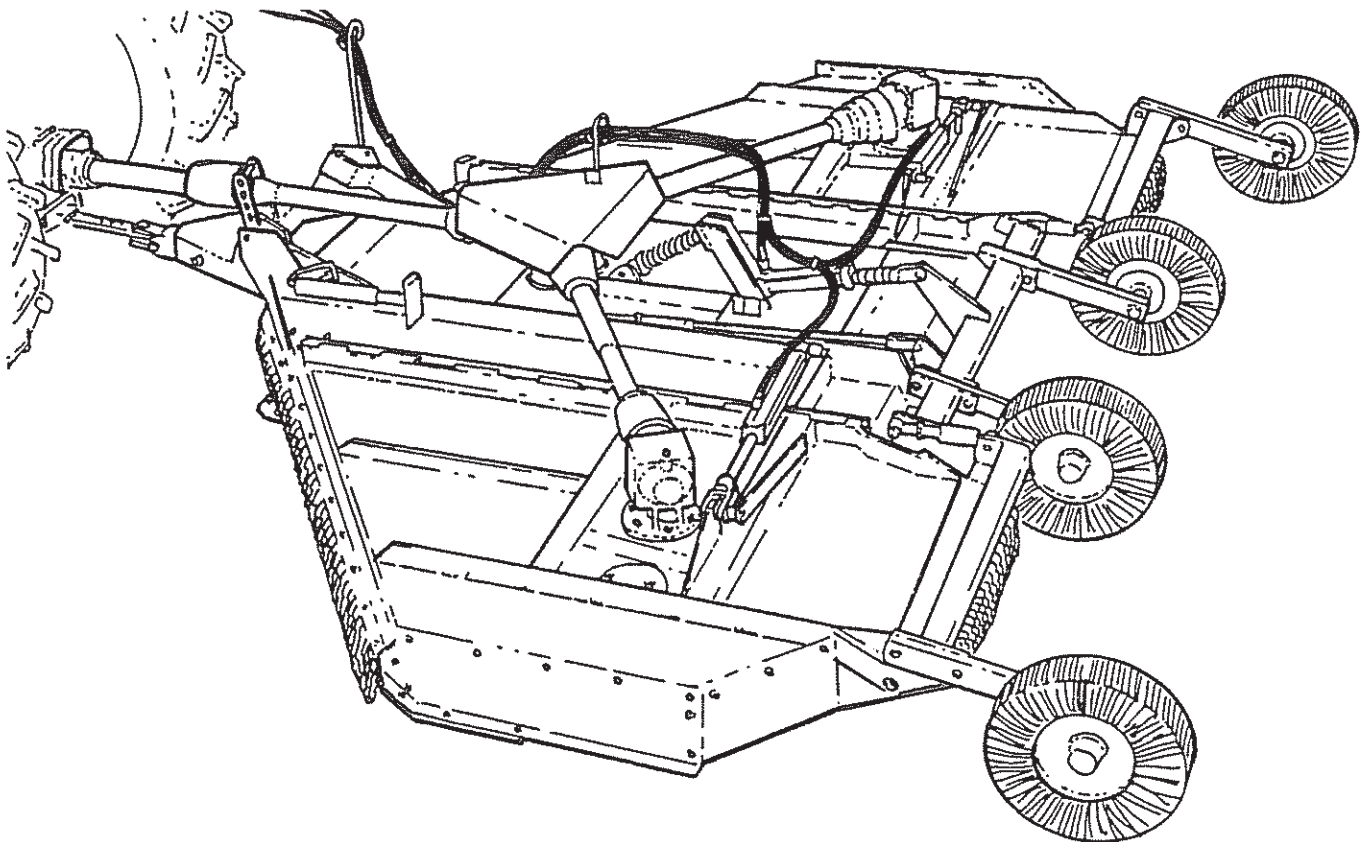




A315

Rev 03-13

P/N 00759398



OWNER'S MANUAL WITH PARTS LISTING

ALAMO INDUSTRIES
1502 E. Walnut
Seguin, Texas 78155
830-372-9595



213 Alamo Grupo, Inc.

To the Owner/Operator/Dealer

All implements with moving parts are potentially hazardous. There is no substitute for a cautious, safe-minded operator who recognizes the potential hazards and follows reasonable safety practices. The manufacturer has designed this implement to be used with all its safety equipment properly attached to minimize the chance of accidents.

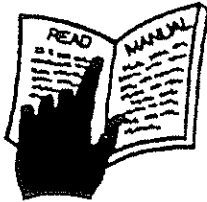
BEFORE YOU START!! Read the safety messages on the implement and shown in your manual. Observe the rules of safety and common sense!



DANGER

FAILING TO FOLLOW SAFETY MESSAGES AND OPERATING INSTRUCTIONS CAN CAUSE SERIOUS BODILY INJURY OR EVEN DEATH TO OPERATOR AND OTHERS IN THE AREA.

1.



2. NO RIDERS. NO CHILDREN OPERATORS.



3. USE SAFETY SHOES, HARD HAT, SAFETY GLASSES, SEAT BELTS, & ROPS.



4. BLOCK UP SECURELY BEFORE WORKING UNDER.



1. Study Operator's Manuals and Safety Decals for tractor and cutter thoroughly to prevent misuse, abuse, and accidents. Practice before operating.

2. **ALLOW NO CHILDREN** on or near implement or tractor. Allow **NO RIDERS** on tractor or implement. Falling off may cause **SERIOUS INJURY** or **DEATH** from being run over by tractor or cutter. **KEEP CHILDREN AWAY!**

3. Operate only with **ROPS** and **FASTENED SEAT BELT** to prevent **INJURY** and possible **CRUSHING DEATH** from falling off or tractor overturn. Wear hard hat, safety glasses, and safety shoes for personal protection.

4. Block up or support cutter securely before putting hands or feet under or working underneath lifted components to prevent **CRUSHING INJURY** or **DEATH** from sudden, inadvertent dropping. Make certain area is clear before lowering.

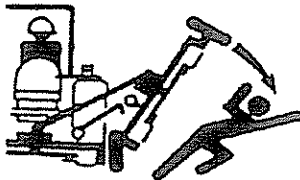
5. Before transporting, put lift lever in detent (full-lift) position to prevent dropping and follow local traffic codes. Slow down at night, in turns, and on hillsides.

6. Make certain that **SMV SIGN, WARNING LIGHTS, and REFLECTORS** are clearly visible.

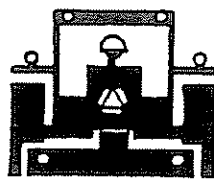
7. Never operate with cutter or section raised off ground to reduce possibility of **INJURY** or **DEATH** from objects thrown under guards or cutter structure.

8. Before dismounting, secure implement in transport position or lower to ground. Put tractor in park or set brake, stop engine, and remove key. Never mount or dismount a moving vehicle to prevent crushing **INJURY** or **DEATH**.

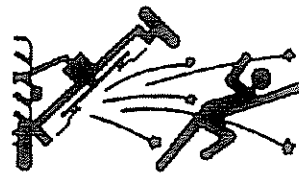
5. TRANSPORT SAFELY, LOCK UP.



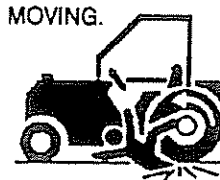
6. USE SMV, LIGHTS, & REFLECTORS.



7. DO NOT OPERATE WITH CUTTER OR WING RAISED.



8. DO NOT MOUNT OR DISMOUNT WHILE MOVING.



00749117

WARRANTY INFORMATION:

Read and understand the complete Warranty Statement found in this Manual. Fill out the Warranty Registration Form in full and return it to Alamo Group within 30 Days. Make certain the Serial Number of the Machine is recorded on the Warranty Card and on the Warranty Form that you retain.

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SAFETY SECTION

SAFETY

DANGER!



There are obvious and hidden potential hazards in the operation of this mower. **REMEMBER!** This machine is often operated in rough terrain conditions and brush up to 1-1/2 inch diameter. The Blades of this mower can throw objects for a great distance at very high speeds. Serious injury or even death may occur unless care is taken to insure the safety of the operator, bystanders, or passersby in the area.

KEEP CLEAR!

Included here is a list of Safety Messages which should be followed. Serious injury or death may occur unless care is taken to follow these Safety Messages and use good common sense in avoiding hazards.

DANGER!



Rotary Mowers are capable under adverse conditions of throwing objects for great distances (100 yards or more) and causing serious injury or death. Follow safety messages carefully.

STOP MOWING IF PASSERSBY ARE WITHIN 100 YARDS UNLESS:

- Front and Rear Deflectors, or Chain Guards, or Bands are installed and in good, workable condition;
- Mower sections or Wings are running close to and parallel to the ground without exposed Blades;
- Passersby are outside the existing thrown-object zone;
- All areas have been thoroughly inspected and all foreign material such as rocks, cans, glass, and general debris has been removed.

NOTE: Where there are grass and weeds high enough to hide debris that could be struck by the blades, the area should be inspected and large debris removed, mowed at an intermediate height, inspected closely with any remaining debris being removed, and mowed again at desired final height. (This will also reduce power required, reduce wear and tear on the Mower drivetrain, spread cut material better, eliminate streaking, and make the final cut more uniform.

DANGER!



The Chain Guards, Bands, Flaps, Driveline shields, and Gearbox Shields should be used and maintained in good working condition. They should be inspected carefully, at least daily for missing or broken cable, chain links, shields, or guards. Missing, broken, or worn items must be replaced at once to reduce the possibility of injury from thrown objects or entanglement.

WARNING!



Extreme care should be taken when operating near loose objects, such as gravel, rocks, wire, and other debris. Foreign objects should be removed from the site or avoided to prevent machine damage and/or bodily injury or even death.

DANGER!



The rotating parts of this machine have been designed and tested for rugged use. However, they could fail upon impact with heavy, solid objects such as steel guard rails and concrete abutments. Such impact could cause the broken objects to be thrown outward at very high velocities. To reduce the possibility of property damage, serious injury, or even death, never allow the cutting blades to contact such obstacles.

WARNING!



The operator and all support personnel should wear "hard hats", "safety shoes", and "safety glasses" at all times for protection from injury by falling objects and items thrown by the machine.

DANGER!



Operate the mower only with a tractor equipped with an approved roll-over-protective system (ROPS). Always wear your seat belt. Serious injury or even death could result from falling off the tractor---particularly during a turnover when the operator could be pinned under the ROPS or the Tractor.

SAFETY

WARNING!



Many varied objects, such as wire, cable, rope, or chains, can become entangled in the operating parts of the mower head. These items could then swing outside the housing at greater velocities than the blades. Such a situation is extremely hazardous. Inspect the cutting area for such objects before mowing. Remove any like object from the site. Never allow the cutting blades to contact such items.

WARNING!



The rotating parts of this machine continue to rotate even after the PTO has been turned off. The operator should remain in his seat for 60 seconds after the brake has been set, the PTO disengaged, the tractor turned off, and all evidence of rotation has ceased. "Wait a minute...Save a life!"

WARNING!



Remove hydraulic pressure prior to doing any maintenance. Place the Mower Heads on the ground or securely blocked up, disengage the PTO, and turn off the engine. Push and pull the Remote Cylinder lever in and out several times.

DANGER!



Do not operate this mower with hydraulic oil leaking. Oil is expensive and its presence could present a hazard. Do not check for leaks with the hand! Use a piece of heavy paper or cardboard. High-pressure oil streams from breaks in the line could penetrate the skin and cause tissue damage or even Gangrene. If oil does penetrate the skin, have it removed immediately by a surgeon knowledgeable and skilled in this procedure.

DANGER!



Be particularly careful in transport. Turn curves or go up hills only at a low speed and at a gradual steering angle. Make certain that at least 20% of the tractor's weight is on the front wheels to maintain safe steering. Slow down on rough or uneven surfaces.

DANGER!



When the Wings are folded for transport, the center of gravity is raised and the possibility of overturn is increased. Turn slowly and with extra care on hillsides. Overturning the Mower could cause the Mower to overturn the Tractor and vice versa. Never fold wings on a hillside...the Mower may overturn.

WARNING!



Make certain that the "Slow Moving Vehicle"(SMV) Sign is installed in such a way as to be clearly visible, and legible. Use flashing warning lights and follow all local traffic regulations. Do not transport unless Wings are well secured. Wings that are not well secured can fall during transport, causing serious damage to the tractor and mower, and possibly causing the operator to be injured or killed.

WARNING!



Inspect the entire machine periodically as indicated in the Maintenance Section of this manual. Look for loose fasteners, worn or broken parts, pinched hydraulic hoses, and leaky or loose fittings. Make sure all pins have cotter pins and washers. Serious injury may occur from not maintaining this machine in good working order.

DANGER!



Do not mount the tractor while the tractor is moving. Mount the tractor only when it is completely stopped.

SAFETY

DANGER! Never allow riders on either tractor or mower. Falling off can kill.



DANGER! Never allow children to operate or ride on the tractor or mower.



DANGER! Never work under the Mower Head, the frame work, or any lifted component unless the mower is securely supported or blocked up. A sudden or inadvertent fall by any of these components could cause serious injury or even death.



WARNING! Never unhitch without using the Tongue Jack. The Tongue is very heavy. Attempting to lift the Tongue without using the Tongue Jack could cause strains. Allowing the tongue to fall suddenly and unexpectedly, could result in crushing injury. Use the Tongue Jack for lifting the mower only. Overloading the Jack can cause failure with possible serious bodily injury or even death.



WARNING! Never operate the tractor and mower until you have read and completely understand this manual, the Tractor Operator's Manual, and each of the Safety Messages found on the decals on the tractor and mower.



WARNING! Always maintain the safety decals in good readable condition. If the decals become damaged or unreadable, order replacement decals immediately.

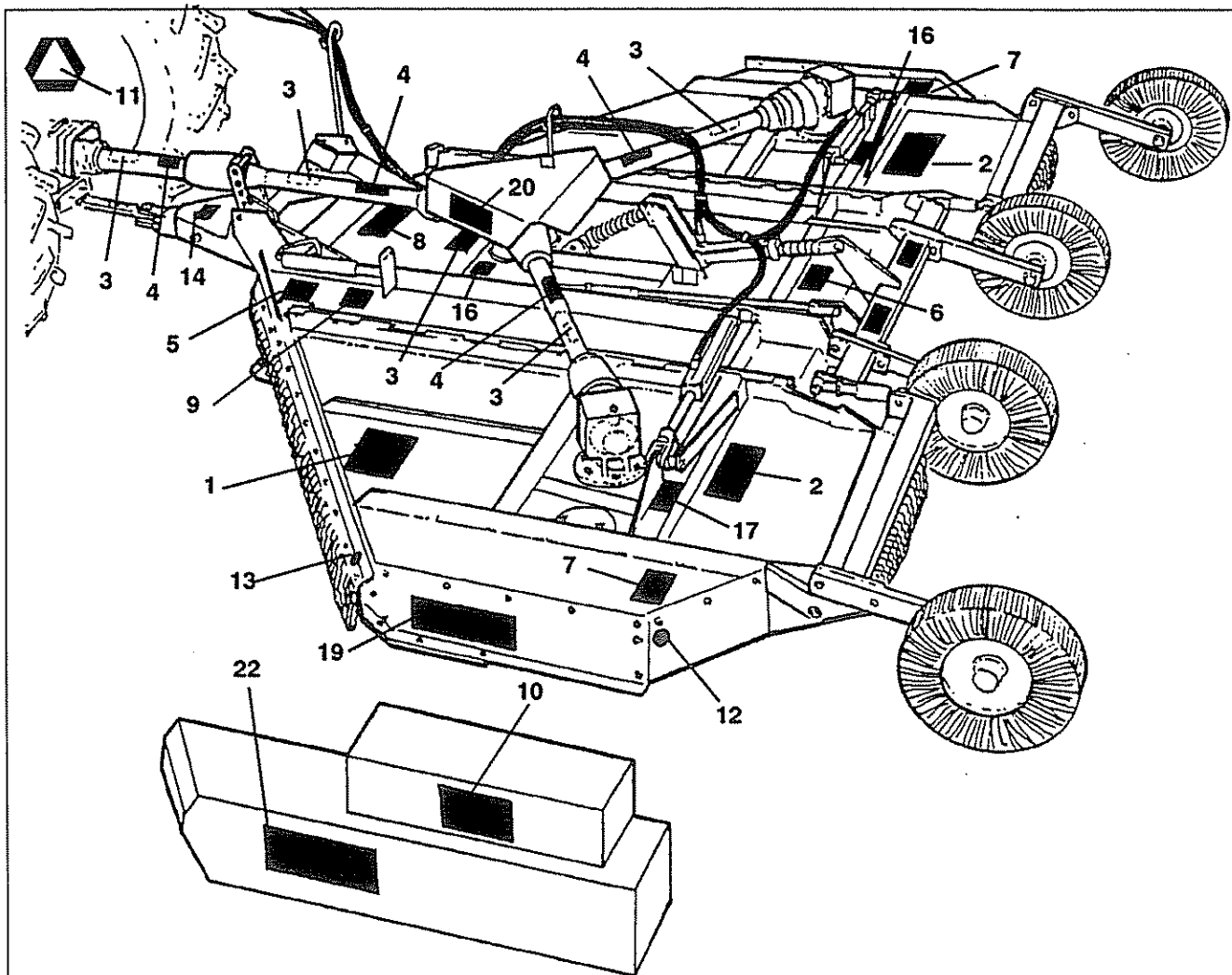


CAUTION! On a fully-assembled unit, do not remove the Hold-Down Strap until the hoses are attached to the tractor and the Wing Cylinders are filled with oil. Lower the Wings slowly and carefully. Keep bystanders away during operations.



In addition to the design and configuration of this implement, including Safety Signs and Safety Equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of the machine. Refer also to Safety Messages and operation instruction in each of the appropriate sections of the Tractor and Mower Manuals. Pay close attention to the Safety Signs affixed to the Tractor and the Mower.

SAFETY DECAL LOCATIONS



ITEM	PART NO.	QTY	TYPE	DESCRIPTION
1	00749117	1	DANGER	Multiple Hazard
2	00753840	2(1)	DANGER	Folding Wing, Thrown Objects
3	00756004	5(4)	DANGER	D/L Shield Missing, Do Not Oper.
4	00756005	4(3)	DANGER	Rotating Driveline, Entanglement
5	00756007	1	WARNING	Use/Repair Shields & Guards
6	00756059	1	DANGER	Oil Leak Detection, Skin Penetr.
7	00756485	2(1)	DANGER	Cutting Blades, Thrown Objects
8	00756494	1	DANGER	Driveline Hazards, 540 RPM
9	02925100	1	CAUTION	Genuine Parts, Rotary Mowers
10	999403	0(1)	DANGER	Ctr Sect Overturn w/o Wgt Box
11	03200347	*	REFLCTR	SMV Emblem
12	99203	2	REFLCTR	Red Reflective Tape
13	99204	2	REFLCTR	Yellow Reflective Tape
14	D102	1	INSTRUC	Drawbar-to-PTO Distance
16	D137	2	INSTRUC	Counter-Clockwise Blade Rotation
17	D138	1	INSTRUC	Clockwise Blade Rotation
19	00758821	2	LOGO	Alamo, 5 x 32
20	02960766	2	LOGO	Alamo, 5 x 5-1/2
22	nfs	1	SER PLT	A315 Serial Plate

* Furnished by tractor manufacturer () Quantities in () are for two-section units

SAFETY

⚠ DANGER

**SHIELD MISSING
DO NOT OPERATE**

⚠ DANGER

**SHIELD MISSING
DO NOT OPERATE**

⚠ DANGER

3 -- 00756004

⚠ 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

4 -- 00756005

⚠ DANGER

1. MAKE CERTAIN DRIVELINES ARE OF THE CORRECT LENGTH AND SECURELY ATTACHED. DRIVELINE SEPARATION AND/OR PTO SHAFT FAILURE CAN CAUSE INJURY OR DEATH. (See Operator's Manual for procedure.)
2. MAKE CERTAIN THAT DRIVELINE SHIELDS ARE INSTALLED CORRECTLY AND TURN FREELY TO PREVENT INJURY OR DEATH FROM ENTANGLEMENT.
3. IF DRIVELINE SHIELDS HAVE TETHER CHAINS, ATTACH TETHER CHAINS SECURELY TO BLOWER AND TRACTOR TO PREVENT SHIELD ROTATION, BELL AND/OR SHIELD FAILURE AND SERIOUS INJURY OR DEATH.
4. 840 PTO RPM UNLESS SPECIFICALLY MARKED OTHERWISE.

8 -- 00756494 page 4-5

02925100

⚠ CAUTION

FOR YOUR SAFETY AND TO GUARANTEE OPTIMUM PRODUCT RELIABILITY, ALWAYS USE GENUINE ALAMO GROUP REPLACEMENT PARTS. THE USE OF INFERIOR REPLACEMENT PARTS MAY CAUSE PREMATURE OR CATASTROPHIC FAILURE WHICH COULD RESULT IN SERIOUS INJURY OR DEATH. IF YOU HAVE ANY QUESTIONS CONCERNING THE REPAIR PARTS YOU ARE USING, CONTACT ALAMO GROUP, P.O. BOX 549, SEGUIN, TX. 78156.

9 -- 02925100

**IMPORTANT
REQUIRED FOR JACK SHAFT UNIT
SUGGESTED FOR STANDARD SHAFT**

14" (540 RPM)
16" (1000 RPM)

TONGUE DRAWBAR

14 -- D102

⚠ DANGER

LOWERING WING

STAY CLEAR WHEN REMOVING TRANSPORT STRAP AND LOWERING OR RAISING WING. COMPONENT FAILURE OR INADVERTENT OPERATION OF CONTROLS MAY ALLOW WING TO FALL SUDDENLY AND CAUSE SERIOUS BODILY INJURY OR EVEN DEATH. (Both Cylinders must be filled with oil for wings to lower slowly and safely.) LOCK WINGS UP SECURELY FOR TRANSPORT.

**ROTATING BLADES
THROWN OBJECTS**

DO NOT OPERATE MOWER WITH WING RAISED. CONTACT WITH EXPOSED BLADES OR BEING HIT BY THROWN OBJECTS MAY CAUSE SERIOUS INJURY, LIMB AMPUTATION, OR EVEN DEATH.

2 -- 00753840

⚠ DANGER

CUTTING BLADES THROWN OBJECTS

KEEP AWAY - ROTATING BLADES

SERIOUS INJURY OR DEATH CAN RESULT FROM THROWN OBJECTS OR BLADE CONTACT.

- * STOP MOWING IF PERSONS ARE NOT CLEAR OF THROWN OBJECTS.
- * DO NOT STAND ON OR NEAR MACHINES WHEN IN OPERATIONAL.
- * DO NOT OPERATE WITH DEFLECTORS OR GUARDS REMOVED.

7 -- 00756485

⚠ WARNING

WHenever this machine is operated in any area where THROWN OBJECTS COULD INJURE PERSONS OR PROPERTY, SAFETY SHIELDING MUST BE INSTALLED AND IN GOOD REPAIR TO REDUCE THE POSSIBILITY OF INJURY FROM THROWN OBJECTS.

CHAIN GUARDS, SOLID BANDS, RUBBER FLAPS, AND OTHER GUARDS ARE SUBJECT TO WEAR AND LOST OR BROKEN PIECES. IT IS THE OPERATOR'S RESPONSIBILITY TO SEE THAT THESE ITEMS OF SAFETY EQUIPMENT ARE REPAIRED AND/OR REPLACED AS SOON AS DAMAGE OCCURS, OR YOU WILL BE OPERATING MACHINE THAT IS IN AN UNSAFE CONDITION.

5 -- 00756007

⚠ DANGER

WITHOUT WEIGHT, CENTER MAY LIFT UP WITH WEIGHT, WING FOLDS

1. KEEP EVERYONE CLEAR WHEN LIFTING, FOLDING, AND WORKING UNDER RAISED COMPONENTS. BLOCK SECURELY BEFORE WORKING UNDER MOWER.
2. INSTALL WEIGHT BOX AND WEIGHT (MINIMUM OF 700# TOTAL) BEFORE OPERATING TO PREVENT TURNING OVER THE CENTER SECTION WHICH CAN CAUSE SERIOUS BODILY INJURY OR DEATH WITHOUT WEIGHT, DO NOT FOLD WING.
3. ATTACH TRANSPORT STRAP SECURELY TO PREVENT INADVERTENT DROPPING FROM THE TRANSPORT POSITION AND POSSIBLE CRUSHING INJURY OR DEATH.

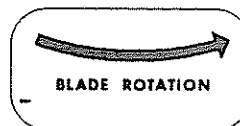
10 -- 999403

⚠ WARNING

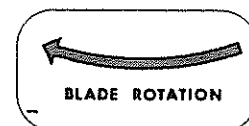
USE PAPER OR CARDBOARD TO CHECK FOR LEAKS. NEVER USE YOUR HAND. IF OIL PENETRATES SKIN, GANGRENE OR OTHER SERIOUS INJURY COULD OCCUR. GET IMMEDIATE MEDICAL ATTENTION. See Operator's Manual.

6 -- 00756059

- 1 -- 00749117
- SEE INSIDE FRONT COVER
- 12 -- 99203 RED REFLECTOR
- 13 -- 99204 YELLOW REFLECTOR
- 22 -- SERIAL PLATE



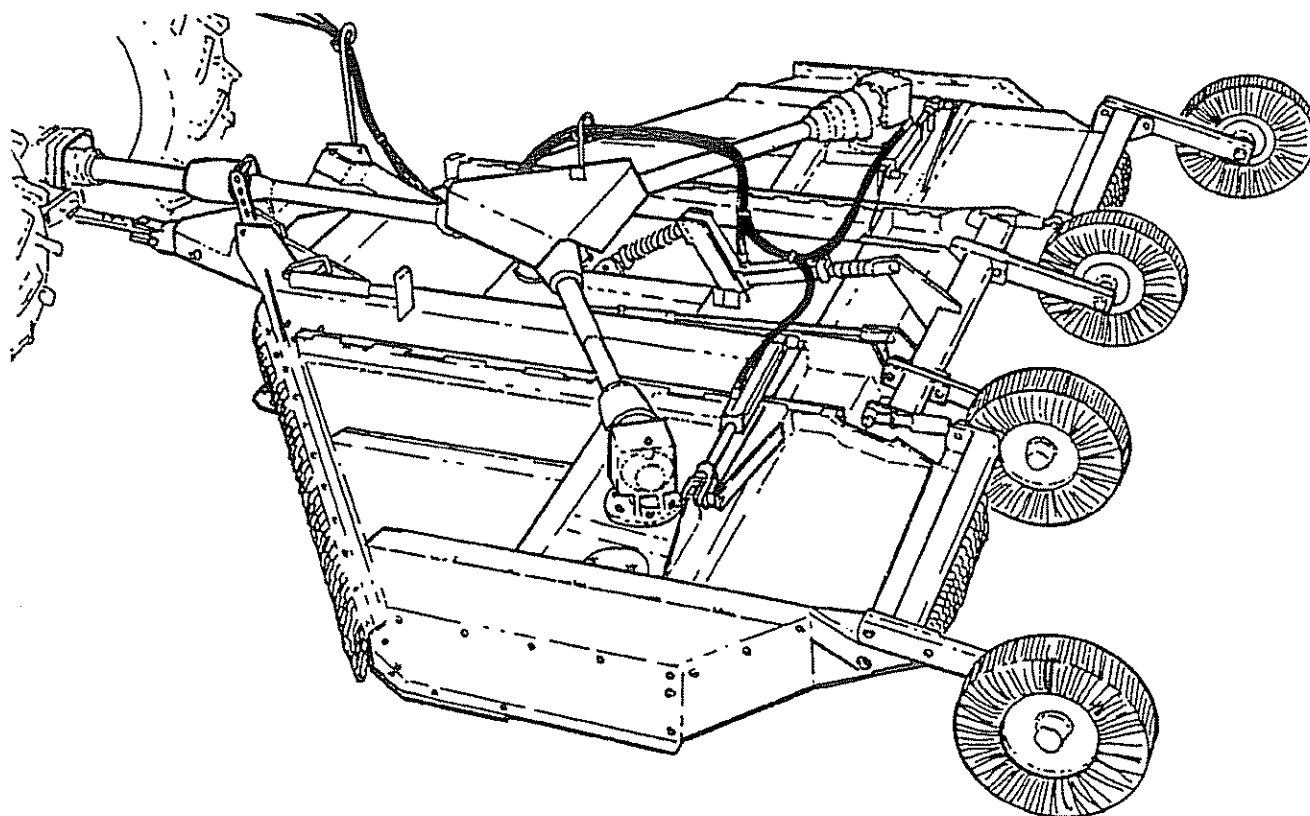
16 -- D137



17 -- D138

INTRODUCTION SECTION

INTRODUCTION



Your medium-duty Mower designed primarily for weed and grass control and shredding row crops such as cotton and corn stalks. With proper maintenance as described in this manual, your Mower will provide you with years of dependable service with a minimum of repairs.

It is recommended that all operators of this implement read this manual or be instructed of its contents as to safety, proper operation, and maintenance before beginning operation.

Your Mower has been assembled for operation with a tractor PTO input speed of 540 RPM. This machine is designed for use with tractors rated 50 HP (37kW) to 100 HP (75kW) for 540 RPM drive.

When ordering parts for the Gearboxes and the Drivelines, be sure to specify the serial number. The serial number is located outside of the right Tongue attaching Plate on the center Mainframe section.

Chain Guards are extra equipment. Deflectors, Driveline Integral Shields and Gearbox Shields are standard equipment and to be used at all times.

To place the warranty into effect, fill out the warranty card in full, giving all the requested information, and mail promptly. Be sure to give the serial number of this Mower.

ASSEMBLY SECTION

ASSEMBLY

DEALER SET-UP INSTRUCTIONS

Set up cutter as received from factory with these instructions. Refer to complete Check List when set up is finished.

Select a suitable working area. Open parts box and lay out parts to make location easy. Refer to Parts List and exploded view drawing in Repair Parts Section and the Packing List.

Cut all wire ties, including those on blades if present.

This cutter is shipped partially assembled. Assembly will be easier if components are aligned and loosely assembled before tightening hardware. Refer to Proper Torque. All bolts are Grade 5 unless otherwise specified.

1. Position center section on flat surface. Elevate approximately 10 inches from ground to permit the installation of wings.

WARNING: Support the frame securely at enough points so that there is no danger of it falling during assembly, causing injury to persons or damage to the cutter.



2. Install Tongue (#1) pivot tubes into clevis type openings at front of Center Section. Insert Pivot Pin (#2) through inside clevis flat, pivot tube, and then outside clevis flat. Rotate head of pin so it locks over end of inside flat. Install cotter pin (#3). Figure 1.

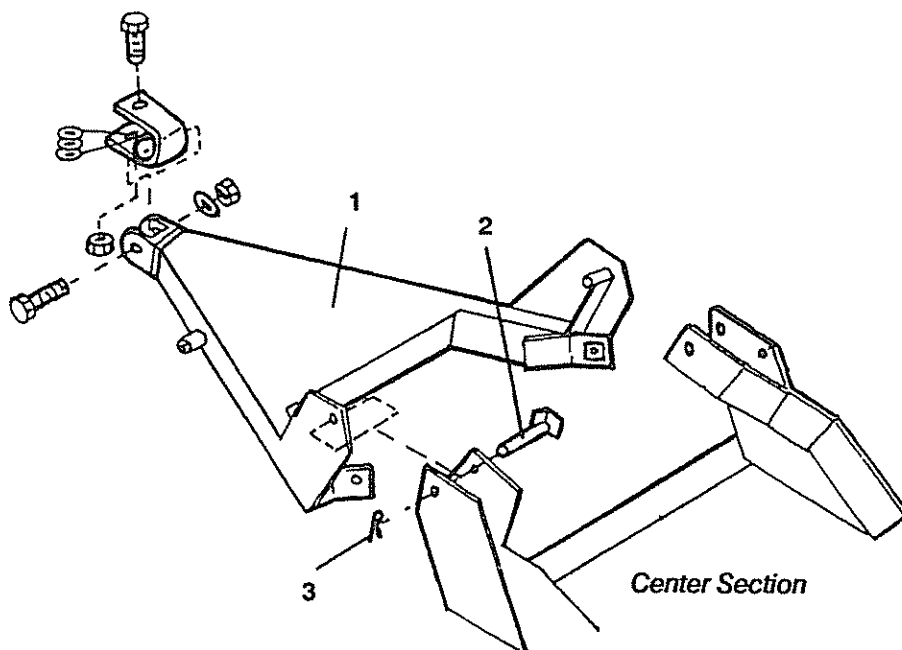


FIGURE 1. Tongue Assembly

ASSEMBLY

3. Install Center Axle Legs (#1) and Outer Axle (#2) to Center Axle (#3) using 3/4 x 3-1/2 bolts, and lock nuts. Tighten securely. **NOTE:** Install bolts through flats on Axle tube (#3) and through gauge wheel Axle Legs (#1) and then Outer Axle (#2). Attach the adjustment Turnbuckle w/Bushings (#6) to the Outer Axle (#2) and Wing Axle (#4) using 3/4 x 3-1/2 bolts, nuts, and locknuts. Attach the Wing Axle Legs (#5) to the Wing Axle (#4) using 3/4 x 3 bolts and locknuts. Figure 2. Install Wheels to Axle Legs on Center Section and Wings.

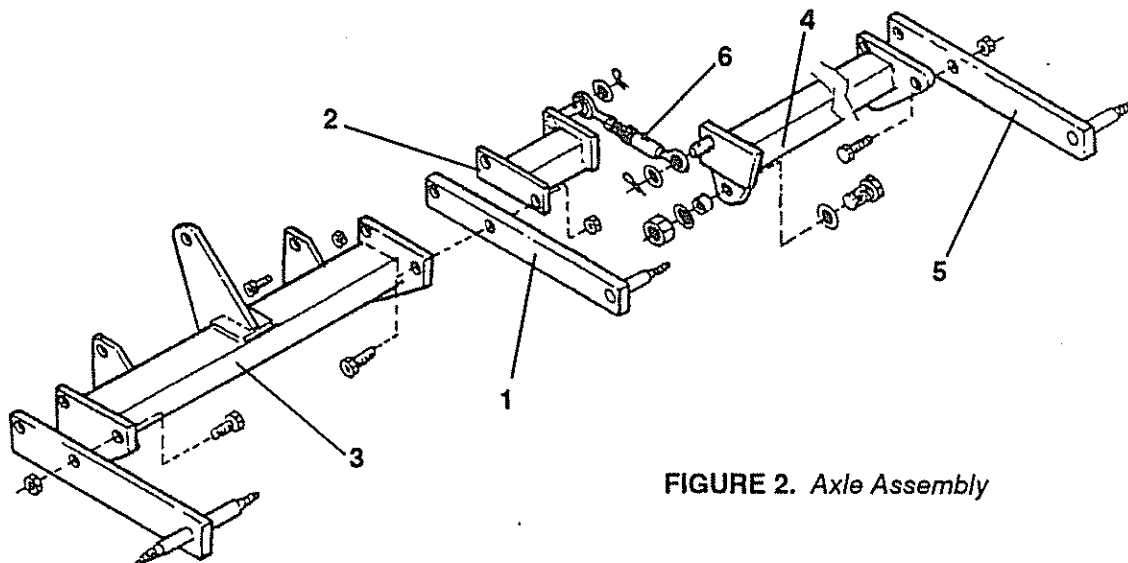


FIGURE 2. Axle Assembly

4. Insert bushings (1" OD X 1" Lg 4 Req'd) one in each Level Rod mounting hole on Lift Axle and one in each mounting hole on Tongue. Install Level Rods with Turnbuckles toward the rear. Secure with 3/4 x 2-1/2 capscrews and locknuts.

NOTE: Before installing Level Rods measure and adjust to same length.

