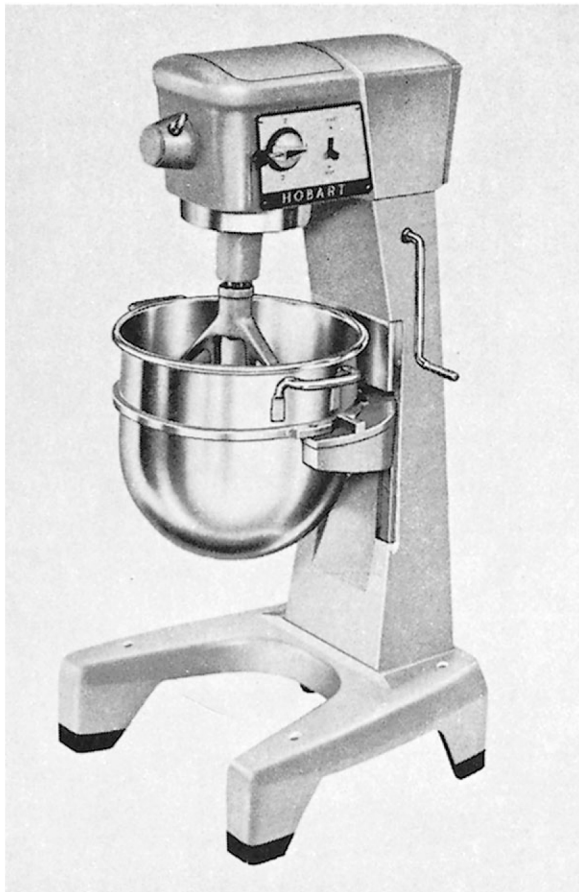




SERVICE MANUAL

** Updated technical documentation is attached to the end of this manual.*



MODEL D-300 MIXER

- NOTICE -

This Manual is prepared for the use of trained Hobart Service Technicians and should not be used by those not properly qualified. If you have attended a Hobart Service School for this product, you may be qualified to perform all the procedures described in this manual.

This manual is not intended to be all encompassing. If you have not attended a Hobart Service School for this product, you should read, in its entirety, the repair procedure you wish to perform to determine if you have the necessary tools, instruments and skills required to perform the procedure. Procedures for which you do not have the necessary tools, instruments and skills should be performed by a trained Hobart Service Technician.

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SECTION 1

GENERAL

1. Introduction.

The Model D-300 is a dependable (30 quart) mixer with positive-drive three speed transmission and the exclusive planetary mixing action. Centralized controls facilitate ease of operation. Optional timer control (Model D-300T) and a bowl dolly further augment the convenience of this mixer. The D-300 is equipped with the standard No. 12 taper attachment hub.

2. Specifications.

A. Motor.

1/2 H.P., Hobart-built, permanently lubricated ball bearings, totally enclosed, internally ventilated. Single-phase is capacitor-start, induction-run type. Three phase is squirrel cage, induction-run type.

B. Electrical.

115-60-1	115-50-1	200-60-3	220-50-3
200-60-1	220-50-1	230-60-3	380-50-3
230-60-1		460-60-3	415-50-3
		575-60-3	

C. Operating Speeds.

<u>Speed</u>	<u>Agitator RPM</u>	<u>Attachment RPM</u>
1st	96	54
2nd	176	100
3rd	321	183

D. Over-all dimensions with standard bowl.

Height 45-1/4"
Width 21"
Depth 23-5/8"

E. Net Weight.

D-300 370 lbs.
D-300D 220 lbs.

3. Operation and Care.

Detailed operation and care instructions are included in the "Instruction Manual ...with Replacement Parts" attached to each new machine.

4. Lubrication Chart.

Transmission Case:	Marfak 00	40 Fluid Oz.
Internal Gear:	Gredag #33	1 Fluid Oz.
Motor Bearings:	Pre-Lubricated	
Slideways:	Lubriplate 630AA	Lightly Coat

SECTION 2

PLANETARY

1. Removal.

WARNING: DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AT THE MAIN CIRCUIT BOX. PLACE A TAG ON THE CIRCUIT BOX INDICATING THE CIRCUIT IS BEING WORKED ON.

- A. Remove the drip cup (Fig. 2-1). On early models it was held on by screws as shown in picture. Later models use thumb screws.



Fig. 2-1

- B. To keep the center shaft from turning, put the flat "B" beater on and hold it while loosening the retaining screw (Fig. 2-2).



Fig. 2-2

- C. Remove retaining screw, lock-washer, and planetary washer (Fig. 2-3) while supporting the assembly.

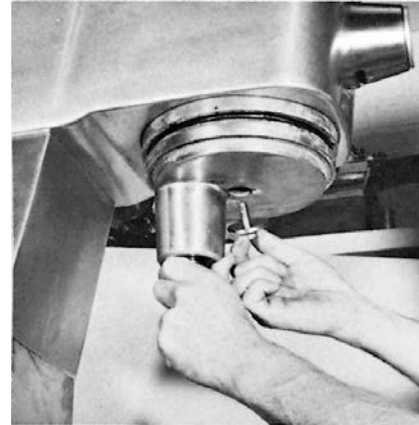


Fig. 2-3

- D. Slide the planetary from shaft. Key (1, Fig. 2-4) will remain in the shaft.
- E. Install the planetary in the reverse order of removal.

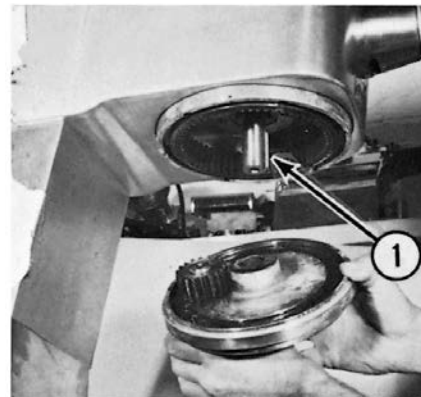


Fig. 2-4

2. Disassembly.

- A. Remove the planetary from the mixer as outlined in step 1 "Removal".
- B. Remove the retaining ring (Fig. 2-5).



Fig. 2-5

- C. Remove the pinion and key (Fig. 2-6). The shaft can be pressed out of the planetary from the top side (Fig. 2-7).



Fig. 2-6



Fig. 2-7

- D. Lift the upper bearing (Fig. 2-8) out of the planetary.



Fig. 2-8

- E. The lower bearing (1, Fig. 2-9) and seal (2, Fig. 2-9) can be removed from the shaft. The bearing must be removed from the top of the shaft.
- F. Reassemble in the reverse order of disassembly.

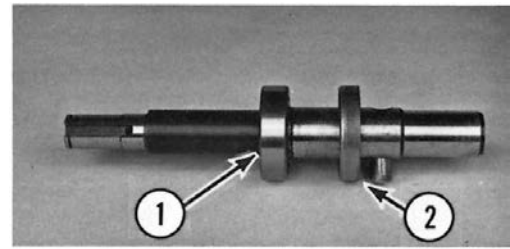


Fig. 2-9

3. Internal Gear.

- A. Remove the planetary from the mixer as outlined in step 1 "Removal".
- B. To remove the internal gear, take out the six screws that hold it to the gear case (1, Fig. 2-10). Remove the gear.
- C. Replace the internal gear in the reverse order of removal.

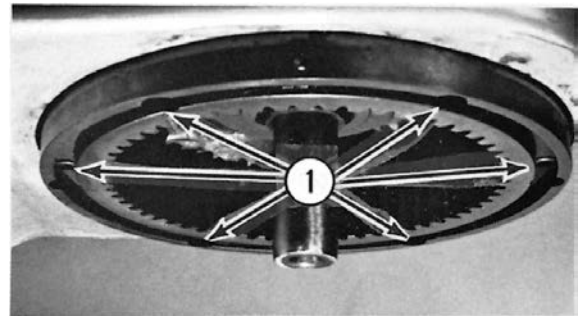


Fig. 2-10

NOTE: The Internal Gear is drilled and tapped for two machine screws which hold the drip cup. Install the gear so these screw holes will be on the sides of the mixer.

SECTION 3

TRANSMISSION

1. Opening Housing.

WARNING: DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AT THE MAIN CIRCUIT BOX. PLACE A TAG ON THE CIRCUIT BOX INDICATING THE CIRCUIT IS BEING WORKED ON.

- A. The housing cover (1, Fig. 3-1) prevents dust and other outside materials from settling on the transmission. Remove the screw (2, Fig. 3-1), lift off the cover and set aside.

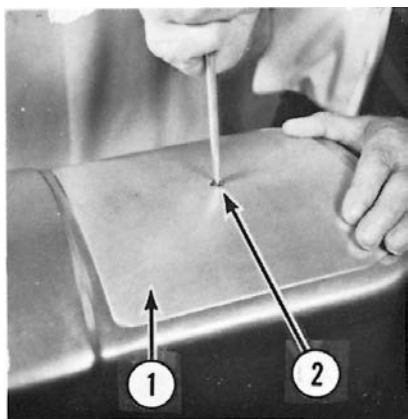


Fig. 3-1

2. Disassembling the Transmission.

- A. Remove four screws and lockwashers. Remove bearing retainer (1, Fig. 3-2).

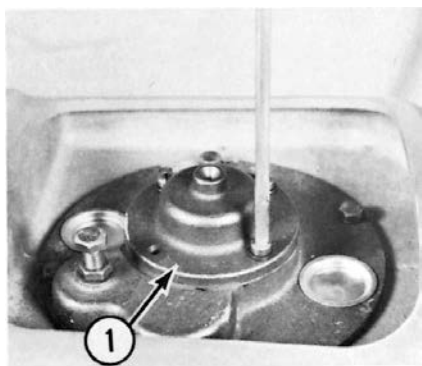


Fig. 3-2

- B. Remove stop nut from center shaft (1, Fig. 3-3). To loosen turn in clockwise direction. This nut has a LEFT HAND THREAD. If nut will not loosen, put the flat "B" beater on and hold it while loosening the nut.
- C. Remove drip cup and lower planetary as outlined in Section 2.

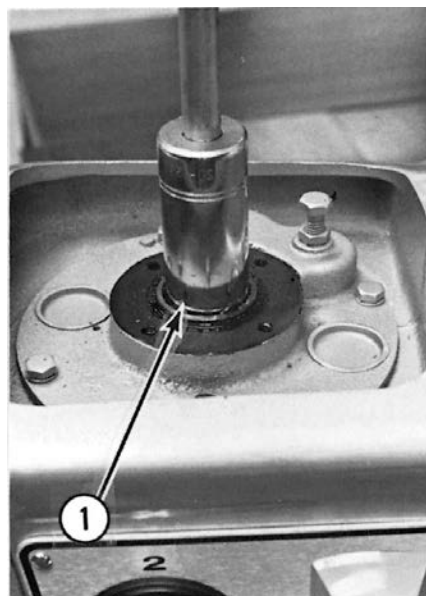


Fig. 3-3

- D. Remove four cap screws holding bearing carrier (1, Fig. 3-4). Remove two friction plugs (2, Fig. 3-4).

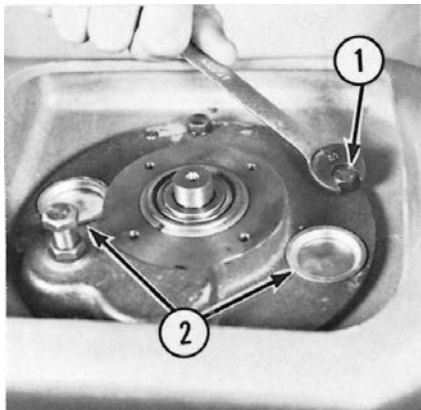


Fig. 3-4

- E. To remove the bearing carrier use a gear puller as shown in (Fig. 3-5). A light tapping in an upward motion around the perimeter of the carrier with a plastic or rubber mallet will help to break the cover loose. When the carrier has cleared the dowel pins, you can lift the carrier out of the machine with your fingers in the openings for the friction plugs.



Fig. 3-5

- F. Remove bearing carrier and check for planetary shaft shims stuck to the carrier (1, Fig. 3-6). Remove and save these shims. These must be put back during reassembly.

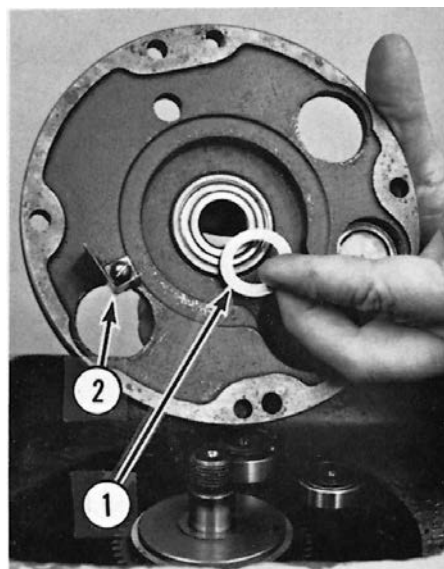


Fig. 3-6

- Remove upper planetary shaft spacer (1, Fig. 3-7).

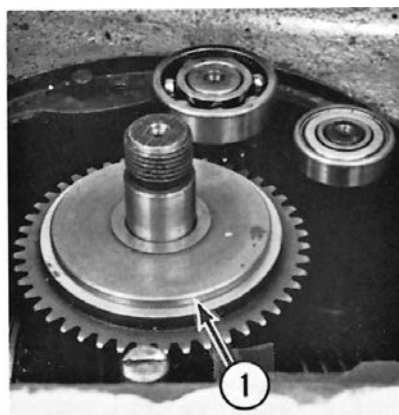


Fig. 3-7

- G. Position shifter handle in second gear. Loosen set screw (1, Fig. 3-8) and remove handle.

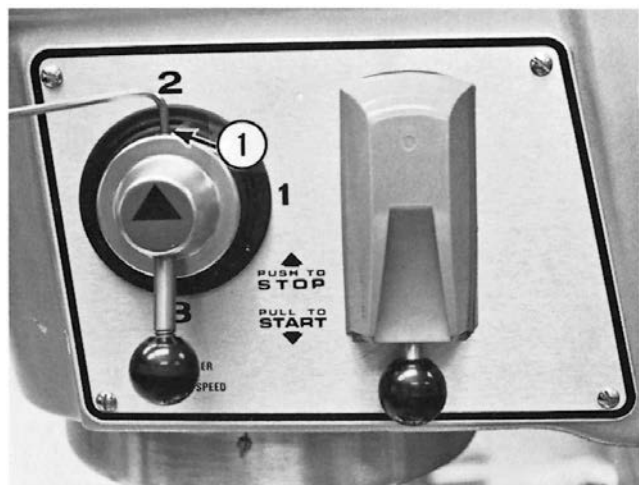


Fig. 3-8

- H. Remove four screws from switch plate (1, Fig. 3-9) and remove plate.



Fig. 3-9

- I. Remove four screws holding shifter assembly (1, Fig. 3-10) and remove the assembly.

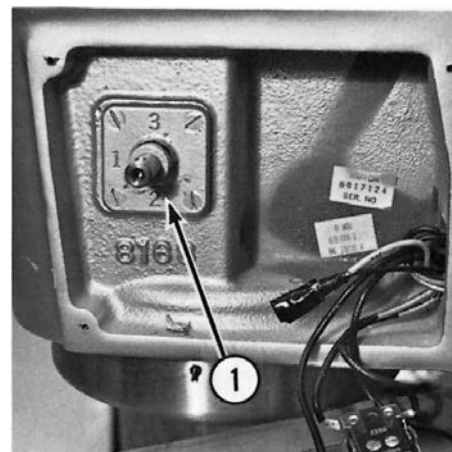


Fig. 3-10

- J. Turn the center (planetary) shaft so the teeth of bevel gear (1, Fig. 3-11) will pass those on transmission shaft gear (2, Fig. 3-11).

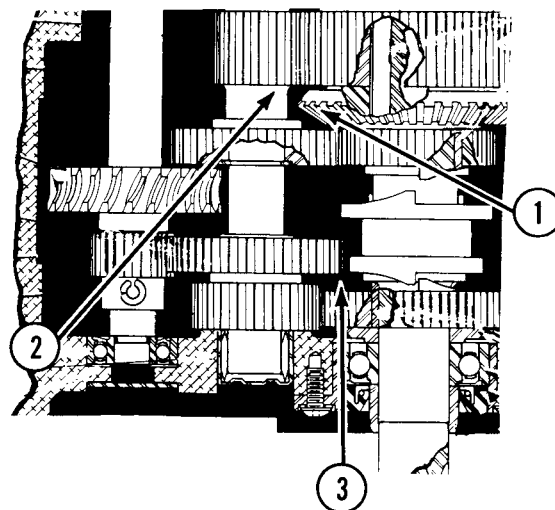


Fig. 3-11

- K. Remove bevel gear and roller clutch assembly as a unit (Fig. 3-12).

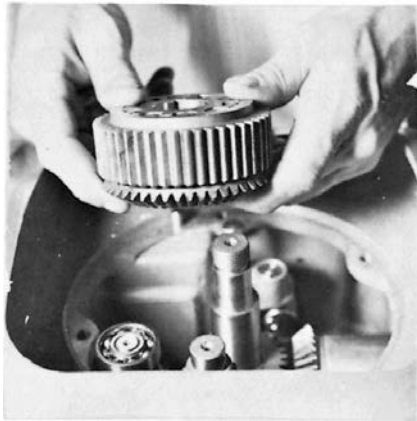


Fig. 3-12

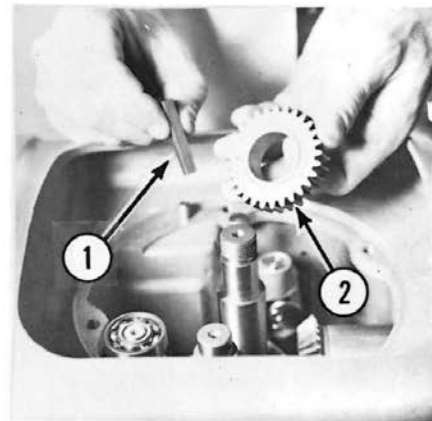


Fig. 3-13

- L. Remove key (1, Fig. 3-13) from the center shaft, then remove upper clutch gear with bushing (2, Fig. 3-13).
- M. Remove clutch sleeve and shifter yoke (Fig. 3-14). When removing the clutch sleeve notice that the smaller diameter is down. This allows clearance for gear (3, Fig. 3-11) on the transmission shaft.
- N. Rotor assembly must be moved to disengage worm from worm gear. Refer to Section 8 "Removing and Installing the Rotor and Stator".



Fig. 3-14

- O. Remove worm gear shaft and transmission shaft together (Fig. 3-15).

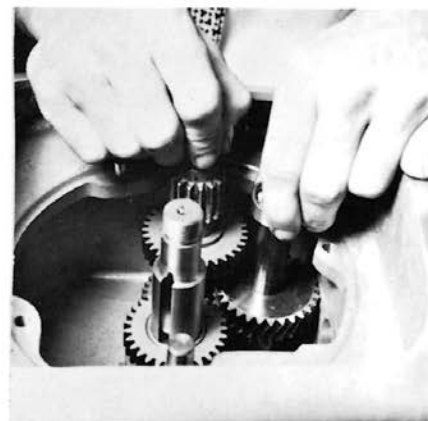


Fig. 3-15

NOTE: Lower ball bearing on the worm gear shaft will come out with the shaft. Do not misplace the spring washer (1, Fig. 3-16) located below the bearing. It provides for later adjustment of the worm gear position.

