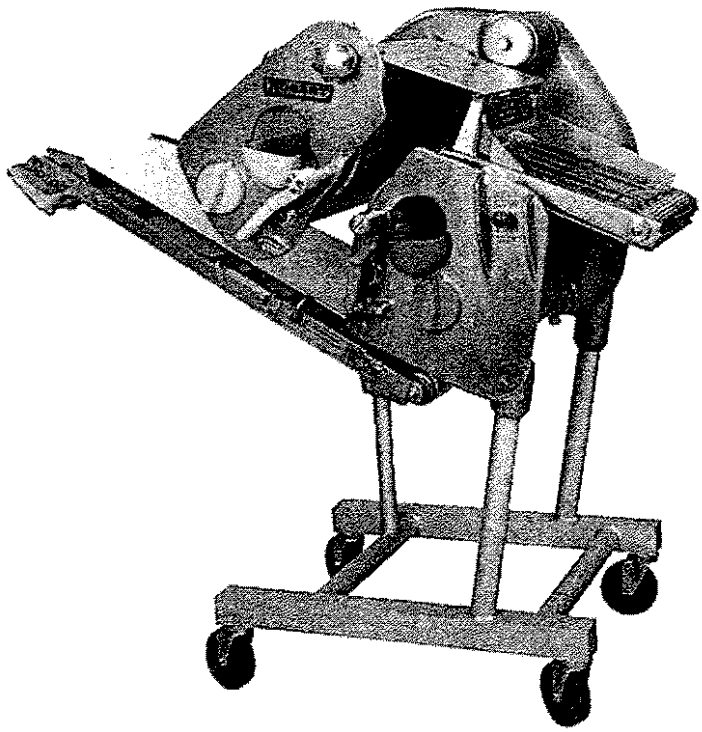
HOBART

# INSTRUCTION MANUAL

## ... with Replacement Parts



# MODEL ABR-1U AUTOMATIC BONE DUST REMOVER

(INCLUDES MOTOR PARTS)

ML-19503

A product of HOBART CORPORATION TROY, OHIO 45374

FORM 12429 (Rev. E, 10-94)

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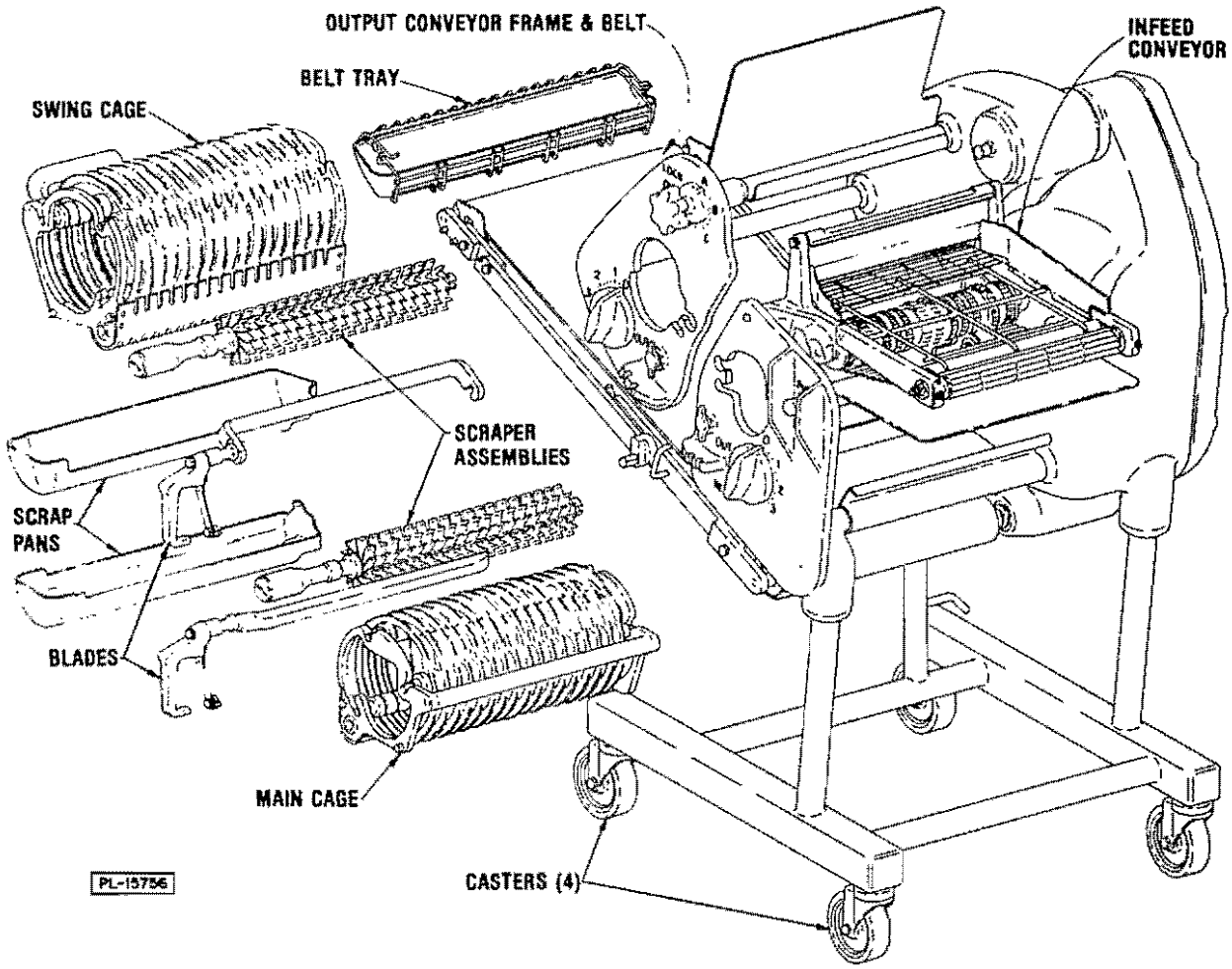



Fig. 1

# Instructions for Operation and Care of MODEL ABR-1U BONE DUST REMOVER

## Save These Instructions

## GENERAL

The Model ABR-1U Automatic Bone Dust Remover is designed to remove bone dust and loose particles from sawed cuts of meat.

For best results, the meat product should be under 40° F.

The ABR-1U is adjustable for maximum scraping efficiency on all sawed cuts of beef, pork, lamb, ham, and veal ranging in thickness from 1/4" to 3-1/2".

The scraping of the meat is accomplished by conveying the sawed product between two reversely rotating scraper clusters.

The scraper clusters rotate over adjustable cluster cleaning blades that direct the bone dust and loose particles into trays that are removable for emptying and cleaning.

The machine is powered by a 1/2 H.P. motor. It has an infeed conveyor speed of 45 feet per minute and output conveyor speed of 60 feet per minute.

The ABR-1U is designed for right to left operation only.

## INSTALLATION

NOTE: Immediately after unpacking, machine should be checked for possible damage. If this machine is found to be damaged after unpacking, save the packing material and contact the shipper.

**Throughout these instruction, any reference to the "Front" of the machine will be the operator side where the controls are located. The left side is the output end, and the right side is the infeed end.**

To remove machine from skid, remove four hold down bracket lag screws.

Parts identified in Fig. 1 will be found in the interior containers.

This machine must be thoroughly cleaned after installation and before being put into service. Refer to MAINTENANCE for instruction.

### ASSEMBLY

Install the caster. Tighten set screws and fill holes with Silastic or RTV. Silastic or RTV should be flush with the outside of tube.

Set the cage pivot pins (1, Fig. 2) to the OUT position by turning them clockwise.

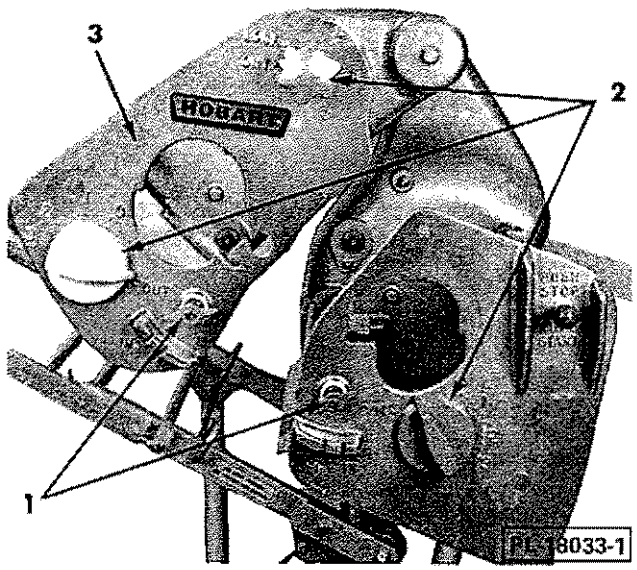



Fig. 2

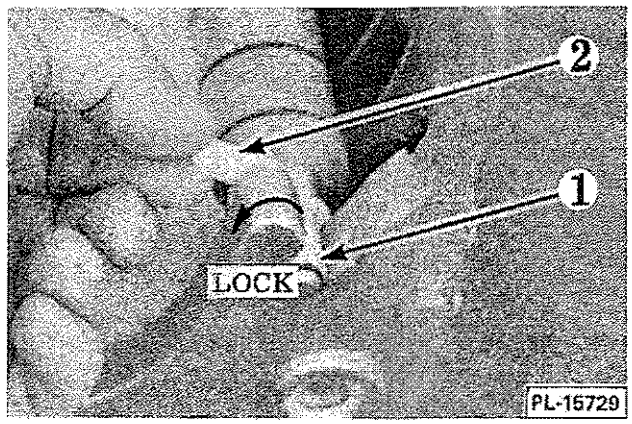



Fig. 3

Set the three adjusting knobs (2, Fig. 2) to the OUT position. Lift up the swing head (3, Fig. 2) to set the gap adjusting knob (upper knob) to the OUT position.

Locate the main cage (Fig. 1). It has the smaller diameter (8-3/16" O.D.) ring gears. Make sure the flange bearing (1, Fig. 3) is properly located on cage roller. Make sure the two white locking tabs (2, Fig. 3) are in position to retain the bottom roller.

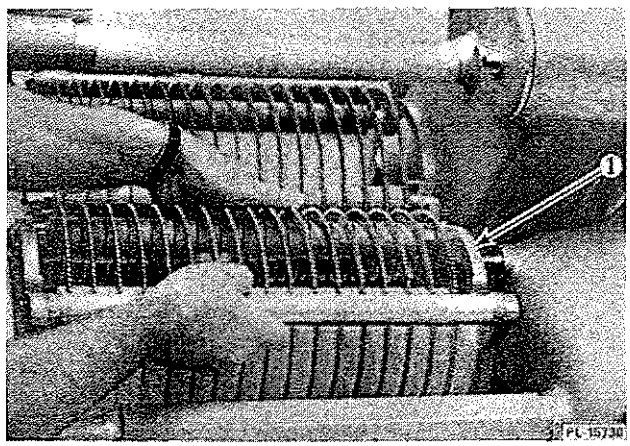



Fig. 4

Place the main cage (1, Fig. 4) in the unit and lock the pivot pin (1, Fig. 2) by turning it counter-clockwise. Be sure the main cage drive hub is engaged.

The swing cage (1, Fig. 5) should be checked and installed the same as main cage.

The scraper assemblies should be installed next (Fig. 6). The scraper handles are color-coded light and dark gray. The light gray goes into the swing

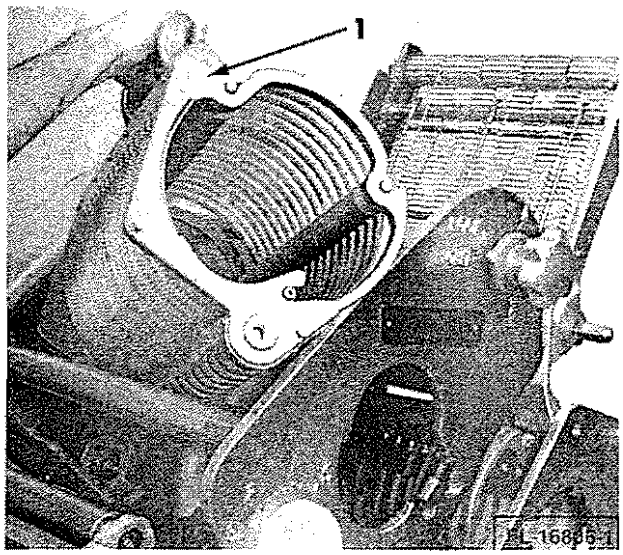



Fig. 5

cage. The dark gray goes into the main cage. The cage adjusting knobs must be in the OUT position. Both scraper assemblies are installed in the same manner.

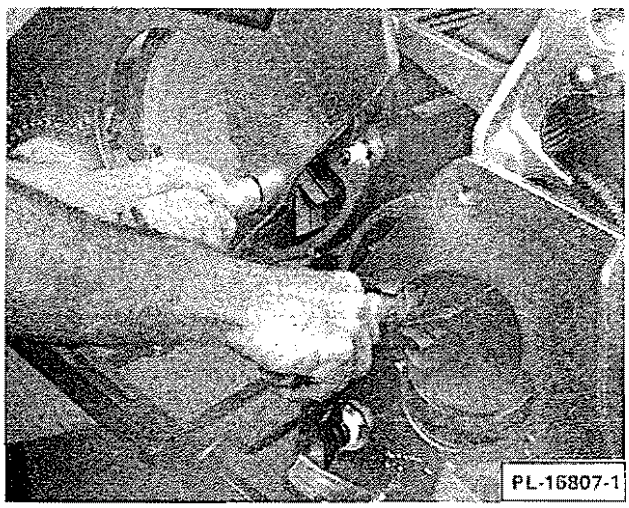



Fig. 6

Insert a scraper assembly into the interior part of its appropriate cage. Use the plastic liner as a guide. Reach in cage and support the blades while engaging the bayonet slot, at the back end, with the drive hub. Slide the handle end of scraper into the slot in the support (see Fig. 6).

Turn the scraper back and forth to assure it is engaged with the pins on the drive hub. If the blades easily rotate a half turn or more, scraper is not properly engaged. If blades rotate less than one quarter turn, scraper is fully engaged. DO NOT force the scraper assemblies into position.

Turn the main cage adjusting knob (3, Fig. 7) from OUT to **0**.

Push the swing cage handle (1, Fig. 8) to the left while turning the swing cage adjusting knob (4, Fig. 7) from OUT toward **0**. If this is not done, the swing cage will remain forward rather than being adjusted by the knob.

The blades (1, Fig. 7) should be installed next. The blade handles are color-coded light and dark gray. The light gray goes into the swing cage. The dark gray goes into the main cage. Both blades are installed in the same manner.

