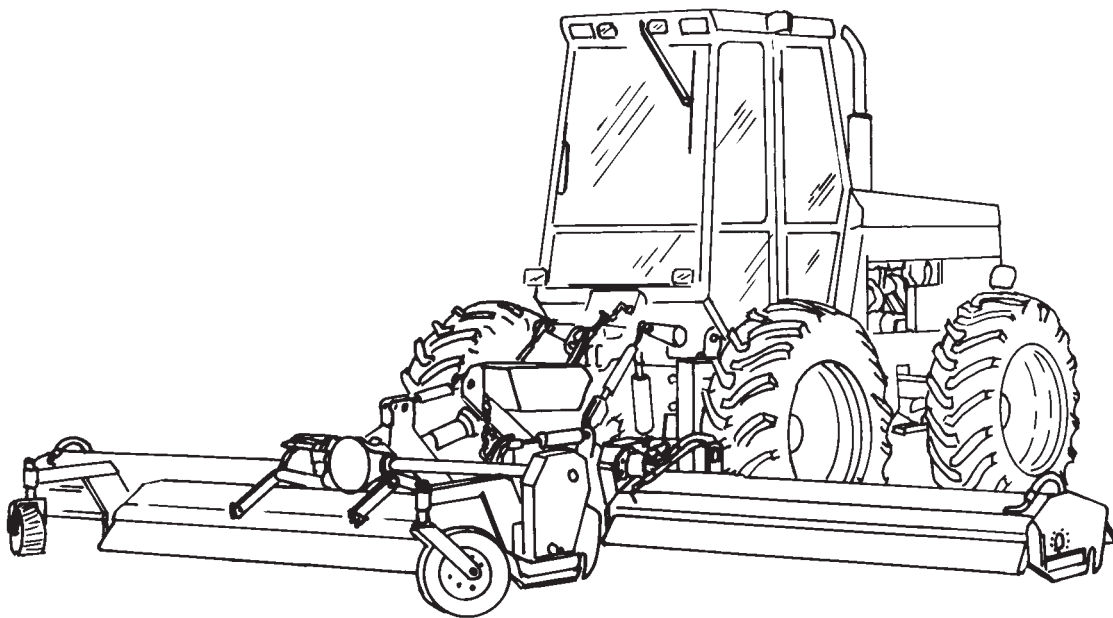


# **ALAMO** **INDUSTRIAL** **MOTT®**

## **VERSA PRO FLAIL**

Rev 07/10

Part No. 803350



## **OPERATOR'S MANUAL** **with PARTS LISTING**

### **ALAMO INDUSTRIAL**

1502 E. Walnut  
Seguin, Texas 78155  
830-379-1480



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# 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.

<p>1. </p>	<p>2. NO RIDERS, NO CHILDREN OPERATORS </p>	<p>3. USE SAFETY SHOES, HARD HAT, SAFETY GLASSES, SEAT BELTS, &amp; ROPS </p>	<p>4. BLOCK UP SECURELY BEFORE WORKING UNDER. </p>
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1. Study and understand Operator's Manuals, Safety Signs, and Instructional Decals for tractor & flail mower to prevent misuse, abuse, & accidents. Practice before operating mower in a confined area or near passersby.

- Learn how to stop engine suddenly in an emergency. Be alert for passersby and especially children.

2. Allow no children on or near implement or tractor. Allow no riders on tractor or implement. Falling off can cause serious injury or death from being runover by tractor or mower or contact with Flail Mower Blades.

3. Operate only with tractor having Roll-Over Protective Structure (ROPS) and with seatbelt fastened securely and snugly to prevent injury and possible death from falling off or tractor overturn. Personal Protective Equipment such as Hard Hat, Safety Glasses, Safety Shoes, and Ear Plugs are recommended.

4. Block up or support raised machine and all lifted components securely before putting hands or feet under or working underneath any lifted component to prevent crushing injury or death from sudden dropping or inadvertent operation of controls. Make certain that area is clear before lowering or folding.

5. Before transporting, put Lift Lever in detent or full-lift position. Install Transport Safety Devices securely on folding implements. Slow down when turning and on hillsides.

- Install \*\*Restrictor in folding circuit to slow down lowering and unfolding if action is faster than is desirable.

6. Make certain that SMV sign, Warning Lights, and Reflectors are clearly visible. Follow local traffic codes.

7. Never operate with Flail Mower or Folding Section raised if passersby, bystanders or traffic are in the area to reduce possibility of injury or death from objects thrown by Blades under Shields or implement structure.

8. Before dismounting, secure flail mower in transport position or lower to ground.

- Put tractor in park or set brake, disengage PTO, stop engine, remove key, and wait until noise of rotation has ceased to prevent entanglement in rotating parts which may cause injury or death.
- Never mount or dismount a moving vehicle. Crushing from runover may cause injury or death.

<p>5. TRANSPORT SAFELY, LOCK UP. </p>	<p>6. USE SMV, LIGHTS, &amp; REFLECTORS. </p>	<p>7. DONOT OPERATE WITH MOWER OR WING RAISED. </p>	<p>8. DO NOT MOUNT OR DISMOUNT WHILE MOVING. </p>
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## 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 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

A safe and careful operator is the best operator. Safety is of primary importance to the manufacturer and should be to the owner/operator. Most accidents can be avoided by being aware of your equipment, your surroundings, and observing certain precautions. The first section of this manual includes a list of Safety Messages that, if followed, will help protect the operator and bystanders from injury or death. Read and understand these Safety Messages before assembling, operating or servicing this implement. This equipment should only be operated by those persons who have read the Manual, who are responsible and trained, and who know how to do so safely and responsibly.

The Safety Alert Symbol combined with a Signal Word, as seen below, is used throughout this manual and on decals which are attached to the equipment. The Safety Alert Symbol means: **“ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!”** The Symbol and Signal Word are intended to warn the owner/operator of impending hazards and the degree of possible injury faced when operating this equipment..

**Practice all usual and customary safe working precautions and above all---remember safety is up to YOU. Only YOU can prevent serious injury or death from unsafe practices.**

**CAUTION!**

The lowest level of Safety Message; warns of possible injury. Decals located on the Equipment with this Signal Word are Black and Yellow.



**WARNING!**

Serious injury or possible death! Decals are Black and Orange.



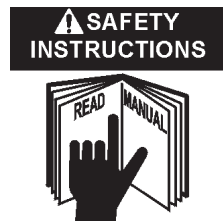
**DANGER!**

Imminent death/critical injury. Decals are Red and White. (SG-1)



**READ, UNDERSTAND, and FOLLOW the following Safety Messages. Serious injury or death may occur unless care is taken to follow the warnings and instructions stated in the Safety Messages. Always use good common sense to avoid hazards.**

(SG-2)



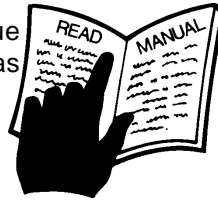
# SAFETY

SAFETY

**PELIGRO!**



Si no lee Ingles, pida ayuda a alguien que si lo lea para que le traduzca las medidas de seguridad. (SG-3)

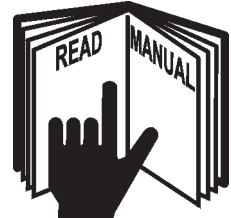


**¡ LEA EL INSTRUCTIVO!**

**DANGER!**



Never operate the Tractor or Implement until you have read and completely understand this Manual, the Tractor Operator's Manual, and each of the Safety Messages found in the Manual or on the Tractor and Implement. Learn how to stop the tractor engine suddenly in an emergency. Never allow inexperienced or untrained personnel too operate the Tractor and Implement without supervision. Make sure the operator has fully read and understood the manuals prior to operation. (SG-4)



**WARNING!**

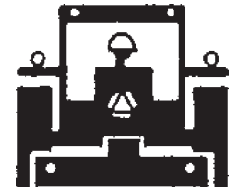


Always maintain the safety decals in good readable condition. If the decals are missing, damaged, or unreadable, obtain and install replacement decals immediately. (SG-5)

**WARNING!**



Make certain that the "Slow Moving Vehicle" (SMV) sign is installed in such a way as to be clearly visible and legible. When transporting the Equipment use the Tractor flashing warning lights and follow all local traffic regulations. (SG-6)



**WARNING!**



Operate this Equipment only with a Tractor equipped with an approved roll-over-protective system (ROPS). Always wear seat belts. 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. (SG-7)



**WARNING!**

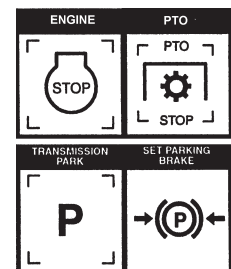


Do not modify or alter this Implement. Do not permit anyone to modify or alter this Implement, any of its components or any Implement function. (SG-8)

**DANGER!**



BEFORE leaving the tractor seat, always engage the brake and/or set the tractor transmission in parking gear, disengage the PTO, stop the engine, remove the key, and wait for all moving parts to stop. Place the tractor shift lever into a low range or parking gear to prevent the tractor from rolling. Never dismount a Tractor that is moving or while the engine is running. Operate the Tractor controls from the tractor seat only. (SG-9)



**DANGER!**



Never allow children or other persons to ride on the Tractor or Implement. Falling off can result in serious injury or death. (SG-10)



# SAFETY

SAFETY

**DANGER!**



Never allow children to operate or ride on the Tractor or Implement. (SG-11)



**WARNING!**



Do not mount the Tractor while the tractor is moving. Mount the Tractor only when the Tractor and all moving parts are completely stopped. (SG-12)



**DANGER!**



Start tractor only when properly seated in the Tractor seat. Starting a tractor in gear can result in injury or death. Read the Tractor operators manual for proper starting instructions. (SG-13)



**DANGER!**



Never work under the Implement, the framework, or any lifted component unless the Implement is securely supported or blocked up to prevent sudden or inadvertent falling which could cause serious injury or even death. (SG-14)



**DANGER!**



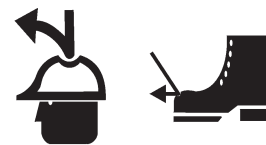
Do not operate this Equipment with hydraulic oil leaking. Oil is expensive and its presence could present a hazard. Do not check for leaks with your hand! Use a piece of heavy paper or cardboard. High-pressure oil streams from breaks in the line could penetrate the skin and cause tissue damage including gangrene. If oil does penetrate the skin, have the injury treated immediately by a physician knowledgeable and skilled in this procedure. (SG-15)



**WARNING!**



The operator and all support personnel should wear hard hats, safety shoes, safety glasses, and proper hearing protection at all times for protection from injury including injury from items thrown by the equipment. (SG-16)



# SAFETY

## CAUTION!



**PROLONGED EXPOSURE TO LOUD NOISE MAY CAUSE PERMANENT HEARING LOSS!** Tractors with or without an Implement attached can often be noisy enough to cause permanent hearing loss. We recommend that you always wear hearing protection if the noise in the Operator's position exceeds 80db. Noise over 85db over an extended period of time will cause severe hearing loss. Noise over 90db adjacent to the Operator over an extended period of time will cause permanent or total hearing loss. *Note:* Hearing loss from loud noise [from tractors, chain saws, radios, and other such sources close to the ear] is cumulative over a lifetime without hope of natural recovery. (SG-17)



## WARNING!

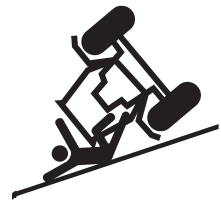


Transport only at safe speeds. Serious accidents and injuries can result from operating this equipment at unsafe speeds. Understand the Tractor and Implement and how it handles before transporting on streets and highways. Make sure the Tractor steering and brakes are in good condition and operate properly.



Before transporting the Tractor and Implement, determine the safe transport speeds for you and the equipment. Make sure you abide by the following rules:

1. Test the tractor at a slow speed and increase the speed slowly. Apply the Brakes smoothly to determine the stopping characteristics of the Tractor and Implement. As you increase the speed of the Tractor the stopping distance increases. Determine the maximum safe transport speed for you and this Equipment.
2. Test the equipment at a slow speed in turns. Increase the speed through the turn only after you determine that it is safe to operate at a higher speed. Use extreme care and reduce your speed when turning sharply to prevent the tractor and implement from turning over. Determine the maximum safe turning speed for you and this equipment before operating on roads or uneven ground.
3. Only transport the Tractor and Implement at the speeds that you have determined are safe and which allow you to properly control the equipment.



Be aware of the operating conditions. Do not operate the Tractor with weak or faulty brakes. When operating down a hill or on wet or rain slick roads, the braking distance increases: use extreme care and reduce your speed. When operating in traffic always use the Tractor's flashing warning lights and reduce your speed. Be aware of traffic around you and watch out for the other guy. (SG-19)

## WARNING!



Never attempt to lubricate, adjust, or remove material from the Implement while it is in motion or while tractor engine is running. Make sure the tractor engine is off before working on the Implement.

(SG-20)

# SAFETY

**WARNING!**



Transport only at safe speeds. Serious accidents and injuries can result from operating this equipment at unsafe speeds. Understand the Tractor and Implement and how it handles before transporting on streets and highways. Make sure the Tractor steering and brakes are in good condition and operate properly.

Before transporting the Tractor and Implement, determine the safe transport speeds for you and the equipment. Make sure you abide by the following rules:

1. Test the tractor at a slow speed and increase the speed slowly. Apply the Brakes smoothly to determine the stopping characteristics of the Tractor and Implement.  
As you increase the speed of the Tractor the stopping distance increases. Determine the maximum safe transport speed for you and this Equipment.
2. Test the equipment at a slow speed in turns. Increase the speed through the turn only after you determine that it is safe to operate at a higher speed. Use extreme care and reduce your speed when turning sharply to prevent the tractor and implement from turning over. Determine the maximum safe turning speed for you and this equipment before operating on roads or uneven ground.
3. Only transport the Tractor and Implement at the speeds that you have determined are safe and which allow you to properly control the equipment.

Be aware of the operating conditions. Do not operate the Tractor with weak or faulty brakes. When operating down a hill or on wet or rain slick roads, the braking distance increases: use extreme care and reduce your speed. When operating in traffic be sure to use the Tractor's directional indicator or flasher lights to properly indicate your movement. Always use the Tractor flashing lights when operating the Tractor and Implement on or near roads and streets. Be aware of traffic around you and watch out for the other guy. (SG-19)



**WARNING!**



Periodically inspect all moving parts for wear and replace when necessary with authorized service parts. Look for loose fasteners, worn or broken parts, 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. (SG-21)



**WARNING!**



Always read carefully and comply fully with the manufacturers instructions when handling oil, solvents, cleansers, and any other chemical agent. (SG-22)



# SAFETY

**DANGER!**



Never run the tractor engine in a closed building or without adequate ventilation. The exhaust fumes can be hazardous to your health.

(SG-23)

**DANGER!**



KEEP AWAY FROM ROTATING ELEMENTS to prevent entanglement and possible serious injury or death.

(SG-24)



**DANGER!**



Never allow children to play on or around Tractor or Implement. Children can slip or fall off the Equipment and be injured or killed. Children can cause the Implement to shift or fall crushing themselves or others.

(SG-25)

**WARNING!**



Do not exceed the rated PTO speed for the Implement. Excessive PTO speeds can cause Implement driveline or blade failures resulting in serious injury or death.

(SG-26)

**DANGER!**



**NEVER use drugs or alcohol** immediately before or while operating the Tractor and Implement. Drugs and alcohol will affect an operator's alertness and coordination and therefore affect the operator's ability to operate the equipment safely. Before operating the Tractor or Implement, an operator on prescription or over-the-counter medication must consult a medical professional regarding any side effects of the medication that would hinder their ability to operate the Equipment safely. **NEVER** knowingly allow anyone to operate this equipment when their alertness or coordination is impaired. Serious injury or death to the operator or others could result if the operator is under the influence of drugs or alcohol.

(SG-27)



**DANGER!**



Operate the Tractor and/or Implement controls only while properly seated in the Tractor seat with the seat belt securely fastened around you. Inadvertent movement of the Tractor or Implement may cause serious injury or death.

(SG-29)

**WARNING!**



Mow only in conditions where you have clear visibility in daylight or with adequate artificial lighting. Never mow in darkness or foggy conditions where you cannot clearly see at least 100 yards in front and to the sides of the tractor and mower. Make sure that you can clearly see and identify passersby, steep slopes, ditches, drop-offs, overhead obstructions, power lines, debris and foreign objects. If you are unable to clearly see this type of items discontinue mowing.

(SGM-1)

**DANGER!**



The rotating parts of this machine have been designed and tested for rugged use. However, the blades could fail upon impact with heavy, solid objects such as metal guard rails and concrete structures. 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.

(SGM-4)

# SAFETY

SAFETY

## WARNING!



Extreme care should be taken when operating near loose objects such as gravel, rocks, wire, and other debris. Inspect the area before mowing. Foreign objects should be removed from the site to prevent machine damage and/or bodily injury or even death. Any objects that cannot be removed must be clearly marked and carefully avoided by the operator. Stop mowing immediately if blades strike a foreign object. Repair all damage and make certain rotor or blade carrier is balanced before resuming mowing. (SGM-5)



## 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 and could result in serious injury or even death. 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. (SGM-6)

## WARNING!



Mow at the speed that you can safely operate and control the tractor and mower. Safe mowing speed depends on terrain condition and grass type, density, and height of cut. Normal ground speed range is from 0 to 5 mph. Use slow mowing speeds when operating on or near steep slopes, ditches, drop-offs, overhead obstructions, power lines, or when debris and foreign objects are to be avoided. (SGM-7)

## WARNING!



Avoid mowing in reverse direction when possible. Check to make sure there are no persons behind the mower and use extreme care when mowing in reverse. Mow only at a slow ground speed where you can safely operate and control the tractor and mower. Never mow an area that you have not inspected and removed debris or foreign material. (SGM-8)

## DANGER!



Replace bent or broken blade with new blades. NEVER ATTEMPT TO STRAIGHTEN OR WELD ON BLADES SINCE THIS WILL LIKELY CRACK OR OTHERWISE DAMAGE THE BLADE WITH SUBSEQUENT FAILURE AND POSSIBLE SERIOUS INJURY FROM THROWN BLADES. (SGM-10)

## WARNING!



Do not mow with two machines in the same area except with Cab tractors with the windows closed. (SGM-11)

## DANGER!



Always disconnect the main PTO Driveline from the Tractor before performing service on the Mower. Never work on the Mower with the tractor PTO driveline connected and running. Blades or Drivelines could turn without warning and cause immediate entanglement, injury or death. (SRM-3)

## WARNING!



Do not let the Blades turn when the Mower Deck is raised for any reason, including clearance or for turning. Raising the Mower deck exposes the Cutting Blades which creates a potentially serious hazard and could cause serious injury or even death from objects thrown from the Blades. (SRM-7)



# SAFETY

**DANGER!**

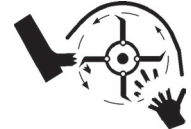


There are obvious and hidden potential hazards in the operation of this Mower. **REMEMBER!** This machine is often operated in grass and in heavy weeds. The Blades of this Mower can throw objects if shields are not properly installed and maintained. Serious injury or even death may occur unless care is taken to insure the safety of the operator, bystanders, or passersby in the area. Do not operate this machine with anyone in the immediate area. Stop mowing if anyone is within 100 yards of mower. (SFL-1)

**DANGER!**



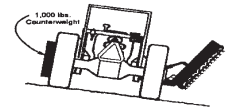
Do not put hands or feet under mower decks. Blade Contact can result in serious injury or even death. Stay away until all motion has stopped and the decks are securely blocked up. (SFL-2)



**WARNING!**



Each Rear Wheel must have a minimum of 1,000 pounds contact with the surface to prevent lateral instability and possible tip-over which could result in serious bodily injury or even death. Widen the wheel tread and add weights if needed. Refer to the mounting instructions or call Customer Service if you need assistance with Counterweight Procedure. (SFL-3)



**WARNING!**

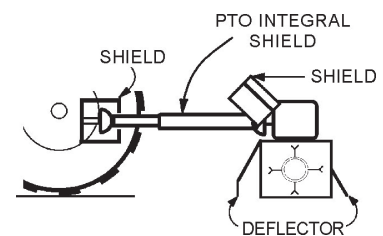


Do not operate Mower if excessive vibration exists. Shut down PTO and the Tractor engine. Inspect the Mower to determine the source of the vibration. If Mower blades are missing or damaged replace them immediately. Do not operate the mower until the blades have been replaced and the Mower operates smoothly. Operating the Mower with excessive vibration can result in component failure and 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 Mower to be operated with blades missing. (SFL-4)

**DANGER!**



All Safety Shields, Guards and Safety devices including (but not limited to) - the Deflectors, Steel Guards, Gearbox Shields, PTO integral shields, and Retractable Door Shields should be used and maintained in good working condition. All safety devices should be inspected carefully at least daily for missing or broken components. Missing, broken, or worn items must be replaced at once to reduce the possibility of injury or death from thrown objects, entanglement, or blade contact. (SFL-5)



**WARNING!**



Never leave Tractor and Implement unattended while the implement is in the lifted position. Accidental operation of lifting lever or a hydraulic failure may cause sudden drop of unit with injury or death by crushing. To properly park the implement when disconnecting it from the tractor, lower the stand and put the retaining pin securely in place, or put a secure support under the A-Frame. Lower the implement carefully to the ground. Do not put hands or feet under lifted components. (SPT-1)

# SAFETY

**DANGER!**



Flail 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, 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 to mow, reduce wear and tear on the Mower drivetrain, spread cut material better, eliminate streaking, and make the final cut more uniform.)

(SFL-6)

**WARNING!**



Be particularly careful when transporting the Implement with the Tractor. Turn curves or go up hills only at a low speed and using a gradual steering angle. Rear mounted implements move the center of gravity to the rear and remove weight from the front wheels. Make certain, by adding front ballast, that at least 20% of the tractor's weight is on the front wheels to prevent rearing up, loss of steering control or Tractor tip-over. Slow down on rough or uneven surfaces to prevent loss of steering control which could result in property damage or possible injury. Do not transport unless 3-Point lift lever is fully raised and in the latched transport position. Dropping implement in transport can cause serious damage to the tractor and/or Implement and possibly cause the operator or others to be injured or killed. (S3PT-2)

**WARNING!**



Use extreme care when lowering or unfolding the implement's wings. Make sure no bystanders are close by or underneath the wings. Allow ample clearance around the implement when folding or unfolding the wings. Use extreme caution around buildings or overhead power lines. (S3PT-5)

(S3PT-5)

**DANGER!**



Make sure the PTO shield, integral driveline shields, and input shields are installed when using PTO-driven equipment. Always replace any shield if it is damaged or missing. (S3PT-8)



**WARNING!**



Relieve hydraulic pressure prior to doing any maintenance or repair work on the Implement. Place the Implement on the ground or securely blocked up, disengage the PTO, and turn off the tractor engine. Push and pull the Remote Cylinder lever in and out several times prior to starting any maintenance or repair work. (S3PT-9)



# SAFETY

## 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. (3PT-10)

**“Wait a minute...Save a life!”**

## DANGER!



This Implement is wider than the Tractor. Be careful when operating or transporting this equipment to prevent the Implement from running into or striking sign posts, guard rails, concrete abutments or other solid objects. Such an impact could cause the Implement and Tractor to pivot violently resulting in loss of steering control, serious injury, or even death. Never allow the Implement to contact obstacles. (S3PT-12)

## DANGER!



When the Wings are folded for transport, the center of gravity is raised and the possibility of overturn is increased. Drive slowly and use extreme caution when turning on hillsides. Overturning the Implement could cause the Implement to overturn the Tractor and vice versa resulting in serious injury or even death. Never fold wings on a hillside...the Implement may overturn. (STI-2)

## DANGER!



**DO NOT** allow any person under a folded wing unless wing is securely locked up or supported. **DO NOT** approach the Implement unless the Tractor is turned off and all motion has ceased. Never work under the frame work, or any lifted component unless the implement is securely supported or blocked up. A sudden or inadvertent fall by any of these components could cause serious injury or even death. (STI-3)



## PARTS INFORMATION

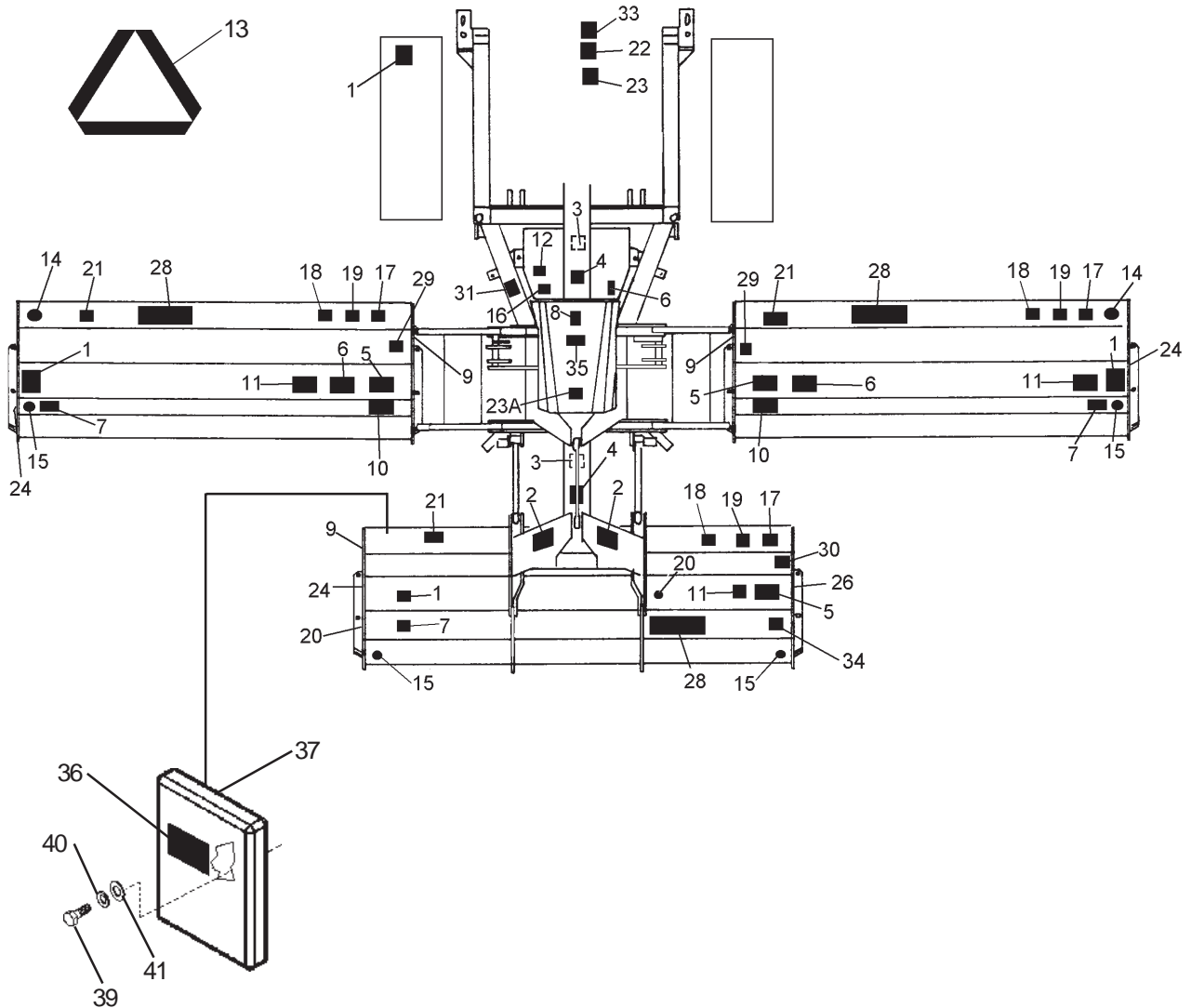
Alamo Industrial mowers use balanced and matched system components for blade carriers, blades, cuttershafts, knives, knife hangers, rollers, drivetrain components, and bearings. These parts are made and tested to Alamo Industrial specifications. Non-genuine "will fit" parts do not consistently meet these specifications. The use of "will fit" parts may reduce mower performance, void mower warranties, and present a safety hazard. Use genuine Alamo Industrial mower parts for economy and safety.

(SPAM-1)

## SEE YOUR ALAMO DEALER

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 Equipment Manuals. Pay close attention to the Safety Signs affixed to the Tractor and Equipment. (SG-18)

# SAFETY



# SAFETY

ITEM	PART NO.	QTY	LEVEL	DESCRIPTION
1	002369	4	DANGER	Multiple-Hazard
2	00753840	2	DANGER	Folding Wing/Wings Raised
3.	00756004	2	DANGER	D/L Shield Missing
4	00756005	2	DANGER	Rotating D/L, Entanglement
5	00756007	3	WARNING	Use/Repair Shields/Guards
6	00756059	3	DANGER	Oil Penetration, Leaks
7	02967668	3	DANGER	Cutting Blades, Thrown Objects
8	00746494	1	DANGER	Driveline Hazards
9	00758194	3	WARNING	Belt/Pulley Pinch Point
10	02962765	2	DANGER	Crushing From Folding Hazard
11	002425	3	DANGER	Removing Front Shield
12	02971123	1	WARNING	Pressurized Tank
13	03200347	*	REFLCTR	SMV Reflector
14	1458392	2	REFLCTR	Red Reflector Decal
15	1458393	4	REFLCTR	Yellow Reflector Decal
16	02966305	1	INSTRUCT	Hyd Oil and Type
17	02925100	3	INSTRUCT	Genuine ALAMO Flail Parts
18	002023	3	INSTRUCT	Cutting Height Adjustment
19	000108	3	INSTRUCT	Flail Operation
20	000678	2	INSTRUCT	Grease Fitting Inside
21	002490	3	INSTRUCT	Wing Unit Lube Chart
22	02962748	2	INSTRUCT	On/Off Solenoid Switch
23	02965093	1	INSTRUCT	Do Not Overspeed Engine
23A	00763977	1	INSTRUCT	Notice to Owner
24	001650	1	LOGO	ALAMO (7.5 x 7)
25	001651	4	LOGO	ALAMO IND
26	02960766	3	LOGO	ALAMO (4 x 5)
28	002489	3	NAME	VERSA PRO (Name)
29	nfs (L)	1	SER PLT	Left Wing Serial Plate
30	nfs (R)	1	SER PLT	Right Wing Serial Plate
31	nfs (C)	1	SER PLT	Center Mower Serial Plate
32	nfs (F)	1	SER PLT	VERSA PRO Serial Plate
33	002505	1	INSTRUCT	Wing Lowering
34	001830	1	INSTRUCT	Lubrication Rear
35	00773723	2	DANGER	Peligro, Driveline
36	02977417	1	INSTRUCT	Operators Manual Inside
37	02977385	1	-----	Canister, Operators Manual
38	803350C	1	-----	Operators Manual
39	10058000	4	-----	Bolt
40	00017000	4	-----	Lockwasher
41	00024100	4	-----	Flatwasher

# SAFETY

SAFETY

## ⚠ DANGER



- Stay clear when removing transport strap and lowering or raising wing.
- Component failure or accidental operation of controls may allow wing to fall suddenly and cause bodily injury or death.
- Cylinders with Restrictors installed must be filled with oil for wings to lower slowly & safely.
- Lock Wings up securely for transporting.



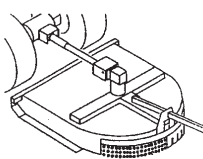
- Do not operate mower with wings raised with passersby in the area.
- Contact with exposed rotating Blades and/or being hit by thrown objects may cause injury or death.

00753840

(2)-00753840

## ⚠ 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.

00756007

(5)-00756007

## ⚠ 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



(6)-00756059

## ⚠ WARNING

DO NOT OPERATE WITH BELT SHIELD REMOVED. FINGER(S) MAY BE PINCHED OFF IF CAUGHT BETWEEN V-BELT AND PULLEY.

00758194



(9)-00758194

## ⚠ DANGER



**GUARD MISSING  
DO NOT OPERATE**

00756004

## ⚠ DANGER



**GUARD MISSING  
DO NOT OPERATE**

00756004

## ⚠ DANGER

(3)-00756004

## ⚠ DANGER



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

- DO NOT OPERATE WITHOUT-**
- All driveline guards, tractor and equipment shields in place
  - Drivelines securely attached at both ends
  - Driveline guards that turn freely on driveline

00756005

(4)-00756005

**PULL      PUSH  
TO START    TO STOP**

(22)-02962748

# SAFETY

**SAFETY**

**⚠ DANGER**

CUTTING BLADES      THROWN OBJECTS

FLAIL      ROTARY      FLAIL      ROTARY

**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 MACHINE WHEN IN OPERATION.
- \* DO NOT OPERATE WITH DEFLECTORS OR GUARDS REMOVED. 00756485

(7)-00746485

**⚠ 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. MAKE CERTAIN THAT DRIVELINE IS INSTALLED CORRECTLY ON TRACTOR PTO SHAFT. MOVE YOKE BACK AND FORTH UNTIL LOCKING COLLAR CLICKS FORWARD AND LOCKS YOKE IN PLACE
4. **540 PTO RPM** UNLESS SPECIFICALLY MARKED OTHERWISE. 00756494

(8)-00746494

**⚠ DANGER**

CRUSHING AND PINCH POINTS

MOVING MACHINERY PARTS CAN PINCH OR CRUSH OR FALL- WHICH MAY CAUSE INJURY OR DEATH. 02962765

(10)-02962765

**ATTENTION**

SERVICE HYDRAULIC SYSTEM WITH UNIVERSAL TRACTOR HYDRAULIC OIL.

PART NUMBER 02966307.

02966305

(16)-02966307

**⚠ DANGER**

**KEEP AWAY! IF FRONT DEFLECTOR SHIELD IS REMOVED FROM FLAIL HOUSING, SERIOUS INJURY TO OR AMPUTATION OF HANDS, FEET, OR LIMBS MAY OCCUR FROM BLADES CONTACT.**

IF FRONT DEFLECTOR SHIELD IS REMOVED TO EFFECT A SUBSTANTIAL IMPROVEMENT IN PERFORMANCE IN VERY HIGH GRASS OR WEEDS, THE OPERATOR MUST BE AWARE OF THE RESULTING POTENTIAL HAZARD AND USE SPECIAL CARE TO MAKE CERTAIN THAT:

1. THE FLAIL MOWER IS NOT OPERATED IN THE VICINITY OF BYSTANDERS TO PREVENT CONTACT WITH BLADES AND RESULTING SERIOUS INJURY.
2. THE OPERATOR NEVER LEAVES THE SEAT NOR ALLOWS ANYONE TO APPROACH THE FLAIL MOWER UNTIL THE PTO AND HYDRAULIC POWER ARE DISENGAGED FROM ROTORS, FLAIL SECTIONS ARE LOWERED TO THE GROUND, ENGINE IS TURNED OFF, PARKING BRAKE IS SET, KEY IS REMOVED, AND ALL MOTION CEASES.
3. THE FRONT DEFLECTOR SHIELD IS REPLACED IN NORMAL MOWING CONDITIONS. 002425

(11)-002425

**GREASE FITTING INSIDE**

(20)-000678



(13)-03200347

**⚠ WARNING: PRESSURIZED TANK**

- ATTENTION: Oil Filler Cap Is Also the PRESSURE RELIEF CAP.
- Remove Cap slowly to relieve pressure before removing Cap completely.
- Stay clear to prevent being scalded with hot oil that may spray out of tank that is still pressurized and may cause serious injury to eyes, face, and exposed skin. 02971123

(12)-02971123

# SAFETY

**SAFETY**

## IMPORTANT

### ALAMO GENUINE FLAIL PARTS

ALAMO INDUSTRIAL Flail Mowers use dynamically balanced and matched system components for Cutter Shafts, Knives, Knife Hangers, Rollers, Drivetrain components, Bearings, Belts, and Pulleys. ALAMO INDUSTRIAL parts are made and tested to meet close-tolerance specifications of balance, quality, and consistency that assure long, trouble-free service.

The use of inferior "will fit" parts will void warranty for your ALAMO INDUSTRIAL implement and may cause premature or catastrophic failure which can result in serious injury or death. If you have any questions concerning the repair parts you are using, contact ALAMO INDUSTRIAL 1502 E. Walnut Seguin, TX 78155 (830) 372-3551.



03200432

(17) - 03200432

#### OPERATING INSTRUCTIONS

This Mower will give long satisfactory service with a minimum of upkeep cost if the following procedure is followed:

1. **KEEP PROPERLY LUBRICATED**
  - a. **BEARINGS** - Use a lithium-based #2 Bearing Grease such as Shell Alvania #2, Sinclair Litholene, Mobil BRB, Texaco Marfak #2, Standard Stanolith #57, etc.
  - b. **GEARBOX** - Use SAE EP90 oil.
2. **KEEP FASTENERS TIGHTENED**
  - a. Normally, if Fasteners loosen after being properly tightened, the Mower is vibrating more than is acceptable and permanent damage can occur rapidly.
  - b. See Bolt Chart for proper tightening torque.
3. **KEEP THE MOWER RUNNING SMOOTHLY AND QUIETLY.**
  - a. After hitting any obstruction and at the first sign of any unusual vibration or noise, STOP THE MOWER, and do not operate again until the problem is found and corrected. VIBRATION CAN DESTROY THE ENTIRE MOWER IN A SHORT TIME.
  - b. Inspect for broken or missing Knives, Knives restricted from swinging freely, worn Bearings, a bent Shaft, or other conditions causing out-of-balance rotation.
  - c. See Operators Manual for details on causes and correction of vibration of Flail Mowers.

**NOTICE:** Warranty does not cover damage resulting from the failure to observe these reasonable procedures.

000108

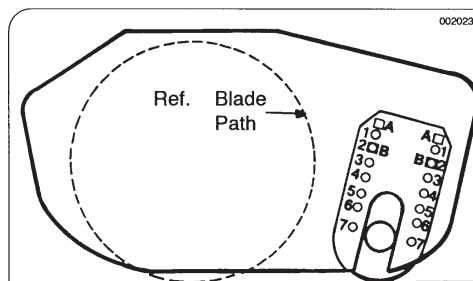
(19) - 000108

#### ATTENTION!

TO PREVENT PREMATURE HYDRAULIC COMPONENT FAILURE, DO NOT OVERSPEED ENGINE. WHEN USING THE MOWER ATTACHMENT, OPERATE TRACTOR AT THE ENGINE SPEED WHICH WILL DELIVER 540 PTO RPM ON THE TACHOMETER. OVERSPEEDING THE ENGINE AND PUMP WHEN OPERATING THE MOWER WILL OVERHEAT AND RAPIDLY RUIN THE OIL WHICH WILL DECREASE THE LIFE OF HYDRAULIC COMPONENTS

02965093

(23) - 02965093



002023

#### MOWER CUTTING HEIGHT ADJUSTMENT

DESIRED CUTTING HEIGHT (INCHES)	ADJUSTMENT BRACKET HOLE	MOWER END PLATE HOLE
1/2	B	2
1	A	1
1-1/2	B	3
2	A	2
2-1/2	B	4
3	A	3
3-1/2	B	5
4	A	4
4-1/2	B	6
5	A	5
5-1/2	B	7
6	A	6

(18) - 002023

#### NOTICE TO OWNER

An OPERATOR'S MANUAL (with Repair Parts Listing) and a WARRANTY REGISTRATION CARD were attached to this implement during final inspection at the factory. If they were not attached at the time of purchase, please contact your selling dealer at once.

