

# SERVICE/PARTS MANUAL

## ELECTRIC FOOD MIXERS

### MODELS

B-12, W-12 (12 QT.)

B-20, W-20 (20 QT.)

F-20, U-20

F-30 (30 QT.)



**BLAKESLEE**  
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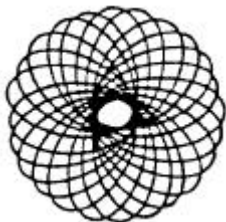
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## TABLE OF CONTENTS

	Page
INSTALLATION INSTRUCTIONS	2
DESIGN AND USE OF BEATERS, WHIPS & OTHER ACCESSORIES	4
MIXING INSTRUCTIONS	5
MIXING BOWL CAPACITY CHART	7
AVAILABLE BEATERS, WHIPS AND ACCESSORIES	8
OPERATION	12
TRANSMISSION REMOVAL AND DISASSEMBLY	14
TROUBLESHOOTING AND REPAIR INSTRUCTIONS	19
SUGGESTED SPARE PARTS LIST	21
ILLUSTRATED PARTS LIST	21
M-5-1505-E MIXER TRANSMISSION, MOTOR AND HOUSING	22
M-5-3330-D AND M-5-18769 MIXER TRANSMISSION, MOTOR AND HOUSING	24
MODEL F-30 COLUMN AND BASE ASSEMBLY	26
MODE LS B-12, W-12, B-20, W-20, F-20, U-20 SERIES COLUMN AND BASE ASSEMBLY	28
M-5-1505-E TRANSMISSION ASSEMBLY	30
M-5-3330 TRANSMISSION ASSEMBLY AND BLAKESLEE HUB AND M-5-18769 WITH UNIVERSAL HUB (TYPE B)	32
ELECTRICAL SYSTEM	34

Your Blakeslee-Built Mixer has been designed and engineered to assist you in the quick and easy preparation of fine tasting, quality foods. It is a valuable machine deserving the same maintenance and attention your automobile now receives. By following the suggestions in this booklet, your mixer will operate for many trouble-free years.

This booklet has been prepared to give you the necessary knowledge for correct operation and maintenance of your Blakeslee-Built Mixer.

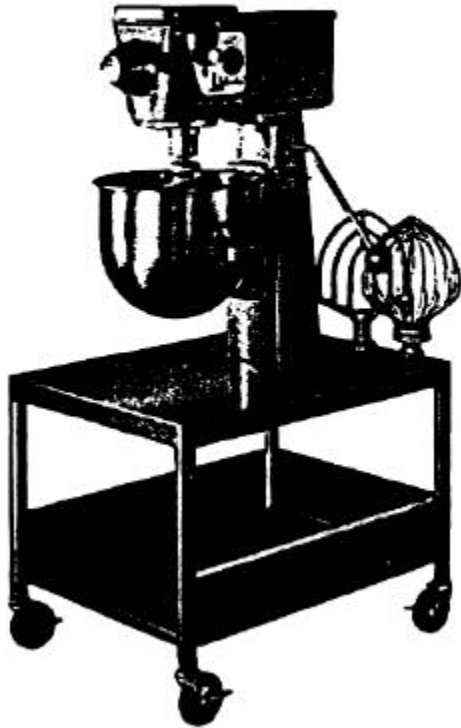


Every food service operator will be interested in the labor savings that Blakeslee Mixers make possible. Each beater, whip and attachment is engineered to perform specific jobs for you. The planetary action of Blakeslee Mixers (beater travels around the circumference of the bowl as it rotates) assures you of a perfectly blended mix every time.

*Diagram shows complete coverage of bowl by planetary action of beaters.*

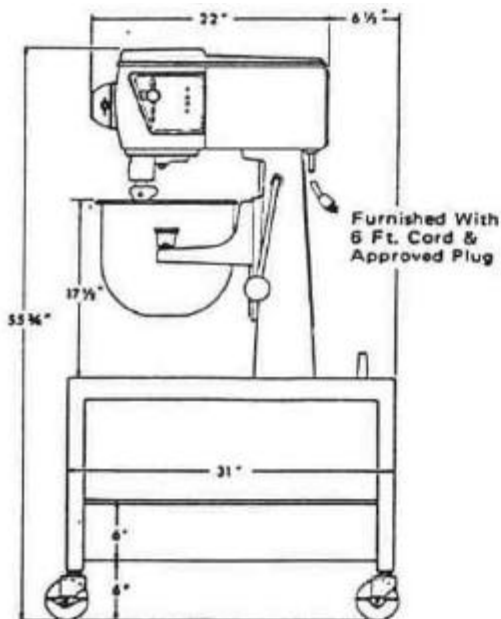
# Installation Instructions

## PORTABLE MODELS – U20

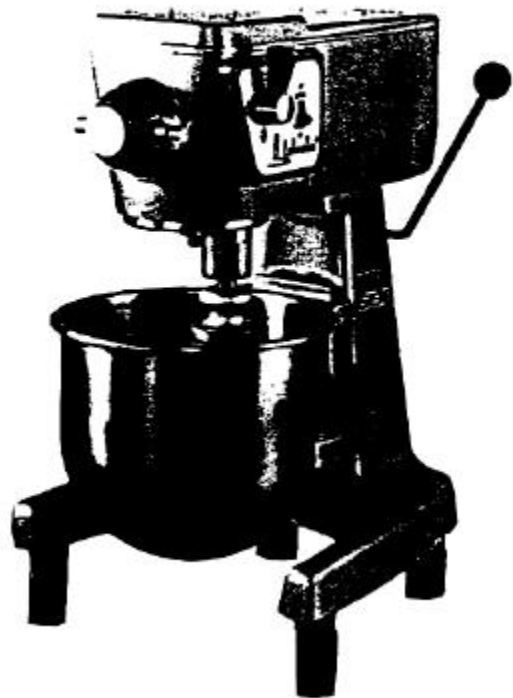


Portable model available only in 20 quart size.

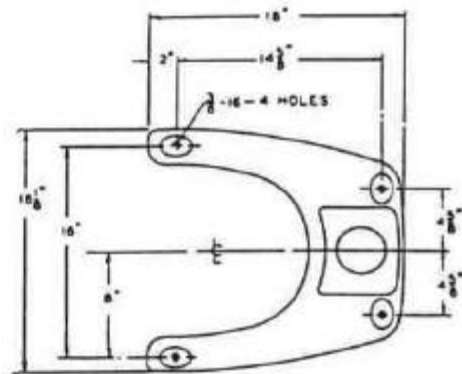
1. Store beaters and whips at rear of table top.
2. Lock all four casters before using mixer.
3. Refer to General Installation Instructions for further information.



## BENCH MODELS – B12, B20



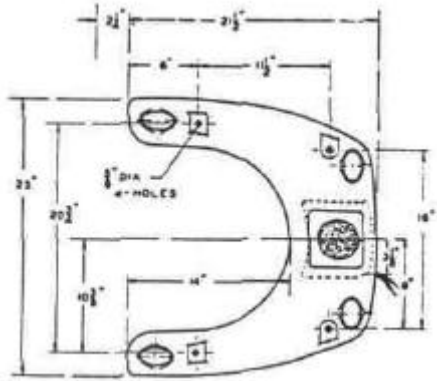
Select a location for your mixer that will save time and steps for the operator. Allow ample work space in front and to the sides of the mixer. Mixer should be mounted to a sturdily built table or bench approximately 25 inches high. Mounting mixer to bench will insure against mixer slipping on wet surface or tipping over from pressure exerted as attachments are used. Refer to mounting hole dimensional diagram.



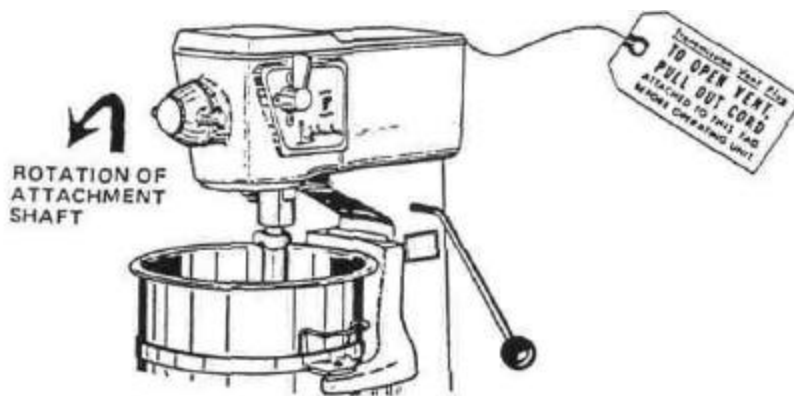
Drill four (4) 13/32" dia. holes in table or bench top per dimensions shown. Secure from underside of table top with four (4) 3/8 - 16 bolts (length as required by thickness of bench top).

## FLOOR MODELS F20, F30

Holes are provided for anchoring the mixer to the floor, but unless desired, bolting to the floor is not necessary except on shipboard use.



### GENERAL FOR ALL MODELS



#### 1. VENT PLUG SEAL REMOVAL

Remove vent plug seal from transmission case. Vent plug has been sealed with wax for shipment. To remove seal, pull on tagged string. Seal will completely pull out leaving vent open and machine ready to run.

#### 2. ELECTRICAL CONNECTIONS

**CAUTION:** Before making electrical connections be sure that current and voltage of the mixer are identical to those of electrical inlet lines.

12 and 20 quart, 110 volt mixers are furnished with a six (6) foot flexible cord. Cords for single phase motors are supplied with a 3 prong plug. Cords for 3 phase motors are supplied with a 4 prong plug.

On 30 quart mixers the line cord is to be supplied by the customer. Connections are made inside the mixer column through cover plate located on back side of column near the bottom. **NOTE:** A six (6) foot flexible, three (3) prong plug cord is available as an extra cost option.

**IMPORTANT:** On 3 phase mixers, after electrical connection has been made, be sure the mixer operates in a counter-clockwise direction as indicated by the arrow located above the attachment. Remove hub cover to observe shaft rotation. If electrical connection is reversed the transmission will not shift, nor will the planetary action function.

#### 3. TRANSMISSION OIL

After the first 200 hours of operation and every 6 months or 1000 hours of operation thereafter the transmission oil must be changed.

When adding or changing transmission oil use #50 heavy duty oil (Hydrol Master 500 or equivalent)

3 pints — M-5-3330 Trans.

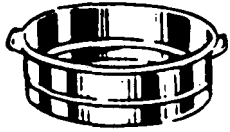
4 pints — M-5-1505 Trans.

## Design and Use of Beaters, Whips & Other Accessories

Each beater and whip has been designed to do a particular type of work. Use only that beater or whip for the work for which it was designed. For example: Never use a batter beater for mixing heavy doughs. Always use an "H" dough hook for dough work.

Following are illustrations of the different types of beaters and whips with an explanation of the work and the use for which they were designed.

### BOWL EXTENSIONS



Extension Rims are merely vertical sided Splash Covers. They are not covers in form, but do provide higher side walls to prevent throw-out of ingredients. Usually they are not recommended because they are often invitations to overloading a

machine beyond its point of maximum efficiency. Extension rims permit more air to enter the bowl and prevents splash of light ingredients. The true capacity of a Mixer is not the amount of material that can be put in the bowl or the amount of total batch which can be mixed within the power of the motor. The true capacities and the most efficient (therefore the best money makers) are the ideal loads which permit a Mixer to operate at peak efficiency, so far as development, yield or aeration have their effect on the mixing operation.

### SPLASH COVERS



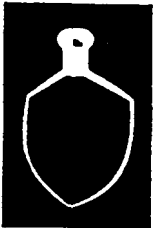
These items provide means for reducing splash or throw-out on certain mixes when, for reasons of speed, the operator prefers to start in a higher speed or progress quickly to a high speed in order to complete a batch. These are valuable accessories but should not be used to increase the mixing capacity of any particular machine, beyond its recommended maximum. They are convenience items, not capacity increasers. The best functioning of Blakeslee Mixers depends on leaving room for proper material aeration or manipulation. Use Splash Covers or Extenders only for containing ingredients. They are efficient for their intended use, but if a Mixer is overloaded and a Splash Cover is used, aeration is reduced due to restriction in the area where air enters the mix. The capacity chart located on the column of the Mixer is a good guide for maximum efficient use for the Mixer. Experience will have to dictate exact top capacity and Splash Cover use, under your own needs.

### "H" DOUGH HOOK



Used for mixing bread or roll dough of standard consistency, biscuits, meat loaf, etc. Dough hooks should always be operated at low speed only. Do not use other types of beaters for dough work; doing so will result in damage to either the beaters or to the mixer proper.

### "PK" PASTRY KNIFE



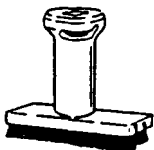
Used for cutting flour and shortening together in pie dough, pastry shells and for cutting lard or shortening into flour. The "PK" pastry knife should always be used for such work so that pie crusts, etc. are mixed with as little rubbing as possible and so that the shortening will be in small pieces to produce a flaky product.

### "B" BATTER BEATER



Furnished as part of standard equipment. Used for mixing batters such as cake and muffin batters, creaming butter, mashing potatoes and vegetables, light cakes, icings and the average run of light work. Never use this beater for heavy dough work. When mashing potatoes, etc., it is advisable to start with the bowl at its lowest position and then as the potatoes or other ingredients break up, the bowl should be gradually raised to its working position. This procedure eliminates severe strain to the beater and to the mixer proper and consequently adds to their life and efficiency.

### BRUSH BEATERS

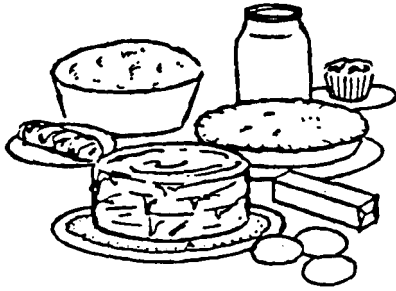


Used with soup strainer and colander attachment for making creamed soups such as pea, tomato, corn, potato, etc., also for making sauces such as cranberry sauce, applesauce, etc.

### "W" WIRE WHIP



Furnished as part of standard equipment. Used for whipping, creaming, beating eggs, meringues, small amounts of mayonnaise, icings and for whipping milk or cream into mashed potatoes after they have been broken up with "B" batter beater.



**FOR  
BEST  
RESULTS**

Operators have their own pet ways of operating their mixing machines, so no attempt will be made to set up iron clad instructions, but there are certain general principles that should be followed in the various operations. These general principles as listed below should be helpful to old and new operators.

**GENERAL POINTS FOR PROPER OPERATION**

**NOTE**

Refer to Mixing Chart before filling bowl.

1. Always start with the bowl in its lowest position.

**NOTE**

When mashing potatoes, kneading dough, or any operation of a similar nature, it is advisable to start the beating with the bowl at its lowest position and as the potatoes or other ingredients break up, the bowl should be gradually raised to its working position. This procedure eliminates severe strain to the mixer and consequently adds to its life and efficiency.

2. In general, start all mixing at slow speed.
3. Gradually raise bowl and its contents to working position.
4. Always return to slow speed when finishing a mix so as to leave the mixer at low speed ready for next operation.
5. In lowering the bowl keep pressure on the hand lever to prevent too fast lowering of the bowl and undue strain on the mixer.
6. Bowl should be filled to at least half capacity for best results.
7. Make sure that bowl-to-beater clearance is about 1/8". Place a 1/8" layer of paper on bottom of bowl to check bowl-to-beater clearance. See page 12 for instructions on how to raise or lower the bowl should adjustment be necessary for proper bowl-to-beater clearance.

**WHIPPING CREAM**

The "W" wire whip (refer to Beaters & Whip chart) should be used for whipping cream. Cream to be whipped should be 24 hours old, should contain 30% butter fat and should be well chilled, in fact near freezing temperature is desirable, since the cooler the cream, the better the whipping. Warm cream may turn into butter instead of whipped cream. Some operators like to use the "jacket for bowl" attachment to surround the whipping cream with cold water to maintain a cool temperature. To prevent splashing out of the bowl, start whipping the cream at slow speed and increase the speed as the cream thickens, or use a "bowl splash cover" attachment on the bowl.

**EGG WHITES**

Use the "W" wire whip and be sure that the eggs are at room temperature and that both the mixing bowl and "W" wire whip are free from all traces of fat or oil, or egg whites won't whip. In some installations one bowl will be kept and used exclusively for beating egg whites. Another bowl will be used exclusively for the oily type mixes. Start beating the eggs at low speed and gradually increase the speed.

**MERINGUES**

Use the "W" wire whip. Meringues can be made perfect by the gradual addition of sugar to eggs which have not been too stiffly beaten.

## **MAYONNAISE**

Use the "M" four wing whip (not available on 12 qt. models): however, on light batches the "W" wire whip can be used. The heavier construction of the "M" wing whips makes it more suitable for better day-in and day-out making of mayonnaise. Depending on the quantity of mayonnaise to be made, a 1 gallon, 2 gallon or 6 gallon Blakeslee-Built oil dropper attachment should be used. This oil dropper attachment is attached to the mixer and automatically adds oil to the batch at a controlled rate of flow. Most mayonnaise recipes contain whole eggs, corn or cottonseed oil, vinegar, sugar, salt, mustard and white pepper. The eggs should be placed in the mixing bowl first and beaten for approximately five minutes at high speed. The speed should then be reduced to slow speed and add dry ingredients which have been mixed together. Mix at high speed for approximately five minutes. Then the oil dropper should be turned on so that the oil is gradually added to the batch for 10 to 20 minutes, after which time the vinegar is poured in slowly. The mixing should be discontinued after the vinegar has been thoroughly mixed into the batch. The last operation in making mayonnaise involves stopping the mixer, scraping the upper part of the bowl with a spatula to make sure that every portion will be, evenly mixed into the recipe. Mayonnaise becomes a thicker and more stable product when the oil is added very slowly.

