REASSEMBLY - BACKLASH ADJUSTMENT

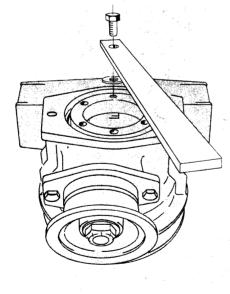
1. Bolt ring gear to drive sleeve. See back cover for torque values.

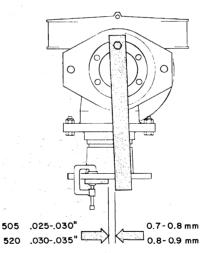
2. Press main bearing onto drive sleeve.

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.

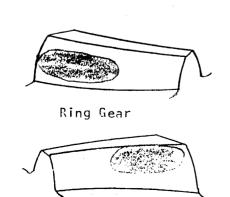




Using a suitable marking compound, check the contact pattern. If the markings look like the picture at right, the pattern is to accepted standards.

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.

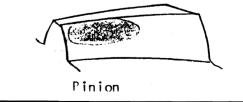
If the contact pattern looks like the picture to right, remove shims between the case and pinion bearing housing. This pattern indicates that the pinion is sitting too high.



Ring Gear

Ring Gear

Pinion



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 high.

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Pinion

PINION BEARINGS AND GEAR REPLACEMENT

A. DISASSEMBLE

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

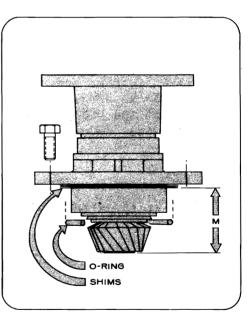
Reverse the procedure described above. Start by using the same shim thickness under the upper bearing as the original assembly; this will serve as a starting point. When reassembled, the pinion housing should turn freely, but with no slack that can be felt by rocking the housing. If it is too tight,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