1. Read and understand Manual before operating the implement.
2. Complete, sign, and mail the Warranty Registration Card in today. 00763977

(23A) - 00763977

## OPERATOR'S MANUAL INSIDE

### READ & UNDERSTAND

#### Before Operating Tractor & Implement



If Manual is missing, obtain one before operating from Dealer or ALAMO INDUSTRIAL, 1502 E. Walnut, Seguin, TX 78155. Customer Service 800-356-6286



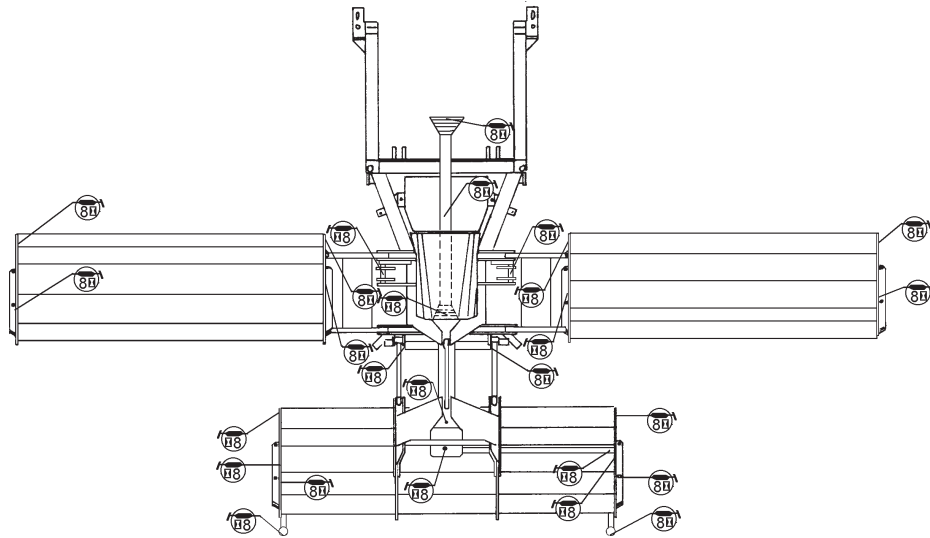
02977417

(34) - 02977417

- |               |                        |              |              |
|---------------|------------------------|--------------|--------------|
| (1) 002369    | Front Cover            | (29) nfs (L) | SERIAL PLATE |
| (14) 99203    | Red Reflector Decal    | (30) nfs (R) | SERIAL PLATE |
| (15) 99204    | Yellow Reflector Decal | (31) nfs (C) | SERIAL PLATE |
| (24) 001650   | ALAMO (7.5 x 7)        | (32) nfs (F) | SERIAL PLATE |
| (25) 001651   | ALAMO (Built by Mott)  |              |              |
| (26) 02960766 | ALAMO (4 x 5)          |              |              |
| (27) 002491   | Name Decal (MOTT)      |              |              |
| (28) 002489   | Name Decal (VERSA PRO) |              |              |

# SAFETY

## LUBRICATION CHART



\* LUBRICATE ALL POINTS EVERY 8 HOURS OF OPERATION

(21) - 002490

## WING LOWERING INSTRUCTIONS

1. Be sure forward/reverse lever is locked in neutral position before attempting to lower wings from locked position.
2. It is necessary to fully raise wings before releasing latches.
3. Pull red knobs. Slowly lower wings by pushing control levers forward.
4. Wings will automatically lock when raised to vertical position.

P/N002505

(33) - 002505

# SAFETY

## FEDERAL LAWS AND REGULATIONS

This section is intended to explain in broad terms the concept and effect of federal laws and regulations concerning employer and employee equipment operators. This section is not intended as a legal interpretation of the law and should not be considered as such.

### Employer-Employee Operator Regulations

U.S. Public Law 91-596 (The Williams-Steiger Occupational and Health Act of 1970) OSHA

#### This Act Seeks:

“...to assure so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources...”

#### DUTIES

Sec. 5 (a) Each employer-

- (1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
- (2) shall comply with occupational safety and health standards promulgated under this Act.
- (b) Each employee shall comply with occupational safety and health standards and all rules, regulations and orders issued pursuant to this Act which are applicable to his own actions and conduct.

### OSHA Regulations

OSHA regulations state in part: “At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee in the safe operation and servicing of all equipment with which the employee is, or will be involved.”

### Employer Responsibilities:

To ensure employee safety during Tractor and Implement operation, it is the employer’s responsibility to:

1. Train the employee in the proper and safe operation of the Tractor and Implement.
2. Require that the employee read and fully understand the Tractor and Implement Operator’s manual.
3. Permit only qualified and properly trained employees to operate the Tractor and Implement.
4. Maintain the Tractor and Implement in a safe operational condition and maintain all shields and guards on the equipment.
5. Ensure the Tractor is equipped with a functional ROPS and seat belt and require that the employee operator securely fasten the safety belt and operate with the ROPS in the raised position at all times.
6. Forbid the employee operator to carry additional riders on the Tractor or Implement.
7. Provide the required tools to maintain the Tractor and Implement in a good safe working condition and provide the necessary support devices to secure the equipment safely while performing repairs and service.
8. Require that the employee operator stop mowing if bystanders or passerbys come within 100 yards.

### Child Labor Under 16 Years of Age

Some regulations specify that no one under the age of 16 may operate power machinery. It is your responsibility to know what these regulations are in your own area or situation. (Refer to U.S. Dept. of Labor, Employment Standard Administration, Wage & Home Division, Child Labor Bulletin #102.)

# **INTRODUCTION SECTION**

# INTRODUCTION

This Mower is designed with care and built with quality materials by skilled workers. Proper assembly, maintenance, and operating practices, as described in this manual, will help the owner/operator get years of satisfactory service from the machine.

The purpose of this manual is to familiarize, and instruct. The Assembly Section instructs the owner/operator in the correct assembly of the Mower using standard and optional equipment. The Parts Listing section is designed to familiarize the owner/operator with replaceable parts on the Mower. This section provides exploded assembly drawings of each mower component illustrating each piece and the corresponding part number.

Careful use and timely service saves extensive repairs and costly downtime losses. The Operation and Maintenance Sections of the manual train the owner/operator how to work the Mower correctly and attend to appropriate maintenance. The Trouble Shooting Guide helps diagnose difficulties with mower and offers solution to the problems.

Safety is of primary importance to the owner/operator and to the manufacturer. The first section of this manual includes a list of Safety Messages, that, if followed, will help protect the operator and bystanders from injury or death. Many of the Safety Messages will be repeated throughout the manual. The owner/operator/dealer should know these Safety Messages before assembly and be aware of the hazards of operating this mower during assembly, use, and maintenance. The Safety Alert Symbol combined with a Signal Word, as seen below, is intended to warn the owner/operator of impending hazards and the degree of possible injury faced when operating this machine.

**CAUTION** The lowest level of Safety Message; warns of possible minor injury. Decals located on the Mower with this Signal Word are Black and Yellow.



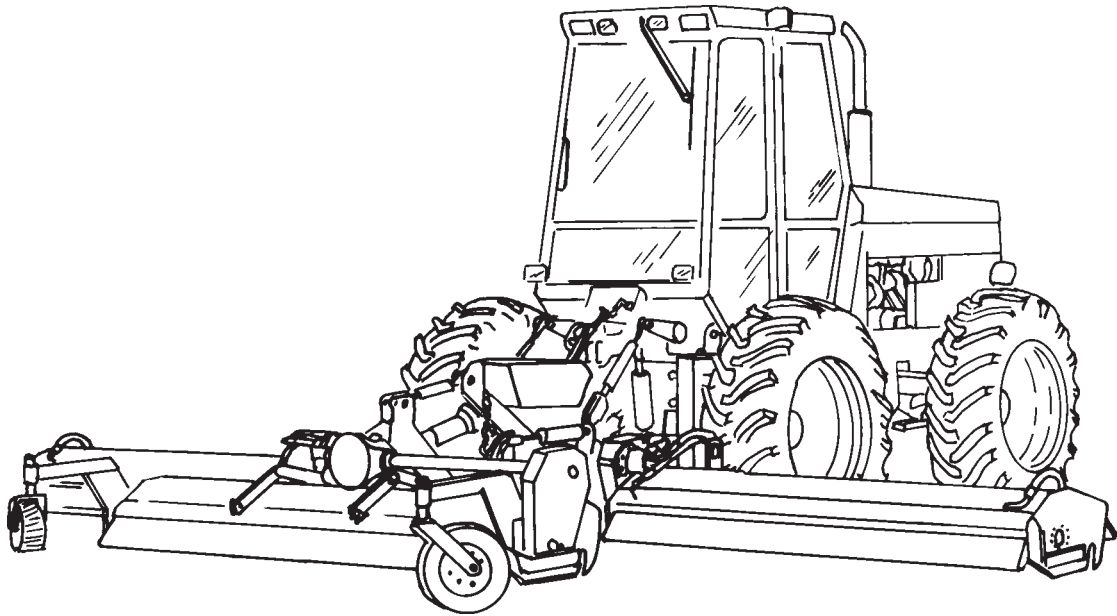
**WARNING** Serious injury or possible death! Decals are Black and Orange.



**DANGER** Imminent death/critical injury. Decals are Red and White.



# INTRODUCTION



Your Mower is designed for medium-duty cutting such as lawn maintenance plus small weed and grass control. With a reasonable amount of preventive maintenance, your Mower will provide years of dependable service.

## DANGER



NEVER ALLOW CHILDREN TO OPERATE, RIDE ON, OR COME CLOSE TO MOWER OR TRACTOR. Usually, 16-17 year-old teenagers who are mature and responsible can operate the mower with reasonable safety if they have read Operator's Manual, been trained in safe operation of the machine, and are physically large and strong enough to reach and operate controls easily.

## DANGER



For Non-Agricultural use, OSHA, ASAE, SAE, and ANSI standards require the use of Chain Guards, Deflectors, or Solid Skirts at all times. The Mower manufacturer strongly recommends the use of Chain Guards or Solid Skirts for Agricultural purposes as well, to reduce the risk of property damage, serious bodily injury, or even death from objects thrown out by or from contact with the Cutting Blades.

## WARNING



At least 20% of the tractor's weight must be on the rear tires with the Mower lifted to provide adequate traction for safe steering under good conditions. Slow down on hills, rough terrain, and curves.

Front and rear and left and right are determined by the normal direction of travel the same as driving an automobile.

# INTRODUCTION

## ATTENTION OWNER/OPERATOR

BEFORE OPERATING THIS MACHINE:

1. Carefully read the Operator's Manual, completely understand the Safety Messages and instructions, and know how to operate correctly both the tractor and Mower.
2. Fill out the Warranty Card in full. Be sure to answer all questions, including the Serial Number of the Mower. Mail within 30 days of delivery date of this implement.

**NOTE:** Warranties are honored only if completed "Owner Registration and Warranty" forms are received by ALAMO within thirty days of delivery of the mower.

3. Record the Mower Model and Serial Numbers on the Warranty page at the back of the Operator's Manual. Keep this as part of the permanent maintenance file for the Mower.

# IMPORTANT

For your safety and to guarantee optimum product reliability, always use Genuine ALAMO INDUSTRIAL replacement parts. The use of inferior "will-fit" parts will void Warranty of your ALAMO INDUSTRIAL implement and may cause premature or catastrophic failure which can result in serious injury or death. If you have any questions concerning the repair parts you are using, contact ALAMO INDUSTRIAL, 1502 E. Walnut Seguin, TX 78155 (830) 372-3551.

 02926100

# INTRODUCTION

## SPECIFICATIONS

*Hydraulic Oil Capacity:* Total System Fill Capacity 25 Gallons.

*Hydraulic Oil:* Universal Tractor Hydraulic Oil

*Grease:* # 2 Lithium Base Bearing Grease and EP90 Gear Oil

### SPECIFICATION OF THE POWER CIRCUIT:

*Hydraulic Pump Speed:* 2160 RPM @ 540 PTO Speed

*Hydraulic Pump Rotation:* Counter Clockwise (viewed from shaft end)

*Hydraulic Motor Speed:* 2000-2400 RPM

*Maximum Rated Pressure:* 4000 PSI

*Rated Flow:* 25 GPM at each of the Motors

*Cuttershaft Speed:* 2000-2400 RPM

*Oil Operating Temperature:* 180 deg.F max.

*Hydraulic Pump:* Tandem Piston type fixed displacement:  
2.77 cu. in./revolution, each section  
Max. rated Pressure - 4000 PSI  
Maximum rated Flow: 36 GPM, each section  
Maximum rated Hydraulic Horsepower - 84HP each section

*Hydraulic Motor:* Piston type fixed Displacement: 2.48 cu.in./revolution  
Maximum rated Speed: 3000 RPM  
Maximum operating Pressure: 4000 PSI  
Maximum rated Flow: 54 G.P.M.  
Relief Valve Setting: 4000 PSI

*Motor Control Valve:* Normally Open: 12 Volts DC Solenoid Cartridge Type  
Rated Pressure: 3750 PSI  
Rated Flow: 36 GPM

*Electric:* Voltage at Solenoid: 12 Volts DC  
Fuse rating: 6 AMPS, 32 Volts  
Switch rating: 15 AMPS, 125 VAC

*Pressure Relief Valve:* Direct acting Differential Piston Type  
Relief Pressure Setting: 4000 PSI  
Rated Flow: 40 GPM

*Filtration:* Full Flow, 10 Micron Nominal, Return Line Filter

*Parameters of Control Circuit:* Utilizes Tractor Remotes

*Hydraulic Lift Cylinder:* All Single Acting  
Wings - 3-1/2 in. Bore x 6-3/16 in. Stroke  
Center - 2 in. Bore x 9-1/4 in. Stroke

*Cutting Height of Mowers:* 1/2" to 6" (1/2" increments)



# **ASSEMBLY SECTION**

# ASSEMBLY

**IMPORTANT** The hydraulic system must be kept "SURGICALLY CLEAN" to ensure proper operation and long life of the pumps, motors, and valves. All components have protective caps over openings connected to internal spaces to prevent contamination. It is important that care be taken during unpacking, assembly, and other contaminants which will damage parts.

DO NOT start the tractor unless the hydraulic system is filled with hydraulic oil. Running without oil will damage the pumps.

Check the oil level in the reservoir before start-up.

Care should be taken when filling the reservoir to prevent contamination of the hydraulic system. Always use new hydraulic fluid when filling the system. **USE ONLY UNIVERSAL TRACTOR HYDRAULIC OIL IN THE HYDRAULIC SYSTEM.**

Reference to the left or right side is determined while standing in the rear & facing in the direction of travel.

## TRACTOR PREPARATION (Figure 1)

1. Remove the Anti-Sway Bars from tractor and Lower Links.
2. Remove the Pins that attach the Lower Links to the Down Links and the Tractor Lugs. Remove the Lower Links. Insert the Pins back into the Down Links and the Tractor Lugs. These Pins will be used when attaching the V-Pro to the tractor.
3. Remove the complete Draw Bar and carrier from the Tractor.

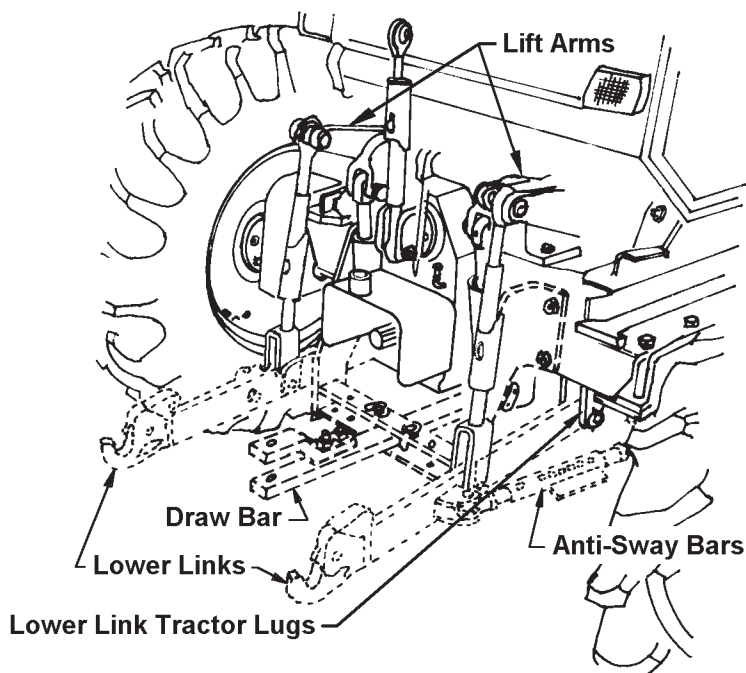


FIGURE 1

# ASSEMBLY

## MAINFRAME TO ATTACHMENT FRAME ASSEMBLY (Figure 2)

Place Mainframe on a level surface. Raise Mainframe with a forklift or hoist and attach the Jackstands. Raise Jackstands until the Mainframe is raised to approximately 18". Align the Attachment Frame (3) lugs with Mainframe, install the Pins (4) and retain with 1/2 x 1-3/4 bolts (5), flatwashers (6) and locknuts (7). Install the Axle Mount Bars (8) and retain with Pins (9) and Cotter Pins (10).

**NOTE:** It will be necessary to lower tank assembly in order to install pin (4).

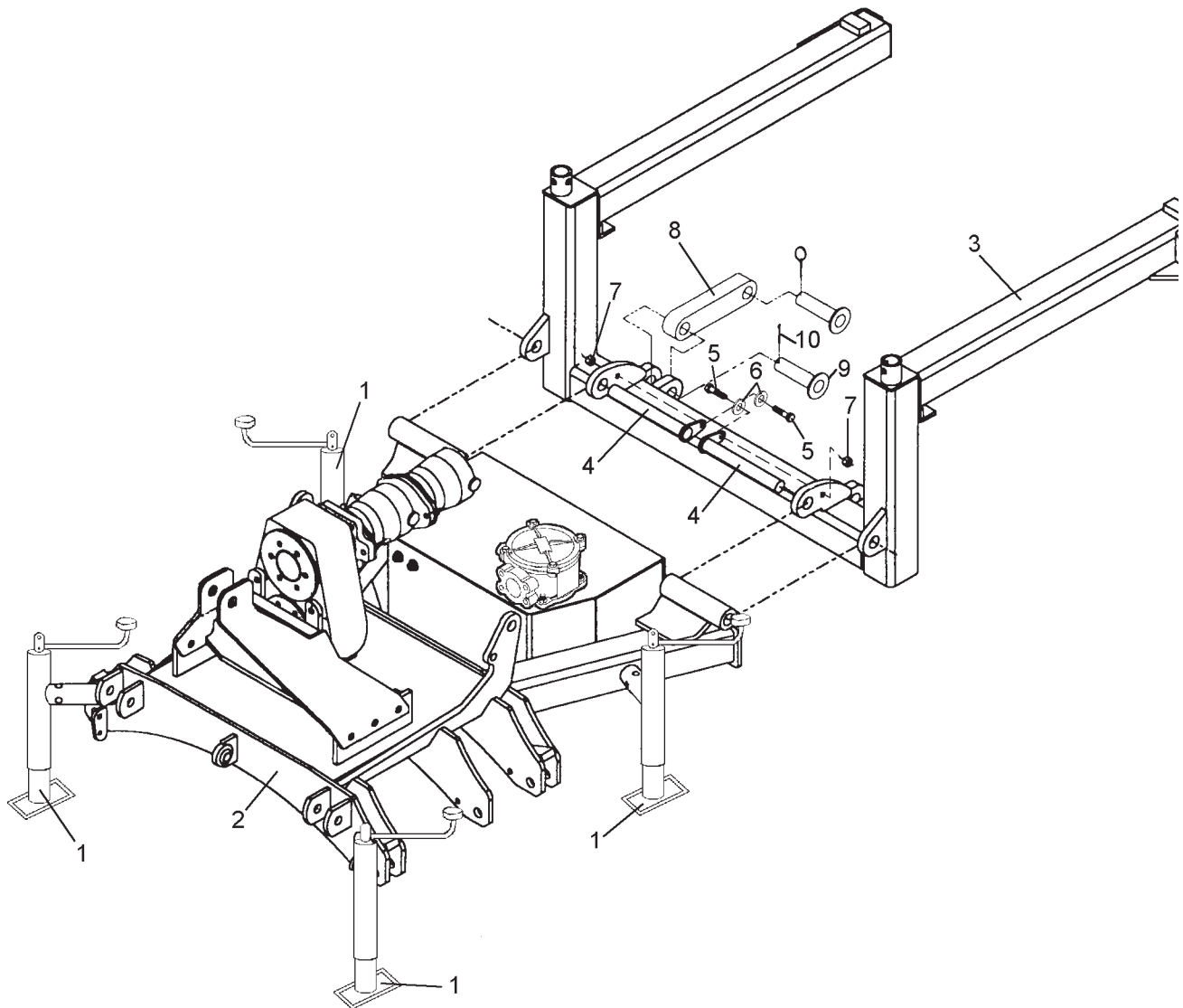


FIGURE 2

ASSEMBLY

# ASSEMBLY

## TRACTOR TO ATTACHMENT FRAME ASSEMBLY

Raise the Attachment Frame Arms(1) to a level height. Drive Tractor into Attachment Frame and align with the Tractor Attachment Frame Mounts (2). Retain with bolt (3) and locknut (4). **Figure 3.** Attach the Axle Mount Bars (5) to the Tractor lugs with Pins (6) and Lynch Pins (7). **Figure 4.** Attach the Down Links (8) to the Mainframe with Pins (9) and Lynch Pins (10). **Figure 5.** **NOTE:** Adjust down links to 28" pin center.

ASSEMBLY

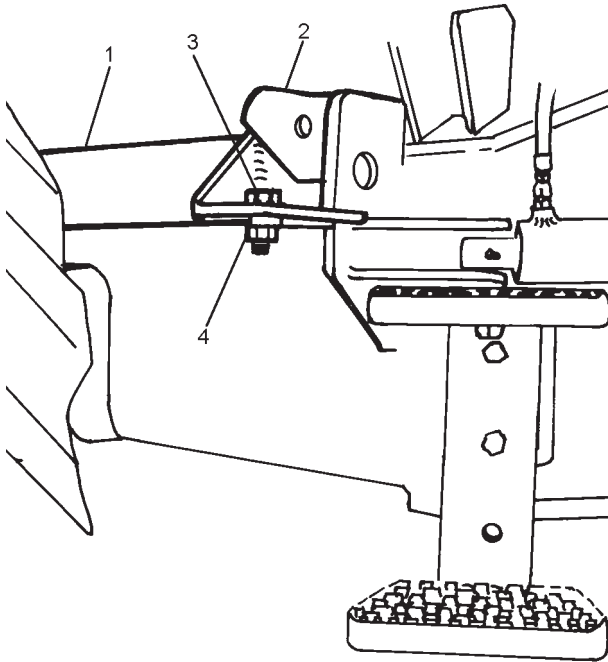


FIGURE 3

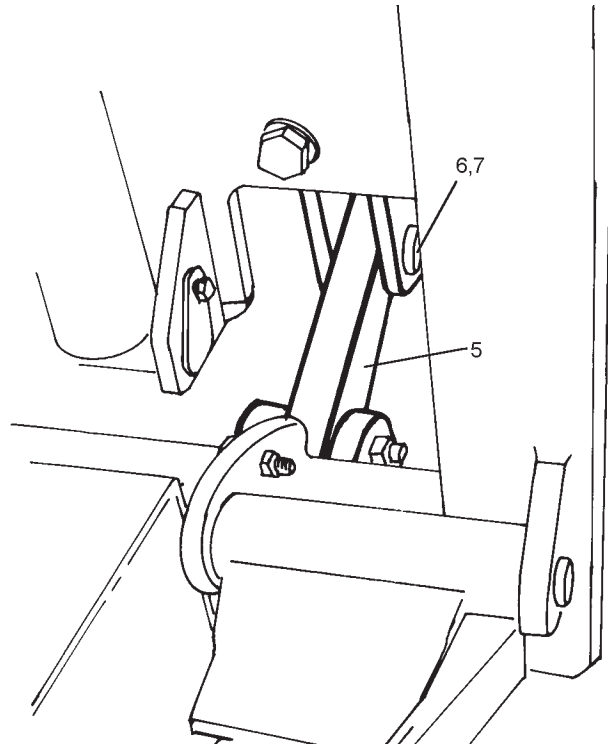


FIGURE 4

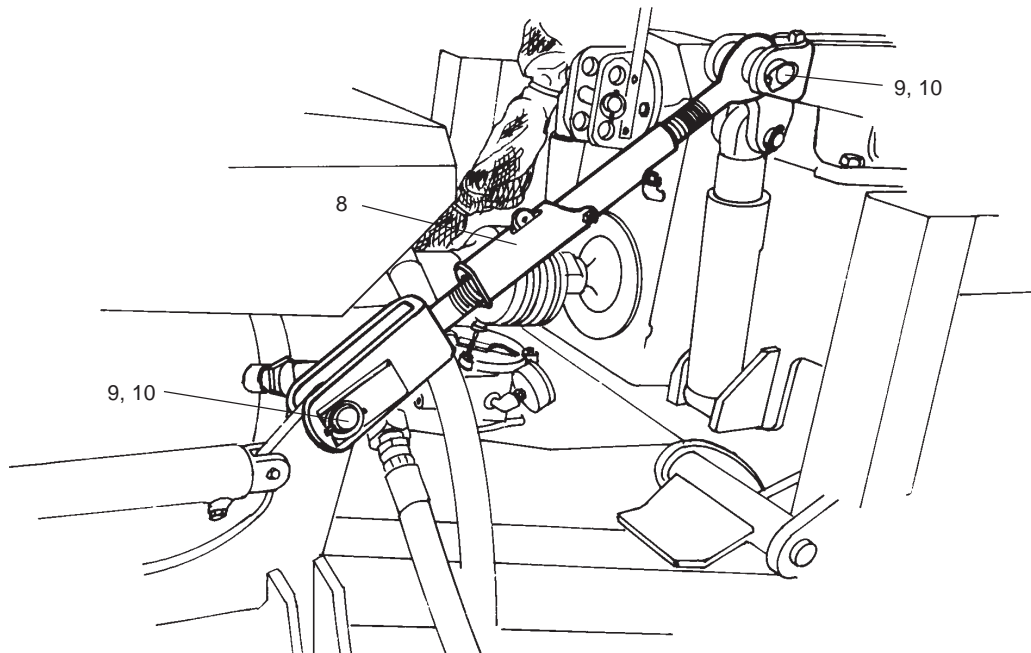


FIGURE 5

# ASSEMBLY

## DRIVELINE ATTACHMENT

Pull slide collar back and attach one end to the Tractor PTO. Move yoke back and forth until locking collar "clicks" forward and locks the yoke in place. Do the same to the other end of the Driveline on the Speed Increaser shaft.

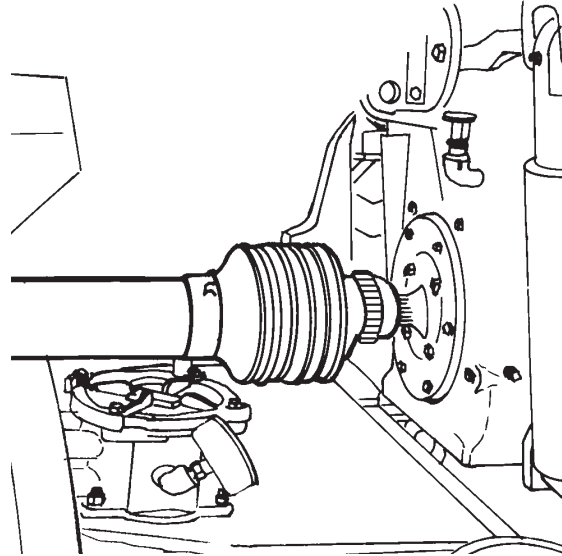


FIGURE 6

## CENTER & WING MOWER ASSEMBLY

Tip cutterhousing back and place a block under roller to safely support unit. Remove shipping skids and drive pulley side belt guard fender. If necessary, install knives, as shown, one row at a time. See rotation below.

**FOR FORWARD ROTATION:** On the right wing and center unit, all knife pins must be installed with their heads facing away from the cuttershaft pulley. On the left wing, the heads of the knife pins must face the cuttershaft pulley.

**FOR REVERSE ROTATION:** On the right wing and center unit, all knife pins must be installed with their heads facing toward the cuttershaft pulley. On the left wing, the heads of the knife pins must face away from the cuttershaft pulley.

This will locate cotter pins where knives cannot reach them when flexing backward. The housing side sheet has a hole in it which allows knife pins to be inserted into end lugs from outside the cutterhousing. After the cotter pin is installed, bend extended prong at a 45 Degree angle with prong parallel to lug.

With the cutterhousing tipped up, attach housing shoes/wear plate. Carriage bolt attaches to front mounting hole; plow bolts attach to middle and rear holes.

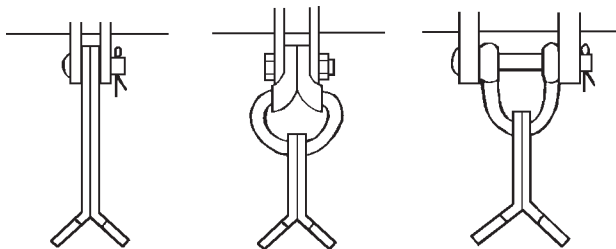


FIGURE 7

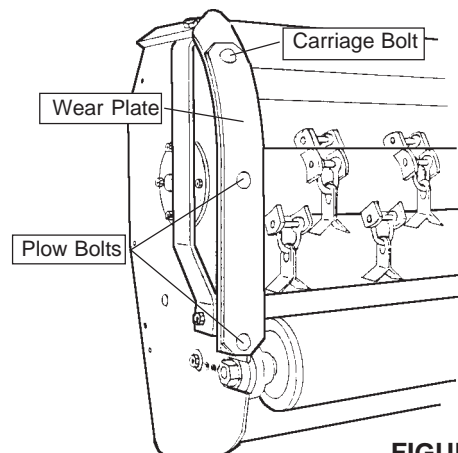


FIGURE 8

# ASSEMBLY

## WING MOWER ATTACHMENT

To attach wing mower to mainframe. Align tilt link (1) with actuator (2) and retain with pin (3). Proceed to lift frame (4) and align with lug on mainframe (5), retain with pin (6) and with pin (7). Secure all pins with 1/2" x 1 1/2" bolt and 1/2" nut. **Figure 9.** Pin (3) will be secured with bolt that also secures pin for cylinder.

## LIFT FRAME TO MOWER

Align toplink (1) to mower lugs (8), retain with pin (9) and lock with cotter pins (10). Align lift frame (4) with lugs at bottom of mower, retain with pivot pin (11) and lock with nut (12). **Figure 9.**

**Note:** Use a thread locking material to secure nut (12) to pivot pin.

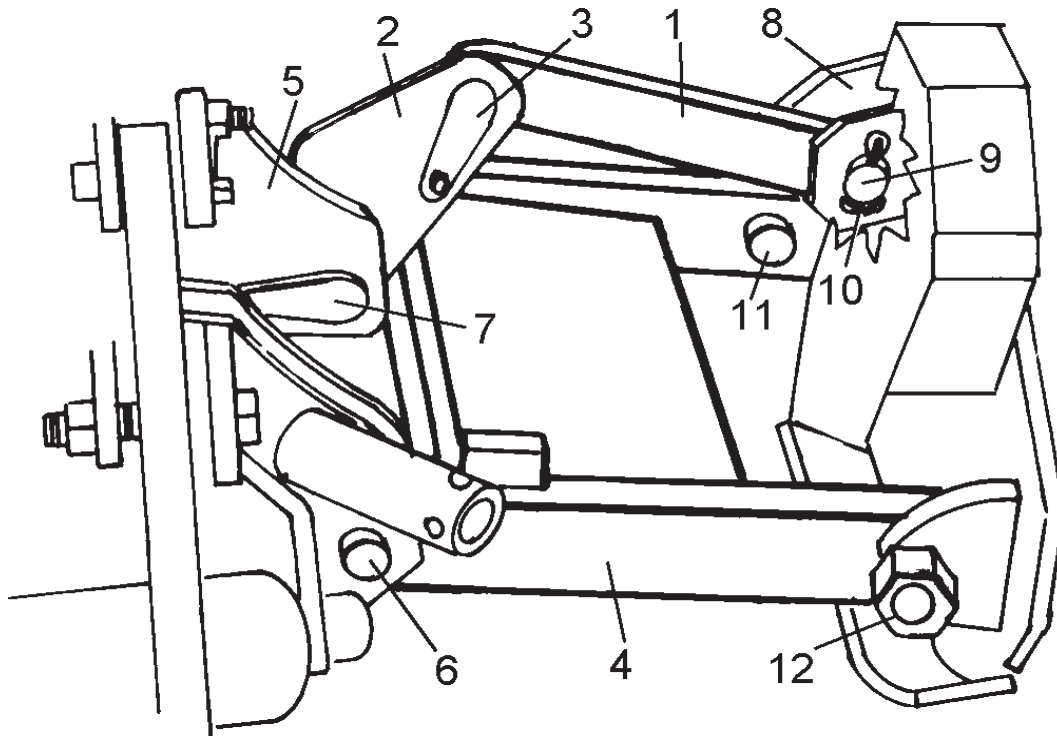


FIGURE 9

# ASSEMBLY

## ELECTRICAL CONNECTION AT TRACTOR

Battery cable must be disconnected to prevent any electrical shock. Unscrew bottom screws from panel with regular tip screwdriver (Figure 10, item 1). Pull down on panel from bottom, and top should pop out. Place a small block of wood inside of console against side wall to protect wiring when drilling holes for switch. Both sides of console should be drilled for switch to be mounted (Figure 10, item 2). Once the switches are installed, connect switch connectors from harness to the top spade terminals of switch. Connect power wires to ignition switch at accessory terminal (Figure 11, item 3). Connect ground wire to ground (Figure 11, item 4). Wire harness should then be routed through console, then through hole underneath seat at pivot point. Wire harness should then exit at hydraulic hoses connection, at front of tractor. Connect wire harness from tractor to the wire harness from mower. Refer to electrical schematic (Figure 13) for additional help.

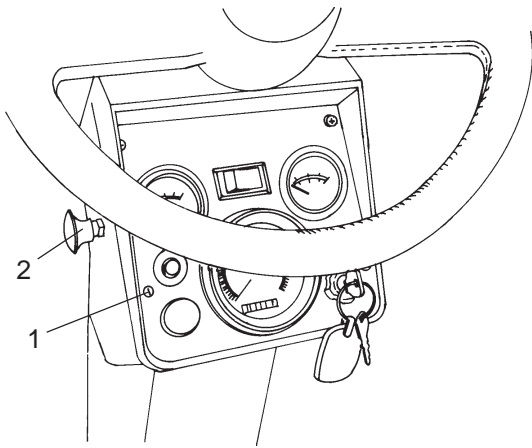


FIGURE 10

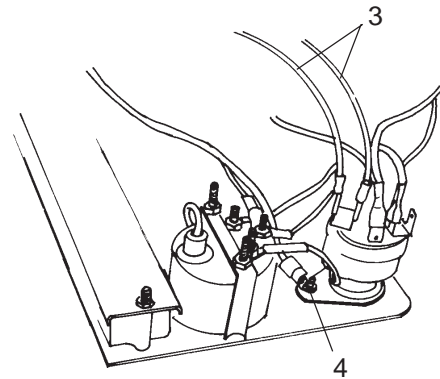


FIGURE 11

## ELECTRICAL CONNECTION AT MOWER.

Connect terminals on harness to corresponding terminals on safety switch. Continue harness routing with hoses and attach connector at end of harness to solenoid coil on motor. Secure with screw and gasket provided with harness. **Fig. 12.** Refer to electrical schematic (**Figure 13**) for additional help.

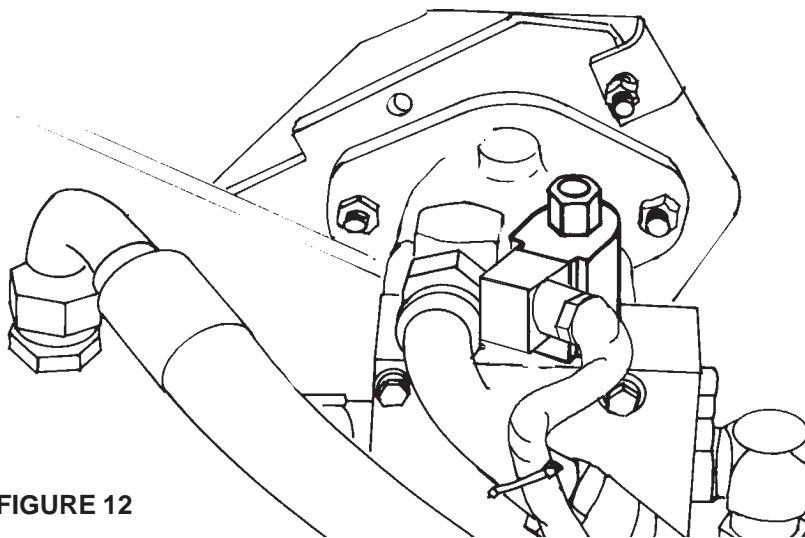


FIGURE 12

# ASSEMBLY

## ELECTRICAL SCHEMATIC

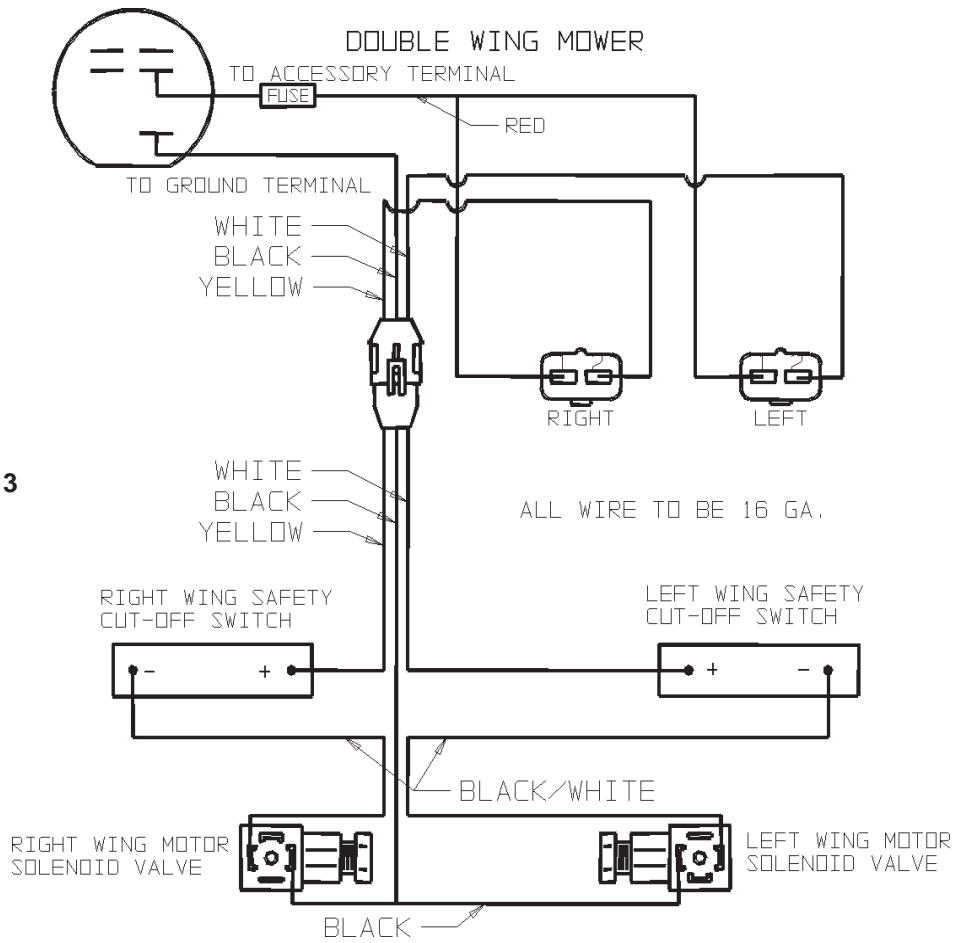


FIGURE 13

ASSEMBLY

## CENTER MOWER ASSEMBLY

Attach the right and left Overarms (1) to the cutterhousing. Secure with 5/8 x 1-3/4 bolts (2) and locknuts (3). Attach the A-Frame Weldment (4) to the Overarms with bolts (2) and locknuts (3). **Figure 14.**

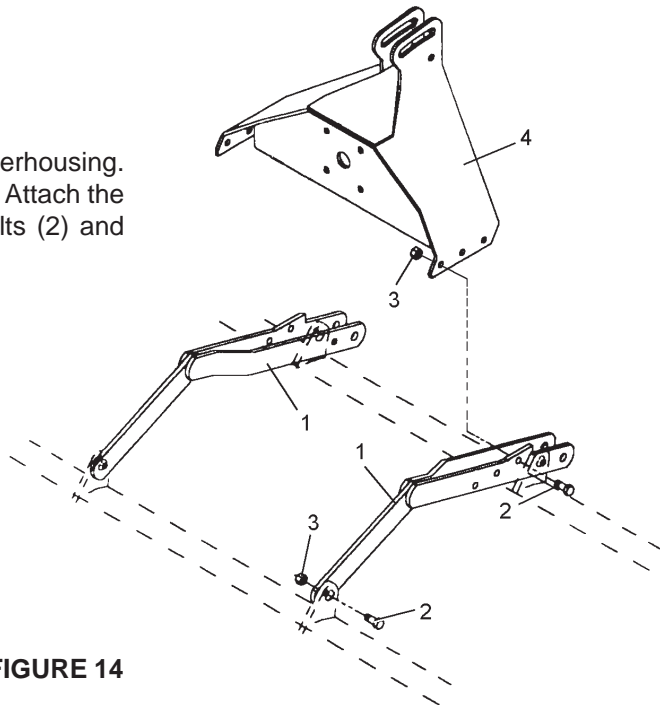


FIGURE 14

# ASSEMBLY

## CENTER MOWER ASSEMBLY

1. Attach outboard bearing plate to cutterhousing.

FORWARD ROTATION (Bearing plate mounts on left side of cutterhousing.)