## **MASHING POTATOES**

Use the "B" batter beater and pre-heat the bowl and beater. Lower the mixing bowl before putting in the potatoes to be mashed so that the breaking up starts with the bowl at its lowest position; then as the potatoes break up, gradually raise the bowl to its working position. This procedure eliminates severe strain to the mixer and the batter beater. Start the operation on low speed. When the potatoes have been broken up, stop the mixer and add the milk or cream, butter and seasoning. Many operators like to change to the "W" wire whip or to the "M" four wing whip for whipping in the milk or cream since more of a whipping action is obtained to produce a fluffier mashed potato.

## **CAKE BATTERS AND COOKIE DOUGH**

Use "B" batter beater. Butter or shortening can be thoroughly creamed in about 10 minutes. The butter or shortening should be at room temperature. Always lower the bowl and start on slow speed and then gradually raise the bowl to its working position. Sugar should be added to recipes at a medium speed. When all of the sugar has been added, stop the mixer and scrape down the sides of the mixing bowl with a spatula to insure a smooth mix. Be careful not to add sugar until the butter or shortening has been thoroughly creamed. Some recipes call for yolks and whites to be beaten separately. This is not necessary with your Blakeslee Mixer as the mechanical mixing is efficient enough to allow the addition of whole eggs. When adding dry ingredients, stop the mixer occasionally and scrape the upper part of the

bowl with a spatula to make sure that every portion will be efficiently mixed into the recipe. Always operate the mixer on slow speed while adding dry ingredients. Many operators use the Blakeslee-Built bowl extension ring to help confine ingredients to the mixing bowl. Add dry ingredients alternately with liquid, starting and ending with dry ingredients. Do most of the beating before the flour and milk are added. Over beating after addition of these two ingredients causes a sub-standard mixture.

## **MIXING DOUGH**

Always use the "H" dough hook for mixing heavy doughs. Do not overload the mixer with too large batches. (See the capacity chart on page 7 of this booklet for capacities of the various size bowls.) When using the "H" and dough hook, the mixing should be started at low speed only with the bowl in the lowest position; then as the mixing continues the bowl should be gradually raised to its working position. Remember — an increased mixing time means a decreased fermentation time. Weighing materials each mixing time will insure a standard product. Stop the mixer occasionally to lower the dough mass from the hook and to scrape the bowl.

Important-In mixing heavy doughs be sure to use the dough hook, be sure not to overload the mixer (see the capacity chart on page 5). and be sure to start the mixer on low speed with the bowl in its lowest position.

## **BISCUIT MIX**

Use "W" wire whip and bowl extension ring (to confine ingredients to bowl). Mix shortening and dry ingredients until shortening is blended and mixture is granular in appearance. Turn off mixer. Scrape bowl down with bowl knife. Store in covered can until ready for use. (Use beater or dough hook when adding liquid; start mixing on slow speed and bowl in lowest position, then gradually raise to working position. Do not over mix.)

## **PASTRIES**

Use the "PK" pastry knife, as pastries should be mixed with as little "rubbing" as possible. The "PK" pastry knife leaves the shortening in small pieces to produce a flaky product. Remember, over-worked dough makes tough pastry, and working in too much flour tends to toughen pastry.

## **SWEET DOUGH**

For best results use the "SD" sweet dough beater, (20 & 30 qt. models only).

## **CREAMED SOUPS AND SAUCES**

Use the puree beater or the "BB" brush beater with the soup strainer and colander attachment for making creamed soups and sauces.

## Mixing Bowl Capacity Chart

	<b>CAPACITY OF BOWL</b>		
<b>KITCHEN MATERIALS</b>	12 Qt.	20 Qt.	30 Qt.
Eggwhites	1-1/4 Pts.	1 Qt.	1-1/2 Qts.
Mashed potatoes	10 lbs.	15 lbs.	23 lbs.
Mayonnaise (qts. of oil)	5 Qts.	10 Qts.	12 Qts.
Meringue (pts. of water)	1 Pts.	1-1/2 Pts.	2 Pts.
Waffle or Hot Cake batter	5 Qts.	8 Qts.	12 Qts.
Whipped cream	2-1/2 Qts.	4 Qts.	6 Qts.
<b>BAKE SHOP MATERIALS</b>			
Angel Food (8-10 oz. cake)	8	15	22
Box or Slab Cake	12 lbs.	21 lbs.	30 lbs.
Cup cakes	12 doz.	22 doz.	33 doz.
Layer cakes	12 lbs.	20 lbs.	30 lbs.
Pound cake	12 lbs.	21 lbs.	30 lbs.
Short sponge cake	8 lbs.	15 lbs.	23 lbs.
Sugar cookies	21 doz.	35 doz.	50 doz.
Bread or roll dough	13 lbs.	25 lbs. <sup>(1)</sup>	45 lbs. <sup>(1)</sup>
Noodle dough	6 lbs.	8 lbs. <sup>(1)</sup>	10 lbs. <sup>(1)</sup>
Pie dough	10 lbs.	17 lbs.	27 lbs.
Pizza dough	8 lbs.	14 lbs. <sup>(1)</sup>	21 lbs. <sup>(1)</sup>
Raised doughnut dough	6 lbs.	9 lbs. <sup>(2)</sup>	15 lbs. <sup>(2)</sup>
Eggs & sugar (for sponge cake)	5 lbs.	8 lbs.	12 lbs.
Fondant icing	7 lbs.	12 lbs.	18 lbs.
Marshmallow icing	1-1/4 lbs.	2 lbs.	3 lbs.
Sponge cake batter	7 lbs.	12 lbs.	18 lbs.
Shortening & sugar creamed	10 lbs.	16 lbs.	24 lbs.

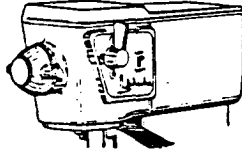
(1) - First Speed only

(2) - Second Speed only

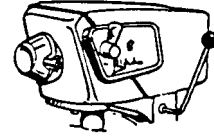
## Available Beaters, Whips and Accessories

\* **NOTE** — Early model mixers were equipped with M-5-1505 transmission. This can easily be determined by the outside appearance. The M-5-1505 transmission is more round and has a plastic cover. The later model transmissions M-5-3330 and M-0-18769 are more square and have an aluminum cover. (See sketch)

M-5-3330 & M-0-18769  
TRANSMISSIONS





M-5-1505  
TRANSMISSION






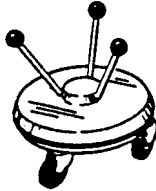


On 30 quart mixers, the bowls, beaters, whips etc. of the M-5-1505 transmission are not interchangeable with the M-5-3330 and M-0-18769 transmissions.


The model number of the transmission can also be determined from the identification tag. The tag item 13, pages 28 & 30 is located under the top cover 4, page 20 or 2, page 22.

The M-0-18769 transmission has a Type B universal attachment hub. Vegetable slicer and meat chopper attachments used on the M-0-18769 transmission are not interchangeable with the type used on the M-5-1505 and M-5-3330 transmission. See page 10.

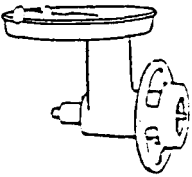






MIXER MODEL	SIZE	PART NO.	DESCRIPTION	MIXER MODEL	SIZE	PART NO.	DESCRIPTION
<b>BOWLS</b> — NOTE: Smaller bowls can be used on next size larger mixer. Bowl adaptors are not required.				<b>WIRE WHIPS</b>			
							
12 QT.	12 QT.	M3-1354	Steel Tinned	12 QT.	12 QT.	M3-1764	Steel Tinned
12 QT.	12 QT.	M3-1715	Stainless Steel	12 QT.	12 QT.	M3-3453	Stainless Steel
20 QT.	12 QT.	M3-1447	Steel Tinned	20 QT.	12 QT.	M3-1765	Steel Tinned
20 QT.	12 QT.	M3-1716	Stainless Steel	20 QT.	12 QT.	M3-3455	Stainless Steel
20 QT.	20 QT.	M3-1349	Steel Tinned	20 QT.	20 QT.	M3-1766	Steel Tinned
20 QT.	20 QT.	M3-1717	Stainless Steel	20 QT.	20 QT.	M3-3456	Stainless Steel
30 QT. WITH M5-3330 & M5-18769 TRANSMISSION*				30 QT. WITH M5-3330 & M5-18769 TRANSMISSION*			
30 QT.	20 QT.	M3-1972	Steel Tinned	30 QT.	20 QT.	M3-1767	Steel Tinned
30 QT.	20 QT.	M3-3315	Stainless Steel	30 QT.	20 QT.	M3-3458	Stainless Steel
30 QT.	30 QT.	M4-1971	Steel Tinned	30 QT.	30 QT.	M4-1977	Steel Tinned
30 QT.	30 QT.	M4-3310	Stainless Steel	30 QT.	30 QT.	M4-3459	Stainless Steel
30 QT. WITH M5-1505 TRANSMISSION *				30 QT. WITH M5-1505 TRANSMISSION *			
30 QT.	20 QT.	M3-1444	Steel Tinned	30 QT.	20 QT.	M3-1767	Steel Tinned
30 QT.	20 QT.	M3-1718	Stainless Steel	30 QT.	30 QT.	M4-1768	Steel Tinned
30 QT.	30 QT.	M41368	Steel Tinned				
30 QT.	30 QT.	M41719	Stainless Steel				

MIXER MODEL	SIZE	PART NO.	DESCRIPTION	MIXER MODEL	SIZE	PART NO.	DESCRIPTION
	<b>BATTER BEATERS</b>				<b>P.K. PASTRY KNIFE</b>		
12 QT.	12 QT.	M3-1376	Aluminum	12 QT.	12 QT.	M3-1541	Aluminum
20 QT.	12 QT.	M3-1377	Aluminum	20 QT.	12 QT.	M3-1543	Aluminum
20 QT.	20 QT.	M3-1367	Aluminum	20 QT.	20 QT.	M3-1538	Aluminum
30 QT. WITH M5-3330 TRANSMISSION *				30 QT. WITH M5-3330 TRANSMISSION *			
30 QT.	20 QT.	M3-1378	Aluminum	30 QT.	20 QT.	M3-1544	Aluminum
30 QT.	30 QT.	M4-1973	Aluminum	30 QT.	30 QT.	M4-1976	Aluminum
30 QT. WITH M5-1505 TRANSMISSION *				30 QT. WITH M5-1505 TRANSMISSION *			
30 QT.	20 QT.	M3-1378	Aluminum	30 QT.	20 QT.	M3-1544	Aluminum
30 QT.	30 QT.	M3-1371	Aluminum	30 QT.	30 QT.	M4-1540	Aluminum
	<b>H. DOUGH HOOKS</b>				<b>M-4 WING WHIP</b>		
12 QT.	12 QT.	M3-1387	Aluminum	12 QT.	12 QT.		N.A.
20 QT.	12 QT.	M3-1517	Aluminum	20 QT.	12 QT.		N.A.
20 QT.	20 QT.	M4-1385	Aluminum	20 QT.	20 QT.	M4-1542	Aluminum
30 QT. WITH M5-3330 TRANSMISSION *				30 QT. WITH M5-3330 TRANSMISSION *			
30 QT.	20 QT.	M4-1513	Aluminum	30 QT.	12 QT.		N.A.
30 QT.	30 QT.	M4-1987	Aluminum	30 QT.	20 QT.	M4-1573	Aluminum
30 QT. WITH M5-1505 TRANSMISSION *				30 QT. WITH M5-1505 TRANSMISSION *			
30 QT.	20 QT.	M4-1513	Aluminum	30 QT.	20 QT.	M4-1573	Aluminum
30 QT.	30 QT.	M4-1388	Aluminum	30 QT.	30 QT.	M4-1563	Aluminum
	<b>S.D. SWEET DOUGH BEATERS</b>				<b>BOWL TRUCK - Allows bowls to be transported without carrying</b>		
12 QT.	12 QT.		None	12 QT.	12 QT.		N.A.
20 QT.	12 QT.		None	20 QT.	20 QT.		N.A.
20 QT.	20 QT.	M3-1394	Aluminum	30 QT. WITH M5-3330 TRANSMISSION *			
30 QT. WITH M5-3330 TRANSMISSION *				30 QT. WITH M5-3330 TRANSMISSION *			
30 QT.	20 QT.	M3-1512	Aluminum	30 QT.	30 QT.	M4-3374	Aluminum
30 QT.	30 QT.	M4-1979	Aluminum	30 QT. WITH M5-1505 TRANSMISSION *			
30 QT. WITH M5-1505 TRANSMISSION *				30 QT. WITH M5-1505 TRANSMISSION *			
30 QT.	20 QT.	M3-1512	Aluminum	30 QT.	30 QT.	M4-1546	Aluminum
30 QT.	30 QT.	M4-1511	Aluminum				



MIXER MODEL	SIZE	PART NO.	DESCRIPTION	MIXER MODEL	SIZE	PART NO.	DESCRIPTION
	RECEIVING PAN BRACKET AND OVER SHELF, LESS PAN			30 QT. WITH M5-3330 TRANSMISSION *			
	12 QT.	M4-3322	Aluminum	30 QT.	30 QT.	M4-3322	Aluminum
	20 QT.	M4-3322	Aluminum	30 QT. WITH M5-1505 TRANSMISSION *			
				30 QT.	30 QT.	M4-1529	Aluminum







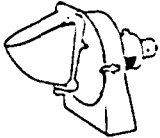
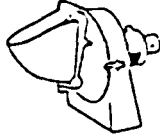


### MEAT CHOPPERS - 12-20-30 QT MIXERS

UNIVERSAL TYPE HUB	BLAKESLEE HUB
	
Used on Mixers Beginning with Serial #1    & Up	Used on Mixers with Serial # Up to and Including 1   
M-0-20447 Meat Chopper Assy (Doubled Tinned)	OBSOLETE Meat Chopper Assy (Doubled Tinned)
Above Includes Knife & 1/8" Plate and Pusher	Above Includes Knife & 1/5" Plate and Pusher

### ACCESSORIES FOR MEAT CHOPPER (FOR BOTH BLAKESLEE & UNIVERSAL HUBS)

M-1-1901 Knife	M-1-1903 End Plate, 3/16" Perforations	M-1-1905 End Plate, 3/8" Perforations
M-1-1902 End Plate, 1/8" Perforations	M-1-1904 End Plate, 1/4" Perforations	M-1-1906 End Plate, 1/2" Perforations

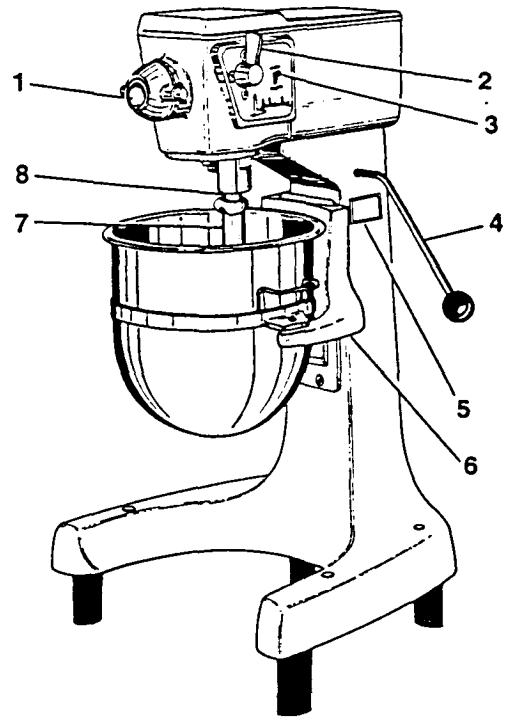
### 9" VEGETABLE SLICERS

UNIVERSAL TYPE HUB	BLAKESLEE HUB
Used on Mixers Beginning with Serial #1    & Up	Used on All Mixers with Serial # Up to and Including 1   
 M-O-20581 9" Vegetable Slicer Complete with Slicer Plate & Hopper Front	OBSOLETE 9" Vegetable Slicer Complete with Slicer Plate & Hopper Front
 M-O-20594 9" Cheese Shredder Complete with Hub & Shaft. 5/16" Shredder Plate and Hopper Front.	M-O-70416 9" Cheese Shredder Complete with Hub & Shaft. 5/16" Shredder Plate and Hopper Front.
 M-O-20595 Adjustable Slicer Plate 9" furnished w/vegetable slicer	
OPTIONAL EQUIPMENT FOR M-O-20581 SLICER	
 M-O-20599 Hub & Shaft Assy	
M-O-95043 Julienne Plate 9"	
M-O-95045 French Fry Plate 9"	
OPTIONAL EQUIPMENT FOR M-O-70416 CHEESE SHREDDER	
M-O-95042 Julienne Plate 9"	
M-O-95044 French Fry Plate 9"	

### OPTIONAL EQUIPMENT FOR USE WITH EITHER SLICER

M-3-15071 Grater Disc	M-2-15021 3/16" Shredder Disc.	M-2-15019 5/16" Shredder Disc.
M-2-15088 3/32" Shredder Disc.		M-2-15072 1/2" Shredder Disc.

## Operation

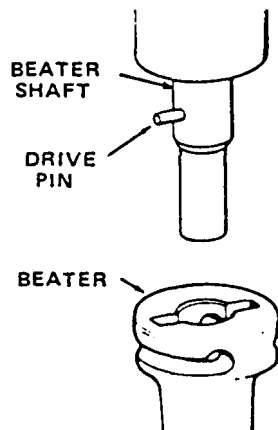


1. Auxiliary Drive Socket
2. Speed Change Lever
3. "ON-OFF" Power Switch
4. Bowl Lift Hand Lever
5. Nameplate & Serial No.
6. Bowl Support
7. Attachment Spindle
8. Beater Shaft

**CAUTION:**  
DO NOT ATTEMPT TO CHANGE ATTACHMENTS WHILE MIXER IS IN OPERATION. ALWAYS SHUT OFF MIXER BEFORE PLACING HANDS OR KITCHEN UTENSILS NEAR ATTACHMENT OR IN THE MIXING BOWL.

### OPERATING BOWL LIFT

The bowl is raised to working position by means of a lever located on the right-hand side of the mixer. Once raised, the bowl will be automatically located in its proper operating position. The bowl lift is pre-adjusted to stop at the proper working position before the mixer is shipped from the factory.



