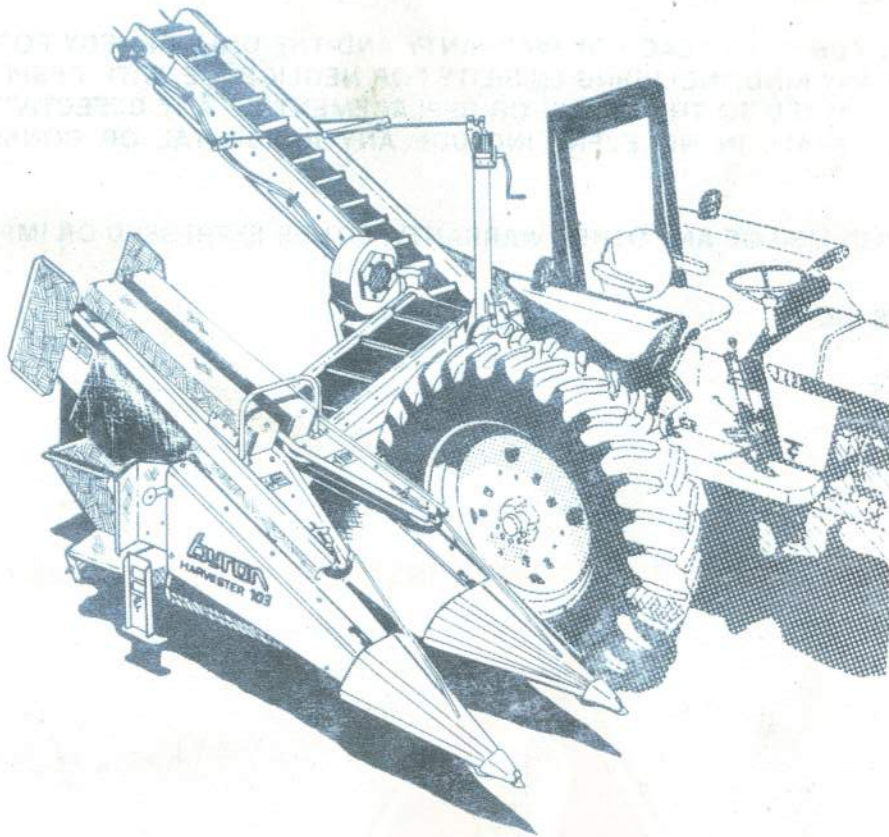


byron®

103

ONE ROW, THREE POINT HITCH MOUNTED SWEET CORN HARVESTER



OPERATORS MANUAL & REPAIR PARTS LIST
Set up, Adjustment & Service Instructions

For the Dealer and Operator, read these
instructions & save them for reference

byron
MACHINERY INC.

7275 BATAVIA-BYRON ROAD, BYRON, N.Y. 14422 U.S.A.

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LIMITED WARRANTY

Byron Enterprises, Inc., warrants its new machines to be free from defects in material and workmanship, under normal use and service, for a period of one (1) year from the date of delivery to the original purchaser, or five hundred (500) hours of operation whichever occurs first.

Upon satisfactory proof of claim, we will, within a reasonable time, at our option replace or repair defective parts free of charge. Charges for transportation, installation, correcting defects or making additions will not be allowed, nor will we accept products returned for credit unless the return or correction is authorized by us in writing.

Warranty claims will not be honored if in the Company's opinion such claim was caused by improper use or adjustment of the machine.

THE ONLY REMEDY FOR ANY BREACH OF WARRANTY AND THE ONLY REMEDY FOR THE COMPANY'S LIABILITY OF ANY KIND, INCLUDING LIABILITY FOR NEGLIGENCE, WITH RESPECT TO ANY MACHINE, SHALL BE LIMITED TO THE REPAIR OR REPLACEMENT OF ANY DEFECTIVE PARTS AS STATED ABOVE, AND SHALL IN NO EVENT INCLUDE ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

THIS WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, EITHER EXPRESSED OR IMPLIED.

BYRON ENTERPRISES INC.
Box 100
Byron, New York 14422
U.S.A.

THE FARM and INDUSTRIAL EQUIPMENT INSTITUTE Safety Alert Symbol



BE ALERT! Your Safety is involved.

THE SYMBOL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS CONCERNING YOUR PERSONAL SAFETY.

SAFETY PRECAUTIONS

TO GUARD AGAINST INJURY TO YOURSELF AND OTHERS, AND DAMAGE TO THE MACHINE OR PROPERTY OF OTHERS, THE FOLLOWING RULES MUST BE FOLLOWED DURING THE OPERATION OF THIS MACHINE:

1. BEFORE OPERATION

- Install harvester on a tractor equipped with an operator enclosure.
- See that all safety shields and tractor P.T.O. parts are installed and properly secured.
- Be sure tractor P.T.O. is disengaged before starting the tractor engine.
- Make sure there is no one near the machine before starting tractor engine.
- Allow only properly trained personnel to operate this machine. Consult your state labor laws for operator qualifications.
- Never operate farm machinery while under the influence of alcohol or drugs.

2. DURING OPERATION

- Do not stand on or near any part of the harvester while in operation.
- Do not allow anyone to ride on the harvester while in operation.
- Do not allow anyone to ride on the tractor while in operation.
- Keep hands, feet and clothing away from moving parts.
- Never wear loose fitting clothing when operating farm machinery, it may catch in moving parts.
- Use extreme care when operating close to ditches, fences or hillsides.

- Never attempt to remove an obstruction from any part of the harvester while the machine is running.
- Disengage tractor P.T.O. and shut off tractor engine before dismounting the tractor.
- Before attempting to clean, adjust or lubricate the machine, shut off tractor engine and be sure all moving parts have come to a complete stop.
- After servicing, be sure all tools, spare parts or servicing equipment are removed from the machine.

3. TRANSPORTING

- Always place the rear elevator/conveyor in the rear loading position for travelling on public roads.
- Avoid heavily traveled roads.
- Drive at a speed which allows complete control of the machine at all times.
- Check clearance carefully before driving the harvester under electric lines or bridges, and into buildings.
- Use warning devices such as flags, S.M.V. emblem, lights, etc. that are approved for use in your local area when moving equipment over public roads. Keep these warning devices clean and in good working order.

DEVELOP SAFE OPERATING HABITS FOR YOURSELF AND INSIST THAT ANYONE ELSE OPERATING THIS MACHINE DO THE SAME. REMEMBER...SAFETY IS EVERYONES CONCERN!

SAFETY WARNING SIGNS

The safety signs shown on this page are placed on the machine to warn of hazards. The warnings on these decals are for your personal safety and the safety of those working around you. **OBSERVE THESE WARNINGS.**



⚠ DANGER

Keep hands away from moving belts.

BE 90163

⚠ DANGER



**SHIELD MISSING
DO NOT OPERATE**

**GARDE MANQUANT
NE PAS OPÉRER**

**PROTECTOR
DESFAECADO
NO OPERAR**

BE 90134

⚠ DANGER

- Knife rolls move faster than you can let go of a stalk!
- Keep hands, feet and clothing away from row gathering units.
- Always disengage drive and shut off engine before attempting to unplug or remove loose stalks from row gathering units.

BE 90020

⚠ DANGER



**ROTATING DRIVELINE
CONTACT CAN CAUSE DEATH
KEEP AWAY**

DO NOT OPERATE WITHOUT:

- ALL DRIVELINE, TRACTOR AND EQUIPMENT SHIELDS IN PLACE
- DRIVELINES SECURELY ATTACHED AT BOTH ENDS
- DRIVELINE SHIELDS THAT TURN FREELY ON DRIVELINE

**PRISE DE FORCE ROTATIVE
TOUT CONTACT PEUT ÊTRE MORTEL
RESTEZ ÉLOIGNÉ!
AVANT D'OPÉRER ASSUREZ QUE:**

- LES PROTECTEURS DE LA PRISE DE FORCE, DU TRACTEUR ET DE L'ÉQUIPEMENT SONT EN PLACE
- LA PRISE DE FORCE EST BIEN BLOQUÉE AUX DEUX EXTRÉMITÉS
- LES PROTECTEURS DE LA PRISE DE FORCE TOURNENT LIBREMENT

**MECANISMO DE TRANSMISIÓN ROTANDO
EI CONTACTO PUEDE CAUSAR LA MUERTE
NO SE ACERQUE**

NO SE OPERE SIN:

- LOS PROTECTORES DE LOS MECANISMOS DE TRANSMISIÓN, TRACTORES Y EQUIPO EN SU LUGAR
- LOS MECANISMOS DE TRANSMISIÓN SEGURAMENTE ADHERIDOS EN AMBOS LADOS
- LOS PROTECTORES DE LOS MECANISMOS DE TRANSMISIÓN DANDO VUELTA LIBREMENTE

BE 90133

**⚠ CAUTION
NO STEP**

Do not step on this area of the machine.
Never allow anyone to ride on the machine.

BE 90019

⚠ WARNING



tractor PTO master shield

**TO AVOID INJURY
Keep tractor PTO master shield in place**

BE 90132



⚠ DANGER

Revolving stalk ejectors.
Keep hands away.

BE 90162

SAFETY INSTRUCTIONS

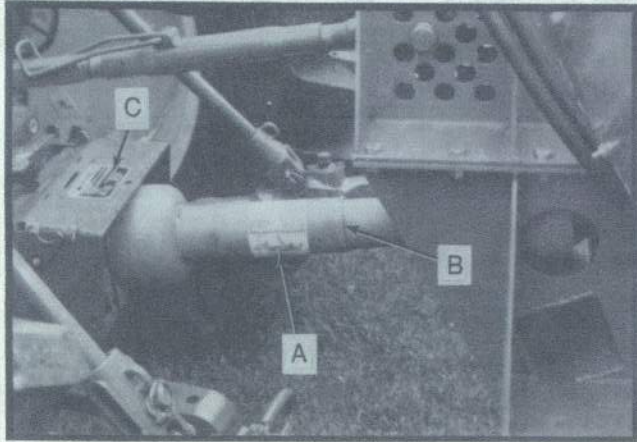
- Keep all guards and shields in place.
- Disengage drive and shut off engine before servicing, adjusting or unplugging machine.
- Keep hands, feet and clothing away from moving parts.
- Never ride on machine when in motion.

BE 90017

SAFETY WARNING SIGNS LOCATIONS

The photos below show where the various safety warning signs are located on the harvester. Keep these signs clean. Wipe them off regularly during the harvest season. Replace signs if they become damaged, are missing or painted over. When replacing signs, clean surface thoroughly with a good cleaning solution before placing signs on the machine.

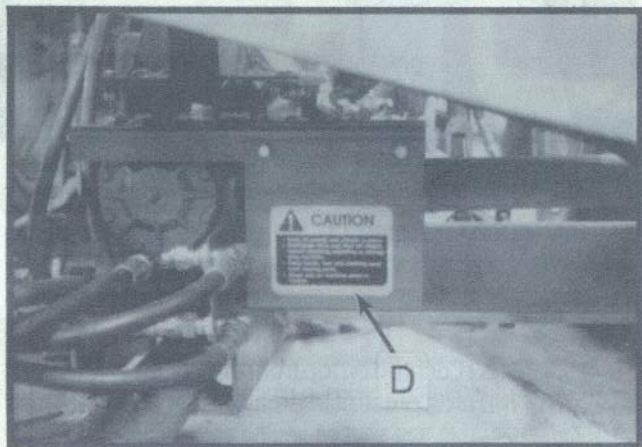
Safety warning signs are available at no charge from your Byron parts department. Order these signs by part number per parts ordering information in the repair parts section of this manual.



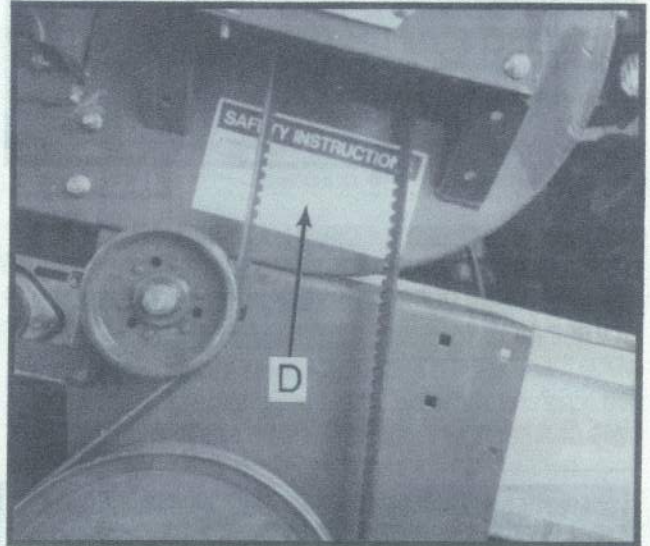
A. P/N 90133 Located on outer P.T.O shaft shield to warn of danger associated with rotating shafts.

B. P/N 90134 Located on inner P.T.O. shaft. Warns of danger present if operating P.T.O. without outer P.T.O. shaft shield in place.

C. P/N 90132 Located on tractor P.T.O. master shield to warn of danger present in rotating parts on tractor P.T.O.



D. P/N 90017 Located on back of rear drive shaft shield to warn of hazards associated with moving parts.



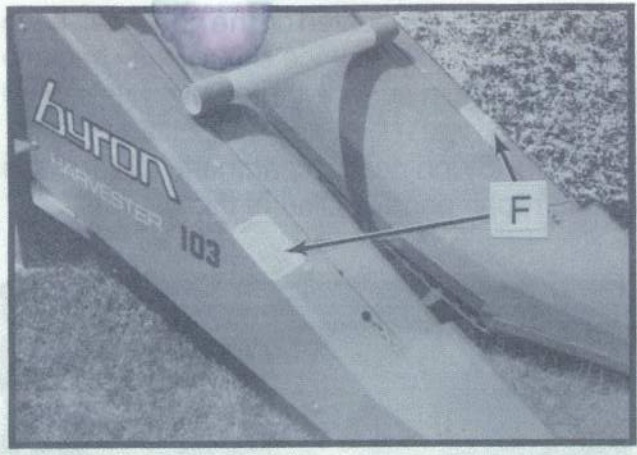
D. P/N 90017 Located on rear of fan housing under belt guard to warn of hazards present when operating machine without guards and shields in place.



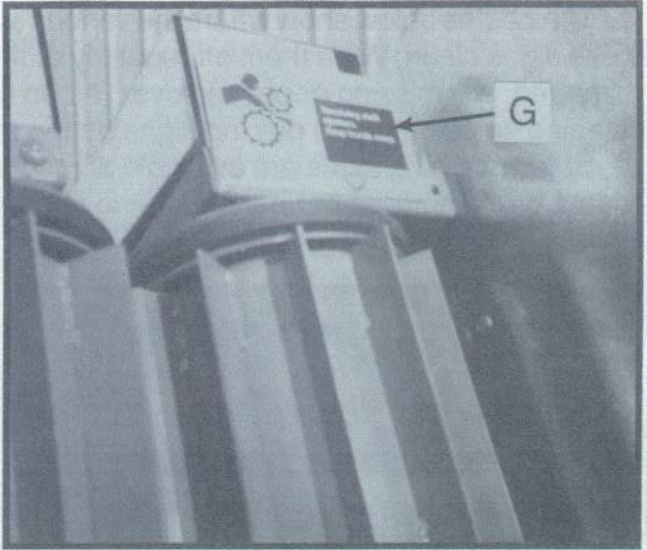
D. P/N 90017 Located on rear of R.H. row separator to warn of hazards associated with moving parts.

E. P/N 90019 Located on rear of L.H. row separator to warn of possible hazards in stepping on row unit sheet metal when machine is running.

F. P/N 90020 Located on back of L.H. row separator to warn of hazards present in row gathering unit moving parts.



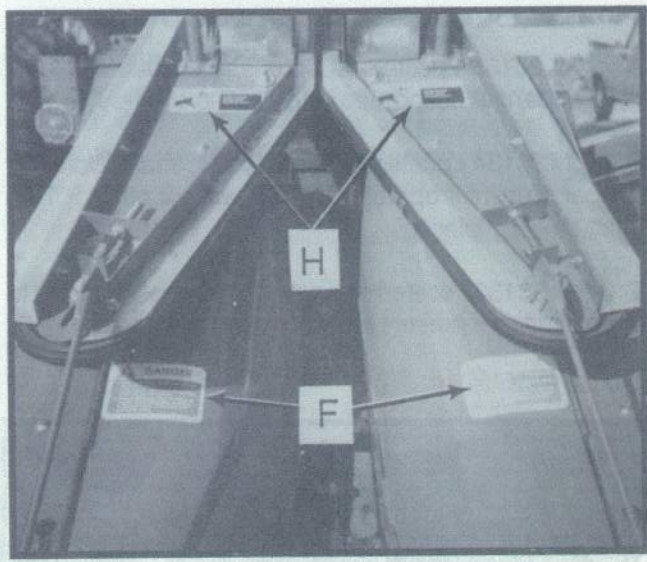
F. P/N 90020 Located on top of both row unit outer covers to warn of hazards present in row gathering unit moving parts.



G. P/N90162 Located above stalk ejector drums to warn of hazards in the area of the rotating drums.



G. P/N 90162 Located on both sides of the stalk ejector drum housings to warn of hazards in the area of the rotating drums.



F. P/N 90020 Located on top of both row unit outer covers to warn of hazards present in row gathering unit moving parts.

H. P/N90163 Located on top front of stalk ejector frames to warn of hazards present in area of stalk gripping belts.

Byron 103 HARVESTER



INTRODUCTION

The BYRON 103 Harvester has been designed to provide the small fresh market sweet corn grower with a mechanical harvester that has most of the advantages of hand picking while offering unmatched speed and conveniences.

The heart of the 103 is the time-proven Byron corn head row gathering unit which is used world wide by commercial sweet corn processors and large fresh market operators in multi-row corn heads. Stripper plates with soft urethane cushions, gentle rubber gathering belts and hard-chrome plated, sharpened knife rolls make for damage free harvesting of most fresh market varieties.

The 103 is intended to be fully mounted on most category II three point hitch equipped tractors of 40 HP or more.

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UNCRATING, ASSEMBLY AND MOUNTING THE HARVESTER

Read and understand these instructions thoroughly before beginning assembly.



READ AND UNDERSTAND TRACTOR OPERATOR'S MANUAL THOROUGHLY BEFORE ATTEMPTING TO INSTALL THIS ATTACHMENT. KEEP PERSONS NOT INVOLVED IN THE ASSEMBLY OF THIS MACHINE AWAY DURING ASSEMBLY - ESPECIALLY CHILDREN!

SPECIAL NOTES:

1. These instructions are written to include the installation of the stalk ejector unit, which is an extra-cost option. If you have not ordered your 103 with the stalk ejector option, disregard the instructions pertaining to that unit.
2. If you will be using these instructions to install a stalk ejector unit or a cleaning fan on machine that was built prior to 1990, it is important to understand that one or both of the gearboxes on the 103 must be modified to drive these attachments. If you have made prior arrangements with BYRON to have your original gearboxes modified by our service department, you can disregard instructions pertaining to their modification. Otherwise see special instruction sheets which are shipped along with the new parts necessary to make these modifications yourself. Do not proceed with the rest of these installation instructions until your gearboxes have been modified.
3. If you are using these instructions to install a cleaning fan on an early harvester that had the cross conveyor drive motor located on the rear of the conveyor, there are some modifications that must be made to the cross conveyor and hydraulic system. Instructions and the necessary new parts to make these modifications are included in the fan parts box.

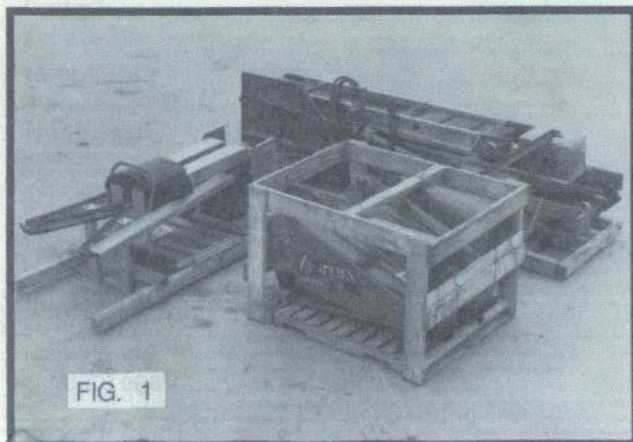


FIG. 1

GETTING STARTED

Your new BYRON 103 Harvester has been shipped in three parts, one skid with the frame, both conveyors and hydraulic parts, one skid containing the row gathering unit and fan skid and one skid with the stalk ejector unit (FIG. 1). Before unpacking the parts, make sure you have plenty of room to assemble the harvester and to maneuver the tractor in to hook up the harvester when ready. If you're doing this outside, make sure you're on firm, level ground.

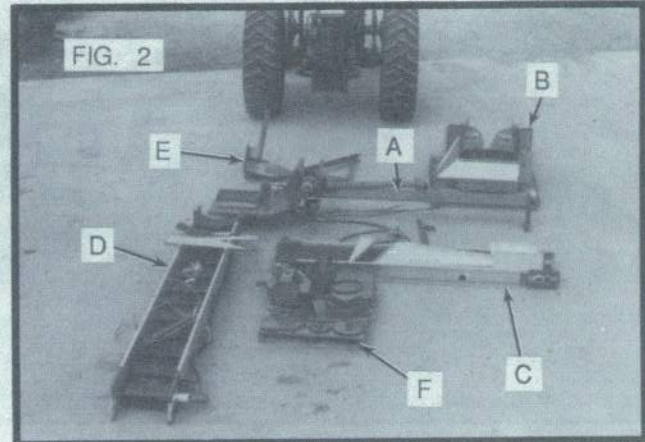


FIG. 2

Set the stalk ejector skid off to one side and remove the strapping and bolts holding the other parts to their skids. The major subassemblies that make up the harvester are the frame (FIG. 2-A), the row gathering unit (FIG. 2-B) (leave the row gathering unit on the skid), the cross conveyor (FIG. 2-C), the elevator/conveyor (FIG. 2-D), the mast (FIG. 2-E) and the cleaning fan (FIG. 2-F).

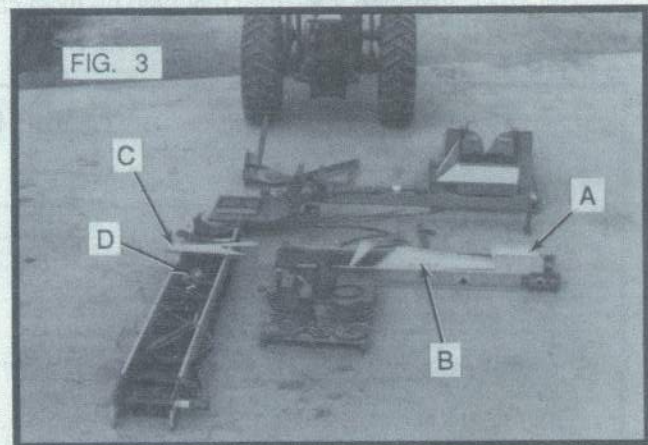


FIG. 3

Some of the smaller individual parts may also be seen in position in FIG. 3. The hardware box, which contained this manual (FIG. 3-A), the cross conveyor hopper parts (FIG. 3-B), the elevator/conveyor hopper parts (FIG. 3-C), the elevator hanger and winch, and the flow divider valve and hoses (FIG. 3-D) which are shipped in the elevator/conveyor.

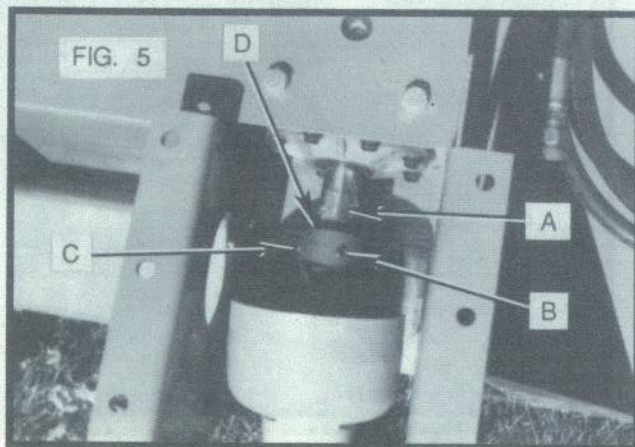
Before starting assembly, open the hardware box and separate the individual parts according to size and type as

shown in FIG. 4.

Begin by setting the harvester frame up on its jackstands. The left hand jackstand is installed in its stowed position. Pull the jack lock pin out of the frame allowing the jackstand to hinge down and reinsert the pin, locking the jackstand into the lowered position. Find the right hand jackstand and remove the handle which is wired to it for shipping. Slide the jackstand up into and through the square tube on the extreme right end of the frame with the shoe on the jackstand pointing forward.



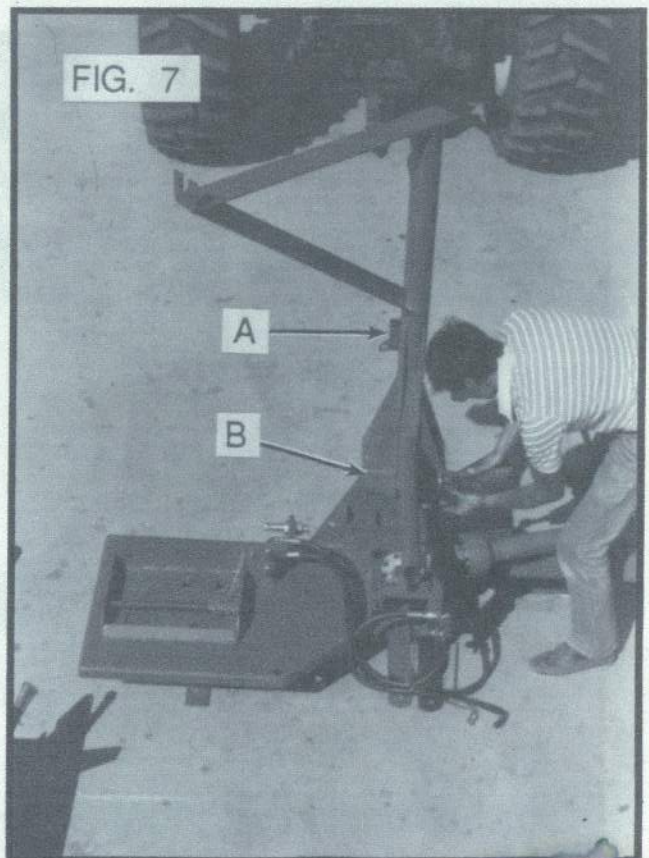
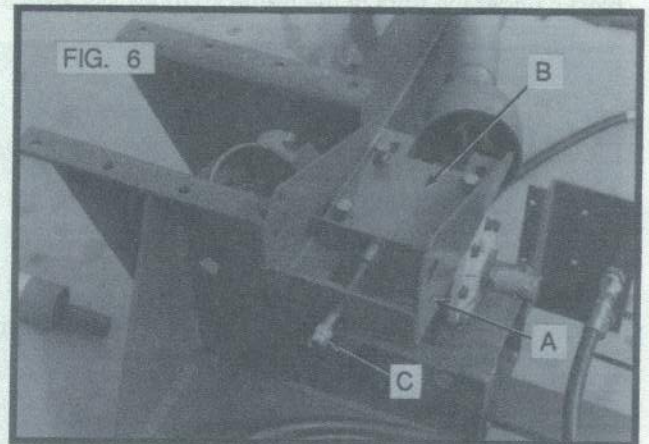
The hole in the frame tube should line up with the center hole in the jackstand. Insert one jack lock pin (from the hardware box) through this hole locking the jackstand in place. Next take the handle and bolt it to the top of the jackstand with two 1/4" x 3/4" carriage bolts and locknuts from the hardware box. Place a block under one of the draw pin ears on the front of the frame so the frame will be level while you are working on it.



Begin assembly by installing the P.T.O. shaft to the main drive gearbox which has been installed in the harvester frame at the factory (FIG. 5). First locate one 1/4" x 1 1/2" square key in the hardware box parts and insert the key into keyway in gearbox input shaft (FIG. 5-A). Apply anti-sieze or grease to shaft. Check to see that set screw (FIG. 5-B) in P.T.O. shaft hub is backed out far enough to allow the hub to slide over the key. Align keyway

in P.T.O. shaft hub with key in gearbox input shaft and slide hub onto shaft, paying particular attention to see that thru hole in hub lines up with thru hole in shaft (FIG. 5-C). If hub to shaft fit is too tight to allow the hub to slide on easily, remove opposite (tractor) end of P.T.O. shaft and tap on the exposed end of the shaft with a plastic or rubber hammer until holes line up. Find one 5/16" x 2 1/4" roll pin from the hardware box and drive roll pin through hub until flush with outside of hub (FIG. 5-D). Check to see that square key is flush with end of hub, tap back in if necessary and tighten set screw down on key.

Locate fan jackshaft mount (FIG. 6-A) and anchor plate (FIG. 6-B) on skid containing the fan parts. Also locate adjuster stud and nut (FIG. 6-C) in fan hardware box. Thread stud thru nut on jackshaft mount and into tube



on anchor plate as shown. Install four 1/2" x 1 1/4" hex head bolts and lockwashers (from fan parts box) thru the anchor plate and jackshaft mount into four tapped holes in top of gearbox as shown. Leave these bolts finger-tight.

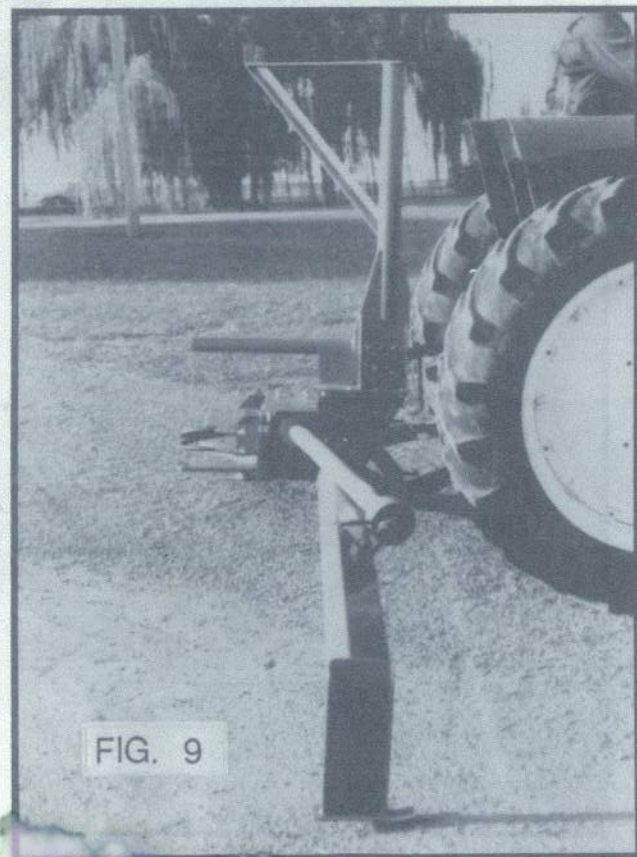
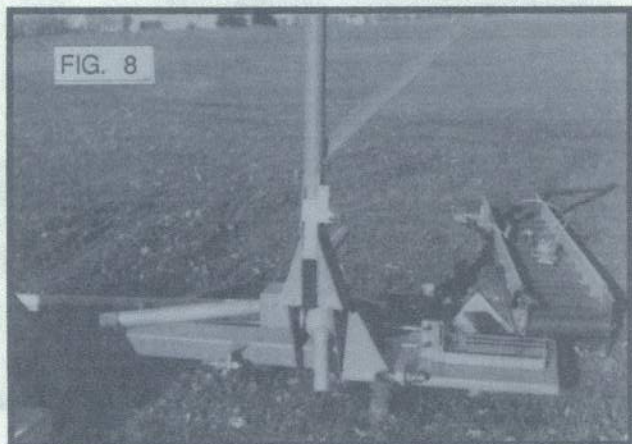
Next line up the mast with the mating holes in the main frame, right above where you just installed the P.T.O. shaft (FIG. 7). The valve mount plate (FIG. 7-A) should face forward, the winch cable guide arm and cross conveyor support tube should be to the rear as shown. In the hardware assortment locate eight 1/2" x 1 1/4" hex head bolts, nuts and lockwashers and install them finger tight through the mating holes in the frame (FIG. 7-B). You may need a drift pin to line up some of the holes. Tighten all eight bolts.

Prepare to mount the frame on the tractor. Place blocks under the front of the frame so that it sits level as

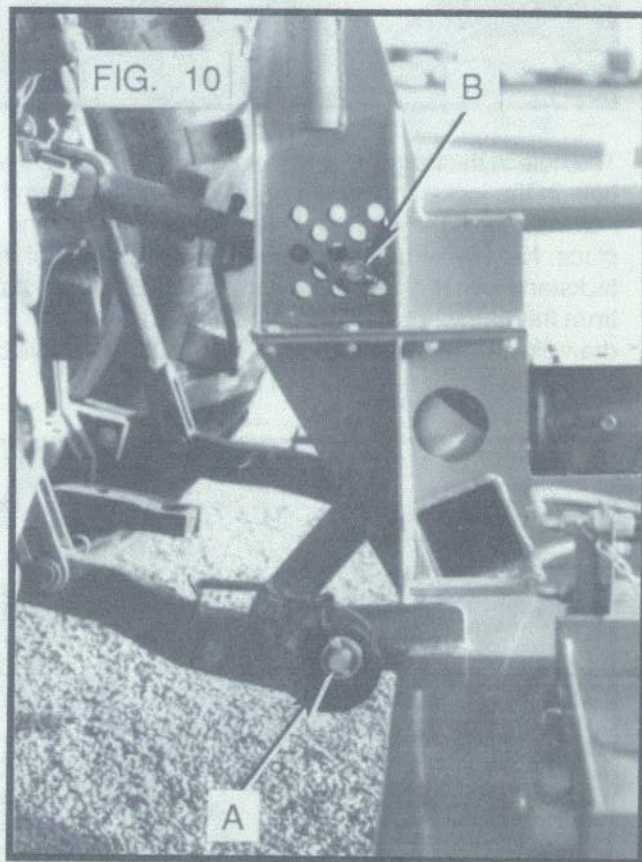
in FIGS. 8 & 9. **NOTE:** When frame is level the mast will be vertical; it is important that the mast remain vertical when hooking up so that proper geometry will be maintained at the row unit when the harvester is raised or lowered.

Back tractor in to the point where the two lower arms of the three point hitch are lined up with the two lower draw pins on the harvester frame.

USE CAUTION WHEN MOUNTING THE HARVESTER FRAME. MAKE SURE NO ONE IS STANDING ON THE FRAME OR IN BETWEEN TRACTOR WHEEL AND FRAME. WHEN WORKING BEHIND TRACTOR TURN OFF ENGINE AND LOCK BRAKES.



Connect two lower arms to lower draw pins and secure with two lock pins (FIG. 10-A) from the hardware box.

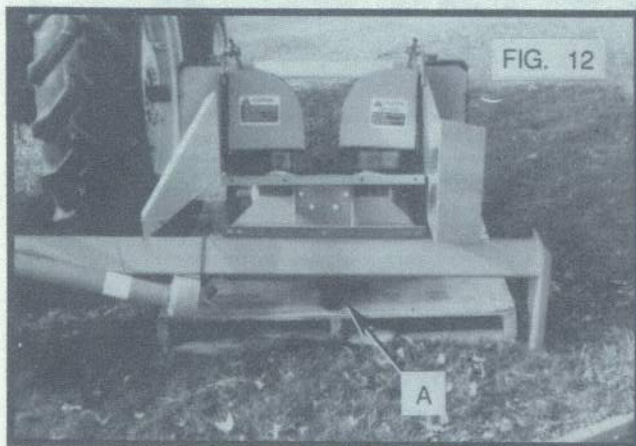


Adjust top link so it will line up with one of the pairs of holes in the lower mast. As a general rule, it is the rear hole in the second row from the bottom that works best for the majority of tractors (FIG. 10-B). Pin the top link in place, start the tractor and raise the harvester frame slowly while watching the mast. Ideally the mast should remain vertical throughout it's travel. Unfortunately there is a wide range of three point hitch designs among various manufacturers. If you discover that the mast does not remain vertical when raising the harvester frame, it is going to be necessary to

experiment with the top link pivot point. Always start with the harvester frame sitting on the ground and blocked up perfectly level (FIGS. 8 & 9). Remove the pin from the top link and adjust the length of the top link to line up with one of the holes next to the hole that you started with. Continue to try different holes until you find one which allows the mast to remain vertical throughout its range of travel.



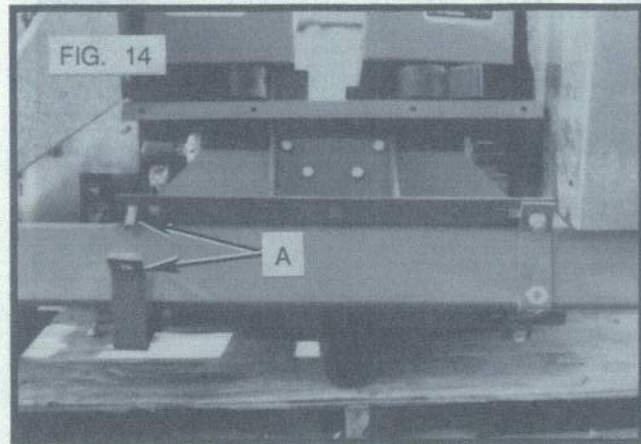
Prepare the row gathering unit for mounting by removing gearbox cover extension panel (FIG. 11-A) from the row frame. Set hardware aside for use later.



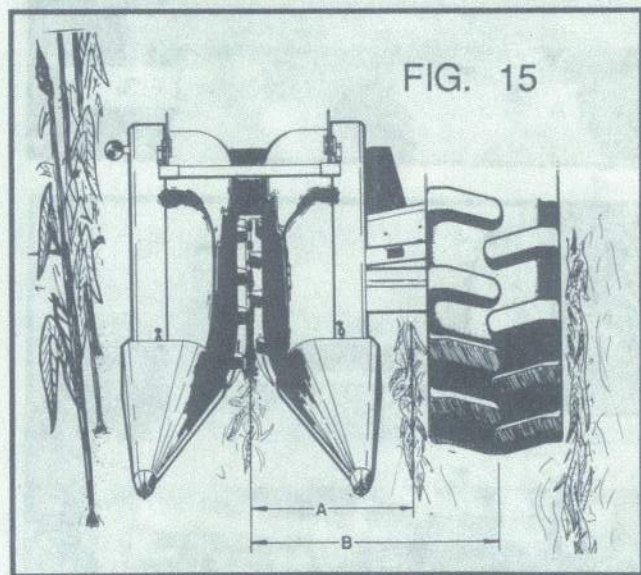
With the row unit still sitting on its shipping skid, jack up the back of the row frame at least 4" and place a block under the lower flange (FIG. 12-A). Drive the tractor into



position alongside the row gathering unit as shown in FIG. 12 with the harvester frame tube lined up with the back of the row gathering unit so the flange on the row frame will fit over the frame tube (FIG. 13-A).



Obtain four 5/8" x 2" carriage bolts, nuts and lockwashers from the hardware assortment along with two frame clamps (FIG. 14-A) and place the frame clamps around the frame tube as shown. Do not tighten the bolts at this time as you will set your row spacing next.



Before proceeding you must know the row spacing of the corn you will picking (FIG. 15). For example if rows are planted on 30" centers (FIG. 15-A), you will want to set your harvester up with a dimension of 45" (FIG. 15-B) from the center of the row gathering unit to the center of the right tire - in other words, one row (30") plus one half of one row (15") equals proper row/tire setting (FIG. 16). This keeps the right hand tire in between two previously picked rows. Slide the row gathering unit left or right to achieve the desired dimension. Tighten all carriage bolts on the frame tube clamps (FIG. 17-A). When tightening bolts check to see that the small square bars on the ends of the clamps contact the row frame, this prevents the row gathering unit from moving on the frame tube.

The row gathering unit driveshaft (FIG. 18-A) which is

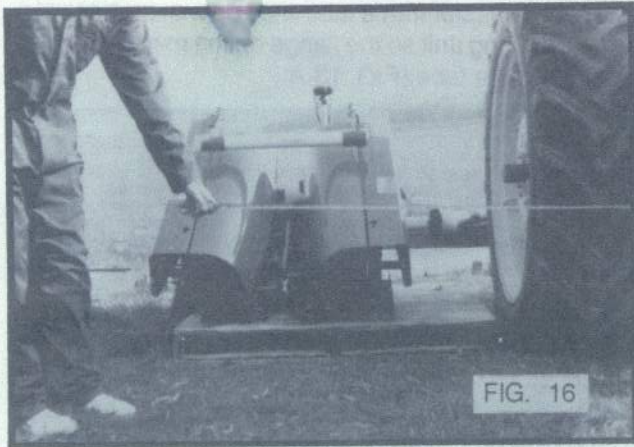


FIG. 16

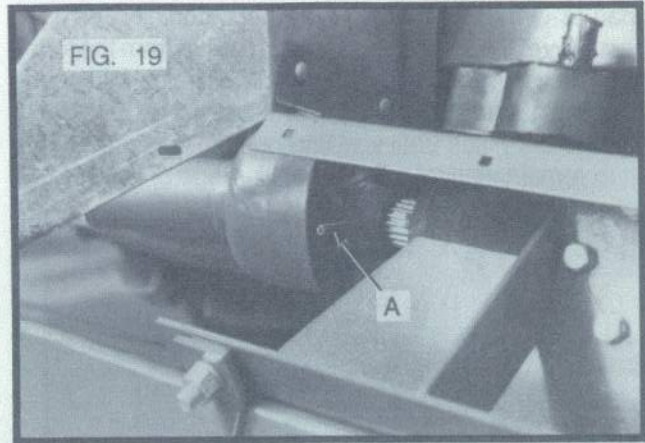


FIG. 19

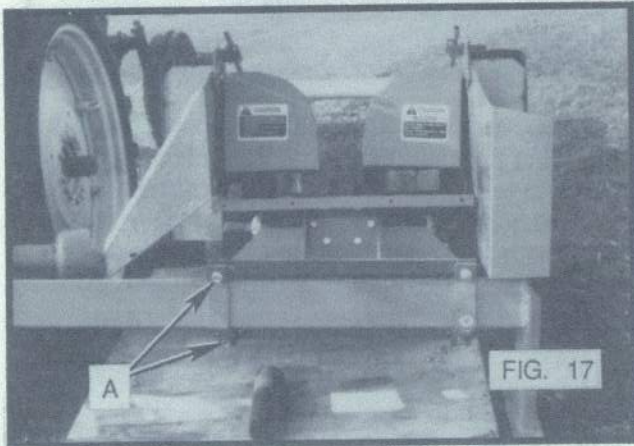


FIG. 17



FIG. 20

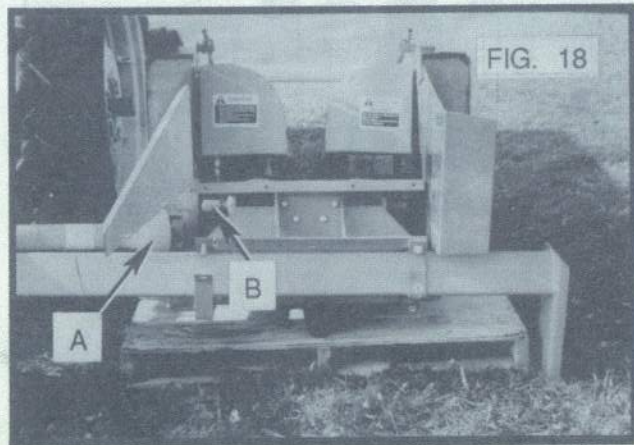


FIG. 18

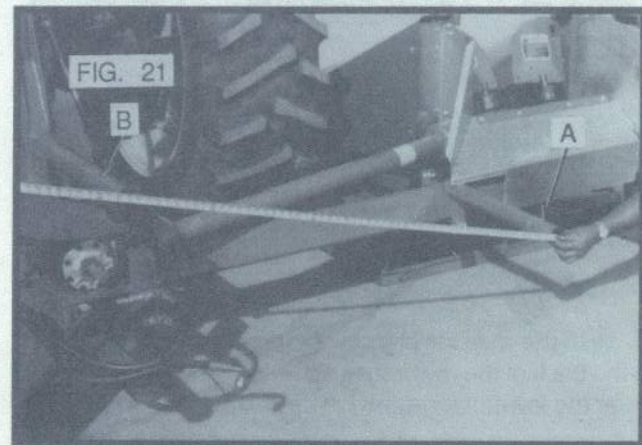


FIG. 21

connected to the main drive gearbox under the mast may now be connected to the splined shaft on the row gathering unit gearbox (FIG. 18-B). Use the same procedure to install as in FIG. 5 (except there is no key or set screw). Be sure to apply anti-sieze or grease to the splined gearbox input shaft and install roll pin (FIG 19-A).

