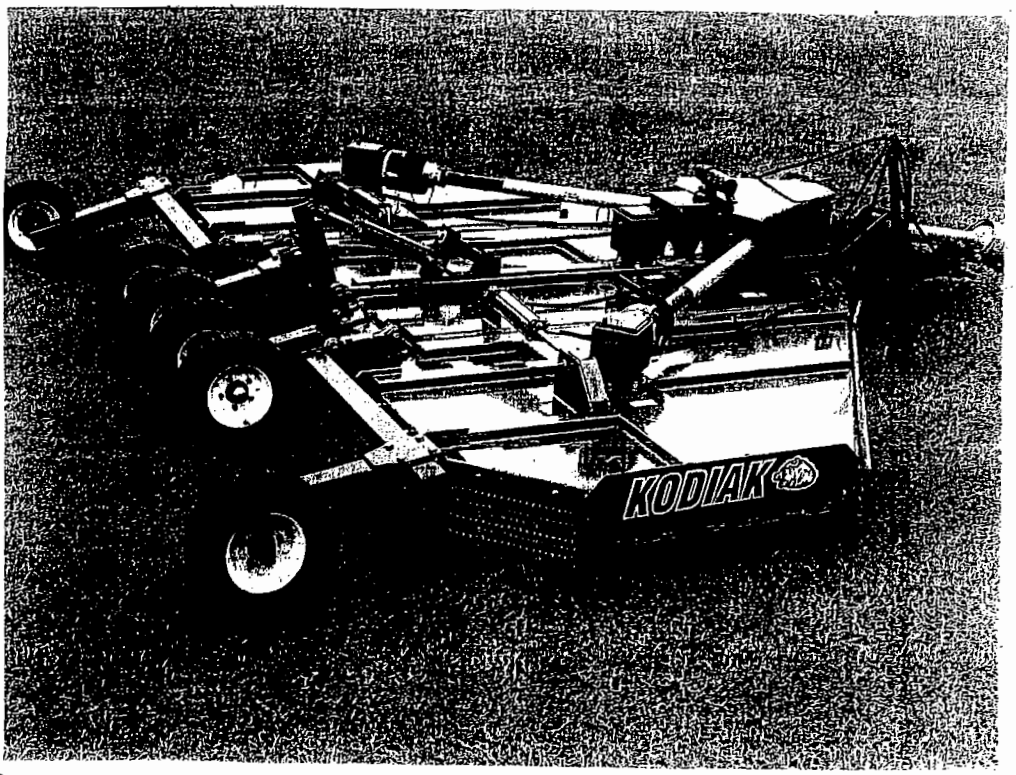
OWNER'S MANUAL & PARTS LIST

KODIAK 3615FW ROTARY CUTTER



KODIAK MANUFACTURING, INC.

8849 Candies Creek Ridge Road • Charleston, TN 37310 • (423) 336-2390 • Fax (423) 336-8805

TO THE OWNER :*(FOR YOUR RECORDS)*

Read this manual before operating your KODIAK cutter. The information presented will prepare you to do a better and safer job. Keep this manual handy for ready reference. Require all operators to read this manual carefully and become acquainted with all the adjustment and operating procedures before attempting to operate. Replacement manuals can be obtained from your dealer or by calling **423-336-2390** in the USA.

The cutter you have purchased has been carefully engineered and manufactured to provide dependable and satisfactory use. Like all mechanical products, it will require cleaning and upkeep. Lubricate the unit as specified. Observe all safety information in this manual and safety decals on the cutter and tractor.

For service, your authorized Kodiak dealer should have trained mechanics, genuine Kodiak service parts, and the necessary tools and equipment to handle all your needs.

Use only genuine Kodiak service parts. Substitute parts will void the warranty and may not meet standards required for safe and satisfactory operation. For your records, fill in the following:

DATE PURCHASED: _____
DEALER: _____

MODEL: _____
SERIAL NUMBER_____

Provide this information to your dealer to obtain correct repair parts.

SAFETY ISSUE

VERY IMPORTANT!!
TO PREVENT SERIOUS INJURY OR DEATH!

When mower is received from factory wings are in an upright position. At this point wings will free fall because of air in the hydraulic system. DO NOT unstrap cylinder locks until wing is hooked to either hoist or forklift too safely lower one wing at a time. STAND CLEAR from wings when performing this operation. Then purge air from hydraulic system (SEE ASSEMBLEY).

DISTRIBUTOR AND OR DEALER
DATE_____
SIGNATURE_____

DISTRIBUTORS MAKE SURE YOUR DEALERS ARE AWARE OF THIS ISSUE. PLEASE ASK THEM TO SIGN AND RETURN THIS SHEET FOR YOUR RECORDS WHEN THE CUTTER IS DELIVERED!

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SAFETY FIRST

YOU MUST READ ALL SAFETY INSTRUCTIONS TO AVOID INJURY OR DEATH!!

YOU are responsible for the SAFE operation and maintenance of your Kodiak Rotary Cutter. YOU must ensure that you and anyone else, who is going to operate, maintain or work around the cutter be familiar with the operating and maintenance procedures and related SAFETY information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices that should be adhered to while operating the cutter.

The best safety device is an informed, careful operator. Remember, YOU are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program.

- Rotary cutter owners must give operating instructions to operators or employees before allowing them to operate the cutter, and at least annually thereafter per OSHA (Occupational Safety and Health Administration) regulation 1928.57.
- The most important safety device on this equipment is a SAFE operator. It is the operator's responsibility to read and understand ALL Safety and Operating instructions in the manual and to follow these. All accidents can be avoided.
- In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel and review instructions frequently with existing workers. A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible serious injury or death.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment and also void warranty.

THINK SAFETY! WORK SAFELY!

WARNING

Do not walk under raised wings for any reason. They can fall with out warning.

DANGER

Keep hands and feet clear of mower while tractor engine is running. Failure to do so could result in serious injury or death from rotating blades or PTO shaft.

WARNING

Always keep the blade carrier and blade bolts tight. Loose blades can easily pierce a quarter inch steel plate and/or seriously injure personnel.

WARNING

Always keep all shields and chain guards furnished with machine in place and I good working order. Failure to do so could result in operator being struck by high speed rotating blades, thrown object or being entangled in rotating parts, resulting in injury to personnel.

CAUTION

Before operating the rotary cutter, carefully inspect the area on which the rotary cutter will be used. Be sure to remove all objects that might be thrown by the rotating blades. Also, note any gullies, ditches, or rough terrain when you are inspecting the area.

DANGER

Wear personal protective equipment such as, but not limited to, protection for eyes, ears, feet, hands and head when operating or repairing the equipment. Do not wear loose clothing or jewelry that may catch on equipment moving parts.

DANGER

Always disengage driveline and block machine before performing any maintenance work on machine. Failure to do so could result in serious injury.

DANGER WARNING CAUTION

Only the operator should ride on the tractor and no one should ride on the mower. Persons riding on tractor or mower could easily fall into the path of the tractor or mower resulting in serious injury or death.

CAUTION

Disengage the PTO, and turn off the tractor engine before leaving the tractor.

CAUTION

Check driveline connections to cutter and tractor before operation. Be sure QD locks are operating and locked. Failure to do so could result in driveline becoming disconnected from the tractor and cutter. Personnel could be struck by fast rotating driveline resulting in serious injury.

CAUTION

Cutter blades should be replaced in pairs to maintain balance and avoid vibration. Failure to do so could result in damage to machine.

DANGER

Use extreme caution when operating on hillside. Cutters are more likely to throw objects when operating on hillside and tractors can easily tip over if dropped in hole. Either could result in serious injury to operator.

CAUTION

Always disengage PTO before transporting cutter. Failure to do so could result in persons being struck by loose objects thrown by rotating blades. Thrown objects from rotating blades can strike with killing force.

CAUTION

Operate tractor PTO at 540 rpm, or 1000 rpm on 1000 rpm cutters. Do not exceed.

WARNING

Always relieve pressure on hydraulic lines before disconnecting. Failure to do so could result in escaping fluid under pressure penetrating the skin causing serious injury. Use a piece of cardboard or wood rather than hands to search for hydraulic leaks.

WARNING

Keep mower deck clear of debris. There is a risk of fire when dry material accumulates and contacts heat generated from rotating components.

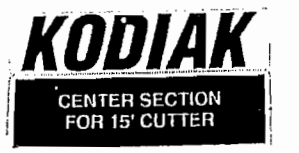
!!!!!SAFETY AT ALL TIMES!!!!!

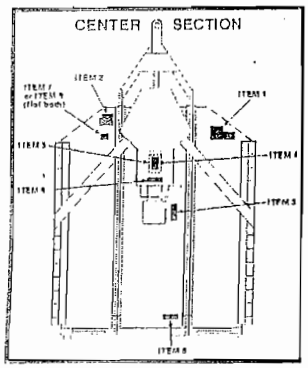
REFER TO THE "SAFETY LABEL" SECTION, READ ALL INSTRUCTIONS NOTED ON THEM.

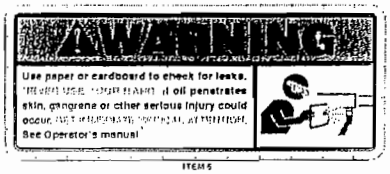
- OPERATOR SHOULD BE FAMILIAR WITH ALL FUNCTIONS OF THE UNIT.
- OPERATE IMPLEMENT FROM THE DRIVER'S SEAT ONLY.
- DO NOT LEAVE TRACTOR OR IMPLEMENT UNATTENDED WITH ENGINE RUNNING.
- DISMOUNTING FROM A MOVING TRACTOR COULD CAUSE SERIOUS INJURY OR DEATH.
- DO NOT STAND BETWEEN THE TRACTOR AND IMPLEMENT DURING HITCHING.
- KEEP HANDS, FEET, AND CLOTHING AWAY FROM POWER-DRIVEN PARTS.
- WEAR SNUG FITTING CLOTHING TO AVOID ENTANGLEMENT WITH MOVING PARTS.
- CLEAR THE WORK AREA OF OBJECTS WHICH MIGHT BE PICKED UP AND THROWN BY MOWER.
- STAND CLEAR OF WING (S) WHEN RAISING OR LOWERING
- WATCH OUT FOR WIRES, TREES, ETC., WHEN RASING IMPLEMENT. MAKE SURE ALL PERSONS ARE CLEAR OF WORKING AREA.
- TURNING TRACTOR TO TIGHT MAY CAUSE IMPLEMENT TO RIDE UP ON WHEELS. THIS COULD RESULT IN INJURY OR EQUIPMENT DAMAGE.

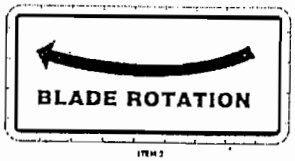
SAFETY DECALS

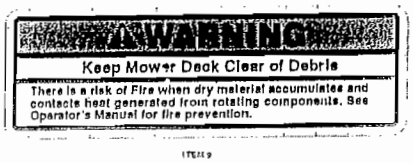
To ensure safe operation, KODIAK, supplies safety decals on all products manufactured. Because damage can occur to safety decals either through shipment, use or reconditioning, KODIAK will, upon request, provide safety decals for any of our products in the field at no charge. Contact your authorized KODIAK dealer for more information.

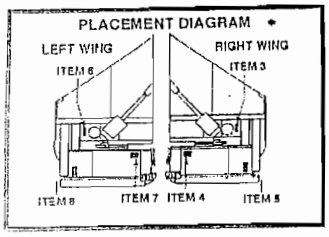












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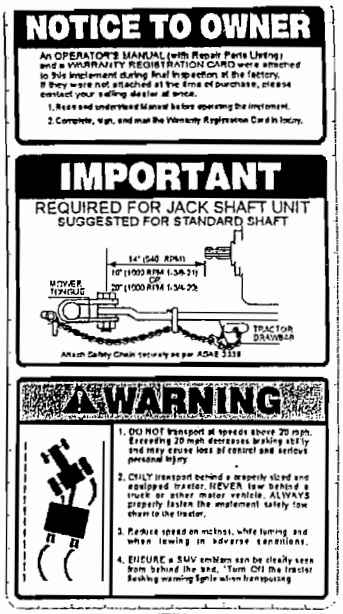

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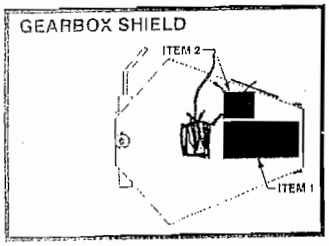

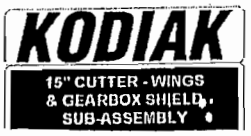

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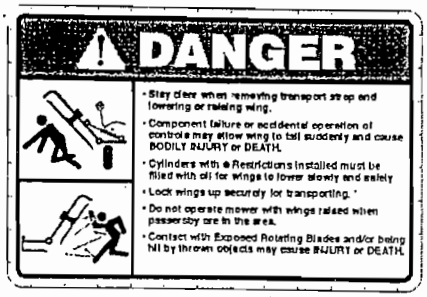
ITEM 3

ITEM 6



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GENERAL INFORMATION AND SPECIFICATIONS

We are pleased to have you as a KODIAK MFG INC customer. Your 15' Kodiak rotary cutter has been designed to give full service with minimum down time. This manual is provided to give you the necessary operating and maintenance instructions for keeping your rotary cutter in top working condition. Please read this manual thoroughly. Understand what each control is for and how to use it. Observe all safety precautions decaled on the machine and noted throughout the manual for safe operation of cutter. If you need further assistance or more information, contact your Kodiak dealer.