### ATTACHING BEATERS AND WHIPS

The beaters and whips used with your mixer have been designed to make fastening of the attachments positive and rapid.

To engage the attachment, line up the slots in the attachment with the drive pin on the beater shaft. Raise the attachment and twist to the right. When released, the attachment will drop slightly into full locked position.

To remove the attachment, grasp near the top, raise slightly while twisting to the left and slide downward.

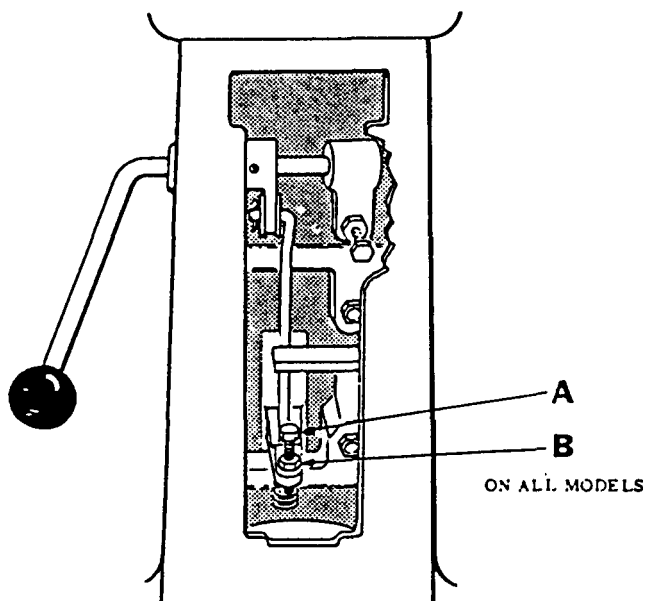
## Operation

In order for your mixer to perform at top efficiency at all times, it is necessary that you follow the recommendations as laid down by the designing engineers. Give your mixer the same attention you would give your automobile and your BLAKESLEE-BUILT Mixer will give you many years of satisfactory service.

### BOWL LIFT MECHANISM ADJUSTMENT

Bowl lift is factory set. However, should adjustment be necessary do so as follows:

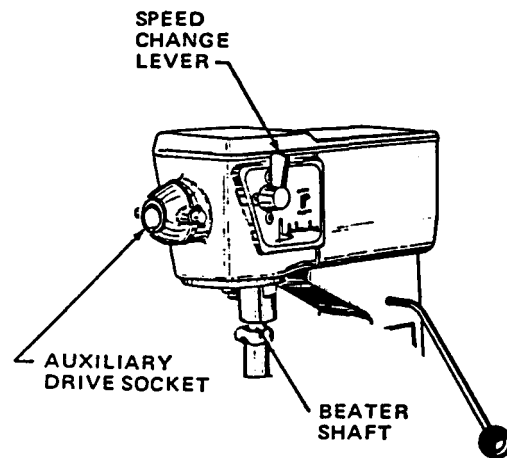
1. The mixers have adjustable stops to limit upward travel of the bowl lift.
2. To adjust upward travel of lift (all models) loosen lock nut "B" and turn bolt "A" clockwise to bring bottom of bowl closer to attachment end or counter-clockwise to increase the distance between the bottom of bowl and attachment end. Retighten lock nut "B". CAUTION: Attachment must not rub on bottom of bowl.



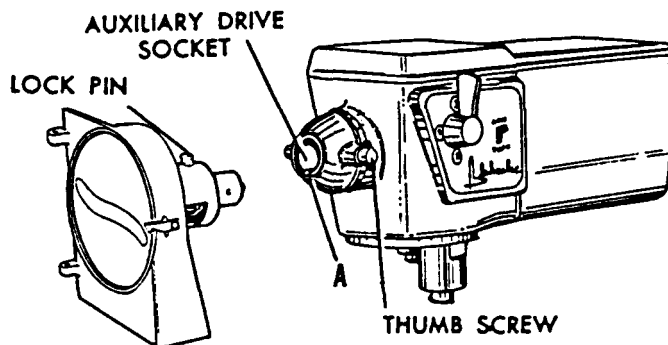
### CHANGING SPEEDS

It is important to the life of the mixer, and to perfect mixing, to keep the mix in constant motion. In Blakeslee-Built Mixers, which are equipped with constant mesh gears and automatic clutch, the speed may be varied by simply turning the mixer off, selecting the new desired speed with the speed change lever, and then turn the mixer back on.

NOTE: When mixing heavy loads, the Transmission should be fully stopped before shifting speeds.



		Beater Speed	Auxiliary Drive
1	LOW	102 rpm	57 rpm
2	MEDIUM	180 rpm	101 rpm
3	HIGH	354 rpm	197 rpm



### MOUNTING OF ACCESSORIES

Vegetable Slicer, Meat chopper, Knife Sharpener and Oil Dropper all mount in a similar fashion to the "Auxiliary Drive Socket". Illustration shows typical mounting using vegetable slicer.

1. Remove cover plate from auxiliary drive socket.
2. Turn thumb screws out so that it does not extend into drive socket.
3. Insert hub of attachment into drive socket, rotating slightly until it slides into place against mixer housing. Lubricate with a few drops of mineral or salad oil.
4. Turn thumb screws to lock attachment in place.
5. Clean drain slot (A) after use.

## Transmission Removal and Disassembly

NOTE: REMOVAL AND DISASSEMBLY OF THE M-5-1505-E AND M-5-3330-A TRANSMISSIONS IS ESSENTIALLY THE SAME. ONLY THE TOP COVER AND MOTOR ENCLOSURE ARE DIFFERENT. REFER TO PARTS LIST EXPLODED VIEWS TO SEE THESE DIFFERENCES.

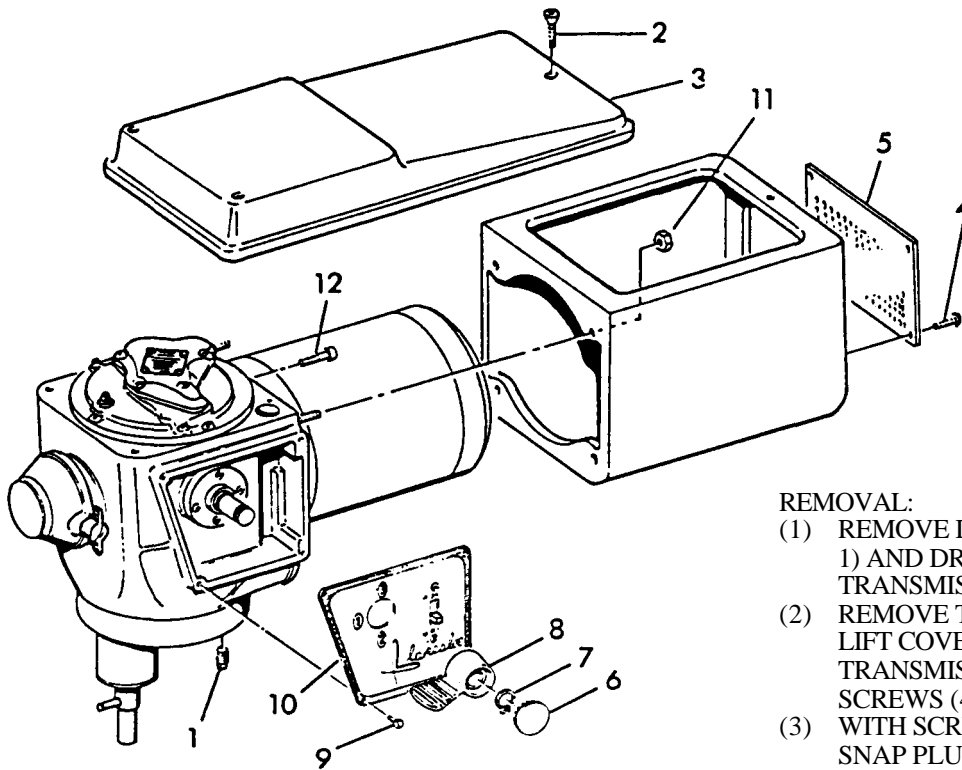


FIGURE 1

NOTE: TRANSMISSION ASSEMBLY DOES NOT HAVE TO BE REMOVED FROM MIXER TO REPLACE AUXILIARY HUB SEALS OR BEATER SHAFT OIL SEAL. REFER TO DISASSEMBLY STEPS 1 & 2.

### REMOVAL:

- (1) REMOVE DRAIN PLUG (1, FIGURE 1) AND DRAIN OIL FROM TRANSMISSION.
- (2) REMOVE THREE SCREWS (2) AND LIFT COVER (3) OFF TRANSMISSION. REMOVE SCREWS (4) AND SCREEN (5).
- (3) WITH SCREWDRIVER PRY OFF SNAP PLUG (6) FROM SHIFT LEVER. REMOVE SNAP RING (7) AND PULL LEVER (8) OFF CAM SHAFT. REMOVE SCREWS (9) AND DROP NAMEPLATE (10) AWAY FROM TRANSMISSION. TAG ELECTRICAL WIRES FOR REASSEMBLY IDENTIFICATION AND DISCONNECT WIRE LEADS FROM BACK OF TIMER OR TOGGLE SWITCH ON BACKSIDE OF NAMEPLATE.
- (4) USING SOCKET WRENCH AND 12 INCH EXTENSION REMOVE FOUR LOCK NUTS (11) AND SLIDE TRANSMISSION AND MOTOR ASSEMBLY OUT FRONT OF MOTOR HOUSING. REMOVE FOUR SOCKET HEAD CAP-SCREWS (12) AND SEPARATE MOTOR ASSEMBLY FROM TRANSMISSION. USE CARE TO AVOID DAMAGING MOTOR GASKET.

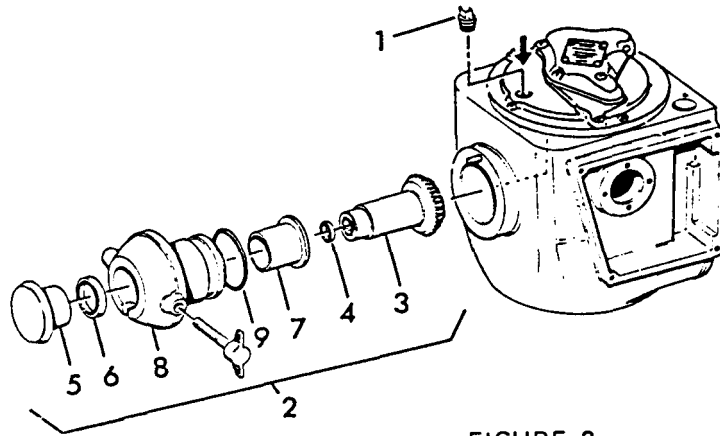


FIGURE 2

DISASSEMBLY

1. *REPLACEMENT OF AUXILIARY HUB AND SEALS.*  
NOTE: TRANSMISSION NEED NOT BE REMOVED FROM MIXER IF ONLY AUX. HUB OR HUB SEALS NEED REPLACEMENT.

- A. REMOVE OIL FILLER PLUG (1, FIGURE 2), INSERT 3/8 INCH LONG STEMMED ALLEN WRENCH DOWN THROUGH FILLER PLUG HOLE AND LOOSEN SETSCREW (APPROX. 3 TURNS). WITH SCREWDRIVER BETWEEN HUB (8) AND TRANSMISSION HOUSING, PRY HUB ASSEMBLY (2) OUT OF TRANS. LIGHT HAMMER TAPS AGAINST BACK OF HUB MAY BE REQUIRED.
- B. PULL BEVEL PINION SHAFT (3) FROM HUB. REMOVE CAP (5) AND BUSHING (7) FROM HUB (8) WITH A PIECE OF PIPE INSERTED INTO BACK OF HUB (SEE FIGURE 2A) TAP SEAL (6) OUT OF HUB; REPLACE "O" RING SEAL (9). COAT NEW SEAL (6) WITH LIQUID GASKET MATERIAL BEFORE REASSEMBLING.

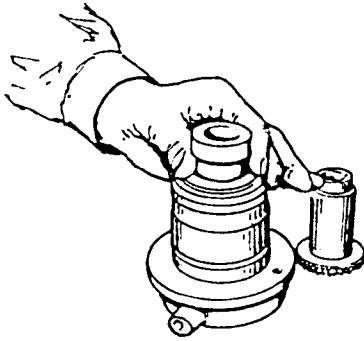
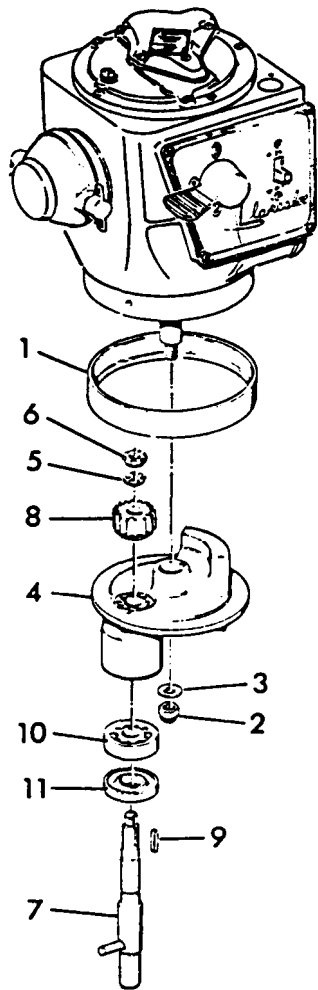


FIGURE 2A



2. *REPLACEMENT OF BEATER SHAFT AND SHAFT SEAL.* NOTE: TRANSMISSION NEED NOT BE REMOVED FROM MIXER IF ONLY BEATER SHAFT OR SEAL NEED REPLACEMENT.

- A. INSERT SCREWDRIVER UNDER DRIP RING (1, FIGURE 3) AND PRY OFF RING. UNSCREW SELF-LOCKING NUT (2) AND REMOVE WITH WASHER (3); INSERT SCREWDRIVER BETWEEN TRANSMISSION HOUSING AND BEATER SHAFT SUPPORT (4). REMOVE SUPPORT AND SHAFT AS AN ASSEMBLY.
- B. BEND TINES OF LOCKWASHER (5) OUT OF SLOTS IN LOCKNUT (6). REMOVE LOCKNUT AND WASHER. SECURE SUPPORT (4) IN ARBOR PRESS AND PRESS SHAFT (7) THROUGH THE BOTTOM OF SUPPORT. GEAR (8) KEY (6) WILL COME OFF SHAFT AS IT IS PRESSED OUT. PRESS BEARING (10) AND SEAL (11) OFF SHAFT.
- C. INSTALL BEARING (10) ON SHAFT (7) AND PRESS INTO SUPPORT (4). INSTALL GEAR (8) WITH KEY (9) AND SECURE WITH LOCKNUT (6) AND LOCKWASHER (5). BEND TINES OF LOCKWASHER INTO LOCKNUT SLOTS.
- D. COAT NEW SEAL (11) WITH LIQUID GASKET MATERIAL ON OUTER EDGE AND SLIDE OVER SHAFT (CUP SIDE UP AGAINST BEARING (10) AND SEAT IN SUPPORT (4).
- E. SLIDE SUPPORT AND SHAFT SUBASSEMBLY ON END OF SUN SHAFT AND SECURE WITH SELF-LOCKING NUT (2) AND WASHER (3). REINSTALL DRIP RING (1) BY PRESSING RING FIRMLY INTO SLOT AROUND RING GEAR.

FIGURE 3

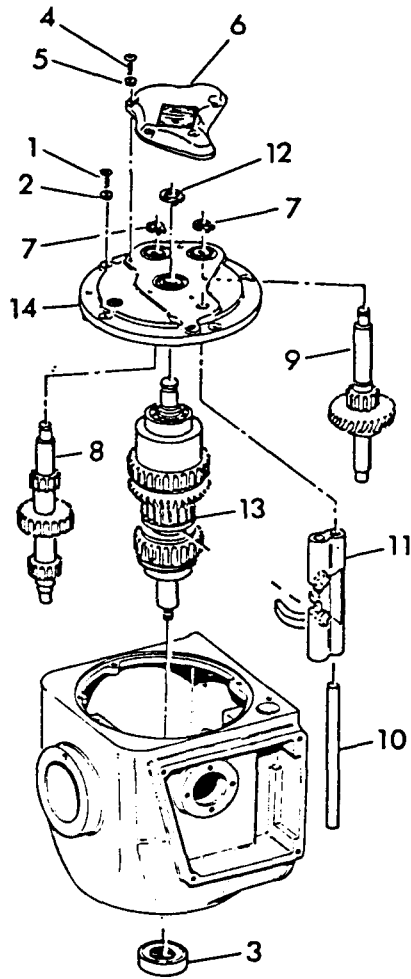


FIGURE 4

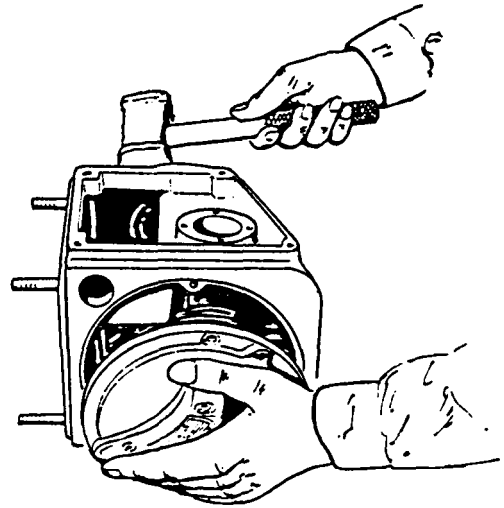


FIGURE 4A

3. REMOVAL OF SUN SHAFT. INTERMEDIATE & PINION SHAFT AS SUBASSEMBLY.

- A. REMOVE COVER SCREWS (1, FIGURE 4) AND WASHERS (2).
- B. LAY TRANSMISSION ON ITS SIDE AND WITH A LEAD OR RUBBER Mallet LIGHTLY TAP THE END OF SUN SHAFT (SEE FIGURE 4A). COVER WILL SEPARATE FROM TRANSMISSION HOUSING. STAND TRANSMISSION UP AND LIFT COVER AND SHAFTS OUT OF HOUSING. NOTE: ROTATE GEARS AS NECESSARY TO CLEAR TRANSMISSION HOUSING.
- C. USING A PIPE AND Mallet, DRIVE OIL SEAL (3, FIGURE 4) OUT OF BOTTOM OF TRANSMISSION HOUSING. WHEN INSTALLING NEW SEAL, COAT OUTER EDGE OF SEAL AND PRESS INTO HOUSING WITH METAL SIDE OF SEAL TOWARD MIXING BOWL (DOWN).
- D. REMOVE SCREWS (4), WASHERS (5) AND COVER (6). REMOVE SNAP RINGS (7) AND PULL INTERMEDIATE (8) AND PINION SHAFT (9) ASSEMBLIES TOGETHER, FROM COVER.
- E. PULL ROD (10) OUT OF COVER TO REMOVE SHIFTER YOKE (11).
- F. REMOVE SNAP RING (12). WITH A CENTER PUNCH. TAP SUN SHAFT ASSEMBLY (13) OUT OF COVER (14).