Re-install gearbox cover extension panel previously removed in FIG. 11. Push panel as far up as it will go in its slots (FIG. 20-A) and tighten bolts. The rear surface should be vertical against the rear of the frame tube. Be sure to install carriage bolts with the bolt heads on the outside, where they come in contact with the corn. (Never place the threaded end of a bolt or nut in the path of the corn, as it can damage the ears).

Prepare to mount the cross conveyor to the main frame by installing the lower cross conveyor support tube (FIG. 21-A) to the frame as shown. Obtain two 5/8" x 2" hex head bolts, nuts and lockwashers from the hardware assortment. Assemble with the support tube clamp on the frame tube near the corner of the row unit sheet metal as shown. With a tape measure, set the distance between the center of the upper cross conveyor support tube on the mast (FIG. 21-B) and the center of the lower tube (FIG. 21-A) at 57".

Begin assembling the cross conveyor hopper by installing rear hopper panel (FIG. 22-A) to rear edge of cross conveyor with 5/16" x 5/8" truss head self-locking screws and 5/16" lock nuts from the hardware assortment.

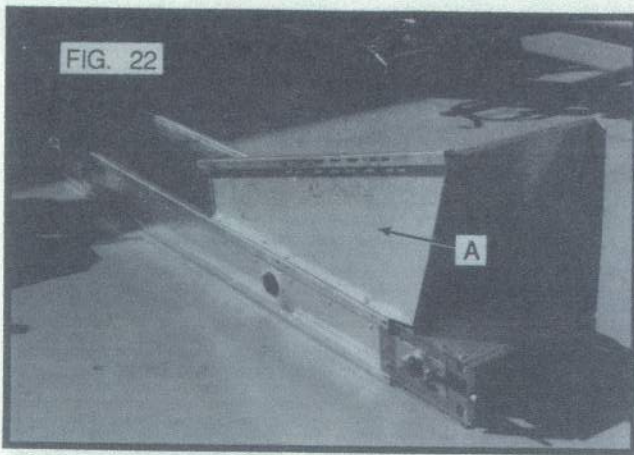


FIG. 22

Next install corner stiffener to rear hopper panel and top edge of cross conveyor (FIG. 23-A). Remember- nuts never go on the side that comes in contact with the corn! Now bolt end panel (FIG. 24-A) to top edge of cross conveyor and rear hopper panel. Front panel (FIG. 24-B) can now be bolted in place. **NOTE:** Refer to Sheet Metal and Related Parts illustration in this manual for additional information on cross conveyor hopper parts.

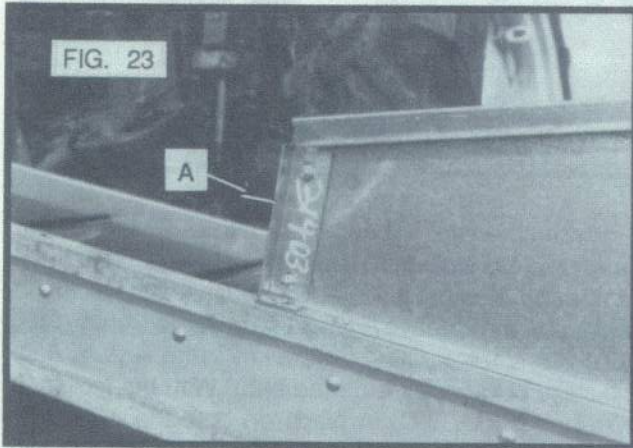


FIG. 23

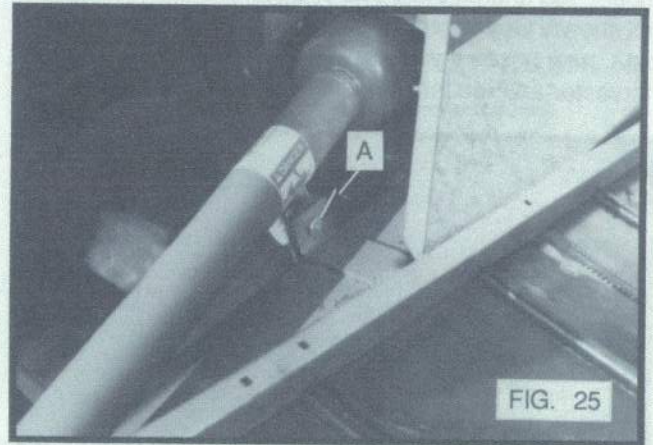


FIG. 25

Two persons can now lift the cross conveyor and slide it onto the two support tubes (FIG. 21-A & B). Once the conveyor is on the tubes all the way you can tighten the clamp bolts (FIG. 25-A) on the lower support tube. Obtain one 1/4" x 3" cotter pin from the parts box and insert it through the hole in the end of the lower cross conveyor support tube (FIG. 26). Bend ends of cotter pin over to retain conveyor.

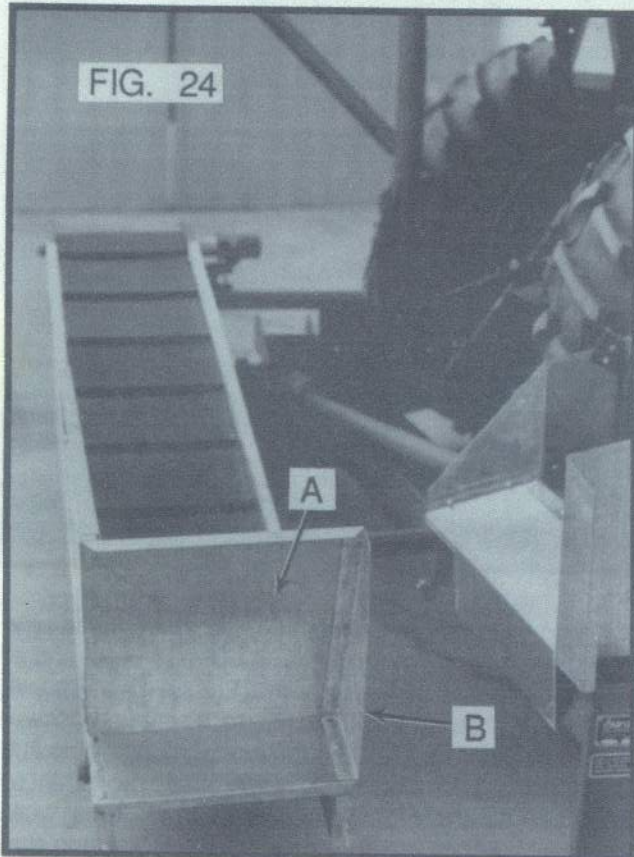


FIG. 24

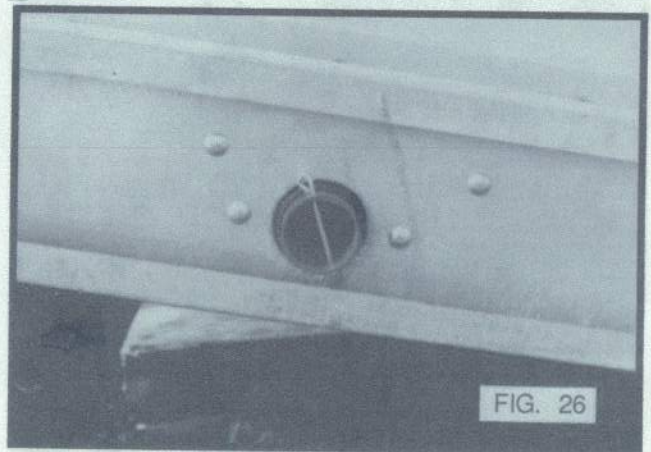


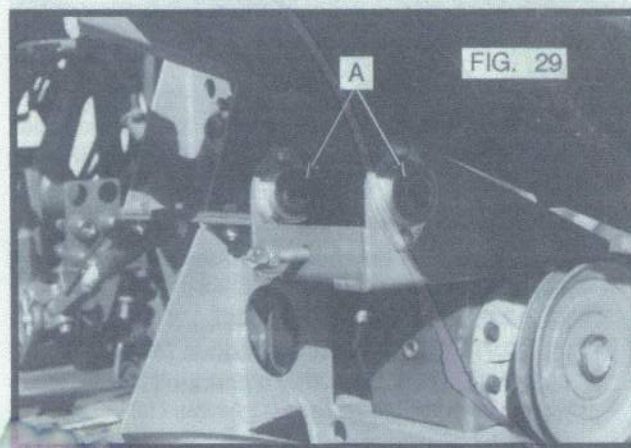
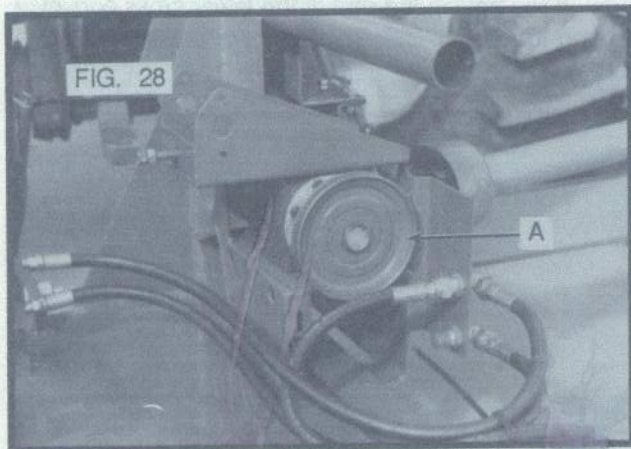
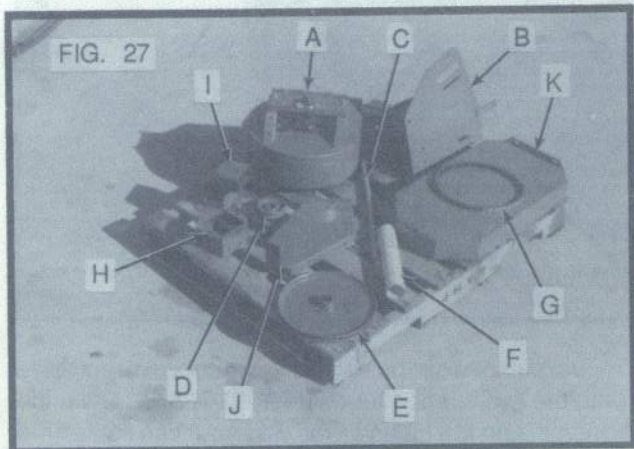
FIG. 26

If you will be installing the cleaning fan on an early harvester that had the cross conveyor drive motor located on the rear of the conveyor, be sure to modify the cross conveyor as outlined in instructions included in the fan parts box. Begin cleaning fan assembly by identifying the following parts on the fan skid:

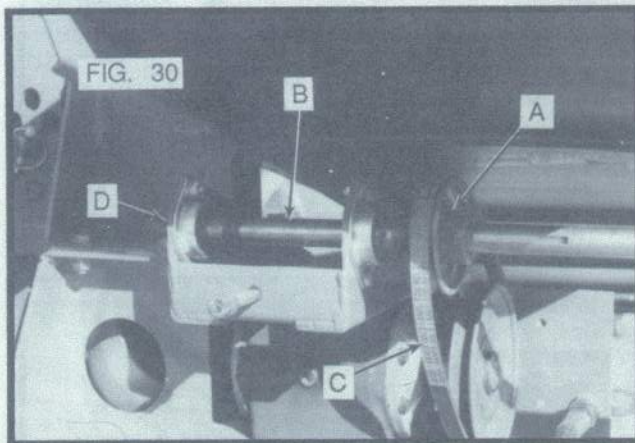
- FIG. 27-A Fan and housing assembly complete
- FIG. 27-B Fan mount assembly
- FIG. 27-C Fan drive jackshaft
- FIG. 27-D Jackshaft drive sheave (4" dia.)
- FIG. 27-E Jackshaft driven sheave (12" dia.)
- FIG. 27-F Shaft guard

- FIG. 27-G Jackshaft drive belt
- FIG. 27-H Transition
- FIG. 27-I Fan nozzle
- FIG. 27-J Lower belt guard
- FIG. 27-K Upper belt guard

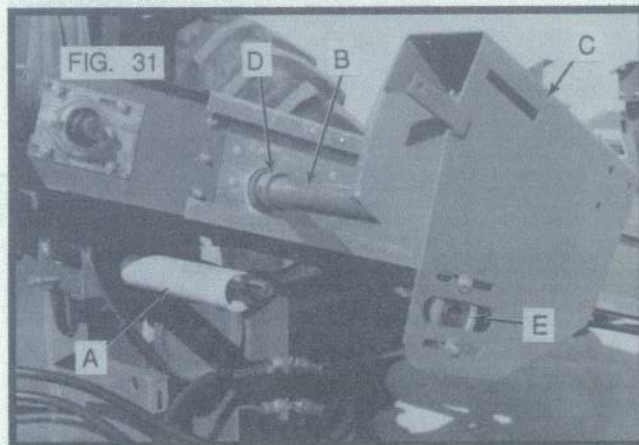
Not shown in the photograph are the fan jackshaft mount and anchor plate that you installed in FIG. 6. Also not shown: Gearbox drive sheave (7" dia.), idler pulley (4" dia.), new hoses if you are installing the fan on an early harvester and the fan installation hardware box.



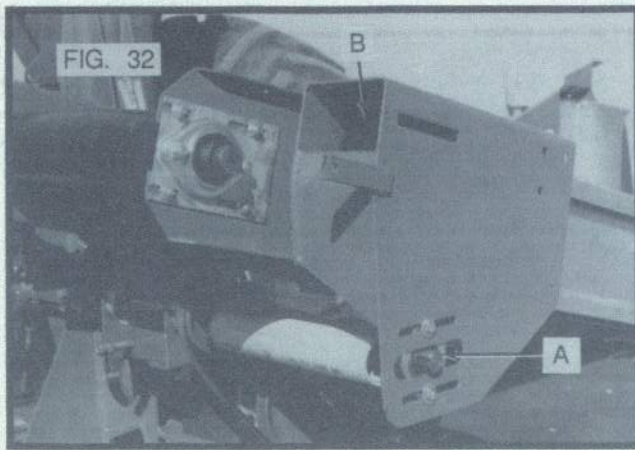
Find one 1/4" x 1 1/4" square key in parts box. Insert key in keyway on gearbox output shaft, apply anti-sieze or grease to shaft and slide 7" drive sheave (FIG. 28-A) on the shaft with hub to the inside. With end of shaft flush with outside of sheave as shown in FIG. 28, tighten set screws in hub to lock sheave to shaft.



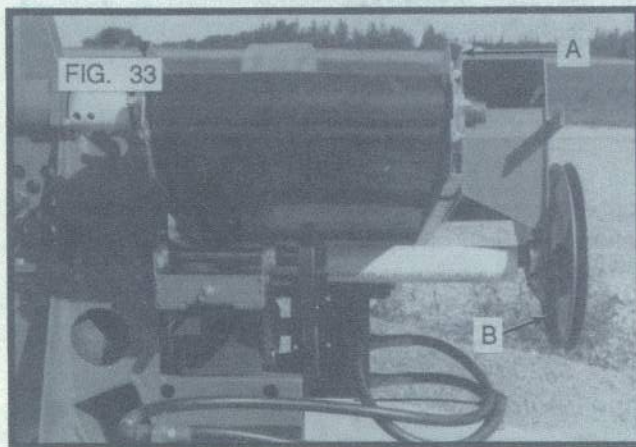
Assemble two 1" bearings (FIG. 29-A) to the rear surfaces of the jackshaft mount as shown with four 5/16" x 3/4" carriage bolts, nuts and lockwashers. Install the 4" jackshaft driven sheave (FIG. 30-A) on the jackshaft (FIG. 30-B) with a 1/4" x 1 1/4" square key in the keyway (use anti-sieze or grease inside the hub). With the jackshaft drive belt (FIG. 30-C) in place on both the 4" and 7" sheaves, slide the plain end of the jackshaft (the end with no keyway) through both bearings (be sure the lock collars are on the bearings) until the end of the shaft is flush with the outside of the front bearing (FIG. 30-D). Do not tighten lock collars or driven sheave to shaft yet.



Next slide guard (FIG. 31-A) over shaft. Insert pipe (FIG. 31-B) on fan mount (FIG. 31-C) into open end of lower cross conveyor support tube (FIG. 31-D) as shown. Mount one 1" bearing (FIG. 31-E) on the inner surface of fan mount using two 5/16" x 3/4" carriage bolts, nuts and lockwashers. Leave bolts finger tight. Slide fan mount all the way into the cross conveyor support tube while inserting jackshaft into bearing (FIG. 32-A), making sure lock collar is on the bearing. Line up four holes on the front

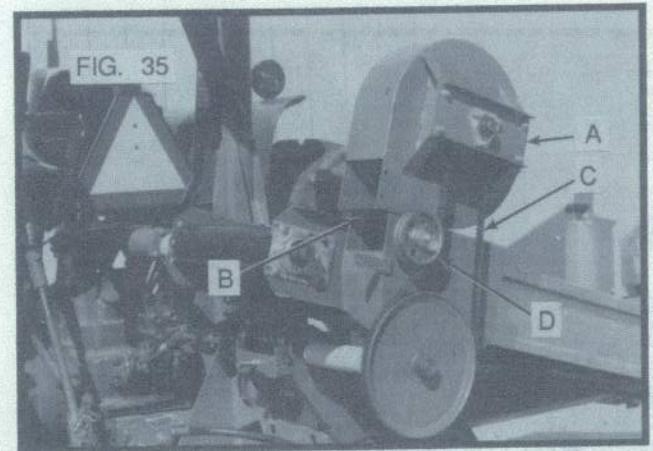
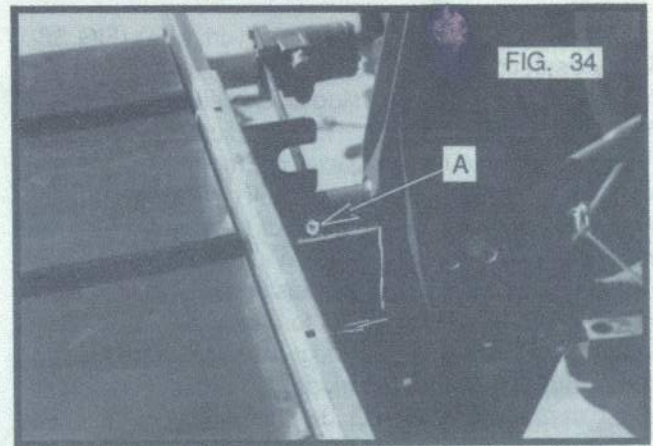


surface of the fan mount (FIG. 32-B) with four corresponding holes in the upper and lower flanges on the cross conveyor. Fasten to cross conveyor with four 5/16" x 3/4" hex head bolts, locknuts and flatwashers. Flatwashers should be next to the bolt heads which are over the slot holes on the cross conveyor flange. Top surface of fan mount should be parallel to the top edge of the cross conveyor (FIG. 33-A). Tighten the four bolts. **NOTE:** When installing a cleaning fan on a harvester that was manufactured prior to S/N 390001 you will have to drill four holes in the upper and lower flanges of the cross conveyor. Dimensions to locate these holes are included in the fan parts box.

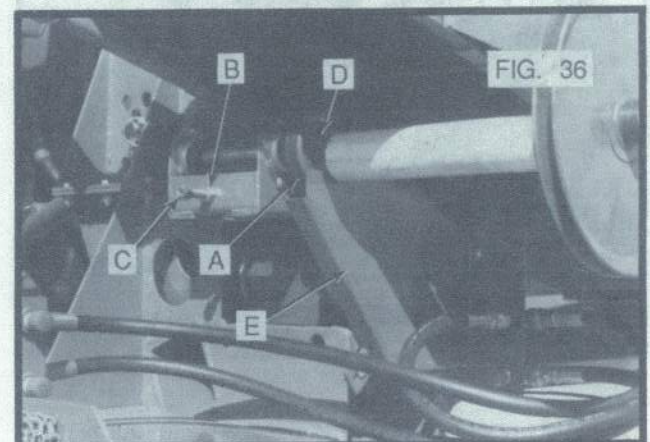


On the newer machines (S/N 390001 and later) you will notice a hole in the upper cross conveyor support tube (FIG. 34-A) near the mast. Using a 9/32" drill, finish drilling this hole all the way through the fan mount pipe and out the other side of the tube. On earlier machines, simply drill a 9/32" hole through this tube about half way between the cross conveyor and the mast as shown in FIG. 34. Insert a 1/4" x 3" cotter pin through the hole and bend over ends to retain cross conveyor.

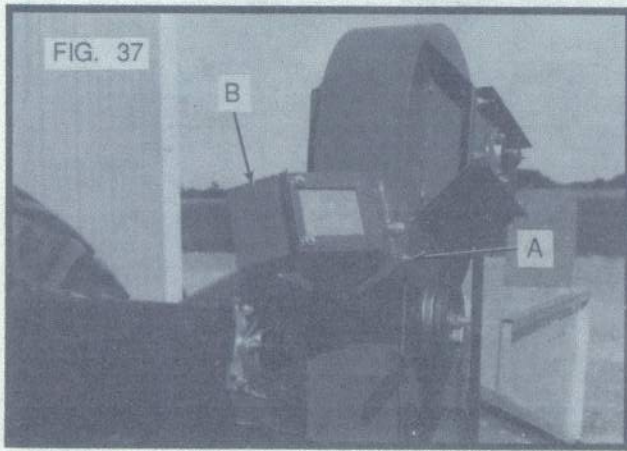
Install large 12" sheave (FIG. 33-B) to end of jackshaft with a 1/4" x 1-1/4" square key after applying anti-sieze or grease to the shaft. Install sheave with hub to the outside as shown in FIG. 35. Do not tighten set screws yet.



Set fan assembly (FIG. 35-A) on top of fan mount and install four 5/16" x 3/4" carriage bolts from inside the fan housing with 5/16" locknuts under the fan mount surface (FIG. 35-B). Do not tighten yet. Fan drive belt (FIG. 35-C) can be wrapped around the large (12") sheave. Install 4" idler pulley (FIG. 35-D) with one 1/2" x 3 1/2" carriage bolt through the slot from the inside with one 5/8" flatwasher over the slot and from eight to ten 1/2" flatwashers to space the idler pulley out the right amount to line up with the belt. Use one 1/2" nut and lockwasher on outside of idler. Do not final tighten yet.



Next apply tension to the jackshaft drive belt (FIG. 36-A) by loosening jam nut (FIG. 36-B) on adjuster stud (FIG. 36-C) and turning adjuster stud clockwise to tighten belt. When belt is tight, tighten jam nut on adjuster stud to lock. Tighten four bolts holding jackshaft mount and anchor plate to top of gearbox. Align jackshaft by making sure 12" sheave is parallel to rear surface of fan mount. This will usually involve pulling 12" sheave to the left (toward the elevator turntable), further increasing belt tension. Now tighten bolts holding bearing to fan mount first, then tighten bolts holding bearings to jackshaft mount. Tighten lock collars on all three bearings. Tighten set screws in jackshaft drive sheave (FIG. 36-D). Line up 12" sheave with driven sheave on fan and tighten set screws in hub. Tighten belt idler pulley against belt.

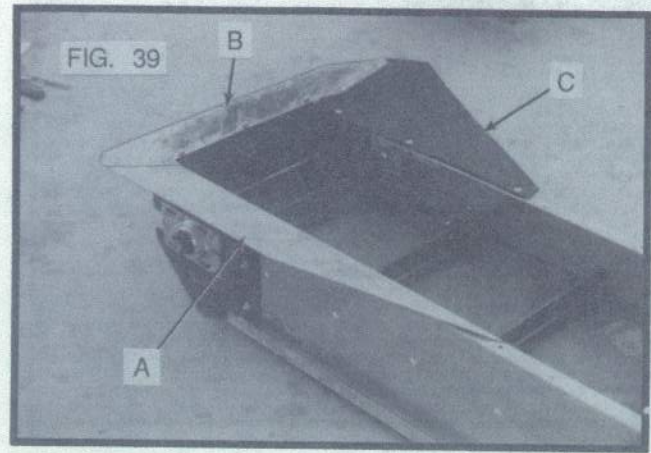


Bolt transition (FIG. 37-A) to fan housing outlet using four 5/16" x 3/4" truss head screws and locknuts. Bolt nozzle (FIG. 37-B) to transition using four more of the 5/16" x 3/4" truss head screws and locknuts. Notice in FIG. 37 that the nozzle is installed with the outlet pointing slightly down, directly at the end of the cross conveyor.

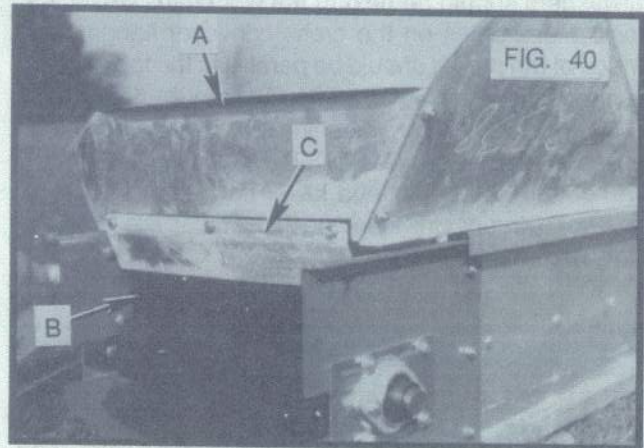
Install lower belt guard (FIG. 36-E) with three 5/16" x 3/4" truss head screws and locknuts as shown.



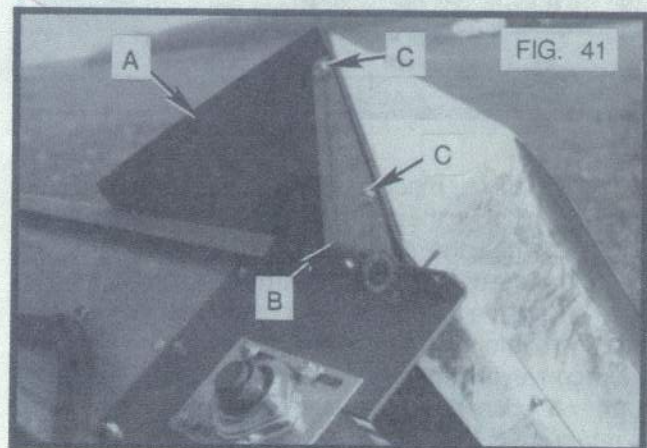
Install upper belt guard (FIG. 38-A) with four 5/16" x 3/4" truss head screws and locknuts as shown.



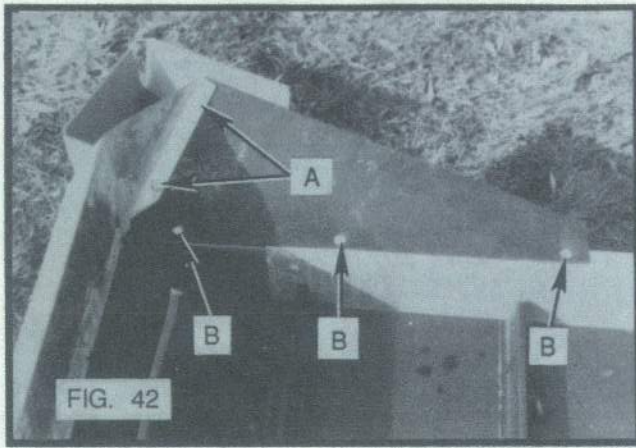
Next begin assembling the elevator/conveyor hopper by bolting hopper R.H. side panel (FIG. 39-A) to lower inside edge of elevator as shown using 5/16" x 3/4" truss head self-locking screws and 5/16" locknuts. Install hopper



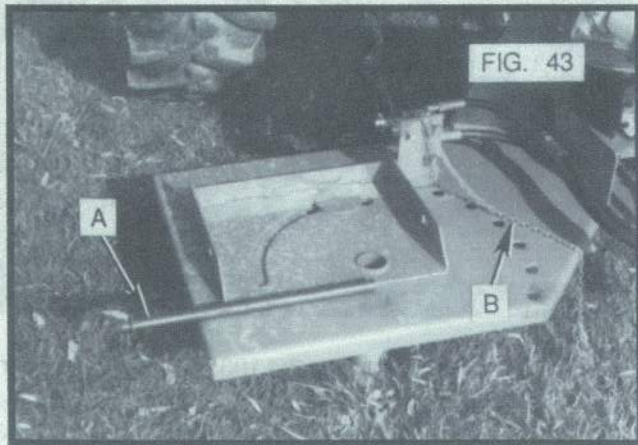
rear panel (FIG. 40-A) to R.H. side panel. Also install hopper rubber flap (FIG. 40-B) with hopper flap back-up panel (FIG. 40-C) on top of the rubber as shown using the same screws.



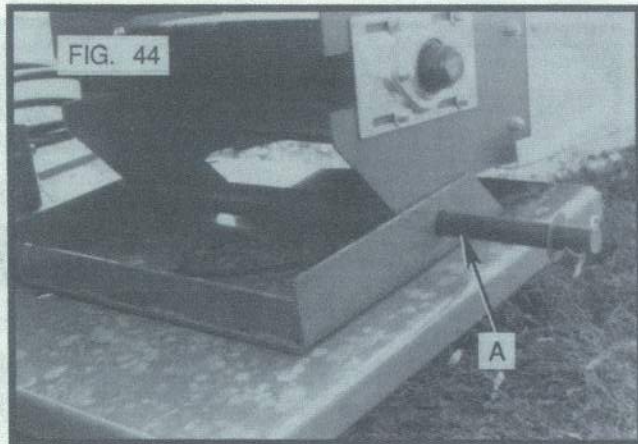
Prepare to install the rubber hopper L.H. side panel (FIG. 39-C and FIG. 41-A) by inserting the corner back-up panel (FIG. 41-B) between it and the top edge of the



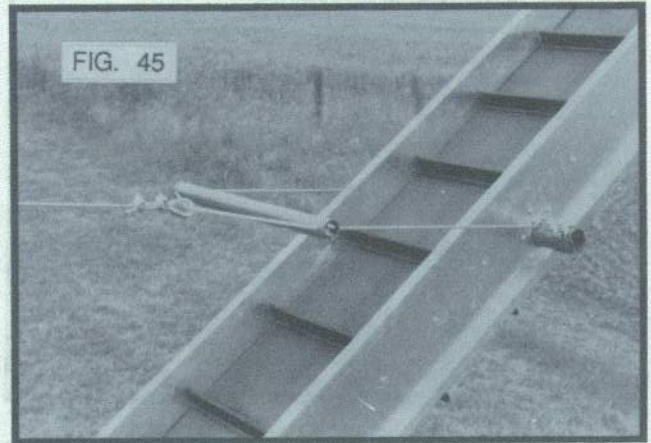
elevator and installing two 5/16" x 3/4" truss head self-locking screws through the two holes in the edge of the rear hopper panel (FIG. 42-A) and through the rubber side panel and corner back-up panel. Secure with 5/16" locknuts (FIG. 41-C). Insert three 5/16" x 5/8" truss head self-locking screws through the edge of the rubber side panel (FIG. 42-B) and the edge of the elevator, install 5/16" locknuts and tighten all screws. NOTE: Refer to elevator/conveyor illustration in this manual for additional information on elevator parts.



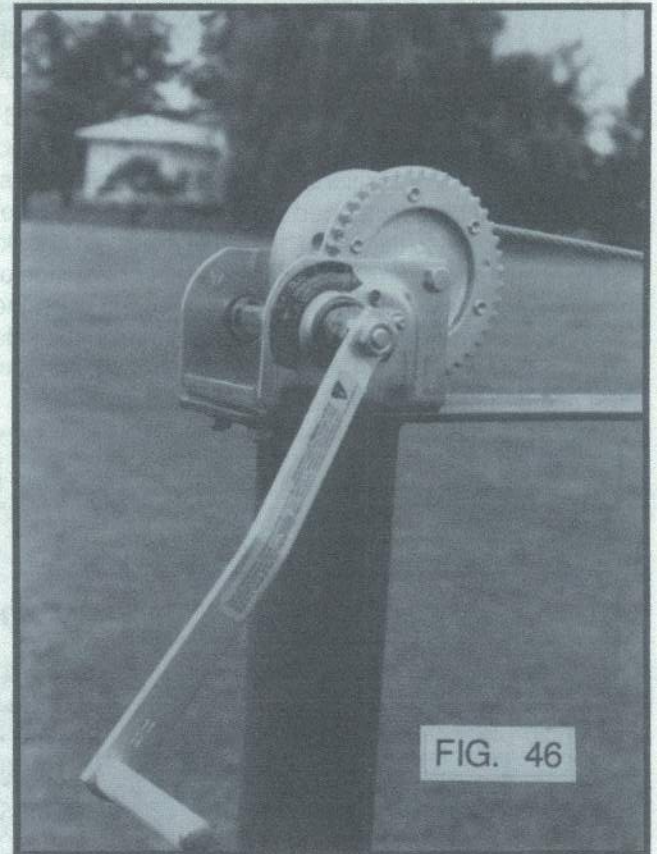
Now that the hopper section is completed, prepare to mount the elevator/conveyor to the turntable (FIG. 43) by removing the cotter pin and washer from the inner end of the elevator pivot shaft (FIG. 43-A). Unwind chain (FIG.



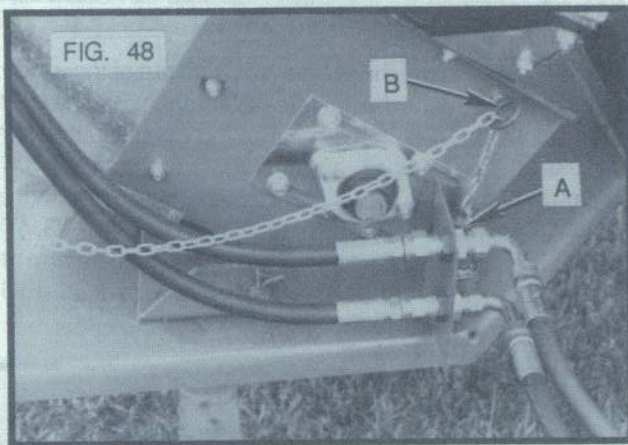
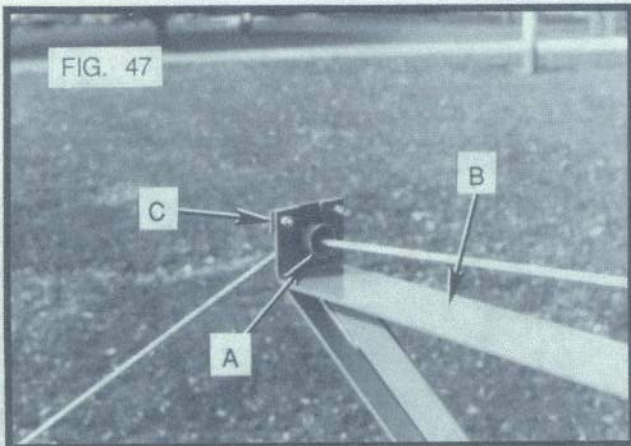
43-B) from the shaft and remove shaft from the turntable. Two persons can now set the elevator up on the turntable as shown in FIG. 44. Insert elevator pivot shaft through the mating holes in the turntable and base of the elevator (FIG. 44-A). Re-install flatwasher and cotter pin.



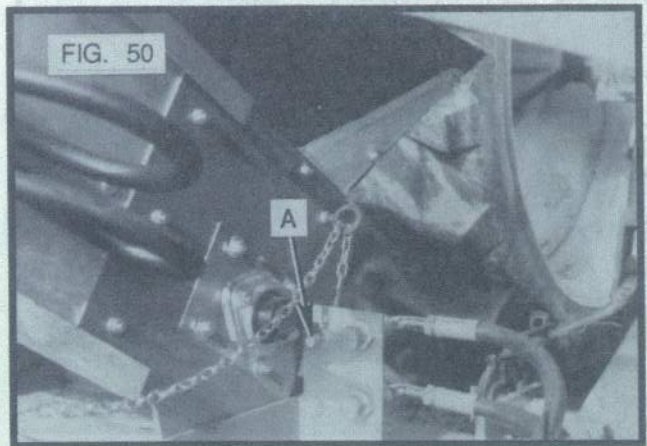
Let all but about three turns of cable out of the winch. The cable is attached to the elevator hanger as shown in FIG. 45. Place the winch on top of the mast as shown in FIG. 46. From the hardware assortment, obtain two 3/8" x 1" hex head bolts, nuts and lockwashers and bolt the winch to the mast. Insert the plastic cable guide (FIG. 47-A) into the slot in the end of the winch cable guide arm on the mast (FIG. 47-B). Locate cable guide retainer (FIG.



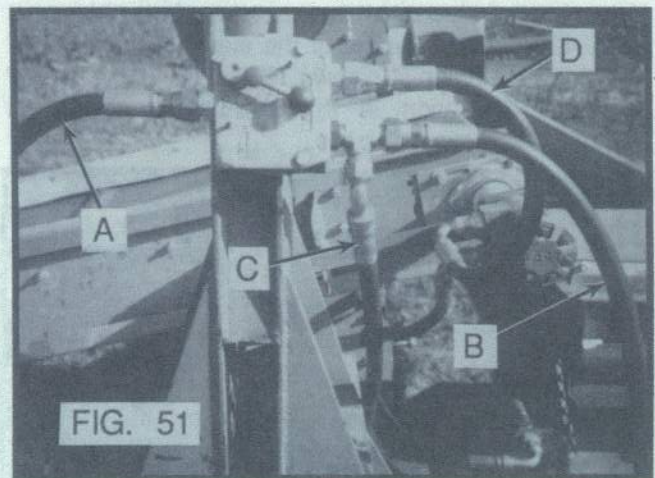
47-C), two 5/16" x 1" hex head bolts, nuts and lockwashers and bolt the retainer in place as shown. You can now tighten up the cable with the winch and raise the elevator/conveyor up to the desired angle.



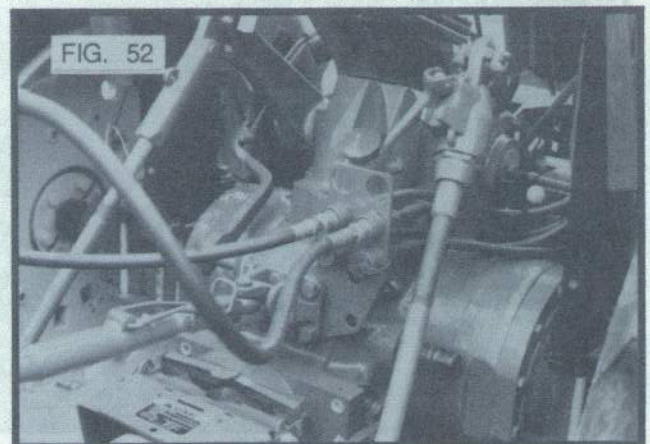
The elevator turntable is equipped with a pin (FIG. 48-A) that, when pulled up, allows the elevator to be positioned manually in different positions to suit loading requirements. The chain that was wrapped around the elevator pivot shaft is attached to this pin. The end of the chain should be passed through an eye bolt (FIG. 48-B) on the side of the elevator. Use a tapered punch and wedge open the first link in the chain so that it can be fastened to the side of the elevator at FIG. 49-A with a 5/16" locknut placed on the end of a bolt provided for this purpose.

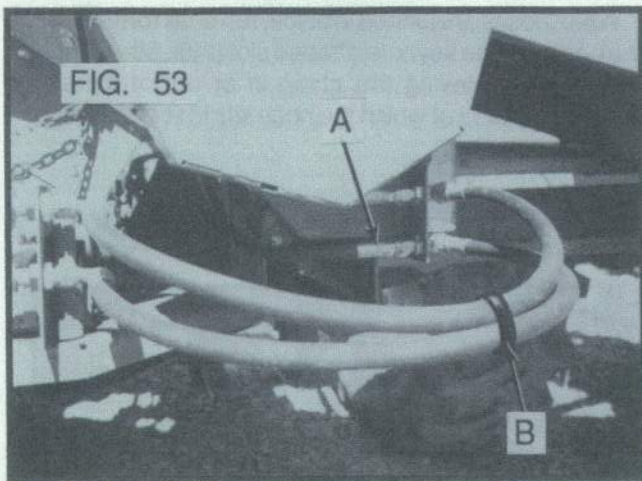


The pin stop bolt (FIG. 50-A) should be adjusted to allow the pin to be pulled out of engagement with the hole in the frame but not allow the pin to be pulled all the way out when pulled by the chain.