NOTE

ALL REFERENCES MADE IN THIS MANUAL TO RIGHT, LEFT, FRONT, REAR, TOP OR BOTTOM ARE AS VIEWED FACING THE DIRRECTION OF FORWARD TRAVEL WITH IMPLEMENT PROPERLY ATTACHED TO TRACTOR.

The 15' Kodiak rotary cutter consists of a center unit with two variable position wings together having a cutting width of 15 feet. Wing operating angles and machine cutting height are independently controlled using hydraulic cylinders. A self-leveling linkage maintains a level cutter at all cutting heights. Power from the tractor PTO is split at the power divider gearbox and supplied to each of the blade gearboxes. Each blade gearbox has two free-swinging uplift blades designed to cut grass, corn stalks and light brush. Free-swinging blades reduce the shock impact when a stationary object is hit. Slip clutches are installed on each gearbox for additional protection. Front and rear chain guards are included as standard equipment.

SPECIFICATION

Length----------186"
Cutting height----------2-15 –in.
Cutting capacity----------4 in. dia. Varies according to cutting conditions.
Blades----------1/2 x 4 in.
Blade overlap----------6-1/2 in.
Blade tip speed----------15,342 FPM @ 540 PTO RPM
Gearbox horsepower----------Splitter 235 HP. Spindle 190 HP.
Minimum HP. Required----------60 HP.
Wing angles---------- 90 degree up to 22 degree down
Hitch ---------- swivel pivot
Gearbox Input Shafts---------- 1-3/4"
Skid Shoes---------- Replaceable
Side Skirt ---------- ¼" thick
Chain Guards---------- Standard front and rear
Input PTO ---------- C.V. CAT. 5
Wing Drive PTO---------- CAT. 4
Wheel Type---------- 5 lug STD Laminated

DEALER PREPARATION CHECK LIST

TO THE DEALER:
The cutter assembly and proper hookup to the tractor is the responsibility of the DEALER. Read manual instructions and safety rules. Make sure all items on the Pre-delivery and Delivery Check Lists are completed before releasing equipment to the owner.

The following check list should be completed before delivery of machine. (*Use the operator's manual as a guide.)*

- 1. Assembly completed.
- 2. Gearbox filled with oil.
- 3. All fittings lubricated.
- 4. All shields in place and in good condition.
- 5. Slip clutches have been checked for proper operation.
- 6. All decals in place and readable. (see decal page)
- 7. Overall condition good. (1.e. paint , welds)
- 8. Operators manual has been delivered to owner and he has been instructed on the safe and proper use of the cutter.

SAFTEY CHAINS AND TOW CHAIN ARE STANDARD EQUIPMENT SHOULD THE DEALER OR PURCHASER DELETE EITHER.

Explanation: _____

WARNING

FOR NON-AGRICULTURAL USE, OSHA , ASAE , SAE AND ANSI STANDARDS REQUIRE THE USE OF CHAIN GUARDS OR OTHER PROTECTIVE GUARDS AT ALL TIMES, KODIAK STRONGLY RECOMMENDS THE USE OF SUCH GUARDS FOR AGRICULTURAL USES AS WELL, TO REDUSE THE RISK OF PROPERTY DAMAGE, SERIOUS BODILY INJURY OR EVEN DEATH FROM OBJECTS THROWN OUT BY OR FROM CONTACT WITH THE CUTTING BLADES.

*Dealer's Signature*_____
*Purchaser's Signature*_____

THIS CHECKLIST TO REMAIN IN OWNER'S MANUAL

It is the responsibility of the dealer to complete the procedures listed above before delivery of this implement to the customer.

ASSEMBLY INSTRUCTIONS

Choose a level area to arrange the parts conveniently. Assemble parts, do each step loosely to insure fit. Use lock washers unless a lock nut is called for. Tighten hardware after parts are installed. The following steps are given to minimize the need for adjustment after assembly. *Remember that* ***left and right*** *are determined by standing at the rear of cutter and facing it.*

CUTTER DECK

1) **Place the center cutter deck in the middle of assembly area and block approximately 15" off the ground.**
2) **Align one wing with center deck. Support wing at the same height as center deck making sure wing is stable. Deck should be level from left to right and front to back.**
3) **With hinge points aligned end to end, drive hinge rod through hinge points going from front to rear. Secure with collar and bolt and nut.**
4) **Repeat steps 2 & 3 for the remaining wing.**

CENTER FRAME WHEEL LIFT ASSEMBLY

1) **Using bolts** *(1"x4-1/2" bolt w/1" lock nut)* **provided attach lift tubes to deck. Secure with lock nuts. Do not over tighten. Parts must be free to rotate.**
2) **Assemble wheels to wheel arms by aligning hole in spindle with hole in tube. Secure with bolt.** *(1/2"x3"w /1/2" lock nut)* **Repeat for wings. Connector plates on lift tubes must point upward when assembled**
3) **Attach wheel arms to lift tubes using four** *¾" x 6-1/2"* **bolts per wheel arm. Secure with lock nuts. Wheel arm width can be adjusted to suit mowing conditions.**
4) **With wheels resting on the ground attach center lift roll to left and right lift tubes with the base end of turnbuckles to the front of cutter. Secure with bolts and nuts.**

TONGUE ASSEMBLY

Attach tongue to the deck using bolts and locknuts.

1) **Mount the jack to the tongue and use it to support the tongue for further assembly.**
2) **Raise the front of tongue to attach female ends of the control rods to the tongue and secure using 1" pins and cotter keys.**
3) **Attach male ends of the control rods to center tube lift and secure with 1" bolts and locknuts.**

CENTER DRIVELINE

The center driveline attaches between the splitter gearbox on the front of the cutter and center deck gearbox.

1) **Loosen the bolt on the slip clutch end of the shaft and slide this end onto the center deck gearbox. Tighten bolt to secure in place.**
2) **Loosen the bolt on other end of shaft and slide this end onto the splitter gearbox**

WINGS DRIVELINE

The wing drivelines attach between the splitter gearbox on the front of the cutter and the wing deck gearboxes.

1) ***Loosen the bolt on the slip clutch end of the shaft and slide this end onto the wing deck gear box. Tighten bolt to secure in place.***
2) ***Loosen the bolt on other end of shaft and slide this end onto the splitter gear box .Tighten bolt to secure in place.***
3) ***Attach shield retaining chain included with drive line to the shield and control rod. The chain keeps the driveline shield from rotating when PTO is engaged.***

GEARBOX -DRIVELINE SHIELDS

Keep a11 shields in place and good repair at all times to protect the operator from rotating shafts and slip clutches. Replace broken shields.

1) ***Splitter gear box shield should rest on splitter gear box and center blade gear box. Align holes in shield with holes in splitter gearbox secure with bolts and lock washers.***

2) ***Wing gearboxes shields attach to gear boxes with bolt, flat washers & lock washers.***

HYDRAULIC CYLINDERS SET UP

1) **Attach butt end of 3 X 12 wing cylinders to bracket on the center deck with line ports facing towards front of unit using bolts, nuts and or pins provided.**
2) **Remove port plug on the piston end of cylinders.**
3) **Pull rod out to align clevis with bracket on wing. Attach piston end to bracket.**
4) **With ports facing towards front of unit attach butt end of 3 X 8 wheel tube cylinder to bracket on rear center deck.**
5) **Remove ports on cylinder to allow movement of piston.**
6) **Extend rod to align clevis with hole in center lift tube cylinder anchor. Attach with hardware provided.**

HYDRAULIC HOSE SET UP

Each hose has only one swivel end. First connect the end with swivel to cylinder port. Always tighten each hose before proceeding.

Use a thread sealant on fittings to prevent leaking. DO NOT OVER TIGHTEN!

1) **Screw a restrictor fitting into the rod end of the wing cylinder. Attach one hose to each wing restrictor.**
2) **Screw a breather fitting into the base of each wing cylinder.**
3) **Attach one hose to butt end of lift cylinder using the end with the swivel adapter.**
4) **Screw a breather fitting into the rod end of the lift cylinder.**
5) **Attach tractor couplers to other end of hose.**
6) **Check all fittings to see that they are tight.**
7) **Check for leaks.** *Warning: Use a piece of card board or wood rather than hands and wear eye protection.*

CUTTER ADJUSTMENTS

Front to rear pitch is controlled by adjusting the linkage rods. (Note that operating the cutter at any pitch other than parallel to the ground will produce a slightly uneven cut.)

a) Shortening the linkage rods assemblies will raise the front of cutter.

b) Lengthening the linkage assemblies will lower front end of cutter.

The pitch adjustment is primarily for compensating for the different height of tractor draw bar. As described in the following, it can also be used to alter the cutting performance. Note that operating the cutter at any pitch other than parallel to the ground will produce a slightly uneven cut.

If you are cutting in dense material, operating cutter with the rear slightly higher than the front will allow an increase volume of cut material to exit from underneath cutter. This will decrease the cutter horsepower requirements.

ADJUST THE PITCH AS FOLLOWS:

1. Loosen jam nut on each adjustment rod assembly.
2. Use the turn buckles to lengthen or shorten the leveling rod assemblies. Shortening the rods will raise the front of the cutter and lengthening rods will lower the front of the cutter. While adjusting, alternate from one rod to the other.
3. When desired pitch is attained, make a final adjustment of the rods so that each will be under the same amount of tension. This may be done by tapping the rods and tuning them to the same sound.
4. Re-tighten jam nut.

NOTE:
If the cutter is allowed to rest on the ground in order to relieve tension on the rods, the tongue must be disconnected from the tractor to allow it to move.

WINGS ADJUSTMENTS:

Wings should be adjusted before use if they are not level (parallel) left to right with center deck section.

1. Lower cutter until skids on center section are approximately 1-2 inches off ground.
2. Remove hydraulic cylinder transport bar and place in holder.
3. Adjust wing level by turning turnbuckle –longer to raise the wing outside edge and shorter to lower the wing outside edge.
4. Tighten nut when complete.

PROCEDURE

- Lower cutter until center deck skids are 1"to 2" off ground.
- Relieve any pressure from lift roll linkage by extending or retracting wing cylinder
- Disconnect linkage at one end.
- Level wing by extending or retracting wing cylinder.
- Make adjustments and reconnect linkage.

ATTACHING TRACTOR TO CUTTER

CHECK TO MAKE SURE BYSTANDERS ARE CLEAR. DO NOT STAND BETWEEN TRACTOR AND CUTTER. SHUT OFF TRACTOR AND ENGAGE PARKING BRAKE PRIOR TO DISMOUNTING.

1) **Back tractor to align drawbar with clevis.**
2) **Attach hitch to drawbar with a high strength drawbar pin and secure with clip pin.**
3) **Attach driveline to tractor, making sure driveline locks in place.**
4) **Attach driveline shield retaining chain to drawbar to prevent rotation during operation.**
5) **Attach hydraulic hoses to your tractor.**
6) **Raise cutter using jack stand until tongue is at drawbar height. Store jack stand on deck lug.**
7) **Start tractor engine to check out hydraulic system.**
8) **Extend wheel lift cylinder to lift mower from supports.**

9) **Check fittings for leaks. If leaks are present, shut off tractor, relieve pressure from hydraulic lines, and make repairs before proceeding.** *(WARNING!!! USE A PIECE OF CARD BOARD OR WOOD RATHER THAN HANDS AND WEAR EYE PROTECTION WHEN SEARCHING FOR HYDRAULIC LEAKS. ESCAPING HYDRAULIC OIL UNDER PRESSURE CAN PENETRATE SKIN. If OIL IS INJECTED INTO SKIN, IT MUST BE SURGICALLY REMOVED WITHIN A FEW HOURS BY A DOCTOR OR GANGRENE MAY RESULT.)*

10) **Remove supports and extend and retract wheel lift cylinder through full range of movement a number of times to purge it of air. Check for any interference.**

11) **Remove wing locks from cylinder pins on center deck.** *(WARNING!!!* ***DO NOT*** *RAISE WINGS WITHOUT FLOW RESTRICTORS. WINGS WILL FALL RAPIDLY WHILE LOWERING, AND COULD CAUSE SERIOUS INJURY OR DEATH.)*

12)
CHECK TO BE SURE BYSTANDERS ARE CLEAR BEFORE LIFTING WINGS. DO NOT WALK UNDER RAISED WINGS FOR ANY REASON. DO NOT STAND BETWEEN IMPLEMENT AND TRACTOR. HYDRAULIC OR MECHANICAL FAILURE CAN LET WINGS TO DROP SUDDENLY WITHOUT WARNING.

ALWAYS PREFORM ALL TRACTOR OPERATIONS ONLY WHILE SEATED IN THE TRACTOR SEAT. DO NOT STAND BESIDE TRACTOR.

13) **Lift wings one at a time and then lower to operating position one at a time. Check for any interference. Repeat until all air is removed from system. When air is removed set wings in operating position.**

14) **Check the tractor's hydraulic fluid reservoir level and refill as necessary.**

REMOVING CUTTER FROM TRACTOR

- **Park cutter in a well drained level area.**
- **Stop tractor engine, set park brake and remove key before dismounting tractor.**
- **Place wheel chocks on cutter.**

(WARNING!!!** Relieving the pressure in the system by shutting off tractor and moving remote cylinder operating levers in both directions before attaching to or detaching from breakaway couplers will help avoid injury from escaping hydraulic fluid**)

BEFORE WORKING UNDERNEATH, RAISE CUTTER TO HIGHEST POSITION.

i. *INSTALL TRANSPORT LOCKS.*

ii. *BLOCK SECURELY. (Blocking up prevents cutter dropping from hydraulic leak down, hydraulic system failures, or mechanical component failures.)*

Not following these instructions could result in serious injury or death.