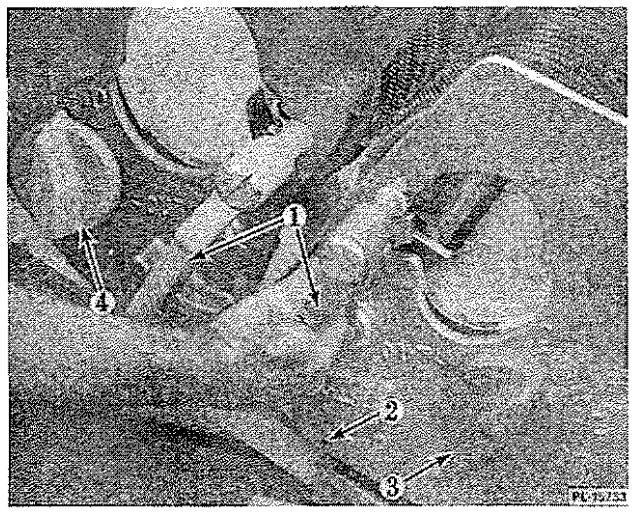



Fig. 7

Insert a blade into the interior part of its appropriate cage. Hook the end of blade around the pin that protrudes from the rear of machine. Slip the

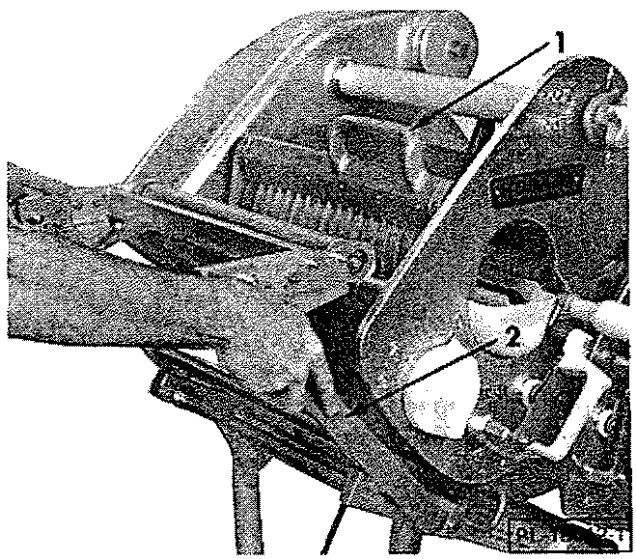



Fig. 8

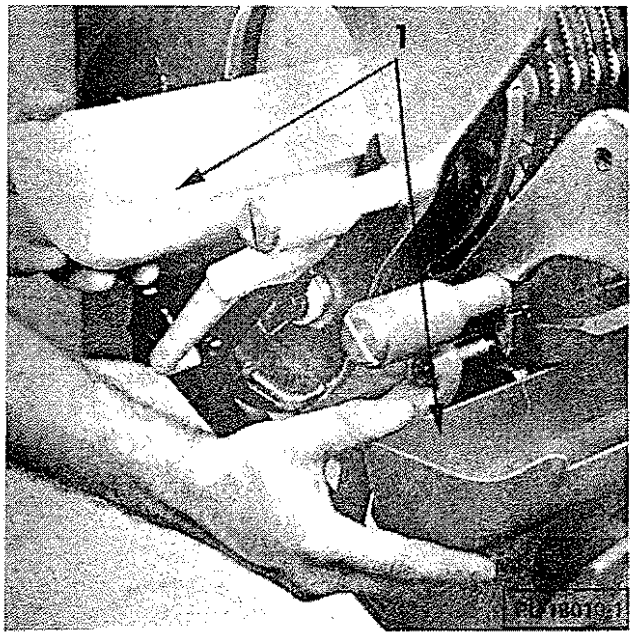



Fig. 9

blade into the slotted hole at the front of machine and engage the handle pin in the slotted position above the arrow (2, Fig. 7).

To install the scrap pans (1, Fig. 9), first move the blade handles from the position above the arrow to the IN position. Insert the color-coded pans, tang end first, through the opening into their appropriate cage.

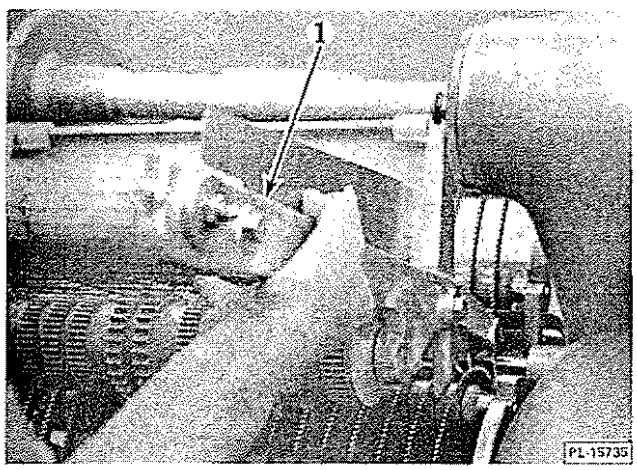



Fig. 10

Install the infeed conveyor (1, Fig. 10) by inserting the pin on the front side through the hole in the main support; drop the back side down over the mating pin, and allow conveyor to rest on the main cage gears. It may be necessary to move the conveyor slightly so it will seat properly on the ring gears.

The midframe conveyor (2, Fig. 8) is installed next. Engage the first set of pins on the midframe conveyor with the slot on the fixed portion of conveyor frame. Slide the midframe conveyor down and engage the second set of pins.

With the top of midframe conveyor folded up, slide the belt (1, Fig. 11) over the frame and align it with the top and bottom rollers. Fold the top of midframe conveyor down to tighten belt.

Slide the belt tray and support (see Fig. 1) onto the pins on the end of midframe conveyor.

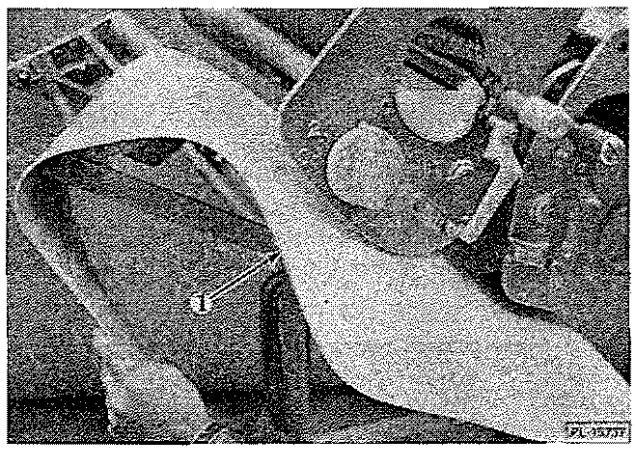



Fig. 11

**UNPLUG MACHINE POWER CORD** prior to folding or moving the machine.

To fold machine for moving or storage, tilt the infeed conveyor up until the hole in rear guide matches the pivot stud. Push the infeed conveyor back slightly to hook the hole over stud.

Pull off the output conveyor scrap pan and support. Fold the end of midframe conveyor up to release belt tension. Pull the midframe section outward and then lift slightly to disengage the set of pins from the slots. Allow the midframe conveyor to hang down on the remaining set of pins. The scrap pan and its support can be placed in the slack loop of the belt.

## ELECTRICAL

Before making electrical connections, check the specifications on machine data plate to assure they agree with those of your electrical service.

Electrical and grounding connections must comply with the applicable portions of the National Electrical Code and/or other local electrical codes.

The machine is furnished with a cord and plug as standard equipment. The plug must be connected to a receptacle that is properly grounded.

WARNING: TO AVOID THE POSSIBILITY OF SHOCK HAZARD, HAVE AN ELECTRICIAN CHECK TO MAKE SURE RECEPTACLE IS PROPERLY GROUNDED. NEVER CUT OFF THE GROUNDING PRONG OR USE A GROUNDING ADAPTER.

## OPERATION

### CONTROLS

In order to achieve maximum cleaning results, the scraper dials should be adjusted within ranges for various thicknesses of cuts.

It is suggested that the operator start at recommended settings. However, for optimum results, the settings should be refined by trial.

The cage adjusting knobs (2 & 4, Fig. 12) regulate the amount of "scrape" applied to each cut. Increasing the setting increases the amount of scrape.

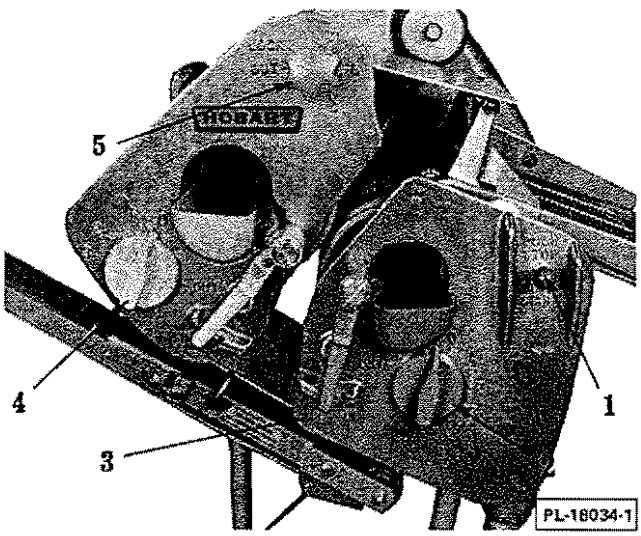



Fig. 12

NOTE: The numbers for cage adjusting knobs settings are for reference ONLY. They have NO relationship to any linear measurements of meat thickness. Use these numbers as a reference for setting the adjusting knobs.

Adjusting knobs should be set within the range shown in Fig. 13 for various products mentioned. For beef products, they should be set to match gauge plate thickness markings on saw table.

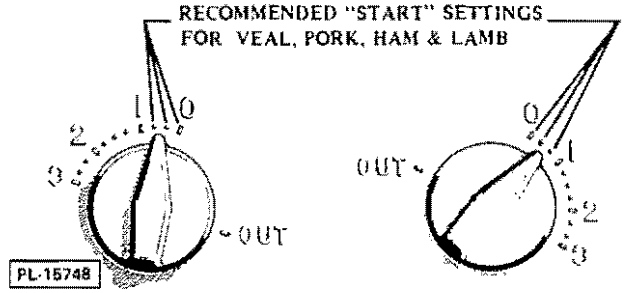



Fig. 13

If there are areas of the meat that are not cleaned, increase the cage adjusting knob setting (toward 3). If the meat hangs up and does not flow through machine, decrease setting (toward 0). Sometimes it will be necessary to increase the setting of one adjusting knob above the other in order to get the cut satisfactorily cleaned on both sides. With very soft warm meat or with very firm meat, the optimum settings may vary considerably from recommended settings.

The gap knob setting (5, Fig. 12) controls the minimum distance between cages. The gap adjustment is provided for use when a large quantity of cuts greater than 1-1/2" thick are being processed. It smoothes operation and reduces the markings by ring gears in the fat on the leading edge of the meat.

The gap knob (Fig. 14) is set on A for all meat cuts under 1-1/2" thickness.

Set both blades at the IN position. NOTE: The blades must be returned to the position above arrow (3, Fig. 12) when the machine is not to be used for an extended period of time or overnight. Scraper clusters will be temporarily distorted if the blades are left in the IN position and machine is not operated for several hours.

Adjust the settings of cage adjusting knobs as necessary for desired scrape. If a large volume of thick

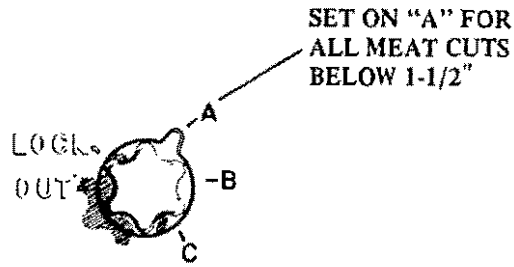



Fig. 14

(at least 1-1/2") cuts is to be processed, set the gap knob as required. If cuts are normal thickness or there aren't more than a few thick cuts, gap knob should be left on A.

Pull the red switch knob (1, Fig. 12) to start machine (push to stop). The life of scraper clusters will be increased if machine is turned off when not is use.

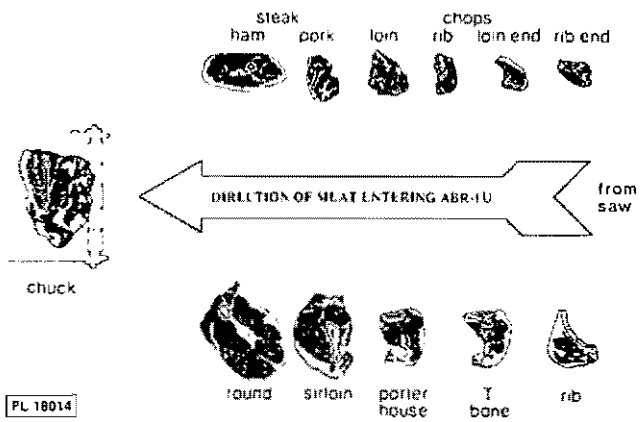



Fig. 15

For best results, use the bone as identification and place cuts on the infeed conveyor as shown in Fig. 15. Veal and lamb should be placed on conveyor the same way as pork. Wedge-shaped cuts should be placed on conveyor with the thin edge first. If these cuts are fed crosswise, the thin edge will not be cleaned. Cuts with sharp bones should NOT be fed with the bone projection first.

Occasionally, the scrap pans and belt tray must be emptied. Remove them, dump in waste container, and replace pans and tray in original locations.

## MAINTENANCE

WARNING: UNPLUG MACHINE POWER CORD BEFORE BEGINNING ANY MAINTENANCE PROCEDURE.

### CLEANING

The ABR-1U can be cleaned with a high-pressure hose or at a sink.

NOTE: Detergent and sanitizing agents used should be suitable for use on aluminum surfaces. Corrosive agents or products with a high concentration of chlorine, ammonia, or iodine will discolor the machine's surface.

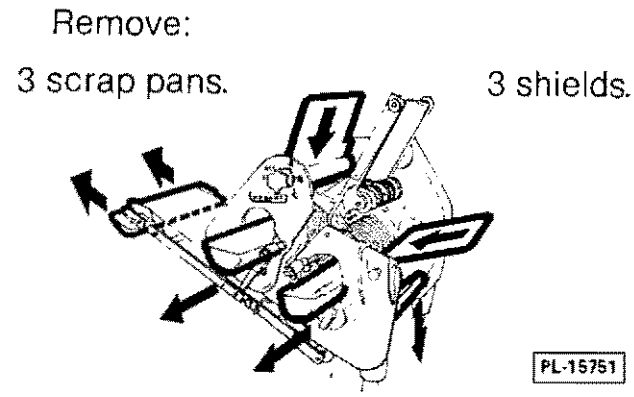



Fig. 16

High Pressure Hose

WARNING: FOR HIGH PRESSURE SPRAY DOWN, THE PLUG SHOULD BE CHANGED TO A SUITABLE WATERPROOF PLUG FOR USE WITH A MATCHING RECEPTACLE. THE RECEPTACLE MUST BE LOCATED AWAY FROM THE SPRAY AREA.

UNPLUG MACHINE POWER CORD and remove the three scrap pans and three shields (see Fig. 16). Clean pans and shields in a sink.

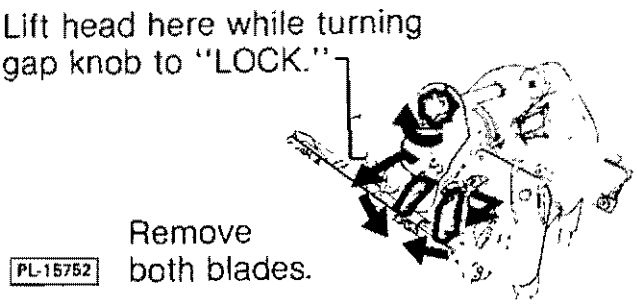



Fig. 17

Move the swing head while turning the gap knob to LOCK (see Fig. 17). This raises the swing head to its maximum clearance for cleaning.

To remove the blades, squeeze each handle spring and turn it such that the flat on blade shaft matches the slot (see Fig. 17). Slide the shaft out of slot and tilt the back end up to disengage blade from pin in back. Clean the blades in a sink.

Plug the cord into a grounded waterproof receptacle and run machine while hosing.

Assembly is a reversal of disassembly.

