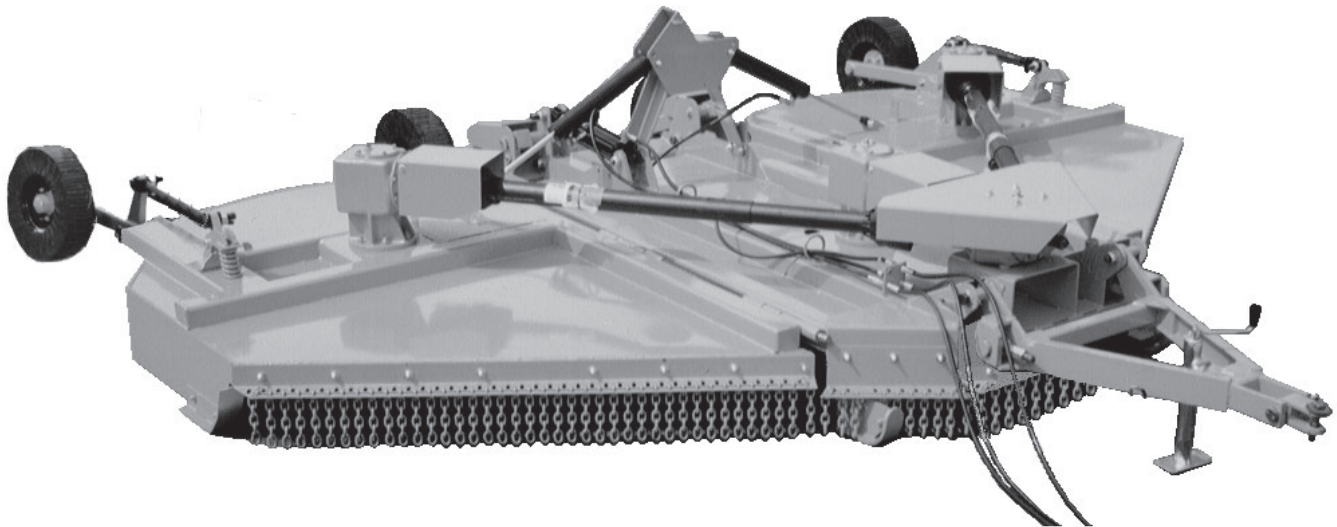




A10IV A15IV ROTARY CUTTER

Rev 03-13

P/N 00755130



OPERATOR'S MANUAL with PARTS LISTING

ALAMO INDUSTRIAL

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



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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!!

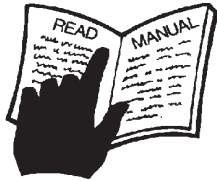
Read the safety messages on the implement and shown in your manual.
Observe the rules of safety and common sense!



DANGER

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

1.



2. NO RIDERS, NO CHILDREN OPERATORS



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



4. BLOCK UP SECURELY BEFORE WORKING UNDER.



1. Study 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.

5. TRANSPORT SAFELY, LOCK UP.



6. USE SMV, LIGHTS, & REFLECTORS.



7. DO NOT OPERATE WITH MOWER OR WING RAISED.



8. DO NOT MOUNT OR DISMOUNT WHILE MOVING.



002369

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

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.



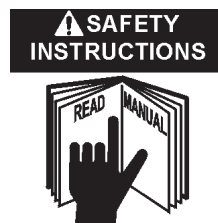
DANGER!

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)

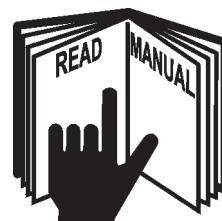


¡LEA EL INSTRUCTIVO!

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!

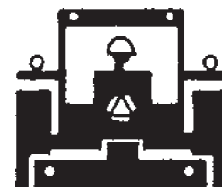


Always maintain the safety decals in good readable condition. If the decals are missing, damaged, or unreadable, obtain and install replacement decals immediately. (SG-5)

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!

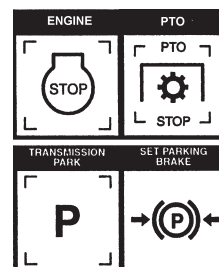


Do not modify or alter this Implement. Do not permit anyone to modify or alter this Implement, any of its components or any Implement function. (SG-8)

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)



SAFETY

SAFETY

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)



DANGER!



Never allow children to operate or ride on the Tractor or Implement. (SGM-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!



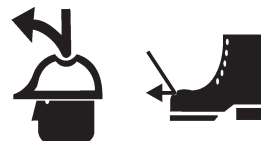
Do not operate this Equipment with hydraulic oil leaking. Oil is expensive and its presence could present a hazard. Do not check for leaks with your hand! Use a piece of heavy paper or cardboard. High-pressure oil streams from breaks in the line could penetrate the skin and cause tissue damage including 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)



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)



SAFETY

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 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)



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)



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)

SAFETY

SAFETY

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!



There are obvious and hidden potential hazards in the operation of this Mower. **REMEMBER!** This machine is often operated in heavy brush 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. (SGM-2)



WARNING!



Follow these guidelines to reduce the risk of equipment and grass fires while operating, servicing, and repairing the Mower and Tractor:

- Equip the Tractor with a fire extinguisher in an accessible location.
- Do Not operate the Mower on a Tractor with an underframe exhaust.
- Do Not smoke or have an open flame near the Mower and Tractor.
- Do Not drive into burning debris or freshly burnt areas.
- Ensure slip clutches are properly adjusted to prevent excessive slippage and plate heating.
- Never allow clippings or debris to collect near drivelines, slip clutches, and gearboxes. Periodically shut down the Tractor and Mower and clean

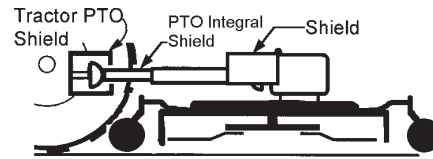


SAFETY

DANGER!



All Safety Shields, Guards and Safety devices including (but not limited to) - the Deflectors, Chain Guards, Steel Guards, Gearbox Shields, Hydraulic Tank 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. (SGM-3)



DANGER!



The rotating parts of this machine have been designed and tested for rugged use. However, they could fail upon impact with heavy, solid objects such as steel guard rails and concrete abutments. Such impact could cause the broken objects to be thrown outward at very high velocities. To reduce the possibility of property damage, serious injury, or even death, never allow the cutting blades to contact such obstacles. (SGM-4)

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 are 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 in the reverse direction that you have not inspected and removed debris or foreign material. (SGM-8)

WARNING!



Do not put hands or feet under mower decks. Blade Contact can result serious injury or even death. (SGM-9)



WARNING!



Only tow the Implement behind a properly sized and equipped Tractor which exceeds the weight of the Implement by at least 20%. DO NOT tow the Implement behind a truck or other type of vehicle. Never tow the Implement and another Implement connected in tandem. Never tow the Implement at speeds over 20 MPH. (STI-6)

SAFETY

SAFETY

DANGER!



Replace bent or broken blade with new blades. NEVER ATTEMPT TO STRAIGHTEN 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!



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



STOP MOWING IF PASSERSBY ARE WITHIN 100 YARDS UNLESS:

- Front and Rear Deflectors, 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;
- Passerby 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.) (SRM-1)

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)

DANGER!

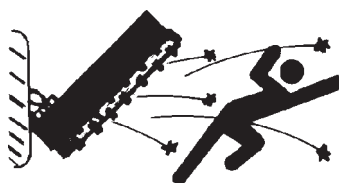


Do not turn so sharp or lift mower so high to produce a severe "knocking" of the Driveline which will cause accelerated wear and breakage of drive train components and could result in possible injury from the separated Driveline sections. (SRM-4)

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)



WARNING!



Never leave Tractor and Implemented 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. (S3PT-1)

SAFETY

SAFETY

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)

CAUTION!



To prevent tipping of implement when stored in folded position, use carrying wheels or adequate stands on center frame. (S3PT-6)

DANGER!



There are obvious and hidden potential hazards in the operation of this Implement as in all power-driven or pulled equipment. REMEMBER! This machine is often operated in rough terrain conditions that include tall grass, weeds, gullies, holes, slopes, hidden obstructions and the like. Serious injury or even death may occur unless care is taken to assure the safety of the operator and bystanders in the area. Do not operate this machine with anyone in the immediate area. (S3PT-7)

DANGER!



Make sure the PTO shield is installed when using PTO-driven equipment. Always replace the PTO 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)



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. (S3PT-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!



Be particularly careful when transporting the Implement using the tractor. Turn curves or go up or down hills only at a low speed and at a gradual steering angle. Make certain that at least 20% of the tractor's weight is on the front wheels to maintain safe steering. Slow down on rough or uneven surfaces. (STI-1)

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)

SAFETY

SAFETY

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)



WARNING!



Never unhitch without using the Tongue Jack. The Tongue is very heavy. Attempting to lift the Tongue without using the Tongue Jack could cause **strains or other injury**. Allowing the tongue to fall **suddenly and unexpectedly** could result in **crushing injury**. Use the Tongue Jack for **lifting the mower only**. Overloading the Tongue Jack can cause failure with possible **serious bodily injury or even death**. (STI-4)

CAUTION!



On a fully-assembled unit, do not remove the Wing Retaining Strap until hoses are attached to the tractor and the Wing Cylinders are filled with oil. Lower the Wings slowly and carefully. Keep bystanders away during operations. (STI-5)

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)

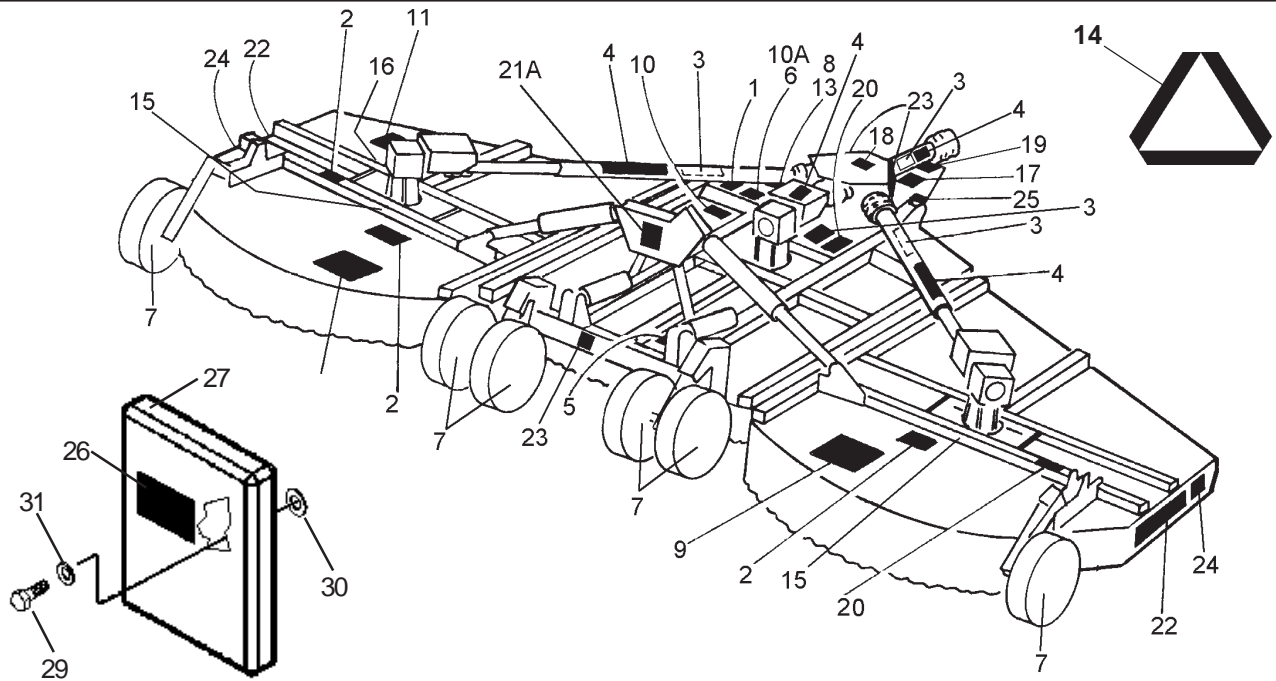
PARTS INFORMATION

Servis-Rhino 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 Servis-Rhino 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 Servis-Rhino mower parts for economy and safety. (SPRM-1)

SEE YOUR SERVIS-RHINO DEALER

SAFETY

SAFETY



ITEM	PART NO.	QTY	TYPE	DECAL DESCRIPTION
1	00725746	1	PELIGRO	Get Manual Translated
2	00753840	2(1)	DANGER	Folding Wings
3	00756004	1((3))	DANGER	D/L Shield Missing, Do Not Oper.
4	00756005	1((3))	DANGER	Rotating D/L, Entanglement
5	00756059	1	DANGER	Oil Leak Detection, Skin Penetr.
6	00756494	1	DANGER	Driveline Hazards, 540 RPM
7	00762608	1/Wheel	CAUTION	Airplane Tire Safety
8	00769736	1	WARNING	Use/Repair Shields & Guards
9	00769737	2(1)	DANGER	Cutting Blades/Thrown Objects
10	02925100	1	INSTRUCT	Genuine Parts, Rotary Mowers
10	00773723	1	PELIGRO	Rotating Driveline Translation
11	02967827	1	DANGER	Multiple Hazards, Folding Rotary
12	999403	0(1)	DANGER	Ctr Sect Overturn w/o Wgt Box
13	D103	[1]	WARNING	540 RPM
	D114	[1]	WARNING	1000 RPM
14	03200347	*	REFLCTR	SMV Emblem
15	1458392	2	REFLCTR	Red Reflector
16	1458393	1	REFLCTR	Amber Reflector
17	00763613	1	INSTRUC	Slip Clutch
18	00763977	1	INSTRUC	Notice to Owner
19	D102	1	INSTRUC	Drawbar-to-PTO Distance
20	D137	2(1)	INSTRUC	Counter-Clockwise Blade Rotation
21	D138	1	INSTRUC	Clockwise Blade Rotation
21A	00763964	1	INSTRUC	AG15 Cylinder Location
22	00757139	2	LOGO	ALAMO BY TK, 5-3/8 X 31-3/8
23	02960766	3	LOGO	ALAMO, 4 X 5
24	00769809	[2]	NAME	A15-IV
	00769812	[2]	NAME	A10-IV
25	nfs	1	SRL PLT	A15-IV
26	02977417	1	INSTRUC	Oper. Man Inside
27	02977385	1	-----	Canister, Oper. Man
28	00755130C	1	-----	Oper. Manual
29	10058000	4	-----	Bolt
30	00017000	4	-----	Lockwasher
31	00024100	4	-----	Flatwasher

* Provided by Tractor Manufacturer
 () For Two-Section Unit w/left wing removed
 (()) Installed by Driveline Manufacturer
 [] Use one or the other

SAFETY

SAFETY

PELIGRO

Si No Lee Ingles, Pida Ayuda a Alguien Que Si Lo Lea Para Que le Traduzca las Medidas de Seguridad.

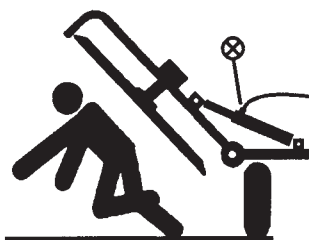
LEA EL INSTRUCTIVO




00725746

1 - 00725746

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

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

26-02977417

SAFETY

SAFETY

! 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

! PELIGRO

Un manual de la seguridad de la línea de conducción n/p 00773776 está disponible en español. Llame el número enumerado para una copia gratis.



**LÍNEA DE CONDUCCIÓN GIRATORIA-
EL CONTACTO PUEDE CAUSAR LA MUERTE
¡MANTENERSE LEJOS!
NO FUNCIONE SIN QUE-**

- Todos los protectores de la línea de Conducción, alimentador y blindajes del Equipo estén en su lugar
- Las líneas de conducción estén conectadas con seguridad en ambos extremos
- Los protectores de la línea de conducción den vuelta libremente en la línea de Conducción

00773723

10A - 00773723

SAFETY

SAFETY

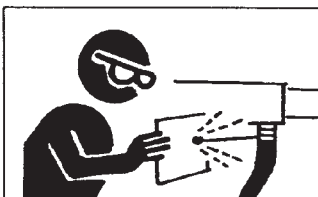
WARNING

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

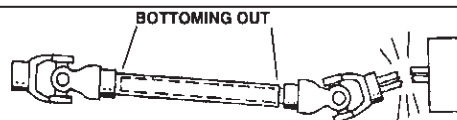


5 - 00756059

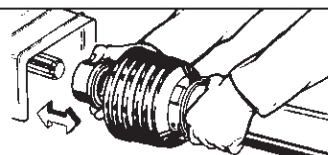
DANGER

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

6 - 00756494


SAFETY

CAUTION

FAILURE TO FOLLOW SAFETY MESSAGES MAY CAUSE BODILY INJURY AND/OR TIRE AND WHEEL AND/OR EQUIPMENT DAMAGE. BE CAREFUL.

1. MAXIMUM inflation pressure 50 PSI to help prevent tire blowouts. MINIMUM inflation pressure 20 PSI.
2. MAXIMUM transport speed 20 MPH to help prevent overheating and blowouts which may cause injuries.
3. Remove valve core to make certain there is no air pressure left in tube before separating wheel halves to dismount tire. DO NOT LOOSEN WHEEL CLAMP BOLTS BEFORE PRESSURE IS REMOVED FROM TUBE AND TIRE TO PREVENT EXPLOSIVE SEPARATION OF WHEEL HALVES WITH POSSIBLE SERIOUS BODILY INJURY.
4. Never mount any other tire (such as a truck tire) on this wheel supplied with a 22-ply aircraft tire. 00762608

7 - 00762608

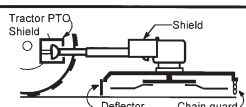

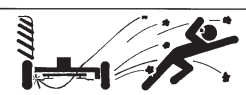


WARNING

FAILURE TO USE AND MAINTAIN SHIELDS AND DEFLECTORS IN GOOD CONDITION MAY LEAD TO INJURY OR DEATH FROM ENTANGLEMENT WITH ROTATING PARTS, BEING HIT BY OBJECTS THROWN WITH GREAT FORCE BY BLADES, OR BY BLADE CONTACT.

- Always replace Guards which have been removed for maintenance. Never operate with Guards missing or broken.
- Chain Guards, Gearbox & Driveline Shields, Rubber-Fabric Deflectors, and Solid Band Enclosures are subject to wear and lost or broken parts and must be repaired or replaced as soon as damage is found.
- Safety Shielding must be installed and in good condition to reduce the possibility of thrown objects any time this machine is operated in any area where thrown objects could cause property damage or bodily injury.

ROTARY 00769736

8 - 00769736



DANGER

KEEP AWAY - THROWN OBJECTS

	<ul style="list-style-type: none"> • Inspect the area before mowing for potential mower hazards. Remove or avoid all foreign objects such as wire, cable, metal objects, and all other foreign material. • Foreign material can be thrown from the mower and cause serious bodily injury to the operator and passersby.
	<ul style="list-style-type: none"> • Do Not let rotating blades contact solid objects like rocks, posts, curbs or guard rails. • Operate only if all Guards-Deflectors are in place and in good condition.
	<ul style="list-style-type: none"> • Do Not operate with Mower or Wing raised off the ground. • Stop mowing if Passersby enter the area of thrown objects. (See Operator's Manual)
	<ul style="list-style-type: none"> • Stay away from rotating blades. Keep hands and feet away from rotating blades. • Do Not approach mower until all motion has stopped. <p><small>00769737</small></p>

9 - 00769737

SAFETY

SAFETY

SAFETY

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.



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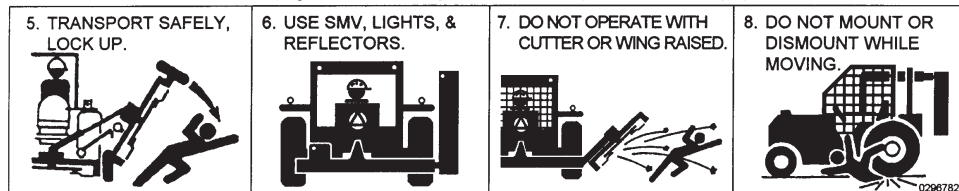


DANGER

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



1. Study and understand Operator's Manuals, Safety Decals, and Instructional Decals for tractor and implement to prevent misuse, abuse, and accidents. Practice before operating 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 folding mower or tractor. Allow no riders on tractor or implement. Falling off may cause serious injury or death from being run over by tractor or mower or contact with rotating blades.
3. Operate only with tractor having Roll-Over Protective Structure (ROPS) and with seat belt securely fastened to prevent injury and possible death from falling off or tractor overturn.
 - Personal Protective Equipment such as Hard Hat, Safety Glasses, Safety Shoes, & 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 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 mowers. Put Booms securely in Transport Rest.
 - Folding and Boom Mowers have raised center of gravity. Slow down when turning and on hillsides.
6. Make certain that SMV sign, warning lights, and reflectors are clearly visible. Follow local traffic codes.
7. Never operate with Cutting Head 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 Guards or mower structure.
8. Before dismounting, secure implement 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 crushing by entanglement in rotating parts which could cause injury or death.
 - Never mount or dismount a moving vehicle. Crushing from runover may cause serious injury or death.



11 - 02967827

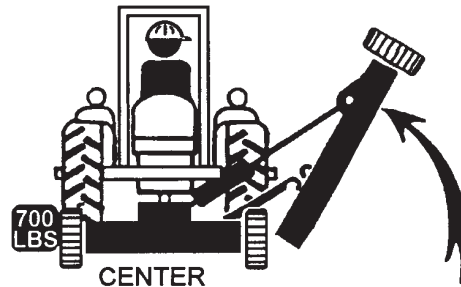
SAFETY

DANGER

WITHOUT WEIGHT, CENTER MAY LIFT UP



WITH WEIGHT, WING FOLDS



1. Keep everyone clear when lifting, folding, and working under raised components. Block securely before working under mower.
2. Install Weight Box and Weight (Minimum of 700# Total) before operating to prevent turning over the center section which can cause **SERIOUS BODILY INJURY** or **DEATH**. Without weight, Do not fold wing.
3. Attach transport strap securely to prevent inadvertent dropping from the transport position and possible **CRUSING INJURY** or **DEATH**.

999403

12 - 999403

WARNING

OPERATE THIS MACHINE AT
540 RPM
TRACTOR PTO SPEED ONLY

Overspeeding PTO may cause component failure with resulting injury.

D103

13 - D103

WARNING

OPERATE THIS MACHINE AT
1000 RPM
TRACTOR PTO SPEED ONLY

Overspeeding PTO may cause component failure with resulting injury.

D114

13 - D114

SAFETY

SAFETY

SAFETY

ATTENTION!

Do not operate PTO until ALL Slip Clutches are properly adjusted and checked to make certain that NONE ARE FROZEN and that ALL WILL SLIP under excessive load. See Operator's Manual for complete instructions.

00763613

17 - 00763613

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.

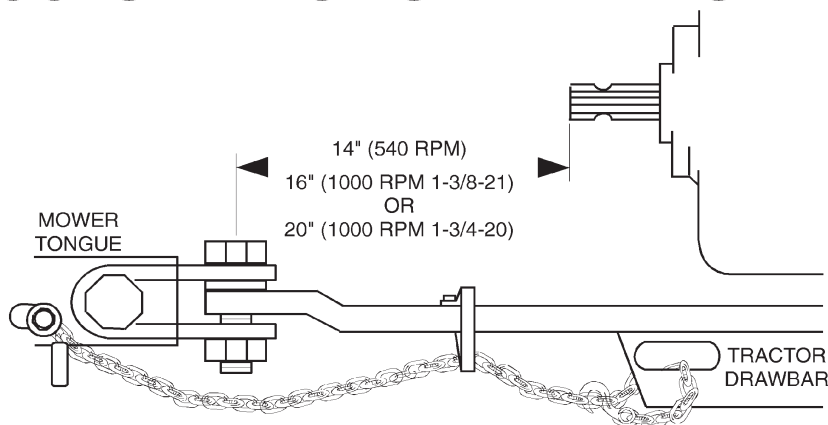
1. Read and understand Manual before operating the implement.
2. Complete, sign, and mail the Warranty Registration Card in today.

00763977

18 - 00763977

IMPORTANT

REQUIRED FOR JACKSHAFT UNIT SUGGESTED FOR STANDARD SHAFT



Attach Safety Chain securely as per ASAE S338

D102

19 - D102

SAFETY



BLADE ROTATION

D137

20 - D137



BLADE ROTATION

D138

21 - D138



22 - 00757139



23 - 02960766

A15-IV

24 - 00769809

A10-IV

24 - 00769812

SAFETY

SAFETY

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

INTRODUCTION

The Alamo 15IV Rotary Mower is designed with pride and built with quality materials by skilled workmen. Proper assembly, maintenance, and operating practices, as described in this manual, will help the owner/operator get years of satisfactory service with a minimum of downtime.

The purpose of this manual is to familiarize, instruct, and train. The Assembly Section is to instruct in the proper assembly of the Alamo 15IV Rotary Mower with Standard or Extra Equipment. The Parts List is designed to familiarize the owner/operator with replaceable parts of the machine. This section includes drawings of parts and assemblies complete with part numbers for ordering replacement parts. The Operations and Maintenance Sections provide basic information required to train the owner/operator in the proper use and care of the machine.

Timely service saves costly repairs and losses due to downtime. When repair or replacement parts are required, insist upon Alamo Group parts. Specifically designed for the Alamo 15IV Rotary Mower, these parts will help the owner/operator keep the machine operating longer and more efficiently with increased profitability.

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/or bystanders from possible injury or death. Many of these Safety Messages will be repeated throughout the manual in appropriate places. The owner/operator/dealer should be familiar with these Safety Messages before assembly of the Alamo 15IV Rotary Mower and aware of them during assembly, use, and maintenance. To call attention to potentially hazardous situations, the Safety Alert Symbol combined with a Signal Word, as seen below, has been provided to instruct the owner/operator of impending hazard and degree of possible injury.

CAUTION



The lowest level of Safety Message; warns of possible minor injury; Black/Yellow decals.

WARNING



Serious injury or death; Black/Orange decals.

DANGER



Imminent death/critical injury; Red/White decals.

ASSEMBLY SECTION

ASSEMBLY

Read the assembly instructions through carefully before assembling the Alamo 15IV Rotary Mower. This will help organize the assembly site and the person doing the assembly. Remove all packaging and unnecessary material and tools during assembly. A CLEAN ASSEMBLY SITE IS A SAFER ENVIRONMENT.

The Alamo 15IV Rotary Mower is designed for light- to medium- duty cutting, including pasture mowing, industrial/highway weed and grass control, and brush up to 2" in diameter. The Alamo 15IV Rotary Mower is to be used with tractors having between 40HP and 100HP with either 540 or 1000 RPM PTO.

NOTE: Warranty is void when the Alamo 15IV Wing Rotary Mower is powered by tractors with greater than 100HP for 540 RPM PTO, or 120 HP for tractors with 1000 RPM PTO.

Fill out the Warranty Card in full. Be sure to answer all questions, including the Serial Number. Mail promptly. Warranties are honored only if completed Warranty Cards are received by the manufacturer within 30 days of delivery.

Read the Safety Messages, Warranty Notice, and Parts Ordering Instructions when ordering extra or replacement parts for your mower.

NOTE: OSHA, ASAE, SAE, and ANSI Standards require the use of Chain Guards or solid skirts for all Non-Agricultural uses. Solid Skirts are standard for the Alamo 15IV Rotary Mower and Chain Guards are extra equipment.

To reduce the risk of property damage, bodily injury, or death caused by objects thrown out by or from contact with the mowing blades, the manufacturer strongly recommends the use of solid skirts or chain guards for all agricultural uses as well.

WARNING



If this is an Offset Model, the Right Wing Section should never be raised under any circumstances without using counter-weights (minimum 600 lbs). Without counterweights, the entire unit could overturn resulting in injury to the operator and damage to the machine. See the Parts Listing Section for weight box.

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

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.



ASSEMBLY

CENTER SECTION

Securely block Center Section a minimum of 10" above ground level. Install the Tongue Assembly, Axles, Leveling Equipment, and Wing Sections according to the information given.

TONGUE ASSEMBLY

Attach the Tongue Hitch Weldment to the Tongue Hitch. Connect the Tongue Assembly to the hitch lugs at the front of the Center Section of the mower. **Figure 1**

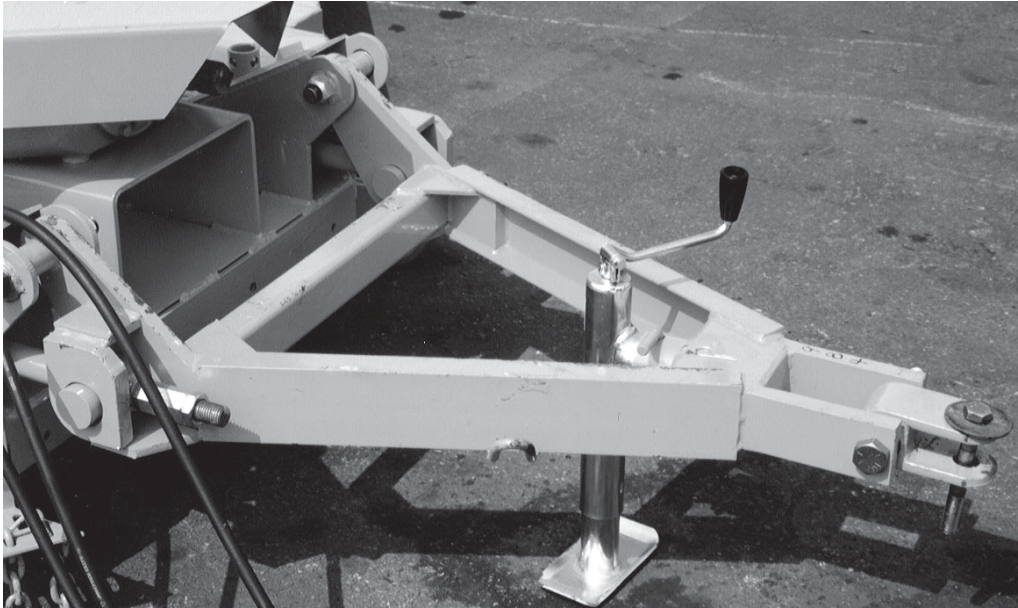


FIGURE 1

CENTER AXLE AND WHEEL ATTACHMENT

Bolt the Center Axle Weldment to the projecting lugs of the Center Sections **Figure 2**. When using puncture-proof, Laminated Tires, take care to install the flat side of the Lug Nut to the wheel.

NOTE: Center Axle with single wheels are standard; dual wheels on the Center Axle are extra equipment.

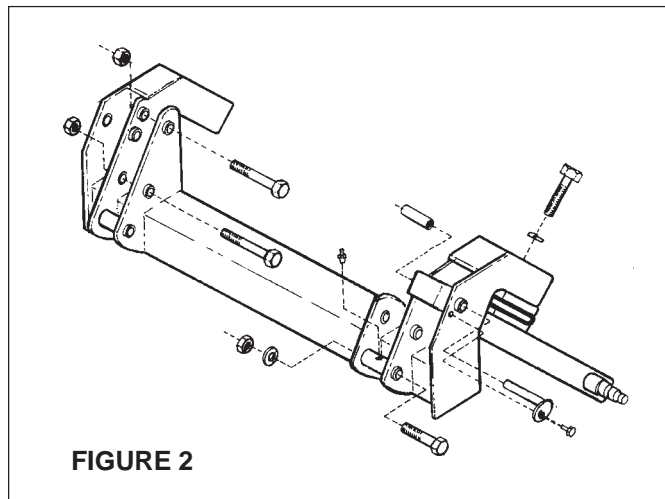


FIGURE 2

ASSEMBLY

ASSEMBLY

LEVEL RODS

Assemble the Level Rod/Rods as illustrated in **Figure 3**. Slide Level Rod/Rods through Center Section mower channel and Tongue. Attach the Rod/Rods in the lower holes of the Hitch Lug on the Center Axle Weldment. Attach Bushing, Nut, and Jam Nut to the Level Rod. Be sure there is equal tension on the rods.

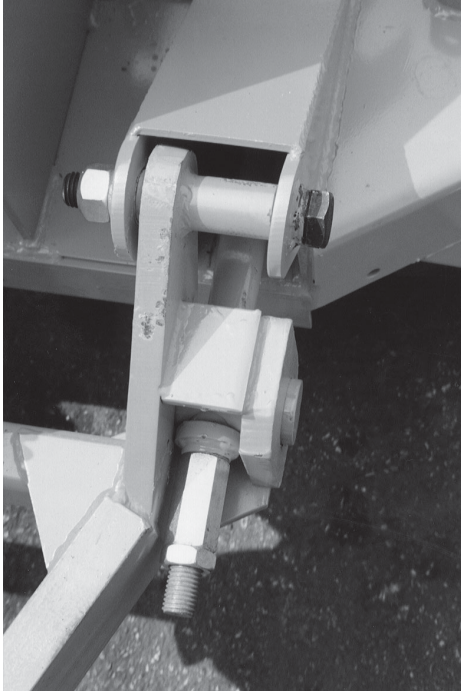


FIGURE 3

WING SECTION ASSEMBLY

While the Center Section is still solidly blocked, attach the Wing Sections in the horizontal plane. Using Hinge Pins, attach the Right and Left Wing Sections to the Center Section. **Figure 4**

NOTE: Wing Sections may require slight lifting after the Hinge Pin is started to aid pin installation.

Insert roll pin in the center of each Hinge Pin.

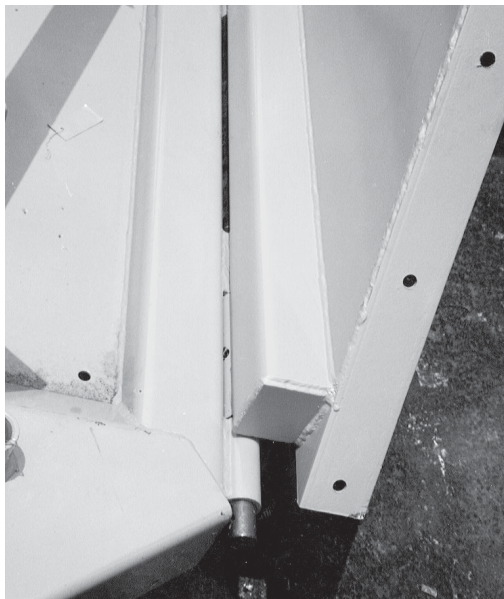


FIGURE 4

ASSEMBLY

WING AXLE ATTACHMENT

Attach the Left and Right Wing Axles to the rear lugs of the Wing Section (**Figure 5**). Hubs face outward from the center of the mower. Mount the wheel to the hubs. If puncture-proof, Laminated Tires and Wheels are used, be sure the flat side of the nut is against the wheel. Tighten wheel bolts to 85 ft/lbs.

LIFT SCREW ATTACHMENT

Attach Lift Screw to the Wing Axles and the Arm Lugs on the Wing Section (**Figure 5**). Level Lift and Spring options are available as extra equipment.



FIGURE 5

CENTER AXLE HYDRAULIC CYLINDER INSTALLATION

Install the clevis rod of the 8" stroke Hydraulic Cylinder to the lug on the Center Axle. The clevis base fastens to the lug on the center mainframe section **Figure 6**.

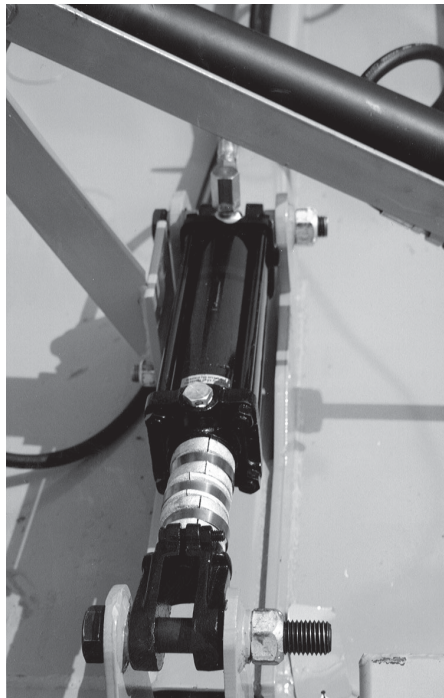


FIGURE 6

ASSEMBLY

DRIVELINE ATTACHMENT

Remove Divider Gearbox Shield if installed. Remove any tape from Gearbox shafts. Attach the Slipclutch end of the Wing Driveline to the Divider Gearbox. Torque bolts evenly to their proper torque. **Figure 7.** Attach the slide collar end to the Wing Section Gearboxes by sliding the collar back while attaching the yoke to the splined shaft on the Gearbox. Move yoke back and forth to make sure yoke is locked in place. **Figure 8.** Install the Main Driveline with slide collar to the Divider Gearbox by using the same procedure as above.

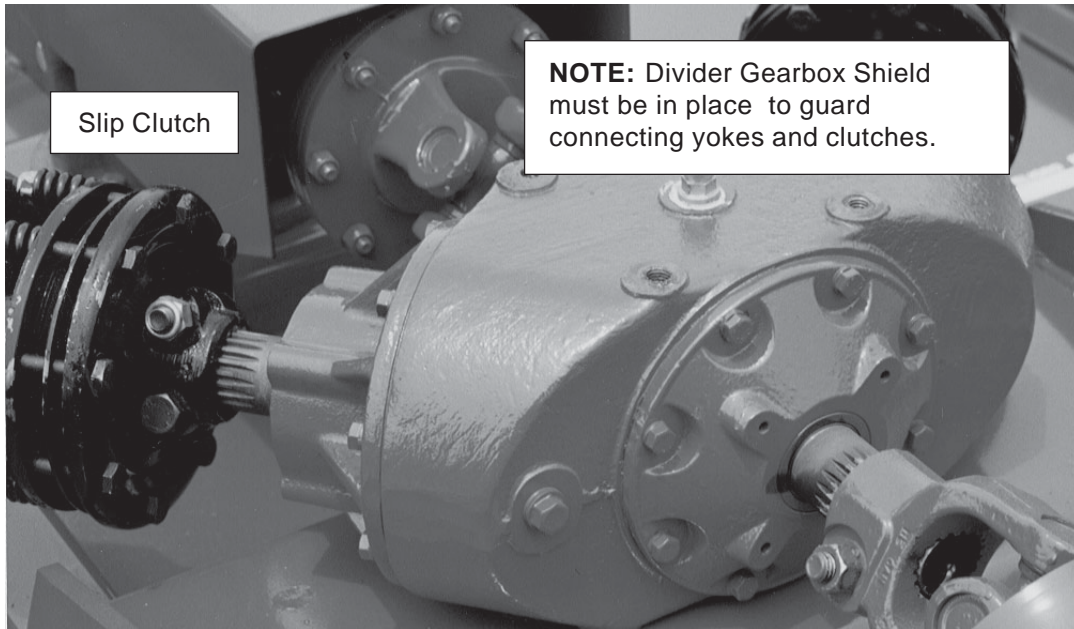


FIGURE 7. Wing Driveline Clutch End Attachment

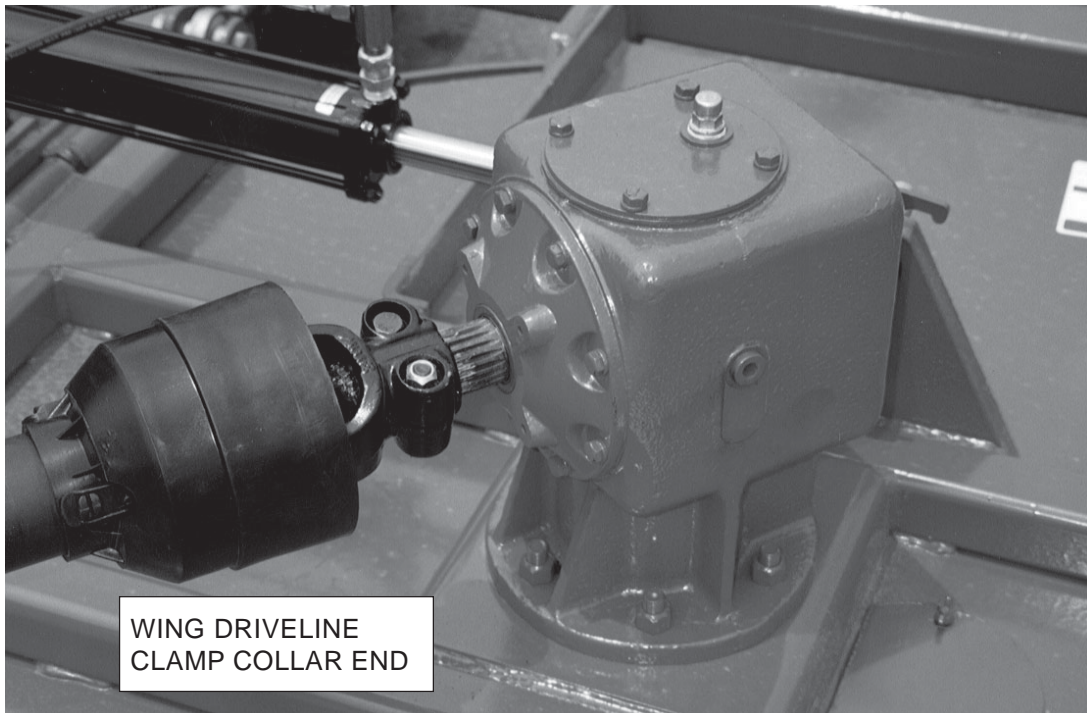


FIGURE 8. Wing Driveline Slide Collar End Attachment

ASSEMBLY

FOLDING HYDRAULICS--WING SECTIONS

Attach base end of cylinder between sides of cylinder support weldment. Insert retaining bolt through top holes in support weldment. **DO NOT OPERATE** with cylinders attached in lower hole. Lower attaching holes are used only for shipment of assembled Mowers. Mount the Hydraulic Cylinder Rod clevis base to the upright lugs on the Left and Right Wing Sections. Make sure the ports of the hydraulic cylinders are facing upwards (**Figure 9**). Keep the ports capped until the hoses are attached to the tractor and are ready to attach to the cylinder ports.

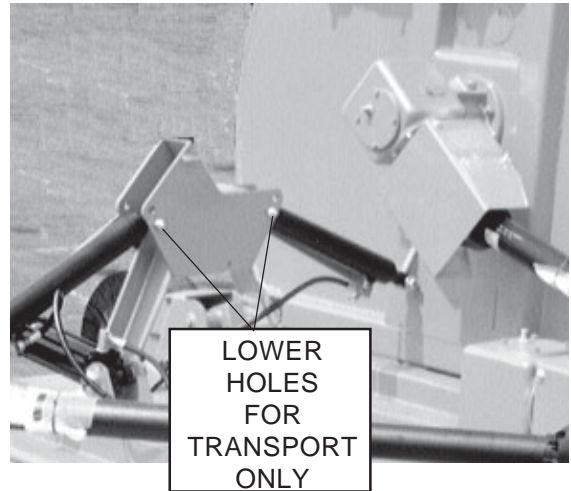


FIGURE 9

LEVEL LIFT HYDRAULIC INSTALLATION (Extra Equipment)

Install the three rephasing hydraulic cylinders and route hoses as shown in **Figure 10**. Seal fittings well using a good pipe sealing compound. Do not use thread tape.

NOTE: Take care when tightening fittings. If tightened too hard, cylinder ports can be damaged.

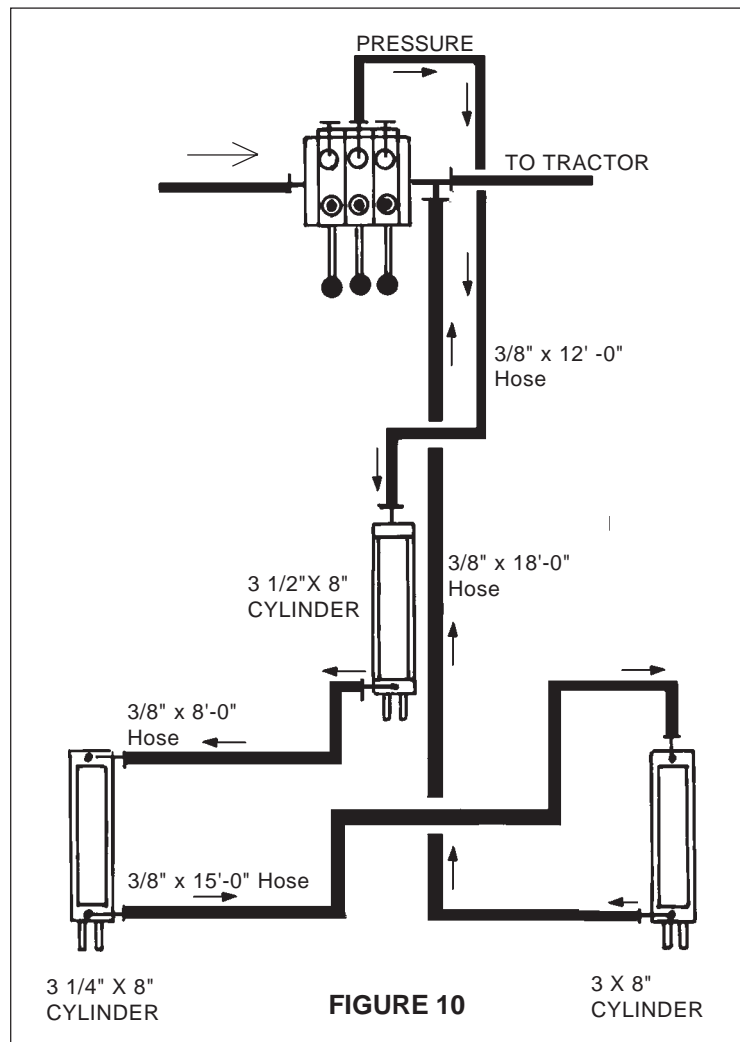


FIGURE 10

ASSEMBLY

SPRING ASSEMBLIES (Extra Equipment)

Wing outboard Spring Assemblies fit over the tube lugs behind the Lift Screw lugs and attach to the lug. Attach the Lift Screw clevis to the Spring Assembly **Figure 11**.

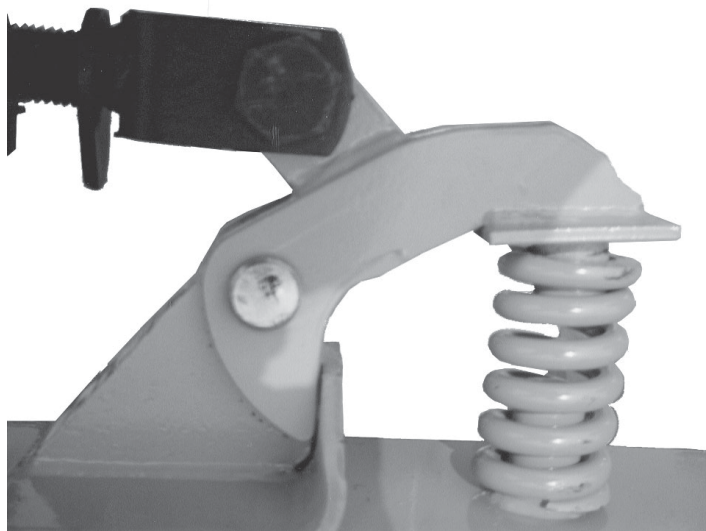


FIGURE 11

WINCH ATTACHMENTS (Extra Equipment)

Fasten the Winch to the Winch Stand and attach the Winch Stand to the cross bars on the Center Section. See Operating Section for use.