- **Relieve all hydraulic pressure from lines and disconnect quick couplers.**
- **Place parking jack on the tongue and raise tongue to remove pressure from tractor's drawbar.**
- **Do not stand on or straddle a tongue when unhitching.**
- **Disconnect cutter from tractor and carefully drive tractor away from cutter.**

PRE-OPERATIONAL CHECK

1. Check gear box for lubricant. Fill the cutter's gearbox to proper level using SAE 140EP gear oil. DO NOT overfill.
2. Check all lubrication points on PTO shafts, tail wheels, and turn buckles with multi-purpose grease.
3. Be sure all bolts are tight and snap rings are in place. See torque chart.
4. Check all safety shields; make sure they are in place.
5. Check blades for signs of wear or damage. Sharpen dull blades and replace bent or broken blades.
6. Inspect hydraulic lines and fittings for wear and leaks. Repair or replace if needed.
7. WARNING! Check for small high pressure leaks by passing a piece of cardboard or wood over lines rather than hands. HIGH PRESSURE OIL CAN PENETRATE SKIN AND CAN ONLY BE REMOVED SURGICALLY.
8. Refer to your Tractor's Owner's Manual for recommended adjustments and weight distribution.
9. Be sure the rotary cutter is properly mounted on tractor.
10. Adjust and level rotary cutter for desired cutting height.

SLIP CLUTCH

OPERATIONAL CHECK:

The slip clutch serves as overall protection for the tractor, driveline, and gear box. Even though new clutch assemblies are "run-in" and checked for torque prior to shipment readjustment may be advisable if the clutch has been exposed to weather for an extended period of time. The clutch facing and plates should be inspected for rust and/ or corrosion. After implement has been stored for 30 days or more, perform the following operational check:

a) Make a trail run in the heaviest operating conditions expected. If the clutch slips noticeably, tighten the 8 adjusting bolts no more than ½ turn between trail runs until clutch slippage is reduced.
b) Scribe a mark across the clutch facing. When subjected to shock loads, a separation of the marks will assure that clutch setting is correct. **Note: check the clutch periodically during the first hour of operation for excessive heat build-up to undetected slip-page.**

If the clutch is being rebuild (new facing and/or plates), it is necessary to "run-in" these parts prior to final adjustment. The plates should be thoroughly cleaned and free of foreign material, as well as being checked with a straight edge for warning. Warped plates cannot be adjusted properly and will not hold. To accomplish the "run-in" after assembly, follow the procedure below.

a) Tighten all adjusting bolts evenly until the clutch cannot be slipped by hand.
b) With the blade carrier locked in a stationary position, operate with the PTO at idling speed (approximately 100 rpm) until evidence of heating is noted. **CAUTION: DO NOT ALLOW THE CLUTCH TO OVERHEAT.**
c) Discontinue operation and allow the clutch to cool completely. **This is very important.**
d) After the clutch has cooled, tighten all the adjusting bolts down evenly and proceed with regular clutch adjusting procedures as described previously.

OPERATING:

Start tractor. Raise cutter and remove stop collars and transport lock. Adjust cutter to working height. Remove wing locks from center deck and lower wings to working position. With tractor at idle speed, engage PTO drive. Slowly adjust engine speed to operating RPM (540 or 1000). For maximum cutting efficiency, tractor forward speed should allow cutter to keep a constant, top blade speed. Incorrect speed blade RPM will result in poor cutting and excessive blade and blade bolt wear.

(WARNING!!! All cutters are capable of discharging large objects from underneath deck. Therefore, do not operate around bystanders or passersby. Do not operate near highways without shields, bands or other ASAE approved cutter shields in place and in good repair.)

MAINTENANCE SAFETY PROCEEDURES

- Understand procedure before doing work. Use proper tools and equipment.
- Work in a clean dry area.
- Keep mower deck clear of debris.
- Before performing any service or maintenance, disconnect driveline from tractor.
- Before working underneath, raise cutter to highest position, install transport locks, and block securely.
- Keep all persons away from operator control area while making adjustments, maintenance or service.
- Inspect all parts. Make sure parts are in good condition & installed properly.
- Check blades often. Making sure they are free of nicks and cracks and fastened securely.
- Do not handle blades with bare hands. Accidents or improper handling may result in serious injury.
- Do not climb or walk on cutter frame, or tires.
- Do not stand on or straddle a frame when hooking up.
- Cylinders and lines should be full of oil and free of air before operating.
- Remove all tools and unused parts from implement before operation.

MAINTENANCE

BEFORE WORKING UNDERNEATH, RAISE CUTTER TO HIGHEST POSITION.

INSTALL TRANSPORT LOCKS.

BLOCK SECURELY. (Blocking up prevents cutter dropping from hydraulic leak down, hydraulic system failures, or mechanical component failures.)

GEARBOXES

i. Check oil level before using. If low fill with SAE 90EP gear oil.
ii. Check mount bolt before each use to be sure they are tight.

BLADES

i. Check blades before each use.
ii. Sharpen worn blades and replace damaged blades in pairs, (to keep balance change in pairs).

Follow these steps for blade replacement.

A. Be sure cutter is stable before proceeding with blade replacement.
B. Remove blade bolts, nut and washer through the access holes in the deck.
C. Inspect bolt shoulder for wear. Replace if necessary.
D. Using a punch, drive the blade bolt out of the blade holder.
E. Insert blade bolts in new blades so the flare in blade tip is up. Align notch in hole with protrusion on bolt into blade and blade holder. Strike head of bolt with a heavy hammer to seat and tighten bolts.
F. Check blades to be sure they swing 360 degrees freely.

WHEEL HUBS

i. Check wheel hubs after each use for excessive play on spindle.
ii. Tighten bearing adjustment nut to eliminate lateral movement on spindle while allowing hub rotation if need be.

SLIP CLUTCH

On a new unit or one that has been stored for a long period of time, perform the following:

i. Loosen all spring retaining nuts until springs can be turn by fingers.
ii. With tractor at idle speed, engage PTO for 2 to 3 seconds. Clutch should slip without turning blades. If not contact your dealer.
iii. Retighten nuts to compress springs according to diagram. Dim A.

(***WARNING!!!*** *Failure to retighten nuts can cause damage to implement and/or tractor.)* WHEN CHANGING OR REMOVING BLADES. BLADE BOLTS MUST BE RETIGHTENED WITH MAX-TORQUE. IF BLADE BOLT IS NOT EXTREMELY TIGHT IT COULD RESULT IN A LOOSE BLADE AND WALLOW BLADE BOLT HOLE. THAT IS NOT COVERED BY WARRANTY, BUT MOST IMPORTANTLY A LOOSE BLADE COULD CAUSE INJURY OR DEATH.

LUBRICATION SCHEDULE:

Clean grease fittings before applying grease. Use multi-purpose, lithium base grease.

BEFORE EACH USE:

Tail wheels – Apply multi-purpose grease slowly with grease gun until grease relieves around seal. (pic. 1.)

Drivelines—Apply grease to universal joints and shield fittings. (pic 2.)

Gearboxes—Check level if needs oil, add SAE90EP gear oil. (pic.5.)

Axle Pivot— Apply multi-purpose grease with grease gun. (pic. 4.)

EVERY 8 HOURS:

CV Drive—grease CV center mechanism 30 pumps initially and 10 pumps every 8 hours. (pic. 3.)

EVERY 16 HOURS:

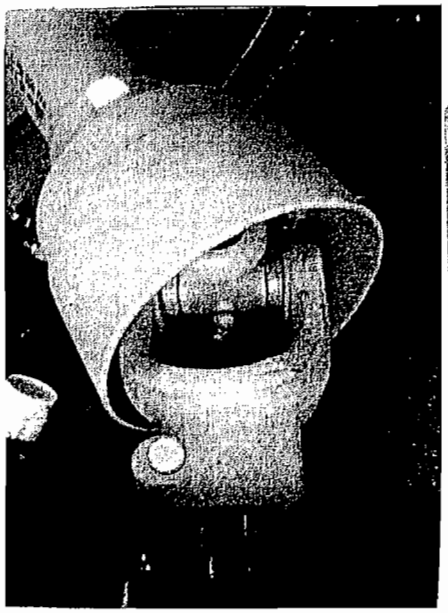
Input driveline-machine must be lowered to ground before lubrication so holes in shield will align.

Driveline—Disconnect driveline and separate sections. Apply a thin coat of grease to outside of male shaft. Reassemble driveline and install. Be sure driveline is locked in place and shield retaining chain is properly installed.

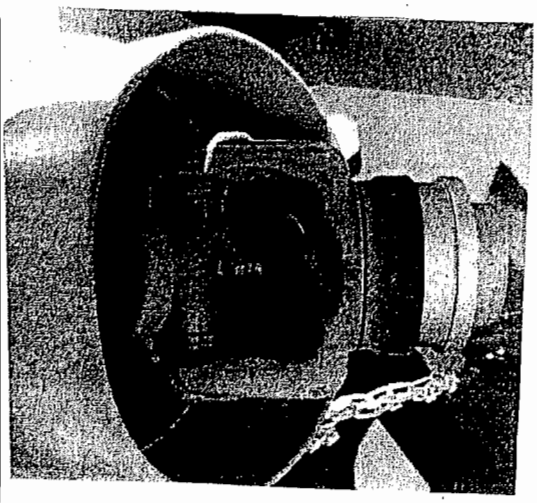
EVERY 40 HOURS:

Wing Turnbuckles—Apply multi-purpose grease slowly with grease gun. (pic. 8)
Wing hinge point-- (*pic. 6.)*
Front clevis pivot hitch (pic. 7.)

PIC. 1.



PIC. 2.



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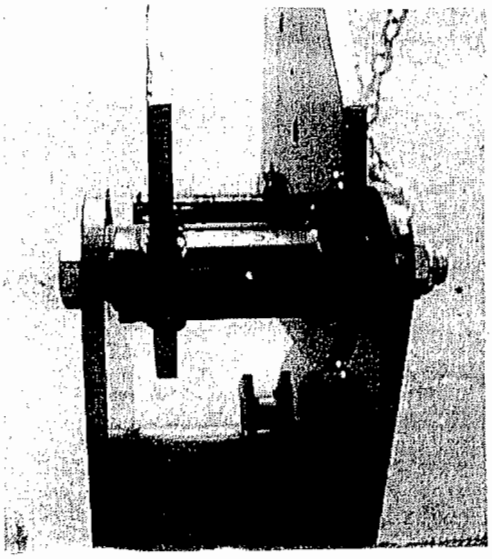
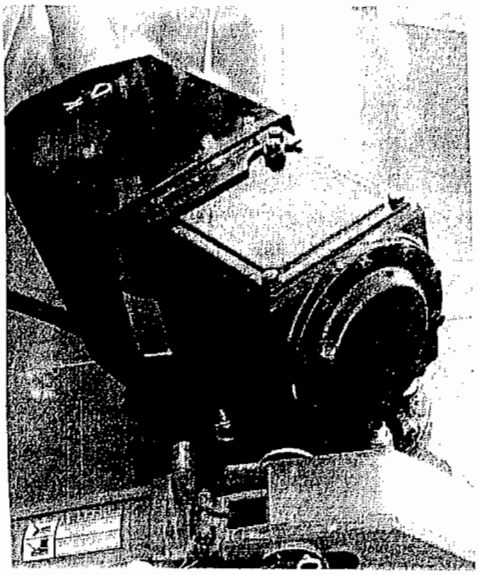
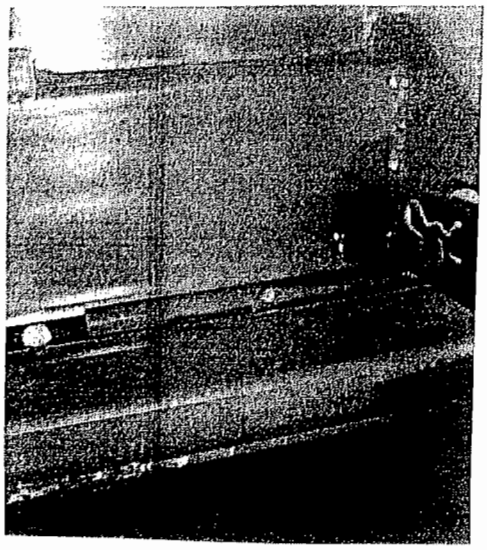


PIC. 4



PIC. 5.



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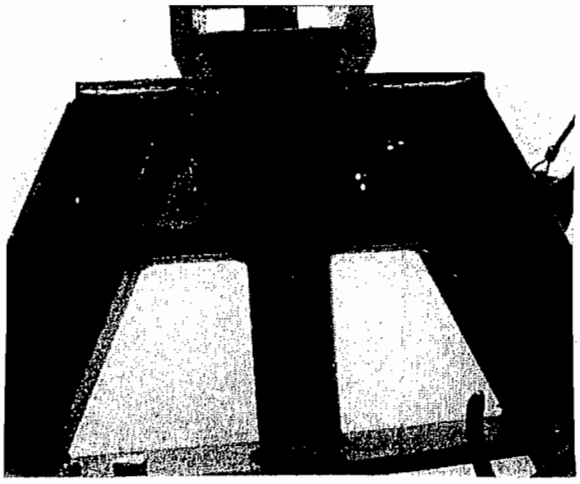
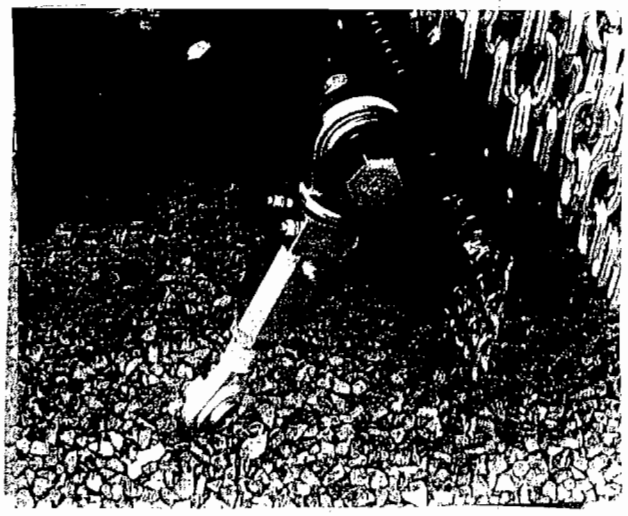


PIC. 7.