NOTE: Once each week, all removable parts should be disassembled from machine and cleaned in-

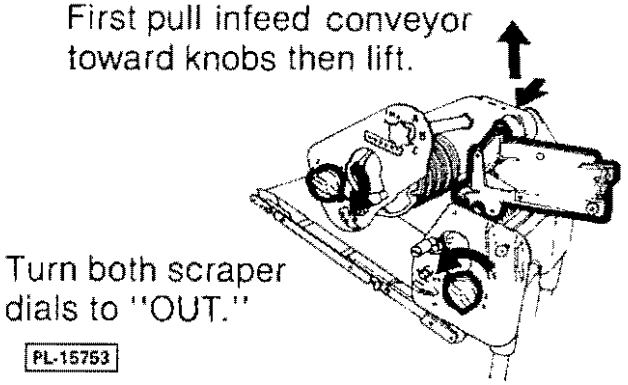



Fig. 18

dividually. For instructions, refer to INSTALLATION, and reverse the ASSEMBLY procedure.

Sink

**UNPLUG MACHINE POWER CORD** and remove the three scrap pans and three shields (see Fig. 16). Clean pans and shields in a sink.

To remove the blades, squeeze each handle spring and turn it such that the flat on blade shaft matches the slot (see Fig. 17). Slide the shaft out of slot and tilt the back end up to disengage blade from pin in back.

Slide infeed conveyor toward front of machine and lift it off (see Fig. 18). Turn both cage adjustment knobs to OUT (see Fig. 18).

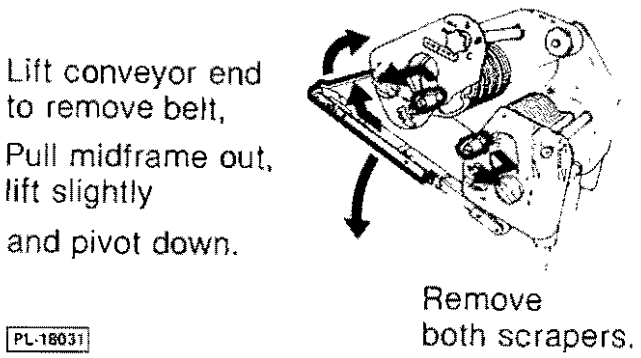



Fig. 19

Fold up the top end of midframe conveyor, releasing belt tension, and remove belt (see Fig. 19).

Remove the scraper assemblies by rotating the handles either direction while pulling outward (see Fig. 19).

Turn the cage pivot pins to OUT. Grasp each cage by its handle and remove by pulling forward and lifting up and out (see Fig. 20).

Immerse each removable part in soapy water and clean with a brush. Clean one part at a time. Do not stack parts on top of each other as it could damage the scrapers, ring gears, or blades. After cleaning, each part should be throughly sanitized.

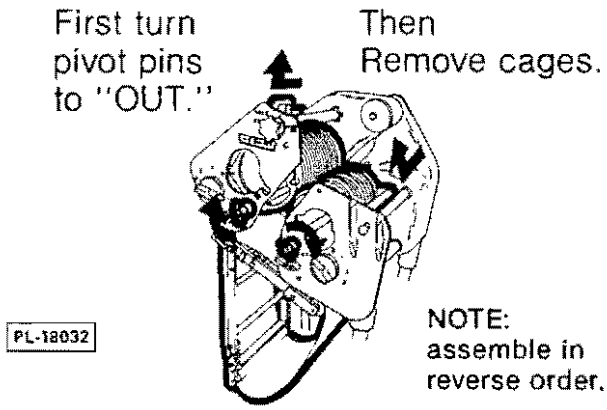



Fig. 20

## SCRAPER ASSEMBLIES

Scraper clusters wear out and can be damaged in handling. A set of scrapers will generally last about six months depending on the amount of use and product being run. This time can be extended or reduced by the care exercised in handling during cleaning and the condition and maintenance of other parts such as the ring gears and blades.

Each scraper assembly consists of eighteen clusters mounted on a shaft with a bushing and handle. The complete assembly is compressed by a spring inside the handle which assures a constant sealing pressure.

Individual scraper clusters (1, Fig. 21) can be replaced as needed. Damaged scrapers can be moved to the outside ends of the assembly as

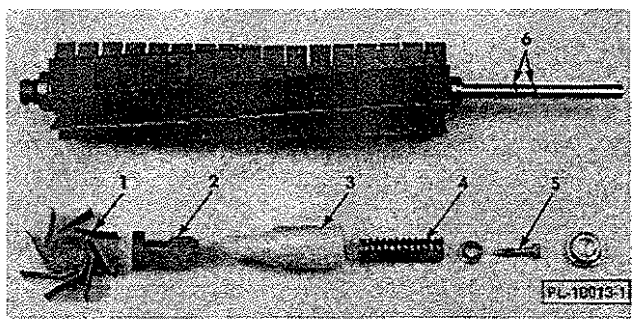



Fig. 21

temporary repair. The loss of one or two separate blades in a cluster will not affect the scraping action, but any cluster with more than two blades broken next to each other should be replaced.

Replace the scraper bushing (2, Fig. 21) when the outside diameter wears approximately 1/32".

NOTE: To avoid interchanging of parts, repair only one scraper assembly at a time. The scraper bushings are different sizes and the handles are color coded.

To disassemble scraper assembly, remove the end cap from the handle. Remove the spring bolt (5, Fig. 21), spring (4, Fig. 21), handle (3, Fig. 21), and bushing (2, Fig. 21).

Remove scraper clusters from the shaft.

When reassembling, make sure the O-rings (6, Fig. 21) are in their proper location on shaft.

Install the 18 scraper clusters on the shaft. Make sure each one fits into the next cluster. The scraper cluster has an alignment button on each side. Assemble the cluster on the shafts, button-to-button to insure correct alignment of the scraper blades. All replacement scraper clusters have eight blades. If an older machine is serviced, the existing scraper clusters may have twelve blades. If a twelve-bladed cluster has to be replaced, all clusters MUST be replaced. Do not mix eight and twelve blade clusters.

NOTE: Scraper clusters are positioned in reverse direction on the main and swing scraper assemblies. Make sure the clusters are installed on the shaft in the proper direction. On the main shaft assembly, the tabs face toward the drive end. On the swing shaft assembly, the tabs face away from the drive end.

Install the bushing, handle, spring bolt, and end cap. Use a coin or similar object to tighten the spring bolt and end cap as they only need to be hand tight.

Clusters should not be loose on the shaft. All driving tabs are hidden when the assembly is properly completed. If any tabs are visible, the parts are improperly seated, backwards, or interchanged.

## BLADES

The condition of the blade edge is important. The edge should be dull and free of any protruding nicks. Any raised projections will damage the scraper clusters and should be removed.

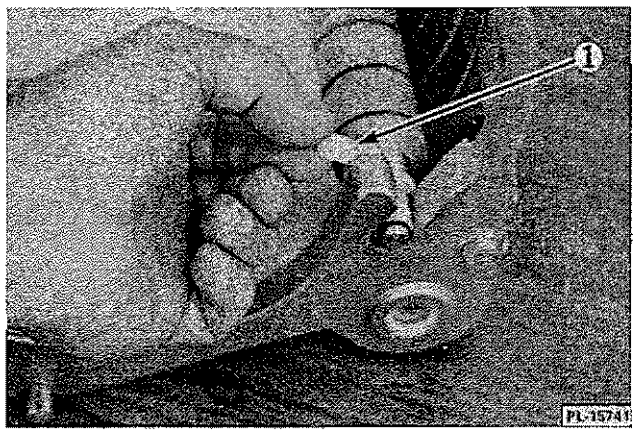



Fig. 22

The edge must be straight for its entire length. A bent blade will not clean the scraper clusters properly. The blade should be adjusted so the scraper strikes it on or just above the bend in the scraper.

## RING GEARS

Ring gears are sometimes bent in normal use but will work if bent slightly out of line. Frequently examine and straighten the rings. Usually rings can be straightened with finger pressure without removing them from the cage. A severely bent ring should be removed and replaced if it cannot be straightened. Hand straightening the rings is more successful than straightening by hammering. Hammering usually "dishes" the ring. If concave or dished rings cannot be straightened, they must be replaced. Refer to CAGES for disassembly instructions.

## CAGES

Occasionally, it may be necessary to disassemble the cage to replace ring gears or bearings. Usually any bent ring gear can be straightened without removing it from the cage.

Monthly inspect the cages for wear of the pinion bearing and cage roller bearings. Replace these bearings if there is any wear or looseness.

To disassemble cage, first turn the two white locking tabs (1, Fig. 22) to free the bottom roller. Lift out the ring gears (1, Fig. 23) and rollers.

To remove the cage bearing (1, Fig. 24), turn it to clear the retaining pins and lift bearing from cage frame. The pinion gear can now be removed.

To reassemble, place the pinion gear in the cage frame.

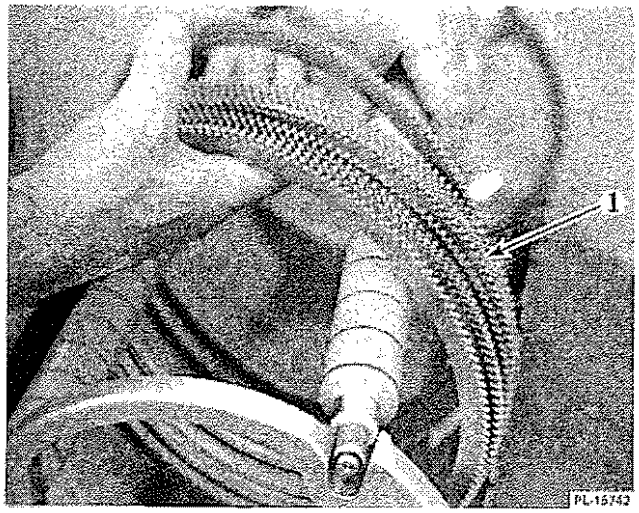



Fig. 23

Install the bearing and turn it until it is seated in the retaining pins.

Place all the ring gears over two of the rollers and set the two rollers in place on the cage frame. Arrange the ring gears so they are seated in the slots of the two rollers.

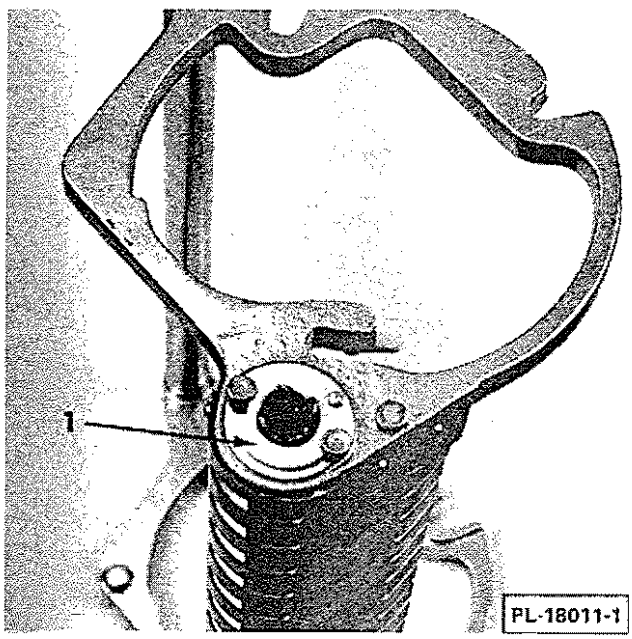



Fig. 24

Place the bottom roller (1, Fig. 25) on the rings and lower it into position in the bearing slots of the frame. Lock the lower roller in position with the locking tabs. CAUTION: Do not force the lower roller or it may jam.

Be sure the plastic inner liner (1, Fig. 26) is in place inside the cage.

## HOUSING DRAINS

Once each week pull the housing drain plugs (see installation diagram), check for condensation, and allow it to drain. If the drains contain an excessive amount of water (over an ounce), contact your Hobart Service Office.

If more than a few drops of oil drain from the main housing drain, DO NOT operate the unit until it is checked by a Hobart Service Technician.

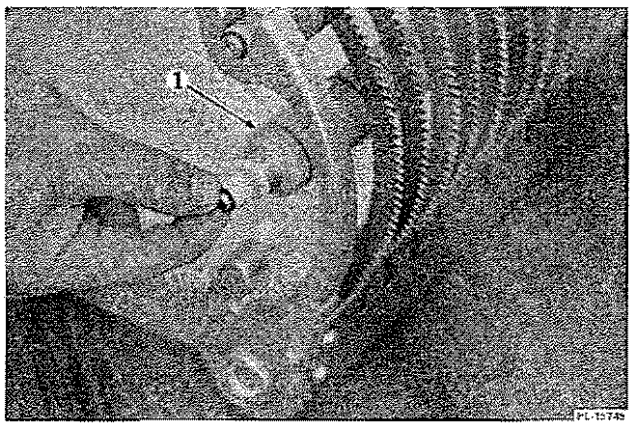



Fig. 25

## LUBRICATION

The ABR-1U requires no external lubrication but should not be run for an extended time without meat passing through the ring gears. The machine must have animal fat as a lubricant for parts in contact with each other.

The drive chains should be lubricated annually and the transmission grease checked. Lubrication

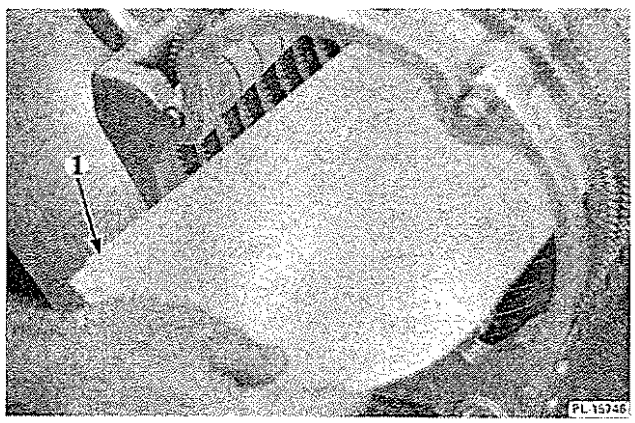



Fig. 26

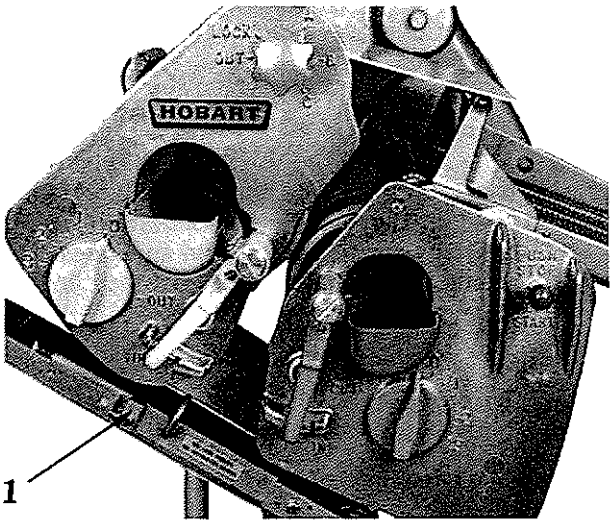



Fig. 27

should always be done by a Hobart Service Technician since covers must be resealed.