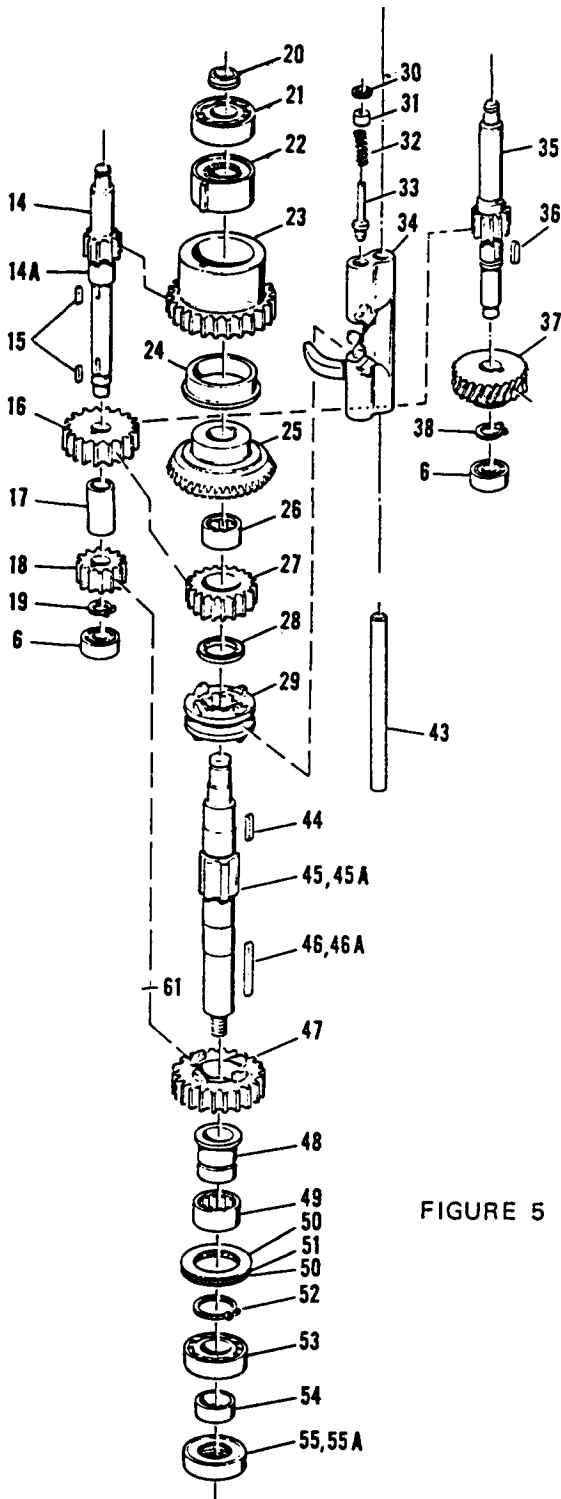


FIGURE 5



FIGURE 6

4. **DISASSEMBLY OF SUN SHAFT ASSEMBLY.** REFER EXP. VIEW FIGURE 5.

- A. REMOVE SPUR GEAR & SLEEVE (23), CLUTCH (22), BEARING (21) AND SPACER (20) FROM SHAFT AS AN ASSEMBLY.
- B. IN AN ARBOR PRESS, PRESS CLUTCH (22) AND BEARING (21) FROM GEAR (23). PRESS BEVEL GEAR (25) OFF SHAFT. ITEMS 26, 27, 28 & 29 WILL SLIDE OFF SHAFT.  
NOTE: WHEN REASSEMBLING NEW CLUTCH (22) INTO GEAR (23) ARROW MARKED ON CLUTCH MUST BE VISIBLE AS SHOWN IN FIGURE 6.
- C. PRESS BEARING (53) OFF SHAFT. REMOVE SNAP RING (52). ITEMS 47 THRU 51 WILL SLIDE OFF SHAFT.

5. **DISASSEMBLY OF INTERMEDIATE SHAFT.** REFER TO FIGURE 5.

- A. PRESS BEARING (6) OFF SHAFT (14). REMOVE SNAP RING (19) AND PRESS OFF GEAR (18). SLIDE OFF SLEEVE (17) AND PRESS OFF GEAR (16).  
NOTE: IN EARLY MODEL TRANSMISSIONS SHAFT (14) HAD A MACHINED SHOULDER. BEGINNING IN 1971 HEAVY DUTY SHAFTS WERE USED WITH A SPACER (14A) INSTEAD OF THE MACHINED SHOULDER. WHEN REASSEMBLING SPACER (14A) THE CHAMFERED END MUST FACE FIXED GEAR ON SHAFT (SEE FIGURE 7).

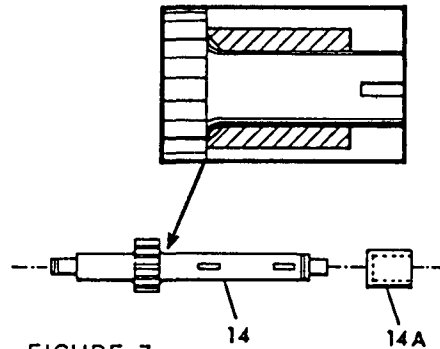


FIGURE 7

6. **DISASSEMBLY OF PIN ION SHAFT.** REFER TO FIGURE 5.

- A. PRESS BEARING (6) OFF SHAFT (35). REMOVE SNAP RING (38) AND PRESS OFF WORM GEAR (37).

**REASSEMBLY & INSTALLATION**

- (1) REASSEMBLY SUBASSEMBLIES IN REVERSE ORDER OF DISASSEMBLY AND INSTALL IN REVERSE ORDER OF REMOVAL.
- (2) REFILL TRANSMISSION WITH #50 HEAVY DUTY OIL. (HYDROL MASTER 500 OR EQUIVALENT)  
3 PINTS - M-5-3330 TRANS.  
4 PINTS - M-5-1505 TRANS.

## Troubleshooting and Repair Instructions




TYPE OF TROUBLE	POSSIBLE CAUSE	RECOMMENDED CORRECTIVE PROCEDURE
Mixer will not start	Main fuse or circuit breaker out Overload switch tripped Wire loose or broken	Reset breaker and change all fuses. Push reset button. Visually check all connections, controls and motor.
Motor runs but will not change speed	(On timed models) The timer inoperative Speed change lever loose Mixer under too great a load Shifting dog stripped or broken	Replace timer Remove handle, install key, replace handle and snap lock ring. Stop mixer, shift to another speed and restart unit. Gear box to be repaired after removal to workbench.
Unit runs hot or smokes	Improper voltage on motor or motor defective Motor overloaded thus overheating Gear box low on lubricant	To be checked by electrician. Have amperage draw checked by an electrician. Drain out old oil, remove cover plate (which covers the entire gear box and motor assembly) insert three pints of S.A.E. 50 oil in vent plug hole. (4 pints in M5-1505 Transmission)
Attachments strike bottom of bowl	Bowl support out of adjustment	Remove back inspection cover and adjust stop bolt for bowl raising mechanism located at base of unit.
Attachments striking side of bowl.	Attachments bent or bowl dented	Replace damaged part.
Bowl will not raise	The drag link spring off of drag link arm Crank casting loose on drag link shaft	Remove inspection cover from back of machine, replace 2" long heavy spring on rocker guide, install nut and washer on drag link and lock in place by tightening nuts. Remove inspection cover in back of machine, reposition crank casting, tighten set screws after being sure crank casting key is in place on shaft.
Transmission operates with a skipping motion	Unit overloaded Chipped gear in gear box	Shift to lower speed or reduce quantity of material being mixed. Remove gear box for bench repairs.
Bowl support hard to raise and lower	Bowl support binding on bowl slides	Clean off bowl slides and lubricate with light grade of oil.
Transmission operates in one speed only and has a clicking noise.	Broken intermediate shaft	Replace intermediate shaft (M-1-15074) in transmission.

TYPE OF TROUBLE	POSSIBLE CAUSE	RECOMMENDED CORRECTIVE PROCEDURE
Motor runs but transmission does not operate	Bronze worm gear worn	Replace bronze worm gear (M-1-1253-C) in transmission.
Bronze worm gear failure	Transmission operated when it was low on oil	Check transmission for seal leaks.
Transmission runs attachment shaft but beater shaft does not turn	Broken beater shaft or stripped ring gear	Replace broken beater shaft (M-2-1250) or stripped ring gear (M-2-1264).

## Suggested Spare Parts List

B,W,& F SERIES MIXERS  
12, 20 and 30 Qt. LATE MODEL (M-5.3330 & M-5-18769) TRANSMISSIONS

Part No.	Description	Model
M-1-15143	Oil Seat. Motor	All Models
M-1-15315	Oil Seal, Sun Shaft	All Models
M-1-15314	Oil Seal, Auxiliary Hub	All Models
*W-1-12561	Oil Seal, Beater Shaft	All Models
**M-0-18752	Oil Seal, Beater Shaft	All Models
M-1-15141	"O" Ring, Motor	All Models
M-0-17381	"O" Ring, Cam Shaft 902-14	All Models
M-0-17384	"O" Ring, Auxiliary Hub 902-36	All Models
M-2-3427	Gasket. Motor	All Models
M-2-1252	Worm, Motor	All Models
M-1-1253	Worm Gear	All Models
M-2-1250-B	Beater Shaft	All Models
M-2-1396	Pin, Beater Shaft	All Models
M-1-1344	Crank	B-12,B-20,W-12,W-20 Only
M-1-1419	Crank	F-20,U-20 Only
M-1-1528	Crank Stop	F-20,U-20 Only
M-1-1967	Crank	F-30 Only
M-2-1969	Drag Link	F-30 Only
	Electrical Switch Assy	See "Motor Control"

\*Units Up to & including Serial # 1   

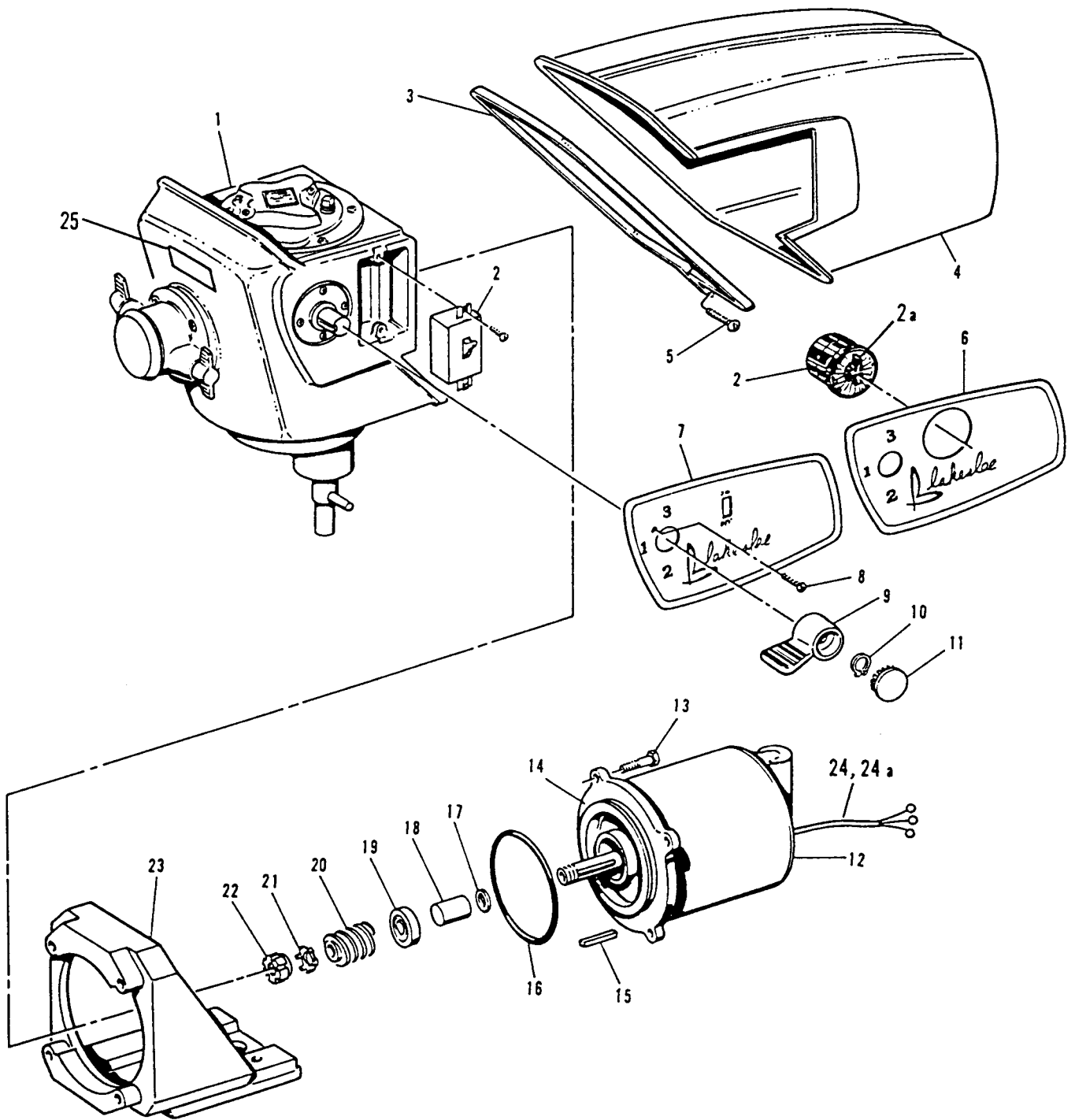
\*\*Units Serial # 1    & Up.

### Illustrated Parts List

#### IMPORTANT

When ordering parts please specify machine Model No. and Serial No.

Credit will not be issued for returned piece parts of an assembly.



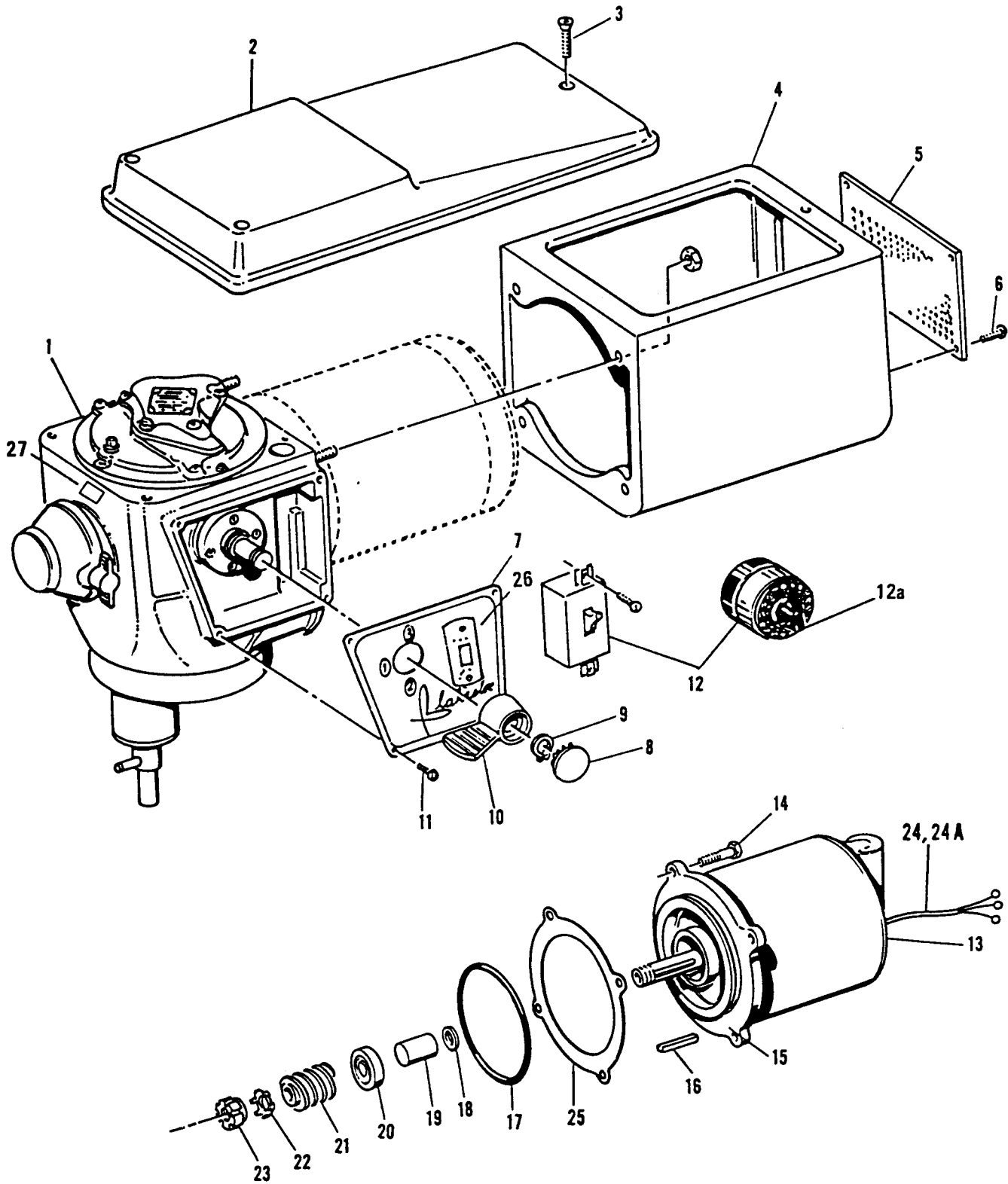
M-5-1505-E MIXER TRANSMISSION, MOTOR AND HOUSING