PIC. 8.

SAFE CUTTER TRANSPORTING

CAUTION!

WHEN TRAVELING ON PUBLIC ROADS AT NIGHT OR DURING THE DAY USE A SLOW-MOVING-VEHICLE (SMV) EMBLEM AND USE ACCESSORY LIGHTS FOR ADEQUATE WARNING TO OPERATORS OF OTHER VEHICLES. COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS.

TRANSPORTING:

- Disengage PTO and allow all moving parts to completely stop. Raise cutter and install cylinder stops. Then raise wings and install wing locks.
- Reduce tractor ground speed when turning and leave enough clearance so the cutter does not contact obstacles such as buildings, trees or fences.
- Do not drive the cutter over 15 miles per hour on the best surface conditions. When traveling on roadways, transport in such a way that faster moving vehicles can pass you safely.
- When in rough terrain shift tractor to a lower gear.
- Check tires and wheel bolts before and after transport.
- Check condition of hitch pins, bolts, tires and hubs before transporting.
- Look out for low hanging overhead power lines. Avoid contact as this can cause serious injury or death.
- Use a safety chain to help control drawn machinery should it separate from tractor. Chain with the strength rating equal to or greater then the gross weight of the towed machinery.

LIMITED WARRANTY

KODIAK MFG., INC., the manufacturer, warrants only to the Original Purchaser that this equipment, under normal use and service, will be free from defects in material and workmanship for one (1) year from date of purchase providing this equipment is purchased for individual and not for commercial use. This warranty does not apply to any equipment which has been damaged or which has been subjected to change, misuse, negligence, abnormal wear and tear, alterations, tampering, or failure to follow operating instructions. This warranty does not cover any product or parts not manufactured by **KODIAK MFG., INC.**
A five (5) year limited warranty on 3/4" stump jumper plates only applies to bending or warping. It is the owner's responsibility to keep blade bolts tight as to not wear out blade bolt hole which is not considered warranty.
A five (5) year **Limited Warranty*** on gearbox components provided they have been properly maintained**and have not been subjected to abuse or mis-use except as limited below.
Gear box ***Warranty limitations***

i. Warranty is one-(1) year for seals (after one year, seals are considered to be wearing parts and the replacement the users' responsibility)
ii. Users' gearboxes may be KODIAK MFG INC or replaced by new or rebuilt gearboxes at the option of KODIAK MFG INC.

** **NOTE-"properly maintained" specifically includes, but is not limited to:**

i. Running gearboxes with the proper amount of the correct lubricant.
ii. Adjusting slip clutches correctly to provide proper protection for gearboxes components and drive line.

Under this warranty, the manufacturer will repair or replace any part which the manufacturer determines has failed during the period of the warranty due to defects in material or workmanship. After written approval by the manufacturer, the equipment or defective part must be returned to KODIAK MFG., INC.

Warranty coverage and performance is expressly conditioned upon the return of the completed registration form to **KODIAK MFG., INC. 8849 CANDIES CREEK RIDGE ROAD, CHARLESTON, TENNESSEE 37310**

PURCHASER'S EXCLUSIVE REMEDY FOR BREACH OF WARRANTY, OTHER DEFECT, OR CONDUCT GIVING RISE TO LIABILITY SHALL BE THE REPAIR OR REPLACEMENT OF THE PRODUCT SOLD, AND THE MANUFACTURE UNDER NO CIRCUMSTANCES SHALL BE LIABLE FOR ECONOMIC LOSS OR INCIDENTAL OR CONSEQUENTIAL DAMAGES. THE MANUFACTURER DISCLAIMS ALL IMPLIED WARRANTIES, INCLUDING THE WARRANTY OF MERCHANTABILITY AND FITNESS FOR PURPOSE.

KODIAK MFG., INC. reserves the right to make improvements and changes in specifications without notice or obligation to modify previously sold units.

This manual describes the proper assembly procedures for your implement and furnishes operating and maintenance recommendations to help you obtain long and satisfactory service.

REGISTRATION

THE FOLLOWING REGISTRATION FORM MUST BE ON FILE AT KODIAK MFG., INC. 8849 CANDIES CREEK RIDGE ROAD, CHARLESTON, TN 37310, WITHIN 30 DAYS OF DELIVERY TO USER OR WARRANTY CLAIM WILL NOT BE HONORED.

MODEL: _____ SERIAL NO.:_____

DATE DELIVERED_____

NAME OF OWNER_____

_____

ADDRESS: (Street, Route, P.O. Box)

_____

CITY _____
STATE_____ZIP_____

NAME OF SELLING DEALER_____

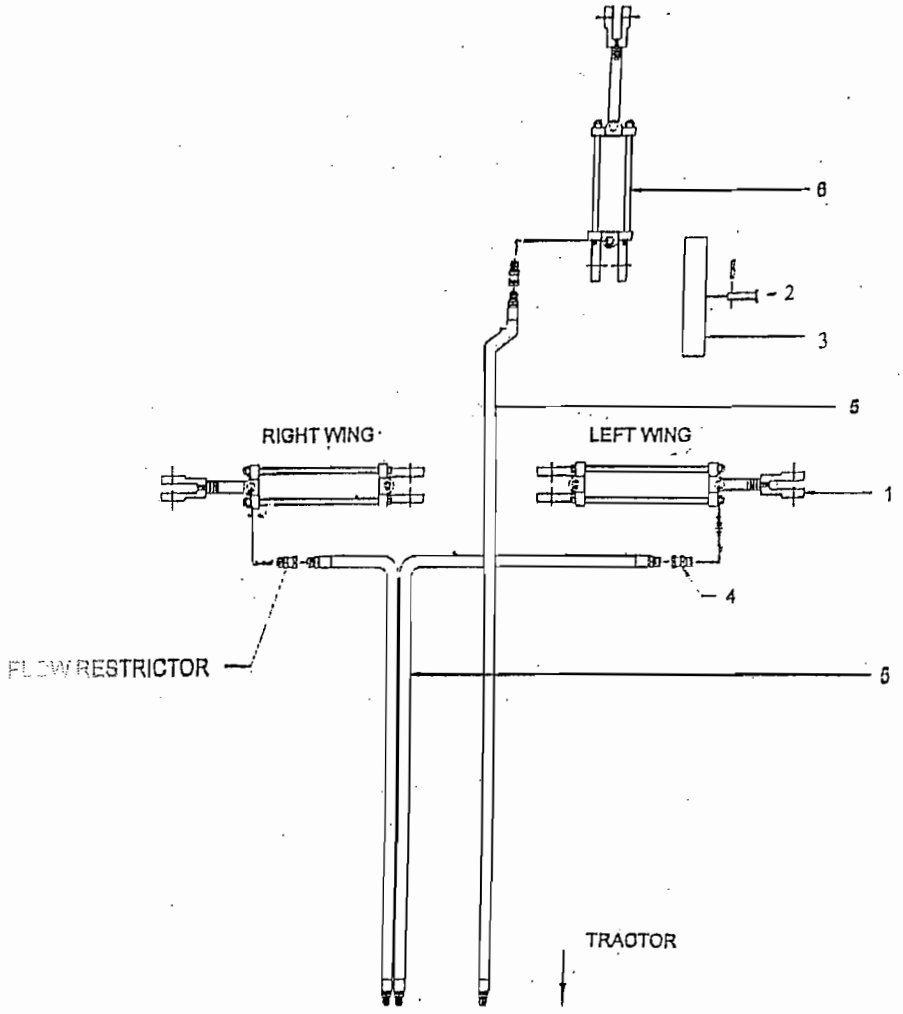
CITY_____
STATE_____ ZIP_____

I have read all warranties and agree with these conditions.

OWNERS SIGNATURE_____

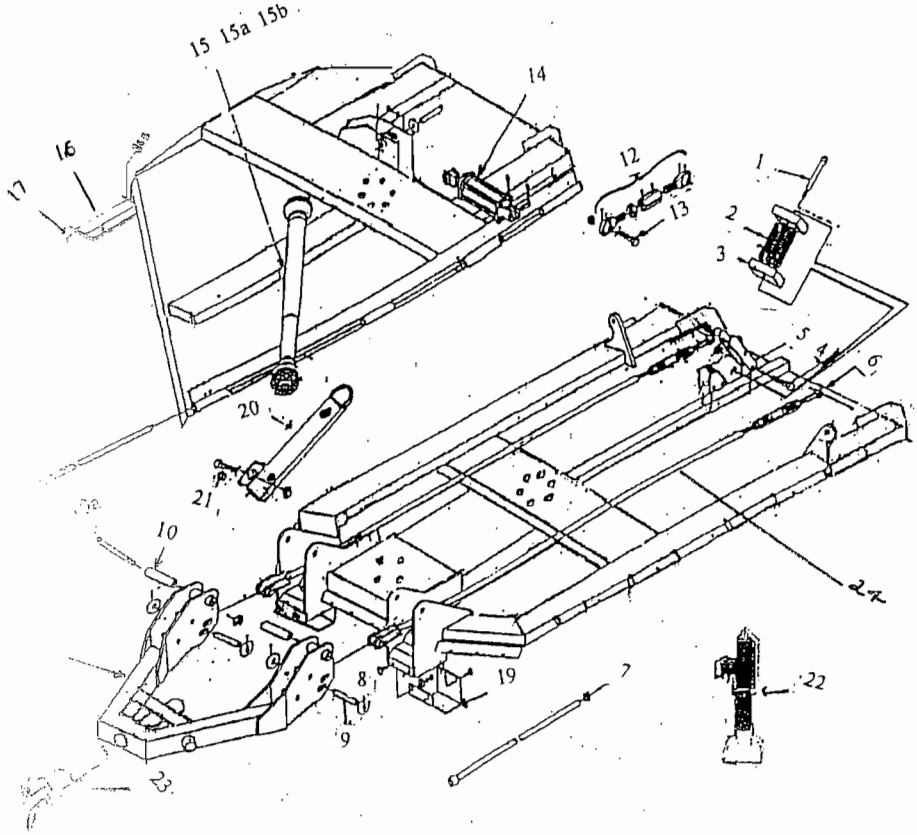
HYDRAULIC SYSTEM

ITEM	PART NO.	DESCRIPTION	QTY.
1	G-10200W	HYD WING CYLINDER 3X12	2
2	BB-23	SHANK PIN	1
3	G-10220C	CYLINDER STOP	1
4	G-10219WC	FLOW RESTRICTOR 1/2 NPT	
5	G-10218WC	HYD HOSE ASSEMBLY 192"	3
6	G-10200C	3.5 X 8 LIFT HYD CYLINDER	1