5. Attach the Jackshaft Bearing Support Bracket (#1) to the Tongue (#2) with Bolts, Flatwashers, and Locknuts (#3). Loosely attach the Bearing Supports (#4) to the Support Bracket (#1) using Bushing (#5), Bolts, Flatwashers, and Locknuts (#6). Attach Jackshaft (#7) with spacer (#8), Bearing and Housing (#9) to Bearing Supports (#4). Tighten Hardware (#6). Install Bolt, Spacer, and Locknut (#10). Tighten securely.

6. Attach the Slip Clutch end of Jackshaft to the Center Gearbox shaft by inserting the spline bore to the Shaft. Tighten Slip Clutch bolts to their proper torque.

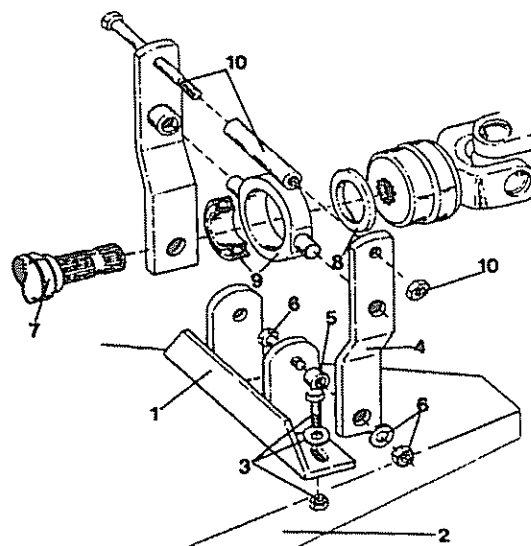


FIGURE 3. Jackshaft Bearing Support Assembly

ASSEMBLY

7. Install Main Driveline. Attach Slide Collar end to Jackshaft by inserting spline bore on to shaft and then depressing spring loaded collar toward clutch housing, thus allowing clutch to slide onto shaft. Move Driveline and forth until locking collar "clicks" out locking the clutch end of joint to shaft.

8. Attach Slip Clutch end of Wing Driveline to shaft on Center Gearbox in same manner as Main Clutch .

9. Install Right Wing and Left Wing or Counter Weight (#1). Align hinges and insert Hinge Rod (#6) from front of machine. (To facilitate installing hinge rod, insert a long 3/4" bolt or rod through the first few rear hinges. This will keep the wing in alignment while inserting rod.) Secure Rod using Spacer (#2) when using Counter Weight, Bushing (#4), 3/8 x 2 bolt (#3), and locknut (#6). Figure 4.

NOTE: Be sure and install Bushing (#4) when installing hinge rod (#6).

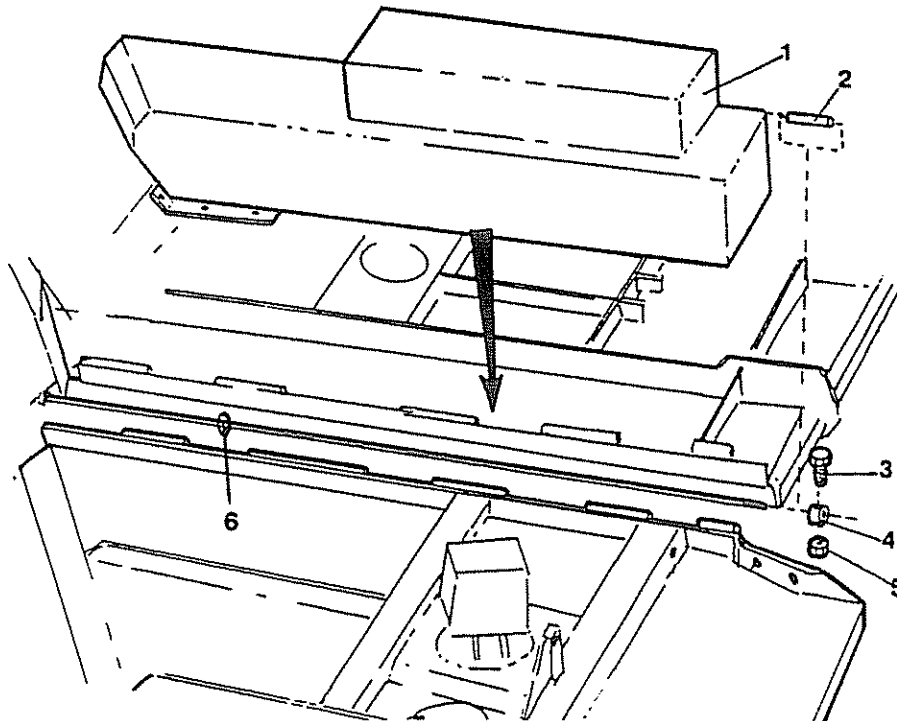


FIGURE 4. Wing or Counter Weight Attachment

10. Install Center Gearbox and Driveline Safety Shield. Remove the top four bolts and lockwashers from the Center Gearbox. Install the shield on the Center Gearbox replace hardware. Note: Check lubricant level of all Gearboxes.

11. Install opposite end of Wing Driveline to Gearbox shaft by sliding yoke of driveline with locking collar depressed onto the Gearbox shaft. Move yoke back and forth until locking collar "clicks" out locking the yoke in place. **NOTE:** To facilitate removal of Clutches and Yokes from splined shafts in the future, it would help to place a small amount of lubricating grease on the splines before installation.

12. Install lift Axle Hydraulic Cylinder with base end attached to Spring Support. Install Restrictor Fitting in base port and one end of Hydraulic hose to fitting. Note: See hydraulic schematic for more details.

14. Install Transport Bar supports on both sides of rear center frame using 1/2 x 1-1/2 bolts, and locknuts.

15. Install Transport Bars on lower Cylinder Pin and retain using cotter pin and retain using cotter pin. Lay Transport Bar in Clevis on Bar Support to store when not in use.

ASSEMBLY

CHAIN SHIELDING ASSEMBLY

Refer to parts list and exploded view drawing in Repair Parts Section.

1. Front Chainguars consists of five assemblies, two for Wings and three for Center Section. The three short assemblies are for center section. Locate longest of three short assemblies and install on Front Section with rod to outside using $1/2 \times 1-1/4$ bolts and locknuts.
2. Install other two assemblies on each side of Center Section with rods to inside using $1/2 \times 1-1/4$ bolts and locknuts. Note: Clipped corner of bracket must be installed toward the center of section.
3. Wing Chainguard assemblies are symmetrical but must be installed so that rod is to outside using $1/2 \times 1-1/4$ bolts and locknuts to retain.
4. Rear Chainguards consists of three assemblies. Sort pieces and identify using Repair Parts Section. The Center Section Chainguard installs on Center Section with the rod to outside of cutter using capscrews and locknuts.
5. Rear Wing Chainguard assembly must be installed on correct wing using bolts and locknuts.

HYDRAULIC SYSTEM ASSEMBLY

1. This unit can be operated on any tractor which has at least two remote outlets.

IMPORTANT: Remote outlets connected to wings cylinders must have a float detent position on control lever. If not the tractor must be equipped with external valve bank which has float detent positions.

2. If tractor has only two outlets, one must be used to control center axle and the other is used to control both wings by placing a tee in hoses between cylinders. NOTE: When wing hydraulic cylinders are operated by one valve spool independent control of wings is not possible. When valve is actuated to raise wings there is no control over which wing will raise first. If independent control is required tractor must be equipped with an external three spool valve bank.
3. If 3 spool valve bank is required assemble on bracket and install on tractor fender at desired location. (See valve bank plumbing diagram for further details).

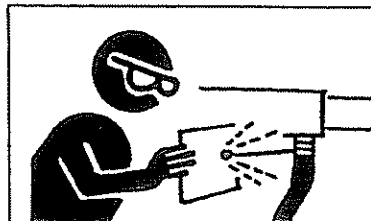
WARNING

USE PAPER OR CARDBOARD TO CHECK FOR LEAKS. NEVER USE YOUR HAND. IF OIL PENETRATES SKIN, GANGRENE OR OTHER SERIOUS INJURY COULD OCCUR.

GET IMMEDIATE MEDICAL ATTENTION.

See Operator's Manual.

00756059



ASSEMBLY

HYDRAULIC 3-BANK VALVE ACCESSORY

Valve bank normally supplied will be an open center valve. If closed center valve is required order part no. 3542.

1. If hydraulic 3-bank valve is used the valve must be matched to tractor hydraulic system (open center or closed center) and must have two spools which have detent position which allows wing cylinders to float. When installing control valve into tractor's hydraulic system, the question frequently arises as to the difference between a closed center and an open center hydraulic system. An explanation follows:

Open Center Hydraulic System - This system pumps oil through the circuit continually. When a resistance to flow is created in the line or valve the pressure builds up until, at a certain point the relief valve opens to pass the oil back to the tank. This, then is a constant flow, variable pressure system with a relief valve required.

Closed Center System - This system holds a constant pressure in the line, and when an obstruction to flow occurs, the pump stops pumping. No relief valve is required or provided. This, then is a variable volume, fixed pressure system.

IMPORTANT: If a closed center valve is installed in an open center system, there is no relief valve provided. When the oil flow is blocked and there is no relief valve, the pump either stops, breaks, a hose is blown or the engine stalls. Hose failure or a pump shaft failure is most common.

If an open center valve containing a relief valve is installed in a closed center system, the pump cut off pressure, over 2200 psi, will exceed that of the relief valve and pump oil continually over the relief valve. This will create a continuous load against the motor with all of this energy going to heat. This in turn, will heat up the hydraulic system, which is usually the transmission and could result in damage to entire transmission of the tractor.

NOTE: If there is any doubt as to which type system your tractor has, check with your local tractor dealer. If there is any doubt as to what type valve bank you have, remove large hex plug from outlet side of valve. If plug is long as pictured in valve is closed center. Closed center plug can be converted to open center by sawing.

IMPORTANT: Do not connect return line from valve bank into remote outlet unless recommended by your tractor manufacturer. Damage to valve can result if remote outlet control lever is actuated to pressurize return line. Always connect return line directly into tractor system reservoir.

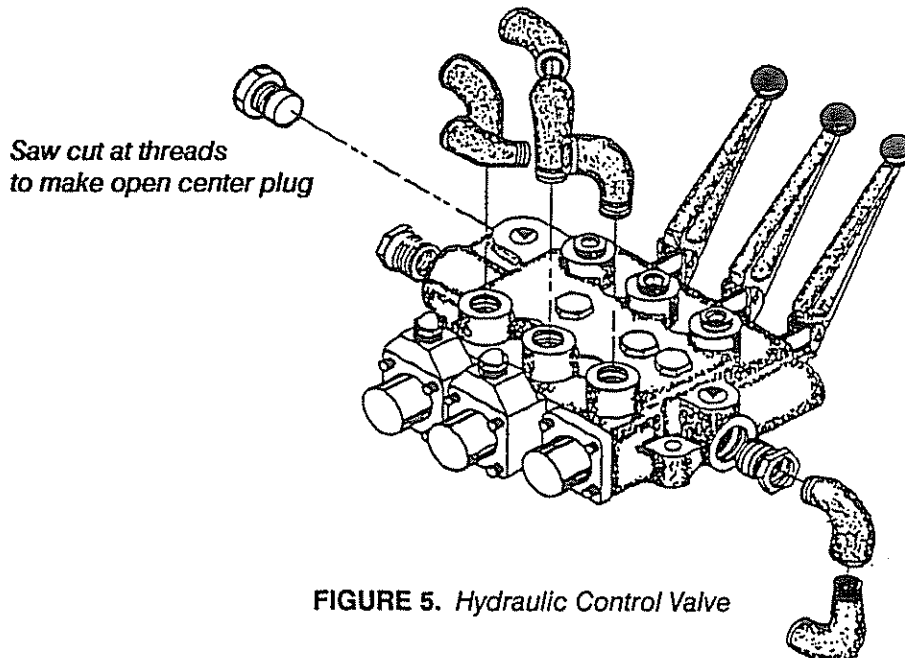


FIGURE 5. Hydraulic Control Valve

ASSEMBLY

LEVEL LIFT KIT ACCESSORY

This accessory consists of a matched set of hydraulic cylinders into which is incorporated a rephasing system. When each cylinder reaches its maximum extended length oil is by passed to next cylinder until all cylinders have been rephased to their maximum lengths. This gives a means of rephasing cylinders if they get out of adjustment. See cylinder schematic for further details. This accessory is used to lift wings simultaneously with center section.

1. Install hydraulic cylinders as shown in schematic. The 3-1/2" cylinder must be placed on center axle. The other two cylinders may go on either wing. The cylinders must be plumbed by sizes shown. **NOTE:** When this accessory used cylinder part no. 8727 axle cylinder is not required.
2. Install hoses and fittings as shown. Route hoses on top of rear tube member on each wing so they can be clamped as indicated in schematic. Clamp hoses using holes provided in transport bar support brackets on main parts schematic located on each side of center frame.
3. Start tractor and actuate so that fluid is supplied to cylinders. Each cylinder will bypass fluid to next cylinder when fully extended. Valve lever must be actuated for extended time period to allow all cylinders to be pressured to full extended position. Cycle cylinders several times to make sure all air is out of system.
4. To adjust and level wing cutting height with center section screw clevis onto rod to lower wing and off rod to raise wing. **NOTE:** Do not adjust clevis more than 4 turns in any direction.

WINCH AND STAND ACCESSORY

Install Mounting Bracket (1) onto left rear side of Center Section. Install 5/8 x 1-1/2 bolts, locknuts through holes in frame to retain bracket. Figure 6.

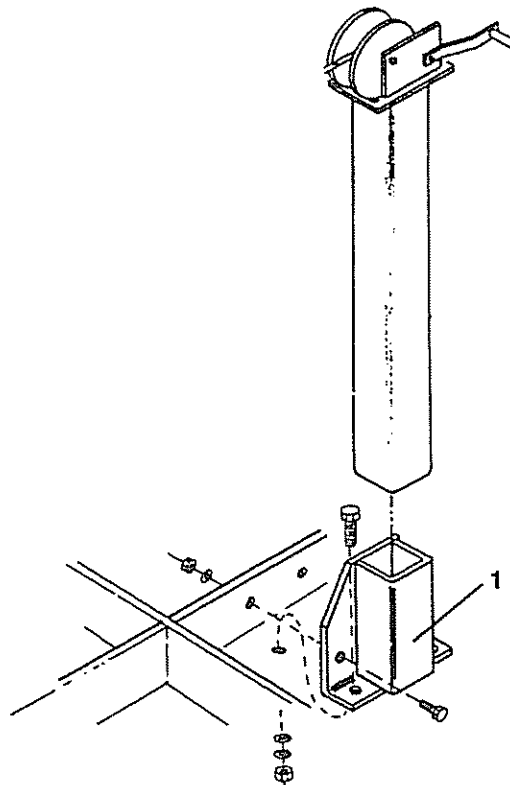


FIGURE 6. Winch Bracket Attachment

ASSEMBLY SECTION 3-7

OPERATION SECTION

OPERATION

The safe operation of this machine is the responsibility of the operator. The operator should be familiar with the cutter and tractor and all safety practices before starting operation. This cutter is designed primarily for weed and grass control in pastures and along highway right-of-ways. It is equipped with suction blades. Recommended cutting speed for most conditions is from 2 to 5 mph. Always operate tractor PTO at 540 RPM.

IMPORTANT: To avoid damage to cutter, retorque all bolts after the first 10 hours of operation. Retorque blade carrier retaining nut on gear box lower shaft to 450 ft. lbs.

PREPARING THE TRACTOR

A few simple preparations will be necessary to prepare your tractor for use with the Rotary Cutter.

1. Adjust drawbar length to 14" (540 RPM) or 16" (1000 RPM) maximum from end PTO shaft to drawbar hole.
2. Remove cap from tractor PTO shaft.
3. Tractor PTO shield must be in place.
4. Set tractor tires out to 60" or greater dimension between tires.

ATTACHING CUTTER TO TRACTOR

When attaching the Rotary Cutter to your tractor, follow the steps outlined in the tractor manual for attaching a pull-type implement.

Attach special clevis to top of drawbar using 5/8" bolt, lockwasher, and nut. Install parking jack on lug provided on tongue.

Using parking jack, raise tongue of cutter so when tractor is backed up to connect to tractor drawbar the ball socket on tongue will fit between special clevis on top of drawbar. Insert pin supplied and retain using clip pin.

NOTE: Always place jack foot on firm surface or place board under jack for support.

WARNING: Jack must be retained on lug with pin provided before raising tongue of cutter.



Remove parking jack from tongue and place on storage bracket on left side of main frame.

With the Rotary Cutter attached to the tractor's drawbar, proceed to connect the PTO as follows:

1. Press QD pin and simultaneously push driveline yoke onto PTO shaft on tractor until pin engages.
2. Move yoke back and forth to make sure yoke is locked in place.

WARNING: A loose shaft could slip and cause personal injury or damage to cutter. When attaching PTO yoke to tractor PTO shaft, it is important that the Locking Collar be fully forward and seated on yoke.



3. Attach the shield tether chain to tractor and mower.

Note: The chain restrains the shield from rotating.

1. Chains must be fitted so as to allow sufficient articulation of the shaft in all working positions.
2. The driveline must not be suspended from the chain.

OPERATION

SAFETY CHAINS

When towing implements on the highway, use a safety chain with tensile strength equal to or greater than the gross weight of the implement to be towed by the tractor. This will control the implement in the event the hitch pin is lost.

After attaching the safety chain, make a trial run by driving the tractor to the right and to the left for a short distance to check the safety chain adjustment. If necessary, readjust to eliminate tight or loose chain.

Safety chains and attaching hardware are available from your tractor dealer.

CUTTING HEIGHT ADJUSTMENT

WARNING: Avoid personal injury! Be sure tractor engine is off, key is removed, and **ALLOW BLADES TO STOP TURNING** before dismounting to make adjustments.



IMPORTANT: Avoid very low cutting heights. Striking the ground with blades gives the most damaging shock loads a cutter can encounter and will cause damage to cutter and drive.

To achieve maximum cutting efficiency and provide the most uniform cut, the cutter should be operated with the rear of cutter slightly higher (1/2" - 3/4") than the front.

LEVELING CENTER SECTION

1. Place tractor and cutter on level surface.
2. Using center axle hydraulic cylinder, raise or lower center section to approximate cutting height.
3. Level the cutter deck front to rear, by adjusting the leveling rods linking the tongue and rear axle. To lower front, lengthen level rods and to raise front, shorten level rods.

IMPORTANT: Adjust level rods the same length to maintain equal tension in rods. Improper adjustment may cause rods to snap or bend.

4. Once machine has been leveled according to directions, exact cutting height can be set. Use split collar assemblies provided and inserted on center axle hydraulic cylinder rod to set height so when cylinder is lowered against collars, cut height is set.

LEVELING WINGS WITH CENTER SECTION

1. Adjust turnbuckle on wing axle until it matches center section.

OPERATION

STARTING & STOPPING CUTTER

Power for operating cutter is supplied from tractor PTO. Refer to your tractor manual instructions for engaging and disengaging the PTO. Always engage the PTO at low engine rpm. Always operate at recommended PTO speed of 540 RPM. Learn how to stop tractor and cutter quickly in case of an emergency.

IMPORTANT: Stop cutter and tractor immediately upon striking an obstruction. Inspect the cutter and repair any damage before resuming operation.

WARNING: Avoid personal injury. When attempting to stop a tractor which does not have to live PTO, the momentum created by the blade carrier of a rotary cutter can cause the tractor to be pushed forward. **DO NOT** operate this cutter unless tractor has live or independent PTO.



To commence operation, reduce engine speed and engage the tractor PTO. Before starting to cut, gradually increase engine speed to develop full PTO speed.

DANGER: Chain guards must be installed if operating with people or livestock in the area or close to highways or buildings and in all non-agricultural operations.



IMPORTANT: Do not attempt to operate the Rotary Cutter in GROUND SPEED PTO.

Enter the area to cut with the cutter operating at PTO speed and, if it becomes necessary to temporarily regulate engine speed during operations, increase or decrease the throttle gradually.

To transport, disengage the PTO, raise center section and wings to full transport height and install transport bars.

IMPORTANT: Do not operate machine with either wing in full transport position. Operational limits for wings are 70 degrees above to 22 degrees below horizontal or ground line. Wing stops are provided which limit lift height during operation.

WARNING: When lowering wings from transport position, be sure all persons are clear of wings. Do not work under wing in raised position unless transport lock bar is in place.



IMPORTANT: Wing hydraulic cylinders should always be controlled by a tractor valve or remote valve which has float detent position which allows wings to float over uneven terrain.

OPERATION

TRANSPORTING CUTTER:

1. Flip wing stop back.
2. Raise wings to full height.
3. Install transport lock bars.
4. Raise center section.

WARNING: This machine can be turned over. Use caution when operating in transport position. Limit speed and avoid sharp turns and rough terrain.



When transporting the Cutter, keep the Center Section as low to the ground as is practical to increase stability. Raise the left and right Wing sections and use the transport lock bars to retain them in the upright position.

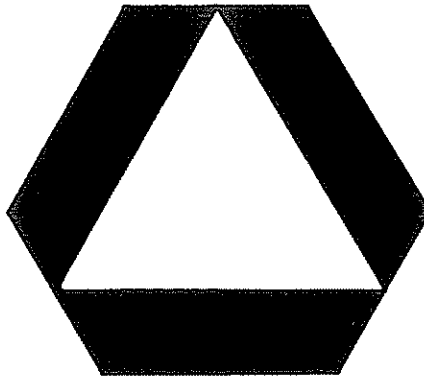
CAUTION: Keep everyone clear while lifting or lowering Cutter or raising and lowering Wings.



CAUTION: Do not exceed 10 MPH with Sectional Tires or 15 MPH with Pneumatic Tires.



CAUTION: Use the tractor Warning Lights, SMV Sign, Reflectors, and other devices for adequate warning to the operators of other vehicles. Comply with local governmental regulations.



SMV Sign

OPERATION

CUTTING SPEED

Proper ground speed for cutting will depend upon the height, type, and density of material to be cut.

Normally, ground speed will range from 2 to 5 mph. Tall, dense material should be cut at low speed while thin medium height material can be cut at a faster ground speed.

WARNING: Do not attempt to raise wings on slopes or banks. Pull machine to level area before attempting to raise wings.



CUTTING TIPS

Always operate PTO at recommended 540 RPM when cutting. This is necessary to maintain proper blade speed and to produce a clean cut.

Under certain conditions, tractor tires may roll some grasses down and prevent them from being cut at the same height as the surrounding area. When this occurs, reduce the tractor ground speed, but maintain PTO RPM. The lower speed will permit grasses to be at least partially rebound and be cut. Taking a partial cut and/or reversing the direction of travel may also produce a cleaner cut.

IMPORTANT: To produce best possible cut, move tractor rear tires out to minimum 60 inches inside of tires so wing blades will pick up grass. Wing blades turn so they will help pick up material mashed down by the tractor tires.

WARNING: Avoid personal injury. Pick up all rocks and other debris before cutting. Enter new areas carefully. Cut material higher the first time to allow cutter to clear unseen objects. Never assume an area is clear. Always check.



Where there are grass and weeds high enough to hide debris that could be struck by the blades, the area should be inspected and large debris removed, mowed at an intermediate height, inspected closely with any remaining debris being removed and mowed again at desired final height. (This will also reduce power required, reduce wear and tear on the Mower drivetrain, spread cut material better, eliminate streaking, and make the final cut more uniform.

Remember, sharp blades produce cleaner cuts and use less power.

Before cutting, analyze the area to determine the best cutting procedure. Consider the height and type of material and the terrain type: hilly, level or rough.

DANGER: Wing sections should be raised only for clearance of obstructions and never for continuous cutting operations. Cutting with wings raised above the ground surface exposes the blades and can cause objects to be thrown from under the guards at a very high velocity and can cause property damage, bodily injury, or even death!



DANGER: DO NOT raise wing with blades rotating if bystanders are within 300 feet.



OPERATION

BLADE ROTATION

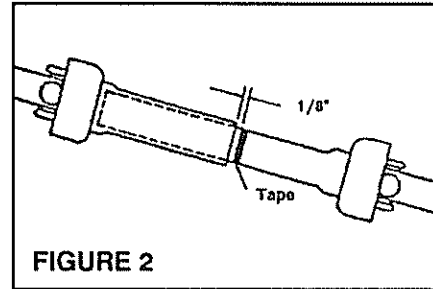
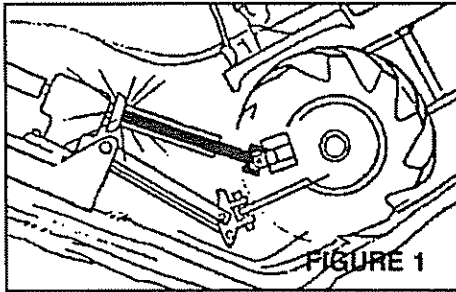
Standard blade rotation as viewed standing on top of unit looking in direction of travel is:

- Right Wing - Counterclockwise
- Center Section - Counterclockwise
- Left Wing - Clockwise

This arrangement will normally give the best quality of cut but in some conditions windrowing may occur at left side of center section. If windrowing becomes a problem, the wing gear boxes and blade assemblies can be reversed thus reversing the direction of rotation of each wing blade assembly. This will give a better distribution of cut material but will not usually give the same quality of cut as the standard rotation.

SPECIAL INSTRUCTIONS FOR ROUGH TERRAIN OPERATIONS

When crossing ditches with steep banks or going up sharp inclines, it is possible to "bottom out" the Driveline that connects the tractor PTO to the Power Divider Gearbox on Flex Wing Cutters. Note: To bottom out means that the Square Shaft has penetrated into the Round Housing to its maximum depth until the Assembly becomes solid - it can shorten no more. See Figure 1 & 2.



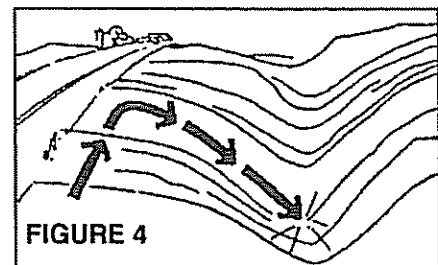
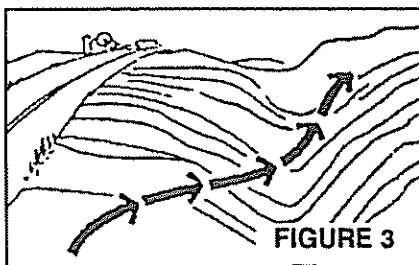
If this happens, it can cause serious damage to the tractor PTO by pushing the PTO into the tractor and through the Support Bearings or downward onto the PTO Shaft, breaking it off.

WARNING



Either failure can allow the Driveline to come loose from the tractor which could cause bodily injury to the operator or others in the vicinity along with expensive damage to the tractor and/or Cutter.

If you have a condition where your tractor will be going up a steep incline with your Cutter still on the flat area or coming down the opposite incline, you have a potential problem. Figure 4. The correct preventive measure is to instruct the operator to cross this kind of terrain at an angle. Figure 3. This will reduce the angle between the tractor and the Cutter. The problem is more likely to occur if the Cutter is in the raised position while the tractor is turning sharply and going up an incline.



OPERATION

WINCH (EXTRA EQUIPMENT) Figure 5 & 6

If the left and right Wings do not have folding Cylinders, use the Safety-Brake Winch to fold or unfold them. Turn the Winch Handle clockwise to raise Wing sections - turn the Handle counterclockwise to lower the Wings. Stop turning the Handle for either operation and the Brake will automatically hold the Wings in place if Brake is adjusted properly.

When reassembling Handle on Winch, make certain the Fiber Friction Disk is placed on the threaded Pinion Shaft before attaching the Handle. To replace the wire Rope, it is necessary to thread the Cable through the holes in the side of the Drum by the Rope Keeper. Fasten the Rope Keeper over the Cable to the side of the Drum, as shown, with Screw Heads to inside of Drum. Coil the wire Rope onto the Winch Drum Counterclockwise beginning at the side of Drum next to Rope Keeper.

Never allow Winch Drum to have less than 3 complete coils of Rope as Keeper will not hold weight of Wings by clamp-force only.

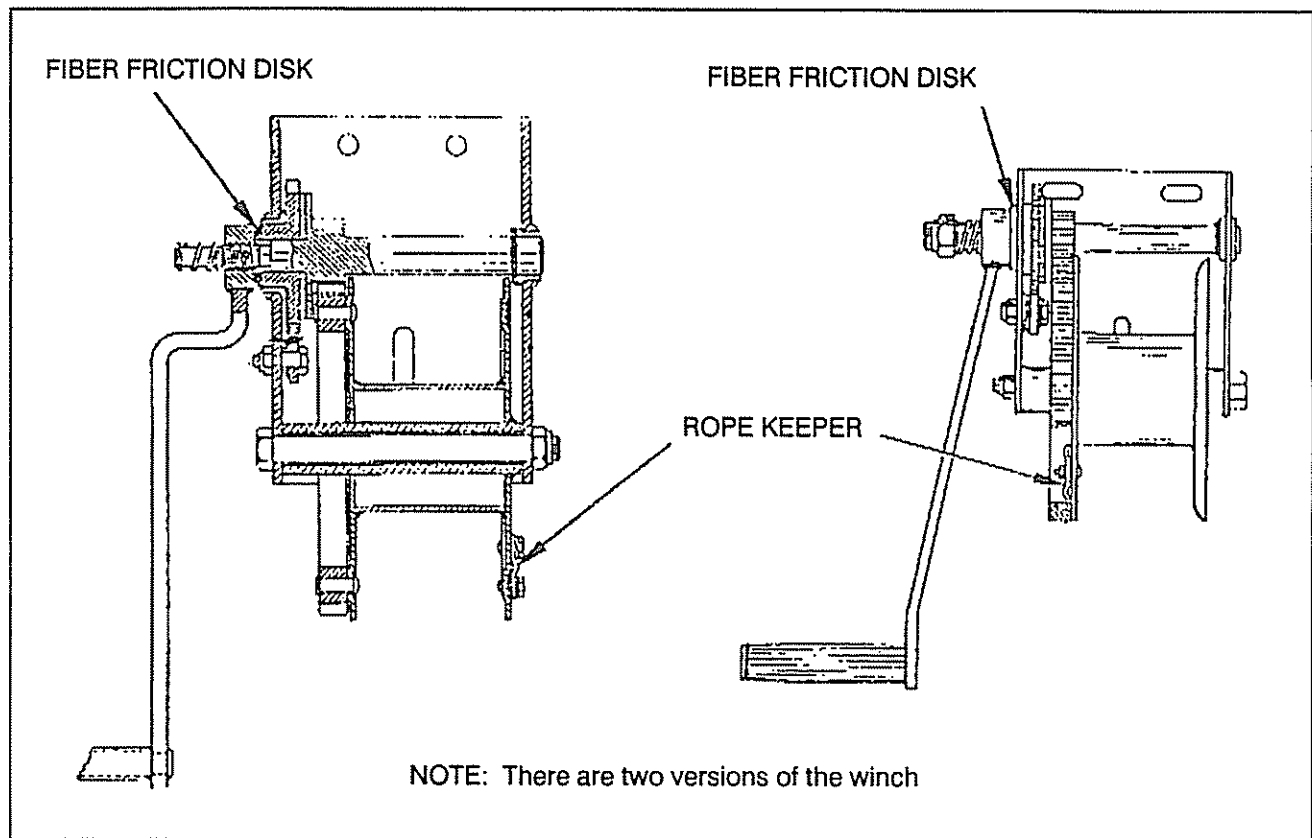


FIGURE 5

FIGURE 6

OPERATION

For added safety, hook the Winch Cable Pulley Assembly around the Stub of the Lifting Lug on the left Wing section. See Figure 7 below. String the Winch Cable across to the right Wing section, and hook the end of the Cable to the Lifting Lug. Remove the slack from the Winch Cable by tightening up on the Winch.

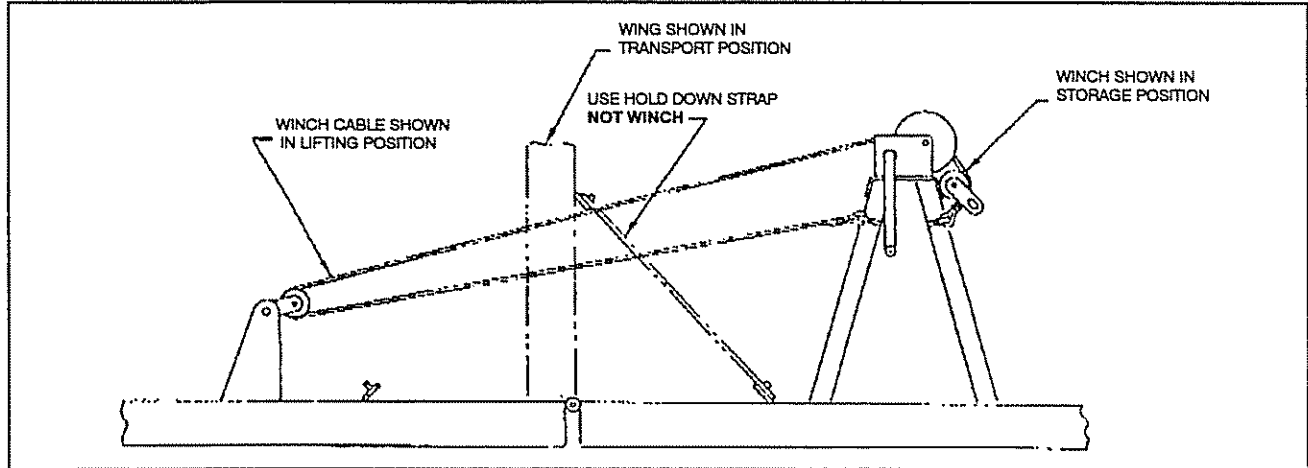


FIGURE 7

TIRES AND WHEELS

If Sectional Tires and Wheels are used, be sure the flat side of the Lug Nut is against the Wheel. See Figure 8. If Pneumatic Tires are used, do not over-inflate. Recommend 15 to 20 PSI. If Sectional Tires are used, do not exceed transport speeds of 10 MPH. Excessive speed can cause damage to the machine and/or the Sectional Tires.

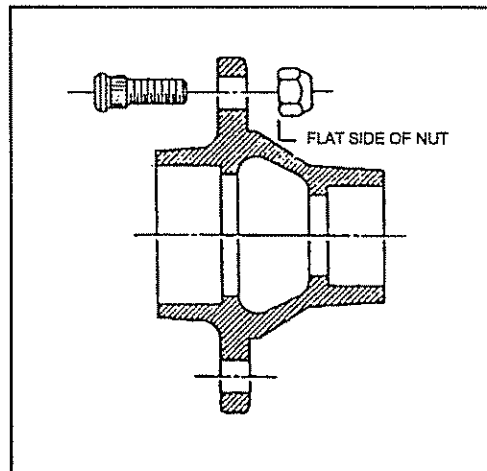


FIGURE 8

OPERATION

How can you tell if your mowing conditions or operating techniques are likely to cause this problem? If you have deep ditches to cross or steep banks to climb, we recommend that you:

- Disengage the Driveline from the tractor PTO Shaft.
- Slide the Driveline together until it "bottoms out" solidly.
- Apply colored tape to the Inner Shield 1/8" from the end of the Outer Shield. See Figure 49.
- Re-attach the Driveline to the PTO Shaft. Note: Tractor Drawbar should be approximately 15" above ground level.
- With the PTO NOT TURNING, slowly drive the tractor with the Flex Wing Cutter attached through your most severe terrain conditions and watch Shaft movement.
- If the colored tape on the Inner Shield comes within approximately 1/4 inch of the Outer Shield, you should stop immediately.
- You can now recognize terrain conditions that may cause this problem and avoid possible damage by crossing ditches and climbing banks at a safe angle.

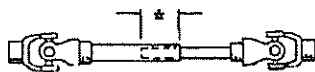
If you have further questions, please contact your dealer.



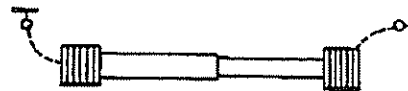
DANGER

1. MAKE CERTAIN DRIVELINES ARE OF THE **CORRECT LENGTH** AND **SECURELY ATTACHED**. **DRIVELINE SEPARATION AND/OR PTO STUB SHAFT FAILURE CAN CAUSE INJURY OR DEATH.** (See Operator's Manual for procedure.)