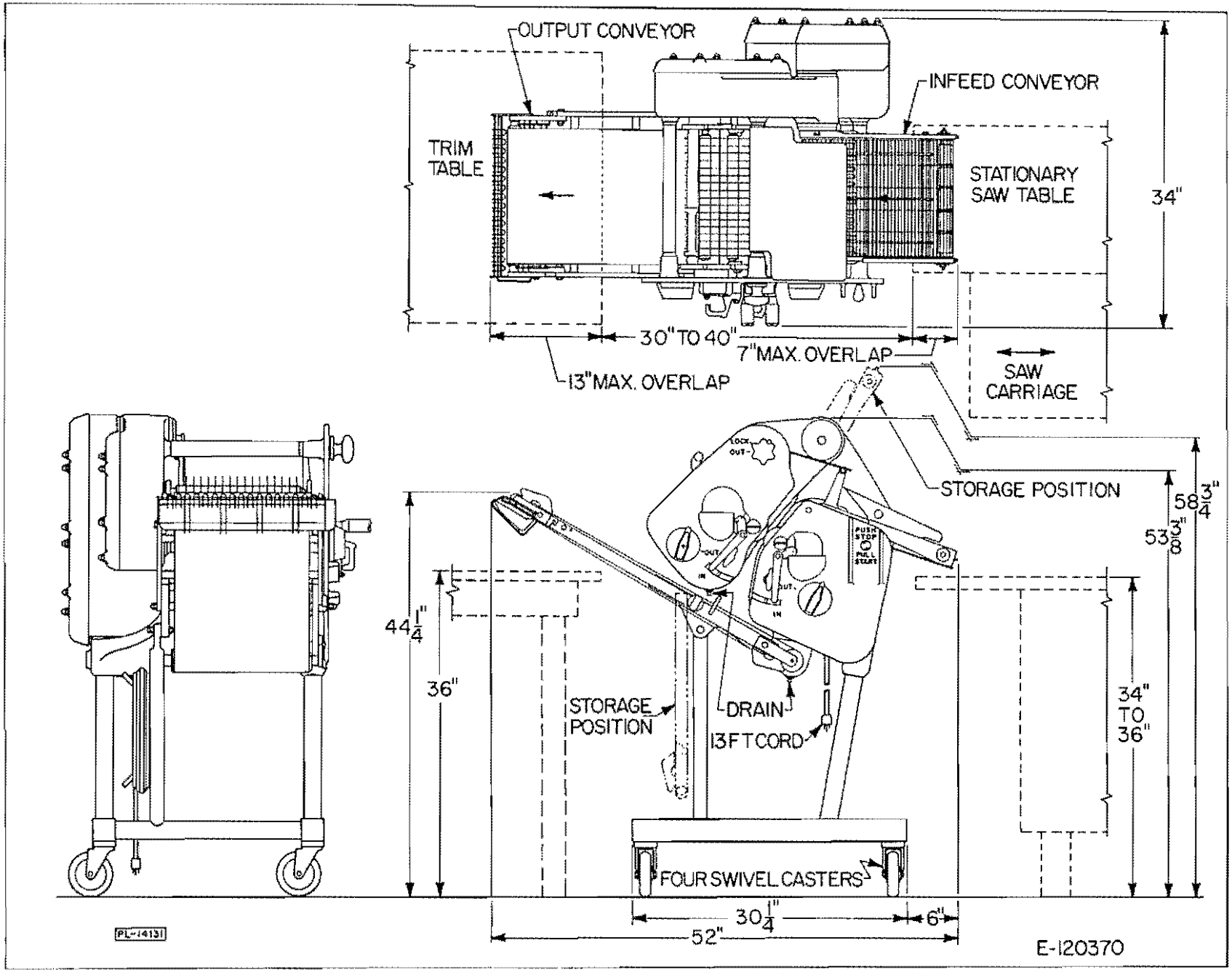
## BELT TENSION ADJUSTMENT

Adjust the bolts (1, Fig. 27) on each side of the conveyor. Thread the bolts out to tighten belt or in to loosen belt. Tension should be tight enough to pull a 10 lb. load without the belt slipping. DO NOT OVERTIGHTEN. The belt should stop when grasped at the idler (top) roller.

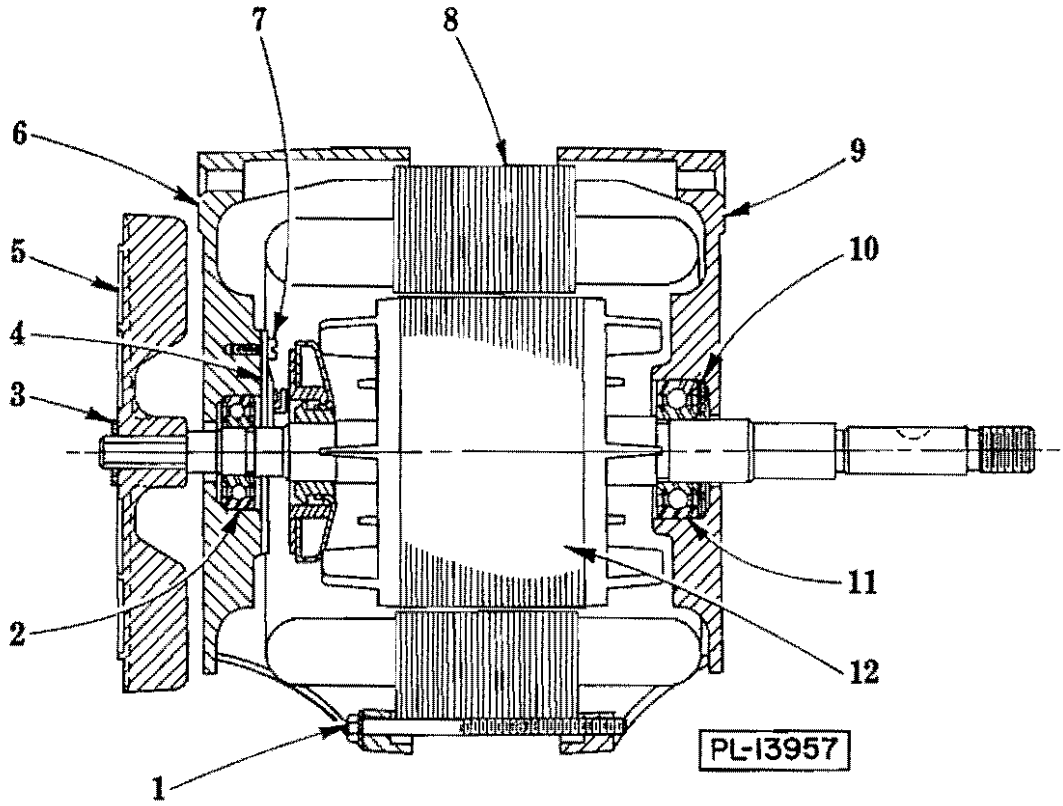
After adjusting, run the conveyor for a few minutes to make sure the belt is tracking properly. Slight adjustments to one of the bolts may be necessary to correct the tracking.

## OPERATING TIPS

| CONDITION | POSSIBLE SOLUTION |
|---|---|
| Meat not being scraped. | 1. Make sure blades set to "IN" position<br>2. Make sure cage adjustment is between 0 and 3.<br>3. Make sure gap adjustment is at A.<br>4. Make sure all removable parts are correctly installed. |
| Meat not satisfactorily scraped on both sides. | 1. Increase both cage adjustments.<br>2. Decrease gap adjustment.<br>3. Scraper clusters broken on both sides.<br>4. Empty scrap pans. Full scrap pans may be redepositing bone dust on product.<br>5. Adjust blade contact with scraper. |
| Meat not satisfactorily scraped on one side. | 1. Increase cage adjustment on side not scraping meat satisfactorily.<br>2. Check blade on that side to make sure it is in.<br>3. Check for broken scraper blade.<br>4. Check for overfill scrap pan on that side.<br>5. Adjust the blade contact with scraper. |
| Meat hangs up between cages. | 1. Decrease cage adjustment.<br>2. Increase gap adjustment.<br>3. Meat too soft, warm or thin. |
| Infeed conveyor will not operate or operates erratically. | 1. Clean scraps off conveyor.<br>2. Make sure the saw table is at proper height to allow conveyor to engage ring gears on main cage.<br>3. Installation incorrect. Reinstall conveyor and seat it properly on the ring gears.<br>4. Loose belt.<br>5. Worn parts. Contact your Hobart Service Office. |
| Output conveyor will not operate or operates erratically. | 1. Check to make sure belt is properly installed.<br>2. Clean conveyor drive roller.<br>3. Clean the inside of belt.<br>4. Worn parts. Contact your Hobart Service Office.<br>5. Loose belt. |
| Scrap on floor. | 1. The three shields are not in correct location.<br>2. Inner liners missing from cages.<br>3. The belt tray not in correct position.<br>4. Scrap tray full. |
| Clusters wear rapidly. | 1. Check for bent ring gears. If bent, straighten or replace ring gears.<br>2. Improper feeding of product.<br>3. Misalignment of scrapers. Contact your Hobart Service Office. |



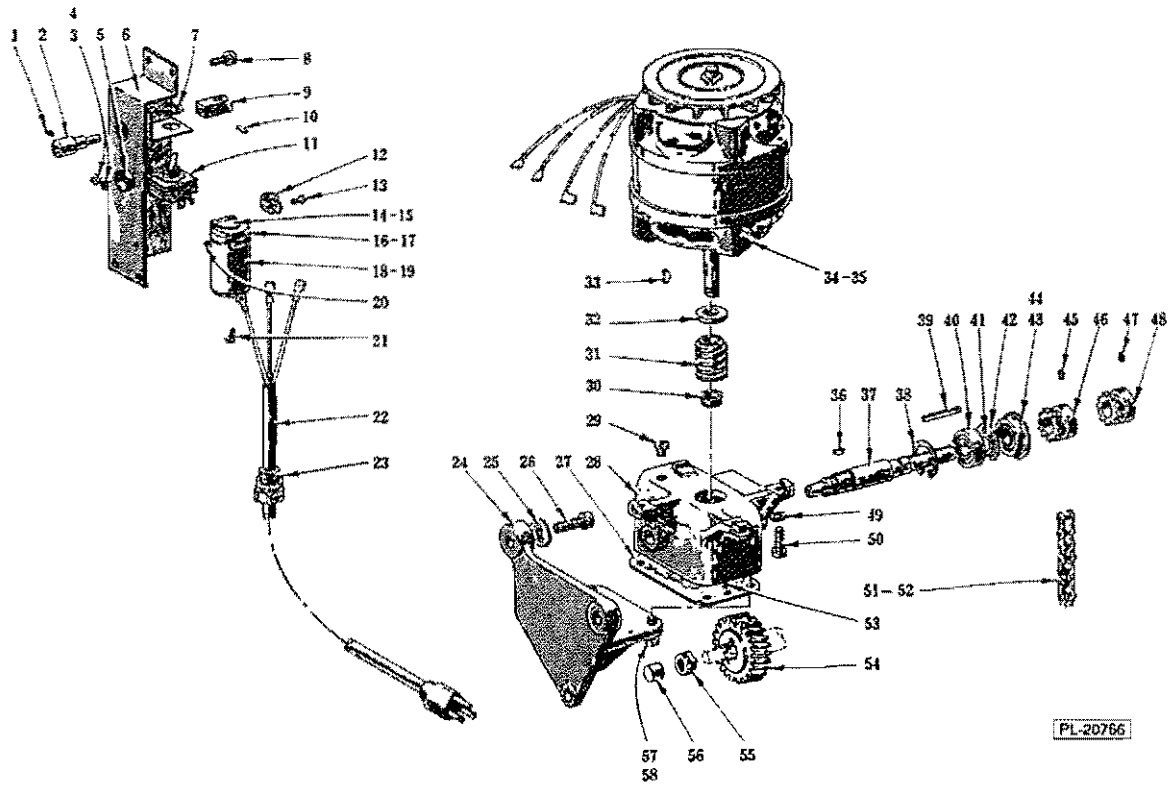

INSTALLATION DIAGRAM




## HOBART BUILT MOTOR PARTS

| ILLUS. PL-13957 | PART NO. | NAME OF PART[29] | AMT. |
|---|---|---|---|
| 1 | 101233-3 | Bolt 8-32 x 3 Hex Hd | 4 |
| 2 | BB-18-12 | Ball Bearing - Fafnir #P201 KDD | 1 |
| 3 | RR-11-16 | Retaining Ring | 1 |
| 4 | 111688-4 | Switch - Starting (Stationary Part) | 1 |
| 5 | 292466-2 | Fan - Ventilating | 1 |
| 6 | 111835-1 | Bracket - Bearing (Switch End) | 1 |
| 7 | SD-9-34 | Self-Tapping 6-32 x 3/8 Phil. Pan Hd., Type F | 2 |
| 8 | 65477-129-1 | Stator Assy. (115 V., 60 Hz., 1 Ph.) | 1 |
| 9 | 117027 | Bracket - Bearing (Drive End) | 1 |
| 10 | 278380 | Washer - Wavy | 1 |
| 11 | BB-20-18 | Ball Bearing - N.D. #77503 | 1 |
| 12 | 22275-217 | Rotor Assy | 1 |

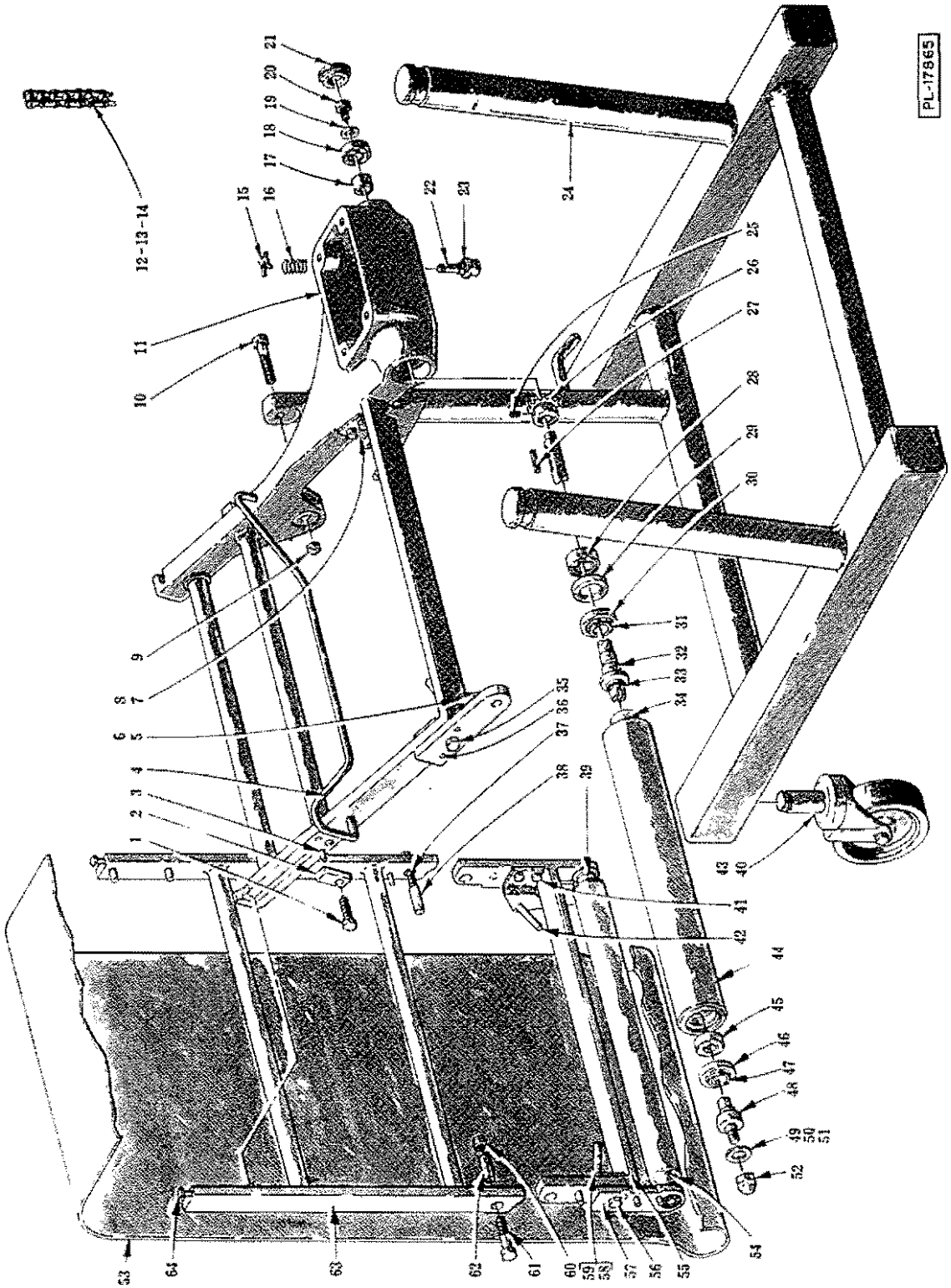
NOTE: Above Motor Parts are for Hobart Built Motors Only. Component Parts for Other Than Hobart Built Motors are Not Available from Hobart.