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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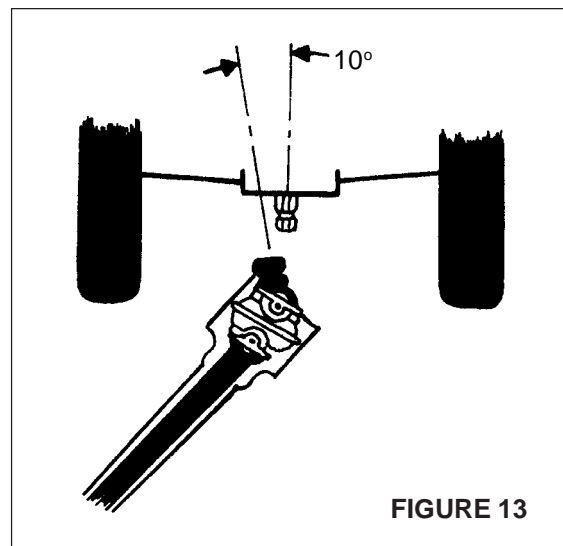
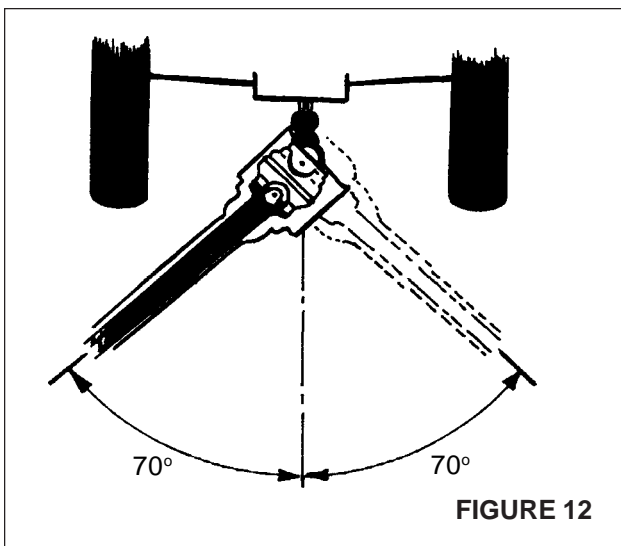


ASSEMBLY

CONSTANT VELOCITY DRIVELINE CHECK PROCEDURES

The main driveline to tractor is equipped with a special constant velocity joint that allows the joint to run smooth with no vibration even at joint angles up to 70 deg. This joint will operate and perform satisfactorily as long as it is not subjected to conditions which abuse it or go beyond its operating limits.

- 1.The constant velocity joint must be greased daily at 8 hour intervals. See Maintenance Section. Failure to lubricate as instructed will cause rapid wear and failure of operating components of joint.
- 2.The constant velocity joint must not be subjected to a joint angle greater that 70 deg. **(Figure 12).**



ASSEMBLY

To check maximum joint angle, connect cutter to tractor. Do not connect driveline at this time. Start tractor and make a maximum turn to left until tractor tire almost contacts frame. Then check joint by holding driveline yoke above PTO shaft and then angle driveline yoke until it stops. There should be approximately a 10 deg. difference between center line of yoke and PTO shaft. **(Figure 13).** If not, check drawbar length and shorten if necessary or move rear tractor tires wider apart to limit turning radius.

- 3.The constant velocity joint must also not be subjected to condition where telescoping tubes bottom out. Check this condition at same time maximum angle was checked above. There should be at least 4 inches of additional telescoping available with the yoke attached to the tractor.

NOTE: If the driveline will not connect because it does not have enough clearance; check to see if drawbar can be lengthened or cut the driveline shield and tube lengths to provide adequate clearance.

ASSEMBLY

FRONT AND REAR DEFLECTORS (Standard Equipment) and CHAIN GUARDS (Optional Equipment at extra cost) (Figures 15-19)



Front and Rear rubber-fabric Deflectors are Standard Equipment and Front and Rear Chain Guards are optional at extra cost. One type of guards must be installed (and maintained in good repair) except for agricultural purposes only in areas where persons, vehicles, livestock, or other property will not be endangered by thrown objects and where such safety equipment would prevent the mower's reasonable performance of its assigned agricultural task.

DEFLECTORS: Front and Rear Deflectors (Standard Equipment) are recommended for the average user and will provide protection from thrown objects with proper operation under normal conditions. Deflectors must be maintained in good repair or replaced after no more than two inches of wear off lower edge.

FRONT CENTER DEFLECTOR

1. Attach Guard Bracket (1) to the front center section of the deck using 7/16" x 1-1/4" Bolts (3) and Locknuts (4). 2. Attach Deflector (10) to Guard Bracket using 3/8" x 1-1/2" Bolts (5), Woodwasher (7), Flatwasher (8), and Locknut (6) as shown in **Figure 16**.

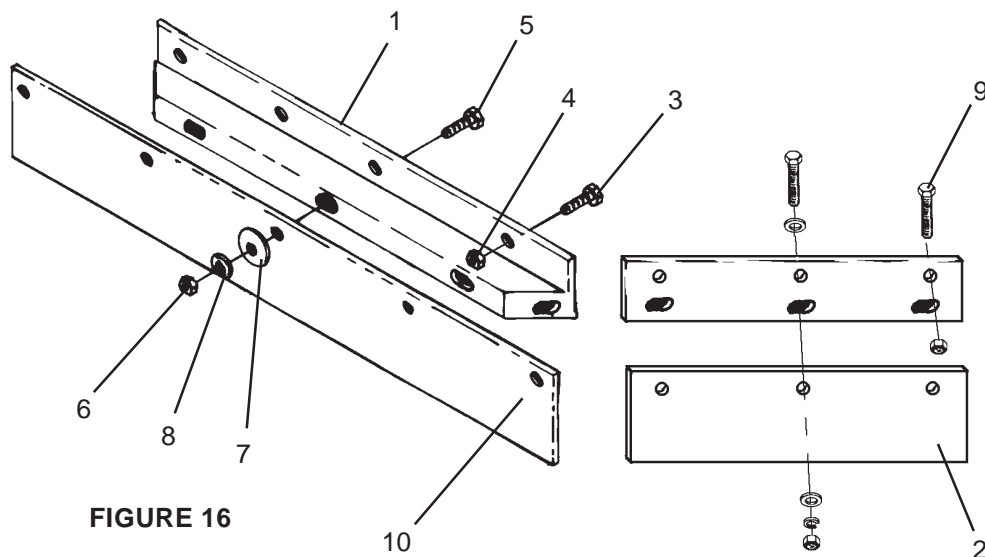


FIGURE 16

REAR CENTER DEFLECTOR

Attach Deflector (2) and Bar Strap (1) to rear center deck using 3/8" x 1-1/2" Bolts (3), Flatwashers (5), and Locknuts (4) as shown in **Figure 15**.

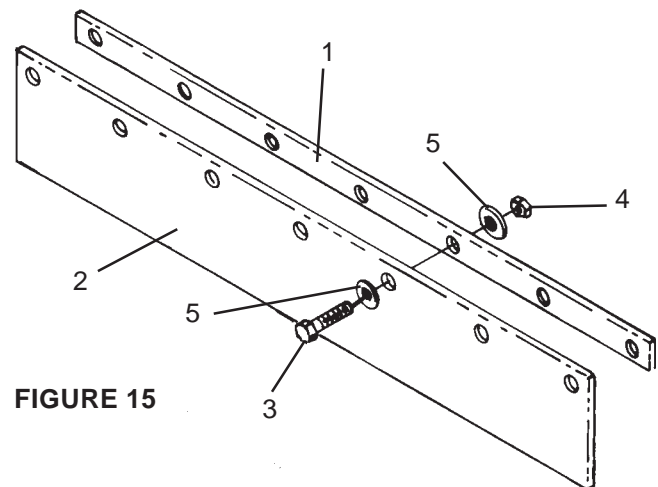


FIGURE 15

ASSEMBLY

WING DEFLECTOR

Attach Wing Deflector to deck using 7/16" x 1-1/2" Bolts (2) and Flatwashers (3) on face side of Flap Strap as shown in **Figure 17**; and securing it on the back side of the deck with Flatwashers (3) and Locknuts (5).

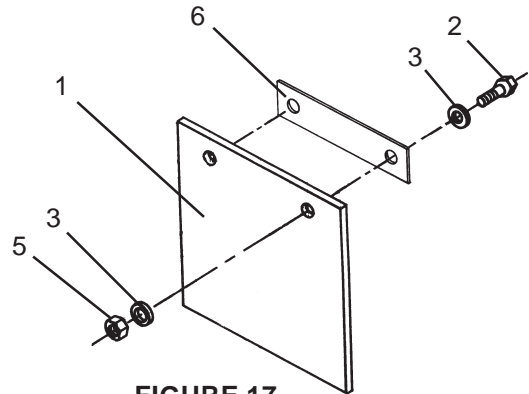


FIGURE 17

RH & LH FRONT WING DEFLECTOR

Attach Deflector (1) to right and left wing deck using 3/8" x 1-1/2" Bolts (2), Flatwasher (5), Woodwasher (4), and Locknut (3) as shown in **Figure 18**.

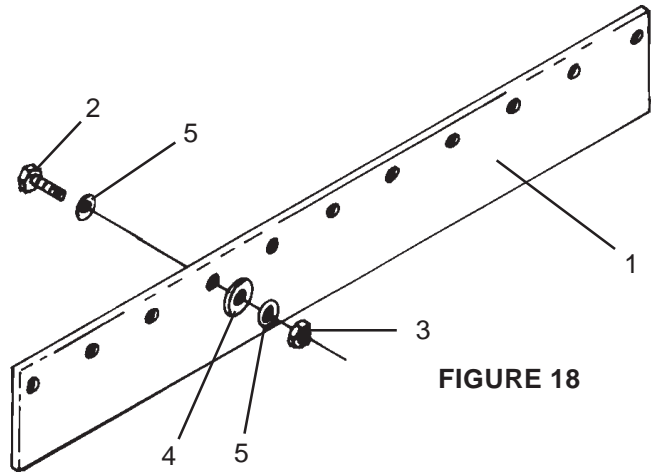


FIGURE 18

RH & LH REAR WING DEFLECTOR

Attach right and left rear wing Deflector (2) and Strap (1) to deck using 3/8" x 1-1/2" Bolts (3), Flatwashers (5), and Locknuts (4) as shown in **Figure 19**.

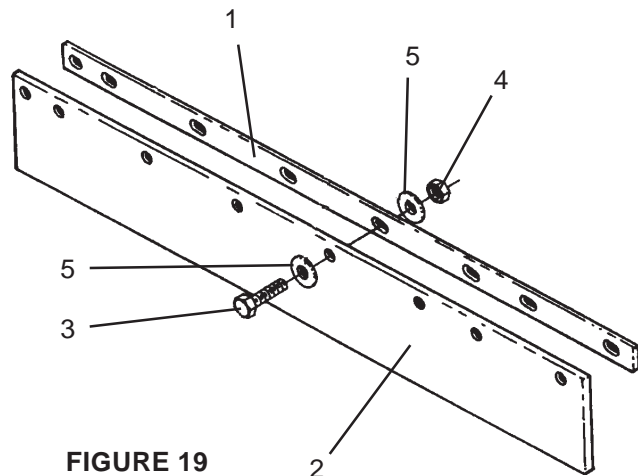


FIGURE 19

ASSEMBLY

CHAIN GUARDS: Front and Rear Chain Guards (Optional Equipment) are recommended for higher than normal usage (100 hours or more per year) and will provide protection from thrown objects with careful operation. Chain Guards must be maintained in good repair by replacing missing or worn sections or by being replaced when seriously worn or damaged.

NOTE: Double Chain Assembly Shown.

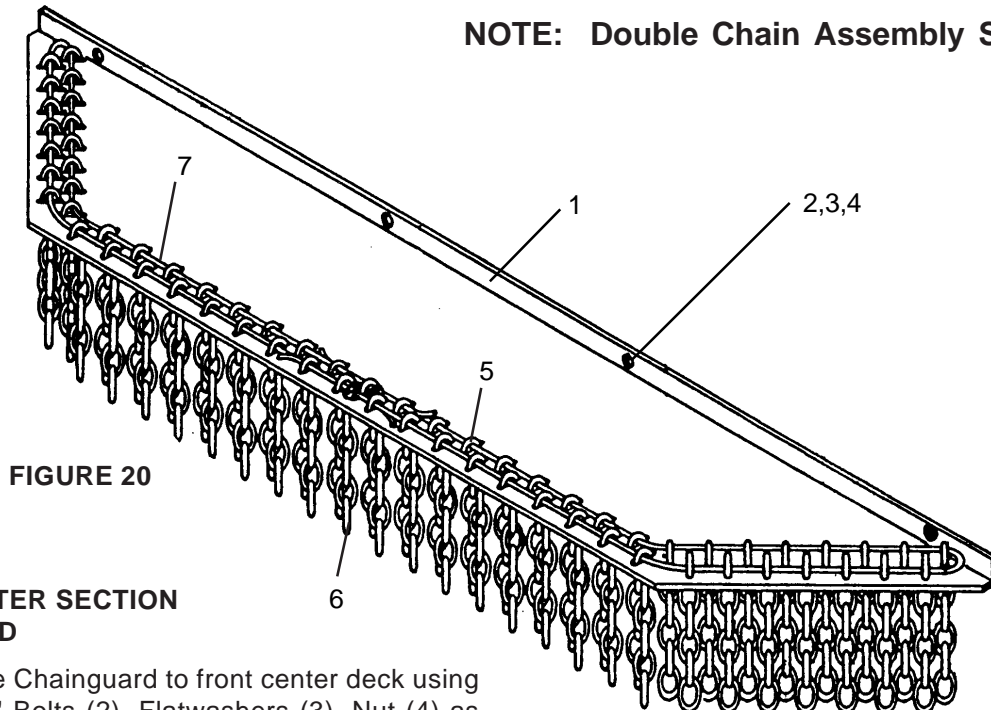


FIGURE 20

FRONT CENTER SECTION CHAINGUARD

Attach Double Chainguard to front center deck using 7/16" x 1-1/2" Bolts (2), Flatwashers (3), Nut (4) as shown in **Figure 20**. Individual chain links (6) should be inserted into Chainguards (1) and held with Cable (7) and Cable Clamp (5).

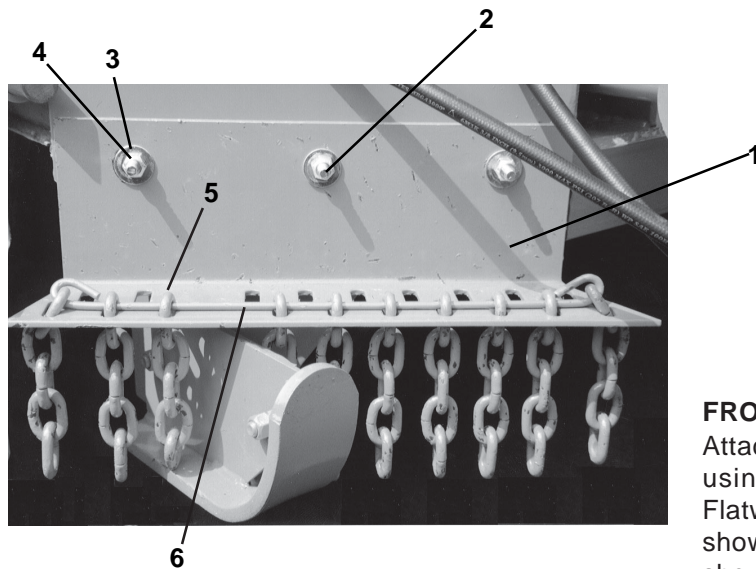


FIGURE 21

NOTE: Single Chain Assembly Shown.

FRONT CENTER SECTION CHAINGUARD

Attach Single Chainguard to front center deck using 7/16" x 1-1/2" Bolts (2), Nut(4), and Flatwashers (3) on face side of Chian Guard as shown in **Figure 21**. Individual chain links(5) should be inserted into chainguard and held in place using Chain Rod (6).

ASSEMBLY

FRONT WING CHAINGUARD

Attach Front Wing Chainguard (1) to front wing deck using 7/16" x 1-1/2" Bolts (2), Flatwashers (3), and Nuts (4) as shown in **Figure 22**. Individual Chain links (5) should be inserted into chainguards.

2, 3, 4

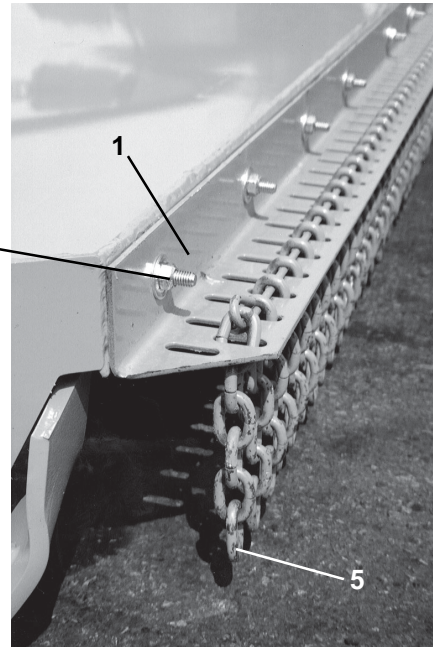


FIGURE 22

REAR CENTER CHAINGUARD

Attach Rear Center Chainguard (1) to rear center deck using 7/16" x 1-1/2" Bolts (2), Flatwashers (3), and Nuts (4) as shown in **Figure 23**. Individual Chain links (5) should be inserted into chainguards and held with Retaining Rod (6).

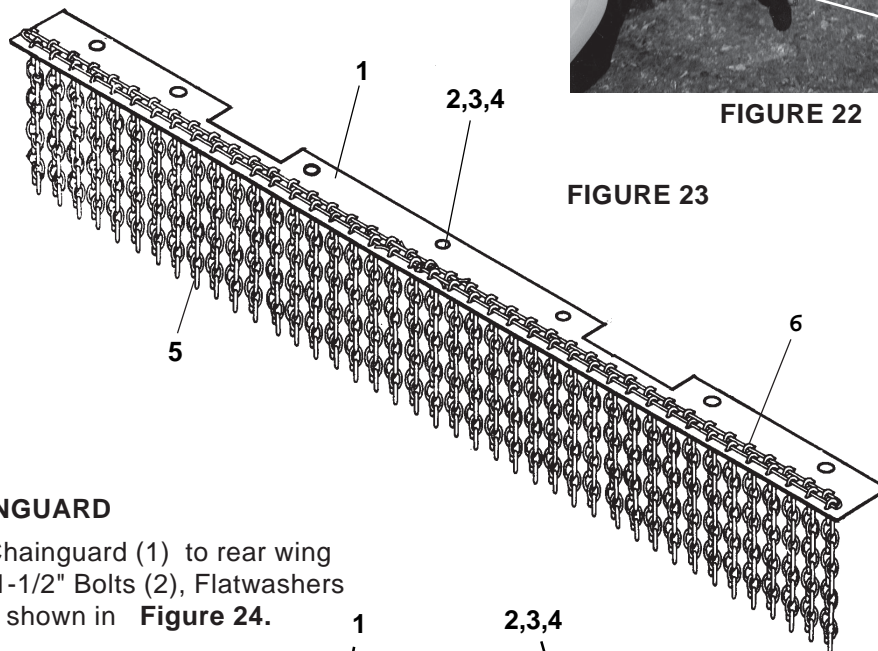


FIGURE 23

REAR WING CHAINGUARD

Attach Rear Wing Chainguard (1) to rear wing deck using 7/16" x 1-1/2" Bolts (2), Flatwashers (3), and Nuts (4) as shown in **Figure 24**.

1

2,3,4

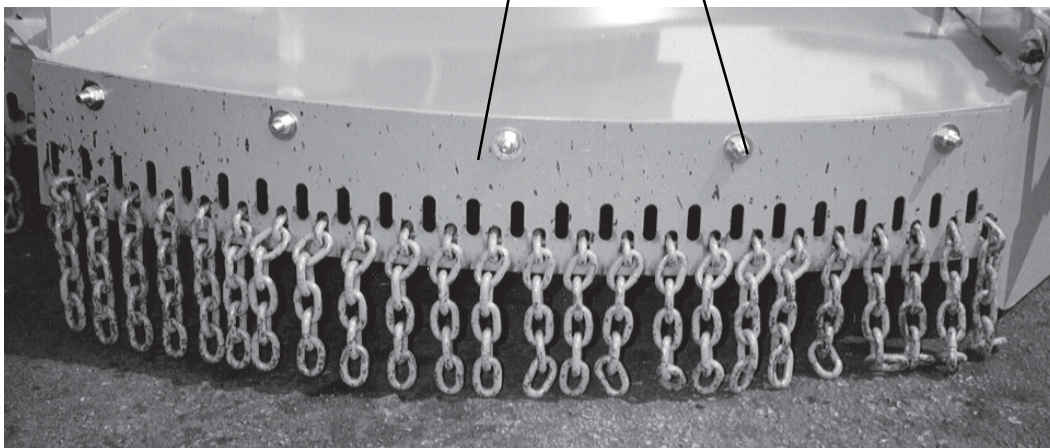


FIGURE 24

OPERATION SECTION

OPERATION

ALAMO INDUSTRIAL A10-IV/A15-IV ROTARY MOWER OPERATION INSTRUCTIONS

Alamo Industrial A10-IV/A15-IV rotary mowers are manufactured with quality material by skilled workers. These mowers are designed to cut grass, weeds, crop stalks, small brush and other vegetative material up to 2-1/2" diameter. The mower is equipped with protective deflectors and/or chain guards to prevent objects being thrown from the mower by the blades, however, no shielding is 100% effective. All shields, guards, deflectors, and chains equipped on the unit must be maintained on the mower in good operational condition.

It is the operator's responsibility to be knowledgeable of all potential operating hazards and to take every reasonable precaution to ensure oneself, others, animals, and property are not injured or damaged by the mower, tractor, or a thrown object. Do not operate the mower if passersby, pets, livestock, or property are within 300 feet of the unit.

This section of the Operator's Manual is designed to familiarize, instruct, and educate safe and proper mower use to the operator. Pictures contained in this section are intended to be used as a visual aid to assist in explaining the operation of a flex-wing rotary mower and are not necessarily of an A10-IV/A15-IV cutter. Some pictures may show shields removed for picture clarity. **NEVER OPERATE** this implement without all shields in place and in good operational condition. The operator must be familiar with the mower and tractor operation and all associated safety practices before operating the mower and tractor. Proper operation of the mower, as detailed in this manual, will help ensure years of safe and satisfactory use of the mower.

IMPORTANT: To avoid mower damage, retorque all bolts after the first 10 hours of operation. Retighten blade carrier retaining nut on gearbox lower shafts to 400 ft. lbs..

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READ AND UNDERSTAND THE ENTIRE OPERATING INSTRUCTIONS AND SAFETY SECTION OF THIS MANUAL AND THE TRACTOR MANUAL BEFORE ATTEMPTING TO USE THE TRACTOR AND MOWER. If you do not understand any of the instructions, contact your nearest authorized dealer for a full explanation. Pay close attention to all safety signs and safety messages contained in this manual and those affixed to the cutter and tractor.

DANGER!



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 INSTRUCTIONS



PELIGRO!



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

¡LEA EL INSTRUCTIVO!



OPERATION

Standard Equipment and Specifications

A15-IV

Horsepower Required (Min.)..... 40 HP
 Cutting Capacity (Diameter).....2"
 Cutting Height.....2"-12"
 Safety Deflectors*Standard
 Cutting Width.....180"
 Transport Width (Folded).....96"
 Overall Width.....186-1/2"
 Overall Length.....174"
 Blade Overlap.....6"
 Weight (Approximate)..... 4,400 lbs.
 Wing Lift.....Hydraulic
 Wing Flex (Degrees).....90° Up-22° Down
 Jack Stand..... Standard
 Hitch (Standard)..... Clevis
 Blade Carrier..... Bar or Pan (Options)
 Gearbox Rating:
 Power Divider.....180 HP
 Center & Wings.....140 HP
 Output Shaft Diameter..... 2-3/8"
 Blade Tip Speed
 Center 540 RPM..... 14,632 FPM
 1000 RPM.....15,053 FPM
 Wings 540 RPM.....15,486 FPM
 1000 RPM.....15,364 FPM
 Driveline Size:
 Main Cat 5
 Wings..... Cat 4 or 5 (Option)
 Deck Thickness..... 7 Gauge
 Side Skirts..... 1/4"x10-3/8"
 Replaceable Skid Shoes..... Standard

A10-IV

40 HP
 2"
 2"-12"
 Standard
 123"
 96"
 126"
 174"
 6"
 4,400 lbs.
 Hydraulic
 90° Up-22° Down
 Standard
 Clevis
 Bar or Pan (Option)
 180 HP
 140 HP
 2-3/8"
 14,632 FPM
 15,053 FPM
 15,486 FPM
 15,364 FPM
 Cat 5
 Cat 4 or 5 (Option)
 7 Gauge
 1/4"x10-3/8"
 Standard

*Safety Deflectors are standard equipment. Single and double chain guards are available as extra equipment at extra cost. Alamo Industrial recommends mowers be equipped with deflectors or double chain guards for all mowing purposes. Single chain guards may be used for agriculture purposes only and are specifically not recommended for highway, right-of-way, parks or greenbelt mowing.

OPERATION

1. OPERATOR REQUIREMENTS

Safe operation of the rotary mower is the responsibility of a qualified operator. A qualified operator has read and understands both the mower and tractor Operator Manuals and is experienced in tractor and mower operations and all associated safety practices. In addition to the safety messages contained in this manual, safety message decals are affixed to the mower and tractor. If any part of the operation and safe use of the mower and tractor is not completely understood, consult an authorized dealer for a full explanation.

Safe mower operation requires that the operator wear approved Personal Protective Equipment (PPE) for the job conditions while connecting, operating, servicing and repairing the mower and tractor. PPE is designed to provide operator protection from bodily injury and includes the following:

Personal Protective Equipment (PPE)

- Protective eye glasses, goggles, or face shield
- Hard hat
- Steel toed safety footwear
- Gloves
- Hearing protection
- Close fitting clothing
- Respirator or filter mask



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)



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OPERATION

2.3 Tractor Horsepower

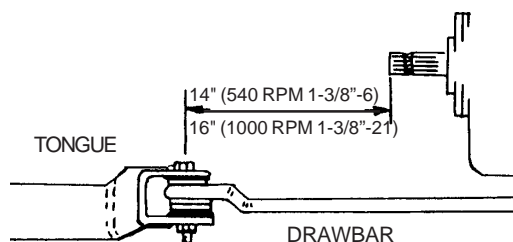
The horsepower required to operate the mower depends on several operating factors including the vegetation to be cut, terrain condition, operator experience, condition of the mower and tractor, and others. For most mowing conditions, the A10-IV and A15-IV mower requires a tractor with a minimum of 40 HP. Operating the mower with a tractor that does not have adequate power may damage the tractor engine. Exceeding 100 HP for a 540 RPM and 120 HP for a 1000 RPM mower may damage the unit by overpowering the unit.

2.4 Drawbar

The tractor drawbar must be positioned at a certain length based on the operating speed of the mower for proper driveline operation. If the mower is a 540 RPM unit, position the drawbar length from shaft end to hitch hole at 14". For 1000 RPM mowers, set the drawbar length at 16".

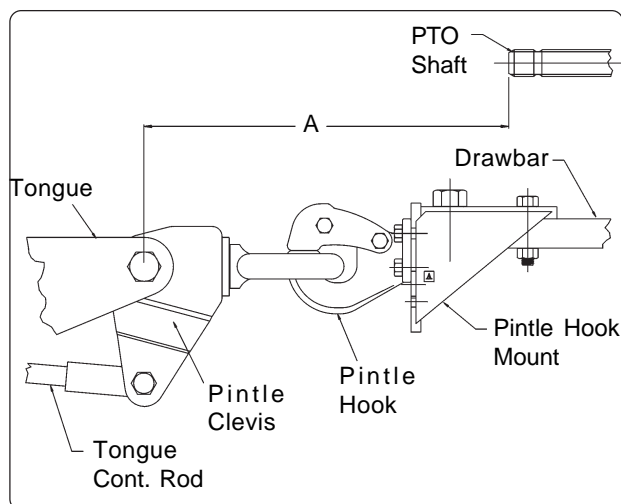
Ensure that the drawbar is rated to carry the tongue weight of the mower.

Tractor Drawbar Length (Based on Mower Operating Speed)



Pintle Hook Hitch-Optional Equipment

Drawbar length must be modified to obtain dimension "A" (CV Driveline=17" \pm 2", 44R Main Driveline = 19" \pm 2").



2.5 Tractor Hydraulics

The mower center section and each wing are positioned with hydraulic cylinders that are operated by the tractor hydraulic pump. The tractor should have a minimum of 2 hydraulic control valves or be equipped with a 3-spool control valve (extra equipment).

A 3-spool control valve is required if the tractor is equipped with a single valve and is recommended for those with two valves so that the center cylinder and each wing cylinder can be controlled independent of one another. Tractors equipped with three hydraulic ports can position the center section and each wing independently with no extra equipment. If the tractor is equipped with only two hydraulic ports and a 3-spool control valve is not used, the wing cylinders must be plumbed together and will be controlled by a single valve.

OPERATION

2.6 Front End Weight

A minimum of 20% total tractor weight must be maintained on the tractor front end at all times. Front end weight is critical to maintain steering control and to prevent the tractor from rearing up while driving. If the front end is too light, add weight until a minimum of 20% total weight is reached on the front tires. Front weights and weight carriers can be purchased through an authorized tractor dealership.

2.7 Power Take Off (PTO)

Depending on the unit, the mower is designed to operate at a PTO speed of 540 or 1000 RPM. Most tractors operate at either 540, or a combination of 540 and 1000 RPM PTO speeds. The operating speed of the mower and tractor can be determined by the number of splines on the driveline yoke and PTO output shaft. Those operating at 540 RPM will have a 1-3/8" diameter 6-spline shaft and those operating at 1000 RPM will have a 1-3/8" 21-spline shaft. Refer to the tractor owner's manual for instructions to change PTO speeds on models that operate at both 540 and 1000 RPM.

If operating an older model tractor where the tractor's transmission and PTO utilize one master clutch, an over-running clutch must be used between the PTO output shaft and the driveline of the mower. An authorized tractor dealer can provide the over-running clutch and its installation if needed.

WARNING!



DO NOT use a PTO adapter to attach a non-matching Implement driveline to a Tractor PTO. Use of an adapter can double the operating speed of the Mower resulting in excessive vibration, thrown objects, and blade and mower failure. Adapter use will also change the working length of the driveline exposing unshielded driveline areas. Serious bodily injury and/or equipment failure can result from using a PTO adapter. Consult an authorized dealer for assistance if the Implement driveline does not match the Tractor PTO.

(S3PT-14)

WARNING!



Never operate the Tractor and Mower if the Mower main driveline is directly connected to the Tractor transmission. Tractor braking distances can be substantially increased by the momentum of the rotating Mower blades driving the Tractor transmission even though the Tractor clutch has been engaged. Install an over running clutch between the Tractor PTO and the Mower driveline to prevent this potentially dangerous situation.

OPERATION

3. GETTING ON AND OFF THE TRACTOR

Before getting onto the tractor, the operator must read and completely understand the mower and tractor operator manuals. If any part of either manual is not fully understood, consult an authorized dealer for a complete explanation.

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)



3.1 Boarding the Tractor

Use both hands and equipped handrails and steps for support when getting on the tractor. Never use tractor control levers for support when mounting the tractor. Always seat yourself in the operator's seat and fasten the seatbelt. Only operate the tractor and mower with the ROPS in the raised position.

Never allow passengers to ride on the tractor or mower. Riders can easily fall off and be seriously injured or killed from being ran over by both the tractor and mower. It is the operator's responsibility to forbid riders.

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)



DANGER!



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



3.2 Dismounting the Tractor

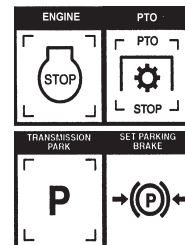
Before dismounting, park the tractor and mower on a reasonably level surface, apply the parking brake, idle the engine down, disengage the PTO, and lower the mower to the ground. Shut down the tractor engine according to the operator's manual, remove the key, and wait for all motion to completely stop. Never leave the seat until the tractor, its engine and all moving mower parts are completely stopped.

OPERATION

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 while it is moving or while the engine is running. Operate the Tractor controls from the Tractor seat only. (SG-9)



Use hand rails and steps when exiting the tractor. Be careful of your step and use extra caution when mud, ice, snow or other matter has accumulated on the steps or hand rails. Use all handrails and steps for support and never rush or jump off the tractor.

4. STARTING THE TRACTOR

The operator must have a complete understanding of the placement, function, and operational use of all tractor controls before starting the tractor. Review the tractor operator's manual and consult an authorized dealer for tractor operation instructions if needed.

Essential Tractor Controls:

- Locate the light control lever
- Locate the engine shut off control
- Locate the brake pedals and the clutch
- Locate the PTO control
- Locate the 3 point hitch control lever
- Locate the hydraulic remote control levers

Before starting the tractor ensure the following:

- Conduct all pre-start operation inspection and service according to the tractor operator's manual.
- Make sure all guards, shields, and other safety devices are securely in place.
- The parking brake is on.
- The PTO control lever is disengaged.
- The 3-point hitch control lever is in the lowered position.
- The hydraulic remote control levers are in the neutral position.
- The tractor transmission levers are in park or neutral.

Refer to the tractor owner's manual for tractor starting procedures. Only start the tractor while seated and belted in the tractor operator's seat. Never bypass the ignition switch by short circuiting the starter solenoid.

After the tractor engine is running, avoid accidental contact with the tractor transmission to prevent sudden and unexpected tractor movement.

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!



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



OPERATION

5. CONNECTING THE MOWER TO THE TRACTOR

Use extreme caution when connecting the mower to the tractor. The mower should be securely resting at ground level or on blocks. Place a block in front of and behind the center section wheels to prevent the mower from moving. Keep hands and feet out from under the mower and clear of pinch points between the tractor and mower.

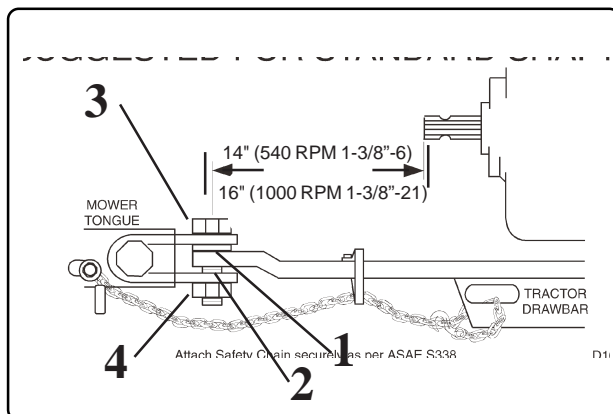
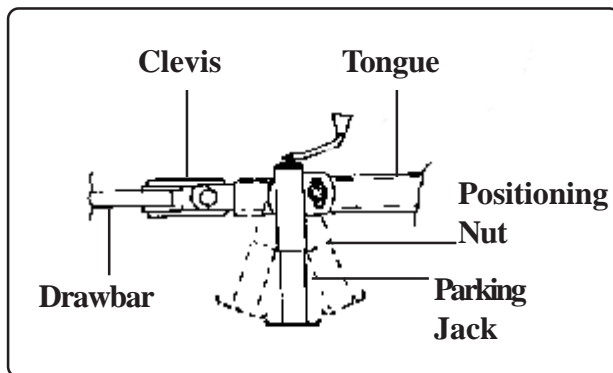
DANGER!



Always shut the Tractor completely down, place the transmission in park, and set the parking brake before you or anyone else attempts to connect or disconnect the Implement and Tractor hitches. (S3PT-15)

5.1 Connecting the Mower Tongue to the Tractor

1. Ensure the tractor is equipped with the correct PTO shaft and the drawbar is set at the correct length.
2. Using the parking jack stand, position the tongue clevis to the height of the tractor drawbar.
3. Board the tractor and start the engine. Back the tractor to the mower aligning the drawbar hitch hole with the mower tongue clevis. Turn off the tractor engine, place the tractor in park, and set the parking brake before dismounting.
4. To attach the mower, place two 1" flatwashers (1) positioned under top lip of tongue clevis and to the top of drawbar. Add additional 1" flatwashers (2) between the bottom of drawbar and bottom lip of clevis to fill open space. Insert a 1" diameter grade 5 or 8 bolt (3) through clevis and drawbar and retain in position with a 1" locknut (4). Tighten the locknut securely but do not overtighten which could spring or break the clevis. NEVER attach mower to the tractor with a pin not having a nut.
5. Securely attach the mower safety chain to the tractor drawbar or drawbar support frame.
6. Lower the jack until the tongue is completely supported by the drawbar. Remove jack from the tongue and place on storage bracket of mower.



Safety Tow Chain

If the mower is towed on a public roadway, a safety chain with tensile strength equal to or greater than the gross weight of the mower must be connected between the tractor and mower. This will help control the implement in the event the tongue becomes disconnected from the drawbar. After connecting both ends of the safety chain, drive the tractor to the right and left to check for proper chain length. Adjust length as necessary and allow only enough slack in the chain to make a maximum turn in both directions.

OPERATION

5.2 Connecting Mower Hydraulic Lines to the Tractor

With the tractor shut down and secured in position, relieve hydraulic pressure from the tractor by moving the control levers back and forth several times or placing the levers in the float position.

Keep hoses, quick couplers, and swivels free of contamination. Never leave a disconnected hose end open and cap the tractor hydraulic outlet ports when not in use. If the tractor ports or mower hydraulic hose ends become contaminated, wipe clean with a rag before connecting.

Operating Mower Hydraulics with Three Tractor Hydraulic Ports

Connect one hose into each hydraulic port. Connect lines to correspond with position of hydraulic control levers.

Operating Mower Hydraulics with Two Tractor Hydraulic Ports

The lines that operate the wing cylinders must be plumbed together and will be controlled using one hydraulic control valve. Each wing cannot be controlled independently nor will they raise and lower simultaneously.

Operating the Mower Hydraulics with a 3-Spool Hydraulic Control Valve (Extra Equipment)

Ensure the control valve matches the hydraulic operating system of the tractor (open or closed center). Mount the valve bank to a tractor fender or other accessible location. Connect valve bank inlet and outlet lines to outlets of the same tractor hydraulic port. Connect the mower hydraulics to the control valve bank with the center section line to the right port. Connect wing cylinder lines to the control valve to correspond with left and right wing.

Level Lift Method (Extra Equipment)

The Level Lift Kit includes three rephasing Cylinders and a set of Hydraulic Hoses. Block or jack up the Center Section so the existing Hydraulic Cylinder is loose. Remove this center Cylinder and replace it with the rephasing Master Cylinder. Use the connectors from the existing Cylinder to attach the Master Cylinder to the Center Section. Refer to LEVEL LIFT HYDRAULIC INSTALLATION in the Assembly Section for a diagram of the proper cylinder and hose installation placement.

NOTE: It is easier to manipulate the Level Lift Hydraulic Cylinders for installation if one of the ports is open.

To lower the Wing Sections, adjust the Wing Axle Lift Screws until the Skid Shoe rests on the ground and the Lift Screw is loose. Remove the Lift Screws and replace with 8" stroke Hydraulic Slave Cylinders. Install the Cylinders with the port side facing upward. Attach to lugs on the Frame and Wing Axle using the connectors from the Lift Screws.

Attach the Hydraulic Hoses in a series. Use a good pipe sealing compound to attach the fittings to the Cylinders and hoses. Do not use thread tape. Exercise care not to overtighten the fittings and possibly causing cracks in the cylinder ports. Thread the hoses through the Hose Brackets to avoid Driveline entanglement, and connect into the tractor's hydraulic control valve.

NOTE: A double-acting remote outlet or a four-way valve is generally recommended for use with the Level Lift Cylinders. However, the rephasing Cylinders can be plumbed to a 3-Way (Single-Acting Valve) by teeing the return line from the rephasing cylinder into the return line on the outlet side of the valve. The return line may also be plumbed to any reservoir inlet to return the rephasing oil.

Hold the Hydraulic valve open until all three axle Cylinders are fully extended. Continue to hold Valve open until all of the air has been expelled from the Cylinder. Holding the valve open at the end of the stroke rephases the Cylinders so they will raise and lower evenly.

The clevis at the end of the cylinders will provide a fine adjustment to the height of the Wings. All three sections must be set evenly. Adjust the depth stop on the center Cylinder to set the center section at the desired mowing height. Stroke control segments may be required to hold adjusted height.

OPERATION

Hydraulic Line Support

Support the hydraulic hoses with the equipped brackets. Ensure that hoses do not contact the driveline, do not bind while turning, and do not become pinched or kinked.

Hydraulic Cylinder Priming

Cylinders must be filled with hydraulic oil before removing transport braces to lower wing sections. Fill cylinders and lines by holding the control valves to fully extend (axle cylinders) and retract (wing cylinders). Place control levers in the float position and repeat the process a second time. Ensure the wings are fully supported by the hydraulic cylinders before removing transport braces. NEVER drive out the bar pins and NEVER remove wing supports that have tension on them.

6. SETTING THE MOWER

Properly setting the cutting height is essential for efficient and safe operation. A properly set mower will make a more uniform cut, distribute clippings more evenly, require minimal tractor work, and follow the contour of uneven terrain. Note: Avoid very low cutting heights, striking the ground with the blades gives the most damaging shock loads and will cause damage to the mower and drive. Blades contacting the ground may cause objects to be thrown out from under the mower deck. Always avoid operating the mower at a height which causes the blades to contact the ground.

DANGER!



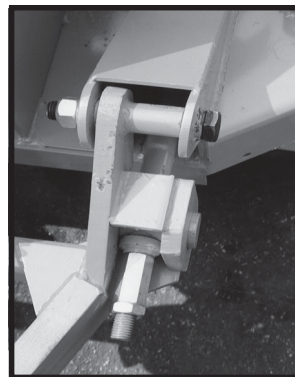
Never work under the Implement, the framework, or any lifted component unless the Implement is securely supported or blocked up to prevent sudden or inadvertent falling which could cause serious injury or even death. (SG-14)



6.1 SETTING DECK HEIGHT

LEVELING DECK CENTER SECTION

1. Place the tractor and mower on a level surface with wings lowered.
2. Raise the mower until the skid shoes are approximately 1" less off the ground than the desired final cut height. For example, for a 4" cut, position the mower about 3" off the ground.
3. Shut down the tractor, place the transmission in park, and set the parking brake before dismounting.
4. Level the mower deck front to rear by adjusting the leveling rods linking the tongue to the center axle. To adjust rod length, loosen jamnut and screw adjustment nut. To lower the front, screw the adjusting nut counter clockwise and to raise the front screw the nut clockwise. Re-tighten jamnuts when deck is leveled. **IMPORTANT:** Alternate adjustments between rods and adjust at equal lengths to maintain equal tension. Improper adjustments may cause rods to snap or bend.
5. Place split collar assemblies on the center axle hydraulic cylinder rod to maintain a set cutting height each time the mower is raised and lowered.



LEVELING ROD, ADJUSTMENT NUT, AND JAMNUT



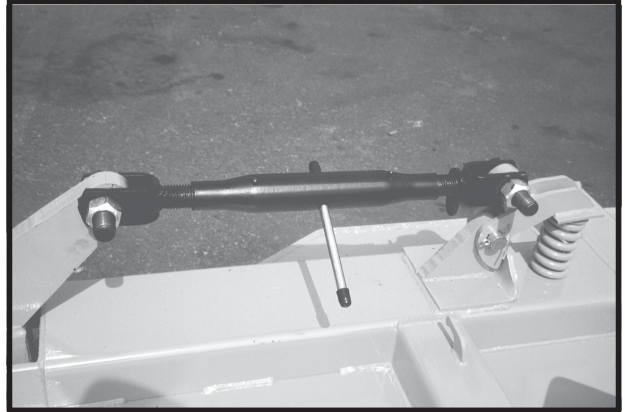
CENTER AXLE HYDRAULIC CYLINDER WITH STROKE CONTROL COLLAR ASSEMBLIES

OPERATION

LEVELING WING SECTION CUTTING HEIGHT

If the mower is not equipped with a Level Lift Hydraulic Cylinder System, the mower wings must be manually adjusted to the same cutting height as the mower center section.

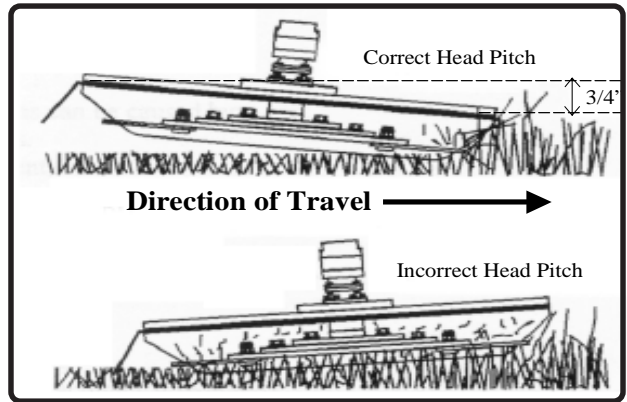
The height of the mower wing in its operating position is manually set by adjusting the length of the lift screw assembly. To lower the wing, shorten the screw assembly, lengthen the screw assembly to raise the operating wing height.



6.2 Setting Deck Pitch

To facilitate safe and efficient operation, the mower should be operated with the deck approximately 3/4" LOWER IN THE FRONT THAN THE REAR.

Operating the mower at this pitch will allow the mower to cut the grass only once and requires less work from the tractor. In addition, a more even distribution of the clippings from the rear of the mower will be achieved with this deck pitch.



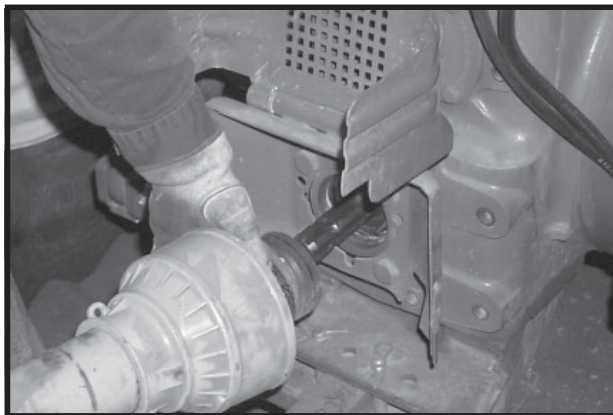
1. Adjust the leveling rods linking the tongue to the rear axle until the front of the mower is at least 3/4" lower in the front than the rear. To lower the front, lengthen the leveling rods and to raise the front shorten the leveling rods. **IMPORTANT:** Adjust the leveling rods the same amount and maintain equal tension in the rods. Improper adjustment may cause rods to snap or bend. Retighten the jamnuts after the deck pitch has been set.

OPERATION

7. DRIVELINE ATTACHMENT

The driveline yoke and tractor PTO shaft must be dirt free and greased for attachment.

To connect the mower driveline to the tractor PTO output shaft, pull the driveline yoke collar back and align the grooves and splines of the yoke with those of the PTO shaft. Push the driveline yoke onto the PTO shaft, release the locking collar, and position the yoke until the locking collar balls are seated onto the PTO shaft. Push and pull the driveline back and forth several times to ensure a secure attachment.



WARNING!



When attaching the PTO yoke to the Tractor PTO shaft, it is important that the spring activated locking collar slides freely and the locking balls are seated securely in the groove of the PTO shaft. A driveline not attached correctly to the Tractor PTO shaft could slip off and result in personal injury and damage to the cutter.

7.1 Driveline Length Check

WARNING!



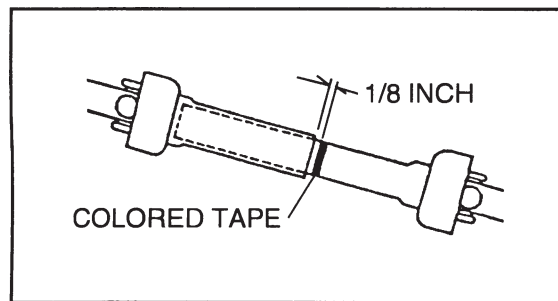
Before operating the Mower, check to make sure the driveline will not bottom out or become disengaged. Bottoming out occurs when the inner shaft penetrates the outer housing until the assembly becomes solid-it can shorten no more. Bottoming out can cause serious damage to the Tractor PTO by pushing the PTO into the Tractor and through the support bearings or downward onto the PTO shaft, breaking it off.