M-5-1505-E MIXER TRANSMISSION, MOTOR AND HOUSING

Item	Part	Description	No.
M5-1505 TRANSMISSION			
1	M5-1505-E	TRANSMISSION, Complete, Reconditioned, Exchange	1
2	SEE CHART	CONTROLLER	1
2a	W0-95645	KNOB, Used With Timer Only	1
3a	M3-1460	BAND, Motor Case Securing (for Plastic Cover)	1
3b	M3-1568	BAND, Motor Case Securing (for Aluminum Cover)	1
4a	M4-1631	MOTOR CASE (Plastic)	1
4b	M4-1510	MOTOR CASE (Aluminum) Obsolete Not Available	
5	W0-16367	SCREW, 10-24 x 1-1/4" R.H. Machine	1
6	M3-1558-A	NAMEPLATE, Timer, 1PH & 3PH	1
7	M3-1480-A	NAMEPLATE, Toggle 1PH & 3PH	1
8	M1-15310	SCREWS, 8/32 x 3/8" Pan Head	2
9	M2-1458	LEVER, Gearshift	1
10	W0-17380	SNAP RING	1
11	M0-17379	PLUG, Snaphole, for M2-1458	1
12a	M1-15112	MOTOR 1/4 H.P., 1 Phase (12 Qt. Models)	1
12b	M1-15113	MOTOR 1/4 H.P., 3 Phase (12 Qt. Models)	1
12c	M1-15117	MOTOR 1/2 H.P., 1 Phase (20 Qt. Models)	1
12d	M1-15118	MOTOR 1/2 H.P., 3 Phase (20 Qt. Models)	1
12e	M1-15119	MOTOR 3/4 H.P., 1 Phase (30 Qt. Models)	1
12f	M1-15120	MOTOR 3/4 H.P., 3 Phase (30 Qt. Models)	1
13	M1-3573	SCREW, 3/8 x 1" Socket Head Machine Screw	4
14	M1-3424	GASKET	1
15	M1-15385	KEY, 1/8 x 1/8 x 1" Lg.	1
16	M1-15141	"O" RING	1
17	M1-15144	WASHER, 1/2 x 3/4" Copper Asbestos	1
18a	M1-1491	SPACER (A. O. Smith Motor)	1
18b	M1-1539	SPACER (Howell Motor & Marathon)	1
19	M1-15143	OIL SEAL	1
20	M-1252	WORM	1
21	M1-15142	WASHER	1
22	M1-15145	NUT	1
23a	M4-1430	MOTOR MOUNT BRACKET (12 Qt. Models)	1
23b	M4-1430	MOTOR MOUNT BRACKET (20 Qt. Models)	1
23c	M4-1430	MOTOR MOUNT BRACKET (30 Qt. Models)	1
24	M1-15366	CABLE ASSY, — Motor to Switch (3 ph. only - 208/230V)	1
24a	M1-18594	CABLE ASSY, — Motor to Switch (3 ph. only - 440/480V)	1
25	M1-93650	CAUTION LABEL	

NOTE: This transmission now discontinued; however, approximately the first 1,000 mixers were equipped with this transmission. See pages 8-9 for current transmission which is M5-3330 transmission.

SPECIFY MACHINE SERIAL NO. WHEN ORDERING PARTS



M-5-3330-D & M-5-18769 MIXER TRANSMISSION, MOTOR AND HOUSING

M-5-3330-D & M-5-18769 MIXER TRANSMISSION, MOTOR AND HOUSING

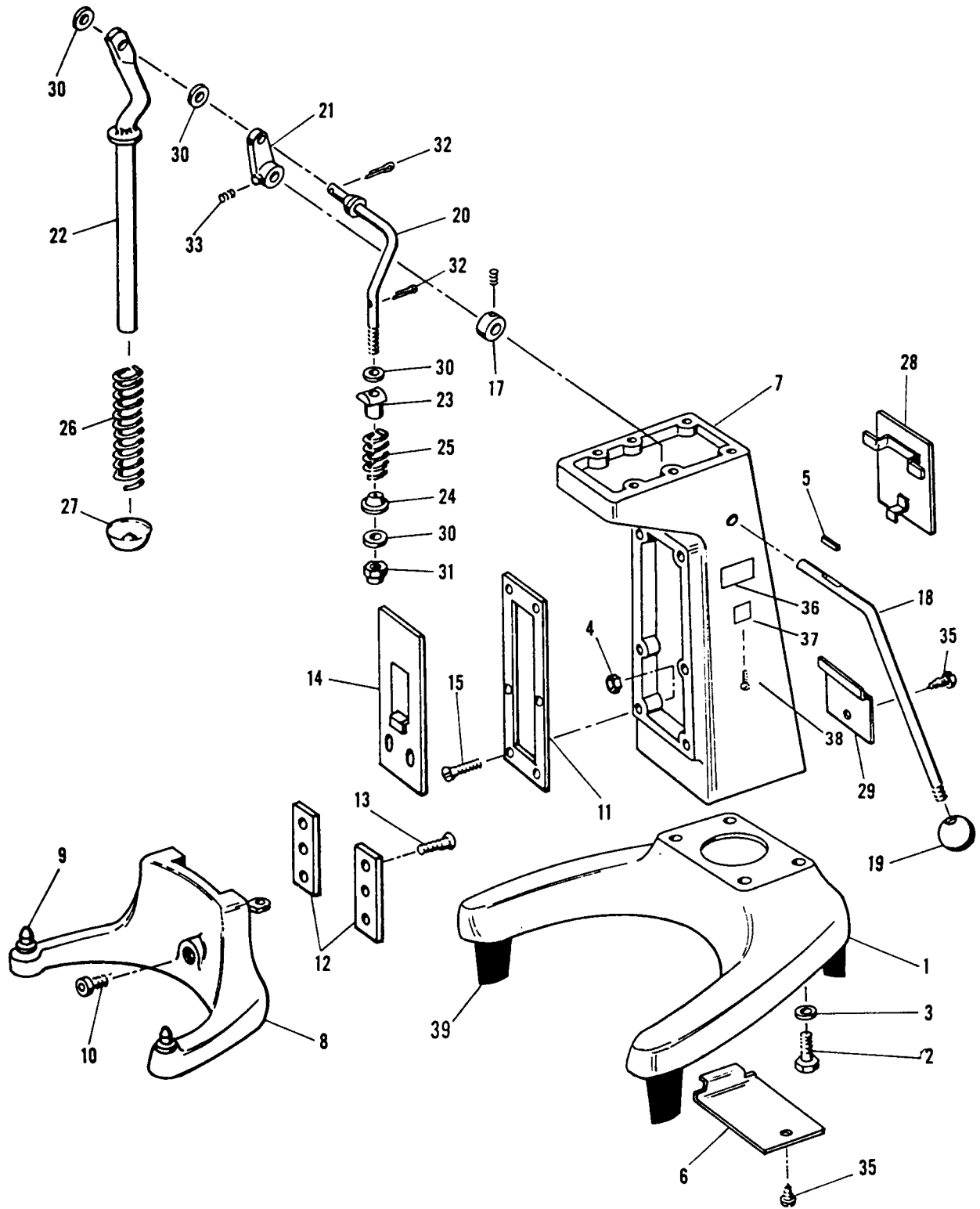
Item No.	Part No.	Description	No. Reqd.
Φ 1a	M5-3330-D	TRANSMISSION, Reconditioned, Exchange	1
Φ1b	M5-18769	TRANSMISSION, Reconditioned	1
2	M3-1961	TOP COVER, Gearbox and Motor Housing	1
3	W1-12549	SCREWS, 1/4 x 1-1/4" Flat Head Machine	3
4a	M4-1958	HOUSING, Motor, Cast Aluminum (12 Qt. Models)	1
4b	M-3-72974	HOUSING, Motor, Cast Aluminum (20 Qt. Models)	1
4c	M-3-72975	HOUSING, Motor, Cast Aluminum (30 Qt. Models)	1
5	M1-3451	COVER PLATE, for Rear of Motor Housing	1
6	W0-20279	SCREWS, 10-24 x 3/8" R. H. Cad. Plated	4
7a	M2-3329	NAMEPLATE, M 5-3330 Transmission Tog. Switch-type, 1 PH only	1
7b	M2-3327	NAMEPLATE & TIMER, 1 PH & 3 PH	1
7c	M2-3325	NAMEPLATE, Tog. Switchtype w/Overload 1 PH Only	1
8	M0-17379	PLUG, Snaphole, for M2-1458	1
9	M0-17380	SNAP RING	1
10	M 2-14 58	LEVER, Gearshift	1
11	M-1-15310	SCREWS, 8/32 x 3/8" Pan Head	4
12	SEE CHART	CONTROLLER	1
12a	W0-95645	TIMER KNOB	1
13a	M1-15112	MOTOR 1/4 H. P., 1 Phase (12 Qt. Models) 110V only	1
13b	W0-189 03	210 M.F.D. CAPACITOR (for M1-15112 Motor only)	1
13c	M1-15113	MOTOR 1/4 H. P., 3 Phase (12 Qt. Models)	1
13d	M1-15117	MOTOR 1/2 H. P., 1 Phase (20 Qt. Models)	1
13e	M0-20274	270-325 M.F.D. CAPACITOR (for M1-15117 Motor only)	1
13f	M1-15118	MOTOR 1/2 H. P., 3 Phase (20 Qt. Models)	1
13g	M1-15119	MOTOR 3/4 H. P., 1 Phase (30 Qt. Models)	1
13h	W0-18904	540 M.F.D. CAPACITOR (for M1-15119 Motor only)	1
13i	M1-15120	MOTOR 3/4 H. P., 3 Phase (30 Qt. Models)	1
13j	W0-18512	MOTOR 3/4 H. P., 1 Phase, 1200 RPM Spl. Low-Speed Feature (30 Qt. Models)	1
13k	W0-18504	MOTOR 3/4 H. P., 3 Phase, 1200 RPM Spl. Low-Speed Feature (30 Qt. Models)	1
14	M1-3573	SCREWS, 3/8 x 1" Socket Head Machine	4
15	M1-3427	GASKET	1
16	M1-15358	KEY, 1/8 x 1/8"	1
17	M1-15141	"O" RING	1
18	M1-15144	WASHER, 1/2 x 3/4" Copper Asbestos	1
19a	M1-1491	SPACER (A. O. Smith Motor)	1
19b	M1-1539	SPACER (Howell Motor & Marathon)	1
20	M1-15143	OIL SEAL	1
21	M-1252	WORM	1
22	M1-15142	WASHER	1
23	M1-15145	NUT	1
24	M1-15366	CABLE ASSY. - Motor to Switch (3 ph. - 208/230V only)	1
24a	M1-18594	CABLE ASSY. - Motor to Switch (3 ph. - 440/480V only)	1
25	M2-3427	GASKET Motor to Transmission	1
25a	M0-18785	GASKET MATERIAL (Permatex Type 3D), 16 Oz. Can	1
26	M1-95654	SWITCH GUARD	1
27	M1-95650	CAUTION LABEL	1

\*M5-3330-D TRANSMISSION is used with all machines with an M3-1961 Top Cover, up to

Serial #1 **B** **A** **A**.

M5-18769 TRANSMISSION is used from Serial #1 **B** **A** **A** & up.

SPECIFY MACHINE SERIAL NO. WHEN ORDERING PARTS



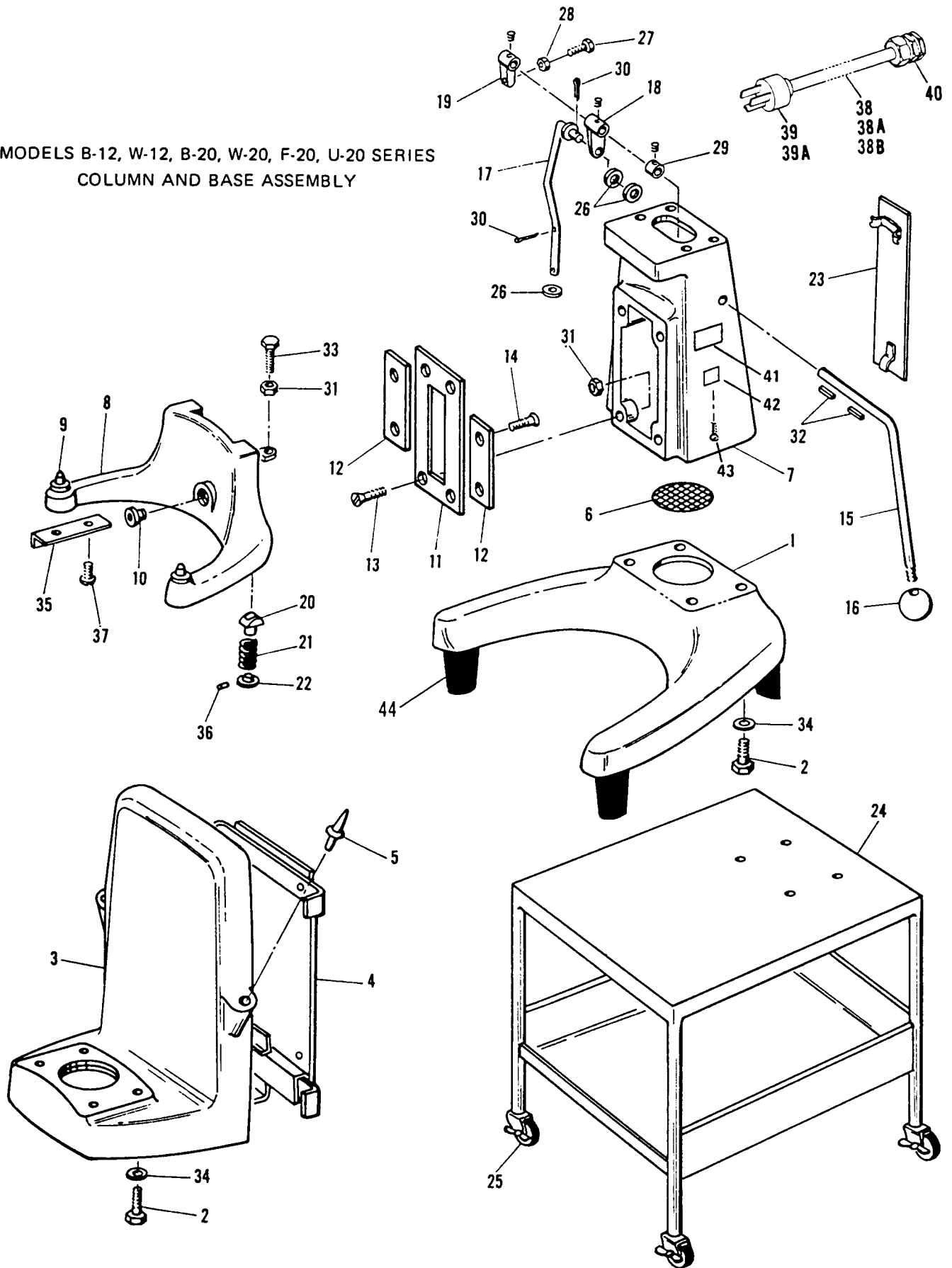
MODEL F-30 COLUMN AND BASE ASSEMBLY

MODEL F-30 COLUMN AND BASE ASSEMBLY

Item No.	Part No.	Description	No. Reqd.	F30 with M5-3330 or M5-18769 Transmission	F30 with M5-1505 Transmission
1	M-3-72877	BASE, Floor Type	1	x	x
2	M1-15320	CAPSCREW, 1/2 x 1-3/4"	4	x	x
3	M1-15317	LOCKWASHER, 1/2" Split	4	x	x
4	M1-15323	LOCKNUT, 3/8" Hex	4	x	x
5	W0-16364	KEY, 3/16 x 3/16 sq. x 1-1/6" lg.	1	x	x
6	M1-3442	BOTTOM COVER	1	x	x
7	M4-1997	COLUMN	1	x	
7	M4-1412	COLUMN	1		x
8	M4-1998	BOWL SUPPORT	1	x	
8	M4-1414-G	BOWL SUPPORT	1		x
9	M1-1991	BOWL PIN	2	x	x
10	M1-1603	BUSHING, Nylon	1	x	x
11	M3-3305	BAR, Bowl Support Guide	1	x	
11	M2-1424-F	BAR, Bowl Support Guide	1		x
12	M2-3312	STRAP, Bowl Support Guide	2	x	
12	M2-1425	STRAP, Bowl Support	2		x
13	M1-15056	SCREW, 3/8 x 7/8" F. H. Machine	4	x	x
14	M2-1995	SANITARY SHIELD	1	x	
14	M2-1461	SANITARY SHIELD	1		x
15	M1-15339	SCREW, 3/8 x 2" F. H. Machine	6	x	x
17	W1-12821	COLLAR, 5/8" Set	1	x	x
18	M3-3308	LEVER, Bowl Left	1	x	
18	M3-1937	LEVER, Bowl Left	1		x
19	M-0-99066	KNOB, Bowl Lift Handle	1	x	x
20	M2-1969	DRAG LINK	1	x	
20	M2-1319	DRAG LINK	1		x
21	M1-1967	CRANK	1	x	
21	M1-1419	CRANK	1		x
21	M1-1528	STOP, Crank	1		x
22	M2-1968	ROD, Spring	1	x	
22	M2-1514	ROD, Spring	1		x
23	M1-1322	GUIDE, Rocker	1	x	x
24	M1-1346	WASHER, Spring	1	x	x
25	M1-1320	SPRING	1	x	x
26	M1-1994	SPRING, Balance	1	x	x
27	M1-1515	HEMISPHERICAL SPRING PERCH	1	x	x
28	M2-3314	ENCLOSURE PANEL, Rear	1	x	
28	M4-1457	ENCLOSURE PANEL, Rear	1		x
29	M1-3307	PANEL ENCLOSURE, Base	1	x	x
30	M1-1516	WASHER, 3/8" Flat	3	x	x
31	W0-16365	LOCKNUT, 3/8-16 Flex	1	x	x
32	W1-16361	PIN, 1/8 x 3/4" Cotter	1	x	x
33	M1-7117	SETSCREW, 5/16 x 3/8" Soc. Hd.	1	x	x
35		SCREW, Sheet Metal	1	x	x
36	P1-5052	PLATE, Data	1	x	x
37	W2-20878	MOTOR REQUIREMENT NAME PLATE	1	x	x
38	W1-8096	SCREW, #4 x 1/4 Self-Tapping	4	x	x
39	M-1-73481	PLASTIC LEG CUP	4	x	x