**SWITCH, MOTOR AND TRANSMISSION**

# SWITCH, MOTOR AND TRANSMISSION

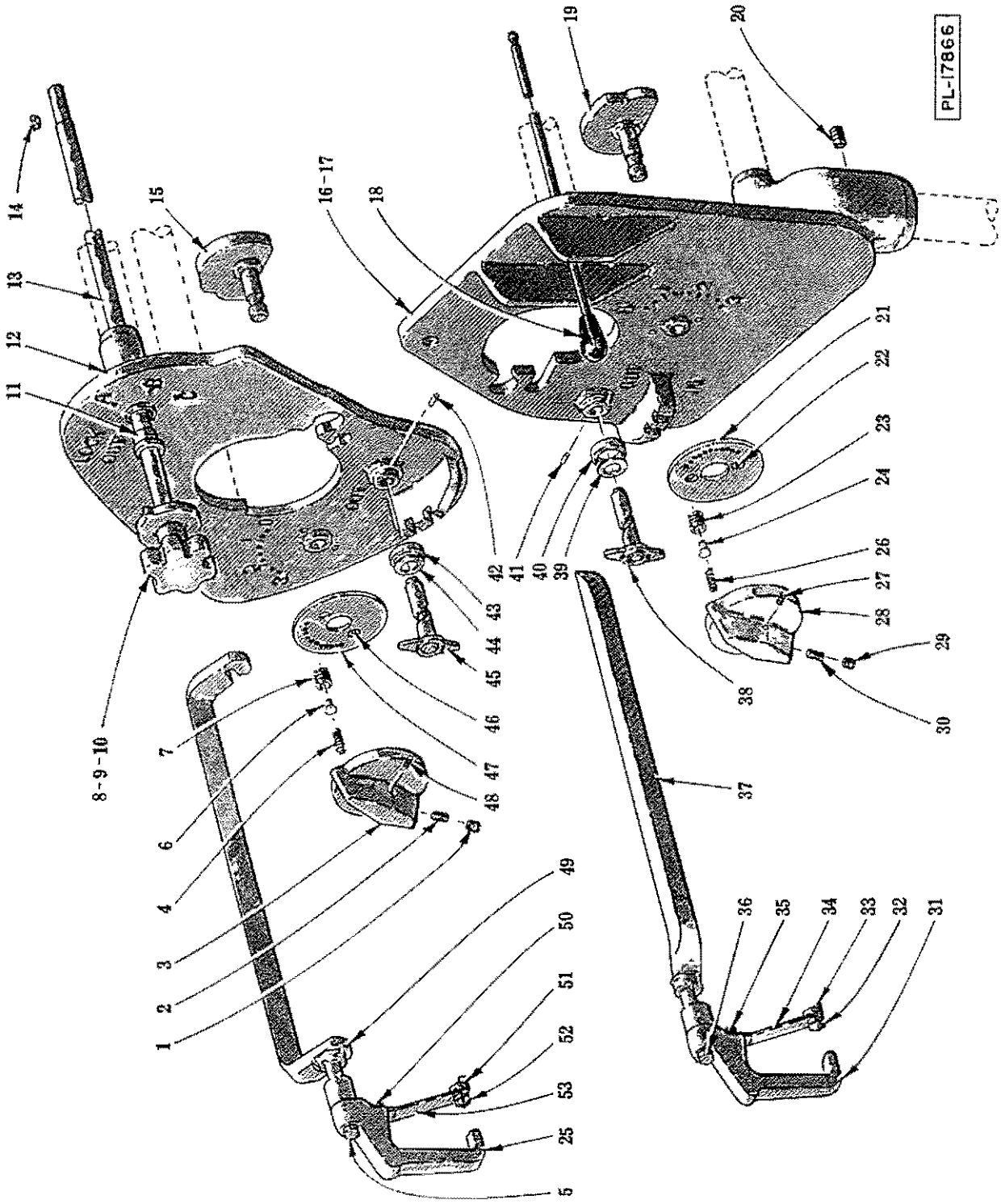
| ILLUS. PL-20766 | PART NO. | NAME OF PART29 | AMT. |
|---|---|---|---|
| 1 | SC-64-25 | Set Screw 10-32 × 3/16 Soc. Hdls., Cup Pt. "Nylok" | 1 |
| 2 | 122813 | Pin - Switch Coupler | 1 |
| 3 | NS-9-22 | Mach. Nut 10-24 Hex | 2 |
| 4 | WL-4-40 | Lock Washer 10 Medium | 2 |
| 5 | FE-22-40 | Bushing - Snap | 1 |
| 6 | 122815 | Control Panel Assy. (Weldment) | 1 |
| 7 | 121827 | Ring - Locking | 1 |
| 8 | SC-62-54 | Cap Screw 1/4-20 × 3/4 Hex Hd | 4 |
| 9 | 122812 | Link - Switch | 1 |
| 10 | RP-3-4 | Rollpin 1/16 Dia. × 1/2 Lg | 1 |
| 11 | 87711-148-1 | Switch - Toggle | 1 |
| 12 | 69193-2 | Clip - Cord | 1 |
| 13 | SD-15-40 | Self-Tapping Screw 8-32 × 3/8 Phil. Pan Hd. "Taptite" | 1 |
| 14 | 66621-3 | Bracket - Capacitor (Use with Hobart Built Motor (3" Lg.) | 1 |
| 15 | 66621-1 | Bracket - Capacitor (Other Than Hobart Built Motor) (3 5/8" Lg.) | 1 |
| 16 | 70486-1 | Cap - Capacitor (Use with Hobart Built Motor) (1 7/16") | 1 |
| 17 | 70486-2 | Cap - Capacitor (Other Than Hobart Built Motor) (1 13/16" Lg.) | 1 |
| 18 | 70487-13 | Capacitor (Use with Hobart Built Motor) (2 3/4" Lg.) | 1 |
| 19 | 70487-1 | Capacitor (Other Than Hobart Built Motor) (3 3/8" Lg.) | 1 |
| 20 | SC-14-55 | Mach. Screw 10-24 × 5/8 Flat Hd | 2 |
| 21 | SC-74-22 | Mach. Screw 10-32 × 7/16 Phil. Rd. Hd | 1 |
| 22 | 117542-31 | Cord & Plug Assy | 1 |
| 23 | FE-6-31 | Strain Relief 1/2 (Cord) | 1 |
| 24 | 117030 | Support - Gear Housing | 1 |
| 25 | WS-18-19 | Washer | 3 |
| 26 | SC-89-35 | Cap Screw 3/8-16 × 1 1/4 Soc. Fil. Hd | 3 |
| 27 | 117032 | Gasket - Gear Housing | 1 |
| 28 | 117041 | Housing - Gear | 1 |
| 29 | 120971 | Vent - Gear Housing | 1 |
| 30 | NS-32-29 | Stop Nut 1/2-20 "Flexloc" | 1 |
| 31 | 117053 | Worm | 1 |
| 32 | 116301 | Seal - Oil | 1 |
| 33 | KW-3-5 | Key - 405 Woodruff | 1 |
| 34 | ML-31222-A | Motor (Hobart Built Motor) | 1 |
| 35 | 270811 | Motor (Other Than Hobart Built Motor) | 1 |
| 36 | KW-3-5 | Key 405 Woodruff | 1 |
| 37 | 116300 | Shaft - Driven | 1 |
| 38 | RR-10-8 | Retaining Ring | 1 |
| 39 | 12430-74 | Key | 1 |
| 40 | BB-20-18 | Ball Bearing N.D. #77503 | 1 |
| 41 | RR-4-12 | Retaining Ring | 1 |
| 42 | RR-10-8 | Retaining Ring | 1 |
| 43 | 117074 | Seal Assy. (Incls. item 44) | 1 |
| 44 | 116301 | Seal - Oil | 1 |
| 45 | SC-47-8 | Set Screw 1/4-20 × 1/4 Soc. Hdls., Cup Pt | 1 |
| 46 | 117068 | Sprocket (#35 Chain) (11T) (Incls. item 45) | 1 |
| 47 | SC-47-8 | Set Screw 1/4-20 × 1/4 Soc. Hdls., Cup Pt | 1 |
| 48 | 117068 | Sprocket (#35 Chain) (11T) (Incls. items 47) | 1 |
| 49 | WL-3-41 | Lock Washer 5/16 Light | 3 |
| 50 | SC-37-85 | Cap Screw 5/16-18 × 1 Hex Hd | 3 |
| 51 | 116961-2 | Chain Assy. (#35) (45 Links) | 1 |
| 52 | 87165 | Link - Connecting (#35 Chain) | 1 |
| 53 | RP-2-45 | Rollpin 3/32 Dia. × 3/8 Lg | 2 |
| 54 | 117040 | Gear - Helical (23T) | 1 |
| 55 | NS-32-37 | Stop Nut 5/8-18 "Flexloc" | 1 |
| 56 | BN-2-31 | Needle Bearing | 1 |
| 57 | SC-37-85 | Cap Screw 5/16-18 × 1 Hex Hd | 4 |
| 58 | WL-3-41 | Lock Washer 5/16 Light | 4 |




**BASE AND CONVEYOR UNIT**

# BASE AND CONVEYOR UNIT

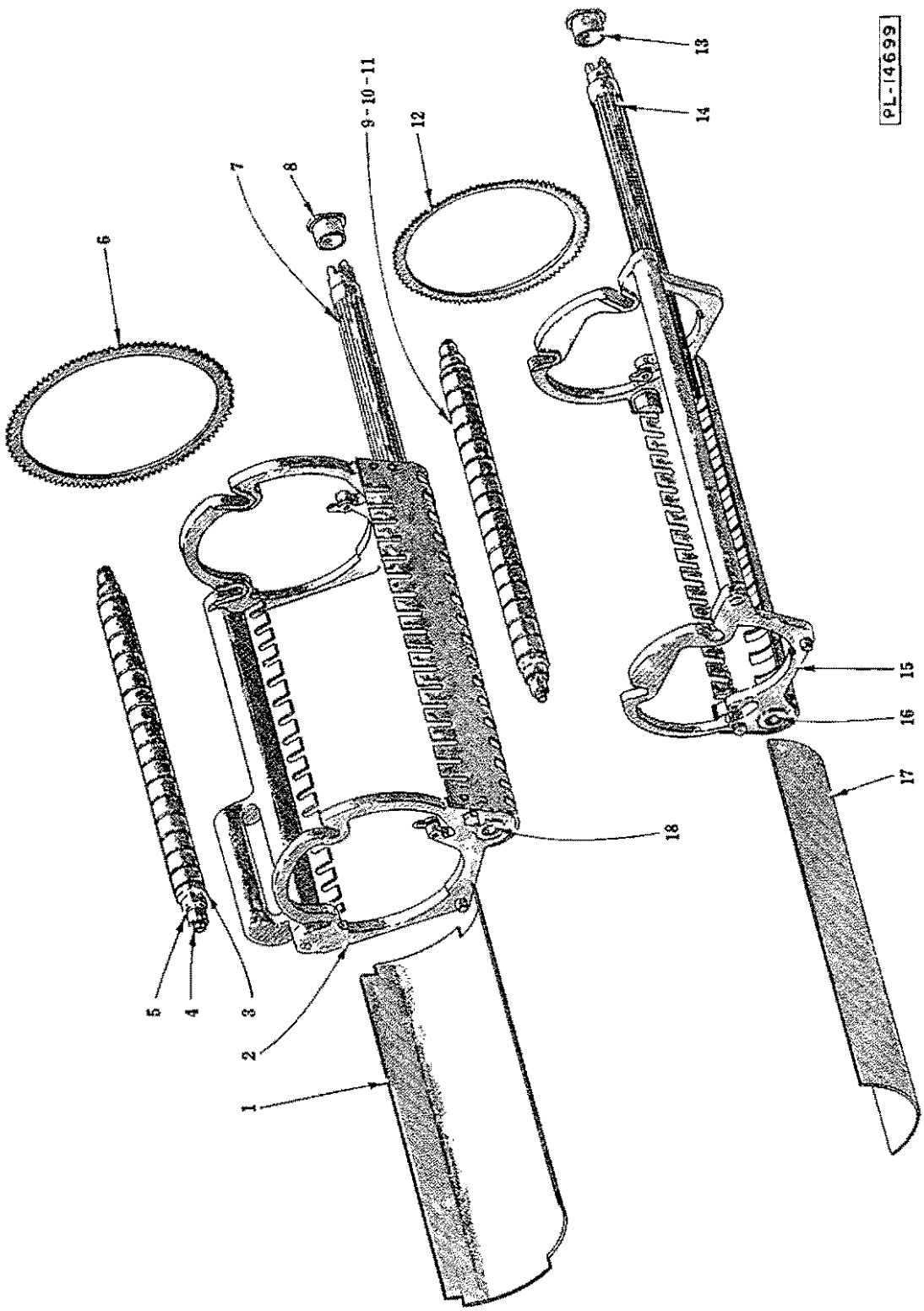
| ILLUS. PL-17865 | PART NO. | NAME OF PART[29] | AMT. |
|---|---|---|---|
| 1 | SC-41-13 | Cap Screw 5/16-18 x 1 Hex Hd | 2 |
| 2 | 122090 | Block - Belt Tension | 2 |
| 3 | 122091 | Dowel - Tension Block | 2 |
| 4 | 118905 | Cradle - Belt | 1 |
| 5 | 119576 | Guard - Belt (Front) | 1 |
| 6 | SC-41-5 | Cap Screw 1/4-20 x 5/8 Hex Hd | 2 |
| 7 | 119575 | Guard - Belt (Rear) | 1 |
| 8 | SC-41-5 | Cap Screw 1/4-20 x 5/8 Hex Hd | 2 |
| 9 | NS-25-15 | Acorn Nut 1/2-13 | 1 |
| 10 | SC-41-60 | Cap Screw 1/2-13 x 2 Hex Hd | 1 |
| 11 | 122094 | Drive Frame Assy. (Incls. item 35) | 1 |
| 12 | 116961-3 | Chain Assy. (#35) (45 Links) (Incls. item 13) | 1 |
| 13 | 127570 | Link - Offset (#35 Chain) | 1 |
| 14 | 87165 | Link - Connecting (#35 Chain) | 1 |
| 15 | 116819 | "X" Washer | 1 |
| 16 | 116821 | Spring - Drain | 1 |
| 17 | 116361-2 | Spacer - Sprocket | 1 |
| 18 | BB-18-12 | Ball Bearing - Fafnir #P201KDD | 1 |
| 19 | 120984 | Washer - Shaft Retaining | 1 |
| 20 | SC-110-12 | Cap Screw 1/4-20 x 5/8 Hex Hd | 1 |
| 21 | 118865 | Cap - Conveyor Housing | 1 |
| 22 | 116818 | Pin - Drain | 1 |
| 23 | 67500-44 | "O" Ring | 1 |
| 24 | 118892-2 | Base Assy | 1 |
| 25 | SC-47-8 | Set Screw 1/4-20 x 1/4 Soc. Hdls., Cup Pt | 1 |
| 26 | 116308 | Sprocket - Conveyor Drive (10T) (Incls. item 25) | 1 |
| 27 | 12430-48 | Key | 1 |
| 28 | BB-20-18 | Ball Bearing - N.D. #77503 | 1 |
| 29 | 121058 | Washer - Seal Support | 1 |
| 30 | 121056 | Seal - Spindle | 1 |
| 31 | 121057 | Insert - Seal | 1 |
| 32 | 119786 | Spindle - Conveyor | 1 |
| 33 | 67500-42 | "O" Ring | 1 |
| 34 | PG-3-29 | Groov-Pin - Type A, 3/16 Dia. x 1 1/4 Lg | 1 |
| 35 | SC-41-30 | Cap Screw 3/8-16 x 1 Hex Hd | 1 |
| 36 | 11800-295 | Dowel | 2 |
| 37 | SC-41-31 | Cap Screw 3/8-16 x 1 1/4 Hex Hd | 1 |
| 38 | 122098-1 | Bushing - Conveyor Pivot (Rear) | 1 |
| 39 | BB-8-11 | Ball Bearing - Nice #SK-T2198 | 2 |
| 40 | 116864 | Caster - Swivel | 4 |
| 41 | SC-41-5 | Cap Screw 1/4-20 x 5/8 Hex Hd | 2 |
| 42 | 119575 | Guard - Belt (Rear) | 1 |
| 43 | SC-109-7 | Set Screw 5/16-18 x 5/8 Soc. Hdls., Cup Pt | 4 |
| 44 | 123899 | Drive Roller Assy. (Incls. item 34) | 1 |
| 45 | BB-8-11 | Ball Bearing - Nice #SK-T2198 | 1 |
| 46 | 121056 | Seal - Spindle | 1 |
| 47 | 121057 | Insert - Seal | 1 |
| 48 | 121865 | Stud - Drive Roller Support | 1 |
| 49 | 122087-1 | Shim - Drive Roller Support (.010" Thk.) | AR |
| 50 | 122087-2 | Shim - Drive Roller Support (.020" Thk.) | AR |
| 51 | 122087-3 | Shim - Drive Roller Support (.030" Thk.) | AR |
| 52 | NS-25-16 | Acorn Nut 3/8-16 | 1 |
| 53 | 119521 | Belt - Conveyor | 1 |
| 54 | 123895 | Idler Roller Assy | 1 |
| 55 | 122081 | Idler Frame Assy. (Incls. item 56) | 1 |
| 56 | SC-41-30 | Cap Screw 3/8-16 x 1 Hex Hd | 1 |
| 57 | 11800-295 | Dowel | 2 |
| 58 | 119576 | Guard - Belt (Front) | 1 |
| 59 | SC-41-5 | Cap Screw 1/4-20 x 5/8 Hex Hd | 2 |
| 60 | NS-25-16 | Acorn Nut 3/8-16 | 2 |
| 61 | SC-41-49 | Cap Screw 3/8-16 x 1 3/8 Hex Hd | 1 |
| 62 | 122098-2 | Bushing - Conveyor Pivot (Front) | 1 |
| 63 | 122096 | Conveyor - Mid Frame Assy | 1 |
| 64 | 120756 | Screw - Conveyor Belt Tension | 2 |