When fitting the mower to the tractor, the telescoping driveline must be inspected to ensure that at its most compressed position, the profiles do not “bottom out”, and when at its farthest extended position, there is sufficient engagement between the profiles to operate safely. At its shortest length, there must be at least a 1” clearance between each profile end and opposite profile universal joint. At its farthest operating extension, a minimum profile engagement of 12” must be maintained.

OPERATION

“Bottoming Out” Check Procedure

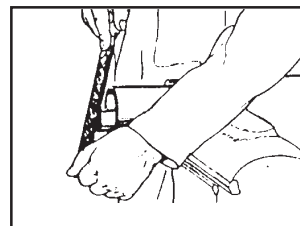
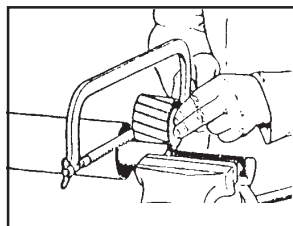
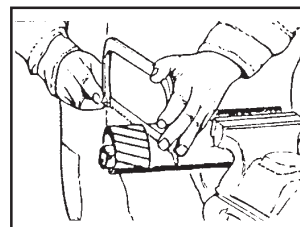
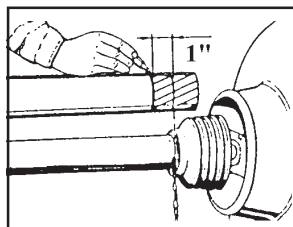
1. Disconnect driveline from the tractor and slide the profiles together until fully compressed.
2. Place a mark on the inner shield 1/8" from the end of the outer shield and reattach the driveline to the PTO shaft.
3. With the **PTO NOT TURNING**, slowly drive the tractor with mower attached through the sharpest turn possible and watch shaft movement. With the **PTO NOT TURNING**, slowly drive the tractor with the mower attached through the most severe terrain conditions expected and watch shaft movement.
4. If the distance between the mark and the outer shield becomes less than 2" at any point there is a potential problem bottoming out the driveline and the driveline should be shortened.



Driveline in maximum compressed position.

Shorten the driveline profiles as follows:

1. Remove the driveline from the tractor.
2. Position the mower to the point with the shortest distance between the tractor PTO shaft and cutter gearbox. Shut down the tractor and securely block the mower in this position.
3. Pull driveline apart and reattach yoke to PTO shaft.
4. Hold driveline sections parallel to one another and measure back 1" from yoke of each shaft and place mark on opposite section. Cut this length off with a saw.
5. Round off all sharp edges and debur.
6. Thoroughly grease then reinstall the driveline.
7. Recheck for proper operation.



Engagement Check Procedure

1. With the driveline attached, position the mower to the point where the telescoping driveline is at its maximum extension. Completely shut down the tractor and secure in position.
2. Mark the inner driveline shield 1/8" from the end of the outer shield.
3. Disconnect the driveline from the tractor and separate the two driveline halves.
4. Measure the distance from the mark to the end of the inner profile. This length is the amount the driveline profiles were engaged.
5. If the engaged length is less than 12", the shaft is considered too short and should be replaced with a longer shaft. Consult an authorized dealer to purchase the required driveline length.

NOTE: If the driveline cannot be shortened and still maintain the required profile engagement, the operator must be made aware of terrain conditions and avoid situations which pose a potential problem to avoid damaging the driveline.

OPERATION

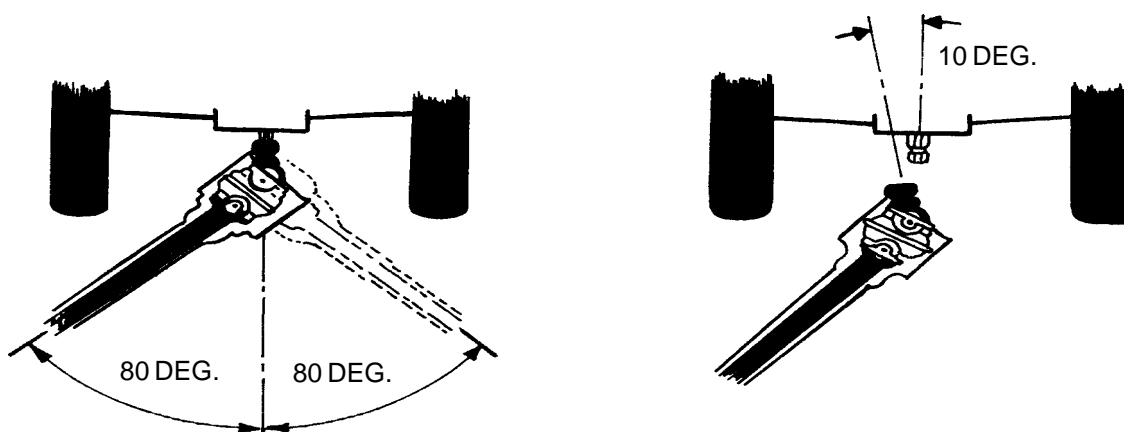
7.2 Constant Velocity (CV) Driveline

For mowers equipped with a Constant Velocity (CV) driveline, the maximum turning angle between the tractor and mower must be determined to ensure the joint angle does not over-extend which can cause CV joint damage. Constant Velocity joints enable the driveline to operate smoothly with no vibrations and clattering at angles up to 70°. Angles greater than 80° can result in mechanical damage to the CV joint and mower driveline.

The Constant Velocity joint must be lubricated every 8 hours of operation as specified in the Maintenance Section. Failure to properly lubricate the joint will result in accelerated wear and joint component failure.

CV Driveline Maximum Angle Check Procedure

1. With the **mower attached** to the tractor and the **driveline disconnected** from the tractor PTO stub make a hard left turn until there is approximately a 1" clearance between the left rear tractor tire and mower frame or tongue.
2. Stop and completely shut down the tractor. Place the tractor in Park and apply the Parking Brake before dismounting.
3. Check the CV joint at this maximum turning radius by holding the driveline yoke above the PTO shaft and then angle the CV joint to its maximum angle. A minimum difference of 10 degrees between the center line of the yoke and the PTO shaft must be maintained to ensure the joint will not be over angled. If the joint cannot be angled at least 10°, there is a potential problem of over-angling the joint while making sharp turns.
4. Solutions: To ensure the joint is not damaged, check the following:
 - Check the drawbar length to ensure that it is at the proper length for the RPM speed of the mower.
 - Move the tractor rear tires wider apart to limit the tractor turning radius.
 - Position the mower at multiple angles and perform the above procedure. Determine the sharpest turning radius that maintains a safe operating angle and note this position to the operator.



CONSTANT VELOCITY JOINT-MAXIMUM ANGLE CHECK

DANGER!



Do not turn so sharp or lift mower so high to produce a severe "knocking" of the Driveline which will cause accelerated wear and breakage of drive train components and could result in possible injury from the separated Driveline sections. (SRM-4)

OPERATION

8. PRE-OPERATION INSPECTION AND SERVICE

Before each use, a pre-operation inspection and service of the mower and tractor must be performed. This includes routine maintenance and scheduled lubrication, inspecting that all safety devices are equipped and functional, and performing needed repairs. Do not operate the mower and tractor if the pre-operation inspection reveals any condition affecting safe operation. Perform repairs and replacement of damaged and missing parts as soon as noticed. By performing a thorough pre-operation inspection and service, valuable down time and repair cost can be avoided.

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)

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)



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 leaking or loose fittings. Make sure all pins have cotter pins and washers. Serious injury may occur from not maintaining this Implement in good working order. (SG-21)



OPERATION

8.1 Tractor Pre-Operation Inspection/Service

Refer to the tractor operator's manual to ensure a complete pre-operation inspection and scheduled service is performed according to manufacturer recommendations. The following is a partial list of items requiring inspection:

- Tire condition/air pressure
- Wheel lug bolts
- Steering linkage
- PTO shield
- SMV sign is clean and visible
- Tractor's lights are clean and functional
- Tractor Seat belt is in good condition
- Tractor cab or ROPS is in good condition
- ROPS is in the raised position
- No tractor oil leaks
- Radiator free of debris
- Engine oil level and condition
- Engine coolant level and condition
- Power brake fluid level
- Power steering fluid level
- Fuel condition and level
- Sufficient lubrication at all lube points
- Air filter condition



8.2 Mower Pre-Operation Inspection/Service

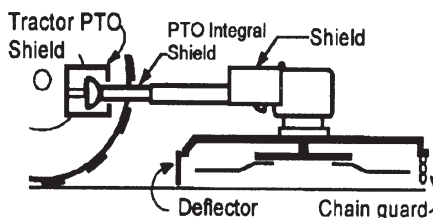
Before each mower use, a complete inspection and service is required to ensure the mower is in a good and safe working condition. Damaged and/or broken parts should be repaired and/or replaced immediately. To ensure the mower is ready for operation, conduct the following.

DANGER!



All Safety Shields, Guards and Safety devices including (but not limited to) - the Deflectors, Chain Guards, Steel Guards, Gearbox Shields, PTO integral shields, and the 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.

(SGM-3)



DANGER!



Replace bent or broken blades 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)

OPERATION

OPERATION

- Ensure that the Manual Canister is secured to the mower with the Operator's Manual inside.
- Ensure all decals are in place and legible. Replace missing, worn, and unlegible decals.

NOTE: The mower Operator's Manual and affixed Decals contain important instructions on the safe and proper use of the mower. Maintain these important safety features on the mower in good condition to ensure the information is available to the operator at all times.



- Ensure the mower hitch is securely attached to the tractor drawbar with a proper size bolt and secured nut.
- Ensure that a properly rated safety tow chain is equipped securing the mower to the tractor.
- Check that the main driveline is securely attached to the tractor PTO shaft.
- Ensure each divider driveline is secure at both ends.



- Ensure chain guards and/or rubber deflectors are in position and not damaged. Replace worn, broken, and missing sections immediately.
- Ensure the driveline integral shields are in good condition and rotate freely.
- Inspect that all bolts and screws are in position and are properly torqued.

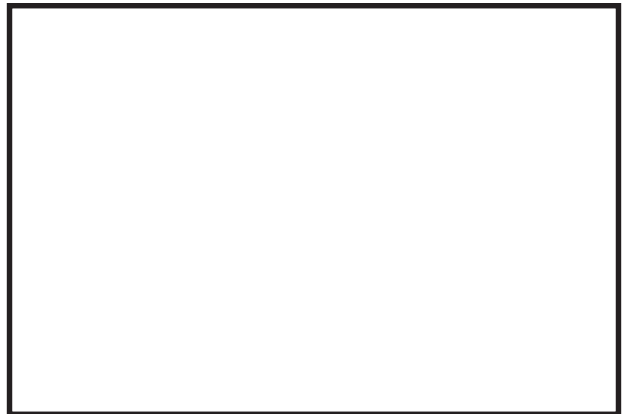
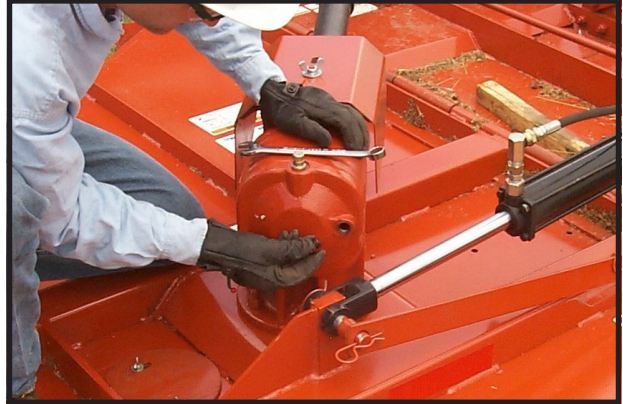


- Ensure the tractor PTO master shield is in place, lowered and in good condition.
- Ensure each mower slip clutch shield is secured in place and in good condition.
- Ensure the driveline slip clutches are properly adjusted and the friction plates are not frozen together. Reference the Maintenance Section for proper slip clutch maintenance.



OPERATION

- Perform scheduled lubrication as specified in the maintenance section.
 - Inspect each gearbox oil level and replenish if needed. A low oil level is a warning sign that the gearbox may be cracked or its seal is damaged and needs to be replaced.
 - Ensure all gearbox vents are in place and free from clogs.
-
- Inspect blades and blade bolts for looseness and excessive wear. Make sure the mower is securely blocked up before crawling beneath. Replace damaged, worn, and missing blades as complete sets to maintain rotary balance.
 - Ensure carrier hub nuts are tightened with the cotter pin inserted and spread.
 - Inspect the condition of the deck skid shoes and the skid shoe attaching hardware.
-
- Ensure each hydraulic cylinder is installed and retained correctly. Ensure the proper size pins are used to retain the cylinders in place and are secured with pins.
 - Check for hydraulic oil leaks on the cylinders, along the hydraulic lines, and at tractor hydraulic ports.
IMPORTANT: DO NOT use your hands to check for oil leaks. Use a piece of heavy paper or cardboard to check for hydraulic oil leaks.
-
- Ensure that the mower is equipped and secured with wing brace supports.
 - Check the condition of the wing hinge pins.
 - Check the condition of the mower axle suspension spring.
 - Inspect mower tire condition, wheel bearings, and lug nut torque.



OPERATION

OPERATION

9. DRIVING THE TRACTOR AND MOWER

Safe tractor transport requires the operator possess a thorough knowledge of the model being operated and precautions to take while driving with an attached implement. Ensure the tractor has the capacity to handle the weight of the mower and the tractor operating controls are set for safe transport. To ensure safety while driving the tractor with an attached mower, review the following.

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)

WARNING!



Transport only at safe speeds. Serious accidents and injuries can result from operating equipment at unsafe speeds. Understand the Tractor and Mower 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 Mower, 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 Mower. 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 Mower 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 Mower at the speeds that you have determined are safe and which allow proper control of 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 in these conditions. 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)

OPERATION

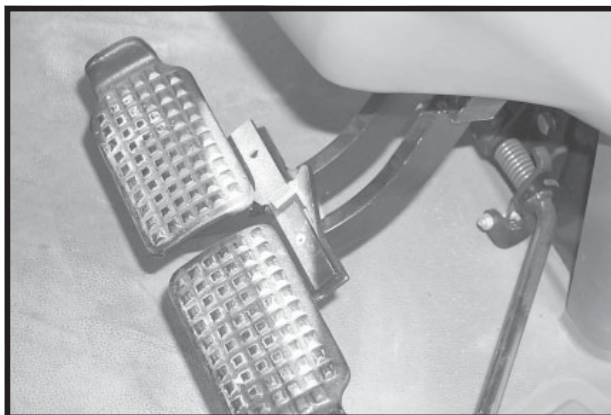
9.1 Starting the Tractor

The procedure to start the tractor is model specific. Refer to the tractor operator's manual for starting procedures for your particular tractor. Consult an authorized dealer if the starting procedure is unclear. Ensure the PTO is disengaged before starting the tractor.



9.2 Brake and Differential Lock Setting

Make sure the tractor brakes are in good operating condition. Tractor brakes can be set to operate independently allowing single rear wheel braking action or locked together to provide simultaneous rear wheel braking. FOR MOST DRIVING AND MOWING CONDITIONS, THE BRAKE PEDALS SHOULD BE LOCKED TOGETHER TO PROVIDE THE MOST EFFECTIVE BRAKING ACTION.



WARNING!



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 in these conditions. 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.

Always disengage the tractor differential lock when turning. When engaged the differential lock will prevent or limit the tractor from turning. During normal cutting conditions, locking the differential provides no benefit and should not be used.

OPERATION

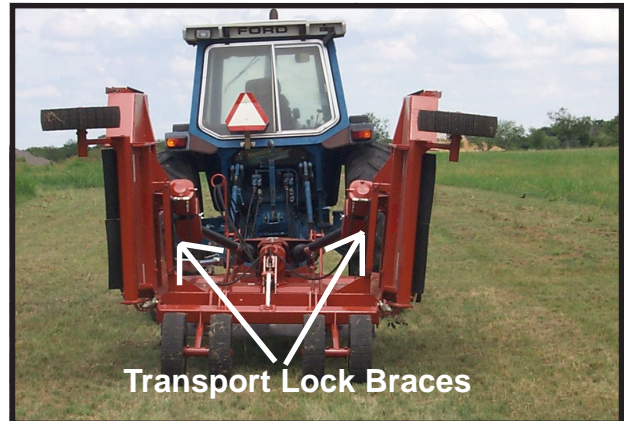
9.3 Operating the Mower Wings

Wings are positioned with hydraulic cylinders. It is recommended that the tractor be equipped with three hydraulic ports or a 3-spool control valve be used so that each section can be controlled independently. Ensure the hydraulic cylinders and lines are filled with oil by holding the valve control levers in the raised position until the cylinders fully retract (wings) and extend (center). Only operate the mower with both wings fully lowered, NEVER operate the mower with a raised wing. Wait until the blades are at a complete stop before raising wings.

Transport Position

To raise mower wings, drive the unit to a level area and retract the wing hydraulic cylinders. DO NOT raise wings with the mower positioned on an embankment or other inclined position to prevent overturning the mower. After the wings are fully raised, install transport retaining arms to prevent wings from inadvertently falling. NOTE: If the transport retaining arms can not be easily installed, lower the mower wings and remove rod end of cylinder and adjust the rod clevis in or out as needed.

The center of gravity is raised and the mower more prone to tipping when the wings are in the raised position. When transporting, only raise the center section high enough to clear ground obstacles.



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)

Operating Position

To lower the wings, remove the transport retaining arms and secure in storage position. DO NOT drive out retaining arm pins. The wing cylinder may need to be retracted to remove tension for brace removal. After removing retaining arms, extend wing hydraulic cylinders and fully lower wings.

The valves operating wing cylinders should be placed in the float position while mowing to allow the mower to follow the contour of uneven terrain and to prevent the wings from creeping up. When extending a wing over a ditch for mowing, place the control valve lever detents in the center position. This will give the mower more stability and prevent the opposite wing from raising. DO NOT operate the mower with the valves in the center detent position for extended periods which can cause mower frame damage.



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)

OPERATION

9.4 Driving the Tractor and Mower

Start off driving at a slow speed and gradually increase your speed while maintaining complete control of the tractor and mower. Moving slowly at first will also prevent the tractor from rearing up and loss of steering control. The tractor should never be operated at speeds that cannot be safely handled or which will prevent the operator from stopping quickly during an emergency. If the power steering or engine ceases operating, stop the tractor immediately as the tractor will be difficult to control.

Drive the tractor with the 3-point lift arms fully raised to prevent damaging the mower driveline and tongue when making sharp turns.

Perform turns with the tractor and mower at slow speeds to determine how the tractor with an attached mower handles a turn. Determine the safe speed to maintain proper control of the tractor when making turns. When turning with a towed implement, the overall working length of the unit is increased. Allow additional clearance for the mower when turning, especially if the wings are lowered.



To avoid overturns, drive the tractor with care and at safe speeds, especially when operating over rough ground, crossing ditches or slopes, and turning corners. Tractor wheel tread spacing should be increased when working on inclines or rough ground to reduce the possibility of tipping.

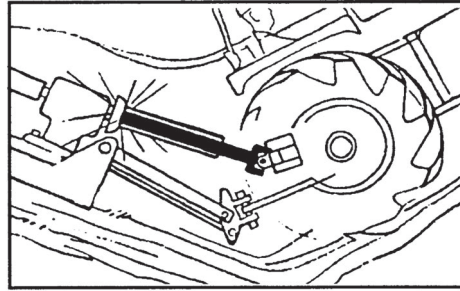
Use extreme caution when operating on steep slopes. Keep the tractor in a low gear when going downhill. **DO NOT** coast or free-wheel downhill.



OPERATION

9.5 Crossing Ditches and Steep Inclines

When crossing ditches with steep banks or going up sharp inclines, it is possible that the main driveline inner profile will penetrate into the outer housing to its maximum depth until the assembly becomes solid (driveline is at its extreme shortest length). This type of abusive operation can cause serious damage to the tractor and mower drive by pushing the PTO into the tractor and through the support bearings or downward onto the PTO shaft, breaking it off.



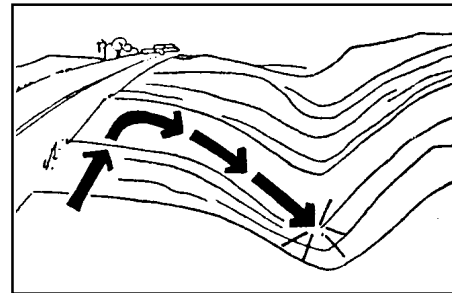
WARNING!



Damage resulting from over-collapse of the driveline's inner profile and its outer housing may allow the driveline to come loose from the Tractor which could cause bodily injury to the operator or bystanders and/or extensive damage to the Tractor or Implement

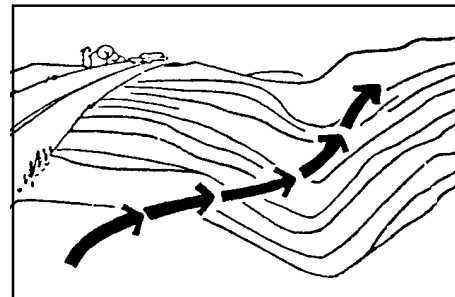
When confronted with an incline or ditch, do not approach from an angle which is perpendicular or straight on as damage to over collapse of the driveline may occur.

When crossing such terrain, the wings should be fully lowered for a lower center of gravity and added stability.



INCORRECT: DO NOT approach ditch straight on.

Inclines and ditches should be approached along a line which is at an angle as shown. This type of path will reduce the possibility of over-collapse of the driveline and resulting damage. If the gradient is so steep that such an approach increases the possibility of a tractor roll-over, select an alternate crossing path.



CORRECT: Approach ditch at an angle

When operating the tractor and mower across slopes and inclines, through ditches, and other uneven terrain conditions, it is important to maintain sufficient deck to ground clearance. Blade contact with the ground may cause soil, rocks and other debris to be thrown out from under the mower resulting in possible injury and/or property damage. Ground contact also produces a severe shock load on the mower drive and to the mower blades resulting in possible damage and premature wear.

OPERATION

10. OPERATING THE TRACTOR AND MOWER

THE OPERATOR MUST COMPLETELY UNDERSTAND HOW TO OPERATE THE TRACTOR AND MOWER AND ALL CONTROLS BEFORE ATTEMPTING TO MOW. The operator must read and understand the Safety and Operation Sections of the mower and tractor operator's manuals. These manuals must be read and explained to any operator who cannot read. Never allow someone to operate the mower and tractor without complete operating instructions.

Before starting any mowing operation, the operator must become familiar with the area to be mowed and any obstacles and hazards contained within to ensure safety to the operator, bystanders, and equipment. Special attention should be paid to foreign debris, rough terrain, steep slopes, and passersby and animals in the area.

DANGER!



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 the blade carrier is balanced before resuming mowing. (SGM-5)



DANGER!



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)

10.1 Foreign Debris Hazards

Before mowing, inspect the area to make sure there are no foreign objects that the mower blades could hit or become entangled with. Remove all foreign objects and debris. If objects are too big to remove, mark them clearly and be sure to prevent the mower blades from contacting them.



OPERATION

OPERATION

If you hit a solid object or foreign debris, stop the mower and tractor at once. Immediately idle the engine speed and disengage the PTO. Wait for all mower rotating motion to stop, then raise the mower and move the tractor and implement off the object. Inspect the area and remove, or mark the location of the debris. Inspect the condition of the mower and make any needed repairs immediately. Make sure the blades are not damaged and the carrier is balanced before resuming operation.

Always wear your seat belt securely fastened and only operate the tractor and mower with the ROPS in the raised position. If the tractor or mower hits a tree stump, rock, or bump, a sudden movement could throw you off of the seat and under the tractor and/or mower. The seat belt is your best protection from falling off the tractor and the ROPS provides protection from being crushed during a tractor roll-over.

10.2 Bystander/Passersby Precautions

If a bystander comes within 100 yards of the tractor while the mower is being operated, stop the tractor at once, idle the engine and disengage the PTO. Do not engage the PTO again until all bystanders are well past the 100 yard distance.

DANGER!



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



STOP MOWING IF PASSERSBY ARE WITHIN 100 YARDS UNLESS:

- Front and Rear Deflectors, 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 the 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.) (SRM-1)

OPERATION

10.3 Engaging the Power Take Off (PTO)

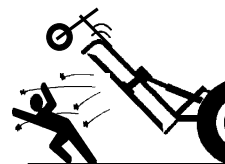
Before engaging the PTO, make certain that the area is clear of bystanders and passersby. The mower wings must be completely lowered and the deck positioned at a safe mowing height. NEVER engage the PTO with the mower wings in the raised position.

Set the tractor engine speed at approximately 1,000 RPM before engaging the PTO. Shift the PTO control to the on position, and slowly increase the engine speed until the PTO is operating at the rated speed. If you hear unusual noises or see or feel abnormal vibrations, disengage the PTO immediately. Inspect the mower to determine the cause of the noise or vibration and repair the abnormality.

DANGER!



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)



DANGER!



Do not put hands or feet under Mower decks. Blade contact can result in serious injury or even death. (SGM-9)



10.4 PTO RPM and Ground Speed

Ground speed for mowing will depend upon the height, type, and density of vegetation to be cut. Recommended speed for efficient mower performance is between 2 and 5 mph. Operate the mower at its full rated PTO speed to maintain blade speed for a clean cut. Refer to the tractor operator's manual or the tractor instrument panel for the engine speed and gear to provide the required PTO and desired ground speed. Make sure that the mower is operating at its full rated speed before entering the vegetation to be cut. If it becomes necessary to temporarily regulate engine speed, increase or decrease the throttle gradually.

Ground speed is achieved by transmission gear selection and not by the engine operating speed. The operator may be required to experiment with several gear range combinations to determine the best gear and range which provides the most ideal performance from the mower and most efficient tractor operation. As the severity of cutting conditions increase, the ground speed should be decreased by selecting a lower gear to maintain the proper operating PTO speed.

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)

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 2 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)

OPERATION

10.5 Operating the Mower

Only operate the mower from the tractor operator's seat with the seatbelt securely fastened. The tractor must be equipped with a ROPS in the raised position or a ROPS cab.

The mower is designed to cut vegetation up to 2" in diameter. Sharp blades will produce a cleaner cut and require less power. Travel at a speed that allows the mower sufficient time to cut through the vegetation and maintain the PTO operating speed to prevent overloading the mower and tractor. Choose a driving pattern that provides the maximum pass length and minimizes turning.

Under certain conditions, tractor tires may roll some grasses down preventing them from being cut at the same height as the surrounding area. When this occurs, reduce the tractor ground speed while maintaining the operating speed of the mower. A slower ground speed will permit grasses to at least partially rebound and be cut. Taking a partial cut and/or reversing the direction of travel may also help produce a cleaner cut.

Avoid mowing in the reverse direction when possible. In situations where the mower must be backed to access areas to be cut, make sure there are no persons or other foreign debris behind the mower before mowing in reverse. When mowing in reverse, operate the tractor and mower at a reduced ground speed to ensure tractor and mower control is maintained.

WARNING!



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

DANGER!



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 item discontinue mowing. (SGM-1)

DANGER!



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 in the reverse direction that you have not inspected and removed debris or foreign material. (SGM-8)

WARNING!



Follow these guidelines to reduce the risk of equipment and grass fires while operating, servicing, and repairing the Mower and Tractor:

- Equip the Tractor with a fire extinguisher in an accessible location.
- Do Not operate the Mower on a Tractor with an underframe exhaust.
- Do Not smoke or have an open flame near the Mower and Tractor.
- Do Not drive into burning debris or freshly burnt areas.
- Ensure slip clutches are properly adjusted to prevent excessive slippage and plate heating.
- Never allow clippings or debris to collect near drivelines, slip clutches, and gearboxes. Periodically shut down the Tractor and Mower and clean clippings and collected debris from the mower deck.

(SGM-12)



OPERATION

When you get to the end of a pass, slightly raise the mower (2-4") before turning. Never raise the mower entirely while the blades are turning. If the mower must be raised higher than 12" from ground level, disengage the tractor PTO and wait for all mower rotation to come to a complete stop before proceeding to raise the mower. NEVER raise the mower wings while the blades are turning.

When turning, the angle between the tractor and mower should not be so great that a clattering of the U-joints occurs. Sharp turns can cause premature failure of the joints and place pressure on the tractor PTO shaft and could cause extensive mechanical damage to the mower and tractor.

If the mower is operated in conditions that require frequent sharp turning, the mower should be equipped with a Constant Velocity driveline. CV joints enable the tractor PTO shaft and mower driveline to be angled safely up to 70 degrees with no damage to the mower or driveline.



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)



Stay alert and watch for trees, low hanging limbs, power lines, and other overhead obstacles and solid ground objects while you are operating. Use care to avoid hitting these items.



OPERATION

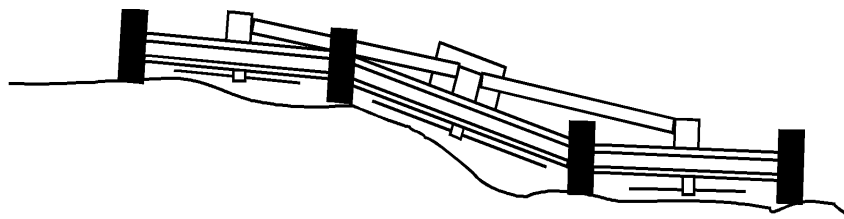
Large, dense, or wet vegetation may need to be mowed in two or more passes to achieve a uniform cut. In such conditions, raise the cutting height up to 15" on the first pass.

Then lower the mower to the desired height and mow the vegetation a second time. If possible, select a mowing pattern that is at a 90 degree angle to the first pass to reduce streaking and provide a more even cut.

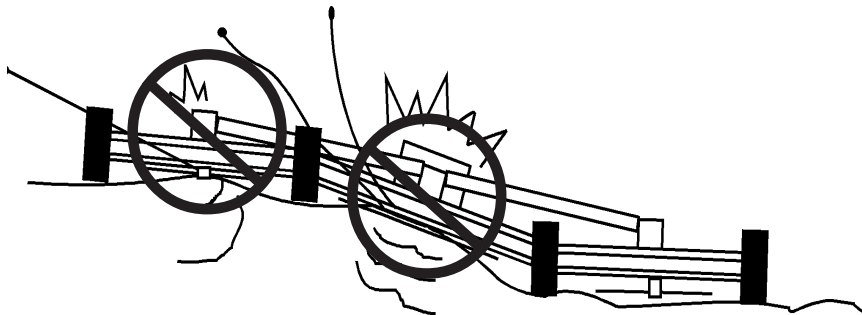


When mowing across uneven areas such as road shoulders, ditch edges, and other uneven terrain, position mower so that one support wheel is near the highest point to prevent blades from cutting into gravel or dirt which can cause rapid blade wear and extremely severe shock loads on the drivetrain resulting in rapid wear or damage to these components. Blades contacting the ground may cause objects to be thrown out from under the mower deck. Always avoid operating the mower at a height or position which may cause the blades to contact the ground. Cutting into the berm or edge of the ditch will cause abnormal and accelerated blade wear and possible blade component failure.

OPERATION



Correct Mower Deck Positioning



Wrong Mower Deck Positioning

OPERATION

10.6 Shutting Down the Mower

To shut down the mower, first bring the tractor to a complete stop. Then slow down the mower by reducing the engine speed before disengaging the PTO. Wait for all rotating motion to stop before proceeding to drive or shut down the tractor.



Park the tractor on a level surface, place the transmission in park or neutral and apply the parking brake, lower the attached mower to the ground, shut down the engine, remove the key, and wait for all motion to come to a complete stop before exiting the tractor.



OPERATION

OPERATION

11. DISCONNECTING THE MOWER FROM THE TRACTOR

DANGER!



Always shut the Tractor completely down, place the transmission in park, and set the parking brake before you or anyone else attempts to connect or disconnect the Implement and Tractor hitches. (S3PT-15)

WARNING!



Never unhitch without using the Tongue Jack. The Tongue is very heavy. Attempting to lift the Tongue without using the Tongue Jack could cause strains or other injury. Allowing the tongue to fall suddenly and unexpectedly could result in crushing injury. Use the Tongue Jack for lifting the Implement only. Overloading the Tongue Jack can cause failure with possible serious bodily injury or even death. (STI-4)

Before disconnecting the mower, the PTO must be disengaged and blade rotation at a complete stop. Move the mower to a level storage location and lower the center section and both wings to the ground. If the mower will be stored with the wings in the raised position, install both wing transport retaining arms. If the mower is not resting securely on the ground, block the mower up securely before attempting to disconnect it from the tractor.

Use extreme care to keep feet and hands from under the mower and clear of any pinch points.

When disconnecting the mower the tractor should be completely shut down and secured in position. Relieve hydraulic pressure by moving the control levers back and forth several times. Lower the parking jack and raise the mower until the tongue clevis is no longer resting on the tractor drawbar and is supported solely by the jack. The jack should be in a near vertical position with the ground and can be adjusted by loosening the positioning nut and moving the jack up to 15 degrees in each direction. Also make sure that the jack foot is securely resting at ground level or securely supported by a block before raising the mower. Once the mower tongue is being supported entirely by the jack, remove the hitch bolt, locknut, and washers. Remove the hydraulic hoses from the tractor and secure to the mower to prevent contact with dirt.

After disconnecting the mower hitch, remove the mower driveline from the tractor PTO shaft. Place the driveline in its storage bracket to prevent it from contacting mud or dirt which can contaminate the universal joint bearings and shorten the life of the driveline.

After the driveline has been removed from the tractor, place the PTO master shield back in the operating position.



OPERATION

12. MOWER STORAGE

It is recommended that the mower be stored with the center section and both wings fully lowered to ground level. If the mower is stored with the wings in the raised position, select a level area and install wing retaining arms to prevent the wings from falling BEFORE disconnecting the mower hitch from the tractor.

Properly preparing and storing the mower at the end of the season is critical to maintaining its appearance and to help ensure years of dependable service. The following are suggested storage procedures:

1. Thoroughly clean all debris off the mower to prevent damage from rotting grass and standing water.
2. Lubricate all mower grease points and fill gearbox oil levels as detailed in the maintenance section.
3. Tighten all bolts and pins to the recommended torque.
4. Check the mower for worn and damaged parts. Perform repairs and make replacements immediately so that the mower will be ready for use at the start of the next season.
5. Store the mower in a clean, dry place with the mower housing resting securely on blocks or at ground level.
6. Keep the driveline yoke from sitting in water, dirt and other contaminants.
7. Use spray touch-up enamel where necessary to prevent rust and maintain the appearance of the mower.



DANGER!



Never allow children to play on or around the Tractor and 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 and others. (SG-25)

It is critical that driveline clutches slip when an obstacle or heavy load is encountered to avoid mower and/or tractor damage. If the mower sits outside for an extended period of time or is exposed to rain and/or humid air, the clutch lining plates must be inspected to ensure they are not frozen together from rust or corrosion. If the mower has been exposed to such conditions, at the start of each mowing season, and any time it is suspected that the slip clutch plates may be frozen together, readjust the slip clutch as detailed in Seasonal Clutch Maintenance of the maintenance section in this manual.

OPERATION

13. TRANSPORTING THE TRACTOR AND MOWER

Inherent dangers of operating the tractor and mower and the possibility of accidents are not left behind when you finish mowing an area. Therefore, the operator must employ good judgement and safe operation practices when transporting the tractor and mower between locations. By using good judgement and following safe transport procedures, the possibility of accidents while moving between locations can be substantially minimized.

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)



Before transporting the tractor and mower, idle the tractor engine, disengage the PTO and wait for all mower moving parts to come to a complete stop. Raise the mower wings and secure in position with transport lock braces. When transporting, only raise the center deck enough to clear ground obstacles to prevent tipping, especially when traveling through rough terrain.



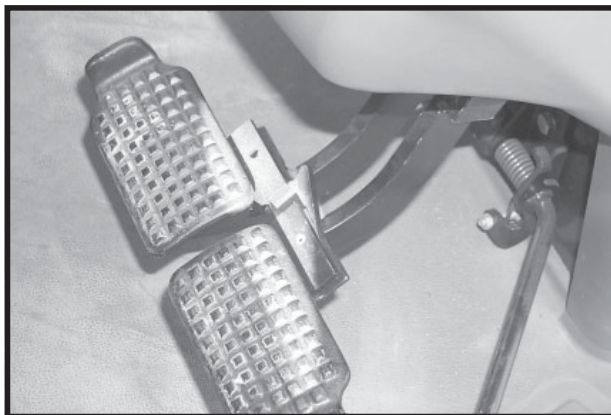
If the tractor's hydraulic pump is not independent of the tractor PTO, or if the tractor PTO has to be run to have hydraulic power, disconnect the mower driveline from the tractor PTO output shaft. Secure the driveline to the mower deck to prevent driveline damage or loss during transport.



OPERATION

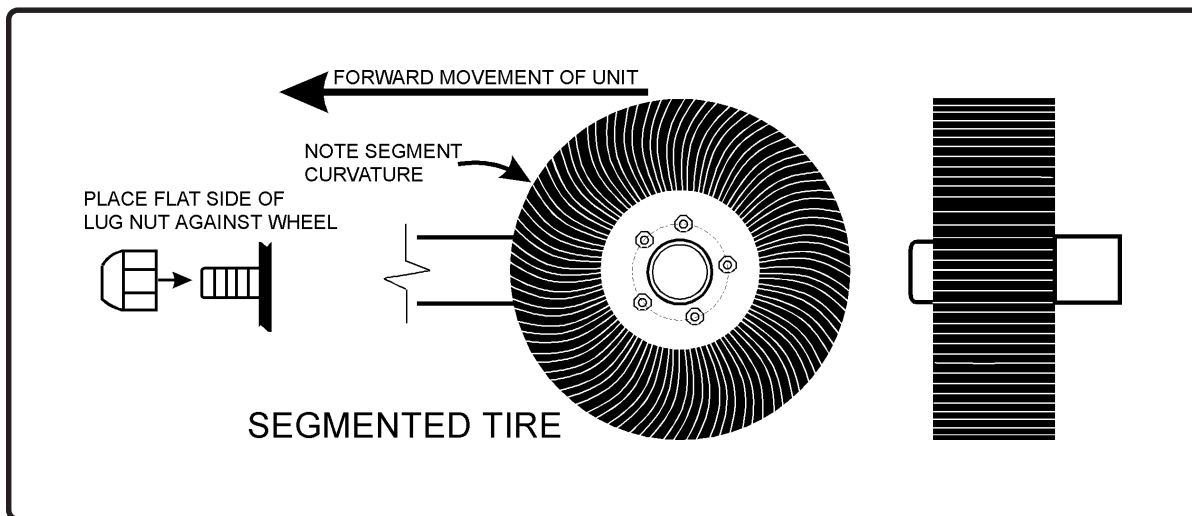
Before transporting the tractor on a public roadway or boarding a trailer for transport, the tractor brake pedals should be locked together. Locking the pedals ensures that both wheels brake simultaneously while stopping, especially when making an emergency stop.

Use extreme caution and avoid hard applications of the tractor brakes when towing heavy loads at road speeds. Never tow the mower at speeds greater than 20 MPH.



Tires and Wheels

Laminated Sectional Tires are designed for conditions where puncture proof performance is required and the mower will not be transported for long distances on roadways. Transport speed for laminated tires should not exceed 10 MPH. Excessive speed can cause damage to the machine and tire sections. Sectional tires must be installed such that the rubber segments lay with the ground.



Foam Filled used Airplane Tires are ideal for conditions where a puncture proof tire is needed and the mower is frequently transported between locations.

Pneumatic Tires (used airplane or implement tires) are ideal for frequent long distance towing, however, they are not puncture proof and are not recommended for mowing brushy areas or other conditions that could damage the tires. Recommended tire pressure is 15-20 PSI. DO NOT over-inflate.

OPERATION

13.1 Transporting on Public Roadways

WARNING!



Only tow the Implement behind a properly sized and equipped Tractor which exceeds the weight of the Implement by at least 20%. **DO NOT** tow the Implement behind a truck or other type of vehicle. Never tow the Implement and another Implement connected in tandem. Never tow the Implement at speeds over 20 MPH. (STI-6)

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)



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)



Extreme caution should be used when transporting the tractor and mower on public roadways. The tractor must be equipped with all required safety warning features including a SMV emblem and flashing warning lights to alert drivers of the tractor's presence. Remember that roadways are primarily designed for automotive drivers and most drivers will not be looking out for you, therefore, you must look out for them. Check your side view mirrors frequently and remember that vehicles will approach quickly because of the tractor's slower speed. Be extremely cautious when the piece of equipment that you are towing is wider than the tractor tire width and/or extends beyond your lane of the road.

Make sure that a proper size safety tow chain is secured between the tractor and mower before entering a public road. Secure the center section at a safe transport height by placing additional stroke control spacers on the center axle cylinder and then lower the mower. Secure the mower wings in the raised position with the transport lock braces.

The SMV (Slow-Moving Vehicle) emblem is universal symbol used to alert drivers of the presence of equipment traveling on roadways at a slow speed. SMV signs are a triangular bright orange with reflective red trim for both easy day and night visibility. Make sure the SMV sign is clean and visible from the rear of the unit before transporting the tractor and mower on a public roadway. Replace the SMV emblem if faded, damaged, or no longer reflective.



OPERATION

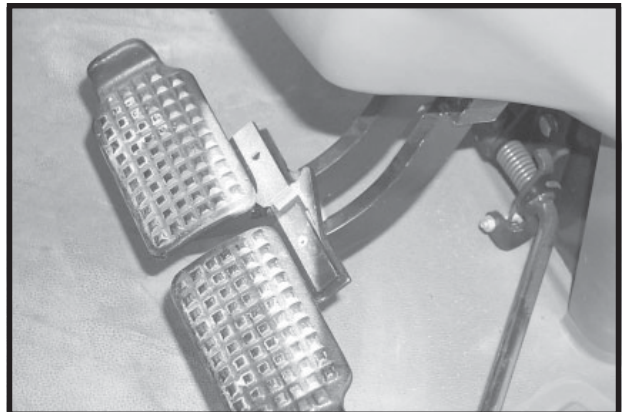
Make sure that all tractor flashing warning lights, headlights, and brake/taillights are functioning properly before proceeding onto public roads. While newer model tractors have plenty of lighting to provide warning signals and operating lighting, most older models were only equipped with operating lights. Consult an authorized tractor dealer for lighting kits and modifications available to upgrade the lighting on older tractor models.



When operating on public roads, have consideration for other road users. Pull to the side of the road occasionally to allow all following traffic to pass. Do not exceed the legal speed limit set in your country for agricultural tractors. Always stay alert when transporting the tractor and mower on public roads. Use caution and reduce speed if other vehicles or pedestrians are in the area.



Reduce speed before turning or applying the brakes. Ensure that both brake pedals are locked together when operating on public roads.



OPERATION

OPERATION

13.2 Hauling the Tractor and Mower

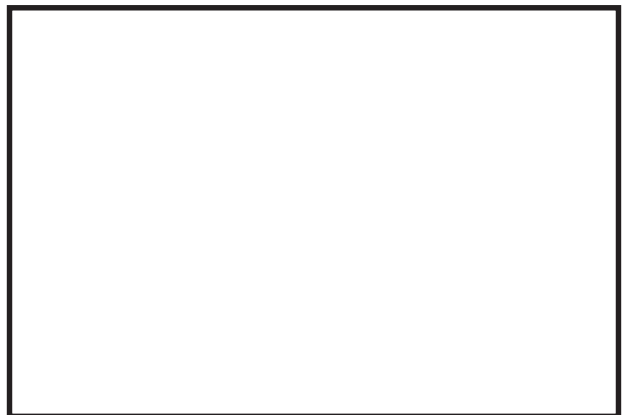
Before transporting a loaded tractor and mower, measure the height and width dimensions and gross weight of the complete loaded unit. Ensure that the load will be in compliance with the legal limits set for the areas that will be traveled through.



Use adequately sized and rated trailers and equipment to transport the tractor and mower. Consult an authorized dealer to determine the proper equipment required. Using adequately sized chains, heavy duty straps, cables and/or binders, securely tie down both the front and rear of the tractor utilizing the proper tie down locations as specified by the tractor manufacturer.



Arrange the chains so that when tightened, the chains are pulling downward and against themselves. Carefully tighten the securing chains or other fasteners used as much as possible using boomers or binders to apply maximum tension. Use extreme care when attaching and removing the securing devices as the extreme tension involved when released has the potential to inflict serious injury.



While hauling the tractor and mower, make occasional stops to check that the tractor and mower have not moved or shifted and that the securing chains have maintained tension. If during transport a hard braking, sharp turning, or swerving action was performed, stop at the next safe location to inspect the security of the load.

MAINTENANCE SECTION

MAINTENANCE

STORAGE

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

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




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.





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.

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

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

MAINTENANCE

DAILY MAINTENANCE

Daily Maintenance should be conducted every morning before the machine is started. Use this check list as a maintenance schedule.

ITEM	DAY				
	M	T	W	TH	F
A. DRIVELINES					
1. ROTATING SAFETY SHIELDS					
2. DRIVELINES					
3. U-JOINTS					
B. BLADES					
C. BOLTS AND NUTS					
1. BLADE BOLTS					
2. BLADE BAR NUTS					
3. DRIVELINE BOLTS					
4. AXLE ARM BOLTS					
5. WINCH STAND BOLTS					
6. DRAWBAR BOLT					
D. WHEEL BEARING SEAL INSPECTION					
E. HYDRAULIC HOSES AND CYLINDERS					

MAINTENANCE

DANGER



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

MAINTENANCE

A. DRIVELINES

The Drivelines and U-Joints should be inspected each morning before the mower is started. The operating power of this machine is transmitted solely through the Drivelines; they must be kept in good working condition.

1. SAFETY SHIELDS

The rotating Driveline Safety Shields should be inspected daily. Each telescoping Driveline has two Shields. The Shields should be free of any cracks, dents, or bends. If extreme pressure is required to rotate the Shield, the bearing and/or Shield should be replaced. To remove the Shields, use a screw driver to unlock retaining guard collar (**FIG. 1**). The Shield bell should slide off (**FIG. 2**).

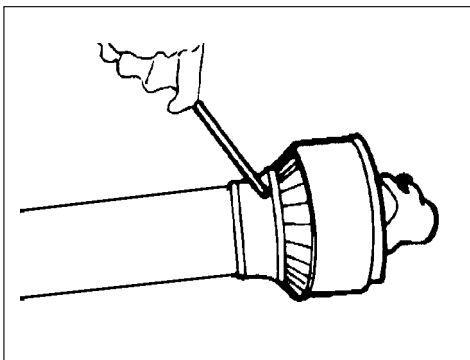


FIGURE 1

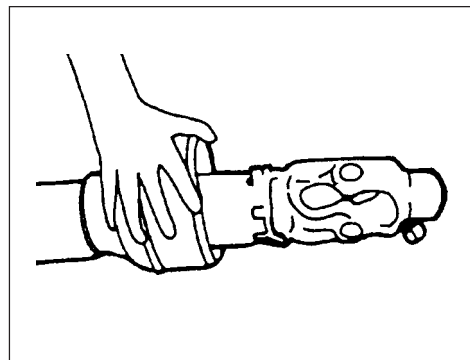


FIGURE 2

Remove the snap ring and slide the Shield off the shaft (**FIG. 3**). Inspect the retaining guard collar for worn areas or cracks. If collar is worn or cracked, replace it. If the Shield has any dents or cracks, replace the Shield. While the Shields are off, examine the Driveline for signs of abnormal wear, bent or twisted shafts, or cracks in the shafts or tubes (**FIG. 4**). Check to see that the Drivelines telescope easily. If the Drivelines do not telescope properly or show signs of abnormal wear, the shaft should be repaired or replaced. Assemble the Shield on the shaft by reversing the steps given for removing the Shields. When assembled, make sure the Shield rotates freely. A Shield that does not function properly may allow clothing to become entangled and cause severe bodily harm.