SPECIFY MACHINE SERIAL NO. WHEN ORDERING PARTS

MODELS B-12, W-12, B-20, W-20, F-20, U-20 SERIES  
COLUMN AND BASE ASSEMBLY



MODELS B-12, W-12, B-20, W-20, F-20, U-20 SERIES COLUMN AND BASE ASSEMBLY

Item No.	Part No.	Description	No. Reqd	USED ON					
				B12	W12	B20	W20	F20	U20
1	M4-72871	BASE, Bench Type	1	x	x	x	x		
1	M4-72871	BASE, Floor Type	1					x	
2	WI-9548	CAPSCREW, 3/8 x 1-3/4"	4	x	x	x	x		
2	MI-15320	CAPSCREW, 1/2 x 1-3/4"	4					x	x
3	M4-1504	BASE, Wall Type	1		x		x		
4	M4-1506	BRACKET, Wall Mount	1		x		x		
5	MI-1361	SUPPORT STUD, Attachment Mount	2		x		x		
6	MI-1462	SCREEN, Vinyl	1	x	x	x	x	x	
7	M4-1413-B	COLUMN	1	x	x				
7	M4-1416	COLUMN	1			x	x		
7	M4-1557	COLUMN	1					x	x
8	M4-1418	BOWL SUPPORT	1	x	x				
8	M4-1417	BOWL SUPPORT	1			x	x	x	x
9	M1-1348-B	BOWL PIN	2	x	x	x	x	x	x
10	MI-1603	BUSHING, Nylon	1	x	x	x	x	x	x
11	M2-1428-B	BAR, Bowl Support Guide	1	x	x	x	x		
11	M2-1437-B	BAR, Bowl Support Guide	1					x	x
12	MI-1427	STRAP, Lock Bowl Support	2	x	x	x	x	x	x
13	MI-15339	SCREW, 3/8 x 2" F. H. Mach.	4	x	x	x	x	x	x
14	MI-15056	SCREW, 3/8 x 7/8" F. H. Mach.	4	x	x	x	x	x	x
15	M2-1436	LEVER, Bowl Lift Handle	1	x	x	x	x		
15	M3-1315	LEVER, Bowl Lift Handle	1					x	x
16	M0-99066	KNOB, Bowl Lift Handle	1	x	x	x	x		
16	M0-99066	KNOB, Bowl Lift Handle	1					x	x
17	M2-1426	DRAG LINK	1	x	x				
17	M2-1422	DRAG LINK	1			x	x		
17	M2-1420	DRAG LINK	1					x	x
18	MI-1344	CRANK w/SETSCREW	1	x	x	x	x		
18	MI-1419	CRANK w/SETSCREW	1					x	x
19	MI-1528	CRANK STOP w/SETSCREW	1					x	x
20	MI-1322	GUIDE, Rocker	1	x	x	x	x	x	x
21	MI-1320	SPRING	1	x	x	x	x	x	x
22	MI-1346	WASHER, Spring	1	x	x	x	x	x	x
23	M2-1431	PANEL, Column Enclosure	1	x	x				
23	M2-3359	PANEL, Column Enclosure	1			x	x		
23	M4-1457	PANEL, Column Enclosure	1					x	x
24	MI-18926	CABINET STAND w/Castors & Att. Holders							x
25	MI-15102	CASTORS w/BRAKE	4						x
26	MI-3538	WASHER, 3/8" Flat	3	x	x	x	x	x	x
27	WI-7657	CAPSCREW, 1/4 x 1-1/4"	1	x	x	x	x		
28	W0-7012	NUT, 1/4" Hex	1	x	x	x	x		
29	MI-15346	COLLAR, 1/2" Set	1	x	x	x	x		
30	WI-16361	PIN, 1/8 x 3/4" Cotter	2	x	x	x	x	x	x
31	MI-15323	LOCKNUT, 3/8" Hex	5	x	x	x	x	x	x
32	MI-15385	KEY, 1/8 x 1/8 sq. x 1" lg.	2	x	x	x	x		
32	MI-15387	KEY, 3/16 x 3/16 sq. x 1-5/8" lg.	2					x	x
33	MI-15095	CAPSCREW, 3/8 x 2-1/4" Full Thread	1	x	x	x	x	x	x
34	W1-5994	LOCKWASHER, 3/8" Split	4	x	x	x	x		
34	MI-15317	LOCKWASHER, 1/2" Split	4					x	x
35	MI-3476	SPLASH GUARD	1			x	x	x	x
36	M1-15345	PIN, 1/8 x 9/16" Drive	1	x	x	x	x	x	x
37	MI-3514	SCREW, 10-24 x 3/8" Rd.Hd.Self Tapping	2			x		x	x
38	MI-18562	3 WIRE CORD, Rubber Covered	1						
38A	MI-15369	4 WIRE CORD, Rubber Covered	1						
38B	MI-18563	CORD SET ASSY.	1						
39	PI-17212	3 PRONG PLUG	1						
39A	PI-17213	4 PRONG PLUG	1						
40	PI-17227	CABLE CONNECTOR	1						
41	PI-5052	PLATE, Data	1	x	x	x	x	x	x
42	W2-20878	POWER REQUIREMENT NAMEPLATE	1	x	x	x	x	x	x
43	WI-8096	SCREW, #4 x 1/4 Self-Tapping	4	x	x	x	x	x	x
44	M-1-73480	PLASTIC LEG CUP	4					x	

SPECIFY MACHINE SERIAL NO. WHEN ORDERING PARTS



M-5-1505-E TRANSMISSION ASSEMBLY

Item No.	Part No.	Description	No. Reqd.	Item No.	Part No.	Description	No. Reqd.
1	M-4-1251-D	COVER	1	46	M-1-1657	KEY, 3/16" sq. x 1-7/8" lg.	1
2	M-0-17364	DRIV-LOK PIN, Type B, 3/16 dia. x 1/2 lg.	1	46A	M-1-15079	KEY, 1/4 x 1-7/8"lg. (for use w/45A)	1
3	M-1-1681	PLUG ASSY, Trans, Case Vent	1	47	M-2-1259-E	GEAR & CLUTCH, Intermediate	1
4	M-0-17365	WASHER, 1/4 I.D. x 1/2 O.D. xp/64"thk.	9	48	M-1-1884-B	SPACER & BEARING RACE	1
5	W-0-16074	SCREW, Ph. Truss Hd. 1/4-20 x 3/4" lg	4	49	M-0-17374	BEARING, Needle, Torr. B-2010-	1
6	M-0-17366	BEARING, N.D. #3201 or equiv.	4	50	M-0-17375	BEARING RACE, Thrust, Torr. TRA-2031	2
7	M-0-17367	SNAP RING, Truarc 5100-46	2	51	M-0-17376	THRUST BRG., Needle, Torr. NTA-2031	1
8	W-1-13059	SNAP RING, Truarc 5100-66	1	52	M-0-17377	SNAP RING, Truarc Ext. 5100-125	1
9	M-0-17368	BEARING, N. D. #3203 or equiv.	2	53	M-0-17378	BEARING, N. D. #3205 or equiv.	1
10	M-2-1407-B	COVER, Shaft	1	54	M-1-1279	SPACER (used with M-2-1271 shaft)	1
11	W-0-16075	SCREW, Ph. Truss Hd. 1/4-20 x 5/8" lg.	5	54A	M-1-1279-B	SPACER (used with M-2-1271-D shaft)	1
12	M-0-16076	PIN, Escutcheon #13 x 1/4" lg. brass	4	55	M-1-15316	SEAL (for use with M-1-1271 only)	1
13	M-1-1492-B	DATA PLATE	1	55A	P-1-5274	SEAL (for use with M-1-1271-D only)	1
14	W-0-14862	SHAFT ASSY, Intermediate (includes items 14A thru 19)	1	56	W-0-16087	SCREW, Fl. hd. 5/16-18 x 7/8" lg.	4
14A	M-1-15074	INTERMEDIATE SHAFT	1	57	M-1-1637	GASKET, Plastic - Red .002 thk, Tan. .004 thk, Transmatte .0075 thk	A/R
14B	M-1-15078	SPACER (on hvy. duty shafts only)	1	58	M-0-17386	PLUG, Expansion	1
15	M-1-1559	KEY, 3/16" sq. x 5/8" lg.	2	59	M-2-1262-G	SHAFT, Bevel Pinion & Attachment Dr.	1
16	M-1-15076	GEAR, Countershaft	1	60	W-0-16086	SETSCREW, Soc. Hd. 3/8-16 x 7/8" lg.	1
17	M-1-15077	SPACER	1	61	W-0-16078	SCREW, Fl. Hd. 10-24 x 5/8" lg.	4
18	M-1-15075	SPUR PINION	1	62	M-1-1408-A	BEARING COVER	1
19	M-1-15083	SNAP RING, Truarc 5100-75	1	63	M-0-17381	"0" RING, Garlock 24849-15, 3/4 x 1" x 1/8"	1
20	M-1-1280-A	SPACER	1	64	M-3-3332-D	CAM & GEAR SHAFT	1
21	M-0-17369	BEARING, N. D. #3304 or equiv.	1	65	M-1-1659	KEY, 3/16" sq. x 1/2" lg.	1
22	M-1-1934	CLUTCH, Overrun	1	66	M-0-17382	DRIV-LOK, 1/8 dia. x 1/2"lg, Type "D"	1
23	M-2-1258-D	SPUR GEAR & SLEEVE, Low speed	1	67	M-4-1397-F	HOUSING, Trans.	1
24	M-0-17370	BUSHING, Flange	1	68	W-0-16079	PLUG, Drain 1/8-27 N. P. T.	1
25	M-2-1261-E	BEVEL GEAR	1	69	M-0-16080	LOCKWASHER, Brg, Torr. #W-02	1
26	M-0-17371	BEARING, Needle, Torrington B-168	1	70	M-0-16081	LOCKNUT, Brg, Torr. #N-02	1
27	M-2-1260-F	GEAR & CLUTCH, Hi speed	1	71	M-2-1264-C	RING GEAR, Internal	1
28	M-0-17372	THRUST BUSHING, Bunting TW-100	1	72	M-1-1292	SPRING	3
29	M-2-1265-C	CLUTCH (Jaw)	1	73	W-0-16082	BALL, Steel 1/4" dia.	3
30	M-0-17373	SNAP RING, Truarc 5000-50	2	74	W-0-16083	SCREW, Soc. Hd. 1/4-20 x 1" lg.	6
31	M-1-1404-B	GUIDE, Actuator rod	1	75	M-1-1263-A	PINION, Planet	1
32	M-1-1288	SPRING, Shifter fork	2	76	M-3-1248-C	SUPPORT, Beater Shaft (for use with M-2-1271 only)	1
33	M-1-3331-B	ROD, Actuator	2	76A	M-3-1248-E	SUPPORT, Beater Shaft (for use with M-2-1271-D only)	1
34	M-2-3345-B	SHIFTER YOKE ASSY. (Includes Items 30-31-32-33-34)	1	77	M-2-1284-A	DRIP RING	1
35	M-1-1254-C	PINION SHAFT	1	78	W-0-16084	WASHER, Fl. 1/2" x 1-1/4" O.D.	1
36	M-1-1658	KEY, 3/16" sq. x 3/4" lg.	2	79	W-0-16085	STOP NUT, Elastic 1/2-20	1
37	M-1-1253-C	WORM GEAR	1	80	M-1-1396-A	PIN, S/Stl.	1
38	M1-3488	SNAP RING, Truarc 5100-75	1	81	M-2-1250-D	SHAFT, Beater	1
39	M-1-1491-A	SPACER (for A. O. Smith Motor-only)	1	82	W-1-12561-A	OIL SEAL, Victor K-3-64254	1
39A	M-1-1539	SLEEVE (for Howell & Marathon Motors)	1	83	M-0-17383	BEARING, N.D. #3204 or equiv.	1
40	M-1-1252-A	WORM, 5 thread	1	84	M-1-1438-A	SCREW ASSY, Wing head	1
41	M-1-15142	LOCKWASHER, Bearing, Torr. W-01	1	85	M-1-1933	CAP, Aux. Drive Hub	1
42	M-0-16077	LOCKNUT, Bearing, Torr. N-01	1	86	M-1-15314	OIL SEAL, Victor K-4-63544	1
43	M-1-1293	GUIDE ROD, Shifter Yoke	1	87	M-3-1932-A	HUB, Aux. attachment	1
44	M-1-1560	KEY, 3/16" sq. x 1" lg.	1				
45	M-2-1271	SUN SHAFT, 3/4" dia. Shaft	1				
45A	M-2-1271-D	SUN SHAFT, 15/16" dia. Shaft (use 46A key)	1				

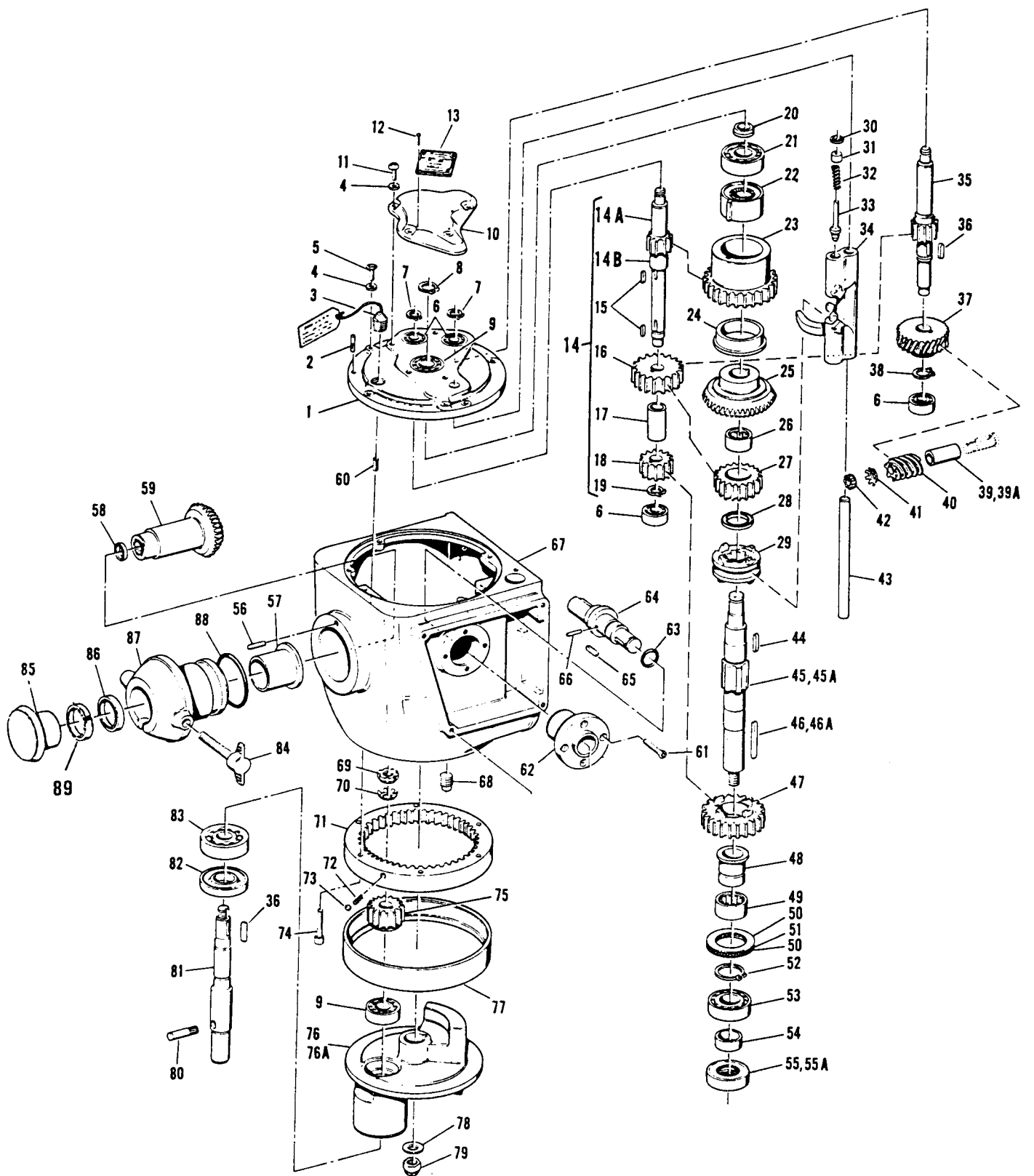
NOTE 1.

In 1967 the thickness of the lower end of the sun shaft was changed from 3/4" to 15/16". To determine the diameter of the shaft in any transmission, remove the support (Index 76, Part #M-3-1248) and measure the shaft end.

NOTE 2.

Certain models of 1505 transmissions used a M-3-1282 attachment shaft, M-1-1475 cap and M-3-1411 hub. All of these items are now replaced by index 87, M-3-1932-A Attachment Hub.