- a. Secure with 3/8 NC x 7/8 Bolt and nut at front mounting hole. Torque to 35 ft-lbs. (Typ.)
- b. Secure with 3/8 NC x 2-1/4 Bolt, nut, lockwasher, and second nut at rear mounting hole. The Bolt is used as an anchor for the idler arm spring.

REVERSE ROTATION (Bearing plate mounts on right side of cutterhousing)

- a. Secure with 3/8 NC x 2-1/4 Bolt, nut and second nut at front mounting hole. The Bolt is used as an anchor for the idler arm spring.

- b. Secure with 3/8 NC x 7/8 Bolt and nut at rear mounting hole.

2. Install gearbox & extension shaft assembly and PTO shield mounting bracket

- a. Remove existing nuts and lockwasher from bearing housing.

**NOTE:** On forward rotation units, remove only the lower two fasteners.

- b. Slide bearing housing Bolt into proper holes in outboard bearing plate.

- c. Attach gearbox and mounting bracket to gearbox mounting frame. Secure with 5/8 NC x 1-1/4 Bolt (upper gearbox feet), and 5/8 NC x 1-1/2 Bolt (lower gearbox feet) and Lockwashers. Torque to 170 ft-lbs. (Typ.)

- d. Secure bearing housing to bearing plate with previously removed fasteners.

**IMPORTANT:** If extension shaft does not line-up with Gearbox, it may be necessary to shim gearbox mounting lugs. To accomplish this, insert one gearbox retaining bolt (Figure 15) thru the mount plate and into the gearbox housing. Do not tighten this bolt (it should have at least 1/4" free threads to move in and out). Assemble the gearbox, shaft, shaft extension tube and the bearing to the bearing retainer plate mounted on the side sheet. Tighten all fasteners except the one bolt in the gearbox mounting plate. Check the distance between the gearbox mounting lugs and the mount plate. If required, insert shims from shim kit (P/N 000552) between gearbox mounting lugs and mounting plate to insure the gearbox pulls up evenly on the mounting plate.

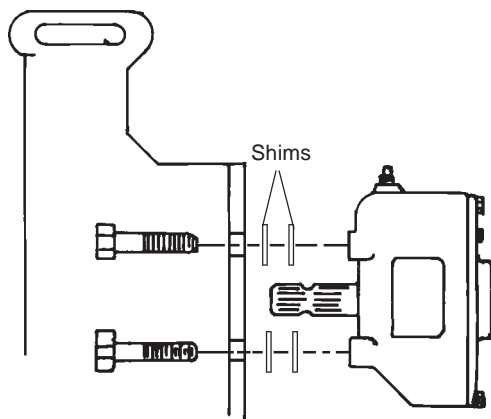


FIGURE 15

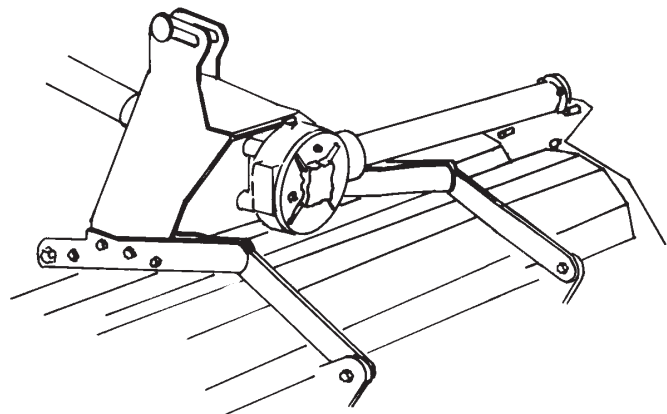


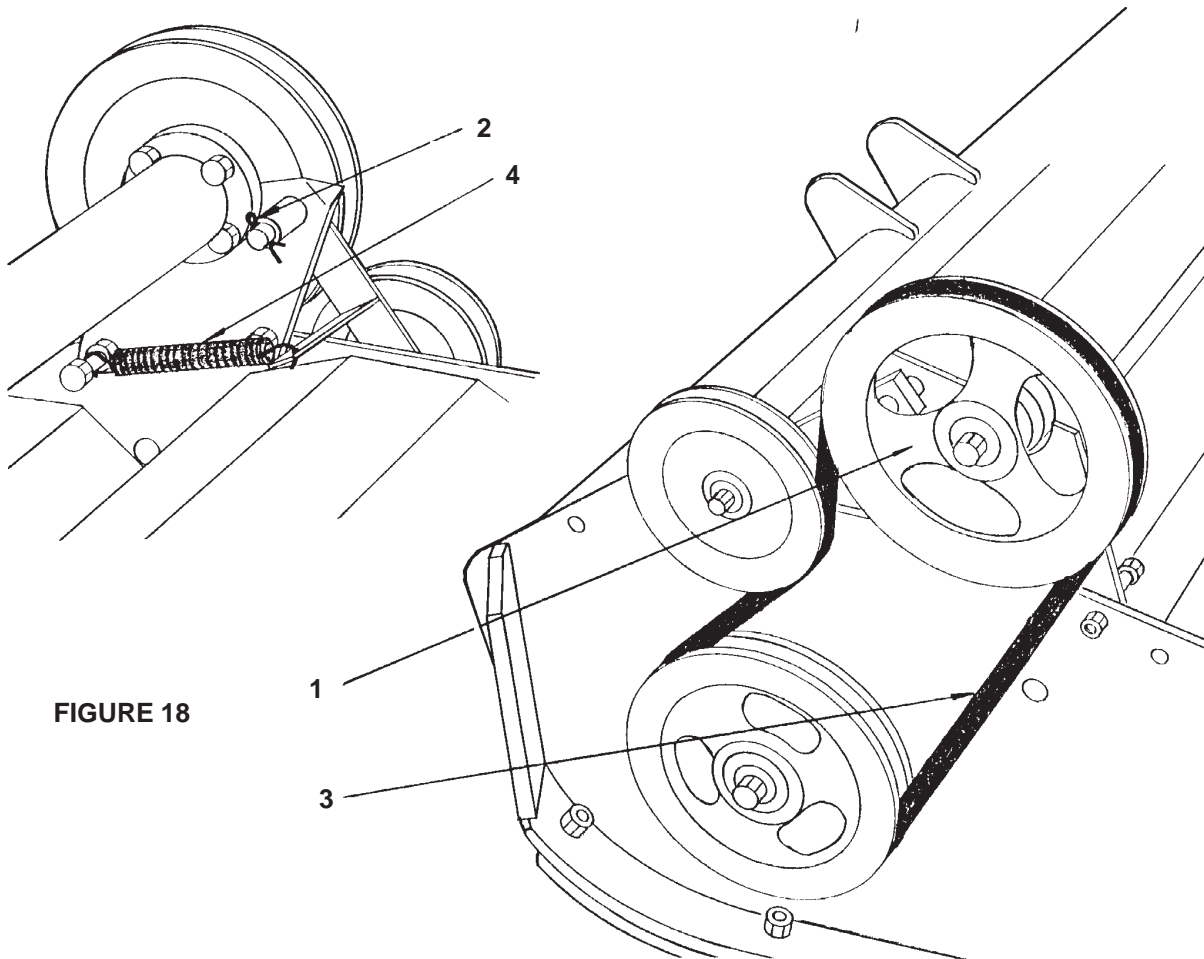
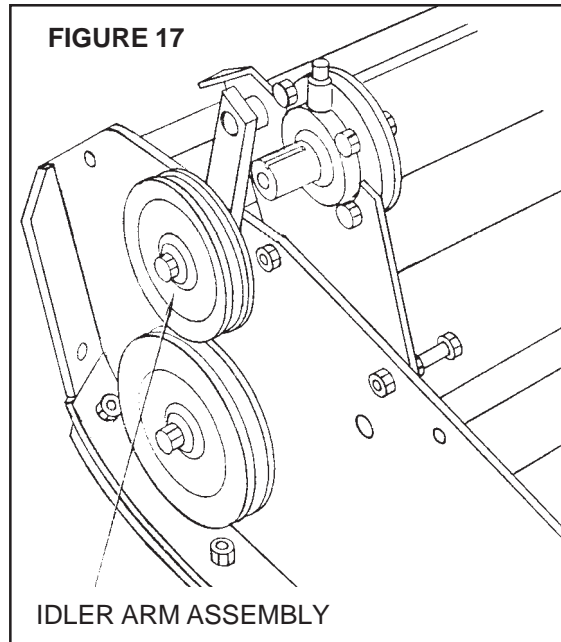
FIGURE 16

# ASSEMBLY

## CENTER MOWER ASSEMBLY

Install idler arm assembly to bearing plate. Do not secure at this time. **Figure 17.**

1. Remove fasteners and shaft protector from end of drive shaft. Lightly grease shaft. Install key and drive shaft pulley. Do not secure at this time. **Figure 17.**
2. Align all three pulleys. Use spacers and shims provided to achieve alignment, then secure idler arm assembly with cotter pin. Secure drive shaft pulley with fasteners removed in Step 1, above.
3. Install drive belt. **Figure 18.**
4. Attach spring. One end is inserted in idler arm spring arm hole; the other end is attached to the long outboard bearing plate bolt.



# ASSEMBLY

## INSTALLATION OF CENTER MOWER - (Figure 19)

1. To properly attach center mower to mainframe, align lower links (1) to overarms (2) and anti-sway bar (3). Attach with 7/8" x 5" bolt and 7/8" locknut (4).
2. Align toplinek (5) with top of A-frame (6) on center mower and retain with pin (7), washers (8), and cotter pins. Attach the other end of the the toplinek to the mainframe. Install 1" x 4" bolt through safety chain and retain with 1" locknut.
3. Continue with driveline by aligning slipclutch and gearbox shaft and slide slipclutch in and tighten bolt. On the other end of driveline pull slide collar back, slip into speed increaser shaft and release slide collar. Move driveline in and out to insure driveline is secure.
4. Level front unit by adjusting top link. Be sure skid shoes are level with ground.

**NOTE:** Front Caster Wheels should be set about 2-4 inches above ground when mower is level.

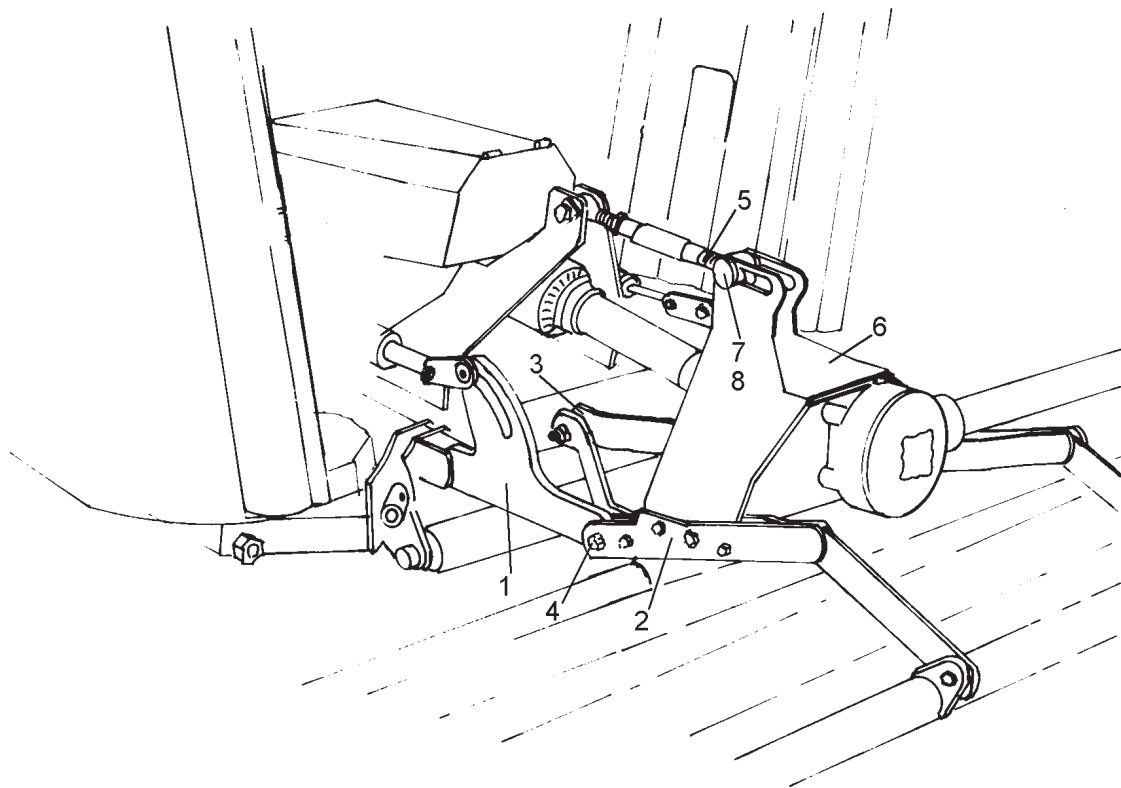


FIGURE 19

# ASSEMBLY

## HYDRAULIC CONNECTIONS

### WARNING!



Refer to the Tractor Manual when connecting hydraulic hoses to the tractor hydraulic system. Numerous precautions should be taken due to the possibility of a pressure buildup within the hydraulic circuit. Relieve the pressure before opening or entering the circuit. **FLUID ESCAPING UNDER PRESSURE CAN PENETRATE THE SKIN CAUSING SERIOUS INJURY.** Ensure that hose fittings are secure before pressurizing the hydraulic systems.

### IMPORTANT

Once drivelines are installed, **DO NOT** start the tractor (which will turn the pumps) unless both power circuits are filled with the specified hydraulic fluid. Running pumps without oil will cause non-warrantable damage.

It is important that pipe thread sealant be used only on solid connections of pipe thread; never on connections between swivel fittings and solid male pipe threads or on straight thread "O" ring fittings. Use the pipe thread sealant supplied. Do not substitute with some other type of sealant, i.e., teflon tape, paint, shellac, etc.

Hoses supplied have two types of fittings; solid or swivel. Some hoses have solid fittings on both ends; others have a solid fitting and a swivel fitting. Hoses with two solid fittings will fit into either a outer solid thread, or a swivel adapter union. When installing either type hose, solid fittings must be installed first, then install the swivel end of the hose.

The VERSA PRO hydraulic system incorporates three basic types of hydraulic fittings:

- Standard pipe (NPT or NPTF) thread fittings. This type requires a small amount of evenly-applied sealant.
- Swivel fittings. This type does not require any sealant on the swivel end because it seals against an internal flare.
- "O" Ring fittings. This type does not require any sealant on the "O" Ring end of the fitting.

It is extremely important to avoid getting pipe thread sealant inside the fittings or hoses. **KEEP THE INTERIOR OF ALL HYDRAULIC COMPONENTS SURGICALLY CLEAN.** Inspect the inside diameter of each hose before assembly. Ensure that no obstruction is present. Dirt, sand, dust, etc., are abrasive and once in the system can cause immediate or early failure.

*NOTE: Do not strap hoses together until all hoses and wiring are connected. Hoses and wiring should be routed so they do not lay on moving parts, too close to sharp edges, or near excessive heat.*

# 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.



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# ASSEMBLY

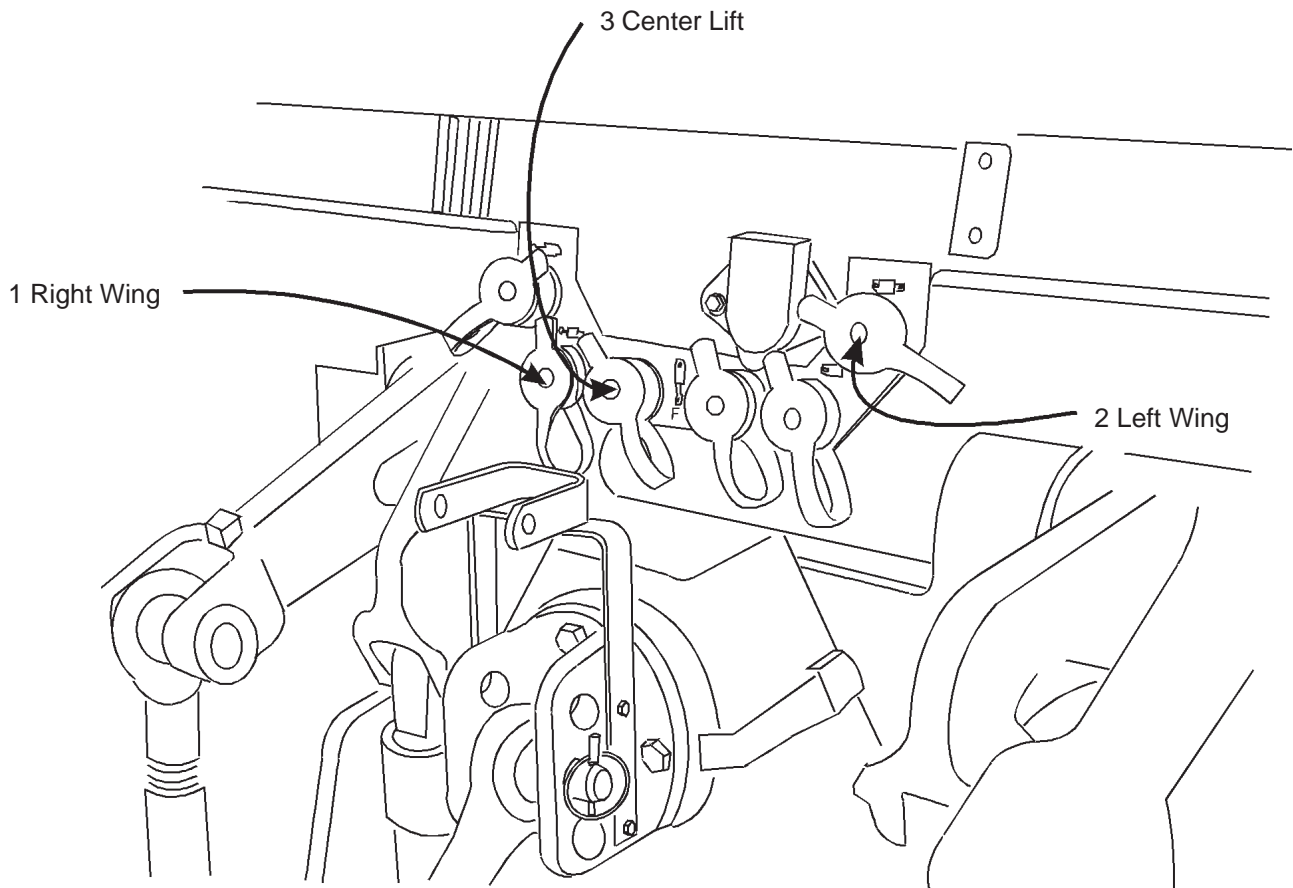
## HOSE CONNECTION AT TRACTOR

1. To properly connect hydraulic hoses to tractor, connect right wing hose P/N 02839000 (1), and left wing hose P/N 02839000 (2).

**Figure 20.**

2. Connect center lift hose P/N 02964451 (3) to connection at center of tractor. **Figure 20.** This should be the remote valve with "Float" position. Always operate front mower in float detent position.

FIGURE 20



ASSEMBLY

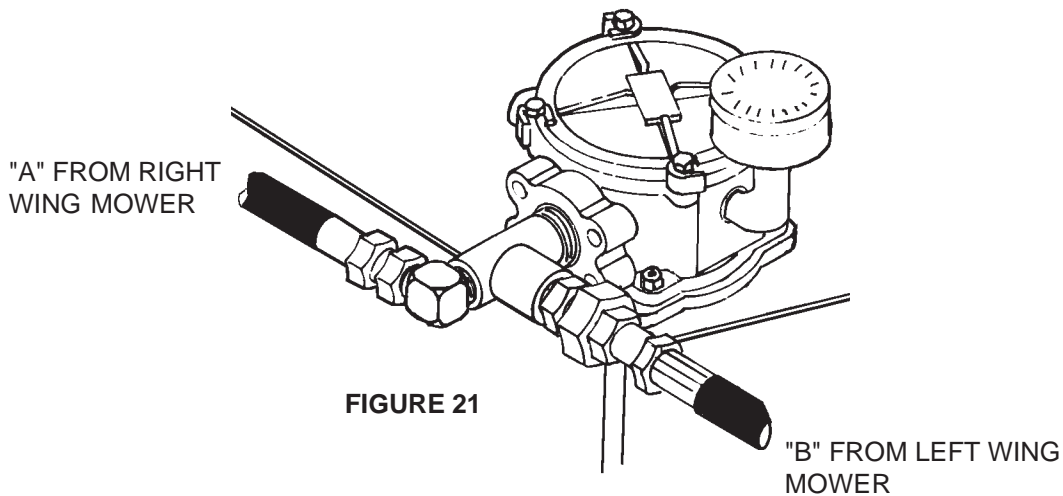
# ASSEMBLY

## HYDRAULIC CONNECTIONS TO CYLINDERS

Connect the Hoses P/N 02965364 and P/N 02961321 from Tee to Center Lift Hydraulic Cylinders at rod end.

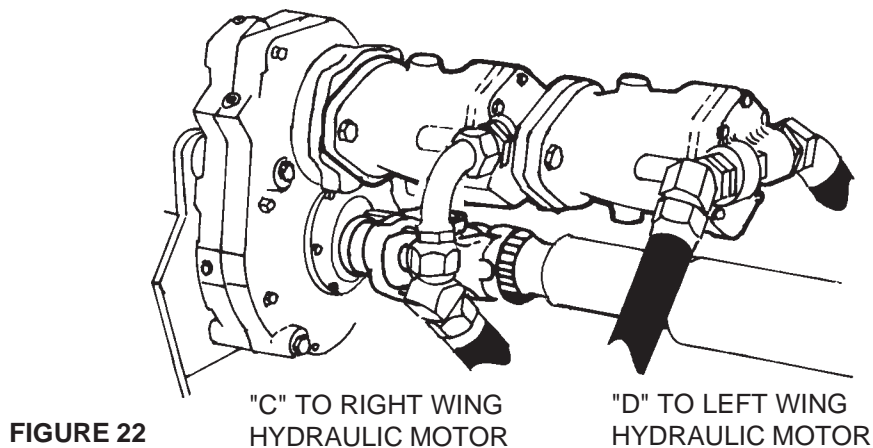
## HYDRAULIC CONNECTIONS TO FILTER

Connect return hose P/N 002479 from right wing mower to elbow at filter (identified as "A"). Left wing mower will use hose P/N 002477 and will be connected to Tee (identified as "B"). **Figure 21.**



## HYDRAULIC CONNECTIONS TO PUMP

Connect right wing hydraulic motor to pump using hose P/N 002480 (identified by "C"). Left wing motor will use hose P/N 002478 (identified as "D"). **Figure 22.**



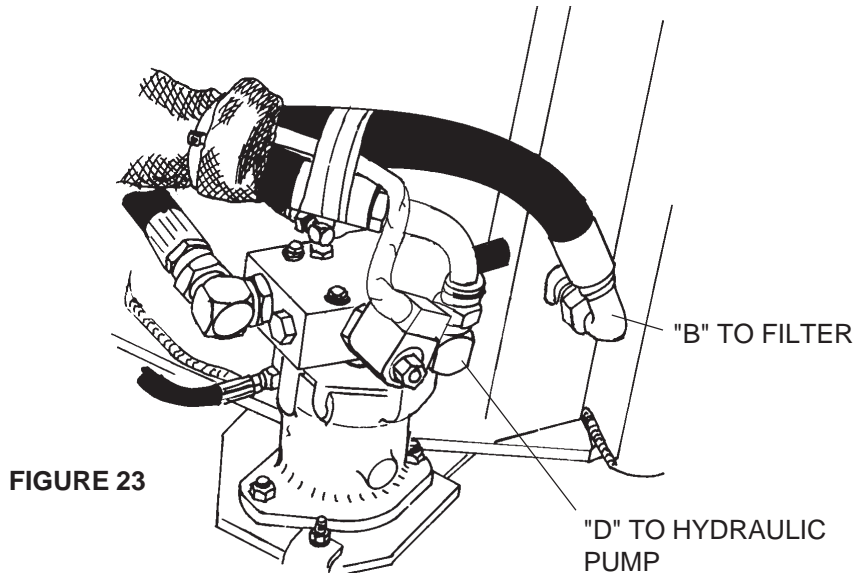
# ASSEMBLY

## HYDRAULIC CONNECTIONS MOTORS

**NOTE:** Run hoses and electrical harness through sleeving. Hoses should lie to the rear of wings and over the top of decks.

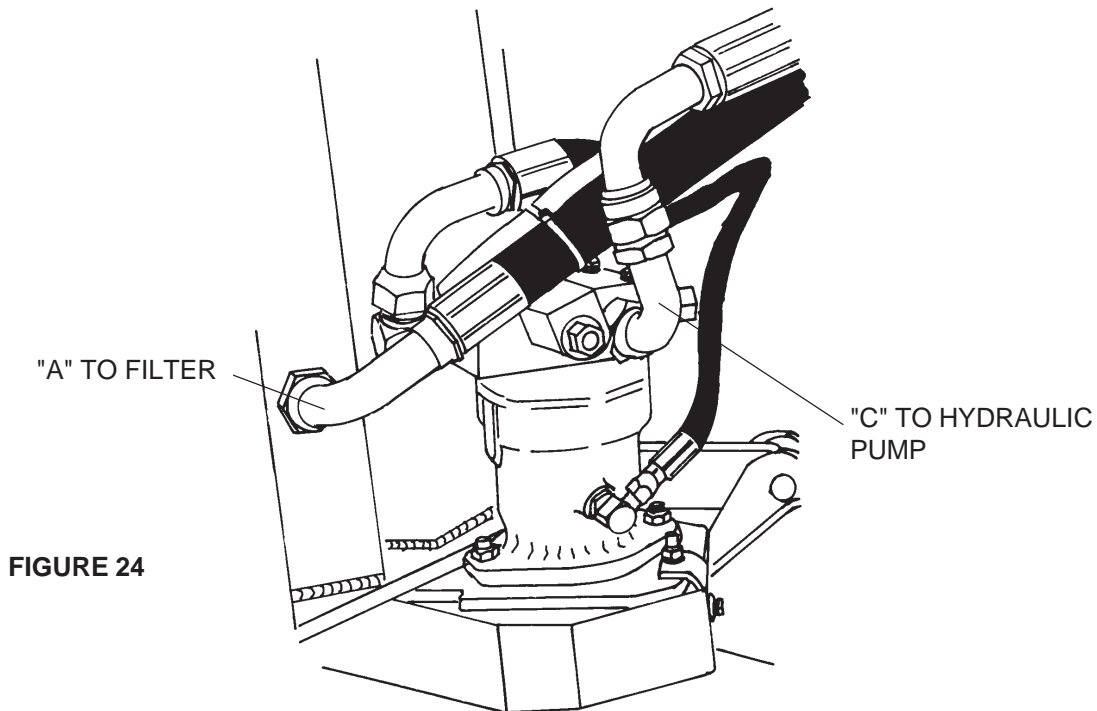
### LEFT WING HYDRAULIC MOTOR

To connect hydraulic hoses to left side mower, use hose P/N 002477 (identified as "B"). This hose comes from filter at tank. Hose P/N 002478 from pump to motor (identified as "D"). **Figure 23.**



### RIGHT WING HYDRAULIC MOTOR

To connect hydraulic hoses to right side mower, use hose P/N 002480 (identified as "C"). Figure 24. This hose comes from pump. Hose P/N 002479 filter at tank (identified as "A").



# ASSEMBLY

## HYDRAULIC

Filter buggies or carts are commercially available for hydraulic system charging. These consist of a high-efficiency, high-capacity filter, a pump, a drive motor, and hoses for supplying the machine's hydraulic system.

After the first 10 hours of operation, replace the hydraulic filter with a new one. An extra Filter Element is provided for you. Refer to the Operation and Maintenance Section for instruction.

After the VERRSA PRO mower is completely assembled to the tractor and with the wings on the ground, fill the mower hydraulic tank above the oil level sight gauge approximately 1" below the top of the tank.

With mower ON/OFF switches in "OFF" position, start engine and engage PTO for about 30 to 45 seconds to allow oil to fill pumps and motors. Check the oil level in the sight gauge. If no oil is seen add oil to bring the level up to the sight gauge. **NOTE:** Do not fill the tank with oil above the level of the sight gauge. Over filling the tank with oil after the initial filling may result in oil being discharged through the air filter on top of the hydraulic tank. Start the tractor and PTO and run it for 2 minutes and then turn it off. Again check the oil level in the sight gauge. If the oil level is in the sight gauge, the unit is ready to run. If no oil is seen, add oil to bring the level up to the sight gauge.

**CAUTION** Remove all foreign objects and stand clear of cutter units.  
**DO NOT GET NEAR ROTATING KNIVES!**



**NOTE:** On tractor hydraulic powered circuit only, make certain that there is full flow from tractor hydraulic system to control valve. Refer to tractor manual.

9. After hydraulic system is fully charged and functioning properly, switch cutter units on, then speed engine up to 540 RPM PTO speed. Maintain this speed for about 5 minutes. Check complete VERRSA PRO, look for any leaks, loose connections, or anything that could cause premature wear or failure.

## FINAL CHECK

Run VERRSA PRO for about 1/2 hour at full speed. Check for leaks and vibrations. Frequently check oil temperature. Make certain it does not exceed 180 deg.

**CAUTION:** DO NOT leave unit unattended, and COMPLY WITH ALL WARNING DECALS.



If unit starts to make unusual noise, stop unit and check oil level. Also check for frothy oil which would indicate a leak on suction side of system.

# OPERATION SECTION

# OPERATION

## CUTTER UNIT

### GENERAL

**CAUTION!** Always operate front mower with hydraulic control in detented float position.



The VERSA PRO electrical circuit controls the flow of oil to the hydraulic motor on the cutter unit. The motor control valve relies on a solenoid to control the spool within the valve and direct the flow of oil.

When the mower ON/OFF switch is in the "ON" position, current flows to the solenoid which positions the spool to direct the oil flow from the pump to the motor. The oil then turns the motor which drives the cuttershaft.

When the mower ON/OFF switch is in the "OFF" position, the solenoid is not energized and oil pressure in the power circuit pushes the spool back allowing the oil to return to the reservoir from the valve. Without the flow of oil, the motor will no longer drive the cuttershaft.

### OFF-ON SWITCH

The electrical circuit is connected to the tractor ignition switch. (See Electrical Schematic). The red wire connects to the switch accessory terminal. A 6 amp in-line fuse on the RED wire protects the off-on switches from an overload.

### SAFETY CUT-OFF SWITCH

In the electrical circuit between the OFF-ON switch and the motor solenoid valve is a safety cut-off switch. This switch is a magnetically-operated electrical switch that cuts the wing mowers off when the wing is raised to approximately 45 degree angle. This also prevents mower from being operated with the wing up. This feature prevents injury due to inadvertently starting mower with wing raised and should be kept in proper operating condition.

### SOLENOID OPERATED VALVE AT MOTOR

The electric solenoid valve is mounted in the hydraulic motor manifold block. The solenoid controls the spool within the valve. When the off-on switch is on and the wing is lowered the solenoid is energized by electrical current and the spool is closed to direct the flow of oil from the pump through the cuttershaft hydraulic motor. The wing activates the safety cut-off switch, the electrical current is removed from the solenoid causing the spool to open and allows oil to return to tank without being directed through the motor. Without oil flow through the motor, the cuttershaft will not operate.

### START OF CUT

Lower boat wings and center unit. Be sure center hydraulic valve is in the "Float" position. With the tractor engine at low idle engage PTO, then switch the wing mowers on and increase the engine speed until the PTO is at 540 RPM. Always start the cutter unit in the clear and allow the unit to develop full speed before starting to cut.

### CUTTERSHAFT AND GROUND SPEED

The VERSA PRO mower is designed to mow effectively when a cuttershaft speed of 2100 RPM is maintained. In order to reach this speed, the engine must be run so that the PTO is at 540 RPM. If the cuttershaft slows down because of heavy cutting, the tractor ground speed must be reduced. If not, the grass may wind around the shaft rather than being discharged properly. The extra load will increase the pressure required to turn the cuttershaft and raise the oil temperature. Should the oil temperature go above 180 deg.F., damage to the seals, bushings or bearings may result. GIVE THE UNIT TIME TO CUT. When working in heavy growth, reduce the tractor ground speed.

### HYDRAULIC OIL TEMPERATURE

The oil returning from the cutter unit motor flows through the oil cooler tubes. Under normal mowing conditions, the knives blow air against the cooling tubes to maintain oil temperature approximately 60° above ambient temperature. Should the cutter unit become overloaded, the oil temperature will rise very quickly. Under no circumstances should the unit be operated if the oil temperature is above 180°F. If the oil reaches this temperature, raise the mower and let the tractor run without the cutter load.

# OPERATION

## DETACHING AND STORING

Lower the Mower to the ground. Park the Tractor with the transmission in the correct gear (Automatic Transmission--Park; Standard Transmission--Neutral). Set the parking brake, shut off the engine, and remove the key. Wait until the PTO stops rotating before getting down from the tractor.

Disconnect the Driveline from the tractor PTO. Disconnect the Top Link and the Lower Lift Links from the Mower.

Always reinstall the Master Shield over the tractor PTO Shaft. This Shield should always remain in place except when connecting or disconnecting Driveline.

## DRIVELINE LENGTH CHECK PROCEDURE

### WARNING!



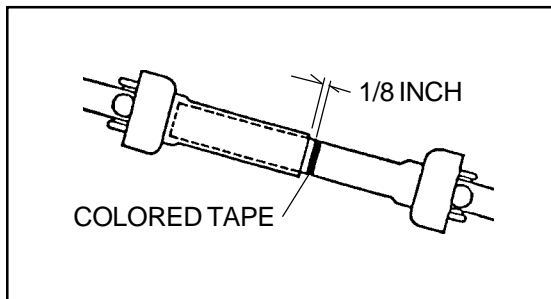
A loose shaft could slip off and result in personal injury or damage to cutter. When attaching PTO yoke to tractor PTO shaft, it is important that spring activated locking collar slides freely and locking balls are seated in groove on PTO shaft.

### WARNING!



Before operating cutter, check to make sure the driveline will not bottom out or become disengaged.

- \* 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. **Figure 1**
- \* Re-attach the Driveline to the PTO Shaft.



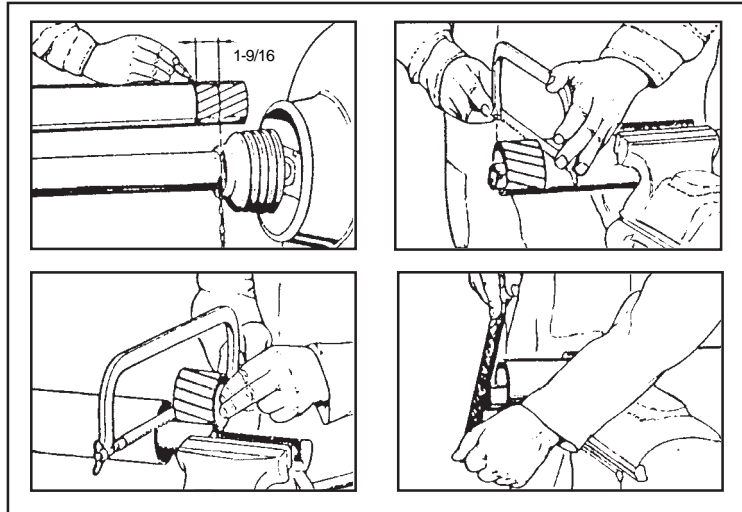
Driveline in maximum compressed position  
**FIGURE 1**

# OPERATION

## Lift Type

Raise mower and watch the Driveline as it approaches the colored tape. If the distance between colored tape and the end of the outer shield tube is 1-9/16" or less Drive Tubes should be shortened per **Figure 2**.

Always maintain 1-9/16" clearance when operated in shortest working position. Shorten inner and outer guard tubes equally. Shorten inner and outer sliding profiles by the same amount that the shield tubes were shortened. Round off all sharp edges and remove burrs. Grease sliding profiles. **Figure 2**.



**FIGURE 2**

Lower mower to lowest position possible. Turn off the Tractor and apply Parking Brake. Apply a second piece of colored tape to the Inner Shield 1/8" from the end of the Outer Shield. Disconnect Driveline from Tractor and then separate the two Driveline halves. Check the distance from the new piece of colored tape to the end of the inner profile. If distance is less than 9" consult dealer to obtain a longer Driveline. Driveline Tube engagement must always exceed 9".

# OPERATION

## TROUBLESHOOTING

The following shows various problems, the apparent cause, and the recommended procedure for their correction.