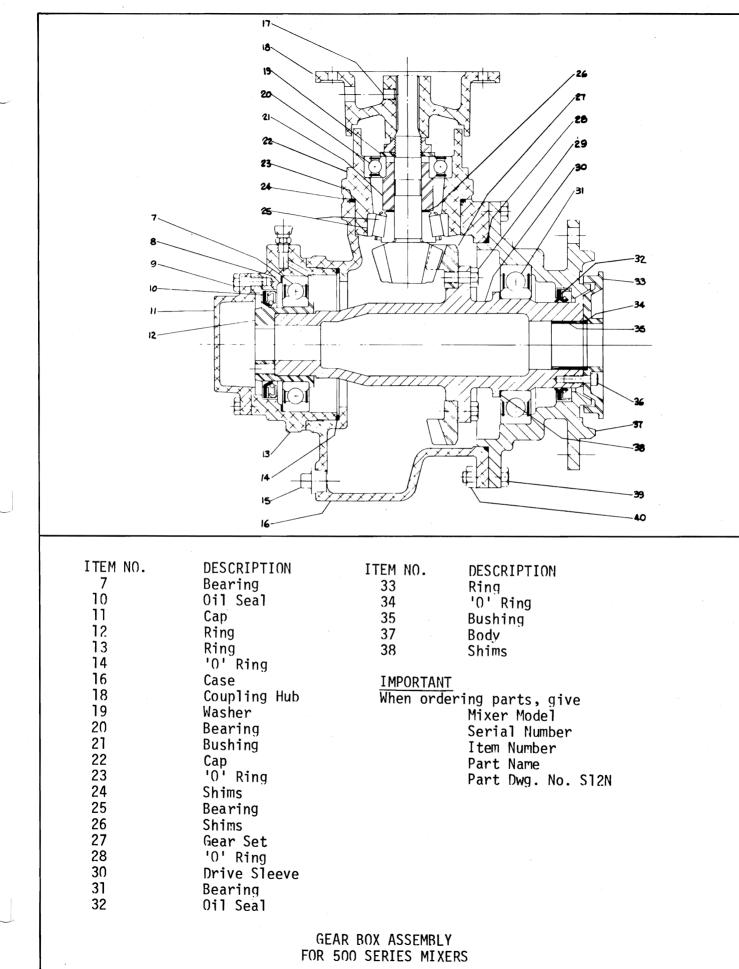
C. PINION DEPTH ADJUSTMENT

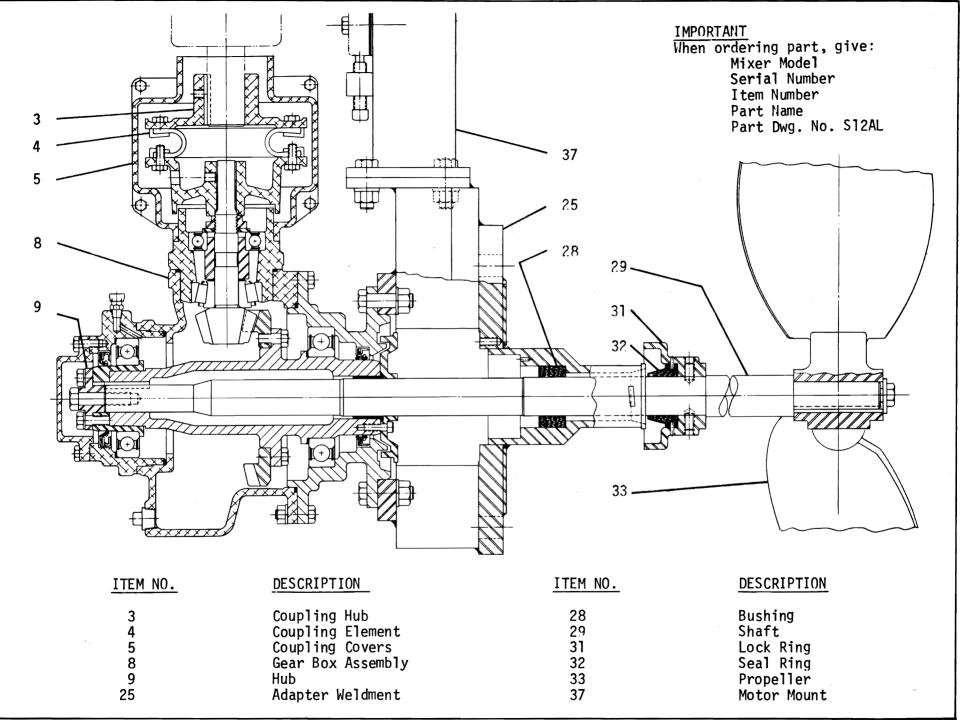
 The distance from the botton of the pinion to the housing flange (M) must be:
 2.687 to 2.688" (68.250 to 68.275 MM) for Model 505
 2.999 to 3.000" (76.174 to 76.200 MM) for Model 520 If (M) is greater than it should be, shims must be added as shown.
 Replace o-ring
 Put pinion assembly in gearcase and install bolts. Torque to values shown.