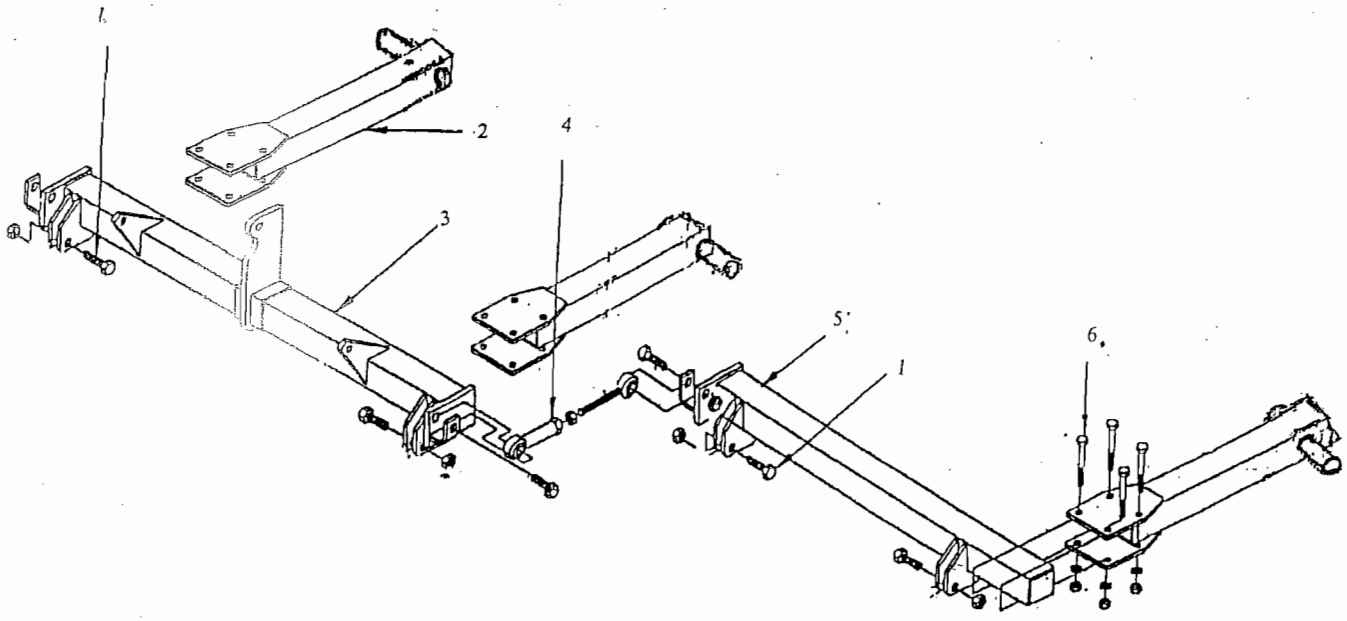
HITCH - WING - BODY

ITEM	PART NO.	DESCRIPTION	QTY.
1	G-10500	BOLT 1" X 12" W/NYLON NUT	1
2	G-10501C	SPRINGS	3
3	G-10502C	SPRING PLATE	2
4	G-10503	BOLT 1" X 6 "	A/R
5	G-10506C	CYLINDER MOUNT	1
6	G-10507C	TURNBUCKLE LEVELING	2
7	G-10508W	HINGE ROD	2
8	G-10509	WASHER/PIN	A/R
9	G-10510C	PIN	A/R
10	G-10511C	BUSHINGS	A/R
10a	G-10522C	1" X 8-1/2" BOLTW/LOCK NUT	2
11	G-10512C	TONGUE ASSEMBLY	1
12	G-10513W	WHEEL CONNECTOR	2
13	G-10103WC	BOLT 1/2" X 4-1/2" W/NYLON LOCK NUT	A/R
14	G10200W	CYLINDER 3X12 WING	2
	G-10200C	CYLINDER 3.5X8 CENTER	1
15	G-21853W	WING PTO SERIES 6W/SLIP CLUTCH	2
15A	G-10810C	SPLITTER CONNECTOR SHAFT	1
15B	G-42895C	COMPLETE CV PTO DRIVE LINE W/COVER	1
16	G-10515W	SKID SHOE	2
17	G-10518	CARRIAGE BOLTS	A/R
18	G-10516W	WING LOCK BAR	2
19	G-10517C	CENTER SKID SHOE	2
20	G-10519C	HYD HOSE HOLDER	1
21		BOLT AND NUT	1
22	G-10520C	IMPLEMENT JACK	1
23	G-10521C	HITCH SWIVEL PIVOT	1
24	G-10507	LEVELING ROD	2



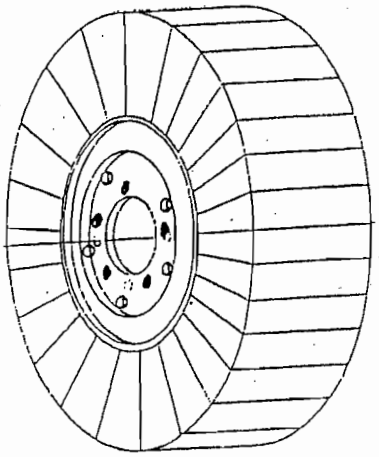
WHEEL CARRIAGE

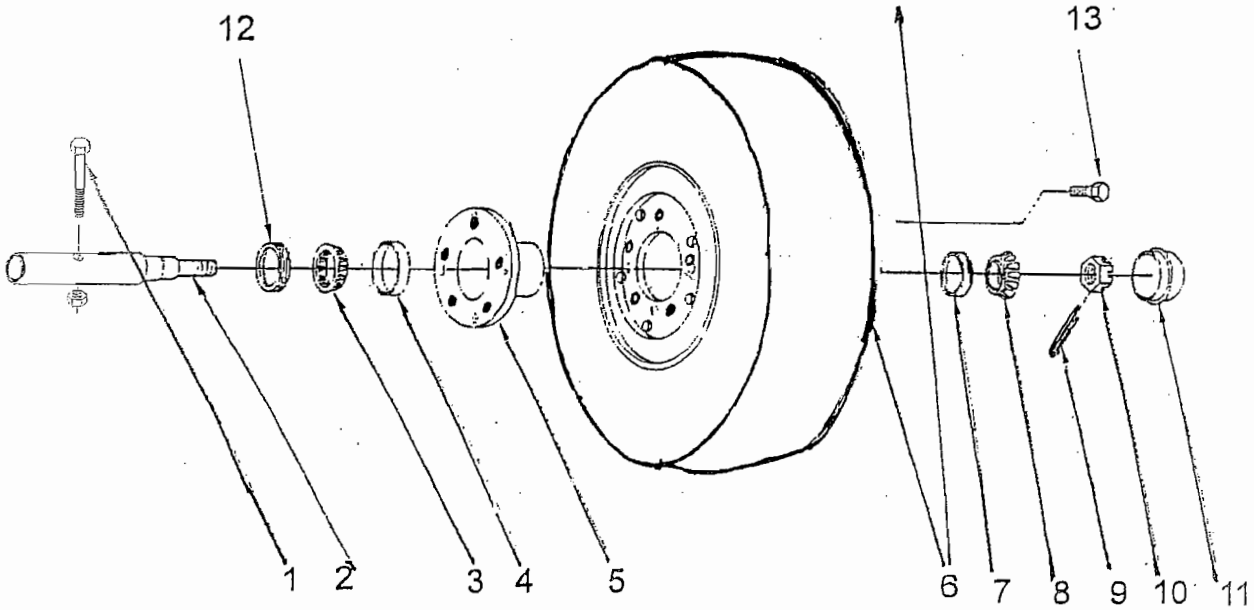
ITEM	PART NO.	DESCRIPTION	QTY.
1	G-10103WC	BOLT 1/2" X 4-1/2" W/1/2-NUT	A/R
2	G-10104WC	WHEEL ARM	4
3	G-10105C	CENTER TUBE ASSEMBLY	1
4	G-10513W	TURN BUCKLE	2
5	G-10109WL	LEFT WING TUBE ASSEMBLEY	1
	G-10110WR	RIGHT WING TUBE ASSEMBLY	1
6	G-10111WC	BOLT 3/4 X 6-1/2	A/R



WHEELS

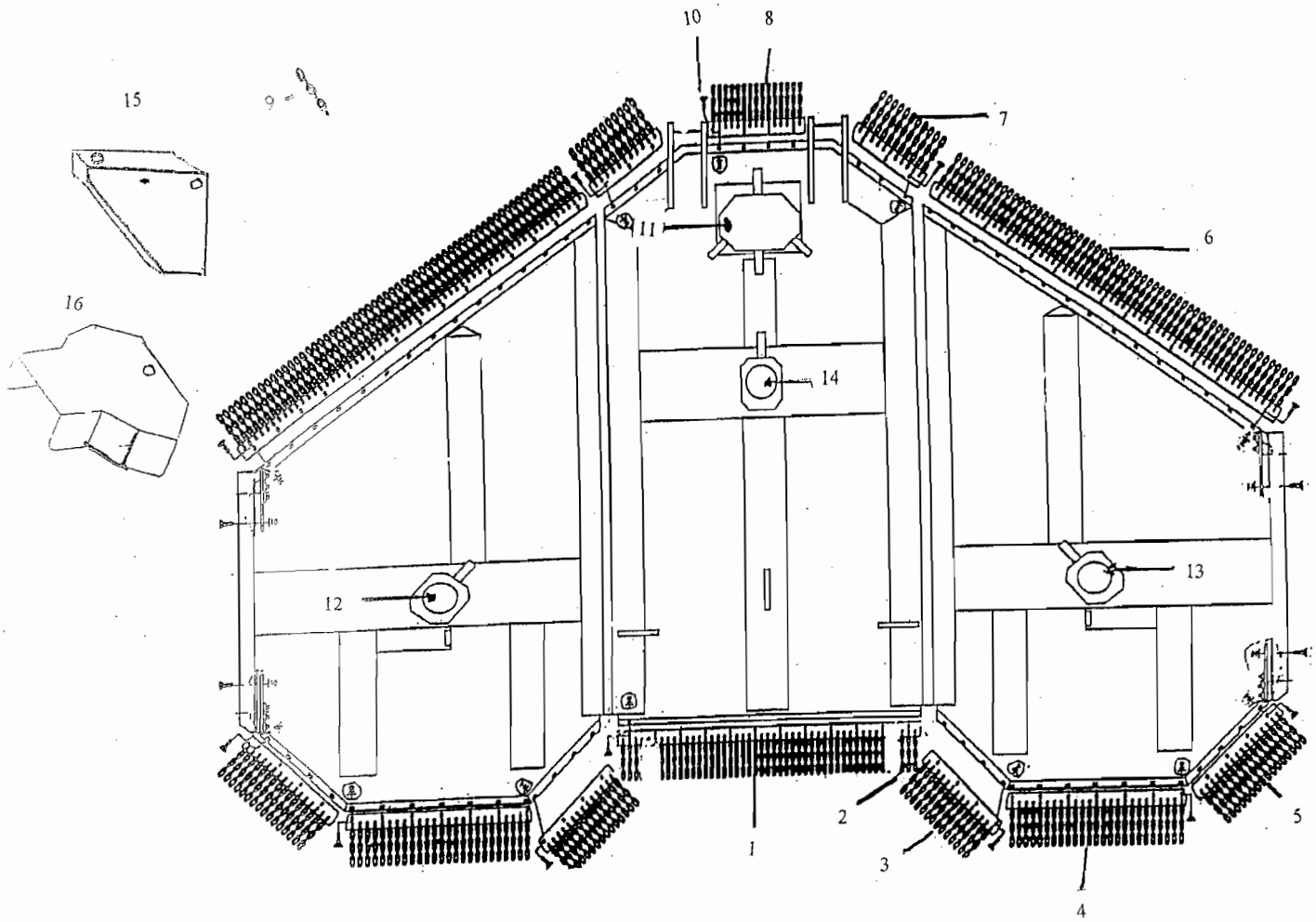
ITEM	PART NO.	DESCRIPTION	QTY.
1	G-10100WC	1/2" X 3" / LOCK NUT 1/2"	
2	G-10101W	SPINDLE/ SINGLE ENDED	
	G-10102C	SPINDLE/DOUBLE ENDED	
3	K-910262	INNER BEARING (LM48548)	
4	K-910261	INNER CUP (LM48510)	
5	PT-TWCH	HUB N25-5 HUB W/CUP & STUDS 281019	6
6	TW-21	WHEEL LAMINATED	
6	TWA-21	AIR PLANE TIRE	
7	K-910257	OUTER CUP (LM67010)	
8	K-910259	OUTER CONE (LM67048)	
9	CP-2	COTTER PIN 1/8 X 1-1/2	
10	PT-CN	NUT SLOTTED 3/4	
11	K-909905	HUB CAP OUTER SEAL	
12	K-906295	INNER SEAL	





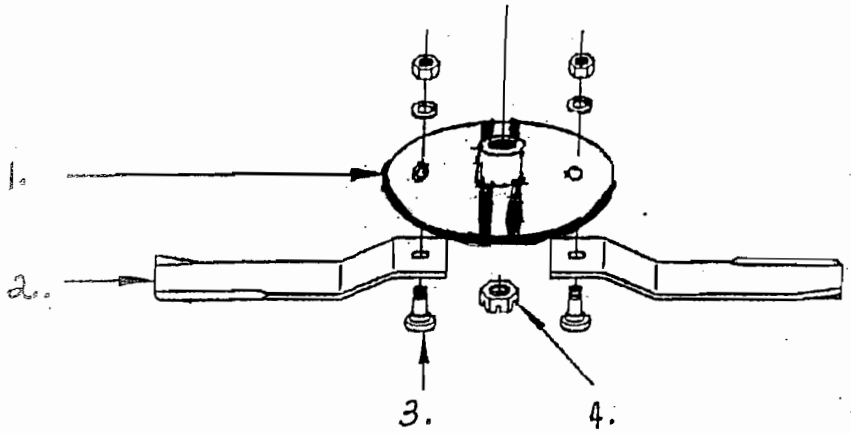
CHAIN GUARDS-GEAR BOXES-SHIELDS

ITEM	PART NO.	DESCRIPTION	QTY.
1	G-10301C	FLAT CHAIN BAR 43"	1
2	G-10302C	FLAT CHAIN BAR 5-1/2"	2
3	G-10303WR	FLAT CHAIN BAR 19"	2
4	G-10304WR	FLAT CHAIN BAR 24-1/2"	2
5	G-10305WR	FLAT CHAIN BAR 22-1/2"	2
6	G-10306WF	Z CHAIN BAR 73-1/2"	2
7	G-10307CF	Z CHAIN BAR 14"	2
8	G-10308CF	Z CHAIN BAR 19-1/2"	1
9	G-10309WC	6 LINKS OF CHAIN	AS/REQ.
10		1/2 X 1-1/4" CARRIAGE BOLT/NYLON LOCK NUT	AS/REQ.
11	G-10310C	SPLITTER GEAR BOX	1
12	G-10311W	LEFT HAND GEAR BOX	1
13	G-10312CWR	RIGHT HAND GEAR BOX SAME AS CENTER	1
14	G-10312CWRC	CENTER GEAR BOX SAME AS RIGHT HAND	1
15	G-10313W	SHIELD SIDE GEAR BOX	2
16	G-10314C	SHIELD CENTER GEAR BOX	1

