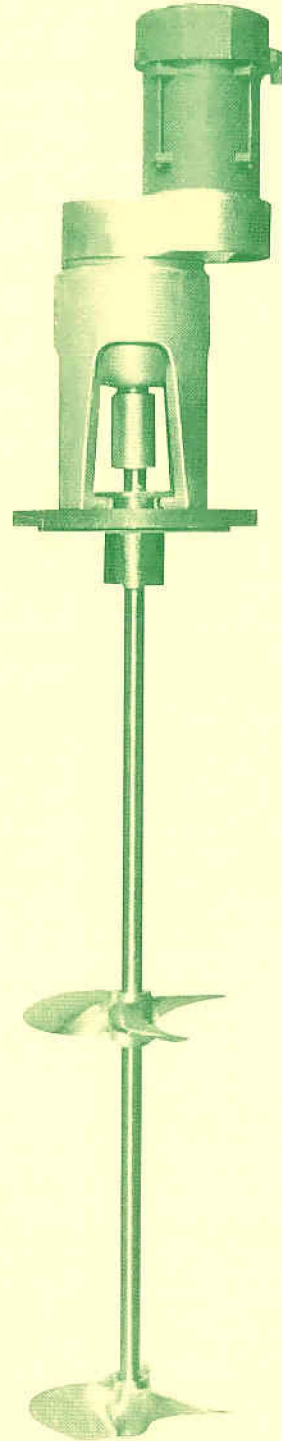


# SERVICE INSTRUCTIONS

## TOP ENTERING MIXERS



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**MIXMOR**



# **SERVICE INSTRUCTIONS**

**MODEL OG, FGL & FG**  
**GEAR DRIVEN TOP ENTERING MIXERS**  
**MANUAL NO. 05-07487**

## TABLE OF CONTENTS

	<b>PAGE</b>
<b>FOREWORD</b> .....	1
<b>GENERAL INFORMATION</b> .....	1
<b>HANDLING INSTRUCTIONS</b> .....	1
SAFETY	
HANDLING	
<b>INSTALLATION INSTRUCTIONS</b> .....	2-4
STORAGE	
LOCATION	
MOUNTING	
GEAR REDUCER	
MIXER SHAFT	
IMPELLER	
<b>LUBRICATION INSTRUCTIONS</b> .....	5
GEAR REDUCER	
GEAR REDUCER BEARINGS	
<b>MODEL OG</b> .....	6-7
GENERAL INFORMATION	
BASEPLATE BEARING LUBRICATION	
BASEPLATE DWG. NO. 05-00906	
BASEPLATE DWG. NO. 05-00907	
<b>MODEL FGL &amp; FG STUFFING BOX INSTRUCTIONS</b> .....	8-9
GENERAL INFORMATION	
LUBRICATION	
START-UP INSTRUCTIONS	
REPACKING PROCEDURE	
MODEL FGL DWG. NO. 05-00904	
MODEL FG DWG. NO. 05-00905	
<b>STEADY BEARING</b> .....	10
INSTALLATION	
BEARING DWG. NO. 05-05513	
<b>START-UP INSTRUCTIONS</b> .....	11
<b>GEAR REDUCER</b> .....	12-13
PREVENTATIVE MAINTENANCE	
TROUBLE SHOOTING	
DISASSEMBLY AND ASSEMBLY	
<b>MIXER PARTS LIST DWG. NO. 05-00909</b> .....	14
1/4 & 1/3 H.P. DRIVE	
<b>MIXER PARTS LIST DWG. NO. 05-00910</b> .....	15
1/2 THRU 5 H.P. DRIVE	
COUPLING DWG. NO. 05-06538	
<b>MAINTENANCE RECORD</b> .....	16

## FOREWORD

The information contained in this service instruction manual covers MixMor Models OG, FGL and FG top entering, fixed mounted, gear driven mixers.

The model is determined by the type of mounting and or seal. The following is a description of the models.

“OG” — Baseplate mounted for channel mounting over open tanks.

“FGL” — Flange mounted with low pressure stuffing box (10 psig maximum) for closed tanks.

“FG” — Flange mounted with high pressure stuffing box (150 psig maximum) for closed tanks.

Throughout this manual it will refer to drawing numbers which identify drives sizes, mounting types, shaft seals, coupling designs, and other mechanical details. The front page of this manual lists all the drawings that apply to your specific mixer.

We have included information in this manual that covers installation, start-up, service, and troubleshooting to assure years of reliable mixer service. Should questions or problems occur that are not covered in this manual, consult your local representative or phone MixMor at our Los Angeles, California plant, (323) 664-1941.

## GENERAL INFORMATION

When apparent or suspected damage has been found on equipment, during transport from factory to user, both the carrier and MixMor must be notified.

When receiving equipment, a check should be made to determine whether all inventoried parts are still in the shipment. Any discrepancy should immediately be reported to both the carrier and MixMor, if claim is to be made.

MixMor mixers do not require the service of a factory engineer upon installation. This service is not included in the price of the unit; therefore, if it is to be furnished, it must be agreed upon, in writing, between MixMor and the purchaser.

MixMor warranty becomes void if the unit sold is not operated within the rating and mixing service conditions for which it was specifically sold. The purchaser shall take all necessary precautions to eliminate all external destructive conditions, including unusual variable loads affecting the critical speeds of the system, severe shock loading, mechanical or thermal overloads and other conditions of which MixMor was not fully advised. The mixer must be installed and maintained in accordance with this service manual.

MixMor must be informed within thirty days, for warranty to cover the mixer in the event of any malfunction during the warranty period.

All personnel directly responsible for operation of equipment must be instructed on proper installation, maintenance and safety procedures.

Design improvements are implemented on a continuous basis. Therefore, we reserve the right to make changes without notice. If any questions arise regarding the data or information in this manual, please contact MixMor in Los Angeles, California.