NOTE: The two lower gears on the transmission shaft can slip off while removing the shaft. Be careful not to drop these gears.

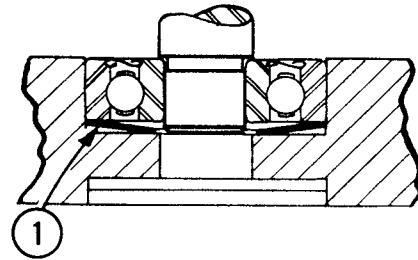


Fig. 3-16

- P. The attachment drive gear must be moved out of the way to remove the lower clutch gear and planetary shaft. Remove three screws and lockwashers (Fig. 3-17) and pull hub assembly forward far enough to clear the gear.



Fig. 3-17

NOTE: If paint has not been broken around attachment joint, break with a knife to help prevent uneven paint joints.

- Q. Remove planetary shaft and lower clutch gear (Fig. 3-18).



Fig. 3-18

3. Worm Gear Shaft Disassembly.

- A. Both upper and lower ball bearings are press fitted. A gear puller or arbor press may be needed for removal.
- B. Remove lower ball bearing.
- C. Remove spirol pin (Fig. 3-19).
- D. Remove worm shaft gear (14t) (1, Fig. 3-20).
- E. Remove worm gear (29t) (2, Fig. 3-20).
- F. Remove key (3, Fig. 3-20).
- G. Remove upper bearing (4, Fig. 3-20).



Fig. 3-19

4. Worm Gear Shaft Assembly.

- A. Install key (3, Fig. 3-20).
- B. Install worm gear (29t) (2, Fig. 3-20) with the hub down.
- C. Install worm shaft gear (14t) (1, Fig. 3-20).
- D. Install spirol pin (5, Fig. 3-20).
- E. Install lower ball bearing shielded side towards gear (6, Fig. 3-20).
- F. Install upper ball bearing shielded side toward gear (4, Fig. 3-20).

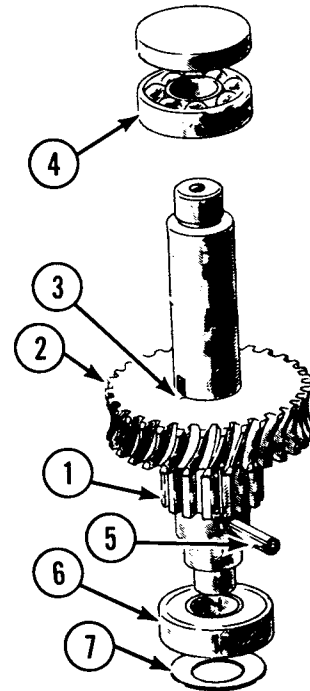


Fig. 3-20

5. Transmission Shaft Disassembly.

- A. Remove lower gear (23t) (1, Fig. 3-21).
- B. Remove (33t) gear (2, Fig. 3-21).
- C. Remove key (3, Fig. 3-21).
- D. Remove spacer (4, Fig. 3-21). Older models had snap rings as shown in (1, Fig. 3-22).
- E. Remove (32t) gear (5, Fig. 3-21) and short key (6, Fig. 3-21).
- F. Check needle bearing (still in gear case). If replacement is necessary drive bearing through bottom of housing. Install new bearing from top and seat with a wood block so top of bearing is flush with transmission case.

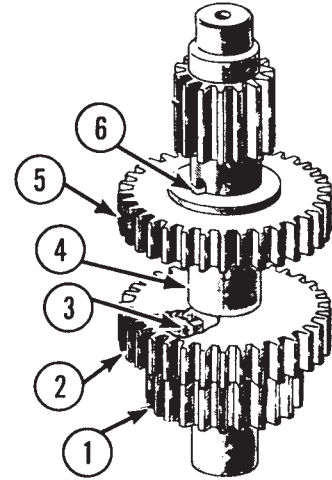


Fig. 3-21

6. Transmission Shaft Assembly.

- A. Install short key then (32t) gear with hub against shaft shoulder (5, Fig. 3-21).
- B. Old style install first and second retaining ring (1, Fig. 3-22). New style install spacer (4, Fig. 3-21).
- C. Install long key and (33t) gear (2, Fig. 3-21), hub down.
- D. Install 23t gear (1, Fig. 3-21).

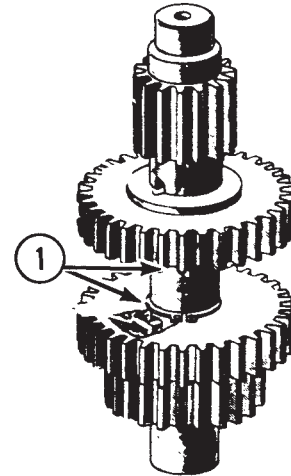


Fig. 3-22

7. Planetary Shaft Disassembly.

- A. All parts from the lower clutch gear up, were removed while disassembling the transmission.
- B. Take the shaft to an arbor press. Apply pressure to the planetary end, and force the shaft through the lower planetary spacer, ball bearing, spacer and gear (Fig. 3-23). The clutch gear bushing will remain on the shaft (1, Fig. 3-24).

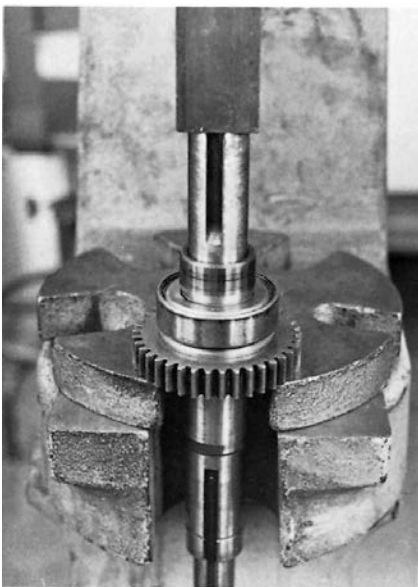


Fig. 3-23

- C. To remove clutch gear bushing. Put shaft in arbor press and apply pressure to planetary end of shaft.

8. Planetary Shaft Assembly.

- A. If lower clutch gear bushing was removed, use arbor press to replace. Flange goes towards top of shaft (1, Fig. 3-24).

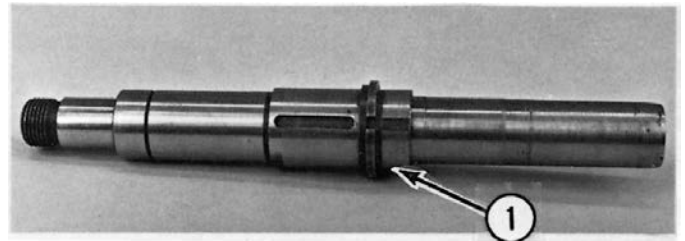


Fig. 3-24

- B. Install lower clutch gear (38t). Clutch teeth towards top of shaft (1, Fig. 3-25).
- C. Install lower planetary spacer with collar towards bearing (2, Fig. 3-25).
- D. Check ball bearing for roughness. If OK, place on shaft with shield toward planetary end and use arbor press to press on the shaft (3, Fig. 3-25).
- E. Check planetary spacer outer surface for roughness. This surface must be smooth. If rough replace. Press against inner race of ball bearing (4, Fig. 3-25). When replacing spacer make sure tapered end goes toward seal away from bearing.
- F. The rest of the shaft will be assembled when installed in the mixer.
- G. Model D-300D mixers have aluminum transmission cases. These have steel liners for the lower center shaft bearing cavity. Do not remove the liner but see that the holding screws are tight and that the bearing seat is clean (1, Fig. 3-26).

9. Transmission Assembly.

- A. Install planetary shaft seal (7, Fig. 3-25). Be sure the seal lip is turned toward the bearing and the seal is flush with bottom of transmission case.
- B. Lay the hard rubber spacing washer (8, Fig. 3-25) on top of seal.

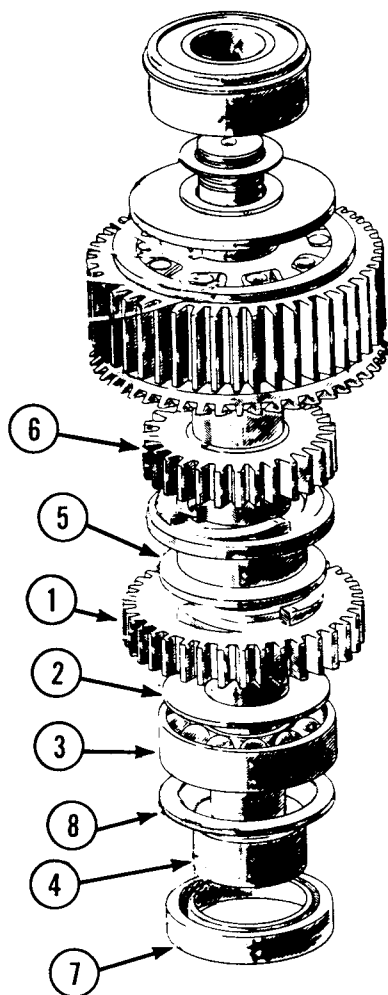


Fig. 3-25

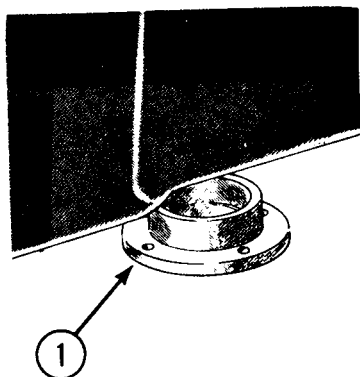


Fig. 3-26

- C. Install the planetary shaft assembly in the gear case (Fig. 3-27).
- D. Mesh (14t) gear on worm shaft with (33t) gear on transmission shaft then install both assemblies together in the housing (Fig. 3-28). Be sure (23t) gear on the transmission shaft (1, Fig. 3-28) is in place.
- E. (23t) gear on the transmission shaft must mesh with lower clutch gear on the planetary shaft. Turn the gears by hand to check assembly.
- F. Install the two $\frac{3}{16}$ " x $\frac{3}{16}$ " x 1" keys in the keyways of the planetary shaft (1, Fig. 3-29).
- G. Install shifter yoke with clutch sleeve (Fig. 3-14). Be sure clutch sleeve has smaller diameter down when installed or it will not clear the (33t) gear on the transmission shaft.
- H. At this time the rotor and back bearing bracket can be pushed forward to mesh the worm with the worm wheel. Tighten the four screws which hold the bearing bracket to the mixer.
- I. Install shifter control and index plate (Fig. 3-10).
- J. Install switch plate (Fig. 3-9).
- K. Install shifter handle (Fig. 3-8).



Fig. 3-27

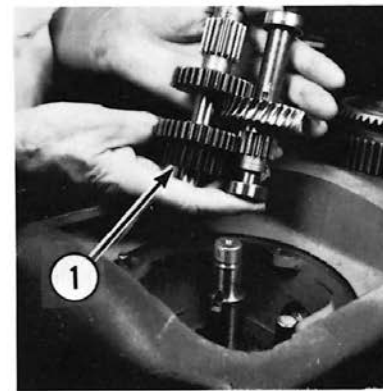


Fig. 3-28

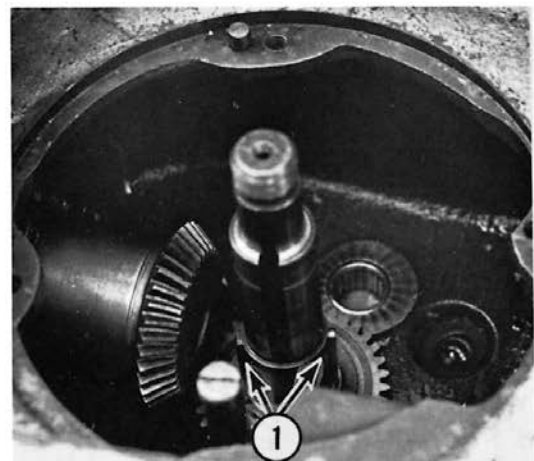


Fig. 3-29

- L. Install bushing in upper clutch gear (Fig. 3-30) and install on planetary shaft with clutch side down.

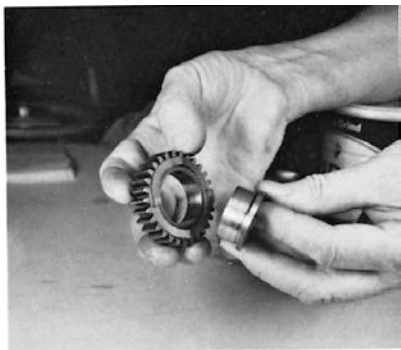


Fig. 3-30

- M. Install upper key in planetary shaft (1, Fig. 3-31).
- N. If the roller clutch gear has been disassembled, be sure to reassemble correctly. Slip the (46t) gear over the drive sleeve then insert the ten rollers and springs as shown (Fig. 3-32).
- O. For ease of reassembly, lubricate the clutch parts with Marfak 00.
- P. Install the bevel gear and roller clutch assembly as a unit (Fig. 3-12). Turn the planetary shaft so the gear teeth of the bevel gear pass through those of the low speed pinion on the transmission shaft.
- Q. Install upper planetary spacer with hub side up (1, Fig. 3-33). THE FOLLOWING STEP IS VERY IMPORTANT.
- R. Put on the shim washer or washers exactly as they were removed during disassembly (2, Fig. 3-33). If shim washers

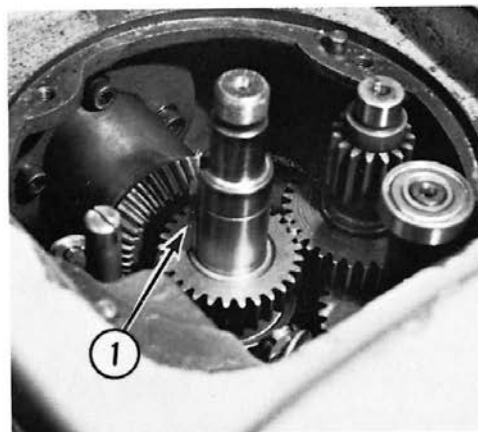


Fig. 3-31

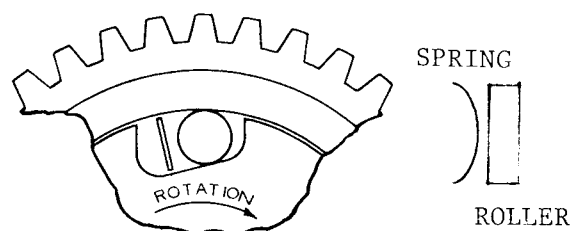


Fig. 3-32

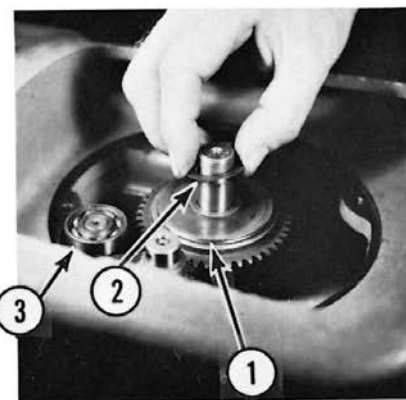


Fig. 3-33

were lost or misplaced put on a .010 thick shim if you recall removing only one. If two shims were removed, use a .010 and a .002 shim. These shims control the mesh of the bevel gears. Shim thickness may be increased or decreased if troublesome bevel gear noise develops.

- S. Shim washers also control the contact of shifter sleeve (5, Fig. 3-25) with gears (1, Fig. 3-25) and (6, Fig. 3-25).
- T. If change is made in the thickness of shim washers, it may be necessary to change attachment hub thrust washer (1, Fig. 3-34) to preserve bevel gear contact. Refer to Catalog of Replacement Parts.
- U. Install the upper ball bearing on top of the transmission shaft (3, Fig. 3-33).
- V. Lubricate the gears just enough so they are not dry.
- W. Be sure bearing pusher (1, Fig. 3-35) is in the bearing carrier. It must be installed with recessed side down toward the bearing.
- X. The position of the bearing pusher is controlled by the hex head cap screw (1, Fig. 3-36) and hex jam nut (2, Fig. 3-36). If you have not moved this screw and nut, it may not be necessary to make a new adjustment.
- Y. Observe the roller clutch grease deflector (2, Fig. 3-6). This is held by one screw and two external lock-washers. Do not change the angle of this deflector. Replace with new part if bent.
- Z. Install bearing carrier and tap down over the two dowels. Install four hex head bolts and lockwashers.
- AA. Install the upper planetary shaft ball bearing (3, Fig. 3-36). This is a snap ring bearing and is mounted with the shield up.

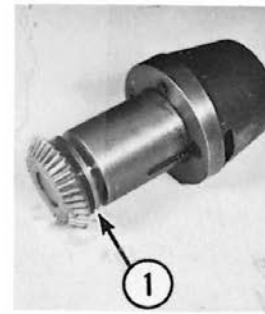


Fig. 3-34

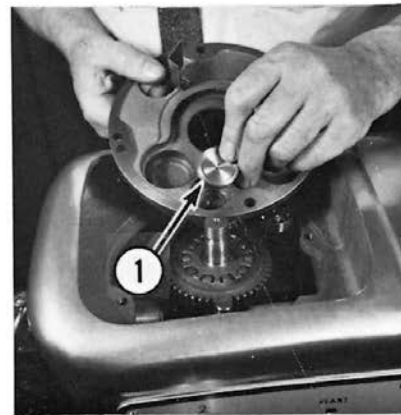


Fig. 3-35

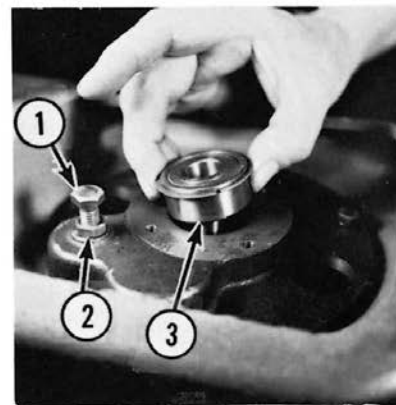


Fig. 3-36

- BB. Install the stop nut on the planetary shaft (Fig. 3-37) and draw it tight. THIS IS A LEFT HAND THREAD.
- CC. Install the bearing retainer and four screws and lock-washers (1, Fig. 3-38).
- DD. Install planetary and drip cup as outlined in Section 2.
- EE. Lay a wiping cloth over the transmission cover to prevent splash. Turn on the motor and try the mixer in all three speeds.
- FF. If the worm gear drive seems noisy, it may not be properly engaged with the worm. Adjustment is made by turning screw (1, Fig. 3-39) after loosening nut (2, Fig. 3-39). The worm gear shaft is supported on the cup spring washer (7, Fig. 3-20). The shaft can be raised or lowered to correct the worm and worm wheel contact. The adjustment will be most effective if made when the mixer is loaded. Loosen or tighten screw gradually until best sound level is reached.
- GG. Put in the remainder of the lubricant through the filler openings in the bearing carrier. Run the mixer for a brief time then press in the two friction plugs (2, Fig. 3-38).
- HH. Replace the housing cover (1, Fig. 3-1).