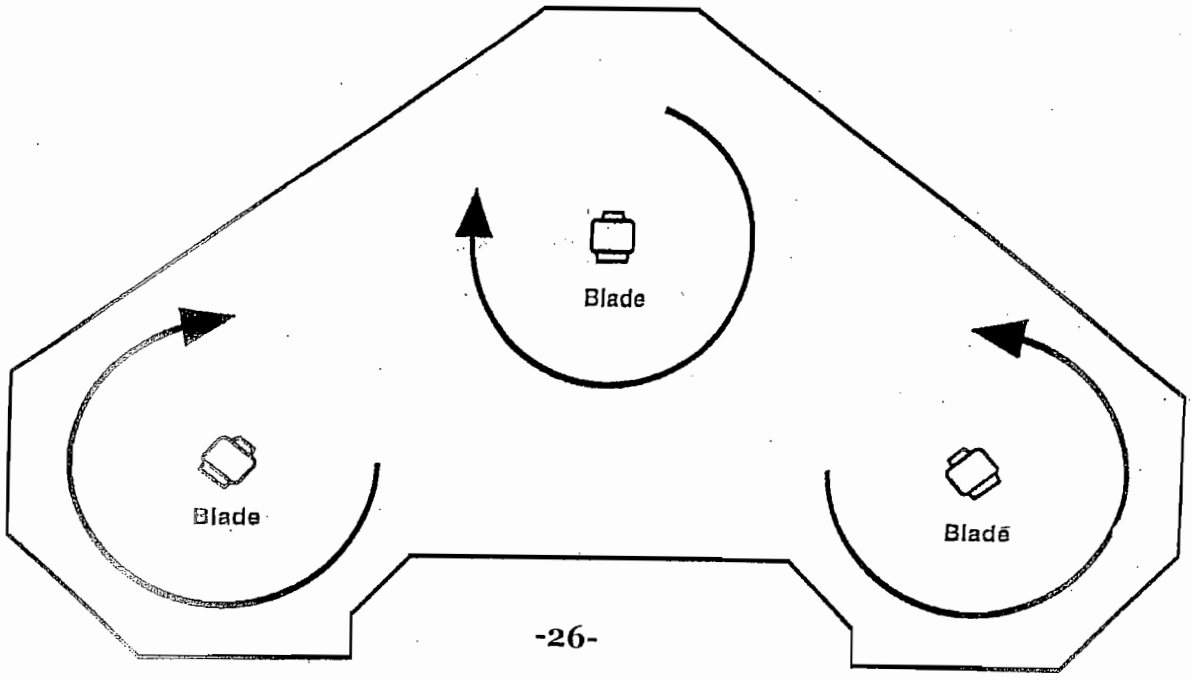


BLADES

ITEM	PART NO.	DESCRIPTION	QTY.
1	G-10401W	BLADE CARRIER OUTBOARD	2
	G-10402C	CENTER BLADE CARRIER	1
2	G-10403Rccw	COUNTER CLOCK WISE RIGHT SIDE BLADES	2
	G-10403Lcw	CLOCK WISE LEFT SIDE BLADES	2
	G-10403CENTER	CLOCK WISE CENTER BLADES	2
3	124-SMH	BLADES BOLT KIT *BOLT,WASHER & NUT*	6
4	G-10404WC	GEAR BOX NUT	3

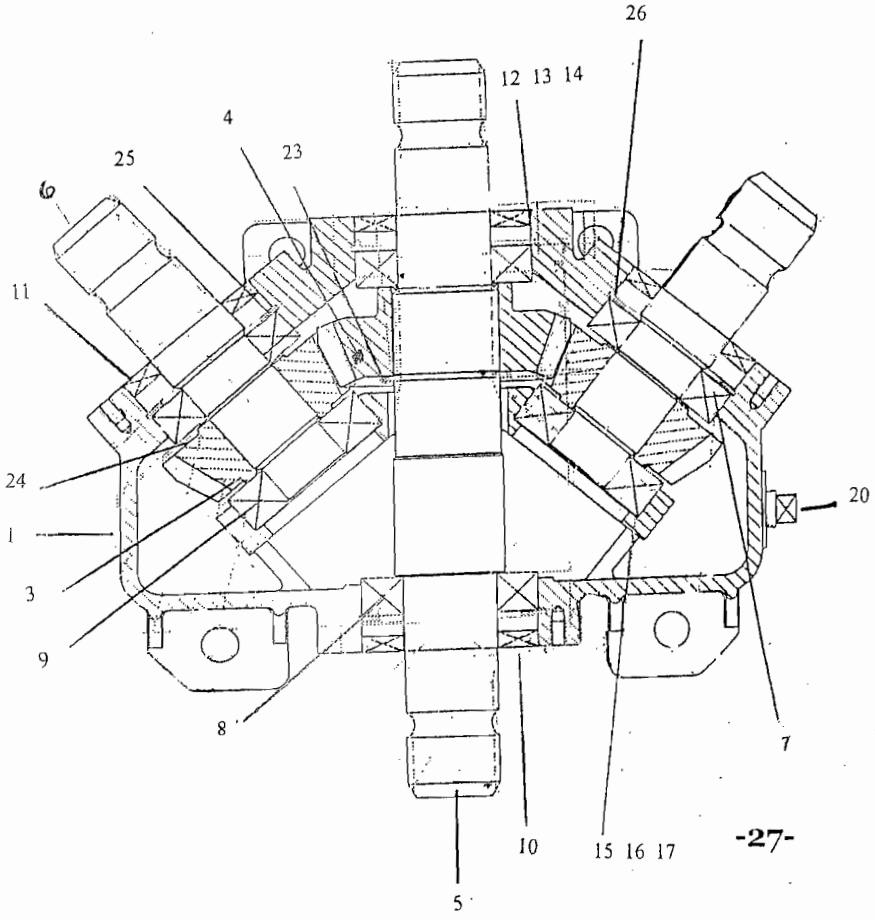


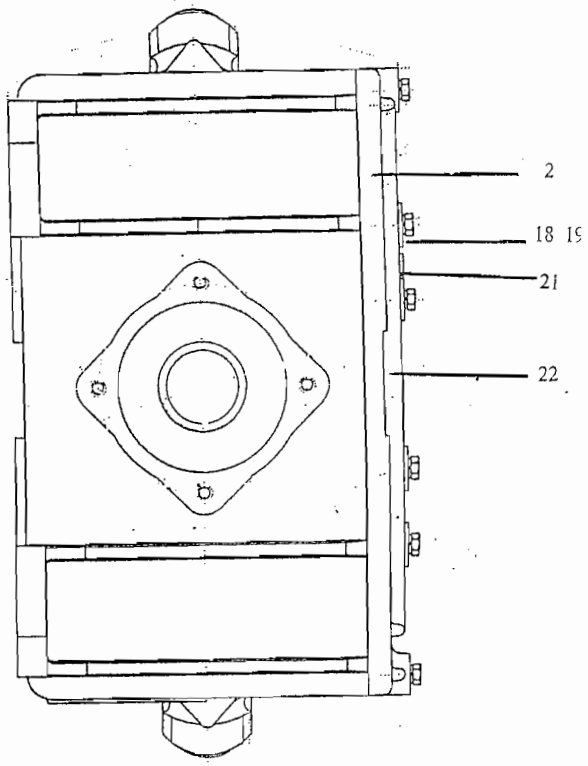
BLADE ROTATION DIAGRAM

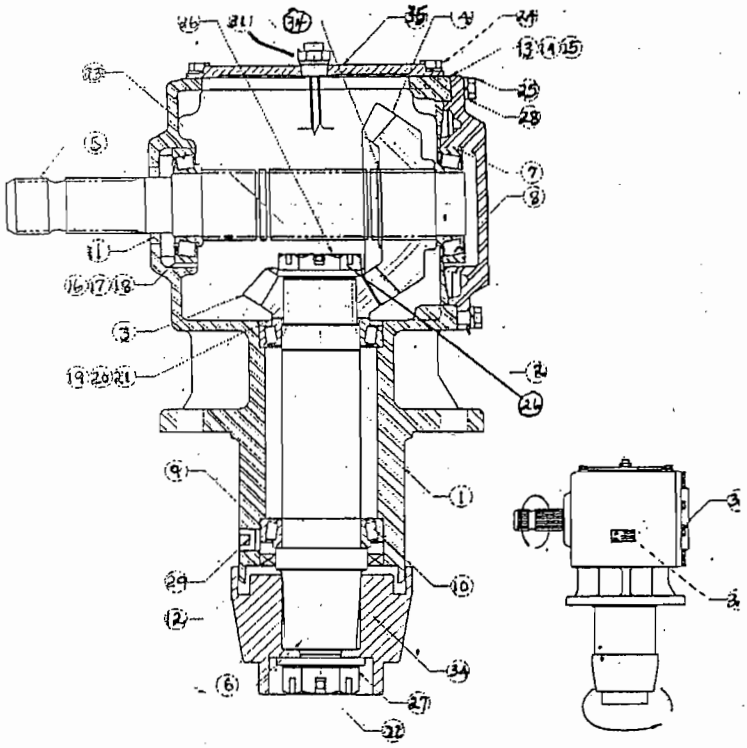


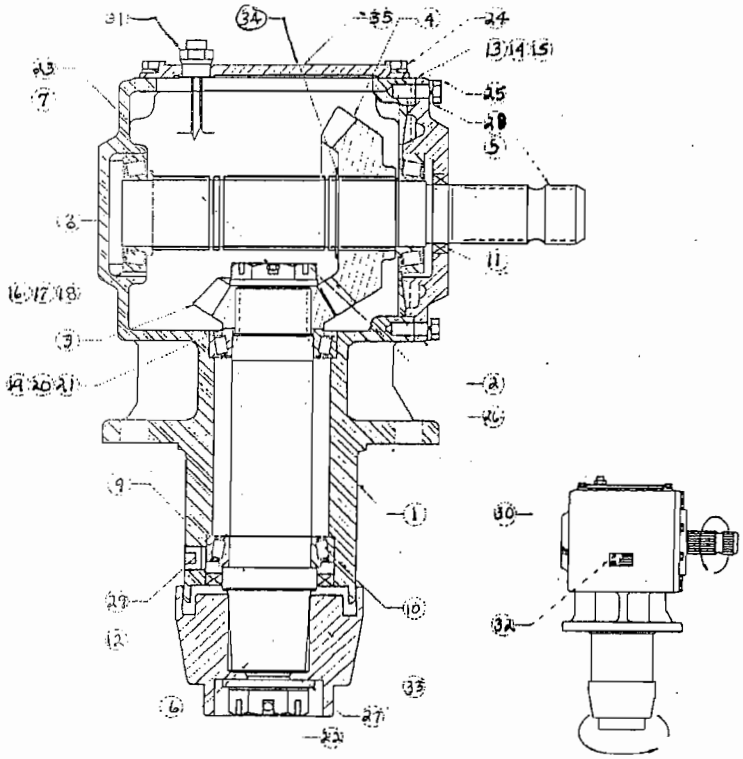
SPLITTER GEAR BOX
RCD-90 1:1.2

ITEM	540	DESCRIPTION	QTY
1	G-10600	HOUSING	1
2	G-10601	COVER	1
3	G-10602	PINION 20T	2
4	G-10603	GEAR 24T	1
5	G-10604	INPUT SHAFT 1.75-20 SPLINE	1
6	G-10605	OUTPUT SHAFT	2
7	G-10608	BALL BEARING 6208	2
8	G-10609	BALL BEARING 6209	2
9	G-10607	BALL BEARING 6307	2
10	G-10610	INPUT SEAL	2
11	G-10611	OUTPUT SEAL	2
12	G-10612	INPUT SHIM 0.1MM	2
13	G-10613	INPUT SHIM 0.2MM	2
14	G-10614	INPUT SHIM 0.5MM	2
15	G-10615	OUTPUT SHIM 0.1MM	4
16	G-10616	OUTPUT SHIM 0.2MM	4
17	G-10617	OUTPUT SHIM 0.5MM	4
18	G-10618	M8 X 35 SCREW	6
19	G-10619	M8 SPLIT TYPE LOCKWASHER	6
20	G-10620	SOCKET HEAD PLUG 3/8"-18NPT	2
21	G-10621	PRESSURE RELIEF PLUG 1/2"-14NPT	1
22	G-10622	ID TAG	1
23	G-10623	50MM RETAINING RING	1
24	G-10624	40MM RETAINING RING	2
25	G-10625	85MM RETAINING RING	2
26	G-10626	80MM RETAINING RING	2
		MUST HAVE SERIAL NUMBER	