* SEE MANUAL FOR MINIMUM OVERLAP & MINIMUM/MAXIMUM LENGTHS



2. MAKE CERTAIN THAT DRIVELINE SHIELDS ARE **INSTALLED CORRECTLY** AND **TURN FREELY** TO PREVENT INJURY OR DEATH FROM ENTANGLEMENT



3. IF DRIVELINE SHIELDS HAVE TETHER CHAINS, **ATTACH TETHER CHAINS SECURELY TO MOWER AND TRACTOR** TO PREVENT SHIELD ROTATION, BELL AND/OR SHIELD FAILURE AND SERIOUS INJURY OR DEATH.

4. **540 PTO RPM UNLESS SPECIFICALLY MARKED OTHERWISE.**

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OPERATION

HYDRAULICS

A Three-Spool Control Valve (Extra Equipment) is available from your Alamo dealer for use with tractors having either an open or closed center Hydraulic System. Figure 9. To install the Hydraulics from the Cutter to the Control Valve, connect the Center Axle Lift Cylinder Hose to the Center Port on the Hydraulic Valve. Connect the wing-folding Cylinder Hoses to the same side of the Control Valve as the Cylinders are on the Cutter rather than crossing the Hoses. Remove plastic Plug from Breather of Cylinder before operation.

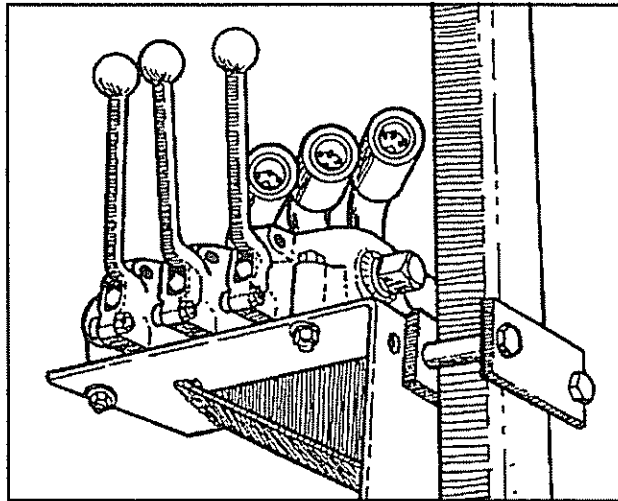


FIGURE 9

The Control Valve Handles should be set in the float position for most Cutter operations. This will allow the Cutter sections to follow the contour of the land. In the float position, the Control Valve Handles are pushed in closest to the Valve body. The closed-center Valve Handles must be kept in the float position to keep the Wings and Center Section from creeping up. When extending the left or right Wing out over a ditch when mowing, put the Control Valve Handles with detents in the center position on the Valve. This will give the Cutter more stability and prevent the opposite Wing from raising. Do not operate Cutter in this position over rough terrain or for long periods of time.

NOTE: Use a sealant and do not over-tighten Hose Fittings since this will break out the Cylinder Ports.

Keep Hoses and Quick Couplers or Swivels free from contamination. Never leave a disconnected end of Hose open. Be sure the Hoses are supported by the two Hose Brackets and are not allowed to come in contact with the Drivelines or to be put in a bind.

In case of Valve or Cylinder malfunction, contact your local Alamo dealer. If it becomes necessary to remove the Piston from the Cylinder, apply a few drops of "Loctite" No. 227 to Nut before replacing.

CAUTION: Repair leaky Hoses as soon as you discover them. DO NOT use your hand to detect pinhole leaks as a high-pressure stream of escaping hydraulic fluid can penetrate skin and cause serious infection. Check for leaks with a piece of paper - DO NOT USE YOUR HAND.



CAUTION: In the event that you do have oil penetration through the skin, contact a physician at once! Serious infection can result!



OPERATION

TROUBLE SHOOTING

TROUBLE	POSSIBLE CAUSE	POSSIBLE REMEDY
Excessive Vibrations	1. Check gear box bolts.	Tighten if loose.
	2. Check for loose nuts on bladeholder and blades.	Tighten if loose.
	3. Check for bent output shaft. If shaft is bent, oil will normally leak from bottom seal.	Replace shaft if bent.
	4. Check to see if blades are free swinging.	Free blades so they swing.
	5. Check for even wear on each blade tip. Were both blades changed at the same time?	Weigh blades. Weight should be within 1 oz. Always replace both blades.
	6. Blade broken.	Replace blades, in sets.
	7. Blade carrier bent.	Replace carrier.
	8. Blade hub not properly seated on shaft.	Remove hub, check tapered spline shaft, clean and replace.
	9. New blade or bolts matched with worn blade or bolts.	Replace blades or bolts in sets.
	10. Drivelines not phased correctly. Implement & Tractor yokes must be in line.	Replace driveline.
Gear Box Overheating	1. Low on lubricant.	Fill to level plug.
	2. Improper type lubricant.	Replace with proper lubricant.
	3. Excessive trash build-up around gear box.	Remove trash.
	4. Bearing or gears set up improperly.	Consult your Dealer.

OPERATION

TROUBLE SHOOTING

TROUBLE	POSSIBLE CAUSE	POSSIBLE REMEDY
Gear Box Noisy	1. Rough gears.	Run in or change gears.
	2. Worn bearing.	Replace bearing.
Gear Box Leaking	1. Damaged oil seal.	Replace seal.
	2. Bent shaft.	Replace oil seal and shaft.
	3. Shaft rough in oil seal area.	Replace or repair shaft.
	4. Oil seal installed wrong.	Replace seal.
	5. Oil seal not sealing in the housing.	Replace seal or use a sealant on OD of seal.
	6. Oil level too high.	Drain oil to proper level.
	7. Sand hole in casting.	Replace castings or gear box.
	8. Gasket damaged.	Replace gasket.
	9. Bolts loose.	Tighten bolts.
Clutch Slips Excessively	1. Clutch linings badly worn or plates warped.	Repair clutch per maintenance section of manuals.
	2. Too much power for clutch.	Reduce ground speed and material intake.
	3. Oil on facings.	Replace facings.
	4. Friction facings glazed.	Clean with emery cloth.
Blade Wears Too Fast	1. Cutting in sandy conditions.	Increase cutting height.
	2. Cutting in rocky conditions.	Increase cutting height.
	3. Soft "will fit" blades.	Use genuine Alamo HT blades.
Hydraulic Cylinder Will Not Operate	1. Not enough pressure.	Check pressure.
	2. Valve not connected properly.	Re-plumb valve.
	3. Quick coupler not completely connected.	Complete connection.

OPERATION

TROUBLE SHOOTING

TROUBLE	POSSIBLE CAUSE	POSSIBLE REMEDY
Oil Squirting from Breather Vent Hole	1. Oil leaking by piston ring. (A small amount of leakage is normal)	Do not carry cutter on cylinder. (Use stroke control)
	2. Piston ring worn.	Replace piston ring.
	3. Cylinder wall scored or pitted.	Replace cylinder.
	4. Wrong piston ring on piston.	Use correct piston rings.
Not Cutting Clean	1. Blades dull.	Sharpen or replace blades.
	2. Blade rotation incorrect.	Use correct blade for carrier rotation.
	3. Carrier RPM too low.	Use correct PTO speed and check for correct gear box ratio.
	4. Mower not level.	Adjust machine.
	5. Tires mashing down grass.	Move tires out of cutter overlap area. Minimum 60" inside tires.
	6. Ground speed too fast.	Reduce ground speed.
	7. Blades locked back.	Free blades.
	8. Blades riding up due to blade bolt wear.	Replace blade bolts.
Streaking Conditions In Swath	1. Conditions too wet for cutting. Blades unable to cut that part of grass pressed down by path of tractor tires.	Allow grass to dry before cutting. Slow ground speed of tractor but keep engine running at full PTO rpm. Move rear tires as wide as possible so wing blades will pick up grass.
	2. Dull Blades.	Sharpen or replace blades.
	3. Height of cutter lower at rear or front.	See Cutting Height Instructions.

MAINTENANCE SECTION

MAINTENANCE

Before operating your Rotary Cutter, make sure it is properly lubricated and thoroughly inspected. Only a minimum of time and effort is required to regularly lubricate and maintain this machine to provide long life and trouble free operation.

WARNING: Always disengage the PTO before raising the Rotary Cutter for transporting or making adjustments.



LUBRICATION INFORMATION

Do not let excess grease collect on or around parts, particularly when operating in sandy areas. The accompanying illustration shows lubrication points. The chart gives the frequency of lubrication in hours, based on normal operating conditions. Severe or unusual conditions may require more frequent lubrication.

Use an SAE multi-purpose lithium type grease for all locations shown. Be sure to clean the fitting thoroughly before using grease gun. Daily lubrication of the wing driveline slip joint is necessary. Failure to maintain proper lubrication will result in damage to U-joints, gear box and/or drive shaft.

WARNING: When attaching QD. yoke to tractor PTO, or gear box shaft, it is important that spring activated locking pin or collar slides freely and locking balls are seated in groove on splined shaft. A loose yoke could slip off and result in personal injury or damage to cutter.




The telescoping wing driveline shaft inside the shielding must be lubricated daily. Disconnect driveline from gear box and extend or compress length to align holes in both shield halves. The grease fitting can then be exposed by rotating both shields (with holes aligned) until fitting appears in sleeve. Insert grease gun and grease thoroughly.

WARNING: Keep fingers out of slot in shield to prevent injury.



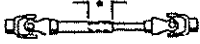

Reconnect driveline to gear box. Raise and lower cutter wing after applying grease to spread over joint working area.




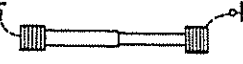
DANGER

1. MAKE CERTAIN DRIVELINES ARE OF THE CORRECT LENGTH AND SECURELY ATTACHED. DRIVELINE SEPARATION AND/OR PTO STUB SHAFT FAILURE CAN CAUSE INJURY OR DEATH. (See Operator's Manual for procedure.)

* SEE MANUAL FOR DRIVELINE OVERLAP & SEPARATION/MAXIMUM LENGTHS

	
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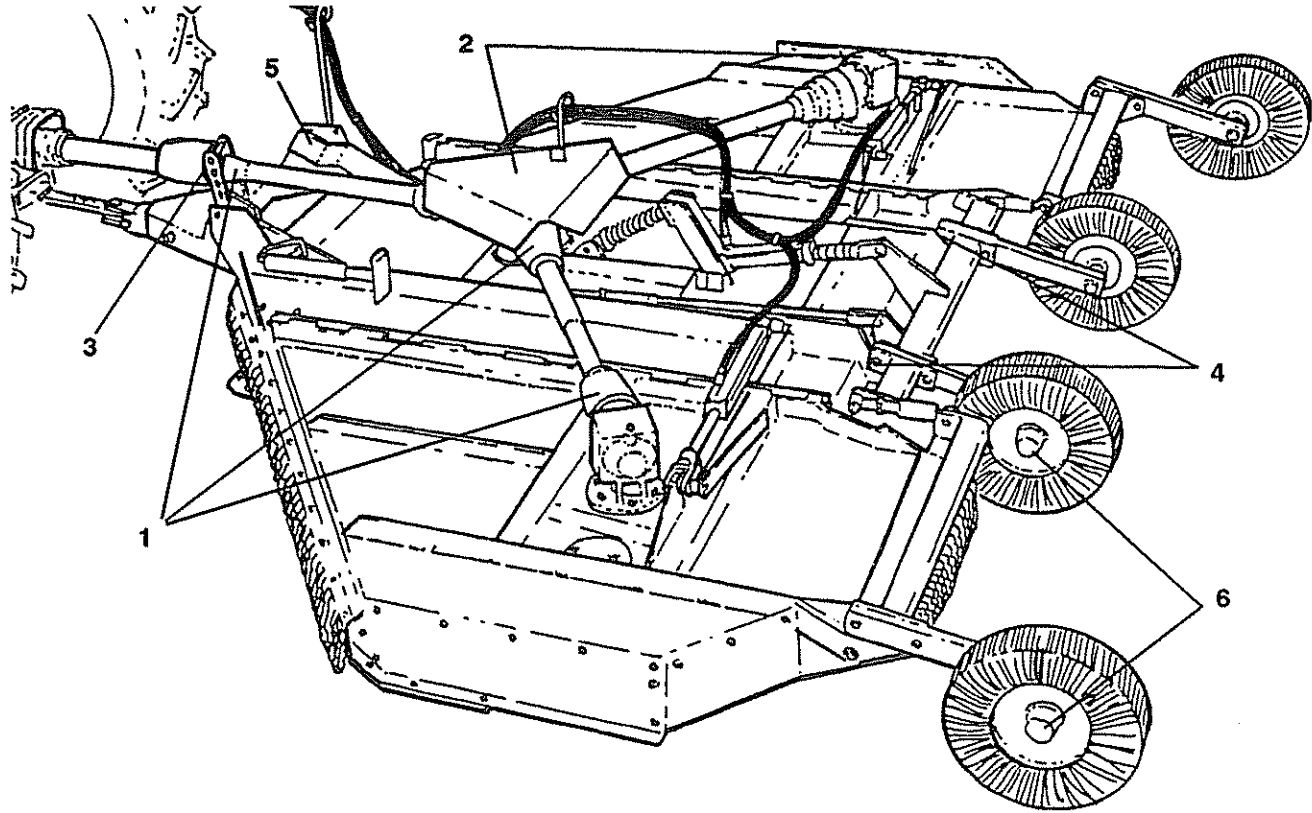
2. MAKE CERTAIN THAT DRIVELINE SHIELDS ARE INSTALLED CORRECTLY AND TURN FREELY TO PREVENT INJURY OR DEATH FROM ENTANGLEMENT

	
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3. IF DRIVELINE SHIELDS HAVE TETHER CHAINS, ATTACH TETHER CHAINS SECURELY TO MOWER AND TRACTOR TO PREVENT SHIELD ROTATION, BELL AND/OR SHIELD FAILURE AND SERIOUS INJURY OR DEATH.

4. 540 PTO RPM UNLESS SPECIFICALLY MARKED OTHERWISE. 00756464

MAINTENANCE



Lubrication Fitting Location

ITEM	Description	Frequency
1	U-Joints	8 hours
2	Gear Box	Check daily
3	Pillow Block	8 Hours
4	Center Axle Pivot	8 Hours
5	Tongue Pivot	8 hours
6	Wheel Hubs	Weekly

NOTE: Lubrication of telescoping members on main driveline is accomplished by extending or compressing driveline until grease zerk can be accessed through slots in shield tubes. Pump liberal amount of lubricant between sliding members. This procedure should be done every 20 hours.

MAINTENANCE

WING GEAR BOX

The gear box should not require additional lubricant unless the box is cracked or a seal is leaking. It is recommended that the oil level plug be removed after every 16 to 20 hours of operation and oil added until it runs out hole.

CENTER GEAR BOX

Oil level plug is a square head pipe plug located on lower left side of input shaft cover plate. Fill plug is above shaft in same front cover.

Recommended lubricant is Exxon - Spartan EP220, Mobil HD 80W90, or equal. Required lubricant is a SAE 90 or SAE 80W90 with EP additives for extreme pressure and temperature, with a API-GI-5 Service rating.

BLADE SERVICING

Inspect blades before each use to determine that they are properly installed and in good condition. Replace any blade that is bent, excessively nicked, worn, or has any other damage. Small nicks can be ground out when sharpening.

WARNING: Use only original equipment blades on this cutter. They are made of special heat treated alloy steel. Substitute blades may not meet specifications and may be dangerous.



BLADE SHARPENING

Always sharpen both blades at same time to maintain balance. Follow original sharpening pattern as shown in Figure 3. Always sharpen blades by grinding. DO NOT heat and pound out edge. Do not sharpen blade to a razor edge. Do not sharpen blade to a razor edge, but leave a 1/16" blunt edge. Do not sharpen back side of blade.

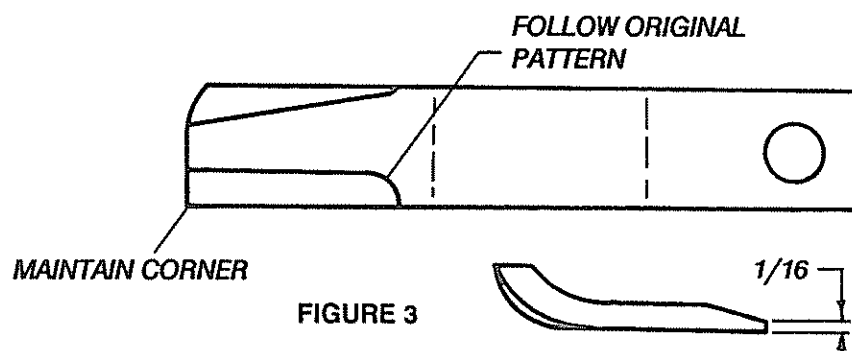


FIGURE 3

IMPORTANT: When sharpening blades, grind each blade the same amount to maintain balance. The difference in blade weights should not exceed 1 ounce. Unbalanced blades will cause excessive vibration which can damage gear box bearings. Vibration may also cause structural cracks in cutter housing.

WARNING: Never work under equipment supported by a hydraulic device because it may drop if the control is actuated (even with the engine stopped) or in the event of hose failure, etc. Always use a secure support for equipment which must be serviced while in the raised position.



MAINTENANCE

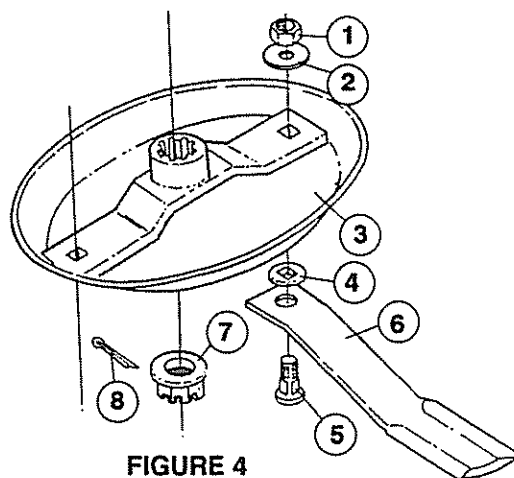
BLADE REMOVAL

To remove blades (#6) for sharpening or replacement, remove the cover plate on deck of cutter near each gear box. Remove locknut (#1) from blade bolt (#5). Inspect lock nut after removal and replace if threads or nylon insert are damaged. Always replace nut when replacing blade bolt. When installing blades be sure and check blade bolt pivot diameter for wear. Replace bolt if worn more than 1/4" at any point. Install blade bolts with worn side of bolt away from the center of the blade carrier. Tighten lock nut to 300 ft. lbs. Figure 4.

WARNING:



Avoid personal injury. Blade and/or blade carrier removal should be done only with the tractor engine shut off, key removed, in neutral, parking brake on, and PTO disengaged, and the cutter blocked in the raised position.



BLADE CARRIER REMOVAL

Remove cotter pin (#8) and loosen slotted nut (#7) on gear box shaft. Loosen but do not remove the nut until the blade carrier is loosened. Use a suitable 2 jaw gear puller to pull carrier off tapered gear box shaft. Once blade carrier is loose on shaft, remove nut and washer and remove carrier. Figure 4.

BLADE CARRIER INSTALLATION

Clean the spines on both the blade carrier and output shaft. position carrier on the gear box output shaft and install flat washer and 1" hex nut. Tighten nut holding blade carrier to minimum 450 ft. pounds, strike the carrier on the hub several times with a heavy hammer to seat the hub. Use a suitable spacer over the nut to prevent damage to the nut and threads. Retighten the nut to 450 ft. pounds. Install and spread cotter pin.

NOTE: Always recheck gear box output shaft slotted blade carrier retaining nut torque after a few hours operation.

WARNING:



Avoid personal injury. Do not work under cutter without support blocks to keep frame from falling.

SKID SHOES

Wing skid shoes are replaceable and should be checked and replaced as required.

MAINTENANCE

SLIP CLUTCHES

This unit is equipped with all four plate clutches. The torque setting in these clutches is set at factory and cannot be changed.

Avoid overheating of clutches caused by too long or too frequent operation of the clutch, since this can damage the friction plates and clutch parts.

SEASONAL CLUTCH MAINTENANCE

It is important the clutches will slip when an obstacle or load heavier than clutch setting is encountered. Before using the cutter each season, use the following procedure to make sure the clutch will slip and give the overload protection required.

1. Tighten nuts (#1) Figure 4 until they contact spring plate and then turn approximately four turns.
2. Attach machine to tractor, set engine at approximately half throttle and quickly engage PTO. This procedure will break clutch facings loose and allow the proper torque to be maintained.
3. Return nuts and bolts to original position.

NOTE: If machine sits outside longer than 30 days and is exposed to rain and humid air, the clutches should be removed from machine and stored in dry area. Clutch facings will soak up moisture, causing the metal plates to rust badly. When this occurs, the break away torque increases greatly and damage to gear box, driveline, or tractor PTO can occur.

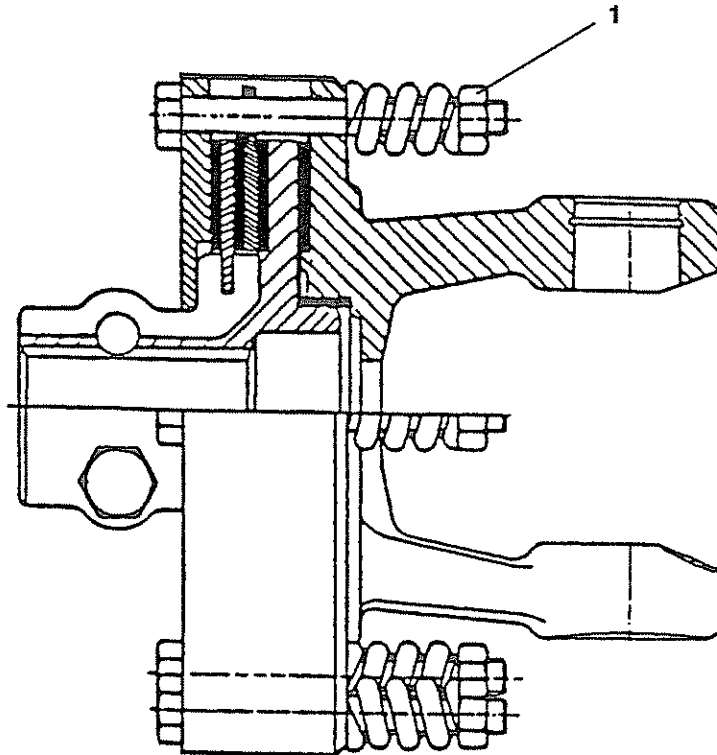


FIGURE 5

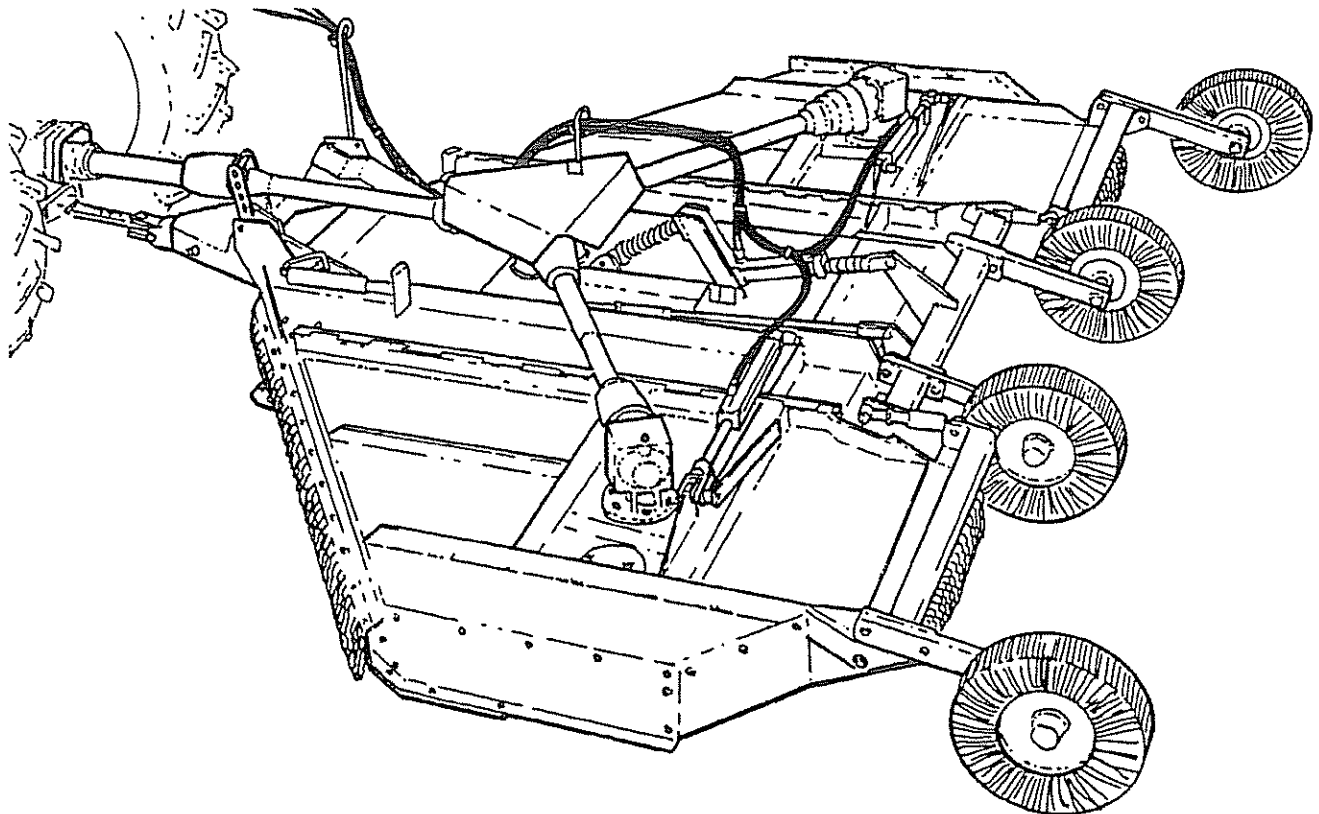
MAINTENANCE

STORAGE

Your rotary cutter represents an investment from which you should get the greatest possible benefit. Therefore, when the season is over, the cutter should be thoroughly checked and prepared for storage so that a minimum amount of work will be required to put it back into operation for the next season. The following are suggested storage procedures:

1. Thoroughly clean the cutter.
2. Lubricate the cutter as covered in Maintenance Section.
3. Tighten all bolts and pins to the recommended torque.
4. Check the cutter for worn or damaged parts. Make replacements immediately using genuine parts.
5. Store the cutter in a clean, dry place with the cutter housing resting on blocks.
6. Inspect gauge shoe runners and replace as required.
7. Use spray touch-up enamel where necessary to prevent rust and maintain the appearance of the cutter.

DANGER: Chain guards must be installed if operating with people or livestock in the area or close to highways or buildings.






MAINTENANCE

HARDWARE

TORQUE CHART

Check nuts, bolts and other miscellaneous hardware regularly. Loose hardware is easily lost, causes increased wear on parts, and increases the chance of breakdown. Loose hardware creates potential hazards which could result in personal injury to the operator, support personnel, and bystanders. Use the "Torque Chart" below when tightening bolted connections.

RECOMMENDED TORQUE IN FT-LBS (Nm) COARSE AND FINE THREADS			
2 (B) 		5 (D) 	
		8 (F) 	
Bolt Diameter	Plain Head	Three Dashes	Six Dashes
1/4	Not used	10 (14)	14 (19)
5/16	Not used	20 (27)	30 (41)
3/8	Not used	35 (47)	50 (68)
7/16	35 (47)	55 (75)	80 (108)
1/2	55 (75)	85 (115)	120 (163)
9/16	75 (102)	130 (176)	175 (237)
5/8	105 (142)	170 (230)	240 (325)
3/4	185 (251)	300 (407)	425 (576)
7/8	160 (217)	445 (603)	685 (929)
1	250 (339)	670 (908)	1030 (1396)
1-1/8	330 (447)	910 (1234)	1460 (1979)
1-1/4	480 (651)	1250 (1695)	2060 (2793)

MAINTENANCE

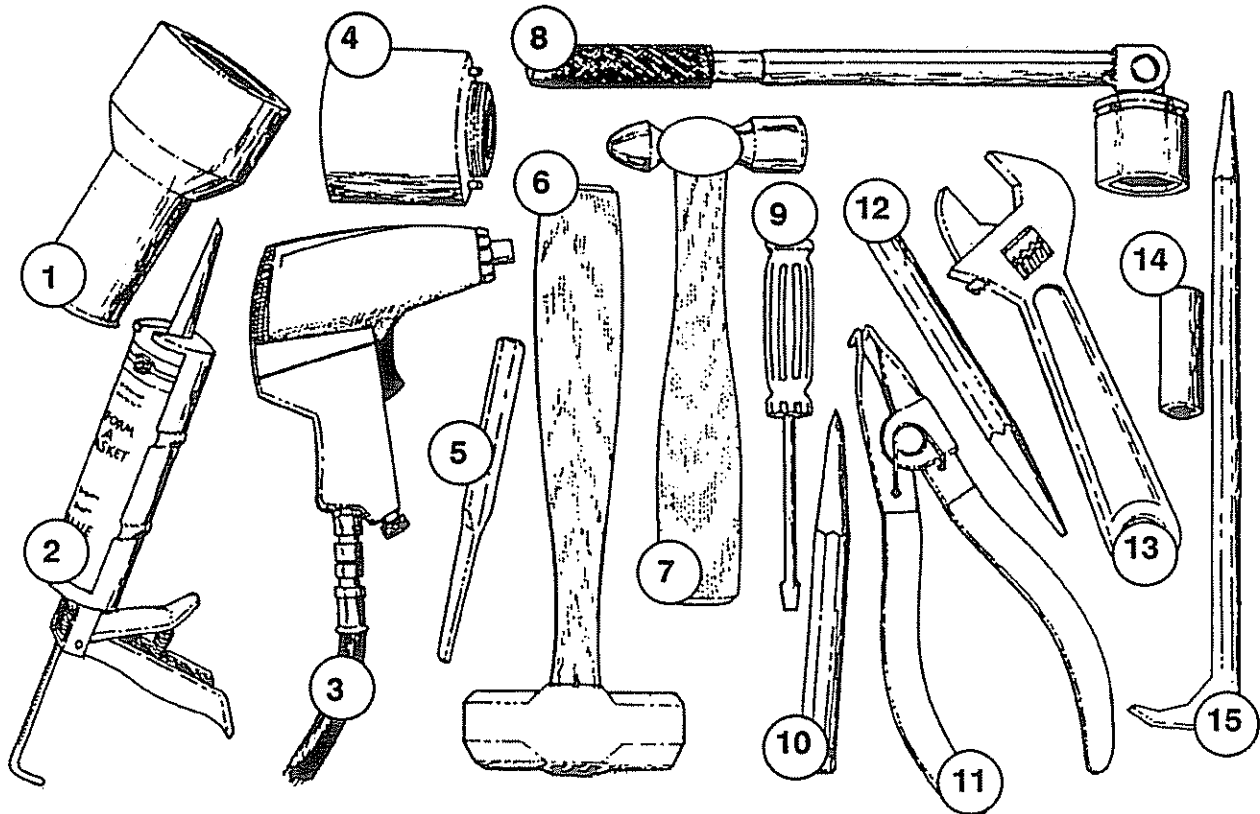
WEEKLY MAINTENANCE

II. Weekly Maintenance is intended for those items that need to be checked once a week. This maintenance should be performed before start-up the first morning of every week.

ITEM	O.K.
A. Slip Clutches	
B. Gearboxes	
C. Nuts and Bolts	
1. Gearbox Bolts	
2. Safety Shield Bolts	
3. Hinge Pins	
D. Pins	
1. Tongue Clevis Pin	
2. Tongue Pins	
3. Hinge Pins	
E. Level Lift Rods	
F. Rubber Sandwich Mounts	
G. Wheel Bearing Inspection	
H. Chain Guards	
I. Winch and Cable	
J. Paint	

MAINTENANCE

TOOLS NEEDED FOR DISASSEMBLY AND ASSEMBLY OF WING GEARBOX.



- | | | | |
|----|-------------------------|-----|-----------------------|
| 1. | Bearing Driver | 9. | Screw Driver |
| 2. | Caulking Gun w/Silicon | 10. | Sharp Punch |
| 3. | Impact Wrench | 11. | Retaining Ring Pliers |
| 4. | Special Pulling Tool | 12. | Punch |
| 5. | Chisel 3/16" wide Blade | 13. | Adjustable Wrench |
| 6. | Sledge Hammer | 14. | 17mm Socket |
| 7. | Ball Pin Hammer | 15. | Pry Bar |
| 8. | Socket Wrench | | |

WARNING: BE CERTAIN TO CLAMP OR SECURELY SUPPORT THE GEARBOX AND SUB-ASSEMBLIES TO PREVENT INJURIES TO HANDS AND FEET DUE TO INADVERTENT DROPPING OR FALLING OVER.



WARNING: ALWAYS WEAR SAFETY GLASSES AND GLOVES TO PREVENT EYE AND HAND INJURY WHEN CHISELING OR HAMMERING ON METAL COMPONENTS. HARDENED METAL WILL CHIP UN-EXPECTEDLY.



WARNING: AN ASSEMBLED GEARBOX IS QUITE HEAVY. USE A HOIST OR GET HELP TO HANDLE THEM SAFELY. LIFT CAREFULLY AND PROPERLY USING YOUR LEGS TO LIFT - NOT YOUR BACK.



NOTICE: REFER TO OPERATOR'S MANUAL FOR INSTRUCTIONS FOR PROPER RE-ASSEMBLY ONTO THE MOWER DECK. TIGHTEN CORRECTLY.

MAINTENANCE

DISASSEMBLY INSTRUCTIONS FOR WING GEARBOX.

NOTE: Drain all oil from Gearbox before disassembly. Mount the Gearbox in a Vice to aid in disassembly and assembly.

Step 1

Remove the 4 M12 Cap Screws (#1) using a 17mm socket, then remove the Output Cap (#2) and Gaskets (#3). Figures 1 & 2.

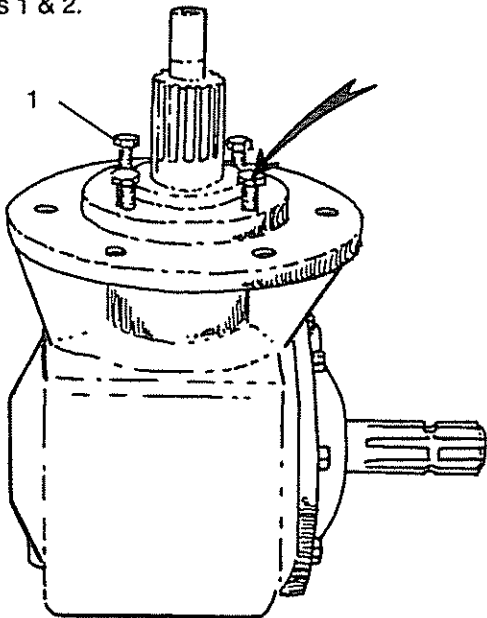


FIG. 1

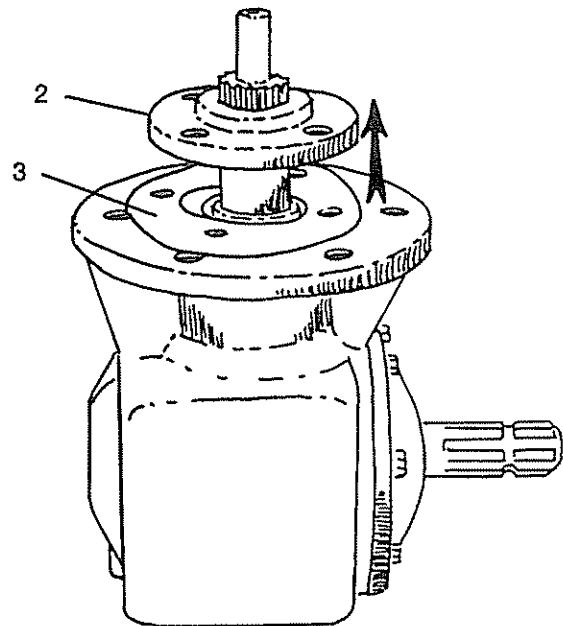


FIG. 2

Step 2

Install a special pulling tool (provided by your dealer) onto the Output Shaft (#4), and be sure that the internal part of the pulling tool is fully seated against the splined area of the Output Shaft. Install Blade Hub Nut (#5) onto the end of the Output Shaft and screw it against end of puller. Figures 3 & 4.