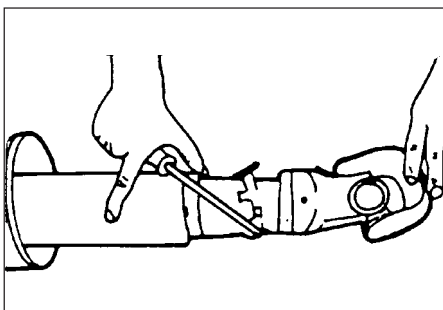


FIGURE 3

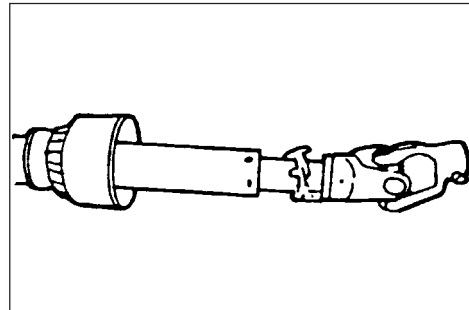


FIGURE 4

MAINTENANCE

2. U-JOINT

The U-Joints on the Driveline undergo extreme forces when the unit is turning or when the Wings are being raised. It is important that the U-Joints be greased each day before the unit is started. The U-Joints are located at each end of the Center and Wing Drivelines (**FIG. 5**). The U-Joint assemblies are accessible by removing Bolts from the Safety Shields (**FIG. 6**). Rotate Driveline Safety Shield until the hole in the Shield matches up with the Grease Fitting (**FIG. 7**). Use #2 Bearing Grease for lubrication. Inspect the U-Joint for wear by holding the shaft on one side of the U-Joint while trying to rotate the shaft on the other side of the U-Joint. If there is noticeable movement in the Driveline, replace the U-Joint before it causes severe damage to the Driveline.

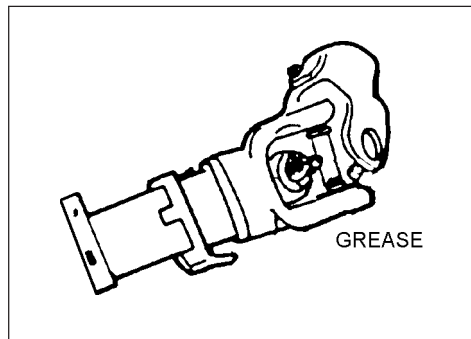


FIGURE 5

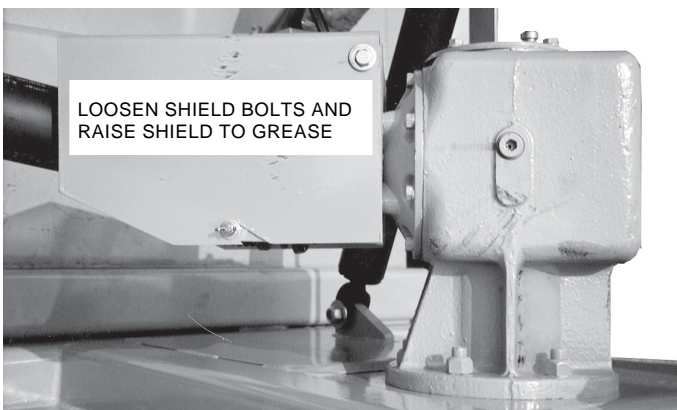


FIGURE 6

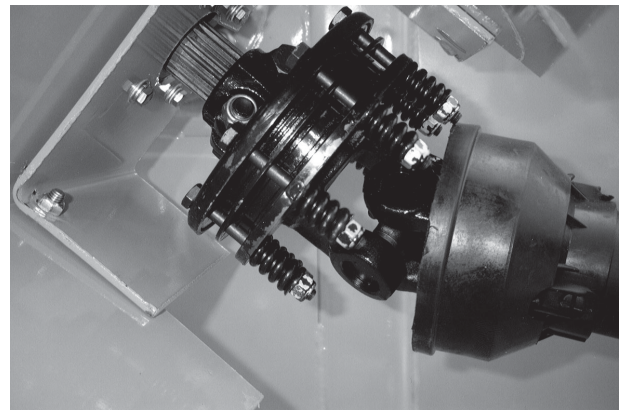


FIGURE 7

MAINTENANCE

MAINTENANCE

B. BLADES

Inspect the Blades closely each morning before start-up (**FIG. 8**). The Blades should be free of deep chips, cracks, or abnormal bends. Sharp Blades require less mowing power. Replace worn or deformed Blades.

NOTE: *Blades should always be replaced in pairs. Blades of different weights can cause serious imbalance and damage to the machine and personnel. When replacing the Blades, also replace the Blade Bolts and hardware. Once the nut has been removed from the Blade Bolt, it will not fasten tightly on the bolt again.*

Never weld or modify Blades. The Blades are made of high-strength, heat-treated steel for maximum strength and resistance to chipping and wear. Welding and other types of heat-produced surface treatments can severely reduce the strength of the Blades and cause failure. Should this occur, a segment of a Blade could be thrown at high speeds from the machine.



FIGURE 8

C. BOLTS

Bolts on the mower will normally stay tight. However, operation over rough terrain can loosen the tightest bolted connection. If bolts come loose, and the connection fails a part of the machine could fail. Check the following Bolts for tightness before start-up each morning. Compare the bolts used at each connection with the Bolt Tightening Chart on the Introduction page of this Section for each type of bolt listed. Follow the chart during the maintenance routine.

MAINTENANCE

1. BLADE BOLTS

Blade Bolts attach the Blade to the Blade bar (**FIG. 9**). If this bolt should loosen, the Blade could detach from the machine, and be thrown at an extremely high rate of speed.

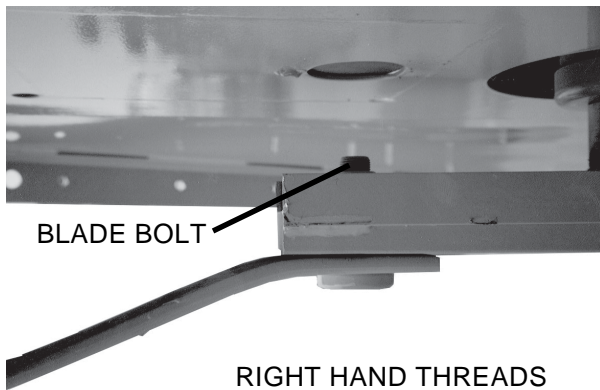


FIGURE 9

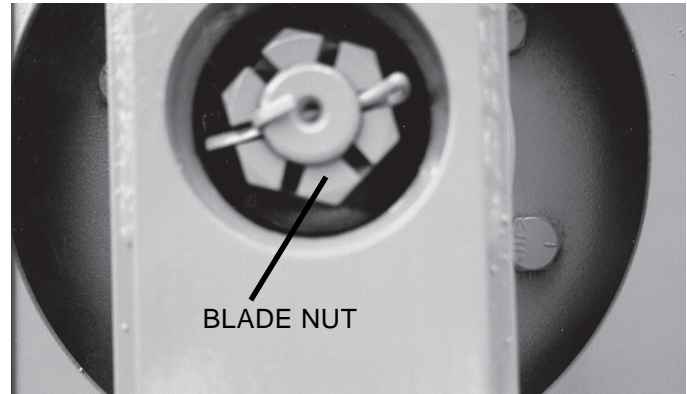


FIGURE 10

2. BLADE BAR NUTS

Blade bar nuts hold the Blade bar to the Gearbox shaft (**FIG. 10**). These nuts should have a retaining wire or cotter pin to keep them from turning. Check the cotter pins for abnormal wear and replace if wear or deformity is noticeable.

3. DRIVELINE BOLTS

A Driveline Bolt is any bolt used in the Driveline assembly. Check Bolts from Driveline to Gearboxes first (**FIG. 11**). Then check the Bolts fastening the Driveline U-Joint to the Slip Clutch (**FIG. 12**). Replace any missing Bolts or nuts.



WARNING Loose Driveline Bolts could cause a Driveline to become detached. The Driveline could then swing freely around the deck and cause severe damage to both the Driveline and the machine.

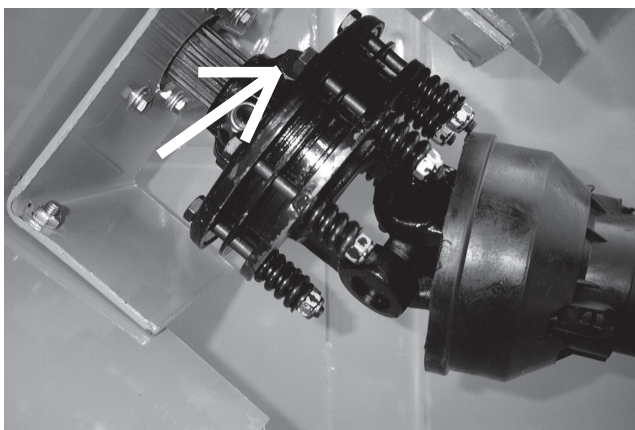


FIGURE 11

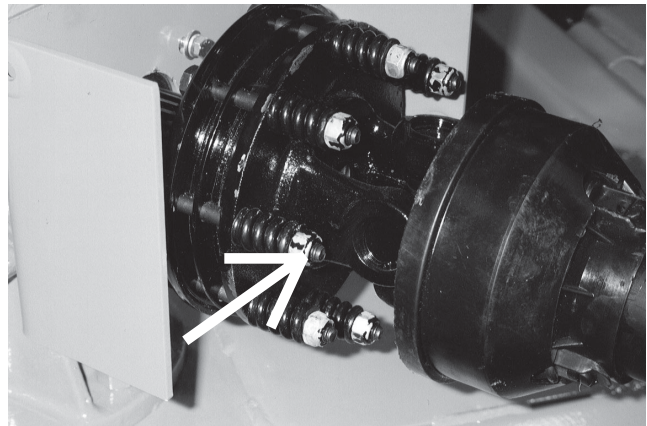


FIGURE 12

MAINTENANCE

4. AXLE ARM PINS

Inspect the Axle Arm Pins for tightness (**FIG. 13**). Tighten the axle arm bolts. The nut should not be loose. Take care that these Bolts are not too tight. Tighten the nuts until they contact both ears. Then tighten it 1/2 turn more. The axle arm must be free to move up and down. If one of these Bolts fails, the suspension system would fail.

5. DRAWBAR BOLT

Inspect the drawbar bolt for proper fit. The nut should be pulled up on the bolt so the tongue clevis is held straight on the drawbar. Use additional washers to shim the difference between the tongue clevis opening and the drawbar thickness. This will assure proper action of the tongue and clevis. If the tongue clevis sags, tighten the nut. Use at least one washer between the Drawbar and the top lip of the tongue clevis to avoid unnecessary wear.



FIGURE 13

6. WINCH STAND BOLTS

The Winch Stand is offered as Extra Equipment on the 15' Flex Wing Rotary Mowers. The Bolt fastening the Winch Stand to the deck should be checked each morning before start-up. If the Winch Stand shows any noticeable movement, tighten the bolts. Loose Bolts could cause the Winch Stand to twist or break.

D. WHEEL BEARING SEAL

Check each Wheel and remove all foreign matter wrapped around the spindle. Check that the rubber grease seal makes full contact with the metal all around the spindle. Replace any worn or cracked seal at once. Worn seals will allow the grease to seep out from the Hub causing the Bearing to run dry and fail.

E. HYDRAULIC CYLINDERS AND HOSES

Replace pinched and broken Hydraulic Hoses at once. Tighten any Hydraulic Fitting with fluid leaking from it. If fluid still leaks, loosen the fitting, apply a pipe thread compound to the threads and tighten. Care must be exercised when tightening Hydraulic Fittings. Too much tightening can cause the fittings to crack, and require replacement fittings.

Although a small amount of oil will be present from bleeding at all Hydraulic Fittings, significant amounts of oil leaking around the Breather Plug on the Cylinder indicates that the seal in the Cylinder is worn out. Replace the seals in the Cylinder immediately before the Cylinder is damaged or too much hydraulic fluid is lost.

Remove the bolts from the Tie Rods, and the remaining parts of the Cylinder will be readily accessible. Replace worn out parts as required. Replace the Tie Rods, and return the Cylinder to the machine. Use only parts from the manufacturer as described in the Parts Listing section of this manual.

Most replacement parts on the Cylinder are available on a part-for-part basis. However, the O-Rings and seals are replaced in kit form. Replace each used part of the cylinder sealing systems with the new kit parts. Do not reuse old seals and O-Rings.

MAINTENANCE

WEEKLY MAINTENANCE

Maintenance checks for the items in this section should be done at the beginning of the work week. Include the daily maintenance check as part of the weekly preventive maintenance function.

ITEM

- F. SLIP CLUTCH
- G. GEARBOXES
- H. FASTENERS
 - 1. GEARBOX FASTENERS
 - 2. SAFETY SHIELD FASTENERS
 - 3. CHAIN GUARD FASTENERS
- I. PINS
- J. CONTROL RODS
- K. WHEEL BEARING
- L. CHAIN GUARDS
- M. WINCH AND CABLE
- N. PAINT

F. SLIP CLUTCH

A slip clutch is incorporated in the PTO driveline. It is designed to slip, absorb the shock load, and protect the driveline. There are two types of clutches furnished. (1) A clutch with 8 coil springs and (2) A clutch with a single disc spring with 6 adjusting nuts.

After the first hour of operation, the slip clutch should be checked for overheating. After this first check, the slip clutch should be checked weekly or anytime there is overheating. (1) To adjust the coil spring slip clutch, tighten the spring bolts 1/8 (maximum) turn at a time. Bolts should NEVER be adjusted to the point where the coil springs are compressed solid. (2) To adjust the disc clutch, tighten the 6 bolts until they bottom out and then loosen each of them 2 turns.

The slip clutch should be checked periodically and adjusted to compensate for wear. The lining plates are 1/8" thick when new. Replace after 1/32" wear. If the mower has been idle for an extended period of time, or in wet weather, before operating check to be sure the friction lining plates are not rusted/coroded together. Should this occur refer to the procedure described in the "Seasonal Clutch Maintenance" section on the next page.

There are two friction lining plates in the slip clutch. These should be checked weekly for oil or grease, wear, and moisture which could cause corrosion on the drive plates.

CENTER SLIP CLUTCH

There are four friction lining plates in this slip clutch. The spring length shown in **Figure 14** includes the washer thickness. DO NOT adjust spring length (including washer) less than 1-15/32". Springs will become solid and tongue rating of clutch will increase drastically, which could cause a driveline failure.

WING SLIP CLUTCH

There are two friction lining plates in this slip clutch. The correct adjustment procedure is to tighten M10 bolts until spring is flat against pressure plate and there is no gap. Loosen each bolt two revolutions for correct settings. DO NOT tighten bolts so that GAP noted in **Figure 14a** is less than 1/16".

MAINTENANCE

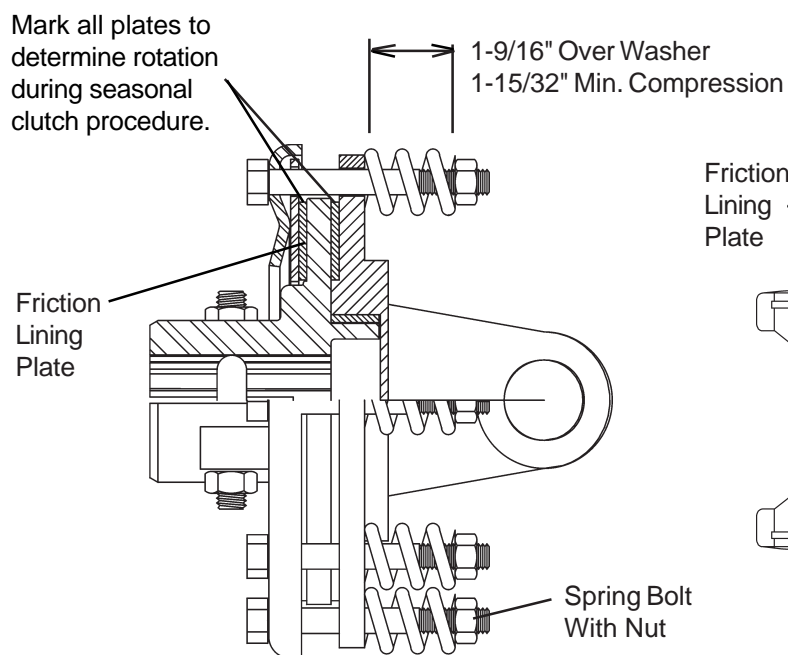


FIGURE 14 - Coil Spring Slip Clutch (1)

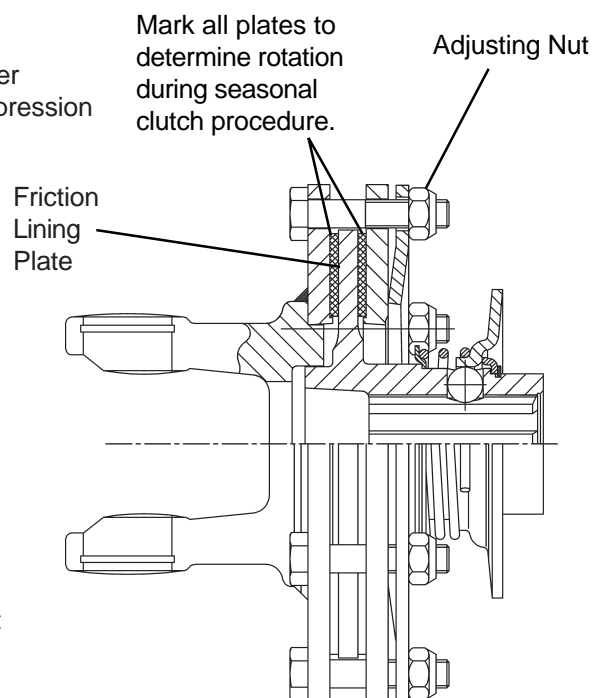


FIGURE 14a - Disc Spring Slip Clutch (2) (Belleville)

SEASONAL CLUTCH MAINTENANCE

It is important that the clutches slip when an obstacle or load heavier than the clutch setting is encountered. Therefore, if the machine sits outside longer than 30 days and is exposed to rain and/or humid air it is important to make sure that the clutch lining plates are not rusted/coroded together. Before using the cutter use the following procedure to make sure the clutch will slip and give the overload protection required. There are two types of clutches furnished. (1) A clutch with 8 coil springs and (2) A clutch with a single disc spring with 6 adjusting nuts.

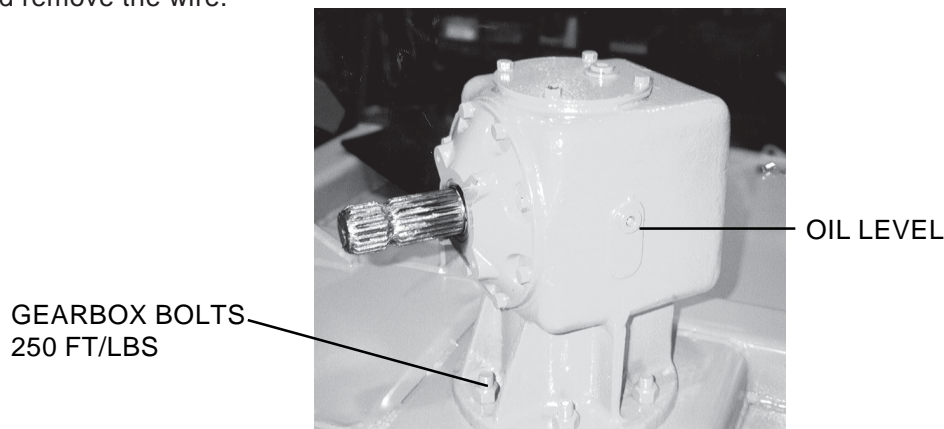
1. Loosen nuts (**Figure 14 & 14a**) on springs until the springs are free, yet remain secure on bolts.
2. Attach cutter to tractor and start the tractor. Set the engine speed at 1200 RPM.
3. Mark outer plates as shown in **Figure 14 & 14a**.
4. Engage the PTO (approximately one second) and then quickly disengage it. The friction lining plates should break loose (check the mark).
5. Turn tractor off. Tighten the nuts on the coil spring clutch to their original position as noted in previous paragraphs.

MAINTENANCE

G. GEARBOXES

The Gearboxes are filled with oil at the factory. Check the oil level in all of the Gearboxes at start-up and weekly. Gearbox oil should be maintained at the level of the check plug (**Fig 15**). When adding oil, use an SAE 80 or 90 weight E.P. gearlube and add through the oil filter plug at the top of the Gearbox. Wipe Gearbox clear of any spilled oil.

Gearbox failure is due primarily to lack of oil causing the bearings and gears to overheat. Oil is lost when the lower seal is worn out. This wear often happens when wire becomes entangled on the shaft and works its way into the seal. Take care to avoid mowing over wire, cable, rope, fencing or other materials that could become wrapped around the output shaft. Stop the mower and remove any of these materials before mowing over it. If wire becomes wrapped around the output shaft, stop the mower at once and remove the wire.



H. FASTENERS

FIGURE 15

The following Fasteners need to be inspected the first day of each new week. If these Fasteners are loose, tighten Bolts according to the Bolt Tightening Chart on the "Introduction" page of this section of the Manual and replace or tighten Pins.

1. GEARBOX FASTENERS

Gearbox Fasteners hold the Gearboxes onto the deck. Make certain they are tightened properly at all time.

2. SAFETY SHIELD FASTENERS

Safety Shield Fasteners hold the Safety Shields onto the Gearboxes. In case of an accident causing a person to fall against a Safety Shield, the Fasteners need to be in place and tight to give maximum protection (**FIG. 16**).

3. CHAINGUARD FASTENERS

Chainguard Fasteners hold the Chainguards to the frame. If a Chainguard fell off and was mowed over, damage could occur to the Chainguard, Blades, and Gearboxes.

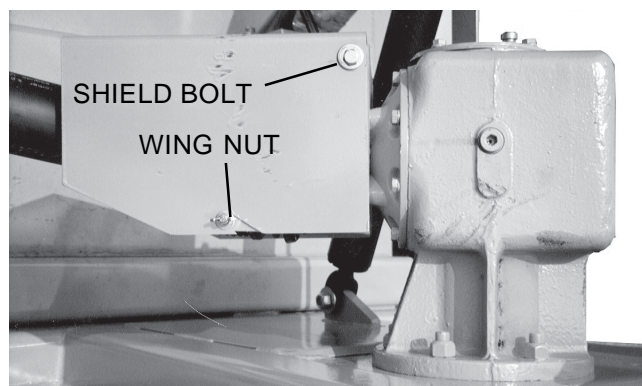


FIGURE 16

MAINTENANCE

I. PINS

Many of the Pins on the 15' Flex Wing Rotary Mower are made of high-strength steel. Replace all cracked or deformed Pins immediately with an appropriate part provided by the manufacturer.

J. CONTROL RODS

Each Control Rod holds approximately twice the weight of the machine. Careful inspection of each Rod and component is important (**FIG. 17**). Look for wear on the Clevis connectors and the drilled holes they ride in. The Pins used in these connections are made with high-strength steel and should be replaced with comparable parts.

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

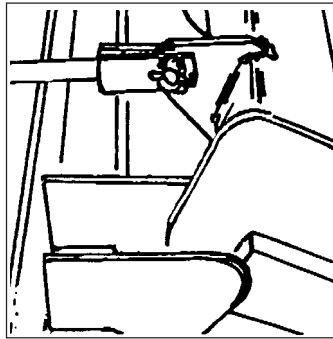


FIGURE 17

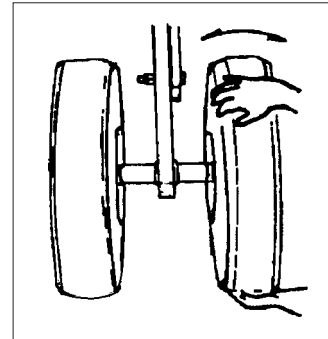


FIGURE 18

K. WHEEL BEARINGS

The Wheel Bearings were packed and adjusted at the factory. The Wheels should be checked for correct adjustment weekly (**FIG. 18**). Grab the Wheel and try to move it in and out. If movement is noticeable, remove the Hub and Cotter Pin. Adjust the Wheel Bearings to a snug, free-rolling fit. Using a Hub that is out of adjustment for only a few days can cause the Bearings, Hub, and Spindle to wear out and require replacement.

L. CHAIN GUARDS

Inspect the Chain Guards for missing Chains or Cables (**FIG. 19**). To replace missing Chains under the retaining Cable Clamp, slide the Cable back, and insert a new 5/16" Chain through the slot. Slide the Cable through the Chains and fasten the Cable Clamp. Missing Chains may allow debris to be thrown from the mower.

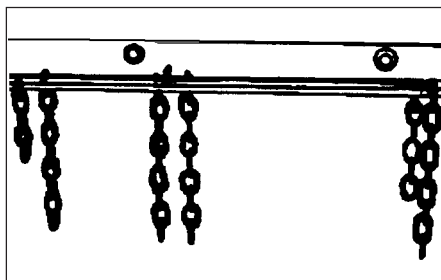


FIGURE 19

MAINTENANCE

M. WINCH AND CABLE

The Winch should be checked weekly (**FIG. 20**). The Cable should be replaced at the first signs of fraying or broken wires. Check to see that the Winch makes a clicking sound when the Cable is wound. There should be slight resistance when releasing the Cable. If the Winch does not function properly, replace it. Winch failure during use can cause one of the Wings to drop.

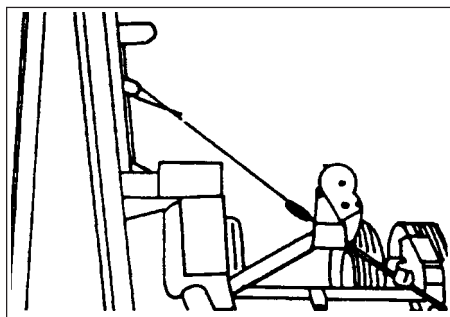


FIGURE 20

N. PAINT

Decomposing grass is a very caustic substance. It can eat away paint and allow rust to set in. Should sections of the mower show signs of paint peeling and flaking, prepare the surface for new paint by sanding the area down to bare metal. Apply new primer and paint. Repainting areas of the mower that are rusting or have the paint peeling will help assure a longer deck life.

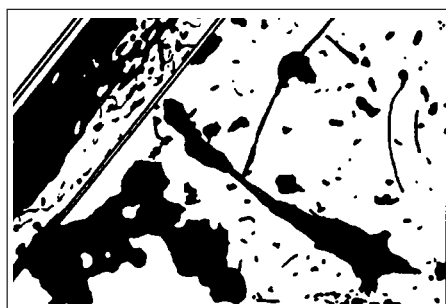


FIGURE 21

MAINTENANCE

BIANNUAL MAINTENANCE

The mower should be serviced completely twice a year. Every component part on the machine should be checked for abnormal wear and repaired or replaced if necessary. Maintenance should be done once during the off-season and again mid-way through the mowing season. This will allow for the discovery of any minor problems and prevent some major problems. All items covered in the Daily and Weekly Maintenance schedules should be checked along with the items included in this section.

ITEM CHECK	
O. SKID SHOES	
P. WHEEL BEARINGS	
Q. TONGUE CLEVIS PIN	
R. DRAWBAR BOLT	
S. LEVEL LIFT SYSTEM	
T. WELD INSPECTION	
U. PAINT INSPECTION	

MAINTENANCE

0. SKID SHOES

Skid Shoes (**FIG. 22**) are made of high carbon steel to reduce wear and increase service life. Premature wear can be caused by the mower Wing sections being set too low which allows the Wing Skid Shoes to drag on the ground. Dragging the Skid Shoes on the ground or running the Skid Shoes into solid objects can contribute to early frame failure on the mower. Replace worn Skid Shoes as required.

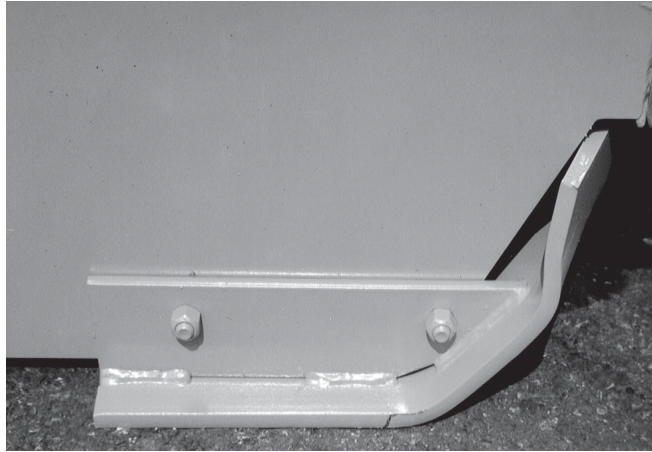


FIGURE 22

P. WHEEL BEARINGS

Every six months, the Wheel Hub should be removed. Remove, clean, and inspect the bearings to see that they are free of all signs of pitting, rust, decay, or deformation. If any of these problems exist, the Cups and Cones in the Bearing Assembly should be replaced. Replace the Cups and Cones as a set. This prevents a continuation of the original problem. If the bearings are in good shape, pack them with grease.

Put the Bearing and Seal back into the Wheel Hub and replace the Wheel (**FIG. 23 and 24**). Tighten the Lugnut until there is noticeable drag while turning the Wheel. Back off just enough to provide a free-rolling fit. Insert and spread the Cotter Pin. Install the Hub Cap. Fill the Hub completely with #2 Bearing Grease.

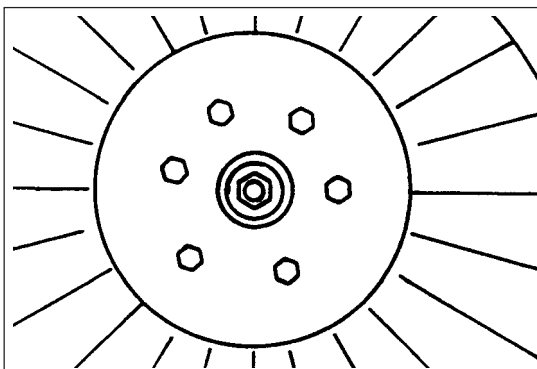


FIGURE 23

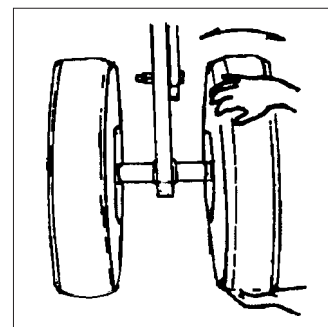


FIGURE 24

MAINTENANCE

R: DRAWBAR BOLT

The Drawbar Bolt fastens the mower to the tractor Drawbar. When the mower is unhitched and this Bolt is removed, examine for signs of cracking or wear. Replace the Drawbar Bolt at the first sign of either problem.

T. WELD INSPECTION

Though the deck and structural members of the mower are welded by conscientious welders with modern equipment, operating over rough terrain can cause severe stress throughout (**FIG. 25**). All welds should be inspected for signs of cracks or metal separation. Should a weld show these signs, repair it at once. Any weld that isn't repaired can develop into a severe problem that may bend or deform structural members, and cause early frame failure.

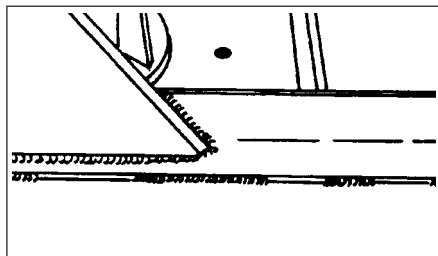
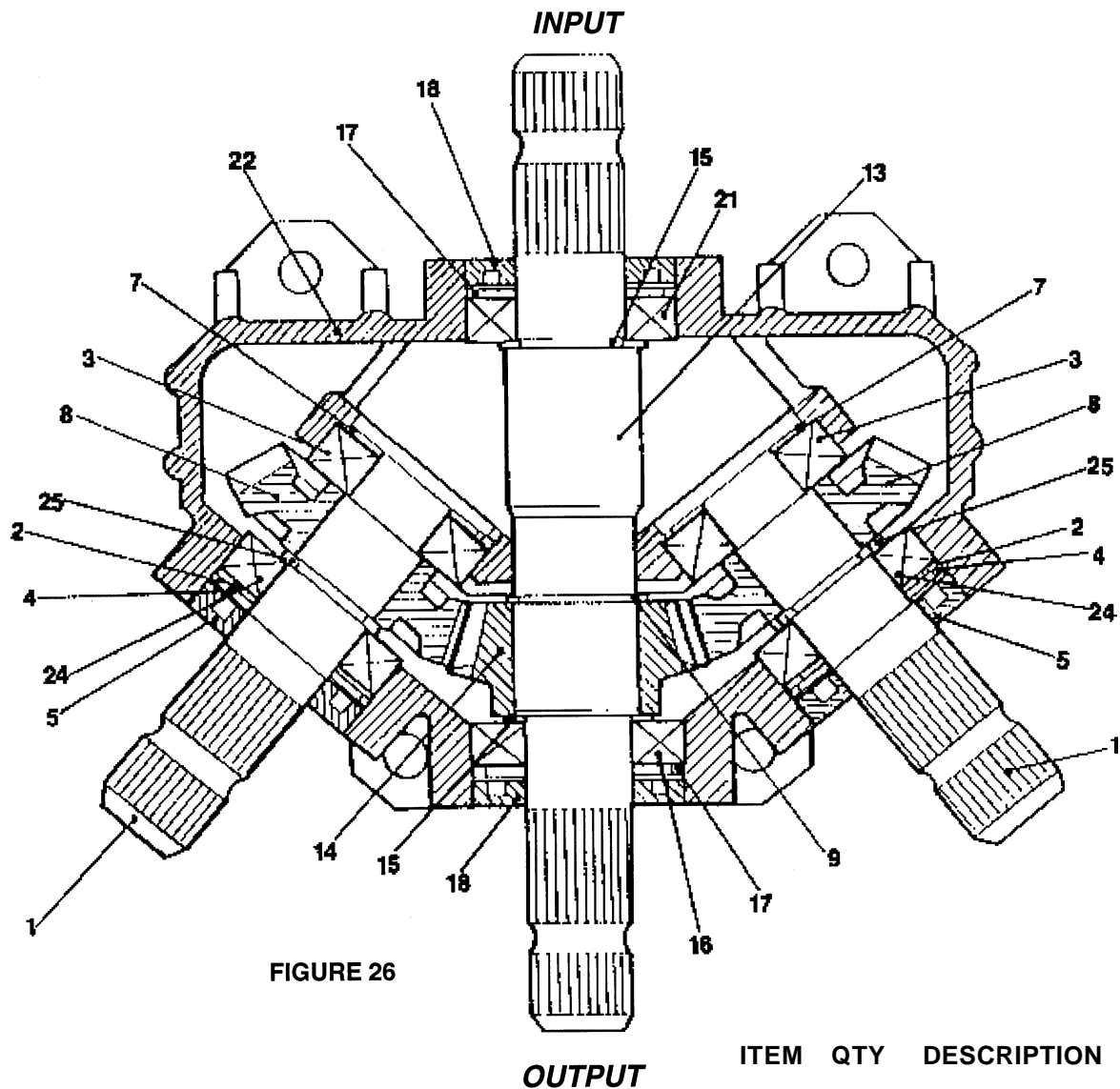


FIGURE 25

MAINTENANCE



ITEM	QTY	DESCRIPTION
1	2	Shaft
2	2	Shim
3	2	Bearing
4	2	Retaining Ring
5	2	Oil Seal
7	2	Shim
8	2	Gear
9	1	Retaining Ring
13	1	Shaft
14	1	Gear
15	2	Shim
16	1	Bearing, Front
17	2	Retaining Ring
18	2	Oil Seal
21	1	Bearing, Rear
24	2	Bearing
25	2	Retaining Ring

MAINTENANCE

DISASSEMBLY AND ASSEMBLY PROCEDURES DIVIDER GEARBOX

Refer to Figure 26 for location of all item Numbers in procedures.

REMOVE MAIN INPUT SHAFT

Step 1. Place gearbox on appropriate work surface. Remove bolts retaining top cover plate. Remove top cover plate.

Step 2. Drive a sharp object (chisel) through seal #18 on input side of gear box and force it out of housing.

Step 3. Remove retaining ring #17 on both input and output side of gearbox.

Step 4. Remove shaft #13 by tapping on output end of shaft thereby forcing shaft out front of gearbox. Gear #14 and shim's #15 remain in housing. Remove by simply lifting out. Note: When disassembling note location of all shims and tag or identify so that they may be replaced in exact location from which they were removed.

Step 5. Remove bearing #16 from output side of housing by pressing bearing inward. Remove bearing #21 and shims #15 from shaft by tapping input end on solid object.

REMOVE SIDE OUTPUT SHAFTS

Step 1. Drive sharp object (chisel) through seal #5 and force it out of housing.

Step 2. Remove retaining ring #4. Remove shims #2 which were between bearing #24 and retaining ring #4.

Step 3. Insert long punch through hole in housing on input side where shaft was located and place punch end against end of shaft #1. Drive shaft #1 and bearing #24 out of main housing.

Step 4. Lift gear #8 out of housing. Using same procedure in step 3 drive bearing #3 out of housing.

Step 5. Remove retaining ring #25 from shaft. Remove bearing #24 from shaft by striking end of shaft on solid surface.

Step 6. Repeat procedure for removal of other short output shaft.

ASSEMBLY PROCEDURE

Assembly is accomplished by reversing disassembly procedure. Short output shafts should be installed first, then main shafts.

Note: Shims #2, 7, and 15 come in three thickness ranges .012, .016 & .020. Always use the .012 shim unless gearbox was set up originally with a thicker shim. Note: Place loctite on all bearing bores to assure that bearings do not turn in housing.

SHORT OUTPUT SHAFT

Step 1. Install bearing adjusting shims #7, if any were present at disassembly.

Step 2. Install outer shims #2, if any were present at disassembly and install retaining ring #4.

MAINTENANCE

Step 3. Check for shaft end play by tapping on each end of shaft. If excessive end play is present thicker shim #15 must be installed.

DISASSEMBLY & ASSEMBLY PROCEDURES DIVIDER GEARBOX (CON'T)

MAIN INPUT SHAFT - GEAR BACKLASH

Step 1. Install all parts with exact shims as were present when box was disassembled.

Step 2. Check for shaft end play by tapping on each end of shaft. If excessive end play is present thicken shim #15 must be installed.

Step 3. Check gear backlash between center gear and each output shaft gear. Backlash should be between .012 and .022 inches. If not then shim #15 behind gear must be swapped with shim #15 behind bearing #21. To increase backlash place a thinner shim #15 behind gear and to decrease backlash place a thicker shim.

Step 4. Press in all seals and install top cover plate.

MAINTENANCE

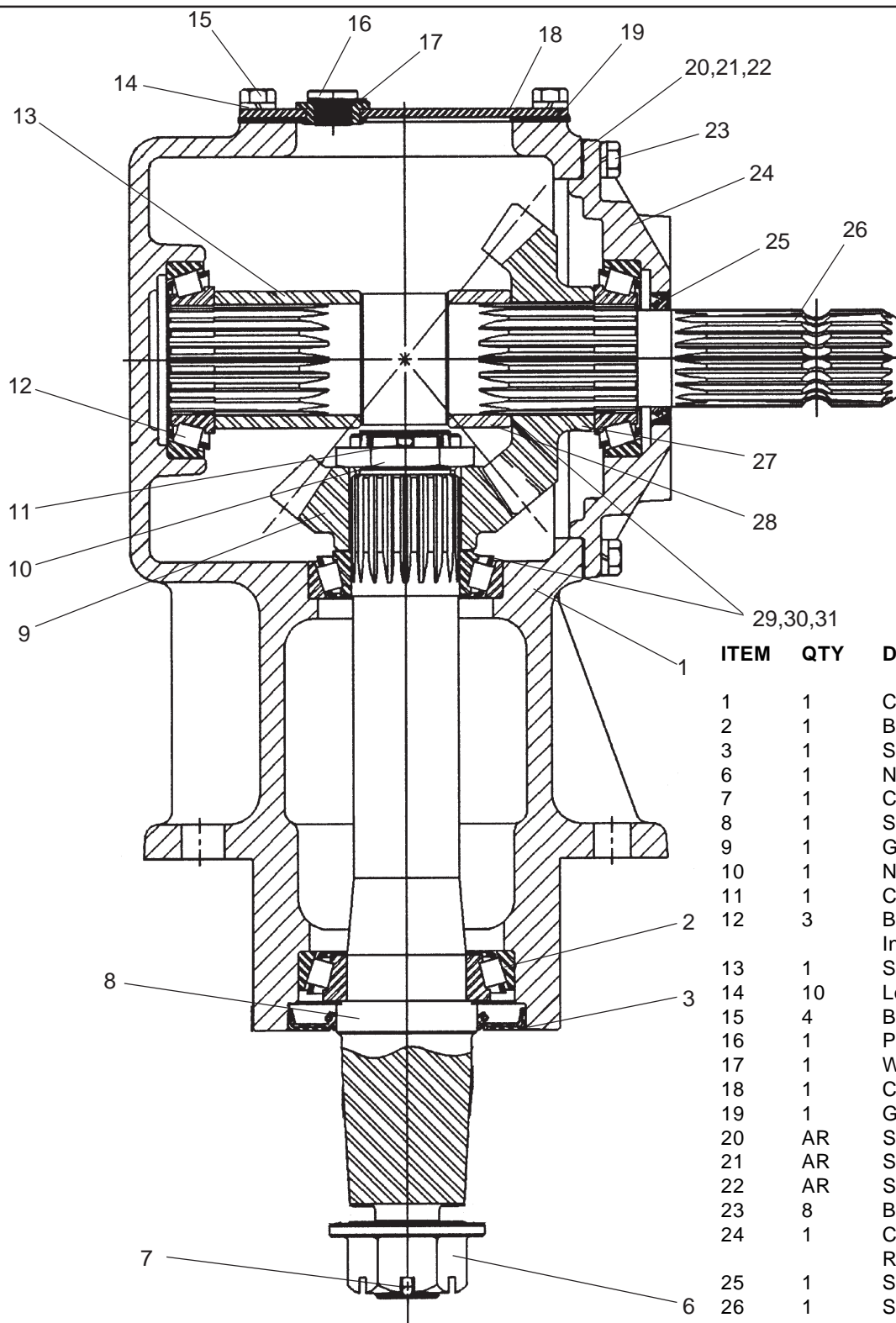


FIGURE 27

ITEM	QTY	DESCRIPTION
1	1	Casing
2	1	Bearing, Lower Output
3	1	Seal, Lower Output
6	1	Nut, Slotted
7	1	Cotter Pin
8	1	Shaft, Output
9	1	Gear, Output
10	1	Nut, Slotted
11	1	Cotter Pin
12	3	Bearing, Upper Output, Inner & Outer Input
13	1	Spacer, Long
14	10	Lockwasher
15	4	Bolt, Top Cover
16	1	Plug, Pressure Vent
17	1	Washer, Sealing
18	1	Cover, Top Inspection
19	1	Gasket, Top Cover
20	AR	Shim (0.10)
21	AR	Shim (0.25)
22	AR	Shim (0.50)
23	8	Bolt, Front Cover
24	1	Cap, Front Bearing Retaining
25	1	Seal, Input
26	1	Shaft, Input
27	1	Gear, Input
28	1	Spacer, Short
29	AR	Shim (0.30)
30	AR	Shim (0.40)
31	AR	Shim (0.50)

MAINTENANCE

RIGHT ANGLE GEARBOX (OUTBOARD) ASSEMBLY & DISASSEMBLY PROCEDURES

INPUT SHAFT REMOVAL

- Step 1.** Place Gearbox on appropriate work surface.
- Step 2.** Remove Vent Plug (item #16) or Complete Top Cover (item #18)
- Step 3.** Turn Gearbox upside down allowing Oil to drain from gearbox into catch pan for proper disposal.
- Step 4.** Turn Gearbox right side up and drop bottom into a hole for support or lay it on its side laying flat.
- Step 5.** Remove Bolts (item # 23) from front Bearing Cap (item # 24), this will allow front cover to be removed, It may be required to drive a wedge between front cover and main housing to loosen cover.
- Step 6.** Remove Input shaft (item #26) and Input Gear (item #27), Input Shaft should pull out with Gear and Bearing Cones (item #12) still on it, Inner Bearing Cone may stay in Housing and Outer Bearing Cone may have come off with front Bearing cover.
- Step 7.** Remove Inner Bearing Cone, Inner Spacer (item # 13), Outer Bearing Cone, Input Gear, Check now for Shims (item # 29,30,31) always note quantity of Shims. Remove outer Spacer (item # 28) from Input Shaft.
- Step 8.** Remove Input Seal (item # 25), Bearing Cup (item #12) from front Cover and bearing Cup (item #12) from back of Main Housing (Casing) (item # 1).

OUTPUT SHAFT REMOVAL

- Step 1.** Remove Cotter Pin (item # 11) from Nut (item # 10) and Output Shaft (item # 8) this can be done by reaching through opening in front of Main Housing.
- Step 2.** Slide Output (Pinion) Gear (item # 9) up off of Output Shaft and out of Main Housing.
- Step 3.** Output Shaft will come out of Main Housing through the bottom, If Output Seal is still in bottom of the Main Housing use a Soft Metal (Brass or Aluminum) Pin to Drive Shaft down from the top, This will drive Output Seal out at the same time.
- Step 4.** Reach in from front or top of Main Housing and remove upper Output Shaft Bearing Cone (item # 12)
- Step 5.** From the Bottom of Main Housing drive out top Bearing Cup (item # 12) and from the top drive out the bottom Bearing Cup (item # 2).

PARTS INSPECTION

- Step 1.** Inspect and Clean all Parts. Check Bearings, Shafts, Gears, Housing and Covers. Shafts should be inspected at Seal wear areas, Bearing areas, Splines, Threads and all surface areas. Housings for cracks and condition of all holes that are threaded. Housing and covers where Seals drive in for Burrs and scratches, If Bearing Cones are replaced always replace Cups with them. Gears should not have rough surfaces where the gears run together. On Main Housing remove any old Gasket Sealer, Scratches, Wash and completely clean it.

OUTPUT SHAFT INSTALLATION

- Step 1.** Install Upper Output Shaft Bearing Cup (item # 12) into Main Housing from the top, Install Output Shaft Lower Bearing Cup (item # 2) into Main Housing (item # 1) from the bottom, Make sure both Bearing Cup are seated firmly against housing.
- Step 2.** Install Lower Bearing Cone (item #2) down over Output Shaft from top making sure it is completely seated against shoulder on lower part of Output Shaft.
- Step 3.** Insert Output Shaft (item # 8) into Main Housing from the bottom till Lower Bearing Cone is seated into Lower Bearing Cup, Slide Upper Bearing Cone down over Output Shaft from the till it seats down against and into upper output Shaft Bearing Cup.
- Step 4.** Slide Output Gear (item # 9) down over Output Shaft till it sits against upper Bearing Cone.
- Step 5.** Install Output Shaft Bearing Adjusting nut (item # 10) Tighten Nut to set Pre-Load on Output Shaft Bearings. Bearing Preload should be from 12 to 14 inch pounds of Rolling Torque.

MAINTENANCE

- Step 6.** Using Soft Metal (Brass or Aluminum) Pin Strike both ends of Shaft with a hammer and recheck the Bearing Pre-Load, This is to ensure Bearings and components are centered and seated. If Bearing Pre-Load is OK insert Cotter Pin (item # 11) and Bend ends.
- Step 7.** Output Seal, Put a light coat of Grease on ID of Seal or on OD of shaft where Seal rides. Install the Output Seal using a Seal Driver.