SPECIFY MACHINE SERIAL NO. WHEN ORDERING PARTS



TRANSMISSION  
M-5-3330 WITH BLAKESLEE HUB  
M-5-18769 WITH UNIVERSAL HUB (TYPE B)

**TRANSMISSION**  
**M-5-3330 WITH BLAKESLEE HUB**  
**M-5-18769 WITH UNIVERSAL HUB (TYPE B)**

Item No.	Part No.	Description	No. Reqd.	Item No.	Part No.	Description	No. Reqd.
1	M-4-1959-A	COVER	1	47	M-2-1259-E	GEAR & CLUTCH, Intermediate	1
2	M-0-17364	DRIV-LOK PIN, Type B 3/16 dia. x 1/2" lg.	1	48	M-1-1884-B	SPACER & BEARING RACE	1
3	M-1-1681	PLUG ASSY, Trans. Case Vent	1	49	M-0-17374	BEARING, Needle, Torr. B-2010	1
4	M-0-17365	WASHER, 1/4 I. D. x 1/2 O.D. x 1/64"thk	9	50	M-0-17375	BEARING RACE, Thrust, Torr. TRA-2031	2
5	W-0-16074	SCREW, Ph. Truss Hd. 1/4-20 x 3/4" lg.	4	51	M-0-17376	THRUST BRG., Needle, Torr. NTA-2031	1
6	M-0-17366	BEARING, N.D. #3201 or equiv.	4	52	M-0-17377	SNAP RING, Truarc Ext. 5100-125	1
7	M-0-17367	SNAP RING, Truarc 5100-46	2	53	M-0-17378	BEARING, N. D. #3205 or equiv.	1
8	W-1-13059	SNAP RING, Truarc 5100-66	1	54	M-1-1279	SPACER (used with M-2-1271 shaft)	1
9	M-0-17368	BEARING, N.D. #3203 or equiv.	2	54A	M-1-1279-B	SPACER (used with M-2-1271-D shaft)	1
10	M-2-1407-B	COVER, Shaft	1	55	M-1-15315	SEAL (for use with M-2-1271-D only)	1
11	W-0-16075	SCREW, Ph. Truss Hd. 1/4-20 x 5/8" lg.	5	55A	M-1-15318	SEAL (for use with M-2-1271 only)	1
12	M-0-16076	PIN, Escutcheon #13 x 1/4" lg. brass	4	56	M-0-17385	PIN, Driv-lok, 5/16 dia. x 3/4" lg.	1
13	M-1-1492-B	DATA PLATE	1	57	M-1-3334	BUSHING, Aux. attachment shaft	1
14	W-0-14862	SHAFT ASSY, Intermediate (includes items 14A thru 19)	1	58	M-0-17386	PLUG, Expansion	1
14A	M-1-15074	INTERMEDIATE SHAFT	1	59	M-2-1262-G	SHAFT, Bevel Pinion and Attachment Dr.	1
14B	M-1-15078	SPACER (on hvy. duty shafts only)	1	* 59A	M-2-18750	SHAFT, Bevel Pinion and Attachment Dr.	1
15	M-1-1559	KEY, 3/16" sq. x 5/8" lg.	2	60	W-0-16086	SETSCREW, Soc. Hd. 3/8-16 x 7/8" lg.	1
16	M-1-15076	GEAR, Countershaft	1	61	W-0-16078	SCREW, Fl. Hd, 10-24 x 5/8" lg.	4
17	M-1-15077	SPACER	1	62	M-1-1408-A	BEARING COVER	1
18	M-1-15075	SPUR PINION	1	63	M-0-17381	"O" RING, Garlock 24849-15, 3/4 x 1" x 1/8"	1
19	M-1-15083	SNAP RING, Truarc 5100-75	1	64	M-2-3332-D	CAM & GEAR SHAFT	1
20	M-1-1280-A	Spacer	1	65	M-1-1659	KEY, 3/16" sq. x 1/2" lg.	1
21	M-0-17369	BEARING, N. D. #3304 or equiv.	1	66	M-0-17382	DRIV-LOK, 1/8 dia. x 1/2" lg. Type "D"	1
22	M-1-1934	CLUTCH, Overrun	1	67	M-5-1960-C	HOUSING, Trans.	1
23	M-2-1258-D	SPUR GEAR & SLEEVE, Low speed	1	68	W-0-16079	PLUG, Drain 1/8-27 N. P.T.	1
24	M-0-17370	BUSHING, Flange	1	69	M-0-16081	LOCKNUT, Brg, Torr. #N-02	1
25	M-2-1261-E	BEVEL GEAR	1	70	M-0-16080	LOCKWASHER, Brg, Torr. #W-02	1
26	M-0-17371	BEARING, Needle, Torrington B-168	1	71	M-2-1264-C	RING GEAR, Internal	1
27	M-2-1260-F	GEAR & CLUTCH. Hi speed	1	72	M-1-1292	SPRING	3
28	M-0-17372	THRUST BUSHING, Bunting TW-100	1	73	W-0-16082	BALL, Steel 1/4" dia.	3
29	M-2-1265-C	CLUTCH (Jaw)	1	74	S-0-16083	SCREW, Soc. Hd. 1/4-20 x 1" lg.	6
30	M-0-17373	SNAP RING, Truarc 5000-50	2	75	M-1-1263-A	PINION, Planet	1
31	M-1-1404-B	GUIDE, Actuator rod	1	76	M-3-1248-C	SUPPORT, Beater Shaft (for use with M-2-1271 only)	1
32	M-1-1288	SPRING, Shifter fork	2	76A	M-3-1248-E	SUPPORT, Beater Shaft (for use with M-2-1271-D only)	1
33	M-1-3331-B	ROD, Actuator	2	77	M-2-1284-A	DRIP RING	1
34	M-2-3345-B	SHIFTER YOKE ASSY. (Includes Items 30-31-32-33-34)	1	78	W-0-16084	WASHER, Fl. 1/2" x 1-1/4" O.D.	1
35	M-1-1254-C	PINION SHAFT	1	79	W-0-16085	STOP NUT, Elastic 1/2-20	1
36	M-1-1658	KEY, 3/16" sq. x 3/4" lg.	2	80	M-1-1396-A	PIN, S/Stl.	1
37	M-1-1253-C	WORM GEAR	1	81	M-2-1250-D	SHAFT, Beater	1
**37a	M0-95492	WORM GEAR	1	82	W-1-12561	OIL SEAL, Victor K-3-64254	1
38	M1-3488	SNAP RING, Truarc 5100-75	1	83	M-0-17383	BEARING, N.D. #3204 or equiv.	1
39	M-1-1491-A	SPACER (for A. O. Smith Motor-only)	1	84	M-1-1438-A	SCREW ASSY, Wing head	1
39A	M-1-1539	SLEEVE (for Howell & Marathon Mtrs.)	1	85	M-1-1933	CAP, Aux. Drive Hub	1
40	M-1-1252-A	WORM, 5 thread	1	*85A	M-1-18751	CAP, Aux. Drive Hub	1
**40a	M0-95491	WORM	1	86	M-1-15314	OIL SEAL, Victor K4-63544	1
41	M-1-15142	LOCKWASHER, Bearing, Torr. W-01	1	*86A	M-0-18752	OIL SEAL	1
42	M-0-16077	LOCKNUT, Bearing, Torr. N-01	1	87	M-3-3333-A	HUB, Aux, attachment	1
43	M-1-1293	GUIDE ROD, Shifter Yoke	1	*87A	M-3-18749	HUB, Aux, attachment	1
44	M-1-1560	KEY, 3/16" sq. x 1" lg.	1	88	M-0-17384	"O" RING SEAL	1
45	M-2-1271	SUN SHAFT, 3/4" shaft dia.	1		M-0-18805	OIL, Transmission (3 pts. reqd)	1
45A	M-2-1271-D	SUN AHFT. 15/16" shaft dia. (use 46A key)	1	89	M-1-95032	SLEEVE	1
46	M-1-1657	KEY, 3/16" sq. x 1-7/8" lg.	1				
46A	M-1-15079	KEY, 1/4x1-7/8"lg.(for use w/45A)	1				

\* These parts used only on Universal Hub (Type B) transmissions, beginning with serial \* 1 **B** **A** **A** & up.

\*\* USED WITH M-5-95493 SPECIAL TRANSMISSION (50 cycle)

**NOTE 1.**

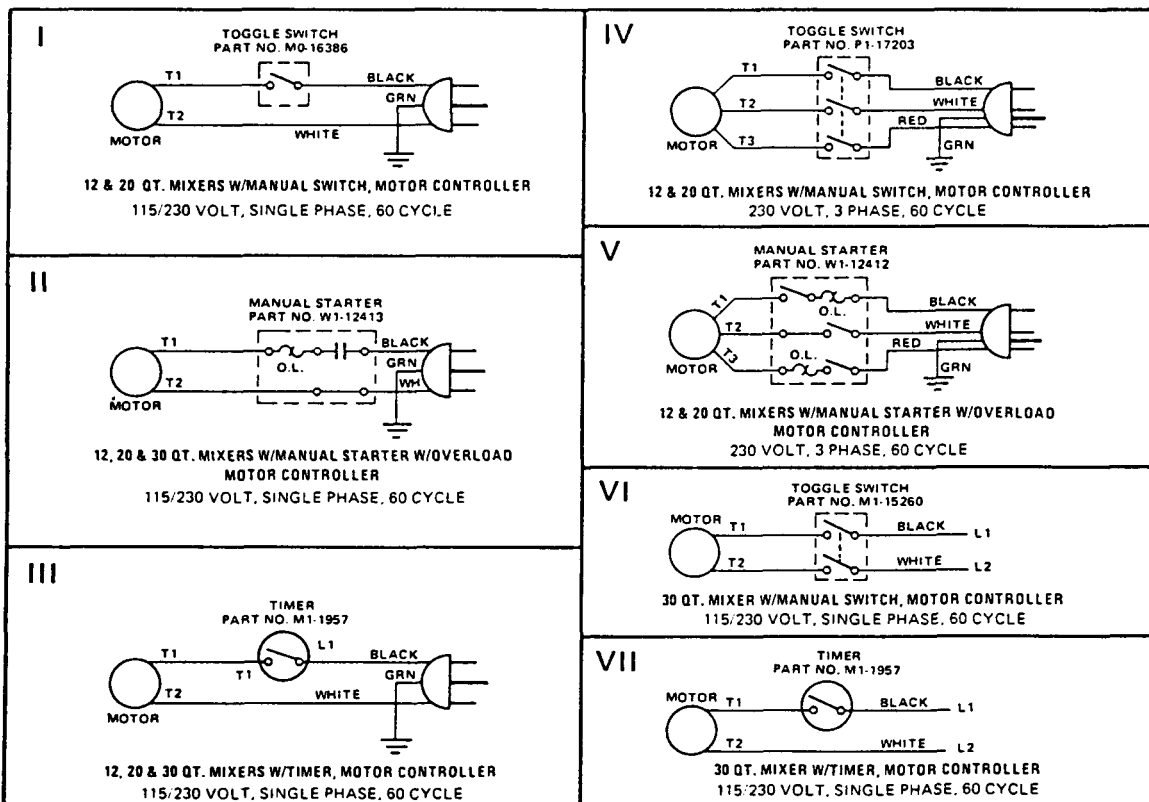
In 1967 the thickness of the lower end of the sun shaft was changed from 3/4" to 15/16". To determine the diameter of the shaft in any transmission, remove the support (Index 76, Part #M-3-1248) and measure the shaft end.

**SPECIFY MACHINE SERIAL NO. WHEN ORDERING PARTS**

# Electrical System

Owners Manual ~ Circuit Diagram No.	FOOD MIXERS – TOTAL AMPERAGE AND BRANCH CIRCUIT PROTECTION CHART – COMMERCIAL 60 CYCLES													
	MODELS	MOTOR						CONTROLLER		OVER LOAD HEATER ELEMENT		MIXER TOTAL (AMPS)	BRANCH CIRCUIT PROTECTION	
		HP	VOLTAGE	PH	CY	F.L. AMPS	G.S.B. PART NO	TYPE	G.S.B. PART NO.	MFR TYPE NO.	G.S.B. PART NO.		CONDUCTORS (MIN) CAPACITY	(MAX) AMPICITY TIME DELAY FUSE OR CIRCUIT BREAKER
1	B12,B12D	1/4	115	1	60	4.6	M-1-15112	TOGGLE SW	M-0-16386	-	-	4.6	5.8	15
2	"	"	"	"	"	"	"	MAN STARTER	W-1-12413	P-28	M-0-16396	"	"	"
4	"	"	220	3	"	1.3	M-1-15113	TOGGLE SW	P-1-17203	-	-	1.3	1.6	"
5	"	"	"	"	"	"	"	MAN STARTER	W-1-12412	4211	M-0-16407	"	"	"
3	B12T, B12DT	"	115	1	"	4.6	M-1-15112	TIMER 15min	M-1-1957	-	-	4.6	5.8	"
3	"	"	230	"	"	2.5	M-1-15112	"	"	-	-	2.3	2.9	"
1	B20,B20D,F20, F20D,U20,U20D	1/2	115	"	"	7.0	M-1-15117	TOGGLE SW	M-0-16386	-	-	7.0	3.8	"
2	"	"	"	"	"	"	"	MAN STARTER	W-1-12413	P-32	M-0-16397	"	"	"
1	"	"	230	"	"	3.5	"	TOGGLE SW	M-0116386	-	-	3.5	4.4	"
2	"	"	"	"	"	"	"	MAN STARTER	W-1-12413	P-25	M-0-16398	"	"	"
4	"	"	220	3	"	2.0	M-1-15118	TOGGLE SW	P-1-17203	-	-	2.0	2.5	"
5	"	"	"	"	"	"	"	MAN STARTER	W-1-12412	4211	M-0-16408	"	"	"
5	"	"	440	"	"	1.0	"	"	"	4211	M-0-16406	1.0	1.3	"
3	B20T,B20BT,F20T,F 20DT,U20T,U20DT	"	115	/	"	7.0	M-1-15117	TIMER 15min	M-1-1957	-	-	7.0	8.8	20
3	"	"	230	"	"	3.5	"	"	"	-	-	3.5	4.4	15
2	F30,F30D	3/4	115	"	"	9.6	M-1-15119	MAN STARTER	W-1-12413	P-35	M-0-16399	9.6	12.0	25
6	"	"	"	"	"	"	"	TOGGLE SW	M-1-15260	-	-	"	"	"
8	"	"	"	"	"	"	"	A.C.MAN	M-0-16236	N-31	M-0-16403	"	"	"
11	"	"	"	"	"	"	"	A.C.MAN	M-0-16235	"	"	"	"	"
2	"	"	230	"	"	4.8	"	MAN STARTER	W-1-12413	P-28	M-0-16396	4.8	6.0	15
6	"	"	"	"	"	"	"	TOGGLE SW	M-1-15260	-	-	"	"	"
8	"	"	"	"	"	"	"	A.C.MAN	M-0-16236	N-24	M-0-16402	"	"	"
11	"	"	"	"	"	"	"	A.C.MAN	M-0-16235	"	"	"	"	"
9	"	"	220	3	"	2.4	M-1-15120	A.C.MAN	M-0-14798	N-17	M-0-16401	2.4	3.0	"
12	"	"	"	"	"	"	"	A.C.MAN	M-0-16240	"	"	"	"	"
10	"	"	440	"	"	1.2	"	A.C.MAN	M-0-16234	*N-10	M-0-16400	1.2	1.5	"
12	"	"	"	"	"	"	"	A.C.MAN	"	"	"	"	"	"
7	F30T,F30DT	"	115	1	"	9.6	M-1-15119	TIMER 15min	M-1-1957	-	-	9.6	12.0	25
8	"	"	"	"	"	"	"	A.C.MAN	M-0-16236	N-31	M-0-16403	"	"	"
7	"	"	230	"	"	4.8	"	TIMER 15min	M-1-1957	-	-	4.8	5.0	15
8	"	"	"	"	"	"	"	A.C.MAN	M-0-16236	N-24	M-0-16402	"	"	"
9	"	"	220	3	"	2.4	M-1-15120	"	M-0-14798	N-17	M-0-16401	2.4	3.0	"

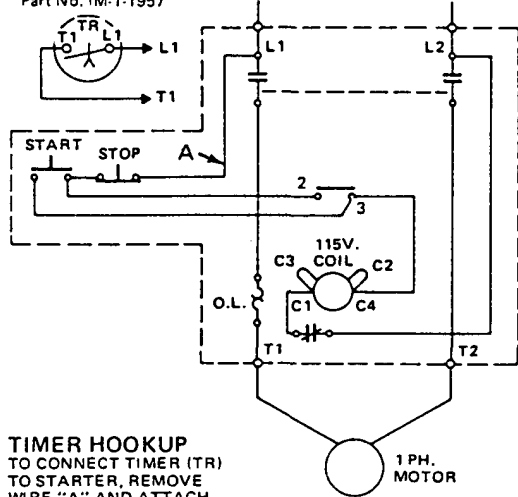
**SEE PAGE 25 FOR SINGLE PHASE MOTOR CAPACITOR PART NUMBERS**



# VIII

Part No. IM-1-1957

115 VOLT  
60 Hz., 1 PH.  
POWER LINES

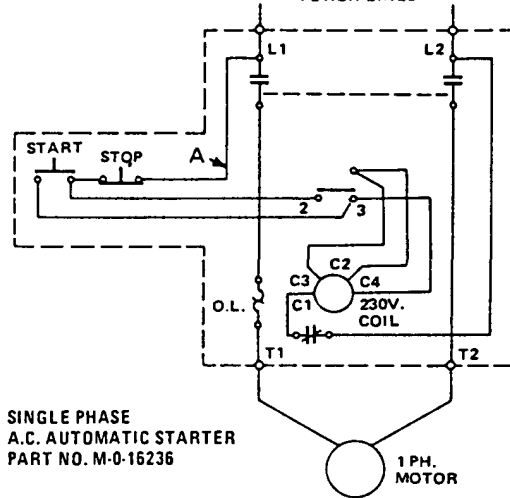


**TIMER HOOKUP**  
TO CONNECT TIMER (TR)  
TO STARTER, REMOVE  
WIRE "A" AND ATTACH  
TIMER WIRE "L1" TO  
LINE WIRE "L1". ATTACH  
TIMER WIRE "T1" TO  
"STOP" BUSHBUTTON TER-  
MINAL.