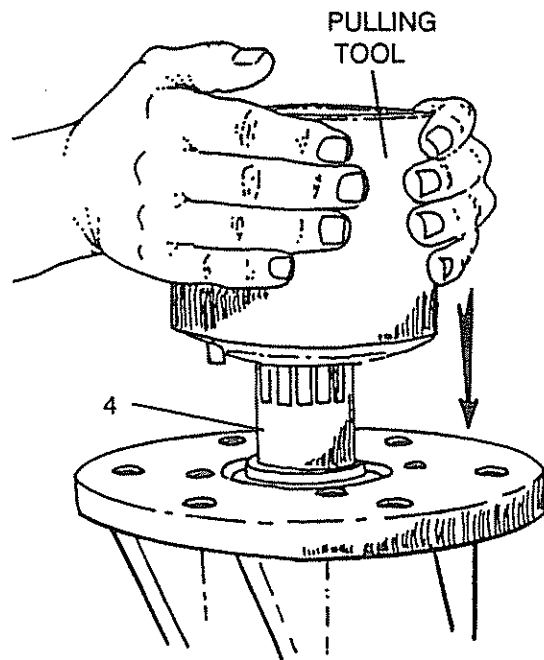


FIG. 3

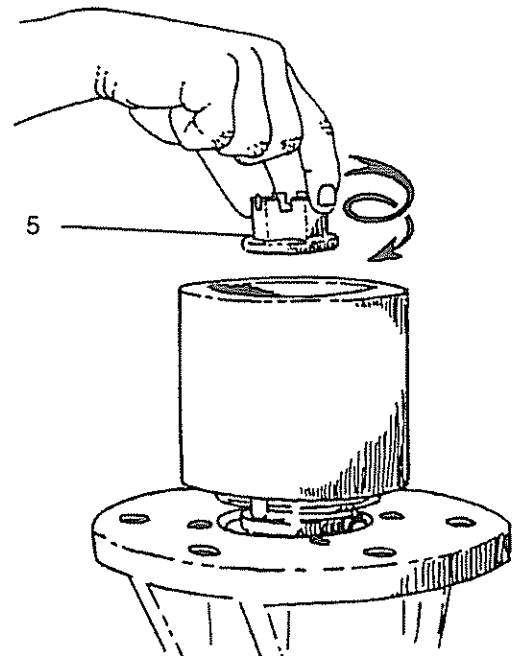


FIG. 4

MAINTENANCE

DISASSEMBLY INSTRUCTIONS FOR WING GEARBOX.

Step 3

Tighten the Blade Hub Nut while holding the external part of puller from rotation. This will cause the external part of the puller to move closer to the Mounting Flange of the Gear Box Housing. As the external part of the puller comes in contact with the Housing Mounting Flange it should be allowed to rotate until the locking pins on the base of the puller align with the bolt holes in the Mounting Flange. Proceed with turning Shaft Nut clockwise until the internal part of the puller unscrews out of the top of the external part of the puller. The Output Shaft and Bearing assembly are now free of the Housing Bearing Base. Figures 5 & 26

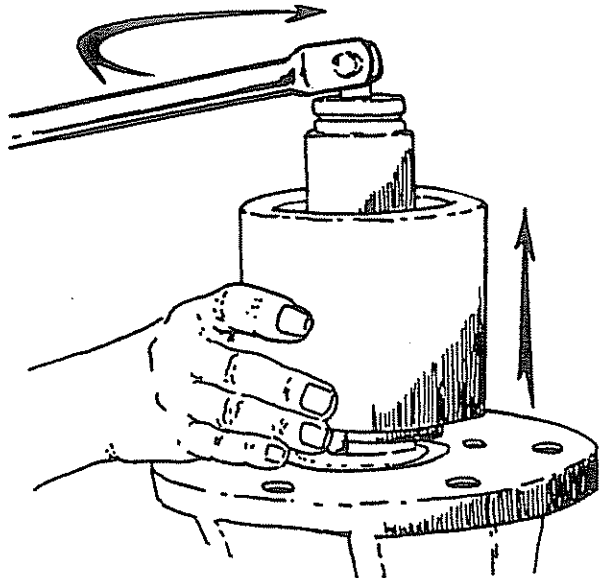


FIG. 5

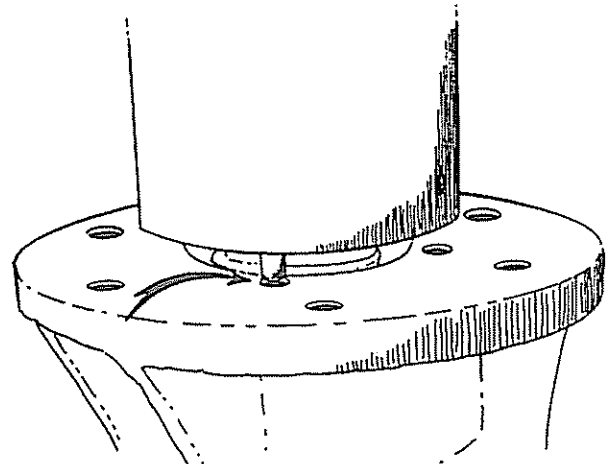


FIG. 6

Step 4

Place the splined end of the Output Shaft in a vice. Remove the Shaft Nut and internal part of the puller from the Output Shaft. Figure 7.

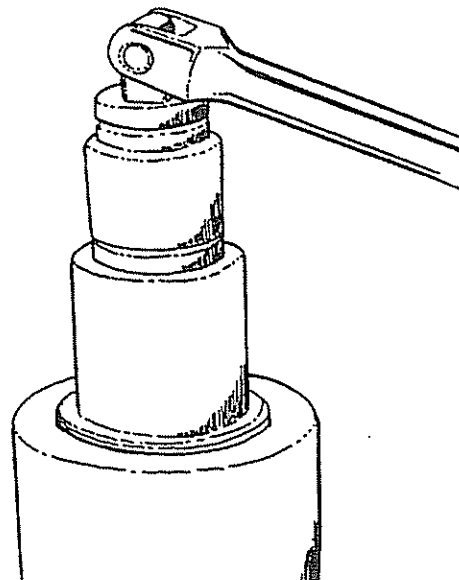


FIG. 7

MAINTENANCE

DISASSEMBLY INSTRUCTIONS FOR WING GEARBOX.

Step 5

Lay the Output Shaft Bearing Assembly on a solid surface. Locate one of the two staked areas. Place a chisel with a 3/16" wide blade at 90 degrees to the center of the shaft and all the way to the rear of the staked area on Adjusting Sleeve. Then drive the chisel downward. This will cut away most of the staked area. Turn the assembly over and repeat the process on the second staked area. Figures 8 & 29

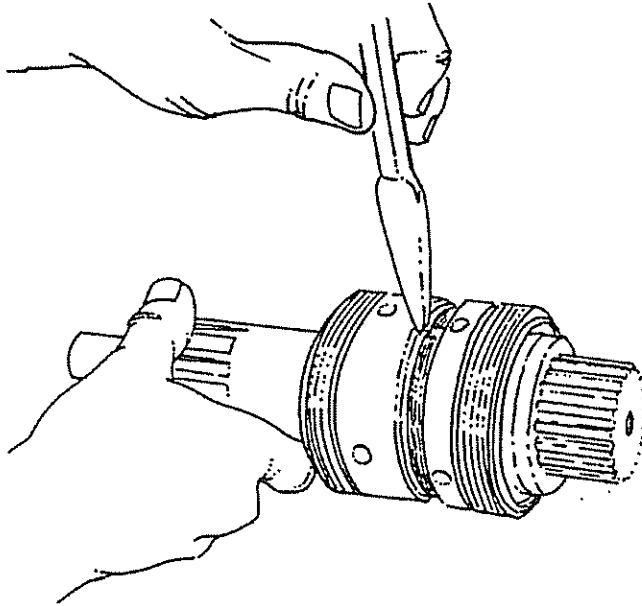


FIG. 8

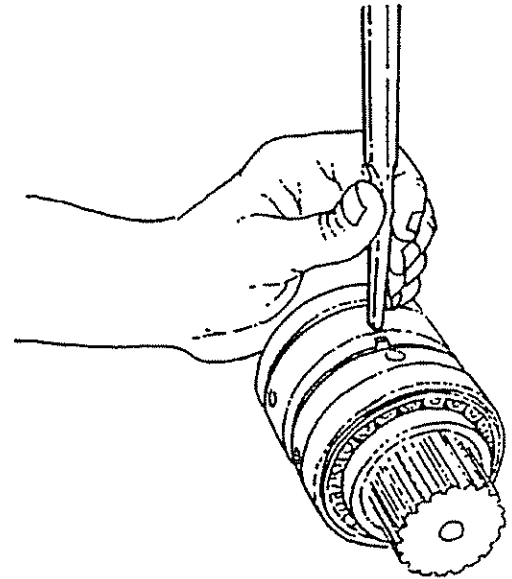


FIG. 9

Step 6

After the staked area has been cut away, the Adjusting Sleeves must be rotated the width of the staking slot in Adjusting Spacer then using a screwdriver or other sharp object, the bent area of the staking flange on Adjusting Spacer should be bent upward on both staked areas. Then, the Adjusting Spacers must be rotated in the opposite direction the width of the plate. The two remaining bent down areas of adjusting spacer must also be bent upward so they clear the threaded area of Adjusting Spacer. These two Adjusting Spacers should now be screwed fully together so the complete bearing assembly becomes loose. Figures 10, 11, & 12.

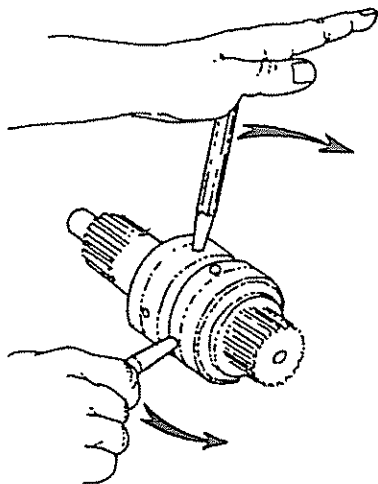


FIG. 10

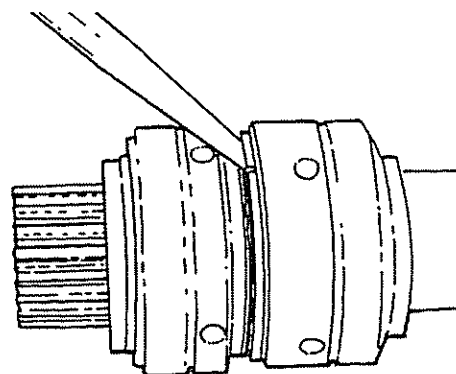


FIG. 11

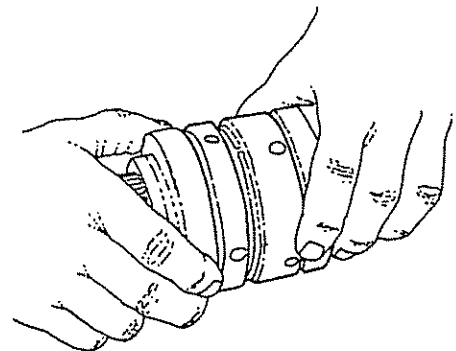


FIG. 12

MAINTENANCE

DISASSEMBLY INSTRUCTIONS FOR WING GEARBOX.

Step 7

Now use a hammer to drive Top Bearing and Retaining Ring Collar downward so that Retaining Ring (#10) is fully exposed. Figure 13.

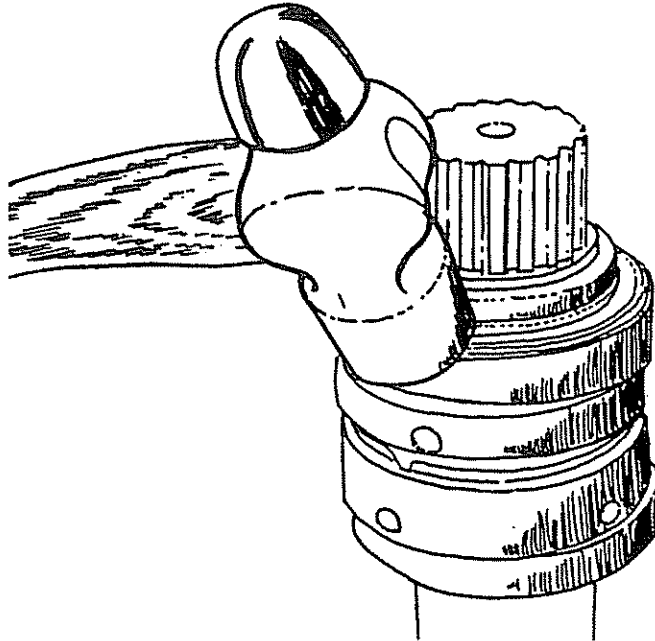


FIG. 13

Step 8

Remove Retaining Ring (#10) from Output Shaft. This will allow the other parts to be removed from the Shaft also. Figure 14.

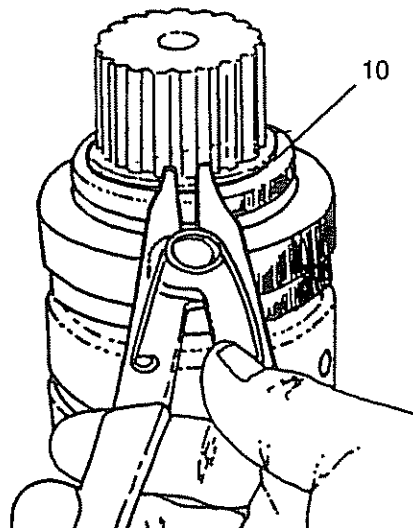


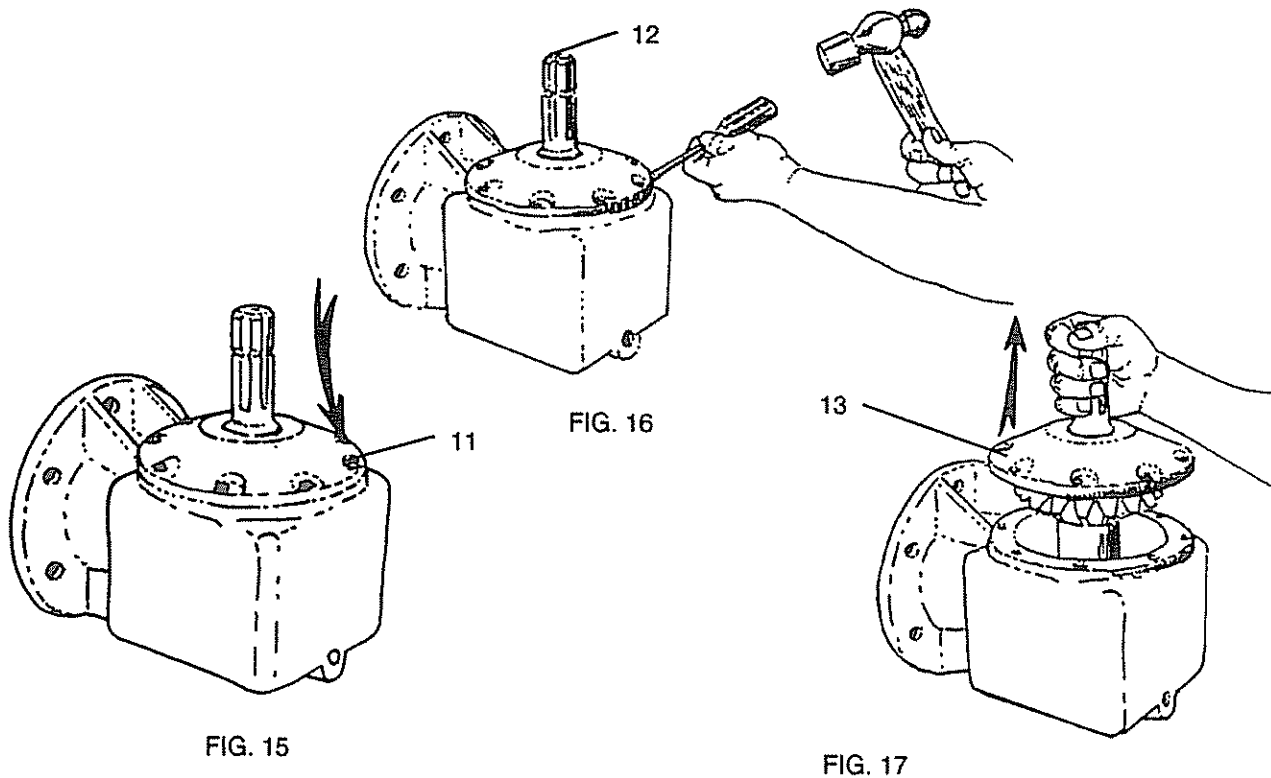
FIG. 14

MAINTENANCE

DISASSEMBLY INSTRUCTIONS FOR WING GEARBOX.

Step 9

Remove the eight M10 cap screws (#11) from Input Cap (#13). Loosen the Input Cap with a screwdriver and hammer. Then, lifting upward on the end of Input Shaft (#12), force the Input Cap (#13) away from the Gearbox Housing, and remove complete Input Cap and Shaft assembly from the Housing. Figure 15, 16, & 17.



Step 10

Reach inside the upper part of Gearbox Housing and remove the Output Gear and all Gear Adjusting Shims. Figure 18. Clean the inside of the Gearbox Housing thoroughly.

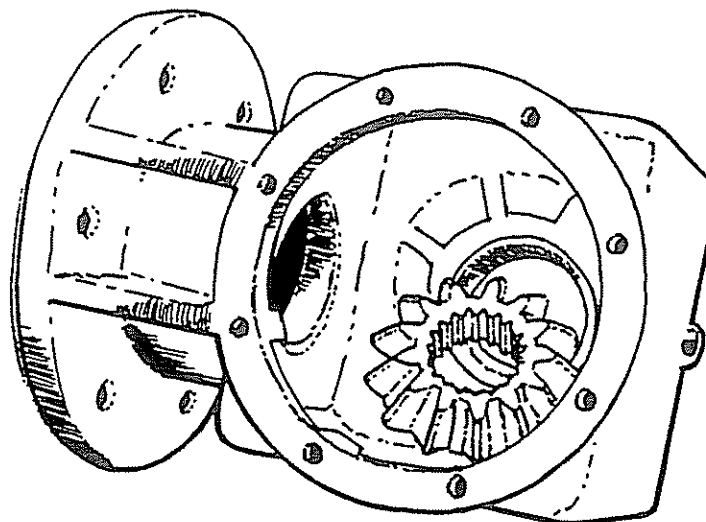


FIG. 18

MAINTENANCE

DISASSEMBLY INSTRUCTIONS FOR WING GEARBOX.

Step 11

Remove the Input Cap (#13) off Input Shaft (#12), and then press Input Gear (#14) and Bearing (#15) off the Shaft. Figure 19.

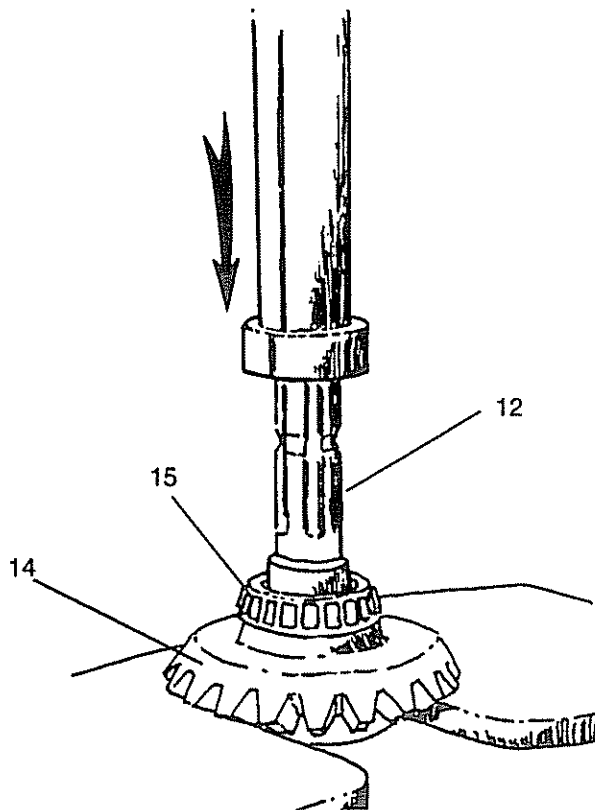


FIG. 19

The Gearbox is now disassembled with the exception of the Bearing cup in the Gearbox Housing, the Oil Seal and Bearing Cup in the input cap, and the Oil Seal in the Output Cap. These items can be removed by conventional means. Inspect and replace all worn or defected parts.

MAINTENANCE

DISASSEMBLY INSTRUCTIONS FOR WING GEARBOX.

Step 1

Install Bearing Assembly on Output Shaft. Install Adjusting Sleeve, Bearing assembly, Retaining Ring Collar, and Retaining Ring.

Step 2

Push Bearing assembly tight against Retaining Ring Collar. Be sure that the Retaining Ring is fully seated in the Retaining Ring Collar.

Step 3

Tighten Bearing assemblies by unscrewing Adjusting Sleeves. Use a special driver (provided by your dealer), and install it on the Tapered spline end of the Output Shaft. Using a hammer, strike the driver several times, check to see if the Bearing assembly has loosened any. If it has, tighten it again and repeat the above process. The Bearing Assembly must be over-tightened until it is difficult to turn. The special driver should also be installed on the opposite end of the Output Shaft and driven downward to be sure that Bearing Assembly is fully seated against the shoulder of the Output Shaft. Figure 20, 21, 22.

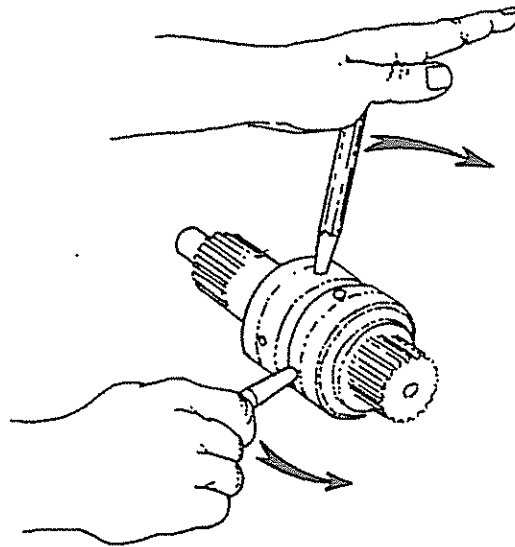


FIG. 20

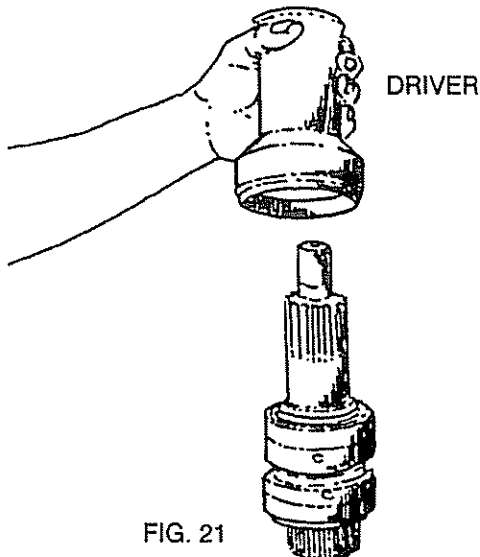


FIG. 21

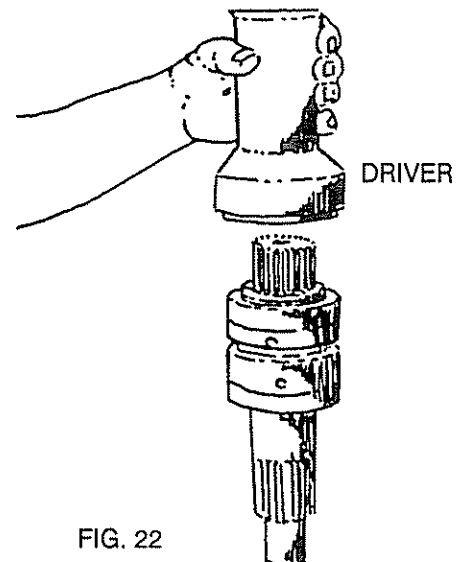


FIG. 22

MAINTENANCE

DISASSEMBLY INSTRUCTIONS FOR WING GEARBOX.

Step 4

Once the Output Shaft Bearing Assembly has been fully seated, the Adjusting Sleeves should be loosened a small amount. Using a hammer, tap both ends of Output Shaft while holding Bearing and Adjusting Sleeve Assembly, and check to see how freely Output Shaft turns in the assembly. Repeat this process until a rolling torque of 10 to 12 inch pounds is required to rotate the Output Shaft in the Assembly. Figure 23.

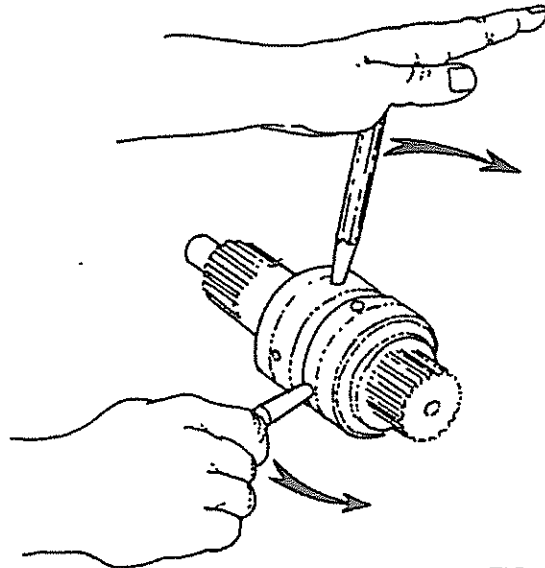


FIG. 23

Step 5

Using a punch that has a 3/16" diameter end, drive a section of the staking flange on the Adjusting Sleeve into the slots in the threaded section of Adjusting Sleeve. This must be done at two locations 180 degrees apart. Figure 24, & 25.

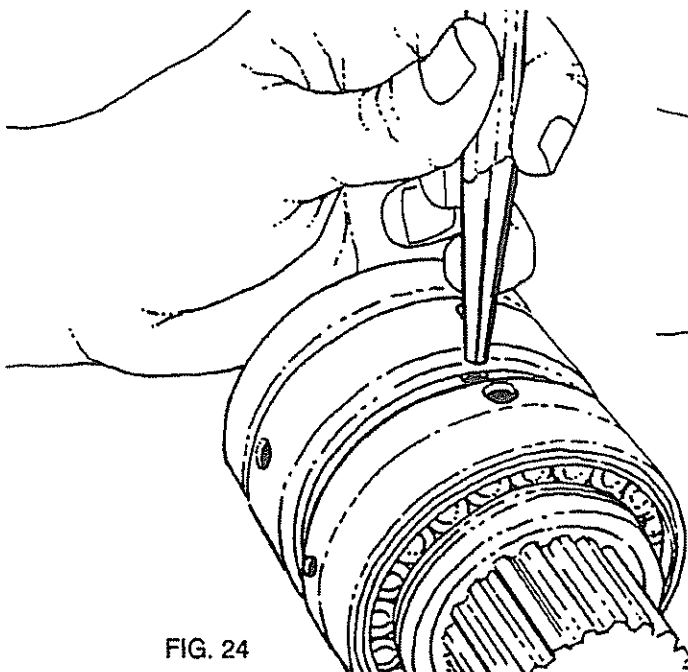


FIG. 24

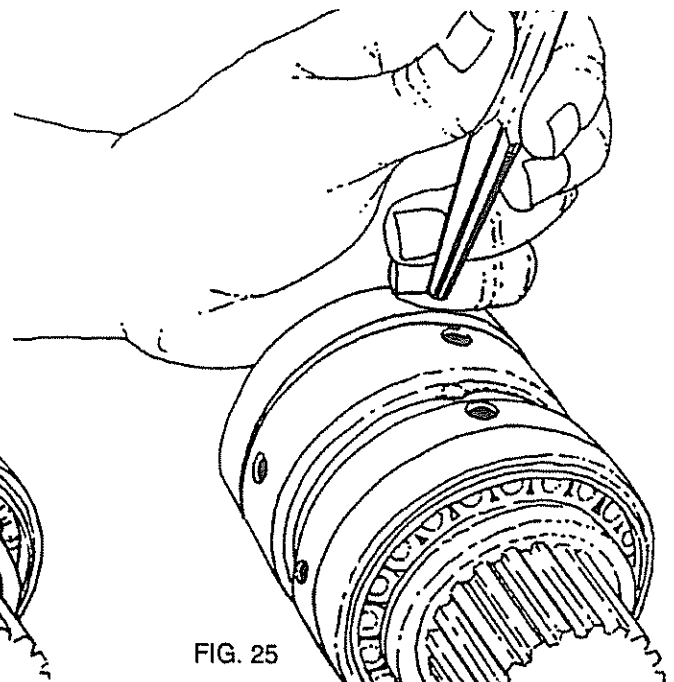


FIG. 25

MAINTENANCE

DISASSEMBLY INSTRUCTIONS FOR WING GEARBOX.

Step 6

Place the Output Shaft and Bearing Assembly into the Bearing Boxes on the Mounting Flange of Housing, and using the special driver, drive the complete Assembly fully into the Gearbox Housing. Extra care should be taken to keep this Shaft Assembly aligned with the Bearing Seats while installing it or severe damage can be caused to the Housing. Figures 26 & 27.

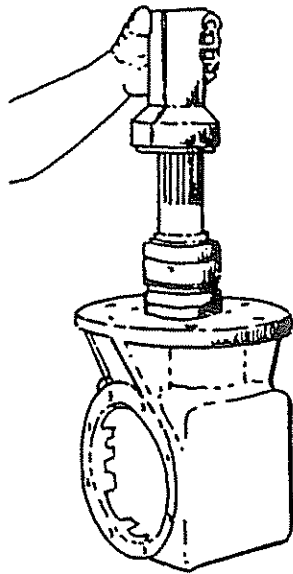


FIG. 26

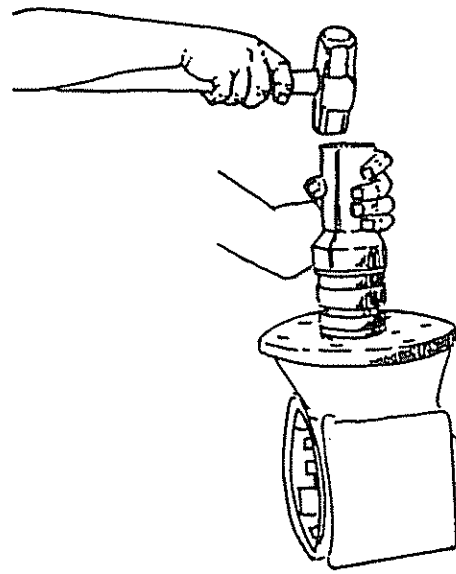


FIG. 27

Step 7

Place output cap on the output shaft and check the gap between housing and cap to see how many gaskets will be required. Remove the output cap and install the gaskets. A small bead of silicon should be applied on top of the gaskets and around the flange of the cap. Reinstall the cap and gasket assembly on the Housing, install the 4 Bolts and tighten them to a torque of 75 to 79 Foot Pounds. Figures 28, 29, & 30.

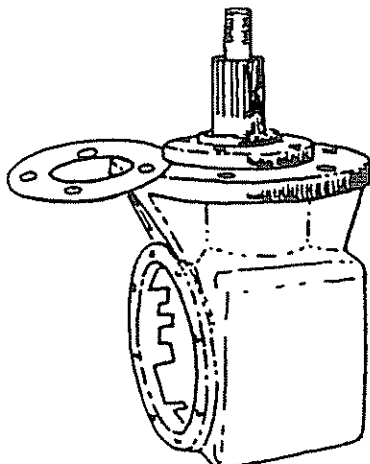


FIG. 28

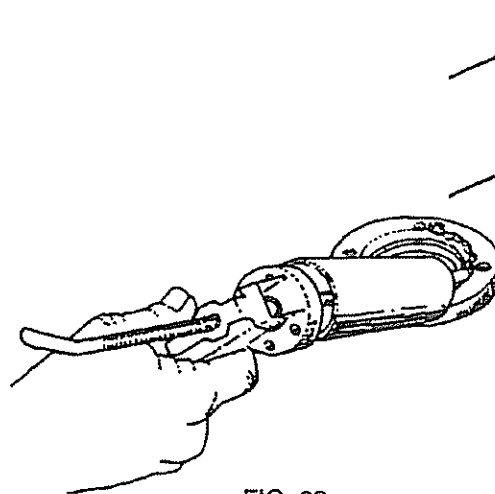


FIG. 29

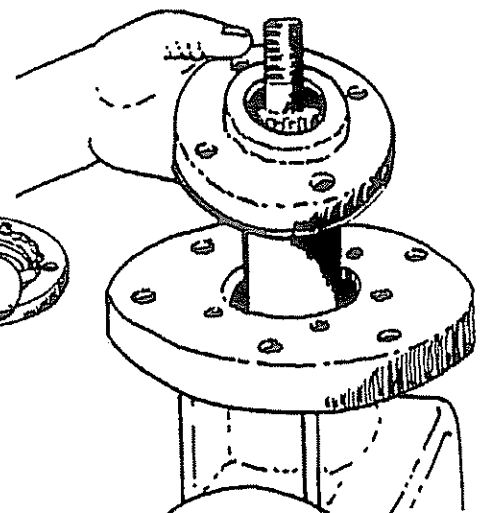


FIG. 30

MAINTENANCE

DISASSEMBLY INSTRUCTIONS FOR WING GEARBOX.

Step 8

Install Gear Adjusting Shims, if any were present at disassembly, then install the Output Gear on the Output Shaft. Figure 31 & 32.