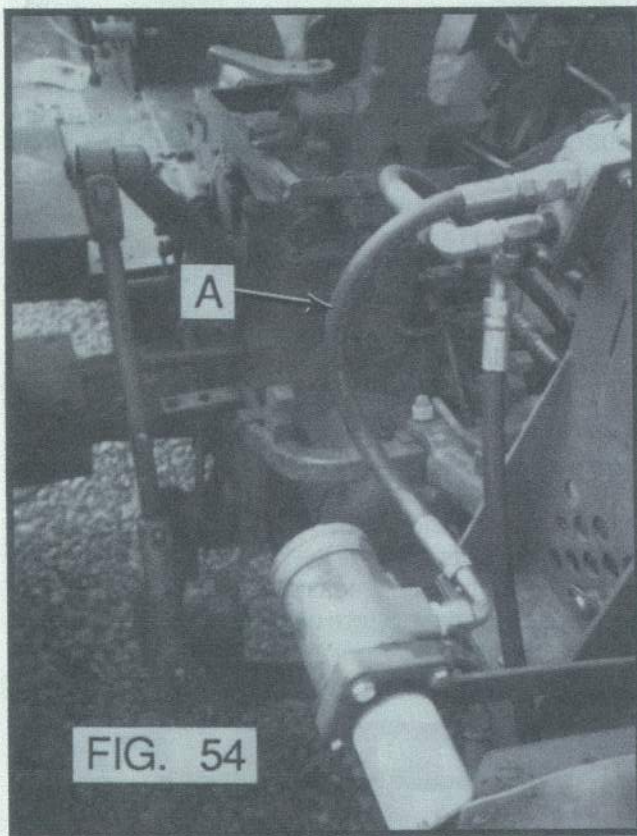


The hydraulic system on the 103 Harvester has been partially assembled at the factory. You will find that the flow divider valve has been shipped with fittings in all three ports and four hoses attached to the fittings (FIG. 51). Begin assembly by taking two 1/4" x 2 1/2" hex head bolts, nuts and lockwashers from the hardware box. Bolt flow divider valve to mount plate at the base of the mast as shown in FIG. 51. Two hoses (FIG. 51-A & B) are



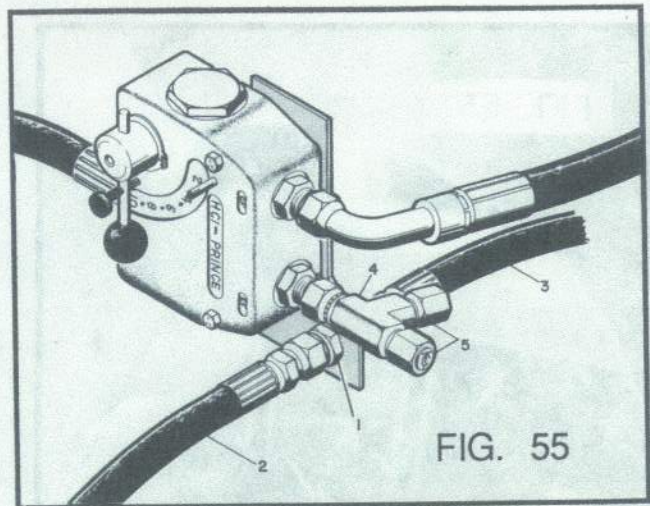


equipped with male quick couplers and may be connected to the hydraulic outlets on the tractor (FIG. 52). Hose from bottom of tee (FIG. 51-C) runs to the lower bulkhead fitting (FIG. 53-A) on the back of the frame, behind the main drive gearbox. Remove plastic plugs and caps and connect as

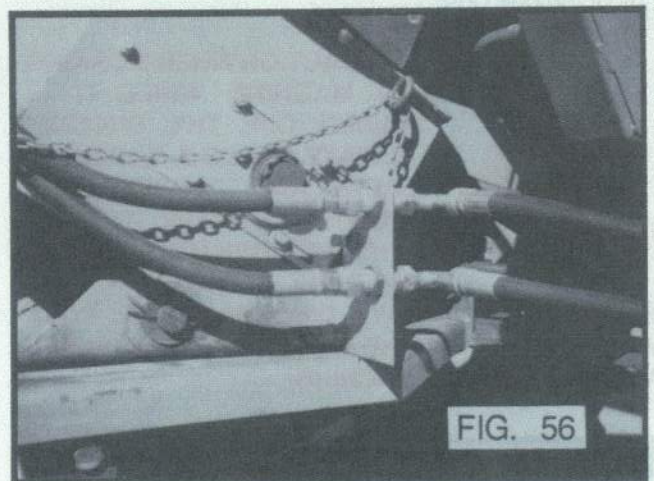


shown. Hose from top port on the flow divider valve (FIG. 51-D) runs to the top port on the cross conveyor drive motor (FIG. 54-A). Remove plastic plugs and caps and connect these hoses as shown.

NOTE: John Deere tractors - When the harvester is being mounted on a tractor with a closed center auxiliary hydraulic system such as John Deere, some changes must be made to the hydraulic system in the area of the flow divider valve as shown in FIG. 55.



- A. Find one bulkhead union P/N 45139 (FIG. 55-1) and two JIC caps P/N 45043 (FIG. 55-5) in hardware assortment.
- B. Install bulkhead union in hole provided below the flow divider valve.
- C. Unscrew two hoses (FIG. 55-2,3) from tee (FIG. 55-4) which is installed in the return port of the flow divider valve.
- D. Install JIC caps (FIG. 55-5) on exposed ends of tee.
- E. Re-install two hoses (FIG. 55-2,3) to the bulkhead union (FIG. 55-1) as shown. (Refer to hydraulic system illustration in the repair parts section of this manual for additional information).



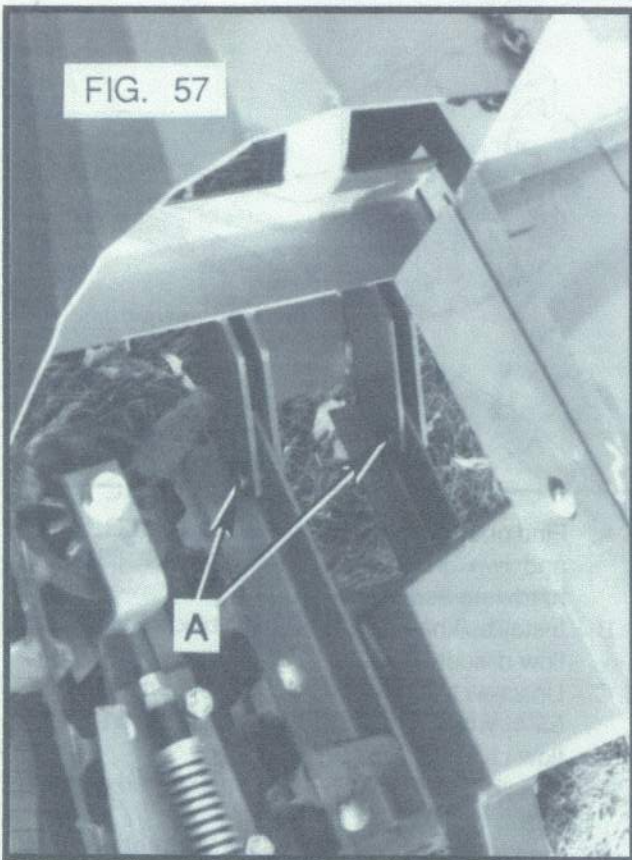
Next connect hoses on the side of the elevator/conveyor (FIG. 56) to the bulkhead fittings on the turntable area of the frame as shown. Top hose to top bulkhead fitting, etc.

After all hoses are in place, install one plastic tie wrap around pair of hoses at the point shown in FIG. 53-B.

Prepare to install row separator noses by starting the tractor engine and raising the harvester up to waist level.

Find four 1/2" x 1 1/2" clevis pins and four 5/32" x 1 1/2" cotter pins (FIG. 57-A) and insert clevis pins from the inside, with the heads of the pins towards the gathering

FIG. 57

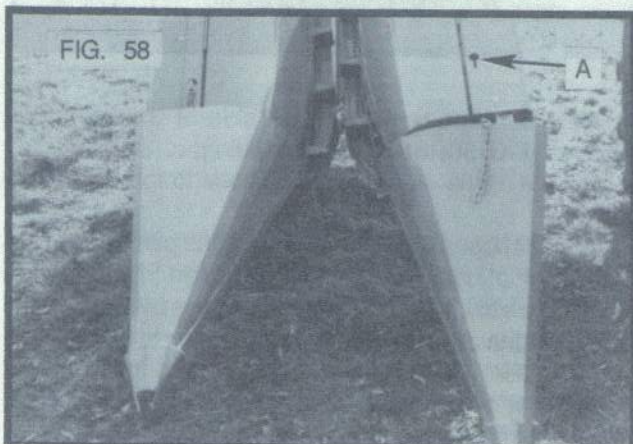


belts. If these are installed wrong, with the cotter pins on the gathering belt side, the cotter pins could damage the tips of the belt lugs.



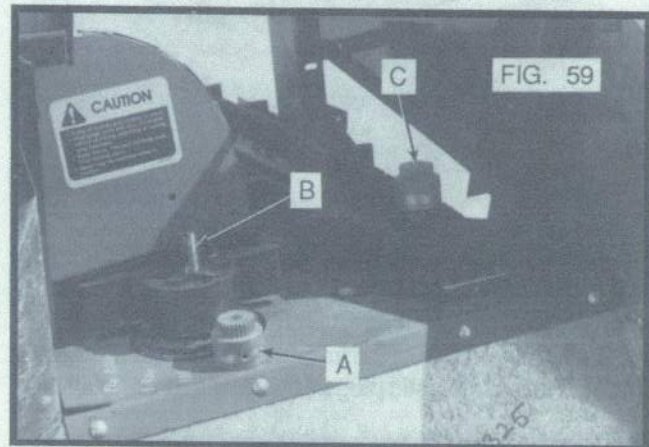
USE CAUTION WHEN WORKING ON MACHINE WHILE IT IS RAISED OFF THE GROUND. ALWAYS PLACE A BLOCK OR JACKSTAND UNDER THE HARVESTER FRAME TO AVOID THE POSSIBILITY OF THE MACHINE LOWERING UNEXPECTEDLY. ALWAYS DISENGAGE THE P.T.O. AND SHUT DOWN THE TRACTOR ENGINE WHEN WORKING ON THE MACHINE.

FIG. 58



When noses are pinned in place, run chain on the rear of the nose into the keyhole-shaped slot (FIG. 58-A) in the row separator. Moving this chain in or out of the slot adjusts the attitude at which the nose sits in relation to the ground.

STALK EJECTOR INSTALLATION



If you are installing a stalk ejector kit on a 103 Harvester that was built prior to machine serial number 28999 or a later 103 that was originally ordered without the stalk ejector you will have to remove the stalk deflector and supports from the top of the row separators. Now remove strapping and bolts holding the stalk ejector parts to the shipping skid. Open the stalk ejector kit parts box and find two drive coupling hubs (FIG. 59-A), two drive coupling sleeves (internally splined) and two 1/4" x 1 1/4" square keys. Insert the keys into the keyways in the extended gathering belt drive shafts (FIG. 59-B) (Remember, if you are working on an early 103 Harvester, it may have been necessary for you to replace these shafts in your early machine with longer shafts needed to drive the stalk ejector unit). Apply some anti-sieze or grease to the shafts and slide the hubs down on the shafts until the hub bottoms out against the shaft (FIG. 59-C), then tighten set screws down on key. Do not install drive coupling sleeves yet.

FIG. 60

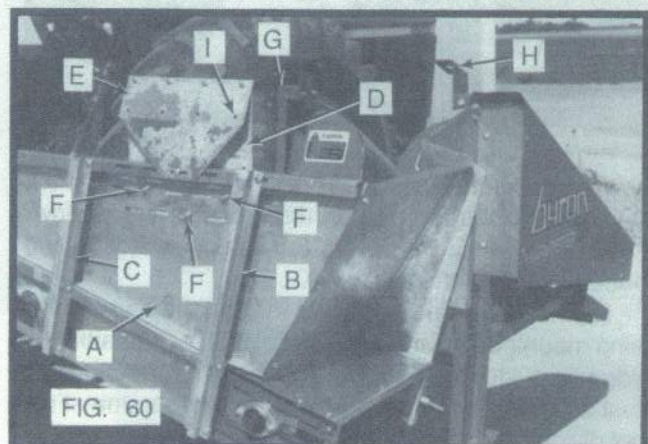
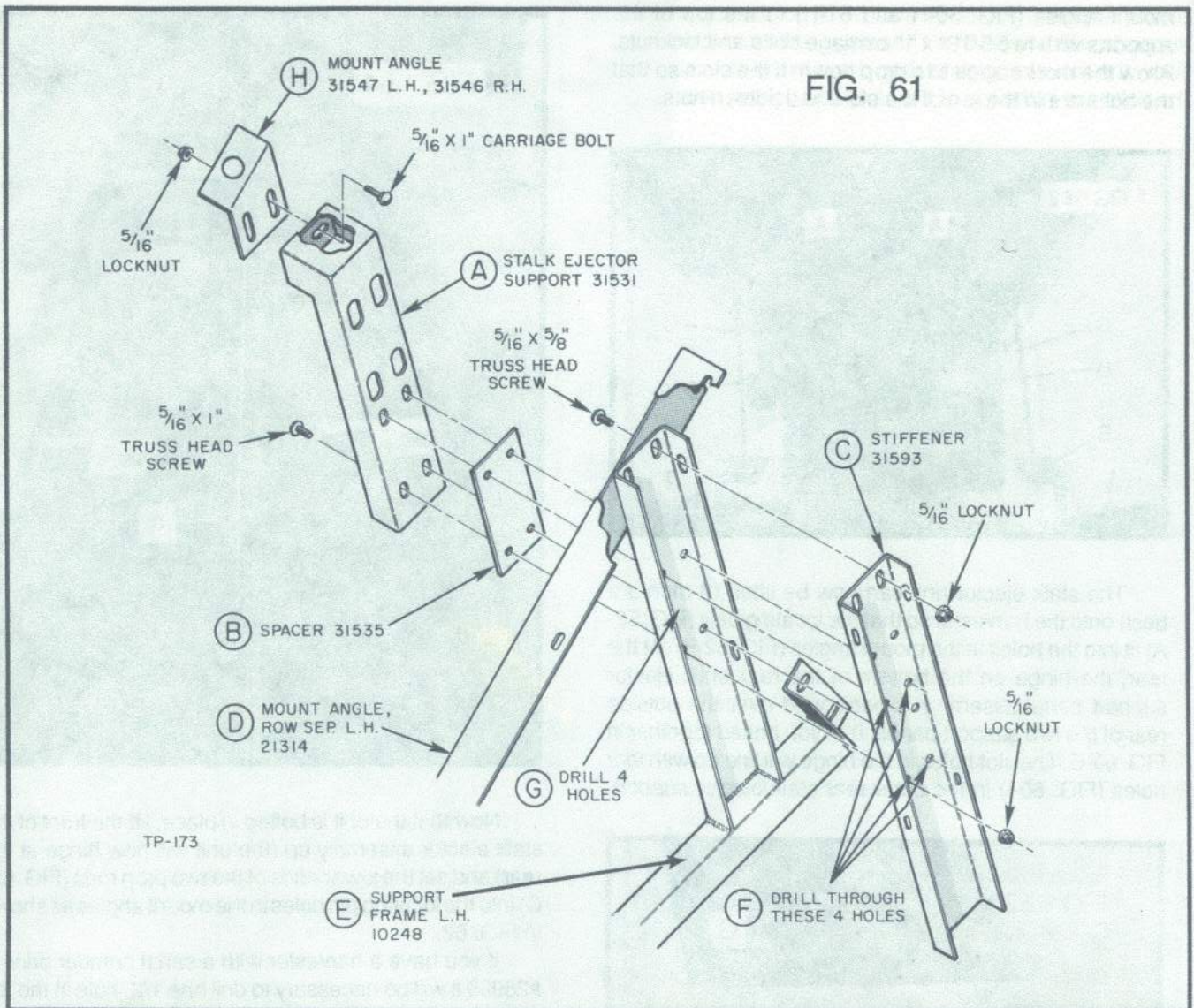


FIG. 61



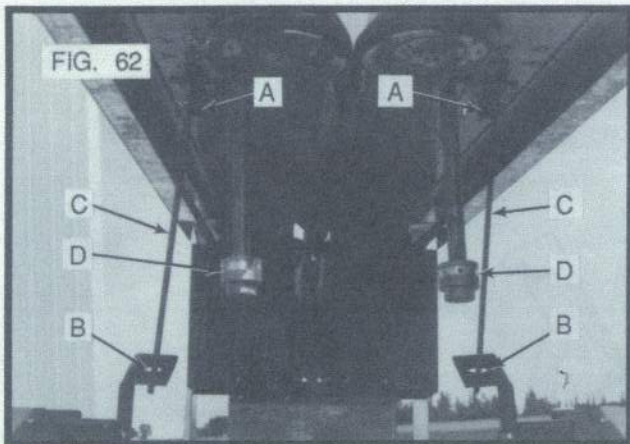
If you are mounting the stalk ejector unit on a harvester built prior to machine serial number 18899, you have been shipped a new rear hopper panel (FIG. 60-A). Remove the original rear panel and install the new one in its place. Next bolt the outer (FIG. 60-B) and inner (FIG. 60-C) hopper stiffeners to the back side of the cross conveyor hopper as shown, using twelve 5/16" x 5/8" truss head screws and locknuts.

Now position the inner rear stalk ejector support panel (FIG. 60-D) over the long slots in the inside of the hopper as shown. Fasten with three 5/16" x 5/8" truss head screws and locknuts (FIG. 60-F) while visually keeping the panel centered on the centerline of the row gathering unit. Snug screws up but do not tighten. Always install the screws with the rounded head to the inside in areas where they will come in contact with the corn.

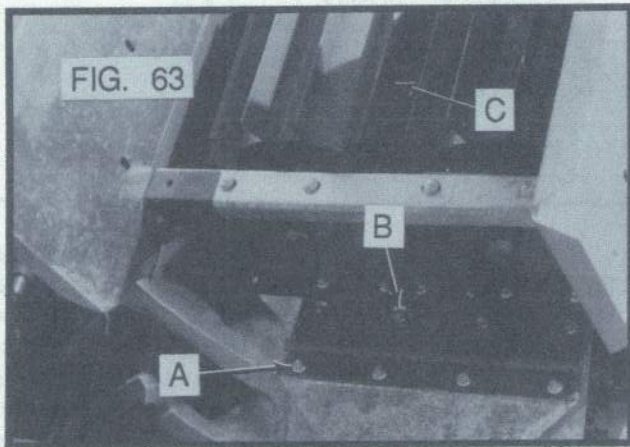
Next install the outer rear stalk ejector support panel (FIG. 60-E) to the upper rear edge of the hopper using one 5/16" x 5/8" truss head screw and locknut but do not tighten. Then fasten the inner and outer panels together at their top edge using four 5/16" x 5/8" truss head screws and locknuts, tightening these screws now.

If you are mounting the stalk ejector unit on a harvester built prior to machine serial number 18899, you have been shipped two front stalk ejector supports (FIG. 60-G and 61-A), two spacers (FIG. 61-B) and two frame channel stiffeners (FIG. 61-C). Prepare to mount the stalk ejector supports by removing two 5/16" truss head screws holding the row separator mount angles (FIG. 61-D) to the support frame channels (FIG. 61-E). Remove two bolts holding rear bulkhead to rear of frame channels. Insert the stiffener inside the frame channel and re-install the truss head screws thru all three parts. Install and tighten locknuts. Re-install bolts and nuts holding the rear bulkhead to the frame channel. On the early harvesters there will be no holes in the frame channel for the stalk ejector supports. Using the stiffener as a guide (FIG. 61-F) drill through the frame channel with a 13/32" drill at four places (FIG. 61-G). Now install the supports to the frame channel with a spacer between them as shown in FIG. 61, using four 5/16" x 1" truss head screws and locknuts as shown. Allow the supports to drop down in their slots so that the lower end rests on top of the gearbox cover then tighten all bolts. After both supports are in place, bolt the stalk ejector

mount angles (FIG. 60-H and 61-H) to the top of the supports with two 5/16" x 1" carriage bolts and locknuts. Allow the mount angles to drop down in the slots so that the bolts are in the top of the slots and tighten nuts.



The stalk ejector unit can now be lifted (3 men are best) onto the harvester so that the locating pins (FIG. 62-A) fit into the holes in the mount angles (FIG. 62-B). At the rear, the hinge on the bottom of the rear stalk ejector support panel assembly is positioned over the outside rear of the two support panels that you bolted together in FIG. 60-E. The slot holes in the hinge will line up with four holes (FIG. 60-I) in the outer rear stalk ejector support.



Insert four 5/16" x 5/8" truss head screws from the inside and install four 5/16" locknuts (FIG. 63-A), allowing the stalk ejector unit to sit all the way down in the slots in the hinge (you will notice that the nuts on the back side of the stalk ejector supports protrude (FIG. 63-B) through a row of round clearance holes in the support panel assembly when properly positioned). Tighten the locknuts.

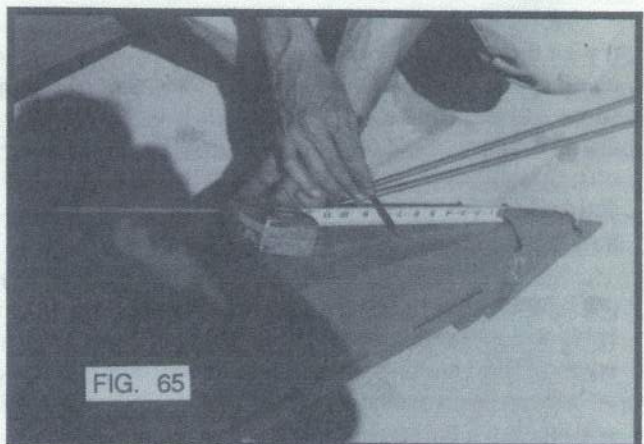
Stand in front of the row gathering unit and visually check to see that the stalk ejector belts are lined up directly over the operating centerline of the knife rolls and stripper plates (FIG. 64-A). Slide the rear of the unit one way or the other to achieve this alignment, then tighten the locknuts holding the inner and outer stalk ejector supports to the cross conveyor hopper (FIG. 60-F).



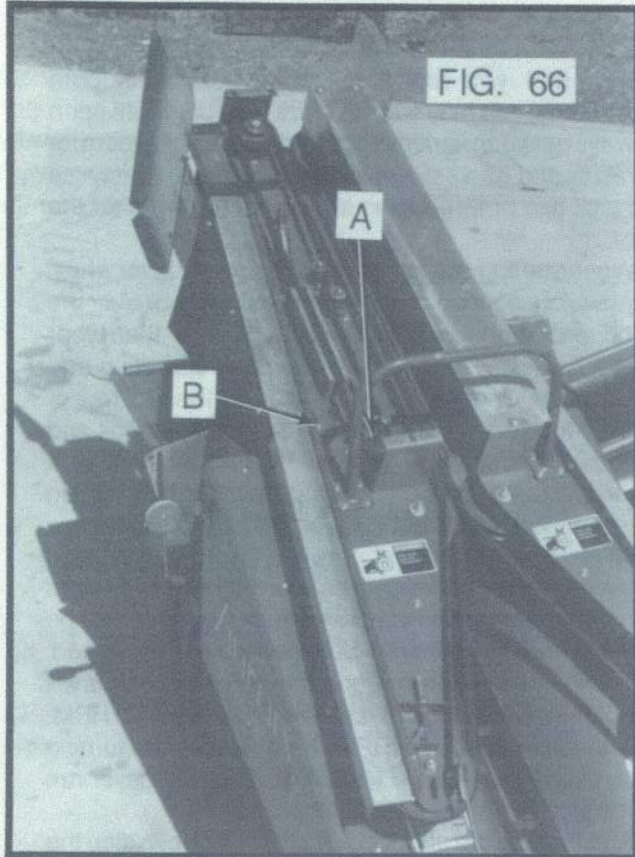
Now that the unit is bolted in place, lift the front of the stalk ejector assembly up (the unit will now hinge at the rear) and set the lower ends of the two prop rods (FIG. 62-C) into the locating pin holes in the mount angles as shown in FIG. 62.

If you have a harvester with a serial number prior to #28999 it will be necessary to drill one 1/2" hole in the top center of each row separator nose approximately 7" back of the heavy plate at the end of the nose as shown in FIG. 65.

Now you can prepare to connect the stalk ejector drive shafts to the row gathering unit gearbox drive shafts by installing the coupler sleeves to the drive coupling hubs you installed in (FIG. 59). Before engaging the drives, go to the rear of the stalk ejector unit and check to see that the



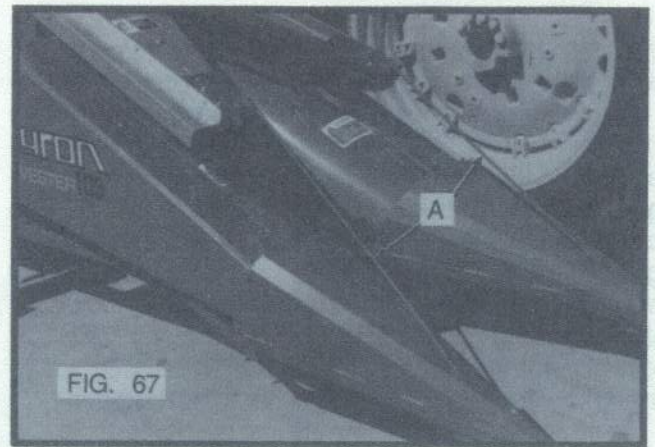
stalk ejector drums are properly timed; in other words, the blades on the drums should intermesh evenly and not strike each other (FIG. 63-C). Next lift the stalk ejector unit, fold the prop rods up and lay them in the prop rod hanger brackets on the underside of the stalk ejector frames. Lower the front of the unit while guiding the drive coupling hubs on the ends of the stalk ejector drive shafts (FIG. 62-D) into the coupling sleeves on the gearbox shafts. Continue to lower the unit until the locating pins are engaged in the holes in the mount angles.



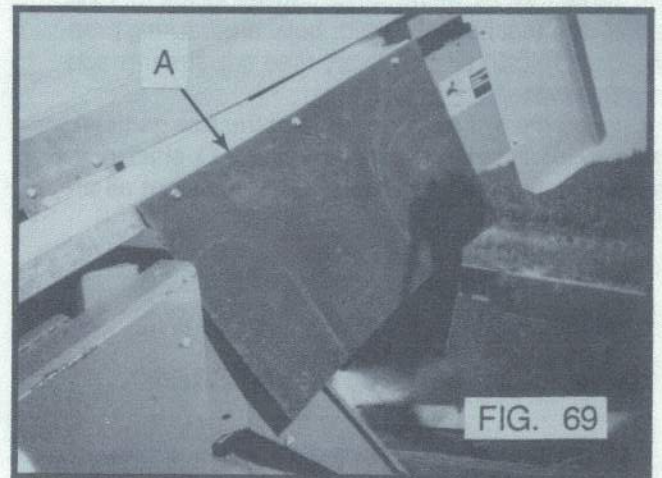
Check to see that the stalk ejector drive shafts are as straight as possible in relation to the row unit gearbox shafts. **NOTE: THE DRIVE COUPLINGS WILL TOLERATE SOME MISALIGNMENT, BUT WILL LAST LONGER IF THEY ARE PROPERLY ALIGNED.** If it is necessary to adjust shaft alignment proceed as follows:

To adjust side to side position loosen two bolts holding each shaft bearing (FIG. 66-A) and slide the bearing and shaft in the desired direction. Re-tighten bolts when satisfied with alignment. To adjust forward - aft position of the shafts, loosen four bolts (FIG. 66-B) that hold the stalk ejector locating pin to the underside of each stalk ejector frame. With the pins engaged in the locating holes push the entire unit in the desired direction to achieve vertical shaft alignment, then re-tighten bolts.

On top of the stalk ejector frame you will find two stalk guide rods (FIG. 67-A) which have been wired in place for shipping. Remove these rods and fasten in place as shown with the end of each rod inserted into the 1/2" hole in the top of each row separator nose. Fasten with 5/16" x 1" hex head bolts and locknuts.



Finally, you can install the rubber back cushion flap (FIG. 68-A) with a 5/16" x 5/8" truss head screw and locknut at each upper corner as shown. Also install two rubber side curtain flaps (FIG. 69-A) on the outer edge of the stalk ejector bolt guards as shown. The flaps fit on the ends of three 5/16" bolts protruding from the belt guards. Fasten with three 5/16" locknuts. One flap is installed on the left side as shown, the other in the same location on the right side.



Now that the harvester is fully assembled and you have it lifted off the ground, you will notice that the majority of the weight of the harvester is carried on the right side of the tractor, especially when the elevator/conveyor is positioned to the rear. Level the harvester by adjusting the lower links of the 3-point hitch to compensate for the weight bias to the right side. On most tractors this can be accomplished by lowering the harvester until it rests on the ground and then raising (by cranking up) the right hand lower link. Keep adjusting this link until the harvester looks level with the ground when viewed from the rear. Also remove any side sway that may be present in the hitch by adjusting it out per the tractor manufacturer's instructions.

The installation is now complete and the harvester is ready to run.

INITIAL/ANNUAL START-UP AND CHECKS

Before running the 103 harvester, read through the lubrication section of this manual. Make sure the machine is lubricated as specified. Make sure that no one is on or near the harvester, then start the tractor engine.

Place the speed selector lever on the flow divider valve in the position shown in FIG. 70. Actuate the tractor remote hydraulic outlets and the conveyors will begin to run. (See adjustments section of this manual for additional instructions on setting the conveyor speed on the flow divider valve). Watch all hydraulic connections for leaks. If any leaks are present, tighten the offending fittings.



WARNING: HYDRAULIC FLUID ESCAPING UNDER HIGH PRESSURE CAN PENETRATE THE SKIN, CAUSING SERIOUS INJURY. IF ANY FLUID IS ACCIDENTALLY INJECTED UNDER

THE SKIN, IT MUST BE SURGICALLY REMOVED BY A DOCTOR WITHIN A FEW HOURS OR GANGRENE MAY RESULT.

Conveyor belts have been adjusted for proper tracking at the factory. However, while conveyors are running, check to see that both conveyor belts are tracking properly. Adjust tracking if necessary (see adjustments section of this manual).

Engage the P.T.O. drive and run the row gathering unit slowly for a few minutes. Observe P.T.O. shaft, drive shaft, gathering belts and knife rolls to see that all are running smoothly.

The harvester is now ready to begin picking corn.

OPERATING THE HARVESTER

Let's recap what you have done in these previous steps to get the 103 Harvester ready to pick sweet corn.

1. Harvester is mounted on your tractor with the mast staying in a vertical position throughout the range of vertical movement required to harvest sweet corn.
2. Harvester is level with the ground when viewed from the rear.
3. Harvester is properly lubricated and adjusted.
4. Hydraulic and mechanical components are operating smoothly and all guards and shields are in place.

STARTING OUT/OPENING UP THE FIELD (with a standard 1990 harvester without stalk ejector installed)

Now that you are harvesting your sweet corn mechanically, you may want to plant your corn with open roadways between varieties or plantings to make room for the tractor and harvester with trailing wagon. Otherwise hand pick two or three rows to make a roadway for the tractor.

When starting out, select a gear on your tractor which will allow you to move at about 2 miles per hour over the ground and produce about 150 RPM less than your tractor's 540 P.T.O. RPM. With row unit operating and conveyors moving advance the unit into the first row of corn with the row centered in the row gathering unit and with the entry area of the row unit held below the lowest ears on the stalks. It is not necessary to maintain a certain distance below the lowest ears, so long as you are below the point where the lowest ears are joined to the stalk. Move along slowly and watch the flow of the stalks into and down through the rotating knife rolls. It is important to be aware of the relationship between knife roll speed, gathering belt speed and ground speed. The knife rolls will turn approximately twice as fast as your tractor PTO RPM. For example at 540 PTO RPM the knife rolls are turning at approximately 1080 RPM. For best results, never run the knife rolls below 800 RPM when harvesting.

After harvesting about 100 ft. of the first row, stop the tractor, disengage the PTO and shut down the tractor engine. Inspect the harvested ears in the wagon. If there is any sign of damage it will show up around the butt of the ear as dented kernals. Butt damage is usually caused by the stripper plate gap being too wide. If experiencing butt damage you may also notice slip shucking (outer wrapper leaves are gone). Closing the stripper plate gap should eliminate both of these problems. Adjust gap not more than 1/16" at a time until damage is eliminated. (See adjustments section of this manual).

Resume harvesting for a short distance and inspect the ears as before. If side damage is present (damage to kernals elsewhere on the ear other than the butt) it can be caused by too much gathering belt lug tip exposure or by dropping the ears from the rear elevator/conveyor into the wagon with the elevator/conveyor winched up too high. Too much belt lug tip exposure can also cause excessive trash (stalks) to be carried up to the cross conveyor. Adjust belt lug tip exposure. (See adjustments section of this manual).

When you have the row gathering unit adjusted to harvest good quality ears, notice how much trash (stalks)

is being carried up to the conveyors. If excessive trash is present, notice the position of the stalk deflector relative to the tops of the stalks as they are pulled down through the knife rolls. Ideally, the tops of the stalks should be disappearing into the knife rolls at a point just before they reach the stalk deflector. This tends to stop a cut stalk and hold it vertical momentarily until it can be gripped and pulled through the knife rolls. If the stalks are striking the deflector bar before being pulled into the knife rolls, move the deflector to the rear. If the stalks are going through the knife rolls some distance before they reach the deflector, move the deflector bar forward. Also you would move the deflector upward for tall corn or down for shorter corn.

When you have the row gathering unit performing to your satisfaction, you can increase ground speed and PTO speed until you reach an ideal combination of ground/gathering unit speed that should be about 3 miles per hour with the PTO running at 540 RPM.

At this point, the only remaining cause for light trash in the load will be an improperly adjusted cleaning fan. The fan nozzle should be blowing across the harvested ears at the point where they drop from the top of the cross conveyor down to the rear elevator. Light trash (leaves, pieces of stalk) should be blown away from the heavier ears. Pay particular attention to this area if the ears are small. Decrease the air flow coming from the nozzle so as not to blow the lighter ears away from the elevator. (See adjustment section of this manual for cleaning fan adjustment)

Just as ear size can affect the amount of air flow required from the cleaning fan, there are also some variables that will affect the quality of the harvested corn and the adjustments needed will become evident when changing from one variety to another. Varieties with a longer shank on the ear usually will pick cleaner (less trash) than a short-shanked variety. Varieties that have a tapered butt usually demand closer attention to adjustments than a variety with a square butt. Stripper plate adjustment will often be necessary when picking a later planting of the same variety, depending on ear size. As a general rule, the wider you can run the stripper plate gap, the less trash you will experience.

If you are in corn that is weedy you may encounter a problem known as wrapping. Some types of weeds and grasses will wrap around the knife rolls under certain conditions and affect the performance of the harvester. One method of reducing wrapping is to increase knife roll (gathering unit) speed. Because you are encountering weedy conditions you may have slowed your ground speed and allowed the row gathering unit R.P.M. to drop off . . . Remember, regardless of ground speed, keep the P.T.O. running at top speed. Also, to combat wrapping, the harvester is equipped with "vine knives" which are positioned below the knife rolls to cut offending weed material. (See adjustment section of this manual for vine knife adjustment).

As you progress from opening up the field as described in the beginning of this section to having harvested a few more rows during the process of adjusting the machine

you will now have the option to side load into a truck instead of into the wagon at the rear. Whether side loading or rear loading you should always run the rear elevator/conveyor as low as possible to avoid damage which could result from dropping the ears from too high into the load.

If your 103 Harvester has the optional stalk ejector installed you will have to disregard the part of these instructions that pertains to the "stalk deflector" as the stalk ejector is now required to handle the tops of the incoming stalks. Instead, remove the rubber side flap from the stalk ejector on the side facing the tractor. When harvesting you will now be able to watch the bottom of the stalks as they move along the ejector belts through the stripper bars and into the ejector drums.

As you move along the row note how many of the stalks are being pulled down through the stripper plates and how many are being removed by the stalk ejector. Also note how many of the stalks being removed by the stalk ejector have ears attached before they reach the stripper bars. If most of the stalks are being run through the stalk ejector then you should move the ejector belt pinch idlers farther apart so the knife rolls have more time to pull the stalks down through the stripper plates. (See adjustments section of this manual) This situation will occur most often in tall varieties of corn. It can also be brought on by combining a high ground speed with a low knife roll rpm.

If there are a lot of stalks with ears still attached going through the stalk ejector you may have the stripper plates set too close. Remember that the stalk ejector is a secondary cleaning/harvesting device. If you can get the ears off the stalks at the stripper plate, those ears will be exposed to one less mechanical operation and therefore will be less likely to be damaged.

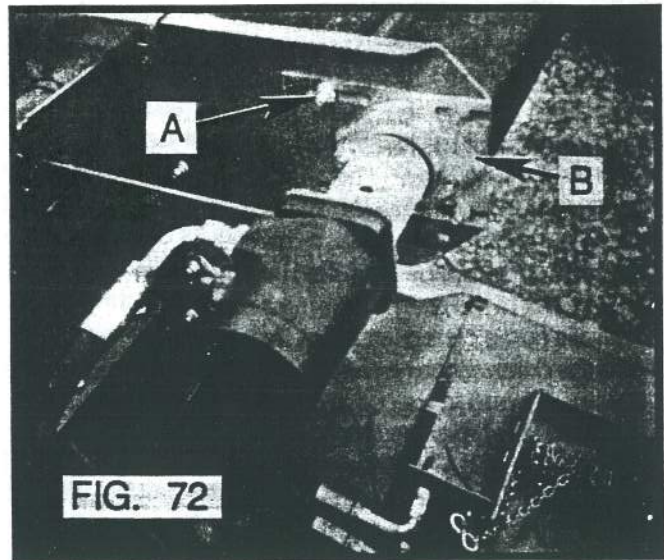
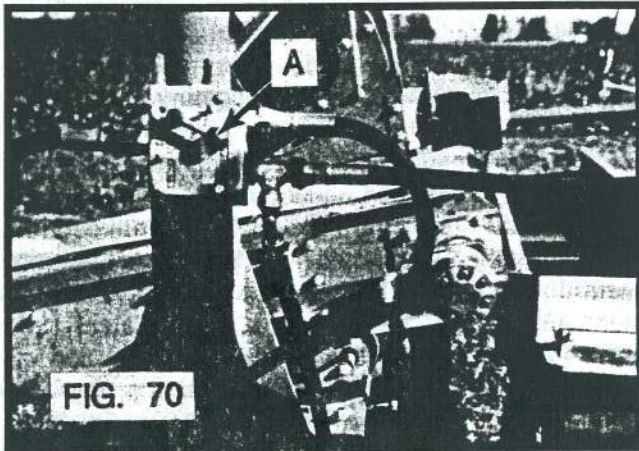
There are certain short-shanked varieties and varieties with two or three ears on a stalk where the stalk ejector will always have to strip ears regardless of the stripper plate setting. If an ear becomes jammed between the stripper bars, the stalks and ears following will usually knock it free. If the ear remains jammed and more ears and stalks jam in behind it plugging the machine, it will be necessary to adjust the stripper bars and/or the belt guides.

If the stalk ejector plugs, stop the machine, turn off the tractor and inspect the jammed ear. If the stalk is still attached and has not been cut off by the ejector drums then you will want to close the gap between the belts particularly at the rear where the stalks transfer from the belts to the drums. (see adjustments section) If the stalk was cut or pulled off by the ejector drums but the ear is still jammed tightly you will have to adjust the gap between the stripping bars. (see adjustments section of this manual) When the ear that was jammed is immature or smaller than you would normally keep, then open up the gap between the stripper bars. This will allow the smaller ears to pass between the bars and be ejected with the stalk. Opening the gap also increases the taper along the bars and makes it easier for following stalks to dislodge a jammed ear. If the jammed ear is one you would normally keep then close the gap between the stripper bars.

ADJUSTMENTS

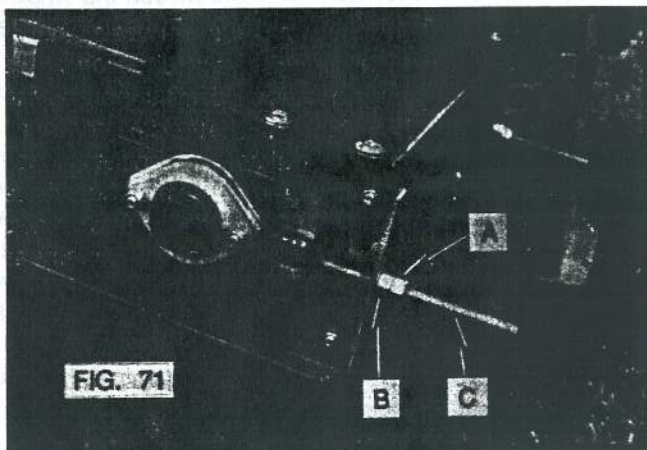
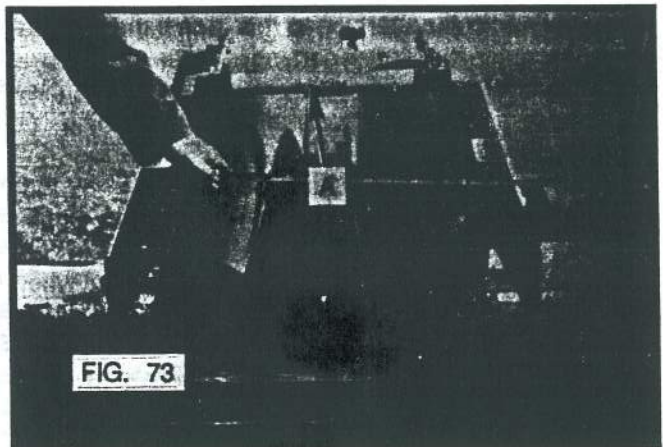
CONVEYORS

Conveyor speed is varied by adjusting the flow divider valve (FIG. 70) by moving the lever (FIG. 70-A) down to increase speed; all the way down against the stop is maximum speed, all the way up against the stop halts the conveyors. When you reach the speed at which you want to operate, turn the knob on the speed control lever to lock in position.



To adjust at the opposite end, loosen nuts (FIG. 72-A) on bearing plate (FIG. 72-B) on the side opposite the side where the belt is rubbing and allow the bearing plate to move toward the opposite end slightly. Tighten nuts.

Both conveyors have been test run at the factory where the belts were adjusted for proper tracking and tension. Tension should be tight enough to keep the belt from slipping but not overly tight as unnecessary belt stretch will occur. Tension is adjusted by loosening the jamnuts (FIG. 71-A) and turning the adjusting nuts (FIG. 71-B) on the adjuster studs (FIG. 71-C) on the adjuster end of each conveyor.



Tracking on this end of the conveyors is also adjusted with these studs. Only a small amount of movement of one side or the other is necessary here to adjust tracking. Each conveyor belt should run on the crown (in the center) of the drive and idler rolls and not rub on either side of the conveyor trough.

STALK DEFLECTOR

The standard 103 Harvester (which does not have the optional stalk ejector) is equipped with an adjustable stalk deflector (FIG. 73-A). The purpose of the deflector is to stop any upright stalks that may have been cut or broken off and carried up by the gathering belts. When such stalks contact the deflector, the knife rolls are given a chance to pull them down through the stripper plates. The normal operating position for the deflector is about 40 inches from the deflector pivot bolt to the deflector tube and about 4 inches from the tops of the row separators. You will find that by adjusting the deflector in or out, or up and down you will be able to minimize trash in all conditions, including corn that has gone down.

Under each knife roll, bolted to the side of the row frame are a pair of vine knives. (See Row Gathering Unit parts illustration in this manual).



CAUTION: WHEN WORKING UNDER THE HARVESTER, DISENGAGE PTO, SHUT DOWN TRACTOR ENGINE AND LOCK THE BRAKES. PLACE A BLOCK OR JACKSTAND UNDER THE HARVESTER FRAME SO THE MACHINE CANNOT BE

LOWERED UNEXPECTEDLY. KNIFE ROLLS ARE SHARP. WEAR GLOVES TO AVOID INJURY.

Loosen the bolts that hold the vine knives to the row frames and clear any material that has wrapped around the knife rolls. Have a helper turn the PTO shaft over slowly by hand using a bar placed into the universal joint. With the knife roll slowly turning, move each vine knife up until it almost touches the knife roll blades, leaving a space of about 1/32". Tighten all bolts.