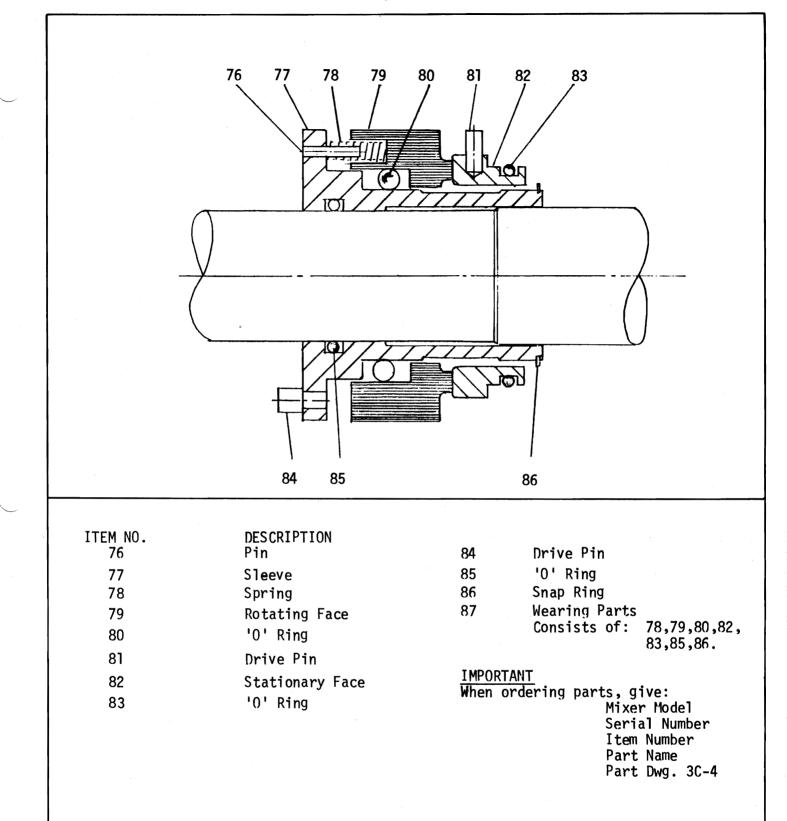






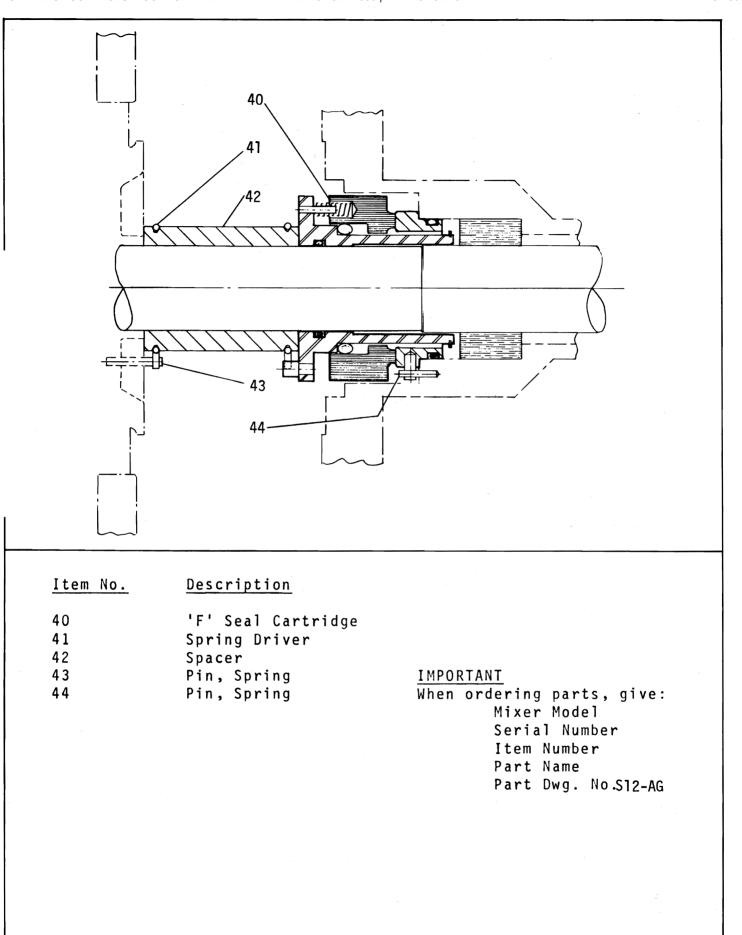
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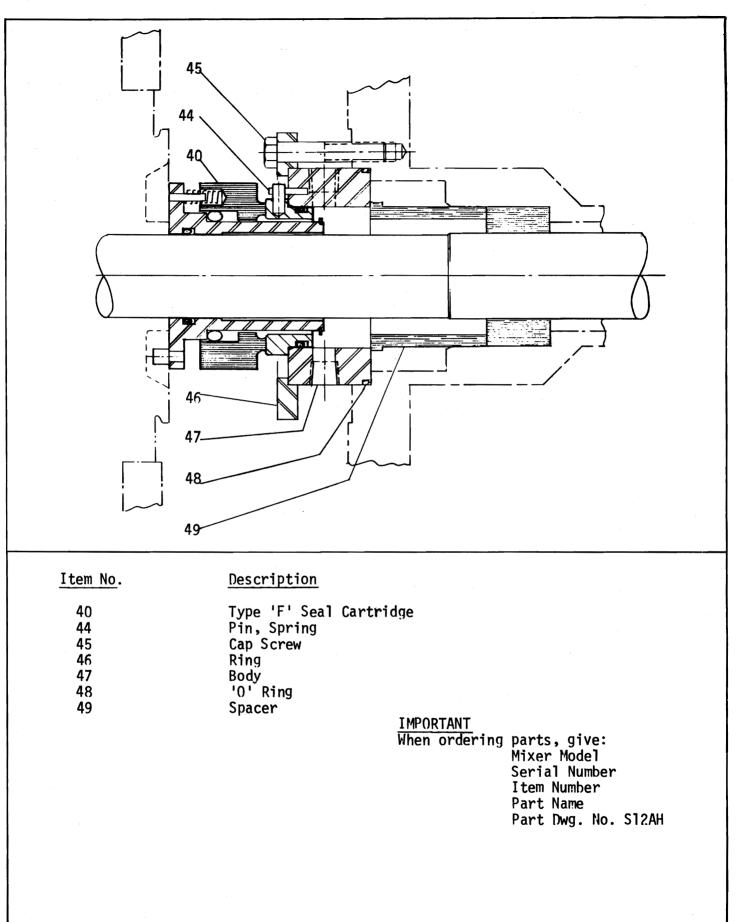