## HANDLING INSTRUCTIONS

### SAFETY

When handling or working on a MixMor mixer, safety precautions must always be remembered and followed. The proper tools, clothing and methods of handling should be used to prevent any accidents.

This manual lists a number of safety precautions. Follow them. Insist that your employees do the same. Safety precautions and equipment have been developed from past accidents. Follow and use them for your protection.

### HANDLING

Do not support or lift the mixer in a manner which could create excessive stress on parts or shaft extensions. Never allow shafting to support any weight of the drive assembly. A slightly bent shaft will cause extreme mixer vibration. Support the mixer with a lifting sling to prevent damaging of any external parts.

## INSTALLATION INSTRUCTIONS

### STORAGE

If installation of the mixer and/or operation is to be delayed for more than one month after factory shipment, special rust preventative precautions should be taken. The precautions may be taken by the user or by the factory if full information concerning storage conditions is provided at the time of ordering.

### LOCATION

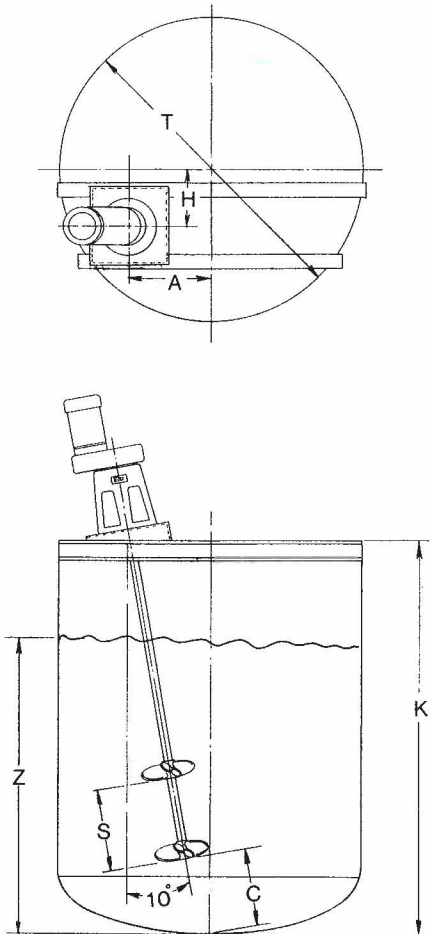
The mounting location of the mixer has a definite effect on the flow pattern within the tank. The recommended location has been made with regard to your particular application and should be carefully followed to obtain optimum results.

When the mixer is vertically mounted on the tank center line the tank must be baffled for most applications. The baffle size and location recommendation is based upon your specific application.

When the mixer is offset and angle mounted use the following chart and drawings for the correct mixer location. The location is based on mixer horsepower and tank geometry. Your mixer horsepower is given on the cover of this manual.

### MODEL OG

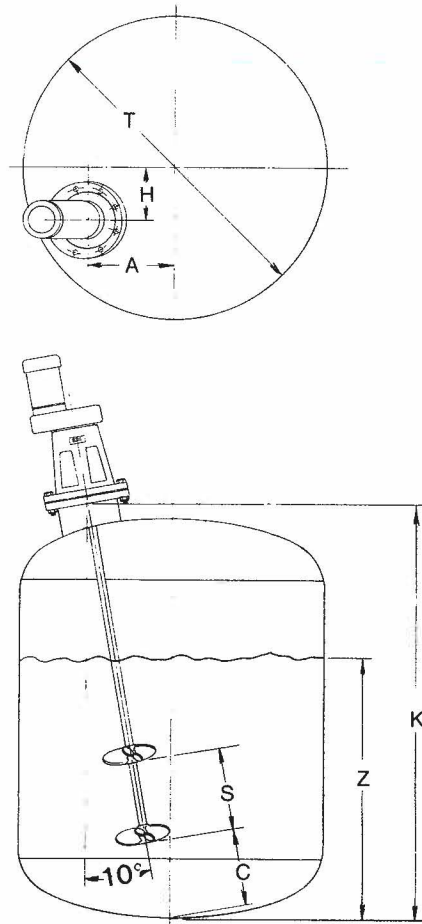
DWG. NO. 05-00780



$$S = \frac{Z-C}{2}$$

### MODEL FGL & FG

DWG. NO. 05-00779



$$S = \frac{Z-C}{2}$$

## LOCATION CHART

"T" TANK DIA.	MIXER HORSEPOWER								
	1/4 & 1/3			1/2 & 3/4			1 THRU 5		
	"A"	"H"	MAX. "K" TANK DEPTH	"A"	"H"	MAX. "K" TANK DEPTH	"A"	"H"	MAX. "K" TANK DEPTH
24	6¼	3¾	35	6	3½	34	5	3	27
27	7½	4½	43	7¼	4¼	41	6¼	3¾	35
30	8¾	5	48	8½	5	47	7½	4¼	42
33	9¾	5¾	55	9½	5½	54	8½	5	48
36	11	6½	62	10½	6¼	59	9¾	5¾	55
39	12¼	7	68	11	7	61	11	6¼	61
42	13¼	7¾	75	13	7½	74	12	7	68
45	14½	8½	82	14	8¼	79	13¼	7¾	74
48	15½	9	87	15¼	8¾	86	14¼	8¼	81
51	16¾	9¾	94	16½	9½	93	15½	9 ●	87
54	17¾	10¼	100	17½	10¼	99	16½	9½	93
57	19	11	107	18½	10¾	105	17½	10¼	100
60	20¼	11¾	114	19¾	11½	111	19	11	106
63	21¼	12¼	120	21	12¼	119	20	11½	113
66	22¼	13	126	22	12¾	125	21	11¼	119
69	23½	13½	132	23¼	13½	131	22¼	11¾	125
72	24½	14¼	132	24½	14¼	139	23½	13½	132
75	25¾	15	132	25½	14¾	144	24½	14¼	139
78	27	15½	132	26½	15½	150	25½	14¾	145
81	28	16¼	132	27¾	16	157	26¾	15½	151
84	29¼	17	132	28¾	16¾	163	28	16¼	164
87	30½	17½	132	30	17½	170	29	16¾	171
90	31½	18¼	132	31¼	18	176	30¼	17½	178
93	32¾	19	132	32	18¼	182	31¼	18¼	184
96	34	19½	132	33½	19½	182	32½	18¾	190
99				34¾	20	182	33½	19½	197
102				35¼	20½	182	34¾	20	197
105				36¾	21¼	182	35¾	10¾	197
108				38	22	182	37	21½	197
111				38¾	22½	182	38¼	22	197
114				40¼	23¼	182	39¼	22¾	197
117				41½	24	182	40½	23¼	197
120				42½	24½	182	42¼	24	197
126							44	25½	197
132							46¼	26¾	197
138							48½	28	197
144							51	29¼	197