Fig. 3-37

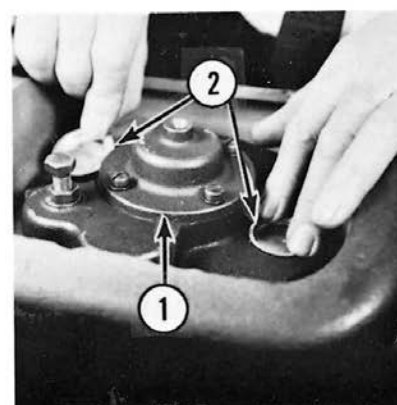


Fig. 3-38

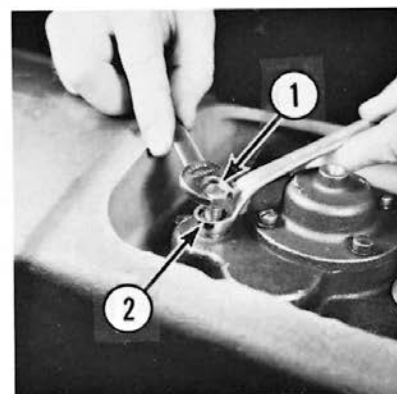


Fig. 3-39

SECTION 4

ATTACHMENT HUB

1. Removing Hub.

WARNING: DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AT THE MAIN CIRCUIT BOX. PLACE A TAG ON THE CIRCUIT BOX INDICATING THE CIRCUIT IS BEING WORKED ON.

- A. When a painted unit is opened for the first time, the painted joint must be broken between the hub and transmission case. Run a knife point along the joint cutting through the paint. This helps to prevent a jagged joint.

NOTE: The three cap screws holding the attachment hub to the mixer are accessible inside the transmission case. Part of the transmission must be removed to gain access to the screws.

- B. Remove housing cover (1, Fig. 4-1).

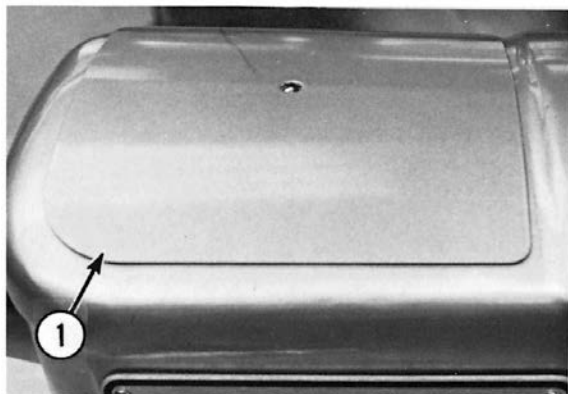


Fig. 4-1

- C. Remove four screws and bearing retainer (1, Fig. 4-2).

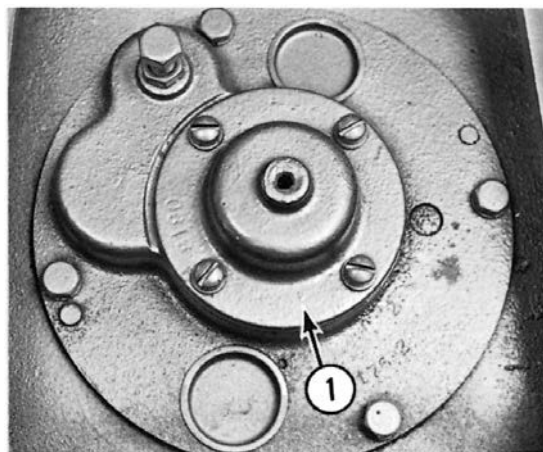


Fig. 4-2

- D. Remove stop nut from center shaft (1, Fig. 4-3). To loosen; turn in clockwise direction. This nut has a LEFT HAND THREAD. If nut will not loosen, put the flat "B" beater on and hold it while loosening the nut.
- E. Remove two friction plugs (2, Fig. 4-3).

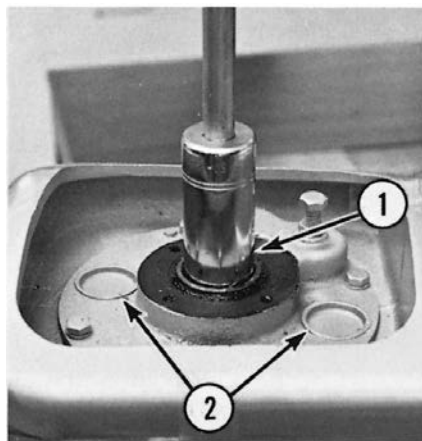


Fig. 4-3

- F. To remove the bearing carrier use a gear puller as shown in (Fig. 4-4). A light tapping in an upward motion around the perimeter of the carrier with a plastic or rubber mallet will help to break the cover loose. When the carrier has cleared the dowel pins, you can lift the carrier out of the machine with your fingers in the openings for the friction plugs.

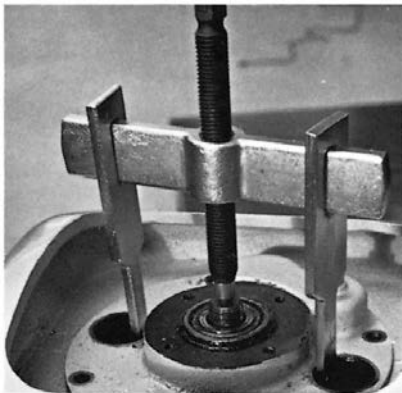


Fig. 4-4

- G. Remove bearing carrier and check for planetary shaft shims stuck to the carrier (1, Fig. 4-5). Remove and save these shims. These must be put back during reassembly.
- H. Turn the center (planetary) shaft so the teeth of bevel gear will pass those on transmission shaft gear.
- I. Remove upper planetary shaft spacer, roller clutch and bevel gear as a unit (1, Fig. 4-6).

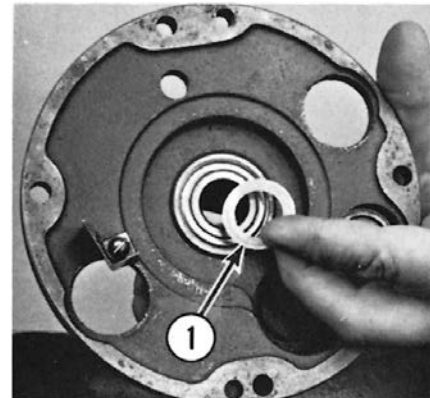


Fig. 4-5

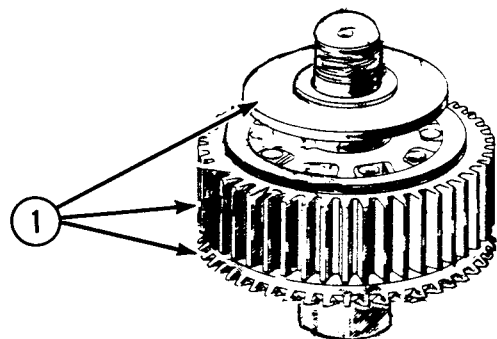


Fig. 4-6

- J. Remove key (1, Fig. 4-9) from the center shaft then remove upper clutch gear with bushing (2, Fig. 4-9).
- K. Remove three screws and lock-washers (1, Fig. 4-7). Remove attachment hub and bearing assembly out the front of the gear case and remove drive gear and thrust washer through inside of gear case.
- L. Before installing the hub assembly inspect the needle bearings (1, Fig. 4-8) and shaft seal (2, Fig. 4-8).
- M. Remove the old shaft seal and clean the seal cavity.
- N. If the needle bearings need replaced, press the bearings forward through the hub casting. Use an arbor press or wood block. Pressing out the bearings will also remove the oil seal.
- O. When replacing the bearings make sure that they are properly spaced. Press the inside bearing flush with the inside end of the hub casting. Press the second bearing in just far enough to pass the oil drain hole (3, Fig. 4-8).
- P. Always use a new seal. A special Hobart Tool No. 55460-3 is available for easy installation of seals. Use of this tool permits a second or third seal to be used when required. Do not use more than three seals as oil hole (3, Fig. 4-8) must be left open.
- Q. Reassemble in the reverse order of disassembly. When installing the hub casting, use a small amount of Permatex to seal the hub casting to the transmission case.

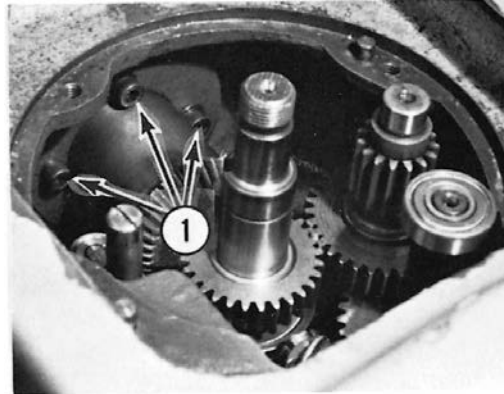


Fig. 4-7

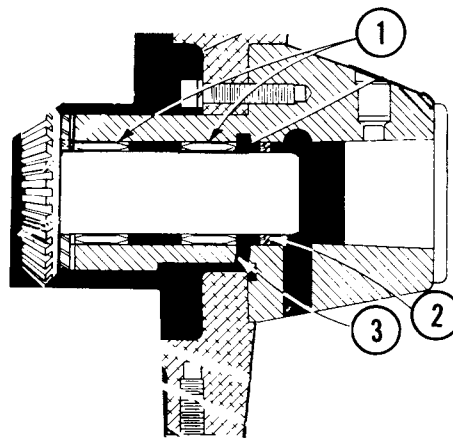


Fig. 4-8

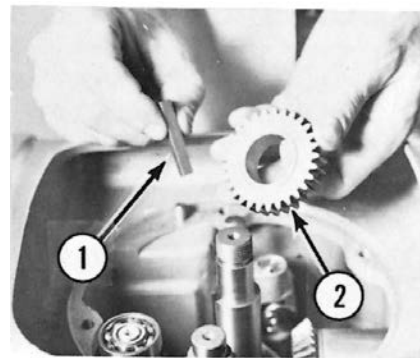


Fig. 4-9

SECTION 5

GEAR SELECTOR/SHIFTER UNIT

1. Removal (Gear Selector).

WARNING: DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AT THE MAIN CIRCUIT BOX. PLACE A TAG ON THE CIRCUIT BOX INDICATING THE CIRCUIT IS BEING WORKED ON.

- A. Position gear selector in second speed and loosen set screw (1, Fig. 5-1). Then remove shifter handle.
- B. Remove four screws and remove switch plate (2, Fig. 5-1).
- C. Remove four screws and pull the gear selector plate (Fig. 5-2).

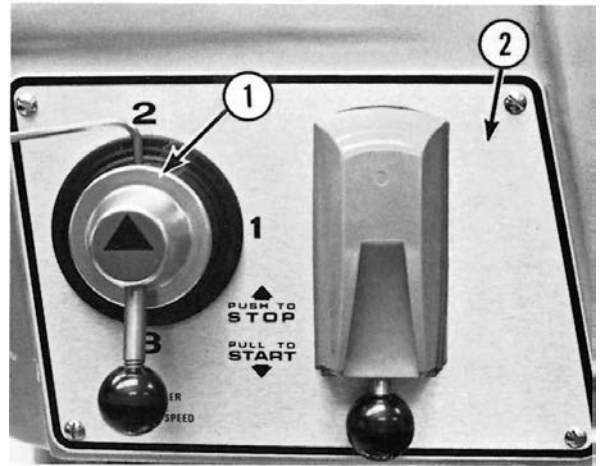


Fig. 5-1

2. Disassembly.

- A. Drive out the taper pin. Newer units have a spirol pin.
- B. Carefully separate the pieces.

3. Assembly.

- A. Install shifter shaft in plate (1, Fig. 5-3).
- B. Install springs in plate (2, Fig. 5-3).
- C. Place balls on springs (3, Fig. 5-3).
- D. Slip cam on the shaft with the flat part of cam on same side of shaft as dimple for shifter handle set screw.
- E. Press assembly together and drive in the pin.
- F. Make sure you have a gasket on the back of the index plate, then install assembly in the mixer.
- G. Install switch plate.
- H. Install shifter handle and set screw.

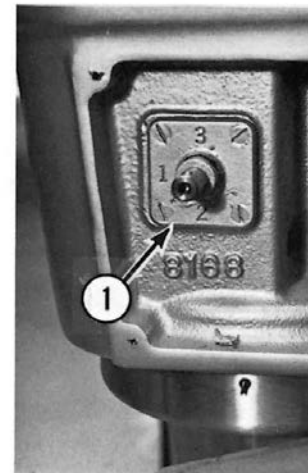


Fig. 5-2

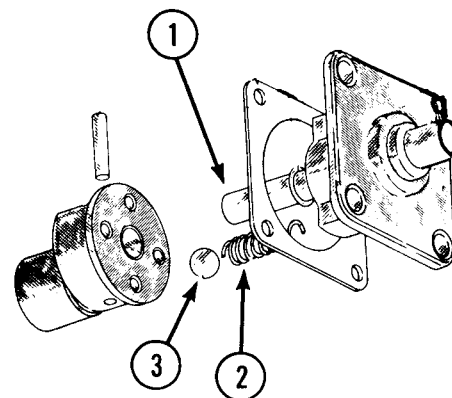


Fig. 5-3

4. Shifter Unit.

- A. To remove this assembly the gear case must be opened and disassembled. Refer to Section 3 "Transmission".
- B. The shifter yoke assembly consist of the yoke casting, two plungers and two springs (Fig. 5-4).
- C. Only spring failure, casting breakage or long hard wear will make service necessary.
- D. To replace a spring remove the retainer and take out broken or weak spring. Install new spring and replace retainer.
- E. It is advisable to replace both springs if one must be changed. Spring tension should be equal.

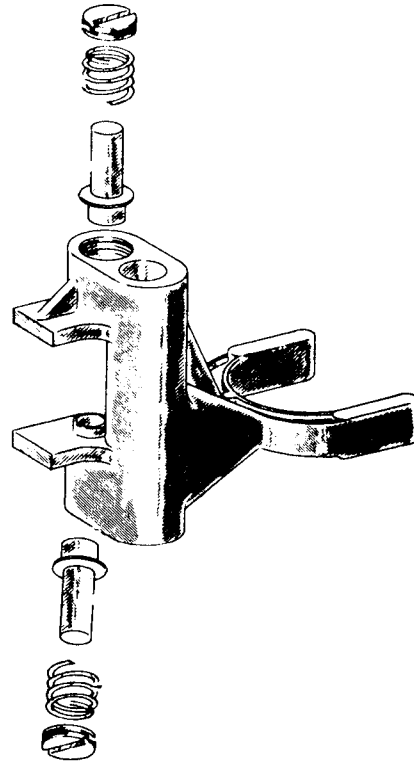


Fig. 5-4

SECTION 6

BOWL SUPPORT AND LIFT UNIT

1. Bowl Support Removal.

WARNING: DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AT THE MAIN CIRCUIT BOX. PLACE A TAG ON THE CIRCUIT BOX INDICATING THE CIRCUIT IS BEING WORKED ON.

- A. Remove stainless steel apron by removing two screws (Fig. 6-1). Newer units have thumb screws instead of slotted head screws.

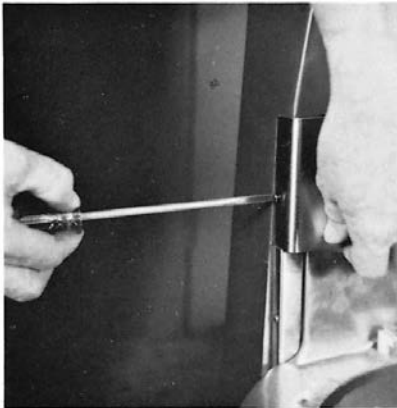


Fig. 6-1

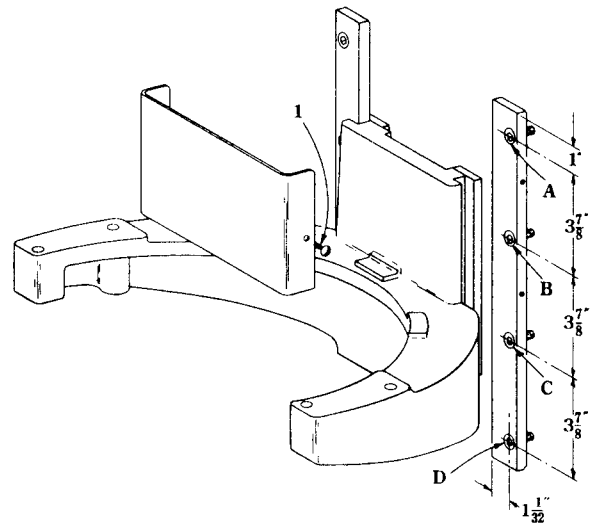


Fig. 6-2

- B. To remove the bowl support it is only necessary to loosen the left hand gib. Loosen four screws. (On new units paint covering the screw heads will need broken). Figure 6-2 gives dimensions to help locate screws.
- C. Remove lift access cover (1, Fig. 6-3).

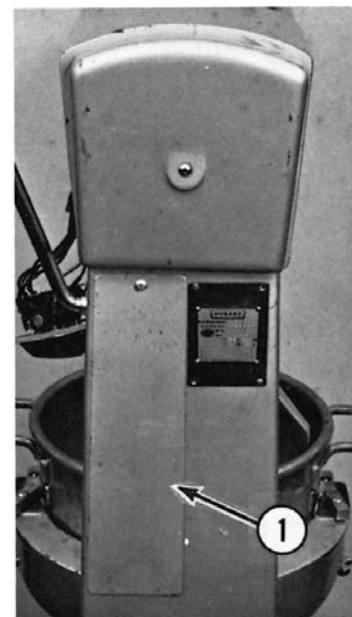


Fig. 6-3

- D. Lower bowl support to its lower position and remove two cap screws (1, Fig. 6-4).

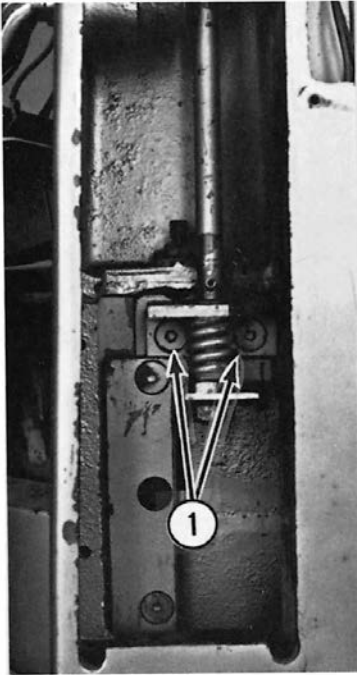


Fig. 6-4

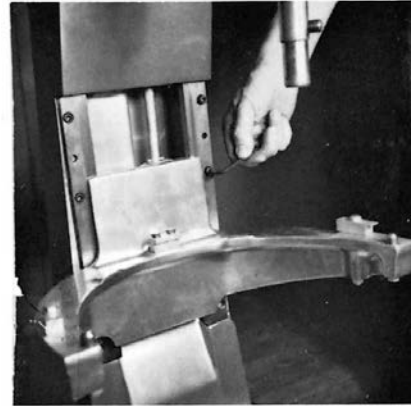


Fig. 6-5

- E. Remove four screws right hand gib (Fig. 6-5) and remove gib and bowl support shim.