TYPE 'F' SINGLE SEAL CARTRIDGE FOR 500 SERIES MIXERS

TEL: 201-327-7660 AGE 12

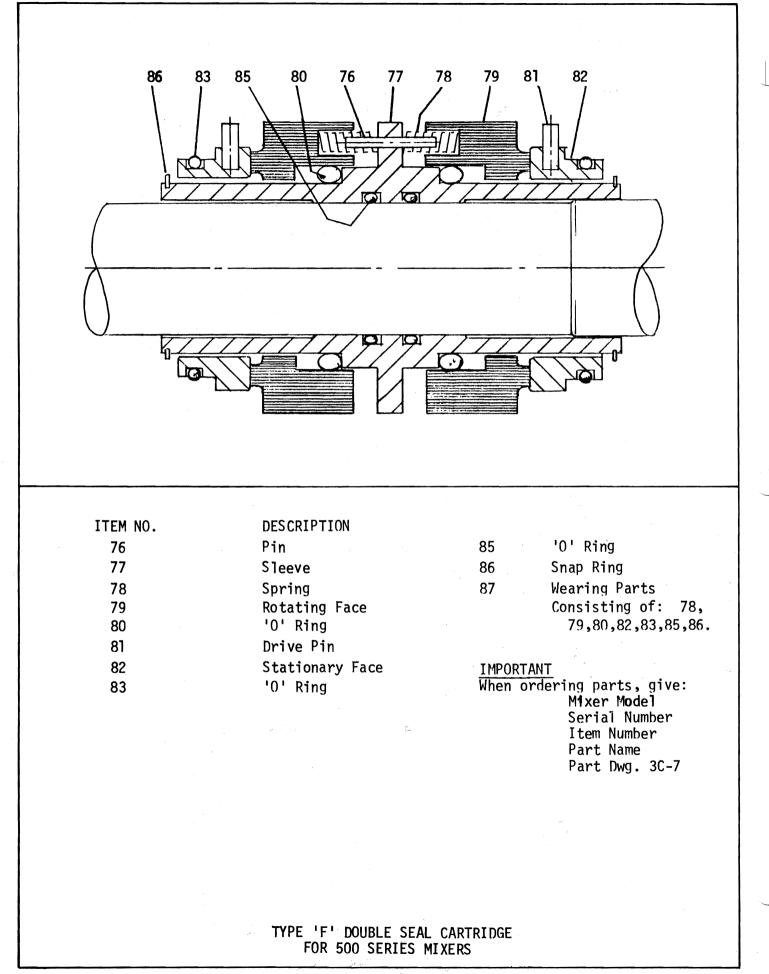


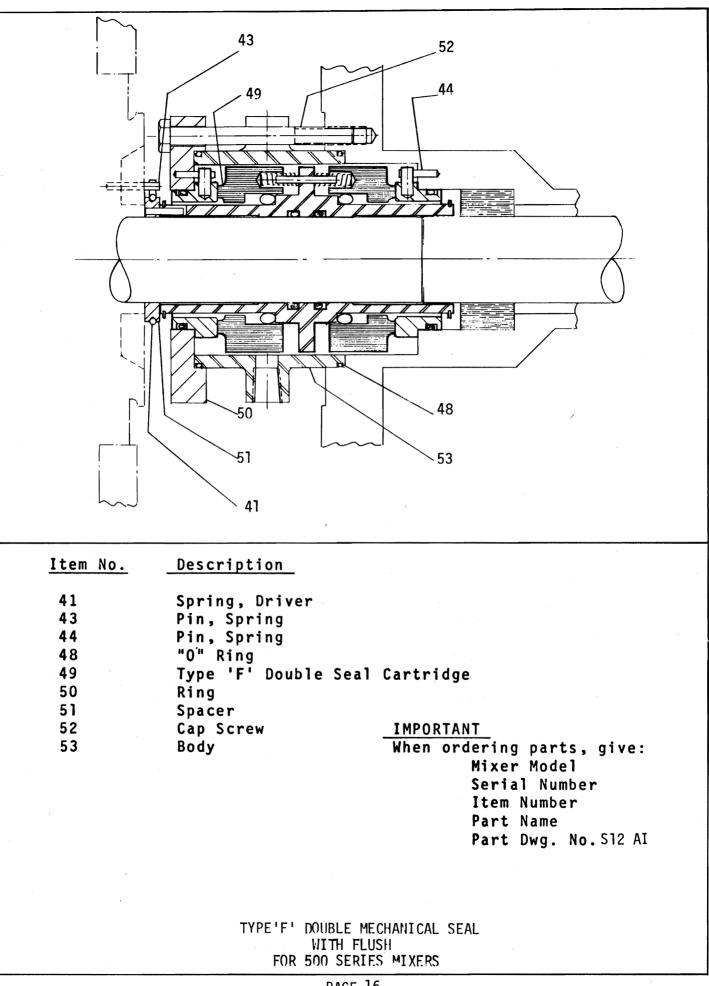
TYPE 'F' SINGLE MECHANICAL SEAL FOR MODEL 500 SERIES MIXERS



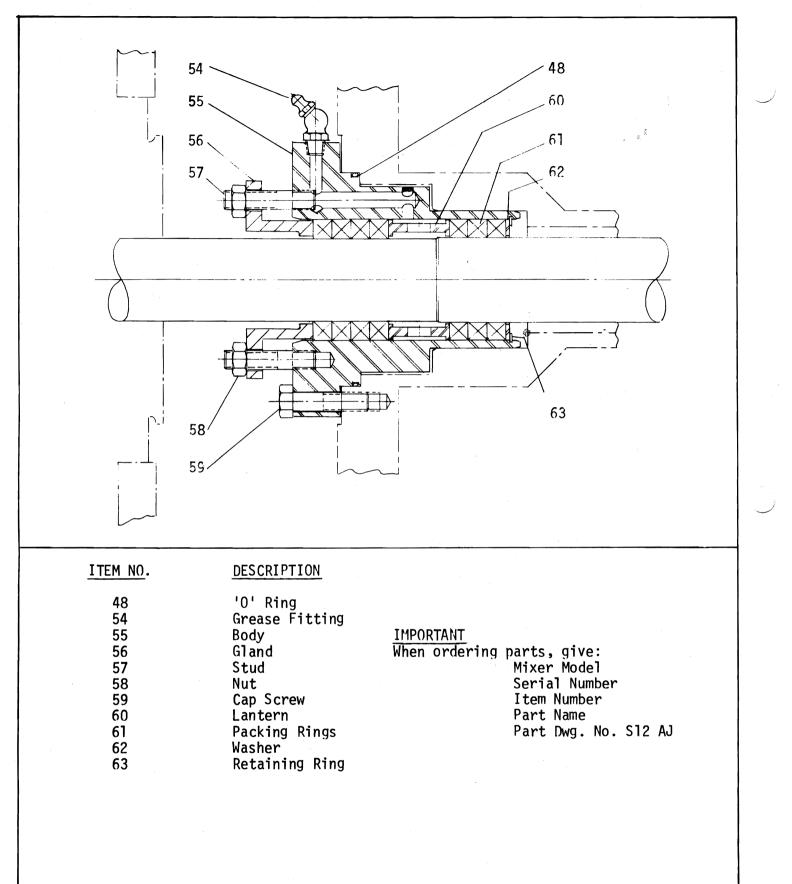
TYPE 'F' SINGLE MECHANICAL SEAL WITH FLUSH FOR 500 SERIES MIXERS

sales@nciweb.com

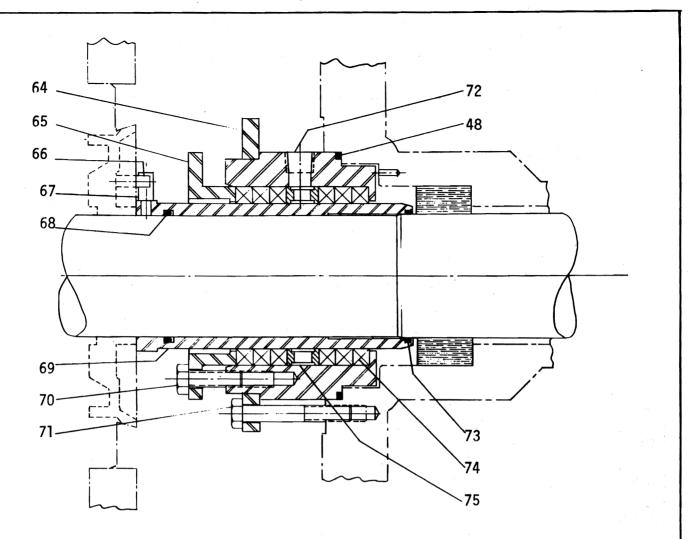




TEL: 201-327-7660 FAX: 201-327-3242



STUFFING BOX ASSEMBLY FOR MODEL 505 MIXER



Item	No.
48 64 65 66 67 68 69 70 71 72 73 74 75	

Description

'0' Ring
Ring
Gland
Pin
Pin, Driver
'O' Ring
Sleeve
Cap Screw
Cap Screw
Body
'0' Ring
Packing Rings
Lantern

Important When ordering parts, give:

> Mixer Model Serial Number Item Number Part Name Part Dwg. No. S12 AK

STUFFING BOX ASSEMBLY FOR MODEL 520 MIXER

PAGE 18 TEL: 201-327-7660 | FAX: 201-327-3242



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