INPUT SHAFT REMOVAL

- Step 1.** Install Inner Bearing Cup (item # 12) into back of main Housing (item # 1), Make sure Cup is seated into Main Housing.
- Step 2.** Install Outer Bearing Cup (item # 12) into back of Front Bearing Cover (item # 24). Make sure Cup is Seated into front Cover.
- Step 3.** Install Spacer (item # 13) onto Back side of Input Shaft (item # 26), Install Spacer (item # 28) onto input Shaft (item # 26) from the front. Install Shims (item # 29,30 & 31) onto input Shaft from the front. For quantity of Shims refer to how many were removed.
- Step 4.** Install Input Gear (item #27) on to Input Shaft From, Install Outer Bearing Cone (item # 12) on to input shaft and slide down till it seats against Gear. Install Inner Bearing Cone (item # 12) Onto input shaft.
- Step 5.** Slide Input Shaft with all components down into Main Housing till Inner Bearing Cone is seated into Inner Bearing Cup. Look at Input Gear and Output at this time, Input Gear should not be held up by Outer Gear, if it is it will be required to add Shims (item # 29,30 & 31). If Input Gear and Output Gear Seem to far away from each other remove some Shims (item # 29,30 & 31).
- Step 6.** Input Seal (item # 25) can be installed now or wait till later. With Shims (item # 20,21 & 22) lower Input Bearing Cap (item # 24) down over Input Shaft. Install Bolts (item # 23) into Bearing Cap and tighten them, Check Bearing Pre-Load and Gear Back Lash. Bearing Preload should be from 12 to 14 pounds of Rolling Torque, Gear Back Lash should be from .016" to .021". If these are not, shims will have to be removed or added to get these readings.
- Step 7.** Install Top Cover (Item # 18) and Gasket (item # 19), Install Pressure Vent Plug (item # 16) with Sealing Washer (item # 17), Vent Plug must be 5 pounds pressure relief type.
- Step 8.** Fill Gearbox with Oil, remove Oil Level Plug (item # not shown) on side of Main Housing, Remove the vent Plug (item # 16) and fill with oil till oil starts to seep out of Oil Level Plug, Stop and wait about 20 minutes so oil will have time to seep down around Output Shaft bearings then finish filling with oil, This procedure may take longer on Cold days or Shorter on Hot days. Always recheck Oil Level after gearbox has been run approximately 1/2 hour.

MAINTENANCE

TROUBLE SHOOTING GUIDE

INTRODUCTION

The following guide is intended to help locate minor problems before they become major ones.

The basic procedures for maintaining the equipment properly have been covered in this manual. However, any machine can have operating problems or need parts replacement under unusual conditions or severe use. The following guide will help identify the most common problems and presents possible causes and solutions.

PROBLEM	POSSIBLE CAUSE	SOLUTION
NOT CUTTING CLEAN	Blades dull.	Sharpen or replace blades
	Blade rotation incorrect	Use correct blade for carrier rotation
	Using flat blades	Use fan blades for down grass
	Carrier RPM too low	Use correct PTO speed and check for correct gearbox ratio
	Cutter not level	Adjust machine
	Tires mashing down grass	Check for correct rotation. Move tires out of cutter overlap area (to clear 72" cutting width)
	Ground speed too fast	Reduce ground speed
	Blades locked back	Free blades
	Blades riding up due to blade bolt wear.	Replace blade bolts
DISHPAN HITTING CUTTER DECK	Blade carrier bent.	Replace dishpan. Straighten dishpan.
	Nut that holds Blade Carrier on is loose.	Tighten Nut
	Deck bent down.	Straighten deck
	Output Shaft on Gearbox bent.	Replace Shaft.
BREAKING BLADE BOLTS	Operating mower with loose blade bolts.	Keep blade bolts tightened to 350 ft/lb
	Worn blade bolts	Replace bolts
BLADE WEARS TOO FAST	Cutting in sandy condition	Increase cutting height
	Cutting in rocky conditions	Increase cutting height
	Blades too soft	Replace blades with heat-treated blades from the manufacturer.

MAINTENANCE

MAINTENANCE

PROBLEM	POSSIBLE CAUSE	SOLUTION
BLADE BOLTS WORKING LOOSE	Bolts not tightened sufficiently	Tighten New Bolts to 350 ft/lb torque.
	Bolt hole elongated or oversized.	Replace blade carrier.
	Locknut worn out	Replace locknut
BLADES HITTING TOP DECK OR CUTTING TOO HIGH	Blades bent	Replace blades
	Blade bolt bushing broken loose.	Replace bushing
	Blade carrier bent	Straighten or replace blade carrier.
CUTTER VIBRATING	Blades on upside down	Change blades right side up
	Blade broken	Replace blade--only in pairs
	Blade carrier bent	Replace carrier
	Blade hub not properly seated on shaft.	Remove hub, check key, and replace.
CUTTER WINDROWING	New blade matched with worn blade	Replace blade--only in pairs
	Rotation of blades incorrect.	Reverse rotation
	Cutting heavy material	Use guards on the rear to reduce windrowing
BROKEN CROSS OR CUPS	Load too high for driveline	Check joint angles and phasing. Make certain slip clutch is free to slip under heavy shock loads.
	Speed too high.	Slow down to reduce load. Increase cutting height to reduce Reduce speed.
END GALLING OF CROSS AND CUPS load.	Ears have deformed	Install thrust washer
	Load too high for	Check for very small joint angles. Make certain slip clutch is free to slip under heavy shock loads.
NEEDLE ROLLERS HAVE BRINELLED INTO CUP AND CROSS		

MAINTENANCE

PROBLEM	POSSIBLE CAUSE	SOLUTION
SHAFT OR TUBE TWISTED; TUBE BROKEN IN WELDED SEAM; YOKE BROKEN AT EAR TIP	Load too high for Driveline	Replace part. Make certain Slip Clutch is free to slip while under heavy shock loads.
NOISY GEARBOX	Improper backlash	Set backlash
	Rough gears	Run in or change gears
	Worn bearing	Replace bearing
	Improper gear mesh	Change gearboxes
SLIP CLUTCH SLIPPING EXCESSIVELY	Excessive load	Reduce load by slowing down or increasing cutting height
	Springs weak due to excessive heat from slipping	Replace springs
	Improper adjustment	Adjust slip clutch.
	Too much power for for slip clutch	Reduce ground speed and material intake. Use 100 HP (540 PTO RPM) or 120 HP (1000 PTO RPM) maximum
	Friction facings worn.	Replace facings
	Friction facings glazed.	Clean with emery cloth.
TABS BREAK ON SLIP CLUTCH HUB	Adjusting nut too tight.	Use correct adjustment
	Driveline end thrust pulling tabs off.	Lubricate shaft sleeve
OIL BLOWING OUT	Flat bottomed vent plug	Replace with proper vent plug.
	Oil level too high.	Lower oil level.
WING BLADES DO NOT CUT CLEAN ON OUTER EDGES	Ground speed too fast.	Slow forward speed.
	Reverse rotation of wing blades.	Reverse location of wing gearboxes and blade carrier. NOTE: This rotation of wing blades may tend to streak behind tractor tires.

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.

NOTE: Please note that the appearance of some parts may vary from the art or photographs shown in the manual.



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

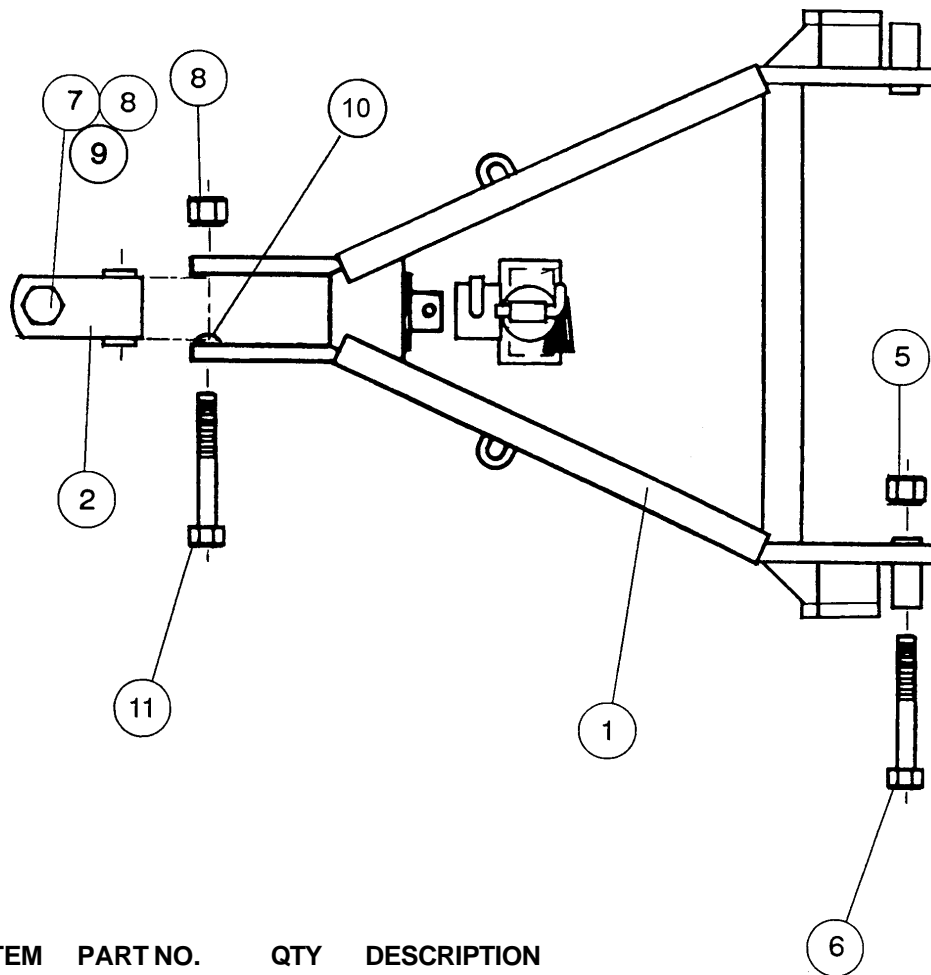


Alamo Industrial
1502 E. Walnut
Seguin, Texas 78155
830-372-3551

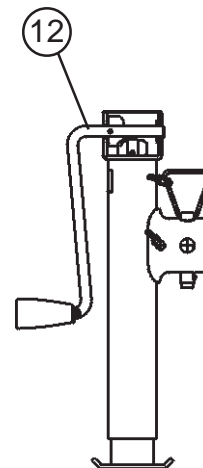
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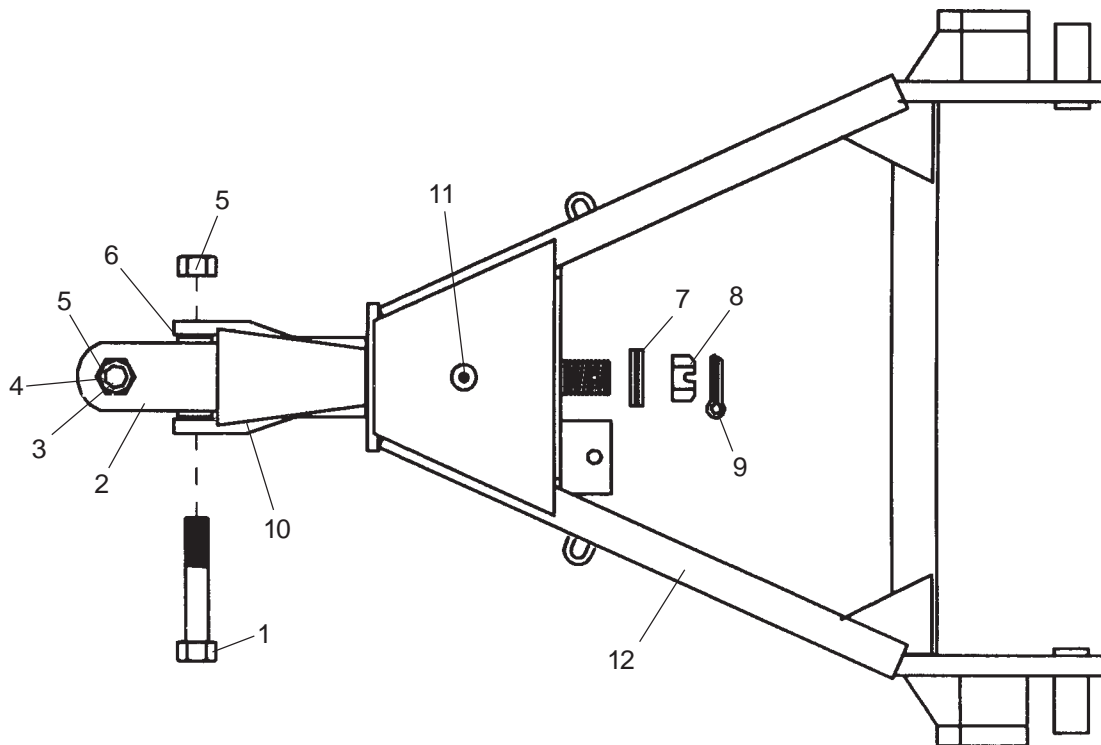
TONGUE ASSEMBLY AND TONGUE JACK



ITEM	PART NO.	QTY	DESCRIPTION
1	00755230	1	Tongue Weldment (Dual Control Rod)
2	00748807	1	Tongue Clevis Weldment
5	23511000	2	Nut
6	00760359	2	Bolt
7	02712500	1	Bolt
8	02030300	1	Nut
9	00748547	2	Flatwasher
10	00757478	1	Spring Washer
11	00016700	1	Bolt
12	00772391	1	Jackshaft



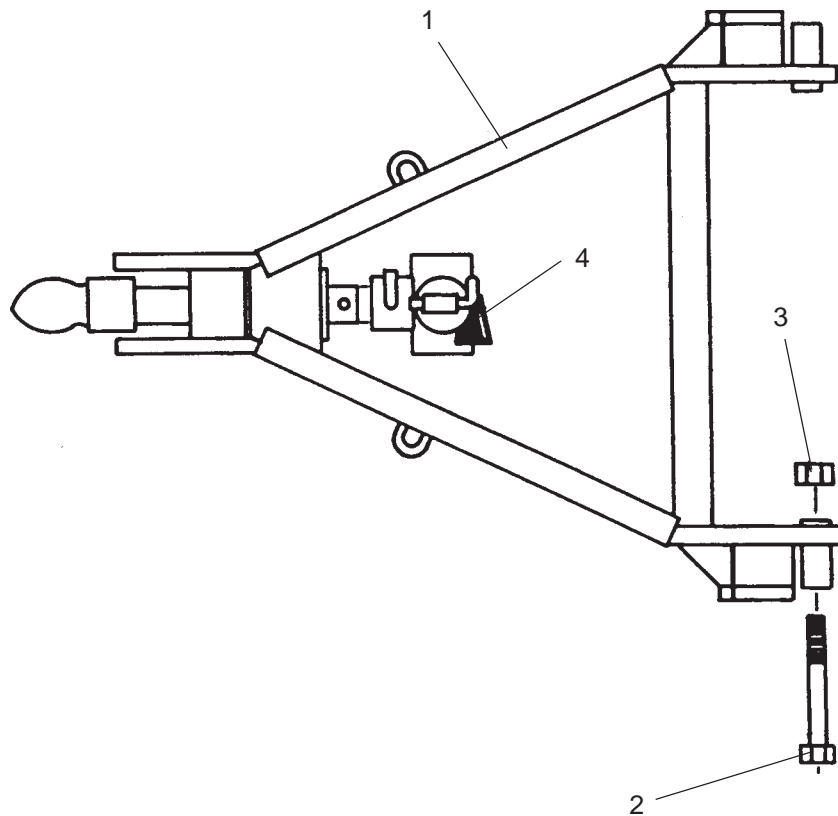
TONGUE ASSEMBLY - SWIVEL OPTION



ITEM	PART NO.	QTY	DESCRIPTION
	00763574	-	Tongue Assembly
1	00755305	1	Bolt
2	00748807	1	Clevis Weldment
3	02712500	1	Bolt
4	00748547	3	Case Hardened Flatwashers
5	02030300	2	Locknut
6	00757478	2	Spring Washer
7	00759941	2	Flatwashers
8	502460	1	Slotted Nut
9	165024	1	Cotter Pin
10	00759878	1	Wildmt. Tongue Clevis
11	00003500	1	Grease Fitting
12	00763251	1	Tongue Weldment

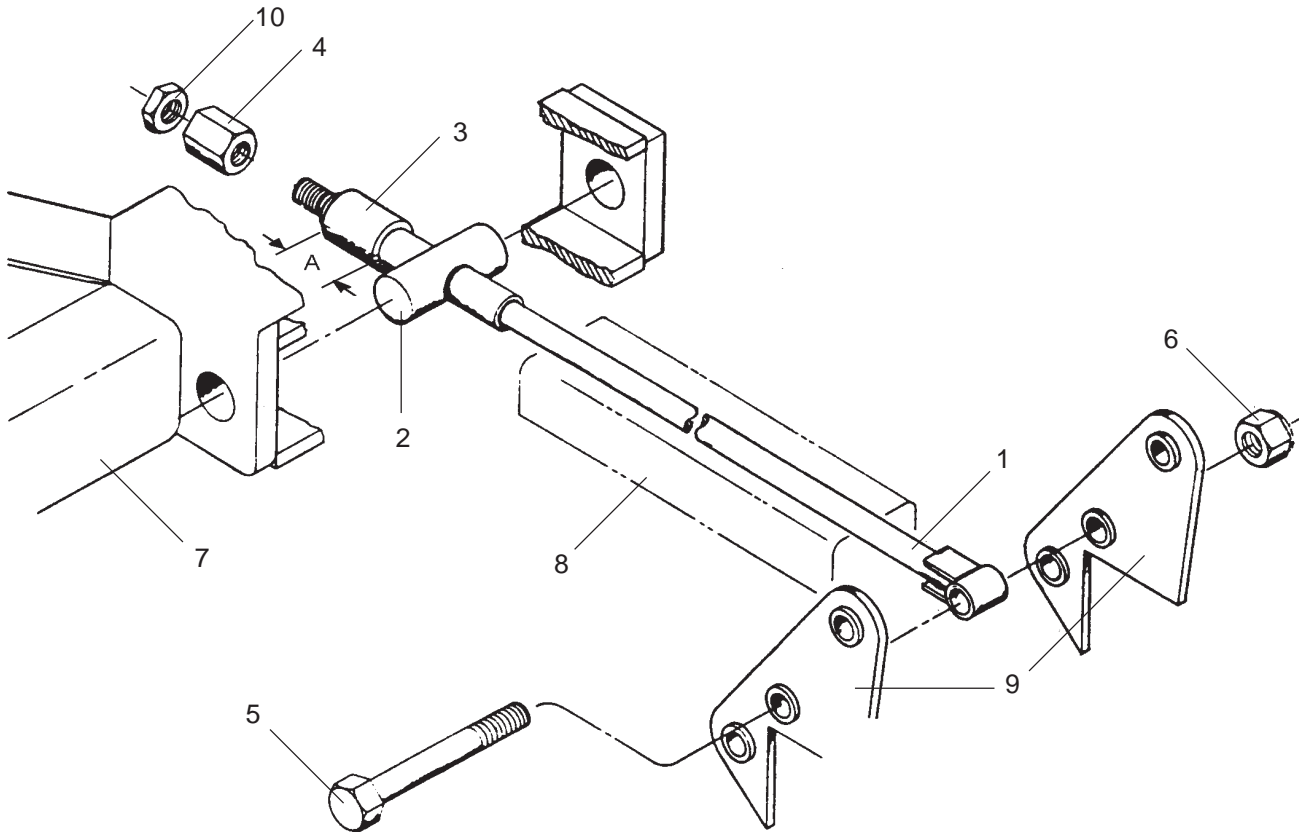
PARTS

TONGUE ASSEMBLY - CAPTIVE BALL HITCH OPTION



ITEM	PART NO.	QTY	DESCRIPTION
1	00755340	1	Captive Ball Hitch
2	00760359	Ref-2	Hex Bolt
3	02030300	Ref-2	Nut
4	00756655	1	Parking Jack

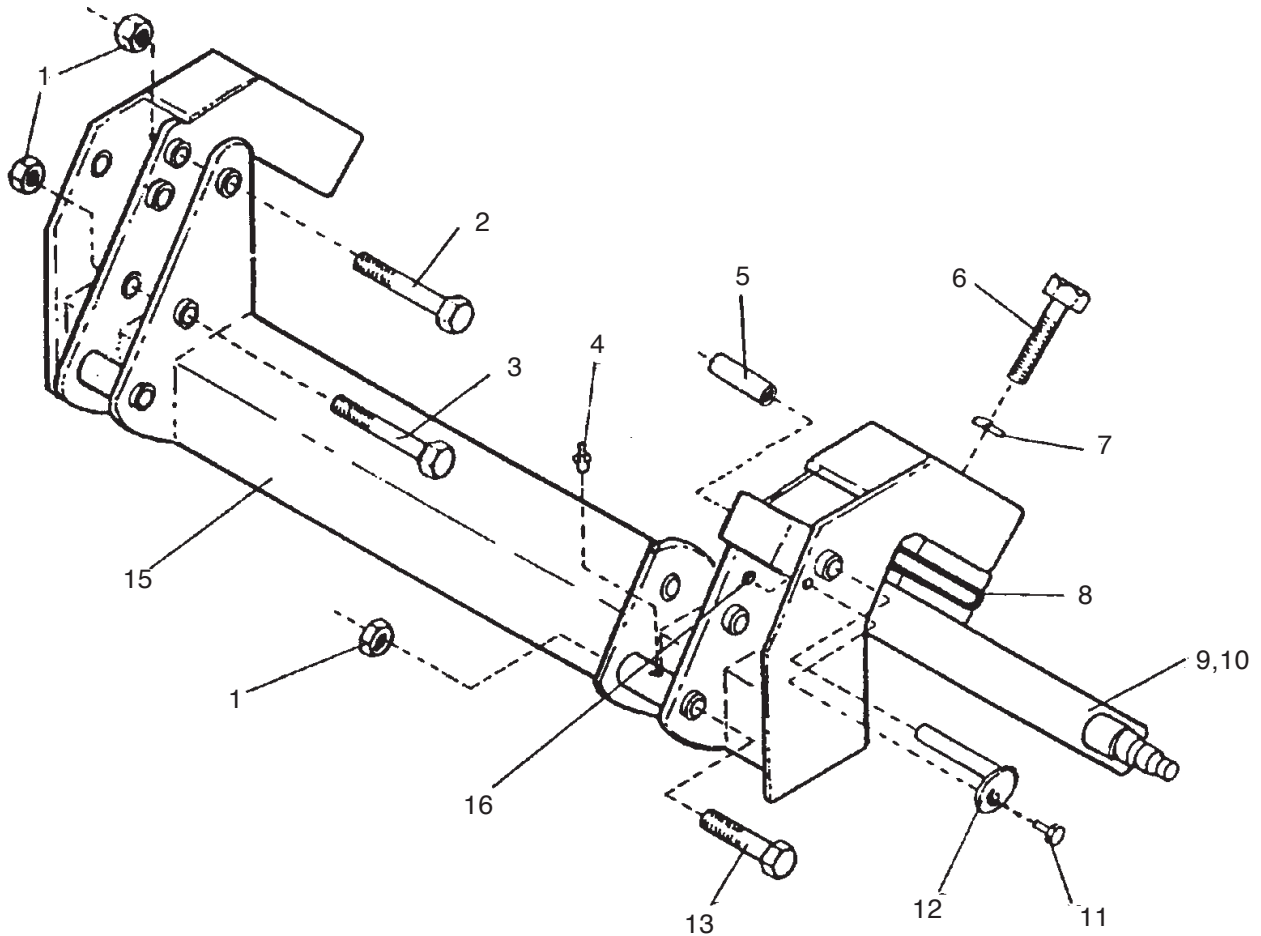
LEVEL LIFT SYSTEMS



ITEM	PART NO.	QTY	DESCRIPTION
1	00755021	1	Level Rod Weldment (112" Long)
	00758831	1	Level Rod Weldment (110" Long)
2	00755044	1	Swivel Bar - Level Lift
3	00755264	1	Bushing Weldment (A Dim. 2-1/2")
	00758833	1	Bushing Weldment (A Dim. 1/2")
4	00754949	1	Hex Nut
5	00755305	1	Bolt
6	00755230	Ref	Tongue Weldment
8	00771651	Ref	Center Section Weldment
9	00757648	Ref	Center Axle Weldment
10	23511000	1	Nut

PARTS

AXLE ASSEMBLY - CENTER

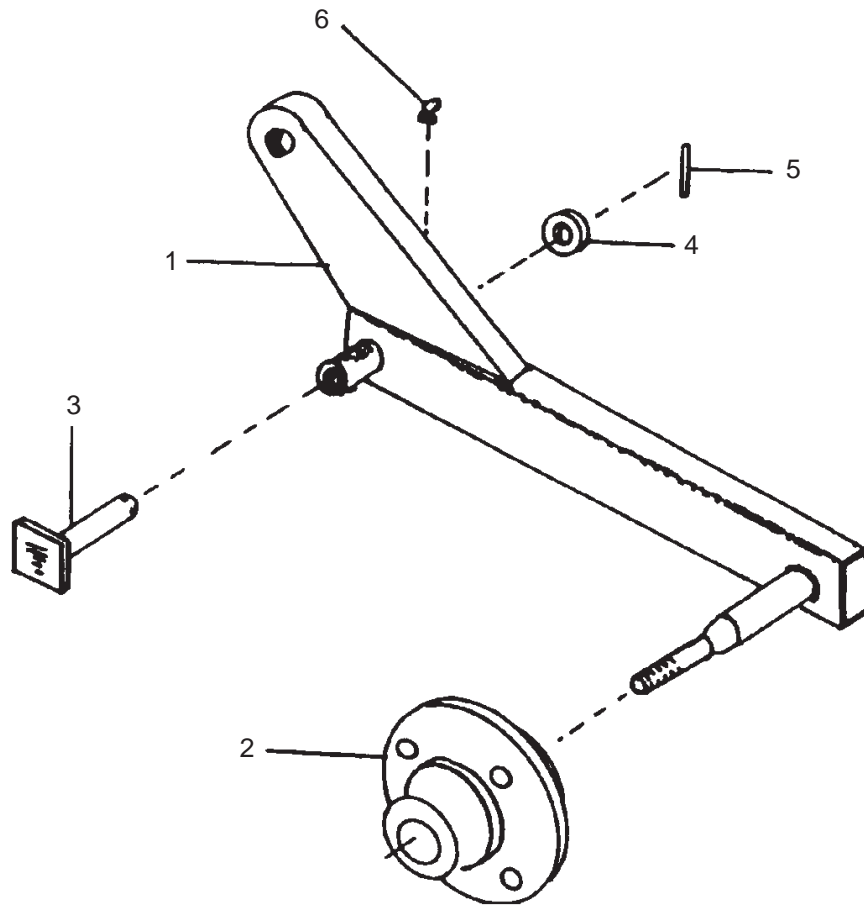


ITEM	PART NO.	QTY	DESCRIPTION
1	02030300	5*	Nut
2	00760359	2	Bolt
3	00755305	2**	Bolt
4	00003500	2	Grease Fitting
5	00753803	2	Bushing
6	00749171	2	Bolt
7	00001300	2	Lockwasher
8	00751035	2	Rubber Mount Disk
9	00757646	ref	Wldmt. Single Axle Arm
	00757647	ref	Wldmt. Dual Axle Arm
11	02030700	2	Bolt
12	00757577	2	Pin - Axle Wldmt.
13	00760359	2	Bolt
15	00757648	1	Center Axle Weldment
16	00001800	2	Locknut TLM 1/2 NC PLC

*Quantity of 6 w/Dual Level Rod Assembly

**Quantity of 3 w/Dual Level Rod Assembly

AXLE ASSEMBLY - WING

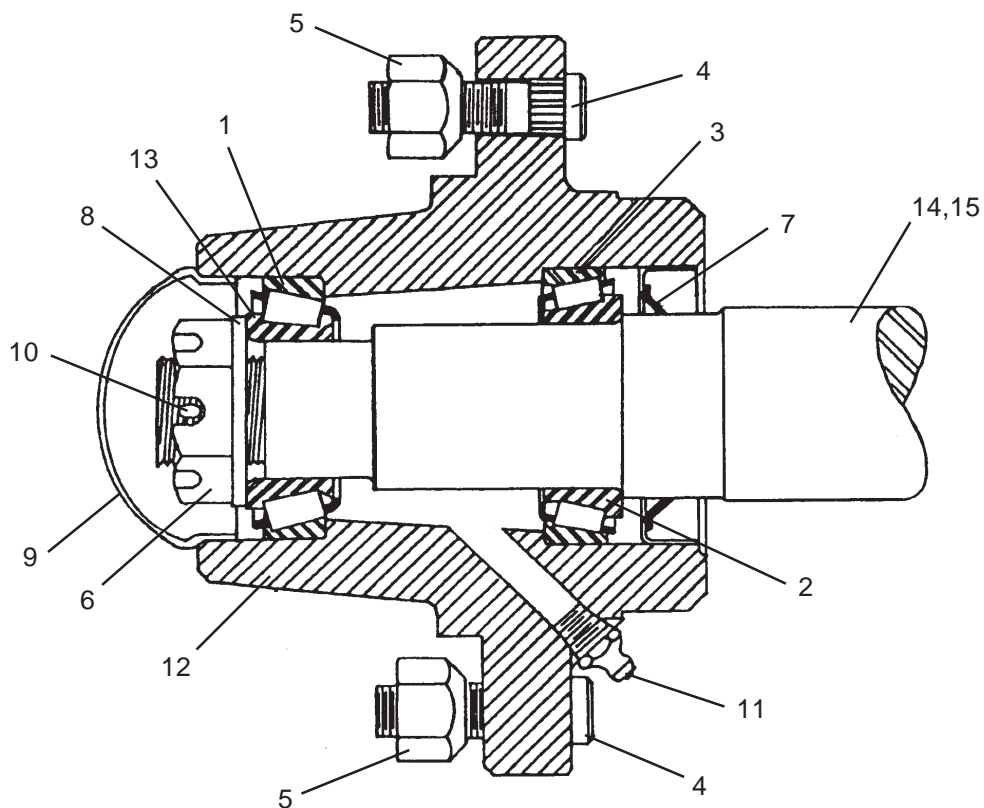


ITEM	PART NO.	QTY	DESCRIPTION
	00757697	-	Axle Assembly-Left
	00757696	-	Axle AssemblyRight
1	00757692	1	(R.H.) Axle Weldment
	00757691	1	(L.H.) Axle Weldment
2	00757241	1	Wheel Hub
3	00756700	1	Axle Pivot Pin
4	15B1600	1	Washer
5	20BH5012	1	Spiral Pin
6	00752670	1	Grease Fitting

Quantity for 1 Wing Only

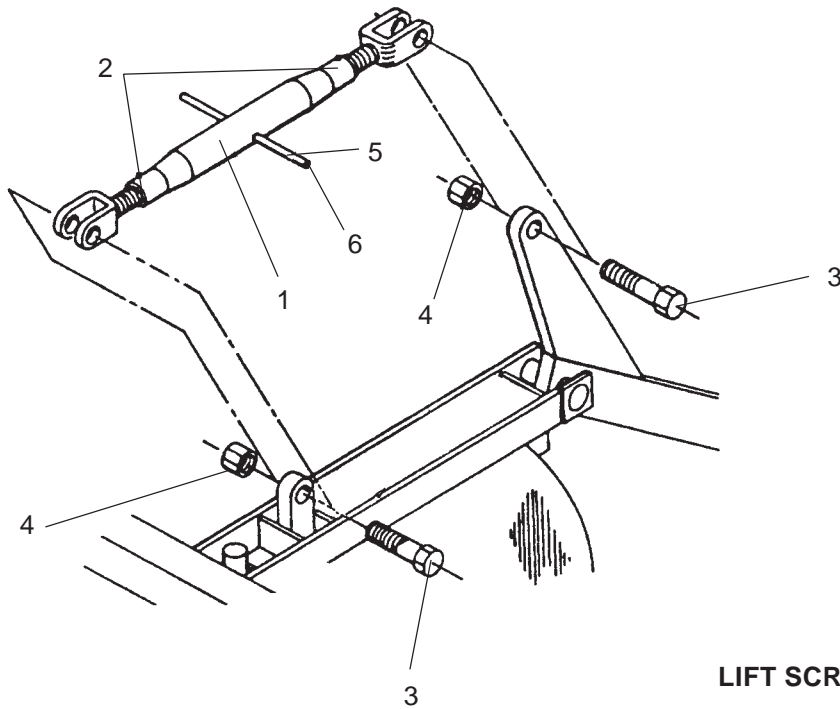
PARTS

WHEEL HUB ASSEMBLY



ITEM	PART NO.	QTY	DESCRIPTION
1	00756576	1	Bearing Cup (Outside)
2	00750434	1	Bearing Cone (Inside)
3	00756577	1	Bearing Cup (Inside)
4	00752177	5	Stud Bolt (For Nom 1/2" DIA Hole)
	13198	5	Stud Bolt (For Nom 5/8" DIA Hole)
5	00750614	5	Nut
6	00756490	1	Bearing Adjusting Nut
7	00750616	1	Oil Seal
8	00756493	1	Washer
9	00756492	1	Dust Cap
10	00026400	1	Cotter Pin
11	00003500	1	Grease Fitting
12	00756489	ref	Wheel Hub (w/Cups & Studs)
	00756528	ref	Wheel Hub Accessory Kit (Includes Items 2, 5 thru 10, & 13)
13	0371242102	1	Bearing Cone (Outside)
14	00756001	ref	Spindle, Single Wheel
15	00756002	ref	Spindle, Dual Wheel

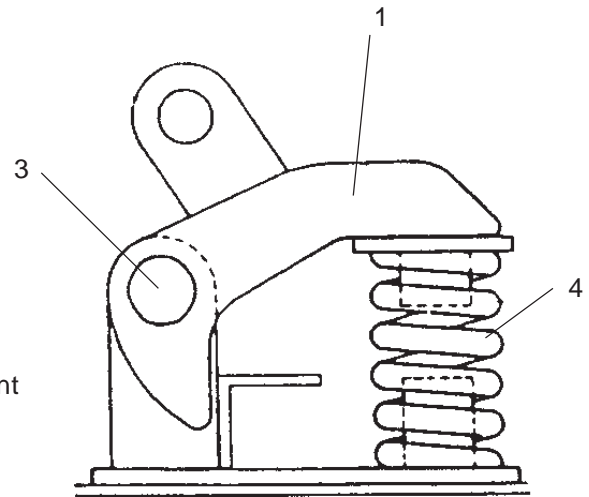
LIFT SCREW & SPRING ASSEMBLY



LIFT SCREW ASSEMBLY

ITEM	PART NO.	QTY	DESCRIPTION
1	0656510000	1	Lift Screw, Complete w/ Handle
2	651062F	2	Grease Fitting
3	00609200	2	Bolt
4	02030300	2	Nut
5	00760135	1	Handle, Manual Lift Screw
6	00771279	1	Plastic Cap

ITEM	PART NO.	QTY	DESCRIPTION
	00756999	-	Spring Assembly (For Outboard Axles)
1	00756907	1	Rocker Arm Weldment
2	00606000	1	Cotter Pin
3	00756998	1	Rocker Arm Pin Weldment
4	371063A	1	Spring

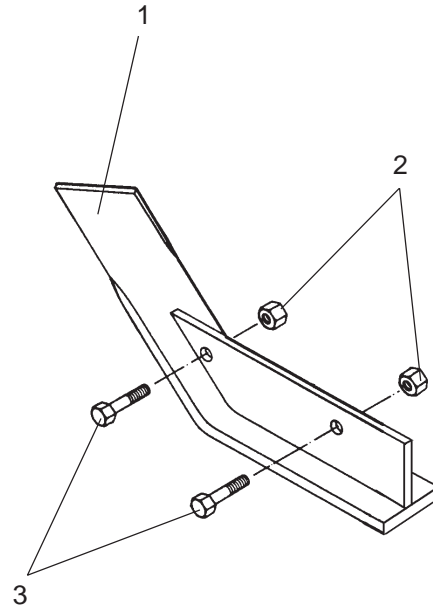


PARTS

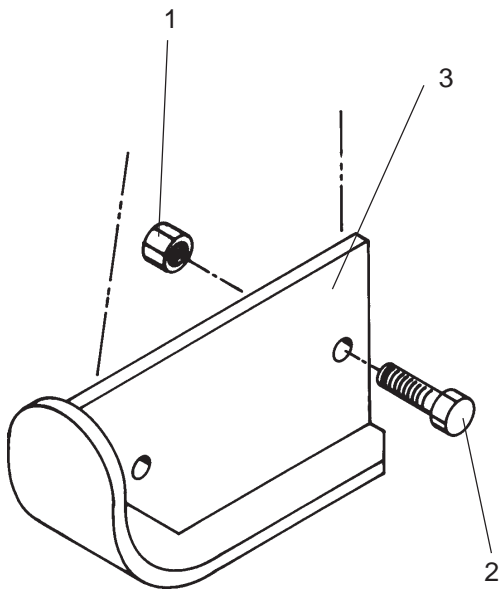
SKID SHOES

WING SECTION SKID SHOE

ITEM	PART NO.	QTY	DESCRIPTION
1	00750993	1	Wldmt. Skid Shoe - Right Wing (As Shown)
	00750989	1	Wldmt. Skid Shoe - Left Wing (Not Shown)
2	02716500	4	Locknut
3	00749171	4	Bolt
4	00750991	Ref	Skid Shoe Kit (Includes items #1 thru 3)



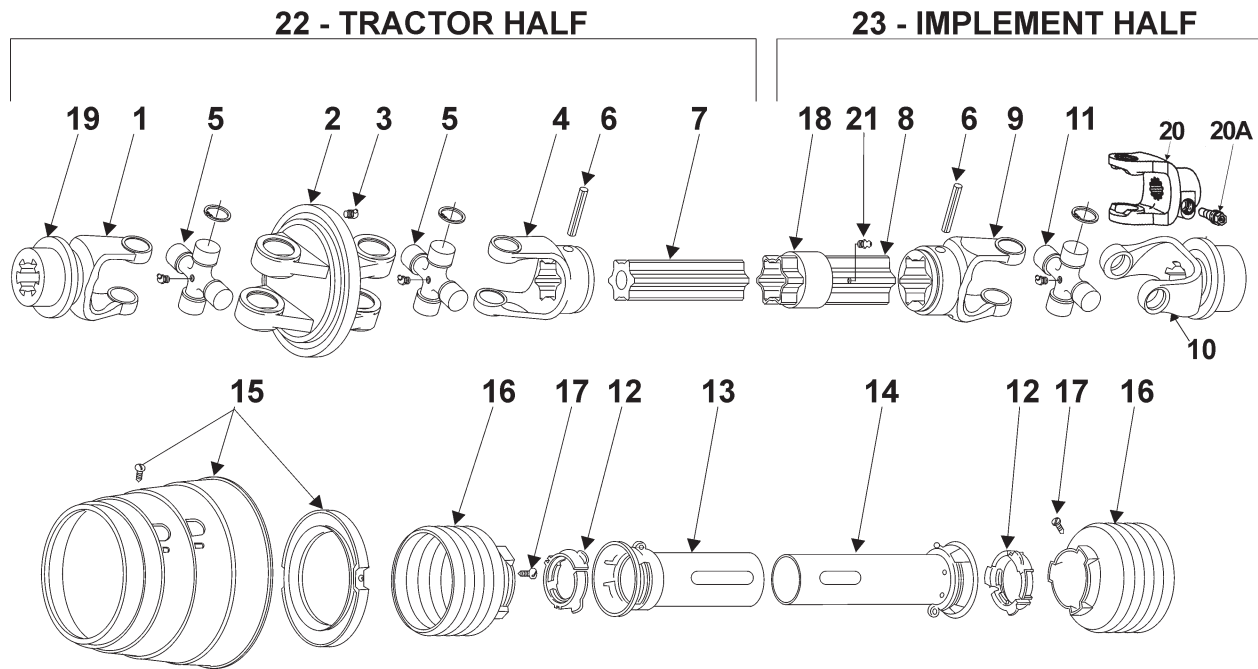
PARTS



CENTER SECTION SKID SHOE

ITEM	PART NO.	QTY	DESCRIPTION
1	02716500	4	Locknut
2	00749171	4	Bolt
6	00751305	2	Wldmt.Center Section Skid Shoe

DRIVELINE ASSEMBLY - MAIN CV

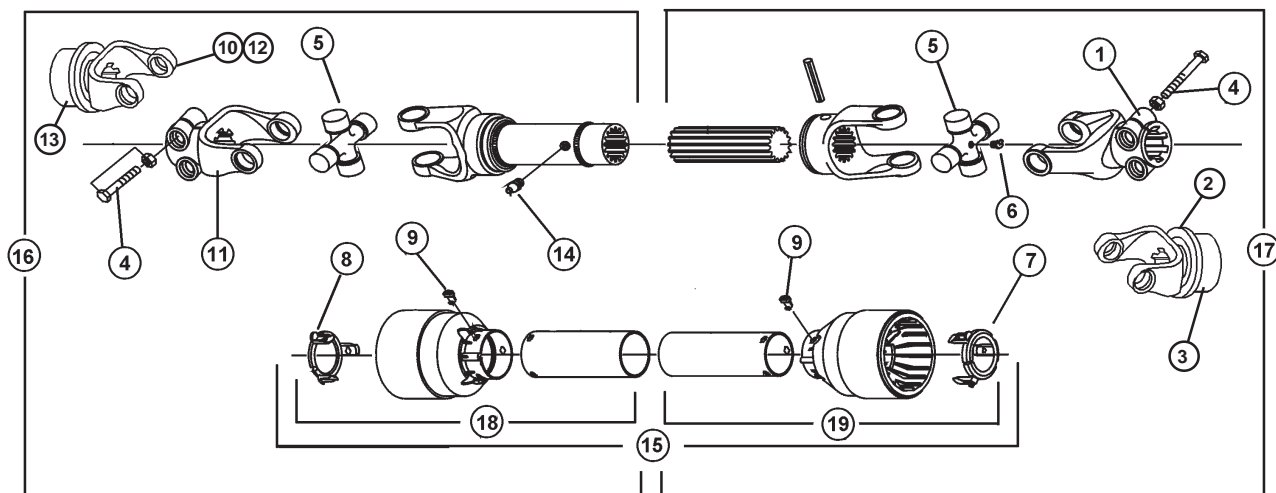


ITEM	540RPM PART NO.	1000RPM PART NO.	QTY.	DESCRIPTION
	00760452		-	Driveline Assembly Main CV
		00760453	-	Driveline Assembly Main CV
1	7431	8478	1	Yoke 1-3/8" 6-540/21-1000
2	8482	8482	1	Double Yoke
3	8382	8382	1	Grease Fitting
4	7432	7432	1	Inboard Yoke
5	7433	7433	2	Cross & Bearing Kit
6	8384	8384	2	Spring Pin
7	00760633	00760632	1	Inner Tubing
8	00760635	00760634	1	Tubing & Sleeve
9	8489	8489	1	Inboard Yoke
10	00774207	00774207	1	Yoke w/ Locking Pin
	00760636	00760636	1	Yoke w/ Slide Collar
11	8486	8486	1	Cross & Bearing Kit
12	8393	8393	2	Bearing Ring
13	00760640	00760640	1	Outer Shield Tube
14	00760641	00760641	1	Inner Shield Tube
15	7420	7420	1	Cone & Bearing Assy.
16	8949	8949	1	Shield Cone
17	4797	4797	8	Screw
18	8974	8974	1	Support Bearing
19	8391	8391	1	Q.D. Collar Kit (For 1-3/8" Yoke)
20	00774208	00774208	1	Locking Pin Kit
	00759556	00759556	1	Slide Collar Kit
21	00752760	00752760	1	Grease Fitting - Requires tube to be tapped to 1/4-28 Straight Thread
22	00760668	00760665	1	D/L Tractor Half
23	00760667	00760667	1	D/L Implement Half

DRIVELINE ASSEMBLY - MAIN (Cat. V Standard)

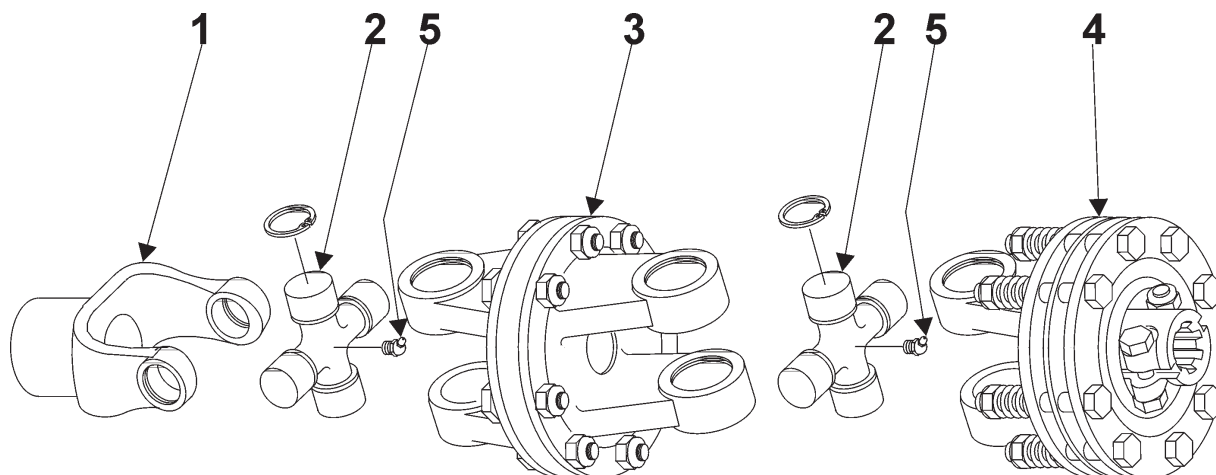
THIS MAIN DRIVELINE HAS BEEN UP-GRADED TO STD. SERIES 8 SHIELDS. IDENTIFY THE NEW SERIES 8 DRIVELINES BY THE LARGER SHIELD TUBES. THE FOLLOWING CHART GIVES THE DIA. & CIRCUMFERENCE OF SHIELDS FOR BOTH DRIVELINES. COMPLETE DRIVELINES ARE INTERCHANGEABLE BUT INDIVIDUAL PARTS ARE NOT.