- F. Remove bowl support.



Fig. 6-6

2. Bowl Support Installation.

- A. Place bowl support in position and install gib and shim support on right side. Shim and gib were not removed from left side. Be sure shim on left side is in place.

- B. Install cap screws (1, Fig. 6-4).

- C. Tighten gib support on left side.

- D. Raise bowl support and use lead mallet to tighten support (Fig. 6-6). Tighten top two screws, right side.

- E. Lower bowl support to within about 1-1/2" of the bottom position. Pull in the lower end of the slideway with a clamp or bump in with a lead mallet and tighten bottom screw on the right side.

- F. Raise bowl support and tighten second screw from bottom on the right side.

3. Bowl Lock Adjustment.

WARNING: DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AT THE MAIN CIRCUIT BOX. PLACE A TAG ON THE CIRCUIT BOX INDICATING THE CIRCUIT IS BEING WORKED ON.

- A. Remove lift access cover assembly (1, Fig. 6-3).
- B. When the bowl is raised, the lift handle will pass bottom center and stop when the bowl lift rod stops against the pedestal. Spring tension on the handle may be adjusted by turning jam nuts (8, Fig. 6-7).

4. Adjusting the Bowl to Beater Clearance.

WARNING: DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AT THE MAIN CIRCUIT BOX. PLACE A TAG ON THE CIRCUIT BOX INDICATING THE CIRCUIT IS BEING WORKED ON.

Clearance between the "B" beater and the bottom of the bowl should be .050" to .111". (1, Fig. 6-8).

- A. Remove lift access cover assembly (1, Fig. 6-3).
- B. Lower bowl lift assembly to lowest position. Loosen jam nut (1, Fig. 6-7).
- C. Use an Allen wrench to turn the stop screw (2, Fig. 6-7) until the desired clearance is reached.
- D. Lock jam nut (1, Fig. 6-7) when clearance is correct.
- E. Install lift access cover.

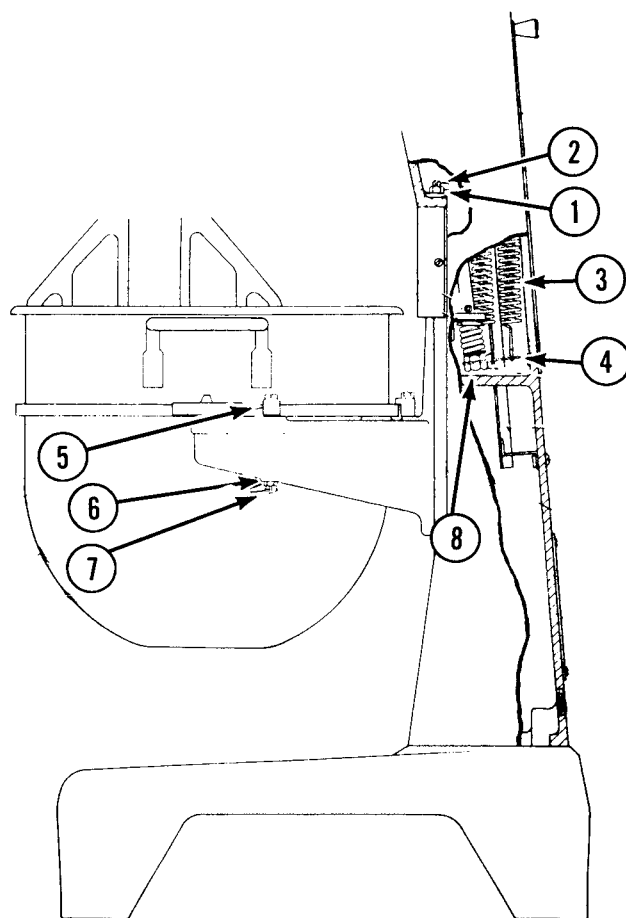


Fig. 6-7

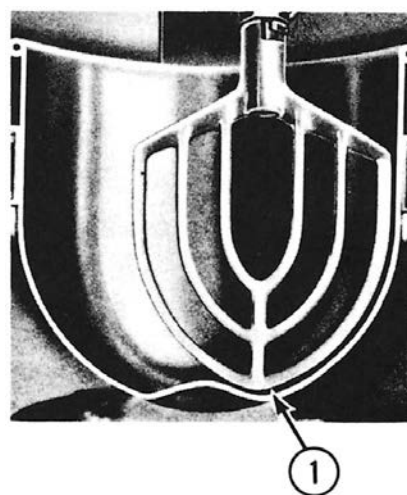


Fig. 6-8

5. Bowl Lift Handle, Lift Arm and Lift Rod Removal.

WARNING: DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AT THE MAIN CIRCUIT BOX. PLACE A TAG ON THE CIRCUIT BOX INDICATING THE CIRCUIT IS BEING WORKED ON.

A. Replacing bowl lift handle.

- (1) Remove lift access cover assembly (1, Fig. 6-3).
- (2) Place lift handle in lower position and knock out rollpin (1, Fig. 6-9).
- (3) Remove handle.
- (4) Reassemble in reverse order.

B. Replacing bowl lift arm.

- (1) Refer to steps 1 through 3 "Replacing Bowl Lift Handle".
- (2) Remove rollpin (2, Fig. 6-9) and remove bowl lift arm.
- (3) Reassemble in reverse order.

C. Replacing bowl lift rod.

- (1) Support bowl lift in half raised position with a block of wood or some other object.
- (2) Remove lift access cover assembly (1, Fig. 6-3).
- (3) Knock out rollpin (2, Fig. 6-9).
- (4) Unhook the two counter balance springs (3, Fig. 6-7) from the lower spring bracket (4, Fig. 6-7).

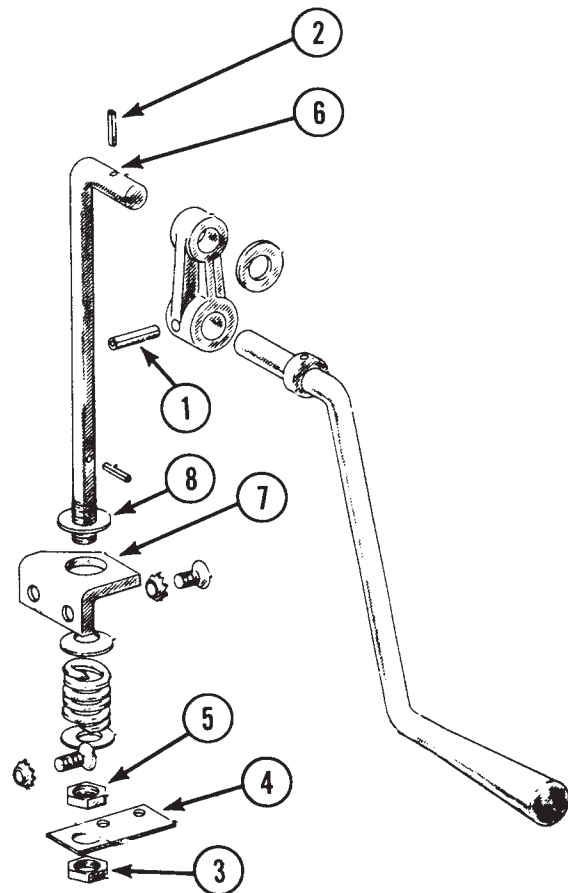


Fig. 6-9

- (5) Remove lower jam nut (3, Fig. 6-9) and lower spring lift bracket (4, Fig. 6-9).
- (6) Remove jam nut (5, Fig. 6-9). The flat washer, bowl lift spring and cupped washer will slide off the bowl lift rod.
- (7) Pull the bowl lift handle down. This will clear the bowl lift rod (6, Fig. 6-9) from the bowl support (7, Fig. 6-9). Do not lose the flat washer (8, Fig. 6-9) located above the bracket.
- (8) Remove the bowl lift rod.
- (9) Reassemble in the reverse order.

6. Bowl Clamp Adjustment.
- A. The height of the bowl clamp (5, Fig. 6-7) is adjustable.
 - B. It is regulated by a spring washer (6, Fig. 6-7).
 - C. To change the tension on the clamp tighten or loosen stop nut (7, Fig. 6-7).

SECTION 7

BASE AND PEDESTAL

1. Replacing the Base.

WARNING: DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AT THE MAIN CIRCUIT BOX. PLACE A TAG ON THE CIRCUIT BOX INDICATING THE CIRCUIT IS BEING WORKED ON.

- A. A broken base can almost always be welded or brazed, often without removal from the mixer.
- B. If removal or replacement is necessary, lay the mixer forward and rest on the attachment hub with wood blocks under each side of bowl support.
- C. Remove four cap screws.
- D. Use a knife to cut paint joint between base and pedestal.
- E. Separate the base from the pedestal.
- F. Reassemble in the reverse order.

2. Replacing the Pedestal.

WARNING: DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AT THE MAIN CIRCUIT BOX. PLACE A TAG ON THE CIRCUIT BOX INDICATING THE CIRCUIT IS BEING WORKED ON.

- A. A mixer pedestal is replaced only because of breakage. If welding or brazing is practical, it is generally more economical than replacing the pedestal.
- B. If a new pedestal is needed, be sure to order the two dowels for the left hand slideway and the two dowels for aligning the transmission case.
- C. Remove bowl support per Section 6.
- D. Remove switch plate and disconnect wires. Use diagram on back of capacitor and starter access cover for wire connections during assembly.
- E. Remove wires from starting switch (stationary part) Refer to Section 8-3.
- F. All parts (Fig. 6-9) can be removed and used on the new pedestal.

- G. Remove machine data plate (1, Fig. 7-1) and capacitor and starter access cover (2, Fig. 7-1).
- H. Remove two cap screws (1, Fig. 7-2).
- I. Remove cap screw (2, Fig. 7-2) and screw (3, Fig. 7-1). This will allow the air baffle to be moved to the lower part of the pedestal allowing you to remove screw (3, Fig. 7-2). It may be necessary to cut the paint seam between the pedestal and transmission case. (Transmission case will be heavy so it may take two people to lift from the pedestal).
- J. Remove base.
- K. Reassemble in the reverse order of disassembly.
- L. Check bowl to beater clearance after assembly. Refer to Section 6 Paragraph 4.

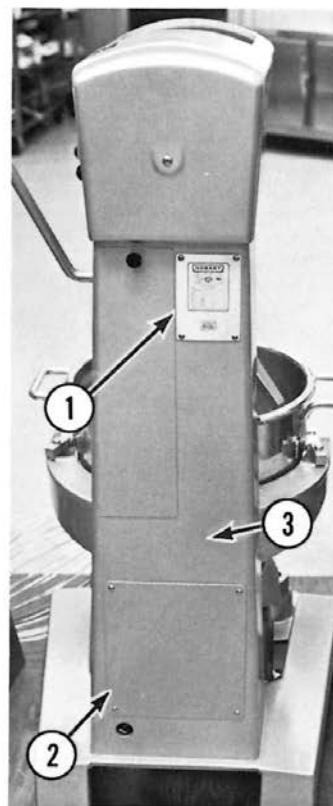


Fig. 7-1

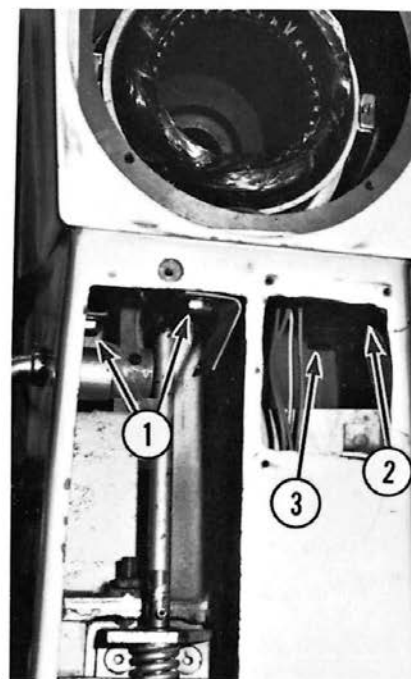


Fig. 7-2

SECTION 8

MOTOR

1. Removing the Rotor and Stator.

WARNING: DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AT THE MAIN CIRCUIT BOX. PLACE A TAG ON THE CIRCUIT BOX INDICATING THE CIRCUIT IS BEING WORKED ON.

- A. Remove the retaining screw and trim cap (Fig. 8-1).



Fig. 8-1

- B. Tilt the mixer forward and block up the back legs 3-1/2" to 4" (Fig. 8-2). This helps to prevent transmission grease from leaking at the motor opening.
- C. Remove four screws (1, Fig. 8-3) and remove bearing cap.
- D. Remove two special nuts and washer (1, Fig. 8-4).
- E. Disconnect the two leads on the stationary start switch on single phase units. Remove four screws (2, Fig. 8-4). Bearing bracket can now be removed leaving the rotor in the stator.



Fig. 8-2

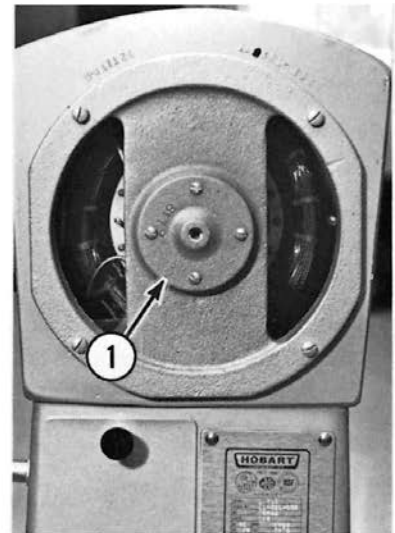


Fig. 8-3

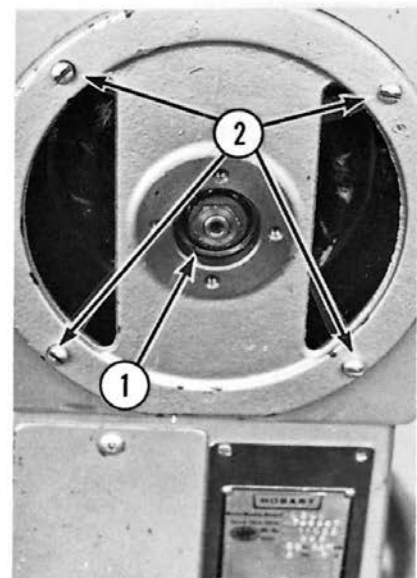


Fig. 8-4

- F. Remove rotor from stator. Rotor, worm and front bearing will come out as one assembly (Fig. 8-5).



Fig. 8-5

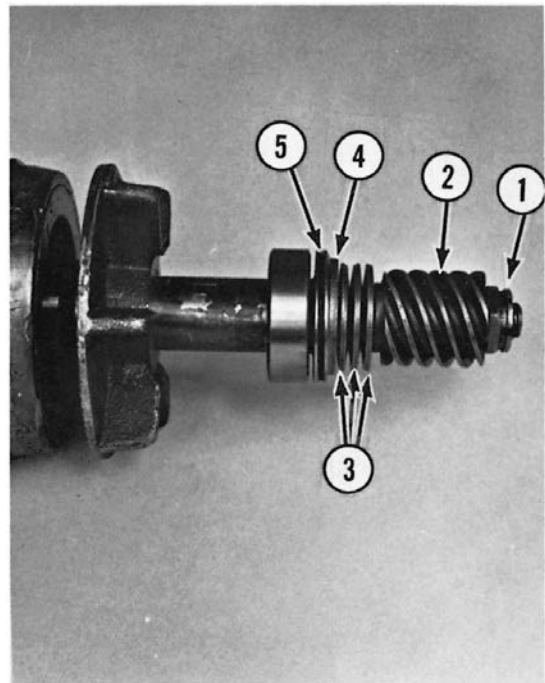


Fig. 8-6

- G. If a new front bearing is needed, the worm must be removed first. Remove stop nut (1, Fig. 8-6), worm (2, Fig. 8-6), six Belleville washers (3, Fig. 8-6), one washer (4, Fig. 8-6) and grease deflector (5, Fig. 8-6).
- H. Use a puller to remove the bearing. Use an arbor press to install the new bearing.
- I. Disconnect all electrical leads. Remove four screws (1, Fig. 8-7).
- J. Remove stator from the gear case.

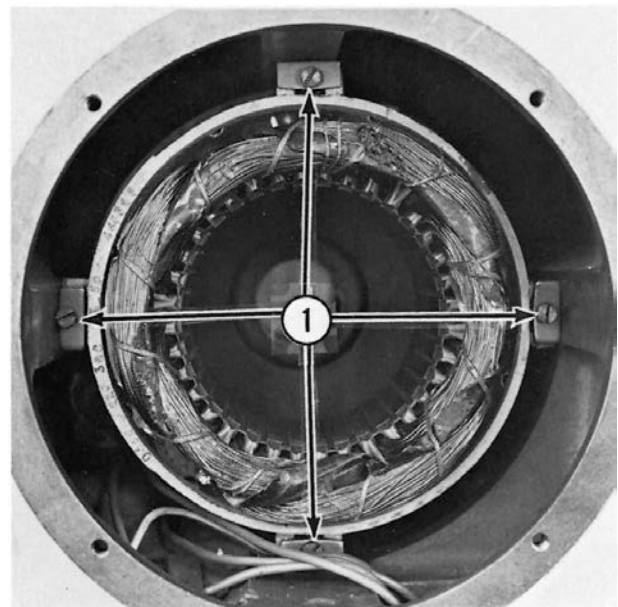


Fig. 8-7

2. Installing the Rotor and Stator.

- A. Place the stator into the gear case and make wiring connections according to wiring diagram on back of capacitor and starter access cover.
- B. Install four screws holding stator to gear case.
- C. Install the rotor.
- D. On single phase units inspect the starting switch contacts (1, Fig. 8-8). If the contacts are dirty, clean them with 4/0 emery paper. If the contacts are pitted, replace the switch. Refer to: "Replacing the Start Switch (Stationary Parts)".
- E. Check the ball bearing in the bearing bracket for smoothness of operation. If bearing turns roughly, replace bearing. Install bearing with shield toward the motor. Connect the two leads to the stationary start switch. Install bracket and secure with four screws.

NOTE: Be sure rounded part of bearing bracket is at the top of the mixer.

- F. Install special washer and two special nuts.
- G. Install bearing cap and secure with four screws.
- H. Install trim cap.

3. Replacing The Starting Switch (Stationary Part).

WARNING: DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AT THE MAIN CIRCUIT BOX. PLACE A TAG ON THE CIRCUIT BOX INDICATING THE CIRCUIT IS BEING WORKED ON.