All Dimensions are in Inches

### MOUNTING

Securely bolt the mixer to its foundation using proper size bolts which will fit mounting holes. Bolts should be SAE Grade 5 or equivalent.

## GEAR REDUCER

The mixer is shipped from the factory with a completely assembled gear drive. Gearing is carefully assembled at the factory to provide proper gear contact. Do not change the setting in any way.

When shipped the gear reducer has been filled with the proper lubricating grease and does not have to be serviced before start-up. We recommend that you read the LUBRICATION INSTRUCTIONS before start-up to familiarize yourself with the mixer.

## MIXER SHAFT

Handle the shaft carefully and always place it in a horizontal position, supporting it at several points. Check the shaft for nicks or burrs. When inserting the shaft into Models FGL and FG care must be taken to prevent damaging the shaft packing (refer to Dwgs. No. 05-00904 or 05-00905). Slide the shaft through the mounting flange or baseplate and into the mixer hollow quill shaft or rigid coupling. Depending on your mixer model and horsepower, one of the following drawings should be referred to for connecting the shaft to the drive. The drawing no. for your mixer is listed in the front of this manual.

Mixer Drawing No. 05-00909: Align the shaft keyway with key (20) and slide the mixer shaft into the quill shaft (15). Tighten socket head cap screw (21).

Mixer Drawing No. 05-00910: Align the shaft keyway with the key (72) and slide the mixer shaft into the coupling (77). Be certain the shaft is all the way into the coupling. Tighten socket head set screws (70).

Alternate Coupling, Drawing No. 05-06538: Align the shaft keyway with the key (6) and slide the mixer shaft into the flange coupling (12). Install taper pin (14) and tighten hex nut (9). Tighten set screws (5).

If your mixer is a Model OG, the set screws (5) in the baseplate bearing (1) must be tightened. Refer to Drawing No. 05-00906 or 05-00907.

## IMPELLER

When mixers are furnished with two impellers the upper impeller should be positioned midway between the lower impeller and the normal liquid level. If one of the impellers has a stabilizing ring on it, it must be used as the lower impeller and attached to the end of the shaft with the stabilizing ring down. Position the impellers on the shaft and tighten the hex head set screws. Depending on the severity of the application, it may be advisable to spot drill the shaft for the impeller set screws.

## LUBRICATION

### GEAR REDUCER

All top entering mixers are shipped from the factory with the gear reducers filled with the proper lubricating grease. The grease should be changed every five years, when used under normal operating conditions, and/or whenever repair work is performed. If the mixer is operating in extremely dirty, or high or low temperature environments, the grease should be changed more often. If you or your lubricant supplier are uncertain as to the frequency of changes, please consult MixMor for our recommendation for your specific environment.

### CHANGING GREASE

Refer to Dwg. No. 05-00909 (page 14). To change the grease the mixer shaft (24) must be removed from the drive and socket head cap screws (14) removed. This will allow the gear reducer assembly to be separated from the pedestal (6). Remove socket head cap screws (27) and separate the quill shaft housing from the gear housing. Remove all grease and clean all parts with a non-flammable, non-toxic solvent. Refill the gear housing (approximately 1 lb., 4 oz.) and reassemble the mixer. Refer to the following chart for approved lubricant recommendation.

Refer to Dwg. No. 05-00910 (page 15). To change the grease the mixer shaft (74) must be removed from the drive and socket head cap screws (64) removed. This will allow the gear reducer assembly to be separated from the pedestal (57). Remove socket head cap screws (56) and separate the quill shaft housing from the gear housing. Remove all grease and clean all parts with a non-flammable, non-toxic solvent. Refill the gear housing (approximately 2 lb., 12 oz.) and reassemble the mixer. Refer to the following chart for approved lubricant recommendation.

### **APPROVED LUBRICANTS**

LUBRICANT MANUFACTURER	BRAND NAME
Shell	Darina EP O or Alvania EP RO
Mobil	Sovarex L
Arco	Olaline Grease O
Texaco	Novatex EP O
Chevron	EP Roller Grease OX

### GEAR REDUCER BEARINGS

All the bearings in the gear reducer are permanently lubricated, double sealed and do not require additional lubrication.



## MODEL OG

### GENERAL INFORMATION

This model mounts on a square baseplate. The mixer baseplate incorporates a heavy-duty self-aligning ball bearing for additional shaft support. The following lubrication instructions apply.

### BASEPLATE BEARING LUBRICATION - REFER TO DWG. NOS. 05-00906 OR 05-00907

The bearing should contain as much grease as practical, since a full bearing with consequent slight leakage is the best protection against entrance of foreign material. When establishing a re-lubrication schedule, note that a small amount of grease at frequent intervals is preferable to a large amount at infrequent intervals. A good starting point to establish a relubrication schedule is to relubricate the bearing weekly. If the mixer is operated in a clean, dry environment, the bearings will have to be relubricated less frequently.