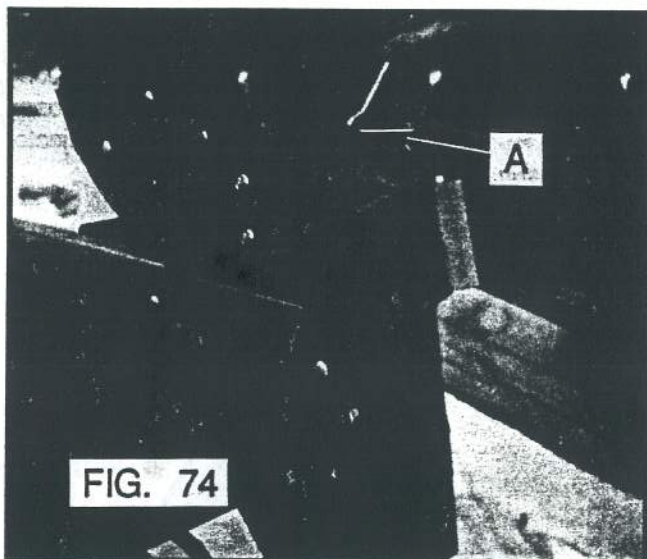


FIG. 74

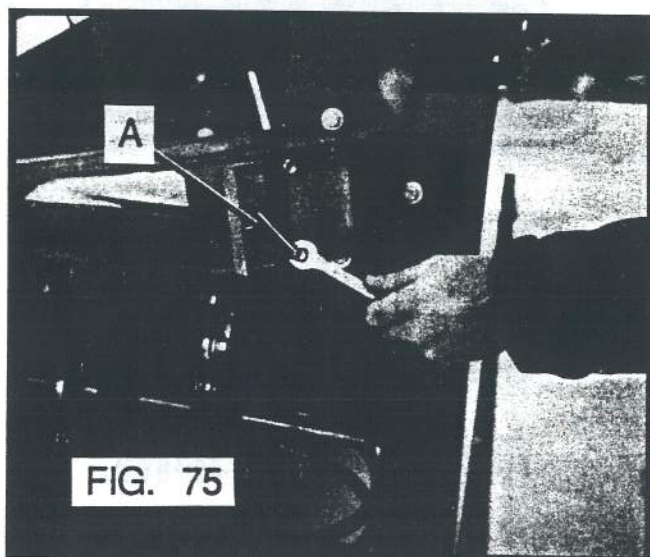


FIG. 75

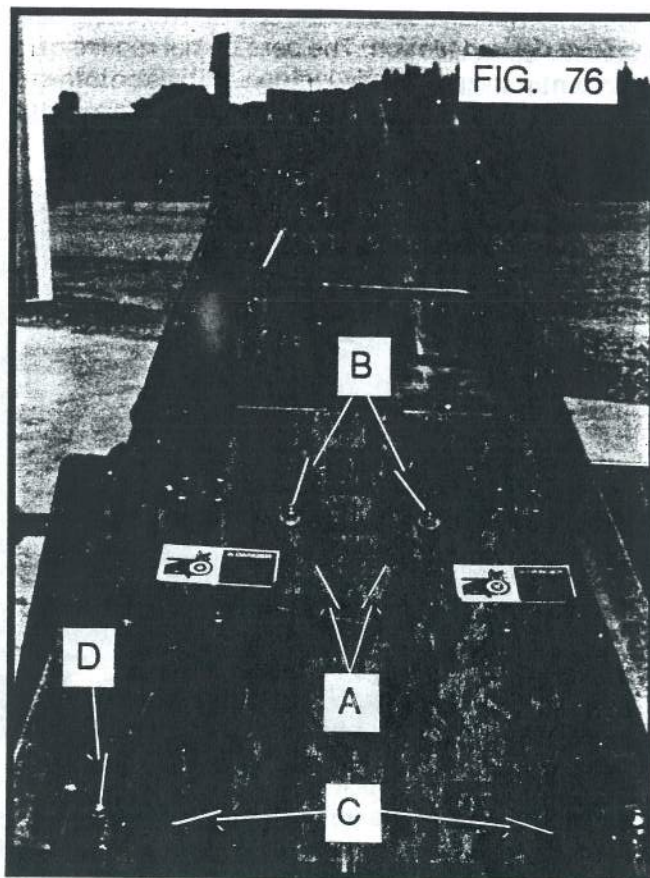


FIG. 76

Loosen the bolts that hold the vine knives to the row frames and clear any material that has wrapped around the knife rolls. Have a helper turn the PTO shaft over slowly by hand using a bar placed into the universal joint. With the knife roll slowly turning, move each vine knife up until it almost touches the knife roll blades, leaving a space of about 1/32". Tighten all bolts.

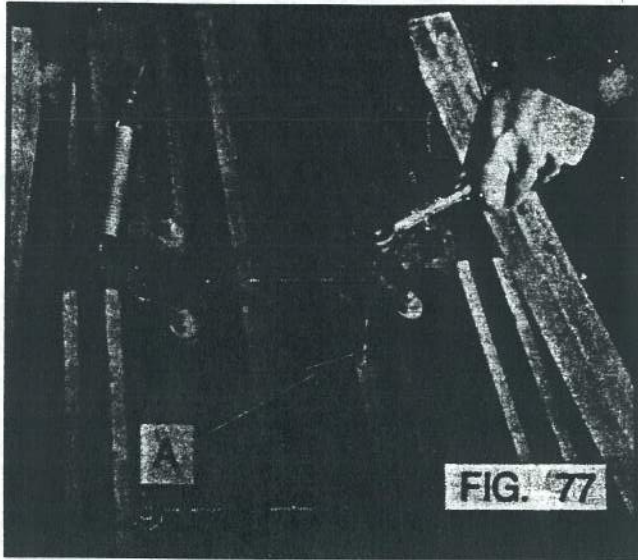
CLEANING FAN

The cleaning fan can be adjusted for nozzle direction and amount of airflow. To adjust nozzle direction, loosen four bolts (FIG. 74-A) on the ring holding the nozzle to the transition section. Rotate the nozzle to the desired position and re-tighten bolts. To adjust airflow loosen the two bolts (FIG. 75-A) on the back of the nozzle which hold the air bleed gate in position. Slide the gate open to reduce airflow across the conveyor. Slide it closed to increase airflow.

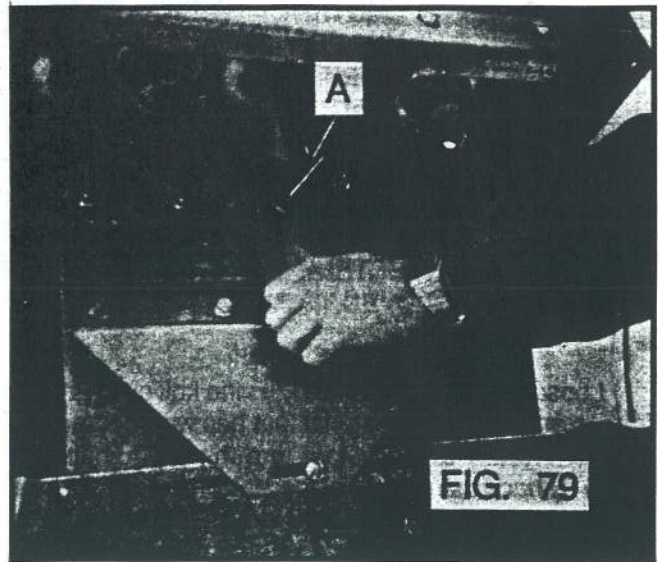
STALK EJECTOR

The stalk ejector belts have two adjustments. The two belt idler pulleys (FIG. 76-A) just in front of the belt guide channels can be moved in or out by loosening nuts (FIG. 76-B) on the belt idler bolts. With this adjustment you can vary the point at which the belts grab the stalks by several inches front to back. Tighten nuts to lock in desired adjustment. The front idler pulleys (FIG. 76-C) are used to adjust belt tension. Loosen locknut on idler (FIG. 76-D),

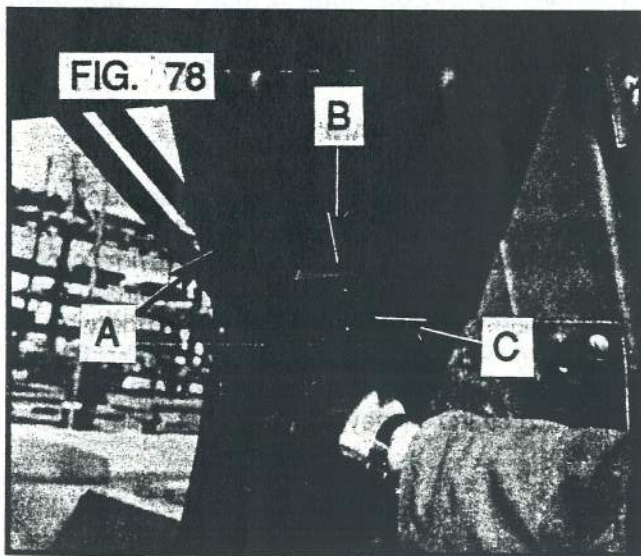
loosen jam nut on adjuster stud and turn adjusting nut to achieve desired tension. The belts do not require much tension to function properly, just enough tension to take up any slack should also prevent slipping. Tighten all nuts to lock adjustment.



The stalk ejector belt guide channels (FIG. 77) are adjustable in and out to control the gap between the belts. To adjust, (after removing the chain guards) loosen six nuts (FIG. 77-A) (three on each side) that hold the belt guides in place. The belts should not have more than 1/4" gap between them at the front of the guides and not more than 1/8" at the back of the guides. After adjusting re-tighten the six bolts and replace the chain guards.



bars to the rear ejector support panel. Then remove one of the bolts (FIG. 78-C) which attaches the cross tube to the stripper bars and slide the bars to the desired position and re-install the bolt. It is usually best to move the stripper bar spacing only one hole at a time when making adjustments. When the desired bar spacing has been obtained, re-tighten the two nuts on the rear ejector support panel.



STRIPPER BARS

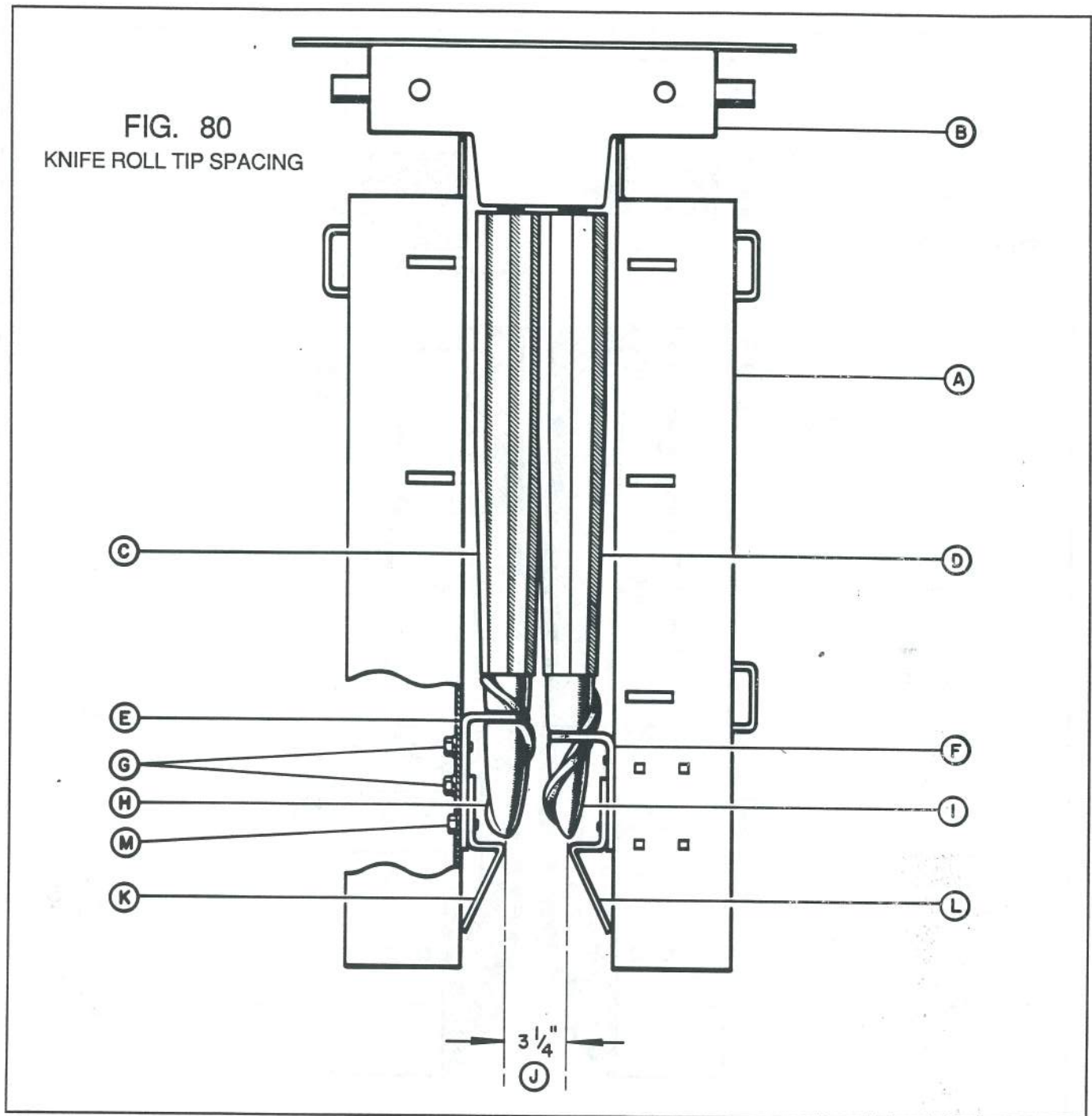
The stripper bars (FIG 78-A) are adjustable for spacing at their lower end. There are six holes in the cross tube (FIG. 78-B) which allows for five different settings of the bar spacing. To change the setting, first loosen the two nuts (FIG. 79-A) which anchor the lower end of the stripper



BE ALERT!

Your Safety is involved.

FIG. 80
KNIFE ROLL TIP SPACING



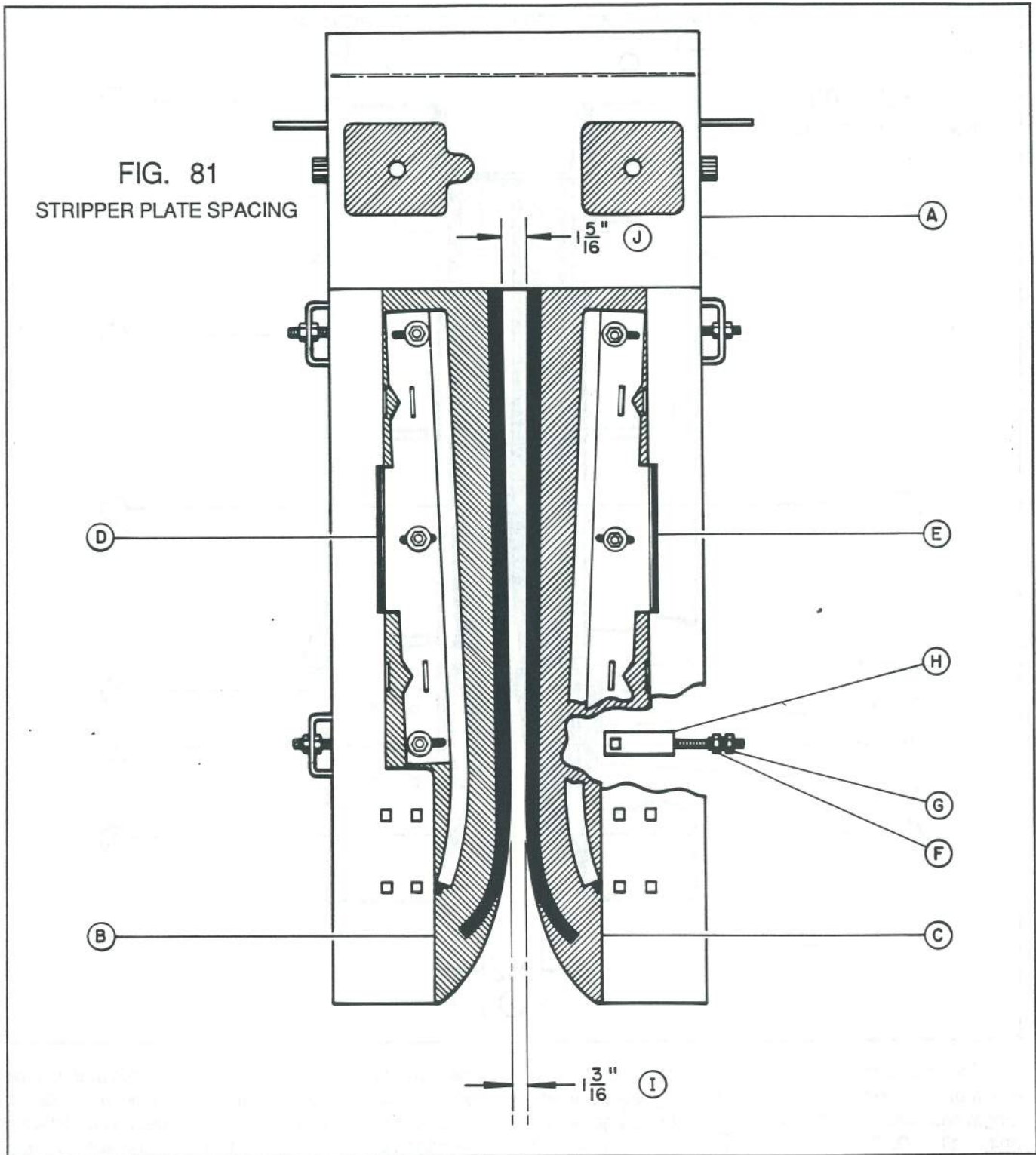
The adjustments that are most critical to maintaining a flow of clean, damage free corn with the desired shank length and wrapper leaves are made in the row gathering unit itself. FIG. 80 shows a top view of the Byron row gathering unit which is made up primarily of the row frame (A), the row gathering unit drive gearbox (B), and the right (C) and left hand (D) knife rolls.* The lower end of each knife roll is supported by the lower knife roll bushing mount assembly right hand (E) and left hand (F). Each mount is held in place by two 1/2" bolts (G) through the side of the row frame.

It is important that the knife roll nose spirals right hand (H) and left hand (I) be run at a dimension of 3-1/4 inches (J) from tip to tip, which is the center to center dimension of the gearbox knife roll drive shafts. This spacing is set at

the factory on new harvesters using shims (part numbers 50513 and 50514) between the lower knife roll bushing mounts and the row frame as needed. This dimension should be checked periodically during the harvest season and adjusted as necessary with the shims. Nose spiral guards R.H. (K) and L.H. (L) direct stalks in between the spirals while preventing material from getting in between the spirals and the row frame. One bolt (M) holds each guard to the row frame.

When removing and replacing knife rolls for any reason, always note how many shims are used on both sides and reinstall the shims in their original locations, checking the nose tip spacing at the same time.

* Right and left hand parts are determined by standing behind the machine facing in the direction of travel.

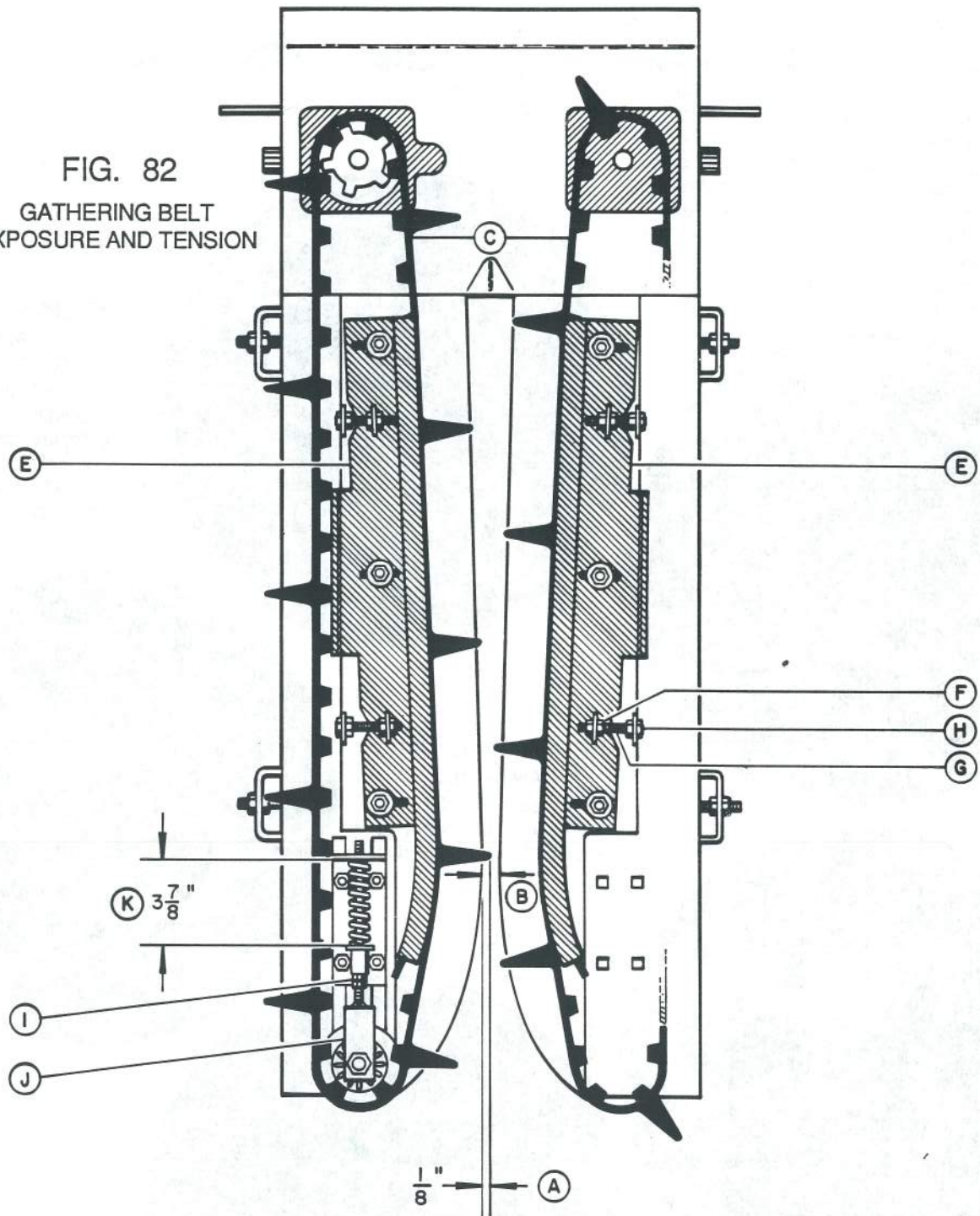


In addition to the basic row frame, gearbox, knife rolls, and lower mounts shown in FIG. 80, we now add the gearbox cover FIG. 81 (A), the right hand (B) and left hand (C) stripper plates (shown shaded) which have removeable urethane cushions located along their edges (shown in black), and the right hand (D) and left hand (E) gathering belt guides.

The stripper plate spacing (gap) is adjusted by turning the adjusting nuts (G) on two stripper plate adjusters

(H). The nominal dimensions for stripper plate gap for fresh market sweet corn are $1\frac{3}{16}$ " (I) at the lower (entry) end and $1\frac{5}{16}$ " at the top end (J). These dimensions may vary depending on ear size and shank length desired, but the gap should always be $\frac{1}{8}$ " greater at the top end than at the entry. It is also important to keep the entire stripper plate gap centered over the working center line between the knife rolls.

FIG. 82
GATHERING BELT
EXPOSURE AND TENSION



Gathering belt exposure is defined as the distance that the tips of the belt gathering lugs protrude beyond the edge of the stripper plates into the stripper plate spacing gap as shown in FIG. 82. Ideally the tip should protrude about $\frac{1}{8}$ " (A) at the point where the stripper plate gap is the narrowest (B) and then gradually protrude less and less until the tip is flush with or slightly behind the stripper plate edge at the top of the gap (zero exposure).

To make these adjustments to the gathering belts (C) loosen two nuts (F) on each of the four adjuster studs (G) and turn either the inner or outer nut to move the belt

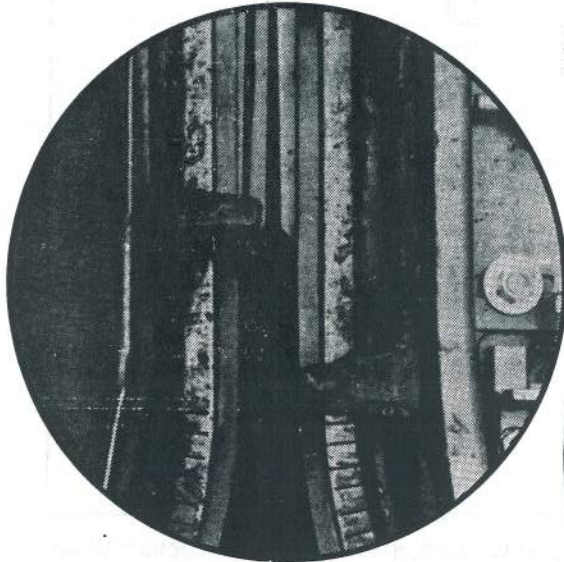
guides (E) (shown shaded) in the desired direction. When correct lug tip exposure has been achieved as described above, tighten nuts (F). Thin jam nuts (H) must remain on the outside end with no thread showing beyond the nut.

Tension on the gathering belt is maintained by the spring-loaded idler sprocket yoke (J). The spring should be adjusted to an installed length of $3\frac{7}{8}$ inches (K). This dimension should be checked periodically. Adjust as necessary to maintain (K) dimension by adjusting nut (I) and turning jam nut against adjusting nut to lock.

**INTERVAL - 60 HOURS
LUBRICANT - EP90 or 80W90**

Check oil level in row gathering unit gearbox by removing vent plug from top of gearbox. Lubricant should cover mainshaft visible thru hole. **IMPORTANT!** Clean trash from around vent plug before removing. Do not allow dirt to fall into filler hole.

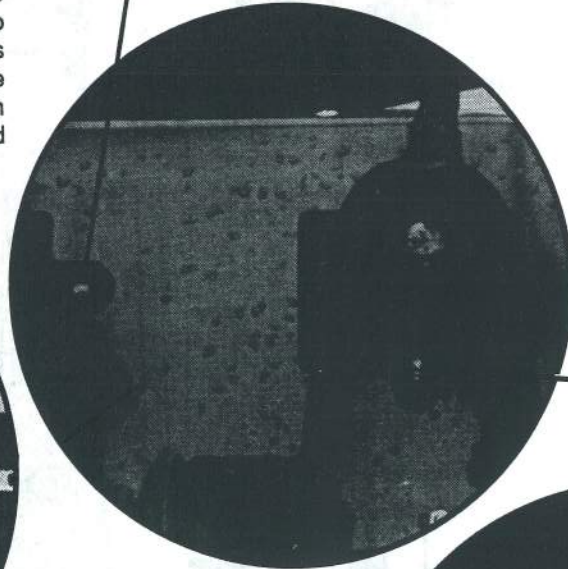
If your harvester is equipped with the one-piece right angle gearbox, remove plug in the rear of the gearbox and check oil level. Lubricant should be up to the bottom of the hole. If your harvester is equipped with the two-piece aluminum right angle gearbox, remove hex bushing and breather from top of gearbox and check visually. Gearbox should be approximately half full of lubricant.



**INTERVAL - 4 HOURS
LUBRICANT - MULTI-PURPOSE GREASE**

Grease lower knife roll support bushings located on the underside of each lower bushing mount. **IMPORTANT!** These bushings cannot be over-lubricated. Failure to grease these bushings could lead to premature bushing failure.

LUBRICATION GUIDE

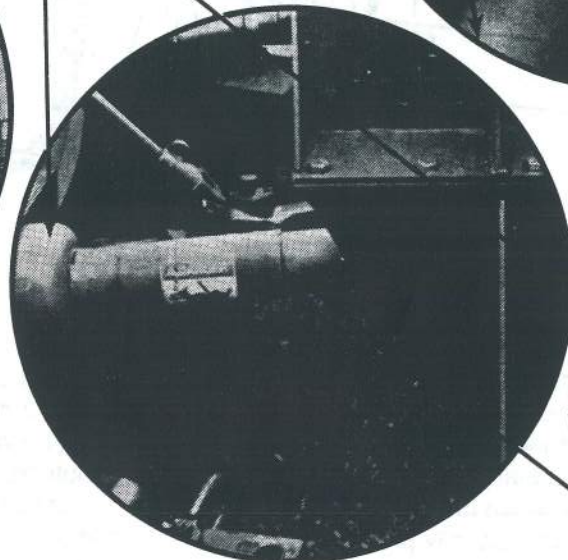
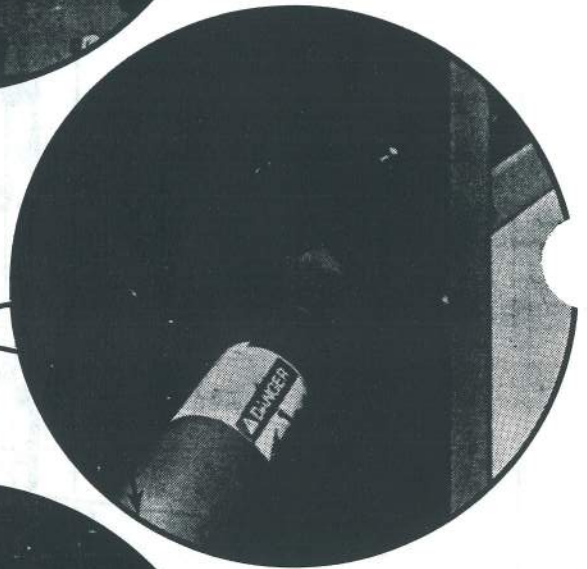


**INTERVAL - 30 HOURS
LUBRICANT - MULTI-PURPOSE GREASE**

On harvesters equipped with three piece row gathering unit drive gearbox only, grease fittings located under each belt drive sprocket.

**INTERVAL - 8 HOURS
LUBRICANT - MULTI-PURPOSE GREASE**

Grease four universal joints on PTO shaft and drive shaft.



**INTERVAL - 20 HOURS
LUBRICANT - MULTI-PURPOSE GREASE**

Grease sliding joint thru hole in PTO shield.

TROUBLESHOOTING

TROUBLE	CAUSE	CORRECTION
(1) Excessive trash in harvested corn.	(A) Ground speed too fast.	(A) Operate at a ground speed compatible with variety, yield and conditions.
	(B) Tractor engine running too slow compared to ground speed.	(B) Run engine at a speed which produces 540 RPM at the PTO.
	(C) Machine not centered on row.	(C) Keep machine centered to avoid stalk breakage.
	(D) Row gathering unit carried too low.	(D) Row gathering unit should be run only low enough to stay below lowest ears.
	(E) Knife rolls too far apart.	(E) Adjust knife roll tip spacing as described in adjustments section.
	(F) Stripper plates set too close.	(F) Set stripper plate gap only as wide as necessary to harvest useable ears. (see adjustments section)
	(G) Stripper plate gap not centered over knife roll operating center line.	(G) Adjust stripper plates as described in adjustments section.
	(H) Too much gathering belt lug tip exposure.	(H) Adjust gathering belts as described in adjustment section.
	(I) Stalk ejector gripper belts have too much slack.	(I) Adjust gripper belts as described in adjustments section.
	(J) Stalk ejector gripper belts too far apart.	(J) Set gap between belts as described in adjustments section.
	(K) Cleaning fan air stream improperly adjusted.	(K) Adjust fan air stream as described in adjustments section.
(2) Excessive damage to harvested corn; butt damage, side damage and slip chucking.	(A) Ground speed too fast. (without excessive trash)	(A) Operate at a ground speed compatible with variety, yield and conditions.
	(B) Row gathering unit carried too high.	(B) Row gathering unit should be run low enough to stay below lowest ears.
	(C) Knife rolls dull or damaged.	(C) Install new knife rolls. (see Installing Knife Rolls section)
	(D) Stripper plate gap spacing too wide.	(D) Set stripper plate gap only as wide as necessary to harvest useable ears. (see adjustments section)
(3) Small ears lodged at upper end of stripper plate gap.	(A) Stripper plates not properly adjusted.	(A) Adjust stripper plates as described in Adjustments section.
	(B) Inadequate gathering belt lug tip exposure.	(B) Increase gathering belt tip exposure at upper end of stripper plate gap.
(4) Ears lodged between stripper bars.	(A) Stripper bars not adjusted properly.	(A) Adjust stripper bar spacing as outlined in adjustments section.
(5) Row gathering unit jammed, P.T.O. shear bolt shears off.	(A) Foreign object caught in knife rolls. (rock, fence wire, etc.)	(A) SHUT DOWN ENGINE and remove foreign object from knife rolls. Install new shear bolt.
	(B) Knife Rolls wrapped with weeds, grass, etc.	(B) SHUT DOWN ENGINE and remove material from knife rolls. Adjust vine knives closer to knife rolls. (see adjustments section) Install new shear bolt.

STORAGE

Prepare your BYRON 103 Harvester for seasonal storage as follows:

- (1.) Clean machine thoroughly, preferably with a pressure washer.
- (2.) Repair or replace any parts worn beyond service limits.
- (3.) Remove knife rolls and pack grease around gear box seal protectors, grease knife roll splined sockets and re-install as described in "Knife Roll Replacement".
- (4.) Lubricate all pressure fittings.
- (5.) Coat gathering belts and conveyor belts with a silicone - base rubber protectant such as Armorall.
- (6.) Remove any rust and apply a coat of paint. Grease exposed metal surfaces.
- (7.) Store harvester in a dry place where it will not be exposed to the weather.

KNIFE ROLL REPLACEMENT

To remove the knife rolls from the row unit first remember to exercise the following safety precautions:



RAISE THE HARVESTER UP HIGH ENOUGH TO WORK UNDER THE MACHINE. DISENGAGE P.T.O., SHUT DOWN TRACTOR ENGINE AND LOCK THE BRAKES. PLACE A JACKSTAND

OR BLOCK UNDER THE HARVESTER FRAME. DO NOT ALLOW ANYONE ON THE TRACTOR WHEN YOU ARE WORKING UNDER THE MACHINE.

Referring to FIG. 49, the knife rolls are removed as follows:

- (1.) Place a length of pipe or bar through the round holes in the row frame so the bar runs crosswise under the knife rolls.
- (2.) Remove two 1/2" bolts (G) from one lower knife roll bushing mount (E,F).
- (3.) Remove shims and set aside in their proper order.
- (4.) Allow the knife roll forward about 1-1/2" and it will be free from the row unit.



CAUTION! WEAR GLOVES, KNIFE ROLLS ARE SHARP AND SHOULD BE HANDLED CAREFULLY. SUPPORT THE KNIFE ROLL FIRMLY DURING REMOVAL. SLIDING THE KNIFE

ROLL FORWARD 1-1/2" WILL ALLOW IT TO FALL OUT OF THE ROW UNIT.

To re-install the knife rolls, first apply a coat of fibrous wheel bearing grease to the splined socket at the upper end of each knife roll. reverse the removal procedure, and in addition, the two knife rolls must be timed with each

other. Each of the knife rolls is driven by a splined shaft from the gearbox. Slide the knives on the splined shafts so that the blades intermesh with each other and so that the Nose Spirals (H) and (I) are not timed together. FIG. 49 shows proper spiral timing. If it becomes impossible to find a position where the knife roll blades mesh properly, remove the opposite knife roll and rotate it one tooth on the drive shaft spline and proceed with assembly. remember to replace the shims between the lower bushing mounts (E F) and row frame in the same order in which you removed them, or adjust shims to achieve the 3-1/4" knife roll tip spacing as shown in Fig. 49. Failure to maintain this dimension will cause excessive wear of the drive splines.

ROW GATHERING UNIT DRIVE GEARBOX OVERHAUL

Your BYRON 103 Harvester has been built with one of two types of row gathering unit drive gearboxes, depending on availability at the time of manufacture. The gearboxes perform exactly the same function in either case but differ in appearance in that one has a three-piece housing and the other has a one-piece housing. Internal parts are different so that when performing an overhaul on yours, be sure to follow the instructions for the type of gearbox you have.

NOTE: When disassembling a gearbox, it is a good practice to keep parts together in the same order in which they were removed. This will enable you to put parts that are to be re-used (gears, shafts, etc.) back into their original location making it easier to achieve gear backlash and bearing pre-load settings. Refer to Row Gathering Unit Gearbox illustrations in the repair parts section of this manual when reading instructions.

DISASSEMBLING THE THREE-PIECE GEARBOX

- (1.) Remove all drain plugs (Item 38) and drain gear lube from gearbox.
- (2.) Remove screws (Item 36) holding front cap (Item 12) to main center housing (Item 10). Remove gasket shims (Items 33, 34, 35) and set aside for future reference. Remove locknuts (Item 14) and hardened washers (Item 15) from knife roll drive shafts (Item 13). Knife roll shaft driven gears (Item 16) and two inner bearing cones (Item 17), knife roll shaft double seals (Item 19) must be removed from front cap. Bearing cups (Item 18) can be removed from front cap at this time if replacement is necessary.
- (3.) Remove countersunk screws (Item 37) holding top caps (Item 21) to end housings (Item 29). Remove gasket shims (Items 30, 31, 32) and set aside for future reference. Remove gathering belt drive shaft seals (Item 22) and bearing cups (Item 18) from top caps if they are to be replaced.
- (4.) Lift gathering belt drive shafts (Item 23) from end housings. Bearing cones (Items 17, 27) can be re-

moved from shafts. Drive roll pin (Item 25) through shaft to remove gathering belt shaft driven gears (Item 26) and keys (Item 24) from shafts.

- (5.) Remove screws (Item 36) holding end caps (Item 2) to end housings (Item 29). Remove gasket shims (Items 30, 31, 32) and set aside for future reference. Slide end caps off main thru shaft (Item 1) and pull bearing cones (Item 5), gathering belt shaft drive gears (Item 6) and keys (Item 7) from shaft.
- (6.) Remove screws (Item 36) holding end housings (Item 29) to main center housing (Item 10). Remove gasket shims (Items 30, 31, 32) and set aside for future reference. Check condition of inner gathering belt shaft bearing cups (Item 28) and remove from end housings if replacement will be necessary.
- (7.) To remove main thru shaft (Item 1) and ball bearings (Item 9) from main center housing (Item 10) remove retaining rings (Item 8) and, using a plastic mallet or hammer and block of wood, carefully drive the shaft through and out of the center housing. At this time, the double-faced knife roll shaft drive gear (item 11) can be removed through the front opening in the center housing. One ball bearing (Item 9) will remain in the center housing, the other will have been removed with the shaft. If these ball bearings are to be replaced, remove the bearing from the housing by driving it out from the back side with a long punch or piece of shaft or pipe with an outside diameter no larger than 1 3/4". The other bearing may be driven off its seat on the shaft by carefully tapping on the inner race with a soft punch.

ASSEMBLING THE THREE-PIECE GEARBOX

- (1.) Before beginning, make sure all parts are clean!
- (2.) Install one ball bearing (item 9) into the bore at one outer end of the main center housing (Item 10) by carefully tapping it in with a plastic mallet or a soft punch until it is fully seated in its bore.
- (3.) Install the other ball bearing on the shaft, slipping it on the shaft until it reaches the bearing seat area of the shaft. You will need two pieces of 1 1/2" pipe no shorter than 10" each with one end cut smooth and square to continue assembly. With the end of the shaft resting on wooden block, place a length of pipe over the shaft and against the ball bearing inner race. Carefully tap on the pipe until the bearing is on its seat about 1/4".
- (4.) Place the main center housing on the bench and insert the double-faced knife roll drive gear into the housing through the front opening in the housing. Insert the shaft into the housing through the double-faced gear and through the ball bearing previously installed on the opposite side of the main center housing. Make sure the splines on the shaft and gear engage smoothly. The bearing seat area of the shaft should now begin to enter the bearing. With a plastic mallet or hammer and block of wood, drive the shaft through the bearing until the ball bearing previously installed on the shaft begins to enter its bore in the housing. If the bearing has entered the bore square, continue driving the shaft through the far bearing as long as it will continue to stay in its bore. At this point, you can slip one length of 1 1/2" pipe over the shaft with the clean, square end against the bearing inner race. Stand the shaft and housing up vertically on the bench and use the second length of pipe to install one retaining ring (Item 8) on the shaft in whichever groove is accessible. Place a pipe over the shaft on the opposite side, stand the shaft and housing up vertically on the pipe, and carefully tap on the end of the shaft until the retaining ring is tight against the bearing. You should now be able to install the second retaining ring on the opposite side.
- (5.) Install bearing cups (Item 28) into the end housings (Item 29) using a brass punch to seat.
- (6.) You may now assemble the end housings to the main center housing. If you are re-assembling in the field, use the same combination of gasket shims (Items 30, 31, 32) that you removed when disassembling. The gasket shims are installed between housings to establish proper engagement of the gathering chain drive gears (Items 6, 26).
- (7.) If this is a new assembly or if the gasket shims were lost or discarded, the following procedure is used:
 - (A.) Use two .015 thick (P/N 50486) gasket shims between each of the end housings and main center housings and main center housing and temporarily install screws (Item 36).
 - (B.) Insert square key (Item 7) into keyset in shaft, then slide gathering belt drive shaft drive gear (Item 6) onto shaft to engage key and seat against shoulder on shaft. (See Fig. 6).
 - (C.) Measure the distance from the machined outer surface of the gear. This dimension should be $.248 \pm .005$ at each end. (See Fig 6)
 - (D.) If the dimension is not within tolerance given, and or remove gasket shims (Items 30, 31, 32) between housings until you achieve proper dimension. Apply a small amount of silicone gasket sealant on the machined surfaces of the housings and tighten screws (Item 36).
- (8.) Carefully install main thru shaft end seals (Item 3) in end caps (Item 2). Install bearing cups (Item 4) into caps tapping firmly with a brass punch to seat. Apply a coat of clean grease to the lip of the seals.
- (9.) Apply a coat of grease or gear lube to bearing cones (Item 5) and slide onto shaft to seat against backside of gears (Item 6).
- (10.) Select a combination of gasket shims (Items 30, 31, 32) .030 thick as in step 7A. Assemble end caps to end housings, install screws (Item 36) and tighten. If the tapered roller bearings are properly pre-loaded, there will be slight drag on the shaft when rotated by hand. If the bearings feel too tight or too loose, adjust gasket shim thickness until proper pre-loading of the bearings is achieved. Use silicone gasket sealant on mating surfaces of housing and end caps and tighten screws.