Атосо	Multi-Purpose Gear Lube	Multi-Purpose Gear Lube	Multi-Purpose Gear Lube
	80	90	140
Arco	Gear Oil HD 80	Gear Oil HD 90	Gear Oil HD 140
B.P.	Extra Duty Gear Oil	Extra Duty Gear Oil	Extra Duty Gear Oil
	80	90	140
Chevron	Universal Gear Lube	Universal Gear Lube	Universal Gear Lube
	80	90	140
Citgo	Premium Gear Oil	Premium Gear Oil	Premium Gear Oil
	MP-80	MP-90	MP-140
Conoco	Universal Gear Lube	Universal Gear Lube	Universal Gear Lube
	80	90	140
Exxon	Gear Oil	Gear Oil	Gear Oil
	GX-80	GX-90	GX-140
Gulf Oil	Multi-Purpose Gear Lube	Multi-Purpose Gear Lube	Multi-Purpose Gear Lube
	80	90	140
Mobil	Mobilube	Mobilube	Mobilube
	HD 80-90	HD 80-90	HD 140
Phillips	Philube SMP Gear Oil	Philube SMP Gear Oil	Philube SMP Gear Oil
	80	90	140
Shell	Spirax	Spirax	Spirax
	HD 80	HD 90	HD 140
Sun Oil	Multi-Purpose Gear Lube	Multi-Purpose Gear Lube	Multi-Purpose Gear Lube
	GL5+80	GL5+90	GL5+140