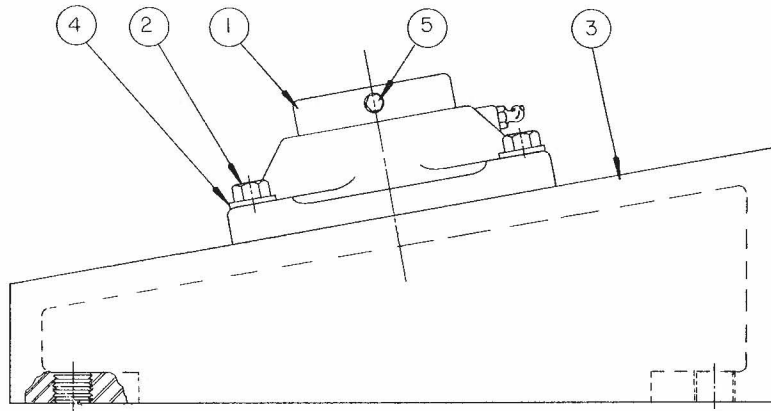
Abnormal bearing temperatures may indicate faulty lubrication. Normal temperatures may range from "cool to warm to the touch" up to a point "too hot to touch for more than a few seconds", depending upon the bearing size and surrounding conditions. High temperature with no grease showing at the seals, particularly if the bearing seems noisy, usually indicates too little grease. Unusually high temperature accompanied by excessive leakage of grease at the seals indicates too much grease. Normal temperature and a slight showing of grease at the seals indicates proper lubrication.

Many ordinary cup greases are not suitable for lubrication. The bearing has been lubricated at the factory with No. 2 consistency lithium base grease which is suitable for normal operating conditions. Relubricate with lithium base grease or a grease which is compatible with original lubricant and suitable for ball bearing service. In unusual or doubtful cases, consult with a reputable grease manufacturer.

**MODEL OG, ANGLE RISER BASEPLATE**

Dwg. No. 05-00906

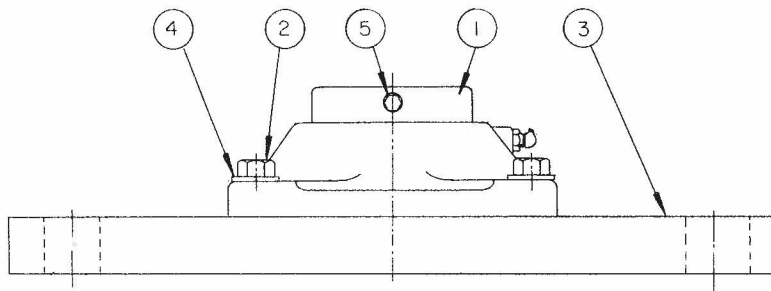
PART NO.	DESCRIPTION
1	Bearing
2	Hex Head Screw
3	Baseplate
4	Lock Washer
5	Set Screw



**MODEL OG, FLAT BASEPLATE**

Dwg. No. 05-00907

PART NO.	DESCRIPTION
1	Bearing
2	Hex Head Screw
3	Baseplate
4	Lock Washer
5	Set Screw



## **MODEL FGL AND FG STUFFING BOX INSTRUCTIONS**

REFER TO DWG. NOS. 05-00904 OR 05-00905

### **GENERAL INFORMATION**

The purpose of a stuffing box is to limit leakage to a practical level and not to stop leakage completely. If the gland is tightened to prevent leakage, packing life will be shortened and shaft damage will occur. The stuffing box START-UP instructions should be carefully followed for long packing and shaft life.

The packing type furnished with the mixer is specified on the certified drawing. If the furnished packing is not satisfactory for the service conditions, it should be replaced.

### **LUBRICATION**

The high pressure stuffing box (Model FG Dwg. No. 05-00905) is shipped without lubricant because of Federal Regulations and the danger of using a lubricant that may contaminate the product. The stuffing box is normally furnished with a grease fitting and lantern ring for intermittent lubrication of the packing. The low pressure stuffing box (Model FGL Dwg. No. 05-00904) is furnished with packing that has been impregnated with a lubricant and is not supplied with a lantern ring for intermittent lubrication.

### **START-UP INSTRUCTIONS**

Prior to initial operation, the following procedure should be used to assure a long seal life.

1. Tighten the adjustment nuts (2) to "finger tightness".
2. Start the mixer and run it until the stuffing box has reached a constant operating temperature. Stop the mixer and tighten opposite nuts (2). Note: When tightening the nuts, be careful to avoid cocking the follower (1). Even tightening of the follower will seat the packing (5) while it is warm and pliable.
3. Loosen gland nuts (2) to finger tightness and re-start the mixer. Leakage may be excessive, but do not tighten the nuts for the first 20 to 30 minutes.
4. If leakage is excessive after this initial run-in period, adjust the follower by tightening the nuts evenly, one flat or a sixth of a turn at a time. This should be done every 30 minutes until leakage is reduced to a normal level.
5. Adjustments must always be done gradually and held to minimum tightness. Although this procedure may take several hours, it will pay dividends in increased packing and shaft life.

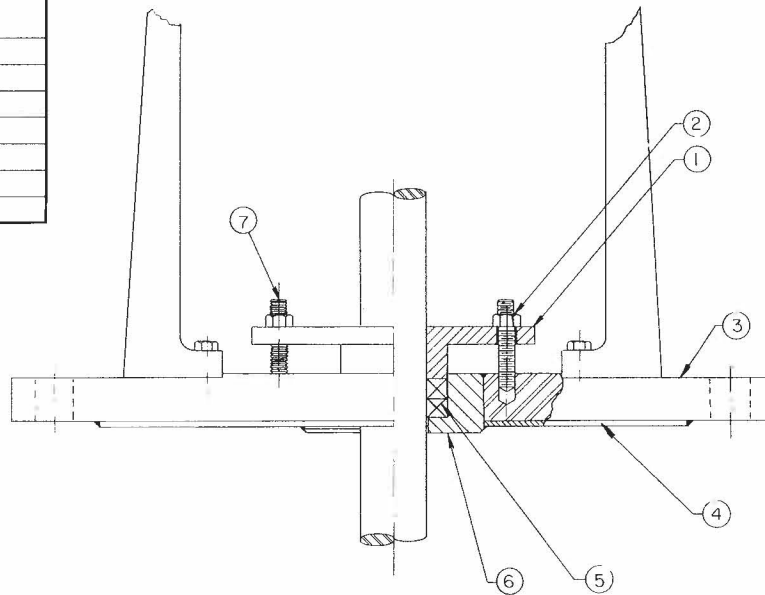
### **REPACKING PROCEDURE**

Note: These instructions cover both the Model FGL and FG. The Model FGL will not have a lantern ring.