- (11.) Assemble seals (Item 22) and bearing cups (Item 18) into top caps (Item 21). Install gathering belt drive shaft gears (Item 26) on gathering belt drive shafts (Item 23) engaging square keys (Item 24) and secure with roll pins (Item 25).
- (12.) Apply a light coat of grease or gear lube to inner bearing cones (Item 27) and place in cups (Item 28) in end housings.
- (13.) Apply a light coat of grease or gear lube to outer bearing cones (Item 17) and slide onto shafts to seat against top of gears (Item 26). Insert shafts into inner bearing cones in end housings.
- (14.) Lightly coat the lip of the seals (Item 22) in both top caps (Item 21) with clean grease and install top cover to end housing using a combination of gasket shims (Items 30, 31, 32) to achieve no more than .020 backlash in the gathering belt shaft drive (Item 6) and driven (Item 26) gears. Turn gearbox main shaft a few revolutions by hand to be sure there is no binding. Use silicone gasket sealant on the mating surfaces of the top caps and end housings to prevent leakage. Tighten flathead (countersunk) screws (Item 37).
- (15.) Install four bearing cups (Item 18) into both sides of front cap (Item 12). Lubricate two bearing cones (Item 17) and set in outer bearing cups. Install double front seals (Item 19) in front cap. Both the inner and outer seals should face outward. Make sure the two seals are fully seated into the front cap and against each other. Pack clean grease into the space between the seals while lubricating the seal lips.
- (18.) With shafts installed, assemble the front cap to the main center housing. If you are re-assembling in the field, use the same combination of gasket shims (Items 33, 34, 35) that you removed when you disassembled the front cap. If this is a new assembly or if the gasket shims were lost or discarded, use a combination of gasket shims (Items 33, 34, 35) that results in no more than .020 backlash in the knife roll gear (Item 11) and the knife roll driven gears (Item 16). Turn gearbox main shaft a few revolutions by hand to be sure there is no binding. Use silicone gasket sealant on the mating surfaces of the front cap and the main center housing. Tighten screws (Item 36).
- (19.) Install all drain plugs in housings and fill gearbox with a good grade of E.P. 90 or 80W90 gear lube. (See lubrication section of this manual).

DISASSEMBLING THE ONE-PIECE GEARBOX

- (1.) Remove drain plug (Item 39) and drain gear lube from gearbox.
- (2.) Remove machine screws (Item 36) holding front cap (Item 19) to housing (Item 1). Remove gasket shims (Items 20, 21, 22) and set aside for future reference. Bend the locking tabs on lockwashers (Item 12) back and remove locknuts (Item 11) from knife roll drive shafts (Item 18). Knife roll shaft driven gears (Item 13) and two inner bearing cones (Item 14) double seals (Item 16) must be removed. Bearing cups may be removed from front cap at this time if replacement is necessary.
- (3.) Remove countersunk screws (Item 40) holding top caps (Item 30) to housing and remove top cap & shaft assembly. Remove gasket shims (Items 32, 33, 34) and inner ball bearing shims (Items 41, 42, 43) from housing. Outer sealed bearing (Item 26) may now be removed from belt drive shaft (Item 28). Bearing must be removed towards the outer end of the shaft, away from the retaining ring (Item 29). Inner ball bearing (Item 23), belt drive shaft driven gear (Item 24) and key (Item 25) must be removed towards the inner end of the shaft and the retaining ring removed from the shaft if necessary. Seal (Item 27) may be removed from top caps if necessary.
- (4.) Remove machine screws (Item 6) holding end caps (Item 2) to housing (Item 1). Slide end caps off main shaft (Item 7) and remove gasket shims (Items 8, 9, 10) and set aside for future reference. Remove large ball bearings (Item 3), belt drive gears (Item 5), spacers (Item 3) and shims (Item 44, 45) from mainshafts. Shims should be kept in their original location if not being replaced. Pull mainshaft from housing. Clutch shaft bushings (Item 46) can be removed from ends of main shaft at this time. Double faced bevel gear (Item 35) can now be removed through front cap opening in housing.

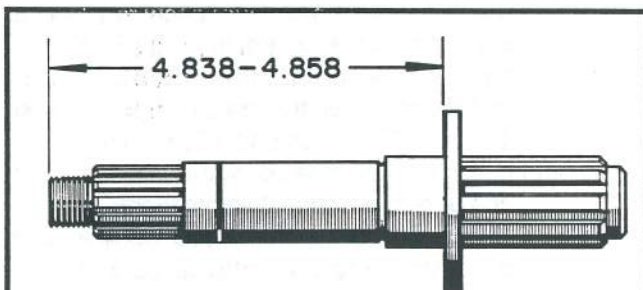


FIG. 52 INSTALLING SEAL PROTECTOR

- (16.) If new knife roll drive shafts (Item 13) are being used, it will be necessary to install a seal protector (Item 20) on each shaft. The protector is pressed on from the outer end of the shaft to a dimension of 4.838 to 4.858 from the inner (threaded) end of the shaft to the rear surface of the seal protector. (See Fig. 52).
- (17.) Carefully insert shafts through the double seals and bearing cones previously installed in the front cap. Install a pre-lubed bearing cone (Item 17), knife roll shaft driven gear (Item 16), hardened washer (Item 15), and locknut (Item 14) on backside of each shaft. Use a thread bonding compound such as "loctite" applied to the threaded portion of the shaft before installing locknuts. Tighten locknuts until an increased drag (pre-load) is felt in the bearings.

ASSEMBLING THE ONE-PIECE GEARBOX

- (1.) Clean all parts before assembly!
- (2.) Install new clutch shaft bushings (Item 46) into ends of mainshaft so that bushings are flush with the ends of the shaft. Place double faced bevel gear (Item 35) into housing through front cap opening. Insert main shaft (item 7) into housing and through the double faced gear smoothly. Install spacers (Item 31, original shims (Items 44, 45) and belt drive gears (Item 5) onto main shaft in their original locations. New seals (item 4) and ball bearings (item 3) may now be installed in end caps (Item 2) if required. Apply a light coat of clean grease to the lips of the seals and slide end caps onto main shaft. If all the original parts are being used, install the same combination of gasket shims (Items 8, 9, 10) under the end caps. Proper engagement of the belt drive gears should result as well as correct clearance in the main shaft bearings (Item 3). If any of these internal parts have been replaced, gear mating and gear lash should be checked and adjusted if necessary by adding or removing gasket shims (Items 8, 9, 10) and shims (Items 44, 45). Correct gear lash is .020-.030 at the gear tooth or .020 - .030 at a point 2-1/16" from the center of the belt drive shaft (item 28). Main shaft should be checked for zero end play. The main shaft can be adjusted from end to end by transferring gasket shims (Items 8, 9, 10) behind end caps from one end to the other to obtain proper mating and lash in the gears. When satisfied that proper adjustment has been achieved, apply a light coating of silicone gasket sealant to mating surfaces and tighten machine screws.
- (3.) Install new seals (item 27) in top caps (Item 30). Install retaining ring (Item 29) onto belt drive shaft (Item 28). Place key (Item 25) and belt drive shaft driven gear (Item 24) on inner side of shaft and press gear onto shaft so that it is seated against the shoulder on the shaft. Press sealed bearing (Item 26) onto outer side of shaft until it seats against retaining ring. Pack the cavity in top cap (Item 30) with clean grease, grease seal lips and slide cap onto shaft. Insert shims (Items 41, 42, 43) into bearing seat in housing in their original location. Place original gasket shims (Items 32, 33, 34) under top cap and install shaft/cap assembly into housing. Check for proper gear lash and zero shaft end play as in step (2.), especially if original parts have been replaced. When satisfied that proper adjustment has been achieved, apply a light coating of silicone gasket sealant to mating surfaces and tighten counter sunk screws.
- (4.) Install four bearing cups (Item 15) into both sides of the front cap (Item 19). Lubricate two bearing cones (Item 14) and set in outer bearing cups. Install double front seals (Item 16) in front cap. Each seal must be packed with grease before being tapped in place.

This prevents the inner lip spring from popping out, causing premature failure. Both the inner and outer seals should face outward. Make sure the two seals are fully seated into the front cap and against each other. If new knife roll drive shafts (Item 18) are being used, it will be necessary to install a seal protector (Item 17) on each shaft. The protector is pressed on the shaft from the outer end to a dimension of 4.838 to 4.858 from the inner (threaded) end of the shaft to the rear surface of the seal protector (See Fig. 52). Carefully insert the shafts through the double seals and bearing cones previously installed in the front cap. Install a pre-lubed bearing cone (Item 14), knife roll shaft driven gear (Item 13), lock washer (Item 12) and lock nut (Item 11) on back side of each shaft. Use a thread bonding compound such as "Loctite" applied to the threaded portion of the shaft before installing locknuts. Tighten locknuts until an increased drag (preload) is felt in the bearings. Bend one or more of the tabs on the lockwasher into the notches in the lock nut. With the shafts installed, assemble the front cap to the housing. If you are using the original parts, install the same combination of gasket shims (items 20, 21, 22) under the front cap. If this is a new assembly use a combination of gasket shims under the front cap that results in knife roll drive shaft gear lash of .020 - .030 in the gears which can be measured at a point 1" from the center of the knife roll drive shaft. When proper gear lash has been achieved, apply a light coating of silicone gasket sealant to mating surfaces and tighten machine screws.

- (5.) Turn gearbox main shafts over a few revolutions by hand to be sure there is no binding. Install drain plug in housing and fill gearbox with a good grade of E.P. 90 or 80W90 gear lube. (See lubrication section of this manual).



BE ALERT!

Your Safety is involved.

ORDERING REPAIR PARTS

The BYRON 103 Harvester is designed and built with top quality agricultural grade components. We recommend that repair/replacement parts for the 103 Harvester be obtained from a BYRON Harvester Dealer. If not available locally, replacement parts may be ordered directly from the manufacturer at 7275 Batavia-Byron Road, Byron, New York 14422. telephone (716) 548-2665. Fax (716) 548-2599. Or from one of two regional warehouses located at W. 6960 Silvercreek Rd., Watertown, Wisconsin 53094. Telephone (414) 261-3147. Fax (414) 261-4570 and at 10480 Brill Road, Emmet Idaho 83617. Telephone (208) 365-2606. fax (208) 365-6476. Right or left hand parts are determined by standing in back of machine facing in the direction of travel. Right or left hand elevator/conveyor parts are determined by standing at the foot of the elevator facing towards the top of the elevator. the abbreviation "A.R." in the "USED" column means "AS REQUIRED" — The item is used to service a major

assembled component or it is used in numbers which may vary between individual machines, usually to obtain a particular adjustment or dimension at assembly. When, in the course of routine repair disassembly a number of shims, flatwashers, etc. are removed, always reassemble the same quantity in that location.

Parts ordered within the continental United States will be shipped via a suitable parcel service if less than 75 lbs. and by common carrier if heavier. faster service can be provided on request. Arrangements for Canadian and overseas shipment will be made with the customer at the time of order.

If you have a BYRON part and/or part number and want to know where it is used on your machine refer to the Numerical Parts Index in the back of this manual. Find the page where the part is used, then look for the part number on that page.

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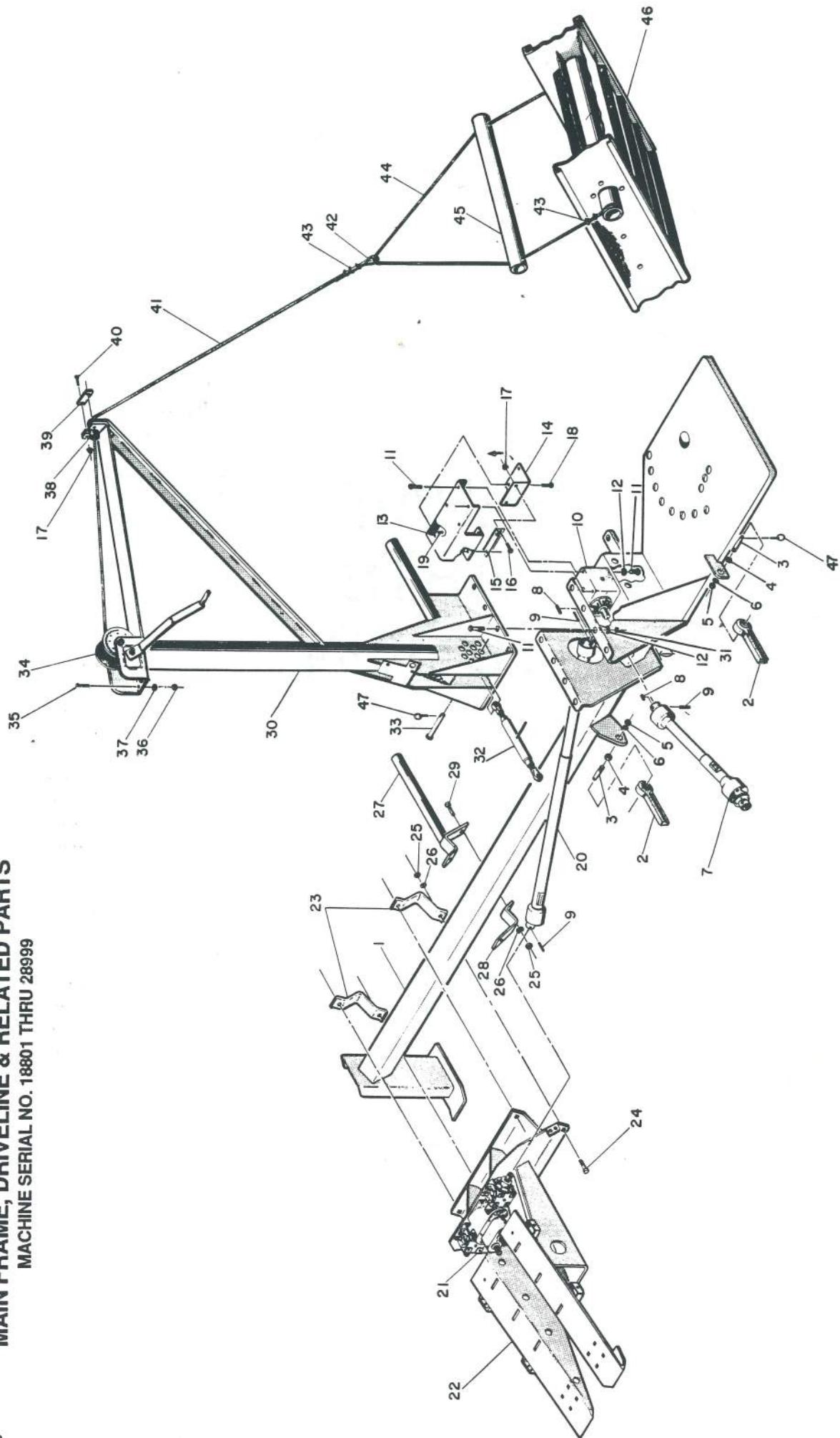
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RECORD YOUR BYRON 103 HARVESTER SERIAL NUMBER IN THE SPACE PROVIDED BELOW. YOUR BYRON DEALER NEEDS THIS NUMBER, ALONG WITH PART NUMBER AND PART DESCRIPTION IN ORDER TO GIVE YOU FAST, EFFICIENT SERVICE WHEN YOU NEED PARTS.

BYRON 103 HARVESTER SERIAL NUMBER

REPAIR PARTS SECTION

MAIN FRAME, DRIVELINE & RELATED PARTS
MACHINE SERIAL NO. 18801 THRU 28999

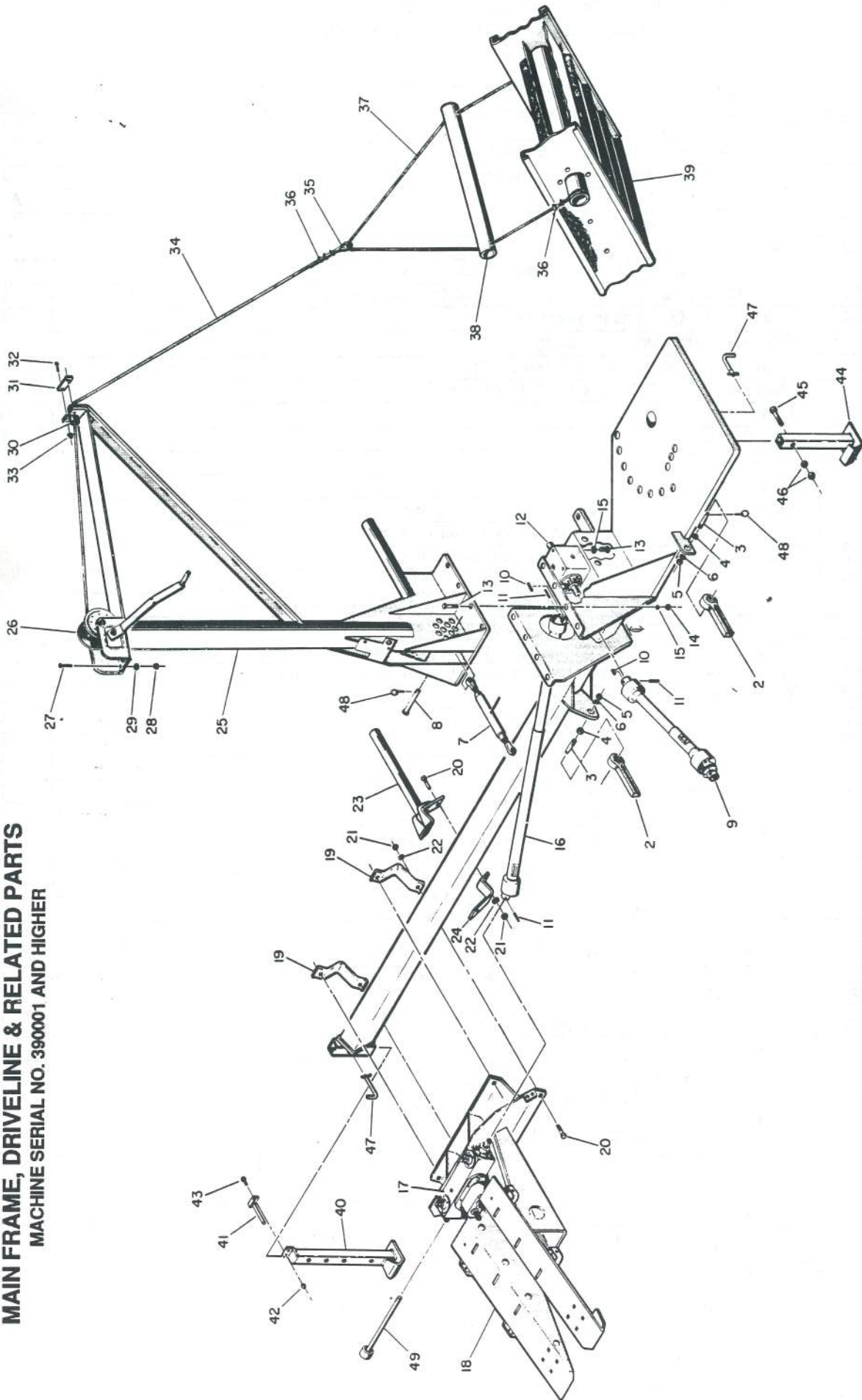


MAIN FRAME, DRIVELINE & RELATED PARTS
MACHINE SERIAL NO. 18801 THRU 28999

KEY	P/N	DESCRIPTION	USED
1	10241	Main frame assembly	1
2	-----	Tractor bottom link, category II 3-point hitch	---
3	51292	Draw pin, bottom link to frame (includes items 4, 5 & 6)	2
4	93495	Jam nut - 1 1/8" NF hex	A.R.
5	93497	Nut - 1 1/8" NF hex	A.R.
6	93586	Lockwasher - 1 1/8 split ring	A.R.
7	51297	P.T.O. shaft assembly - 26" (tractor P.T.O. to gearbox)	1
8	50067	Key, 1/4" square by 1 1/2" long, P.T.O. shafts to gearboxes	3
9	93759	Roll pin - P.T.O. shafts to gearboxes	3
10	51240	Gearbox - 90° (cast iron housing*)	1
10	51356	Gearbox - 90° (cast aluminum housing*)	1
11	93079	Machine screw - 1/2" NC x 1 1/4" hex head, grade 5	12
12	93580	Lockwasher - 1/2" split ring	14
13	21349	Guard mount	1
14	21351	Shield, P.T.O.	1
15	21350	Hinge, shield	1
16	93026	Machine screw - 5/16" NC x 1/2" hex head, grade 5	4
17	93522	Locknut - 5/16" NC hex, serrated flange, self locking	6
18	93027	Machine screw - 5/16" NC x 3/4" hex head, grade 5	2
19	93545	Speed nut - 5/16" NC x .074 - .100 grip	2
20	51296	Drive shaft assembly - 48" (90° gearbox to row gathering unit gearbox)	1
21	51305	Gearbox assembly, row gathering unit drive (3-piece housing*)	1
21	51146	Gearbox assembly, row gathering unit drive (one-piece housing*)	1
22	10255	Row frame assembly (see Row Gathering Unit Parts Illustration For additional parts)	1
23	30340	Clamp, row frame to main frame	2
24	93237	Carriage bolt - 5/8" NC X 2" grade 5	4
25	93457	Nut - 5/8" NC hex	6
26	93582	Lockwasher - 5/8" split spring	6
27	31374	Cross conveyor support assembly, lower	1
28	31383	Clamp, conveyor support	1
29	93104	Machine screw - 5/8" NC X 1 1/2" hex head, grade 5	2
30	10245	Mast assembly	1
31	93455	Nut - 1/2" NC hex	8
32	-----	Tractor top link, category II 3 - point hitch	---
33	51295	Pin, top link to main frame	1
34	51274	Winch assembly (does not include cable)	1
35	93053	Machine screw - 3/8" NC X 1" hex head, grade 5	2
36	93453	Nut - 3/8" NC hex	2
37	93578	Lockwasher - 3/8" split spring	2
38	51294	Cable guide	1
39	31416	Retainer, cable guide	1
40	93028	Machine screw - 5/16" NC X 1" hex head, grade 5	2
41	51303	Lift (winch) cable	1
42	31397	Thimble, 5/16" wire rope	1
43	31396	Cable clamp, 5/16"	10
44	51302	Elevator hanger cable	1
45	51301	Elevator hanger tube	1
46	-----	Elevator assembly (see separate illustration for parts breakdown)	---
47	93784	Lynch pin, 7/16"	3

* See separate illustration for each individual gearbox for internal parts breakdown.

MAIN FRAME, DRIVELINE & RELATED PARTS
MACHINE SERIAL NO. 390001 AND HIGHER



MAIN FRAME, DRIVELINE & RELATED PARTS
MACHINE SERIAL NO. 390001 AND HIGHER

KEY	P/N	DESCRIPTION	USED
1	10241	Main frame assembly	1
2	—	Tractor bottom link, category II 3-point hitch	—
3	51292	Draw pin, bottom link to frame (includes items 4, 5 & 6)	2
4	93495	Jam nut, 1 1/8"-10 hex	A.R.
5	93497	Nut, 1 1/8"-10 fin. hex	A.R.
6	93580	Lockwasher, 1 1/8" USS standard spring	A.R.
7	—	Tractor top link, category II 3-point hitch	—
8	51295	Pin, top link to frame	1
9	51297	P.T.O. Shaft assembly - 26" (tractor P.T.O. to gearbox)	1
--	51357	Repair kit (cross & bearings to repair one universal joint)	A.R.
10	50067	Square key, 1/4" x 1 1/2" - P.T.O. shafts to gearboxes	2
11	93759	Roll pin, 5/16" dia. x 2 1/4" long - P.T.O. shafts to gearboxes	3
12	51496	Main drive gearbox (cast iron housing*)	1
12	51481	Main drive gear box (cast aluminum housing*)	1
13	93079	Machine screw, 1/2"-13 x 1 1/4" hex head, grade 5	12
14	93455	Nut, 1/2"-13 fin. hex	8
15	93580	Lockwasher, 1/2" USS standard spring	12
16	51296	Drive shaft assembly - 48" (main drive gearbox to row gathering unit gearbox)	1
--	51357	Repair kit (cross & bearings to repair one universal joint)	A.R.
17	51482	Gearbox assembly, row gathering unit/stalk ejector drive *	1
18	10255	Row frame assembly, (see row Gathering Unit Parts illustration for additional parts)	1
19	30340	Clamp, row frame to main frame	2
20	93237	Carriage bolt, 5/8"-11 x 2" grade 5	6
21	93457	Nut, 5/8"-11 fin. hex	6
22	93582	Lockwasher, 5/8" split spring	6
23	31374	Support assembly, cross conveyor - lower	1
24	31383	Clamp, support to main frame	1
25	10245	Mast assembly	1
26	51274	Winch assembly (does not include cable)	1
27	93053	Machine screw, 3/8"-16 x 1" hex head, grade 5	2
28	93453	Nut, 3/8"-16 fin. hex	2
29	93578	Lockwasher, 3/8" USS standard spring	2
30	51294	Cable guide	1
31	31416	Retainer, cable guide	1
32	93028	Machine screw, 5/16"-18 x 1" hex head, grade 5	2
33	93522	Locknut, 5/16"-18 hex, serrated flange, self locking	2
34	51303	Lift (winch) cable	1
35	31397	Thimble, 5/16" wire rope	1
36	31396	Cable clamp, 5/16"	9
37	51302	Elevator hanger cable	1
38	51301	Elevator hanger tube	1
39	—	Elevator/conveyor assembly (see separate illustration for parts breakdown)	—
40	31650	Jackstand assembly, R.H.	1
41	31651	Handle assembly, jackstand	1
42	93252	Carriage bolt, 1/4"-20 x 3/4"	2
43	93520	Locknut, 1/4"-20 hex, serrated flange, self locking	2
44	31645	Jackstand assembly, L.H.	1
45	93113	Machine screw, 5/8"-11 x 3 3/4" hex head, grade 5	1
46	93457	Nut, 5/8"-11 fin. hex	2
47	50533	Pin, jack lock	2
48	93784	Lynch pin 7/16"	3
49	51400	Drive shaft, row gathering unit gearbox	1

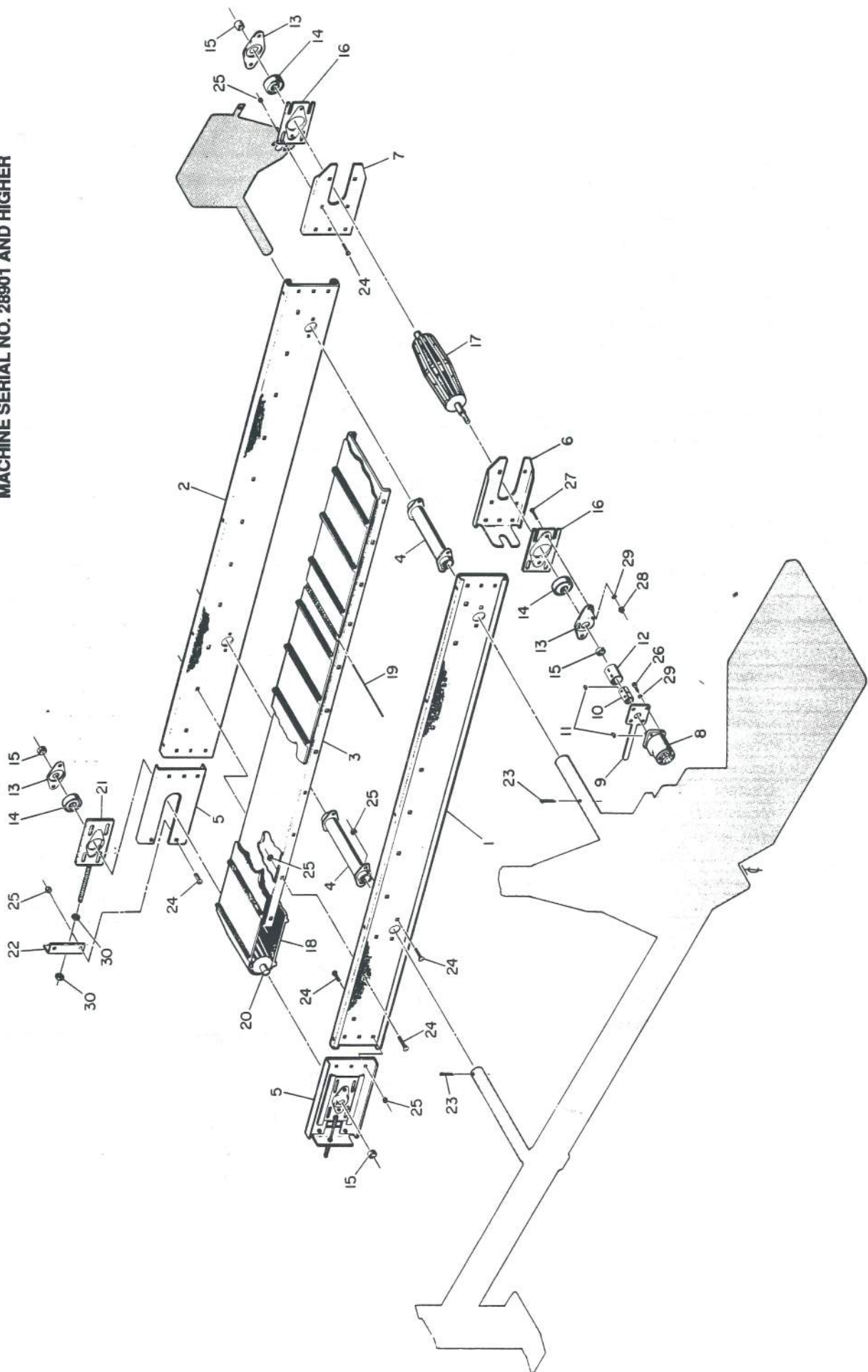
*See separate illustration for each individual gearbox for internal parts breakdown.

CROSS CONVEYOR
MACHINE SERIAL NO. 18801 THRU 18899

KEY	P/N	DESCRIPTION	USED
1	21280	Conveyor side, front	1
2	21281	Conveyor side, rear	1
3	21283	Conveyor floor	1
4	31346	Torque tube assembly	2
5	21284	Conveyor boot side	2
6	21309	Head section side, front	1
7	21286	Head section side, rear	1
8	40263	Hydraulic motor, conveyor drive (see hydraulic system illustration for additional parts)	1
9	51255	Motor mount / torque arm	1
10	51287	Drive coupling (includes screws)	1
11	93718	Woodruff key, coupling to motor & shaft, 1/4" X 1" (#808)	2
12	51254	Safety shield, drive coupling	1
13	50087	Bearing housing (flangette) 2 - bolt	4
14	50103	Bearing assembly - 11/4" bore non-regreaseable (includes lock collar)	4
15	50102	Lock collar, 11/4" bore, eccentric (light duty)	A.R.
16	21276	Bearing plate, conveyor drive	2
17	51252	Conveyor drive roll assembly	1
18	51279	Conveyor belt assembly, includes pin	1
19	51257	Lacing pin	A.R.
20	51246	Conveyor idler roll assembly	1
21	21278	Bearing plate/conveyor belt adjuster assembly	2
22	31345	Adjuster angle	2
23	93694	Cotter pin, 1/4" X 3" - cross conveyor to main frame	2
24	93163	Carriage bolt - 5/16" NC X 3/4" grade 5	54
25	93452	Nut - 5/16" hex	54
26	93577	Lockwasher 5/16" split spring	54
27	93522	Locknut - 5/16" NC hex, serrated flange, self locking	8
28	93052	Machine screw - 3/8" NC X 3/4" hex head, grade 5	4
29	93188	Carriage bolt - 3/8" NC X 3/4" grade 5	8
30	93453	Nut - 3/8" NC hex	8
31	93578	Lockwasher - 3/8" split spring	12
32	93455	Nut - 1/2" NC hex	4

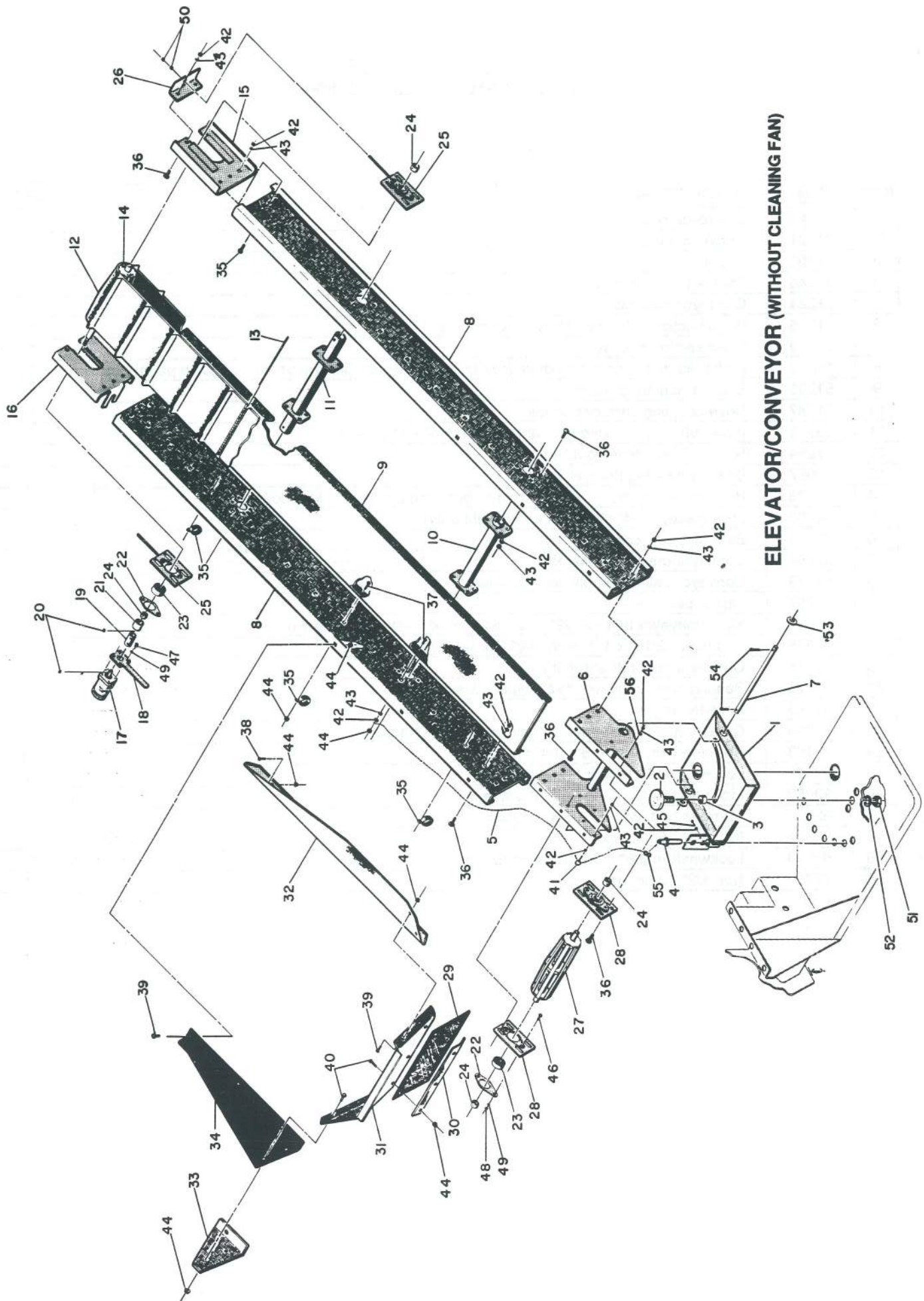
~~51642~~ *lacing* cat # 88557
 48" long
 staple
 & pin

CROSS CONVEYOR
MACHINE SERIAL NO. 28901 AND HIGHER



CROSS CONVEYOR
MACHINE SERIAL NO. 28901 AND HIGHER

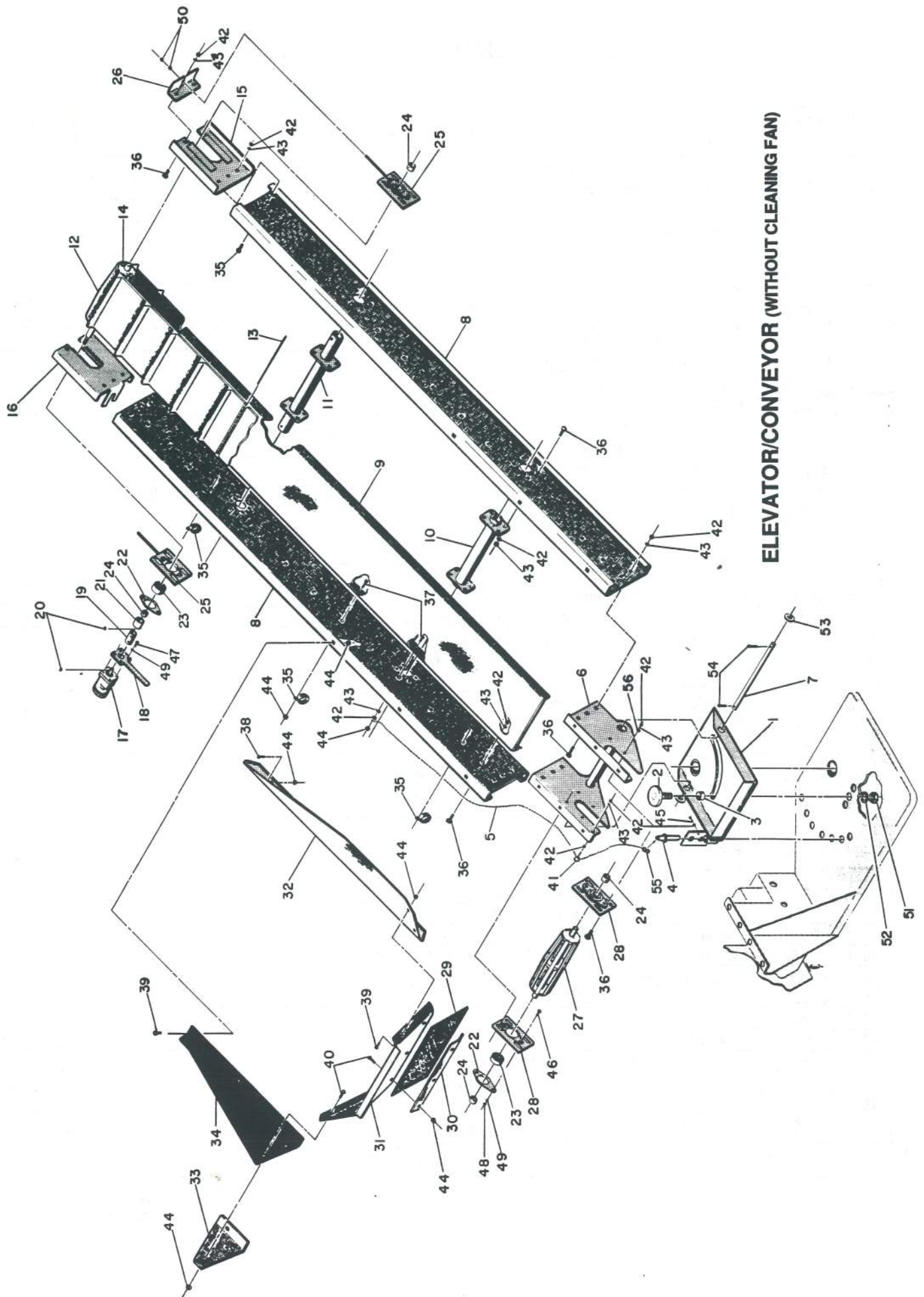
KEY	P/N	DESCRIPTION	USED
1	21280	Conveyor side, front	1
2	21281	Conveyor side, rear	1
3	21283	Conveyor floor	1
4	31346	Torque tube assembly	2
5	21284	Conveyor boot side	2
6	21286	Head section side, front (motor mount side)	1
7	21309	Head section side, rear	1
8	40263	Hydraulic motor, conveyor drive (see hydraulic system illustration for additional parts)	1
9	51255	Motor mount/torque arm	1
10	51287	Drive coupling, includes screws	1
11	93718	Woodruff key, coupling to motor & shaft, 1/4" x 1" (#808)	2
12	51254	Safety shield, drive coupling	1
13	50087	Bearing housing (flangette) 2-bolt	4
14	50103	Bearing assembly, 1 1/4" bore non-regreaseable (includes lock collar)	4
15	50102	Lock collar, 1 1/4" shaft, eccentric (light duty)	A.R.
16	21276	Bearing plate, conveyor drive	2
17	51252	Conveyor drive roll assembly	1
18	51279	Conveyor belt assembly, includes pin	1
19	51257	Lacing pin, belt	A.R.
--	21537	Skirt, conveyor belt - 2 1/2" x 36" skirt board rubber (not shown)	2
--	93845	Pop rivet - 3/16" x 1/2" long, 5/8" dia. head (not shown)	10
20	51246	Conveyor idler roll assembly	1
21	21278	Bearing plate/conveyor belt adjuster assembly	2
22	31345	Adjuster angle	2
23	93694	Cotter pin, 1/4" x 3" - cross conveyor to main frame	2
24	93163	Carriage bolt, 5/16"-18 x 3/4" grade 5	54
25	93522	Locknut, 5/16"-18 hex serrated flange	62
26	93052	Machine screw, 3/8"-16 x 3/4" grade 5	4
27	93188	Carriage bolt, 3/8"-16 x 3/4" grade 5	8
28	93453	Nut, 3/8"-16 fin. hex	8
29	93578	Lockwasher, 3/8" USS standard spring	12
30	93455	Nut, 1/2"-13 fin. hex	4



ELEVATOR/CONVEYOR (WITHOUT CLEANING FAN)

ELEVATOR/CONVEYOR (WITHOUT CLEANING FAN)

KEY	P/N	DESCRIPTION	USED
1	51244	Turntable assembly	1
2	31379	Turntable holddown assembly	1
3	31380	Turntable holddown spacer	1
4	51299	Turntable position lock pin	1
5	51308	Chain, lock pin release	1
6	31339	Elevator boot assembly	1
7	51300	Elevator pivot shaft	1
8	21269	Elevator side	2
9	21270	Elevator floor	1
10	31360	Torque tube assembly, lower	1
11	31358	Torque tube assembly, upper	1
12	51256	Elevator belt assembly, includes pin	1
13	51257	Lacing pin	A.R.
14	51252	Elevator drive roll assembly	1
15	31343	Head section side, L.H.	1
16	31340	Head section side, R.H.	1
17	40263	Hydraulic motor, elevator drive (see hydraulic system illustration for additional parts)	1
18	51255	Motor mount/torque arm	1
19	51287	Drive coupling (includes screws)	1
20	93718	Woodruff key, coupling to motor & shaft, 1/4" x 1" (#808)	2
21	51254	Safety shield, drive coupling	1
22	50087	Bearing housing (flangette) 2-bolt	4
23	50103	Bearing assembly - 1-1/4" bore non-regreaseable (includes lock collar)	4
24	50102	Lock collar, 1-1/4" bore, eccentric (light duty)	A.R.
25	21278	Bearing plate/elevator belt adjuster assembly	2
26	31345	Adjustable angle	2
27	51246	Elevator idler roll assembly	1
28	21274	Bearing plate, idler roll shaft	2
29	21341	Hopper flap	1
30	21342	Pannel, hopper flap back-up	1
31	21337	Pannel, hopper rear	1
32	21338	Panel, hopper R.H.	1
33	21340	Panel, rubber side back-up	1
34	21339	Panel, hopper L.H. (rubber)	1
35	93882	Loom clip, 1-1/2" (hose retainer)	3
36	93163	Carriage bolt - 5/16" NC x 3/4" grade 5	66
37	93164	Carriage bolt - 5/16" NC x 1" grade 5	4
38	93379	Machine screw - 5/16" NC x 3/4" grade 5	3
39	93379	Machine screw - 5/16" NC x 5/8" truss head, serrated flange, self-locking, grade 5	5
40	93380	Machine screw - 5/16" NC x 3/4" truss head, serrated flange, self-locking, grade 5	10
41	93391	Eye bolt - 5/16" NC x 1-1/8" long	1
42	93452	Nut - 5/16" NC hex	75
43	93577	Lockwasher - 5/16" split ring	73
44	93522	Locknut - 5/16" NC, hex serrated flange, self locking	26
45	93028	Machine screw - 5/16" NC x 1" hex head, grade 5	1
46	93188	Carriage bolt - 3/8" NC x 3/4" grade 5	8
47	93052	Machine screw - 3/8" NC x 3/4" grade 5	4
48	93453	Nut - 3/8" NC hex	8
49	93578	Lockwasher - 3/8" split ring	12