Техасо	Multigear Lube	Multigear Lube	Multigear Lube
	EP 80	EP 90	EP 140
Union Oil	MP Gear	MP Gear	MP Gear
	80	90	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.

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NORTHEAST CONTROLS INCORPORATED



SMALLEST OPENING THAT PROPELLER WILL GO THROUGH WHEN MOUNTED <u>ON</u> MIXER

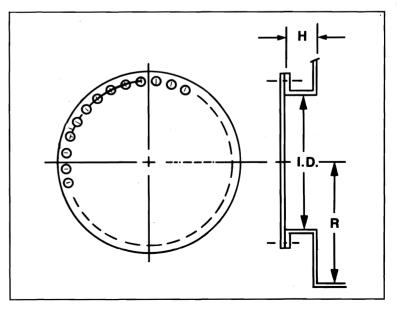
		Propeller Diameter						
Η	20	23	26	29	32	35		
4	14	16	17	19	20	22		
5	15	16	18	19	21	22		
6	16	17	19	20	22	24		
7	16	17	19	22	24	25		
8	18	19	20	23	25	26		
9	18	19	20	24	26	28		
10	18	20	22	24	27	29		
11	18	21	22	25	27	30		
12	19	21	22	25	28	30		
13	19	21	22	26	- 29	32		
14	21	22	24	27	30	34		
15	21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

SMALLEST OPENING THAT PROPELLER WILL ROLL THROUGH <u>NOT</u> ON MIXER

		Propeller Diameter						
Н	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.