1. Remove the follower (1), all packing (5) and lantern ring (8). Carefully avoid scoring the shaft with the packing hook or removal tool.
2. Inspect the shaft and lantern ring (8). Lantern ring, lubrication channel and holes must be free of packing and dirt. Minor shaft wear should be worked smooth. Where excessive wear exists, the shaft should be built up and remachined to give a smooth finish or it should be replaced. Clean stuffing box (6) thoroughly, checking to insure the lubrication holes are free and clear.
3. The location of the lantern ring (8) should be predetermined for proper alignment between lubrication holes and grease lines or fittings.
4. Insert first ring of packing (5) into the box. Install a split spacer (preferably of wood) into the box against packing so that packing ring is firmly seated and spread to make a good seal against the inside walls of the box and the shaft. When tightening the follower, pull it up evenly so each ring will be packed squarely into the box, assuring a good seal. Repeat this procedure for each ring. The individual packing joints must be staggered at 90°.
5. After the box has been completely packed, replace the follower, tightening the nuts (2) to finger tightness.
6. Refer to the preceding start-up instructions for packing adjustment procedure.

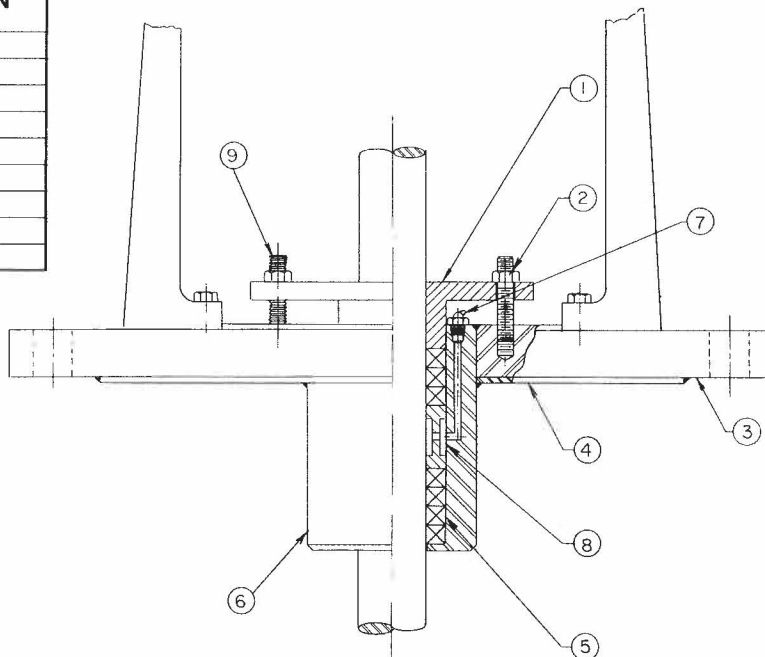
**MODEL FGL**  
Dwg. No. 05-00904

PART NO.	DESCRIPTION
1	Follower
2	Adjustment Nut
3	Flange
4	Flange Facing
5	Packing
6	Stuffing Box
7	Stud



**MODEL FG**  
Dwg. No. 05-00905

PART NO.	DESCRIPTION
1	Follower
2	Adjustment Nut
3	Flange
4	Flange Facing
5	Packing
6	Stuffing Box
7	Grease Fitting
8	Lantern Ring
9	Stud



## STEADY BEARING

REFER TO DWG. NO. 05-05513

### INSTALLATION

The steady bearing must be centered on the mixer shaft's axis of rotation. To assure that the steady bearing is properly located and to minimize bearing preload, it must be installed after the mixer is mounted onto the tank and after the shaft is installed.

To find the shaft's axis of rotation, attach a marker that will contact the tank bottom to the end of the shaft. Remove the motor fan cover and rotate the motor fan. This will draw a circle on the tank bottom. Install the steady bearing in the center of this circle.

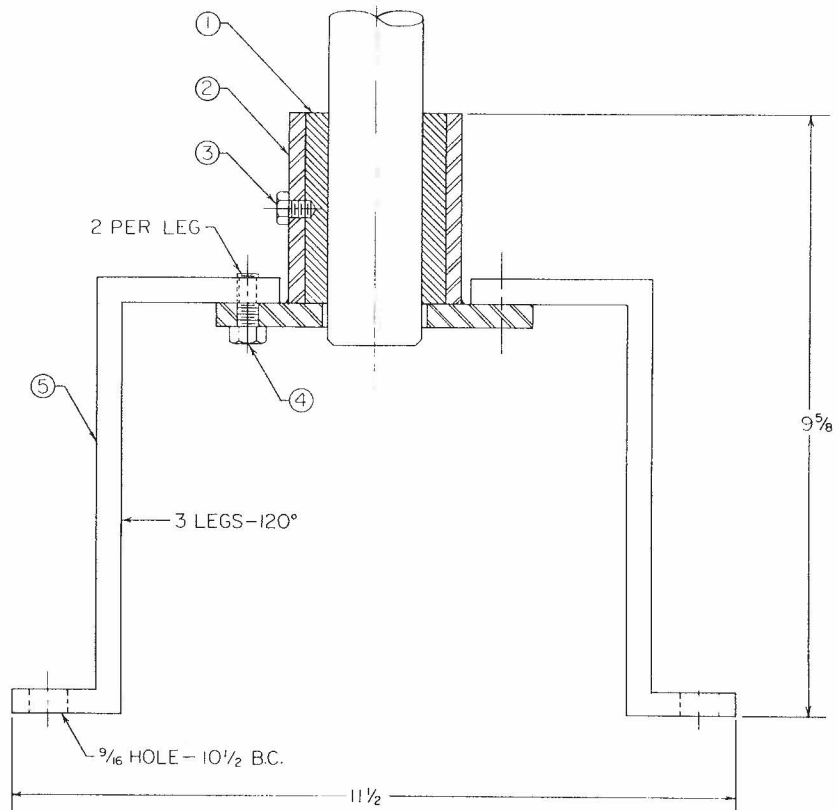
The shaft runout will differ on all mixers depending upon the shaft length.