	OLD SHIELD TUBE		NEW SHIELD TUBE	
	DIA.	CIRCUMFERENCE	DIA.	CIRCUMFERENCE
INNER SHIELD TUBE	3"	9-3/8"	3-9/16	11-1/4
OUTER SHIELD TUBE	3-1/4"	10-1/8"	3-13/16	12"



ITEM	P/N 00752793A (540 RPM)	P/N 00760408A (1000 RPM)	QTY	DESCRIPTION
	PART NO.	PART NO.		
1	00772743	00772743	1	Clamp Yoke 1-3/4-20
2	00753908	00753908	1	Yoke - 1-3/4 - 20 Slide Collar
3	00757052	00757052	1	Collar Repair Kit (1-3/4 - 20 SC)
4	00772531	00772531	2	Bolt & Nut (Clamp Yoke)
5	00753068	00753068	2	Cross Bearing Kit
6	00754335	00754335	1	Grease Fitting For Tube
7	00765417	00765417	1	Inner Locking Collar
8	00765420	00765420	1	Outer Locking Collar
9	00754330	00754330	6	Nylon Bolt
10	-	00760409	1	Yoke 1-3/8 - 21 Spline Slide Collar
11	00757042	-	1	Clamp Yoke, 1-3/8 - 6 Spline
12	00753067	-	1	Yoke 1-3/8 - 6 Spline Slide Collar
13	00757144	00757144	1	Collar Repair Kit (1-3/8 Spline)
14	00755610	00755610	1	Grease Fitting
15	00765423	00765423	1	Complete Shield Kit
16	00765418	00765416	1	Outer Driveline Half
17	00765419	00765419	1	Inner Driveline Half
18	00765421	00765421	1	Outer Shield
19	00765422	00765422	1	Inner Shield

DRIVELINE ASSEMBLY - INTERMEDIATE 35R

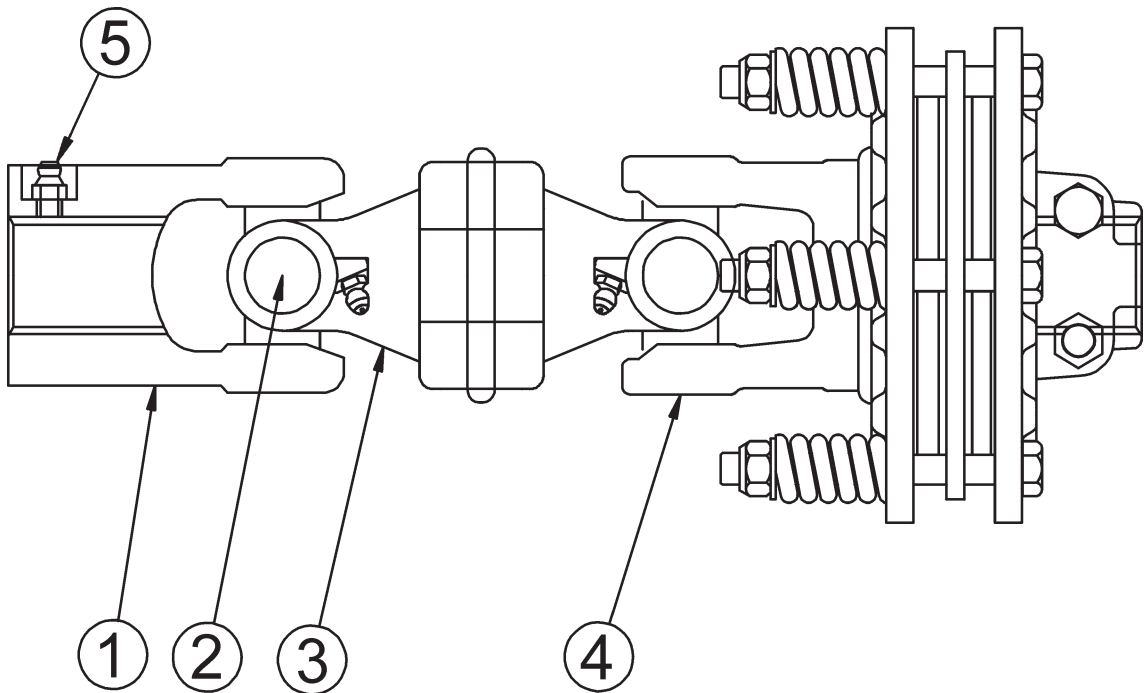


ITEM	PART NO.	QTY.	DESCRIPTION
	00756581	-	Intermediate Driveshaft 35R
1	00757049	1	Outer Yoke
2	00752896	2	Cross Bearing w/Retaining Ring
3	00754399	1	Flange Double Yoke
4	00756075	1	Clutch & Yoke Series 6
5	00755610	2	Grease Fitting

PARTS

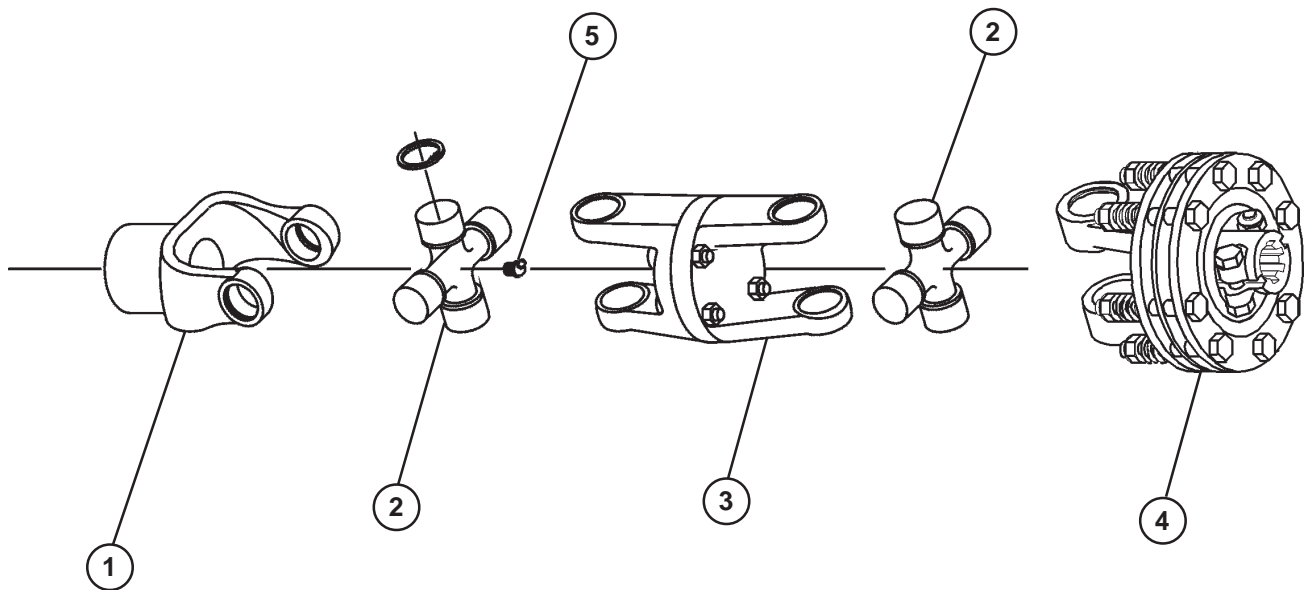
DRIVELINE ASSEMBLY - INTERMEDIATE 35R

Order replacement parts from this page if your driveline has a non-flanged double yoke.



ITEM	PART NO.	QTY.	DESCRIPTION
	00775340	-	Intermidate Driveshaft
1	00775341	1	Yoke
2	W279R	2	Cross & Bearing
3	00775342	1	Double Yoke
4	00775331	1	Slip Clutch
5	ref.	1	Grease fitting (in item 1)

DRIVELINE ASSEMBLY - INTERMEDIATE 44R

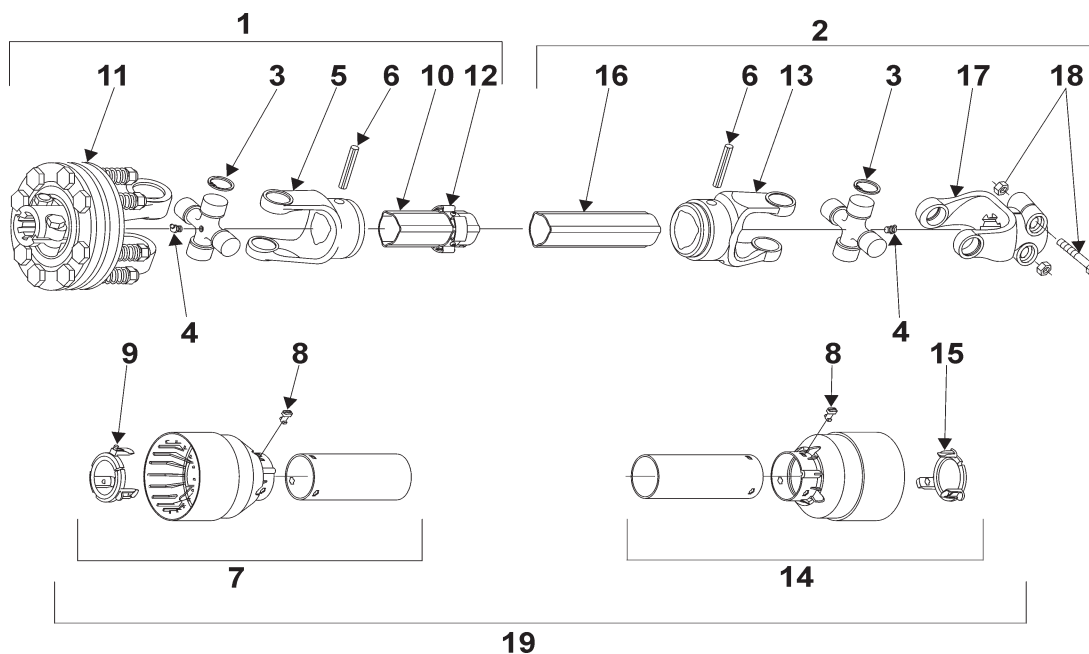


ITEM	PART NO.	QTY.	DESCRIPTION
	00756580	-	Intermediate Driveshaft 44R
1	00757047	1	Q.D. Yoke
2	00753068	2	Cross Bearing w/Retaining Ring
3	00753889	1	Flange Fork w/ Bolts
4	00756173	1	Slip Clutch (w/springs)
5	00755610	2	Grease Fitting

PARTS

DRIVELINE ASSEMBLY - WING

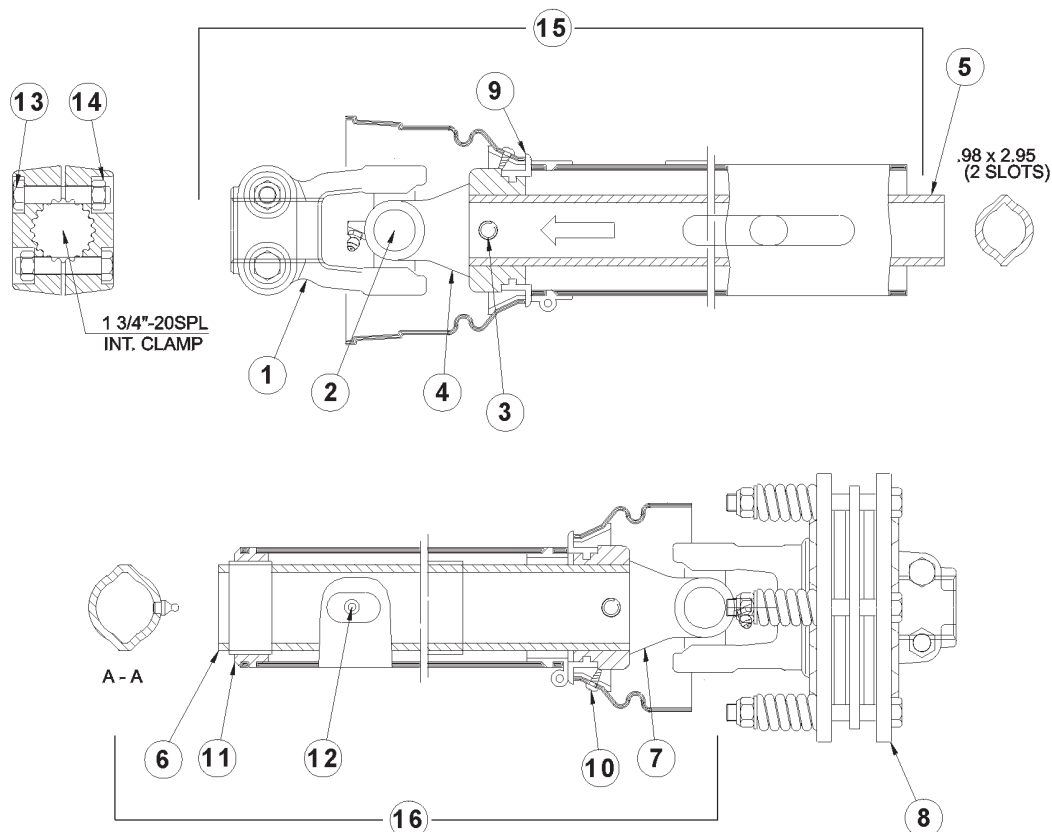
Order replacement parts from this page if the profile of your driveline is triangle shaped.



ITEM	PART NO.	QTY.	DESCRIPTION
	00756583		Driveline,Wing
1	00756537	1	Half Driveshaft W/Clutch
2	00757054	1	Pto Inner With Safety Guard
3	00752896	2	Cross Bearing Series 6
4	00755610	2	Grease Fitting
5	00754154	1	Yoke-outer Tube
6	00754167	2	Pin Roll
7	00754372	1	Shield Kit Outer
8	00754330	6	Bolt, Nylon
9	00754332	1	Locking Collar Outer
10	00755445	1	Outer Tube
11	00756075	1	Clutch & Yoke Series 6
12	00772529	1	Bushing With Grease Fitting
13	00754153	1	Yoke Inner
14	00754373	1	Shield Kit Inner
15	00754331	1	Locking Collar Inner
16	00755444	1	Inner Tube
17	00771337	1	Yoke-clamp
18	00772531	2	Bolt & Nut
19	00754374	1	Shield Kit Complete

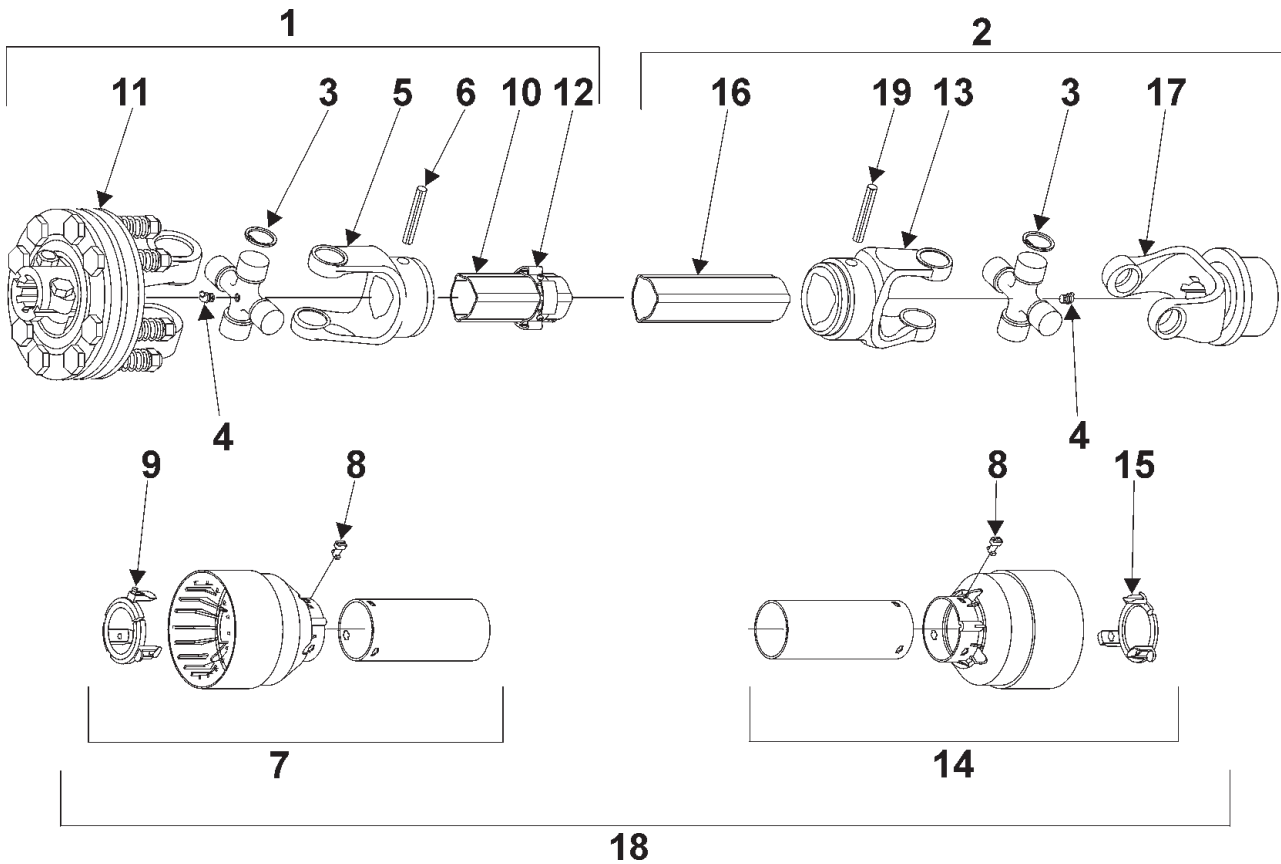
DRIVELINE ASSEMBLY - WING

Order replacement parts from this page if the profile of your driveline is lemon shaped.



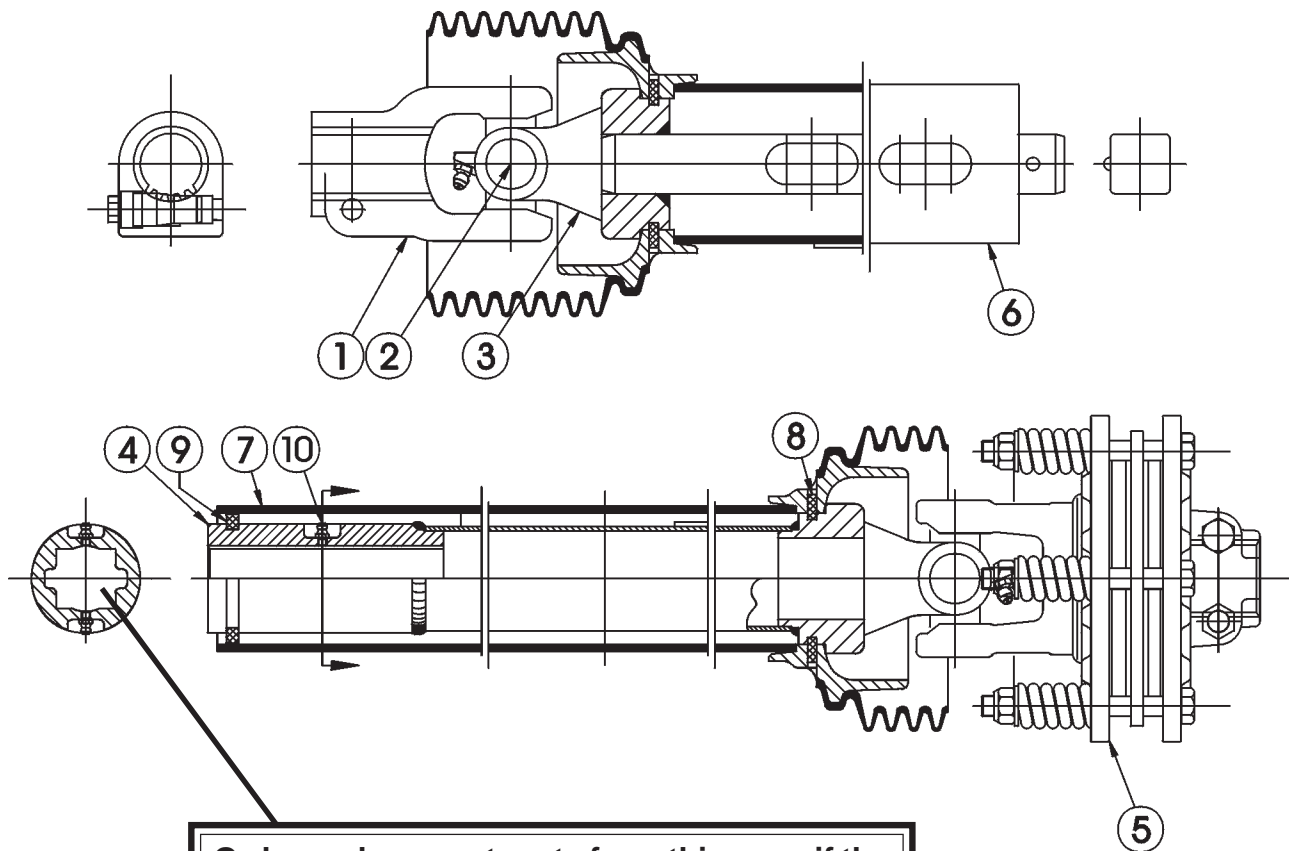
ITEM	PART NO.	QTY.	DESCRIPTION
	00775329		Driveline - Wing Series 60
1	00775316	1	Yoke 1 3/4-20SPL I.C.
2	W279R	2	Cross & Bearing Kit
3	8384	2	Spring Pin 10x80
4	00775317	1	Inboard Yoke 1b
5	00775375	1	Inner Profile 1b
6	00775376	1	Profile & Sleeve W.A.
7	00775318	1	Inboard Yoke 2a
8	00775331	1	Friction Clutch
9	8393	2	Bearing Ring SC25
10	4797	2	Screw-In Item 9 & 13
11	8974	1	Support Bearing
12	1416601	1	Zerk In Item 6
13	00775384	2	Bolt -M12x60 In Item 1
14	00775327	2	Nut - M12 - In Item 1
15	00775319	1	Outer Shield Half
16	00775332	1	Inner Shield Half

DRIVELINE ASSEMBLY - WING 44R



ITEM	PART NO.	QTY.	DESCRIPTION
	00757375A	-	Driveline, Wing, Series 80, W/Slip Clutch, 1-3/4-20
1	00765431	1	Half Outer Shaft,W/Ser 8 Shlds
2	00765432	1	Half,Inner Shaft W/Ser 8 Shlds
3	00753068	2	Cross Bearing Series 8
4	00754335	2	Grease Fitting
5	00765471	1	Yoke-outer
6	00758159	1	Pin Roll
7	00765433	1	Half,Outer Shield,Series 8
8	00754330	6	Bolt, Nylon
9	00765420	1	Locking Collar Outer Shield
10	00766570	1	Outer Tube
11	00756173	1	Clutch & Yoke
12	00772932	1	Bushing With Grease Fitting
13	00753908	1	Yoke Inner, Series 8
14	00765434	1	Half,Inner Shield,Series 8
15	00765417	1	Locking Collar Inner
16	00766571	1	Inner Tube
17	00757040	1	Outer Yoke (Clamp Type)1-3/4-2
18	00765435	1	Shield Kit Complete
19	00758160	1	Pin, Roll

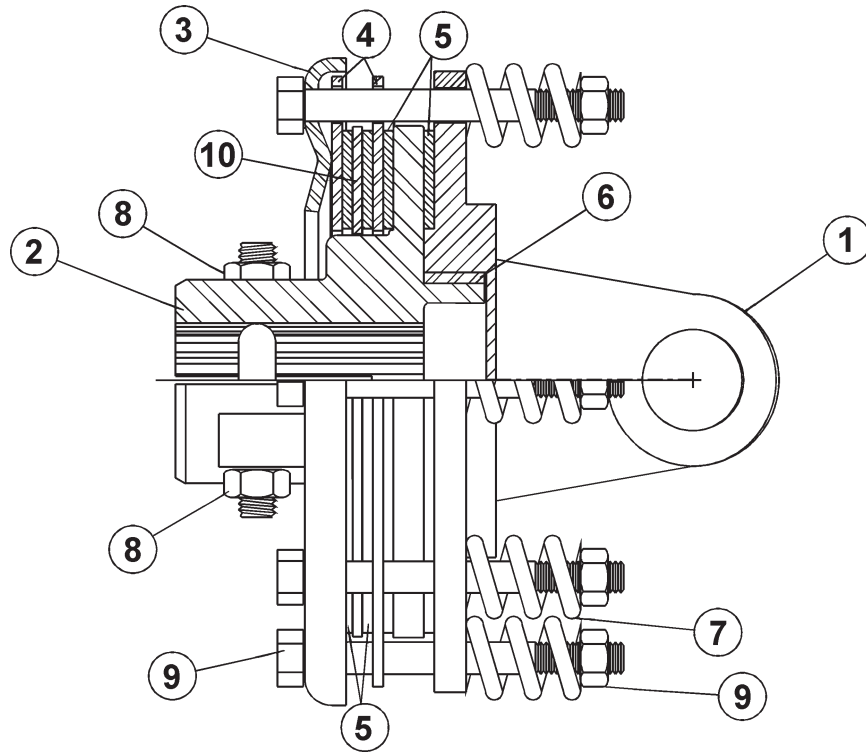
DRIVELINE ASSEMBLY - WING 44R



Order replacement parts from this page if the profile of your driveline has this shape.

ITEM	PART NO.	QTY	DESCRIPTION
	00775343	-	Driveline Assembly
1	00775005	1	Yoke
2	W840	2	Cross & Bearing Kit
3	W816F	1	Yoke & Bar
4	00775344	1	Yoke, Tube, Sleeve
5	00775382	1	Friction Clutch
6	00775345	1	Outer Shield Tube Assy
7	00775346	1	Inner Shield Tube Assy
8	00775347	4	Shield Bearing
9	00775348	1	Sleeve Bearing
10	00752670	2	Grease Fitting
11	00774208	1	Lock Assy CC Yoke (in item 1)

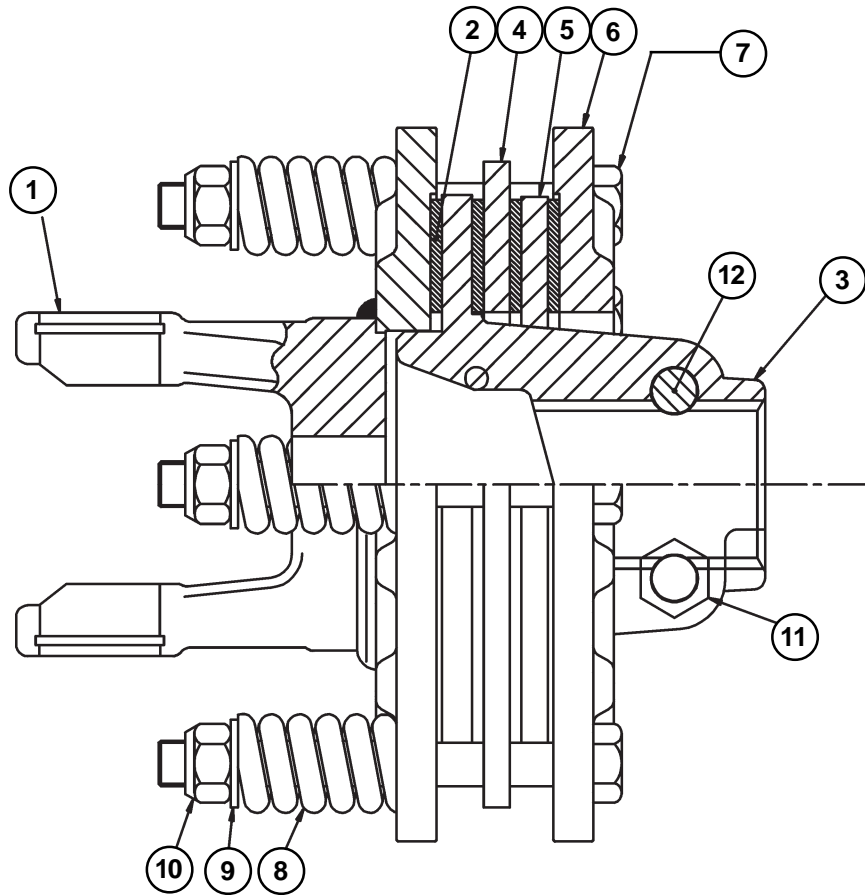
SLIP CLUTCH ASSEMBLY



For Cat 4 Drivelines

ITEM	PART NO.	QTY	DESCRIPTION
	00756075	-	Slip Clutch Assembly
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, Clutch
8	00755600	2	Nut & Bolt
9	00754199	8	Nut & Bolt
10	00754201	1	Intermediate Plate

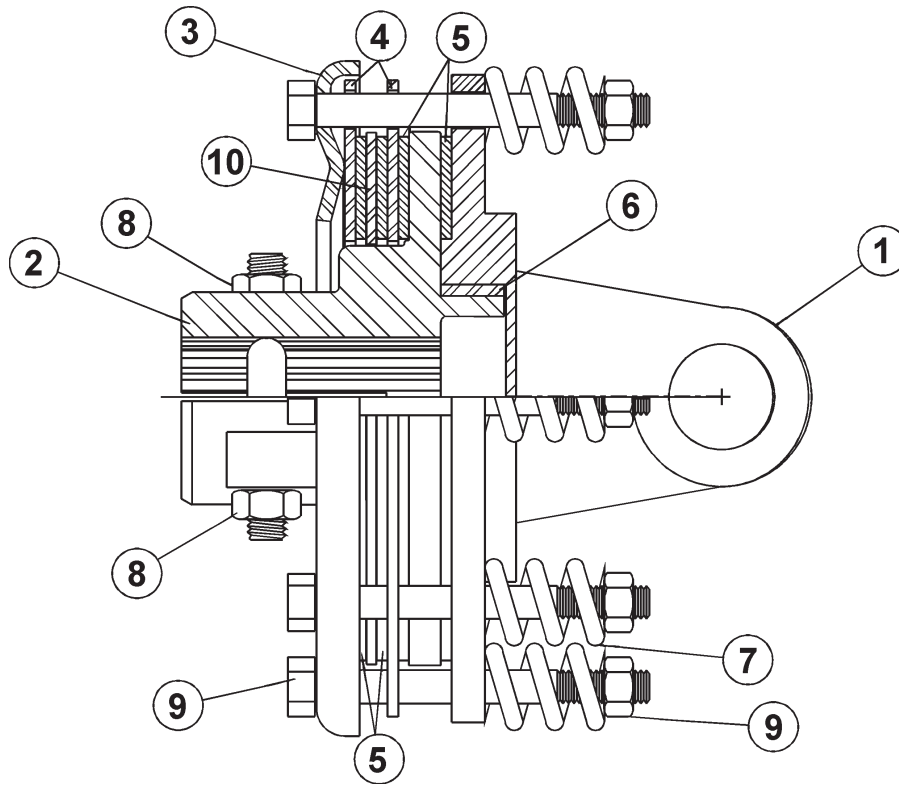
SLIP CLUTCH ASSEMBLY



USED ON DRIVELINES
P/N 00775329
P/N 00775340

ITEM	PART NO.	QTY	DESCRIPTION
	00775331	-	Slip Clutch
1	00775333	1	Flange Yoke
2	8366	4	Friction Disk
3	00775334	1	Hub
4	00775335	1	Drive Plate
5	00775336	1	Drive Plate
6	00775337	1	Thrust Plate
7	00775338	6	Bolt
8	00775339	6	Compression Spring
9	00754566	6	Lockwasher
10	00756164	6	Locknut
11	00775327	2	Locknut
12	00775328	2	Bolt

SLIP CLUTCH ASSEMBLY

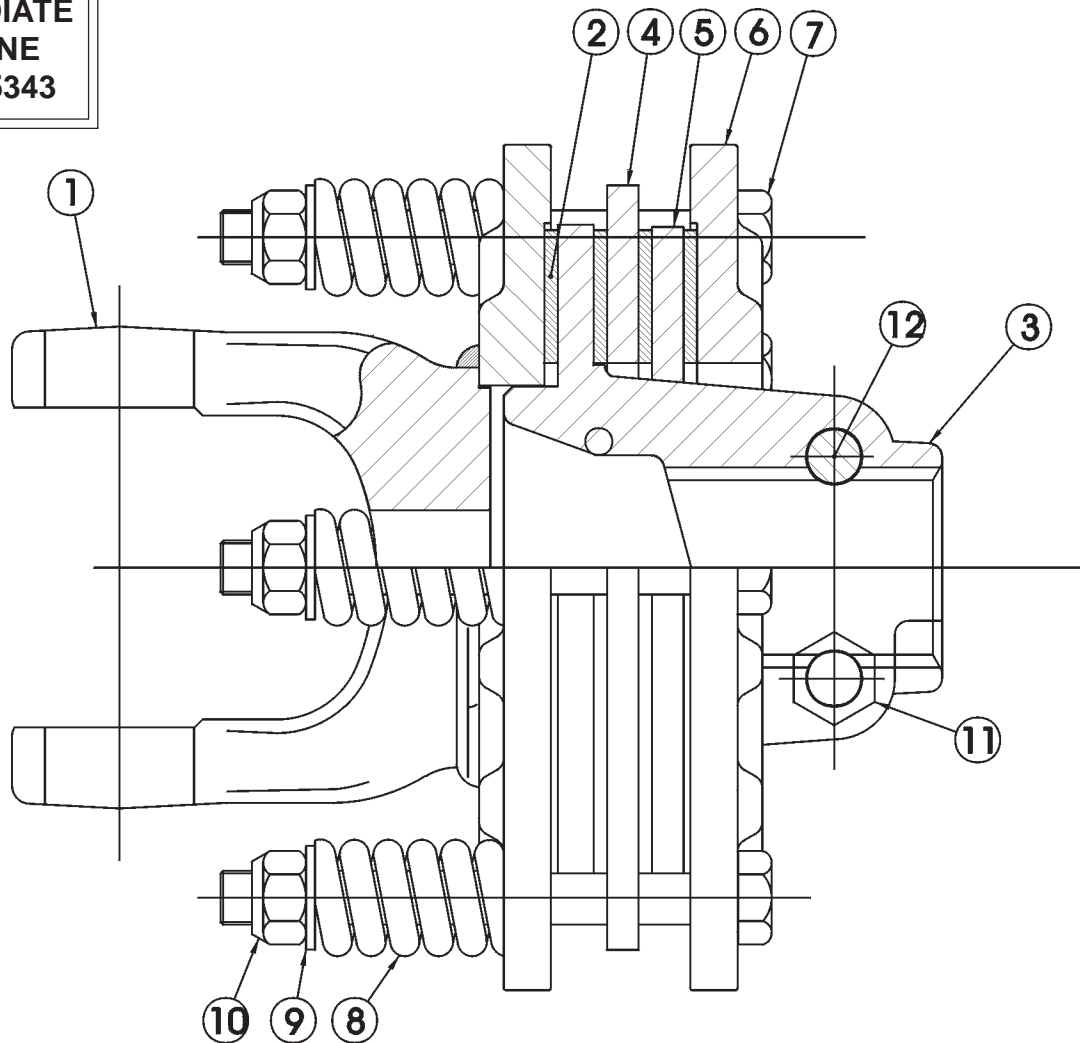


For Cat 5 Drivelines

ITEM	PART NO.	QTY	DESCRIPTION
	00756173	-	Slip Clutch Assembly
1	00754083	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, Clutch
8	00755600	2	Nut & Bolt
9	00754199	8	Nut & Bolt
10	00754201	1	Intermediate Plate

SLIP CLUTCH ASSEMBLY

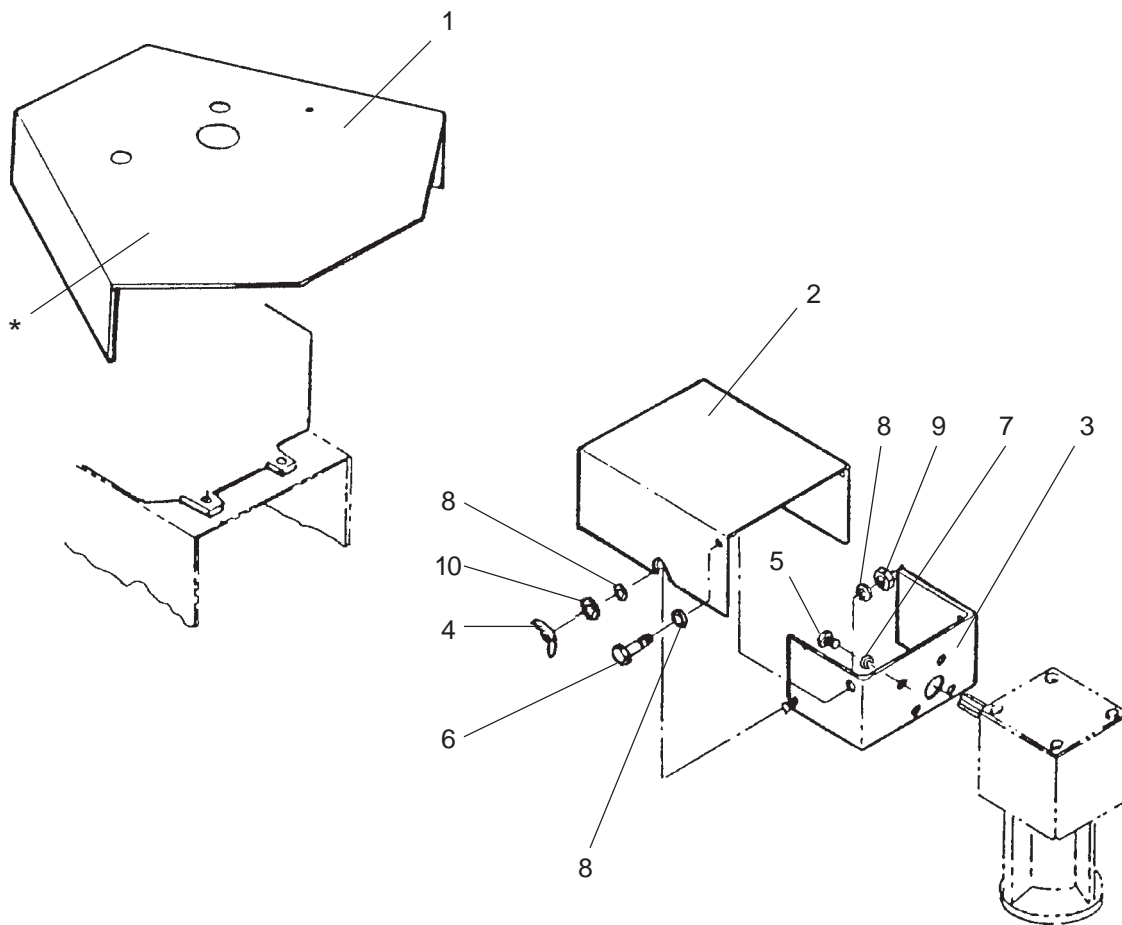
USED ON
INTERMEDIATE
DRIVELINE
P/N 00775343



ITEM	PART NO.	QTY	DESCRIPTION
	00775382	-	Slip Clutch Assembly
1	00775383	1	Flange Yoke
2	8366	4	Friction Disk
3	00775334	1	Hub
4	00775335	1	Drive Plate
5	00775336	1	Drive Plate
6	00775337	1	Thrust Plate
7	00775338	6	Bolt
8	00775339	6	Compression Spring
9	00754566	6	Lockwasher
10	00756164	6	Locknut
11	00775327	2	Locknut
12	00775328	2	Bolt

PARTS

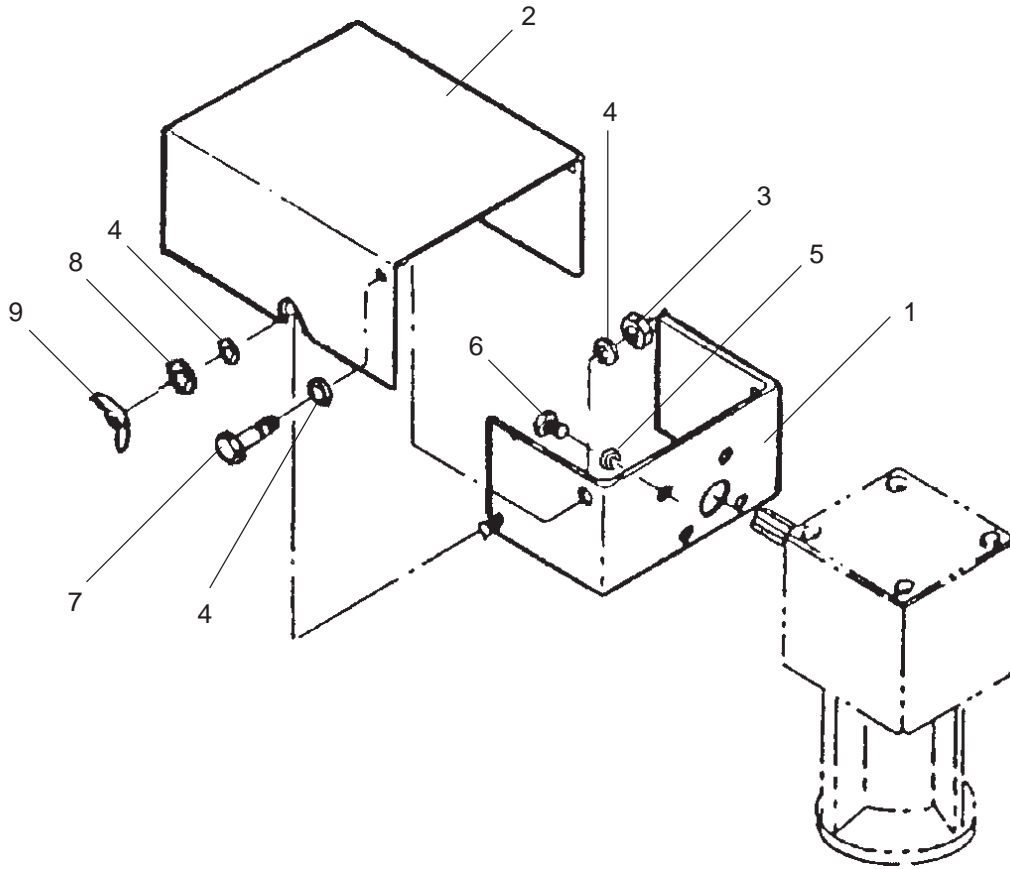
SAFETY SHIELD ASSEMBLY (CENTER SECTION)



ITEM	PART NO.	QTY	DESCRIPTION
1	0656130100	1	Safety Shield, Primary Gearbox
2	00753016	1	Safety Shield
3	00756076	1	Rear Support Bracket, Gearbox Shield
4	00004000	2	Wing Nut
5	00751693	4	Bolt
6	10182000	2	Bolt
7	00011700	4	Lockwasher
8	00011100	4	Flatwasher
9	00015800	2	Nut
10	00024100	2	Flatwasher

* Use existing Gearbox Bolts to bolt Safety Shield on Gearbox.

SAFETY SHIELD ASSEMBLY



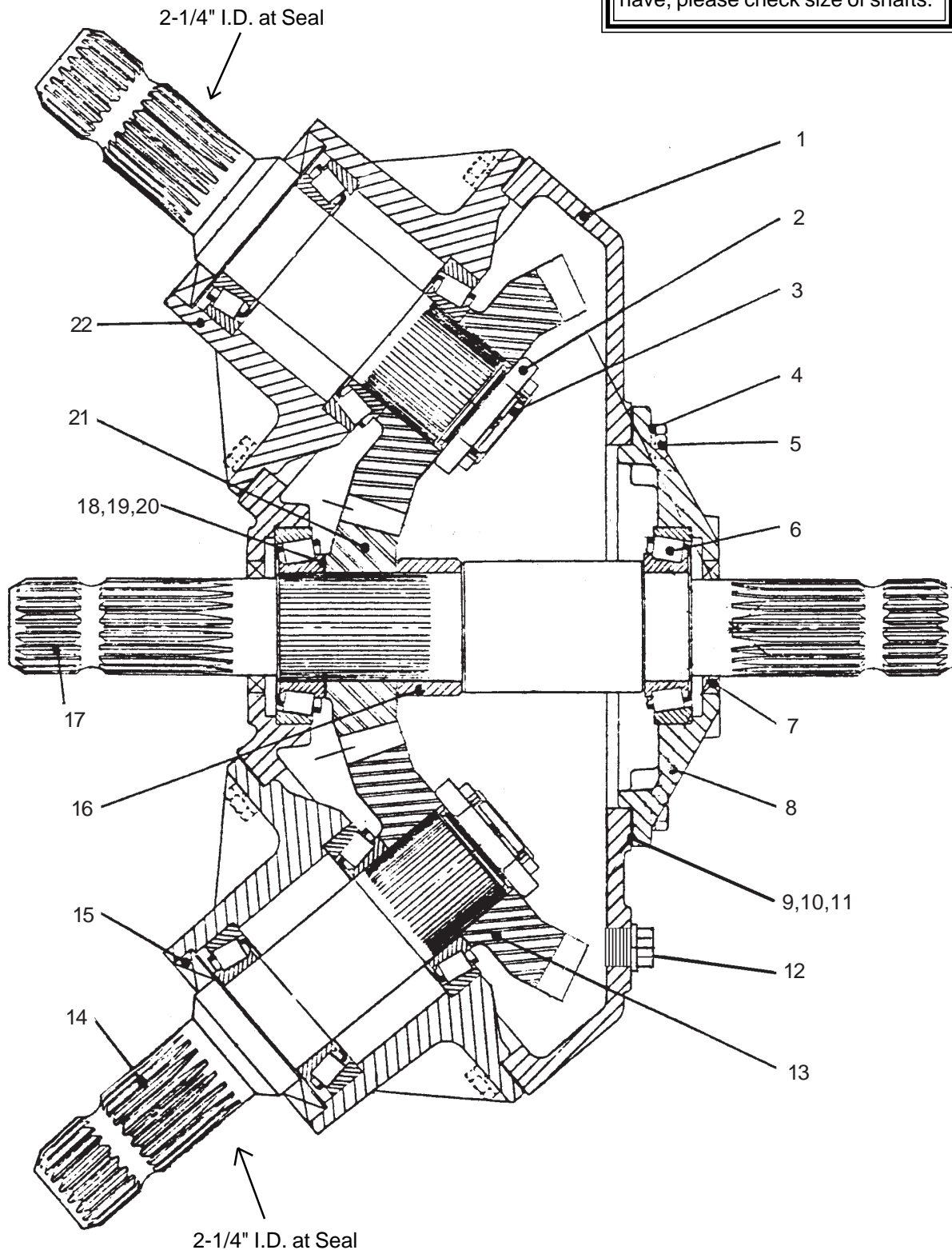
ITEM	PART NO.	QTY	DESCRIPTION
	00755673	-	Safety Shield Assembly
1	00757742	1	Wldmt. Bracket Gearbox
2	00753016	1	Safety Shield
3	00015800	2	Locknut
4	00011100	4	Flatwasher
5	00011700	4	Lockwasher
6	00751693	4	Bolts
7	10182000	2	Bolt
8	00024100	2	Flatwasher
9	00004000	2	Wingnut

GEARBOX ASSEMBLY - DIVIDER

P/N 00769115 (540 RPM)
P/N 00769116 (1000 RPM)

NOTE:

To determine which Gearbox you have, please check size of shafts.