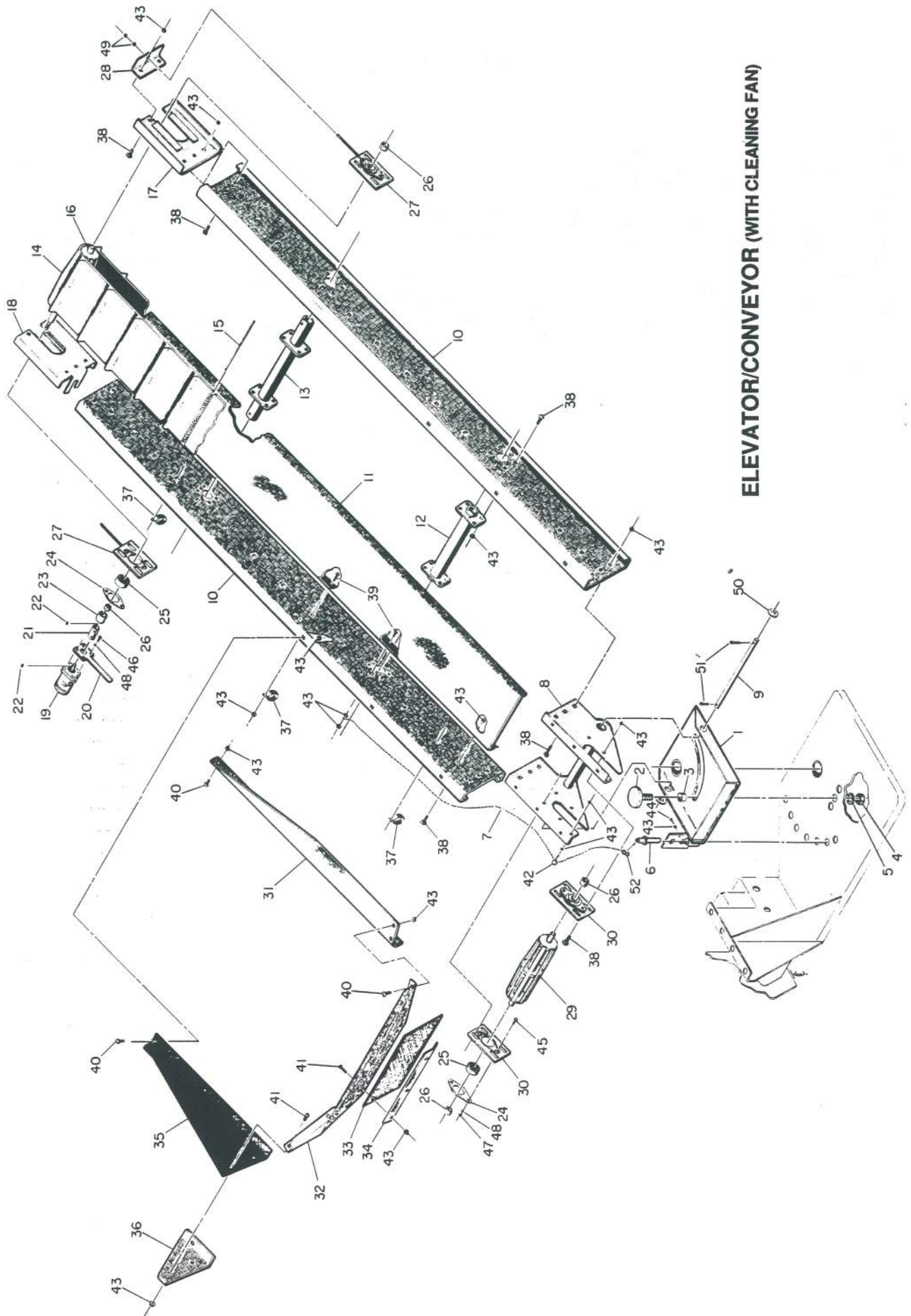


ELEVATOR/CONVEYOR (WITHOUT CLEANING FAN)

ELEVATOR/CONVEYOR (WITHOUT CLEANING FAN)

(continued)

KEY	P/N	DESCRIPTION	USED
50	93455	Nut - 1/2" NC hex	4
51	93458	Nut - 3/4" NC hex	1
52	93583	Lockwasher - 3/4" split ring	1
53	93642	Machinery washer - 1" x 10 GA.	2
54	93690	Cotter pin - 1/4" x 2"	2
55	93895	"S" hook, pin release chain to pin	1
56	93602	Flatwasher - 5/16" nominal I.D., wrought	1

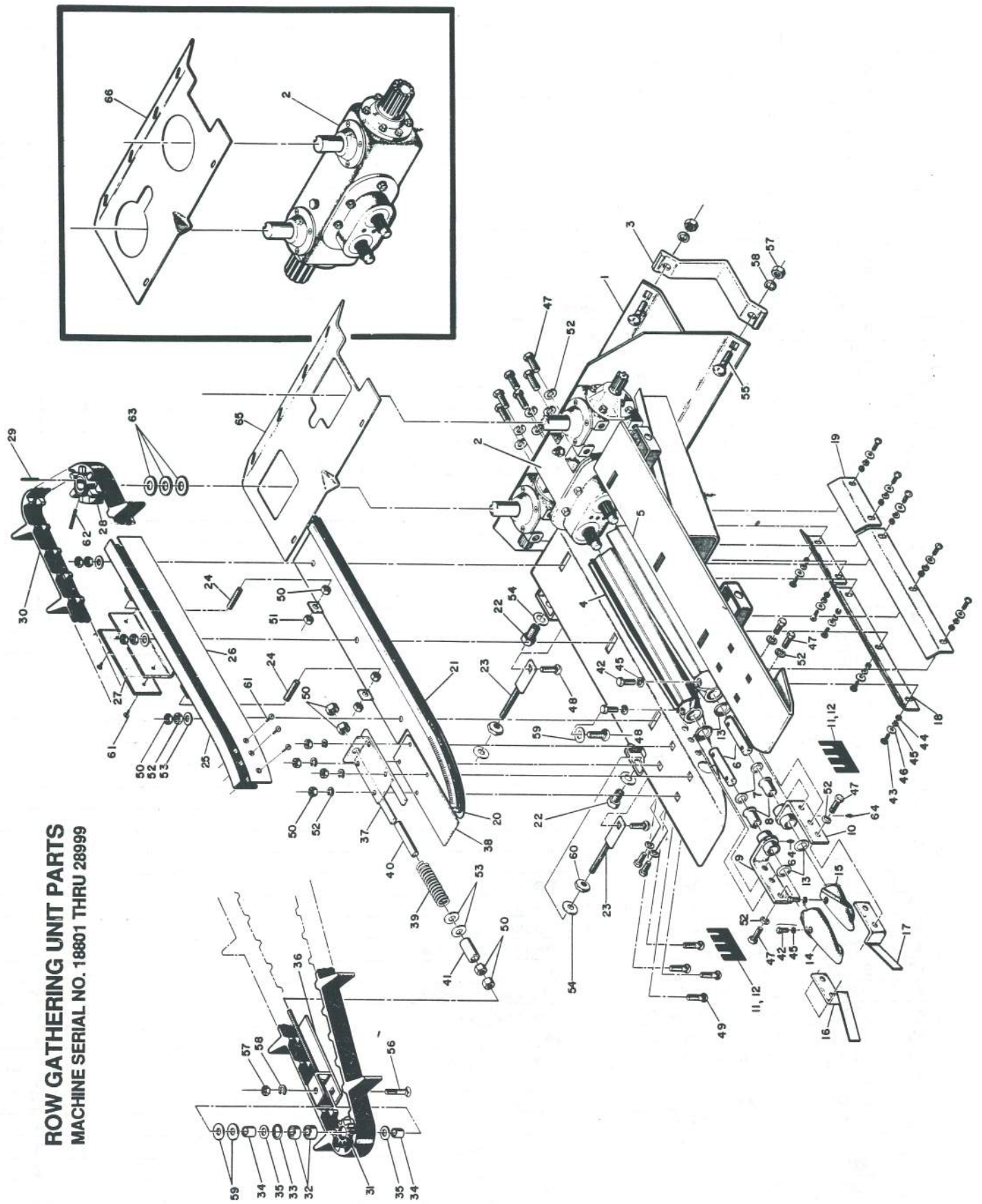


ELEVATOR/CONVEYOR (WITH CLEANING FAN)

ELEVATOR/CONVEYOR (WITH CLEANING FAN)

KEY	P/N	DESCRIPTION	USED
1	51244	Turntable assembly	1
2	31379	Holddown, turntable	1
3	31380	Spacer, holddown	1
4	93458	Nut, 3/4"-10 fin. hex	1
5	93583	Lockwasher, 3/4" USS standard spring	1
6	51299	Turntable position lock pin	1
7	51308	Chain, lock pin release	1
8	31339	Elevator boot assembly	1
9	51300	Elevator pivot shaft	1
10	21269	Elevator side	2
11	21270	Elevator floor	1
12	31360	Torque tube assembly, lower	1
13	31358	Torque tube assembly, upper	1
14	51256	Conveyor belt assembly (includes pin)	1
15	51257	Lacing pin, conveyor belt	A.R.
16	51252	Conveyor drive roll assembly	1
17	31343	Head section side assembly, R.H.	1
18	31340	Head section side assembly, L.H. (motor side)	1
19	40263	Hydraulic motor, conveyor drive (see hydraulic system illustration for additional parts)	1
20	51255	Motor mount/torque arm	1
21	51287	Drive coupling (includes screws)	1
22	93718	Woodruff key, coupling to motor and drive roll shaft, 1/4" x 1" (#808)	2
23	51254	Safety shield, drive coupling	1
24	50087	Bearing housing (flangette) 2-bolt	4
25	50103	Bearing assembly, 1 1/4" bore non-regreaseable (includes lock collar)	4
26	50102	Lock collar, 1 1/4" bore, eccentric (light duty)	A.R.
27	21278	Bearing plate/conveyor belt adjuster assembly	2
28	31345	Angle, adjuster	2
29	51246	Conveyor idler roll assembly	1
30	21274	Bearing plate, idler shaft	2
31	21484	Hopper panel, R.H.	1
32	21483	Hopper panel, rear	1
33	21341	Hopper/conveyor spill flap	1
34	21342	Panel, flap back-up	1
35	21485	Hopper panel, L.H. (rubber)	1
36	21486	Panel, rubber back-up, L.H.	1
37	93882	Loom clip, 1/2" (hose retainer)	3
38	93163	Carriage bolt, 5/16"-18 x 3/4" grade 5	66
39	93164	Carriage bolt, 5/16"-18 x 1" grade 5	4
40	93379	Machine screw, 5/16"-18 x 5/8" truss head, grade 5	6
41	93380	Machine screw, 5/16"-18 x 3/4" truss head, grade 5	10
42	93391	Eye bolt, 5/16"-18 x 1 1/8" long	1
43	93522	Locknut, 5/16"-18 hex serrated flange, self locking	101
44	93028	Machine screw, 5/16"-18 x 1" hex head, grade 5	1
45	93188	Carriage bolt, 3/8"-16 x 3/4" grade 5	3
46	93052	Machine screw, 3/8"-16 x 3/4" hex head, grade 5	4
47	93453	Nut, 3/8"-16 fin. hex	8
48	93578	Lockwasher, 3/8" USS standard spring	12
49	93455	Nut, 1/2"-13 fin. hex	4
50	93642	Machinery washer, 1" shaft x 10 ga. (wide rim)	2
51	93690	Cotter pin, 1/4" x 2"	2
52	93895	"S" hook, pin release chain to pin	1

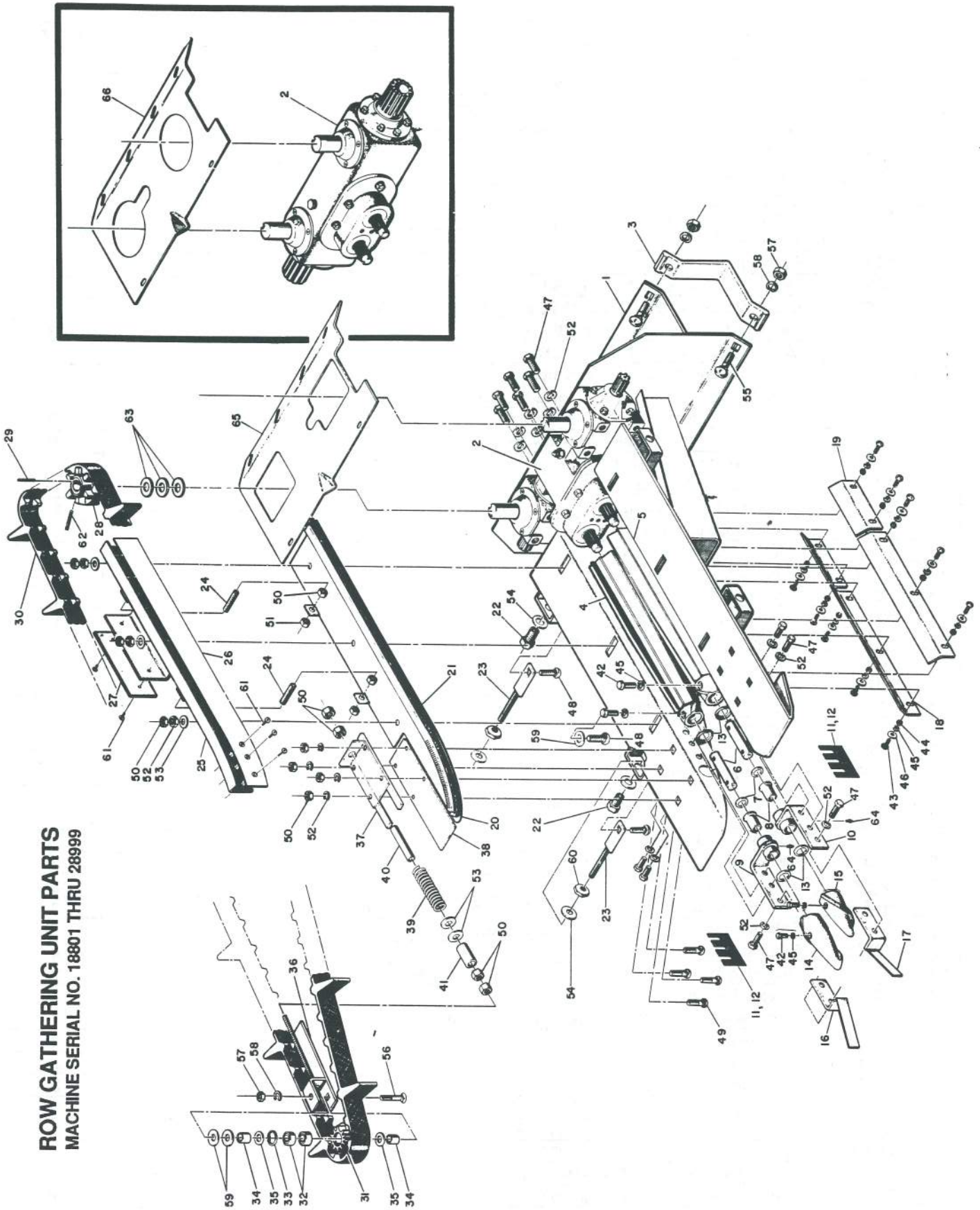
ROW GATHERING UNIT PARTS
MACHINE SERIAL NO. 18801 THRU 28999



ROW GATHERING UNIT PARTS
MACHINE SERIAL NO. 18801 THRU 28999

KEY	P/N	DESCRIPTION	USED
1	10255	Row frame assembly	1
2	51305	Row gathering unit gearbox assembly, 3-piece housing	1
2	51146	Row gathering unit gearbox assembly, one piece housing (see separate illustrations in this manual for parts breakdown on both types of gearbox)	1
3	30340	Clamp, row frame mount	2
4	50502	Knife roll assembly, R.H.	1
5	50503	Knife roll assembly, L.H.	1
6	50573	Shaft, knife roll lower	2
7	93640	Thrust washer	2
8	50283	Bushing	2
9	30365	Mount, lower knife roll bushing, R.H.	1
—	50550	Mount assembly, lower knife roll bushing, R.H. - complete (includes 50283 bushing and 93802 grease fitting assembled)	A.R.
10	30366	Mount, lower knife roll bushing, L.H.	1
—	50551	Mount assembly, lower knife roll bushing, L.H. - complete (includes 50283 bushing and 93802 grease fitting assembled)	A.R.
11	50513	Shim, .062 - mount assembly to row frame	A.R.
12	50514	Shim, .125 - mount assembly to row frame	A.R.
13	50578	Seal, lower knife roll shaft	4
14	50432	Nose spiral, R.H. (long)	1
15	50433	Nose spiral, L.H. (short)	1
16	30391	Guard, nose spiral - R.H.	1
17	30392	Guard, nose spiral - L.H.	1
18	30317	Weed guard, lower	2
19	30436	Weed guard, upper	2
20	21277	Stripper plate assembly, R.H.	1
—	21279	Stripper plate assembly, L.H. (not shown)	1
21	51237	Cushion, stripper plate	2
22	51226	Adjuster nut, stripper plate	4
23	30346	Adjuster, stripper plate	4
24	30360	Stud, belt guide adjuster	1
25	30679	Belt guide assembly, R.H.	1
—	30680	Belt guide assembly, L.H. (not shown)	1
26	50825	Wear strip, belt guide front	2
27	50826	Wear strip, belt guide back	2
28	51074	Sprocket, gathering belt drive	2
29	50067	Key - 1/4" square x 1-1/2" long	2
30	50812	Gathering belt	2
31	50811	Belt idler sprocket (does not include bearings and retaining ring)	2
—	51023	Belt idler sprocket assembly (includes bearings and retaining ring)	2
32	50823	Bearing, idler sprocket	4
33	50824	Retaining ring	2
34	51284	Spacer, belt idler	4
35	93636	Machine washer - 5/8" shaft dia. x 14 Ga., wide rim	4
36	30678	Idler yoke assembly	2
37	30359	Yoke guide assembly	2
38	30380	Wear plate, yoke guide	2
39	50511	Spring, gathering belt tension	2
40	50496	Spacer, travel limiter - 1/2" I.D. x 3-3/8" long	2
41	50498	Spacer, tension adjustment - 1/2" I.D. x 1" long	2
42	93433	Machine screw - 3/8" NC x 1-1/4" hex head, grade 8	4
43	93189	Carriage bolt - 3/8" NC x 1" grade 5	10
44	93453	Nut - 3/8" NC hex	10

ROW GATHERING UNIT PARTS
MACHINE SERIAL NO. 18801 THRU 28999

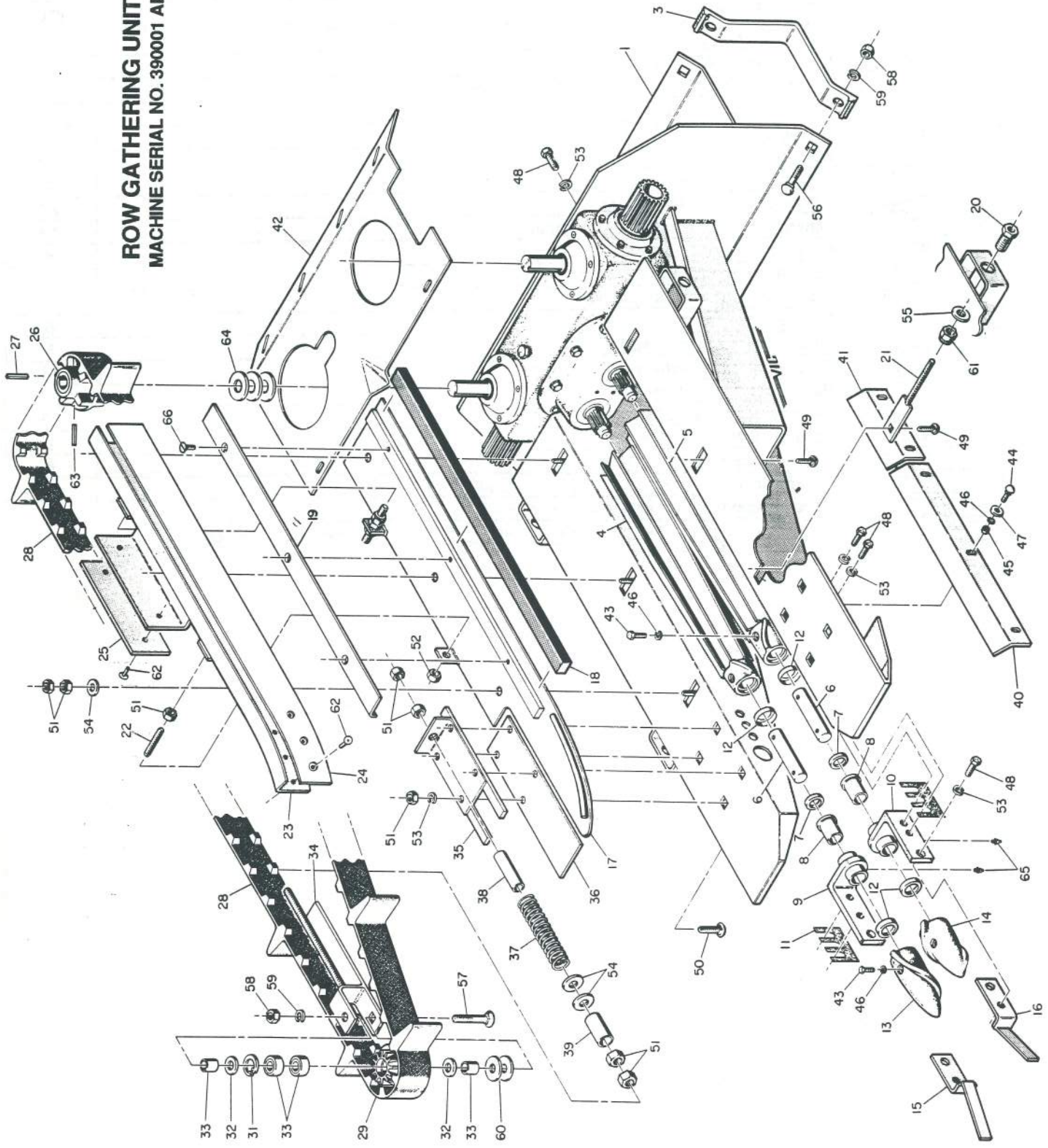


ROW GATHERING UNIT PARTS
MACHINE SERIAL NO. 18801 THRU 28999

(continued)

KEY	P/N	DESCRIPTION	USED
45	93578	Lockwasher - 3/8" split spring	14
46	93603	Flatwasher - 3/8" nominal I.D., wrought	10
47	93078	Machine screw - 1/2" NC x 1" hex head, grade 5	12
48	93215	Carriage bolt - 1/2" NC x 1-1/2" grade 5	6
49	93216	Carriage bolt - 1/2" NC x 2" grade 5	8
50	93455	Nut - 1/2" NC hex	42
51	93505	Jam nut - 1/2" NC hex	4
52	93580	Lockwasher - 1/2" split spring	22
53	93605	Flatwasher - 1/2" nominal I.D., wrought	18
54	93606	Flatwasher - 9/16" nominal I.D., wrought	8
55	93237	Carriage bolt - 5/8" NC x 2" grade 5	6
56	93319	Plow bolt - 5/8" NC x 4" grade 5	2
57	93457	Nut - 5/8" NC hex	8
58	93582	Lockwasher - 5/8" split spring	8
59	93607	Flatwasher - 5/8" nominal I.D. wrought	14
60	93536	Nut - 5/8" NF hex elastic stop	4
61	93845	Pop rivet - 3/16" x 1/2" long, 5/8" dia. head	12
62	93758	Roll pin - 5/16" x 2" long	2
63	93626	Thrust washer, nylon - 1" nominal I.D.	6
64	93802	Grease fitting, 1/4" - 28 thread, straight 45/64" long	4
65	21324	Cover, gearbox - used with three piece gearbox	1
66	21372	Cover, gearbox - used with one piece gearbox (round drive tower clearance holes)	1

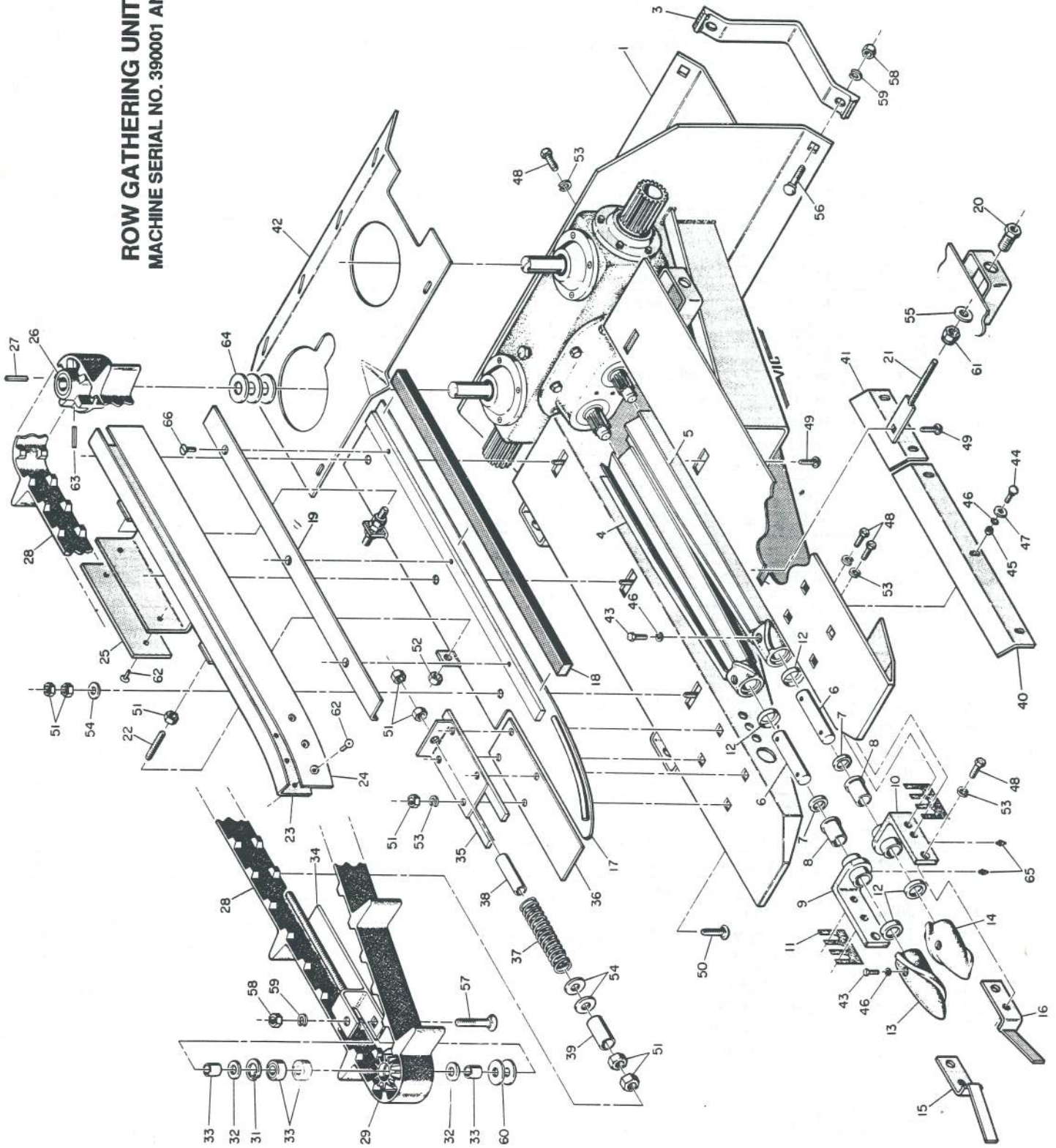
**ROW GATHERING UNIT PARTS
MACHINE SERIAL NO. 390001 AND HIGHER**



ROW GATHERING UNIT PARTS
MACHINE SERIAL NO. 390001 AND HIGHER

KEY	P/N	DESCRIPTION	USED
1	10255	Row frame assembly	1
2	51482	Row gathering unit gearbox assembly (see separate illustration for internal parts)	1
3	30340	Clamp, row frame mount	2
4	50202	Knife roll assembly, R.H.	1
5	50203	Knife roll assembly, L.H.	1
6	50573	Shaft, knife roll lower	2
7	93640	Thrust washer	2
8	50283	Bushing, lower knife roll	2
9	30365	Mount, lower knife roll bushing - R.H.	1
—	50550	Mount assembly, lower knife roll bushing, R.H. - complete (includes 50283 bushing and 93802 grease fitting, assembled)	A.R.
10	30366	Mount, lower knife roll bushing - L.H.	1
—	50551	Mount assembly, lower knife roll bushing, L.H. - complete (includes 50283 bushing and 93802 grease fitting, assembled)	A.R.
11	50513	Shim, .062 - mount assembly to row frame	A.R.
11	50514	Shim, .125 - mount assembly to row frame	A.R.
12	50578	Seal, lower knife roll shaft	4
13	50432	Nose spiral, R.H. (long)	1
14	50433	Nose spiral, L.H. (short)	1
15	30391	Guard, nose spiral - R.H.	1
16	30392	Guard, nose spiral - L.H.	1
17	21437	Stripper plate assembly, R.H.	1
—	21438	Stripper plate assembly, L.H. (not shown)	1
18	51413	Cushion, stripper plate	2
19	21439	Hold-down, cushion	2
20	51226	Adjuster nut, stripper plate	4
21	30346	Adjuster, stripper plate	4
22	30360	Stud, belt guide adjuster, 1/2"-13	4
23	30679	Belt guide assembly, R.H.	1
—	30680	Belt guide assembly, L.H. (not shown)	1
24	50825	Wear strip, belt guide front	2
25	50826	Wear strip, belt guide back	2
26	51074	Sprocket, gathering belt drive	2
27	50067	Square key, 1/4" x 1 1/2" long, sprocket to shaft	2
28	50812	Gathering belt	2
29	50811	Belt idler sprocket (does not include bearings and retaining ring)	2
—	51023	Belt idler sprocket assembly (includes bearings and retaining ring)	A.R.
30	50823	Bearing, idler sprocket	4
31	50824	Retaining ring	2
32	93636	Machinery washer, 5/8" shaft dia. x 14 Ga., wide rim	4
33	51284	Spacer, belt idler	4
34	30678	Idler yoke assembly	2
35	30359	Yoke guide assembly	2
36	30380	Wear plate, yoke guide	2
37	50511	Spring, gathering belt tension	2
38	50496	Spacer, travel limiter - 1/2" I.D. x 3 3/8" long	2
39	50498	Spacer, tension adjustment - 1/2" I.D. x 1" long	2
40	30317	Weed guard, lower	2
41	30436	Weed guard, upper	2
42	21379	Cover, gearbox	1
43	93433	Machine screw, 3/8"-16 x 1 1/4" hex head, grade 8	4
44	93189	Carriage bolt, 3/8"-16 x 1" grade 5	10
45	93453	Nut, 3/8"-16 fin. hex	10

**ROW GATHERING UNIT PARTS
MACHINE SERIAL NO. 390001 AND HIGHER**

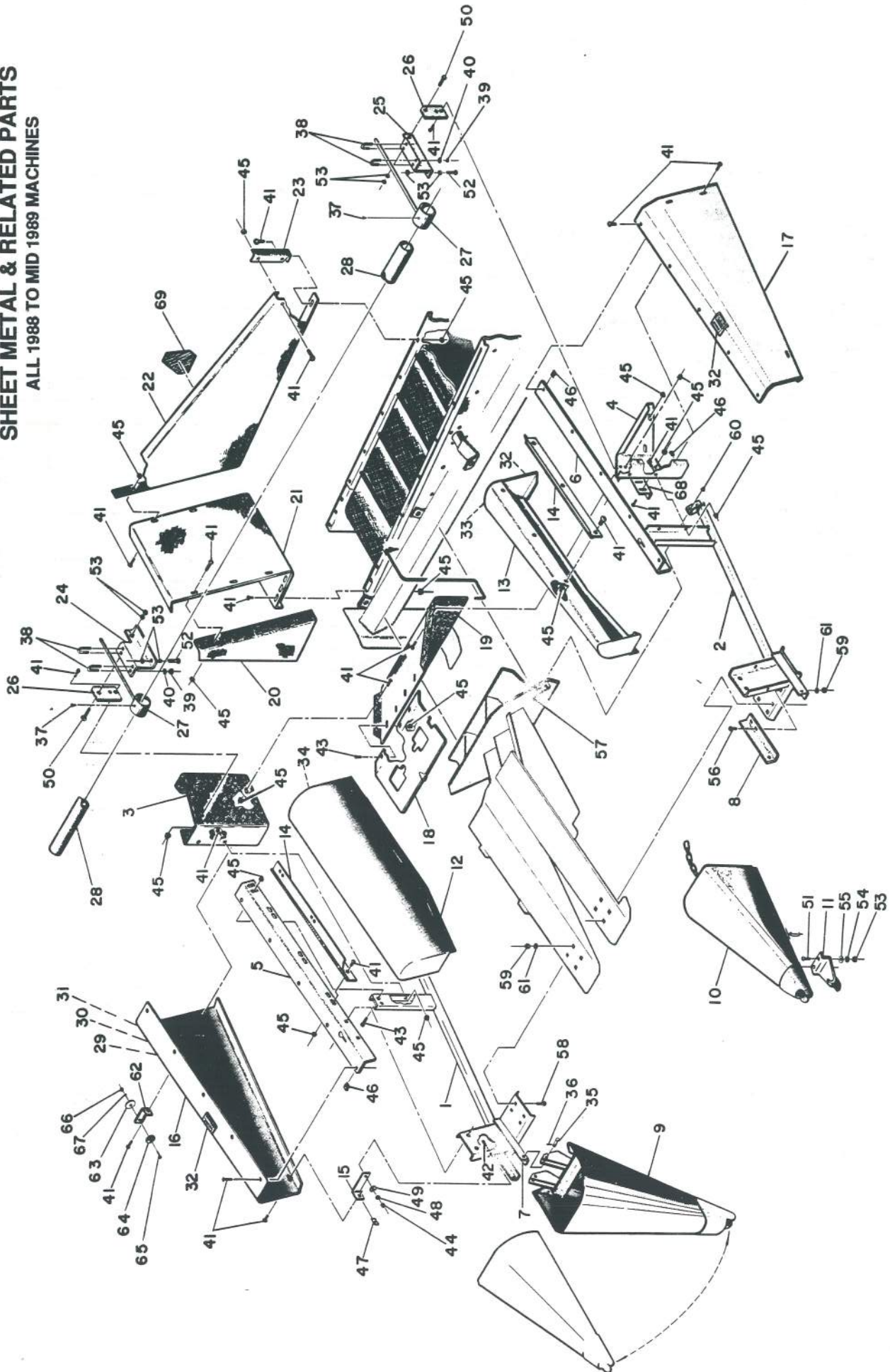


ROW GATHERING UNIT PARTS
MACHINE SERIAL NO. 390001 AND HIGHER

(continued)

KEY	P/N	DESCRIPTION	USED
46	93578	Lockwasher, 3/8" USS standard spring	14
47	93603	Flatwasher, 3/8" USS standard wrought	10
48	93078	Machine screw, 1/2"-13 x 1" hex head, grade 5	12
49	93215	Carriage bolt, 1/2"-13 x 1 1/2", grade 5	6
50	93216	Carriage bolt, 1/2"-13 x 2" grade 5	8
51	93455	Nut, 1/2"-13 fin. hex	42
52	93505	Jam nut, 1/2"-13 hex	4
53	93580	Lockwasher, 1/2" USS standard spring	22
54	93605	Flatwasher, 1/2" USS standard wrought	18
55	93606	Flatwasher, 9/16" USS standard wrought	8
56	93237	Carriage bolt, 5/8"-11 x 2" grade 5	6
57	93319	Plow bolt, 5/8"-11 x 4"	2
58	93457	Nut, 5/8"-11 fin. hex	8
59	93582	Lockwasher, 5/8" USS standard spring	8
60	93607	Flatwasher, 5/8" USS standard wrought	14
61	93536	Nut, elastic stop, 5/8"-18 hex	4
62	93845	Pop rivet, 3/16" x 1/2" long, 5/8" dia. head	12
63	93758	Roll pin, 5/16" x 2" long	2
64	93626	Thrust washer, nylon - 1" shaft dia.	6
65	93802	Grease fitting, 1/4"-28 x 45/64" long, straight	2
66	93345	Machine screw, 5/16"-18 x 3/4" hex socket countersunk head <i>12</i>	6

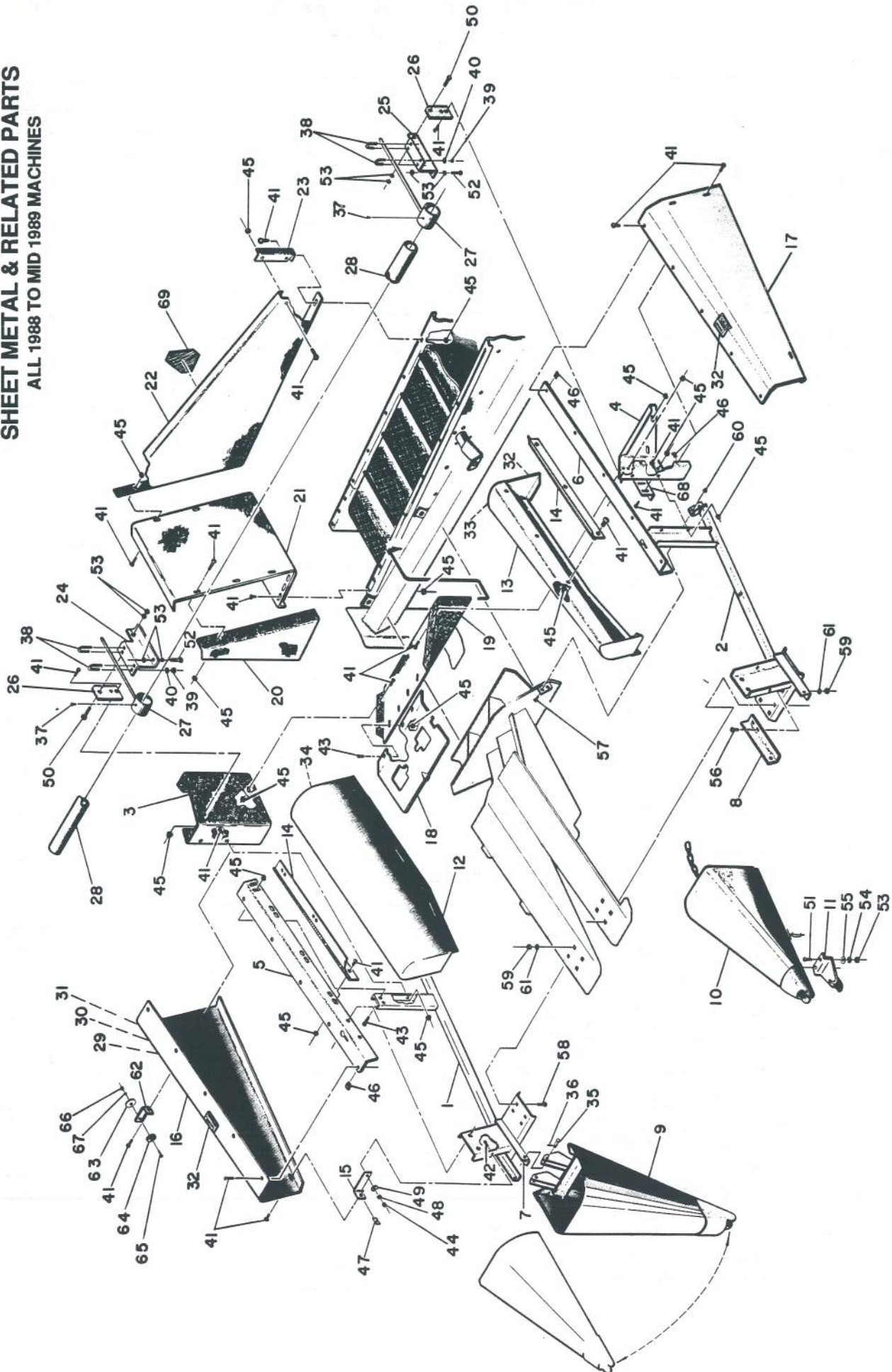
SHEET METAL & RELATED PARTS
ALL 1988 TO MID 1989 MACHINES



SHEET METAL & RELATED PARTS
ALL 1988 TO MID 1989 MACHINES

KEY	P/N	DESCRIPTION	USED
1	10247	Support frame, R.H.	1
2	10248	Support frame, L.H.	1
3	21321	Rear bulkhead, R.H.	1
4	21322	Rear bulkhead, L.H.	1
5	21313	Mount angle assembly, R.H.	1
6	21314	Mount angle assembly, L.H.	1
7	30711	Bracket, nose pivot, L.H.	1
8	30712	Bracket, nose pivot, R.H.	1
9	20777	Nose assembly, L.H.	1
10	20778	Nose assembly, R.H.	1
11	50540	Shoe, row separator nose, replaceable (not included with nose assembly)	2
12	21329	Row separator half assembly, R.H.	1
13	21330	Row separator half assembly, L.H.	1
14	31400	Hinge, row separator	2
15	30719	Brace, outer covers	2
16	21318	Outer cover, R.H.	1
17	21319	Outer cover, L.H.	1
18	-----	Gear box cover (see Row Gathering Unit Parts Illustration)	1
19	21325	Extension, gearbox cover	1
20	21345	Front panel, conveyor hopper	1
21	21344	End panel, conveyor hopper	1
22	21343	Rear panel, conveyor hopper	1
23	31403	Stiffener, hopper	1
24	31405	Mount, stalk deflector, R. H.	1
25	31406	Mount, stalk deflector, L.H.	1
26	31404	Pivot bracket, stalk deflector	2
27	31701	Support, stalk deflector	2
28	51306	Stalk deflector	1
29	90011	Decal, "BYRON" logo	1
30	90095	Decal, "Harvester"	1
31	90126	Decal, "103" model number	1
32	90020	Decal, "Danger, knife rolls move faster", etc.	3
33	90019	Decal, "Caution, no step"	1
34	90017	Decal, "Caution, keep all guards & shields in place"	2
35	93785	Clevis pin, nose pivot - 1/2" X 1 1/2" long	4
36	93672	Cotter pin - 5/32" X 1 1/2" long	4
37	93447	Drill screw - #14 X 3/4" long	2
38	93342	U - bolt - 1/4" NC X 1 1/2" long (#401)	2
39	93451	Nut - 1/4" NC hex	4
40	93576	Lockwasher - 1/4" split spring	4
41	93379	Machine screw - 5/16" NC X 5/8" truss head, grade 5, self locking	42
42	93027	Machine screw - 5/16" NC X 3/4" hex head, grade 5	11
43	93380	Machine screw - 5/16" NC X 3/4" truss head, grade 5, self locking	12
44	93452	Nut - 5/16" hex	13
45	93522	Nut - 5/16" hex, serrated flange, self locking	50
46	93545	Speed nut - 5/16" NC X .074 - .100 grip range	16
47	93546	Speed nut - 5/16" NC X .100 - .134 grip range	2
48	93577	Lockwasher - 5/16" split spring	2
49	93602	Flatwasher - 5/16" nominal I.D., wrought	2
50	93053	Machine screw - 3/8" NC X 1" hex head, grade 5	2
51	93189	Carriage bolt - 3/8" NC X 1." grade 5	4
52	93055	Machine screw - 3/8" NC X 1 1/2" hex head, grade 5	2
53	93453	Nut - 3/8" NC hex	8