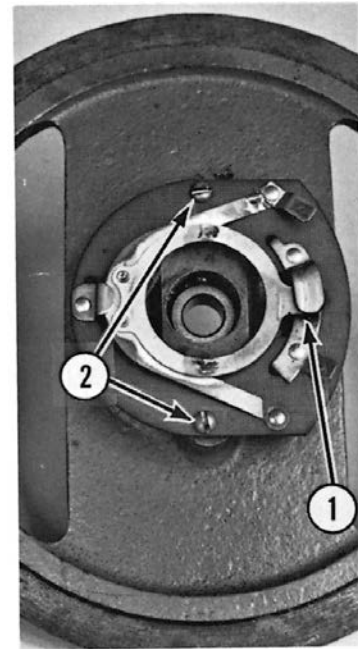


Fig. 8-8

- A. Remove the retaining screw and trim cap (Fig. 8-1).
- B. Remove four screws (1, Fig. 8-3) and remove bearing cap.
- C. Remove two special nuts and washer (1, Fig. 8-4).
- D. Disconnect the two leads on the stationary starting switch. Remove four screws (2, Fig. 8-4). Bearing bracket can now be removed leaving the rotor in the stator.
- E. Remove the two screws (2, Fig. 8-8) and lift up the switch.
- F. Install new switch and reassemble in the reverse order.

NOTE: Be sure rounded part of bearing bracket is at top of the mixer.

4. Replacing The Capacitor.

WARNING: DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AT THE MAIN CIRCUIT BOX. PLACE A TAG ON THE CIRCUIT BOX INDICATING THE CIRCUIT IS BEING WORKED ON.

- A. Remove capacitor and starter access cover (1, Fig. 8-9).
- B. Remove capacitor from bracket and disconnect wires.
- C. Install new capacitor and re-assemble in reverse order.

5. Testing The Motor Stator Windings.

WARNING: DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AT THE MAIN CIRCUIT BOX. PLACE A TAG ON THE CIRCUIT BOX INDICATING THE CIRCUIT IS BEING WORKED ON.

- A. Disconnect all stator leads.
- B. With all motor leads disconnected and the ohmmeter set on RX1 range, check each winding for continuity (Fig. 8-10). A reading less than stated indicates a shorted stator. If there is no meter reading, the stator is open.
- C. Set the ohmmeter on RX100,000 and check for a grounded motor. Check any stator lead to chassis. Generally, if the motor is not grounded, the meter will indicate infinity. However, any reading above 500,000 ohms is acceptable.
- D. If the windings are shorted, open or grounded, replace the stator.

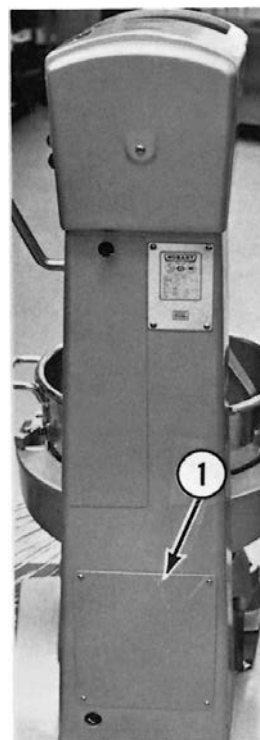
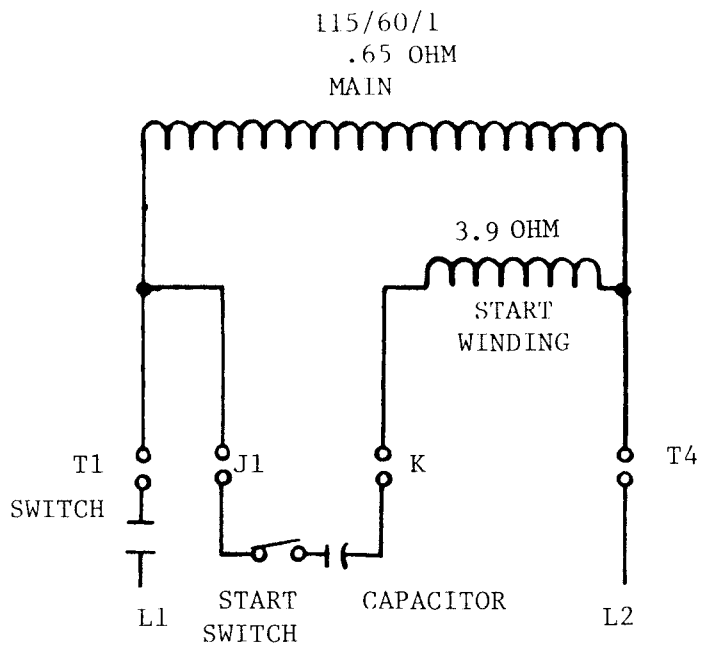
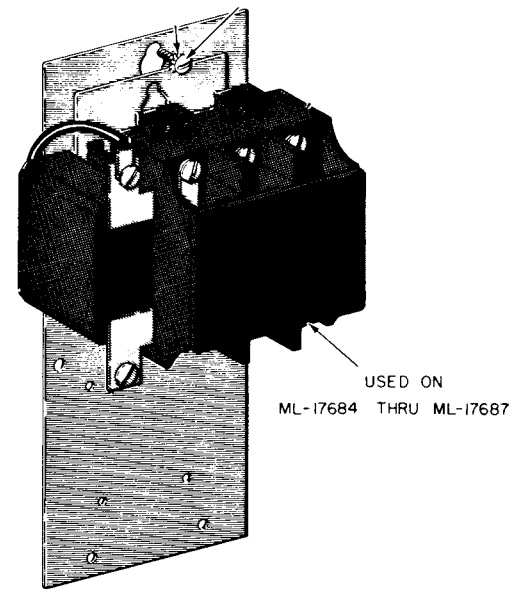
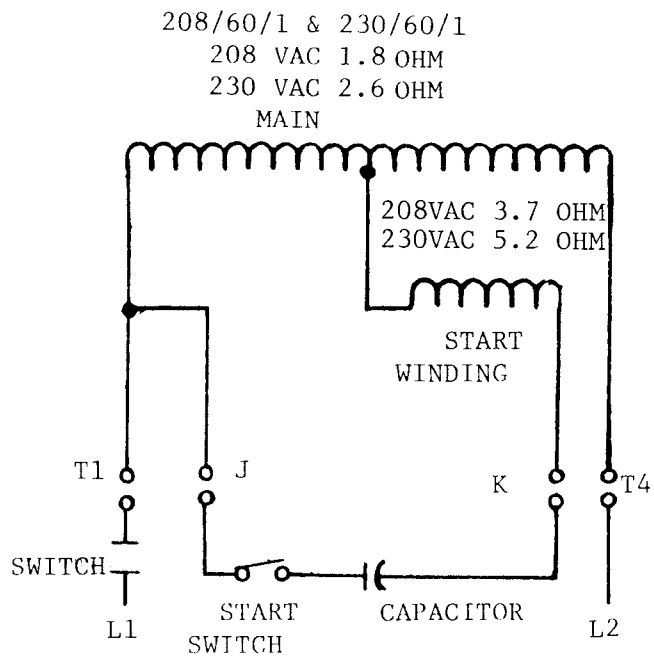
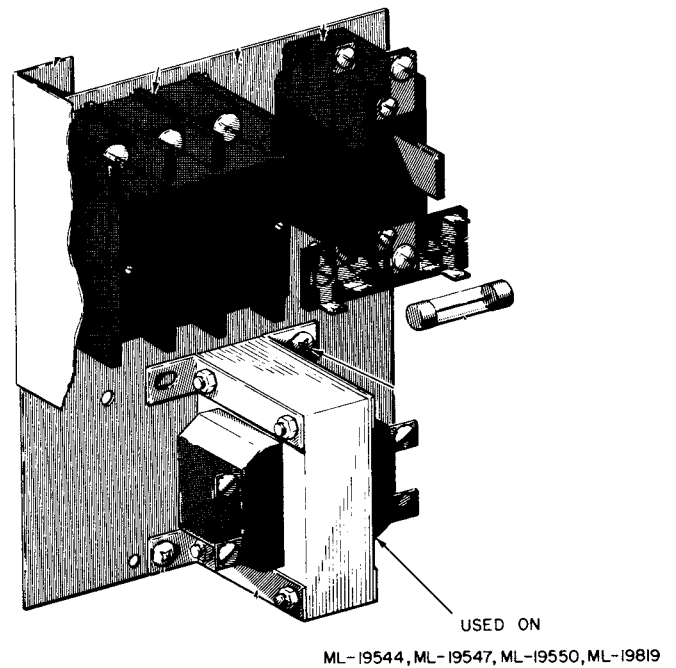


Fig. 8-9

6. Replacing Optional Magnetic Starter or Contactor Unit.

WARNING: DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AT THE MAIN CIRCUIT BOX. PLACE A TAG ON THE CIRCUIT BOX INDICATING THE CIRCUIT IS BEING WORKED ON.

- A. If unit is equipped with either the starter or contactor assembly, they will be located behind the capacitor and starter access cover (1, Fig. 8-9).
- B. Remove cover and you have access to the assemblies (Fig. 8-11). Make required changes and follow wiring diagram on rear of capacitor and starter access cover for wire connections.



200/60/3	T1	T2, T2	T3, T3	T1	7.4.OHM
230/60/3	T1	T2, T2	T3, T3	T1	8 OHM
460/60/3	T1	T2, T2	T3, T3	T1	48 OHM

NOTE: ALL RESISTANCE READINGS ARE ONLY APPROXIMATE AND WILL VARY.

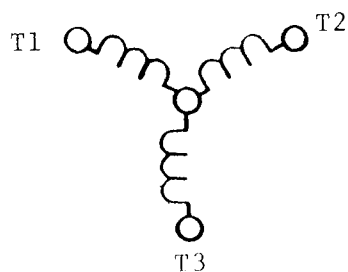


Fig. 8-10

Fig. 8-11

SECTION 9

ELECTRICAL SERVICE

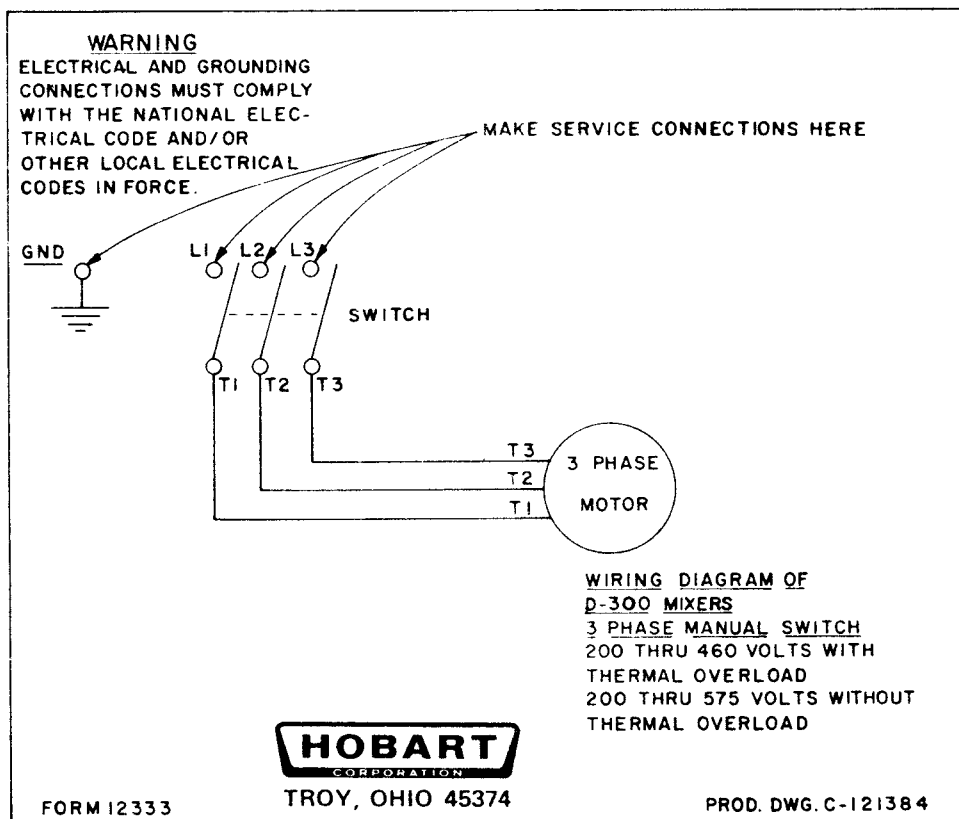
1. Operating Controls.

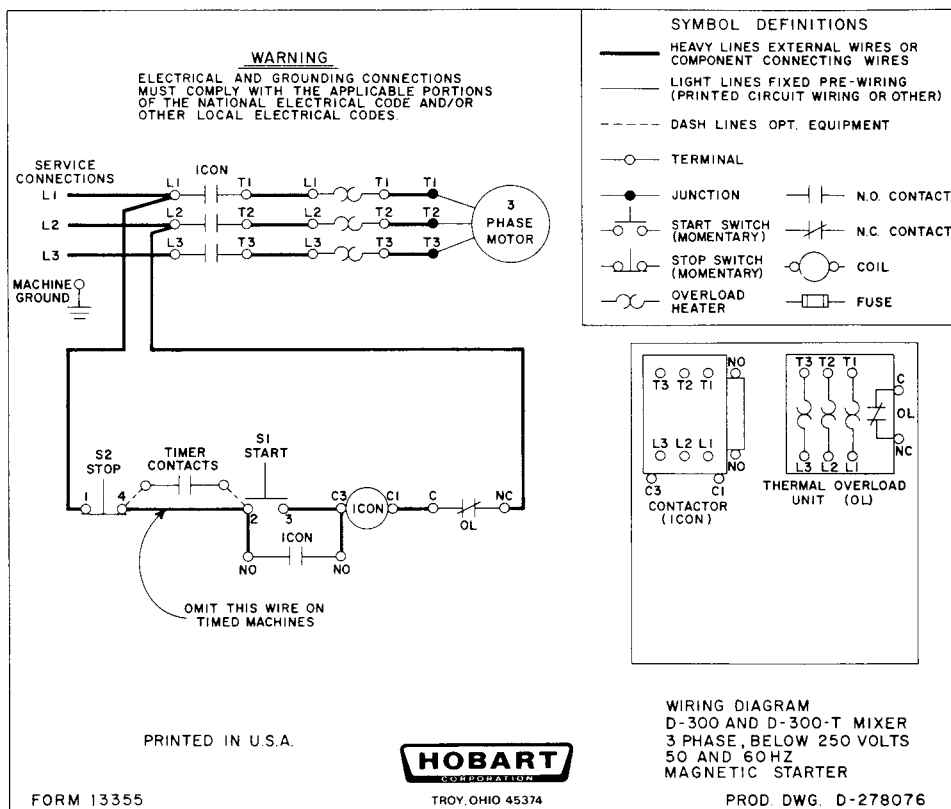
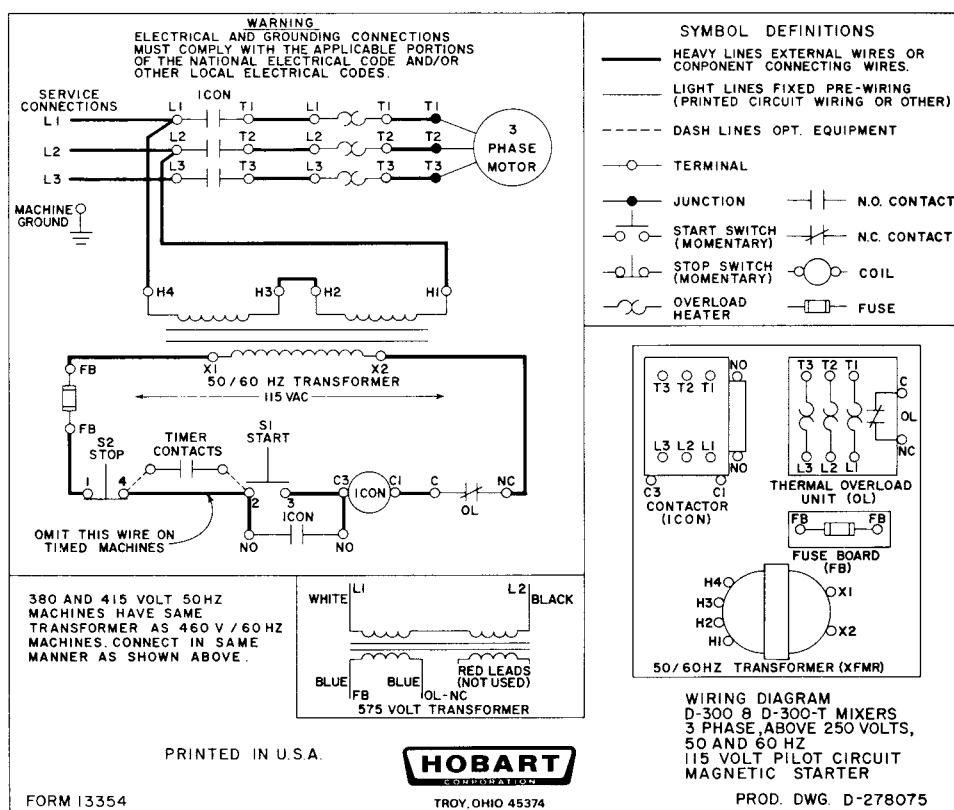
A. On-Off switch.