POSSIBLE TROUBLE	CAUSE	CORRECTION
1. Mower will not rotate.	<ul style="list-style-type: none"> <li>A. Inline fuse blown.</li> <li>B. Safety switch not making contact.</li> <li>C. Broken drive belts.</li> <li>D. On/Off switch bad.</li> <li>E. Insufficient voltage through solenoid.</li> <li>F. Solenoid spool will not shift completely.</li> </ul>	<ul style="list-style-type: none"> <li>A. Replace fuse.</li> <li>B. Adjust or replace safety switch.</li> <li>C. Replace belts.</li> <li>D. Replace On/Off Switch.</li> <li>E. Check coil and wires.</li> <li>F. Clean or replace solenoid cartridge.</li> </ul>
2. Mower will not stop.	<ul style="list-style-type: none"> <li>A. Solenoid spool will not shift.</li> </ul>	<ul style="list-style-type: none"> <li>A. Clean or replace solenoid cartridge.</li> </ul>
3. Intermittent mowing power.	<ul style="list-style-type: none"> <li>A. Safety switch maladjustment.</li> <li>B. Electrical problem.</li> <li>C. Bad solenoid.</li> </ul>	<ul style="list-style-type: none"> <li>A. Adjust safety switch.</li> <li>B. Trace electrical circuit for short.</li> <li>C. Replace solenoid coil.</li> </ul>
4. Insufficient cutting power or low cuttershaft speed.	<ul style="list-style-type: none"> <li>A. Drive belts slipping.</li> <li>B. Bound shaft.</li> <li>C. Relief valve setting to low.</li> <li>D. Solenoid spool will not shift completely.</li> <li>E. Worn pump or motor.</li> </ul>	<ul style="list-style-type: none"> <li>A. Readjust belt tension and check idler springs.</li> <li>B. Free the shaft.</li> <li>C. Adjust relief valve.</li> <li>D. Replace valve cartridge.</li> <li>E. Replace or rebuild.</li> </ul>
5. Hydraulic oil overheating - mower free to rotate.	<ul style="list-style-type: none"> <li>A. Low fluid level.</li> <li>B. Relief valve setting too high.</li> <li>C. Obstruction in power circuit - Extra or will-fit parts.</li> </ul>	<ul style="list-style-type: none"> <li>A. Fill to proper level.</li> <li>B. Adjust relief valve.</li> <li>C. Remove obstruction &amp; extra items which are not standard.</li> </ul>
6. Pump making loud noise.	<ul style="list-style-type: none"> <li>A. Low oil level.</li> <li>B. Vacuum in reservoir.</li> <li>C. Clogged oil filter.</li> <li>D. Worn pump.</li> </ul>	<ul style="list-style-type: none"> <li>A. Add hydraulic fluid.</li> <li>B. Clean or replace breather valve.</li> <li>C. Replace filter.</li> <li>D. Replace or rebuild.</li> </ul>
7. Mower will not raise or raises slowly.	<ul style="list-style-type: none"> <li>A. Relief valve setting too low.</li> <li>B. Worn cylinder.</li> <li>C. Worn control valve.</li> </ul>	<ul style="list-style-type: none"> <li>A. Adjust relief valve. See Tractor manual.</li> <li>B. Replace or rebuild.</li> <li>C. Replace valve section. See Tractor manual.</li> </ul>

# OPERATION

## TROUBLESHOOTING (CON'T)

POSSIBLE TROUBLE	CAUSE	CORRECTION
8. System noisy.	<ul style="list-style-type: none"> <li>A. Air in system due to low oil level.</li> <li>B. Loose suction line.</li> <li>C. Clogged suction filter.</li> <li>D. Internal pump or motor damage.</li> </ul>	<ul style="list-style-type: none"> <li>A. Fill in reservoir to sight glass.</li> <li>B. Tighten fittings.</li> <li>C. Replace filter element.</li> <li>D. Disassemble, inspect, and repair.</li> </ul>
9. Sluggish response to acceleration or deceleration.	<ul style="list-style-type: none"> <li>A. Air in system.</li> <li>B. Internal pump or motor wear or damage.</li> </ul>	<ul style="list-style-type: none"> <li>A. See step 1A, 1B, 1C, 2B.</li> <li>B. Disassemble, inspect, and repair.</li> </ul>
10. Motor turns while unloaded but slows down or stops when load is applied.	<ul style="list-style-type: none"> <li>A. Scored back plate.</li> <li>B. Scored or worn piston shoes.</li> <li>C. Low relief valve pressure.</li> </ul>	<ul style="list-style-type: none"> <li>A. Remove backplate and examine surface condition of flat area; if scored, replace backplate. Do Not Lap.</li> <li>B. Disassemble motor examine, condition of shoes on pistons; replace pistons as a complete set if necessary. Do Not Lap.</li> <li>C. Check relief valve for proper pressure setting; adjust or replace relief valve.</li> </ul>
11. Motor will not turn.	<ul style="list-style-type: none"> <li>A. Severely scored backplate.</li> </ul>	<ul style="list-style-type: none"> <li>A. Disassemble motor completely. Inspect all parts, clean all parts, replace all worn parts and flush hydraulic system.</li> </ul>
12. Excessive case drain flow.	<ul style="list-style-type: none"> <li>A. Excessive internal wear in motor.</li> </ul>	<ul style="list-style-type: none"> <li>A. Disassemble motor, inspect parts and replace as necessary. Case drain flow should not exceed 1.5 GPM at full pressure.</li> </ul>
12. Mower Heads scalping.	<ul style="list-style-type: none"> <li>A. Center unit Top Link out of adjustment.</li> <li>B. Cutting height set to low.</li> </ul>	<ul style="list-style-type: none"> <li>A. Level front unit so that skid shoes are level with ground.</li> <li>B. Raise cutting height.</li> </ul>

# **MAINTENANCE SECTION**

# MAINTENANCE

## DAILY CHECKS

1. Lubricate the VERSA PRO at the specified intervals as outlined in the lubrication diagram. All mower grease fittings are equipped with lubricaps which snap over the grease fittings to prevent dirt from entering the fittings. Remove the cap and wipe the fitting before greasing. Wipe the outlet of the grease gun then grease the bearing. When finished, place the cap over the fitting and wipe any excess grease from around the cap. In extremely dusty conditions, it is desirable to lubricate more often than every 8 hours. Grease PTO shaft as outlined on the diagram located on PTO shaft shield. The idler pulleys are equipped with a sealed ball bearing and require no further lubrication. Caster wheel bearings should be repacked at the end of each mowing season and checked before the start of the next season. The gearbox is shipped with the proper amount of SAE No. 90 extreme pressure lubricant. Maintain the level of this oil at the lower 1/8" pipe plug on the gearbox cover. **LUBRICATE MOWER BEFORE INITIAL USE.**

2. Before each day's use, follow this procedure:

Visually check the unit, and make certain all items are properly tightened.

**NOTE:** *Cutter unit belt tension is maintained by a spring-loaded idler pulley.*

Check the reservoir fluid level with the cutter units in the transport position. The oil level should be even with the sight glass located on the reservoir. Before removing filler cap, wipe the top of the reservoir to prevent dirt from entering the tank.

**NOTE:** *If the reservoir needs oil, a leak exists somewhere in the system. Repair the leak before using the unit.*

Check the cuttershaft to make certain it is fully knived. Replace any missing knives or cotter pins, then run the unit at full speed to check for vibrations. Do not operate the unit in an out-of-balance condition.

**DANGER** Before doing maintenance, turn off power, and securely block up mower.



# MAINTENANCE

## LUBRICATION INFORMATION

Before operating your Mower, 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.

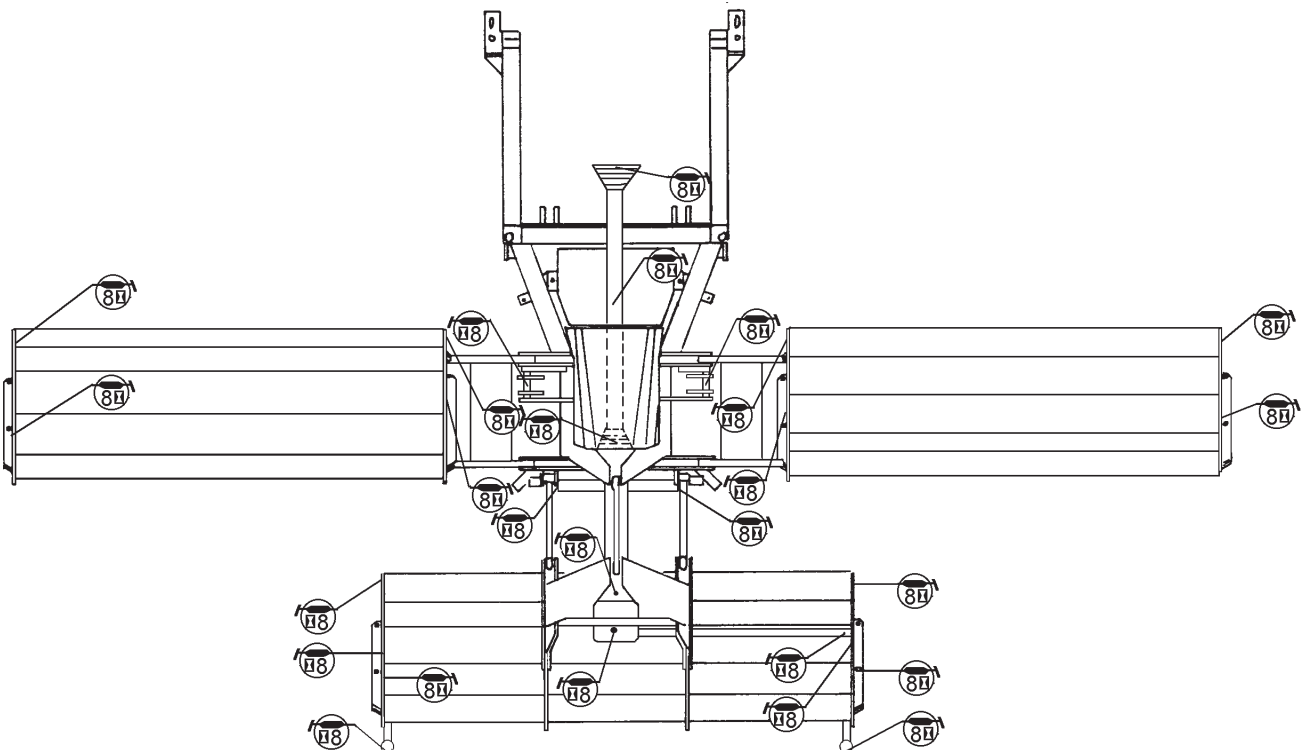
**WARNING!** Always disengage the PTO before raising the mower for transporting or making adjustments.



Do not let excess grease collect on or around parts, particularly when operating in sandy areas. The illustrations below shows lubrication points. All points should be lubricated daily under normal operating conditions. Severe or unusual conditions may require more frequent lubrication. **Figure 1.**

Use an SAE multi-purpose, lithium-type grease for all location 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, gearbox, and / or driveshaft.

**\*NOTE:**  
Lubricate flail roller bearing until lubricant can be seen coming out between roller and bearing housing.



**FIGURE 1**

**MAINTENANCE**

# MAINTENANCE

## CHANGING HYDRAULIC SYSTEM FILTER

A large capacity filter is located on top of the hydraulic oil reservoir. **Figure 2.** The filter will trap particles which are .001 inch or larger. The filter needs to be changed after the first 10 hours of operation and every 200 hours thereafter.

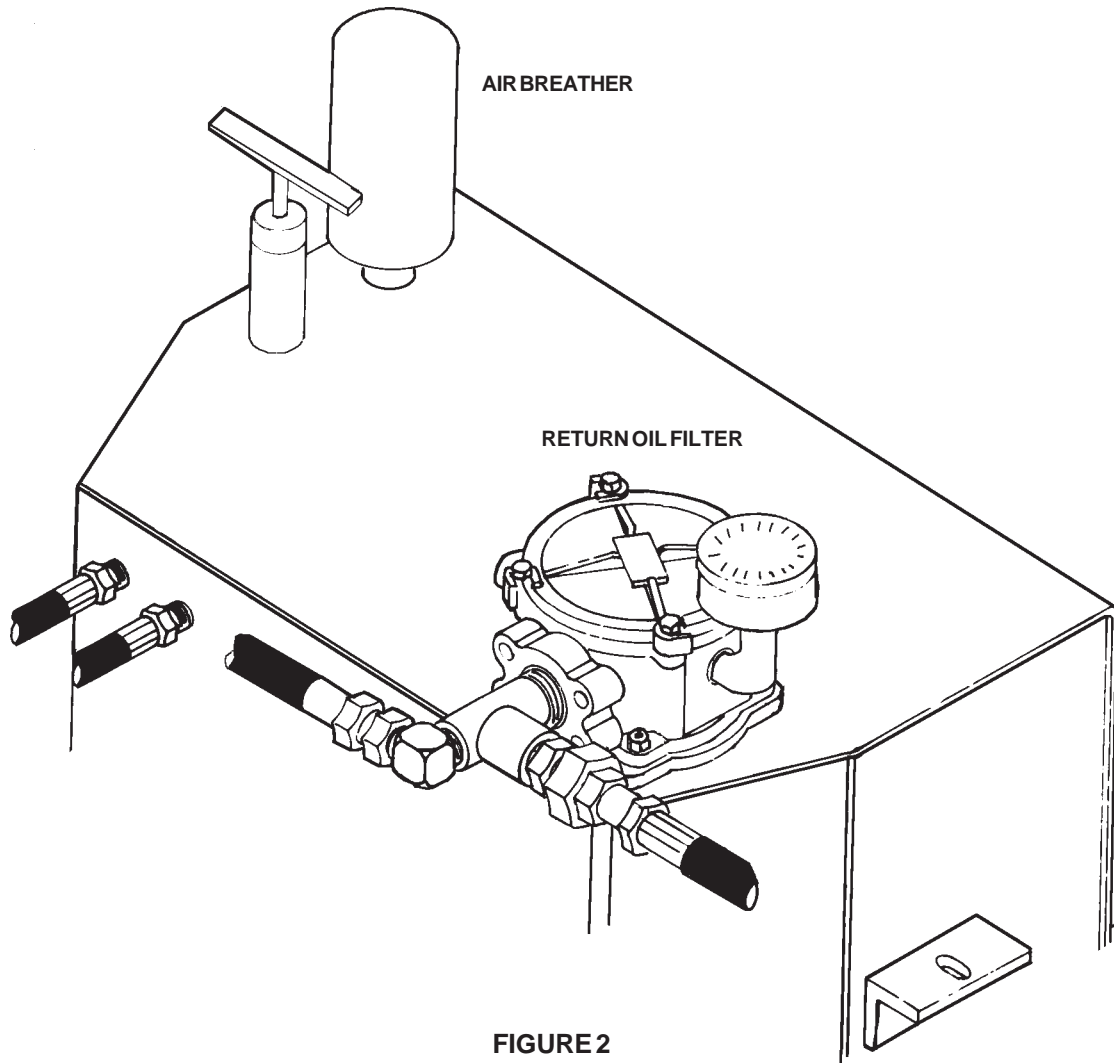


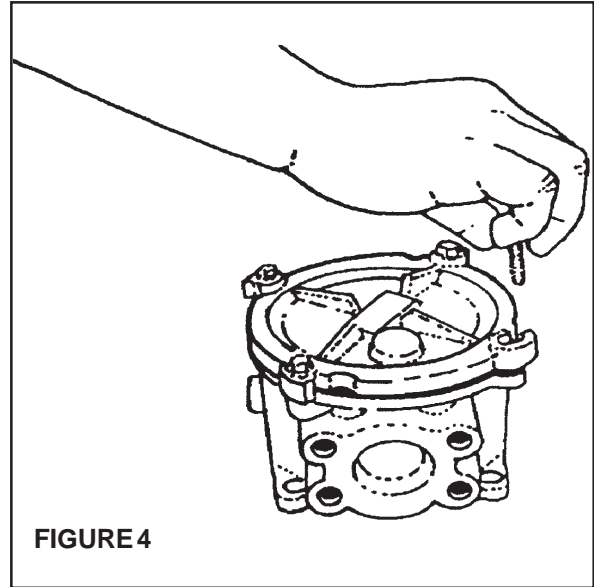
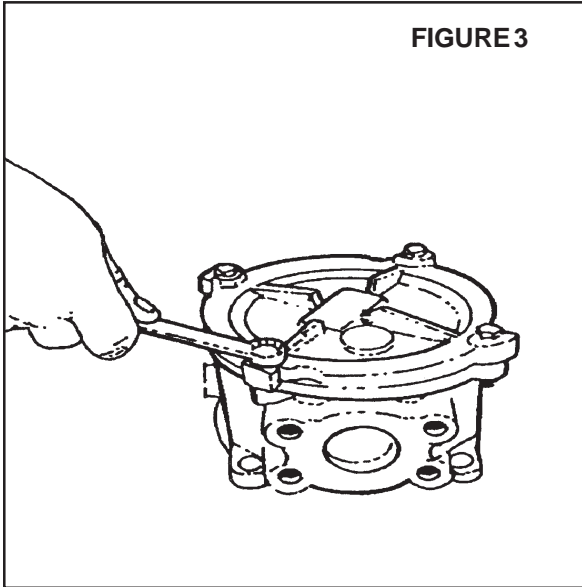
FIGURE 2

MAINTENANCE

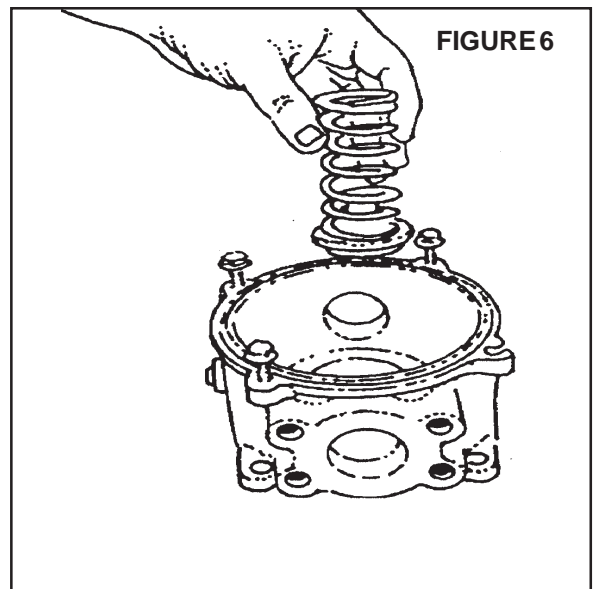
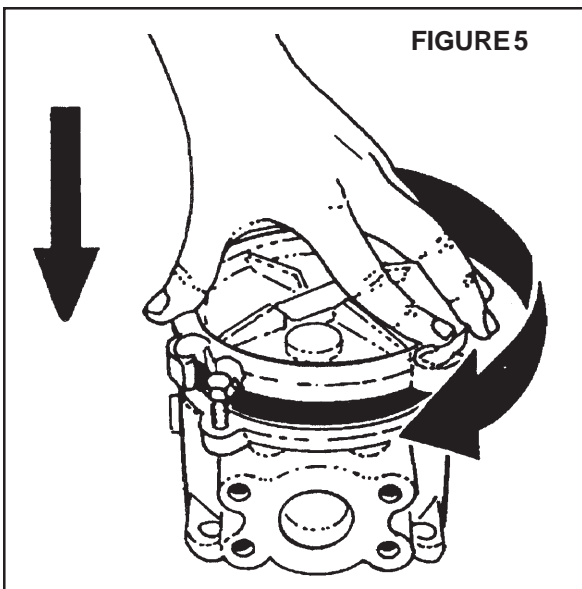
# MAINTENANCE

## CHANGING HYDRAULIC SYSTEM FILTER (cont'd)

1. Clean the filter cover to prevent dirt from entering tank.
2. Loosen the four bolts on the filter cover. **Figure 3.** Remove one bolt from the filter to aid in removing the filter cover. **Figure 4.**



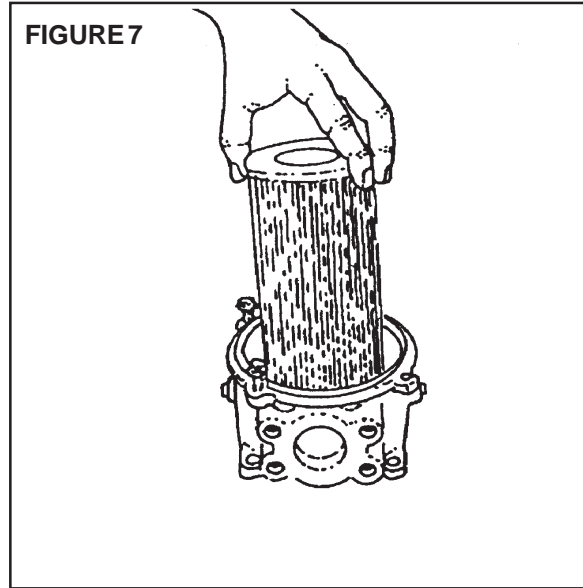
3. Push the filter cover down and slowly twist the filter cover off. **Figure 5.**
4. Remove filter spring. **Figure 6.**



# MAINTENANCE

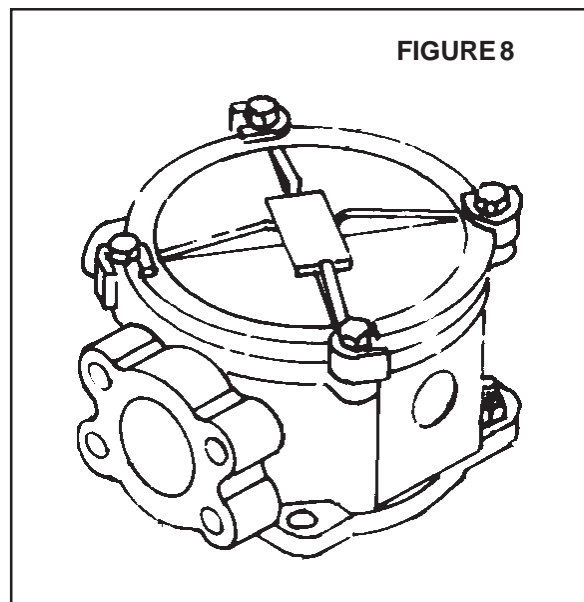
## CHANGING HYDRAULIC SYSTEM FILTER (cont'd)

5. Remove filter. Inspect material trapped by the filter. It can indicate parts wear in the system. **Figure 7.**



6. Install the new filter.

7. Reinstall filter spring and filter cover. Replace the one bolt which had previously been removed. Tighten all bolts in an even manner. **Figure 8.**



# MAINTENANCE

## GENERAL

Mowing is accomplished by a series of knives which rotate at high speed on a shaft. The shaft is driven by a hydraulic motor through a set of drive belts. Belt tension is maintained by a spring-loaded idler pulley.

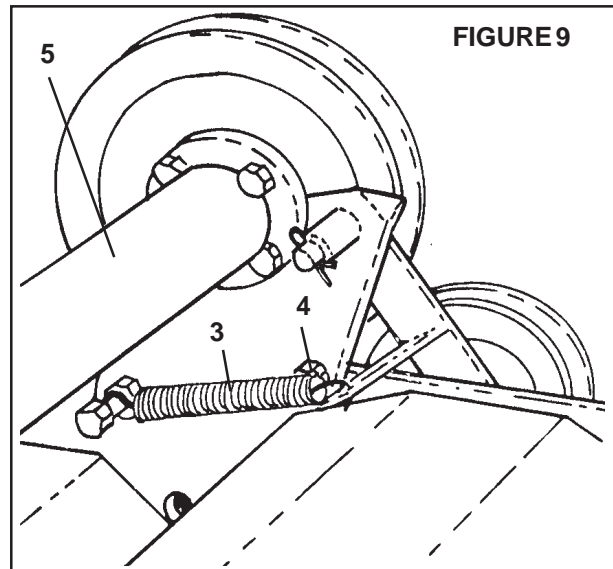
The cutter unit is mounted to the lift frame by two mounting pins and held in place by a hydraulic cylinder. This cylinder is used to tilt the cutter unit to allow mowing on an angle and tilting to the vertical position for transporting.

The cutter unit rides on a large roller assembly. The position of this roller is adjustable and will determine the cutting height of the knives.

## REPLACING CUTTER UNIT DRIVE BELTS

### Figure 9.

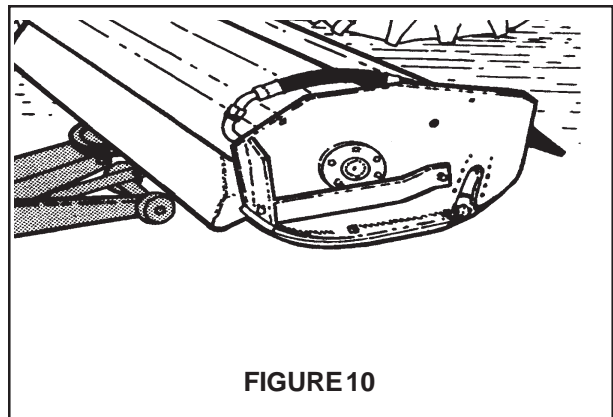
1. Place unit on ground or support securely.
2. Remove belt guard.
3. Remove idler arm spring.
4. Remove extension shaft housing mounting bracket front bolt and loosen rear bolt.
5. Loosen extension shaft housing mounting bracket rear bolt.
6. Pivot extension shaft housing mounting bracket assembly. Remove old belts and install new ones.
7. Reinstall front mounting bolt then secure extension shaft housing mounting bracket to unit.
8. Reinstall idler arm spring and belt guard.



## ADJUSTING CUTTING HEIGHT

### Figure 10.

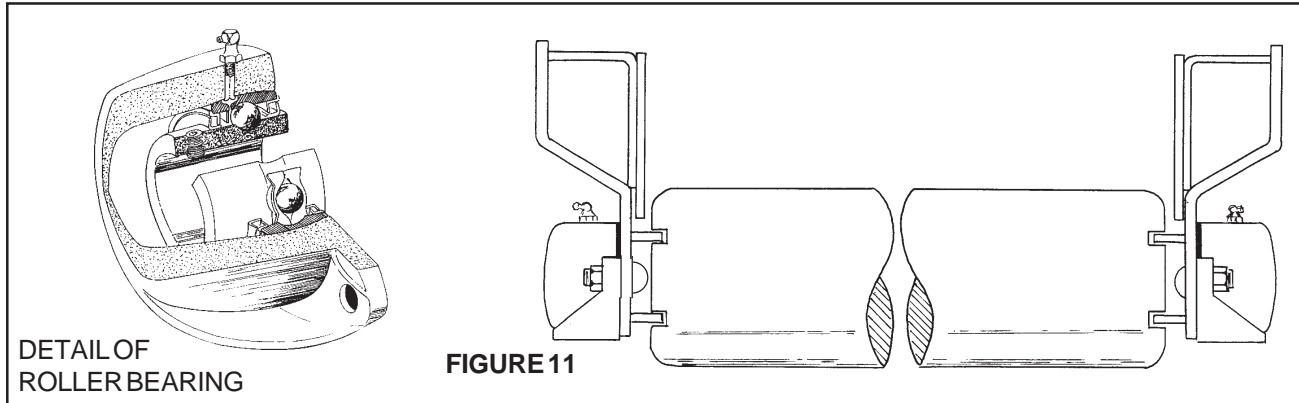
1. Lower cutter unit to ground.
2. Place lifting device (scissors jack, hydraulic jack) under center of cutter housing.
3. Remove hex nuts, washers and carriage bolts from bracket at each end of roller. Make certain that roller bracket is free to move once the fasteners are removed. A stuck roller could drop suddenly and cause an injury.
4. Use lifting device to reposition cutter housing to desired cutting height. Align bracket holes with cutter-housing holes, then reinstall fasteners.
5. Lower cutter unit to ground; then remove lifting device.



# MAINTENANCE

## ROLLER BEARING REPLACEMENT

Figure 11.



1. Remove roller and both bearing and bracket assemblies from mower. Lift the mower only high enough to remove the roller assembly.

**CAUTION:** Securely support mower while removing and installing roller assembly.



If installing a roller with preassembled bearing and bracket assemblies, remove the old roller, proceed to step 11.

2. Slide bearing and bracket assemblies off each end of roller.

If replacing with new bearing and bracket assemblies, proceed to step 9.

3. Remove roller bearing and housing assembly attaching hardware. Remove assembly from bracket. Inspect seal between assembly and bracket for brittleness, cracks, wear and tear. Replace if necessary.

If replacing with new roller bearing and housing assemblies, proceed to step 8.

4. Remove grease fitting from the top of bearing housing.

5. Remove bearing from housing. By rotating Bearing 90° sideways and line up with notches in Bearing Housing; then pull out.

6. Install new bearing into housing. Bearing must be installed with grease hole in bearing aligned with grease fitting hole in housing.

7. Reinstall grease fitting to housing. Grease fitting must be tight and seated in grease hole in bearing to prevent bearing from rotating in housing.

8. Attach roller bearing and housing assembly to bracket with seal between housing and bracket.

9. Slide bearing and bracket assemblies on each end of roller.

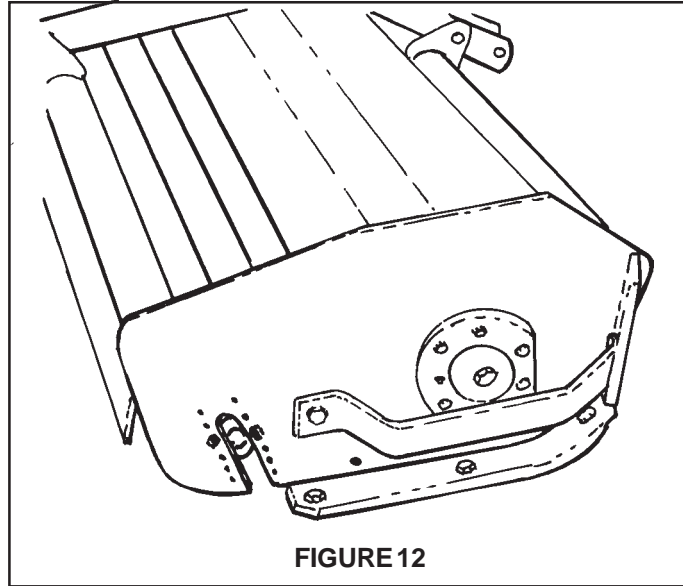
10. Check bearing for proper installation in housing by gently rocking bearing and bracket assembly in end of roller. Play should be slight to none at all.

11. Install roller and bearing and bracket assemblies on mower.

12. Lubricate roller bearing until lubricant can be seen coming out between roller and bearing housing.

# MAINTENANCE

## CUTTERSHAFT BEARING REPLACEMENT



### OUTBOARD BEARING. FIGURE 12

1. Lift cutter unit to maximum horizontal height; then, securely support ends of cutterhousing.
2. Remove enough knives to place a floor jack under center of cuttershaft.
3. Securely support cuttershaft.

**NOTE:** The cuttershaft must remain supported while changing bearings.

4. Remove outboard fender.

5. Remove fasteners securing bearing and housing assembly to cutterhousing; then remove bearing and housing assembly.

**NOTE:** There are two tapped holes in the housing which can be used to pull bearing and housing assembly out by using special tool No. 701627.

6. Using a jack to align parts, install bearing and housing assembly to cutter unit and make certain that bearing setscrew is located in keyway on cuttershaft. Grease bearing and install cap over fitting.

If only the outboard bearing and housing assembly is to be replaced, proceed as follows: Remove jack and check shaft rotation. Reinstall knives which were removed. Reinstall outboard fender. Remove supports. Lower unit to ground and test unit.

If the inboard (drive) bearing is to be replaced, proceed to step 7.

# MAINTENANCE

## CUTTERSHAFT BEARING REPLACEMENT (cont'd)

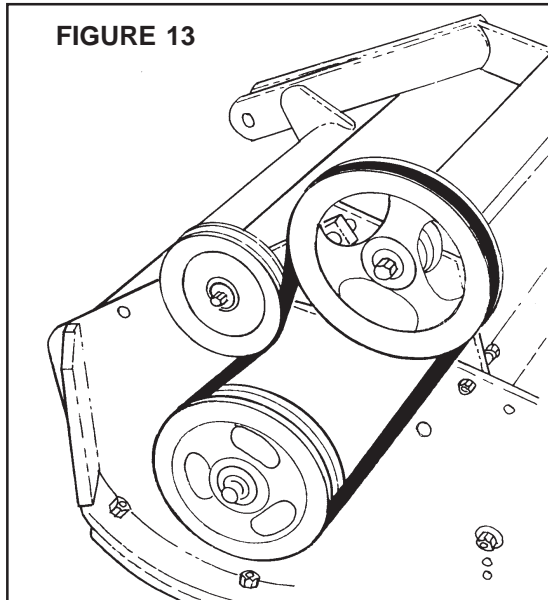


FIGURE 13

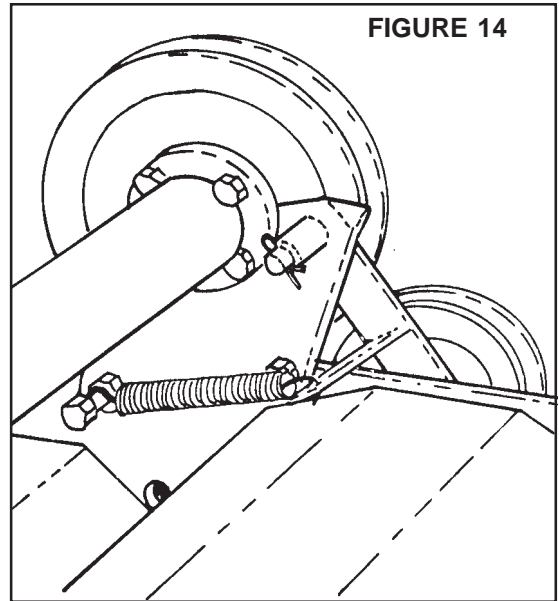


FIGURE 14

INBOARD (DRIVE) BEARING. FIGURE 13 & 14.

7. Remove Belt Guard.
8. Remove spring from idler arm.
9. Remove extension shaft housing mounting bracket fasteners at the cutterhousing. Pivot mounting bracket assembly and remove drive belts.
10. Remove fasteners that secure pulley to cuttershaft. Remove pulley and key.
11. Remove fasteners securing inboard bearing and housing assembly to cutterhousing; then, remove bearing and housing assembly.

**NOTE:** There are two tapped holes in the housing which can be used to pull bearing and housing assembly out by using special tool No. 701627.

12. Using a jack to align parts, install inboard bearing and housing assembly to cutter unit. Grease bearing and install cap over fitting.
13. Reinstall key and pulley. Secure with cuttershaft fasteners.
14. Remove jack and check shaft rotation. Reinstall knives which were removed.
15. Reinstall drive belts then secure motor mounting bracket to cutterhousing.
16. Reinstall idler arm spring.
17. Reinstall belt guard.
18. Remove supports, lower unit to ground and test unit.  
Reinstall outboard fender, if not already installed.

### CUTTERSHAFT REPLACEMENT

**NOTE:** It is recommended that cuttershaft bearing and housing assemblies be replaced when replacing cuttershaft.

1. Place unit on the ground or securely support at a convenient height.
2. Remove cuttershaft bearing and housing assemblies as outlined above. After removing both assemblies, the cuttershaft can be removed and a new one installed. It may be necessary to remove two sets of knives nearest the drive end of cuttershaft.
3. Install new bearing and housing assemblies.

# MAINTENANCE

## Changing to Forward or Reverse Rotation

### WING MOWERS

The hydraulic wing motors are dual rotation motors which means they will rotate in either direction depending on the inlet port used. An arrow on the flat surface of the motor housing at both ports indicate the direction of rotation. To change rotation, remove the four bolts that mount the manifold block to the motor. Remove the case drain hose at the motor, but leave it attached in present location at the manifold block. Leave all other plumbing as presently installed at the manifold block. Remove the two mounting bolts at the motor mounting plate and rotate the motor 180 deg. This changes the present inlet port into the outlet port of the motor. Re-install manifold block but do not change the position. Install case drain hose.

### CENTER MOWER

To change direction of cuttershaft rotation for the center mower, three parts are required. A belt guard, an outboard bearing plate and a idler pulley arm. (Consult parts book for these part numbers). Remove the cuttershaft and turn 180 deg. remove the gearbox cuttershaft drive pulley and outboard bearing plate, (using the proper bearing plate) mount the plate to opposite side of mower housing. Remove the four bolts that mounts the gearbox and rotate gearbox 180 deg. to new position. Install cuttershaft pulley, gearbox output pulley, idler arm pulley assembly and belt. REPLACE EXISTING BELT GUARD WITH PROPER GUARD.

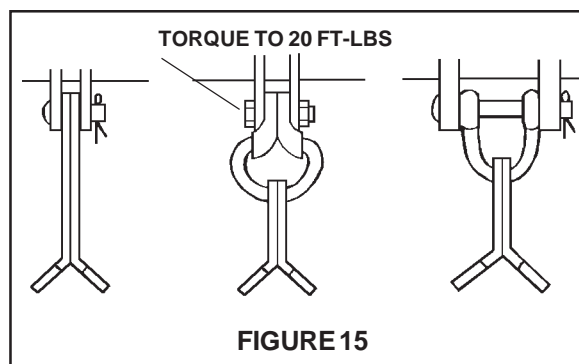
## Replacing Cutter Unit Knives

The cutter knives are attached to the cutter shaft with hardened pin and cotter pins. These pins are supplied with the knife kit. To remove existing knives, remove and discard these pins and install new knives using new pins.

### Figure 15.

FOR FORWARD ROTATION: On the right wing and center unit, all knife pins must be installed with their heads facing away from the cuttershaft pulley. On the left wing, the heads of the knife pins must face the cuttershaft pulley.

FOR REVERSE ROTATION: On the right wing and center unit, all knife pins must be installed with their heads facing toward the cuttershaft pulley. On the left wing, the heads of the knife pins must face away from the cuttershaft pulley.



# MAINTENANCE

## HYDRAULICS

### GENERAL

VERSA PRO hydraulic system consists of two circuits. The power circuit drives the cuttershaft. The control circuit lifts and tilts the cutter unit.

*NOTE: It is important that pipe thread sealant be used on solid connections only; never on connections between swivel fittings or fittings with "O" rings and straight threads. Use pipe thread sealing compound. DO NOT substitute other types of sealant, such as teflon tape, paint, shellac, etc.*

### INITIAL START-UP PROCEDURES

Whenever the hydraulic system is drained in order to service a hydraulic component, the following start-up procedure should be completed.

1. Check all nuts and bolts to be sure they are tight and that all lock washers are fully compressed.
2. Check all hoses and hydraulic connections to be sure that they are tight.
3. Inspect all moving parts, and make certain that no wires or hoses will be caught or pinched when the tractor is in operation.  
Secure all wires and hoses.
4. Thoroughly lubricate the VERSA PRO. Refer to Illustration 1, Page 5-3.
5. Change the hydraulic filter and fill the reservoir to the sight glass with new hydraulic oil. Refer to 2-5 for specifications.

**CAUTION:** Remove all objects from, and stand clear of, the front of the cutter unit.  
**DO NOT GET NEAR ROTATING KNIVES!**

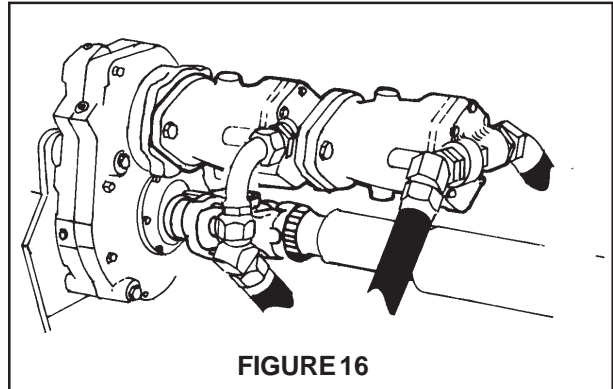


6. Turn mowers off, then start tractor and run engine at low idle. Operate the cylinder, (turn cutter units on ONLY when mowers are fully lowered). Operate until the system is fully charged. Recheck the fluid level and add oil, if necessary. If undue noise continues after the system is fully charged, stop the unit and determine the cause.
7. After the hydraulic system is fully charged and functioning properly, switch the mowers on and increase the engine speed to run the PTO at 540 RPM. Maintain this speed for 5 minutes and look for any leaks or possible problems.

# MAINTENANCE

## HYDRAULIC PUMPS

The pump unit assembly is made up of the oil reservoir, gearbox, and hydraulic pump. The pump is driven by the Tractor PTO through a drive shaft. Therefore, oil is being pumped whenever the PTO is engaged. When the mower is off, oil is directed to the reservoir by the solenoid motor control valve and does not flow to the cutter motor. Cooling is provided by patented in frame cooling tubes in the wing mowers.



### REPLACING HYDRAULIC PUMPS (FIGURE 16)

The pump unit for the power circuit is a piston fixed displacement pump (see specifications) and is PTO driven. It is mounted on the mainframe above the hydraulic reservoir. There is a separate pump for each wing. By following the hose routing, the operator can determine each wing mower's supply source. Each pump has a case drain to eliminate excessive fluid in the pump. All excess fluid in the pump is routed back to the reservoir through the case drain.

Replacing Outer Pump:

1. Remove the Pump Cover by unscrewing the wing nut which holds it in place.
2. Disconnect the outer Pump Suction Hose, Case Drain Hose, and the Pressure Hose.