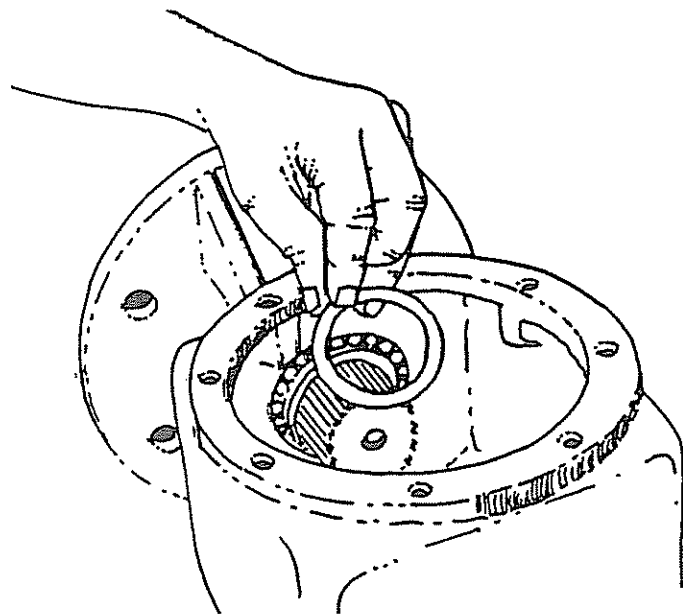


FIG. 31

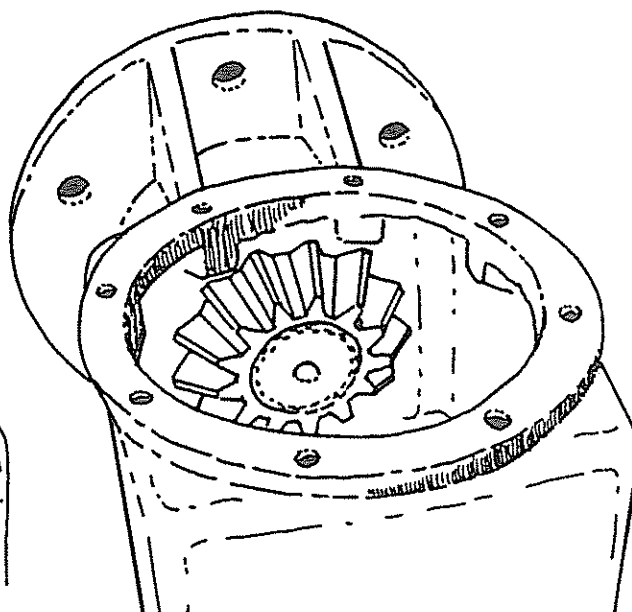


FIG. 32

Step 9

Install Bearing on the Input Shaft and then place Shaft into the Housing. Next install the Gear Spacer on the Shaft. Reinstall the Gear Adjusting Shims on Shaft and the Input Gear. Check the back side of the Gear Tooth surface where the Input and Output Gear engage each other. These two surfaces should be approximately flush. If they are not flush, then either add or subtract shims to the output Gear or add or subtract shims in front of Input Gear. The correct adjustment of these two Gears is that point at which they operate the quietest and the backlash of the Gear Teeth does not exceed .022". Figure 33 & 34.

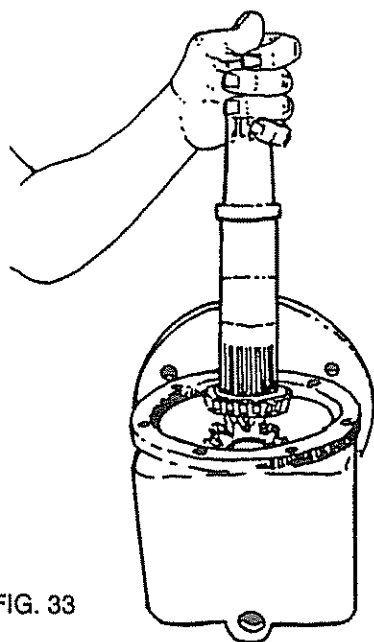


FIG. 33

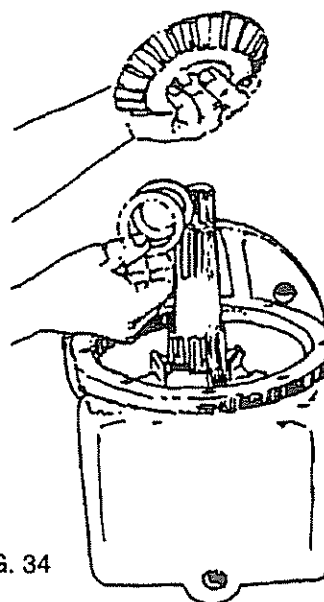


FIG. 34

MAINTENANCE

DISASSEMBLY INSTRUCTIONS FOR WING GEARBOX.

Step 10

The total amount of Shims required on Input Shaft is .040". Note what the total thickness of shims are used in front of the Input Gear and subtract this from the .040" total. Apply the remainder to the Rear Mount surface of the Input Gear then install bearing. Figure 35.

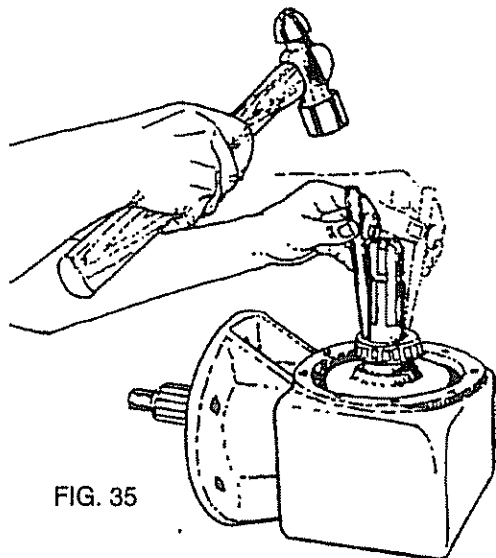


FIG. 35

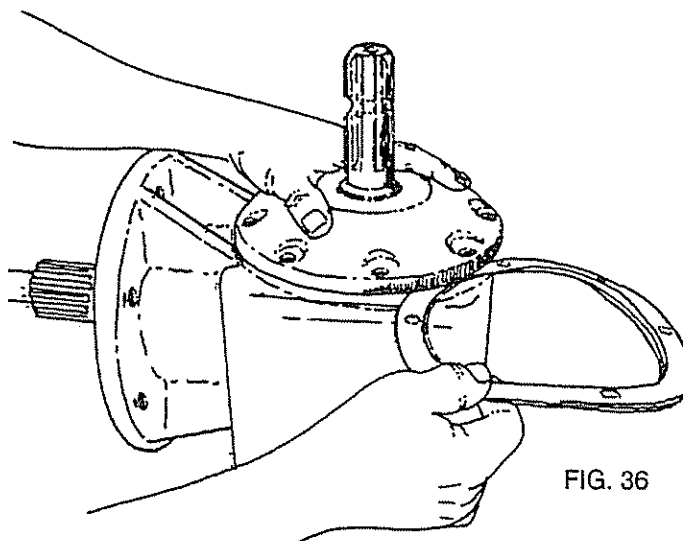


FIG. 36

Step 11

Install Input Cap on Shaft and Housing and check the gap between Cap and Housing to see what the approx. thickness of Gaskets will be required. Remove the Cap and install the Gaskets. Reinstall the Cap and Gaskets on Housing. Install four Bolts and tighten them. Note: These four Bolts should be installed in every other Bolt Hole of the Cap, and when tightening, the second Bolt tightened should be 180 deg. away from the first Bolt tightened. Check to see how the Input Shaft turns. If it is tight, then additional Gaskets need to be added. If it turns very loose and the Shaft can be moved from side to side in the cap, then Gaskets need to be removed. The correct adjustment of the Input Shaft Bearing is when the Shaft turns freely but cannot be moved from side-to-side in the Housing. Once this adjustment has been made, remove the Cap and Gaskets. Install all Gaskets on Cap and then apply a small bead of Silicon around flange of the Cap and on top of the Gaskets. Reinstall the Cap on the housing and install all eight Bolts and tighten them to a torque of 31 to 34 foot pounds. Figure 36, 37, & 38.

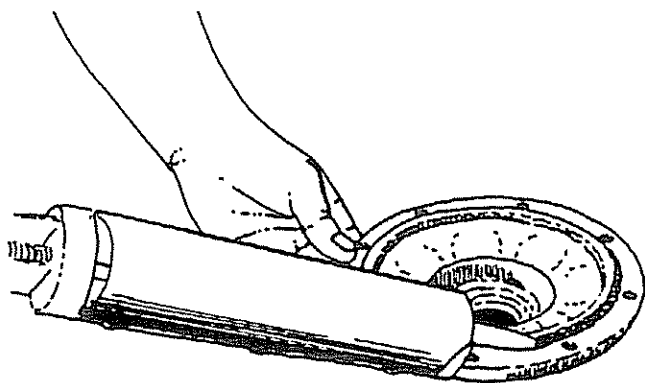


FIG. 37

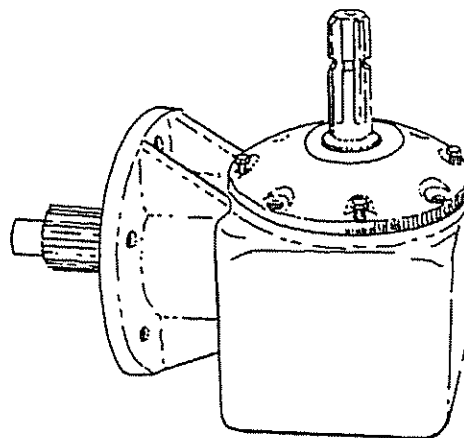


FIG. 38

Fill the Gearbox with new EP-90 Oil to the Oil Level Plug. Reinstall the Breather Plug and remount the Gearbox back on the machine.

MAINTENANCE

DISASSEMBLY INSTRUCTIONS FOR CENTER GEARBOX (FIGURE 40)

NOTE: Drain all oil from Gearbox before disassembly. Mount the Gearbox in a Vice to aid in disassembly and assembly.

STEP 1

Remove all 8 of the M10 Cap Screws (#1) from both Cap Hubs, using a 14mm Socket, then remove the Hub Assemblies and Gaskets from the Main Housing.

STEP 2

Place Gear (#2) in a vice with the Output Shaft (#3) in an up location. Then using a sharp object, drive it through the Seal Retainer (#4) and force the Retainer out of the Hub Cap. (#5)

STEP 3

Using a chisel, with a 3/16" wide cutting edge, place it parallel with Output Shaft (#3) and on top of the threaded area of the Shaft, and into 1 of the Staking Slots in the treaded section of the Shaft. Then drive it downward until the bent part of the Staking flange on Adjusting Nut (#6) is bent outward and is free of the Slot and threads of the Shaft. This procedure is done 2 places on the Shaft.

STEP 4

Using a special Socket (Provided by your Dealer) install it onto the Output Shaft (#3) and Adjusting Nut (#6) and unscrew the Adjusting Nut. It is not necessary to totally remove this Nut, it only needs to be unscrewed at least a total of 6 turns to provide the clearance needed for disassembly.

STEP 5

Remove the Hub Assembly from the vice and place it on a solid surface with the Gear (#2) in an up location, then using a Hammer top this Gear downward until the Retaining Ring (#7) is fully exposed, then remove the Retaining Ring off the Shaft.

STEP 6

Laying the Hub Assembly on its side, top the Gear end of the Output Shaft (#3) down into the Gear (#2) and on through it and Bearing (#8). Once the Shaft has cleared the Bearing (#8) it can be fully removed from the Hub Assembly. The remaining Bearings and Bearing Racer can be removed by conventional means.

STEP 7

Remove all 8 Bolts (#9) from Input Cap (#10) using a 14mm Socket. Then using a Hammer, top the Output end of the Input Shaft (#11). This will loosen the Input Cap (#10) and allow the removal of the complete Input Shaft Assembly.

STEP 8

The Input Gear (#12) and Bearing (#13) can be removed from the Input Shaft by topping the end of the Input Shaft (#11) on a solid surface.

MAINTENANCE

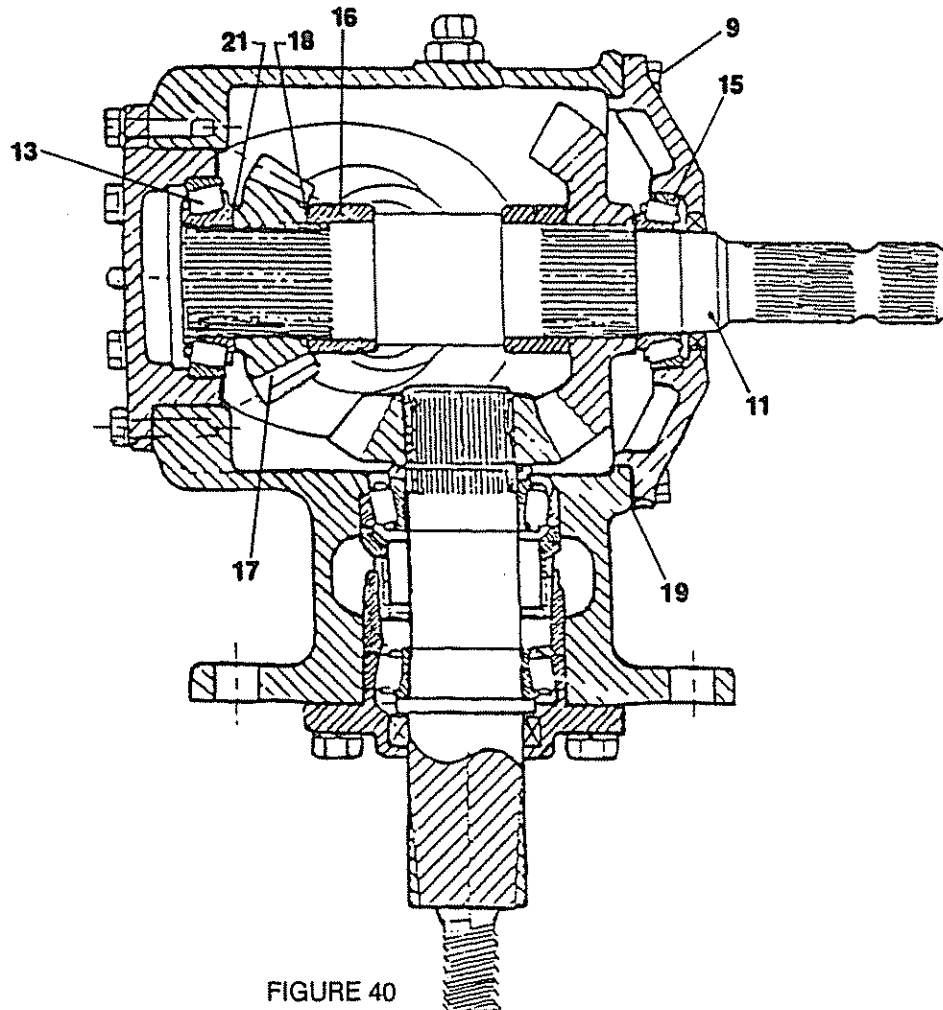
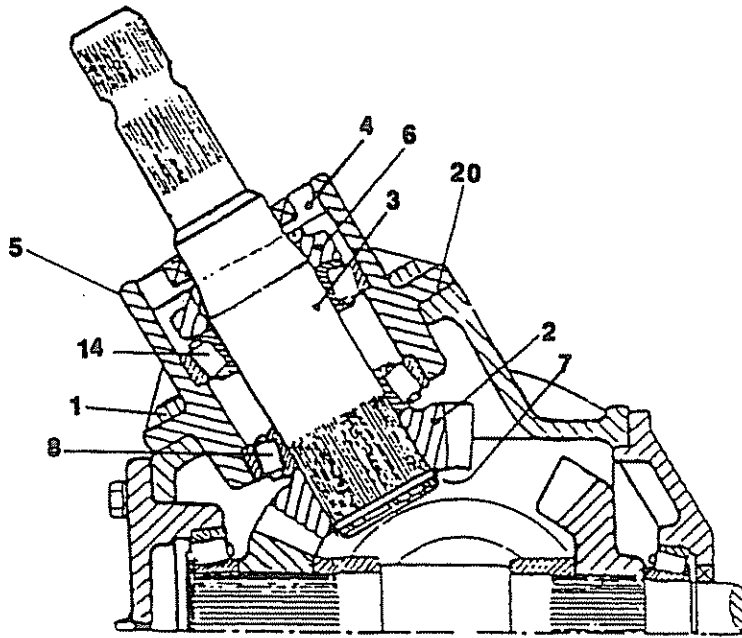


FIGURE 40

MAINTENANCE

DISASSEMBLY INSTRUCTIONS FOR CENTER GEARBOX.

Step 9

Remove the 4 M12 Cap Screws (#1) using a 17mm socket, then remove the Output Cap (#2) and Gaskets (#3). Figures 41 & 42.

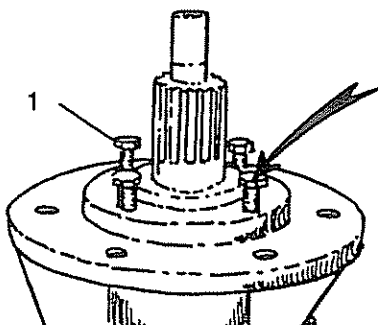


FIG. 41

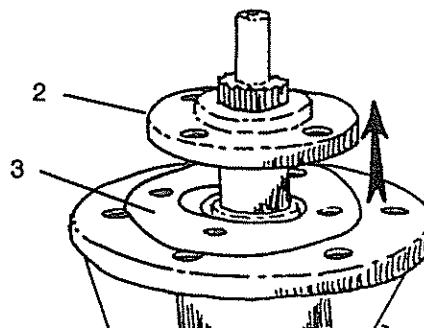


FIG. 42

Step 10

Install a special pulling tool (provided by your dealer) onto the Output Shaft (#4), and be sure that the internal part of the pulling tool is fully seated against the splined area of the Output Shaft. Install Blade Hub Nut (#5) onto the end of the Output Shaft and screw it against end of puller. Figures 43 & 44.

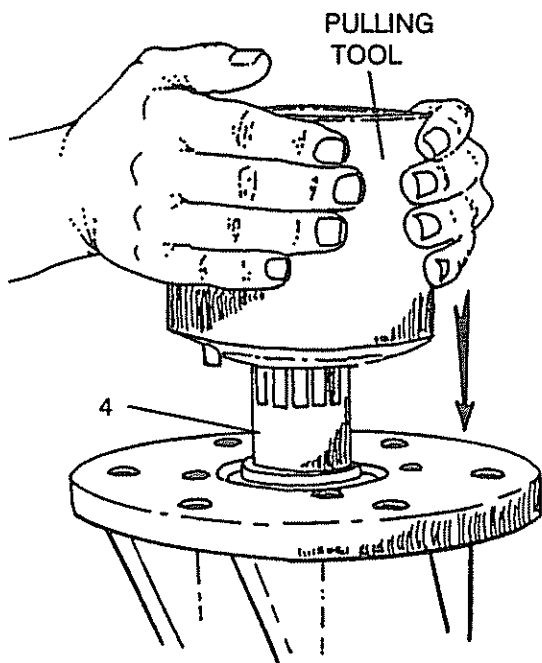


FIG. 43

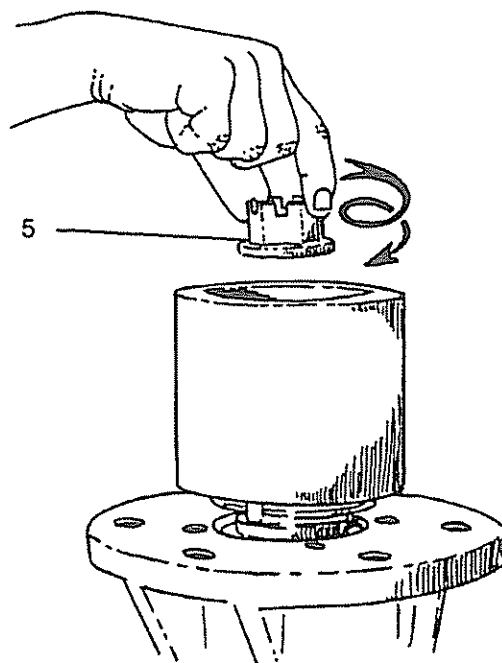


FIG. 44

MAINTENANCE

DISASSEMBLY INSTRUCTIONS FOR CENTER GEARBOX.

Step 11

Tighten the Blade Hub Nut while holding the external part of puller from rotation. This will cause the external part of the puller to move closer to the Mounting Flange of the Gear Box Housing. As the external part of the puller comes in contact with the Housing Mounting Flange it should be allowed to rotate until the locking pins on the base of the puller align with the bolt holes in the Mounting Flange. Proceed with turning Shaft Nut clockwise until the internal part of the puller unscrews out of the top of the external part of the puller. The Output Shaft and Bearing assembly are now free of the Housing Bearing Base. Figures 45 & 46.

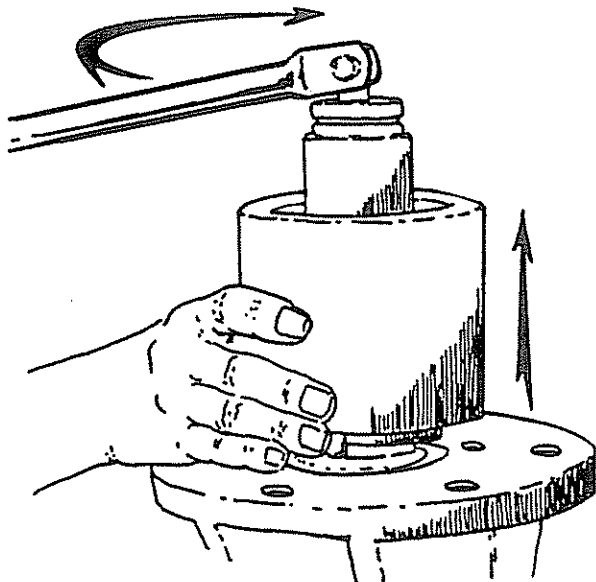


FIG. 45

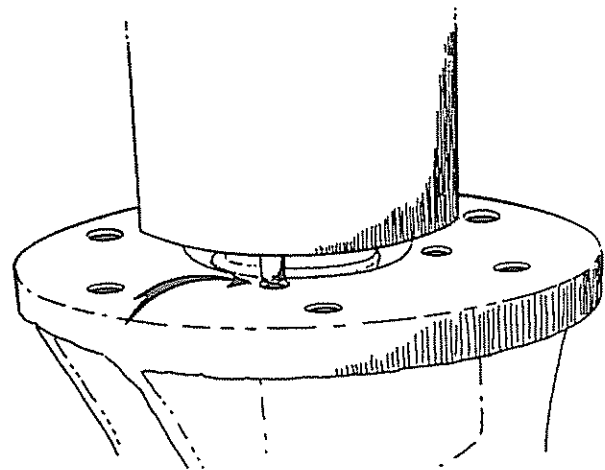


FIG. 46

Step 12

Place the splined end of the Output Shaft in a vice. Remove the Shaft Nut and internal part of the puller from the Output Shaft. Figure 47.

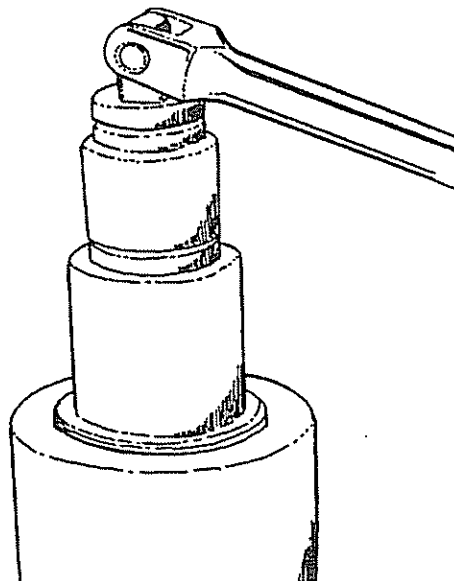


FIG. 47

MAINTENANCE

DISASSEMBLY INSTRUCTIONS FOR CENTER GEARBOX.

Step 13

Lay the Output Shaft Bearing Assembly on a solid surface. Locate one of the two staked areas. Place a chisel with a 3/16" wide blade at 90 degrees to the center of the shaft and all the way to the rear of the staked area on Adjusting Sleeve. Then drive the chisel downward. This will cut away most of the staked area. Turn the assembly over and repeat the process on the second staked area. Figures 48 & 49.

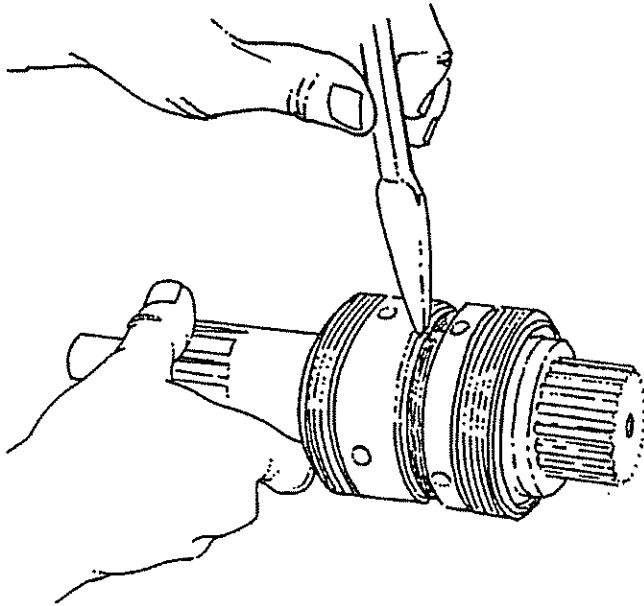


FIG. 48

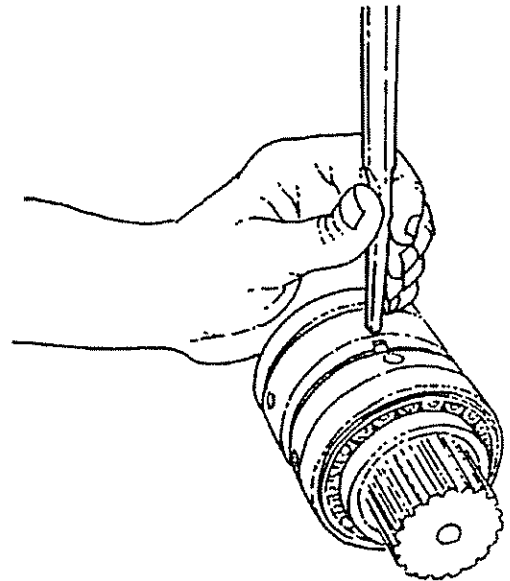


FIG. 49

Step 14

After the staked area has been cut away, the Adjusting Sleeves must be rotated the width of the staking slot in Adjusting Spacer then using a screwdriver or other sharp object, the bent area of the staking flange on Adjusting Spacer should be bent upward on both staked areas. Then, the Adjusting Spacers must be rotated in the opposite direction the width of the plate. The two remaining bent down areas of adjusting spacer must also be bent upward so they clear the threaded area of Adjusting Spacer. These two Adjusting Spacers should now be screwed fully together so the complete bearing assembly becomes loose. Figures 50, 51, & 52.

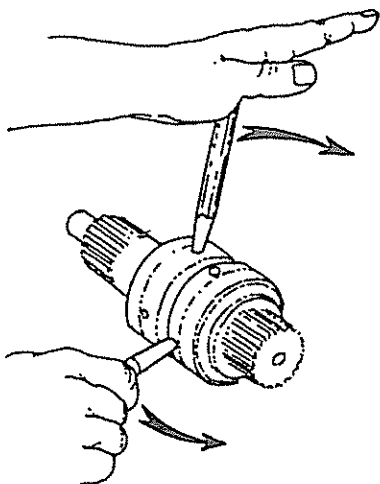


FIG. 50

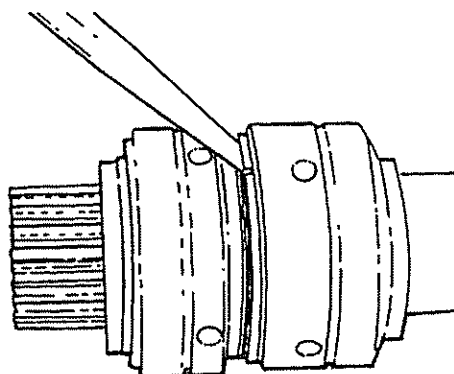


FIG. 51

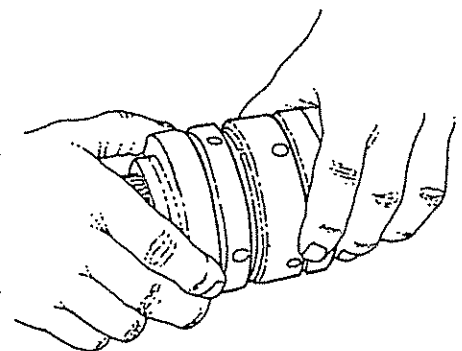


FIG. 52

MAINTENANCE

DISASSEMBLY INSTRUCTIONS FOR CENTER GEARBOX.

Step 15

Now use a hammer to drive Top Bearing and Retaining Ring Collar downward so that Retaining Ring (#10) is fully exposed. Figure 53.

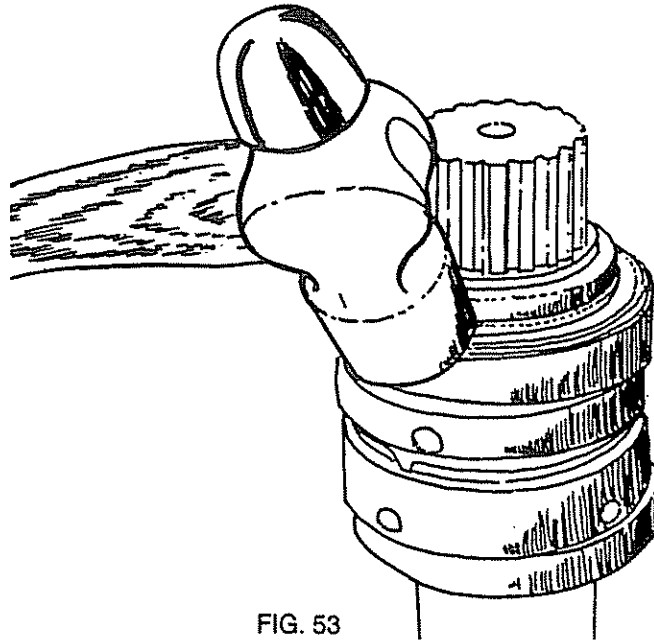


FIG. 53

Step 16

Remove Retaining Ring (#10) from Output Shaft. This will allow the other parts to be removed from the Shaft also. Figure 54.

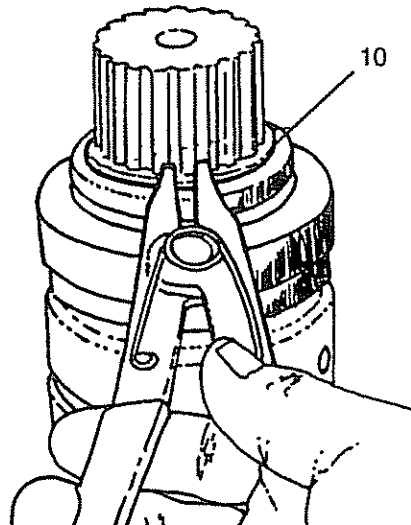


FIG. 54

The unit is now completely disassembled with the exception of Oil Seal's and Bearing Races that can be removed by conventional means.

Inspect and replace all worn or defective parts.

MAINTENANCE

ASSEMBLY INSTRUCTION WW75-340 GEARBOX (FIGURE 55)

STEP 1

Install Bearing Race (#14 and #8) into Hub Cap (#5).

STEP 2

Install Bearing (#14) onto Output Shaft (#3) then place the Shaft into Hub Cap (#5). Place Bearing (#8) and Gear (#2) onto Shaft and drive them fully down so that the Retaining Ring Groove on Shaft is fully exposed on the face side of Gear (#2), then install Retaining Ring (#7).

STEP 3

Install Adjusting Nut (#6) onto Shaft (#3). Tighten Nut until it is difficult to turn Shaft. Check to be sure that Retaining Ring (#7) is fully engage in the counter bore on the face of Gear (#2). While holding Hub, top each end of Shaft and check to see if it has loosen up. Repeat this process until the Shaft no long becomes loose in the assembly after being topped on the ends. Now unscrew Nut (#6) a small amount and again top each end of Shaft (#3) while holding Hub (#5). Repeat this process until a rolling torque of 10 to 12 inch pounds is reached on the Shaft (#3).

STEP 4

Using a punch, with a 3/16" diameter end , bend a section of the Staking flange on Nut (#6) into the Slot in the threads of Shaft (#3).

This needs to be done at 2 places, 180 deg apart.

STEP 5

Place the Seal Retainer (#4) on a flat surface and install the Oil Seal. A small amount of Silicon sealer should be applied to the mounting bore of this Seal Retainer and to the Outside Diameter of the Seal.

STEP 6

Apply a small amount of Silicon sealer to the bore area of Hub Cap (#5) and to the outside diameter of the Seal Retainer, then drive the Retainer into the bore of the Hub Cap. Care should be taken to keep Retainer in line with the bore when driving it into place.

STEP 7

Install Bearing Race (#12) into Main GearBox Housing.

STEP 8

Install Bearing (#15) onto Shaft (#11). Next install Gear Spacer (#16) and then Gear (#17). Then install 1 each. 020 Thick Gear Adjusting Shim (#18) then Install Bearing (#12).

STEP 9

Install Shaft Assembly (#11) into Main Housing then install Input Cap (#10) and check the gap between the Main Housing and the Input Cap to determine the approximate amount of Gaskets (#19) that will be required.

MAINTENANCE

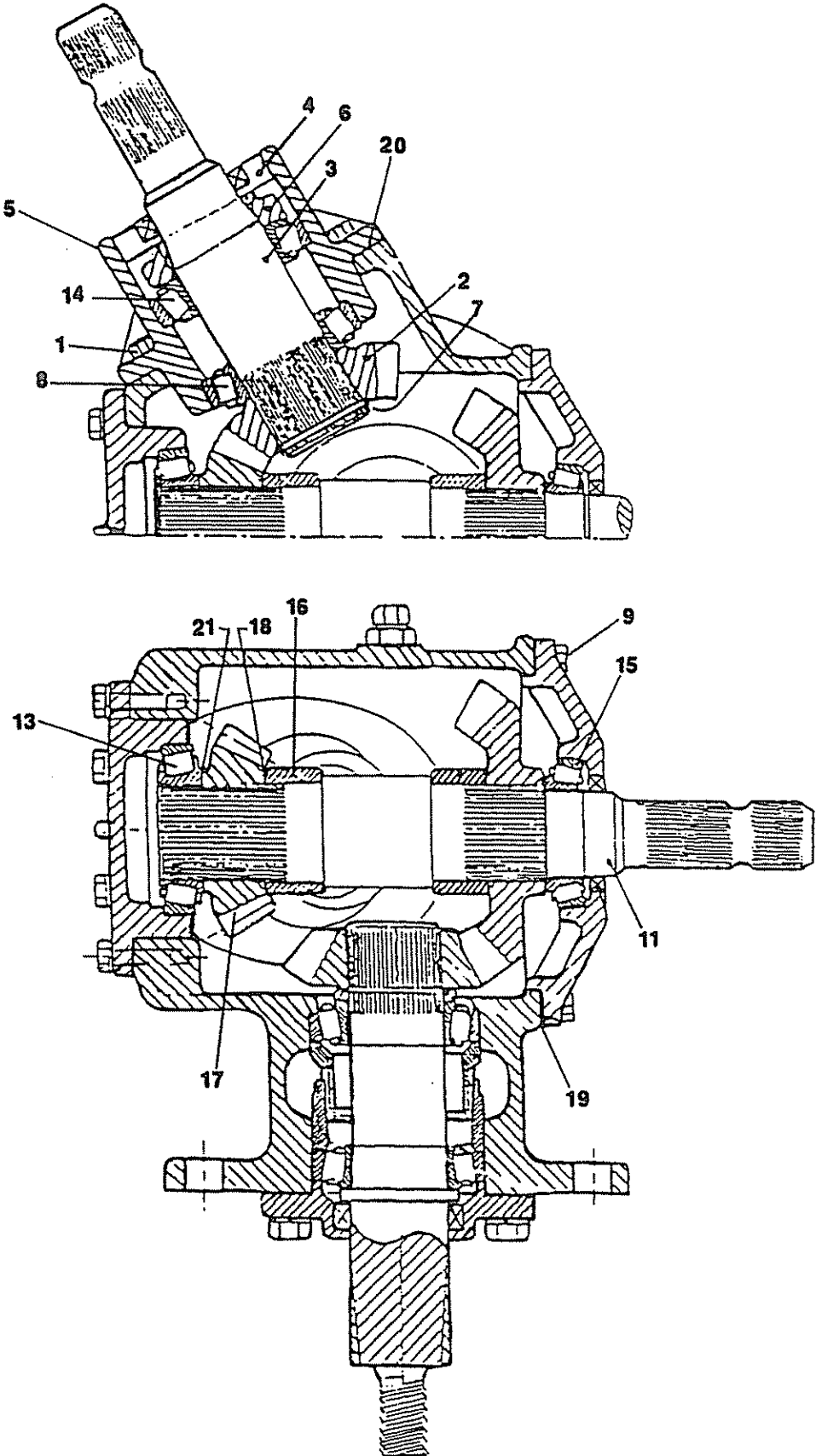


FIGURE 55

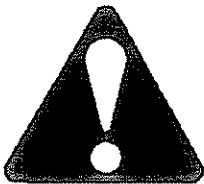
PARTS SECTION

PARTS ORDERING GUIDE

The following instructions are offered to help eliminate needless delay and error in processing purchase orders for the equipment in this section.