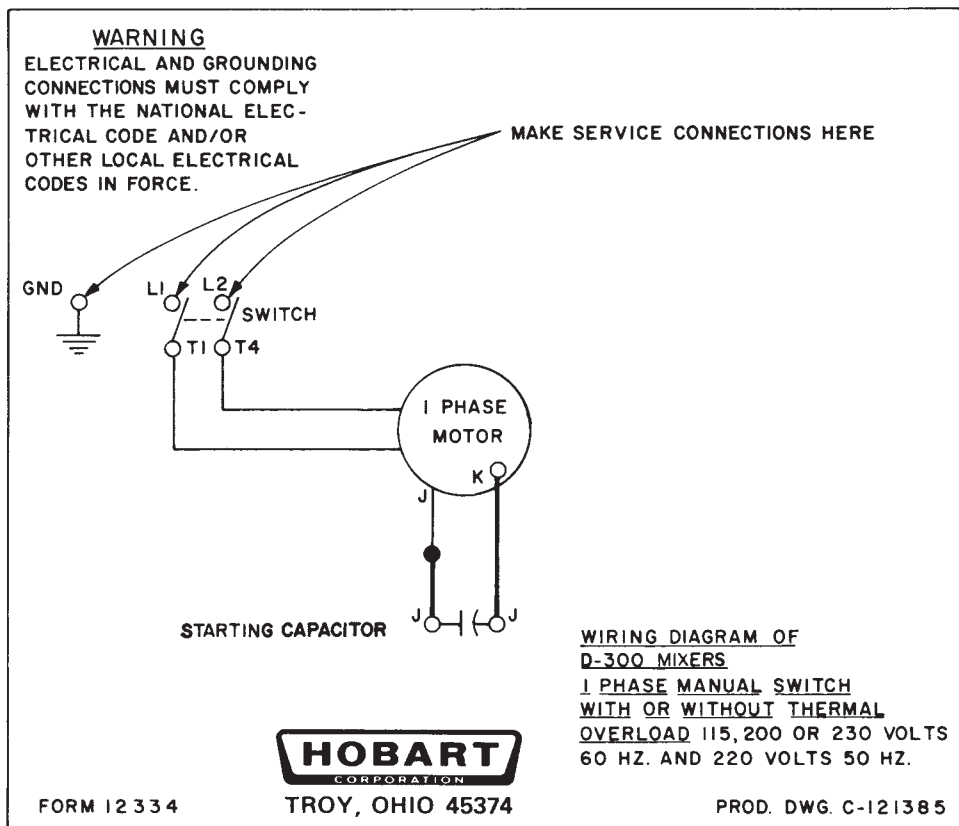
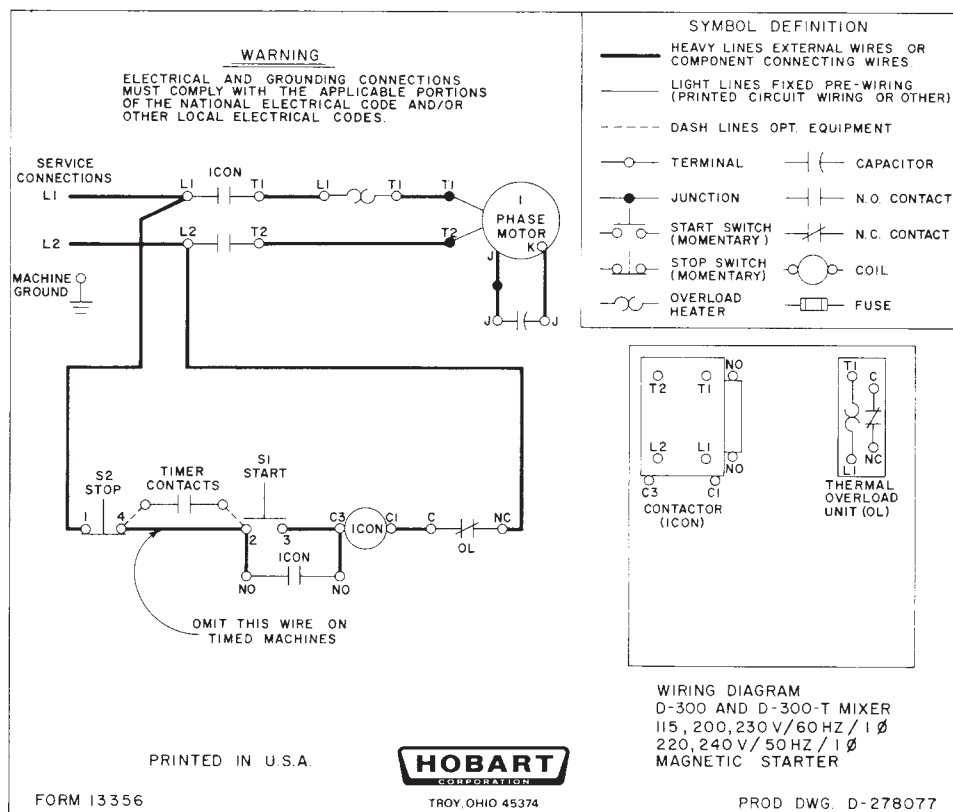
The On-Off switch is mounted on the right side of the transmission case, behind the shifter index plate. When the switch is on, the motor is powered and will run. (If the mixer is equipped with a timer, it must be set "To Hold" before the motor will run).

B. Timer (Optional).

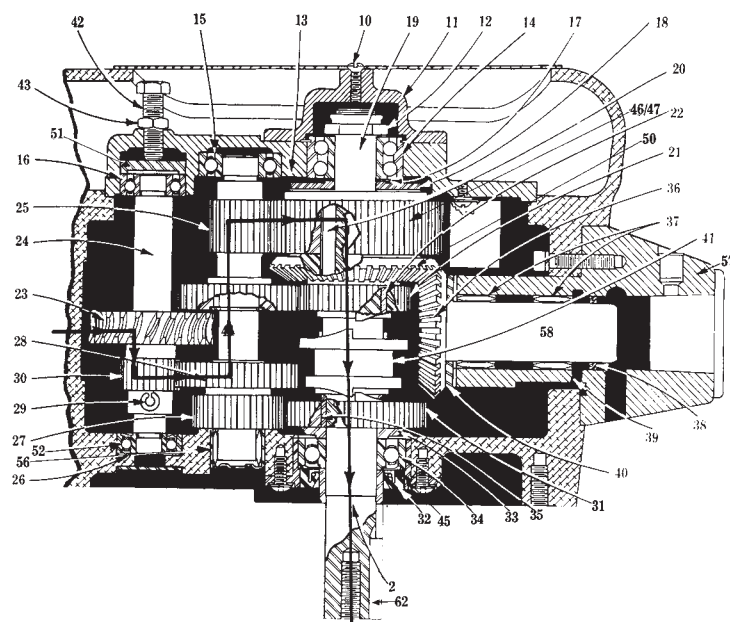
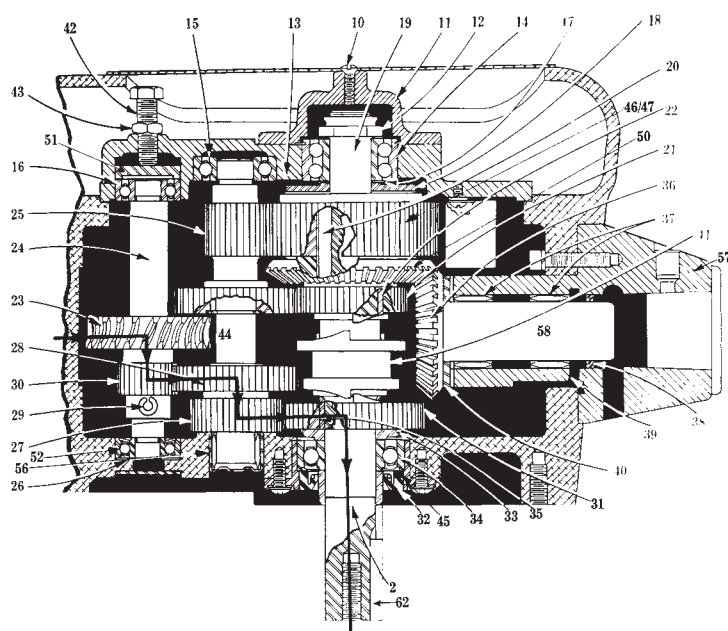
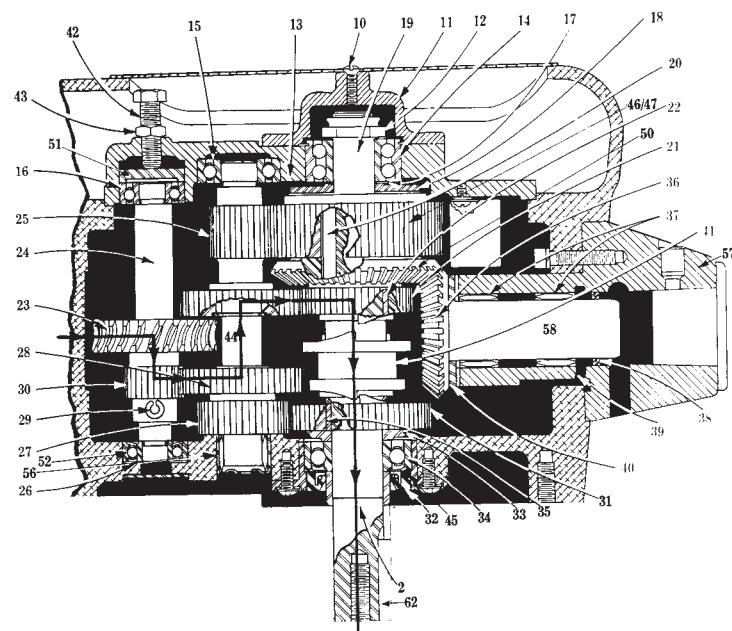
The timer automatically shuts off the machine in any speed after the time set has elapsed. Nontimed operation is obtained by setting the dial to the "Hold" position.







SECTION 10

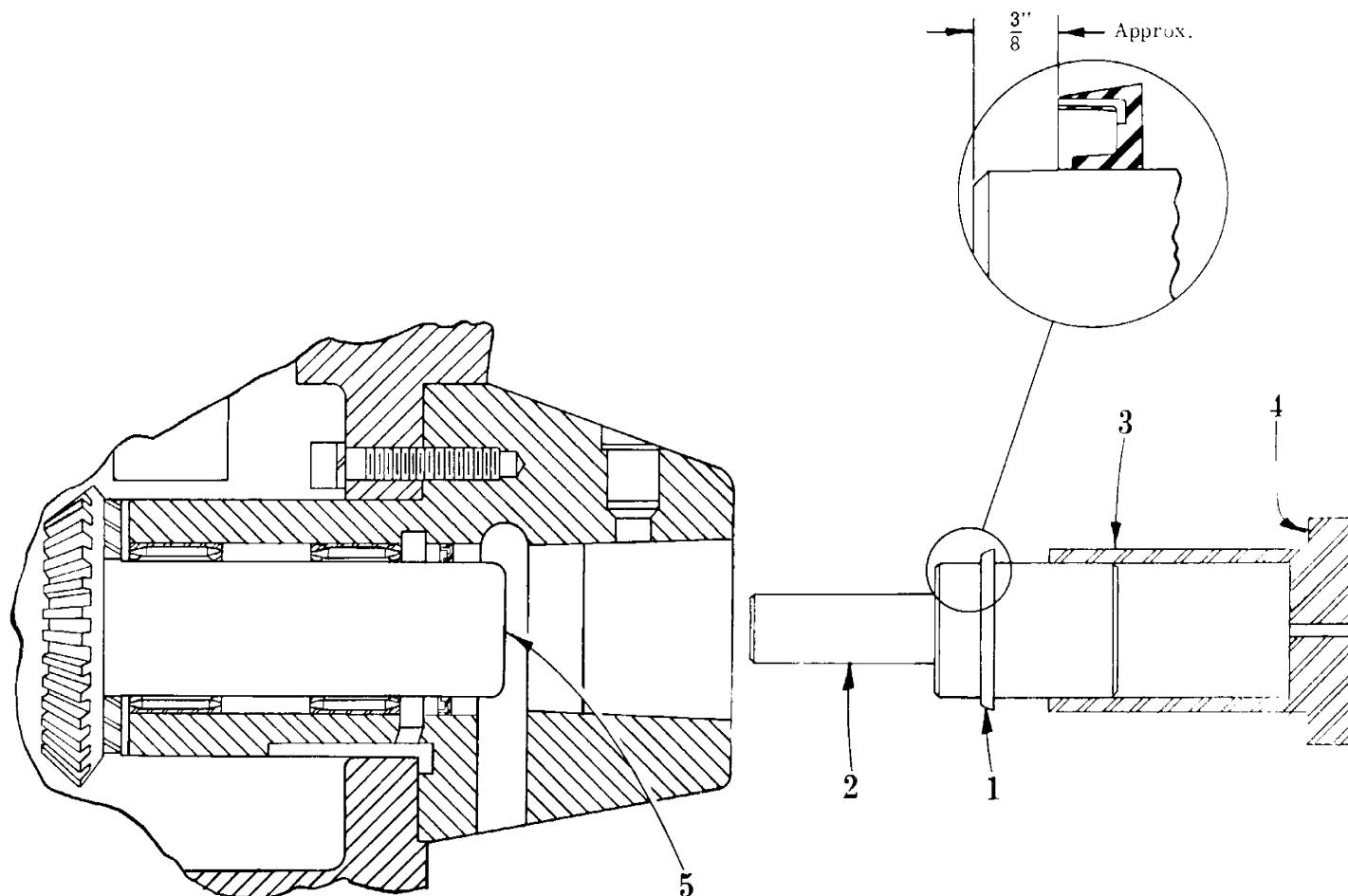
POWER FLOW

TECHNICAL SERVICE BULLETIN

NATIONAL SERVICE DEPARTMENT

THE HOBART MANUFACTURING COMPANY TROY, OHIO

D-300 MIXER - Attachment Hub Seal



Should oil leakage occur at the attachment hub due to a worn or improperly assembled seal, a tool (#55460) is now available to quickly and correctly assemble a new seal. With this tool it is not necessary to remove the old seal or disassemble the transmission and the attachment hub.

For the seal (1) to function properly it must be assembled correctly. Lightly coat the seal with oil so that it will assem-

ble easily on the pilot (2) of the tool. The lip of the seal must be toward machine to approximate dimension, as shown in enlarged view. Slide pilot (with seal) into attachment hub until shoulder of pilot stops against attachment drive gear (5). Next position pressing sleeve (3). Gently tap the end of the pressing sleeve until shoulder (4) stops against attachment hub face.



S E R V I C E

TECHNICAL SERVICE BULLETIN

HOBART SERVICE

TROY, OHIO 45374-0001

MIXERS

VOL. 1 NO. 578A

May 1987

SUPS. TSB-578 DATED 4/20/84

D-300 MIXERS - SWITCH, TIMER, AND SWITCH PLATE

Increasing difficulties in obtaining switches from our vendor (Arrow Hart) have forced us to find suitable replacements from other manufacturers. At the same time these switch changes were made, a change from a spring-driven to a new motor-driven timer was also made. The motor-driven timers are 15 minute timers only. The thirty minute timer option has been discontinued. In some instances, these changes will require service kits to adapt new components to existing machines. This bulletin will identify these changes and their effects on service.

D-300 MIXERS-UNTIMED SINGLE PHASE OR THREE PHASE (W/O MAGNETIC STARTERS)

<u>MODELS</u>	<u>NEW ML's</u>	<u>CHANGES/SERVICE IMPLICATIONS</u>
---------------	-----------------	-------------------------------------

D-300	33460	
-------	-------	--

D-300D	33462	
--------	-------	--

The single phase switch (87711-99-4) is no longer available. To replace this switch (on units prior to the above ML's), order and install Service Kit #270309.

The old three phase switches (87711-99-2 and 87711-57-1) are no longer available. To replace either of these switches (on units prior to the above ML's), order and install a new switch (87711-206-1).

The single phase manual overload switch (87810-19-1) remains available. The previously discontinued three phase manual overload switch (87810-26-1) should be serviced using 87711-206-1.

Fig. 1

D-300 MIXERS-UNTIMED, SINGLE PHASE OR THREE PHASE

<u>MODELS</u>	<u>NEW ML's</u>	<u>CHANGES/SERVICE IMPLICATIONS</u>
D-300 D-300D	33460 33462	New switches and switch plates which are not direct replacements for the old. Old switches (87711-102-1) and switch plate (117851) are no longer available. To replace either of these items (on units prior to the above ML's), order and install a switch and plate service kit (291824).

Fig. 2

The switch and plate service kit (291824) consists of the following items.

Qty.	Part Number	Description
1	291723	Switch Plate
1	87711-183-1	Start Switch
1	87711-183-2	Stop Switch
4	65890-233	Adapter Terminal
4	SC-13-12	#6 Screw
1	102467-1	Cap, Black
1	102467-2	Cap, Red
1	F14615	Electrical Diagram
1	F14616	Electrical Diagram

This kit is installed in the following manner:



⚠ WARNING DISCONNECT ELECTRICAL POWER TO THE MIXER AND PLACE A TAG ON THE CIRCUIT BREAKER INDICATING IT IS BEING SERVICED.

1. Remove the switch plate assembly by removing screws which secure it.
2. Assemble the switches to the new plate. The switch with the black button (START) should be installed in the upper hole and the switch with the red button (STOP) should be installed in the lower hole. Both switches should be installed so the common terminals are on the left side when viewed from the front of the plate. Four #6 screws are provided to mount the switches.
3. Install the adapter terminals so the ring terminal connections are made behind the switch.
4. Make wiring connection using the electrical diagrams provided.
5. Install the appropriate electrical diagram on the electrical box cover.
6. Install the new switch plate assembly.
7. Install the rubber caps on the switch plate ferrules (red-stop; black-start).
8. Reconnect electrical power and check operation.

D-300T AND DT MIXERS-TIMED, SINGLE PHASE OR THREE <NL>&TAB;PHASE (WITH MAGNETIC STARTERS)

<u>MODELS</u>	<u>NEW ML's</u>	<u>CHANGES/SERVICE IMPLICATIONS</u>
D-300T D-300DT	33461 33463	<p>New switches, new motor-driven timer, and new switch plate which are not directly interchangeable with the old components. The 30 minute timer option has been discontinued.</p> <p>The old switches (87711-102-1) timers (103228 and 103229), and switch plate (117852) are no longer available. To replace any of these components (on units prior to the above ML's), order the appropriate switch, plate, and timer service kit listed below:</p> <p>291825-1 115V./60 Hz. 291825-2 230V./60 Hz. 291825-3 115V./50 Hz. 291825-4 230V./50 Hz.</p> <p><u>NOTE:</u> The voltage specifications of these service kits depict the rated voltage of the new timer. The 115V service kits are used to service machines which have pilot circuits.</p>

Fig. 3

These kits consist of one of the following timers.

- 294650-4-5 115V./60 Hz.
- 294650-4-6 230V./60 Hz.
- 294650-4-7 115V./50 Hz.
- 294650-4-8 230V./50 Hz.

and the following other components.

Qty.	Part Number	Description
1	291725	Switch Plate
1	87711-183-1	Start Switch
1	87711-183-2	Stop Switch
1	291751	Insulator
4	65890-233	Adapter Terminal
1	87532-114	Lead Wire Assembly-Butt Splice<
1	87532-120	Lead Wire Assembly-Transformer
1	87532-151	Lead Wire Assembly
2	SC-13-07	Screw #5
1	291748	Knob
4	SC-13-12	Screw #6
1	SC-27-28	Screw #8
1	WL-11-01	Lockwasher #8

Qty.	Part Number	Description
1	NS-10-11	Nut #8
1	102467-1	Cap, Black
1	102462-2	Cap, Red
1	65890-85	Line Splice
1	F14615	Electrical Diagram - 1 Phase
1	F14615	Electrical Diagram - 1 Phase
1	F14616	Electrical Diagram - 3 Phase

To Install This Kit:



⚠ WARNING DISCONNECT ELECTRICAL POWER TO THE MIXER AND PLACE A TAG ON THE CIRCUIT BREAKER INDICATING IT IS BEING SERVICED.

1. Remove the switch plate assembly by removing the screws which secure it and disconnecting the wiring.

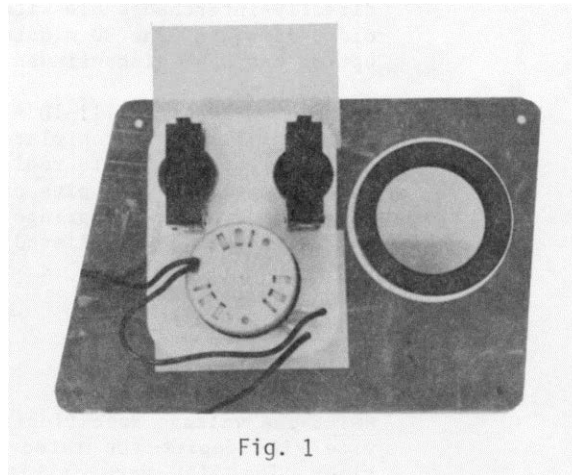


Fig. 4

2. Assemble the insulator and timer to the switch plate. The insulator should be positioned between the timer and the plate so the 3 holes for the timer are aligned and so the holes for the START and STOP switches align with those in the plate. Secure the timer using two #5 screws (Fig. 1).
3. Assemble the new switches to the switch plate. The switch with the black button (START) should be installed in the left hole and the switch with the red button (STOP) should be installed in the right hole (when viewed from the front of the plate). The switches should be mounted so the common terminals are toward the top of the plate and the insulator is trapped between the switches and the plate (Fig. 1).
4. Install the adapter terminals on the switches so the ring terminal connections are made behind the switch.
5. Make wiring connections using the appropriate electrical diagram provided.