SHEET METAL & RELATED PARTS
ALL 1988 TO MID 1989 MACHINES

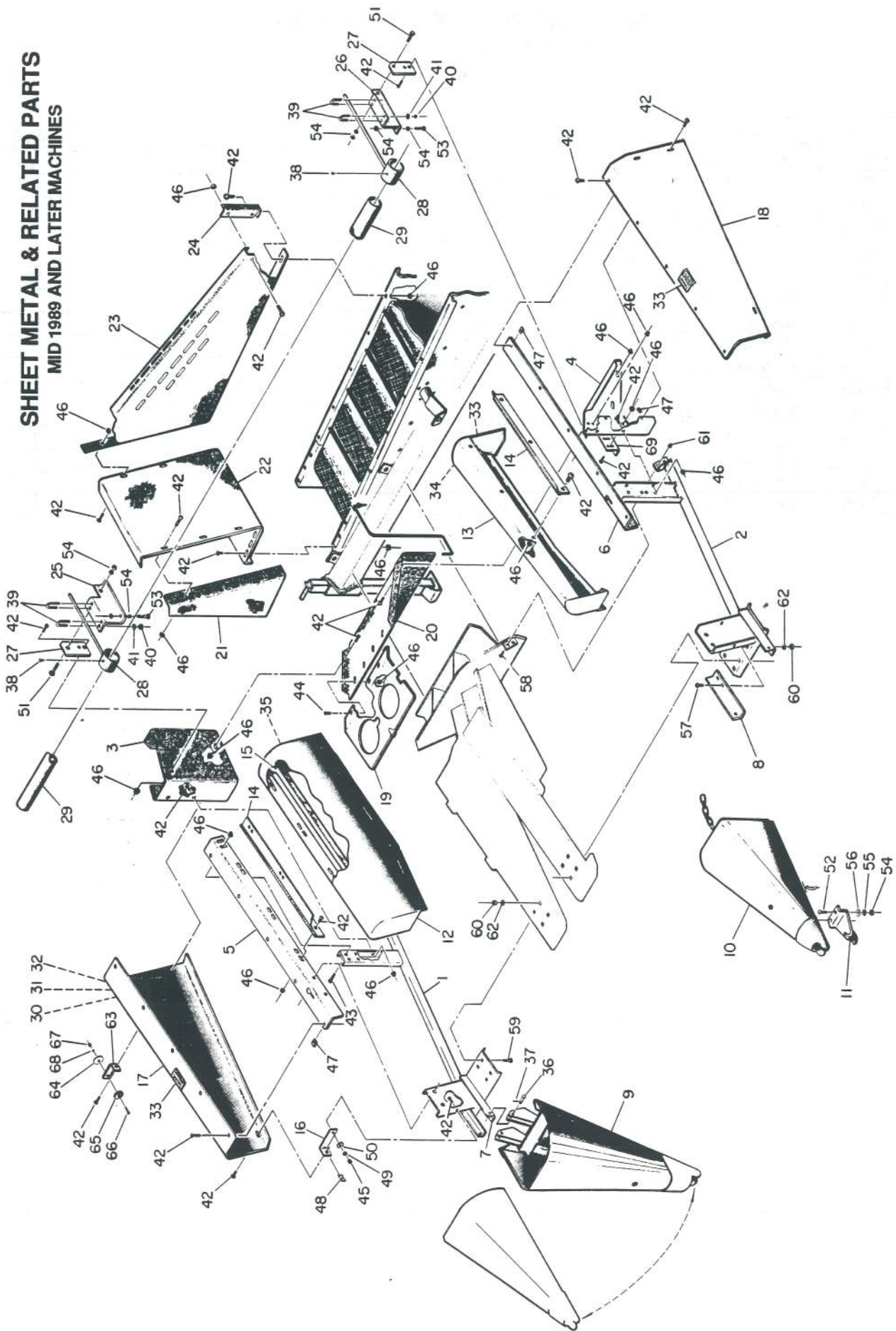


SHEET METAL & RELATED PARTS
ALL 1988 TO MID 1989 MACHINES

(continued)

KEY	P/N	DESCRIPTION	USED
54	93578	Lockwasher - 3/8" split spring	4
55	93603	Flatwasher - 3/8" nominal I.D., wrought	4
56	93214	Carriage bolt - 1/2" NC X 1" grade 5	4
57	93215	Carriage bolt - 1/2" NC X 1 1/2" grade 5	4
58	93216	Carriage bolt - 1/2" NC X 2" grade 5	8
59	93455	Nut - 1/2" NC hex	12
60	93525	Nut - 1/2" NC hex, serrated flange, self locking	4
61	93580	Lockwasher - 1/2" split spring	12
62	31415	Bracket, reflector mount	1
63	50587	Reflector, red	1
64	50586	Reflector, yellow	1
65	93440	Machine screw - #10-24 X 1" round head	1
66	93470	Nut - #10-24 hex	1
67	93593	Lockwasher - #10 split spring	1
68	21323	Cover, PTO access	1
69	90080	Decal, SMV sign	1

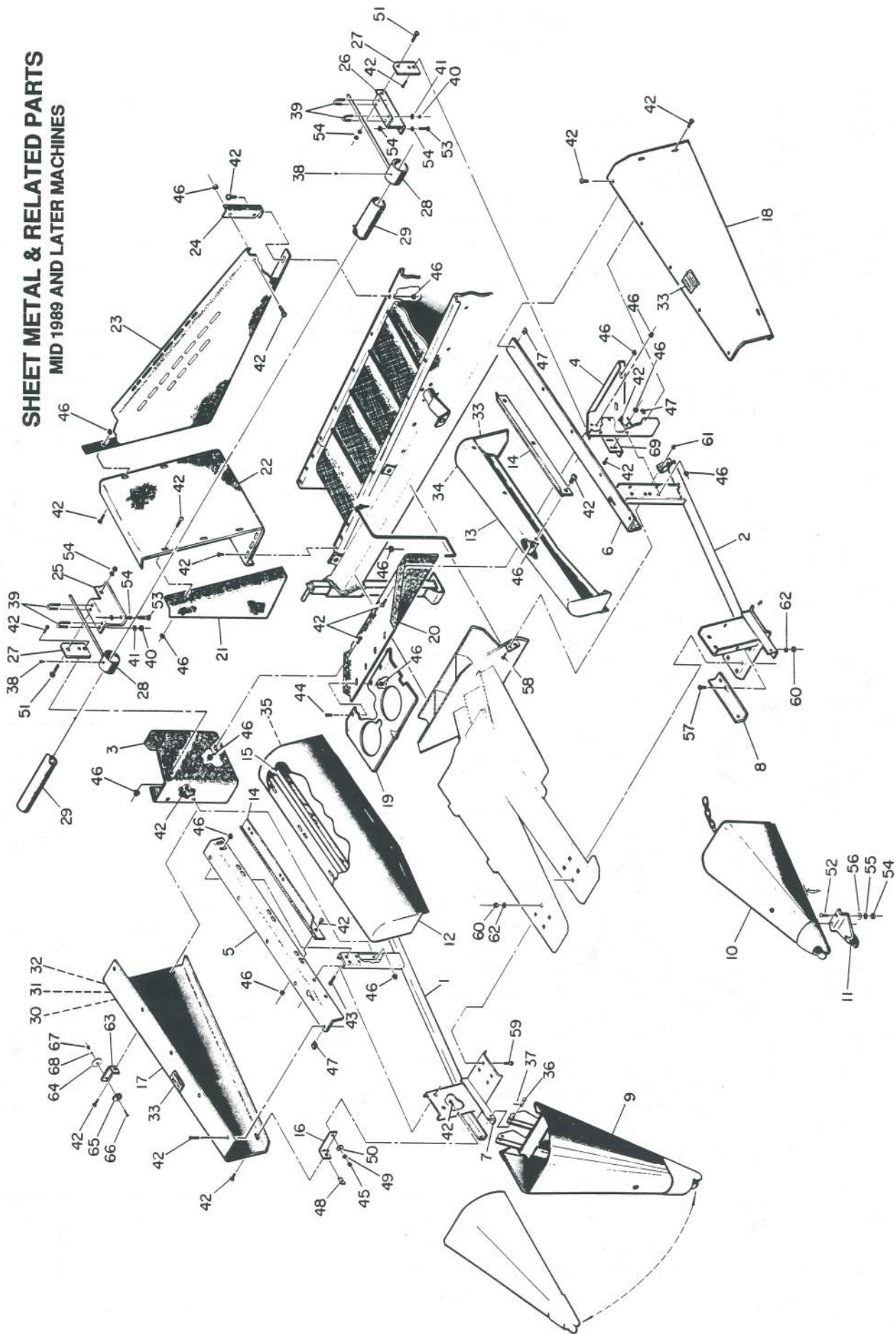
**SHEET METAL & RELATED PARTS
MID 1989 AND LATER MACHINES**



**SHEET METAL & RELATED PARTS
MID 1989 AND LATER MACHINES**

KEY	P/N	DESCRIPTION	USED
1	10247	Support Frame, R.H.	1
2	10248	Support frame, L.H.	1
3	21321	Rear bulkhead, R.H.	1
4	21322	Rear bulkhead, L.H.	1
5	21313	Mount angle, R.H.	1
6	21314	Mount angle, L.H.	1
7	30711	Bracket, nose pivot, R.H.	1
8	30712	Bracket, nose pivot, L.H.	1
9	20777	Nose assembly, R.H.	1
10	20778	Nose assembly, L.H.	1
11	50540	Shoe, row separator nose, replaceable (not included with nose assembly)	2
12	21329	Row separator half assembly, R.H.	1
13	21330	Row separator half assembly, L.H.	1
14	31400	Hinge, row separator	2
15	31670	Stiffener angle, R.H.	1
15	31671	Stiffener angle, L.H. (not shown)	1
16	30719	Brace, outer covers	2
17	21318	Outer cover, R.H.	1
18	21319	Outer cover, L.H.	1
19	21379	Gearbox cover (see Row Gathering Unit parts illustration)	1
20	21325	Extension, gearbox cover	1
21	21345	Front panel, conveyor hopper	1
22	21344	End panel, conveyor hopper	1
23	21343	Rear panel, conveyor hopper	1
24	31403	Stiffener, hopper	1
25	31405	Mount, stalk deflector, R.H.*	1
26	31406	Mount, stalk deflector, L.H.*	1
27	31404	Pivot bracket, stalk deflector*	2
28	30701	Support, stalk deflector*	2
29	51306	Stalk deflector*	1
30	90011	Decal, "BYRON" logo	1
31	90095	Decal, "HARVESTER"	1
32	90126	Decal, "103" model number	1
33	90020	Decal, "Danger, knife rolls move faster than", etc.	3
34	90019	Decal, "Caution, no step"	1
35	90017	Decal, "Safety Instructions"	2
36	93785	Clevis pin, nose pivot - 1/2" x 1 1/2" long	4
37	93672	Cotter pin, 5/32" x 1 1/2" long	4
38	93447	Drill screw, #14 x 3/4" long*	2
39	93342	U-bolt, 1/4"-20 x 1 1/2" long*	4
40	93451	Nut, 1/4"-20 fin. hex*	8
41	93576	Lockwasher, 1/4" USS standard spring*	8
42	93379	Machine screw, 5/16"-18 x 5/8" truss head, self-locking, grade 5	42
43	93027	Machine screw, 5/16"-18 x 3/4" hex head, grade 5	11
44	93380	Machine screw, 5/16"-18 x 3/4" truss head, self-locking, grade 5	12
45	93452	Nut, 5/16"-18 fin. hex	13
46	93522	Nut, 5/16-18 hex serrated flange, self locking	50
47	93545	Speed nut, 5/16"-18 x .074-.100 grip range	16
48	93546	Speed nut, 5/16"-18 x .100-.134 grip range	2
49	93577	Lockwasher, 5/16" USS standard spring	2
50	93602	Flatwasher, 5/16" USS standard wrought	2
51	93053	Machine screw, 3/8"-16 x 1" hex head, grade 5	2
52	93189	Carriage bolt, 3/8"-16 x 1", grade 5	4

**SHEET METAL & RELATED PARTS
MID 1989 AND LATER MACHINES**



SHEET METAL & RELATED PARTS

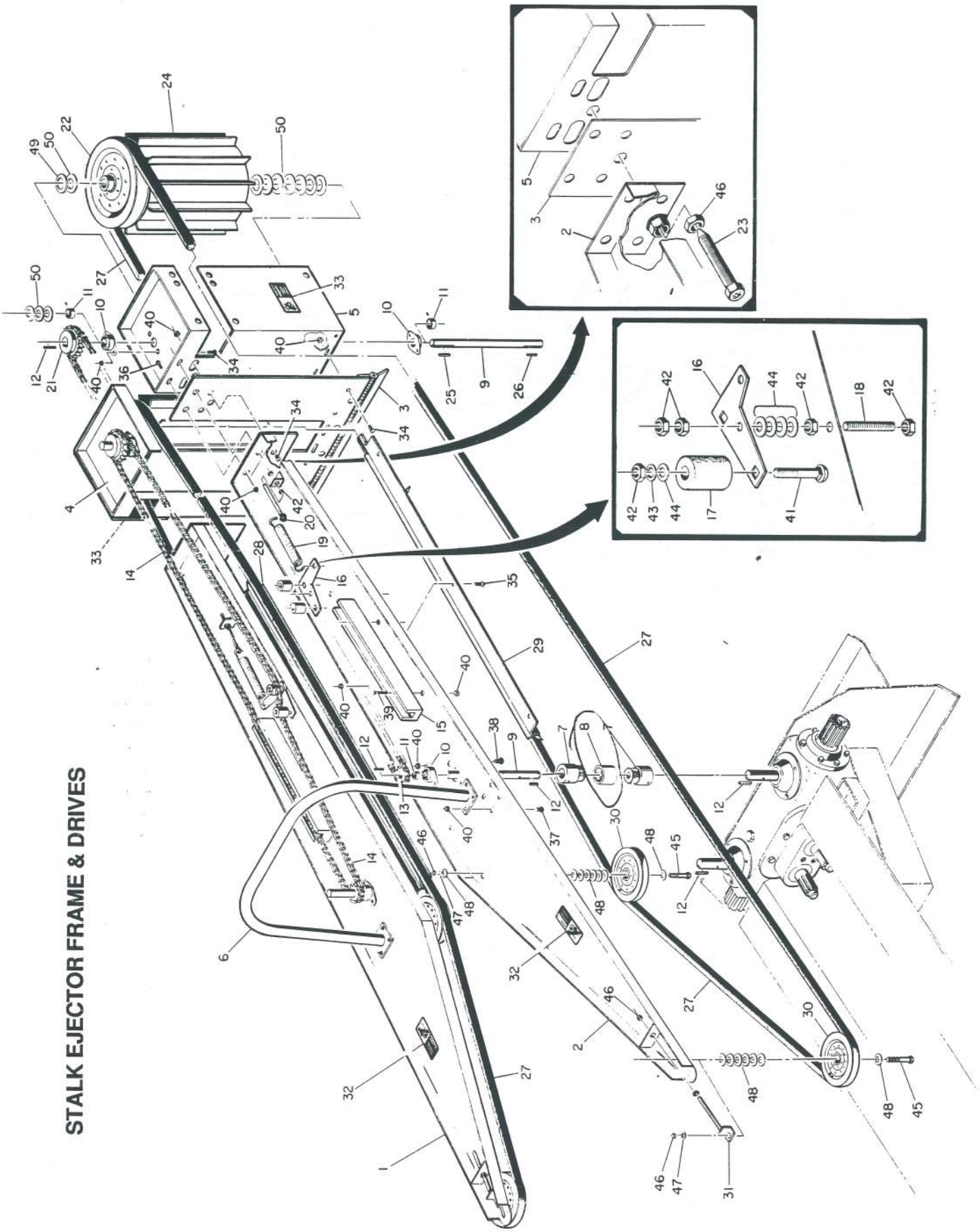
MID 1989 AND LATER MACHINES

(continued)

KEY	P/N	DESCRIPTION	USED
53	93055	Machine screw, 3/8"-16 x 1 1/2" hex head, grade 5	2
54	93453	Nut, 3/8"-16 fin. hex	8
55	93578	Lockwasher, 3/8" USS standard spring	4
56	93603	Flatwasher, 3/8" USS standard wrought	4
57	93214	Carriage bolt, 1/2"-13 x 1" grade 5	4
58	93215	Carriage bolt, 1/2"-13 x 1 1/2" grade 5	4
59	93216	Carriage bolt, 1/2"-13 x 2" grade 5	8
60	93455	Nut, 1/2"-13 fin. hex	12
61	93525	Nut, 1/2"-13 hex serrated flange, self locking	4
62	93580	Lockwasher, 3/8" USS standard spring	12
63	31415	Bracket, reflector mount	1
64	50587	Reflector, red	1
65	50586	Reflector, amber	1
66	93440	Machine screw, 10-24 x 1" round head	1
67	93470	Nut, 10-24 fin. hex	1
68	93593	Lockwasher, #10 USS standard spring	1
69	21323	Cover, drive shaft access	1

*Not used when stalk ejector is installed.

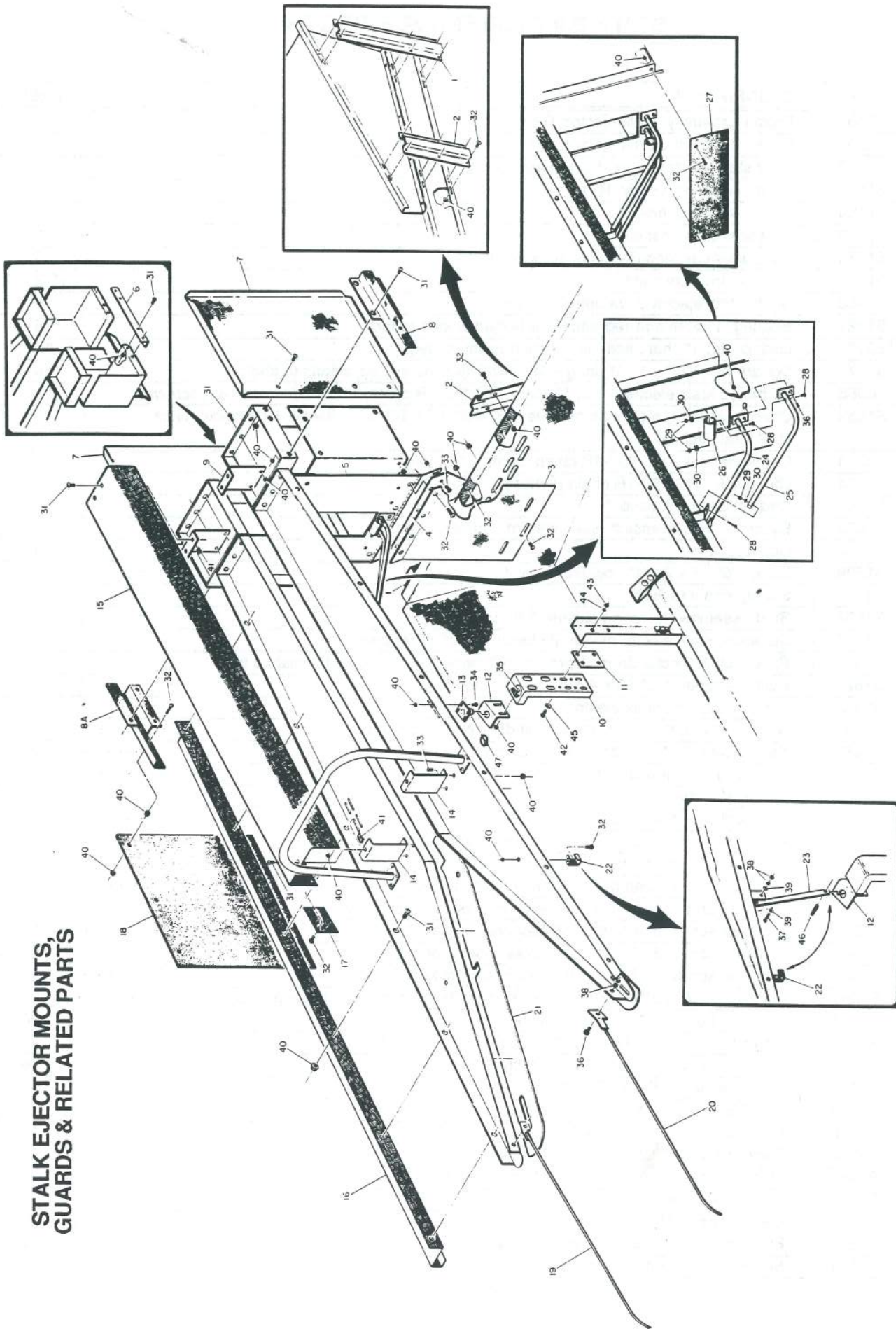
STALK EJECTOR FRAME & DRIVES



STALK EJECTOR FRAME & DRIVES

KEY	P/N	DESCRIPTION	USED
1	10302	Frame assembly, stalk ejector, R.H.	1
2	10303	Frame assembly, stalk ejector, L.H.	1
3	21463	Rear stalk ejector support panel assembly	1
4	21458	Drum mount assembly, R.H.	1
5	21459	Drum mount assembly, L.H.	1
6	31576	Spreader tube assembly	1
7	51455	Hub, drive coupling (includes set screw)	4
8	51456	Sleeve, drive coupling	2
9	51458	Shaft, stalk ejector drive and drum main	4
10	51421	Bearing, 1" bore non-regreaseable (includes lock collar)	6
11	50135	Lock collar, 1" shaft, eccentric (includes set screw)	A.R.
12	50575	Square key, 1/4" x 1 1/4" long - flex coupling hubs and sprockets to shaft	8
13	50555	Sprocket, stalk ejector drive, 12 tooth, RC #50-1R chain, 1" bore (includes set screws)	2
14	51459	Chain assembly, stalk ejector drive - RC #50-1R x 145 + 2 offset & 1 connector links (148 total pitches)	2
—	50233	Connector link - RC #50-1R chain (spring clip type)	A.R.
—	50234	Offset link - RC #50-1R chain (cotter pin type)	A.R.
15	51466	Chain slide block (wood)	2
16	31534	Bellcrank, chain tension (see inset for additional parts)	2
17	50397	Chain guide	4
18	31538	Stud, 3/8"-16 x 2 1/4" - bellcrank pivot	2
19	51417	Spring, chain tension	2
20	31537	Stud assembly, tension adjuster, 3/8"-16 thread	2
21	51437	Sprocket, stalk ejector driven -22 tooth, RC #50-1R chain	2
22	51428	Pulley, stalk ejector drum, 1 groove, "C" section, 8 1/2 O.D., 1" finished bore	2
23	31621	Pulley scraper, 1/2"-13 x 4 5/8" long, pointed bolt	2
24	51463	Drum assembly, stalk ejector	2
25	50547	Square key, 1/4" x 1 3/4" long - belt drive pulley to shaft	2
26	51487	Square key, 1/4" x 1" long - drum to shaft	2
27	51462	Hex belt, stalk gripper - "C" 162	2
28	31570	Belt guide assembly, R.H.	1
29	31571	Belt guide assembly, L.H.	1
30	51429	Pulley, belt idler, 1 groove, "C" section, 7 5/16" O.D., 1/2" bore	4
31	31533	Belt tensioner assembly	2
32	90163	Decal, "Danger; keep hands away from moving belts"	2
33	90162	Decal, "Danger; revolving stalk ejectors, keep hands away"	2
34	93026	Machine screw, 5/16"-18 x 1/2" hex head, grade 5	16
35	93379	Machine screw, 5/16"-18 x 5/8" turss head, grade 5	6
36	93027	Machine screw, 5/16"-18 x 3/4" hex head, grade 5	8
37	93384	Machine screw, 5/16"-18 x 1" hex serrated flange head, self-locking, grade 5	8
38	93164	Carriage bolt, 5/16"-18 x 1" grade 5	4
39	93167	Carriage bolt, 5/16"-18 x 1 3/4" grade 5	4
40	93522	Locknut, 5/16"-18 hex serrated flange	46
41	93197	Carriage bolt, 3/8"-16 x 3" grade 5	4
42	93453	Nut, 3/8"-16 fin. hex	16
43	93578	Lockwasher, 3/8" USS standard spring	4
44	93603	Flatwasher, 3/8" USS standard wrought	12
45	93084	Machine screw, 1/2"-13 x 2 1/2" hex head, grade 5	4
46	93455	Nut, 1/2"-13 fin. hex	8
47	93580	Lockwasher, 1/2" USS standard spring	4
48	93605	Flatwasher, 1/2" USS standard wrought	30
49	93644	Machinery washer, 1" shaft, 14 ga., thin rim	2
50	93642	Machinery washer, 1" shaft, 10 ga., thin rim	26

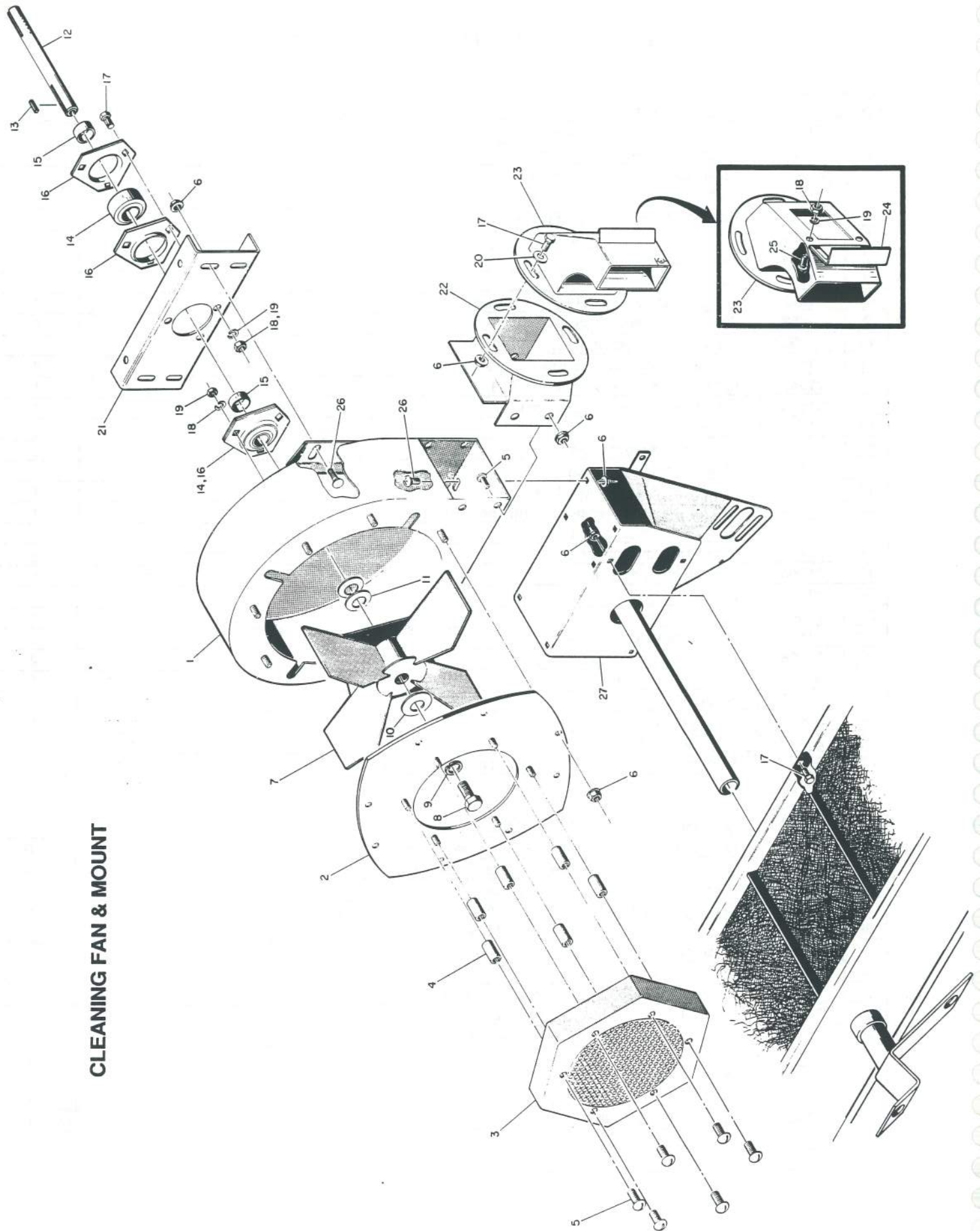
STALK EJECTOR MOUNTS, GUARDS & RELATED PARTS



STALK EJECTOR MOUNTS, GUARDS & RELATED PARTS

KEY	P/N	DESCRIPTION	USED
1	31530	Hopper stiffener, outer (long)	1
2	31529	Hopper stiffener inner (short)	1
3	31528	Stalk ejector support, inner rear	1
4	31527	Stalk ejector support, outer rear	1
5	21463	Rear stalk ejector support panel assembly	1
6	31624	Brace, drum mount rear	1
7	21544	Ejector drum shield	2
8	21543	Guard, ejector drum, L.H.	1
—	21542	Guard, ejector drum, R.H. (not shown)	1
9	21453	Chain guard mount, upper	2
10	31531	Stalk ejector support, front	2
11	31535	Spacer, front support to row frame	2
12	31547	Mount angle, stalk ejector front L.H.	1
—	31546	Mount angle, stalk ejector front R.H.	1
13	31542	Locator pin, front	2
14	21452	Chain guard mount, lower	2
15	21449	Chain guard, stalk ejector	2
16	21513	Belt guard, stalk ejector, R.H.	1
—	21514	Belt guard, stalk ejector, L.H. (not shown)	1
17	21460	Filler plate, chain guard	2
18	21462	Side flap, stalk ejector	2
19	31590	Stalk guide rod, R.H.	1
20	31591	Stalk guide rod, L.H.	1
21	21540	Leaf deflector	2
22	31586	Hanger bracket, prop rod	2
23	31585	Prop rod, stalk ejector frame	2
24	31582	Stripper bar, R.H.	1
25	31583	Stripper bar, L.H.	1
26	31584	Ear stripper tube	1
27	21473	Flap, ear cushion	1
28	93473	Machine screw, 1/4"-20 x 1 1/4" hex socket button head, grade 5	4
29	93451	Nut, 1/4"-20 fin. hex	4
30	93576	Lockwasher, 1/4" USS standard spring	4
31	93378	Machine screw, 5/16"-18 x 1/2" truss head, grade 5	44
32	93379	Machine screw, 5/16"-18 x 5/8" truss head, grade 5	40
33	93380	Machine screw, 5/16"-18 x 3/4" truss head, grade 5	20
34	93163	Carriage bolt, 5/16"-18 x 3/4" grade 5	8
35	93164	Carriage bolt, 5/16"-18 x 1" grade 5	4
36	93028	Machine screw, 5/16"-18 x 1 hex head, grade 5	4
37	93030	Machine screw, 5/16"-18 x 1 1/2" hex head, grade 5	2
38	93452	Nut, 5/16"-18 hex	8
39	93602	Flatwasher, 5/16" USS standard, wrought	4
40	93522	Locknut, 5/16"-18 hex serrated flange	104
41	93545	Speed nut, 5/16"-18 x .074-.100 grip range	6
42	93053	Machine screw, 3/8"-16 x 1" hex head, grade 5	8
43	93453	Nut, 3/8"-16 fin hex	8
44	93578	Lockwasher, 3/8" USS standard spring	8
45	93603	Flatwasher, 3/8" USS standard wrought	8
46	93775	Roll pin, 3/8" dia. x 2" long	2
47	51236	Lynch pin, 1/4" dia.	2

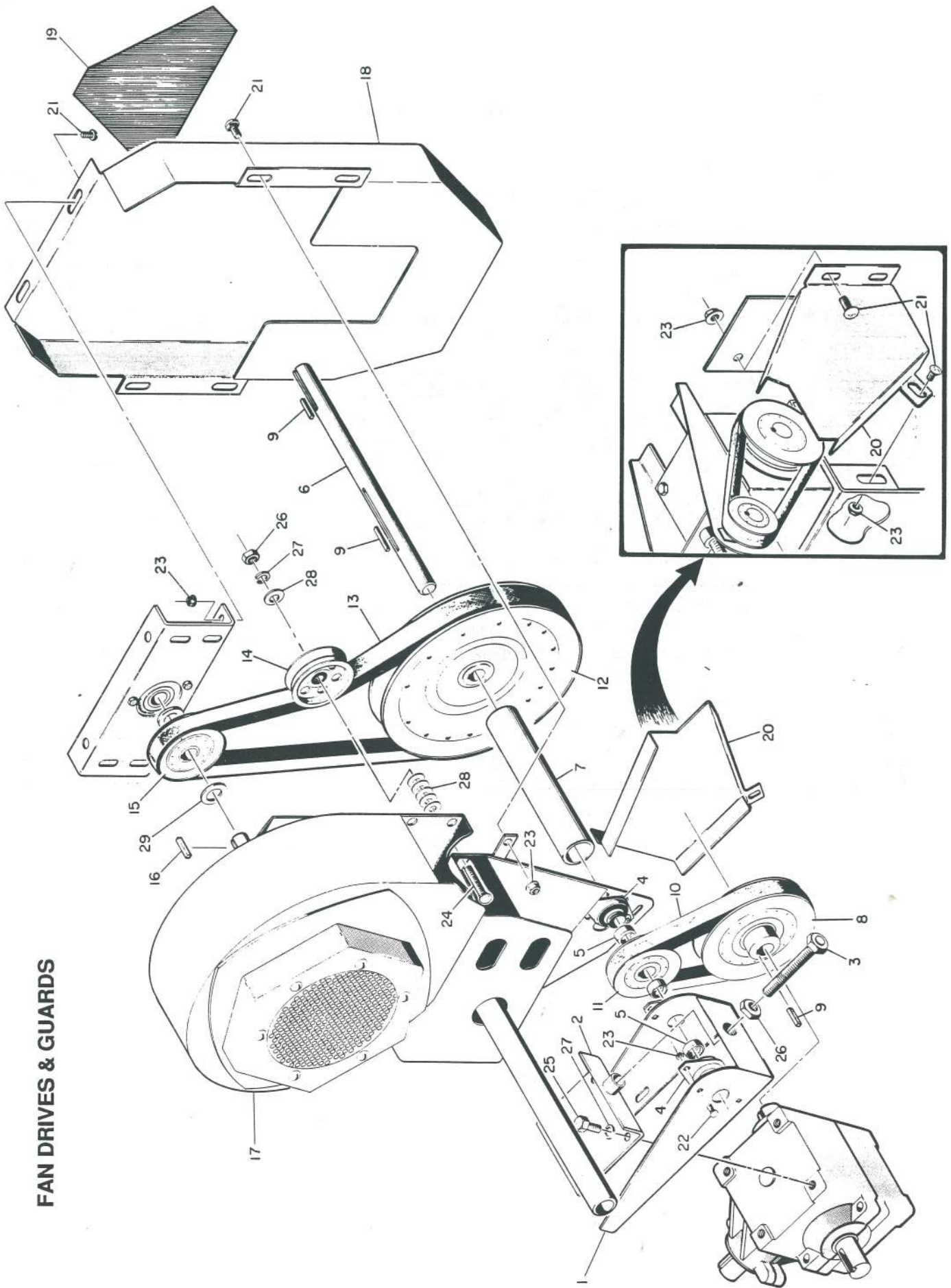
CLEANING FAN & MOUNT



CLEANING FAN AND MOUNT

KEY	P/N	DESCRIPTION	USED
A	60060	Cleaning fan assembly complete (includes items 1-26)	A.R.
1	31596	Fan housing assembly	1
2	21507	Cover plate	1
3	21478	Intake guard	1
4	93532	Stand off nut, 5/16"-18 x 1 11/32" long	6
5	93379	Machine screw, 5/16"-18 x 5/8" hex serrated flange head, self-locking, grade 5	10
6	93522	Locknut, 5/16"-18 hex, serrated flange	28
7	51415	Fan	1
8	93070	Machine screw, 3/8"-24 x 1 1/4" hex head, grade 5	1
9	93578	Lockwasher, 3/8" USS standard spring	1
10	93625	Washer, special - 3/8" x 2 1/8" O.D. x 12 ga.	1
11	93642	Machinery washer, 1" shaft dia. x 10 ga., narrow rim	2
12	51497	Shaft, fan	1
13	50418	Key, 1/4" square x 2" long, fan to shaft	1
14	50013	Bearing, 1" bore non-regreaseable (includes lock collar)	2
15	50135	Lock collar - 1" shaft, eccentric (includes set screw)	A.R.
16	50014	Bearing housing (flangette) 1" bore 3-bolt	4
17	93027	Machine screw, 5/16"-18 x 3/4" hex head, grade 5	13
18	93452	Nut, 5/16"-18 fin. hex	8
19	93577	Lockwasher, 5/16" USS standard spring	8
20	93602	Flatwasher, 5/16" USS standard wrought	4
21	31594	Bearing mount channel	1
22	31604	Transition	1
23	31605	Nozzle, fan	1
24	21503	Air bleed gate	1
25	93378	Machine screw, 5/16"-18 x 1/2" truss head, grade 5	2
26	93163	Carriage bolt, 5/16"-18 x 3/4" grade 5	8
27	31600	Fan mount assembly	1

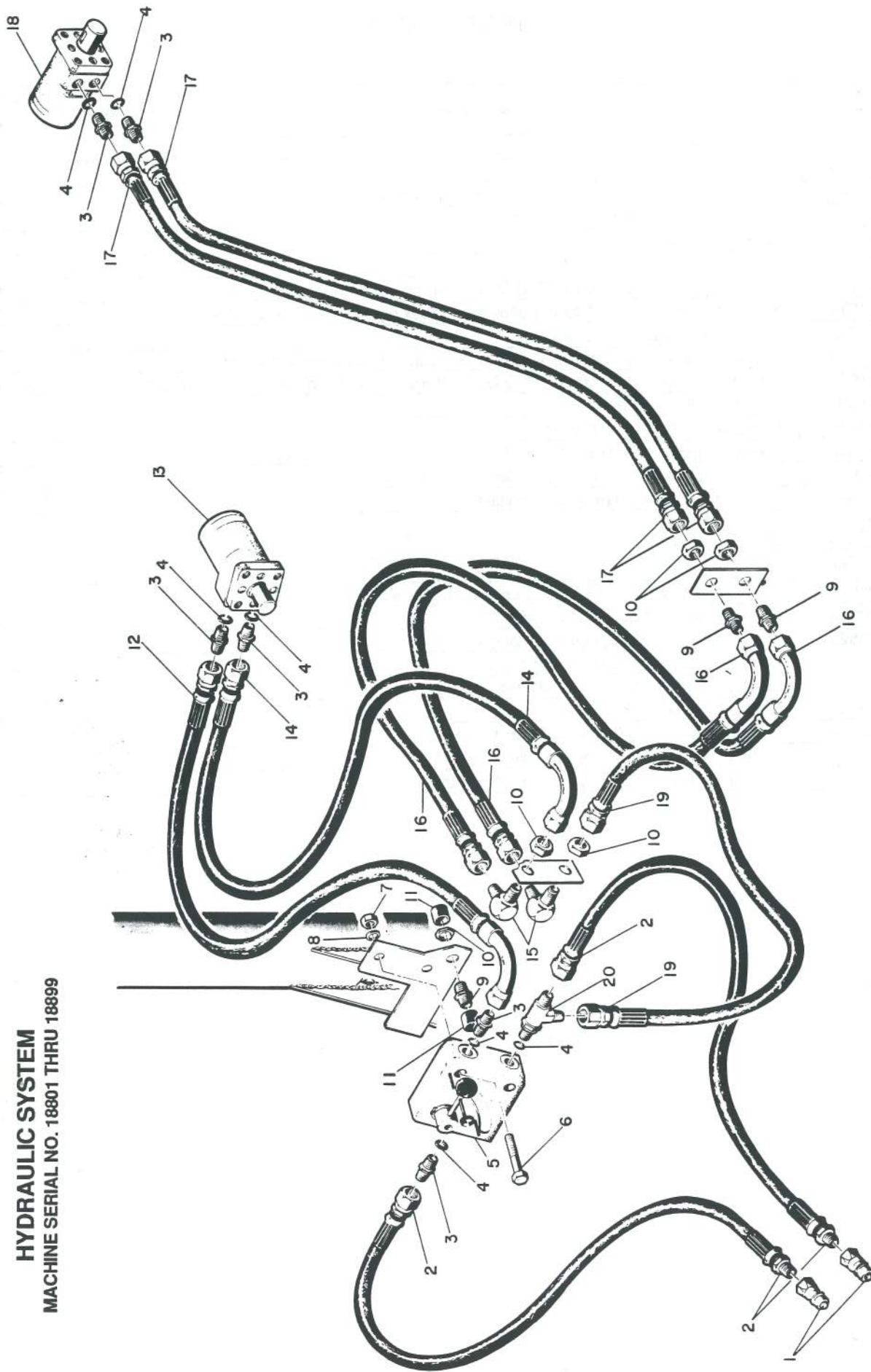
FAN DRIVES & GUARDS



FAN DRIVES & GUARDS

KEY	P/N	DESCRIPTION	USED
1	31615	Jackshaft mount assembly	1
2	31617	Anchor plate assembly	1
3	31622	Stud, belt tension adjuster	1
4	51421	Bearing assembly, 1" bore, 2-bolt flange (includes lock collar)	3
5	50135	Lock collar, 1" shaft dia., eccentric	A.R.
6	51498	Jackshaft, fan drive	1
7	51529	Shaft guard, 2" PVC, 12 1/2" long	1
8	51504	Pulley, 1 groove, "B" section, 7" O.D. + 1 1/4" finished bore-jackshaft drive	1
9	50575	Key, 1/4" square x 1 1/4" long, pulley to gearbox shaft-pulleys to jackshaft	3
10	51502	V-belt, BX 32, jackshaft drive	1
11	51505	Pulley, 1 groove, "B" section, 4" O.D. + 1" finished bore-jackshaft driven	1
12	51503	Pulley, 1 groove, "B" section, 12" O.D. + 1" finished bore-fan drive from jackshaft	1
13	51501	V-belt, BX 65, fan drive	1
14	50086	Idler pulley, 4" dia. x 1/2" bore	1
15	51505	Pulley, 1 groove, "B" section, 4" O.D. + 1" finished bore-fan driven	1
16	50575	Key, 1/4" square x 1 1/4" long, pulley to fan shaft	1
17	—	Fan and fan mount (see separate illustration)	—
18	21496	Belt guard, upper	1
19	90080	SMV sign decal	1
20	21506	Belt guard, lower	1
21	93379	Machine screw, 5/16"-18 x 5/8" truss head, grade 5	7
22	93163	Carriage bolt, 5/16"-18 x 3/4" grade 5	4
23	93522	Locknut, 5/16"-18 hex, serrated flange	11
24	93255	Carriage bolt, 1/2"-13 x 3 1/4" grade 5	1
25	93079	Machine screw, 1/2"-13 x 1 1/4" hex head, grade 5	4
26	93455	Nut, 1/2"-13 fin. hex	2
27	93580	Lockwasher, 1/2" USS standard spring	5
28	93605	Flatwasher, 1/2" USS standard wrought	A.R.
29	93617	Machinery washer, 1" shaft dia. x 14 ga., thin rim	A.R.