1 PH.  
MOTOR

1 PH. A.C. AUTOMATIC STARTER & TIMER  
(OFFERS LOW VOLTAGE & NO VOLTAGE PROTECTION)

230 VOLT  
60 Hz., 1 PH.  
POWER LINES



SINGLE PHASE  
A.C. AUTOMATIC STARTER  
PART NO. M-0-16236

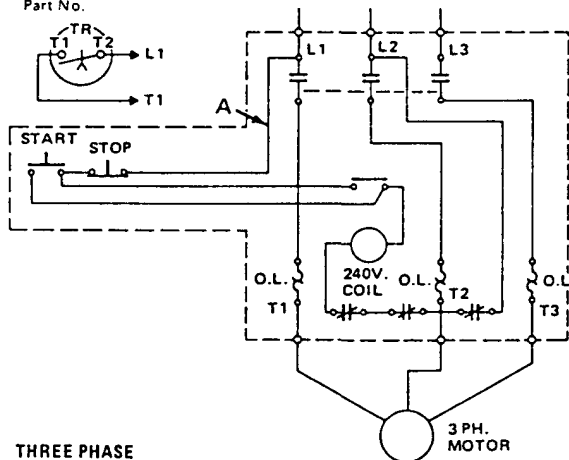
1 PH.  
MOTOR

3 PH. AUTOMATIC MOTOR STARTER & TIMER  
(OFFERS LOW VOLTAGE & NO VOLTAGE PROTECTION)

# IX

Part No.

220/240 VOLT  
60 Hz., 3 PH.  
POWER LINES



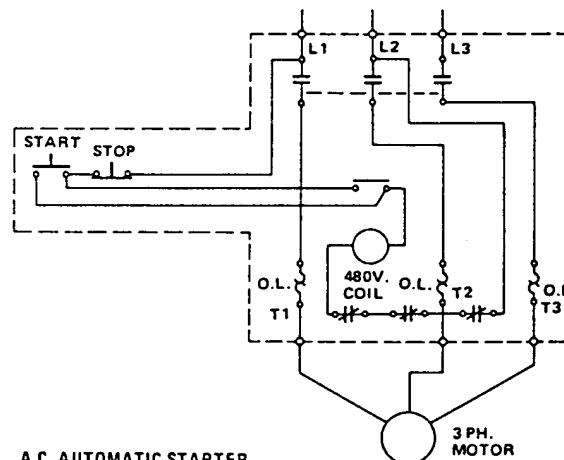
THREE PHASE  
A.C. AUTOMATIC STARTER  
PART NO. M-0-14798

3 PH.  
MOTOR

3 PH. AUTOMATIC STARTER  
(OFFERS LOW VOLTAGE & NO VOLTAGE PROTECTION)

# X

440/480 VOLT  
60 Hz., 3 PH.  
POWER LINES



A.C. AUTOMATIC STARTER  
THREE PHASE  
PART NO. M-0-16234

3 PH.  
MOTOR

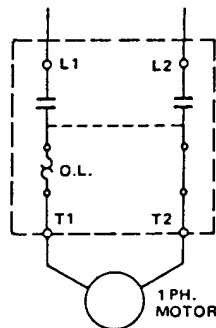
NOTE: TIMER CANNOT BE  
USED WITH THIS STARTER.

1 PH. MANUAL MOTOR STARTER

# XI

115/230 VOLT  
60 Hz., 1 PH.  
POWER LINES

SINGLE PHASE  
A.C. MANUAL STARTER  
PART NO. M-0-16235



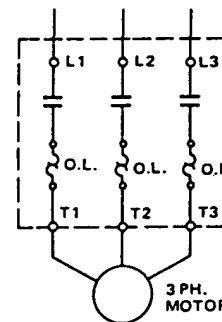
1 PH.  
MOTOR

3 PH. MANUAL MOTOR STARTER

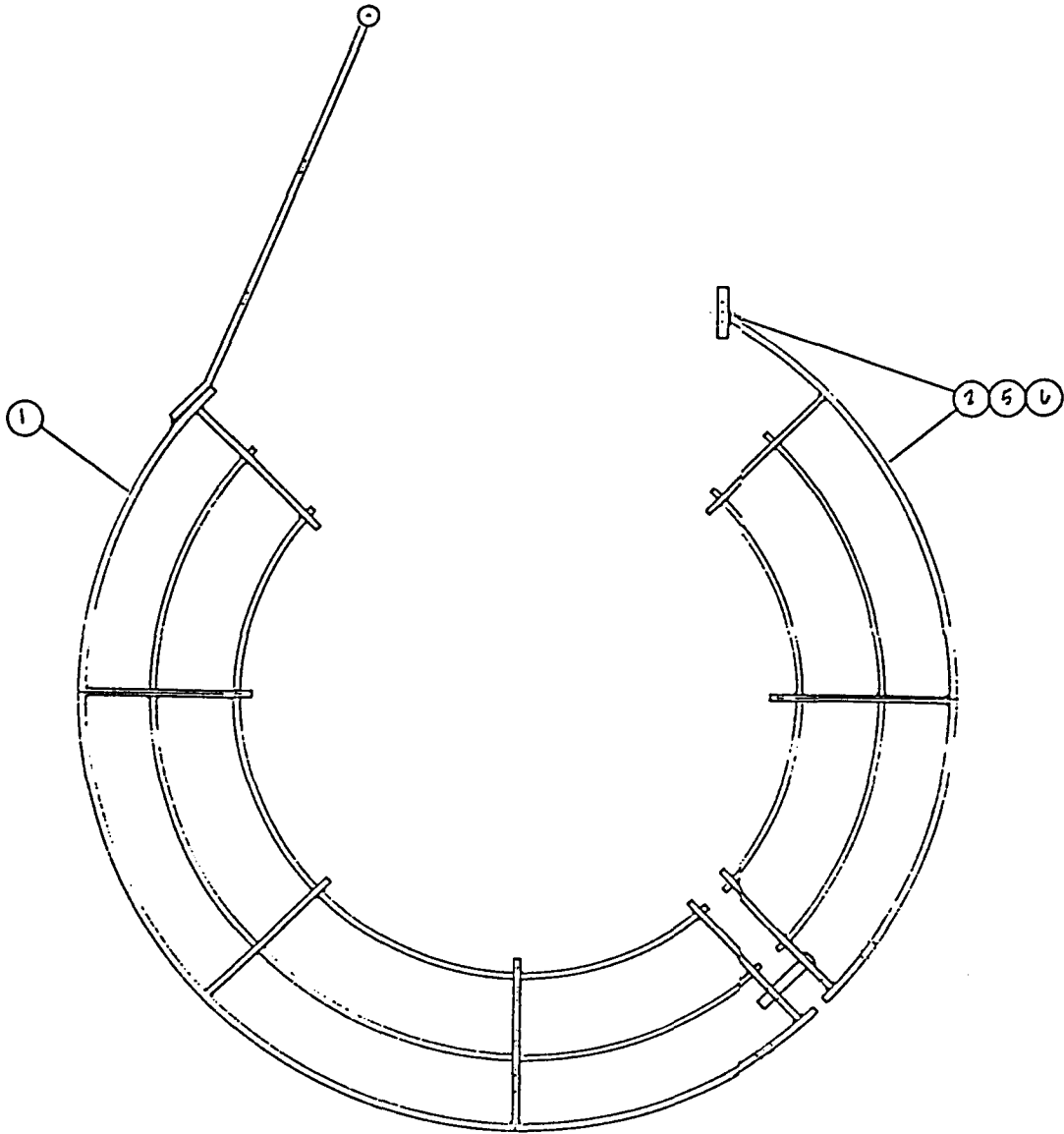
# XII

200-240/440-575V.  
60 Hz., 3 PH.  
POWER LINES

THREE PHASE  
A.C. MANUAL STARTER  
PART NO. M-0-16240



3 PH.  
MOTOR

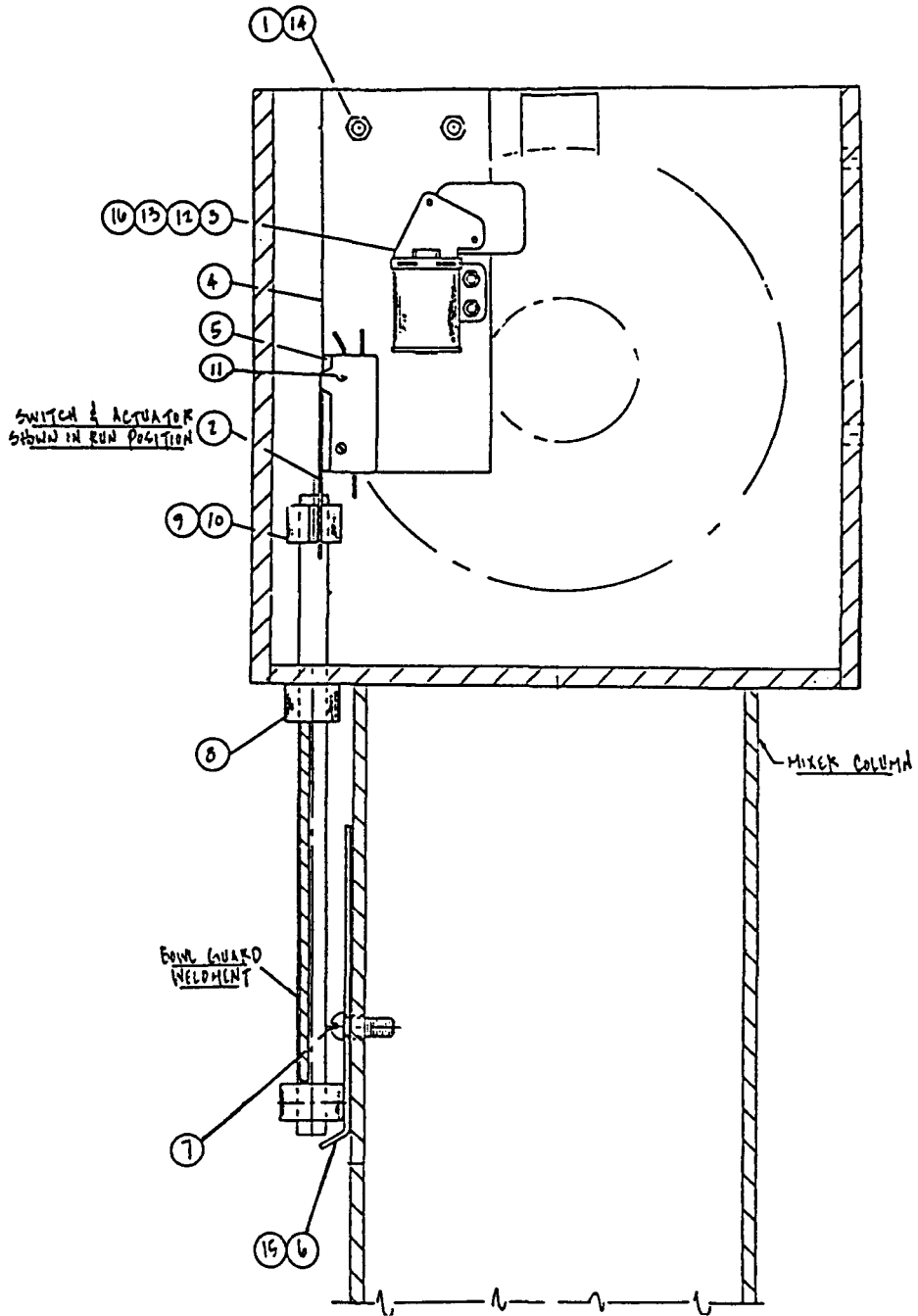


ITEMS #5, 6 & 7 NOT SHOWN

7	M-3-74955	1	SAFTEY SWITCH ASSY.
6	W-1-7282	2	1/4 - 20 LOCKNUT
5	W-1-8434	2	1/4 - 20 X 1.00 K.H SER
4	W-0-14895	1	PIN
3	M-1-74941	1	HANDLE
2	M-2-74848	1	SIDE PLATE WLDMT
1	M-3-74845	1	COVER WLDMT
ITEM	PART NO.	QTY	DESCRIPTION
---MATERIAL LIST---			

BOWL GAURD ASSEMBLY

TYPE "A"



16	M-0-75292	1	POWER RELAY -230V
15	M-2-79291	1	RETAINER - 30QT
14	W-1-12608	2	1/4-20 x .75 Fip. SCR
13	W-1-8875	2	#6-32 HEX NUT
12	W-1-9887	2	#6-32 x .50 K.H.M.S.
11	M-0-74978	2	#6-32 x 1.50 K.H.M.S.
10	W-1-7847	1	1/4-20 x .31 SET SCR.
9	M-1-74954	1	ACTUATOR WELDM'T
8	M-0-74951	1	SPACER
7	W-1-8434	2	1/4-20 x 1.00 K.H.M.S.
6	M-2-75502	1	RETAINER -30 QUART
5	M-1-74948	1	SPACER-SWITCH
4	M-1-75949	1	PLATE- SWITCH
3	M-0-74073	1	POWER RELAY - 115V
2	W-0-70152	1	MICRO-SWITCH
1	W-0-16732	2	1/4-20 LOCKNUT
ITEM	PART NO	QTY.	DESCRIPTION
--MATERIAL LIST--			

BOWL GUARD ASSEMBLY

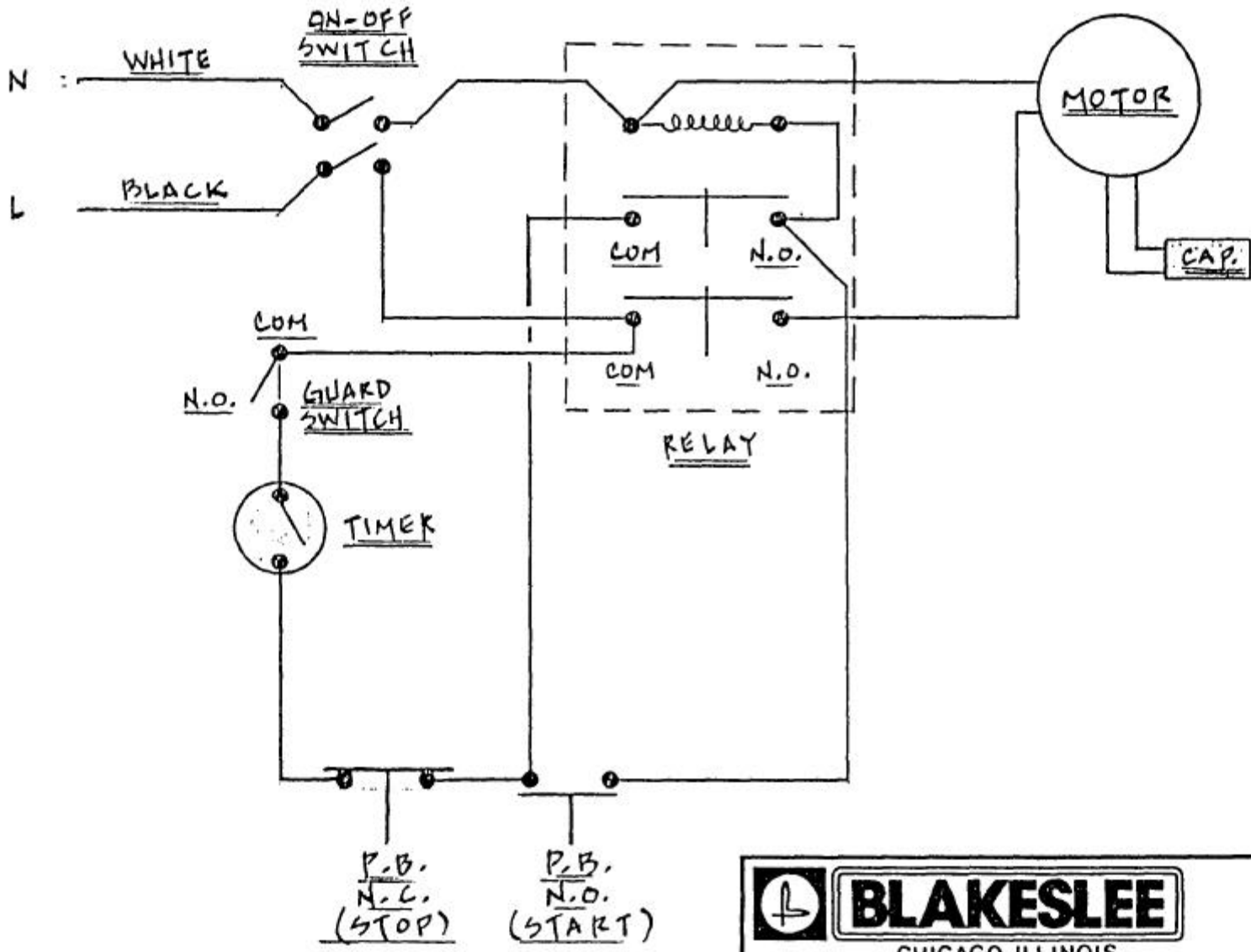
TYPE "A"

DWG. NO.  
M-1-73676

IF IN DOUBT ASn

EQUIP.  
GROUND

GREEN



38

**BLAKESLEE**  
CHICAGO, ILLINOIS

Commercial Dishwashing  
& Kitchen Equipment  
- Since 1880 -

BOWL GUARD WIRING DIAGRAM

TOLERANCES UNLESS  
OTHERWISE NOTED:  
FRACTIONAL ±  
DECIMAL ±

ISSUE	DESCRIPTION	BY	DATE
RECORD OF CHANGES			

DR BY	SCALE NTS	DATE 2-4-94
FIRST MADE FOR	MODEL 20 & 30 QT. MIXERS	DWG. NO. M-1-73676