PARTS

GEARBOX ASSEMBLY - DIVIDER

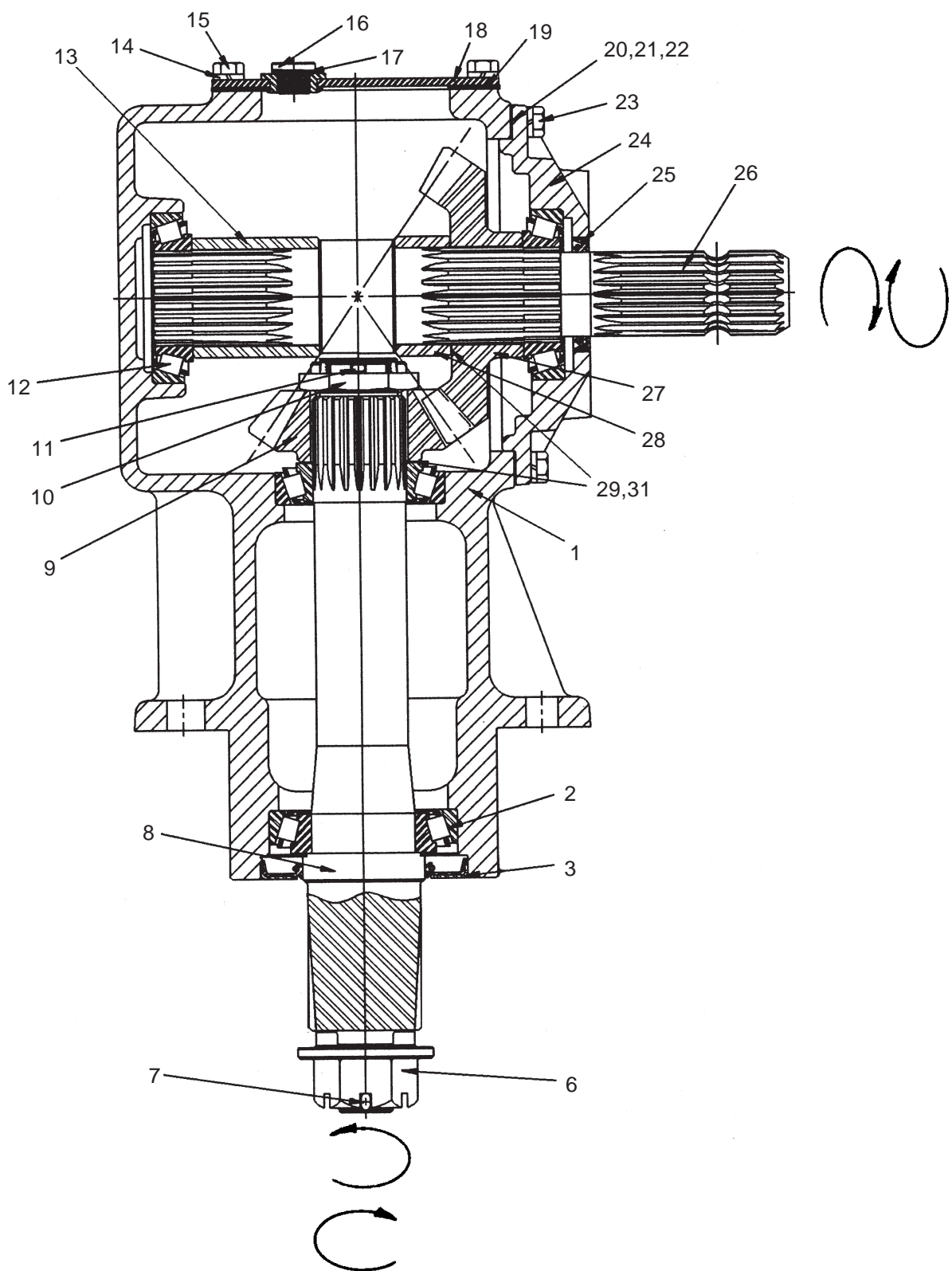
P/N 00769115 (540 RPM)
P/N 00769116 (1000 RPM)

ITEM	PART NO		QTY	DESCRIPTION
	540 RPM	1000 RPM		
	00769115	-	-	Gearbox Assembly-Divider
	-	00769116	-	Gearbox Assembly-Divider
1	00769162	00769162	1	Housing Divider Gearbox
2	00762121	00762121	2	Bearing Adj. Nut
3	00026200	00026200	2	Cotter Pin
4	00755954	00755954	24	Lockwasher
5	00758659	00758659	24	Bolt
6	00755628	00755628	6	Bearing
7	00758653	00758653	2	Seal
8	00762128	00762128	1	Input Cap
9	00758646	00758646	var	Shim Adjustment 0.1
10	00758647	00758647	var	Shim Adjustment 0.25
11	00758648	00758648	var	Shim Adjustment 0.5
12	00762123	00762123	1	Plug
13	00769160		2	Gear 20 Tooth
		00769159	2	Gear 26 Tooth
14	00762522	00762522	2	Input Shaft
15	00762521	00762521	2	Seal
16	00758657	00758657	1	Spacer
17	00769163	00769163	1	Input Shaft
18	00758667	00758667	var	Shim 0 .3
19	00758666	00758666	var	Shim 0.4
20	00758668	00758668	var	Shim 0.4
21	00769161		1	Gear 23 Tooth
		00769158	1	Gear 20 Tooth
22	00762520	00762520	2	Horz. Hub Cap
23	00762114	00762114	1	Pipe Plug Vented (Not Shown)

PARTS

GEARBOX ASSEMBLY - LEFT & CENTER (540 RPM)

P/N 00769912
CW IN - CCW OUT



PARTS

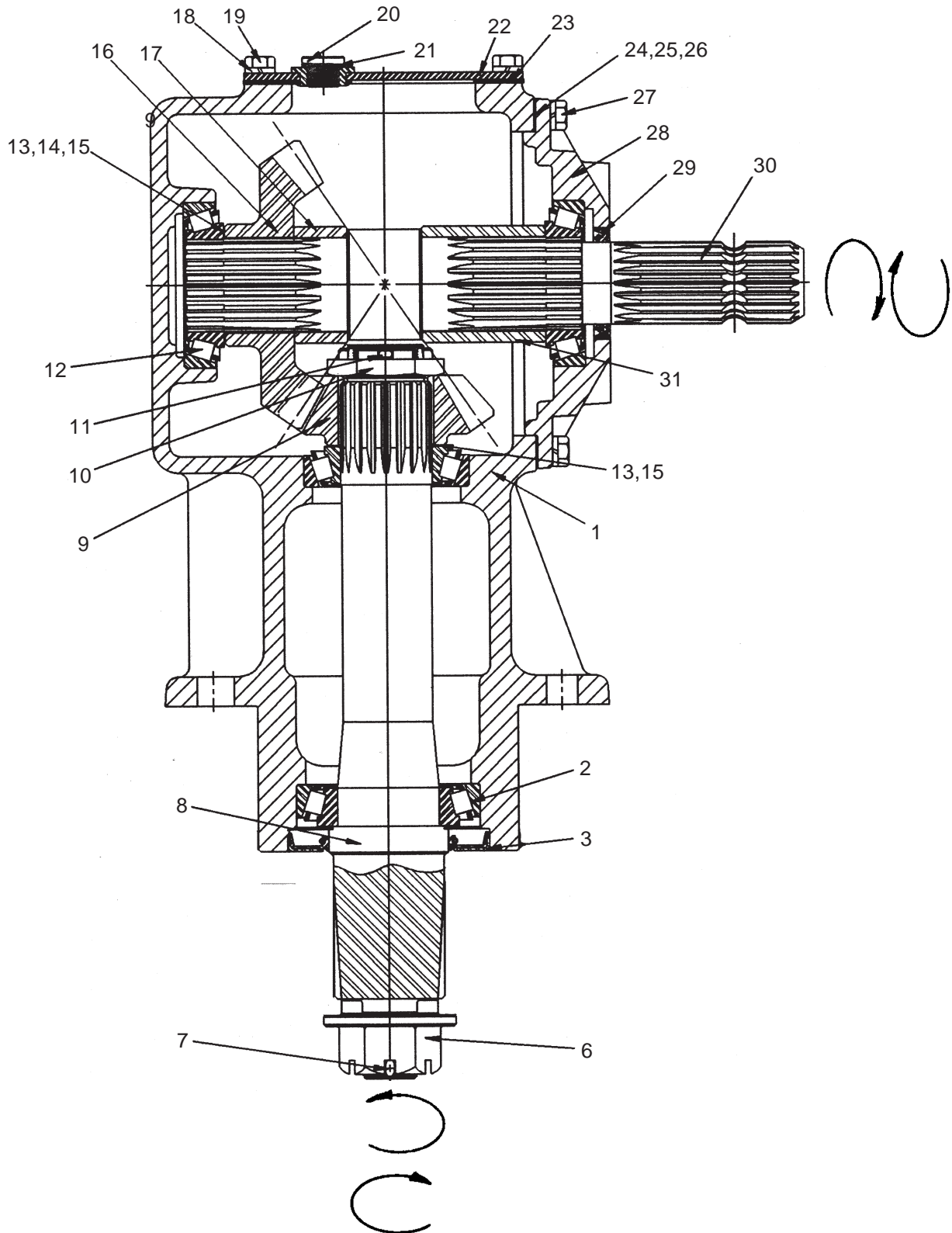
GEARBOX ASSEMBLY - LEFT & CENTER (540 RPM)

ITEM	PART NO.	QTY	DESCRIPTION
	00769912	-	Gearbox Assembly-Left & Center (540 RPM) CW in - CCW Out
1	00770724	1	Housing
2	00770725	1	Bearing Assembly
3	00770726	1	Oil Seal
4	00770727	1	Seal Protector
5	00771227	1	Hub
6	00771226	1	Nut
7	01422502	1	Cotter Pin
8	00770728	1	Output Shaft
9	00770729	1	Gear (9 Teeth)
10	00770730	1	Bearing Adjusting Nut
11	00606000	1	Cotter Pin
12	00755628	3	Bearing Assembly
13	00770731	1	Shaft Spacer
14	00766083	12	Washer
15	00754338	4	Bolt
16	00762517	2	Pipe Plug
17	00769321	3	Washer, Sealing
18	00770732	1	Inspection Cover
19	00770733	1	Inspection Cover Gasket
20	00758646	VAR	Shim Adjustment (0.10)
21	00758647	VAR	Shim Adjustment (0.25)
22	00758648	VAR	Shim Adjustment (0.50)
23	00765905	8	Bolt
24	00770734	1	Input Cap
25	00758653	1	Oil Seal
26	00770735	1	Input Shaft
27	00770729	1	Gear (19 Teeth)
28	00758657	1	Spacer
29	00758667	VAR	Shim (0.30)
31	00758668	VAR	Shim (0.50)
32	00762114	1	Pressure Plug Vent (Not Shown)

PARTS

GEARBOX ASSEMBLY - RIGHT 540 RPM

RIGHT WING - 00769915
CW OUT



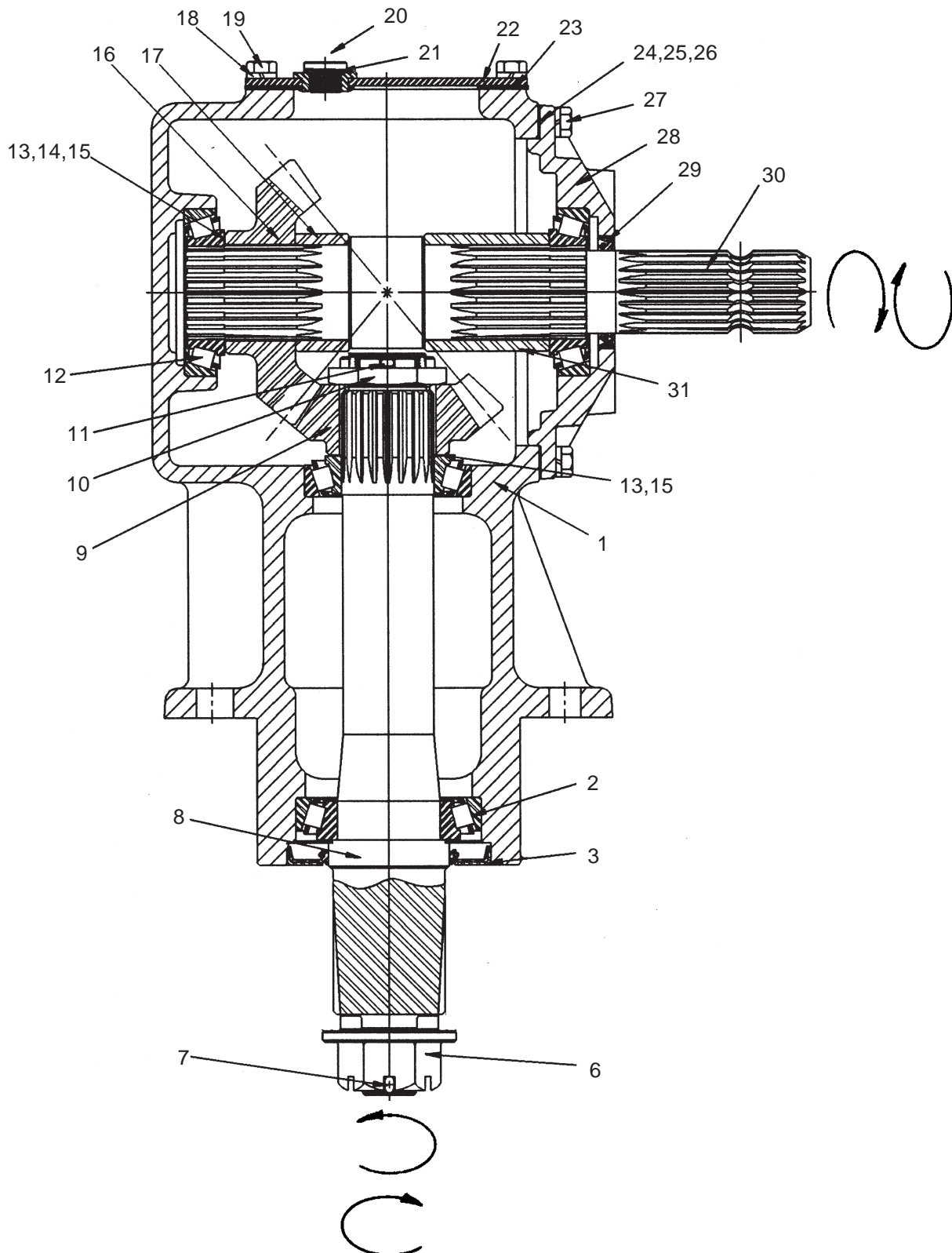
PARTS

GEARBOX ASSEMBLY - RIGHT 540 RPM

ITEM	PART NO.	QTY	DESCRIPTION
	00769915	-	Gearbox Assembly -Right Wing (540 RPM) CW - out
1	00770724	1	Housing
2	00770725	1	Bearing Assembly
3	00770726	1	Oil Seal
4	00770727	1	Seal Protector
5	00771227	1	Hub
6	00771226	1	Nut
7	01422502	1	Cotter Pin
8	00770728	1	Output Shaft
9	00770736	1	Pinion (13 Teeth)
10	00770730	1	Bearing Adjusting Nut
11	00606000	1	Cotter Pin
12	00755628	3	Bearing Assembly
13	00758667	VAR	Shim (0.30)
15	00758668	VAR	Shim (0.50)
16	00770729	1	Gear (19 Teeth)
17	00758657	1	Spacer
18	00766083	12	Lockwasher
19	00754338	4	Bolt
20	00762517	2	Pipe Plug
21	00769321	3	Washer, Sealing
22	00770732	1	Inspection Cover
23	00770733	1	Inspection Cover Gasket
24	00758646	VAR	Shim Adjustment (0.10)
25	00758647	VAR	Shim Adjustment (0.25)
26	00758648	VAR	Shim Adjustment (0.50)
27	00765905	8	Bolt
28	00770734	1	Input Cap
29	00758653	1	Oil Seal
30	00770735	1	Input Shaft
31	00770731	1	Shaft Spacer
32	00762114	1	Pressure Vent Plug (Not Shown)

GEARBOX ASSEMBLY - RIGHT 1000 RPM

RIGHT WING - 00769921 CW IN - CW OUT



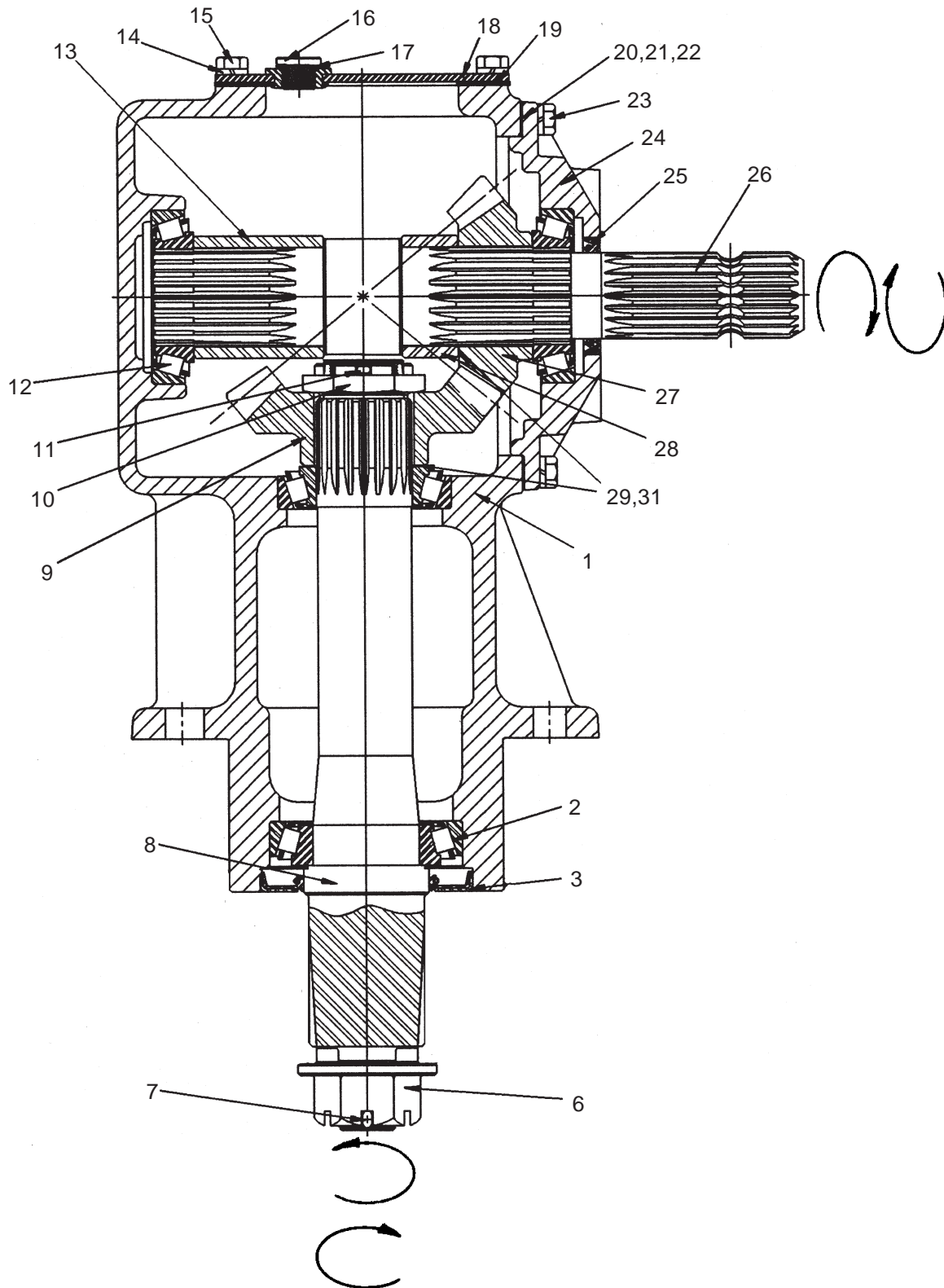
PARTS

GEARBOX ASSEMBLY - RIGHT 1000 RPM

ITEM	PART NO.	QTY	DESCRIPTION
	00769921	-	Gearbox Assembly - Right Wing (1000 RPM) CW in - CW out
1	00770724	1	Housing
2	00770725	1	Bearing Assembly
3	00770726	1	Oil Seal
4	00770727	1	Seal Protector
5	00771227	1	Hub
6	00771226	1	Nut
7	01422502	1	Cotter Pin
8	00770728	1	Output Shaft
9	00770738	1	Gear (14 Teeth)
10	00770730	1	Bearing Adjusting Nut
11	00606000	1	Cotter Pin
12	00755628	3	Bearing Assembly
13	00758667	VAR	Shim (0.30)
15	00758668	VAR	Shim (0.50)
16	00770739	1	Gear (17 Teeth)
17	00758657	1	Spacer
18	00766083	10	Lockwasher
19	00754338	4	Bolt
20	00762517	1	Pipe Plug
21	00769321	3	Washer Sealing
22	00770732	1	Inspection Cover
23	00770733	1	Inspection Cover Gasket
24	00758646	VAR	Shim Adjustment (0.10)
25	00758647	VAR	Shim Adjustment (0.25)
26	00758648	VAR	Shim Adjustment (0.50)
27	00765905	8	Bolt
28	00770734	1	Input Cap
29	00758653	1	Oil Seal
30	00770735	1	Input Shaft
31	00770731	1	Shaft Spacer
32	00762114	1	Pressure Vent Plug (Not Shown)

GEARBOX ASSEMBLY - LEFT AND CENTER 1000 RPM

CENTER SECTION - 00769924 LEFT WING - 00769918
CW IN - CCW OUT



PARTS

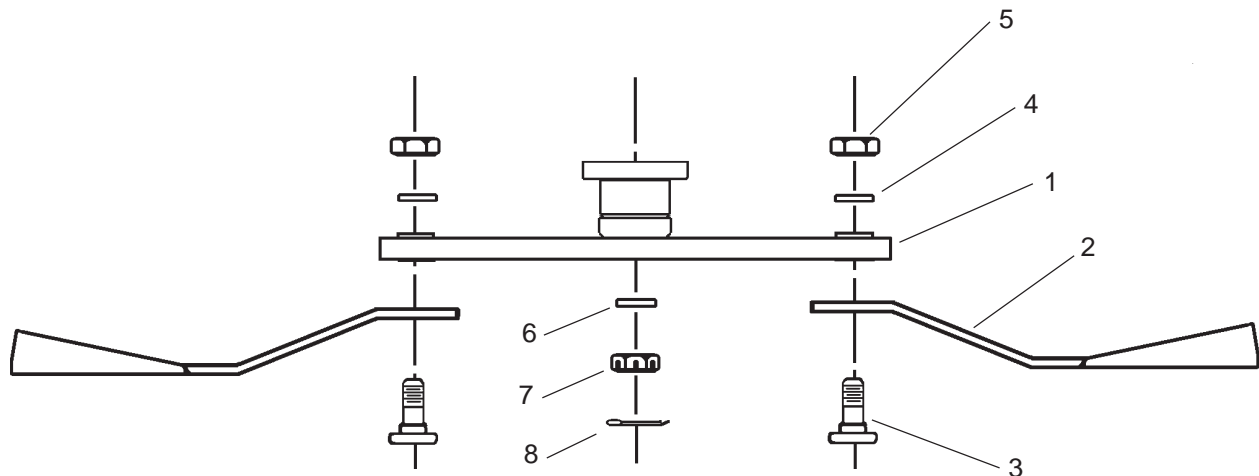
GEARBOX ASSEMBLY - LEFT AND CENTER 1000 RPM

ITEM	PART NO.	QTY	DESCRIPTION
	00769924	-	Gearbox Assembly- Center Section (1000 RPM) CW in - CCW out
	00769918	-	Gearbox Assembly - Left Wing (1000 RPM) CW in - CCW out
1	00770724	1	Housing
2	00770725	1	Bearing Assembly
3	00770726	1	Oil Seal
4	00770727	1	Seal Protector
5	00771227	1	Hub
6	00771226	1	Nut
7	01422502	1	Cotter Pin
8	00770728	1	Output Shaft
9	00770739	1	Gear (17 Teeth) Left and Right Wing
	00770738	1	Gear (14 Teeth) Center
10	00770730	1	Bearing Adjusting Nut
11	00606000	1	Cotter Pin
12	00755628	3	Bearing Assembly
13	00770731	1	Shaft Spacer
14	00766083	12	Lockwasher
15	00754338	4	Bolt
16	00762517	2	Plug, Socket Head
17	00769321	3	Washer, Sealing
18	00770732	1	Inspection Cover
19	00770733	1	Inspection CoverGasket
20	00758646	VAR	Shim Adjustment (0.10)
21	00758647	VAR	Shim Adjustment (0.25)
22	00758648	VAR	Shim Adjustment (0.50)
23	00765905	8	Bolt
24	00770734	1	Input Cap
25	00758653	1	Oil Seal
26	00770735	1	Input Shaft
27	00770738	1	Pinion (14 Teeth) Center
	00770739	1	Pinion (17 Tooth) Left and Right Wing
28	00758657	1	Spacer
29	00758667	VAR	Shim (0.30)
30	-----	VAR	Shim (0.40)
31	00758668	VAR	Shim (0.50)
32	00762114	1	Pressure Vent Plug (Not Shown)
33	-----	2	I.D. Tag Rivet
34	-----	1	I.D. Tag

PARTS

BLADE BAR ASSEMBLY - CENTER SECTION

00771793 (STANDARD)
00771798 (HEAVY DUTY)



ITEM	PART NO.	QTY	DESCRIPTION
1	00771726	1	Wldmt. Blade Bar Weldment (Standard)
	00771796	1	Wldmt. Ctr Blade Bar Weldment (HD)
2	00752972	1 Set	Updraft Blade
3	8227	2	Blade Bolt
4	9216	2	Washer
5	5JRC16140	2	Locknut
6	00755623	1-Ref	Washer
7	00755624	1-Ref	Castle Nut
8	00606000	1-Ref	Cotter Pin

ITEMS LISTED BELOW ARE AN OPTION
AND ARE NOT ILLUSTRATED

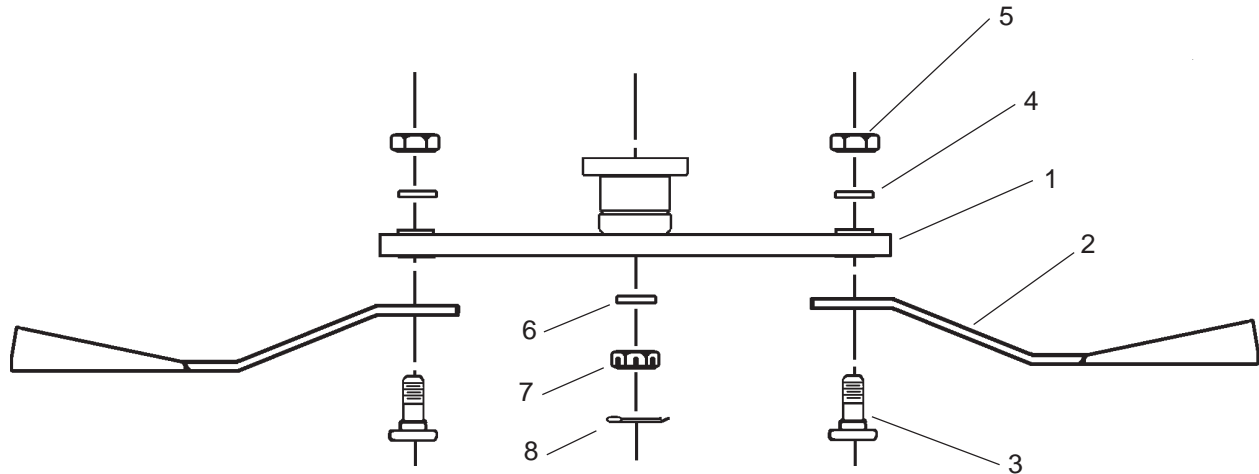
9	00771809	Stump -Jumper Blade Assembly
	00771801	Stump-Jumper Weldment Bld. Pan
10	8195	Blade Bolt and Nut Assembly (Not Shown)

PARTS

BLADE BAR ASSEMBLIES - WING

L/H # 00771795 (STANDARD)
00771800 (HEAVY DUTY)

R/H # 00771794 (STANDARD)
00771799 (HEAVY DUTY)



ITEM	PART NO.	QTY	DESCRIPTION
1	00771727	1	Blade Bar Wing Weldment (Standard)
	00771797	1	Blade Bar Weldment (Heavy Duty)
2	00752971	1 Set	Updraft Blade (L.H.)
	00752972	1 Set	Updraft Blade (R.H.)
3	8227	2	Blade Bolt
4	9216	2	Washer
5	5JRC16140	2	Locknut
6	00755623	1-Ref	Washer
7	00755624	1-Ref	Castle Nut
8	00606000	1-Ref	Cotter Pin

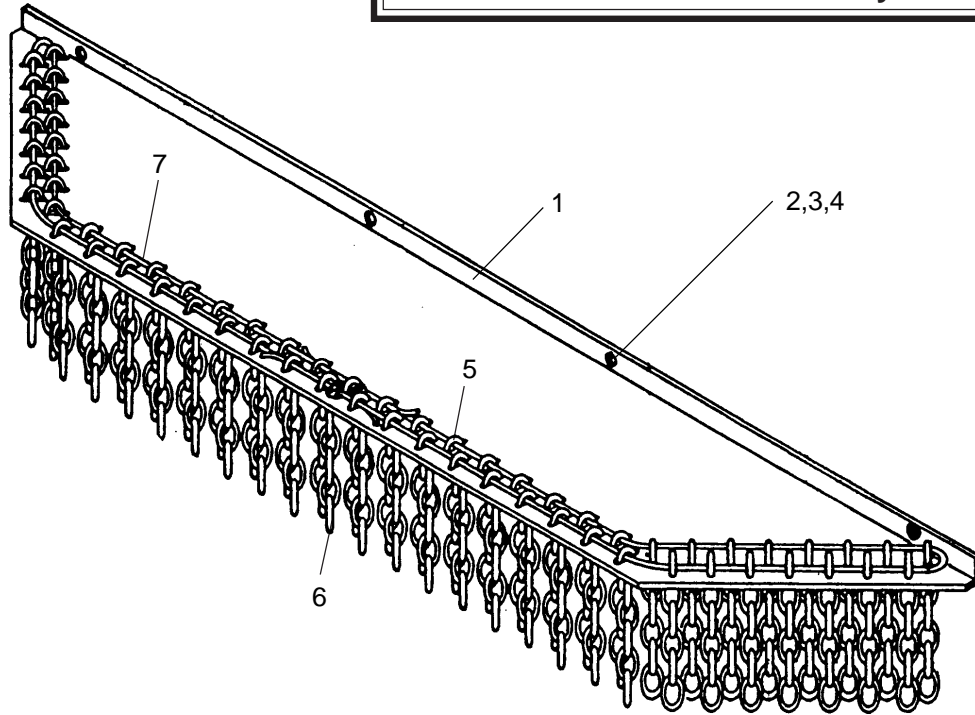
Items Listed Below are Options and Are Not Illustrated

9	00771811	Stump-Jumper Blade Assembly (L.H.)
	00771810	Stump-Jumper Blade Assembly (R.H.)
	00771802	Stump-Jumper Weldment (Left or Right)
10	8195	Blade Bolt and Nut Assembly (not shown)

PARTS

CHAINGUARD - FRONT CENTER

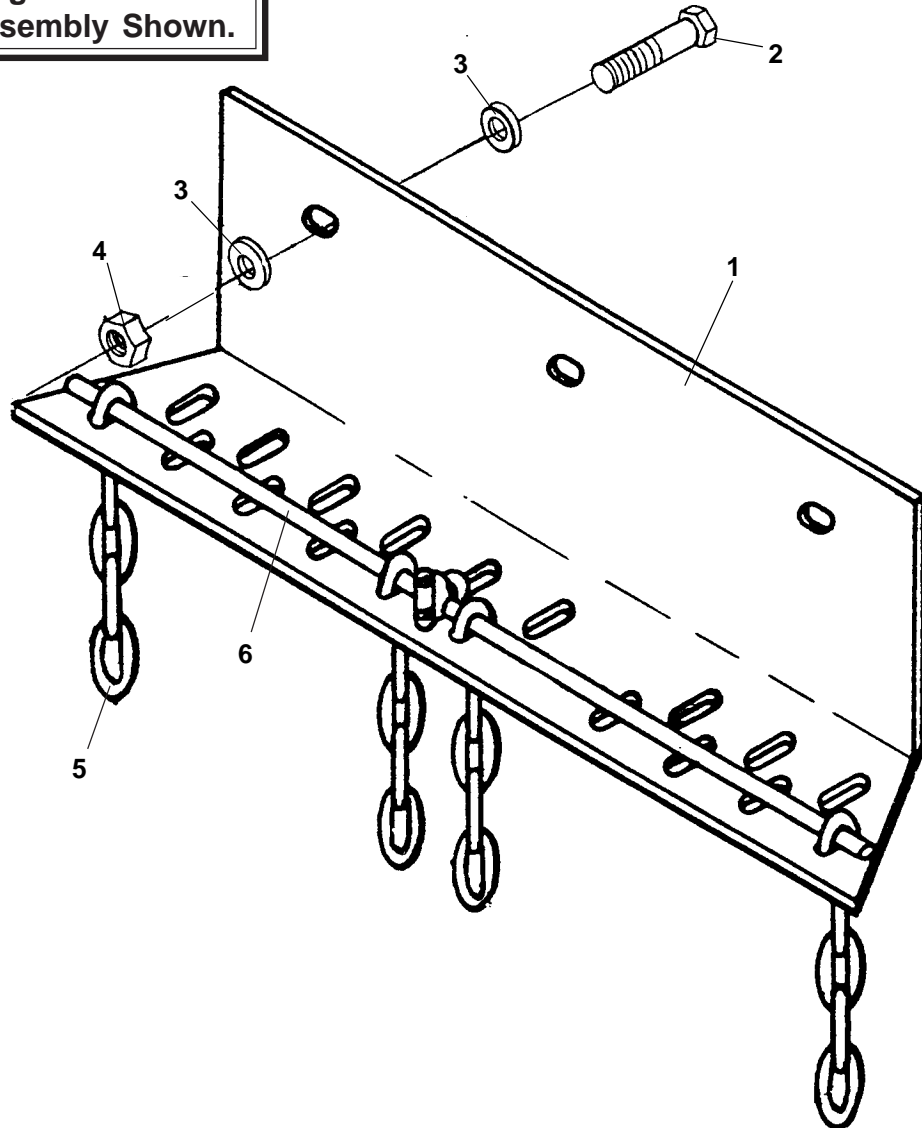
NOTE: Double Chain Assembly Shown.



ITEM	Single, Wld. PART NO.	Double, Wld. PART NO.	QTY	DESCRIPTION
	00775976	00755114	1	Frnt. Center Section Assy. (Less Items 2,3, & 4)
1	00775977	00755091	1	Frnt. Cnt. Bracket Only (Less all Components)
2	00022500	00022500	4	Bolt
3	00019700	00019700	4	Flatwasher
4	02957941	02957941	4	Locknut
5	00001000	00001000	2	Cable Clamp
6	00755090	-----	18	Chain Links (Welded)
	-----	00755090	35	Chain Links (Welded)
7	00992000	-----	3	Cable
	-----	00992000	4	Cable

CHAINGUARD - FRONT SIDE CENTER

NOTE: Single Chain Assembly Shown.



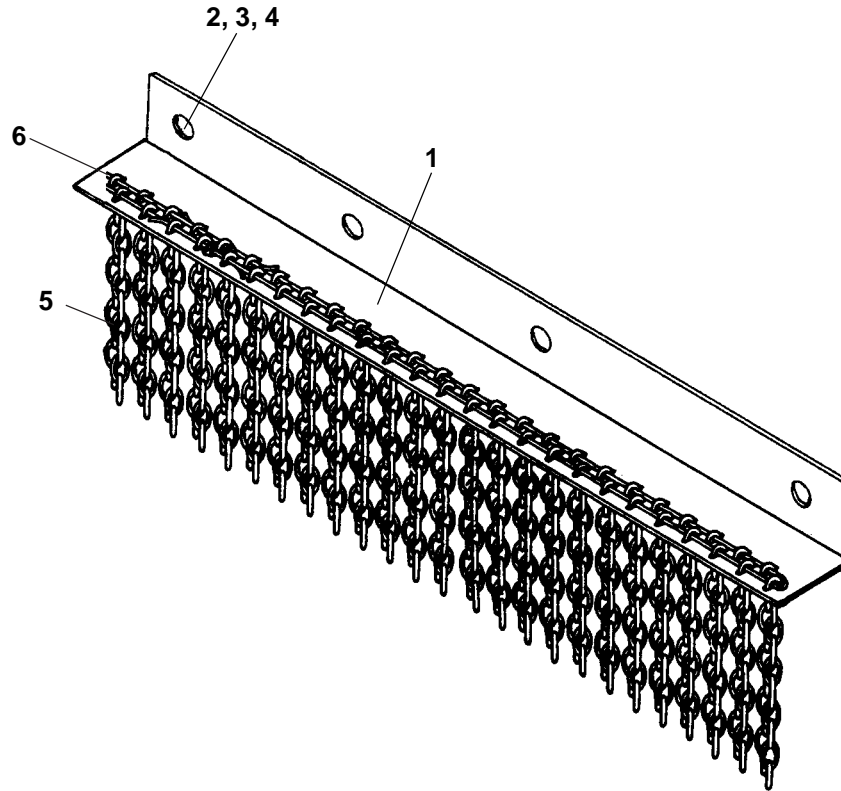
ITEM	Single, Wld. PART NO.	Double, Wld. PART NO.	QTY	DESCRIPTION
	00775980	00755116	1	Frnt. Section LH Assy. (Less Items 2, 3, & 4)
	00775978	00755115	1	Frnt. Section RH Assy. (Less Items 2, 3, & 4)
1	00775981	00755096	1	Bracket LH Only (Less All Components)
	00775979	00755094	1	Bracket RH Only (Less All Components)
2	00022500	00022500	3	Bolt
3	00019700	00019700	6	Flatwasher
4	02957941	02957941	3	Locknut
5	00755090	-----	13	Chain Links (Welded)
	-----	00755090	19	Chain Links (Welded)
6	00959900	00959900	Req	Retaining Rod

* Qty Shown For One Side - Left or Right*

PARTS

CHAINGUARD - FRONT WING

NOTE: Double Chain Assembly Shown.



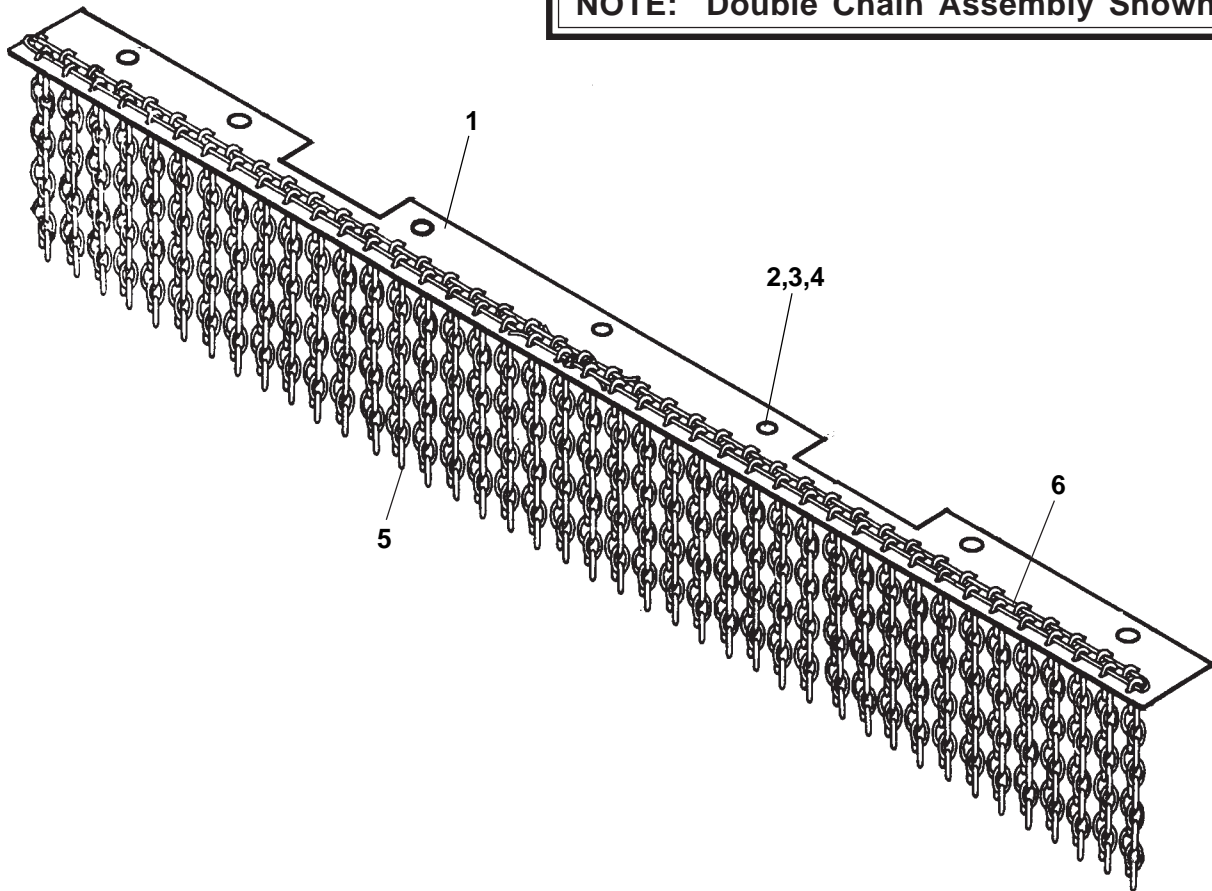
ITEM	Single, Wld. PART NO.	Double, Wld. PART NO.	QTY	DESCRIPTION
1	00775986	00755556	1	Left Wing Front Assy. (Less Items 2, 3, & 4)
	00775988	00755557	1	Right Wing Front Assy. (Less Item 2, 3, & 4)
	00775987	00755551	1	Left Frt. Wing Bracket Only (Less all Components)
	00775989	00755552	1	Right Frt. Wing Bracket Only (Less all Components)
2	00022500	00022500	8	Bolt
3	00019700	00019700	16	Flatwasher
4	02957941	02957941	8	Locknut
5	00751126	-----	62	Chain Links (Welded)
	-----	00751126	80	Chain Links (Welded)
6	00959900	00959900	Req	Retaining Rod

* Qty Shown for One Wing - Left or Right*

CHAINGUARD - CENTER REAR

(Rear-Center Section)

NOTE: Double Chain Assembly Shown.

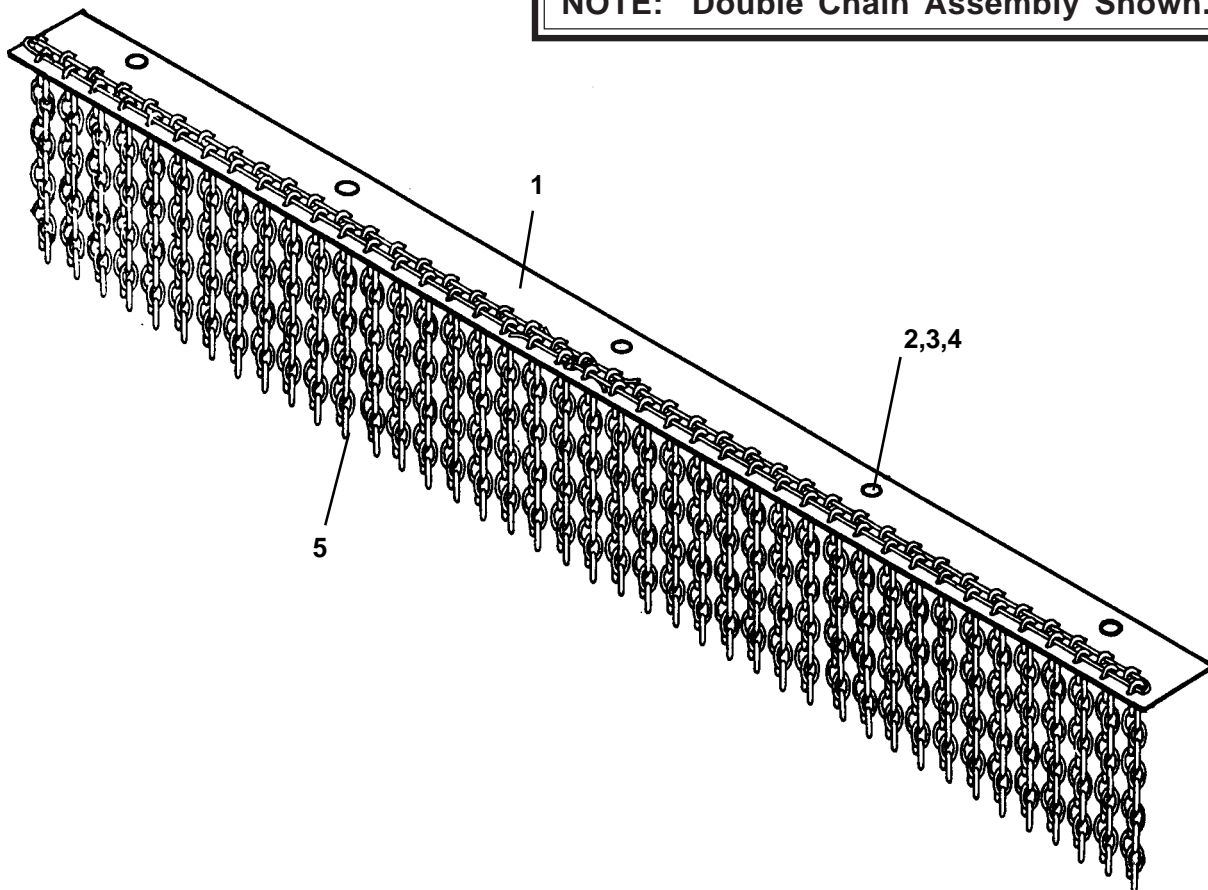


ITEM	Single, Wld. PART NO.	Double, Wld. PART NO.	QTY	DESCRIPTION
	00775982	00755117	1	Center Rear Chain Assy. (Less Items 2, 3, & 4)
1	00775983	00755099	1	Center Rear Bracket Only (Less all Components)
2	00022500	00022500	5	Bolt
3	00019700	00019700	10	Flatwasher
4	02957941	02957941	5	Locknut
5	00751126	-----	53	Chain Links (Welded)
	-----	00751126	68	Chain Links (Welded)
6	00959900	00959900	Req	Retaining Rod

PARTS

CHAINGUARD ASSEMBLY - REAR WING

NOTE: Double Chain Assembly Shown.