1. The Parts Section is prepared in logical sequence and grouping of parts that belong to the basic machine featured in this manual. Part Numbers and Descriptions are given to help locate the parts and quantities required.
2. The Purchase Order must include the name and address of the person or organization ordering the parts, who should be charged, and if possible, the serial number of the machine for which the parts are ordered.
3. The Purchase Order must clearly list the quantity of each part, the complete and correct part number, and the basic name of the part.
4. The Manufacturer reserves the right to substitute parts where applicable.
5. Some parts are unlisted items which are special production items not normally stocked and are subject to special handling. Request a quotation for such parts before sending a Purchase Order.
6. The Manufacturer reserves the right to change prices without prior notice.

NOTE: Please refer to The Safety Section in the front of this Manual for the proper Part Number when ordering Replacement Safety Decals.



For maximum safety and to guarantee optimum product reliability, always use genuine Alamo Group Parts. The use of inferior replacement parts may cause premature or catastrophic failure which could result in serious injury or death. Direct any questions regarding parts to:

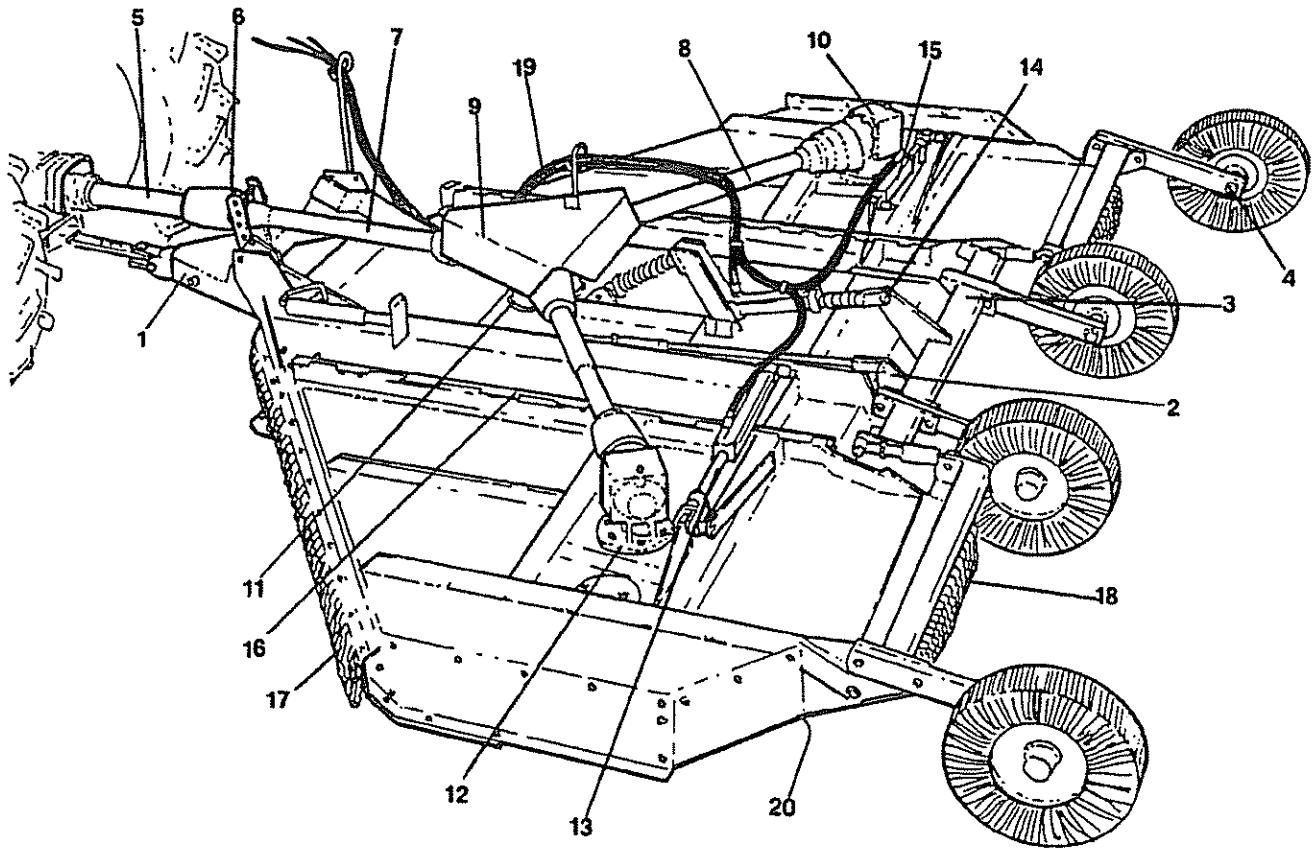


Alamo Group
P.O. Box 549
Seguin, Texas 78156
(512) 379-1480

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GENERAL ASSEMBLY

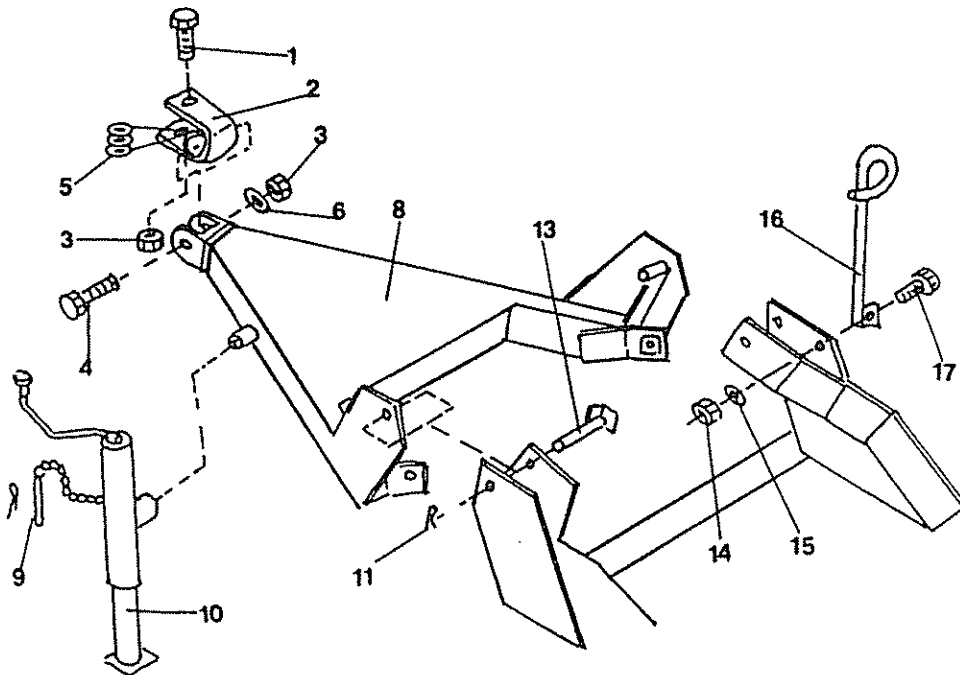


GENERAL ASSEMBLY

ITEM	PAGE NO.	DESCRIPTION
1	6	Tongue Assembly
2	7	Level Rod Assembly
3	8	Axle Attachment
4	9	Wheel/Hub Assembly
5	10	Main Driveline Assembly
6	11	Pillow Block Bearing Assembly
7	12	Jackshaft Assembly
8	13	Wing Driveline Assembly
9	14-15	Center Gear Box Assembly
10	16-17	Wing Gear Box Assembly
11	19	Center Gear Box Attachment
12	20	Wing Gear Box Attachment
13	21	Wing Cylinder Attachment
14	22	Center Cylinder Attachment
15	23	Hydraulic Cylinder Assembly
16	24	Wing Attachment
17	25	Front Chain Guard
18	26	Rear Chain Guard
*	27	Front Rubber Flaps
*	28	Rear Rubber Flaps
19	30	Hydraulic Hose Routing
*	30	Hydraulic Control Valve
20	29	Blade Pan Assembly
*	32	Wench and Stand
*	8	Axle Assembly
*	9	Pneumatic/Laminated tire

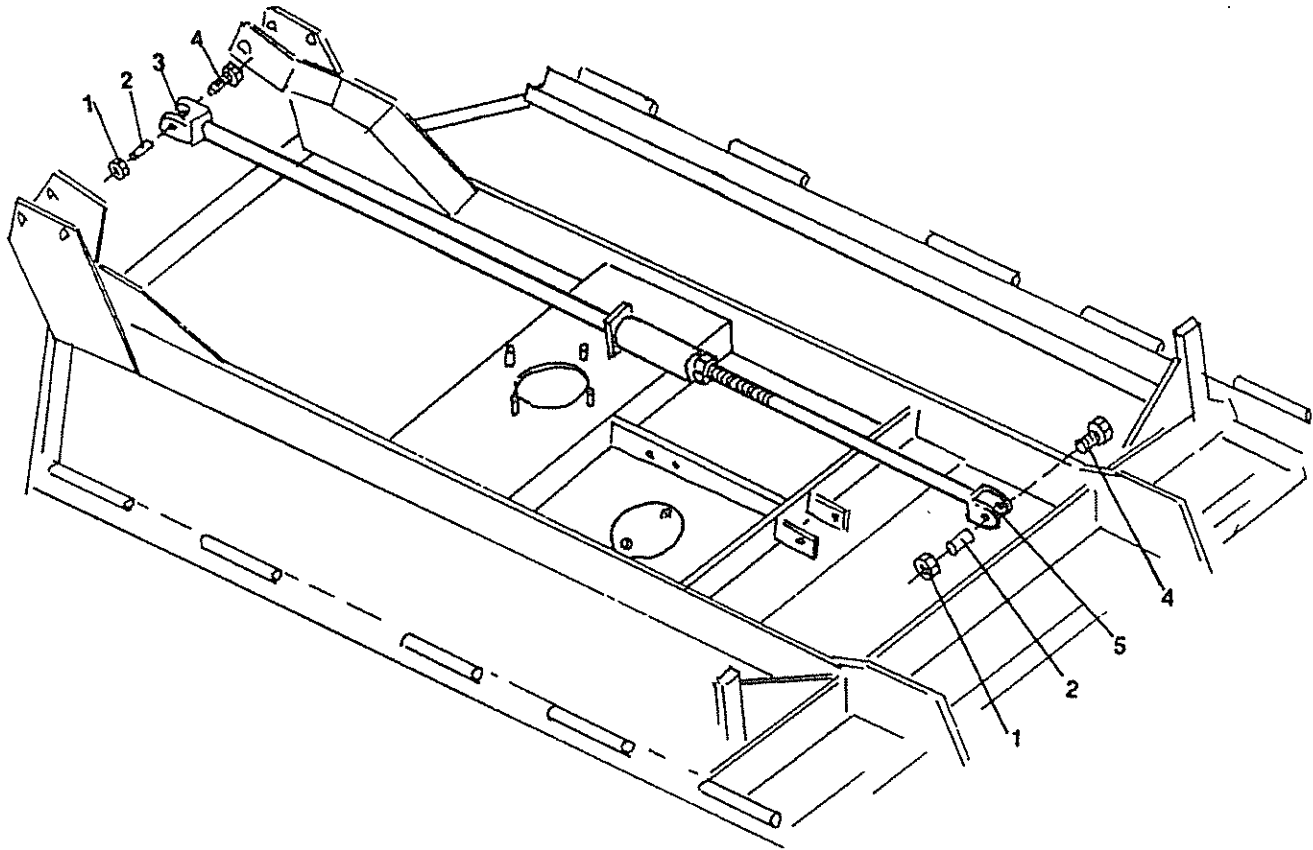
* THESE NOT SHOWN ON ILLUSTRATION

TONGUE ASSEMBLY



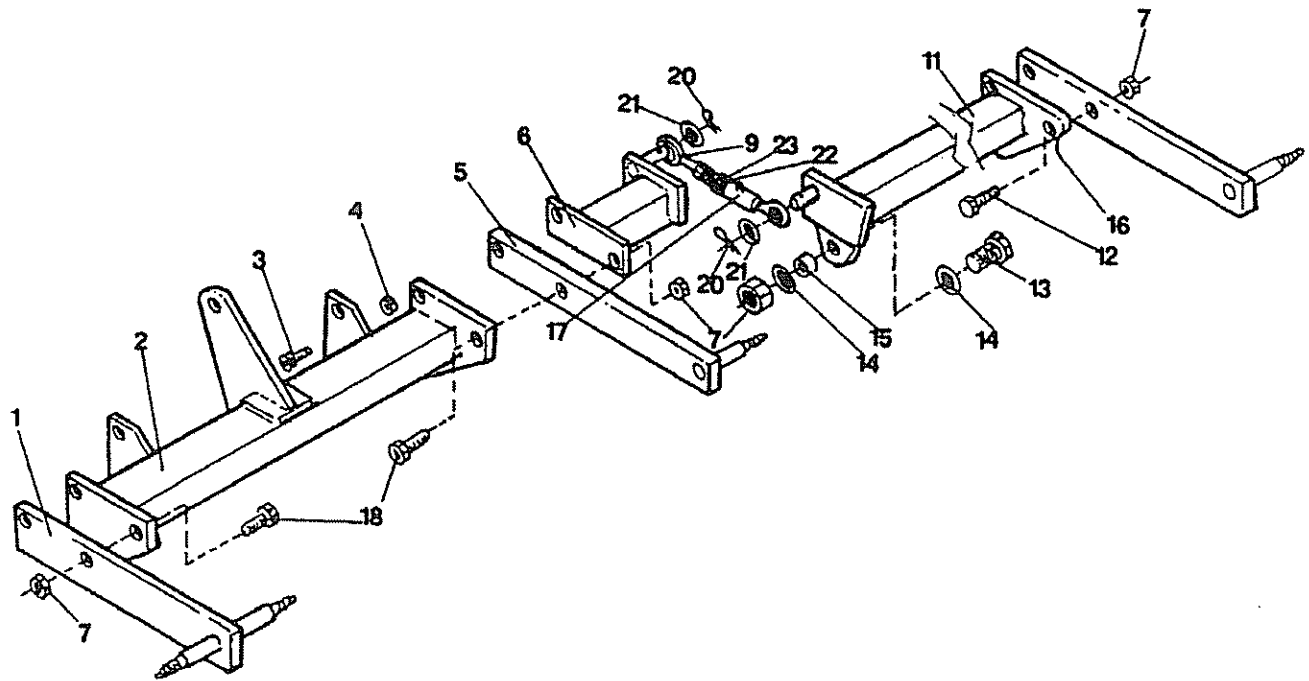
ITEM	PART NO.	QTY	DESCRIPTION
1	02712500	1	Bolt
2	00748807	1	Clevis Weldment
3	5JRC1680	2	Locknut
4	00755305	1	Bolt
5	00759275	3	Washer
6	00757478	1	Washer
8	00759151	1	Tongue Weldment
9	7093	1	Pin, Chain and Cotter Pin
10	7092	1	Jack
11	7343	2	Cotter Key
13	8349	2	Pin
14	7058	1	Nut
15	7057	1	Washer
16	8343	1	Hose Holder
17	4338	1	Bolt

LEVEL ROD ASSEMBLY



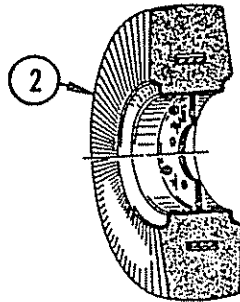
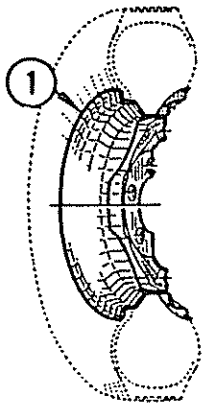
ITEM	PART NO.	QTY	DESCRIPTION
1	1168	2	Locknut
2	8327	2	Bushing
3	00759257	1	Level Rod - Long
4	8252	2	Bolt
5	00759180	1	Level Rod - Short

AXLE ASSEMBLY



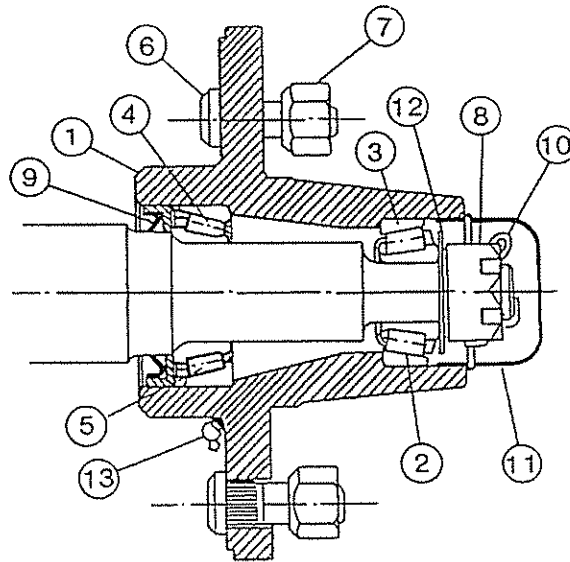
ITEM	PART NO.	QTY	DESCRIPTION
1	00759268	2	Dual Spindle (Optional)
2	00759076	1	Center Axle Weldment
3	00752278	2	Bolt
4	5JRC1680	2	Locknut
5	00759133	4	Single Spindle
6	00760336	1	Left Hand Axle Weldment
	00760335	1	Right Hand Axle Weldment
7	5JRC12100	12	Nut
9	00759722	1	Adjustment Rod
11	00759106	1	Right Wing Axle Weldment
	00759107	1	Left Wing Axle Weldment
12	4626	4	Bolt
13	8252	4	Bolt
14	8248	8	Flatwasher
15	7483	2	Bushing (Inside)
16	00759561	2	Bushing (Outside)
17	00759721	2	Swivel Lever Rod
18	4723	2	Bolt
20	7343	4	Cotter Pin
21	15B1600	4	Washer
22	4625	2	Washer
23	5C1490	2	Jam Nut

WHEEL & HUB ASSEMBLY



Wheel Group
(Quantities Shown for 1-Cutter, Complete)

ITEM	PART NO.	QTY.	DESCRIPTION
1	8529	6	Wheel, (Standard Equipment)
2	2542	6	Laminated Puncture-Proof Tire & Wheel Assembly

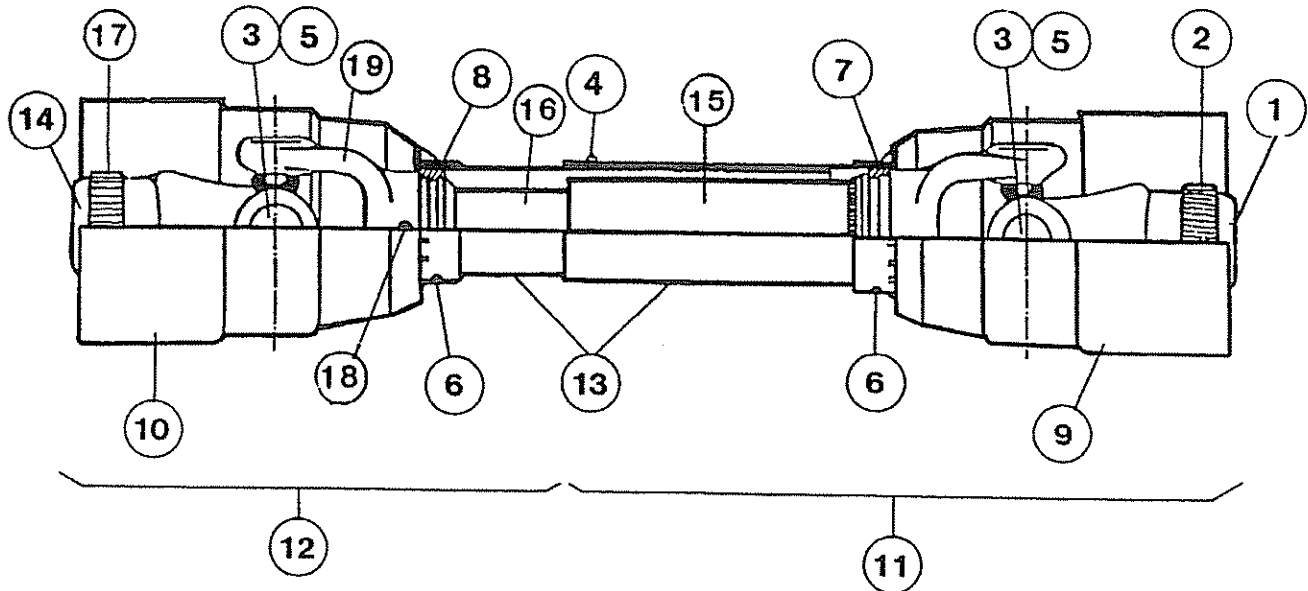


Wheel Hub Assembly

ITEM	PART NO.	QTY.	DESCRIPTION
1	00756489	1	Wheel Hub w/caps, studs, nuts, and Grease Fittings
2	0371242102	1	Bearing Cone (Outside)
3	00756576	1	Bearing Cup (Outside)
4	00750434	1	Bearing Cone (Inside)
5	00756577	1	Bearing Cup (Inside)
6	00756488	5	Stud Bolt
7	00750614	5	Nut, Stud, Bolt
8	00756490	1	Nut, Bearing, Adjusting
9	00756491	1	Seal
10	00026200	1	Cotter Pin
11	00756492	1	Dust Cap
12	00756493	1	Washer
13	00752176	1	Grease Fittings
14	00756528	1	Bearing Kit

MAIN DRIVELINE ASSEMBLY P/N 00760593

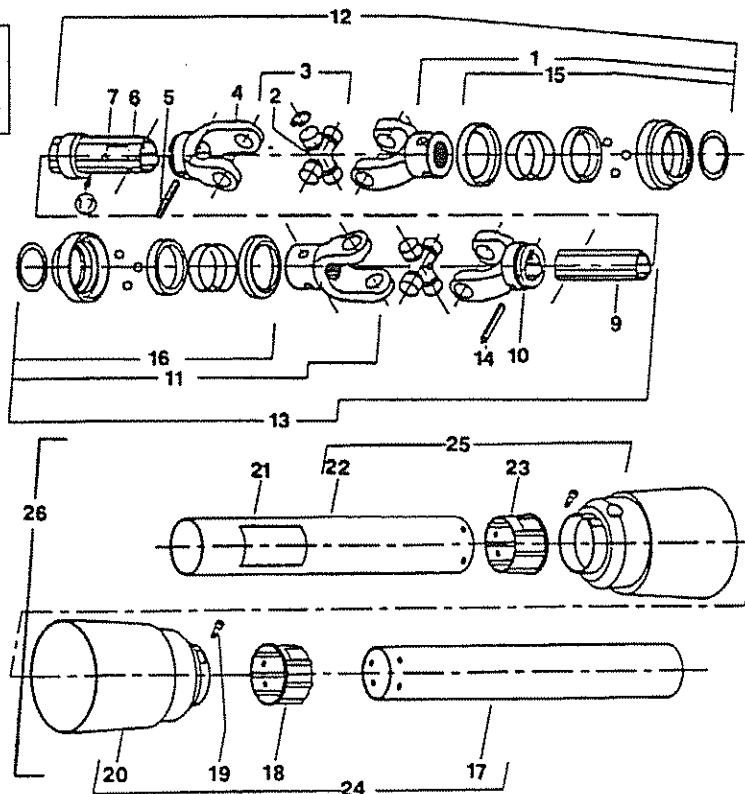
Main Driveline Assy. P/N 00760593
S/N - SE15-10251 and After



ITEM	PART NO.	QTY	DESCRIPTION
1	00752883	1	Outer Yoke 1-3/8-6
2	00757144	1	Slide Collar Repair Kit
3	00752896	2	Cross Journal Set
4	00754335	1	Grease Nipple for Tube
5	00755610	2	Grease Nipple for Cross
6	00754330	6	Nylon Bolt
7	00754332	1	Locking Collar Outer
8	00754331	1	Locking Collar Inner
9	00760617	1	Shield Complete Outer
10	00760618	1	Shield Complete Inner
11	00760616	1	Mower Half Complete and Shielded
12	00760615	1	Tractor Half Complete and Shielded
13	00760619	1	Shield Complete
14	00757051	1	Outer Yoke 1-3/4-20
15	00760625	1	Outer Tube & Yoke
16	00760624	1	Inner Tube
17	00757052	1	Slide Collar Repair Kit
18	00754167	1	Roll Pin
19	00754153	1	Yoke - Inner Tube

MAIN DRIVELINE ASSEMBLY P/N 00759325

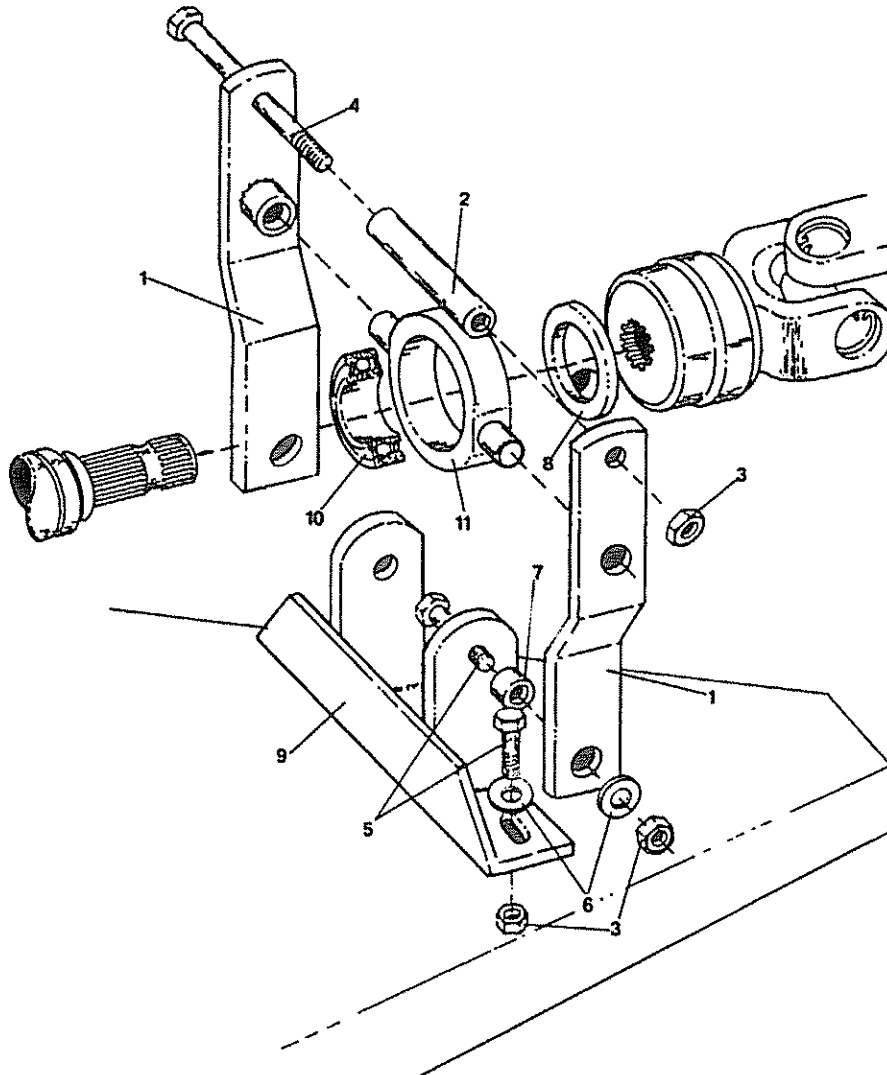
Main Driveline Assy.
P/N 00759325
S/N - SE15-10250 and Prior



ITEM	PART NO.	QTY	DESCRIPTION
1	00752883	1	Collar Yoke 1-3/8"
2	00759517	2	Grease Nipple Cross
3	00752896	2	Cross Assembly
4	00754154	1	Outer Tube Yoke
5	00754167	1	Roll Pin for Outer Yoke
6	00759871	1	Outer Tube
7	00756004	1	Warning Decal
8	00754335	1	Grease Nipple
9	00759872	1	Inner Tube
10	00754153	1	Inner Tube Yoke
11	00757051	1	Collar Yoke 1-3/4
12	00759869	1	Outer Shaft w/Protector
13	00759870	1	Inner Shaft w/Protector
14	00754167	1	Roll Pin Inner Tube
15	00757144	1	Collar Yoke 1-3/8
16	00757052	1	Collar Yoke 1-3/4
17	00759873	1	Inner Tube
18	00759216	1	Inner Tube Bearing
19	00759217	2	Screw
20	00759844	1	Standard Cone
21	00756005	1	Warning Decal
22	00759874	1	Outer Tube
23	00759218	1	Outer Tube Bearing
24	00759875	1	Inner Half Shield
25	00759876	1	Outer Half Shield
26	00759877	1	Complete Shield

JACKSHAFT BEARING SUPPORT

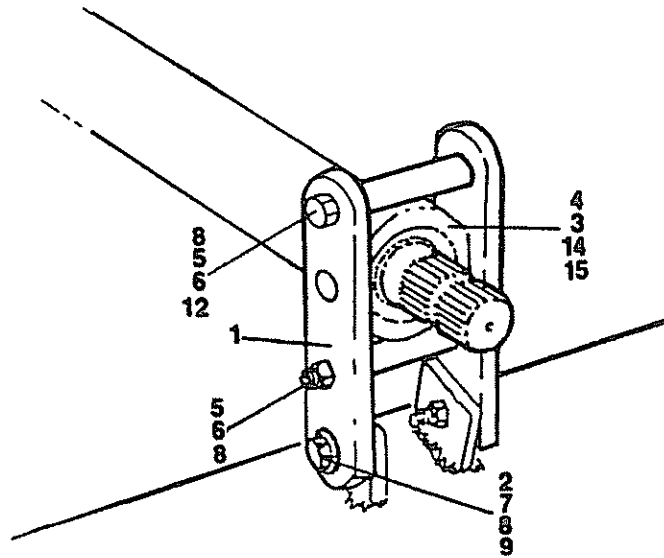
Jackshaft Bearing Support
S/N - SE15-10251 and After



ITEM	PART NO.	QTY	DESCRIPTION
1	00760585	2	Support
2	00760527	1	Spacer
3	00001800	5	Locknut
4	4994	1	Bolt
5	00013300	4	Bolt
6	15B800	4	Washer
7	681112	2	Bushing
8	00759868	1	Spacer
9	562142	1	Bracket
10	531116	1	Bearing
11	531111	1	Bearing Housing

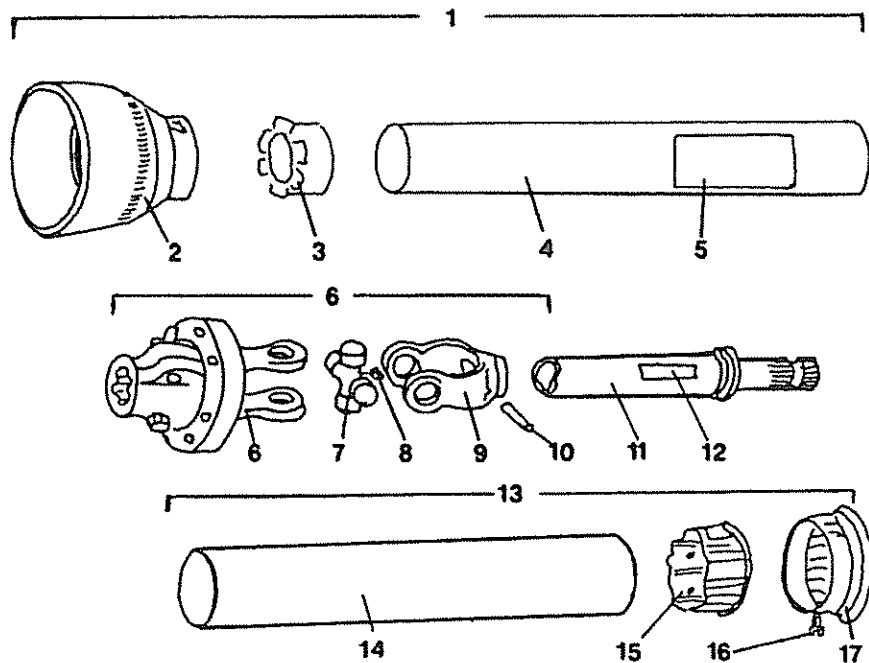
JACKSHAFT BEARING SUPPORT

Jackshaft Bearing Support
S/N - SE15-10250 and Prior



ITEM	PART NO.	QTY	DESCRIPTION
1	00759867	2	Jackshaft Support Flat
2	681112	2	Bushing
3	531111	1	Bearing Housing
4	531116	1	Bearing
5	531113	2	Bearing Spacer
6	7A81344	2	Bolt
7	00013300	2	Bolt
8	00001800	4	Locknut
9	15B800	4	Washer
12	00002700	2	Washer
14	0811180010	1	Bearing & Housing Assembly
15	00759868	1	Spacer

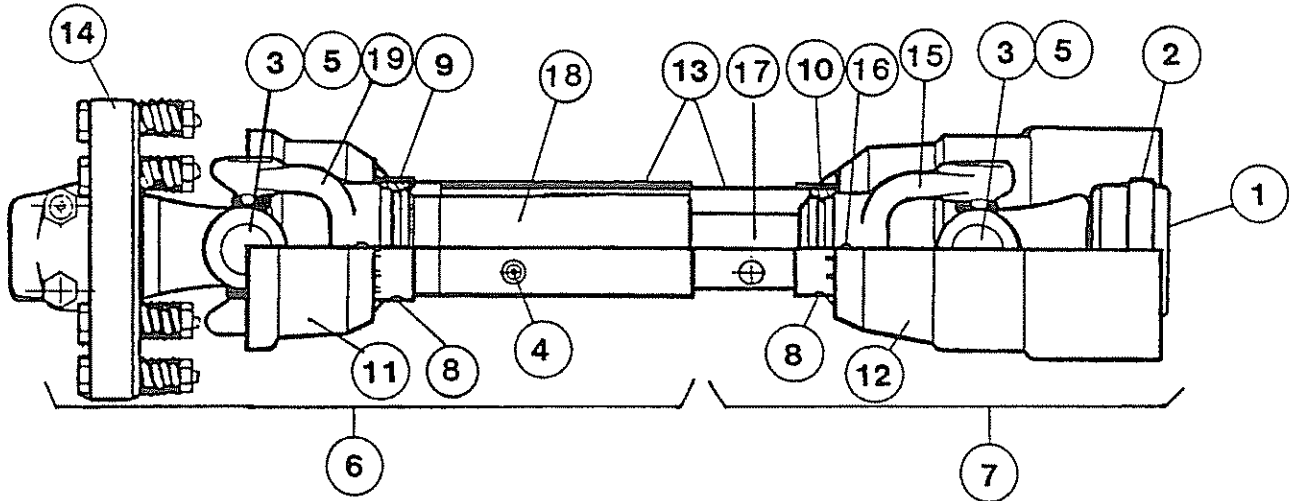
JACKSHAFT ASSEMBLY P/N 00759326



ITEM	PART NO.	QTY	DESCRIPTION
1	00759854	1	Half Female Shield
2	00759842	1	Cone (Short Rigid Cone)
3	00759218	1	Outer Tube Bearing
4	00759851	1	Outer Tube
5	00756005	1	Driveline Shield Warning Label
6	00759985	1	Complete Disc Clutch
7	00752896	2	Cross Assembly
8	00759517	2	Grease Nipple Cross
9	00754154	1	Outer Tube Yoke
10	00754167	1	Roll Pin for Outer Tube
11	00759848	1	Outer Tube-Jackshaft
12	00756004	1	Driveline Warning Label
13	00759853	1	Half Male Shield
14	00759849	1	Inner Tube
15	00759216	1	Inner Tube Bearing
16	00759217	2	Screw
17	00759850	1	Short Cone (Cutoff Rigid Cone)
18	00759852	1	Complete Shield (Consists of Items 1 & 13)