## STEADY BEARING

Dwg. No. 05-05513

PART NO.	DESCRIPTION
1	Bushing*
2	Cartridge
3	Retaining Screw
4	Screw
5	Leg

\*Recommended Spare Parts



## **START-UP INSTRUCTIONS**

When starting up any new piece of equipment, it is wise to proceed cautiously. Even though the best installation practices are followed, the possibilities of errors or omissions always exist. MixMor recommends that before the initial start-up, the following checklist should be followed:

1. Has all accessory equipment such as: breathers, level indicators, pressure gauges, switches, etc., been mounted? It is often necessary to box these items separately to prevent damage or loss in shipment.
2. Are mounting bolts tight? Check all external bolts, screws, accessories, etc., to make sure they have not become loose in shipping and handling.
3. Have all inspection covers on the mixer been closed and properly fastened?
4. Have required electrical connections been made? Units should be wired in accordance with motor manufacturer's wiring diagram on the motor.
5. Have required piping connections been made?

During start-up, the following procedures are recommended to assure years of trouble-free operation:

1. If the reducer is equipped with heaters for cold temperature operation, turn on heaters and allow temperature to rise to at least 65°F.
2. Start mixer slowly under as light a load as possible. Check the rotation of the shaft against the rotation arrow on the mixer housing. If necessary, reverse electrical leads on motor to have shaft rotation conform to direction shown on mixer.
3. Prime mover electrical starting equipment should be arranged to start unit slowly to avoid severe impact loads.
4. As the mixer is brought up to normal operating speed, it should be checked continuously for unusual sounds, excessive vibrations, excessive heat or oil leakage. If any of these develop, the unit should be shut down immediately and the cause determined and corrected. The operating temperature of the unit at the hottest point normally should not exceed 200°F.
5. If possible, the mixer should be operated under a light load (approximately half-load) for one or two days to allow final breaking-in of gears. After this period, the unit can be operated under normal load.
6. After the first 48 hours of operation, all external housing and mounting fasteners should be checked for tightness. Loose fasteners can cause alignment problems and excessive wear.

## GEAR REDUCER

### PREVENTATIVE MAINTENANCE

Keep shafts and vent plug clean to prevent foreign particles from entering seals or gear case. Never paint the vent plug. Check coupling set screws and all fasteners for tightness. Loose fasteners will cause alignment problems and excessive wear. Check end play in shaft. Noticeable movement might indicate service or parts replacement.

When lip seals are new, a small amount of lubricant leakage is sometimes noted until the seals seat on the shaft. This condition is normal. However, if leakage persists, this indicates a damaged seal and it must be replaced.

### TROUBLE SHOOTING

It is advisable to periodically inspect your gear drive for signs of wear. Spare or replacement parts can often be ordered and obtained before disassembly is necessary, thus minimizing downtime. The following symptoms can be visually inspected without disassembly and may, in some cases, require repair work.

CHECKLIST		
OBSERVATION	POSSIBLE SOURCE	ACTION
VIBRATION	1) Loose hardware	Be certain all external housing and mounting fasteners are tight.
	2) Bearing failure	Replace bearings
	3) Foreign particles in bearings and gears	Foreign particles will cause excessive wear. Take steps to prevent entrance of particles. Thoroughly flush drive with solvent and refill with new grease.
OVERHEATING	1) Breather	Breather must be free of any obstruction. Clean breather as required.
	2) Overloaded	Check mixer speed and impeller diameter against certified drawing. Has the specific gravity and/or viscosity of the product increased? Inspect for material build-up on impeller. Check shaft rotation against rotation arrow.
	3) Bearing failure	Replace bearings.
	4) Reducer grease	Check grease level and condition and add or change as required.
NOISE	1) Bearing failure	Replace bearings.
	2) Rust	Rust can be caused by entrance of water or humidity. Flush and thoroughly clean drive. Take steps to prevent further entrance of water and use a lubricant with good rust-inhibiting properties.
	3) Extended shut-down or improper storage	When drives are not properly prepared for extended shut-down or storage in a moist atmosphere or a temperature condition which will cause condensation, destructive rusting of bearings, gears and shafts/seals will take place. Clean and replace parts as required.
	4) Overloaded	Overloading can cause loud operation. Refer to OVERHEATING, Source No. 2.
	5) Refer to VIBRATION, Source No. 3	
	6) Refer to OVERHEATING, Sources No.'s 1, 2, 3 & 4	

GREASE LEAKINGS	1) Worn lip seals	Replace defective seals.
	2) Plugged breather	Breather must be free of any obstructions. Clean breather as required.
	3) Gear case joints	Tighten fasteners or remove and recoat with Locktite before tightening. If this does not stop leakage, remove housing, clean surfaces and replace gaskets or apply new sealing compound.

#### DISASSEMBLY AND ASSEMBLY

Never perform any work on the gear reducer or coupling until you are absolutely certain that the prime mover cannot be remotely or automatically started. Clean up area around unit before disassembly to keep parts clean and to keep them in proper order for reassembly. Keep in mind that parts usually go back together in reverse order of disassembly. Also note any match marks which may aid reassembly. Provide wooden blocks for storing machined parts in order to prevent damage to machine surfaces. Before starting disassembly carefully review typical parts list and assembly drawing of unit.