SUPPORT AND BLADE UNIT

# SUPPORT AND BLADE UNIT

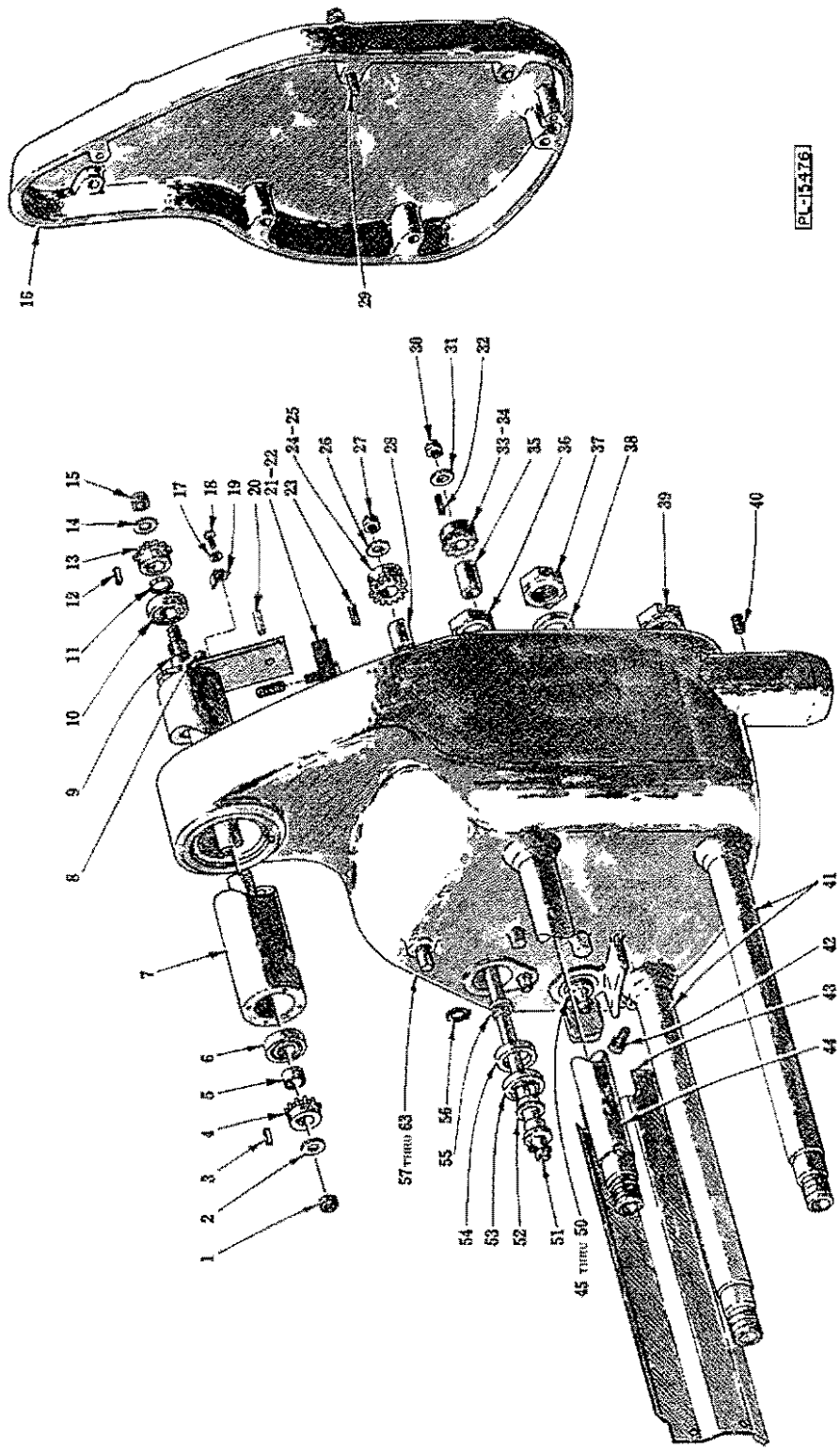
| ILLUS. PL-17866 | PART NO. | NAME OF PART[29] | AMT. |
|---|---|---|---|
| 1 | 121203 | Plug - Pipe | 1 |
| 2 | SC-109-7 | Set Screw 5/16-18 x 5/8 Soc. Hdls., Cup Pt. "Eslok" | 1 |
| 3 | 120157-2 | Knob - Cage Adjusting (Swing) (Incls. items 2, 4, 6, 7 & 48) | 1 |
| 4 | 120153 | Spring - Detent | 1 |
| 5 | SC-41-15 | Cap Screw 5/16-18 x 1¼ Hex Hd | 1 |
| 6 | 290435 | Plunger - Detent | 1 |
| 7 | 290434 | Bushing - Detent | 1 |
| 8 | 116778 | Knob - Gap | 1 |
| 9 | PG-3-29 | Groov-Pin - Type A, 3/16 x 1¼ | 1 |
| 10 | 67500-5 | "O" Ring | 1 |
| 11 | 116997 | Bearing - Gap (Front) | 1 |
| 12 | 122133 | Swing Support Assy | 1 |
| 13 | 118863 | Gap Shaft & Knob Assy. (Incls. items 8, 9 & 10) | 1 |
| 14 | KW-3-1 | Key #304 Woodruff | 1 |
| 15 | 120037 | Swing Cage Cam Assy | 1 |
| 16 | 122134 | Main Support Assy | 1 |
| 17 | 80538-1 | Bushing - Switch Rod | 1 |
| 18 | 117743 | Switch Rod Assy | 1 |
| 19 | 120036 | Main Cage Cam Assy | 1 |
| 20 | SC-47-44 | Set Screw 3/8-16 x 5/8 Soc. Hdls., Cup Pt | 1 |
| 21 | 120162 | Plate - Detent | 1 |
| 22 | SC-22-20 | Mach. Screw 10-24 x 5/8 Flat Hd | 2 |
| 23 | 290434 | Bushing - Detent | 1 |
| 24 | 290435 | Plunger - Detent | 1 |
| 25 | 119768-2 | Blade Handle Assy. (Swing) | 1 |
| 26 | 120153 | Spring - Detent | 1 |
| 27 | SC-109-6 | Set Screw 10-24 x 5/16 Soc. Hdls., Cup Pt. "Eslok" | 1 |
| 28 | 120157-1 | Knob - Cage Adjusting (Main) (Incls! items 23, 24, 26, 27 & 30) | 1 |
| 29 | 121203 | Plug - Pipe | 1 |
| 30 | SC-109-7 | Set Screw 5/16-18 x 5/8 Soc. Hdls., Cup Pt. "Eslok" | 1 |
| 31 | 119768-1 | Blade Handle Assy. (Main) | 1 |
| 32 | NS-25-9 | Acorn Nut 5/16-18 | 1 |
| 33 | 122579 | Bolt - Blade Adjustor | 1 |
| 34 | 119776 | Spring - Handle | 1 |
| 35 | 120861 | Shoulder Screw .279" x .178" Hex Hd | 1 |
| 36 | SC-41-15 | Cap Screw 5/16-18 x 1¼ Hex Hd | 1 |
| 37 | 119793 | Main Blade & Shaft Assy | 1 |
| 38 | 119998 | Pin - Cage Pivot | 1 |
| 39 | 119894 | Spring - Cage Pivot | 1 |
| 40 | 121085 | Collar - Pin Retaining | 1 |
| 41 | 121084 | Pin - Retaining | 1 |
| 42 | 121084 | Pin - Retaining | 1 |
| 43 | 121085 | Collar - Pin Retaining | 1 |
| 44 | 119894 | Spring - Cage Pivot | 1 |
| 45 | 119998 | Pin - Cage Pivot | 1 |
| 46 | SC-22-20 | Mach. Screw 10-24 x 5/8 Flat Hd | 2 |
| 47 | 120162 | Plate - Detent | 1 |
| 48 | SC-109-6 | Set Screw 10-24 x 5/16 Soc. Hdls., Cup Pt. "Eslok" | 1 |
| 49 | 119794 | Swing Blade & Shaft Assy | 1 |
| 50 | 120861 | Shoulder Screw .279" x .178" Hex Hd | 1 |
| 51 | 122579 | Bolt - Blade Adjustor | 1 |
| 52 | NS-25-9 | Acorn Nut 5/16-18 | 1 |
| 53 | 119776 | Spring - Handle | 1 |
| | 119816-1 | Swing Blade, Shaft & Handle Assy. (Incls. items 5, 25, 49, 50, 51, 52 & 53) | 1 |
| | 119816-2 | Main Blade, Shaft & Handle Assy. (Incls. items 31 thru 37) | 1 |




CAGE FRAME UNIT

## CAGE FRAME UNIT

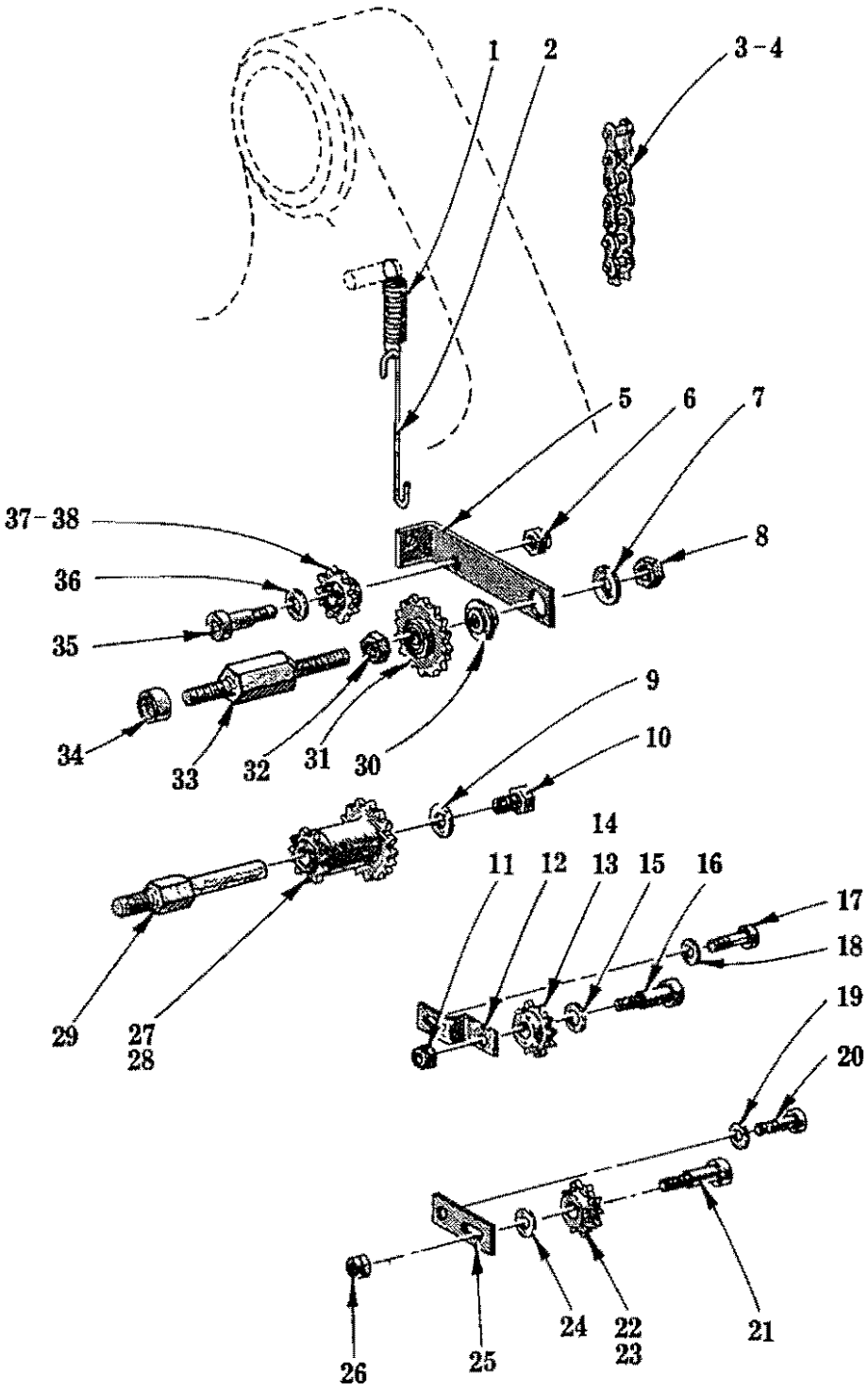
| ILLUS. PL-14699 | PART NO. | NAME OF PART | AMT. |
|---|---|---|---|
| 1 | 120031 | Liner — Swing Cage | 1 |
| 2 | 120029 | Swing Cage Frame Assy | 1 |
| 3 | 119792 | Cage Roller & Bearing Assy. (Incls. Items 4 & 5) | 3 |
| 4 | 67500-86 | "O" Ring | 6 |
| 5 | 119751-1 | Bearing - Flange | 6 |
| 6 | 115161-3 | Ring Gear - Swing Cage (168T) | 17 |
| 7 | 115187 | Pinion & Shaft Assy | 1 |
| 8 | 119751-3 | Bearing - Flange | 1 |
| 9 | 119792 | Cage Roller & Bearing Assy. (Incls. Items 10 & 11) | 3 |
| 10 | 67500-86 | "O" Ring | 6 |
| 11 | 119751-1 | Bearing - Flange | 6 |
| 12 | 115162-3 | Ring Gear - Main Cage (145T) | 17 |
| 13 | 119751-3 | Bearing - Flange | 1 |
| 14 | 115187 | Pinion & Shaft Assy | 1 |
| 15 | 119778 | Main Cage Frame Assy | 1 |
| 16 | 119751-2 | Bearing - Flange | 1 |
| 17 | 119834 | Liner - Main Cage | 1 |
| 18 | 119751-2 | Bearing - Flange | 1 |