**NOTE:** Clean spills at once. Cap all hoses immediately to prevent contamination of the hydraulic system.

3. Remove the two bolts which attach the outer pump to the inner pump flange.
4. Remove Pump. Lightly oil new "O" Ring and place on inner pump flange. Install the new Pump with the pump drain ports facing Hydraulic Tank.
5. Reinstall hydraulic hoses. Tighten hose fittings to their proper torque. Refer to Torque Chart.
6. Reinstall Pump Cover and tighten the four thumb screws securely.

Replacing Inner Pump:

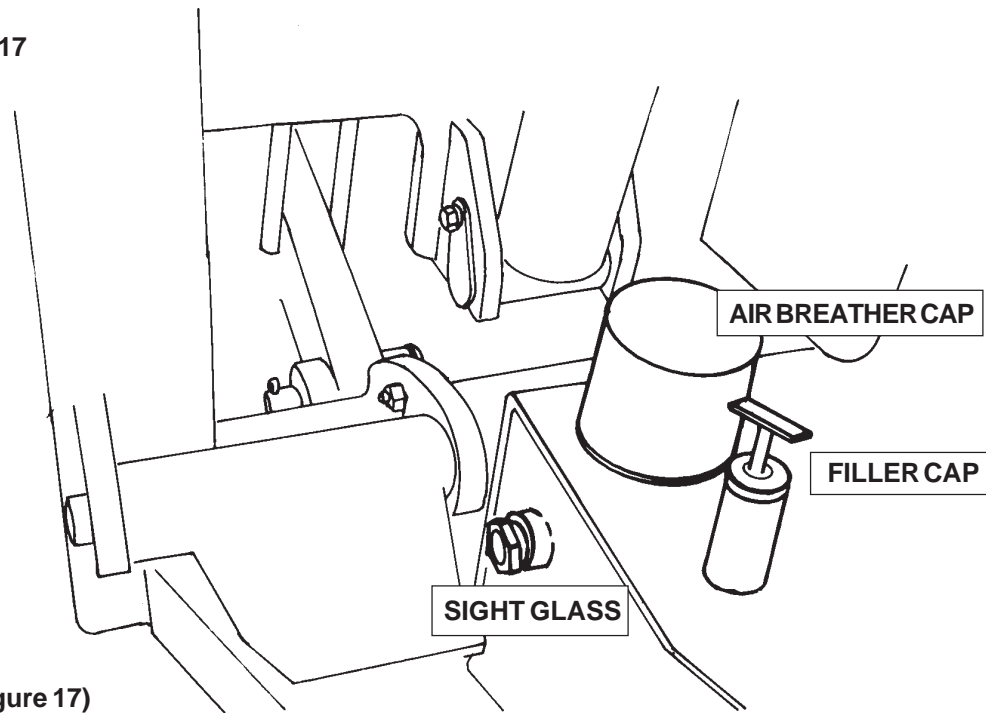
7. To replace inner pump both pumps must be removed. Follow same procedure as for outer pump. BE SURE TO CAP ALL HOSES AND CLEAN OIL SPILLS AT ONCE.

**NOTE:** Clean spills at once. Cap all hoses immediately to prevent contamination of the hydraulic system.

8. Separate the inner pump from the outer pump and install new pump to inner pump following step 4 making sure both case drain ports are facing hydraulic reservoir.
9. Reinstall pumps to pump mounting bracket.
10. Reinstall all hoses. Tighten hose fittings to their proper torque refer to torque chart.
11. Reinstall all guards.

# MAINTENANCE

FIGURE 17



RESERVOIR (Figure 17)

The reservoir stores hydraulic system oil. The breather cap which is mounted on top of the reservoir prevents a pressure buildup or vacuum from occurring in the tank as oil level changes. There is also an oil filler cap which is used to fill the reservoir with oil. To help prevent dirt from entering the tank, clean the top of the reservoir before removing the cap. THE BREATHER CAP HOLDS APPROX 11 PSI PRESSURE IN TANK. REMOVE FILLER CAP SLOWLY

The oil level sight glass is located on the side of the reservoir. The oil level should be even with the sight glass and checked with the cutter unit in the transport position. The oil temperature should not exceed 180 deg.F.

The oil return hoses are connected to the hydraulic filter on top of the reservoir. Oil is returned from cutter unit cooling tubes and filtered before entering the hydraulic reservoir.

SOLENOID CONTROL VALVE (FIGURE 18)

A. CONTROL VALVE

B. SOLENOID

The solenoid control valve directs oil flow from the hydraulic pump. When the mower ON/OFF switch is in the "ON" position, the solenoid is energized and the spool within the valve is positioned to direct oil to the cuttershaft motor.

When the mower ON/OFF switch is in the "OFF" position, oil pressure within the valve pushes the spool back which allows the oil to circulate through the cutter unit before returning to the reservoir. When the flow of oil to the motor

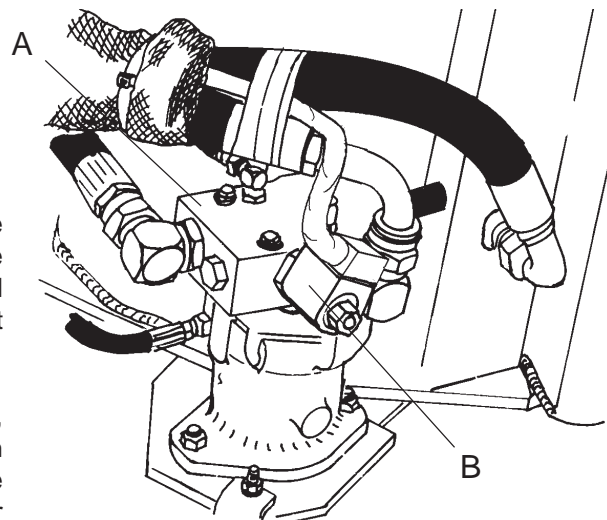


FIGURE 18

# MAINTENANCE

## SOLENOID MOTOR CONTROL VALVE (cont'd)

### CHECKING SOLENOID VALVE

- a. With engine running, turn the mower ON/OFF switch in the "ON" position. Check voltage level at the solenoid.
- b. If it is less than 12 volts, check wiring and ground connections. Checking ground wire is as important as checking the hot wire. If voltage is sufficient, the solenoid valve is bad and will need to be replaced.

### HYDRAULIC PUMP

#### DISASSEMBLY

1. Disconnect all hydraulic lines. Remove pump assembly from tractor.
2. Plug all ports and thoroughly clean outside of pump.
3. Clamp the end of the drive shaft in a protected jaw vise with the body of the pump up and remove the sixcap screws from the back plate.
4. Use a plastic mallet and tap the back plate assembly to loosen it, then pull back plate straight up until it is free. Remove gasket.
5. Remove pump from vise and remove rotating assembly from pump housing.
6. If the pistons did not come out with the piston block, remove them, the spider, and the spider pivot.
7. The piston block assembly need not be disassembled unless the internal pins of spring is damaged.

#### CAUTION!



The following procedure should be used if the spring is to be removed from the piston block assembly. The spring is highly compressed and the snap ring should not be removed without first compressing the spring.

The following parts will be needed to disassemble the piston block:

- 2 ea. 3/8 I.D. x 1-1/8 O.D. flat washer
- 1 ea. 3/8 x 3-1/4 N.C. capscrew
- 1 ea. 3/8 N.C. nut

Place one of the flat washers over the 3/8 x 3-1/4 cap screw and place this through the center of the piston block. Place the other washer over the cap screw and let it rest on the three pins. Screw the nut on and compress the spring inside the piston block. Use a pair of snap ring pliers and remove the internal snap ring. Remove the bolt and the two washers. Remove the washers, spring, three pins, and the internal pin keeper.

8. Remove snap ring from housing. Press shaft from housing and remove shaft seal and washer.
9. Remove the two snap rings, thrust bearing, and two thrust washers from the drive shaft.
10. To remove the camplate from housing, remove the four screws from sides of the housing. Remove trunnion cover, seal cover, and o-ring cover. Remove o-ring, seal, two washers, inner race, and needle bearings. The cam plate can now be moved over to one side and removed. The cam plate pivot bearing are a loose slip fit into the housing. Do not be concerned if they are not tight.

# MAINTENANCE

## INSPECTION

1. Inspect flat surface of the backplate. The finish on the piston block side should be smooth and free of grooves. **DO NOT LAP BACKPLATE WEAR SURFACE.** The backplate should be replaced if it shows any of the wear characteristics outlined above. Inspect the needle bearing in the backplate. If the needles are free of excessive play and remain in the bearing cage, there is no need to replace the bearing.
2. Inspect the piston block. The wear surface that contacts the backplate should be smooth and free of grooves. **DO NOT LAP PISTON BLOCK.**
3. The pistons should move freely in the piston block bores. If they are sticky in the bore, examine the bore for scoring or contamination.
4. Examine the O.D. of the pistons for finish condition. They should not show wear or deep scratches. The shoes should be a snug fit on the ball end of the pistons. The flat surfaces of the shoes should be flat and smooth. **DO NOT LAP THE PISTON SHOES.**
5. Examine the spider. It should be flat, no cracks and no signs of wear in the pivot area.
6. Examine the pivot. It should be smooth and show no signs of wear.
7. The cam plate should be inspected for the condition of the finish of the polished shoe surface. It should show no signs of scoring. Inspect the camplate pivot bearings. If the needles are free of excessive play and remain in the bearing cage, there is no need to replace the bearing.
8. Inspect the drive shaft for fretting in the bearing and spline areas.
9. Inspect the thrust bearing and thrust washers for wear.
10. Inspect the needle bearing in the housing. If the needles are free of excessive play and remain in the bearing cage, there is no need to replace the bearing.

## REASSEMBLY

1. Clean all parts in a suitable solvent. Lubricate all critical moving parts before reassembly. If necessary, install new needle bearing in housing with numbered end of bearing outward.
2. Insert cam plate into housing. Insert needle bearings and inner race. The chamfered I.D. of the race should be inward. Install washers, o-ring seal, o-ring cove, trunnion cover, seal cover, and retain with four screws and tighten to 36-48 in. lbs.
3. Install snap ring on shaft. Install thrust washer, thrust bearing, and second thrust washer. Secure with second snap ring.
4. Install shaft in housing and install washer and shaft seal and retain with snap ring.
5. Compress pin keeper and install in the spline of the piston block. Install the three pins with head end to the inside of the block, and install in the special grooves of the piston block spline.
6. Install washer, spring, and second washer in the piston block. Use the two 3/8 I.D. washers and the 3/8 x 3-1/4 cap screw to compress the spring and retain with snap ring. Remove the 3/8 x 3-1/4 cap screw and the two washers.

# MAINTENANCE

7. Install the pivot, spider, and the piston assemblies in the piston block. Install this assembly in the housing assembly. The piston shoes must be in contact with the cam plate. Be sure all the parts are in their proper position.
8. Clamp this assembly in a protected jaw vise with the open end of the housing up.
9. Install new gasket.
10. Install relief valves and springs into backplate.
11. Install backplate assembly. Install sixcap screws and torque to 27-31 ft. lbs.



# 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

# MAINTENANCE

## HYDRAULIC MOTOR DISASSEMBLY

1. Clean outside of unit thoroughly. Refer to Hydraulic Motor illustration in the Parts Listing section.
2. Clamp shaft in a protected jaw vise with backplate end up.
3. Remove six bolts from backplate.
4. Use a plastic mallet and tap the backplate to loosen it.
5. Remove o-ring from backplate.
6. Remove the complete piston block assembly from the housing assembly.
7. Remove piston assemblies, spider, and pivot from piston block assembly.
8. The piston block assembly need not be disassembled unless the pins or spring is damaged.

### CAUTION!



The following procedure should be used if the spring is to be removed from the piston block. The spring is highly compressed and the snap ring should not be removed without compressing the spring.

The following parts will be needed to disassemble the piston block:

- 2 ea. 3/8 I.D. x 1-1/8 O.D. flat washer
- 1 ea. 3/8 I.D. x 3-1/4 N.C. capscrew
- 1 ea. 3/8 N.C. nut

Place one of the flat washers over the 3/8 x 3-1/4 bolt and place this through the center of the piston block. Place the other washer over the bolt and let it rest on the three pins. Screw nut on and compress the spring inside the piston block. Use a pair of snap ring pliers and remove the internal snap ring. Remove the bolt and two washers. Remove the two washers, spring, three pins, and pin keeper.

9. Remove thrust race from housing.
10. Remove snap ring from housing.
11. Remove shaft seal from housing.
12. Remove washer from housing.
13. Remove drive shaft from housing.
14. Remove the two snap rings, thrust washers, and thrust bearing, from drive shaft.

## INSPECTION

1. Wash all parts thoroughly in a suitable solvent.
2. Examine needle bearings in housing and backplate.
3. Inspect thrust washers and thrust bearing. All surfaces should be free of any signs of wear or fretting.
4. Inspect spider and pivot; conical surfaces should be free of wear and score marks.

# MAINTENANCE

5. Inspect the pistons: the O.D. surface should be smooth and free of scoring. The shoes should be snug fit to the piston. The face of the shoes should be flat and free of scoring and flaking. **DO NOT LAP PISTON SHOES.**
6. Inspect the piston block; the bores should be free of scoring. The surface that contacts the backplate should be smooth and free of grooves or metal build-up. Do not lap piston block.
7. Inspect the thrust race; the surface should show no signs of scoring or grooves.
8. Inspect the flat surface on the backplate; it should be free of excessive scoring or metal build-up. **DO NOT LAP BACKPLATE.**
9. Inspect the drive shaft for fretting in the bearing areas. Check spline area for twisted or broken teeth. If keyed shaft, check for cracked or chipped keyway.

## REASSEMBLY

1. Use filtered system oil to lubricate all critical moving parts before assembly.
2. Install one snap ring in rear groove of drive shaft. Install one thrust washer, thrust bearing, and second thrust washer on drive shaft. Install second snap ring in front groove on drive shaft.
3. Replace needle bearing in housing if necessary. Install shaft in housing assembly and install washer. Oil O.D. of new shaft seal and press into position. Retain with snap ring.
4. Compress pin keeper and install in the spline area of the piston block.
5. Install the three pins in the special grooves of the spline and with head end of pin toward inside of bock.
6. Install one washer, spring, and second washer. Use the two 3/8 I.D. washers and the 3/8 x 3-1/4 capscrew to compress the spring and retain with snap ring. Remove the 3/8 x 3-1/4 capscrew and two washers.
7. Install the pivot, spider, and the piston assemblies in the piston block assembly.
8. Lubricate thrust race and install in housing assembly.
9. Install piston block assembly in housing assembly. The piston shoes must contact the thrust race. Be sure all parts are in their proper position.
10. Install new needle bearing in backplate if necessary.
11. Install new o-ring on backplate.
12. Install backplate on housing.
13. Install six capscrews and torque 15-18 ft. lbs.
14. On through shaft type assembly, install shaft seal and snap ring in backplate. Install key in drive shaft.

# MAINTENANCE

## LIFT CYLINDERS (FIGURE 19)

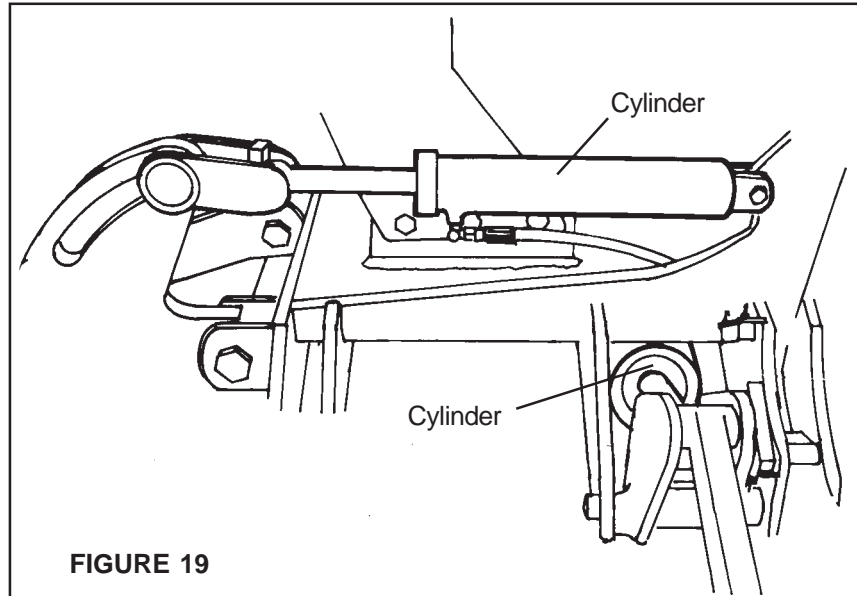


FIGURE 19

### DISASSEMBLY OF LIFT CYLINDER

For part numbers and illustration, refer to the Parts Listing section.

1. Disconnect hoses at cylinder. Cap all hoses to prevent fluid contamination. Remove cylinder from unit.
2. Remove reducer bushing and snap ring which retains the rod guide. Remove rod guide, rod, and piston. Remove guide and piston from rod.
3. Replace all "O" rings, back-up washers, and rod wiper. Inspect rod, guide, piston, and body for damage.
4. Clean inside of cylinder with mineral spirits. DO NOT wipe dry; air dry instead. Lint, dirt, and grit can cause immediate or premature failure.
5. Lubricate all parts with clean hydraulic oil and reassemble.
6. Reinstall cylinder with stop located on the upper side, to prevent bending the rod.

# MAINTENANCE

## EXTERNAL COIL

### SLIP CLUTCH DISK REPLACEMENT

#### A. TO DISASSEMBLE EXTERNAL COIL SPRING CLUTCH (Refer to FIGURE 20)

Before beginning disassembly, remove or fold shields out of the way and clean off dirt and trash from the area.

1. Remove two Attaching Bolts (6). Remove Clutch Assembly from shaft of Gearbox. Leave Driveline or Driveline Half attached to Clutch.
2. Loosen six Adjusting Bolts (1). **LOOSEN EACH BOLT A FEW TURNS AT A TIME - NOT ALL AT ONCE.** Continue in rotation until Nuts are loose. Remove these Bolts. Flange Yoke (9) will slide off. On Clutches that have Dust Shields (11), Shields will slide off with Flange Yoke. **Note: Some types do not have Dust Shields.**
3. On the opposite side, Outer Flange (2) will slide off which will allow Clutch Plate (3) to slide over notches on outside diameter of Clutch Body (5).
4. Remove Plate with six bolt holes (7). **Note: Bolts (1) go through these holes.**
5. Remove the four Friction Disks (4) and discard. **DO NO RE-USE.**

#### B. TO CLEAN AND INSPECT

1. Inspect all components for rust, wear, or damage. Check Spacer (8) for scoring or excessive wear. Clean Clutch Plates and Drive Plates with a wire brush as required to remove any rust.

#### C. TO REASSEMBLE (Refer to Figure 20)

1. After all parts have been inspected, cleaned or replaced as necessary, replace components in reverse order from disassembly **USING THE NEW, IMPROVED DISKS.** Do not tighten the six Adjusting Nuts and Bolts (1) until assembly is complete.

#### D. TO ADJUST (Refer to Figure 21)

1. To adjust Slip Clutch, tighten Bolts (1) until the Nut makes contact with Compression Spring (10).
2. After all six Bolts have been assembled so that Nuts contact Springs, mark the position of the top flat on each Nut.. Tighten Nuts 1-3/8 turns as follows:  
**Do NOT** tighten one bolt completely. Tightening as shown in rotation will put equal pressure all the way around on Friction Disks and Drive Plates.
  - a. Tighten the Nuts (1) one-half turn in rotation.
  - b. Tighten one-half turn again until the marks on the Nuts are on top as in the beginning.
  - c. Then, carefully tighten 3/8 of a turn. As a double check, the Springs should now be **COMPRESSED TO 1-11/32" (1.34") TO 1-5/16" (1.31") long. SEE FIG 21.**
3. Re-assemble Clutch to Gearbox. Tighten Bolts (6) securely.
4. If Clutch slips too easily, **STOP PTO AT ONCE.** Tighten each Adjusting Nut (1) **NO MORE THAN ¼ TURN AT A TIME. NEVER TIGHTEN SPRINGS SHORTER THAN 1-9/32" (1.28") LONG EVEN AFTER DISK WEAR.**

**NOTE: EXCESSIVE SLIPPING WILL BURN UP DISKS AND SLIP CLUTCH TO THE POINT WHERE THE CLUTCH IS NOT REPAIRABLE. HOWEVER, EXCESSIVE TIGHTENING WILL PREVENT THE SLIP CLUTCH FROM SLIPPING AND CAN LEAD TO FAILURES OF DRIVETRAIN COMPONENTS WITH RESULTING DOWNTIME.**

#### E. TO REPLACE SHIELDS

1. Make certain that all Driveline Canopy Shields are in good repair and rotate smoothly on the Drivelines. Replace Bearings and/or Integral Shields if necessary.
2. Re-install Gearbox Canopy Shields with the same hardware and tighten securely.

# MAINTENANCE

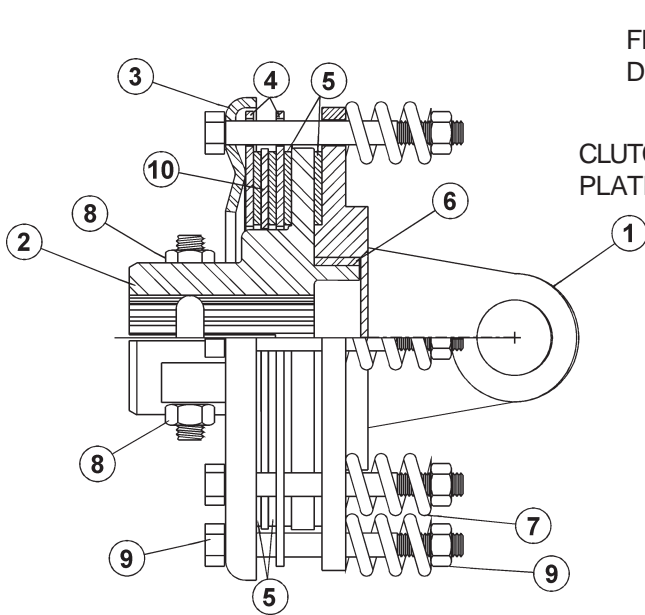


FIGURE 20  
SPRING CLUTCH

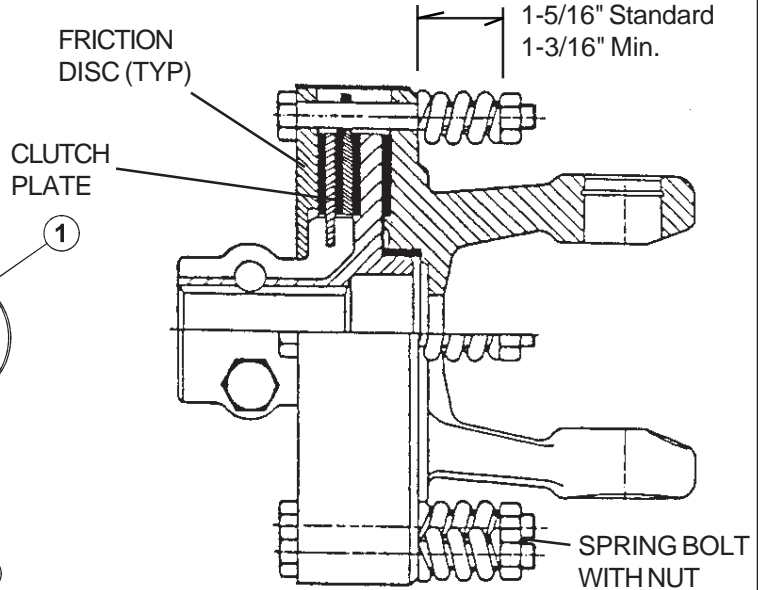


FIGURE 21  
SLIP CLUTCH ADJUSTMENT

ITEM	PART NO.	QTY	DESCRIPTION
1	00754302	1	Flange Yoke
2	00755599	1	Clutch Support
3	00766810	1	Pressure Plate
4	00754314	2	Plate with Holes
5	00754202	4	Lining Ring
6	00754301	1	Bushing
7	00754303	8	Spring
8	00755600	2	Nut & Bolt
9	00754199	8	Nut & Bolt
		8	Nut & Bolt
10	00754201	1	Intermediate Plate

## SLIP CLUTCH PRECAUTIONS

If **MOWER** is to sit outside **FOR 30 DAYS** or more and be exposed to rain or humid air, the **CLUTCHES** should be removed and **STORED IN A DRY AREA**.

However, if **CLUTCHES** are left outside for 30 days or more, make certain that you follow **BREAK-A-WAY INSTRUCTIONS** shown below.

It is very important to check for and **FREE-UP EVERY FROZEN CLUTCH** to prevent drivetrain's overloading and possible failure of drivetrain or tractor components.

### A. TO TEST FOR FROZEN CLUTCHES:

1. Mark across Clutch Disks and Plates plainly with soft chalk so that you can tell if Clutch slips (would mis-align the marks).
2. With mower lifted off the ground, PTO engaged, and tractor engine at half throttle, let the tractor clutch out rapidly to see if all Slip Clutches will slip.
3. If all Clutches slip and provide protection for the drivetrain, you are ready to mow if you have performed all normal maintenance.

### B. IF MACHINE IS STORED OUTSIDE FOR 30 DAYS OR MORE:

1. Before mowing, back off all Adjusting Nuts (1) until Nuts just touch Springs (10). Then, tighten Nuts one full turn uniformly.
2. Mark Plates and Disks as in A.1. above. With PTO engaged and tractor running at **HALF THROTTLE**, let Clutch out rapidly to "pop" Slip Clutches loose. If all Slip Clutches slip as is necessary, adjust as is shown at "D" on other side, and you are ready to mow if you have completed all normal maintenance.

# MAINTENANCE

## ATTENTION!!

Buy clean Dextron II AT Oil and keep it clean. Always clean off filler area and pour new oil through a filter.

### VERSA PRO TANK FILLING INSTRUCTIONS *USE Universal Tractor Hydraulic oil only.*

A VERSA PRO will require approximately 26 gallons of oil to fill the hydraulic tank, hoses, and cooling tubes in the mower deck. The Hydraulic tank only holds 15 gallons of oil and you can not add enough oil to the tank the first time to completely fill the system. Therefore, the following filling instructions must be carefully followed to prevent pump cavitation and instant pump failure.

1. After the VERSA PRO mower is completely assembled to the tractor and with the wings on the ground, fill the mower hydraulic tank above the oil level sight gauge approximately 1" below the top of the tank. Use Universal Tractor Hydraulic Oil only.
2. Start the tractor and engage PTO for 30 to 45 seconds and then turn it off.
3. Check the oil level in the sight gauge. If no oil is seen, add oil to bring the level up to the sight gauge.

**NOTE!!** Do not fill the tank with oil above the level of the sight gauge after the first filling. Over-filling the tank with oil after the initial filling may result in oil being discharged through the air filter on top of the hydraulic tank.

4. Start the tractor and engage PTO for 2 minutes and then turn it off.
5. Again check the oil level in the sight gauge. If the oil level is in the sight gauge, the unit is ready to run. If no oil is seen, add oil to bring the level up to the sight gauge.
6. Repeat steps 4 and 5 as required until the oil level stabilizes at the level of the sight gauge.

MAINTENANCE

# MAINTENANCE




## PROPER TORQUE FOR FASTENERS

The chart lists the correct tightening torque for fasteners. When bolts are to be tightened or replaced, refer to this chart to determine the grade of bolts and the proper torque except when specific torque values are assigned in manual text.





RECOMMENDED TORQUE IN FOOT POUNDS UNLESS OTHERWISE STATED IN THE MANUAL \*

**NOTE:** These values apply to fasteners as received from supplier, dry or when lubricated with normal engine oil. They do not apply if special graphited or molydisulphide greases or other extreme pressure lubricants are used. This applies to both UNF fine and UNC coarse threads.

Proper Torque values for bolts that are measured in Inches

Bolt Diameter			
	Head Marking No Marks Grade Two	Head Marking Three Lines Grade Five	Head Marking Six Lines Grade Eight
	Pound - Foot Value Dry	Pound - Foot Value Dry	Pound - Foot Value Dry
1/4"	5.5	9	12.5
5/16"	11	18	26
3/8"	20	33	46
7/16"	32	52	75
1/2"	50	80	115
9/16"	70	115	160
5/8"	100	160	225
3/4"	175	280	400
7/8"	175	450	650
1"	270	675	975
1-1/8"	375	850	1350
1-1/4"	530	1200	1950
1-3/8"	700	1550	2550
1-1/2"	930	2100	3350

Proper Torque values for Metric bolts

Bolt Diameter				
	Head Marking 4.8	Head Marking 8.8 or 9.8	Head Marking 10.9	Head Marking 12.9
	Pound - Foot Value Dry	Pound - Foot Value Dry	Pound - Foot Value Dry	Pound - Foot Value Dry
6mm	4.5	8.5	12	14.5
8mm	11	20	30	35
10mm	21	40	60	70
12mm	37	70	105	120
14mm	60	110	165	190
16mm	92	175	255	300
18mm	125	250	350	410
20mm	180	350	500	580
22mm	250	475	675	800
24mm	310	600	850	1000
27mm	450	875	1250	1500
30mm	625	1200	1700	2000

To get Newton-Meters multiply pound-foot of torque by 1.356

\*

# 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. 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:

PARTS

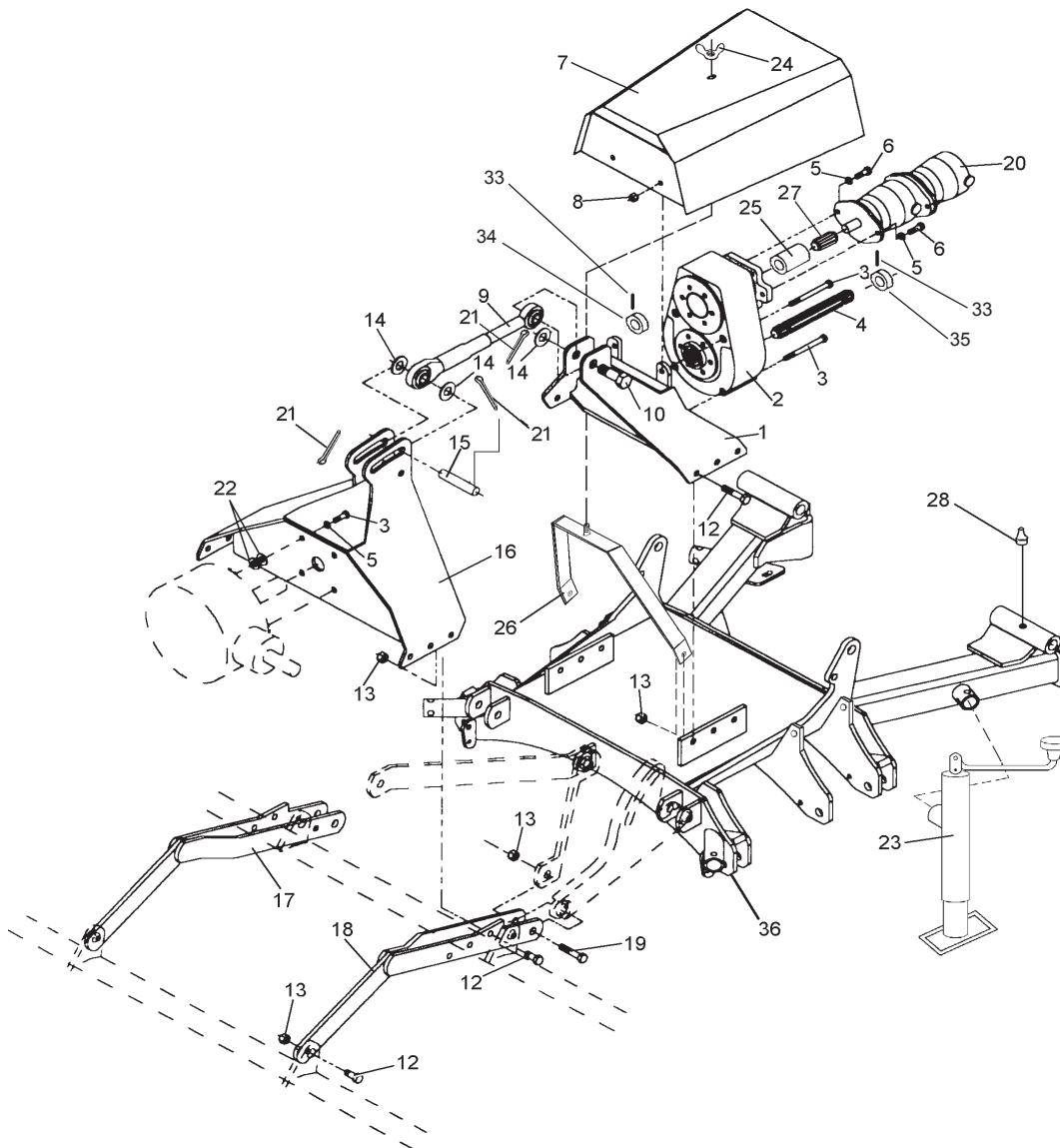


**Alamo Industrial**  
1502 E. Walnut  
Seguin, Texas 78155  
830-372-3551

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# MAINFRAME ASSEMBLY

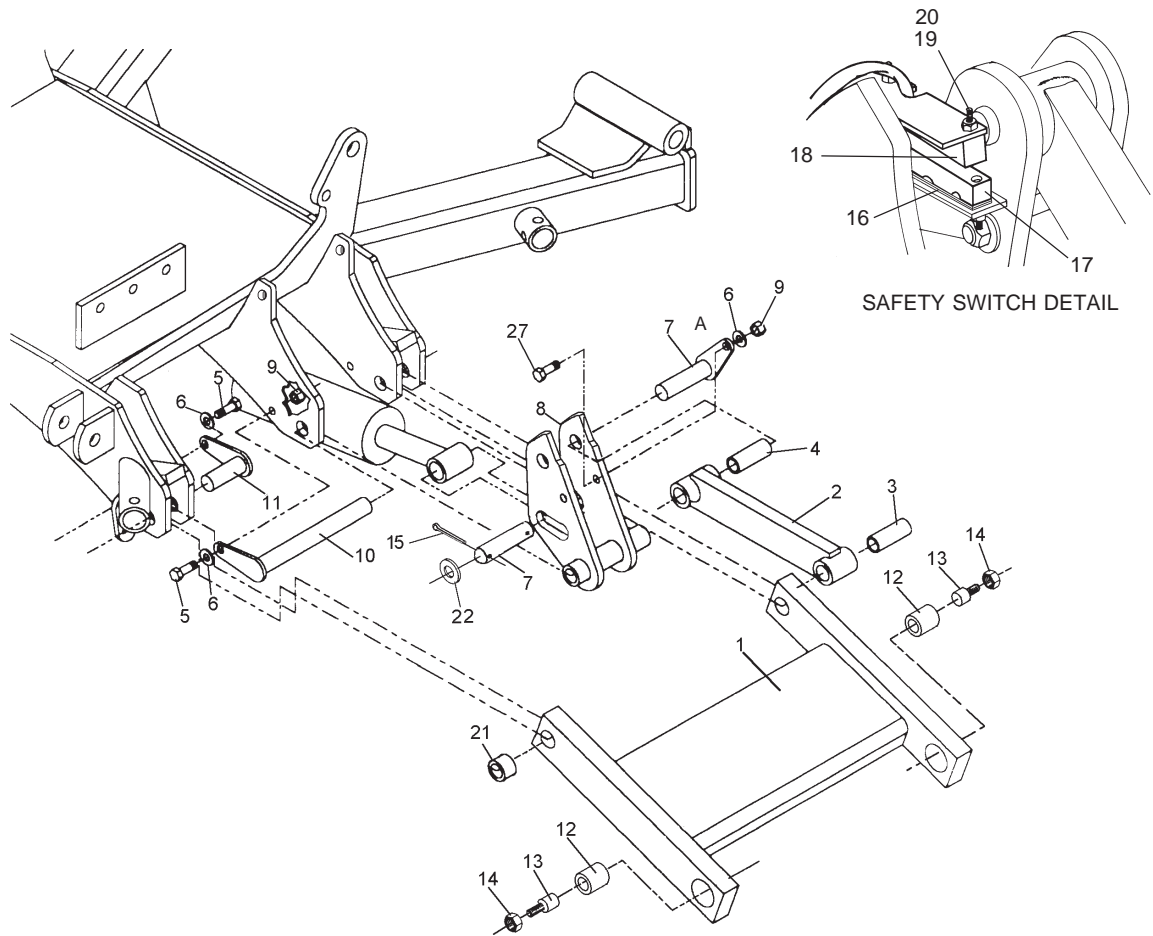


## PARTS

ITEM	PART NO	QTY	DESCRIPTION	ITEM	PART NO.	QTY	DESCRIPTION
1	107762	1	Weld. - Mnt. Plate	17	108094	1	Weld. - Overarm (RH)
2	02897900	1	Speed Increaser	18	108093	1	Weld. - Overarm (LH)
3	02036400	4	Bolt	19	00756793	2	Bolt
4	107969	1	Shaft	20	001600	1	Pump
5	00019600	2	Lockwasher	21	00755153	3	Cotter Pin
6	00748823	2	Bolt	22	000552	8	Shim
7	107772	1	Cover	23	00756655	4	Parking Jack
8	00001800	4	Nut	24	5F8130	1	Wing Nut
9	002475	1	Top Link	25	00762689	1	Spacer
10	8354	1	Pin	26	107795	1	Weldment - Bracket
12	0008300	12	Bolt	27	002306	1	Splined Adapter
13	00695100	12	Nut	28	00003500	2	Grease Fitting
14	02822500	3	Flatwasher	33	02965449	2	Roll Pin
15	103266	1	Pin	34	107970	1	Collar
16	108098	1	Weld. - A-Frame	35	107971	1	Collar
				36	107750	1	Mainframe Weldment

Rev 04-11

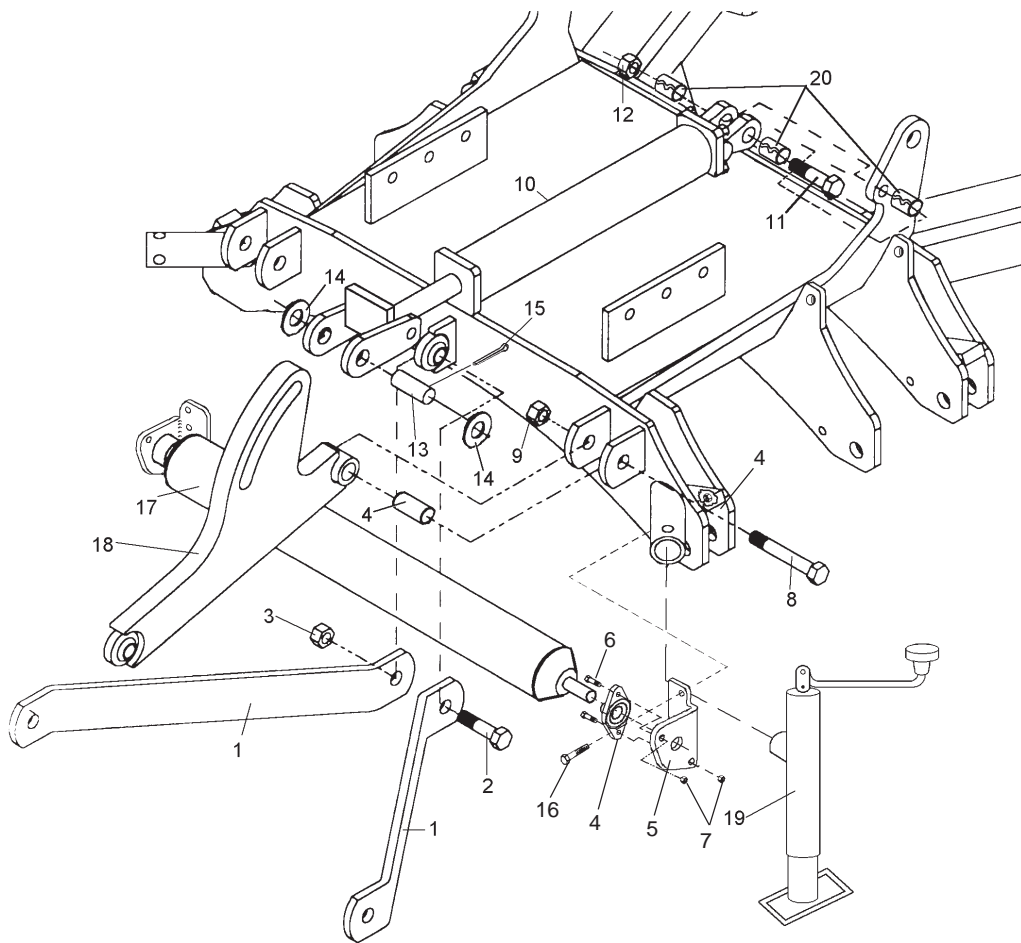
# WING LIFT ASSEMBLY



ITEM	PART NO	QTY	DESCRIPTION
1	02965828	1	Weldment w/Bushing - Lift Frame (LH)
	02965825	1	Weldment w/Bushing - Lift Frame (RH)
2	02964991	2	Weldment - Link
3	02965212	2	Bearing
4	02965213	2	Bearing
5	00748823	4	Bolt
6	00002700	8	Flatwasher
7	103266	2	Pin
7A	02965074	2	Pin
8	107769	1	Weldment - Actuator (LH)
	107770	1	Weldment - Actuator (RH)
9	00001800	6	Nut
10	00763355	2	Pin
11	02965829	2	Pin
12	00764656	4	Bushing
13	02965777	4	Pivot pin
14	000760	2	Nut
15	00755153	2	Cotter Pin
16	002020	4	Spacer
17	002019	2	Magnet
18	703520	2	Switch
19	02963585	8	Machine Screw
20	02963584	8	Locknut
21	02965214	4	Bushing
22	02822500	4	Washer
27	00755082	2	Bolt