NOTE: Additional lead wires, a splice connector, and a #8 screw, lockwasher, and nut are provided to make these connections.

6. Affix the appropriate electrical diagram to the electrical box cover.
7. Install the switch plate assembly.
8. Reconnect electrical power and check operation.



S E R V I C E

TECHNICAL SERVICE BULLETIN

HOBART SERVICE

TROY, OHIO 45374-0001

MIXERS
VOL. 1 NO. 843E
November 1999
SUPS. TSB 843D DATED 1/01/01

TSB843 D330/D340/D340PFS MIXERS - FRONT MOTOR HOUSING SEAL, "O" RING, & HUB SEAL "O" RING ENHANCEMENTS - LOW LUBRICATION SYMPTOMS

PURPOSE

Current production of these models have the latest enhancement, which is a seal in the front motor housing. The new front motor housing/seal assembly can be identified by looking for a groove cut in the top of three mounting lugs.

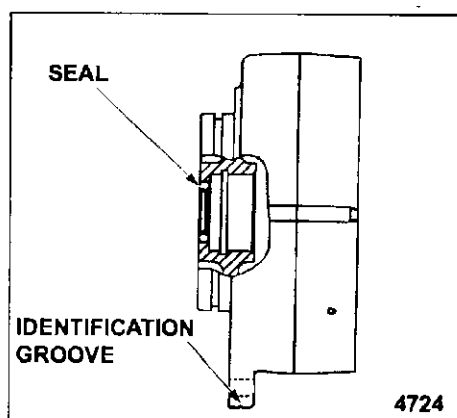


Fig. 1

REFERENCE MATERIAL

NOTE: The information for any disassembly/assembly required to perform these instructions should be obtained from D330 service manual, F-23771 (3/89) and this bulletin.

SYMPTOMS

1. Overload relay(s) cutting off.
2. Grease leak(s).
 - A. Out of reed switch housing (units with bowl guard).
 - B. Between pedestal and base.
 - C. At bottom of the planetary shaft.
3. Low transmission lubrication.

POSSIBLE CAUSES

1. Low transmission lubrication can create a mechanical condition where the motor ampere draw causes the overload relay(s) to trip.
2. Air pressure in the transmission can cause a leak and/or a breakdown of the lubrication.
3. Lack of an "O" ring in the planetary shaft sub-assembly and/or lack of an "O" ring and a seal in the front motor housing.

SOLUTION

- The factory on a temporary basis drilled a 1/8" hole in the friction plug in the transmission case cover assembly. This provides an air vent for the transmission. Current production units have the air vent in the transmission case cover assembly.

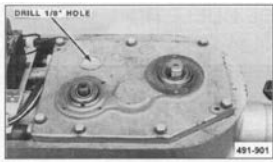


Fig. 2



Fig. 3

- The transmission lubrication has changed to Chevron FM 0 and is 9 lbs.
The proper lubrication amount brings the level to the center line of the motor worm gear when mixer is running and lubricant is warm. The lubrication level can be observed by removing the friction plug.
- An "O" ring enhancement was made to the hub seal of the planetary shaft sub-assembly.
- An "O" ring and seal enhancement was made to the front motor housing.

INSTRUCTIONS

1. Repair any grease leak(s).
A. If a leak from the bottom of the planetary shaft is present determine the parts required from the following chart and install them per the illustration shown.

PLANETARY SHAFT PARTS			
Part No.	Description	To Replace Use	Qty.
274040	Planetary Shaft Sub-Assembly	437603	1
271224	Hub Seal	437599 and	1
-----	"O" Ring	67500-70	1

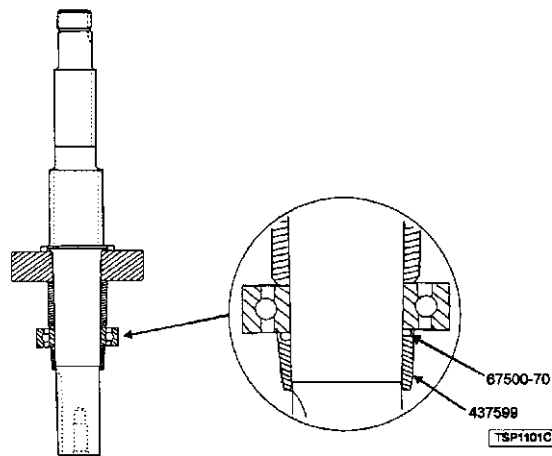


Fig. 4

- B. If grease was observed running from under the mixer, out of the reed switch housing (units with bowl guard) or between the pedestal and the base, it may be necessary to remove and disassemble the motor for removal of any grease present. If grease is present, clean the motor and order the front motor housing/seal assembly, part #873505-2 and "O" ring, part # 67500-126.

- 1) Install the parts per the illustration shown.

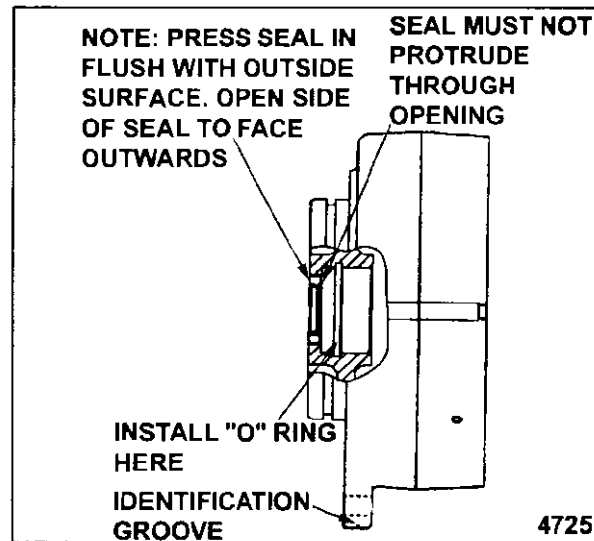


Fig. 5

NOTE: Anytime the previous front motor housing, part #271254-2 is ordered, the front motor housing/seal assembly part # 873505-2 will be sent. The "O" ring part #67500-126 must be ordered and installed.

Once the front motor housing/seal assembly is present, the individual seal part # 873508 can be ordered as a service part.

2. Check to see if an air vent is present in the friction plug or the transmission case cover assembly. If none is present, remove the friction plug and hand drill a 1/8" hole in the center.
3. Remove the grease and clean the transmission case. Inspect the components for any needed replacement.
4. Partially fill the transmission case with Chevron FM O to the level where the bottom of the motor worm gear will run in the lubrication.
5. Run the mixer and transmission for approximately ten minutes or until the transmission is warm and the grease is moving easily. This allows the lubrication to settle into the transmission.
6. Top off the lubrication by adding Chevron FM O until level with the center line of the motor worm gear and/or 9 lbs. have been installed.

7. Reassemble mixer and check for proper operation and leaks.



S E R V I C E

TECHNICAL SERVICE BULLETIN

HOBART SERVICE

TROY, OHIO 45374-0001

MECHANICAL STARTING MECHANISM INFORMATION

A120, A200 AND D300 SERIES MOTORS

Purpose

The parts to service the mechanical starting mechanism shown are changing due to tooling deterioration.

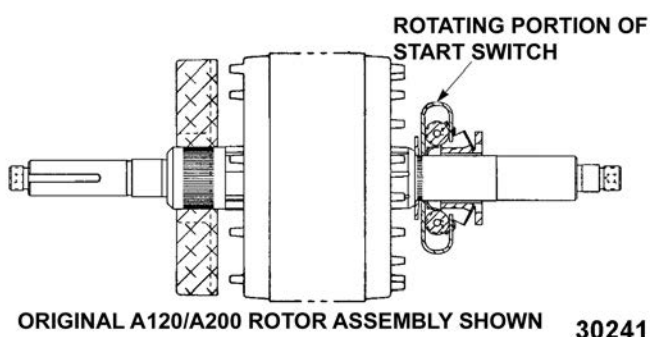
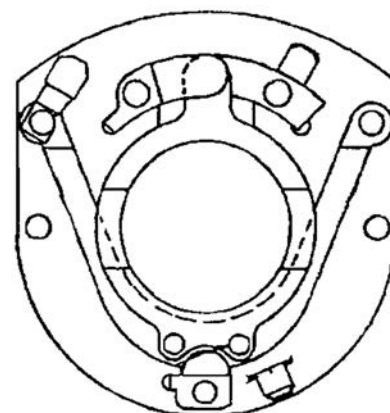
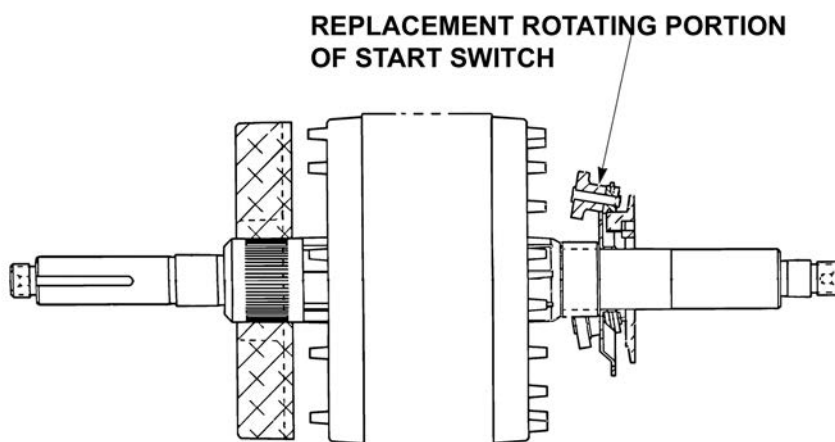


Fig. 1

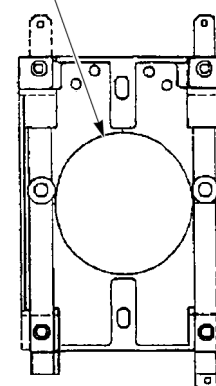
ORIGINAL STATIONARY
PART OF SWITCH 30242
Fig. 2

When the **original rotor assembly** is replaced, a **new rotor assembly and a kit must be ordered**. If any of the **components of the original mechanical starting mechanism** (operating sleeve, rotating part of starting switch, tension springs or stationary switch assembly) are required, **a kit must be ordered**.



REPLACEMENT A120/A200 ROTOR ASSEMBLY SHOWN

Fig. 3

REPLACEMENT
STATIONARY SWITCH

30244

Fig. 4

Parts Information

The kit part number required in all situations is determined by the hertz of the unit. Unit Hertz Order Kit Part No.

Unit Hertz	Order Kit Part No.
60 HZ.	873435
50 HZ.	873436

If a kit is being used along with a new rotor assembly the shaft spacer and the rotor actuator switch in the kit will not be required, they are already installed on the rotor assembly.

Installation Instructions are included in the kits.

The kits consists of the following parts.

----- Not a service part.

Part Number In Kit	Description	60 Hertz Kit Part Number 873435	50 Hertz Kit Part Number 873436
-----	Shaft Spacer	1	1
73156	Switch Insulator	1	1
119858-1	Switch Insulator	1	1
74269-8	Rotor Actuator Switch	1	
74269-9	Rotor Actuator Switch		1
WL 003-9	Lockwasher	2	2
WS 023-15	Washer	2	2
SC 009-67	Machine screw	2	2
NS 009-7	Nut	2	2
-----	F-24887 Installation Instructions	1	1

Original Part Number	Description	Order
21607	Operating Sleeve	Kit
23706-1	Tension Spring (60 HZ.)	Kit No. 873435
23706-2	Tension Spring (50 HZ.)	Kit No. 873436
88428	Rotor Switch Assembly	Kit
114306	Stationary Switch Assembly	Kit
22275-257	(A120 & A200) Rotor Assembly (60 HZ.)	Kit No.873435 & 22275-280 Rotor Assembly (60 HZ.)
22275-258	(A120 & A200) Rotor Assembly (50 HZ.)	Kit No. 873436 & 22275-281 Rotor Assembly (50 HZ.)
22275-104	(0300) Rotor Assembly (60 HZ.)	Kit No. 873435 & 22275-282 Rotor Assembly (60 HZ.)
22275-105	(0300) Rotor Assembly (50 HZ.)	Kit No. 873436 & 22275-283 Rotor Assembly (50 HZ.)

Service Information

These models can be serviced using A120 and A200 service manual F-46048 (12-86), 0300 service manual F- 4656A (10-83) and the information in this bulletin.



S E R V I C E

TECHNICAL SERVICE BULLETIN

HOBART SERVICE

Miscellaneous

VOL. 1 NO. 630

September 1985

TROY, OHIO 45374-0001

TSB 630 ARROW HART OVERLOAD RELAY & HEATER REPLACEMENT

INTRODUCTION

Increasing difficulties in obtaining replacement parts from our vendor (Arrow Hart) has forced us to find a suitable replacement. Thermal Overload Relays, Part Numbers P-88196-1-1 and P-88196-2-1 are no longer available.

If you encounter a machine that is equipped with Arrow Hart Thermal Overload Relays, and either the Thermal Overload Relay or the Overload Relay Heater Element requires replacement, order and install a Furnas Thermal Overload Relay, Part Number P-88196-6-1 and the appropriate Overload Relay Heater Element from the chart below.

Furnas Overload Relay Heater Elements and Arrow Hart Overload Relay Heater Elements are not interchangeable.

FOR USE WITH THERMAL OVERLOAD RELAY P/N 88196-6-1 ONLY

FOR USE WITH THERMAL OVERLOAD RELAY PART #88196-6-1 ONLY

TYPE MOTOR AND HORSEPOWER	MOTOR/MACHINE NAMEPLATE VOLT - HZ-PH - AMPS		THERMAL OVERLOAD RELAY HEATER ELEMENT PART NO.
LM 1/3 HP	100-115/60/1	4.4	C-112235-31
	200-230/60/1	2.2	-23
	200-230/60/3	1.25	-17
	400-460/60/3	0.63	-8
	550-600/60/3	0.50	-6
	110-120/50/1	4.94	-32
	220-240/50/1	2.58	-24
	200-240/50/3	1.25	-17
FTC 1/2 HP	346-415/50/3	0.70	-9
	200-230/60/3	1.6	C-112235-19
	400-460/60/3	0.8	-11
	550-600/60/3	0.7	-9
	200-240/50/3	2.0-2.2	-23
SMRS 1/2 HP	346-415/50/3	1.3	-17
	200-230/60/1	3.0	C-112235-26
	200-230/60/3	1.6	-19
	400-460/60/3	0.8	-11
	220-240/50/1	3.5	-28
VAC 1/2 HP	200-240/50/3	1.8	-20
	346-415/50/3	1.1	-16
	200-230/60/1	3.5	C-112235-29
	200-230/60/3	2.2	-23
	400-460/60/3	1.1	-16
AM 8 AM 9 AM 10 AM 11 1 HP	220-240/50/1	3.4	-28
	200-240/50/3	1.7	-19
	346-415/50/3	1.0	-14
	100-115/60/1	11.1	C-112235-41
	200-230/60/1	5.5	-33
	200-230/60/3	2.8	-25
	400-460/60/3	1.4	-18
	550-600/60/3	1.1	-14
1 HP	110-120/50/1	11.5	-41
	220-240/50/1	5.75	-34
	200-240/50/3	3.1	-27
	346-415/50/3	2.0-1.6	-22

Fig. 1

FOR USE WITH THERMAL OVERLOAD RELAY P/N 88196-6-1 ONLY (Continued)

FOR USE WITH THERMAL OVERLOAD RELAY PART #88196-6-1 ONLY

TYPE MOTOR AND HORSEPOWER	MOTOR/MACHINE NAMEPLATE VOLT - HZ-PH - AMPS		THERMAL OVERLOAD RELAY HEATER ELEMENT PART NO.
AM 12	200-230/60/1	7.8	C-112235-38
	200-230/60/3	4.0	-30
1 HP	400-460/60/3	2.0	-22
	550-600/60/3	1.5	-18
	220-240/50/1	8.4	-39
	200-240/50/3	4.4	-31
	346-415/50/3	2.6	-25
C 44	200-230/60/1	9.5	C-112235-40
	200-230/60/3	4.5	-31
1-1/2 HP	400-460/60/3	2.3	-23
	220-240/50/1	9.8	-40
	200-240/50/3	5.2	-33
	346-415/50/3	2.9	-26
C 44	200-230/60/1	11.3	C-112235-41
	200-230/60/3	5.4	-34
2 HP	400-460/60/3	2.7	-25
	550-600/60/3	2.2	-23
	220-240/50/1	11.3	-41
	200-240/50/3	6.0	-34
	346-415/50/3	3.3	-28
CS 120	200-230/60/3	4.3	C-112235-31
	400-460/60/3	2.2	-24
1-1/2 HP	550-600/60/3	1.7	-20
	200-240/50/3	5.6	-34
	346-415/50/3	3.2	-28
CS 120	200-230/60/3	5.5	C-112235-34
	400-460/60/3	2.7	-26
2 HP	550-600/60/3	2.2	-24
	200-240/50/3	6.4	-36
	346-415/50/3	3.7	-30
FTP	200-230/60/3	4.3	C-112235-30
	400-460/60/3	2.2	-23
1-1/2 HP	200-240/50/3	5.6	-33
	346-415/50/3	3.2	-27
FTP	200-230/60/3	5.5	C-112235-34
	400-460/60/3	2.7	-25
2 HP	550-600/60/3	2.2	-23
	200-240/60/3	6.4	-35
	346-415/50/3	3.7	-29
FTP	200-230/60/3	8.1	C-112235-38
	400-460/60/3	4.0	-30
3 HP	200-240/50/3	8.5	-39
	346-415/50/3	4.9	-32

Fig. 2

FOR USE WITH THERMAL OVERLOAD RELAY P/N 88196-6-1 ONLY (Continued)

FOR USE WITH THERMAL OVERLOAD RELAY PART #88196-6-1 ONLY

TYPE MOTOR AND HORSEPOWER	MOTOR/MACHINE VOLT - HZ-PH-	NAME PLATE AMPS	THERMAL OVERLOAD RELAY HEATER ELEMENT PART NO.
4346 7-1/2 HP	200-208/60/3	22.8-22.0	C-112235-47
	220-230/60/3	20.8-20.0	-46
	400/60/3	11.4	-41
	440-460/60/3	10.4-10.0	-59
	550-575/60/3	8.3-7.6	-38
	220/50/3	21.0	-46
4732 3 HP	380/50/3	12.2	-42
	208/60/1	19.5	C-112235-46
	230/60/1	17.9	-45
	208/60/3	8.6	-40
	220/60/3	8.1	-39
	440/60/3	4.1	-31
	550/60/3	3.3	-29
	220/50/1	17.5	-45
	220/50/3	8.2	-39
	380/50/3	4.8	-32
4632 2 HP	415/50/3	4.4	-31
	208-230/60/1	13.2-12.5	C-112235-42
	208-220/60/3	6.5-6.1	-35
	440/60/3	3.1	-27
	550/60/3	2.5	-25
	200-220/50/1	13.5-12.2	-42
	190-220/50/3	7.3-6.3	-35
	346-380/50/3	4.0-3.7	-30
	415/50/3	3.4	-29

Fig. 3

DISPOSER MOTORS USED ON FR-FRC DISHWASHERS ONLY

FOR USE WITH THERMAL OVERLOAD RELAY PART #88196-6-1 ONLY

TYPE MOTOR AND HORSEPOWER	MOTOR/MACHINE VOLT - HZ-PH-	NAMEPLATE AMPS	THERMAL OVERLOAD RELAY HEATER ELEMENT PART NO.
1-1/2 HP	208-220/50/3	4.8	C-112235-32
	440/50/3	2.4	-24
2 HP	208-220/50/3	6.0	-34
	440/50/3	3.0	-27
3 HP	208-220/50/3	8.8	-39
	440/50/3	4.4	-31
5 HP	208-220/50/3	14.2	-42
	440/50/3	7.1	-37

Fig. 4



S E R V I C E

TECHNICAL SERVICE BULLETIN

HOBART SERVICE

TROY, OHIO 45374-0001

Mixers

VOL. 1 NO. 667

February 1987

D300 MIXER - MANUAL START SWITCH CHANGES

BACKGROUND

In 1984, due to a suppliers production phase out, the D-300 untimed single phase On/Off Switch was changed to P/N 87711-212-1.