## MAIN HOUSING UNIT

# MAIN HOUSING UNIT

| ILLUS. PL-15476 | PART NO. | NAME OF PART[29] | AMT. |
|---|---|---|---|
| 1 | NS-32-18 | Stop Nut 3/8-16 "Flexloc" | 1 |
| 2 | WS-18-24 | Washer | 1 |
| 3 | 12430-45 | Key | 1 |
| 4 | 116308 | Sprocket (#35 Chain) (10T) | 1 |
| 5 | 116361-3 | Spacer - Sprocket | 1 |
| 6 | BB-20-18 | Ball Bearing - N.D. #77503 | 1 |
| 7 | 121817 | Quill & Retainer (Incls. item 8) | 1 |
| 8 | SC-61-9 | Cap Screw 3/8-16 x 1 1/4 Soc. Flat Hd | 2 |
| 9 | 116596 | Shaft - Quill | 1 |
| 10 | BB-20-18 | Ball Bearing - N.D. #77503 | 1 |
| 11 | WS-10-50 | Washer | 1 |
| 12 | 12430-45 | Key | 1 |
| 13 | 116308 | Sprocket (#35 Chain) (10T) | 1 |
| 14 | WS-18-24 | Washer | 1 |
| 15 | NS-32-18 | Stop Nut 3/8-16 "Flexloc" | 1 |
| 16 | 118728 | Cover - Main Housing | 1 |
| 17 | WL-4-40 | Lock Washer 10 Medum | 1 |
| 18 | SC-60-56 | Mach. Screw 10-32 x 5/16 Rd. Hd | 1 |
| 19 | 121841 | Clamp - Bearing Retainer | 1 |
| 20 | 508756 | Dowel | 3 |
| 21 | 123022 | Block - Quill Holding | 1 |
| 22 | SC-40-41 | Cap Screw 1/2-13 x 6 Hex Hd | 1 |
| 23 | 12430-48 | Key | 1 |
| 24 | 117069 | Sprocket (#35 Chain) (13T) (Incls. item 25) | 1 |
| 25 | SC-47-8 | Set Screw 1/4-20 x 1/4 Soc. Hdls., Cup Pt | 1 |
| 26 | WS-18-19 | Washer | 1 |
| 27 | NS-32-18 | Stop Nut 3/8-16 "Flexloc" | 1 |
| 28 | 116361 | Spacer - Sprocket | 1 |
| 29 | 117974-1 | Cover Stud Assy | 7 |
| 30 | NS-32-18 | Stop Nut 3/8-16 "Flexloc" | 1 |
| 31 | WS-18-19 | Washer | 1 |
| 32 | 12430-48 | Key | 1 |
| 33 | 116308 | Sprocket (#35 Chain) (10T) (Incls. item 34) | 1 |
| 34 | SC-47-8 | Set Screw 1/4-20 x 1/4 Soc. Hdls., Cup Pt | 1 |
| 35 | 116361-1 | Spacer - Sprocket | 1 |
| 36 | NS-17-64 | Jam Nut 1 1/4-7 Hex Fin | 1 |
| 37 | NS-17-64 | Jam Nut 1 1/4-7 Hex Fin | 1 |
| 38 | 118866 | Collar - Nut Spacing | 1 |
| 39 | NS-17-64 | Jam Nut 1 1/4-7 Hex Fin | 1 |
| 40 | SC-47-44 | Set Screw 3/8-16 x 5/8 Soc. Hdls., Cup Pt | 1 |
| 41 | 119467-4 | Tube - Tie (Lower Main) | 2 |
| 42 | SC-41-86 | Cap Screw 1/4-20 x 3/8 Hex Hd | 4 |
| 43 | 119976 | Slide - Output | 1 |
| 44 | 119467-2 | Tube - Tie (Upper Main) | 1 |
| 45 | 121663 | Main Spindle Assy | 1 |
| 46 | 121056 | Seal - Spindle | 1 |
| 47 | 121057 | Insert - Seal | 1 |
| 48 | 121058 | Washer - Seal Support | 1 |
| 49 | RR-11-2 | Retaining Ring (Main Spindle) | 1 |
| 50 | 121569 | Spacer - Retaining Ring | 1 |
| 51 | 121663 | Main Spindle Assy | 1 |
| 52 | 121057 | Insert - Seal | 1 |
| 53 | 121056 | Seal - Spindle | 1 |
| 54 | 121058 | Washer - Seal Support | 1 |
| 55 | 121569 | Spacer - Retaining Ring | 1 |
| 56 | RR-11-2 | Retaining Ring (Main Spindle) | 1 |
| 57 | 119789 | Main Housing Assy. (Incls. items 40, 59, 60, 61, 62 & 63) | 1 |
| 58 | SC-89-35 | Cap Screw 3/8-16 x 1 1/4 Soc. Fil. Hd. (Main Housing to Drive Frame) | 4 |
| 59 | BB-20-18 | Ball Bearing - N.D. #77503 | 4 |
| 60 | RP-2-29 | Rollpin 5/16 Dia. x 3/4 Lg | 2 |
| 61 | PG-9-15 | Groov-Pin - Type G Driv-Loc, 5/16 x 1 1/4 | 1 |
| 62 | SC-8-9 | Mach. Screw 10-24 x 3/8 Rd. Hd | 2 |
| 63 | WS-23-20 | Washer | 2 |
| | 116597 | Pivot Quill Assy. (Incls. items 1 thru 15 and 17, 18 & 19) | 1 |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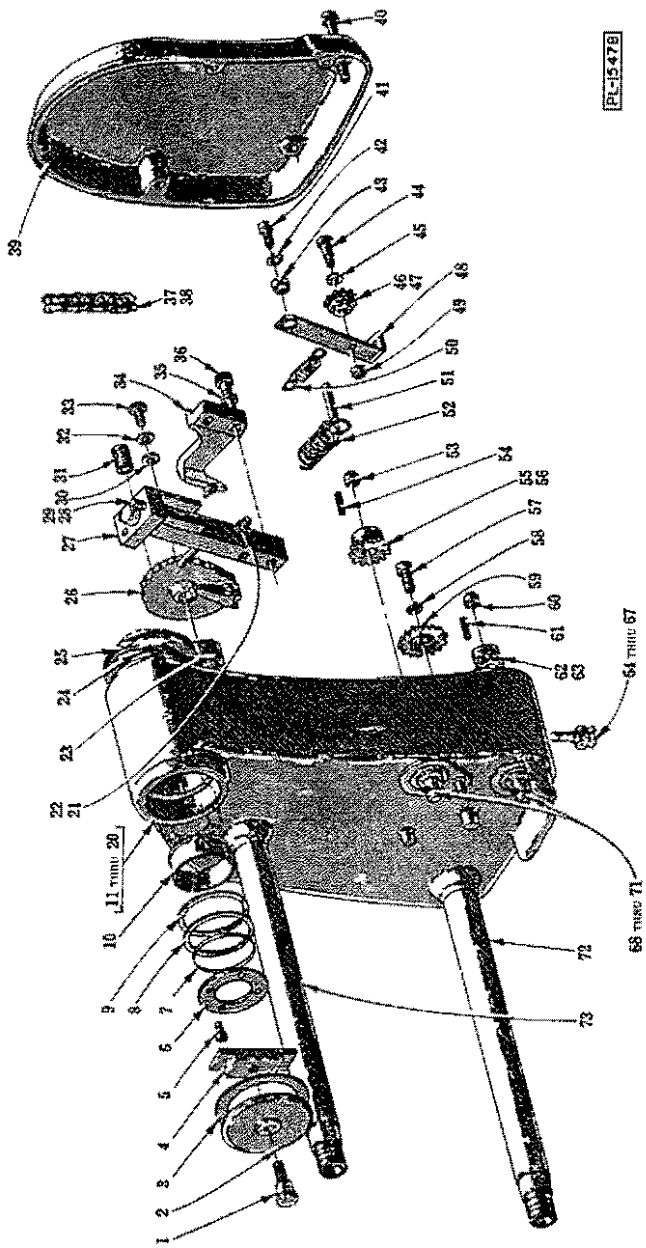
PL-15477

IDLER UNIT

## IDLER UNIT

| ILLUS. PL-15477 | PART NO. | NAME OF PART | AMT. |
|---|---|---|---|
| 1 | 112981 | Spring | 1 |
| 2 | 120670 | Hook - Idler Spring | 1 |
| 3 | 116961-1 | Chain Assy. (#35) (133 Links) | 1 |
| 4 | 87165 | Link - Connecting (#35 Chain) | 1 |
| 5 | 120667 | Arm - Primary Idler | 1 |
| 6 | NS-32-8 | Stop Nut ¼-20 "Flexloc" | 1 |
| 7 | WS-18-19 | Washer | 1 |
| 8 | NS-17-16 | Jam Nut ⅜-16 Hex Fin | 1 |
| 9 | WS-22-19 | Washer | 1 |
| 10 | SC-36-14 | Cap Screw ¼-20 × ½ Hex Hd | 1 |
| 11 | NS-32-8 | Stop Nut ¼-20 "Flexloc" | 1 |
| 12 | 118811 | Arm - Main Chain Idler | 1 |
| 13 | 116664 | Sprocket Assy. (10T) (Incls. item 14) | 1 |
| 14 | 108436-14 | Bearing - Flange | 1 |
| 15 | WS-4-39 | Washer | 1 |
| 16 | SC-86-2 | Shoulder Screw 5/16 × ¾ Soc. Hd | 1 |
| 17 | SC-89-4 | Cap Screw ¼-20 × 1 Soc. Fil. Hd | 1 |
| 18 | WS-17-25 | Washer | 1 |
| 19 | WS-17-25 | Washer | 1 |
| 20 | SC-89-4 | Cap Screw ¼-20 × 1 Soc. Fil. Hd | 1 |
| 21 | SC-86-3 | Shoulder Screw 5/16 × 1 Soc. Hd | 1 |
| 22 | 116664 | Sprocket Assy. (10T) (Incls. item 23) | 1 |
| 23 | 108436-14 | Bearing - Flange | 1 |
| 24 | WS-17-25 | Washer | 1 |
| 25 | 118851 | Arm - Conveyor Chain Idler | 1 |
| 26 | NS-32-8 | Stop Nut ¼-20 "Flexloc" | 1 |
| 27 | 118832 | Sprocket & Bearing Assy. (11T & 16T) (Incls. item 28) | 1 |
| 28 | 108436-13 | Bearing - Flange | 2 |
| 29 | 118835 | Countershaft | 1 |
| 30 | 118837 | Spacer - Primary Tension | 1 |
| 31 | 116307 | Idler - Ball Bearing (16T) | 1 |
| 32 | NS-17-16 | Jam Nut ⅜-16 Hex Fin | 1 |
| 33 | 122912 | Support - Primary Idler | 1 |
| 34 | 122921 | Spacer - Primary Idler | 1 |
| 35 | SC-101-11 | Shoulder Screw 5/16 × ⅝ Soc. Hd | 1 |
| 36 | WS-4-39 | Washer | 1 |
| 37 | 116664 | Sprocket Assy. (10T) (Incls. item 38) | 1 |
| 38 | 108436-14 | Bearing - Flange | 1 |
| | 120668 | Primary Chain Idler Assy. (10T) (Incls. items 5, 6, 35, 36 & 37) | 1 |
| | 120701 | Countershaft Assy. (11T & 16T) (Incls. items 9, 10, 27 & 29) | 1 |
| | 118813 | Main Chain Idler Assy. (10T) (Incls. items 11, 12, 13, 15 & 16) | 1 |
| | 118812 | Conveyor Chain Idler Assy. (10T) (Incls. items 21, 22, 24, 25 & 26) | 1 |