1. Disconnect the power to the motor. Be certain that the mixer cannot be remotely or automatically started.
2. Disconnect and, if necessary, remove the mixer shaft from the drive.

REFER TO DWG. NO. 05-00909, 1/4 & 1/3 H.P. (Page 14)

3. Remove socket head cap screws (14) and remove the gear reducer assembly from pedestal (6).
4. Remove socket head cap screws (27) and remove reducer shaft housing (16) with the shaft assembly from the gear housing.
5. Remove retaining ring (9) and pull gear (11) off of quill shaft (15). Remove retaining ring (12). The reducer quill shaft (15), with bearings and seals, can now be pressed out of the housing (16).
6. Remove socket head cap screws (8) and remove motor (1) from gear housing (5). Loosen socket head set screws (3) and remove pinion (4) from motor shaft.
7. Clean all parts thoroughly. Before assembly, examine components carefully for signs of wear and replace if necessary.
8. Reverse the preceding instructions for assembly. Be certain to position the pinion (4) on the motor shaft to the dimension shown on the drawing. This will insure full gear (11) face contact with the pinion.

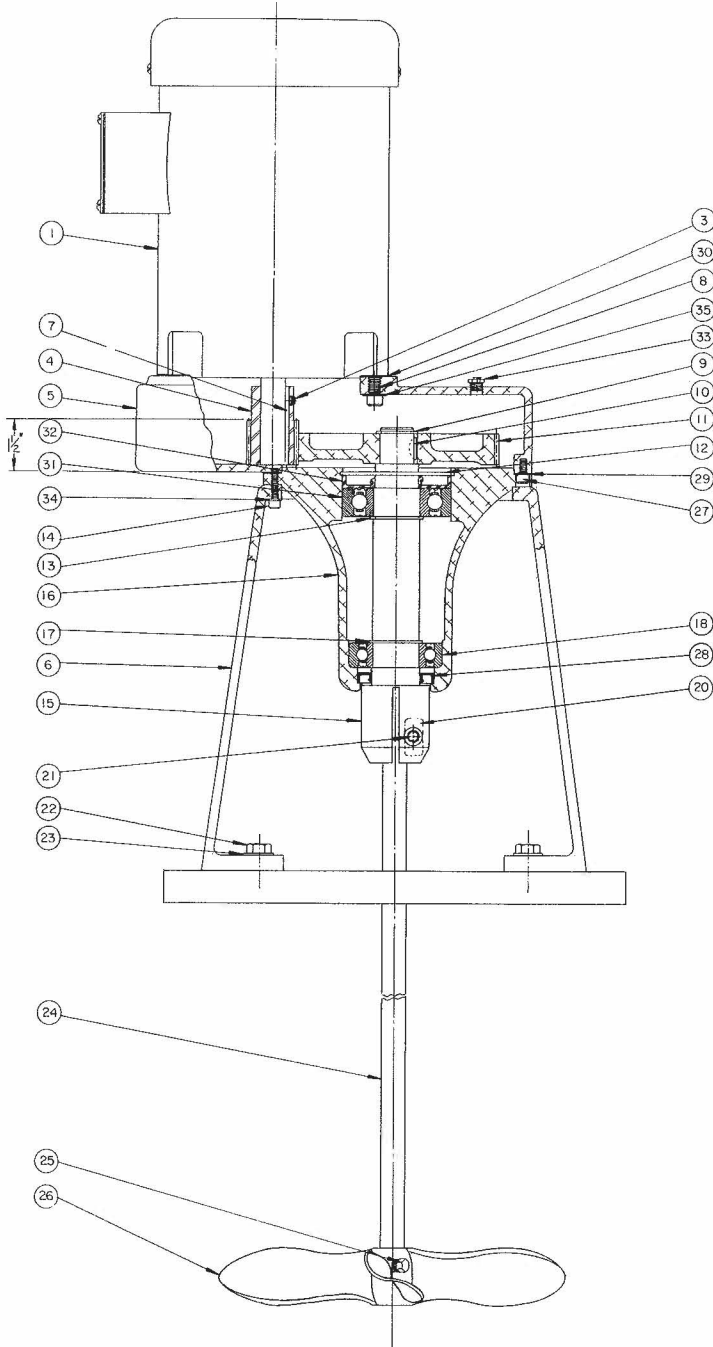
REFER TO DWG. NO. 05-00910, 1/2 THRU 5 H.P. (PAGE 15)

3. Remove socket head cap screws (64) and remove the gear reducer assembly from pedestal (57).
4. Remove socket head cap screws (56) and remove reducer shaft housing (66) with the shaft assembly from the gear housing.
5. Loosen socket head set screws (70) and remove coupling (77) from reducer shaft (67). Remove retaining ring (59) and pull gear (61) off of reducer shaft (67). Remove retaining ring (62). The reducer shaft (67), with bearings and seals, can now be pressed out of the housing (66).
6. Remove hex head cap screws (52) and remove motor (50) from gear housing (53). Loosen socket head set screws (54) and remove pinion (55) from motor shaft.
7. Clean all parts thoroughly. Before assembly, examine components carefully for signs of wear and replace if necessary.
8. Reverse the preceding instructions for assembly. Be certain to position the pinion (55) on the motor shaft to the dimension shown on the drawing. This will insure full gear (61) face contact with the pinion.