BLADE GEAR BOX

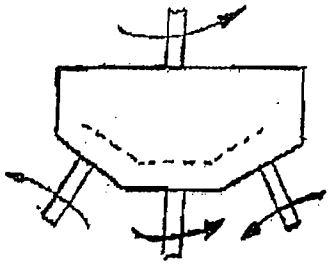
RC 130LS REV. RC 130L STD

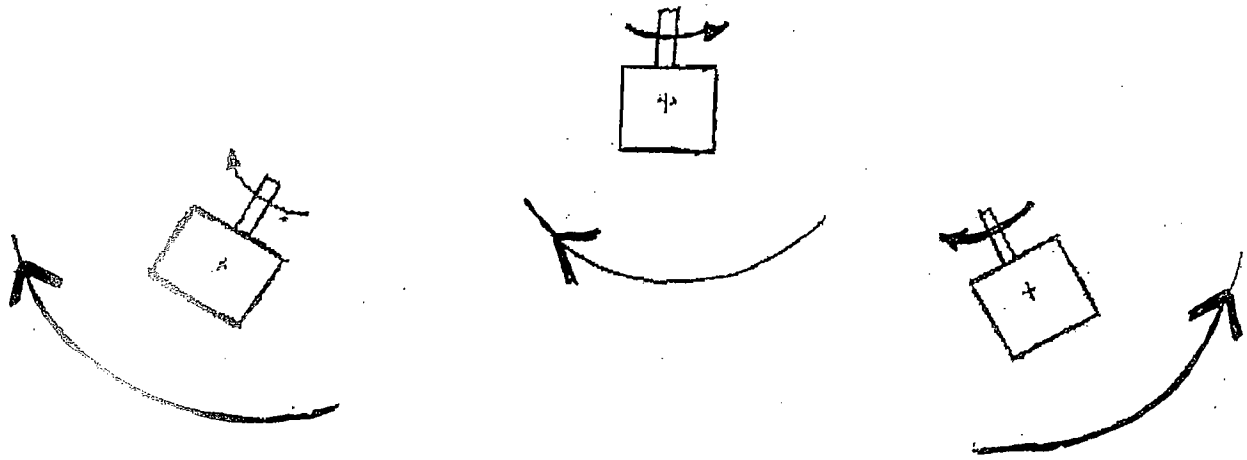
1:1.462

ITEM	540	DESCRIPTION	QTY
1	G-10700S	HOUSING RC-130L STD ROTATION	1
	G-10700R	HOUSING RC-130LS REV. ROTATION	1
2	G-10701	INPUT CAP	1
	G-10701R	INPUT CAP rev	1
3	G-10702	13T OUTPUT PINION	1
4	G-10703	19T INPUT GEAR	1
5	G-10704	1.75-20 SPLINE INPUT SHAFT	1
6	G-10705	18T TAPERED SLINE OUTPUT SHAFT	1
7	G-10706	BEARING CUP ORDER W 50201 30210	2
8	G-10707	BEARING CONE ORDER W 50200 30210	2
9	G-10708	BEARING CUP ORDER W 50203 32012	2
10	G-10709	BEARING CONE ORDER W 50202 32012	2
11	G-10710	INPUT SEAL	1
12	G-10711	OUTPUT SEAL	1
13	G-10712	INPUT GASKET 0.20MM	A/R
14	G-10713	INPUT GASKET 0.30MM	A/R
15	G-10714	INPUT GASKET 0.50MM	A/R
16	G-10715	INPUT SHIM 0.10MM	A/R
17	G-10716	INPUT SHIM 0.20MM	A/R
18	G-10717	INPUT SHIM 0.30MM	A/R
19	G-10718	OUTPUT SHIM 0.10MM	A/R
20	G-10719	OUTPUT SHIM 0.20MM	A/R
21	G-10720	OUTPUT SHIM 0.30MM	A/R
22	G-10721	6.3 X 60 COTTER PIN	1
23	G-10722	5 X 65 COTTER PIN	1
24	G-10723	3/8" 16UNC X 1 SCREW	4
25	G-10724	3/8" 16UNC X 1-1/4" SCREW	10
26	G-10725	NUT HEX SLOTTED 1-3/8"-18UNEF	1
27	G-10726	NUT HEX SLOTTED 1-1/4"-18UNEF	1
28	G-10727	3/8" SLIT TYPE LOCKWASHERS	14
29	G-10728	SOCKET HEAD PIPE PLUG 3/8" 18NPTF	1
30	G-10729	SQ. HEAD PIPE PLUG 1/8"-27NPTF	1
31	G-10730	PRESSURE RELIEF PLUG 1/2"-14NPTF	1
32	G-10731	I.D. TAG	1
33	G-10732	BLADE HUB	1
34	G-10733	RETAINING RING	1
35	G-10734	INSPECTION COVER	1

SHAFTS ROTATION DIRECTION

FRONT CUTTER

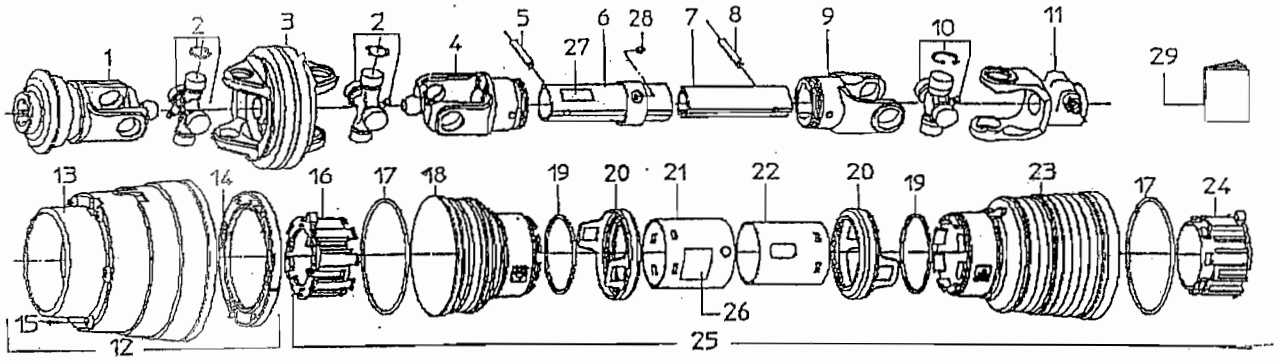




REAR CUTTER

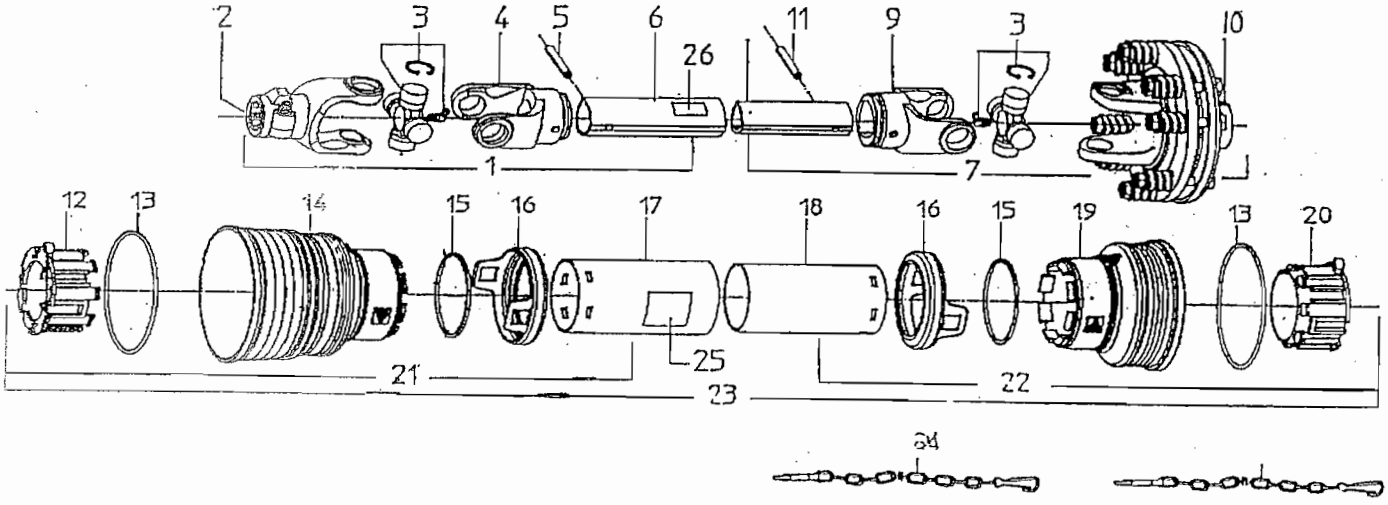
TRACTOR TO CUTTER DRIVELINE

ITEM	PART NO.	DESCRIPTION	QTY.
1		outer pull collar	
2	G-62095	CROSS AND BEARING KIT	2
3	G-66615	CENTER JOINT	1
4	G-66625	OUTER TUBE YOKE	1
5	G-66265	OUTER TUBE PIN	1
6	G-66635	OUTER TUBE	1
7	G-66645	INNER TUBE	1
8	G-66265	ROLL PIN INNER	1
9	G-30443	INNER YOKE	1
10	G-21943	CROSS BEARING KIT	2
11	G-61123	YOKE 1-3/4-20 INTERFERING BOLT	1
12	G-66665	WIDE ANLE PROTECTION *INCLUDES 13,14,15*	1
13		SOFT CONE NOT AVAILABLE BY ITSELF	N/A
14	G-52613	BEARING SOFT CONE	1
15	G-52573	SELF THREADING SCREW	6
16	G-66345	OUTER BEARING	1
17	G66365	STIFFENING RING	2
18	G-66315	SHORT CONE	1
19	G-66375	STOP RING	2
20	G-66385	SAFTEY SLEEVE	2
21	G-66675	OUTER TUBE SHIELD	1
22	G-66685	INNER TUBE SHIELD	1
23	G-66325	STANDARD CONE	1
24	G-66355	TUBE BEARING INNER	1
25	G-57736	COMPLETE PROTECTION ITEMS 16 THUR 28	1
26	G-67213	OUTER DECAL	1
27	G-67223	INNER DECAL	1
28	G52513	GREASE SEAL	1
29	**G-42895**	**COMPLETE CV PTO W COVER**	1



WING DRIVELINE

ITEM	PART NO.	DESCRIPTION	QTY.
1		HALF SHAFT	N/A
2	K-6116	YOKE	1
3	K-6117	CROSS KIT	2
4	K-6118	OUTER TUBE YOKE	1
5	K-6123	10X80 ROLL PIN OUTER TUBE	1
6	K-5120	OUTER TUBE	1
7		INNER HALF SHAFT	N/A
8	K-6121	INNER TUBE	1
9	K-6119	INNER TUBE YOKE	1
10	SCA	FD2 SEE SLIP CLUTCH BREAKDOWN FOR PARTS	1
11	K-6122	10X70 ROLL PIN INNER TUBE	1
**	G-21853W	AX61110FD2A-HDSC COMPLETE PTO 62#'S	1
12	K-6101	COVER BEARING	1
13	K-5102	STIFFING RING	2
14	K-5103	STANDARD CONE	1
15	K-5104	STOP RING	2
16	K-5105	SAFETY SLEEVE	2
17	K-5107	OUTER TUBE SHIELD	1
18	K-5109	INNER TUBE SHIELD	1
19	K-5112	SHORT CONE	1
20	K-6110	TUBE BEARING	1
21		OUTER HALF	N/A
22		INNER HALF	N/A
23	G-67953W	COMPLETE COVER USE 1240MM 36795	1
24	K-5114	CHAIN	1
25	K-5113	DECAL	1
26	S/A K-5113	DECAL	1
	G21853W	COMPLETE DRIVE LINE	2

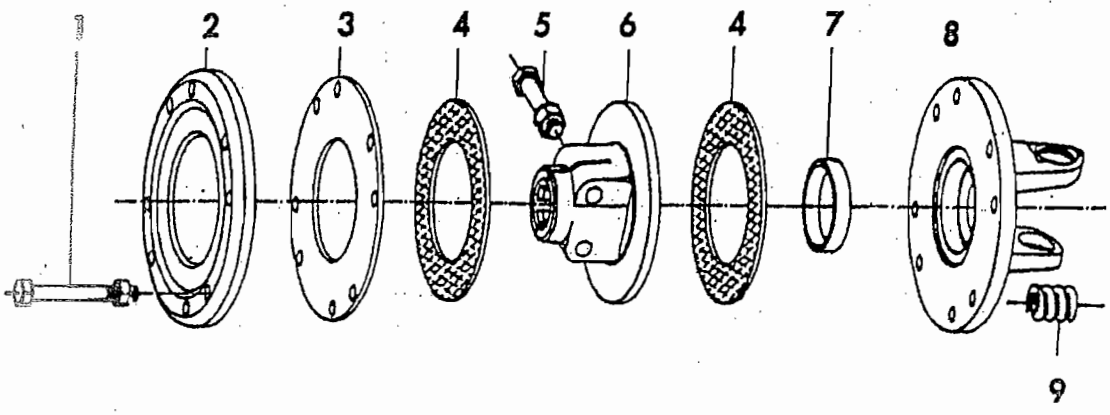


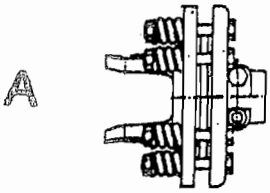
SLIP CLUTCH FD-2

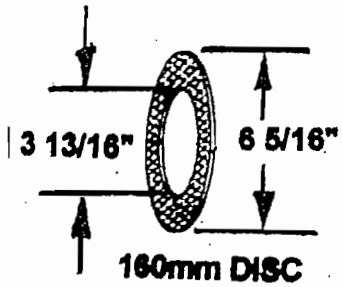
ITEM	PART NO.	DESCRIPTION	QTY.
1	G-35553	10mmX80mm / 10mm NUT	8
2	G-24953	OUTER PRESSURE PLATE	1
3	G-25523	INNER PRESSURE PLATE	1
4	K-5144	FRICTION DISC 6-5/16"O.D. 3-13/16" I.D.	2
5	G-41653	BOLT ,LOCK WASHER , NUT	1
6	G-40643	HUB	1
7	G-24903	SLEEVE	1
8	G-24933	FLANGE W/YOKE 6	1
9	G-24983	TENSION SPRING	8

FD2 SLIP CLUTCH PARTS(160mm disc)