Technical Service Bulletin No. 578A, dated May 20, 1987</REFER>, explained the service implications of this change.

NOTE: The most recent D-300 Parts Catalog, F-14797 (2-84), does **not** show the 87711-212-1 switch).

PROBLEM

As the result of a field report, we have discovered that the untimed D-300 switch actuator can bind on the switch lever. This may cause difficulty in turning the switch to its fully off position. Although the mixer may stop, it could restart unexpectedly.

SOLUTION 1 PHASE MIXERS

For **single-phase** machines, the 87711-212-1 switch must be removed and replaced. To accomplish this, Service Kit 270309 contains the following:

87711-184-1	Switch
270326	Switch Rod
WS-08-04	Washer
SC-27-28	Screw
WL-07-11	Washer
NS-10-11	Nut
F-16483	Wiring Diagram
F-23648	Installation Instructions

SOLUTION 3 PHASE MIXERS

For **three-phase** machines, instructions on how to check for the proper orientation of the Switch Actuating Rod (P/N 121237) and correct, if necessary, are shown in Fig. 1.

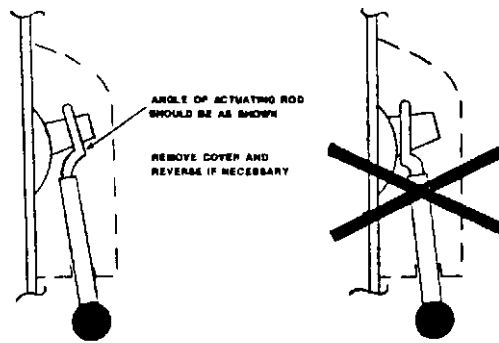


Fig. 1

Fig. 1

INSTALLATION INSTRUCTIONS

⚠ WARNING UNPLUG UNIT BEFORE SERVICING.

1. Position shifter handle in second gear. Loosen set screw and remove handle.
2. Remove four screws from switch plate and remove plate.
3. Disconnect wires from start switch.
4. Remove shifter handle grommet and switch rod and housing assembly from switch plate.
5. Assemble new switch plate.
 - A. Install toggle switch to switch plate.
 - 1) Run first hex nut as far down switch barrel as it will go.
 - 2) Assemble switch, flat washer, lockwasher and remaining hex nut to switch plate as shown in Fig. 2.

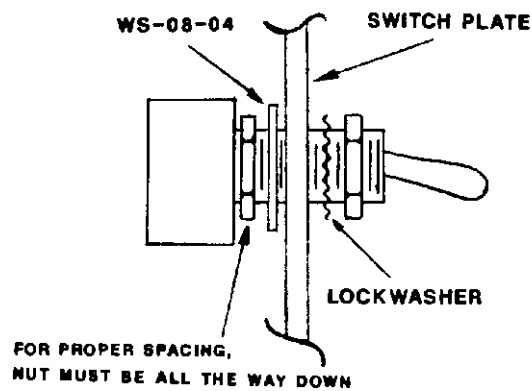


Fig. 2

Fig. 2

- B. Assemble new switch rod (utilizing existing knob and sleeve) to switch rod housing and install housing to switch plate. Check that the switch operates and there is no interference with rod, switch and housing.
 - C. Install shifter handle grommet to switch plate.
6. Connect wires L2 and T2 with nut (NS-10-11), screw (SC-27-28) and lockwasher (WL-07-11) and tape with thermoplastic electrical tape. A minimum of 4 layers of tape is required.
7. Connect wires L1 and T1 to toggle switch and install switch plate to mixer.
8. Install shifter handle.
9. Install new electrical diagram over existing electrical diagram.
10. Check mixer for proper operation.

PRESENT PRODUCTION MIXERS

In order to expedite this change, some production mixers will be built using a modified version of the existing switch plate along with an adaptor plate. These parts will **not** be available for service replacement. Should the adaptor plate or switch plate become lost or damaged, a new switch plate (270325) will have to be installed (see Fig. 2). Proper assembly of this modified version is shown in Fig. 3. These mixers also utilize the old style switch rod and should be installed as shown in Fig. 1.

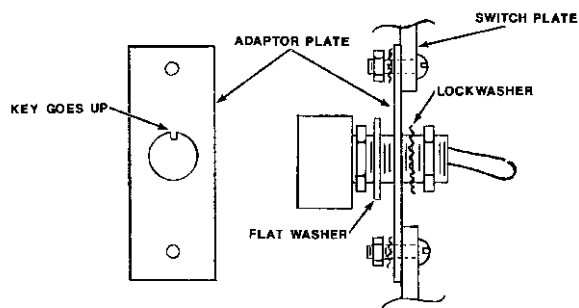


Fig. 3

Fig. 3



S E R V I C E

TECHNICAL SERVICE BULLETIN

HOBART SERVICE

Mixers

VOL. 1 NO. 916

August 1994

TROY, OHIO 45374-0001

D300 UPDATE KITS - PART NOS. 438820-1, -2, -3 & -4

INTRODUCTION

These kits are designed to update an untimed D300 mixer built without a contactor, to an untimed mixer with a contactor and overload relay.

PARTS INFORMATION

- - - indicates part is not a service

Part No.	Description	Qty.	Kit No.
----	Control Panel Assembly	1	All
102467-1	Cap - Push Button (Start)	1	All
102467-2	Cap - Push Button (Stop)	1	All
87711-183-1	Push Button (Start) (Black)	1	All
87711-183-2	Push Button (Stop) (Red)	1	All
NS-10-11	Hex Nut 8-32	2	All
WL-1 1 -01	Lockwasher	5	All
SC-27-28	Machine Screw 8-32 x 1/4" (Brass)	2	All
65890-21	Terminal	6	All
65890-29	Insulated Connector	1	438820-1
		1	438820-2
110961	Shifter Handle Grommet	1	All
SC-13-12	Mach. Screw 6-32 x 1/4" Flat Hd.	4	All
291723	Plate - Switch<	1	All
----	Start Switch Wiring Harness	1	All
----	Lead Wire Assemblies	As Required	All
112235-17	Overload Heater Element	3	438820-4
112235-24	Overload Heater Element	3	438820-3
112235-32	Overload Heater Element	1	438820-2
112235-33	Overload Heater Element	1	438820-2
112235-40	Overload Heater Element	1	438820-1
112235-59	Overload Heater Element	1	438820-1
F-14589	Wiring Diagram	1	438820-1
		1	438820-2
F-14590	Wiring Diagram	1	438820-3

Part No.	Description	Qty.	Kit No.
		1	438820-4
SC-007-37	Machine screw 8-32 x 1/4" (Steel)	3	438820-3
		3	438820-4
65890-23	Butt Splice	6	All
502374	Wire	2 FT.	All
F-19167	Wiring Diagram	1	438820-2
		1	438820-1

The individual service part numbers available for the control panel assembly can be found in the Catalog of Replacement Parts F-16971 (10/88). The wiring diagrams can be ordered from the Literature Center, Troy, OH.

SPECIAL TOOLS REQUIRED

- Suggested crimping tool, T & B No. WT-111-M or Amp No. 47386
- No. 33 Electrical Tape, part no. 508494

INSTALLATION INSTRUCTIONS

⚠ WARNING DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AT THE MAIN CIRCUIT BOX. PLACE A TAG ON THE CIRCUIT BOX INDICATING THE CIRCUIT IS BEING SERVICED

1. Remove shifter handle assembly and grommet. Discard grommet.
2. Remove switch plate screws (save screws).
3. Disconnect switch wiring and discard switch plate with switch.
4. Tilt mixer forward and block up back legs 3-1/2" to 4" to prevent grease leakage at motor opening.
5. Remove trim cap.
6. If unit is single phase and has a stationary start switch, disconnect wires.
7. Remove bearing bracket with bearing cap and rotor by removing four screws.
8. Remove lead wire retainer.
9. Remove cover and gasket assembly (capacitor and starter access).

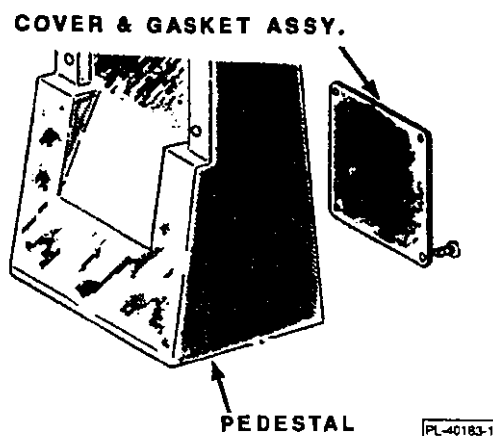


Fig. 1

10. If unit is single phase, disconnect wiring to capacitor and electronic start switch (if present).
 - A. Remove screws and washers holding capacitor mounting plate to pedestal and save them.
 - B. Discard mounting plate with capacitor and electronic start switch (if present).

11. Install the proper overload heater element(s) (as listed below) in the overload relay on the control panel assembly.

Electrical Application	Part No.	Vendor No.	Qty.
115V/60Hz./1 Phase	112235-59	E-54	1
115V/50Hz./1 Phase	112235-40	E-53	1
200V/60Hz./1 Phase	112235-33	E-46	1
230V/60Hz./1 Phase	112235-33	E-46	1
220V/50Hz./1 Phase	112235-32	E-44	1
230V/60Hz./3 Phase	112235-24	E-33	3
200V/60Hz./3 Phase	112235-24	E-33	3
220V/50Hz./3 Phase	112235-24	E-33	3
460V/60Hz./3 Phase	112235-17	E-24	3
380V/50Hz./3 Phase	112235-17	E-24	3
415/50Hz./3 Phase	112235-17	E-24	3

12. If the unit is single phase and originally had an electronic start switch, reconnect the wiring to the capacitor and electronic start switch on the control panel assembly.

- A. If the unit has a stationary start switch, remove and discard the electronic start switch, and the lead wire assemblies from the capacitor to the electronic start switch and from the electronic start switch to the contactor.

NOTE: It may be necessary to extend the existing wires by using the butt splices and wire provided.

- 1) Reconnect existing wires to capacitor.

13. Install the lead wire assemblies and the start switch harness to the control panel components per the proper new wiring diagram and the branding on the wires.

NOTE: It may be necessary to loosen the top contactor mounting screw to swing the contactor out of the way so the control panel assembly will pass through the opening in the pedestal.

14. On a single phase unit install control panel assembly where capacitor mounting plate was removed using screws and washers saved in step 10A.

15. On a three phase unit, install control panel assembly at three tapped holes in pedestal at back of cavity, using 8-32 x 1/4" machine screws (Steel) and lockwashers in kit.

16. Assemble the start switch and stop switch to the switch plate using four screws provided.

- A. Install the proper switch cap on each switch.

17. Route and connect the lead wire assemblies and start switch harness from the control panel assembly per the proper new wiring diagram and the branding on the wires.

- A. The connections to motor leads with ring terminals should be made using the 8-32 x 1/4" screws (Brass), washers and nuts provided. Tape the connections.

- 1) On a single phase motor with quick connect leads an insulated connector must be installed between the T4 motor lead and the lead wire assembly to the overload T1.

- B. Any cord and plug or line connections to the contactor should be reterminated using the terminals provided.

- C. The existing lead wires from the old on/off switch should be pulled and discarded.

18. Install the switch plate assembly using screws saved in step 2.

19. Peel the backing from the proper wiring diagram and place over the original wiring diagram.

20. Reassemble the mixer in reverse order steps 9-4 and 1, installing the new grommet at step 1.

21. Power mixer and check for proper operation.



S E R V I C E

TECHNICAL SERVICE BULLETIN

HOBART SERVICE

MISCELLANEOUS

VOL. 1 NO. 550B

August 2016

TROY, OHIO 45374-0001

MACHINE DATA CODE INFORMATION

INTRODUCTION

Since January 1, 2002, all Hobart equipment, except microwave ovens, have been marked with a three-letter date code to eliminate duplication at the end of the two-letter date code numbering cycle (i.e. 23 assigned letters for a 23 year date code numbering cycle). Microwave ovens are marked with the month and year as outlined under Manufacture Date (item 2).

Between January 1985 and January 2001 all Hobart equipment, *except* microwave ovens, were marked with a two letter date code.

Refer to manufacturing date code tables.

MANUFACTURE DATE

1. All Hobart equipment is marked with a manufacturing date code in the CODE or MD section on the machine data plate with the exception of microwave ovens. If the CODE or MD section is not available, the manufacturing date code should be marked in the far right of the serial number section. The manufacturing date code will not become part of the serial number.

Exception: Refrigeration equipment is marked with the manufacturing date code directly following the serial number; or with the two-digit numerical date (Month & Year) in the DATE section.

2. Microwave ovens are marked with a manufacturing date code in the section designated on the machine data label per UL 923. The month and year of manufacture are both marked without abbreviation, with the year shown as a four-digit number on the machine data label. Example: January 2005.

MANUFACTURING DATE CODES AFTER JANUARY 1, 2002					
*First Letter = Month	*Second and Third Letters = Year				
A = JAN	AA = 2001	AN = 2013	BB = 2025	BP = 2037	CC = 2049
E = FEB	AB = 2002	AP = 2014	BC = 2026	BR = 2038	CD = 2050
R = MAR	AC = 2003	AR = 2015	BD = 2027	BS = 2039	CE = 2051
P = APR	AD = 2004	AS = 2016	BE = 2028	BT = 2040	CF = 2052
Y = MAY	AE = 2005	AT = 2017	BF = 2029	BU = 2041	CG = 2053
U = JUN	AF = 2006	AU = 2018	BG = 2030	BV = 2042	CH = 2054
L = JUL	AG = 2007	AV = 2019	BH = 2031	BW = 2043	
G = AUG	AH = 2008	AW = 2020	BJ = 2032	BX = 2044	
T = SEP	AJ = 2009	AX = 2021	BK = 2033	BY = 2045	
C = OCT	AK = 2010	AY = 2022	BL = 2034	BZ = 2046	
N = NOV	AL = 2011	AZ = 2023	BM = 2035	CA = 2047	
M = DEC	AM = 2012	BA = 2024	BN = 2036	CB = 2048	
* The letters I, O, and Q have been omitted for clarity.					

NOTE: For the year 2001, each manufacturing facility had the option of using the last letter of Y in the two letter date code format or begin using the second and third letters of AA in the three-letter date code format (if space was available on the data plate).

MANUFACTURING DATE CODES BETWEEN JANUARY 1985 AND JANUARY 2001					
*First Letter = Month		*Second Letter = Year			
A = JAN	L = JUL	A = 1980	G = 1986	N = 1992	V = 1998
E = FEB	G = AUG	B = 1981	H = 1987	P = 1993	W = 1999
R = MAR	T = SEP	C = 1982	J = 1988	R = 1994	X = 2000
P = APR	C = OCT	D = 1983	K = 1989	S = 1995	Y = 2001
Y = MAY	N = NOV	E = 1984	L = 1990	T = 1996	
U = JUN	M = DEC	F = 1985	M = 1991	U = 1997	

* The letters I, O, and Q have been omitted for clarity.

3. Before 1985, GE or Chicago Heights cooking equipment serial numbers included a manufacturing date code.

Serial number coding from 1962 to approximately 1984 for cooking equipment only.

M	C	A	0000*
Year of Manufacture	Class of Product	Month of Manufacture	Numerical Identification

*From 1962 to 1963, the number of digits used may vary.

*First Letter = Month		YEAR OF MANUFACTURE		CLASS OF PRODUCT		MONTH OF MANUFACTURE	
Year	Letter	Year	Letter	Product	Letter	Month	Letter
1962	K	1974	B	Cooking	C	JAN	A
1963	L	1975	C	Refrigeration	R	FEB	B
1964	M	1976	D	Sanitation	S	MAR	C
1965	N	1977	E			APR	D
1966	P	1978	F			MAY	E
1967	R	1979	G			JUN	F
1968	S	1980	H			JUL	G
1969	T	1981	J			AUG	H
1970	U	1982	K			SEP	J
1971	W	1983	L			OCT	K
1972	X	1984	M			NOV	L
1973	A					DEC	M

SERIAL NUMBER CODING BEFORE 1962 FOR GE OR CHICAGO HEIGHTS EQUIPMENT ONLY								
	1954	1955	1956	1957	1958	1959	1960	1961
COOKING								
Heavy Equipment	4-0000	B-0000	F-0000	E-0000	C-0000	D-0000	G-0000	H-0000
Counter Equipment	4-0000	B-0000						
Griddles			BG0000	EG0000	CG0000	DG0000	BGG0000	HG0000
Food Warmers			BF0000	EF0000	CF0000	DF0000	GF0000	HF0000
Fry Kettles			BK0000	EK0000	CK0000	CK0000	GK0000	HK0000
Waffle Bakers			BW0000	EW0000	CW0000	DW0000	GW0000	HW0000

SERIAL NUMBER CODING BEFORE 1962 FOR GE OR CHICAGO HEIGHTS EQUIPMENT ONLY								
	1954	1955	1956	1957	1958	1959	1960	1961
REFRIGERATION								
Water Coolers	24600000 to 24999999	55400000 to 55807000	70060000 to 70099999	70190000 to 70199999	70230000 to 70239999	70300000 to 70335000	70335700 to 70359100	70359101 to 70386665
SANITATION		Sanitation serial numbers will vary prior to 1968.						