**PARTS**

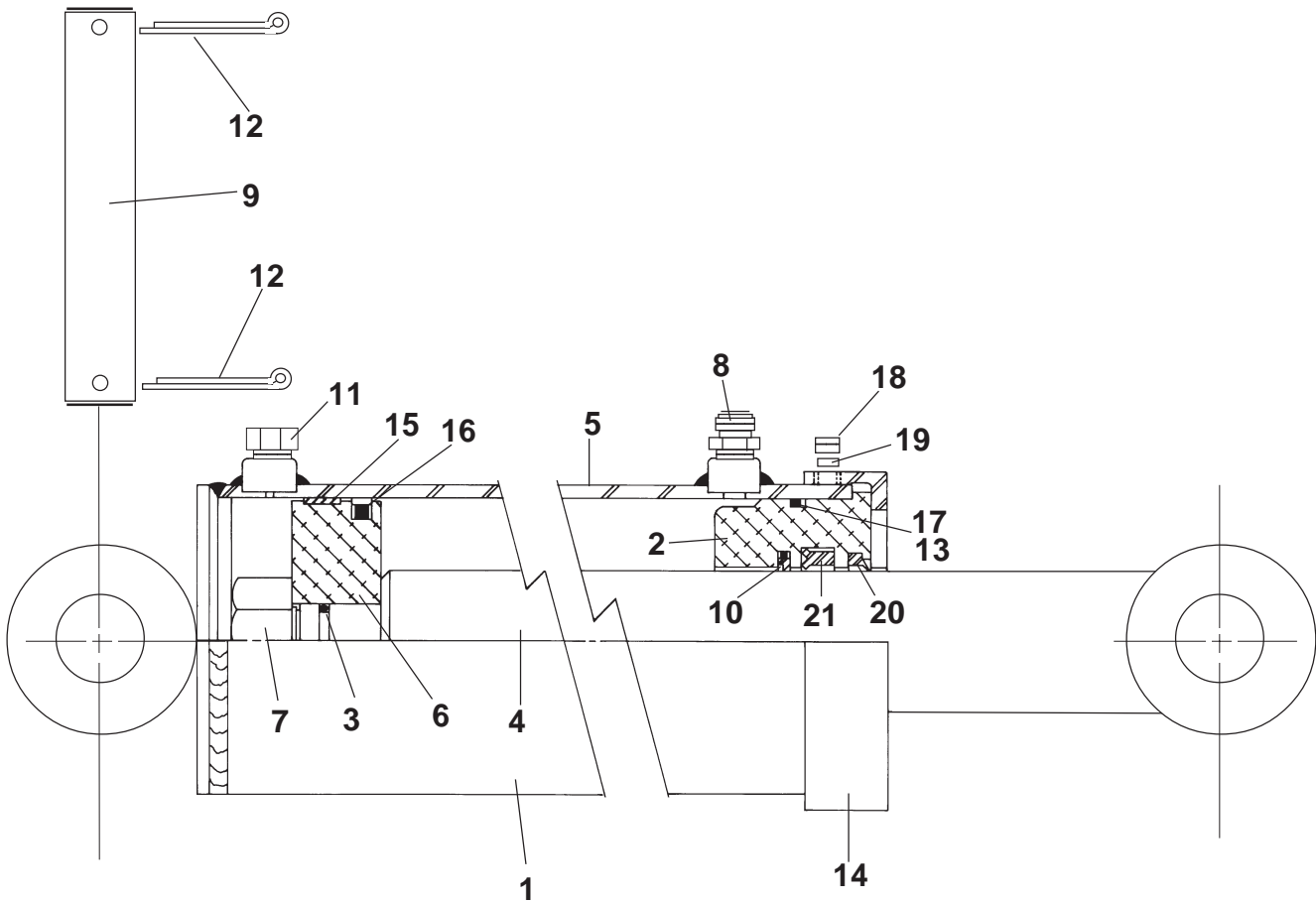
# CENTER LIFT ASSEMBLY



ITEM	PART NO	QTY	DESCRIPTION
1	107708	2	Anti-sway bar
2	7A14932	1	Bolt
3	5JRC1490	1	Nut
4	001681	2	Flange Bearing
5	108118	1	Roller Bracket LH
	108117	1	Roller Bracket RH
6	00022500	4	Bolt
7	02957941	4	Locknut
8	00750479	2	Bolt
9	02030300	2	Nut
10	107728	2	Cylinder
11	02027400	2	Bolt
12	00001800	4	Nut
13	8354	2	Pin
14	02822500	2	Flatwasher
15	00755153	2	Cotter Pin
16	00748823	4	Bolt
17	107759	1	Weldment - Roller
18	703952	2	Lower Link (Includes Item #4)
19	00756655	4	Parking Jack
20	02959892	6	Bushing

**PARTS**

# TILT CYLINDER ASSEMBLY

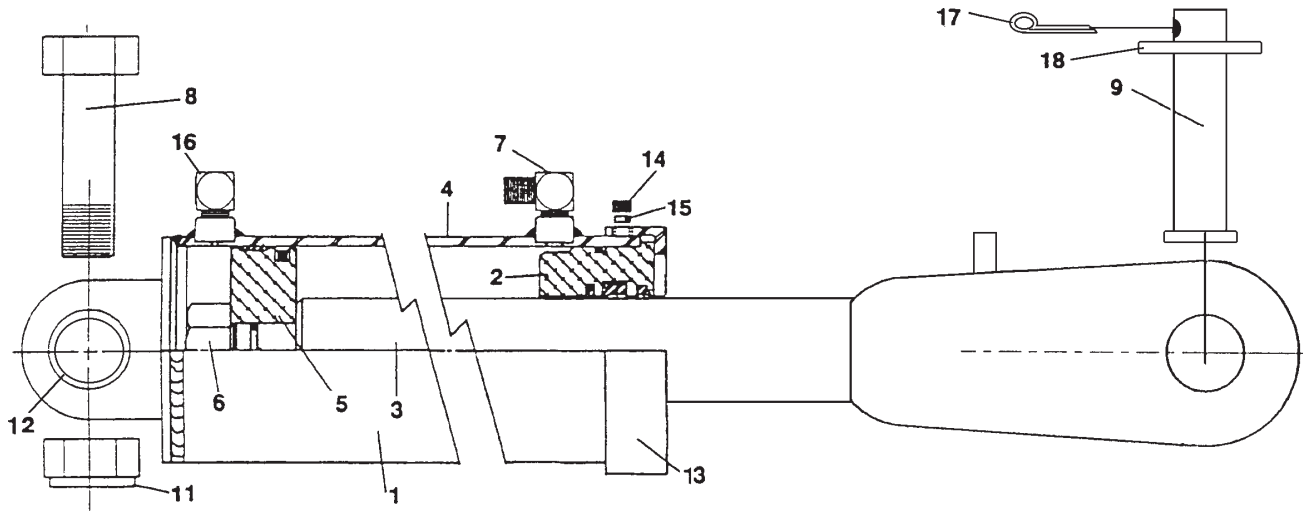


ITEM	PART NO.	QTY	DESCRIPTION
1	02961483	1	Hydraulic Cylinder
2	02962134	1	Gland
3*	-----	1	"O" Ring
4	02962137	1	Rod Assembly
5	02962136	1	Barrel Assembly
6	02962131	1	Piston
7	02840500	1	Locknut
8	02962181	1	Adapter
9	02963095	1	Pin
10*	-----	1	Buffer Seal
11	02960054	1	Breather Plug
12	00606000	2	Cotter Pin
13*	-----	1	Back-Up Ring
14	02962129	1	Collar
15*	-----	1	Wear Ring
16*	-----	1	Piston Seal
17*	-----	1	"O" Ring
18	02962169	1	Set Screw
19	02962170	1	Nylon Insert
20*	-----	1	Rod Wiper
21*	-----	1	Rod Seal

\* Included in Seal Kit P/N 02962135

**PARTS**

# HYDRAULIC CYLINDER ASSEMBLY

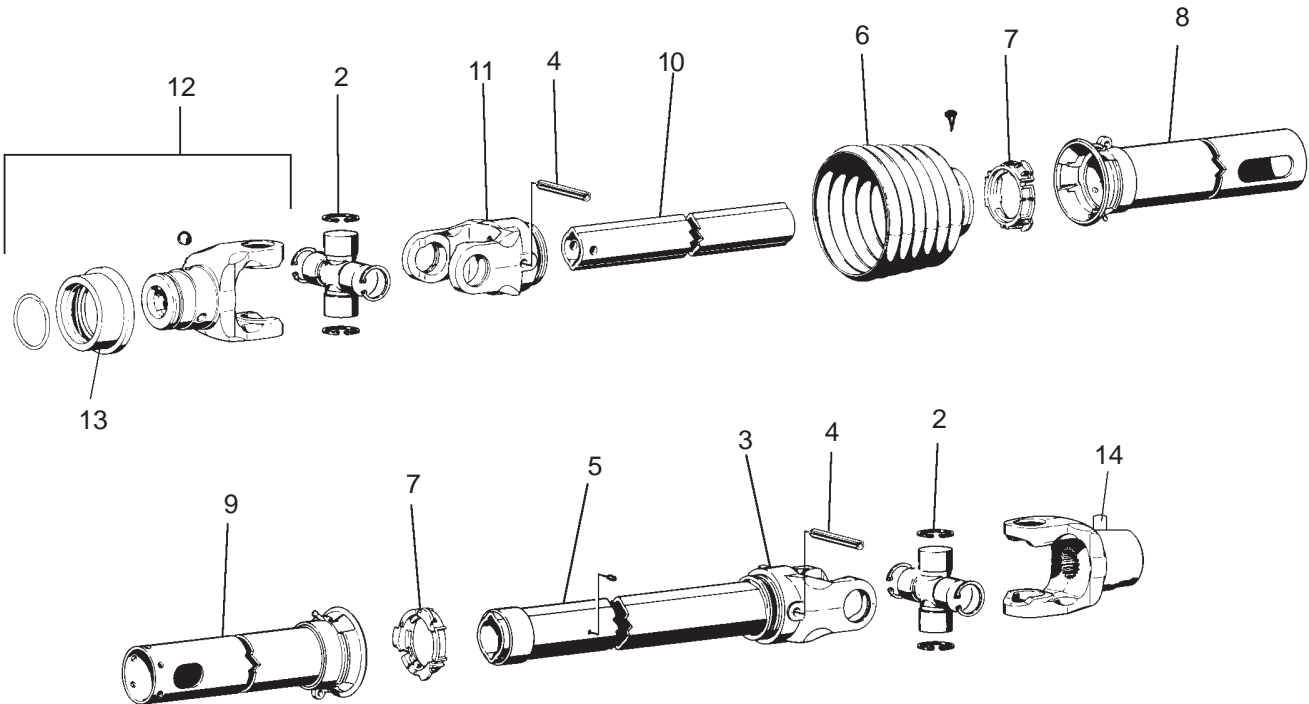


ITEM	PART NO.	QTY	DESCRIPTION
1	107728	1	Hydraulic Cylinder
2	02962145	1	Gland
3	108226	1	Wldmt.-Cylinder Rod
4	02962143	1	Barrel Assembly
5	02962125	1	Piston
6	02247100	1	Locknut
7	02960018	1	Elbow
8	00753013	Ref.	Bolt
9	8354	1	Pin
10	02845800	Ref.	Bolt
11	00749137	Ref.	Nut
12	02959892	2	Bushing
13	02962146	1	Collar
14	02962169	1	Set screw
15	02962170	1	Nylon insert
16	02960054	1	Breather plug
17	00755153	1	Cotter Pin
18	02822500	1	Flatwasher

Seal Kit 02962147

PARTS

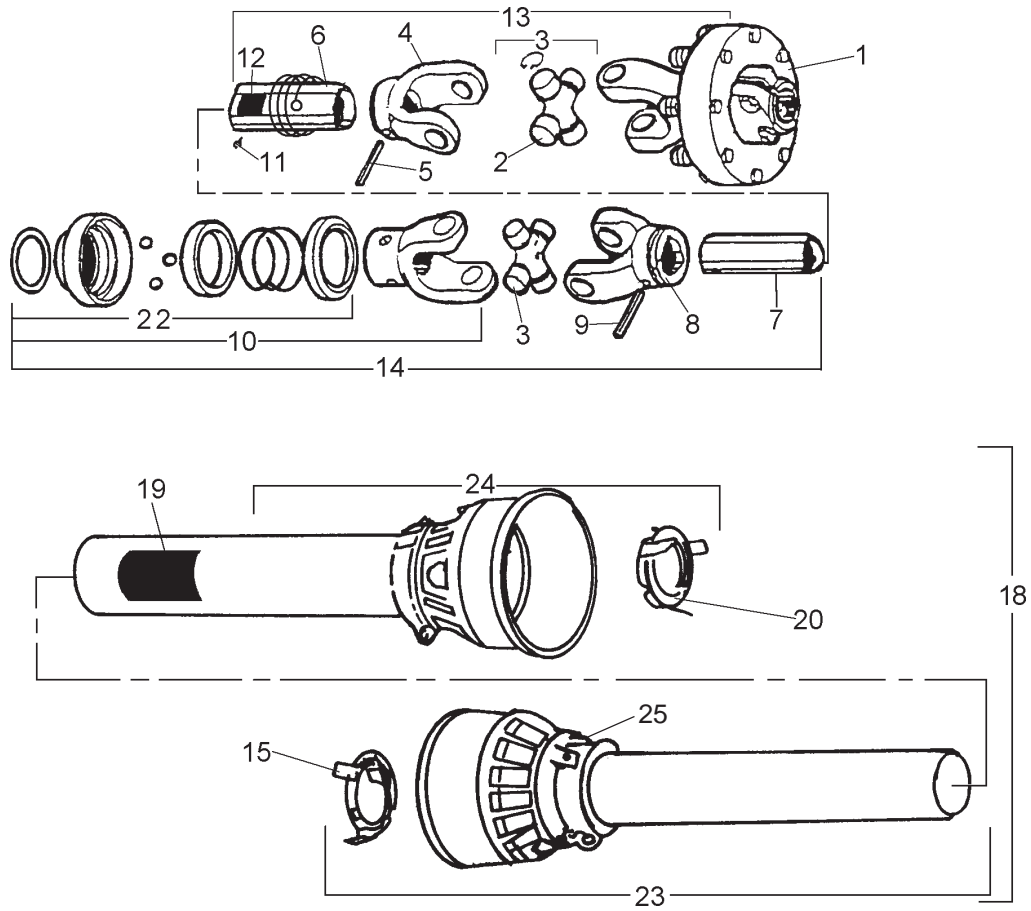
# DRIVELINE P/N 002470



ITEM	PART NO.	QTY.	DESCRIPTION
1	0921000320	1	Yoke, Q.D. 1-3/8 6B Spline
2	0921000312	2	Cross Kit
3	0921000371	1	Yoke
4	0921000333	1	Yoke
5	0901000372	1	Tube
6	0921000341	1	Shield Cone, 6 Rib
7	0921000343	2	Bearing Ring
8	0901000394	1	Inner Shield Tube
9	0901000344	1	Outer Shield Tube
10	0901000332	1	Tube
11	0921000331	1	Yoke
12	8983	1	Yoke, Slide Collar 1-3/8 - 6B Spline
13	8445	1	Slide Collar Repair Kit
14	0921000321	1	Q.D. Pin Repair Kit

**PARTS**

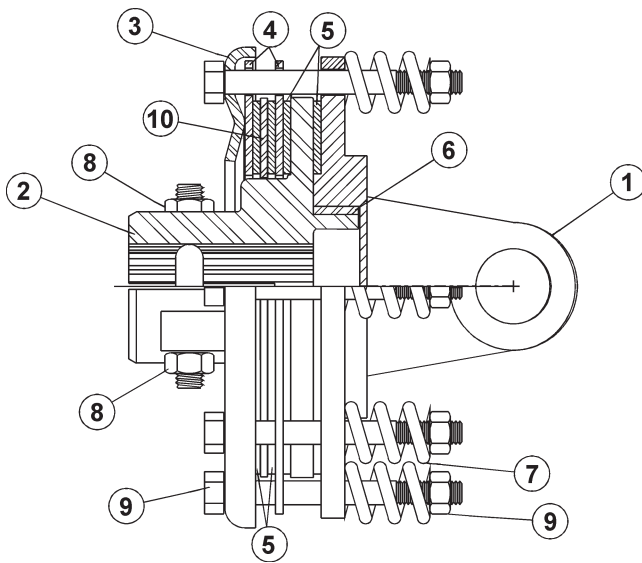
# DRIVELINE ASSEMBLY P/N 002471



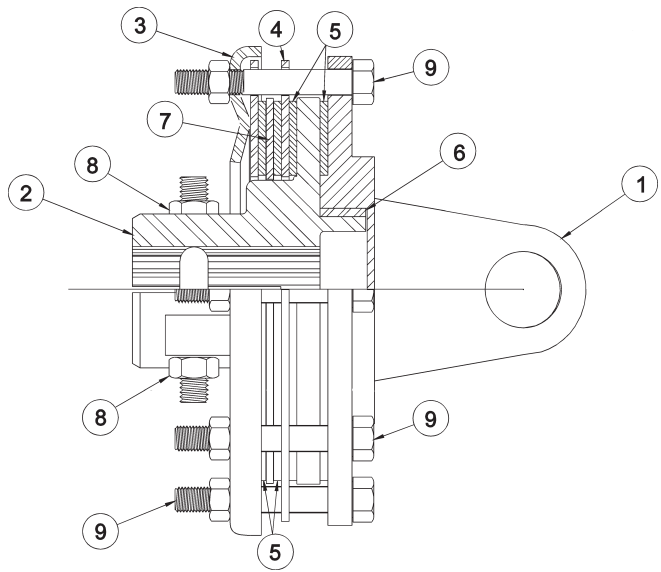
ITEM	PART NO.	QTY	DESCRIPTION
1	00759948	1	Complete Slip Clutch
2	00759517	2	Grease Fitting (Cross Kit)
3	00752896	2	Cross Assembly
4	00754154	1	Outer Tube Yoke
5	00754167	1	Roll Pin
6	00760242	1	Outer Tube
7	00760243	1	Inner Tube
8	00754153	1	Inner Tube Yoke
9	00754167	1	Roll Pin
10	00757051	1	Yoke 1-3/8" - 6
11	00754335	1	Grease Zerk (Tube)
12	00756004	1	Driveline Warning Label
13	00760244	1	Outer Half w/Slip Clutch
14	00760245	1	Inner Half Shaft w/1-3/8 - 6 Yoke
15	00763196	1	Inner Shield Bearing
18	00760250A	1	Complete Shield
19	00756005	1	Driveline Shield Warning Label
20	00763195	1	Outer Shield Bearing
22	00757144	1	Q.D. Collar Kit
23	00760248A	1	Half Inner Shield
24	00760249A	1	Half Outer Shield
25	00754330	3	Bolt, Nylon

PARTS

# SLIP CLUTCH ASSEMBLY



P/N 00759985



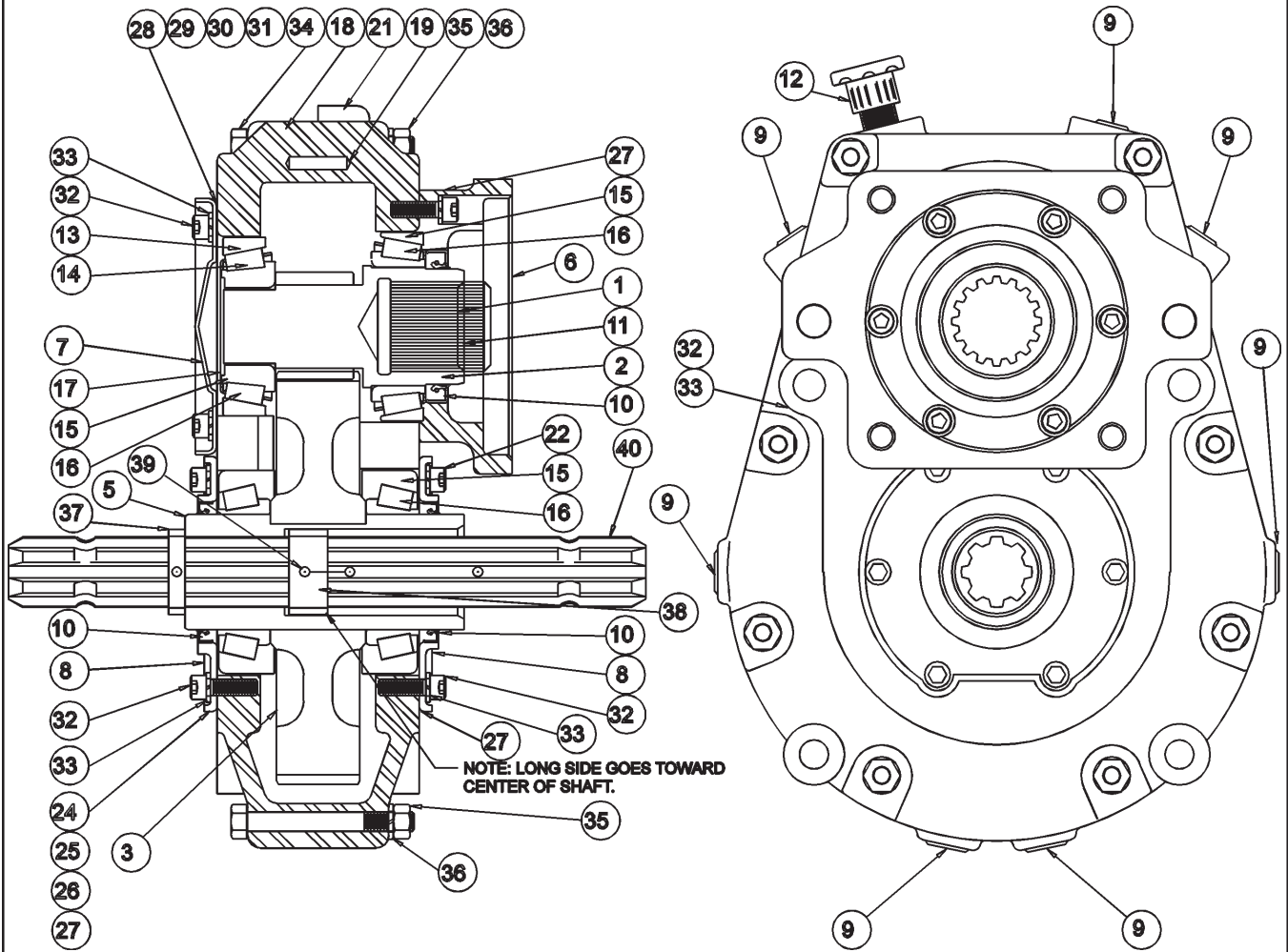
P/N 00759985A  
(Obsolete)

ITEM	00759985 PART NO.	(*Obsolete see note below) 00759985A PART NO.	QTY	DESCRIPTION
1	00754302		1	Flange Yoke
2	00755599		1	Clutch Support
3	00766810		1	Pressure Plate
4	00754314		2	Plate with Holes
5	00754202		4	Lining Ring
6	00754301		1	Bushing
7	00754303		8	Spring
8	00755600		2	Nut & Bolt
9	00754199		8	Nut & Bolt
			8	Nut & Bolt
10	00754201		1	Intermediate Plate

**\*NOTE:**

This slip clutch is no longer available. Order Spring Kit (P/N 00773222) as replacement part to convert to a spring clutch.

# SPEED INCREASER REPLACEMENT PARTS P/N 02897900



NOTE: ITEM 37,38,39,40 ARE NOT PART OF 02897900 SPEED CHANGER.

PARTS

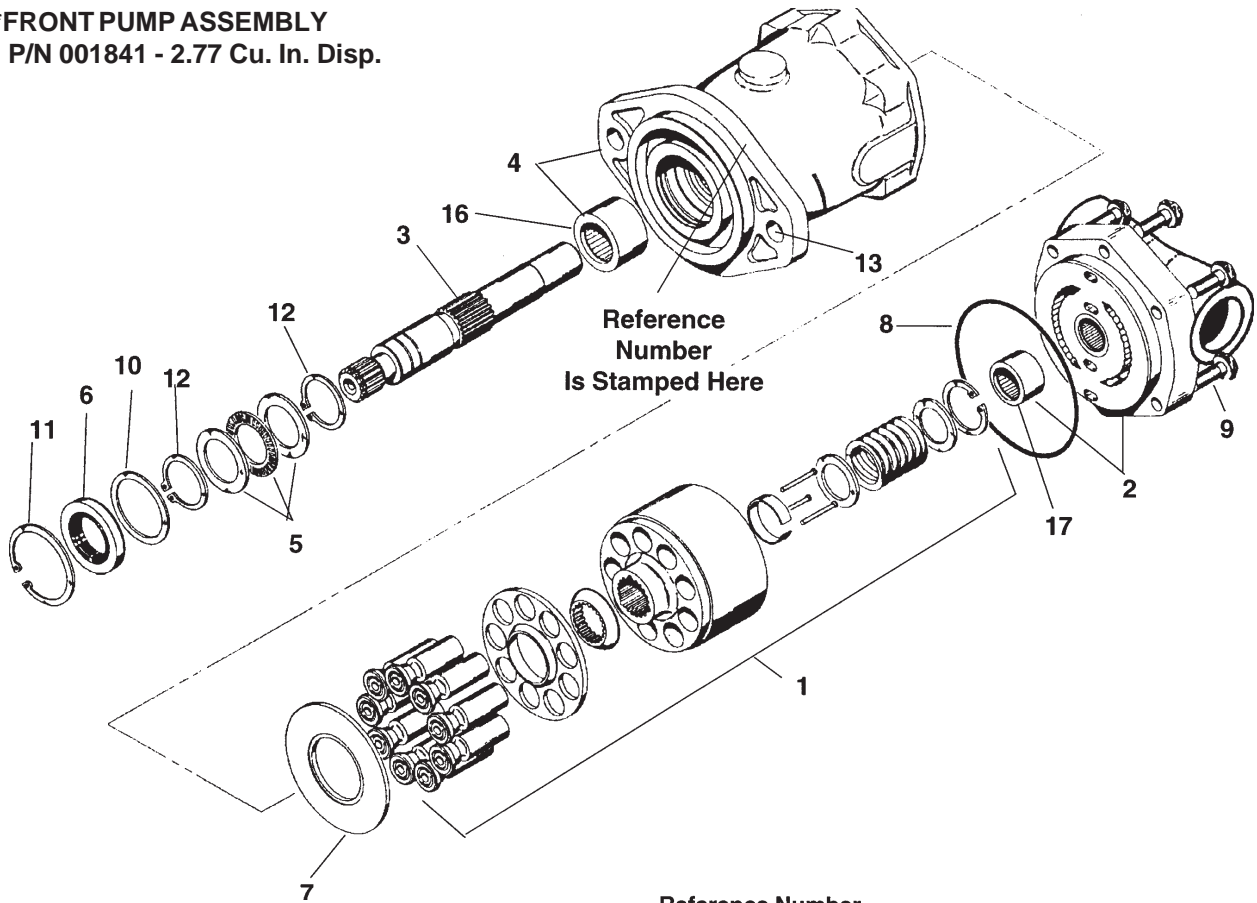
## SPEED INCREASER REPLACEMENT PARTS P/N 02897900

ITEM	PART NO.	QTY	DESCRIPTION
1	02922700	1	Adapter, Shaft
2	00751531	1	Pinion Gear - High Speed
5	00752179	1	Shaft & Gear, Low Speed
6	02922600	1	Pump Flange
7	00751949	1	Cover, Closed
8	00751950	2	Cover, Open
9	00751970	8	Pipe Plug
10	00751535	3	Seal
11	00751954	1	Retaining Ring
12	00751942	1	Breather
13	00751951	1	Bearing Cup
14	00751533	1	Bearing Cone
15	00749201	3	Bearing Cup
16	00749200	3	Bearing Cone
17	00751953	1	Spacer Ring
18	00751955	1	Housing
19	00751956	1	Housing
20	00751957	2	Dowel
21	00751958	1	Gasket (.015)
22	00751971	2	Spacer Ring
24	00751959	AR	Shim (.005 Alum.)
25	00751960	AR	Shim (.007 Alum.)
26	00751961	AR	Shim (.020 Alum.)
27	00751962	3	Shim (.005 Fibre)
28	00751963	AR	Shim (.005 Alum.)
29	00751964	1	Shim (.005 Fibre)
30	00751965	AR	Shim (.007 Alum.)
31	00751966	AR	Shim (.020 Alum.)
32	00751967	24	Screw
33	00751968	24	Lockwasher
34	00751969	8	Screw
35	00013901	8	Nut
36	00012101	8	Lockwasher
	00752772	1	Magnetic Plug
*37	107970	1	Collar
*38	107971	1	Collar
*39	02965449	2	Roll Pin
*40	107969	1	Shaft

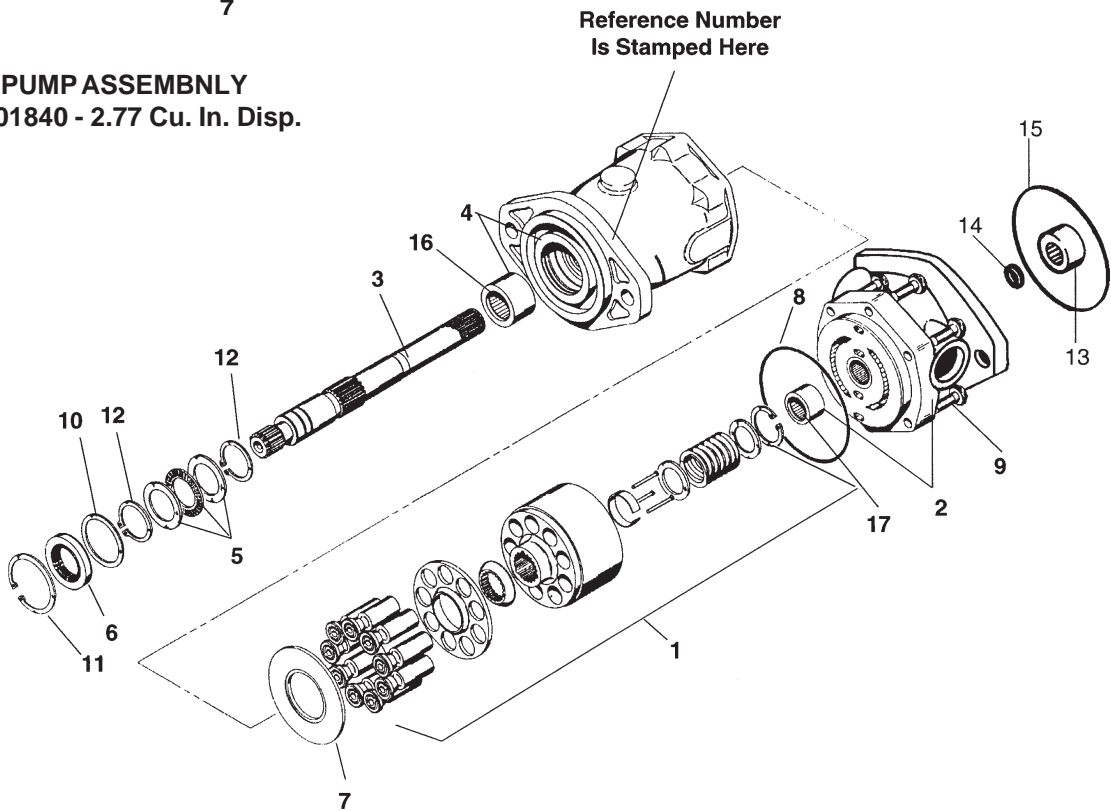
\* NOT PART OF 02897900 SPEED CHANGER.

# TANDEM FRONT PUMP ASSEMBLY

**\*FRONT PUMP ASSEMBLY**  
 P/N 001841 - 2.77 Cu. In. Disp.



**\*REAR PUMP ASSEMBLY**  
 P/N 001840 - 2.77 Cu. In. Disp.



**PARTS**

# TANDEM FRONT PUMP ASSEMBLY

**\*FRONT PUMP ASSEMBLY**  
P/N 001841 - 2.77 Cu. In. Disp.

**\*REAR PUMP ASSEMBLY**  
P/N 001840 - 2.77 Cu. In. Disp.

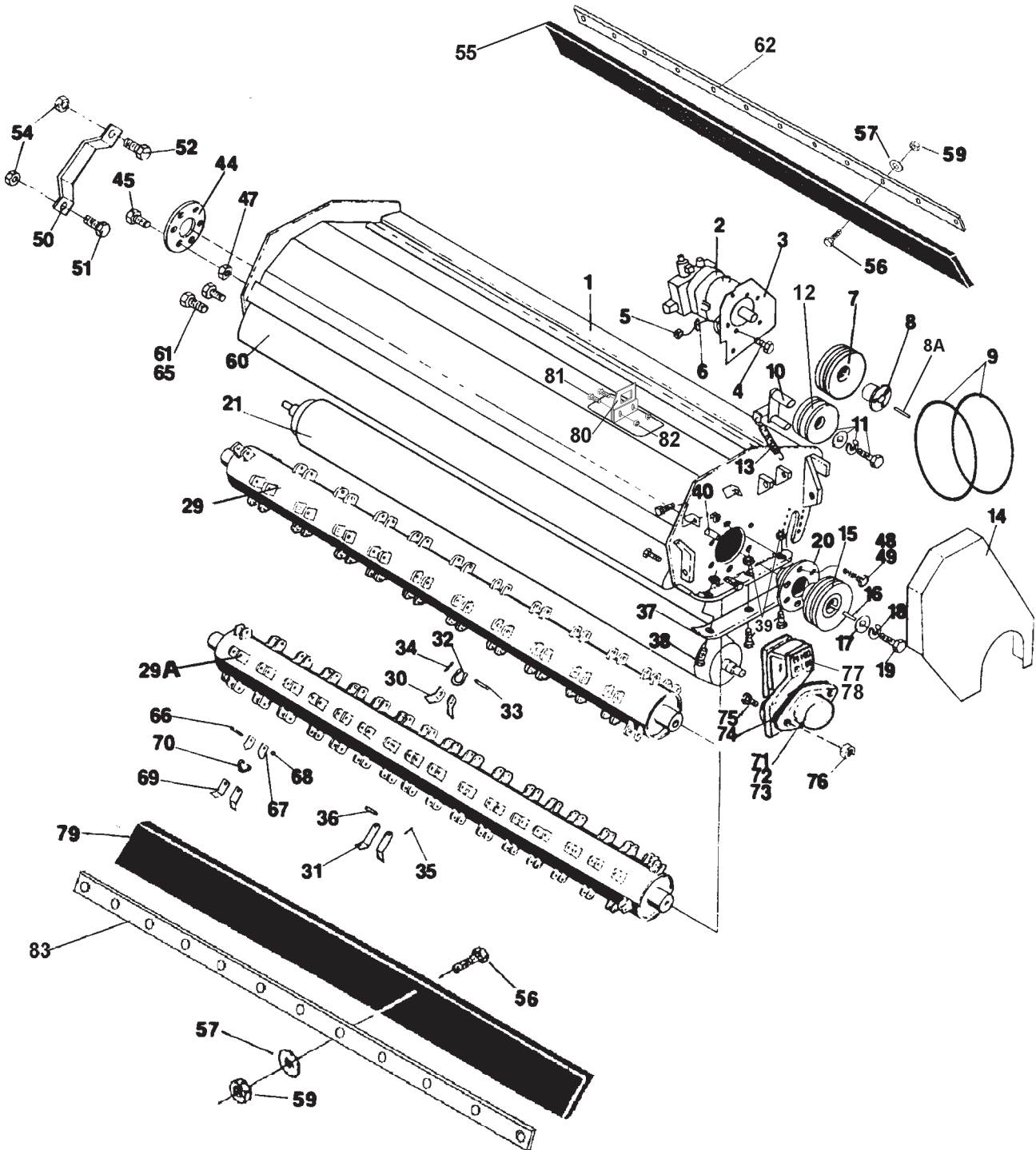
ITEM	PART NO.	QTY	DESCRIPTION
1	03200402	2	Rotating Kit Assembly
2	001837	1	Back-Up Plate Assy w/ Bearing
3	001838	1	Driveshaft
4	-----	1	Housing
5	001644	2	Thrust Race & Bearing
6	Seal Kit	-	Shaft Seal
7	03200408	2	Cam Plate Insert
8	Seal Kit	2	"O" Ring
9	02766400	6	Bolt
10	03200411	2	Washer
11	Seal Kit	-	Retaining Ring
12	Seal Kit	-	Retaining Ring
13	001844	2	Bolt
16	002339	2	Bearing, Backplate
17	002340	2	Bearing, Housing
SEAL KIT 001648			

ITEM	PART NO.	QTY	DESCRIPTION
1	03200402	2	Rotating Kit Assembly
2	001834	1	Back-Up Plate Assy w/ Bearing
3	001835	1	Driveshaft
4	-----	1	Housing
5	001644	2	Thrust Race & Bearing
6	Seal Kit	-	Shaft Seal
7	03200408	2	Cam Plate Insert
8	Seal Kit	2	"O" Ring
9	001836	6	Bolt
10	03200411	2	Washer
11	Seal Kit	-	Retaining Ring
12	Seal Kit	-	Retaining Ring
13	001839	1	Coupler
14	001843	1	Lock Ring
15	001842	1	"O" Ring
16	002339	2	Bearing, Backplate
17	002340	2	Bearing, Housing
SEAL KIT 001648			

**\* Refer To Numbers Stamped In Flange To Identify.**

No. Stamped in Flange	Part No.	Description
001600R	001841	Pump Front Section 2.77 CID
001600F	001840	Pump Rear Section 2.77 CID

# WING MOWER ASSEMBLY



Front Deflector is used only with reverse rotation.  
Double quantities for front deflector.