WING DRIVESHAFT P/N 00760595

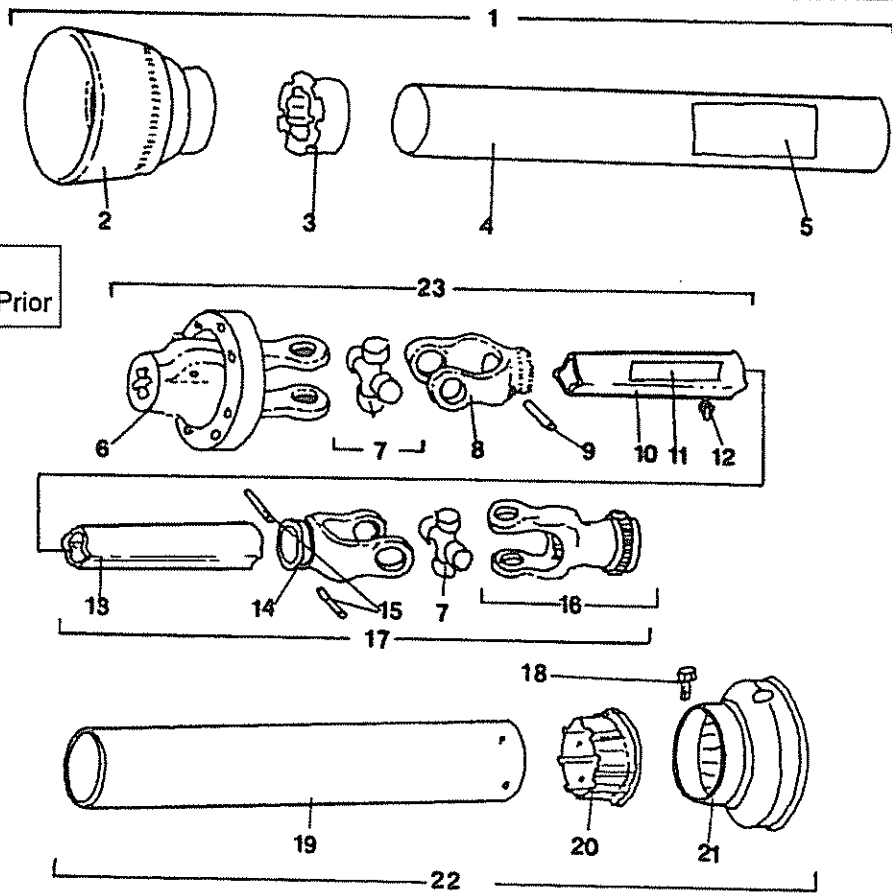
Wing Driveshaft P/N 00760595
S/N - SE15-10251 and after



ITEM	PART NO.	QTY	DESCRIPTION
1	00757051	1	Outer Yoke
2	00757052	1	Slide Collar Repair Kit
3	00752896	2	Cross Journal Kit
4	00754335	1	Grease Nipple for Tube
5	00755610	2	Grease Nipple
6	00760621	1	D/L, Slip Clutch half, Shielded
7	00760620	1	D/L, QD Half, Shielded
8	00754330	6	Nylon Bolt
9	00754332	1	Locking Collar Outer
10	00754331	1	Locking Collar Inner
11	00754193	1	Shield Complete Outer
12	00754192	1	Shield Complete Inner
13	00754333	1	Shield Complete
14	00756075	1	Slip Clutch
15	00754153	1	Inner Yoke
16	00754167	1	Roll Pin
17	00755444	1	Inner Tube

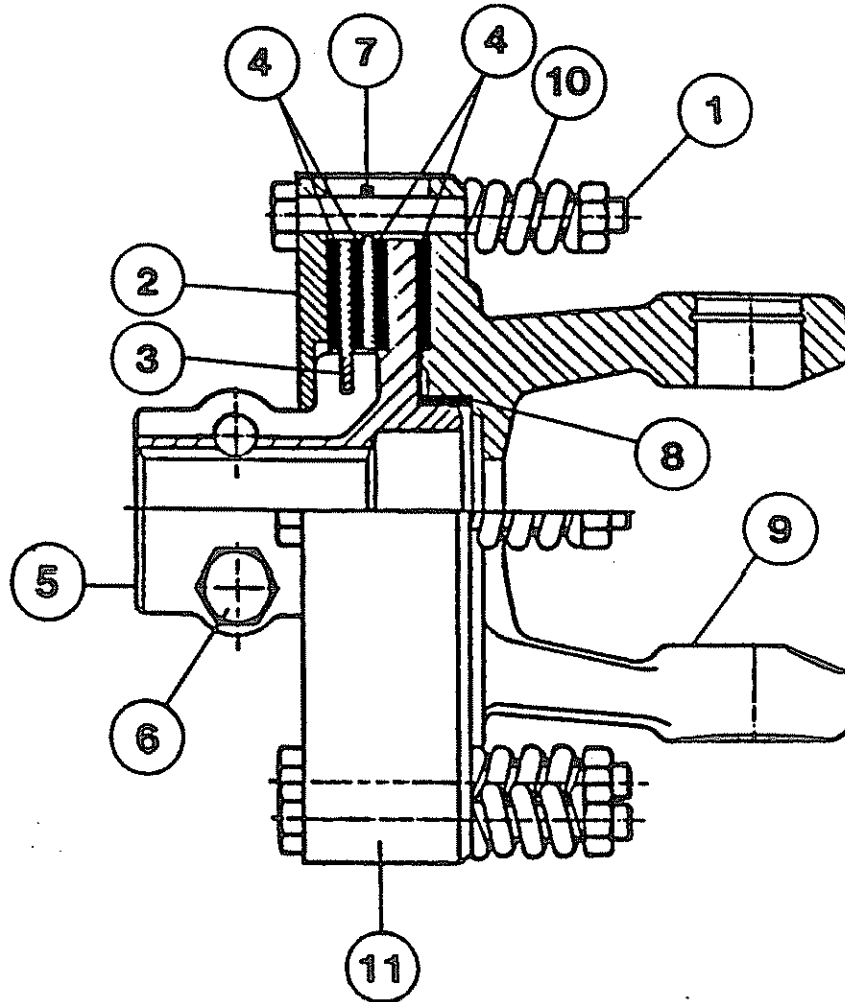
WING DRIVELINE ASSEMBLY

Wing Driveline
S/N - SE15-10250 and Prior



TEM	PART NO.	QTY	DESCRIPTION
1	00759225	1	Female Half w/Shield
2	00759844	1	Cone
3	00759218	1	Outer Tube Bearing
4	00759843	1	Outer Tube
5	00756005	1	Warning Decal
6	00756075	1	Disc Clutch
7	00752896	2	Cross Bearing
8	00754154	1	Outer Yoke
9	00760503	2	Pin
10	00759837	1	Outer Tube
11	00756004	1	Warning Decal
12	00754335	1	Grease Nipple
13	00759838	1	Inner Tube
14	00754153	1	Inner Tube
15	00754167	1	Pin
16	00757051	1	Collar Yoke
17	00759840	1	Inner Shaft
18	00759217	2	Screw
19	00759841	1	Inner Tube
20	00759217	1	Inner Tube Bearing
21	00759842	1	Short Cone
22	00759846	1	Male Half
23	00759839	1	Outer Shaft

SLIPCLUTCH ASSEMBLY (Series 60 - 1-3/4 - 20 Splined Hub)

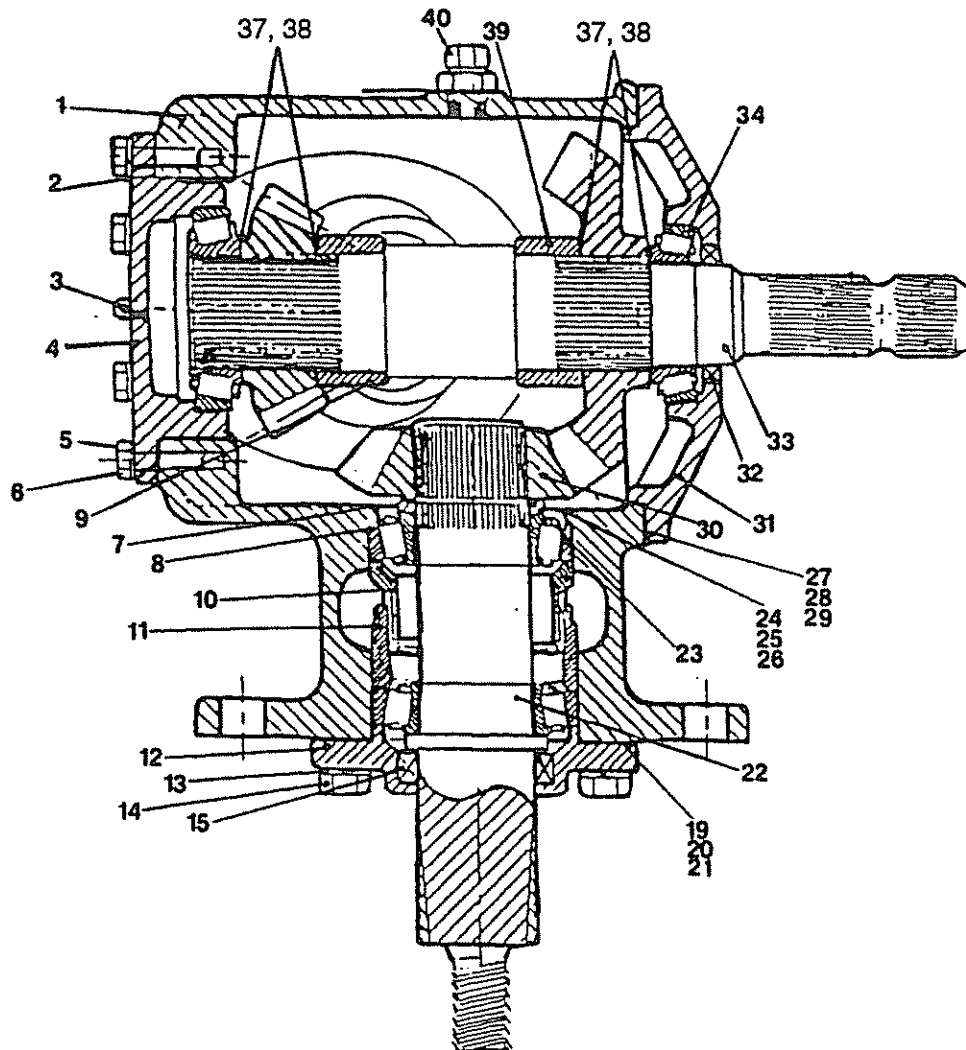
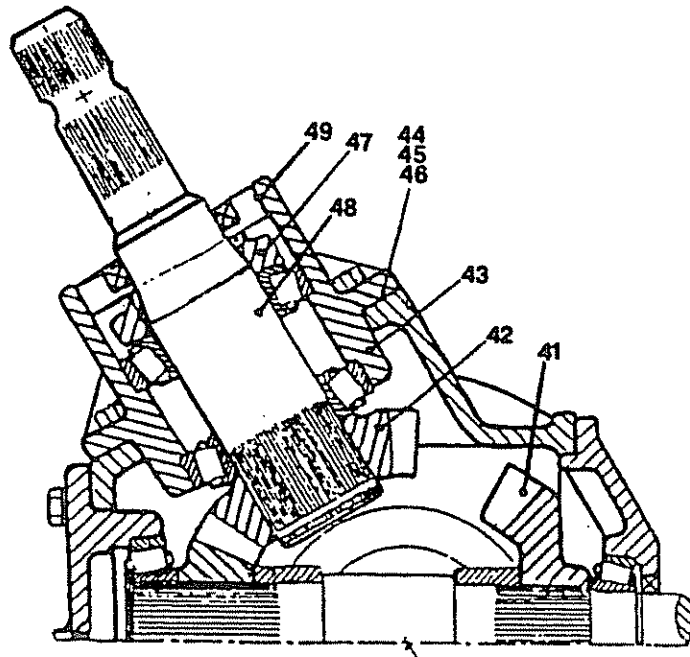


P/N 00756075 CLUTCH SET @ 882 FT. LB. TORQUE

P/N 00759984 CLUTCH SET @ 110 FT. LB. TORQUE
(Use on Jackshaft Only)

ITEM	PART NO.	QTY	DESCRIPTION
1	00754199	8	Nut and Bolt
2	00754203	1	Pressure Plate
3	00754201	1	Inner Plate
4	00754202	4	Clutch Lining
5	00755599	1	Clutch Body
6	00755600	2	Bolt and Nut Set
7	00754314	1	Plate w/Holes
8	00754301	1	Spacer
9	00754302	1	Yoke, Clutch
10	00754303	8	Spring Clutch
11	00754304	1	Dirt Shield

CENTER GEARBOX ASSEMBLY



Parts 6-18

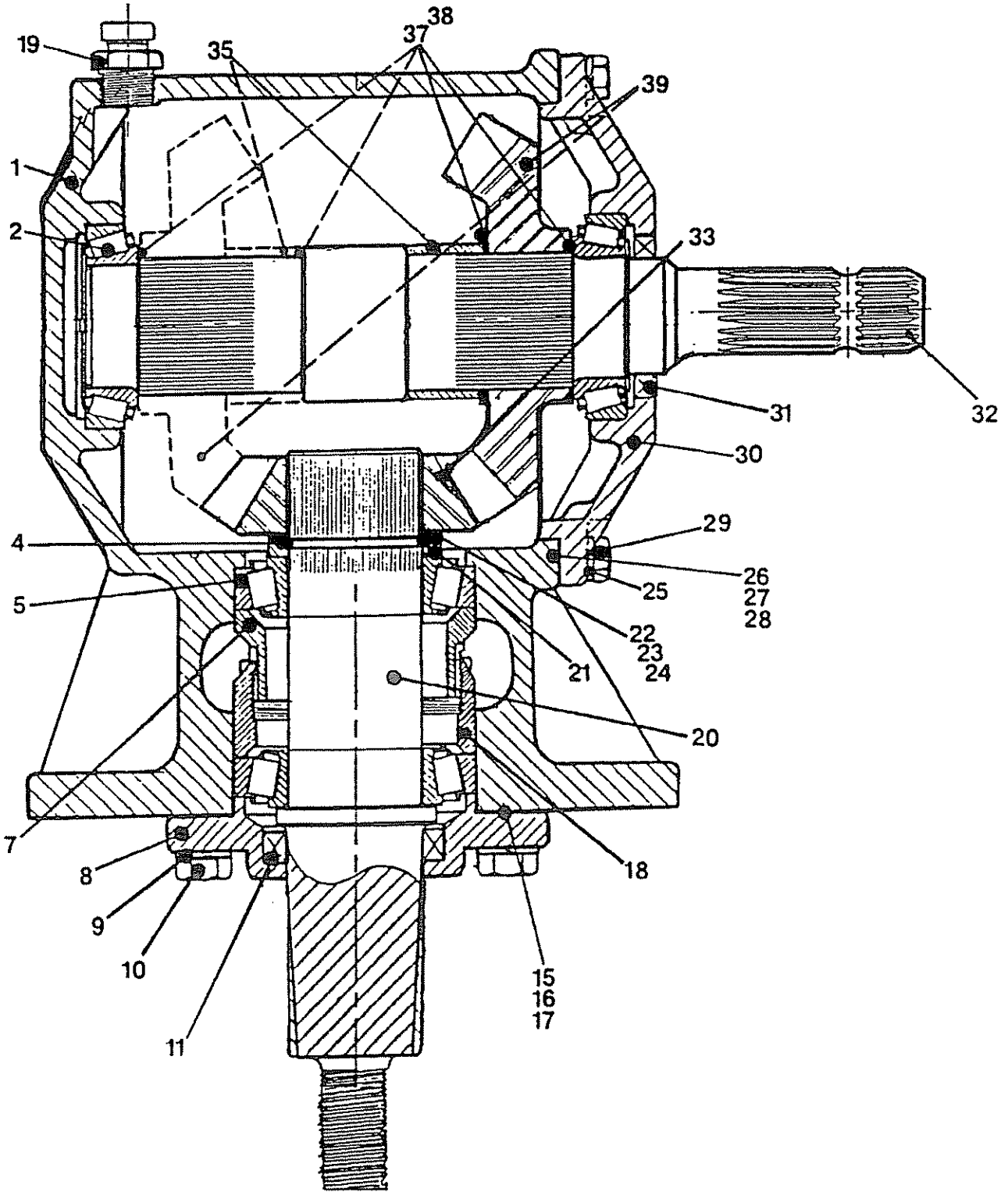
CENTER GEARBOX ASSEMBLY

Center Gearbox Assembly
P/N 00758957
Counter Clockwise Rotation

ITEM	PART NO.	QTY	DESCRIPTION
1	00758702	1	Housing
2	00758703	1	Cap Gasket
3	00565000	1	Pipe Plug
4	00758704	1	Input Cap
5	00755954	26	Lockwasher
6	00758659	26	Bolt
7	00758660	3	Retaining Ring
8	00758650	7	Bearing Assembly
9	00759489	1	Gear Spacer
10	00758662	1	External Adjusting Spacer
11	00758679	1	Internal Adjusting Spacer
12	00758663	1	Output Cap
13	00758672	4	Lockwasher
14	00758673	4	Bolt
15	00758674	1	Oil Seal
19	00758676	2*	Gasket (.10)
20	00758677	1*	Gasket (.30)
21	00758678	1*	Gasket (.50)
22	00758687	1	Shaft, Output
23	00758688	1	Retaining Ring
24	00758666	1	Shim (.10)
25	00758667	1*	Shim (.30)
26	00758668	1*	Shim (.50)
27	00758646	2*	Gasket (.10)
28	00758647	1*	Gasket (.30)
29	00758648	1*	Gasket (.50)
30	00758693	1	Output Gear
31	00758664	1	Input Cap
32	00758653	3	Oil Seal
33	00759490	1	Input Shaft, 1-3/4 - Spline
34	00758655	1	Bearing Assembly
37	00758667	2	Shim (.30)
38	00758668	2	Shim (.50)
39	00758657	2	Input Shaft Spacer
40	00758654	1	Relief Plug
41	00758694	1	Input Gear
42	00758706	3	Gear
43	00758707	2	Horizontal Hub
44	00758708	2*	Gasket (.10)
45	00758709	1*	Gasket (.30)
46	0075870	1*	Gasket (.50)
47	00758651	2	Adjusting Nut
48	00758658	2	Output Shaft, 1-3/4 - 20 Spline
49	00758652	2	Seal Adapter

* OR AS MANY NEEDED TO FIT PROPERLY

WING GEARBOX ASSEMBLY



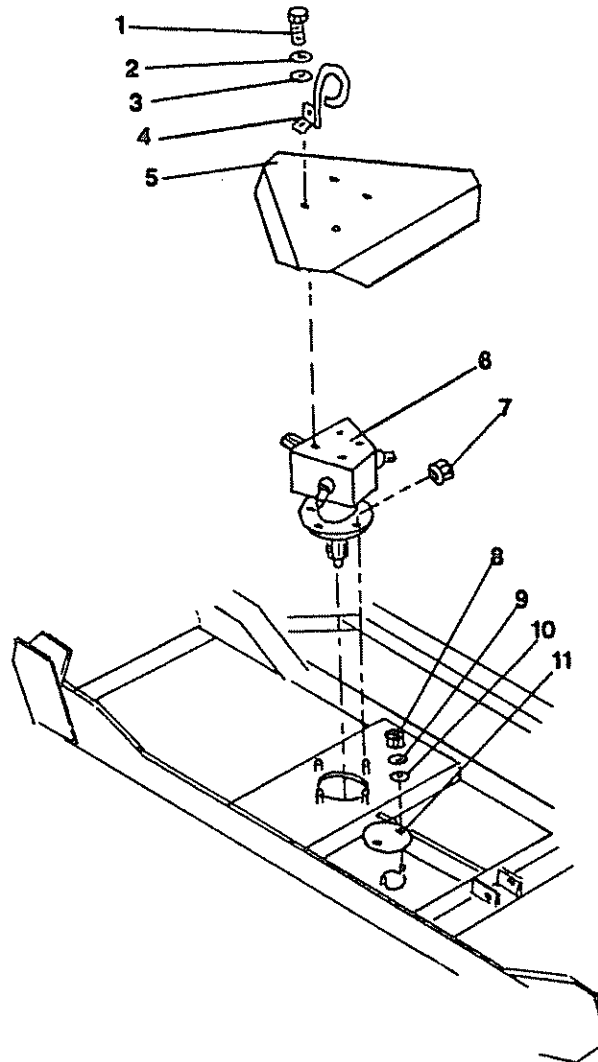
WING GEARBOX ASSEMBLY

Wing Gearbox Assembly
P/N 00759205 P/N 00759206
Clockwise Rotation Counter Clockwise Rotation

ITEM	PART NO.	QTY	DESCRIPTION
1	00758661	1	Housing
2	00758655	2	Bearing
4	00758660	1	Retaining Ring
5	00758650	2	Bearing
7	00758662	1	Adjusting Spacer
8	00758663	1	Output Cap
9	00758672	4	Lockwasher
10	00758673	4	Bolt
11	00758674	1	Oil Seal
15	00758676	2*	Gasket (.10)
16	00758677	1*	Gasket (.30)
17	00758678	1*	Gasket (.50)
18	00758679	1	Spacer
19	00758654	1	Relief Plug
20	00758687	1	Output Shaft
21	00758688	1	Retaining Plug
22	00758666	2*	Shim (.10)
23	00758667	1*	Shim (.30)
24	00758668	1*	Shim (.50)
25	00755954	8	Lockwasher
26	00758646	2*	Gasket (.10)
27	00758647	1*	Gasket (.30)
28	00758648	1*	Gasket (.50)
29	00758659	8	Bolt
30	00758664	1	Input Cap
31	00758653	1	Oil Seal
32	00758689	1	Input Shaft, 1-3/4 - 20 Spline
33	00758693	1	Output Shaft
34	00565000	1	Oil Level Plug
35	00758657	1	Shaft Spacer
37	00758667	1	Shim (.30)
38	00758668	1	Shim (.50)
39	00758694	1	Input Gear

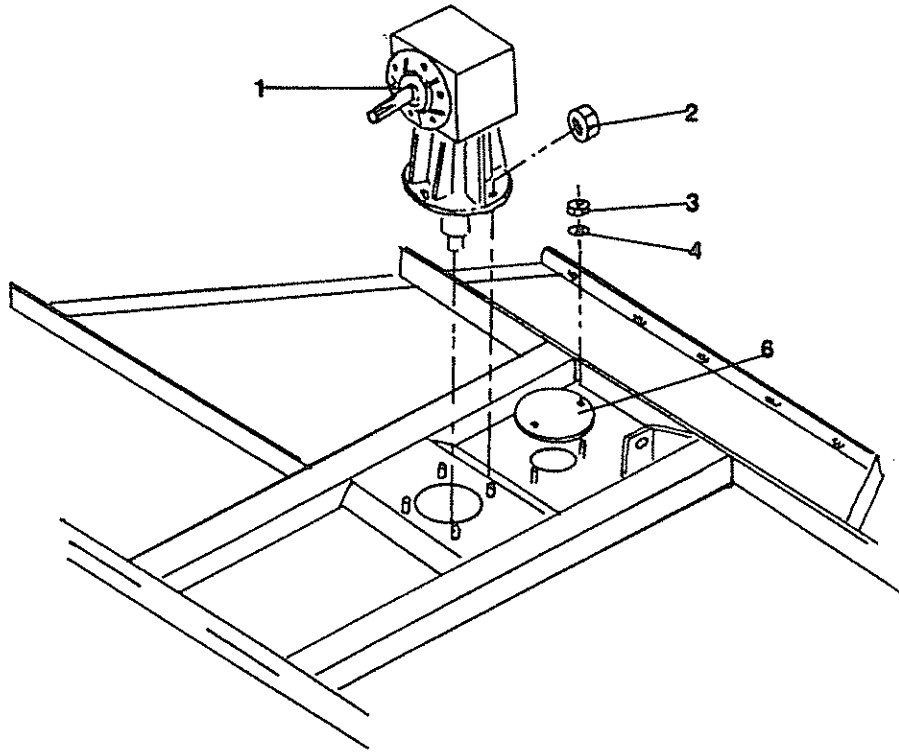
* OR AS MANY NEEDED TO FIT PROPERLY

CENTER GEARBOX ATTACHMENT



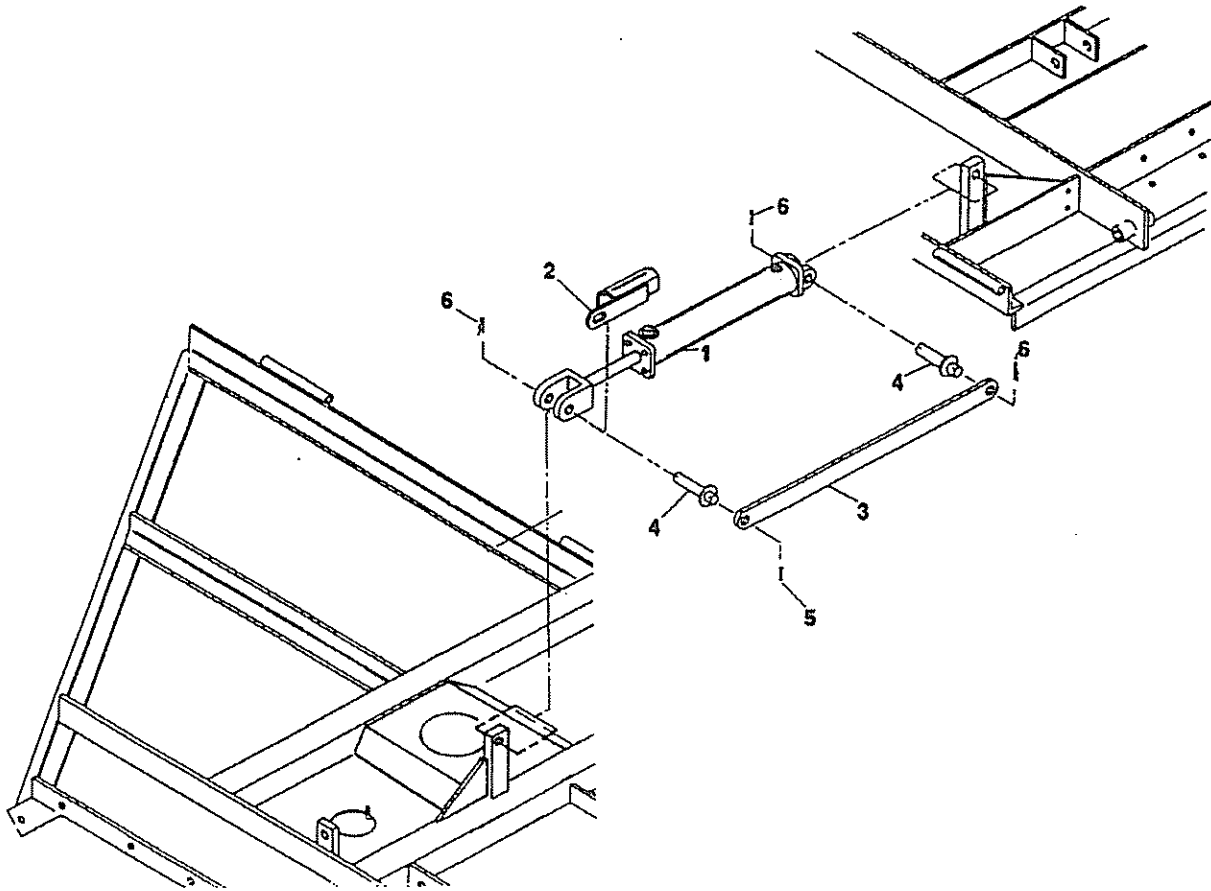
ITEM	PART NO.	QTY	DESCRIPTION
1	00750959	4	Bolt
2	00001300	4	Lockwasher
3	00002700	4	Flatwasher
4	8343	1	Hose Holder
5	00759144	1	Shield
6	00758957	1	Gearbox-Center
7	1168	4	Locknut
8	4403	2	Nut
9	4369	2	Lockwasher
11	5471	1	Cover Plate

WING GEARBOX ATTACHMENT



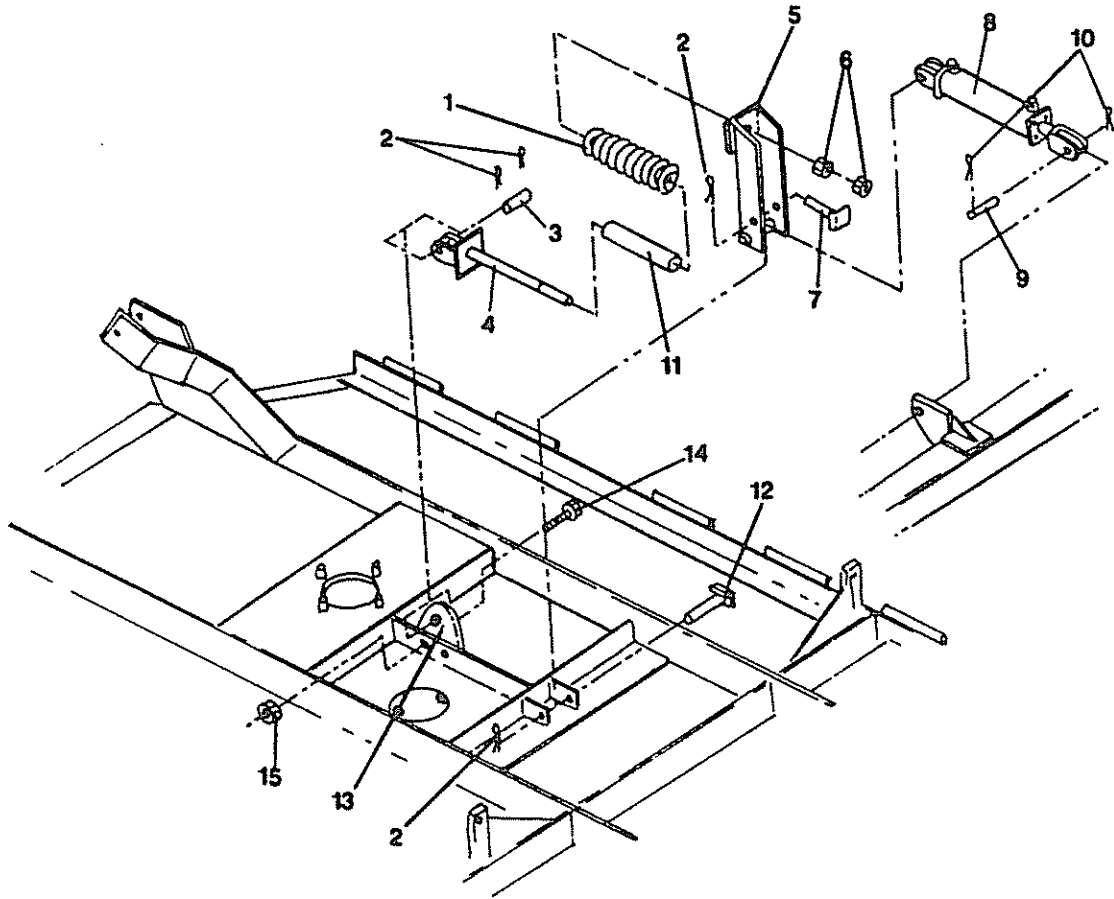
ITEM	PART NO.	QTY	DESCRIPTION
1	00759206	1	Right Wing Gearbox
	00759205	1	Left Wing Gearbox
2	1168	4	Locknut
3	4403	2	Nut
4	4369	2	Lockwasher
6	5471	1	Cover Plate

WING CYLINDER ATTACHMENT



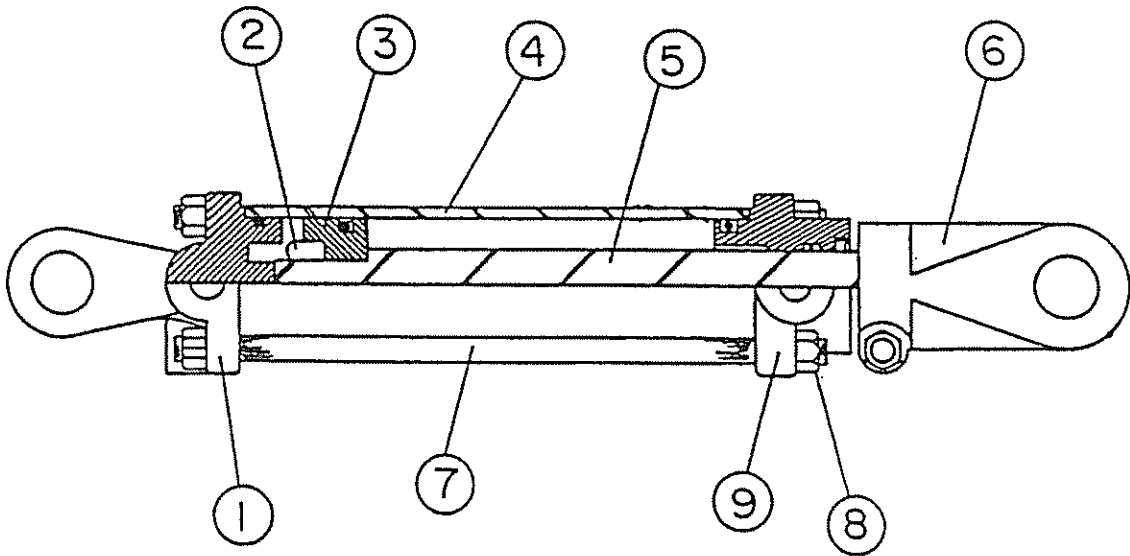
ITEM	PART NO.	QTY	DESCRIPTION
1	8728	2	Hydraulic Cylinder
2	8505	1	Cylinder Stop-Right
	8524	1	Cylinder Stop-Left
3	8445	2	Transport Bar
4	8352	4	Pin Assembly
5	2192	4	Hairpin Cotter
6	7343	4	Cotter Key

CENTER CYLINDER ATTACHMENT



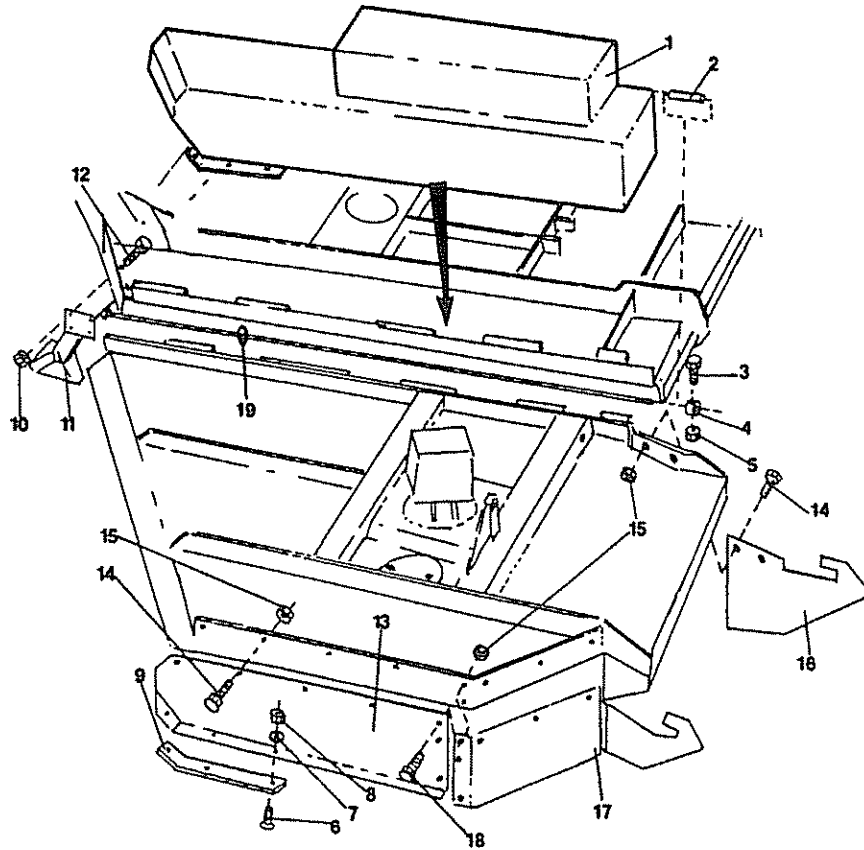
ITEM	PART NO.	QTY	DESCRIPTION
1	8306	1	Compression Spring
2	7343	4	Cotter Key
3	8351	1	Pin
4	8326	1	Spring Rod Assembly
5	8325	1	Cylinder Spring Stop
6	4483	2	Nut
7	8349	1	Pin
8	8727	1	Hydraulic Cylinder
9	8354	1	Pin
10	2192	2	Cotter Pin
11	8336	1	Spring Stop
12	8350	1	Pin
13	00759086	1	Lug
14	4412	2	Bolt
15	00695100	2	Locknut