**MODEL OG & FG MIXER PARTS, 1/4 AND 1/3 H.P.**

**Dwg. No. 05-00909**

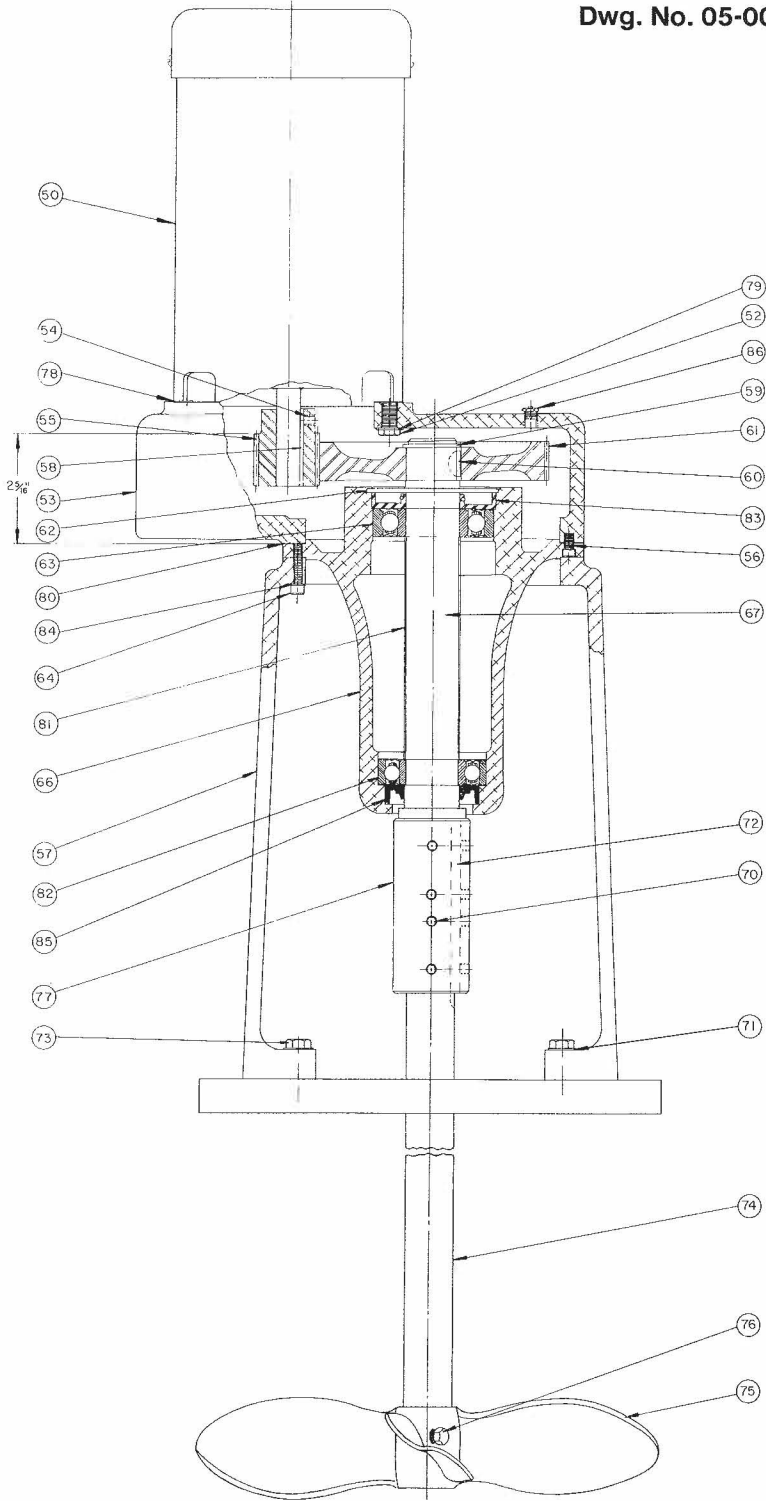


PART NO.	DESCRIPTION
1	Motor
3	Socket Head Set Screws (2)
4	Pinion •
5	Gear Housing
6	Pedestal
7	Key
8	Socket Head Set Screws (4)
9	Retaining Ring •
10	Key •
11	Gear •
12	Retaining Ring •
13	Retaining Ring •
14	Socket Head Cap Screws (4)
15	Quill Shaft
16	Quill Housing
17	Retaining Ring •
18	Bearing •
20	Key
21	Socket Head Cap Screw
22	Hex Head Cap Screw (4)
23	Lock Washer (4)
24	Shaft
25	Hex Head Cap Screw (2)
26	Propeller
27	Socket Head Cap Screw (2)
28	Lip Seal •
29	Gasket •
30	Gasket •
31	Bearing •
32	Lip Seal •
33	Relief Valve
34	Lock Washer (4)
35	Lock Washer (4)

• RECOMMENDED SPARE PARTS

**MODEL OG & FG MIXER PARTS, 1/2 THRU 5 H.P.**

Dwg. No. 05-00910



PART NO.	DESCRIPTION
50	Motor
52	Hex Head Cap Screw (4)
53	Gear Housing
54	Socket Head Set Screw (2)
55	Pinion •
56	Socket Head Cap Screw (4)
57	Pedestal
58	Key
59	Retaining Ring •
60	Key •
61	Gear •
62	Retaining Ring •
63	Bearing •
64	Socket Head Cap Screw (4)
66	Output Shaft Housing
67	Output Shaft
70	Socket Head Set Screw (8)
71	Lock Washer (4)
72	Key
73	Hex Head Cap Screw (4)
74	Shaft
75	Propeller
76	Hex Head Cap Screw (2)
77	Coupling
78	Gasket •
79	Lock Washer (4)
80	Gasket •
81	Bearing Spacer
82	Bearing •
83	Lip Seal •
84	Lock Washer (4)
85	Lip Seal •
86	Relief Valve

• RECOMMENDED SPARE PARTS

PART NO.	DESCRIPTION
1	Output Shaft
2	Key
3	Socket Head Set Screw (2)
4	Lock Washer (4)
5	Socket Head Set Screw (2)
6	Key
8	Lock Washer
9	Hex. Nut
10	Taper Pin
11	Coupling
12	Coupling
13	Socket Head Cap Screw (4)
14	Taper Pin
15	Hex. Nut
16	Lock Washer
17	Shaft

**ALTERNATE COUPLING**

Dwg. No. 05-06539