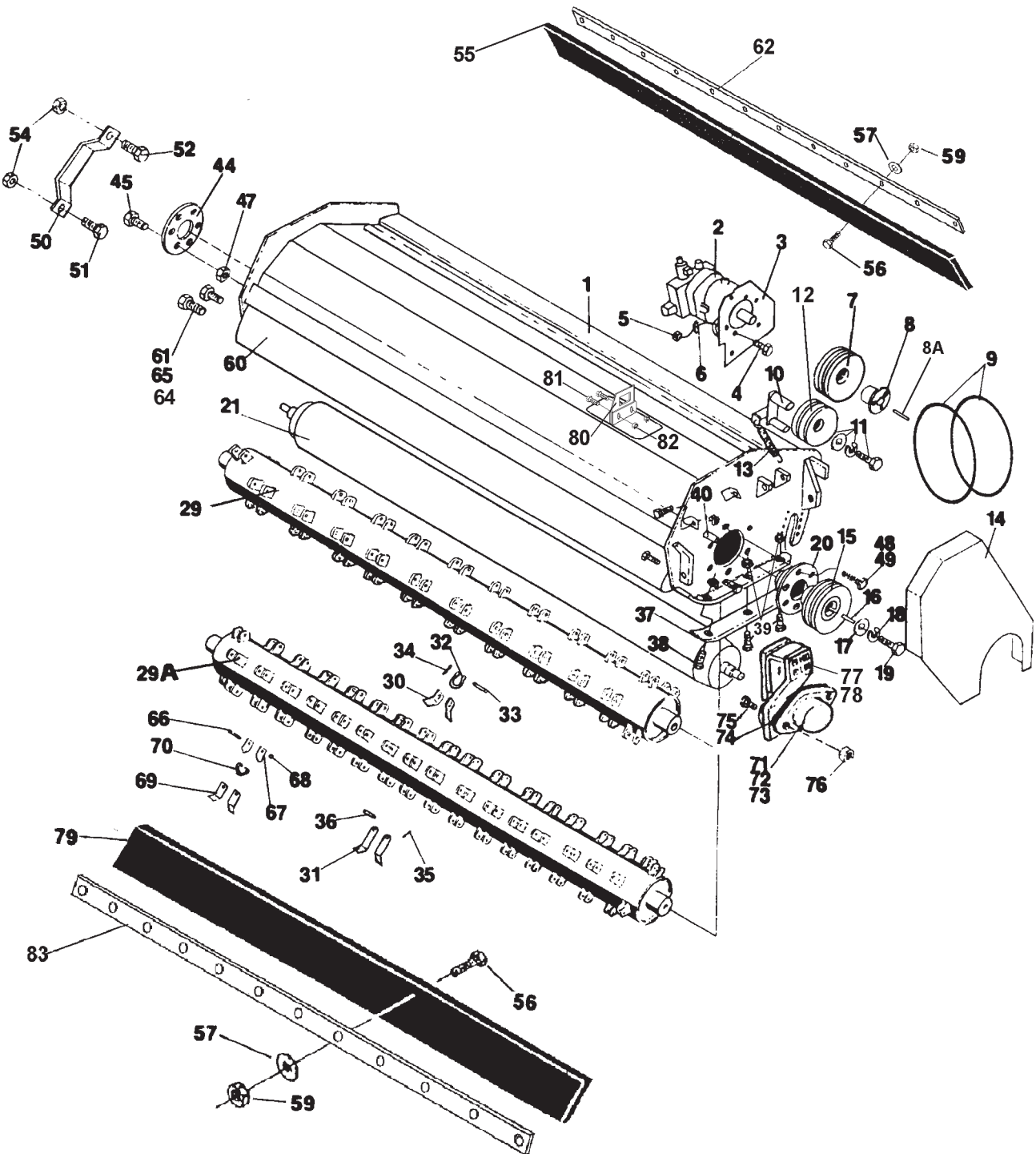
PARTS

# WING MOWER ASSEMBLY

ITEM	PART NO.	QTY	DESCRIPTION
1	107158	1	Right Wing Mower Weldment
	107159	1	Left Wing Mower Weldment
2	-----	1	Hyd. Motor Assy (See Motor Assemblies for correct part numbers)
@	03200521	1	Key
3	106458	1	Motor Mounting Bracket
+	00023100	2	Bolt
4	00748823	2	Bolt
5	00001800	2	Nut
6	00019600	2	Lockwasher
7	000673	1	Pulley
8	001761	1	Hub
+	10121000	3	Bolt/Hub
+	00011700	3	Lockwasher
9	000702	1	V-Belts Matched Pair
10	106529	1	Right Idler Arm Forward Rotation
@	106527	1	Right Idler Arm Reverse Rotation
@	106526	1	Left Idler Arm Reverse Rotation
	106528	1	Left Idler Arm Forward Rotation
11	103105	1	Idler Pulley
+	000001	1	Bolt
+	00011700	1	Lockwasher
+	00023500	1	Washer
12	101778	1	Spacer
13	000539	1	Spring
+	000001	1	Bolt
+	00011700	1	Lockwasher
@	702747	1	Right Idler Assembly - Forward Rotation
@	702748	1	Left Idler Assembly - Forward Rotation
@	703085	1	Right Idler Assembly - Reverse Rotation
@	703086	1	Left Idler Assembly - Reverse Rotation
@	000206	1	Lubricap
14	107390	1	Right Belt Guard Forward Rotation
	107394	1	Right Belt Guard Reverse Rotation
	107386	1	Left Belt Guard Forward Rotation
	107389	1	Left Belt Guard Forward Rotation
+	02035400	2	Bolt
+	00011100	2	Lockwasher
+	03101646	2	Flatwasher
@	702754	1	Guard Support
+	00753642	1	Bolt
+	00752036	1	Nut
15	103065	1	Cuttershaft Pulley
16	103105	1	Key
17	103767	1	Washer
18	00010300	1	Lockwasher
19	000407	1	Bolt
20	703695	1	Cuttershaft Bearing & Housing Assembly
@	002315	1	Bearing
21	107178	1	Roller-Round,Keyed Shaft
	100786	1	Roller-Hex Shaft
@	703260	1	Roller Assembly-Hex, (including 21,71,77,78)
+	000516	2	Carriage Bolt
+	02886900	2	Carriage Bolt
+	00001800	4	Nut
29	107125	1	Cuttershaft - Coarse Cut
29A	107129	1	Cuttershaft - Fine Cut

**PARTS**

# WING MOWER ASSEMBLY



Front Deflector is used only with reverse rotation.  
Double quantities for front deflector.

PARTS

# WING MOWER ASSEMBLY

ITEM	PART NO.	QTY	DESCRIPTION
30	108381	88	Coarse Cut Knife
30	105319M	88	Coarse Cut Knife - Extreme Service
31	102086	216	Fine Cut Knife
32	100761	44	Ring
33	102670	44	Pin
34	02668700	44	Cotter Pin
35	02668700	108	Pin
36	101034	108	Knife Pin
37	103051	2	Shoe Wear Plate
38	02886900	2	Carriage Bolt
39	000700	4	Plow Bolt
+	00011700	6	Nut
40	702749	1	Idler Pivot Pin w/Grease Fitting
@	000853	1	Grease Fitting
@	000206	1	Lubricap
44	703271	1	Cuttershaft Bearing & Housing Assembly
@	703694	1	Bearing w/Set Screw
45	00753642	6	Bolt
47	00752036	6	Nut
48	000130	6	Bolt
49	000841	6	Lockwasher
50	103064	1	Fender
51	00748823	1	Bolt
52	02030700	1	Bolt
54	00001800	2	Nut
55	100755	1	Rear Trash Deflector
56	10058000	12	Bolt
57	00024100	12	Flatwasher
59	02959924	12	Nut
60	107259	1	Foot Guard
61	02030700	2	Bolt
@	00748823	2	Bolt
62	108744	1	Bar Flap Retainer - Rear
64	00019600	4	Lockwasher
65	00001200	4	Nut
66	000032	108	Bolt
67	02990020	108	Wing Clip
68	000210	108	Nut
69	101993	216	Ring Knife
70	101991	108	Ring
71	703575	2	Roller Bearing & Housing Assembly-Keyed
	703976	2	Roller Bearing & Housing Assembly-Hex
	107340	2	Cast Housing Only (No Bearing)
72	703574	2	Bearing & Set Screw-Keyed
	002486	2	Bearing-Hex
73	002039	2	Grease Fitting
74	002037	2	Seal
75	000516	4	Carriage Bolt
76	00001800	4	Nut
77	107182	1	Left Roller Bracket
78	107380	1	Right Roller Bracket
79	106781	1	Front Trash Deflector
@	703977	1	Left Roller Bracket & Bearing Assy. (Keyed Hex)
@	703596	1	Right Roller Bracket & Bearing Assy. (Keyed Hex)
+	02979042	4	Locknut
+	02886900	2	Carriage Bolt
+	000516	2	Carriage Bolt
80	108185	1	Locking Plate
81	00720512	2	Bolt
82	00725916	2	Center Lock Nut
83	108752	2	Bar Flap Retainer - Front

**PARTS**

+Fastener, not shown

\*Optional

@ Not shown

VERSA PRO 04/02

Parts Section 6-19



# 88" CENTER MOWER ASSEMBLY

ITEM	PART#	FWD	REV	DESCRIPTION
1	107171	1	1	Standard Cutterhousing
1	107201	1	1	Cutterhousing w/Caster Brackets
8	702673	1	1	Gearbox
--	700489	1	1	Gearbox Extension Shaft Assembly
11	700171	1	1	Spline Coupler Assembly (w/grease fitting)
+	001727	4	4	Counterbore Screw
+	03101646	4	4	Lockwasher
12	100724	1	1	Extension Shaft
13	100721	1	1	Extension Shaft Housing
+	001727	1	1	Screw
+	03101646	1	1	Lockwasher
14	100010	1	1	Bevel Ring
15	100057	1	1	Snap Ring
16	000398	1	1	Bearing
--	700491	1	1	Bearing and Housing Assembly
@	000206	1	1	Lubricap
+	00023100	4	4	Bolt
+	00752036	4	4	Nut
17	700739	1	1	Bearing Housing (w/grease fitting)
18	000402	2	2	Bearing Retaining Ring
19	102651	3	3	Pulley Shim (as needed)
20	102501	1	1	Drive Shaft Pulley
21	101782	1	1	Key
22	101780	1	1	Heavy Washer
23	00019600	1	1	Lockwasher
24	000555	1	1	Bolt
25	100706	1	1	Drive Belt
31	000539	1	1	Spring
32	101778	4	4	Pulley Arm Bearing Plate Spacer
+	000001	1	1	Bolt
+	00011700	1	1	Lockwasher
+	00023500	1	1	Washer
--	700494	1	-	Idler Assembly
--	701851	-	1	Idler Assembly
33	701905	1	-	Outboard Bearing Plate (w/grease fitting)
33	701847	-	1	Outboard Bearing Plate (w/grease fitting)
@	000206	1	1	Lubricap
+	000135	1	1	Bolt(long)
+	000645	1	1	Bolt
+	00752036	2	2	Locknut
+	00013901	1	1	Nut
34	100727	1	-	Idler Arm
34	104938	-	1	Idler Arm
+	00755153	2	2	Cotter Pin
35	000547	1	1	Idler Pulley
@	700494	1	-	Idler Assembly (Including 32-35 & fasteners)
@	701851	-	1	Idler Assembly (Including 32-35 & fasteners)

**PARTS**

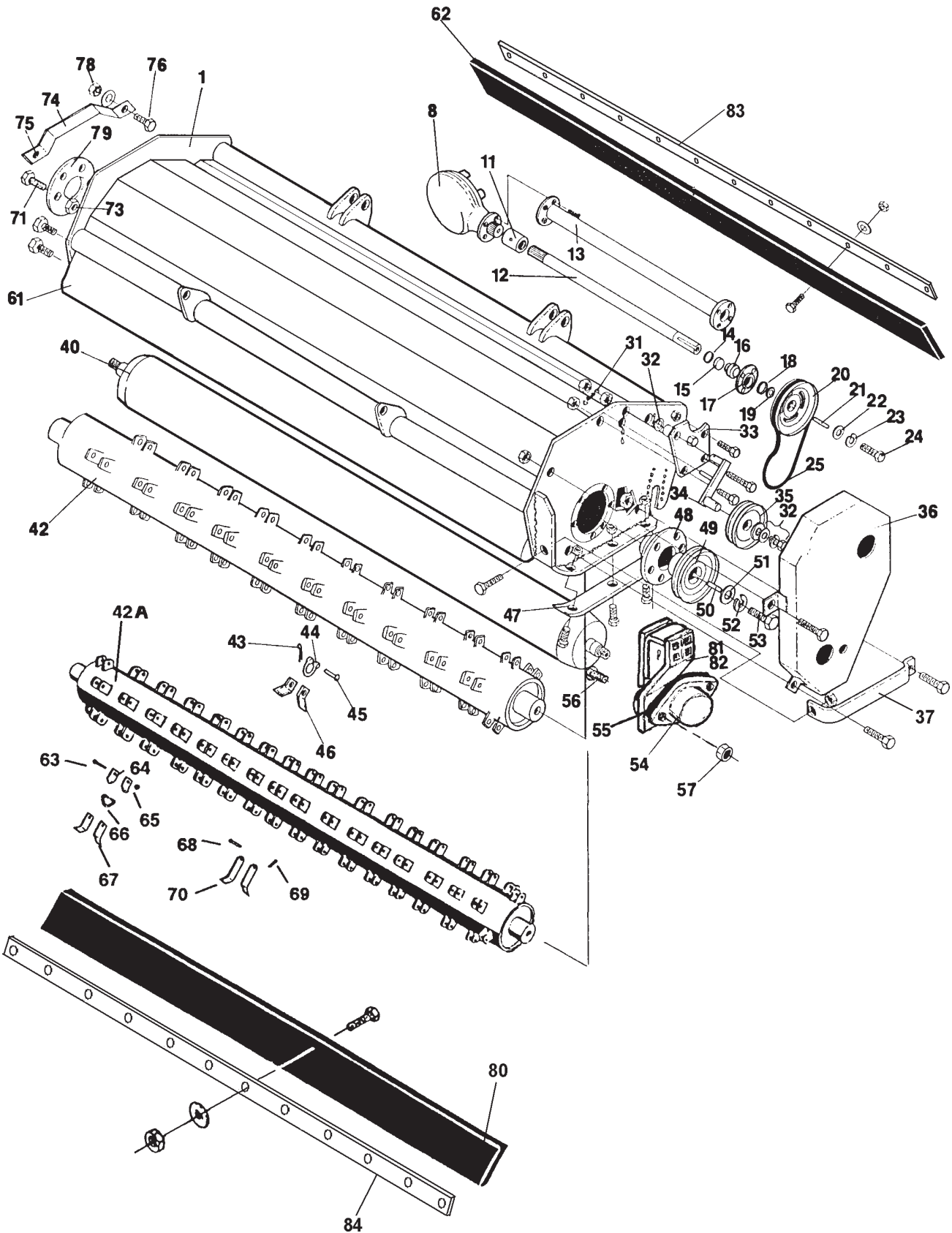


# 88" CENTER MOWER ASSEMBLY

ITEM	PART#	FWD	REV	DESCRIPTION
36	700488	1	-	Belt Guard Package (Incl. fasteners)
+	000139	3	-	Bolt
+	00001800	3	-	Nut
36	701845	-	1	Belt Guard Package (Incl. fasteners)
+	000139	-	1	Bolt
+	000508	-	2	Bolt
+	00019600	-	2	Lockwasher
+	00019700	-	2	Flatwasher
+	00001800	-	1	Nut
37	103117	1	-	Belt Guard Fender
37	104935	-	1	Belt Guard Fender
@	103064	1	1	Fender, R.H.: Fwd/LH.: Rev
+	000141	1	1	Bolt (front)
+	000140	1	1	Bolt (rear)
+	00001800	2	2	Nut
40	107178	1	1	Roller-Round Shaft
	107786	1	1	Roller-Hex Shaft
@	703260	1	1	Roller Assembly-Hex Incl. (40, 54 - 57, 81, 82)
42	107125	1	-	Coarse Cut Cuttershaft
42A	107129	1	1	Fine Cut Cuttershaft
43	02668700	44	-	Cotter Pin
44	100761	44	-	Ring
45	102670	44	-	Hardened Knife Pin
46	100759	88	-	Coarse Cut Knife
46	108381	88	-	Coarse Cut Knife Extreme Service
@	103026	44	44	Renovating Knife
@	700592	1	-	Coarse Cut Knife Package
@	02986278	1	-	Coarse Cut Knife Package (Extreme Service)
@	701778	1	-	Renovating Knife Package (Coarse Cut Cuttershaft)
47	103051	2	2	Shoe Wear Plate
+	02886900	2	2	Carriage Bolt
+	000700	4	4	Plow Bolt
+	00001800	6	6	Nut
@	100704	2	2	Wear Shoe - Renovating Mower
+	02030700	4	4	Bolt
+	00001800	4	4	Nut
48	703695	1	1	Cuttershaft Bearing and Housing Assembly
@	002315	1	1	Bearing
+	000206	2	2	Lubricap
+	000354	6	6	Bolt
+	00752036	6	6	Nut
49	102652	1	1	Cuttershaft Pulley
50	100768	1	1	Key
51	100720	1	1	Clamp Washer
52	000521	1	1	Lockwasher
53	000407	1	1	Bolt
54	703575	2	2	Roller Bearing and Housing Assembly (Keyed)
	703976	2	2	Roller Bearing and Housing Assembly (Hex)
@	703574	2	2	Bearing (Keyed)
	002486	2	2	Bearing (Hex)
@	002039	2	2	Grease Fitting

**PARTS**

# 88" CENTER MOWER ASSEMBLY



**PARTS**

# 88" CENTER MOWER ASSEMBLY

ITEM	PART#	FWD	REV	DESCRIPTION
55	002037	2	2	Seal
56	000516	4	4	Carriage Bolt
57	00001800	4	4	Nut
61	107258	1	1	Front Foot Guard
+	00749130	4	4	Bolt
+	00019600	4	4	Lockwasher
+	00001200	4	4	Nut
62	100755	1	1	Rubber Rear Trash Deflector
+	02153100	12	12	Bolt
+	00024100	12	12	Washer
+	02959924	12	12	Nut
63	000032	108	-	Bolt
64	02990020	216	-	Ring Clip
65	000210	108	-	Locknut
66	101991	108	-	Ring
67	101993	216	-	Ring Knife
	700803	1	-	Ring Knife Pkg. (Incl. 63 -67)
68	101034	108	108	Hardened Knife Pin
69	02668700	108	108	Cotter Pin
70	102086	216	216	Fine Cut Knife
	700496	1	1	Fine Cut Knife Pkg. (Incl. 68 - 70)
	102087	108	108	Renovating Knife for Fine Cut Cuttershaft
@	700810	1	1	Fine Cut Knife Package (Incl. 68 - 70)
@	700517	1	1	Renovating Knife Package for Fine Cut Cuttershaft
71	000354	6	6	Bolt
73	00752036	6	6	Nut
74	103064	1	1	Fender
75	00748823	1	1	Bolt
76	02030700	1	1	Bolt
78	00001800	2	2	Nut
79	703271	1	1	Bearing Housing Assembly
@	703694	1	1	Bearing with Set Screw
80*	106781	-	1	Front Rubber Trash Deflector
@*	02153100	12	12	Bolt
@*	00024100	12	12	Flatwasher
@*	02959924	12	12	Nut
81	107182	1	1	Bracket LH
82	107380	1	1	Bracket RH
@	703263	1	1	Bracket & Bearing Assembly LH-Keyed(Incl. 81, 54 -57)
@	703596	1	1	Bracket & Bearing Assembly RH-Keyed(Incl. 82, 54 -57)
	703977	1	1	Bracket & Bearing Assembly LH-Hex
	703978	1	1	Bracket & Bearing Assembly RH-Hex
+	02979042	4	4	Locknut
+	02886900	4	4	Carriage Bolt
83	108744	1	-	Bar Flap Retainer - Rear
84	108752	-	1	Bar Flap Retainer - Front

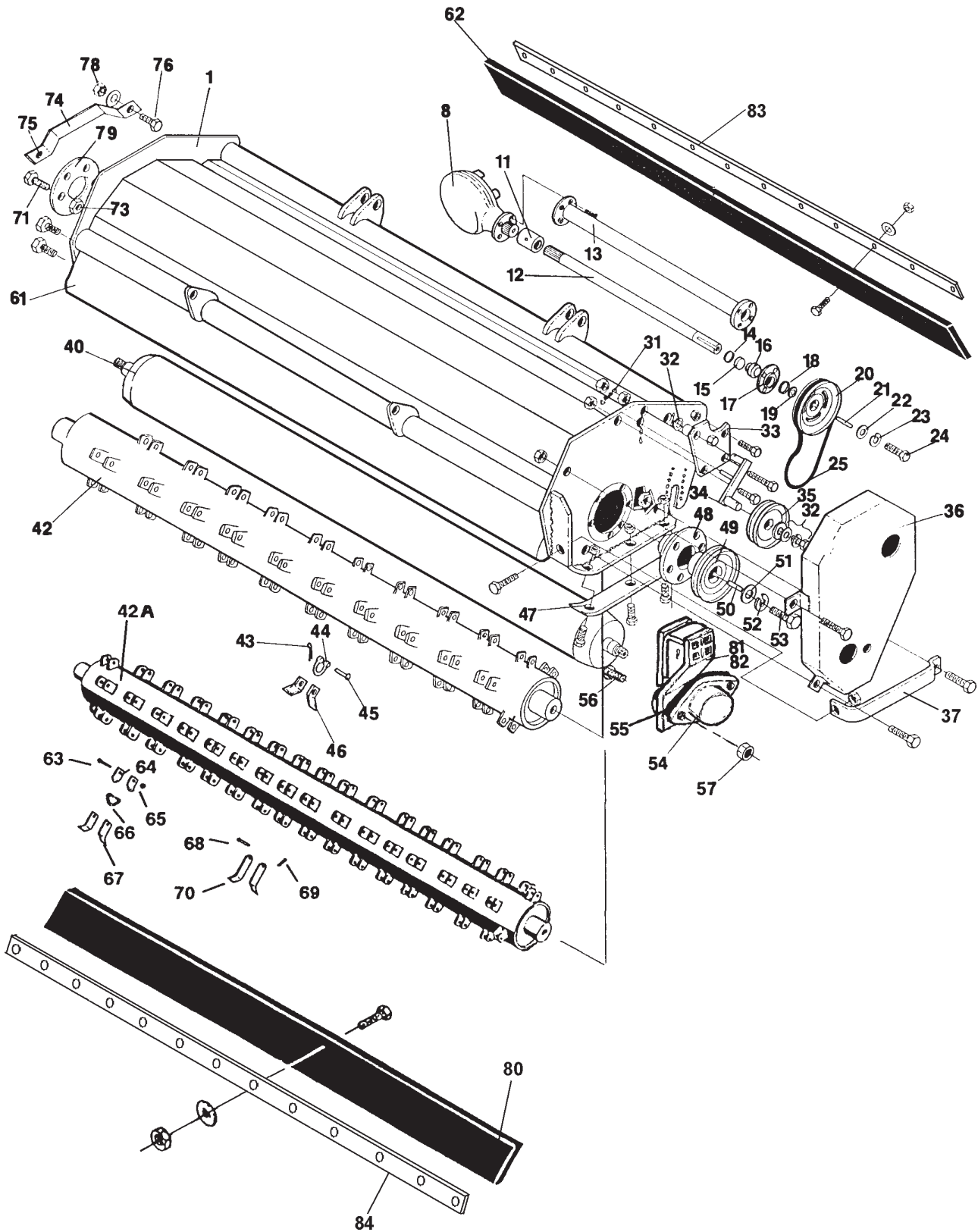
+ = Fastener, not shown

\* = Optional

@ = not shown

**PARTS**

# 96" CENTER MOWER ASSEMBLY



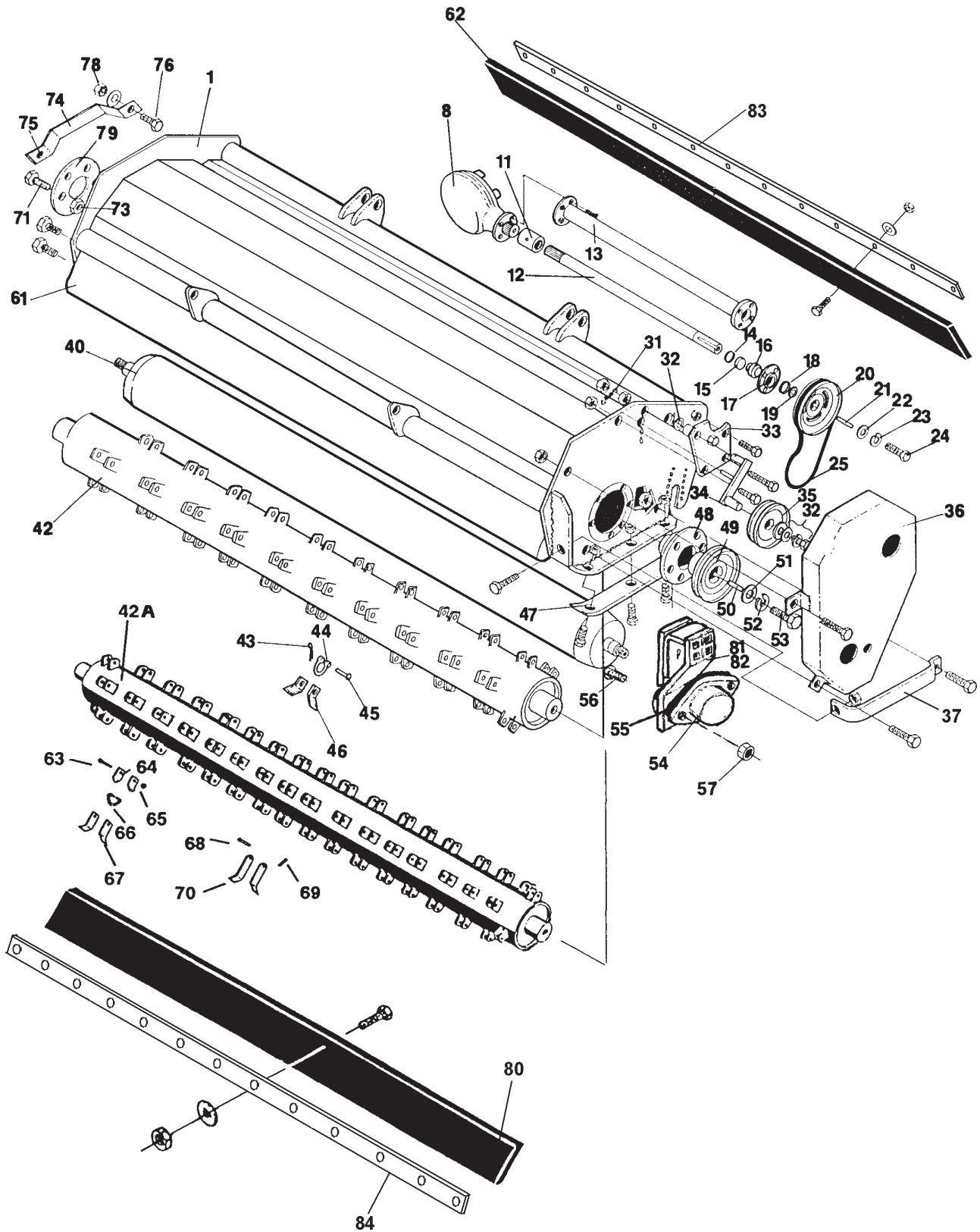
**PARTS**

# 96" CENTER MOWER ASSEMBLY

ITEM	PART#	FWD	REV	DESCRIPTION
1	107760	1	1	Standard Cutterhousing
1	107201	1	1	Cutterhousing w/Caster Brackets
8	702673	1	1	Gearbox
11	700171	1	1	Spline Coupler Assembly (w/grease fitting)
+	001727	4	4	Counterbore Screw
+	03101646	4	4	Lockwasher
12	107748	1	1	Extension Shaft
13	107747	1	1	Extension Shaft Housing
+	001727	1	1	Screw
+	03101646	1	1	Lockwasher
14	100010	1	1	Bevel Ring
15	100057	1	1	Snap Ring
16	000398	1	1	Bearing
--	700491	1	1	Bearing and Housing Assembly
@	000206	1	1	Lubricap
+	00023100	4	4	Bolt
+	00752036	4	4	Nut
17	700739	1	1	Bearing Housing (w/grease fitting)
18	000402	2	2	Bearing Retaining Ring
19	102651	3	3	Pulley Shim (as needed)
20	102501	1	1	Drive Shaft Pulley
21	101782	1	1	Key
22	101780	1	1	Heavy Washer
23	00019600	1	1	Lockwasher
24	000555	1	1	Bolt
25	100706	1	1	Drive Belt
31	000539	1	1	Spring
32	101778	4	4	Pulley Arm Bearing Plate Spacer
+	000001	1	1	Bolt
+	00011700	1	1	Lockwasher
+	00023500	1	1	Washer
--	700494	1	-	Idler Assembly
--	701851	-	1	Idler Assembly
33	701905	1	-	Outboard Bearing Plate (w/grease fitting)
33	701847	-	1	Outboard Bearing Plate (w/grease fitting)
@	000206	1	1	Lubricap
+	000135	1	1	Bolt(long)
+	000645	1	1	Bolt
+	00752036	2	2	Locknut
+	00013901	1	1	Nut
34	100727	1	-	Idler Arm
34	104938	-	1	Idler Arm
+	00755153	2	2	Cotter Pin
35	000547	1	1	Idler Pulley
@	700494	1	-	Idler Assembly (Including 32-35 & fasteners)
@	701851	-	1	Idler Assembly (Including 32-35 & fasteners)

**PARTS**

# 96" CENTER MOWER ASSEMBLY



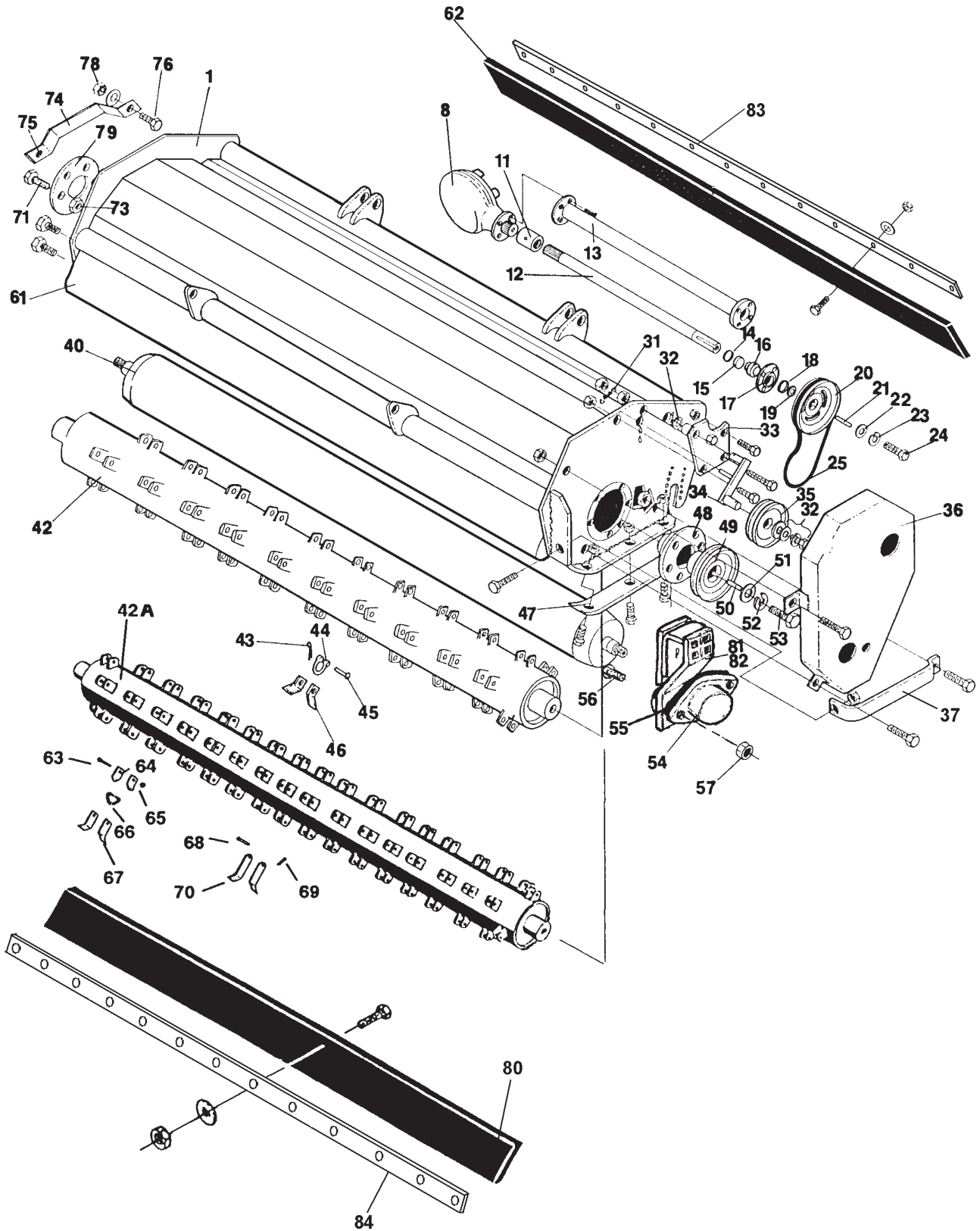
**PARTS**

# 96" CENTER MOWER ASSEMBLY

36	700488	1	-	Belt Guard Package (Incl. fasteners)
+	000139	3	-	Bolt
+	00001800	3	-	Nut
36	701845	-	1	Belt Guard Package (Incl. fasteners)
+	000139	-	1	Bolt
+	000508	-	2	Bolt
+	00019600	-	2	Lockwasher
+	00019700	-	2	Flatwasher
+	00001800	-	1	Nut
37	103117	1	-	Belt Guard Fender
37	104935	-	1	Belt Guard Fender
@	103064	1	1	Fender, R.H.: Fwd/LH.: Rev
+	000141	1	1	Bolt (front)
+	000140	1	1	Bolt (rear)
+	00001800	2	2	Nut
40	107682	1	1	Roller-Round Shaft
	107787	1	1	Roller-Hex Shaft
@	703260	1	1	Roller Assembly-Hex Incl. (40, 54 - 57, 81, 82)
42	107745	1	-	Coarse Cut Cuttershaft
42A	107789	1	1	Fine Cut Cuttershaft
43	02668700	48	-	Cotter Pin
44	100761	48	-	Ring
45	102670	48	-	Hardened Knife Pin
46	100759	96	-	Coarse Cut Knife
46	108381	96	-	Coarse Cut Knife Extreme Service
@	103026	44	44	Renovating Knife
@	703874A	1	-	Coarse Cut Knife Package (Extreme Service)
@	703987	1	-	Renovating Knife Package (Coarse Cut Cuttershaft)
47	103051	2	2	Shoe Wear Plate
+	02886900	2	2	Carriage Bolt
+	000700	4	4	Plow Bolt
+	00001800	6	6	Nut
@	100704	2	2	Wear Shoe - Renovating Mower
+	02030700	4	4	Bolt
+	00001800	4	4	Nut
48	703695	1	1	Cuttershaft Bearing and Housing Assembly
@	002315	1	1	Bearing
+	000206	2	2	Lubricap
+	000354	6	6	Bolt
+	00752036	6	6	Nut
49	102652	1	1	Cuttershaft Pulley
50	100768	1	1	Key
51	100720	1	1	Clamp Washer
52	000521	1	1	Lockwasher
53	000407	1	1	Bolt
54	703575	2	2	Roller Bearing and Housing Assembly (Keyed)
	703976	2	2	Roller Bearing and Housing Assembly (Hex)
@	703574	2	2	Bearing (Keyed)
	002486	2	2	Bearing (Hex)
@	002039	2	2	Grease Fitting

**PARTS**

# 96" CENTER MOWER ASSEMBLY



**PARTS**

# 96" CENTER MOWER ASSEMBLY

55	002037	2	2	Seal
56	000516	4	4	Carriage Bolt
57	00001800	4	4	Nut
61	107754	1	1	Front Foot Guard
+	00749130	4	4	Bolt
+	00019600	4	4	Lockwasher
+	00001200	4	4	Nut
62	100753	1	1	Rubber Rear Trash Deflector
+	02153100	13	13	Bolt
+	00024100	13	13	Washer
+	02959924	13	13	Nut
63	000032	116	-	Bolt
64	02990020	232	-	Ring Clip
65	000210	116	-	Locknut
66	101991	116	-	Ring
67	101993	232	-	Ring Knife
	700803	1	-	Ring Knife Pkg. (Incl. 63 -67)
68	101034	116	116	Hardened Knife Pin
69	02668700	116	116	Cotter Pin
70	102086	232	232	Fine Cut Knife
	102087	108	108	Renovating Knife for Fine Cut Cuttershaft
71	000354	6	6	Bolt
73	00752036	6	6	Nut
74	103064	1	1	Fender
75	00748823	1	1	Bolt
76	02030700	1	1	Bolt
78	00001800	2	2	Nut
79	704305	1	1	Bearing Housing Assembly
@	703694	1	1	Bearing with Set Screw
80*	108017	-	1	Front Rubber Trash Deflector
@*	02153100	12	12	Bolt
@*	00024100	12	12	Flatwasher
@*	02959924	12	12	Nut
81	107182	1	1	Bracket LH
82	107380	1	1	Bracket RH
@	703263	1	1	Bracket & Bearing Assembly LH-Keyed(Incl. 81, 54 -57)
@	703596	1	1	Bracket & Bearing Assembly RH-Keyed(Incl. 82, 54 -57)
	703977	1	1	Bracket & Bearing Assembly LH-Hex
	703978	1	1	Bracket & Bearing Assembly RH-Hex
+	02979042	4	4	Locknut
+	02886900	4	4	Carriage Bolt
83	02976084	1	-	Bar Flap Retainer - Rear
84	108753	-	1	Bar Flap Retainer - Front