HYDRAULIC SYSTEM
MACHINE SERIAL NO. 18801 THRU 18899

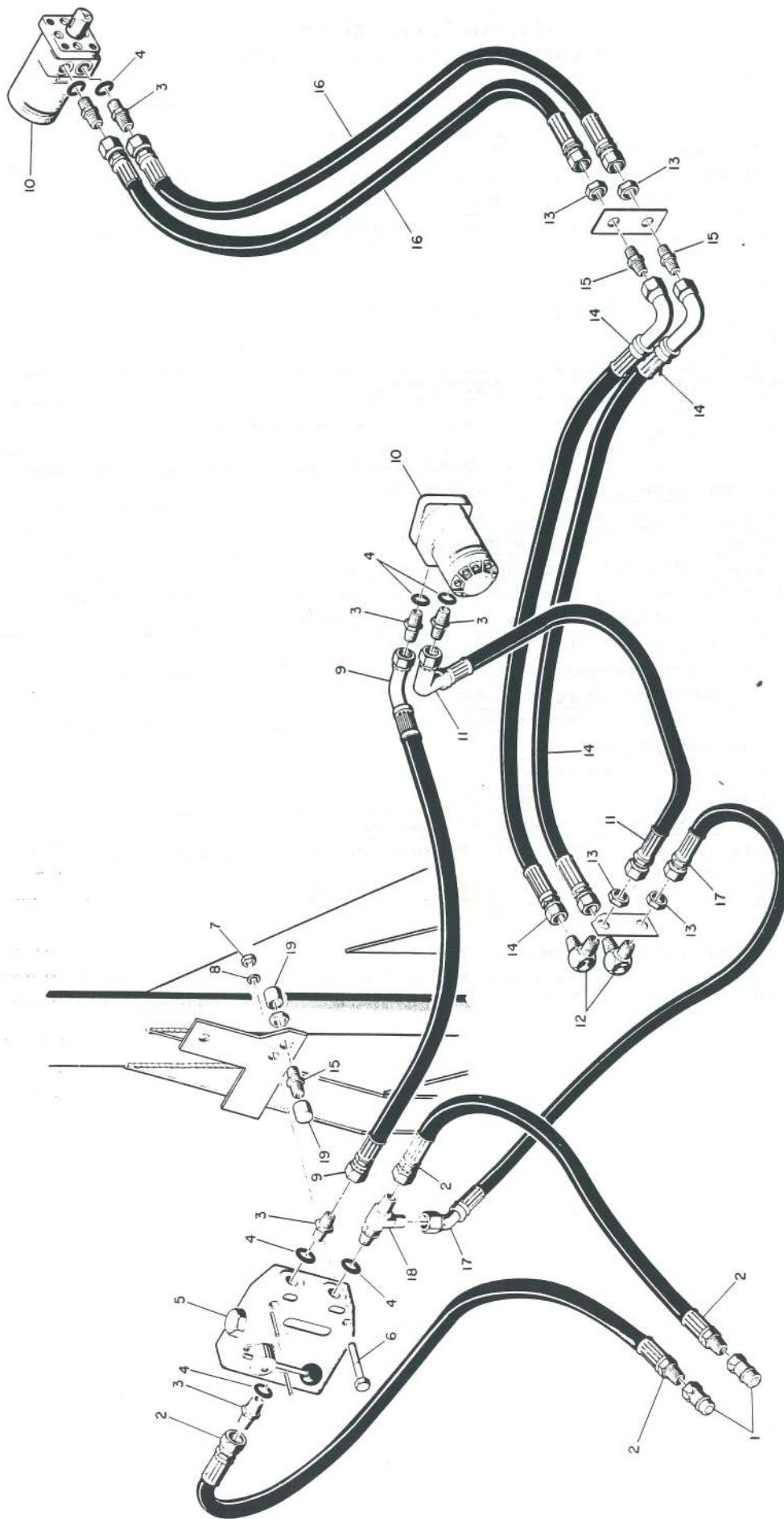


HYDRAULIC SYSTEM
MACHINE SERIAL NO. 18801 THRU 18899

KEY	P/N	DESCRIPTION	USED
1	40070	Quick coupler, male half - 1/2" NPT	2
2	41265	Hose assembly, pressure from and return to tractor, - 10 37° flare straight female swivel to 1/2" NPT straight solid male, 40" long.	2
3	45319	Straight adapter, - 10 SAE "O" ring to - 10 37° flare solid male, includes "O" ring	6
4	45879	"O" ring, - 10	A.R.
5	40476	Flow divider valve assembly	1
6	93009	Machine screw - 1/4" NC x 2-1/2" hex head, grade 5	2
7	93451	Nut - 1/4" NC hex	2
8	93576	Lockwasher - 1/4" split ring	2
9	45139	Bulkhead union, - 10 37° flare (includes jam nut)*	3
10	45980	Jam nut, - 10	A.R.
11	45043	Cap, - 10 37° flare*	2
12	41268	Hose assembly, pressure from flow divider to cross conveyor drive motor, - 10 37° flare 90° female swivel to - 10 37° flare straight female, 74" long.	1
13	40263	Hydraulic motor, cross conveyor drive	1
—	41209	Seal kit for Char-Lynn H-9 series motor	A.R.
—	41286	Replacement flange for Char-Lynn H-9 series motor	A.R.
14	41266	Hose assembly, pressure from cross conveyor drive motor to main frame bulkhead, - 10 37° flare 90° female swivel to - 10 37° flare straight female swivel, 33" long.	1
15	45165	90° Bulkhead elbow, - 10 37° flare (includes jam nut,	2
16	41123	Hose assembly, pressure and return, intermediate, - 10 37° 90° female swivel to - 10 37° flare straight female swivel, 46" long.	2
17	41270	Hose assembly, pressure and return from elevator drive motor, - 10 37° flare straight female swivel both ends, 139" long.	2
18	40263	Hydraulic motor, elevator drive	1
—	40209	Seal kit for Char-Lynn H-9 series motor	A.R.
—	40286	Replacement flange for Char-Lynn H-9 series motor	A.R.
19	41269	Hose assembly, return from elevator to flow divider, - 10 37° flare straight female swivel both ends, 44-1/2" long.	1
20	45422	Run tee, - 10 SAE "O" ring to - 10 37° flare (includes "O" ring)	1

* NOTE: One bulkhead union P/N 45139 is shipped loose in the hardware box. This bulkhead union is installed in the position shown only when harvester is being used on a John Deere tractor. In this case two JIC caps P/N 45043, also found in the hardware box, are used to cap off the tee (item 20) in the return port of the flow divider valve. (see set-up instructions section of this manual)

HYDRAULIC SYSTEM
MACHINE SERIAL NO. 28901 AND HIGHER



HYDRAULIC SYSTEM
MACHINE SERIAL NO. 28901 AND HIGHER

KEY	P/N	DESCRIPTION	USED
1	40070	Quick coupler, male half	2
2	41265	Hose assembly, pressure from and return to tractor, -10 JIC straight female swivel to 1/2" NPT straight solid male, 40" long	2
3	45319	Straight adapter, -10 SAE "O" ring to -10 JIC solid male, includes "O" ring	6
4	45879	"O" ring, -10	A.R.
5	40476	Flow divider valve assembly	1
6	93009	Machine screw, 1/4"-20 x 2 1/2" hex head, grade 5	2
7	93451	Nut, 1/4"-20 fin. hex	2
8	93576	Lockwasher, 1/4" USS standard spring	2
9	41404	Hose assembly, pressure from F.D. valve to cross conveyor drive motor, -10 JIC straight female swivel to -10 JIC 90° female swivel, 22" long	1
10	40263	Hydraulic motor, cross conveyor and elevator drive	2
—	41209	Seal kit for Char-Lynn H-9 series motor	A.R.
—	41286	Replacement flange for Char-Lynn H-9 series motor	A.R.
11	41405	Hose assembly, pressure from cross conveyor drive motor to frame bulkhead, -10 JIC straight female swivel to -10 JIC 90° female swivel, 35" long	1
12	45165	90° bulkhead elbow, -10 JIC (includes jam nut)	2
13	45980	Jam nut, -10	A.R.
14	41123	Hose assembly, pressure and return, intermediate, -10 JIC straight female swivel to -10 JIC 90° female swivel, 46" long	2
15	45139	Bulkhead union, -10 JIC (includes jam nut)*	3
16	41270	Hose assembly, pressure and return, elevator drive motor, -10 JIC straight female swivel both ends, 139" long	2
—	41209	Seal kit for Char-Lynn H-9 series motor	A.R.
—	41286	Replacement flange for Char-Lynn H-9 series motor	A.R.
17	41406	Hose assembly, return from elevator to F.D. valve, -10 JIC straight female swivel to -10 JIC 45° female swivel, 50" long	1
18	45422	Run tee, -10 SAE "O" ring to -10 JIC (includes "O" ring)	1
19	45043	Cap nut, -10 JIC	2

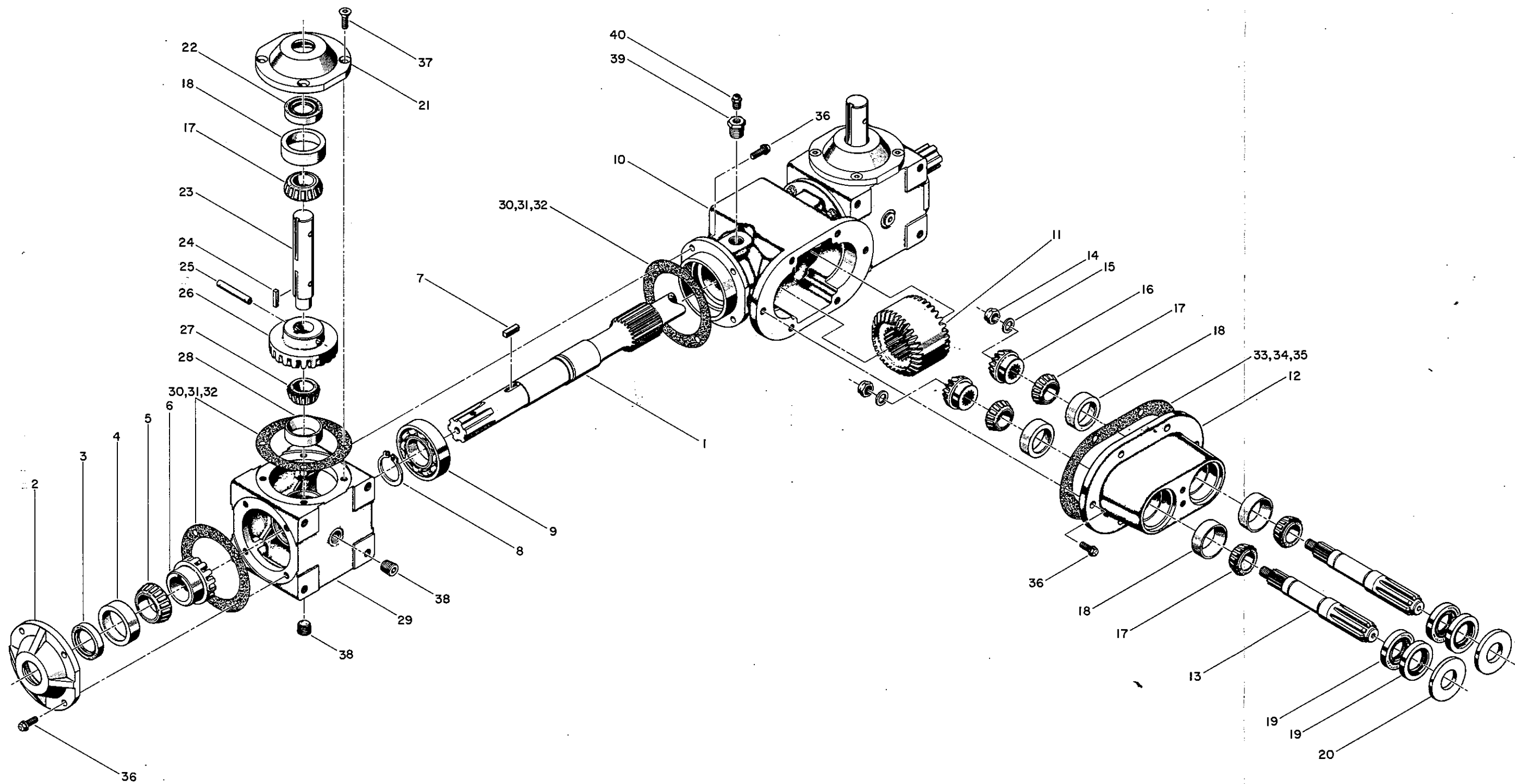
*NOTE: One bulkhead union P/N 45139 is shipped loose in the hardware box. This bulkhead union is installed in the position shown only when harvester is being used on a John Deere tractor. In this case two JIC caps P/N 45043, also found in the hardware box, are used to cap off the tee (item 20) in the return port of the flow divider valve. (see set-up instructions section of this manual).

ROW GATHERING UNIT GEARBOX, 3-PIECE HOUSING
MACHINE SERIAL NO. 18801 THRU 18899

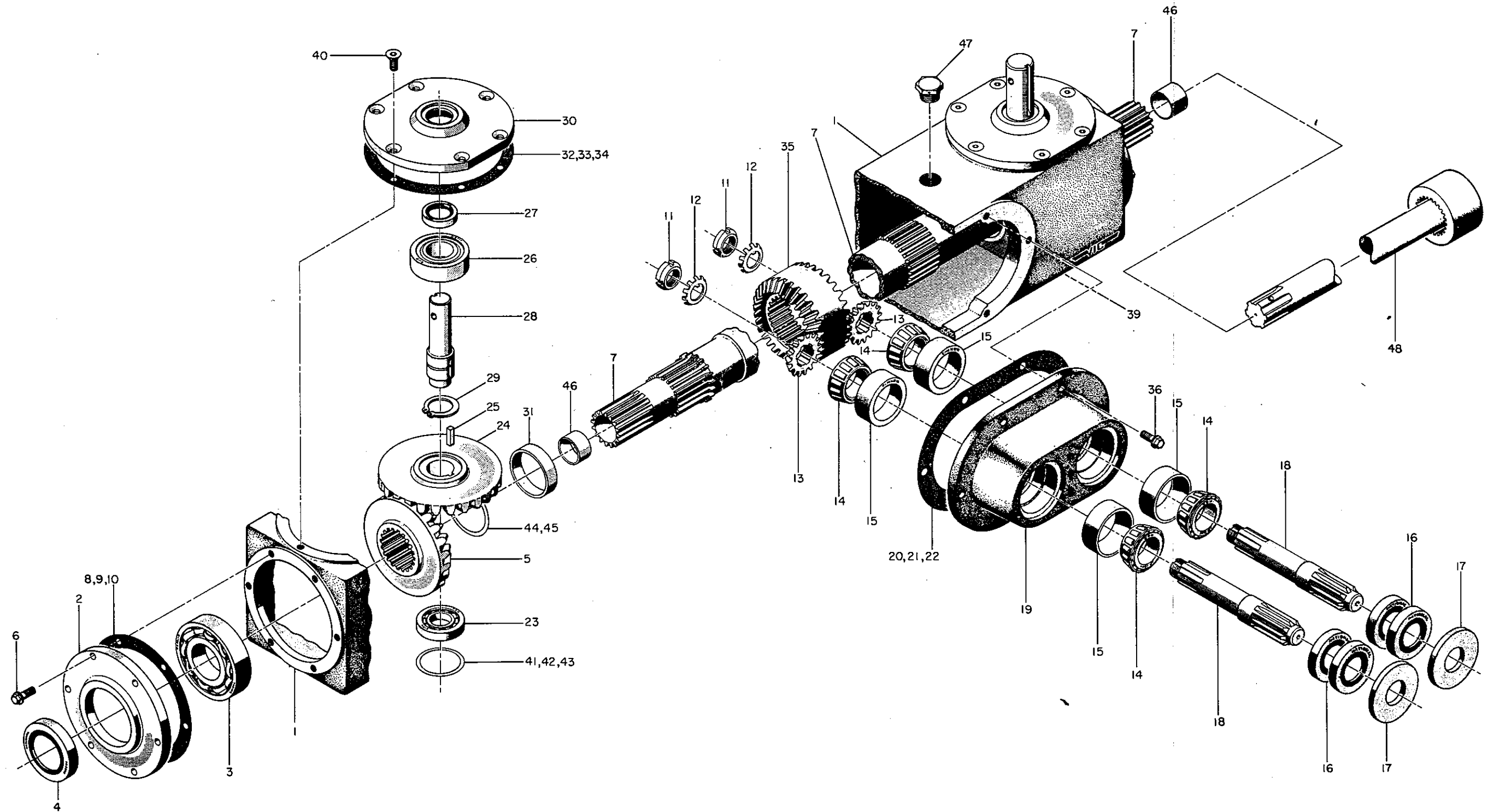
KEY	P/N	DESCRIPTION	USED
A	51305	Gearbox assembly complete (this gearbox comes with the short gathering belt drive shafts installed. It is the correct replacement to order if your harvester <u>does not</u> have the stalk ejector option. If ordering for a harvester equipped with stalk ejector, order the one piece gearbox shown on the next page)	1
1	51304	Shaft, main thru	1
2	50457	Cap, end	2
3	50458	Seal, main thru shaft end	2
4	50205	Cup, bearing	2
5	50206	Cone, bearing	2
6	50459	Gear, gathering belt shaft drive	2
7	50460	Key, gathering belt drive shaft - drive gear	2
8	50461	Retaining ring	2
9	50462	Ball bearing	2
10	50463	Housing, main center	1
11	50464	Gear, double faced knife roll drive	1
12	50465	Cap, front	1
13	50466	Shaft, knife roll drive	2
14	93536	Elastic stop nut, thin	2
15	93627	Washer	2
16	50469	Gear, knife roll driven shaft	2
17	50157	Cone, bearing	8
18	50158	Cup, bearing	8
19	50472	Seal, knife roll shaft	4
20	50473	Seal protector	2
21	50474	Cap, top	2
22	50475	Seal, gathering belt drive shaft	2
23	50476	Shaft, gathering belt drive - short (without stalk ejector)	2
23	51457	Shaft, gathering belt drive - long (stalk ejector drive)	A.R.
24	50477	Key, gathering belt drive shaft - driven gear	2
25	93758	Roll pin, gear to shaft	2
26	50479	Gear, gathering belt drive shaft - driven	2
27	50480	Cone, bearing	2
28	50481	Cup, bearing	2
29	50482	Housing, end	2
30	50483	Gasket shim - .015	A.R.
31	50484	Gasket shim - .005	A.R.
32	50485	Gasket shim - .003	A.R.
33	50486	Gasket shim - .015 (front cap)	A.R.
34	50487	Gasket shim - .005 (front cap)	A.R.
35	50488	Gasket shim - .003 (front cap)	A.R.
36	93382	Machine screw - 5/16" NC x 1" hex head, self locking, grade 5	22
37	93345	Machine screw - 5/16" NC x 3/4" counter sunk hex socket head, grade 5	8
38	40138	Plug - 1/4" NPT hex socket	7
39	40140	Reducer bushing - 1/2" to 1/8" NPT hex	1
40	40139	Breather - 1/8" NPT hex	1

Note: See maintenance section for overhaul and assembly instructions for Row Gathering Unit Gearbox Assembly.

ROW GATHERING UNIT GEARBOX, 3-PIECE HOUSING
MACHINE SERIAL NO. 18801 THRU 18899



ROW GATHERING UNIT GEAR BOX, 1-PIECE HOUSING
MACHINE SERIAL NO. 28901 AND HIGHER

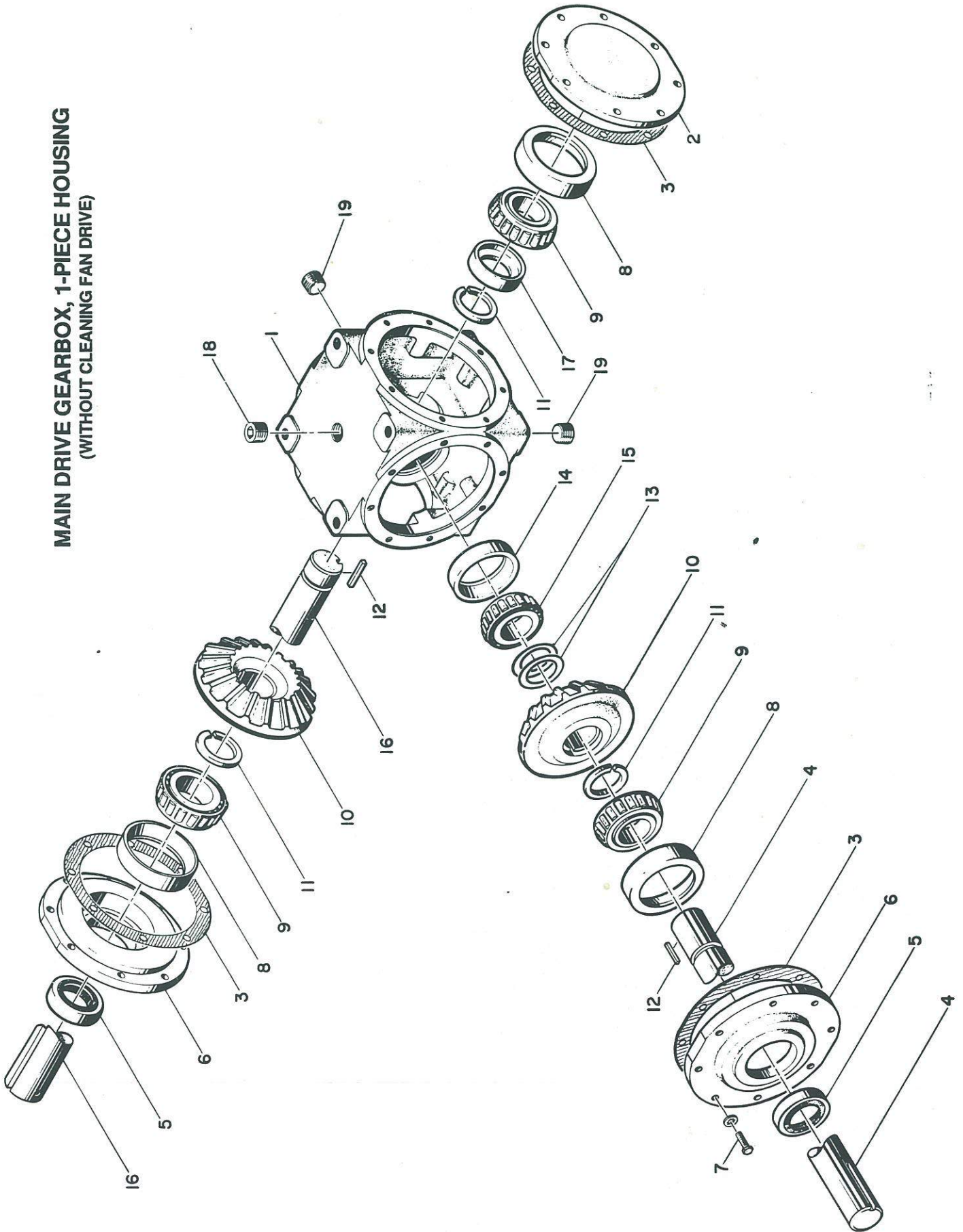


ROW GATHERING UNIT GEAR BOX, 1-PIECE HOUSING
MACHINE SERIAL NO. 28901 AND HIGHER

KEY	P/N	DESCRIPTION	USED
A	51482	Gearbox assembly complete (does not include items 46 or 48) (This gearbox is equipped with the long gathering belt drive shafts to drive the stalk ejector. This gearbox is a direct replacement for the early three-piece gearbox.)	1
1	51175	Housing	1
2	51176	End cap	2
3	51177	Ball bearing, mainshaft	2
4	51178	Seal, mainshaft	2
5	51179	Bevel gear, 17 tooth - gathering belt drive shaft - drive gear	2
6	93382	Machine screw - 5/16" NC x 1" hex head, self locking, grade 5	18
7	51180	Mainshaft, hollow thru bore	1
8	51181	Gasket shim, .015	A.R.
9	51182	Gasket shim, .005	A.R.
10	51183	Gasket shim, .003	A.R.
11	51280	Locknut	2
12	51281	Lockwasher	2
13	51184	Bevel gear, 16 tooth - knife roll drive shaft - driven gear	2
14	51185	Bearing cone, knife roll drive shaft	4
15	51186	Bearing cup, knife roll drive shaft	4
16	51282	Seal, knife roll drive shaft	4
17	50473	Seal protector	2
18	51283	Shaft, knife roll drive	2
19	51187	Front cap	1
20	50486	Gasket shim, .015	A.R.
21	50487	Gasket shim, .005	A.R.
22	50488	Gasket shim, .003	A.R.
23	51188	Ball bearing, gathering belt drive shaft	2
24	51189	Bevel gear, 23 tooth - gathering belt drive shaft - driven gear	2
25	51190	Square key, gear to shaft	2
26	51191	Ball bearing, sealed - gathering belt drive shaft, upper	2
27	50475	Seal, gathering belt drive shaft	2
28	51431	Shaft, gathering belt/stalk ejector drive	2
29	51193	Retaining ring, gathering belt drive shaft	2
30	51194	Top cap	2
31	51195	Spacer, mainshaft bevel gear	2
32	51196	Gasket shim, .015	A.R.
33	51197	Gasket shim, .005	A.R.
34	51198	Gasket shim, .003	A.R.
35	51199	Bevel gear, double faced, 36 tooth	1
36	93382	Machine screw - 5/16" NC x 1" hex head, self locking, grade 5	18
39	40138	Plug - 1/4" NPT hex socket head, drain (not shown)	1
40	93345	Machine screw - 5/16" NC x 3/4" counter sunk hex socket head, grade 5	12
41	51200	Shim, ball bearing, .015	A.R.
42	51201	Shim, ball bearing, .005	A.R.
43	51202	Shim, ball bearing, .003	A.R.
44	51203	Shim, bevel bearing, .010	A.R.
45	51204	Shim, bevel bearing, .005	A.R.
46	50932	Bushing, clutch shaft	2
47	40079	Vent plug - 1/2" NPT hex	1
48	51400	Drive shaft, spline adapter	1

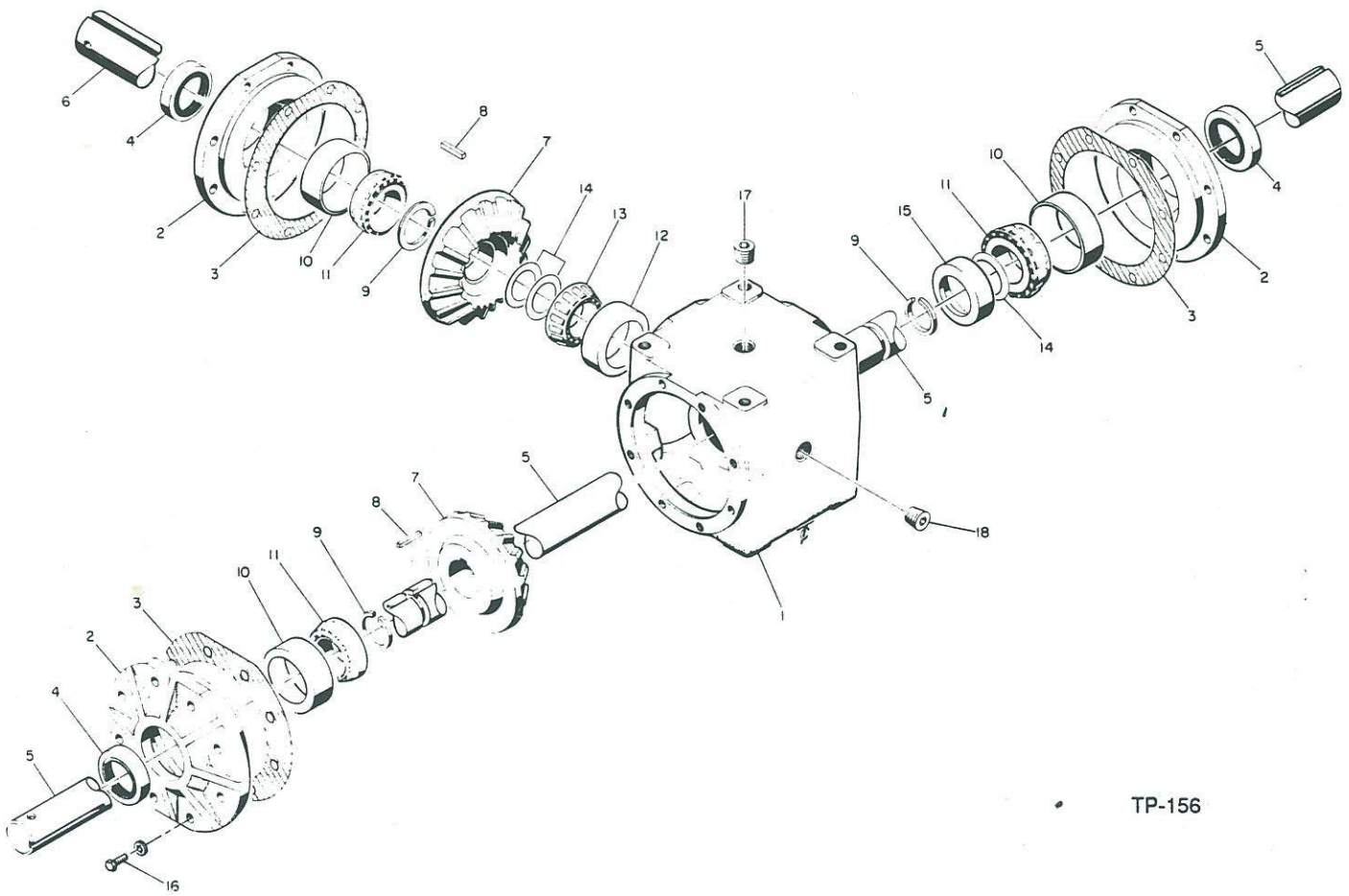
Note: See maintenance section for overhaul and assembly instructions for Row Gathering Unit Gearbox Assembly.

**MAIN DRIVE GEARBOX, 1-PIECE HOUSING
(WITHOUT CLEANING FAN DRIVE)**



**MAIN DRIVE GEARBOX, 1-PIECE HOUSING
(WITHOUT CLEANING FAN DRIVE)**

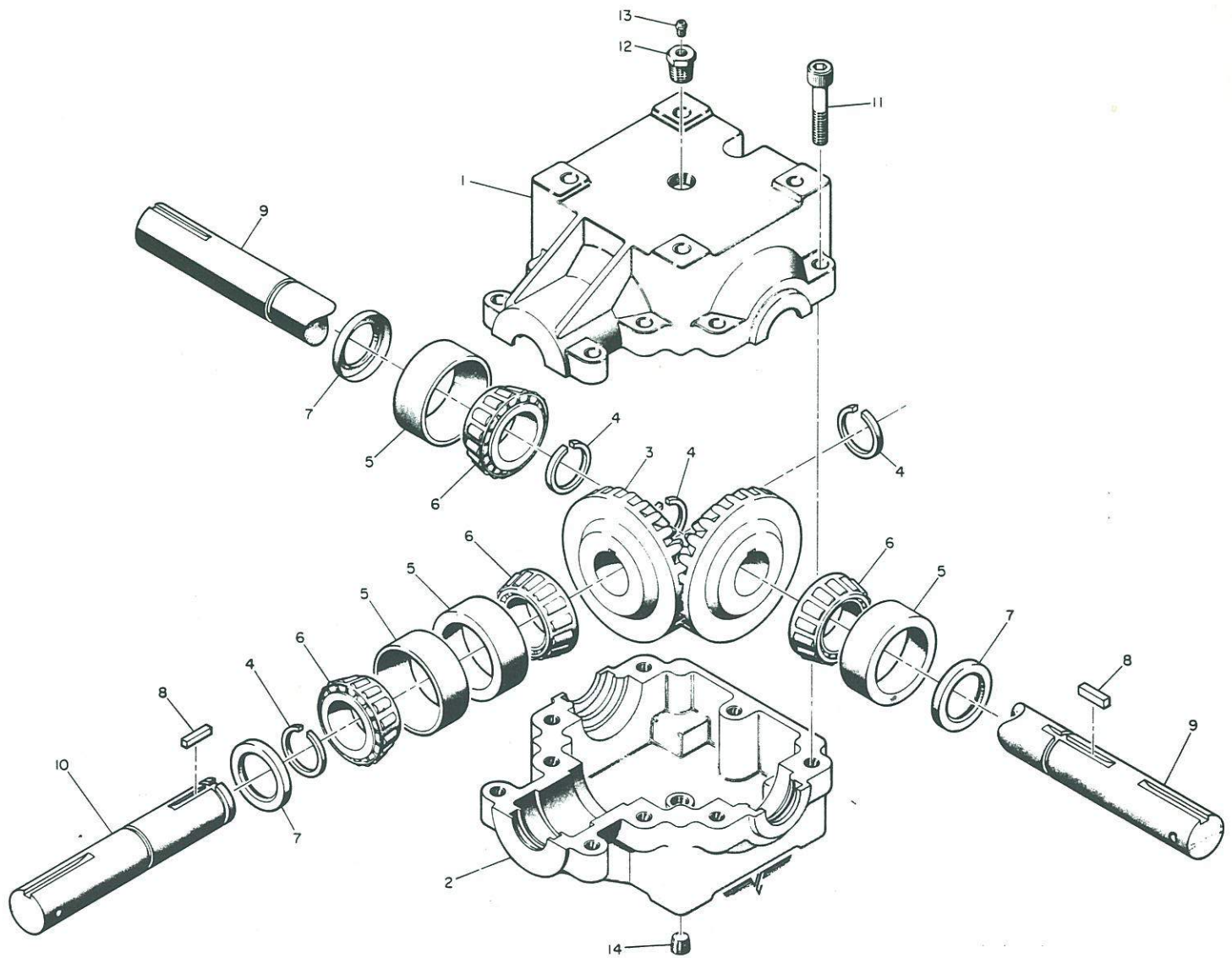
KEY	P/N	DESCRIPTION	USED
A	51240	Gearbox assembly complete	A.R.
1	50191	Housing, gearbox	1
2	51341	Blank cap	1
3	50192	Gasket shim (.015)	A.R.
3	50193	Gasket shim (.005)	A.R.
3	50194	Gasket shim (.003)	A.R.
4	51348	Shaft, input	1
5	50211	Seal, shaft	2
6	51347	Cap, shaft	2
7	93430	Machine screw - 5/16" NC x 1" hex head, grade 5, SEMS (includes lockwasher)	24
8	51342	Bearing cup	3
9	51343	Bearing cone	3
10	51344	Bevel gear	2
11	50200	Retaining ring	3
12	51345	Key	2
13	50208	Shim (.005)	A.R.
13	50209	Shim (.010)	A.R.
14	50205	Bearing cup, input shaft inner bearing	1
15	50206	Bearing cone, input shaft inner bearing	1
16	51346	Shaft, output	1
17	50201	Thrust collar	1
18	40074	Vent plug - 1/2" NPT	1
19	40073	Plug - 1/2" NPT	2



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**MAIN DRIVE GEARBOX, 1-PIECE HOUSING
(WITH CLEANING FAN DRIVE)**

KEY	P/N	DESCRIPTION	USED
A	51496	Gearbox assembly complete (includes items 1-18)	A.R.
1	50191	Housing, gearbox	1
2	51479	Cap, shaft	3
3	50192	Gasket shim (.015)	A.R.
3	50193	Gasket shim (.005)	A.R.
3	50194	Gasket shim (.003)	A.R.
4	50211	Seal, shaft	3
5	51478	Shaft, input and fan drive	1
6	51348	Shaft, row gathering unit drive	1
7	51344	Bevel gear	2
8	51345	Key	2
9	50200	Retaining ring	3
10	51482	Bearing cup	3
11	51483	Bearing cone	3
12	50205	Bearing cup, row gathering unit drive shaft inner	1
13	50206	Bearing cone, row gathering unit drive shaft inner	1
14	50208	Shim (.005)	A.R.
14	50209	Shim (.010)	A.R.
15	50201	Thrust collar	1
16	93430	Machine screw, 5.16"-18 x 1" hex head, grade 5, SEMS (includes lockwasher)	24
17	40074	Vent plug, 1/2" NPT, hex socket	1
18	40073	Plug, 1/2" NPT, hex socket	2

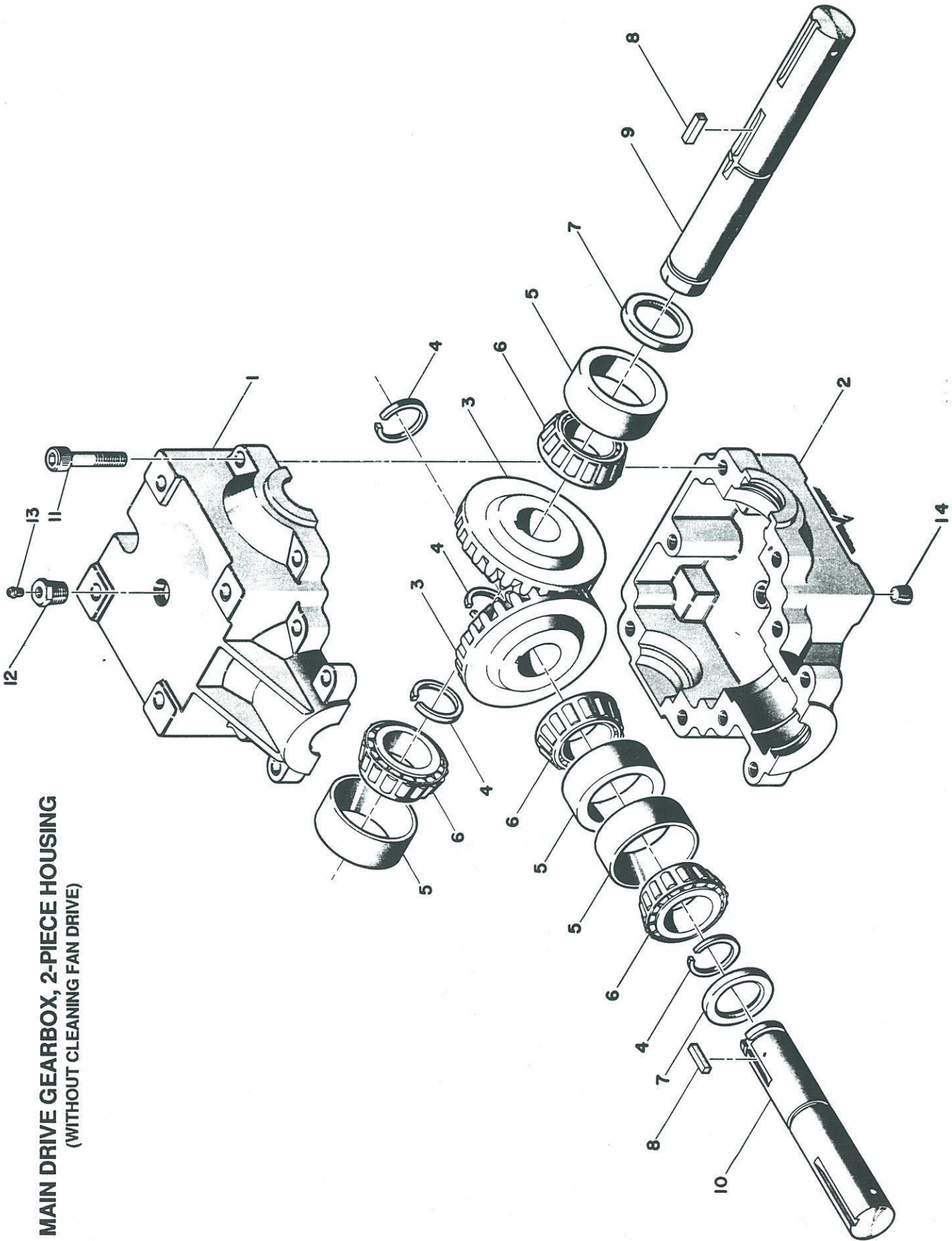


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**MAIN DRIVE GEARBOX, 2-PIECE HOUSING
(WITH CLEANING FAN DRIVE)**

KEY	P/N	DESCRIPTION	USED
A	51481	Gearbox assembly complete (includes items 1-14)	A.R.
1	51556	Gearbox housing half, top (thru bolt holes)	1
2	51557	Gearbox housing half, bottom (tapped bolt holes)	1
3	51380	Bevel gear	2
4	51381	Retaining ring	4
5	51382	Bearing cup	4
6	51383	Bearing cone	4
7	51384	Seal	3
8	51385	Key	2
9	51555	Shaft, input and fan drive	1
10	51387	Shaft, row gathering unit drive	1
11	93349	Machine screw, 3/8"-16 x 2 1/4" hex socket head, grade 8	9
12	40140	Reducer bushing, 1/2" to 1/8" NPT hex	1
13	41301	Pressure relief, 1/8" NPT	1
14	40751	Plug, 1/2" NPT hex socket	1

**MAIN DRIVE GEARBOX, 2-PIECE HOUSING
(WITHOUT CLEANING FAN DRIVE)**



**MAIN DRIVE GEARBOX, 2-PIECE HOUSING
(WITHOUT CLEANING FAN DRIVE)**

KEY	P/N	DESCRIPTION	USED
A	51356	Gearbox assembly complete (includes items 1 -1 4)	
1	51378	Gearbox housing half, top (thru bolt holes)	1
2	51379	Gearbox housing half, bottom (tapped bolt holes)	1
3	51380	Bevel gear	2
4	51381	Retaining ring	4
5	51382	Bearing cup	4
6	51383	Bearing cone	4
7	51384	Seal	2
8	51385	Key	2
9	51386	Shaft, input	1
10	51387	Shaft, output	1
11	93349	Machine screw - 3/8" NC x 2-1/4" hex socket head, grade 8	9
12	40140	Reducer bushing - 1/2" to 1/8" NPT hex	1
13	41301	Pressure relief, 1/8" NPT	1
14	40751	Plug, 1/2" NPT hex socket	1

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93580	41,43,57 61,65,69 71,77
93582	41,43 57,61
93583	51,53
93586	41
93593	65,69
93602	51,63,67 73,75

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93603	57,61,65 69,71,73
93605	57,61 71,77
93606	57,61
93607	57,61
93617	77
93625	75
93626	57,61
93627	82
93636	55,59
93640	55,59
93642	51,53 71,75
93644	71
93672	63,67
93690	51,53
93694	45
93718	45,49,53
93758	57,61,82
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93784	41,43
93785	63,67
93802	57,61
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93882	49,53
93895	51,53