HEAVY DUTY 2 DISC - 10600 IN. LB. TORQUE for use with series 5 /6 /7

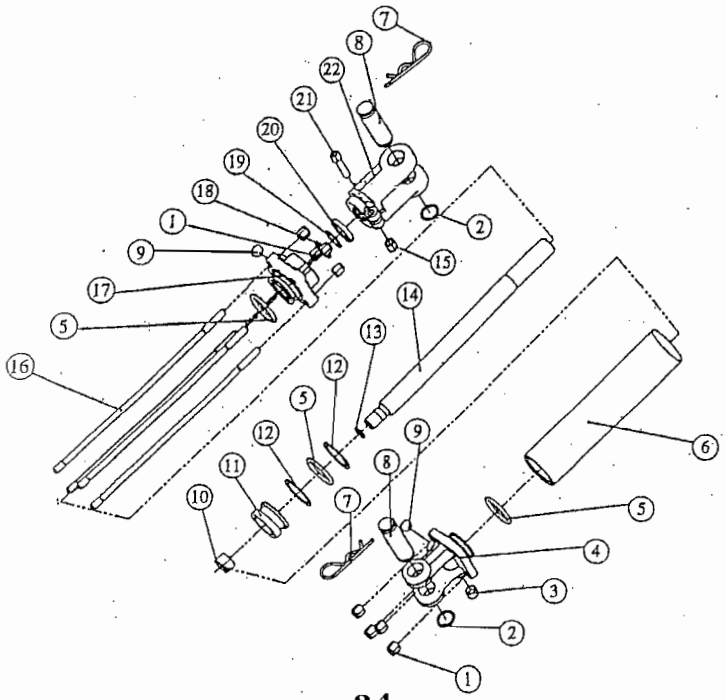






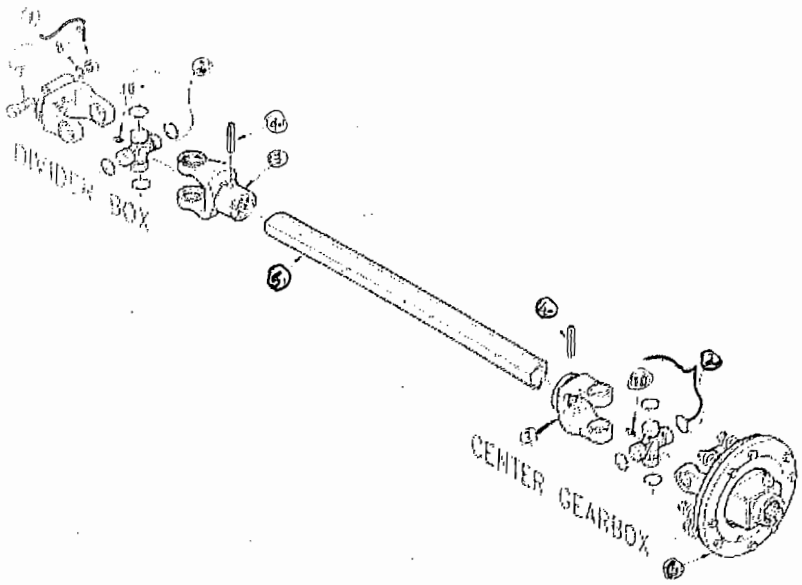
HYDRAULIC CYLINDER

ITEM	PART NO.	DESCRIPTION	QTY.
1	G-10201WC	TIE ROD NUT	8
2	G-10202WC	C-RING	
3	G-10203WC	STEEL PIPE PLUG	
4	G-10204WC	LOAD CLEVIS	
5	**	O'RING	
6	G-10205C	CYLINDER TUBE 3.5X8	
6	G-10205W	CYLINDER TUBE 3X12	
7	G-10206WC	CLIP PIN	2
8	G-10207WC	CLEVIS PIN	2
9	G-10208WC	PLASTIC PLUG	
10	G-10209WC	PISTON NUT	
11	G-10210WC	PISTON	
12	**	BU-RING	
13	**	O'RING	
14	G-10211C	PISTON ROD 3.5X8	
14	G-10211W	PISTON ROD 3X12	
15	G-10212WC	NUT	
16	G-10213C	TIE ROD 3X8	4
16	G-10213W	TIE ROD 3X12	4
17	G-10214WC	GUIDE	
17	G-10214WC	CLEVIS PIN	
18	**	O'RING	2
19	**	BU-RING	3
19	**	BACK UP RING	
20	**	WIPER	
21	G-10215WC	SET SCREW	
22	G-10216C	CLEVIS 3.5X8	
22	G-10217W	CLEVIS 3X12	
**	G-46905W	PACKING KIT (INCLUDE. 12,13,5,18,20,19) 3X12	
**	G-46906C	PACKING KIT (INCLUDE. 12,13,5,18,20,19) 3.5X8	



CONNECTOR

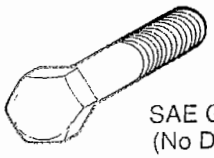
ITEM	PART NO.	DESCRIPTION	QTY.
1	G-10800C	TRACTOR END YOKE *	1
2	G-10801C	UNIVERSAL	1
3	G-10802C	OUTER TUBE YOKE	1
4	G-10803C	10X 80 148 ROLL PIN	2
5	G-10804C	TUBE	1
6	G-10805C	TORQUE LIMITER 4 FRICTION DISC	1
7	G-10806C	E.C. BOLT	1
8	G-10807C	SPRING WASHER	1
9	G-10808C	EC NUT	1
10	G-10809C	GREASE FITTING 8X1 45 DEG.	1
	G-10810C	COMPLETE CONNECTOR SHAFT	1



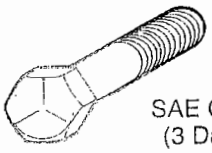
TORQUE SPECIFICATIONS

AMERICAN

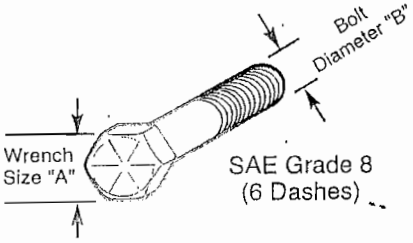
Bolt Head Markings



SAE Grade 2
(No Dashes)



SAE Grade 5
(3 Dashes)

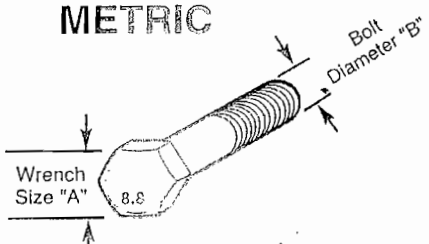


SAE Grade 8
(6 Dashes)

Proper toque for American fasteners used on Bush Hog equipment.
Recommended Torque in Foot Pounds (Newton Meters).*

WRENCH SIZE (IN.) "A"	BOLT DIAMETER (IN.) "B" AND THREAD SIZE	SAE GRADE 2	SAE GRADE 5	SAE GRADE 8
7/16	1/4 - 2O UNC	6 (7)	8 (11)	12 (16)
7/16	1/4 - 28 UNF	6 (8)	10 (13)	14 (18)
1/2	5/16 - 18 UNC	11 (15)	17 (23)	25 (33)
1/2	5/16 - 24 UNF	13 (17)	19 (26)	27 (37)
9/16	3/8 - 16 UNC	20 (27)	31 (42)	44 (60)
9/16	3/8 - 24 UNF	23 (31)	35 (47)	49 (66)
5/8	7/16 - 14 UNC	32 (43)	49 (66)	70 (95)
5/8	7/16 - 20 UNF	36 (49)	55 (75)	78 (106)
3/4	1/2 - 13 UNC	49 (66)	76 (103)	106 (144)
3/4	1/2 - 20 UNF	55 (75)	85 (115)	120 (163)
7/8	9/16 - 12 UNC	70 (95)	109 (148)	153 (207)
7/8	9/16 - 18 UNF	79 (107)	122 (165)	172 (233)
15/16	5/8 - 11 UNC	97 (131)	150 (203)	212 (287)
15/16	5/8 - 18 UNF	110 (149)	170 (230)	240 (325)
1-1/8	3/4 - 10 UNC	144 (195)	266 (360)	376 (509)
1-1/8	3/4 - 16 UNF	192 (260)	297 (402)	420 (569)
1-5/16	7/8 - 9 UNC	166 (225)	430 (583)	606 (821)
1-5/16	7/8 - 14 UNF	184 (249)	474 (642)	668 (905)
1-1/2	1 - 8 UNC	250 (339)	644 (873)	909 (1232)
1-1/2	1 - 12 UNF	274 (371)	705 (955)	995 (1348)
1-1/2	1 - 14 UNF	280 (379)	721 (977)	1019 (1381)
1-11/16	1-1/8 - 7 UNC	354 (480)	795 (1077)	1288(1745)
1-11/16	1-1/8 - 12 UNF	397 (538)	890 (1206)	1444 (1957)
1-7/8	1-1/4 - 7 UNC	500 (678)	1120 (1518)	1817 (2462)
1-7/8	1-1/4 - 12 UNF	553 (749)	1241 (1682)	2013 (2728)
2-1/16	1-3/8 - 6 UNC	655 (887)	1470 (1992)	2382 (3228)
2-1/16	1-3/8 - 12 UNF	746 (1011)	1672 (2266)	2712 (3675)
2-1/4	1-1/2 - 6 UNC	870 (1179)	1950 (2642)	3161 (4283)
2-1/4	1-1/2 - 12 UNF	979 (1327)	2194 (2973)	3557 (4820)

METRIC



Numbers appearing on bolt heads indicate ASTM class.

Proper torque for metric fasteners used on Bush Hog equipment.
Recommended torque in foot pounds (newton Meters).*

WRENCH SIZE (mm) "A"	BOLT DIA. (mm) "B"	ASTM 4.6	ASTM 8.8	ASTM 9.8	ASTM 10.9
8	5	1.8 (2.4)		5.1 (6.9)	6.5 (8.8)
10	6	3 (4)		8.7 (12)	11.1 (15)
13	8	7.3 (10)		21.1 (29)	27 (37)
16	10	14.5 (20)		42 (57)	53 (72)
18	12	25 (34)	74 (100)	73 (99)	93 (126)
21	14	40 (54)	118 (160)	116 (157)	148 (201)
24	16	62 (84)	167 (226)	181 (245)	230 (312)
30	20	122 (165)	325 (440)		449 (608)
33	22		443 (600)		611 (828)
36	24	211 (286)	563 (763)		778 (1054)
41	27		821 (1112)		1138 (1542)
46	30	418 (566)	1119 (1516)		1547 (2096)

*Use 75% of the specified torque value for plated fasteners. Use 85% of the specificed torque values for lubricated fasteners.

IMPORTANT FEDERAL LAWS AND REGULATIONS* CONCERNING EMPLOYERS, EMPLOYEES AND OPERATIONS.

*(This section is intended to explain in broad terms the concept and effect of the following federal laws and regulations. It is not intended as a legal interpretation of the laws and should not be considered as such).

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

Current 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." These will include (but are not limited to) instructions to:

Keep all guards in place when the machine is in operation;

Permit no riders on equipment;

Stop engine, disconnect the power source, and wait for all machine movement to stop before servicing, adjusting, cleaning or unclogging the equipment, except where the machine must be running to be properly serviced or maintained, in which case the employer shall instruct employees as to all steps and procedures which are necessary to safely service or maintain the equipment.

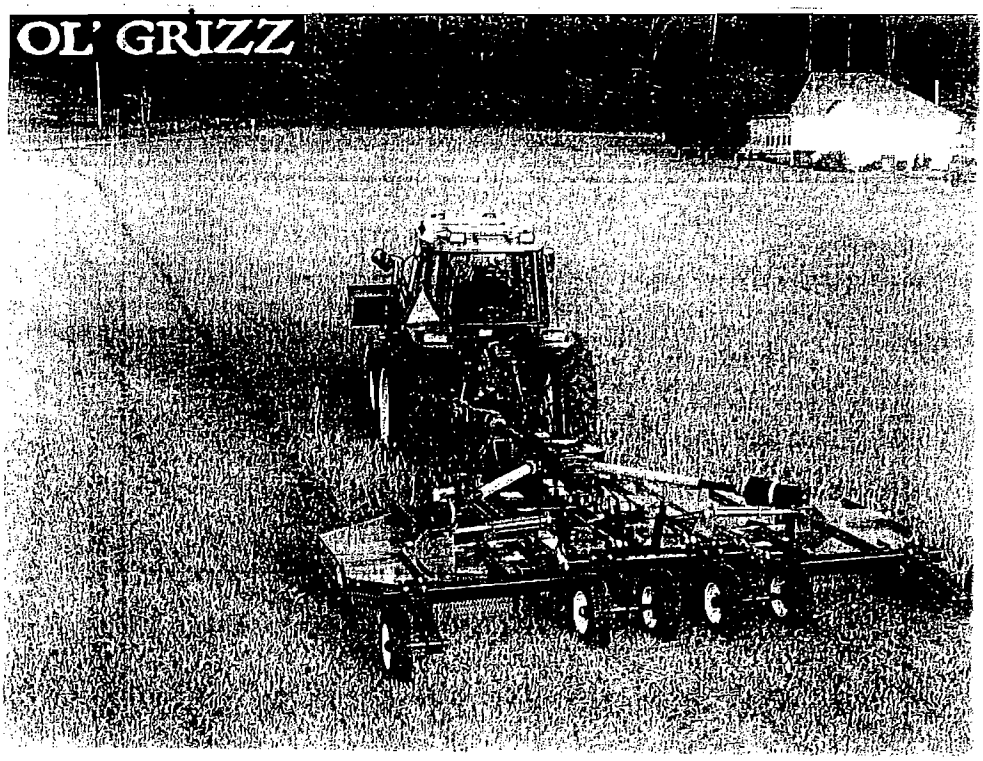
Make sure everyone is clear of machinery before starting the engine, engaging power, or operating the machine.

EMPLOYEE TRACTOR OPERATING INSTRUCTIONS:

1. Securely fasten your seat belt 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 tractor manufacturers.
9. When tractor is stopped, set brakes securely and use park lock if available.

Child Labor Under 16 Years Old

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.)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