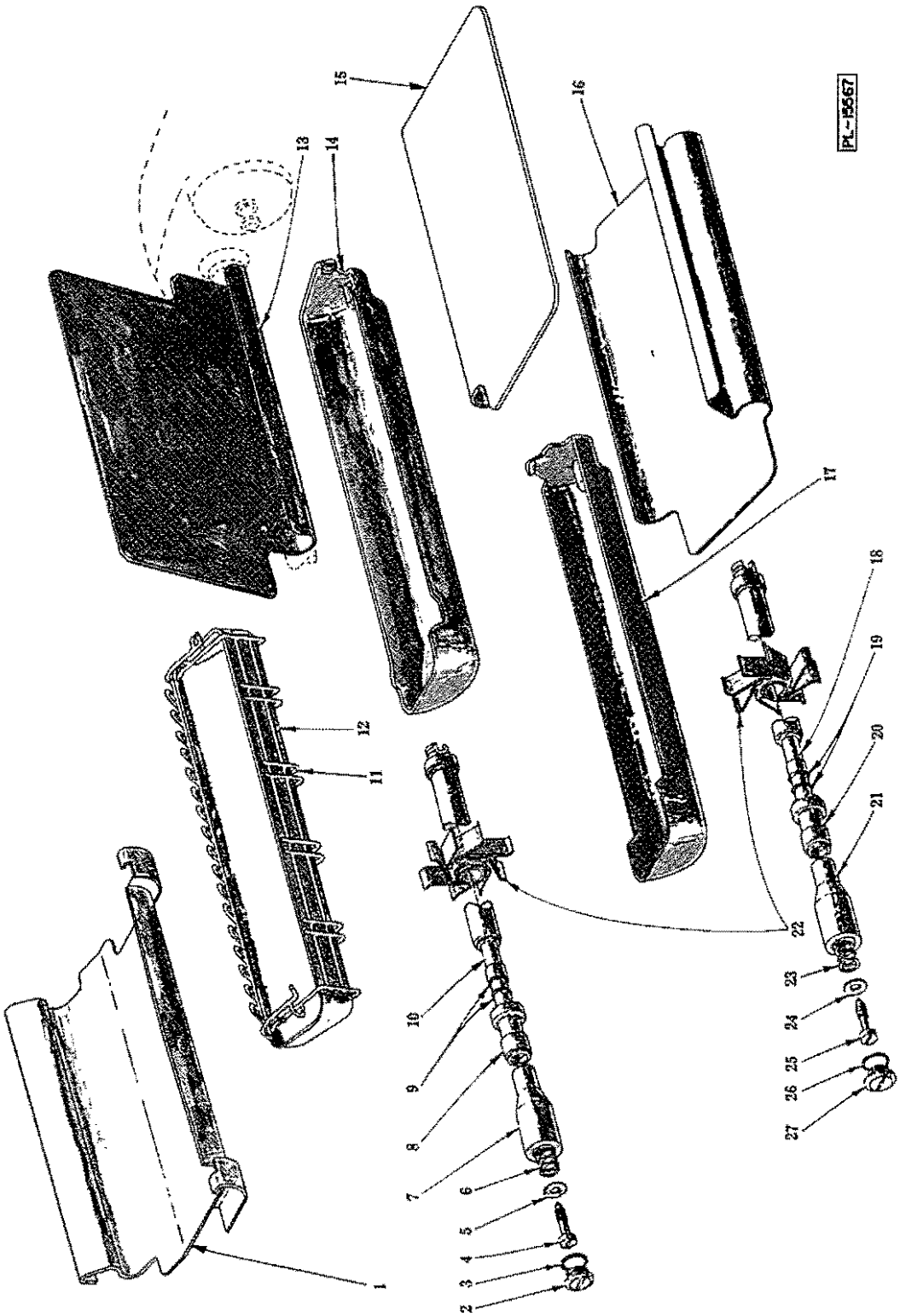



## SWING HOUSING UNIT

| ILLUS. PL-15478 | PART NO. | NAME OF PART[29] | AMT. |
|---|---|---|---|
| 1 | 117976 | Pivot Cover Stud Assy | 1 |
| 2 | 118729 | Cover - Pivot | 1 |
| 3 | 115296 | Gasket - Pivot Cover | 1 |
| 4 | 116606 | Retainer - Cover | 1 |
| 5 | 117687 | Special Screw | 4 |

# SWING HOUSING UNIT (Cont.)

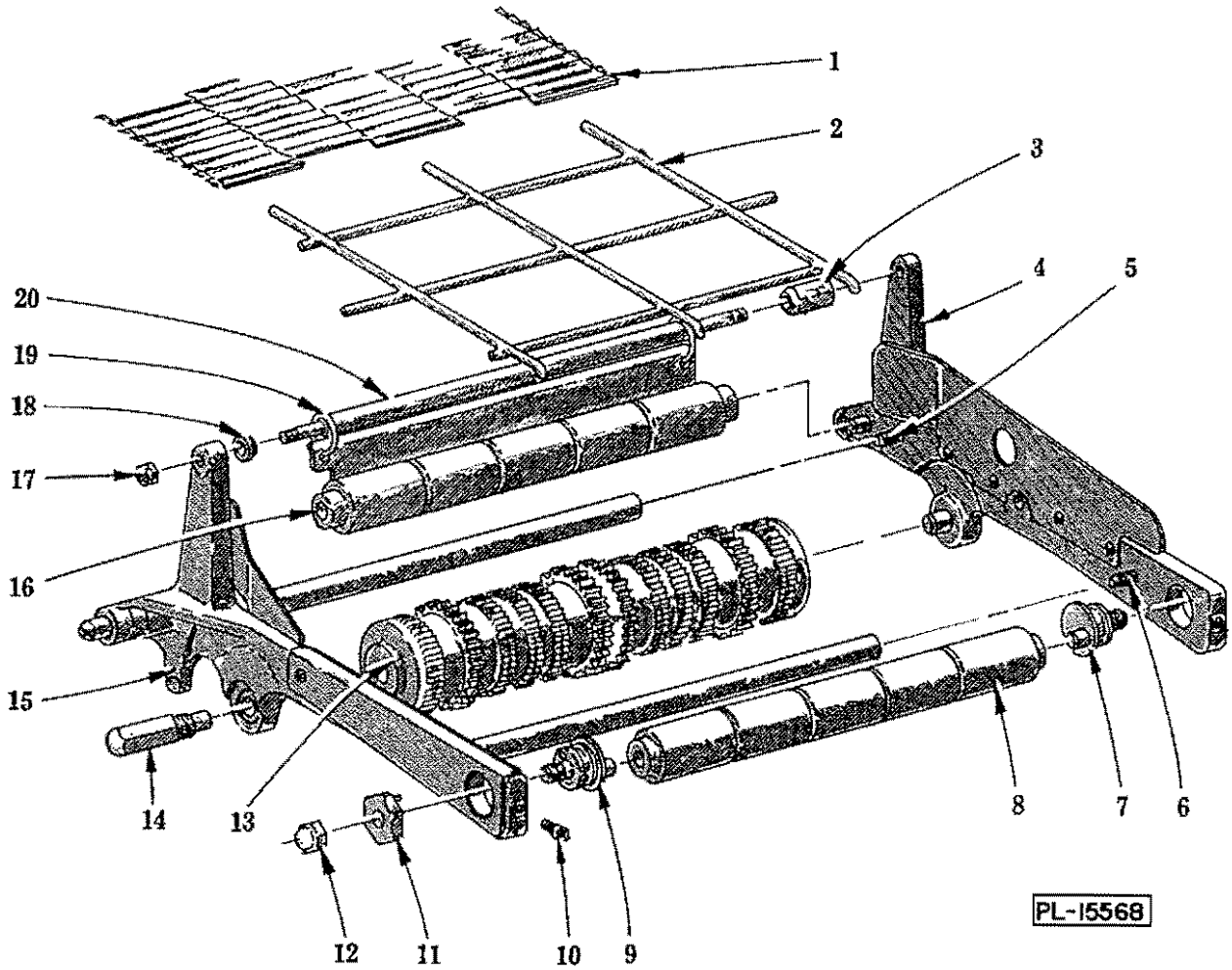
| ILLUS. PL-15478 | PART NO. | NAME OF PART[29] | AMT. |
|---|---|---|---|
| 6 | 116599 | Retainer - Quill (Front) | 1 |
| 7 | 67500-91 | "O" Ring | 1 |
| 8 | 123320 | Thrust Bearing Assy. (Small) | 1 |
| 9 | 116602 | Spacer - Quill | 1 |
| 10 | 116609 | Bearing - Pivot | 1 |
| 11 | 119788 | Swing Housing Assy. (Incls. items 12 thru 20) | 1 |
| 12 | 116749 | Pin - Blade Support | 1 |
| 13 | RP-4-13 | Rollpin ¼ Dia. × ¾ Lg | 1 |
| 14 | 108436-12 | Bearing - Flange | 1 |
| 15 | PG-9-15 | Groov-Pin - Type G Driv-Loc, 5/16 × 1¼ | 1 |
| 16 | RP-2-29 | Rollpin 5/16 Dia. × ¾ Lg | 2 |
| 17 | BB-20-18 | Ball Bearing - N.D. #77503 | 2 |
| 18 | BB-18-12 | Ball Bearing - Fafnir #P201KDD | 2 |
| 19 | SC-8-9 | Mach. Screw 10-24 × 3/8 Rd. Hd | 2 |
| 20 | WS-23-20 | Washer | 2 |
| 21 | SC-109-85 | Set Screw 5/16-18 × 1½ Soc. Hdls., Oval Pt | 1 |
| 22 | NS-17-8 | Jam Nut 5/16-18 Hex Fin | 1 |
| 23 | NS-17-64 | Jam Nut 1¼-7 Hex Fin | 2 |
| 24 | 116609 | Bearing - Pivot | 1 |
| 25 | 123319 | Thrust Bearing Assy. (Large) | 1 |
| 26 | 118915 | Cam - Gap Adjusting | 1 |
| 27 | 123617 | Stop Arm Assy. (Incls. items 21 & 22) | 1 |
| 28 | SC-92-62 | Cap Screw 3/8-16 × 1½ Soc. Fil. Hd | 3 |
| 29 | WL-4-6 | Lock Washer 3/8 Medium | 3 |
| 30 | WS-3-45 | Washer | 1 |
| 31 | 118867 | Detent | 1 |
| 32 | WL-3-38 | Lock Washer ¼ Medium | 1 |
| 33 | SC-36-14 | Cap Screw ¼-20 × ½ Hex Hd | 1 |
| 34 | 123169 | Bracket - Spring | 1 |
| 35 | WS-5-1 | Washer | 2 |
| 36 | SC-92-30 | Cap Screw 5/8-18 × 1½ Soc. Fil. Hd | 2 |
| 37 | 116961-4 | Chain Assy. (#35) (113 Links) | 1 |
| 38 | 87165 | Link - Connecting (35 Chain) | 1 |
| 39 | 118620 | Cover - Swing Housing | 1 |
| 40 | 117974-2 | Cover Stud Assy. (Swing) | 5 |
| 41 | SC-36-13 | Cap Screw ¼-20 × ¾ Hex Hd | 1 |
| 42 | WL-3-38 | Lock Washer ¼ Medium | 1 |
| 43 | 118840 | Bushing - Swing Idler | 1 |
| 44 | SC-101-11 | Shoulder Screw 5/16 × 5/8 Soc. Hd | 1 |
| 45 | WS-4-39 | Washer | 1 |
| 46 | 116664 | Sprocket Assy. (#35 Chain) (10T) (Incls. item 47) | 1 |
| 47 | 108436-14 | Bearing - Flange | 1 |
| 48 | 118841 | Arm - Swing Idler | 1 |
| 49 | NS-32-8 | Stop Nut ¼-20 "Flexloc" | 1 |
| 50 | 112981 | Spring | 1 |
| 51 | 11800-165 | Dowel | 1 |
| 52 | 116980 | Spring - Counterbalance | 1 |
| 53 | NS-32-18 | Stop Nut 3/8-16 "Flexloc" | 1 |
| 54 | 12430-48 | Key | 1 |
| 55 | 117069 | Sprocket (#35 Chain) (13T) (Incls. item 56) | 1 |
| 56 | SC-47-8 | Set Screw ¼-20 × ¼ Soc. Hdls., Cup Pt | 1 |
| 57 | SC-36-72 | Cap Screw 3/8-16 × 1 Hex Hd | 1 |
| 58 | WL-4-6 | Lock Washer 3/8 Medium | 1 |
| 59 | 116307 | Idler - Ball Bearing (16T) | 1 |
| 60 | NS-32-18 | Stop Nut 3/8-16 "Flexloc" | 1 |
| 61 | 12430-48 | Key | 1 |
| 62 | 116308 | Sprocket (#35 Chain) (10T) (Incls. item 63) | 1 |
| 63 | SC-47-8 | Set Screw ¼-20 × ¼ Soc. Hdls., Cup Pt | 1 |
| 64 | 116818 | Pin - Drain | 1 |
| 65 | 67500-44 | "O" Ring | 1 |
| 66 | 116821 | Spring - Drain | 1 |
| 67 | 116819 | "X" Washer | 1 |
| 68 | 119800 | Spindle Assy. (Swing) | 2 |
| 69 | 121058 | Washer - Seal Support | 2 |
| 70 | 121056 | Seal - Spindle | 2 |
| 71 | 121057 | Insert - Seal | 2 |
| 72 | 119467-3 | Tube - Tie (Lower) | 1 |
| 73 | 119467-1 | Tube - Tie (Upper) | 1 |
| | 118847 | Swing Chain Idler Assy. (Incls. items 44, 45, 46, 48 & 49) | 1 |




**SHIELDS, TRAYS AND SCRAPER UNIT**

## SHIELDS, TRAYS AND SCRAPER UNIT

| ILLUS. PL-15567 | PART NO. | NAME OF PART | AMT. |
|---|---|---|---|
| 1 | 122730 | Bottom Swing Shield Assy | 1 |
| 2 | 119676 | Cap - End | 1 |
| 3 | 67500-87 | "O" Ring | 1 |
| 4 | 119668 | Bolt - Handle Spring | 1 |
| 5 | WS-17-1 | Washer | 1 |
| 6 | 119666 | Spring - Handle | 1 |
| 7 | 120184 | Handle - Swing Scraper | 1 |
| 8 | 120253 | Bushing - Swing Scraper | 1 |
| 9 | 67500-84 | "O" Ring | 2 |
| 10 | 119855-2 | Shaft - Swing Scraper | 1 |
| 11 | 122097 | Support - Belt Tray | 1 |
| 12 | 119689 | Tray - Belt | 1 |
| 13 | 121076 | Label & Shield Assy | 1 |
| 14 | 117063 | Pan - Swing Scrap | 1 |
| 15 | 123915 | Infeed Shield & Label Assy | 1 |
| 16 | 119831 | Shield - Bottom | 1 |
| 17 | 117062 | Pan - Main Scrap | 1 |
| 18 | 119855-1 | Shaft - Main Scraper | 1 |
| 19 | 67500-85 | "O" Ring | 2 |
| 20 | 120252 | Bushing - Main Scraper | 1 |
| 21 | 120183 | Handle - Main Scraper | 1 |
| 22 | 123389 | Scraper Cluster Kit | 1 |
| 23 | 119666 | Spring - Handle | 1 |
| 24 | WS-17-1 | Washer | 1 |
| 25 | 119668 | Bolt - Handle Spring | 1 |
| 26 | 67500-87 | "O" Ring | 1 |
| 27 | 119676 | Cap - End | 1 |
|  | 119678-1 | Main Scraper Assy. (Incls. items 18 thru 27) | 1 |
|  | 119678-2 | Swing Scraper Assy. (Incls. items 2 thru 10 & 22) | 1 |




## INFEED UNIT

| ILLUS. PL-15568 | PART NO. | NAME OF PARTS | AMT. |
|---|---|---|---|
| 1 | 117762 | Belt - Infeed | 1 |
| 2 | 119740 | Support - Belt | 1 |
| 3 | 122121 | Collar - Rear Rod | 1 |
| 4 | 119743 | Infeed Frame Assy. (Rear) | 1 |
| 5 | SC-41-32 | Cap Screw ⅜-16 x 1½ Hex Hd | 1 |
| 6 | SC-41-31 | Cap Screw ⅜-16 x 1¼ Hex Hd | 1 |
| 7 | 123251 | Infeed Roller Adjusting Cam Assy | 1 |
| 8 | 120372 | Roller - Infeed (Adjustable) | 1 |
| 9 | 123251 | Infeed Roller Adjusting Cam Assy | 1 |
| 10 | 117800 | Screw - Lock Cam | 2 |
| 11 | 121836 | Clamp Plate Assy | 2 |
| 12 | NS-25-16 | Acorn Nut ⅜-16 | 2 |
| 13 | 119739 | Infeed & Gear Roll | 1 |
| 14 | 122116 | Pin - Infeed Locator | 1 |
| 15 | 119742 | Infeed Frame (Front) | 1 |
| 16 | 120375 | Roller - Infeed (Fixed) | 1 |
| 17 | NS-25-9 | Acorn Nut 5/16-18 | 1 |
| 18 | 122120 | Collar - Front Rod | 1 |
| 19 | 122124-1 | Curtain & Ring Assy | 1 |
| 20 | 122123 | Rod - Infeed Curtain | 1 |
| | 120968 | Strand - Infeed Belt Repair | AR |
| | 120969 | Link - Infeed Belt Repair | AR |