20

	MATERIAL STANDARDS		
PARTS & MATERIAL	AMERICAN	BRITISH	GERMAN
Gears AlS1 8620 Steel	ASTM A322-5T		
<u>Gear Case</u> Aluminum CSTG-356-T6	ASTM B108 CL.SG70A		DIN 1725
Covers & Housings Aluminum CSTG-356-T6 Aluminum CSTG-319F	ASTM B108 CL.SG70A ASTM B108 CL.SC64D		DIN 1725 DIN 1725
Body & Drive Sleeve Iron CSTG	ASTM A48 CL.25		DLN 1693
<u>Adapter</u> Carbon Steel Plate Stainless Steel Bar Type 316 Stainless Steel Sheet Type 316	ASTM A283 GR.D ASTM A276 ASTM A167	BS.4360	DIN 17100
<u>Motor Mount</u> Carbon Steel Plate Carbon Steel Square Type Weld Filler Rod	ASTM A283 GR.D. ASTM A500 GR.B ASTM A33 Type 24 ASTM A316 Type 7018	BS.4360	DIN 17100
<u>Cover Plate</u> Carbon Steel Plate	ASTM A283 GR.D.	BS.4360	DIN 17100
<u>Shaft</u> Stainless Steel Type 316	ASTM A276		DIN 17742
<u>Propeller</u> Stainless Steel CSTG type 316 L Stainless Steel Bar type 316 Weld Filler Rod	ASTM A351 GR.CF8M ASTM A276 ASTM A371 Type 310	BS. 1504-84-5	
Lock Ring Stainless Steel CSTG type 316	ASTM A351 GR. CF8M		
<u>Bushings</u> Teflon - Glass Filled			
Bolts & Nuts Carbon Steel GR.2 Alloy Steel GR.5 Stainless Steel Type 316	ASTM A307 ASTM A449 ASTM A276		DIN 1711
<u>'O' Rings</u> Buna 'N' (not in contact with tank fluid) Viton 'A' (in contact with tank fluid)	ASTM D2000-70b Spec. AMS3215 ASTM D2000-70b Spec. AMS 7278		

MATERIAL SPECIFICATIONS FOR 500 SERIES MIXERS

NORTHEAST CONTROLS INCORPORATED

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

FIELD DISASSEMBLY TOOL LIST

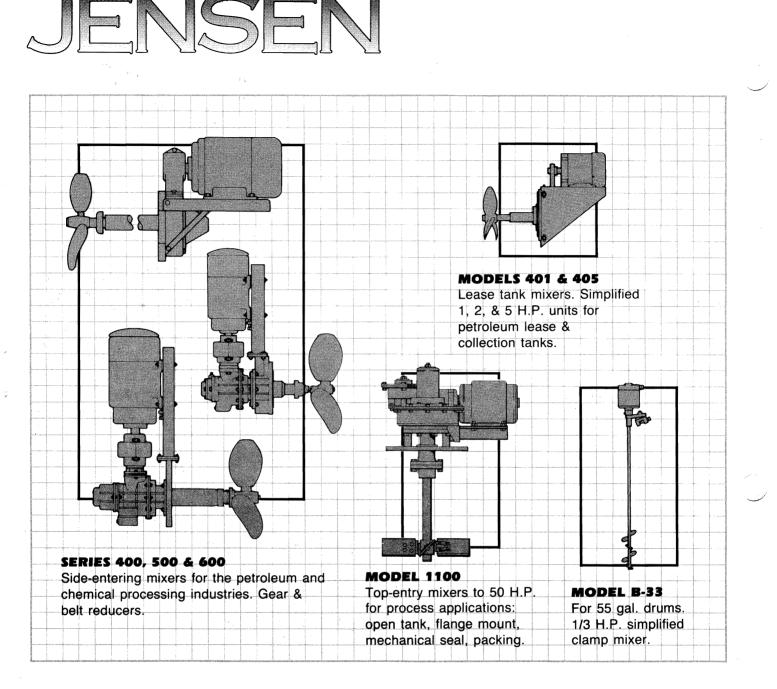
Field service and inspection on Jensen Series 600 Mixers requires only basic hand tools. The following list will allow removal of all major components.

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

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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 and gear reducers are warranted by their respective manufacturers and are excluded from the Jensen warranty.

Jensen