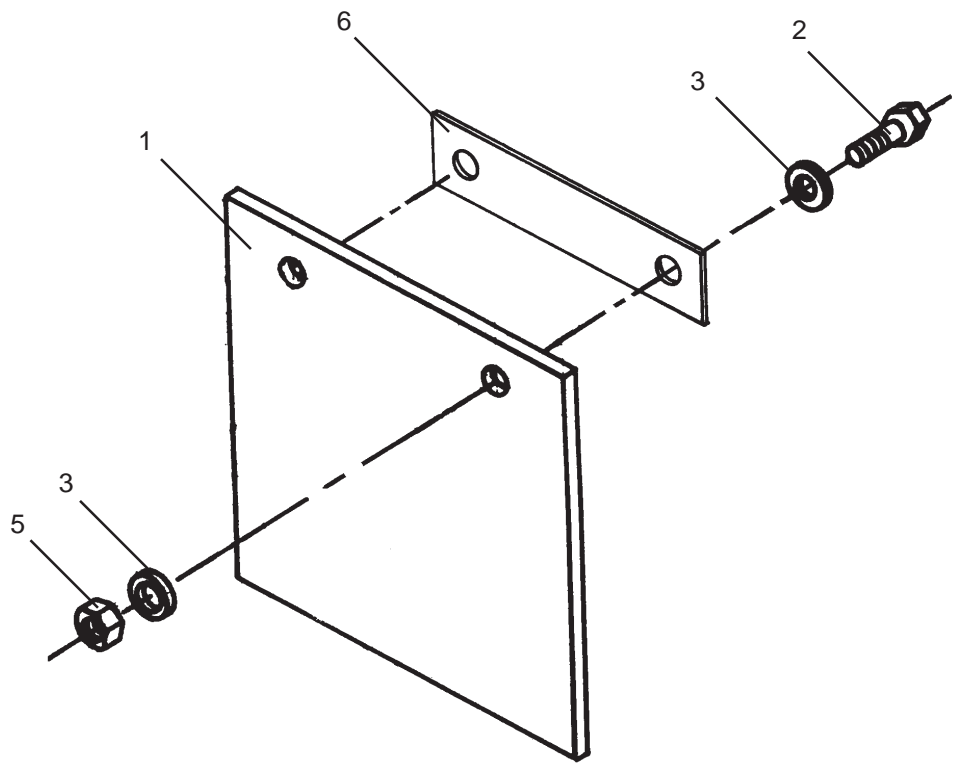
PARTS

ITEM	Single, Wld. PART NO.	Double, Wld. PART NO.	QTY	DESCRIPTION
	00775984	00755119	1	Left or Right Wing Assy. (Less Items 2, 3, & 4)
1	00775985	00755105	1	Left or Right Wing Bracket Only (Less all Components)
2	00022500	00022500	5	Bolt
3	00019700	00019700	10	Flatwasher
4	02957941	02957941	5	Locknut
5	00751126		38	Chain Links (Welded)
		00751126	48	Chain Links (Welded)

* Qty Shown for One Wing - Left or Right*

Double Qty. for Left and Right

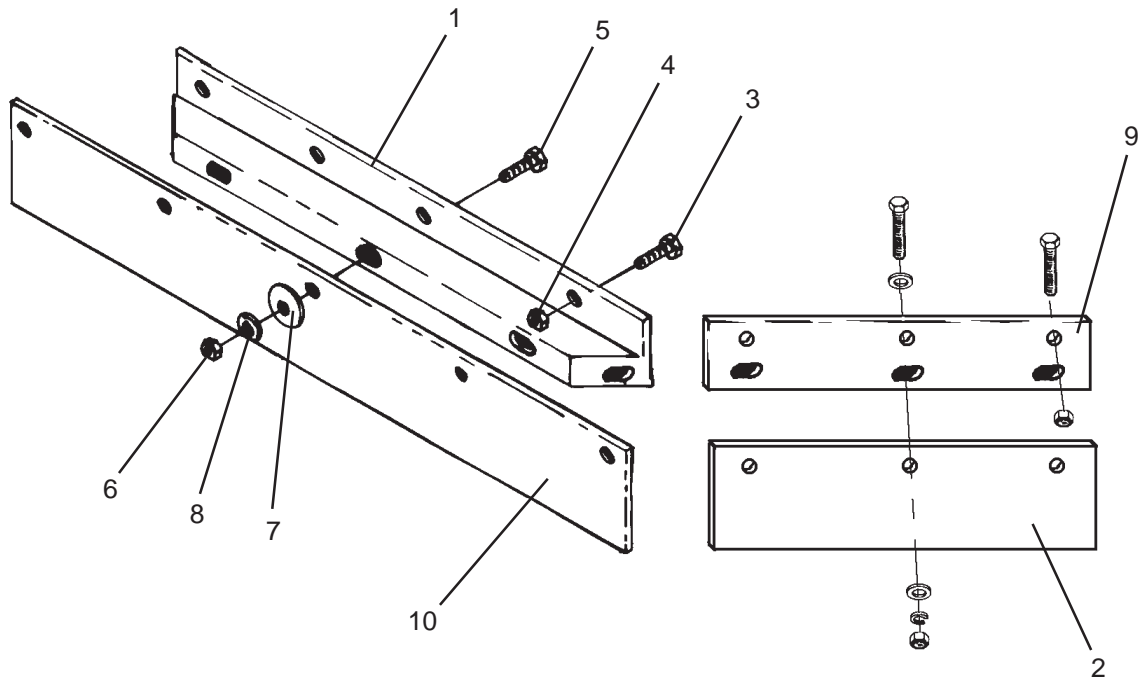
DEFLECTOR - WING



ITEM	PART NO.	QTY	DESCRIPTION
1	00752051	2	Rubber Flap
2	00022500	4	Bolt
3	00019700	8	Flatwasher
5	02957941	4	Nut
6	00751997	2	Flap Strap

PARTS

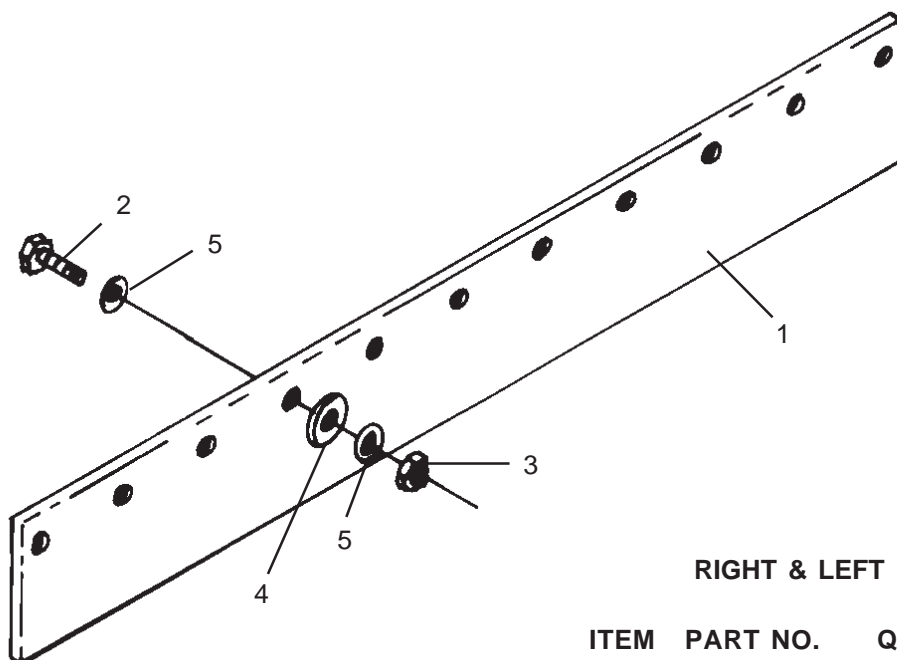
DEFLECTOR - FRONT CENTER SECTION



FRONT CENTER SECTION

ITEM	PART NO.	QTY	DESCRIPTION
1	00758268	1	Bracket, Rubber
2	00758272	1	Panel, Rubber
3	00999314	10	Hex Bolt
4	02957941	10	Nut
5	63066100	11	Bolt
6	00015800	11	Locknut
7	02035800	11	Woodwasher
8	00011100	22	Flatwasher
9	00758269	1	Bracket, Rubber, Left
	00758270	1	Bracket, Rubber, Right (Not Shown)
10	00758271	2	Panel, Rubber

DEFLECTOR - RH & LH WING & REAR CENTER

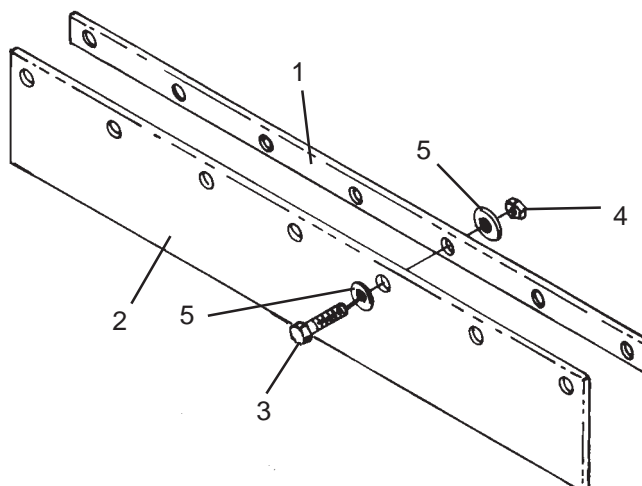


RIGHT & LEFT HAND WING

ITEM	PART NO.	QTY	DESCRIPTION
1	00758275	1	Panel, Rubber
2	63066100	11	Bolt
3	00015800	11	Locknut
4	02035800	11	Woodwasher
5	00011100	22	Flatwasher

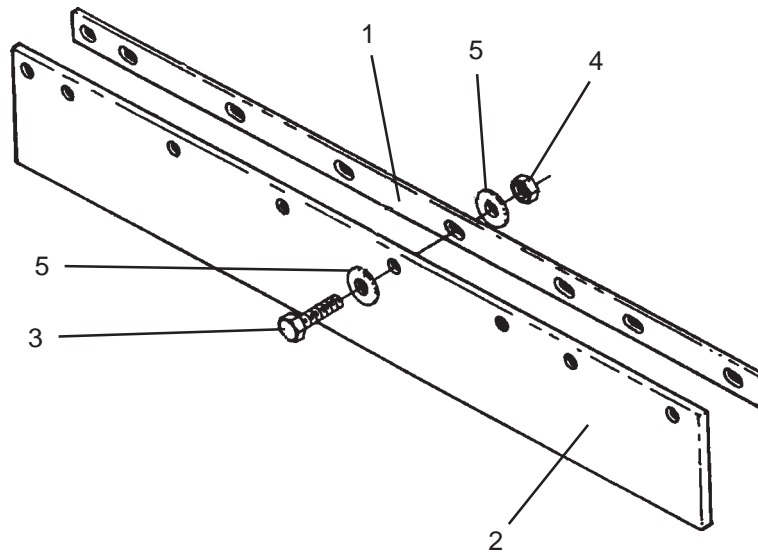
REAR CENTER SECTION

ITEM	PART NO.	QTY	DESCRIPTION
1	00758276	1	Band, Rubber
2	00758273	1	Panel, Rubber
3	63066100	7	Bolt
4	00015800	7	Locknut
5	00011100	14	Flatwasher



PARTS

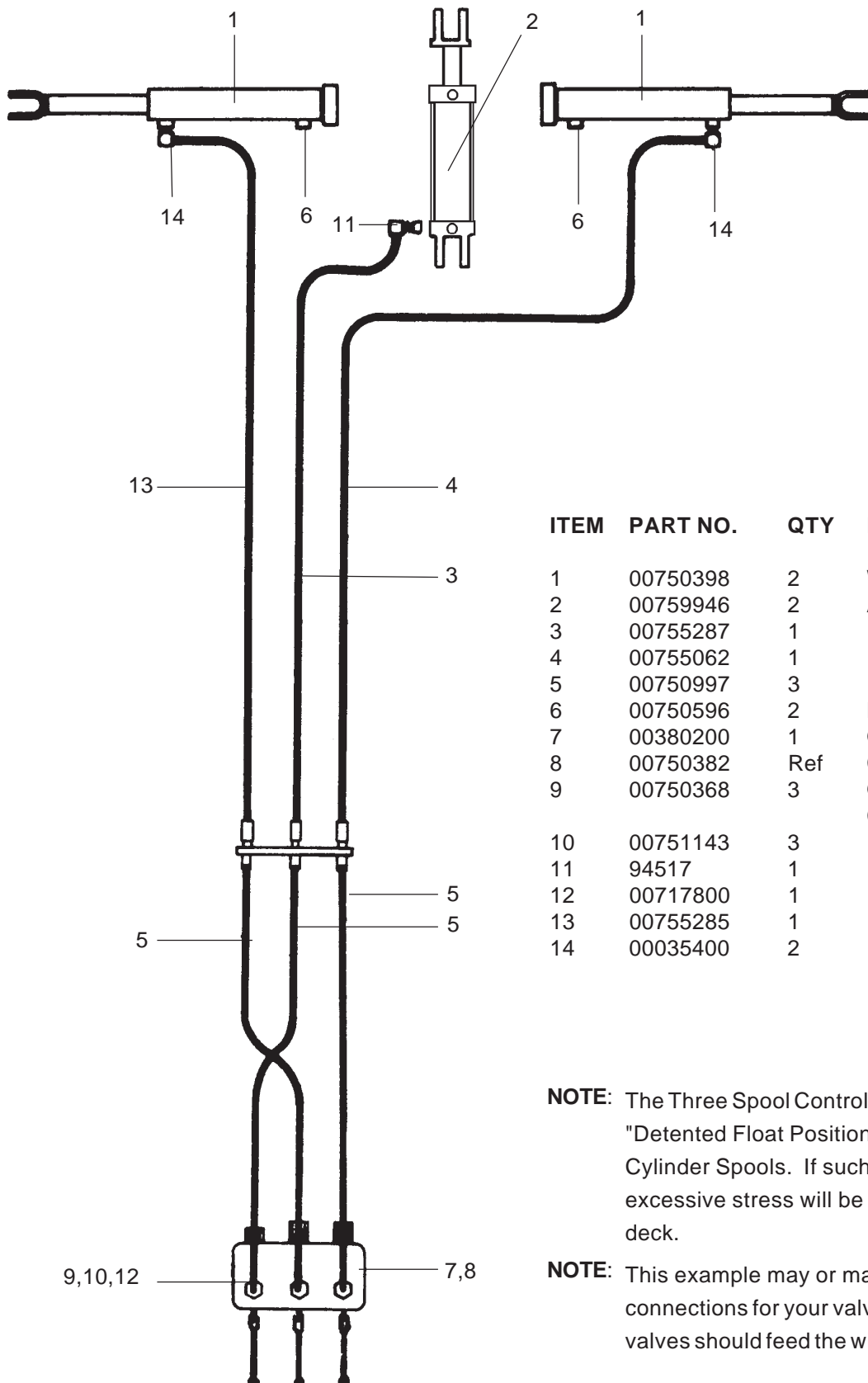
DEFLECTOR - RH & LH REAR WING



RIGHT AND LEFT REAR WING

ITEM	PART NO.	QTY	DESCRIPTION
1	00758267	1	Band, Rubber
2	00758274	1	Panel, Rubber
3	63066100	8	Hex Head Bolt
4	00015800	8	Locknut
5	00011100	16	Flatwasher

HYDRAULIC CIRCUIT AND HOSE PLAN



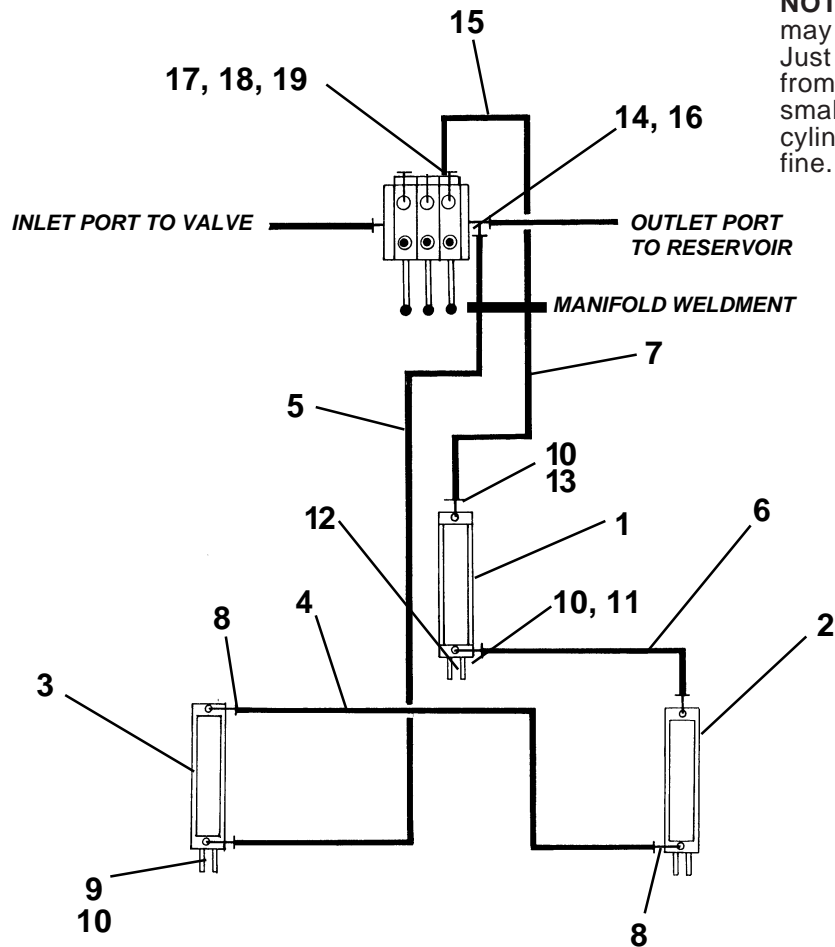
ITEM	PART NO.	QTY	DESCRIPTION
1	00750398	2	Wing Cylinder
2	00759946	2	Axle Cylinder
3	00755287	1	Hose
4	00755062	1	Hose
5	00750997	3	Hose
6	00750596	2	Breather Plug
7	00380200	1	Open Center Valve
8	00750382	Ref	Closed Center Valve
9	00750368	3	Quick Disconnect Coupler
10	00751143	3	Elbow
11	94517	1	Elbow
12	00717800	1	Reducer
13	00755285	1	Hose
14	00035400	2	Elbow

NOTE: The Three Spool Control Valve must have "Detented Float Positions" for the Two Wing Cylinder Spools. If such a valve is not used, excessive stress will be induced into the deck.

NOTE: This example may or may not show the connections for your valve - The "Detented" valves should feed the wings.

PARTS

SCHEMATIC - HYDRAULIC (LEVEL LIFT)

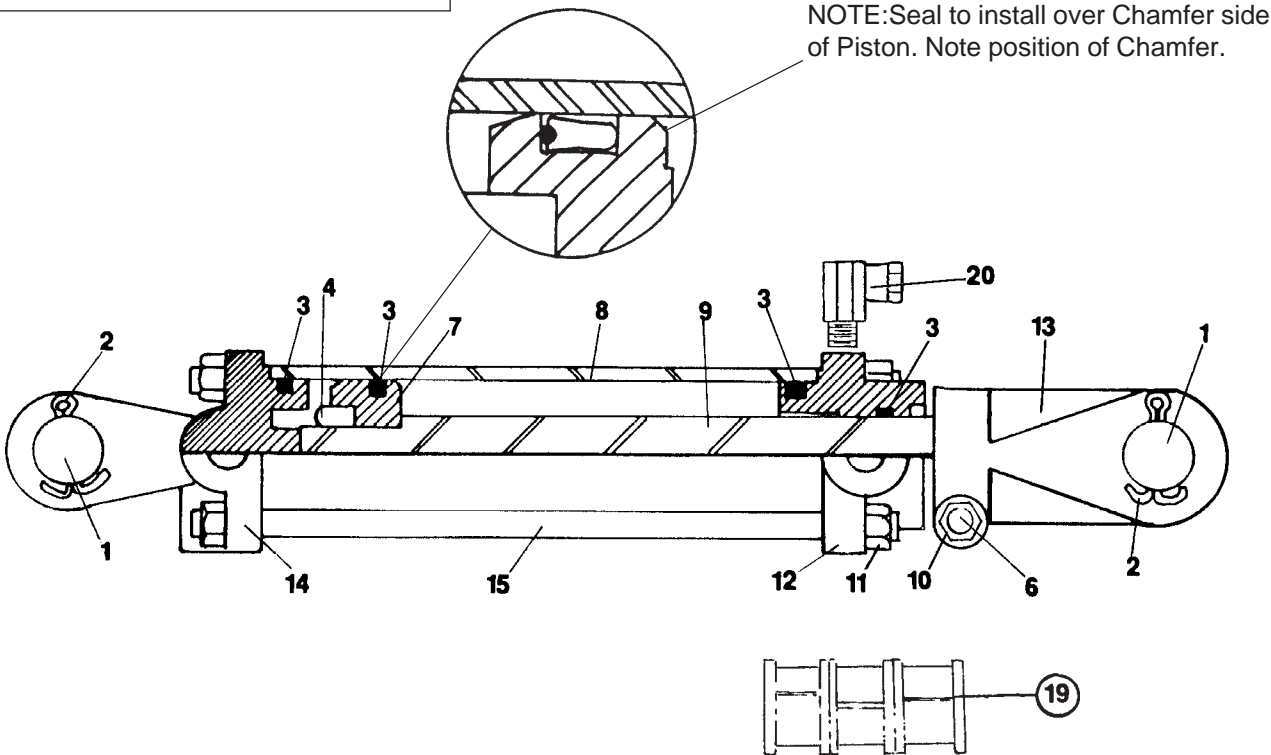


NOTE: This example may or may not be like your system. Just as long as the fluid goes from larger, to middle size to small cylinder and the large cylinder is in the center it is fine.

ITEM	PART NO.	QTY	DESCRIPTION
1	8719	1	Large Hyd. Cylinder
2	8720	1	Medium Hyd. Cylinder
3	8721	1	Small Hyd. Cylinder Level Lift
4	00749466	1	Hose
5	00758952	1	Hose
6	00754101	1	Hose
7	00757894	1	Hose
8	94517	6	Elbow, 90 degree
9	00609200	4	Bolt
10	02030300	6	Locknut
11	00754107	1	Bolt
12	00755234	ref	Control Spacer Kit
13	00760359	1	Bolt
14	00607100	1	Tee
15	00750997	1	Hose
16	72276000	1	Nipple 3/4 Close
17	00751143	1	Elbow
18	00750368	1	Q.D. Coupler
19	00717800	1	Reducer

CYLINDER, HYDRAULIC (CENTER)

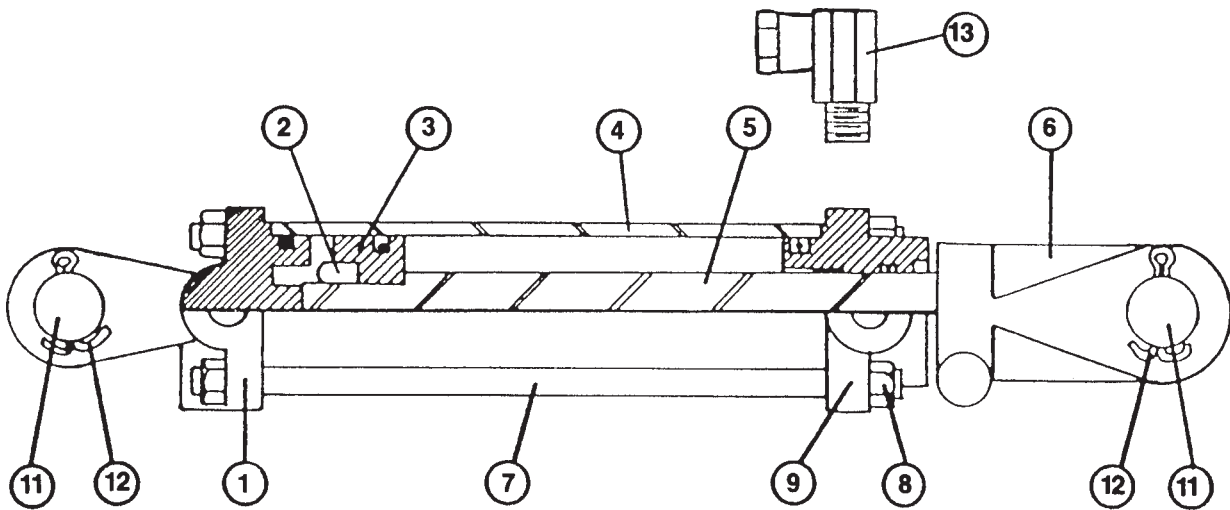
Hydraulic Cylinder P/N 00759946
S/N 15-02111 and after



ITEM	PART NO.	QTY	DESCRIPTION
	00759946	-	Hydraulic Cylinder Assy
1	8354	2	Pin, Hyd. Cylinder
2	163016	2	Cotter Pin
3	00760199	1	Seal Kit
4	4675	1	Piston Nut
5	00750208	1	Breather Plug (Not Shown)
6	4427	1	Bolt
7	00760661	1	Piston
8	00760194	1	Tube, Cylinder
9	00760200	1	Rod Cylinder
10	4378	1	Locknut
11	02716500	8	Locknut
12	00760197	1	Head, Cylinder
13	8754	1	Outer Clevis
14	00760196	1	Base, Cylinder
15	00760202	4	Tie Rod, Cylinder
19	00755234	1	Control Spacer Kit
20	94517	1	Elbow

PARTS

CYLINDER, HYDRAULIC (LEVEL LIFT KIT)

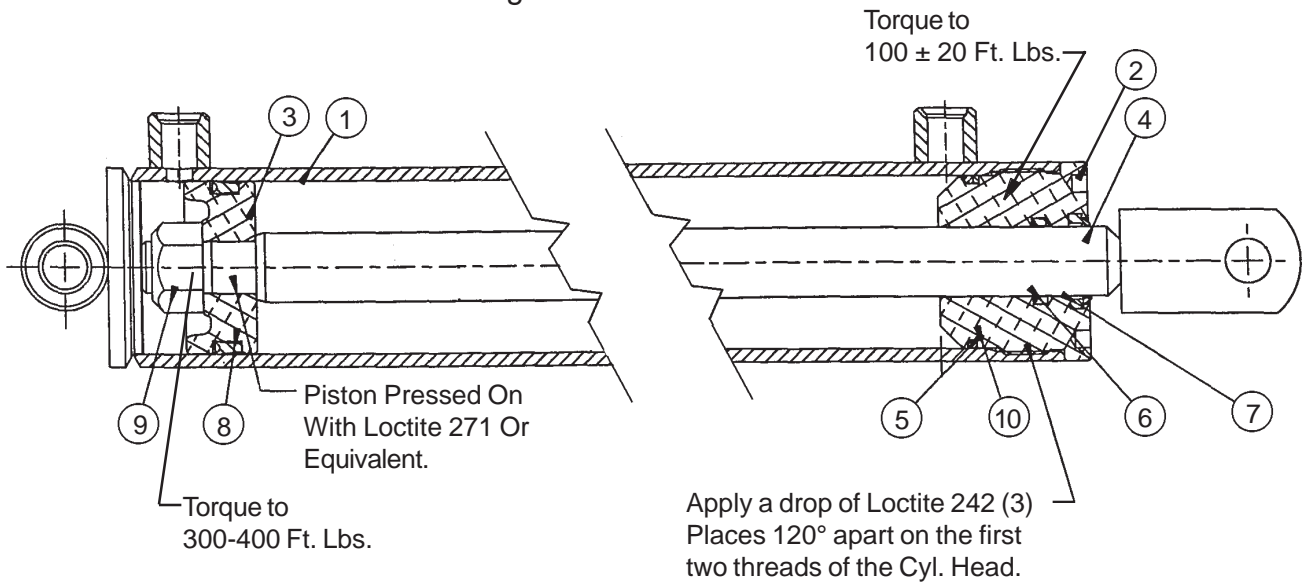


ITEM	3-1/2 x 8 PART NO.	3-1/4 x 8 PART NO.	3x8 PART NO.	QTY.	DESCRIPTION
	8719			1	Center Cylinder
		8720		1	Wing Axle Cylinder
			8721	1	Wing Axle Cylinder
1	8772	8778	8784	1	Base Clevis Cap
2	4705	4705	4675M	1	Piston Nut
3	8768	8775	8780	1	Piston
4	8769	8776	8781	1	Tube
5	4706	4706	8753	1	Piston Rods
6	8754	8754	8754	1	Rod Clevis
7	8773	8773	8785	4	Tie Rod
8	4689	4689	02816800	8	Nut
9	8774	8779	8786	1	Head
10	8764	8765	8766	1	Seal Kit
11	8354	8354	8354	2	Pin, Clevis
12	00606000	00606000	00606000	4	Cotter Pin
13	94514			4	Swivel Elbow

PARTS

CYLINDER ASSEMBLY - WING

00750398 is no longer available. We are substituting 00750398B.
Retain this Parts Listing for Future use.

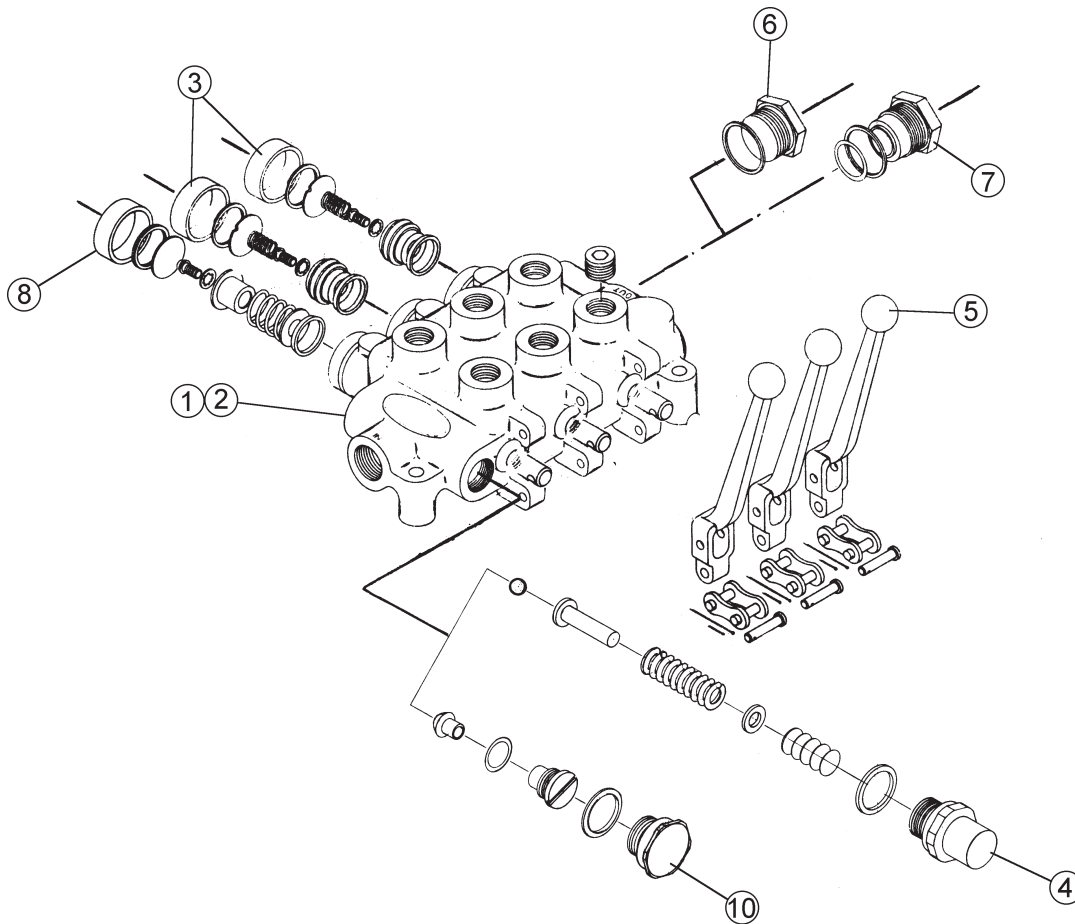


ITEM	PART NO.	QTY	DESCRIPTION
	00750398B	-	Cylinder Assy
1	02978211	1	Tube Weldment
2	02978212	1	Cyl. Head
3	02978213	1	Piston
4	02978214	1	Rod Weldment
*5	-----	1	O-Ring
*6	-----	1	Seal Hallite
*7	-----	1	Seal, Wiper Rod
*8	-----	1	Seal, Piston Ring
9	5JRC12160	1	Hex Nut
*10	-----	1	Seal

* Consist of Seal Kit 02979053 Which is Not Illustrated

PARTS

VALVE, HYDRAULIC

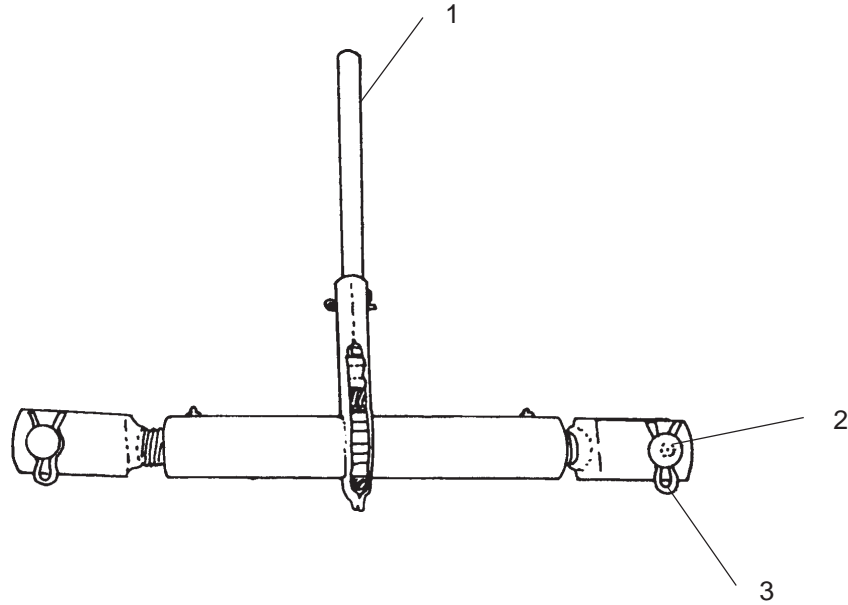


NOTE: The Three Spool Control Valve must have "detented float positions" for the Two Wing Cylinder Spools. If such a valve is not used, excessive stress will be induced into the deck and Cylinder Rods.

PARTS

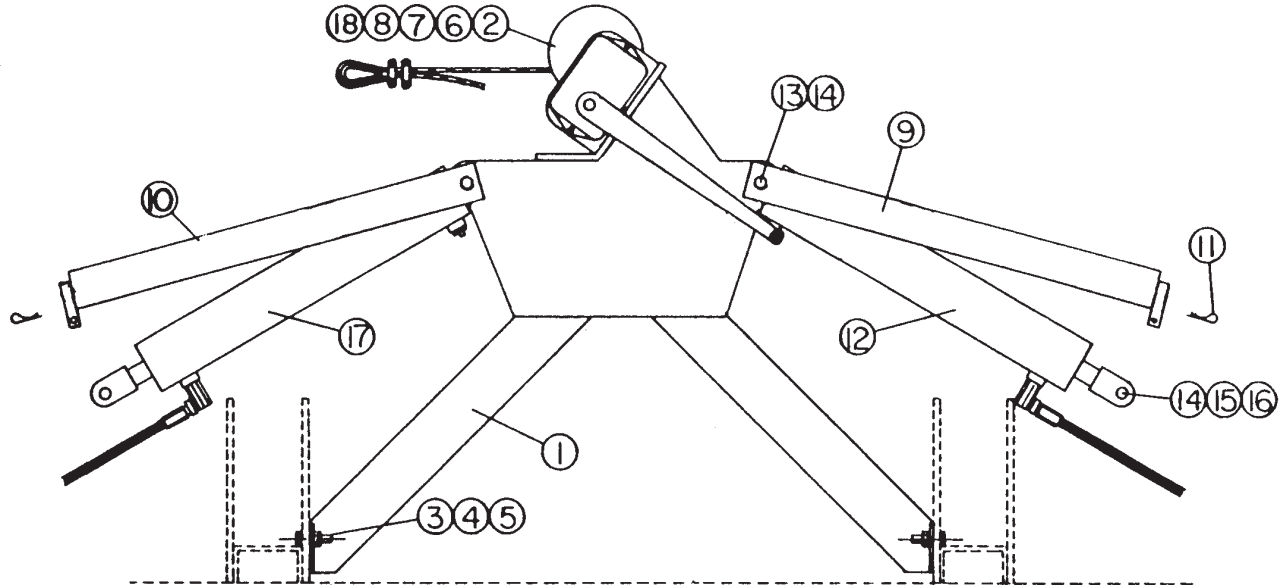
ITEM	PART NO.	CLOSED CENTER QTY	OPEN CENTER QTY	DESCRIPTION
1	00380200	-	1	Open Center Valve
2	00759833	1	-	Closed Center Valve
3	00751139	3	2	Detent Repair Kit
4	00751140	-	1	High Pressure Relief Valve Kit
5	00751142	3	3	Handle Assembly
6	00751141	-	1	Plug (open center)
7	00751002	1	-	Closed Center Plug
8	00751358	-	1	Repair Kit-Spring Return to Center
9	00751556	1	1	Spool Seal Kit for Item #1 or #2 (Not Shown)
10	00752057	1	-	Non-Relief Valve Plug (Closed Center)

RATCHET JACK ASSEMBLY



ITEM	PART NO.	QTY	DESCRIPTION
	00554600	-	Ratchet Jack Assembly
1	00554600	1	Ratchet Jack-Complete
2	00748714	2	Pin
3	00748715	4	Clip

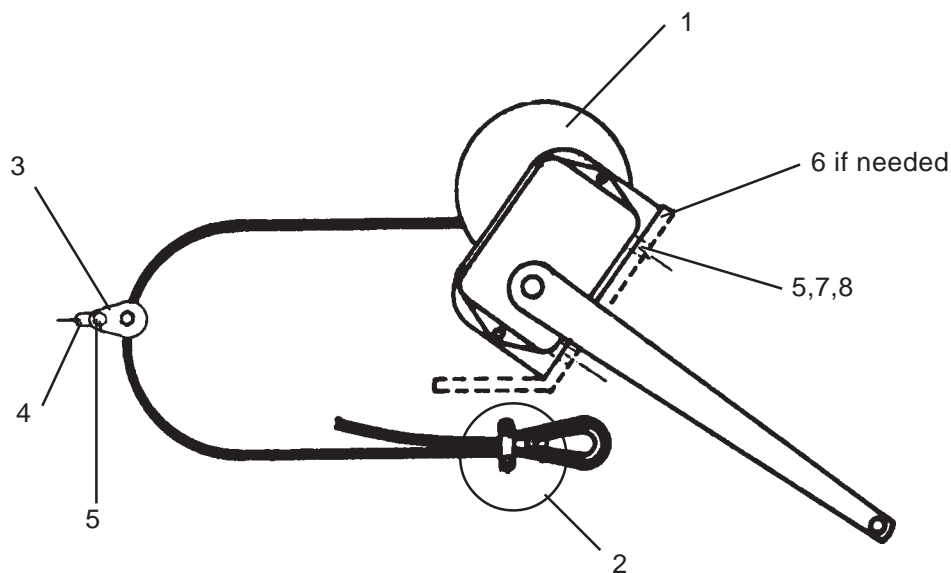
WINCH STAND ASSEMBLY



ITEM	PART NO.	QTY	DESCRIPTION
1	00755028	1	Winch & Cylinder Support Stand
2	00754019	1	Winch Assembly
3	00000200	4	Nut
4	00003901	4	Lockwasher
5	02892100	4	Bolt
6	00015800	2-REF	Locknut
7	00011100	2-REF	Flatwasher
8	00011400	2-REF	Bolt
9	00750578	1	Right Retaining Arm
10	00751131	1	Left Retaining Arm
11	00008900	2	Stay Pin
12	00750585	opt	Right Wing Cylinder Kit
13	00059000	2	Bolt
14	00695100	4	Nut, Toplock 5/8 NC PLC
15	00750311	2	Bolt
16	00001400	4	Flatwasher
17	00750998	opt	Left Wing Cylinder Kit

PARTS

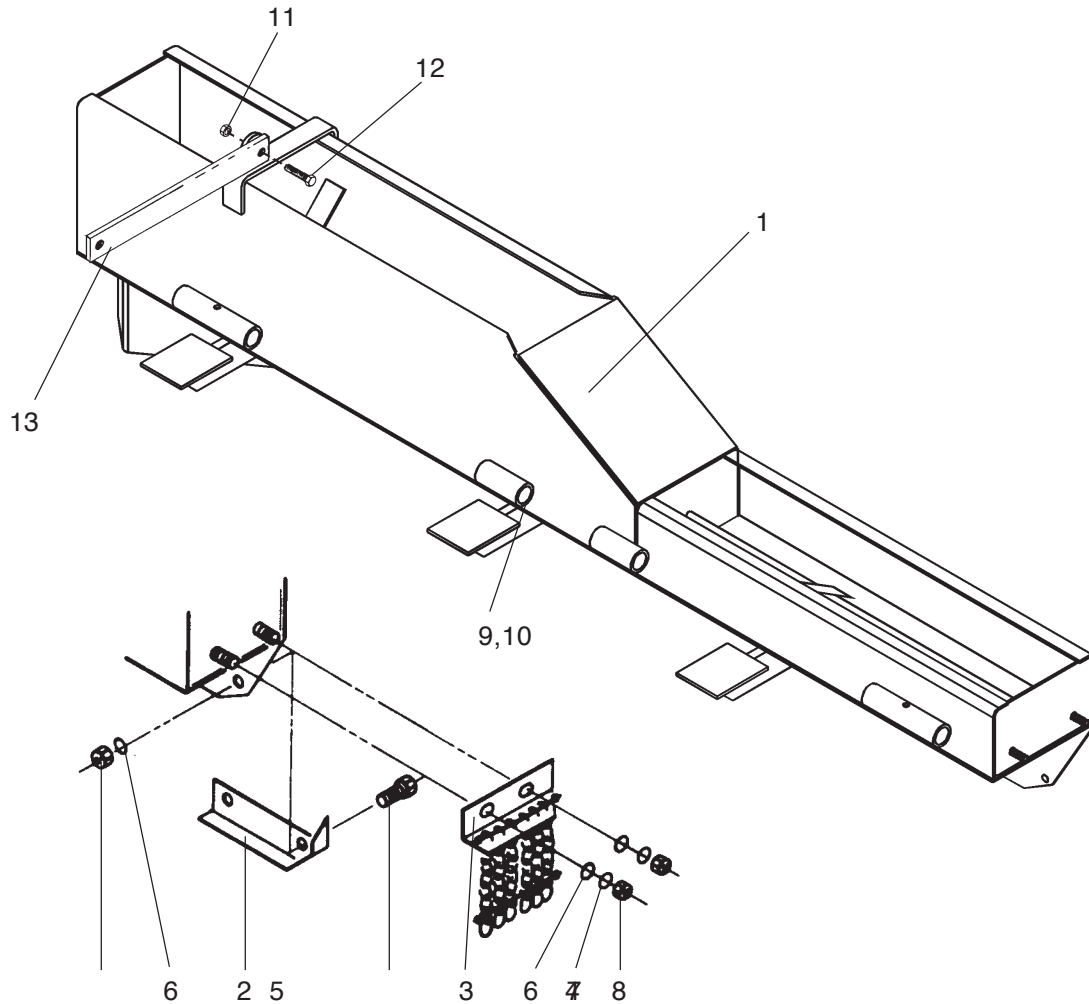
WINCH ASSEMBLY



ITEM	PART NO.	QTY	DESCRIPTION
	00754019	-	Winch Assembly
1	00750936	1	Winch
2	00000801	1	Winch Cable Assembly
	00000800	1	Cable
	02024600	1	Cable Thimble
	00001000	2	Cable Clamps
3	00753655	1	Cable Pulley & Blocks
4	00753656	1	Chain
5	00015800	3	Locknut
6	00753657	1	Cable Attach. Weld
7	00011400	2	Bolt
8	00011100	2	Flatwasher

PARTS

COUNTERWEIGHT ASSEMBLY - (AG10 ONLY)

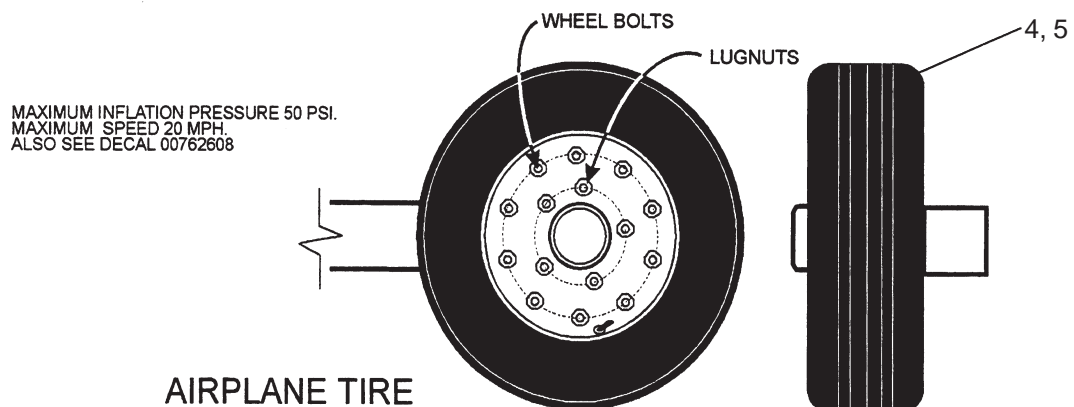
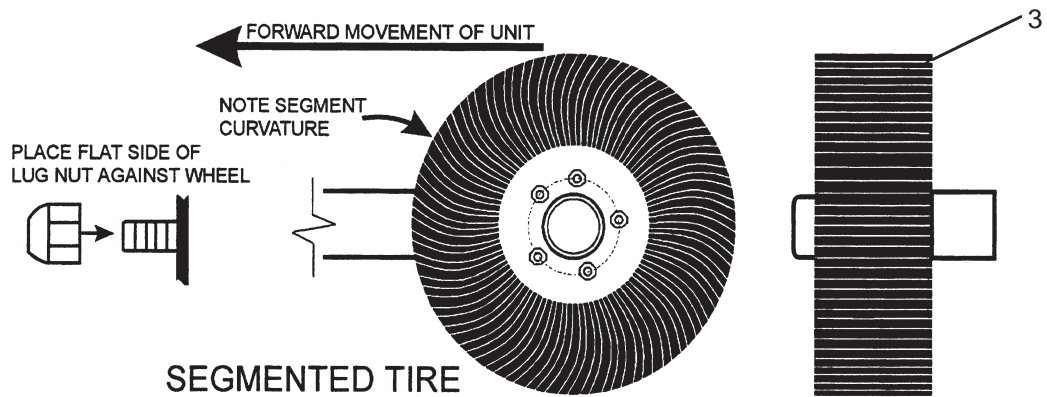
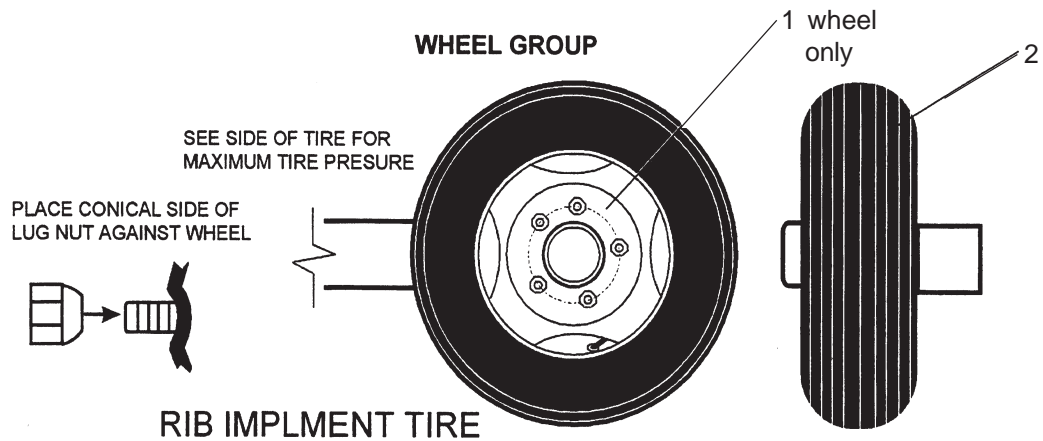


ITEM	PART NO.	QTY	DESCRIPTION
1	00755087	1	Left Hand Counterweight Weldment (Shown Above)
	00755086	1	Right Hand Counterweight Weldment (Opposite)
2	00750989	1	Left Hand Skid Shoe Weldment (Shown Above)
	00750993	1	Right Hand Skid Shoe Weldment (Opposite)
3	00751203	1	Left Hand Chainguard Assembly (Shown Above)
	00751161	1	Right Hand Chainguard Assembly (Opposite)
4	00749171	2	Bolt
5	02716500	2	Nut
6	00002700	4	Flatwasher
7	00001300	2	Lockwasher
8	00001800	2	Locknut TLM 1/2 NC PLC
9	00751042	Ref	Hinge Pin (Not Shown)
10	00751107	Ref	Retaining Roll Pin (Not Shown)
11	00695100	1	Nut,Toplock 5/8 NC PLC
12	00752658	1	Bolt
13	00770289	1	Lock Up Arm

PARTS

WHEEL AND TIRE ASSEMBLY

ITEM	PART NO.	DESCRIPTION
1	00008700	Wheel, 15 x 5.00 DC (Wheel Only)
2	00749698	Rib Implement - Tire and Wheel Complete
3	00025200	Laminated Puncture-Proof Tire & Wheel Assembly (21" OD) 6.00 x 9
4	00749700	Used 14" Airplane Tire and Wheel
5	00764721	Recapped Airplane Tire and Wheel



PARTS

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. NOTWITHSTANDING THE ABOVE LIMITATIONS AND WARRANTIES, MANUFACTURER'S LIABILITY HEREUNDER FOR DAMAGES INCURRED BY PURCHASER OR OTHERS SHALL NOT EXCEED THE PRICE OF THE GOODS.
- 3.04. NO ACTION ARISING OUT OF ANY CLAIMED BREACH OF THIS WARRANTY OR TRANSACTIONS UNDER THIS WARRANTY MAY BE BROUGHT MORE THAN TWO (2) YEARS AFTER THE CAUSE OF ACTION HAS OCCURRED.

4. MISCELLANEOUS.

- 4.01. 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
Post Office Drawer 549
Seguin, Texas 78156
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.

-
- ☒ **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.**