CYLINDER ASSEMBLY



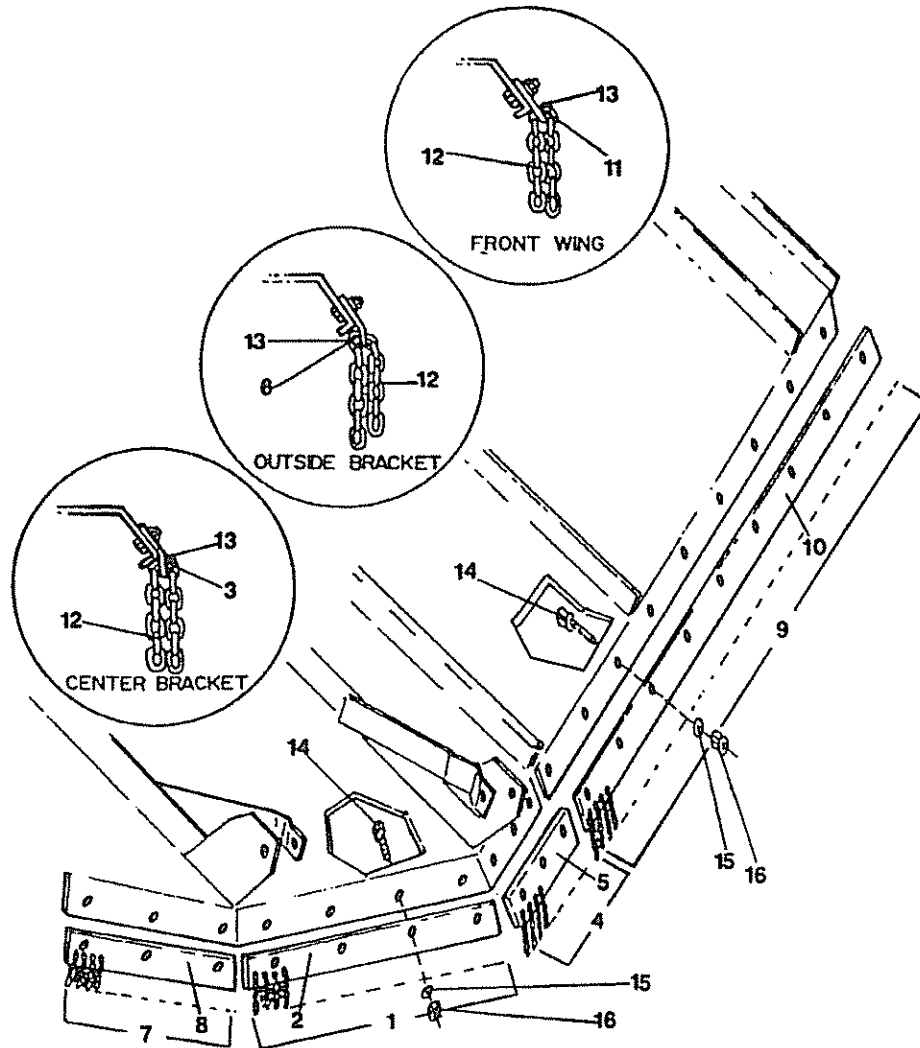
ITEM	WING PART NO.	CENTER PART NO.	QTY	DESCRIPTION
	8728		2	Wing Cylinder
		8727	1	Center Cylinder
1	8755	8755	1	Base Clevis
2	4675	4675	1	Piston Nut
3	8751	8751	1	Piston
4	8758	8752	1	Tube
5	8759	8753	1	Piston Rod
6	8654	8754	1	Rod Clevis
7	8761	8756	4	Tie Rod
8	4690	4690	8	Nut
9	8757	8757	1	Head
10	7339	7339	1	Breather Plug
11	8763	8763	1	Seal Kit

WING ATTACHMENT W/SKIRTS & SKID SHOES



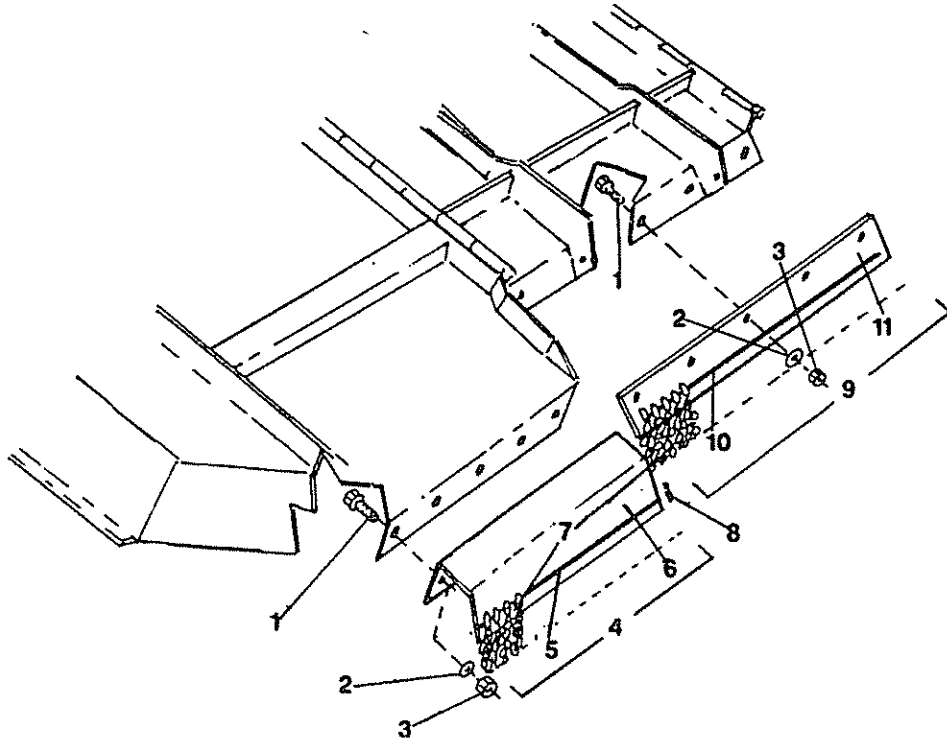
ITEM	PART NO.	QTY	DESCRIPTION
1	00759381	1	L.H. Weight Box
	00759562	1	R.H. Weight Box
2	00759146	1	Tube - Pivot Short
3	8276	2	Bolt
4	8347	2	Head Pin
5	4423	2	Locknut
6	8277	3	Plow Bolt
7	3078	3	Flatwasher
8	5JRC6160	3	Locknut
9	8312	2	Runner
10	00695100	8	Locknut
11	00759203	1	Skid Shoe RH
	00759204	1	Skid Shoe LH
12	00752658	8	Bolt
13	8332	1	Skid Shoe RH
	8333	1	Skid Shoe LH
14	9012	12	Bolt 1/2x1-1/4 LG
15	4526	13	Locknut 1/2
16	00759108	1	Shield
	00759109	1	Shield LH
17	00759120	1	Shield RH
	00759121	1	Shield LH
18	4338	1	Bolt 1/2x1-1/2 LG
19	8322	1	Hinge Rod Assembly

FRONT CHAINGUARD



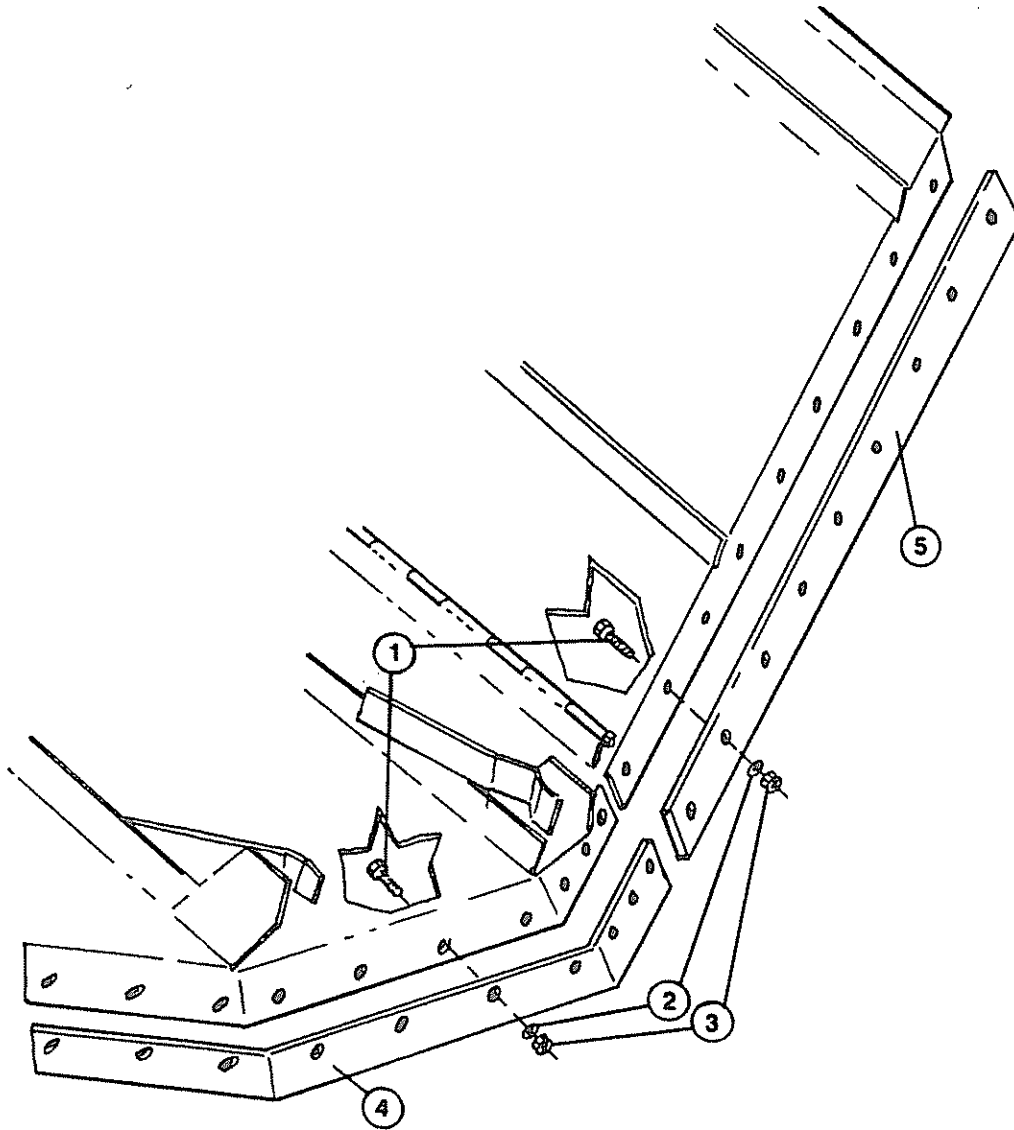
ITEM	PART NO.	QTY	DESCRIPTION
1	4497	1	Front Center Chainguard
2	4498	1	Front Center Bracket
3	4499	1	31" Rod
4	4506	1	Left Front Center Chainshield
5	4507	1	Front Left Hand Bracket
6	4508	2	21" Rod
7	4532	1	Right Front Center Chainguard
8	4533	1	Front Right Center Bracket
9	4500	2	Front Wing Chainshielding
10	4501	2	Front Wing Bracket
11	2460	2	70" Rod
12	2416	371	7 Link Chain
13	2545	24	Cotter Key
14	9012	50	Bolt
15	4526	50	Nut
16	9067	4	Washer

REAR CHAINGUARD



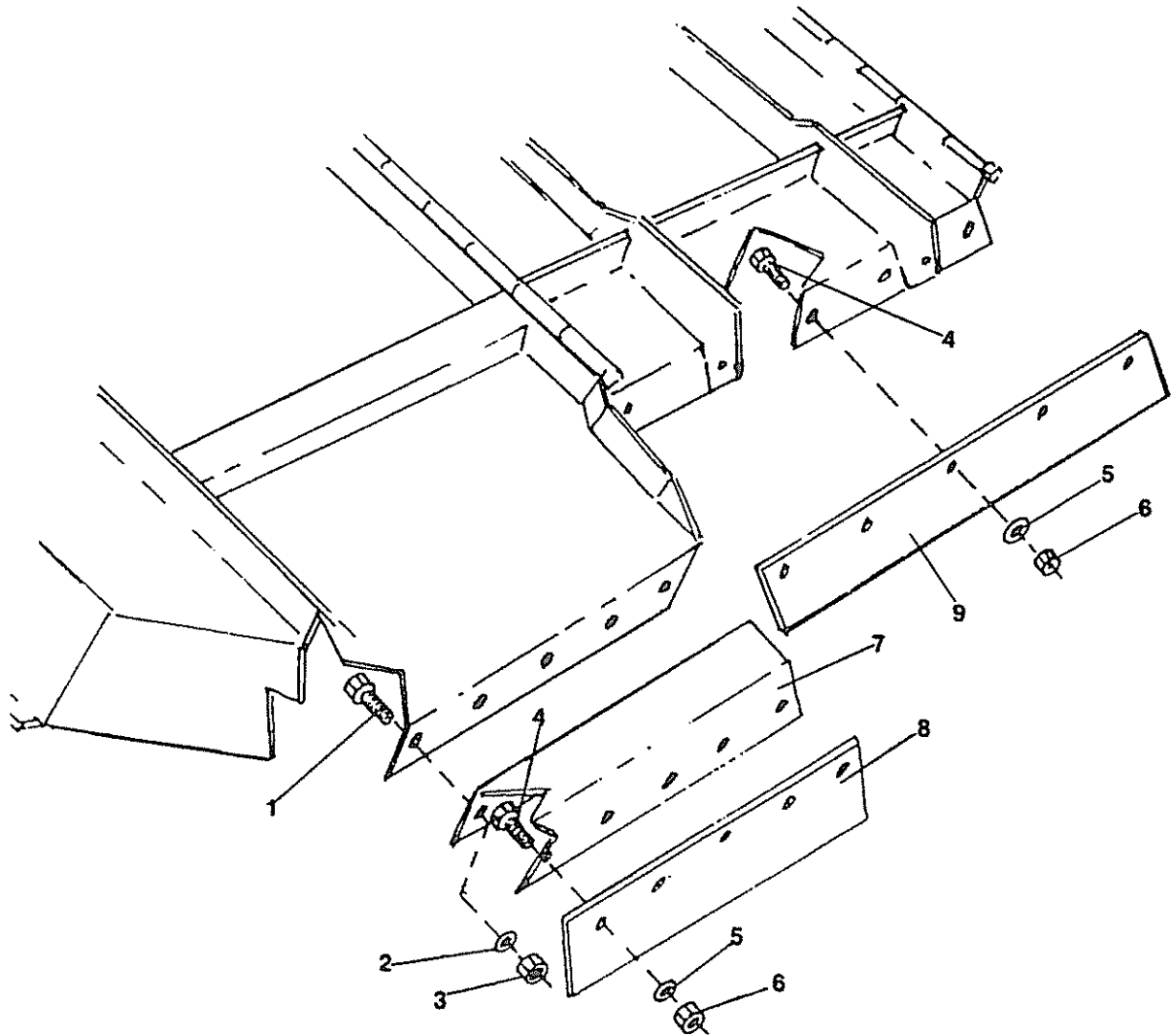
ITEM	PART NO.	QTY	DESCRIPTION
1	9012	15	Bolt
2	9067	15	Flatwasher
3	5JRC8130	15	Locknut
4	00759210	2	Rear Wing Chainguard Assembly
5	00756183	2	Rod
6	00759126	2	Rear Wing Bracket
7	2416	95	Chain (7 Link)
8	2545	2	Cotter Key
9	4503	1	Rear Center Chainguard Assembly
10	4505	1	Rod
11	4504	1	Rear Center Bracket

FRONT RUBBER DEFLECTOR



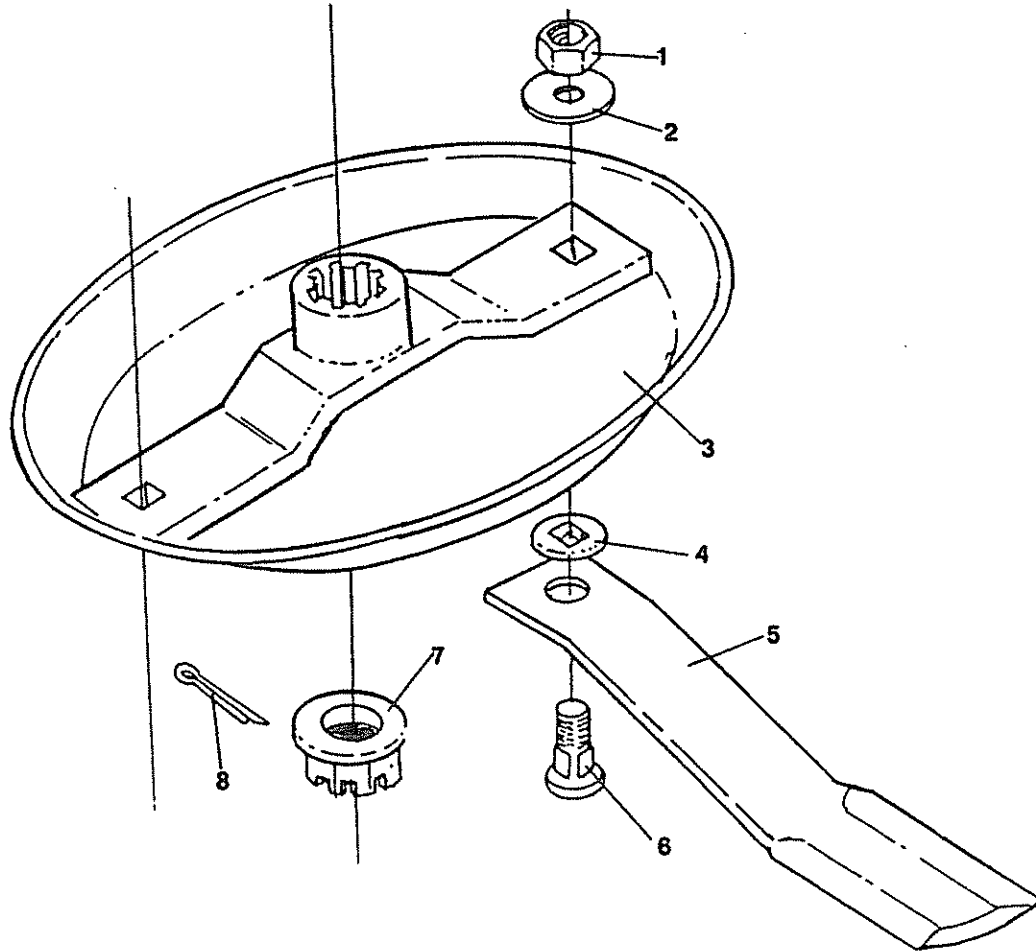
ITEM	PART NO.	QTY	DESCRIPTION
1	9012	19	Bolt
2	9067	19	Flatwasher
3	5JRC8130	19	Locknut
4	00758529	1	Center Flap
5	00758513	2	Wing Flap

REAR RUBBER DEFLECTOR



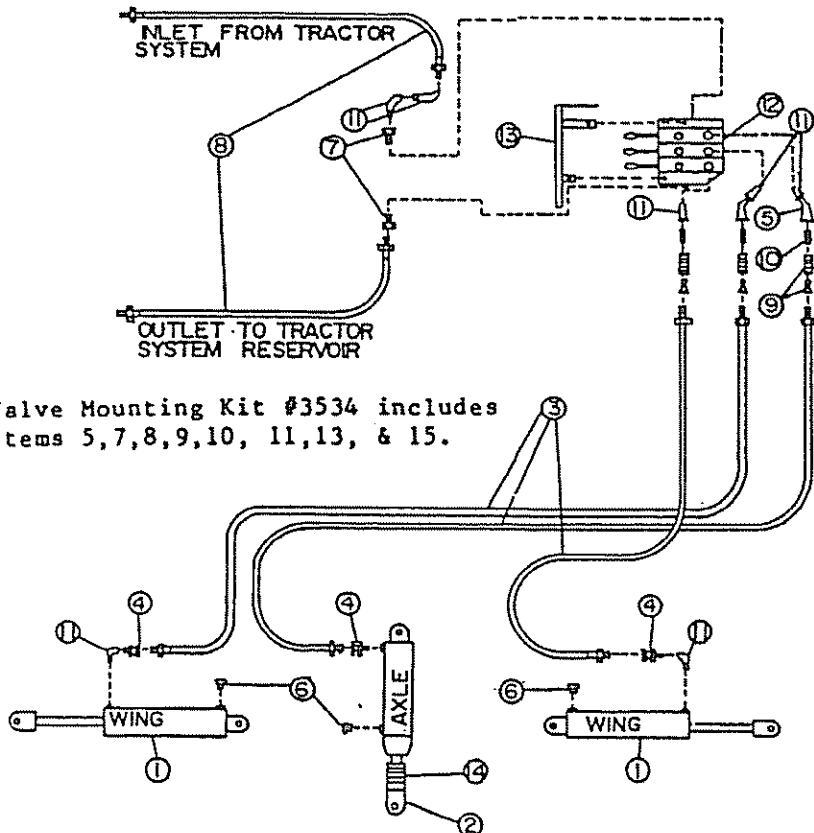
ITEM	PART NO.	QTY	DESCRIPTION
1	9012	10	Bolt
2	9067	10	Flatwasher
3	4526	10	Locknut
4	02030700	15	Bolt
5	00002700	15	Flatwasher
6	00001800	15	Locknut
7	00759269	2	Wing Deflector Bracket
8	00759270	2	Wing Flap
9	00758523	1	Center Flap

BLADE PAN ASSEMBLY



ITEM	PART NO.	QTY	DESCRIPTION
1	8201	2	Locknut
2	9216	2	Washer
3	00758590	1	Blade Pan
4	7516	2	Blade Washer
5	8588	1pr	Matched Blades (ccw)
5	8589	1pr	Matched Blades (ccw)
5	8590	1pr	Matched Blades (ccw)
6	8251	2	Blade Bolt
7	00758692	1	Hex Nut
8	00606000	1	Cotter Pin
	00758605	-	Center Complete Assembly
	00758592	-	Right Complete Assembly
	00758591	-	Left Complete Assembly

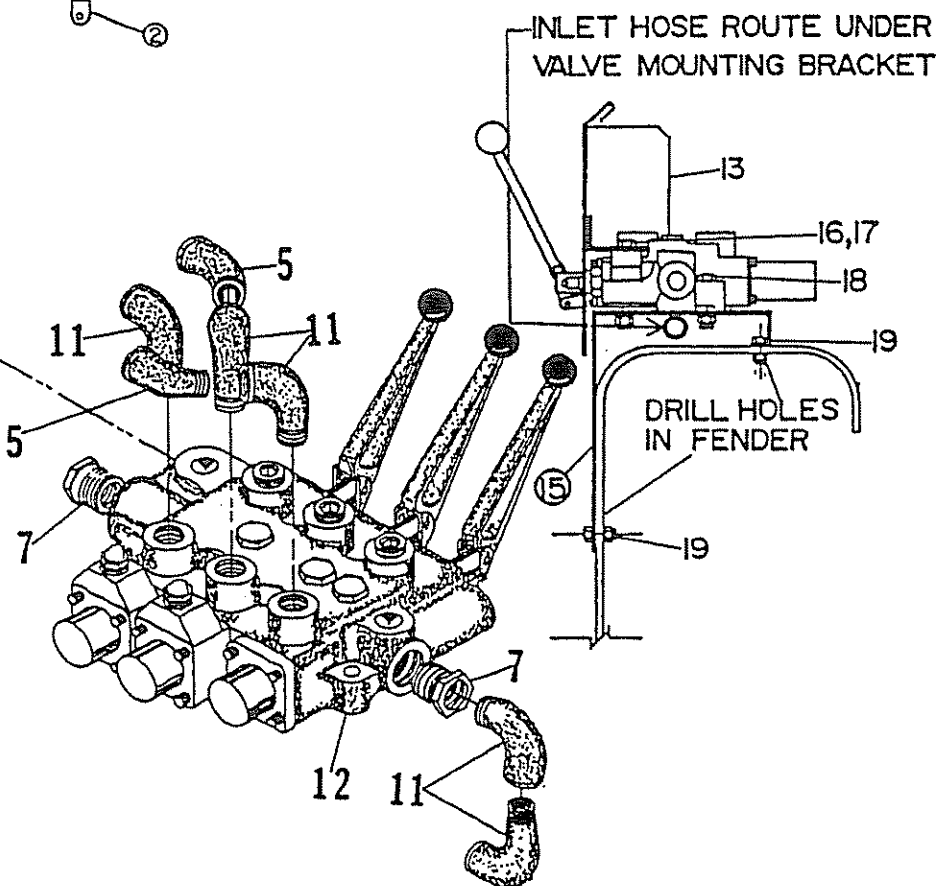
HYDRAULIC CONTROL VALVE W/MOUNTING KIT



Valve Mounting Kit #3534 includes items 5, 7, 8, 9, 10, 11, 13, & 15.

CLOSED CENTER PLUG

Saw cut at threads to make open center plug

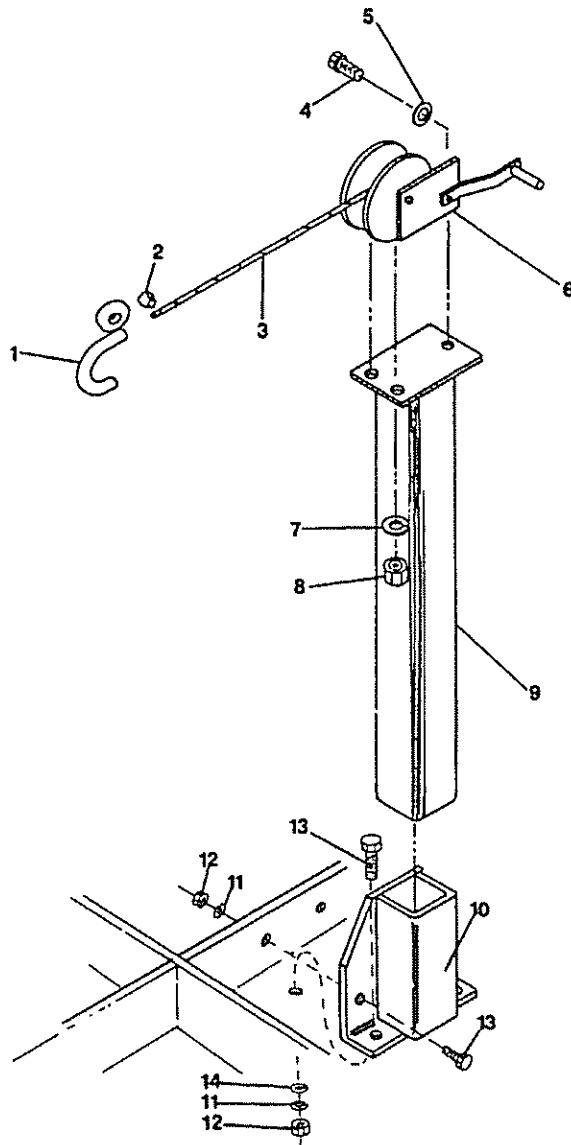


HYDRAULIC CONTROL VALVE W/MOUNTING KIT

ITEM PART NO. QTY DESCRIPTION

1	8728	2	Wing Left Cylinder
2	8727	1	Axle Lift Cylinder
3	8446	3	Hydraulic Hose
4	7329	3	Restrictor Fitting
5	7325	2	Elbow 45 Deg.
6	7339	3	Breather
7	7323	2	Reducer
8	1347	2	Hydraulic Hose
9	2107	3	Quick Disconnect
10	8477	3	Close Nipple
11	7324	7	Elbow 90 Deg.
12	3533	1	Open Valve Bank
	3542	1	Closed Valve Bank
13	7281	1	Shield
14	9001	1	Stroke Control
15	8166	1	Fender Bracket
16	4564	2	Bolt
17	7336	2	Spacer
18	8276	1	Bolt
19	7197	4	Bolt

WINCH & STAND ASSEMBLY



ITEM	PART NO.	QTY	DESCRIPTION
1	7061	1	Cable Hook
2	7062	1	Cable Clump
3	7063	1	Cable
4	7197	3	Bolt
5	3078	3	Washer
6	7091	1	Brake Winch
7	4331	3	Lockwasher
8	4378	3	Nut
9	8422	1	Winch Tube
10	8421	1	Winch Stand Bracket
11	2372	4	Lockwasher
12	4337	4	Nut
13	4386	4	Bolt
14	9082	4	Flatwasher

ALAMO
LIMITED WARRANTY

1. LIMITED WARRANTIES

- 1.01. Alamo warrants for one year from the purchase date to the original non-commercial, governmental, or municipal purchaser ("Purchaser") and warrants for six months to the original commercial or industrial purchaser ("Purchaser") that the goods purchased are free from defects in material or workmanship.
- 1.02. Manufacturer will replace for the Purchaser any part or parts found, upon examination at one of its factories, to be defective under normal use and service due to defects in material or workmanship.
- 1.03. This warranty does not apply to any part of the goods which has been subjected to improper or abnormal use, negligence, alteration, modification, or accident, damaged due to lack of maintenance or use of wrong fuel, oil, or lubricants, or which has served its normal life. This warranty does not apply to any part of any internal combustion engine, or expendable items such as blades, shields, guards, or pneumatic tires except as specifically found in your Operator's Manual.
- 1.04. Except as provided herein, no employee, agent, Dealer, or other person is authorized to give any warranties of any nature on behalf of Manufacturer.

2. REMEDIES AND PROCEDURES.

- 2.01. This warranty is not effective unless the Purchaser returns the Registration and Warranty Form to Manufacturer within 30 days of purchase.
- 2.02. Purchaser claims must be made in writing to the Authorized Dealer ("Dealer") from whom Purchaser purchased the goods or an approved Authorized Dealer ("Dealer") within 30 days after Purchaser learns of the facts on which the claim is based.
- 2.03. Purchaser is responsible for returning the goods in question to the Dealer.
- 2.04. If after examining the goods and/or parts in question, Manufacturer finds them to be defective under normal use and service due to defects in material or workmanship, Manufacturer will:
 - (a) Repair or replace the defective goods or part(s).
 - (b) Reimburse Purchaser for the cost of the part(s) and reasonable labor charges (as determined by Manufacturer) if Purchaser paid for the repair and/or replacement prior to the final determination of applicability of the warranty by Manufacturer.
 - (c) The choice of remedy shall belong to Alamo.
- 2.05. Purchaser is responsible for any labor charges exceeding a reasonable amount as determined by Manufacturer and for returning the goods to the Dealer, whether or not the claim is approved. Purchaser is responsible for the transportation cost for the goods or part(s) from the Dealer to the designated factory.

3. LIMITATION OF LIABILITY.

- 3.01. MANUFACTURER DISCLAIMS ANY EXPRESS (EXCEPT AS SET FORTH HEREIN) AND IMPLIED WARRANTIES WITH RESPECT TO THE GOODS INCLUDING, BUT NOT LIMITED TO, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
- 3.02. MANUFACTURER MAKES NO WARRANTY AS TO THE DESIGN, CAPABILITY, CAPACITY, OR SUITABILITY FOR USE OF THE GOODS.
- 3.03. EXCEPT AS PROVIDED HEREIN, MANUFACTURER SHALL HAVE NO LIABILITY OR RESPONSIBILITY TO PURCHASER OR ANY OTHER PERSON OR ENTITY WITH RESPECT TO ANY LIABILITY, LOSS, OR DAMAGE CAUSED OR ALLEGED TO BE CAUSED DIRECTLY OR INDIRECTLY BY THE GOODS INCLUDING, BUT NOT LIMITED TO, ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES RESULTING FROM THE USE OR OPERATION OF THE GOODS OR ANY BREACH OF THIS WARRANTY. NOTWITHSTANDING THE ABOVE LIMITATIONS AND WARRANTIES, MANUFACTURER'S LIABILITY HEREUNDER FOR DAMAGES INCURRED BY PURCHASER OR OTHERS SHALL NOT EXCEED THE PRICE OF THE GOODS.
- 3.04. NO ACTION ARISING OUT OF ANY CLAIMED BREACH OF THIS WARRANTY OR TRANSACTIONS UNDER THIS WARRANTY MAY BE BROUGHT MORE THAN TWO (2) YEARS AFTER THE CAUSE OF ACTION HAS OCCURRED.

4. MISCELLANEOUS.

- 4.01. The laws of the State of Texas shall govern the construction of this agreement. Venue for any lawsuits shall be in Guadalupe County, Texas.
- 4.02. Manufacturer may waive compliance with any of the terms of this limited warranty, but no waiver of any terms shall be deemed to be a waiver of any other term.
- 4.03. If any provision of this limited warranty shall violate any applicable law and is held to be unenforceable, then the invalidity of such provision shall not invalidate any other provisions herein.

KEEP FOR YOUR RECORDS

ATTENTION: Purchaser should fill in the blanks below for his reference when buying repair parts and/or for proper machine identification when applying for warranty.

Alamo Implement Model _____ Serial Number _____

Date Purchased _____ Dealer _____

ATTENTION:
READ YOUR OPERATOR'S MANUAL

ALAMO
An Alamo Group Company
Post Office Drawer 549
Seguin, Texas 78156
512-379-1480





TO THE OWNER/OPERATOR/DEALER

To keep your implement running efficiently and safely, read your manual thoroughly and follow these directions and the Safety Messages in this Manual. The Table of Contents clearly identifies each section where you can easily find the information you need.

The OCCUPATIONAL SAFETY AND HEALTH ACT (1928.51 Subpart C) makes these minimum safety requirements of tractor operators:

REQUIRED OF THE OWNER:

1. Provide a Roll-Over-Protective Structure that meets the requirements of this Standard; and
2. Provide Seatbelts that meet the requirements of this paragraph of this Standard and SAE J4C; and
3. Ensure that each employee uses such Seatbelt while the tractor is moving; and
4. Ensure that each employee tightens the Seatbelt sufficiently to confine the employee to the protected area provided by the ROPS.

REQUIRED OF THE OPERATOR

1. Securely fasten seatbelt if the tractor has a ROPS.
2. Where possible, avoid operating the tractor near ditches, embankments, and holes.
3. Reduce speed when turning, crossing slopes, and on rough, slick, or muddy surfaces.
4. Stay off slopes too steep for safe operation.
5. Watch where you are going - especially at row ends, on roads, and around trees.
6. Do not permit others to ride.
7. Operate the tractor smoothly - no jerky turns, starts, or stops.
8. Hitch only to the drawbar and hitch points recommended by the tractor manufacturer.
9. When the tractor is stopped, set brakes securely and use park lock, if available.

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- Keep children away from danger all day, every day...
 - Equip tractors with rollover protection (ROPS) and keep all machinery guards in place...
 - Please work, drive, play and live each day with care and concern for your safety and that of your family and fellow citizens.