+ = Fastener, not shown

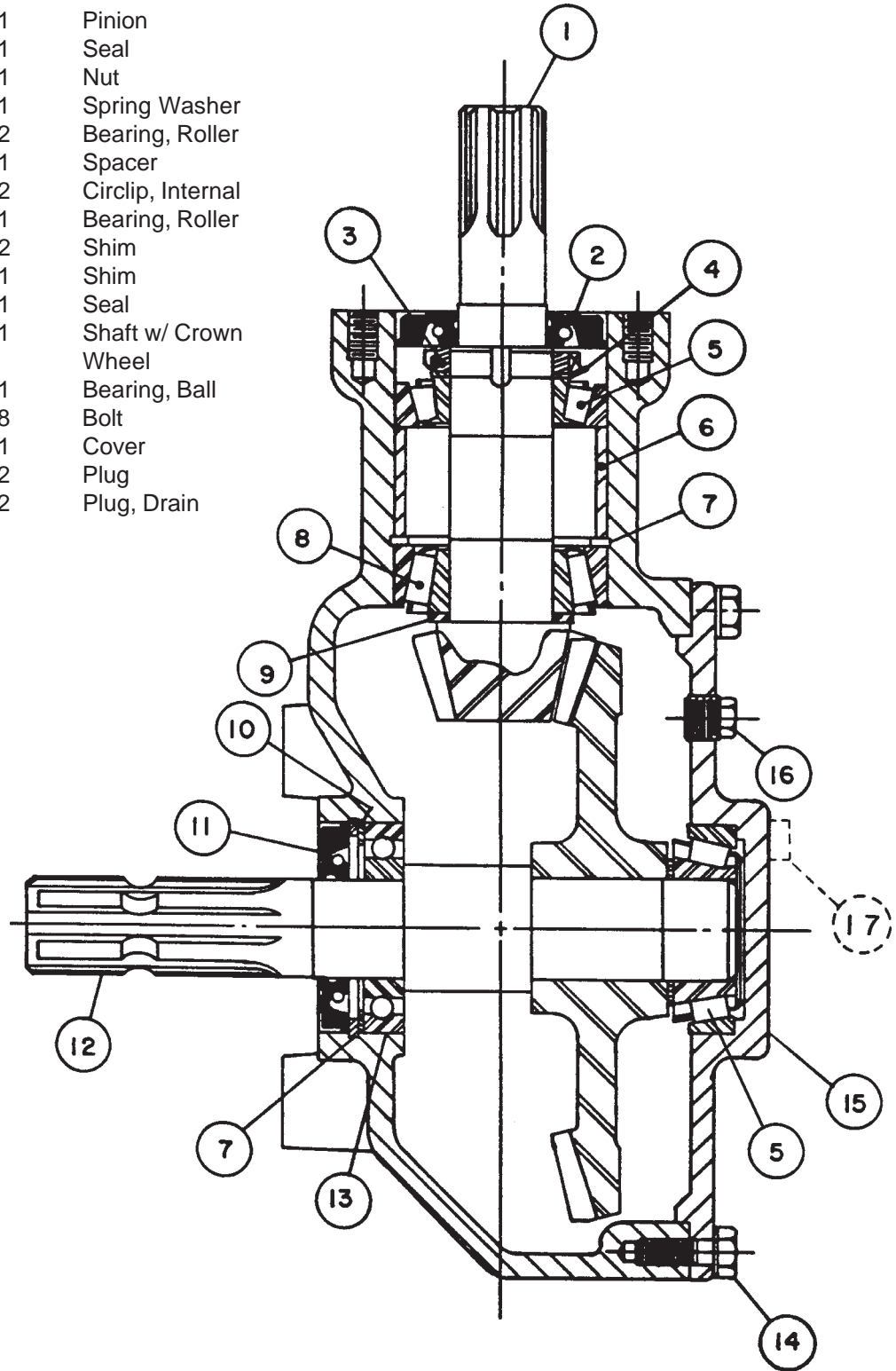
\* = Optional

@ = not shown

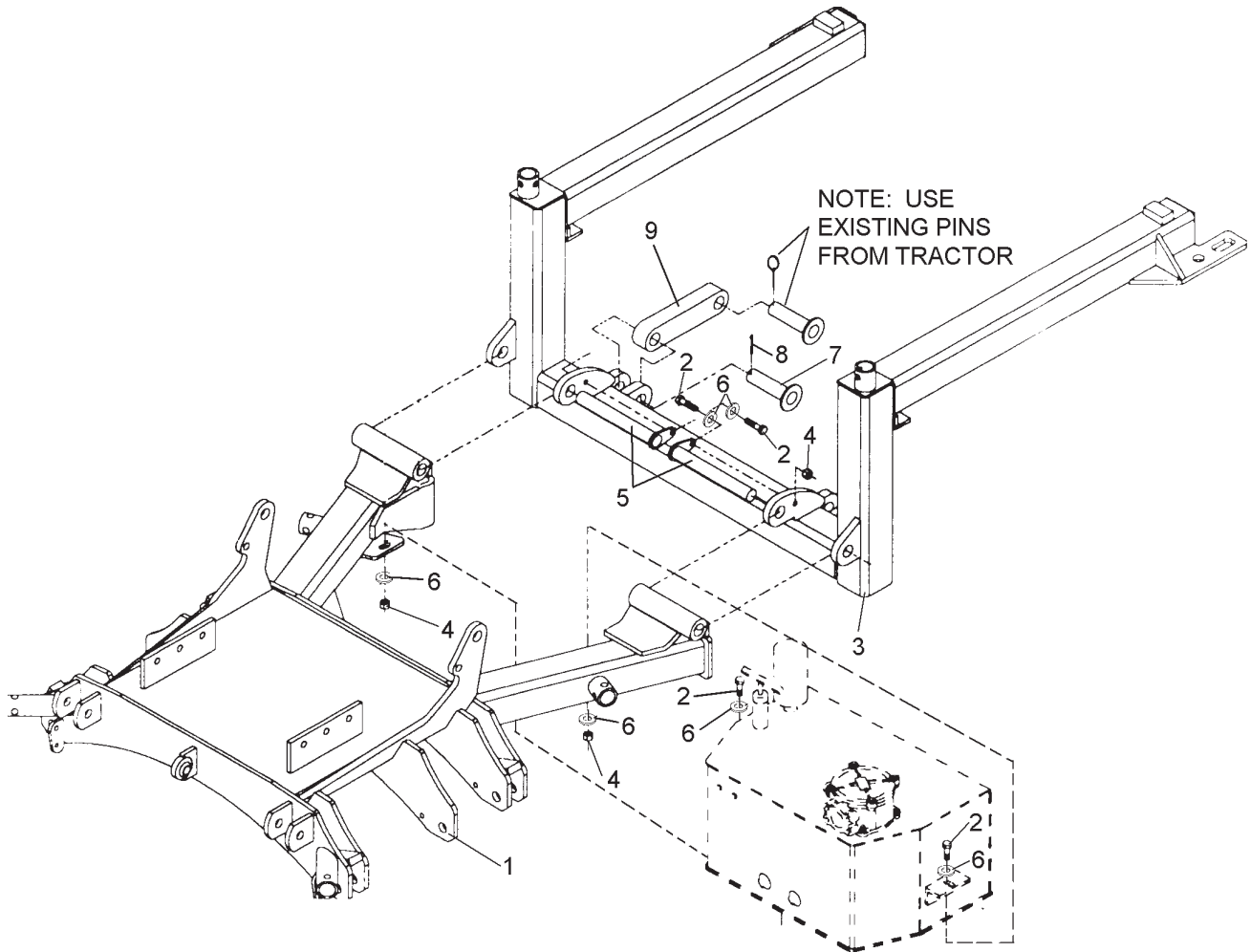
**PARTS**

# REVERSE GEARBOX P/N 702673

ITEM	PART NO.	QTY	DESCRIPTION
1	001718	1	Pinion
2	001719	1	Seal
3	001717	1	Nut
4	001720	1	Spring Washer
5	00754757	2	Bearing, Roller
6	001716	1	Spacer
7	00754752	2	Circlip, Internal
8	001722	1	Bearing, Roller
9	00753222	2	Shim
10	00754761	1	Shim
11	001724	1	Seal
12	001725	1	Shaft w/ Crown Wheel
13	00754459	1	Bearing, Ball
14	001708	8	Bolt
15	001710	1	Cover
16	00755633	2	Plug
17	000055	2	Plug, Drain

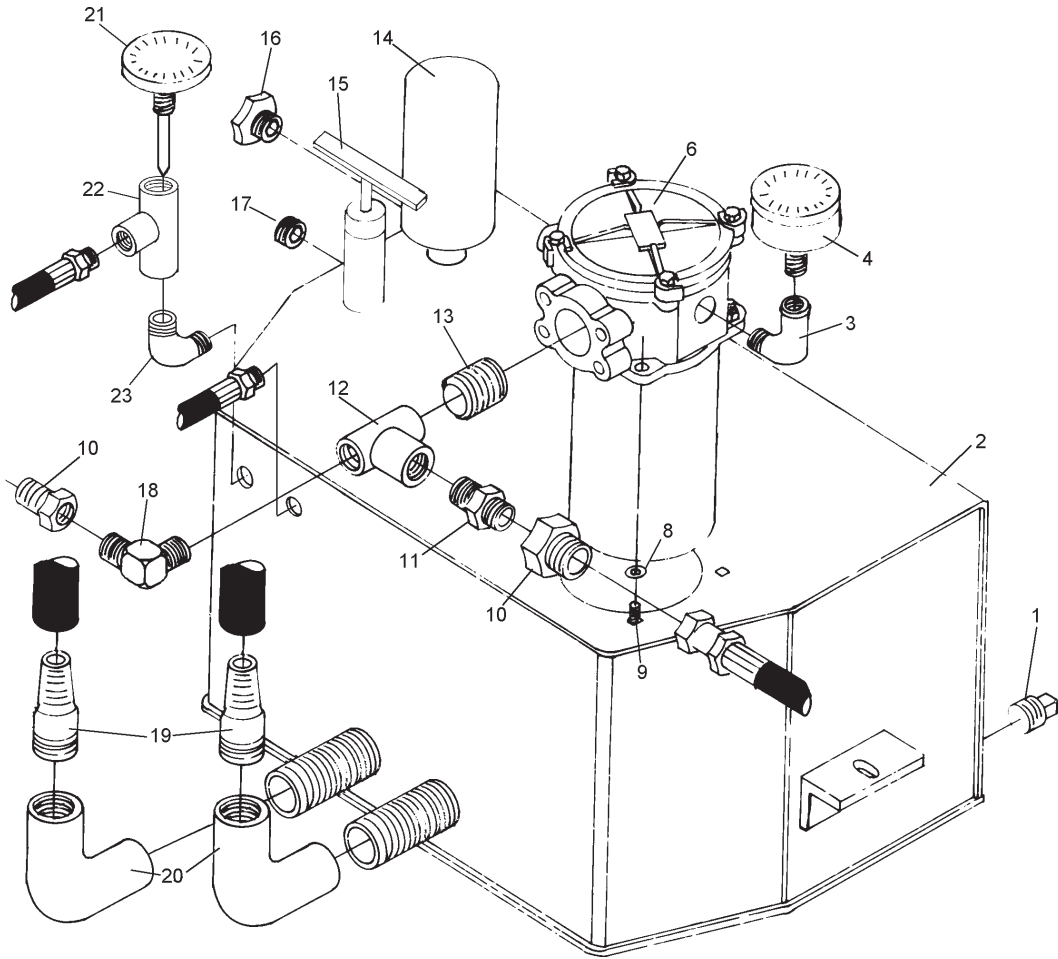


# MAINFRAME TO ATTACHMENT FRAME



ITEM	PART NO.	QTY	DESCRIPTION
1	107750	1	Weldment - Mainframe
2	00749130	2	Bolt
3	107765	1	Weldment - Attachment Frame
4	00001800	2	Nut
5	107761	2	Pin
6	00002700	4	Washer
7	02963400	2	Pin
8	01422502	2	Pin - Cotter
9	107774	2	Axle Mount Bar

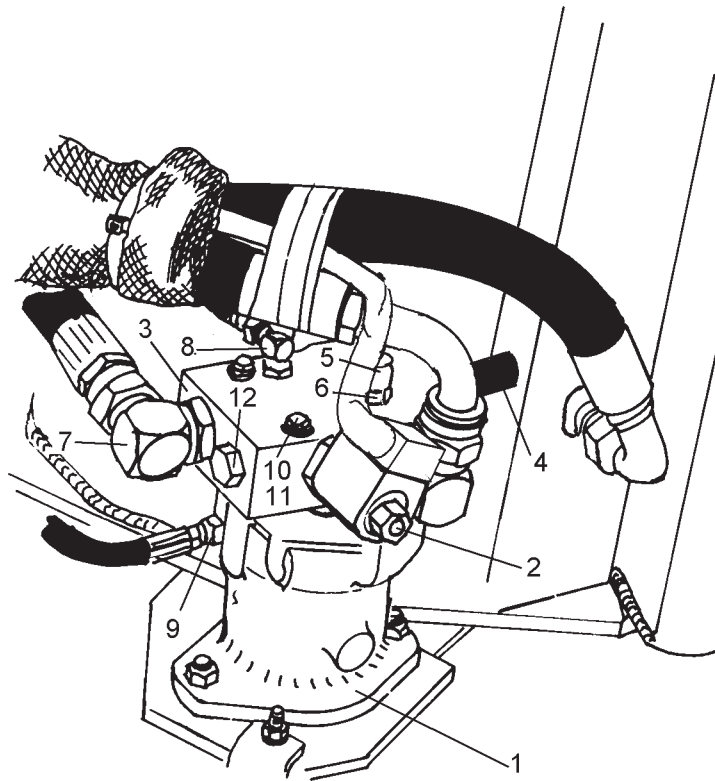
# TANK ASSEMBLY P/N 703958



ITEM	PART NO.	QTY	DESCRIPTION
1	00752307	1	Magnetic Plug
2	107726	1	Weldment - Tank
3	00751596	1	Elbow
4	02962963	1	Dial Indicator
6	02964748	1	Filter - Modified
	02961001	1	Filter Element
	02961452	1	O-Ring
8	02049500	4	Lock Washer High Collar
9	00600500	4	Bolt
10	02961286	2	Straight Adapter
11	02960809	1	Straight Adapter
12	00751468	1	Tee Adapter
13	72414000	1	Pipe Adapter
14	00770429	1	Breather Valve w/Filter
15	03200350	1	Fill Cap
16	02049700	1	Sight Gauge
17	001064	1	Plug
18	02958920	1	Elbow
19	03200300	2	Bib
20	02961115	2	Elbow
21	000810	1	Thermometer
22	02959883	1	Tee
23	00751143	1	Elbow

# LEFT WING HYDRAULIC MOTOR ASSEMBLY

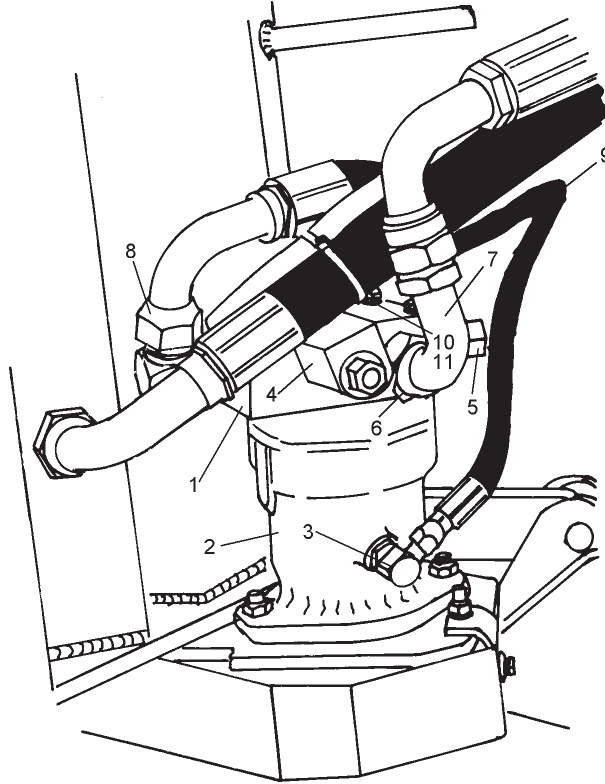
**NOTE:** Hydraulic Motor Assembly shown in vertical position with raised wing.



ITEM	PART NO.	QTY	DESCRIPTION
1	001602	1	Motor
2	002502	1	Solenoid Valve - Complete
	002099	1	Solenoid Valve Cartridge w/Seals
	002098	1	Solenoid Valve Seal Kit
	002503	1	Solenoid Valve Coil
3	02964792	1	Manifold Block
4	00286	1	Relief
5	001574	1	Cap Nut
6	03200283	1	Adapter
7	02090900	2	Adapter 90 deg.
8	63149100	1	Elbow
9	001654	1	Elbow
10	00011700	4	Lockwasher
11	63092200	4	Bolt
12	03200587	1	Plug

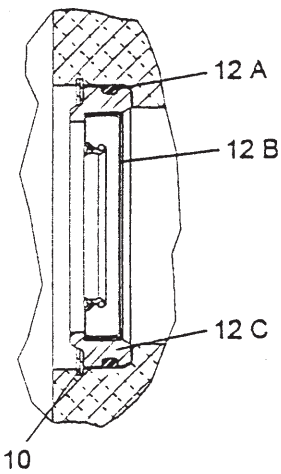
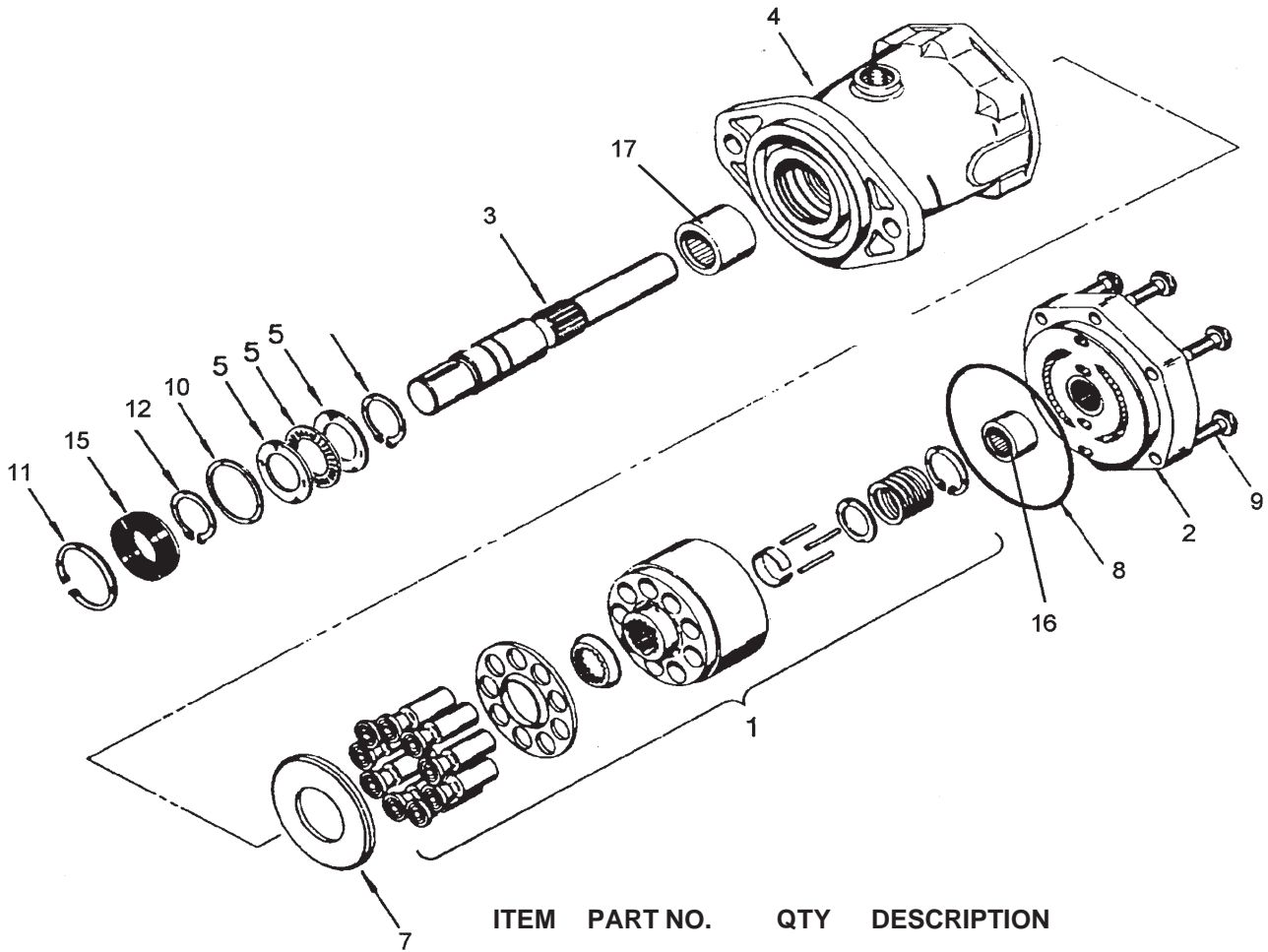
# RIGHT WING HYDRAULIC MOTOR ASSEMBLY

**NOTE:** Hydraulic Motor Assembly shown in vertical position with raised wing.



ITEM	PART NO.	QTY	DESCRIPTION
1	02964792	1	Manifold Block
2	001602	1	Motor
3	001654	1	Elbow
4	002502	1	Solenoid Valve - Complete
	002099	1	Solenoid Valve Cartridge w/ Seals
	002098	1	Solenoid Valve Seal Kit
	002503	1	Solenoid Valve Coil
	02970704	1	Solenoid Retaining Nut
5	001759	1	Valve Relief
6	02957622	1	Adapter
7	02958858	1	Adapter 90 deg.
8	02090900	1	Adapter
9	63149100	1	Elboow
10	00011700	4	Lockwasher
11	63092200	4	Bolt
12	03200587	1	Plug (not shown)

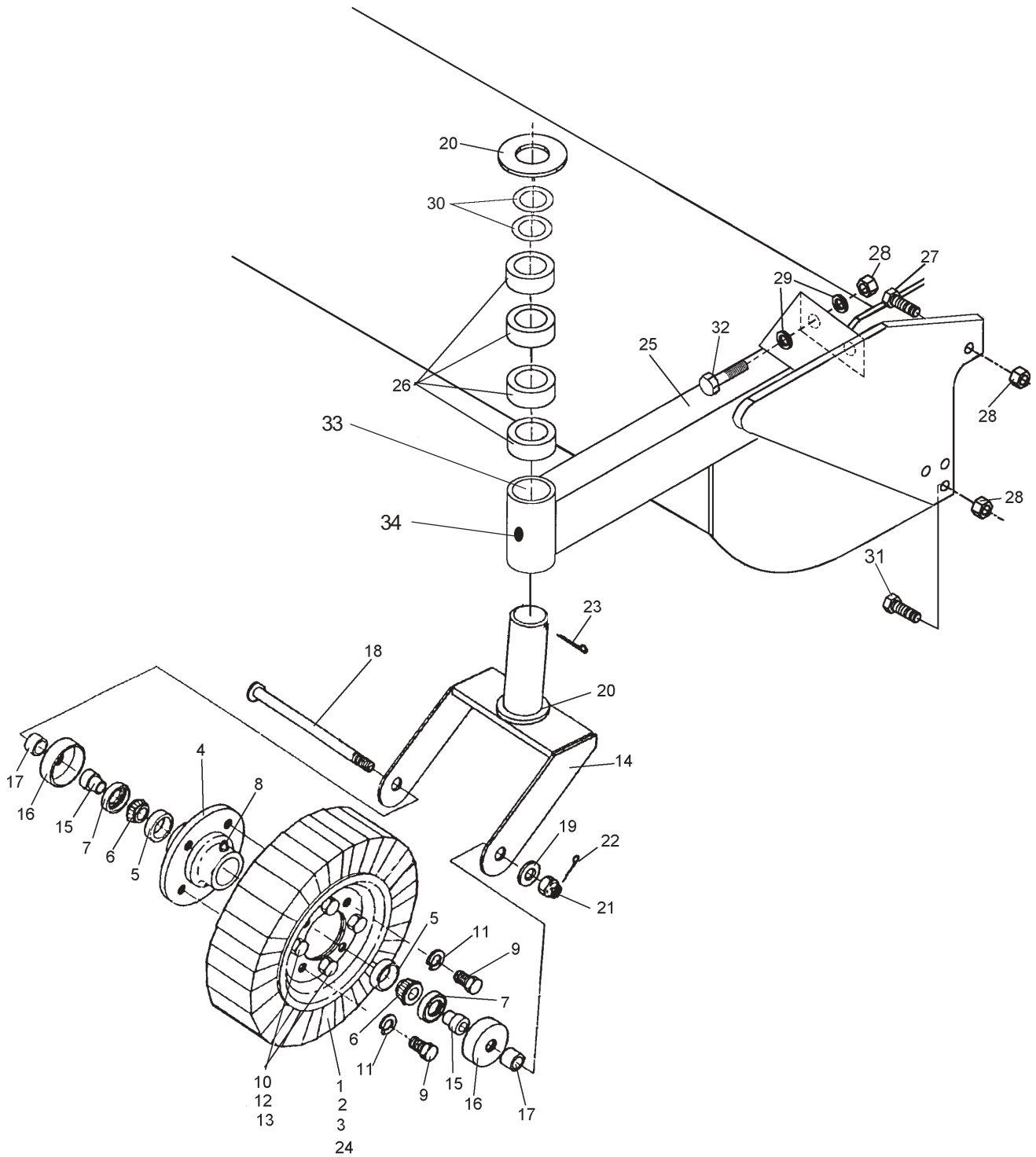
# HYDRAULIC MOTOR P/N 001602



ITEM	PART NO.	QTY	DESCRIPTION
1	001641	1	Rotating Kit Assembly
2	001642	1	Backplate Assembly w/Bearing
3	001643	1	Keyed Driveshaft
4	Non Service	1	Housing Assembly
5	001644	1	Thrust Bearing & Race kit
6	001645	1	Camplate Insert
7*	03200409	1	O-Ring
8	02766400	2	Capscrew
9	03200411	1	Washer
10*	03200412	1	Retaining Ring
11*	03200413	2	Retaining Ring
12	02966926	1	Shaft Seal Kit
12A*	02966924	1	O-Ring
12B*	02966922	1	Seal
12C*	02966923	1	Seal Adapter
13	03200521	1	Key
14	03200587	1	Plug
15	002339	1	Bearing, Backplate
16	002340	1	Bearing, Housing

\* Included in Seal Kit p/n 001648

# CASTER WHEEL ASSEMBLY

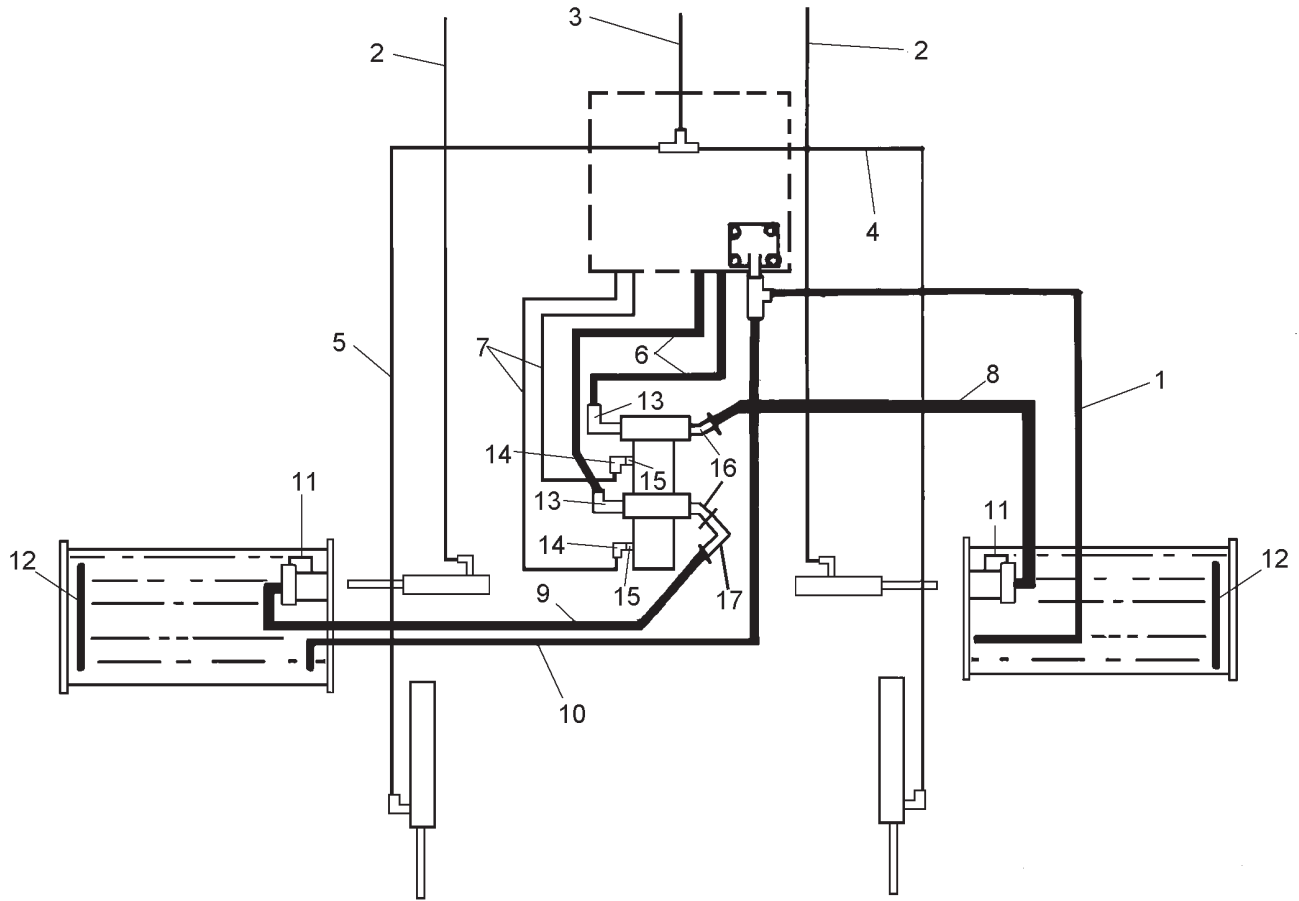


# CASTER WHEEL ASSEMBLY

ITEM	PART NO.	QTY	DESCRIPTION
1	373024	1	Wheel Assy. (1 ea. Items 2, 3, & 373024D)
2	373024A	1	Tire
3	373024B	1	Wheel
4	373024C	1	Hub. (w/Bearing Cups & Grease Fitting)
	373024D	ref.	Hub, (w/ Bearings, Seals, Grease Fitting, Bolts, & Lockwasher)
5	373024G	2	Bearing Cup
6	373024F	2	Bearing Cone
7	373024E	2	Seal, Grease
8	17C1792B	1	Grease Fitting (Threaded)
	00600000	1	Grease Fitting (Drive in)
9	7A8208	4	Capscrew, Hex Head
10	7A6166	4	Capscrew, Hex Head
11	13800	4	Lockwasher
12	13600	4	Lockwasher
13	5B6160	4	Nut
14	0585020210	1	Fork (Weldment)
15	37302C2C	2	Sleeve, Shoulder
16	37302D2B	2	Dust Cap
17	511016	2	Bushing, Spacer
18	37302D2A	1	Bolt, Spindle (Special)
19	15B1200	1	Washer, Plain SAE
20	15B2400	2	Washer, Plain SAE
21	5E12160	1	Nut. Slotted
22	1621/2012	1	Pin, Cotter
23	00758829	1	Roll Pin
24	373024H	1	Tire & Wheel (Bolted Assy. Only, Less Hub)
25	107734	1	Weldment - Caster Arm (LH)
	107733	1	Weldment - Caster Arm (RH)
26	107816	4	Spacer
27	00768823	2	Bolt
28	00001800	6	LockNut
29	00002700	4	Flatwasher
30	642013	2	Spacer
31	02027400	4	Bolt
32	00749130	4	Bolt
33	361129	2	Bushing (Inserted Inside Tube)
34	00752670	1	Grease Fitting

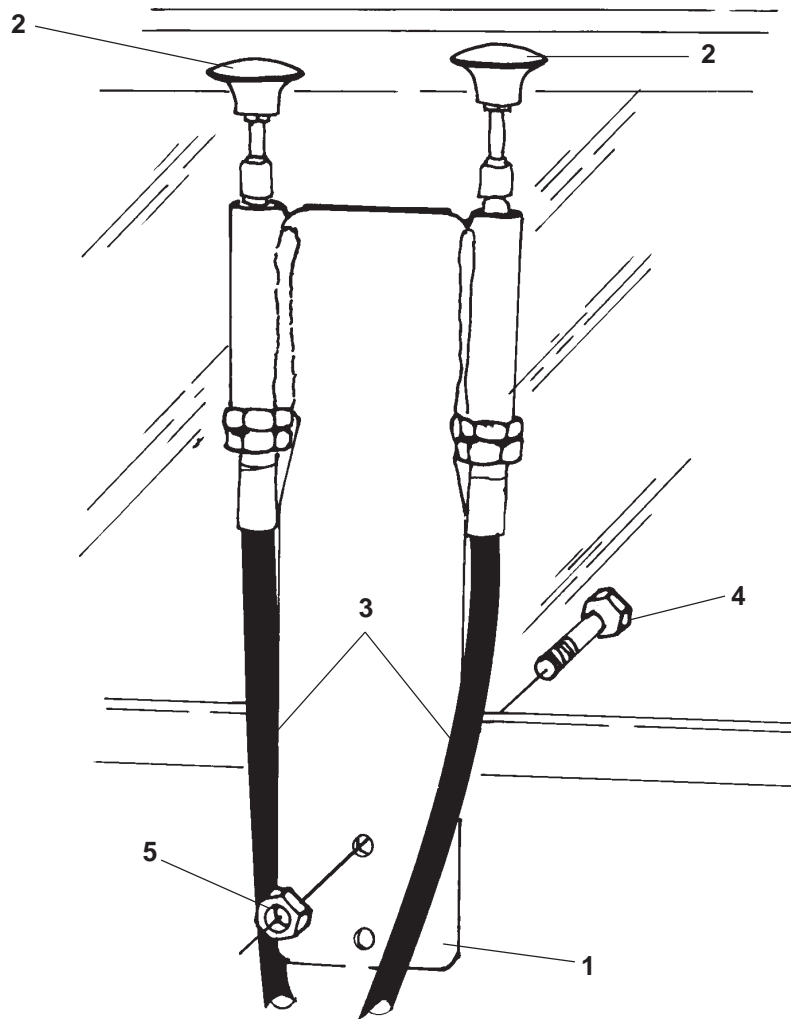
Item 1-24 make Assembly P/N 0585020200

# HYDRAULIC SCHEMATIC



ITEM	PART NO.	QTY	DESCRIPTION
1	002477	1	Hose
2	02839000	2	Hose
3	02964451	1	Hose
4	02961321	1	Hose
5	02965364	1	Hose
6	002476	2	Hose
7	001859	2	Hose
8	002478	1	Hose
9	002480	1	Hose
10	002479	1	Hose
11	001579	2	Hose
12	002628	2	Hose
13	002462	2	Adapter - 90 deg.
14	001921	2	Adapter - 90 deg.
15	02957622	2	Adapter - Straight
16	02043600	2	Adapter - 45 deg.
17	02958858	1	Adapter - 90 deg.

# CABLE MOUNT PLATE



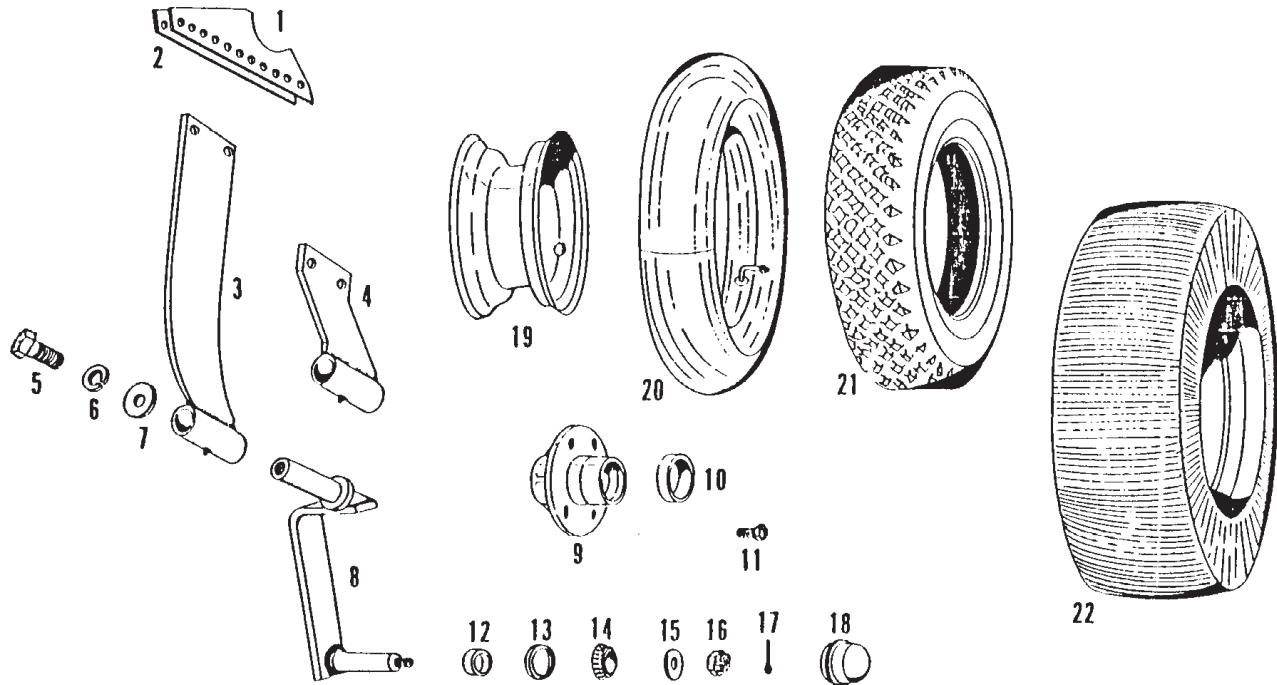
ITEM	PART NO.	QTY	DESCRIPTION
1	108005	1	Weldment-Cable Mount
2	108015	2	Knob
3	02962879	2	Cable
4	10058000	2	Bolt
5	02959924	2	Nut

# OPTIONAL EQUIPMENT, AND PACKAGES

702321	Knife Grinder (Sharpens all ALAMO flail mower knives)
700413	Knife Straightener Set (Two 102092 slotted bars)
107176 & 001967	62" Rubber Covered Roller
107177 & 001968	74" Rubber Covered Roller
107178 & 001969	88" Rubber Covered Roller
703262 & 001967	62" Rubber Covered Roller Assembly
703261 & 001968	74" Rubber Covered Roller Assembly
703260 & 001969	88" Rubber Covered Roller Assembly
703602	62" Roller Scraper Kit
703603	74" Roller Scraper Kit
703604	88" Roller Scraper Kit
700500	Pneumatic Caster Wheel Pkg., 180 deg. Swivel, Field Installed
700502	Laminated Caster Wheel Pkg., 180 deg. Swivel, Field Installed
701056	Pneumatic Caster Wheel Pkg., 360 deg. Swivel, Field Installed
701057	Laminated Caster Wheel Pkg., 360 deg. Swivel, Field Installed
704036	Rear Roller Scraper
107787 & 002452	Rubber Covered Roller

(All above Caster Wheel Pkg's include fasteners)

## CASTER WHEEL PACKAGE



**PARTS**

# OPTIONAL EQUIPMENT, AND PACKAGES

ITEM	PART NO.	QTY	DESCRIPTION
1*	100752	2	Right Caster Bracket
2*	100753	2	Left Caster Bracket
3	701058	2	360 Deg. Caster Socket Assembly w/Grease Fitting
4	700191	2	180 Deg. Caster Socket Assembly w/Grease Fitting
	000142	4	Bolt
	000520	4	Lockwasher
	000170	4	Nut
5	000554	2	Bolt
6	000520	2	Lockwasher
7	103767	2	Washer
8	100141	2	Caster Half Fork
9	000621	2	Hub w/Bearing Cups
10	000226	4	Bearing Cups
11	000622	8	Hub Bolt w/item 19
	000554	8	Hub Bolt
	000520	8	Lockwasher
12	000573	2	Spacer
13	000201	2	Seal
14	000225	4	Bearing Cone
15	101780	2	Washer
16	000122	2	Nut
17	000123	2	Cotter Pin
18	000247	2	Hub Cap
	000620	2	Hub Complete (incl. 9, 12-14, 18)
	702272	2	Lower Fork Assembly (Incl. 8, 9, 12-18)
19	000619	2	Wheel (tube type tire)
20	000623	2	Tube
21	000618	2	Tire (tube type)
	000617	2	Wheel, Tire and Tube Assembly (incl. 19-21)
22**	700280	2	Laminated Tire/Wheel Assembly

\* For field installation, brackets are shipped loose. They are to be welded to the housing by the customer. Brackets for mowers ordered with brackets are welded at the factory.

\*\* Optional

# ALAMO INDUSTRIAL

## LIMITED WARRANTY

### 1. LIMITED WARRANTIES

- 1.01. Alamo Industrial 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 limited 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 limited 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 limited 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) or
  - (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.The choice of remedy shall belong to Manufacturer.
- 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. NOT WITHSTANDING 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. Proper Venue for any lawsuits arising from or related to this limited warranty shall be only 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.
- 4.04. Applicable law may provide rights and benefits to purchaser in addition to those provided 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 Industrial Implement Model \_\_\_\_\_ Serial Number \_\_\_\_\_

Date Purchased \_\_\_\_\_ Dealer \_\_\_\_\_

ATTENTION:  
READ YOUR OPERATOR'S MANUAL

**ALAMO INDUSTRIAL**

An Alamo Group Company

1502 E. Walnut  
Seguin, Texas 78155  
830-379-1480





## 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.**

