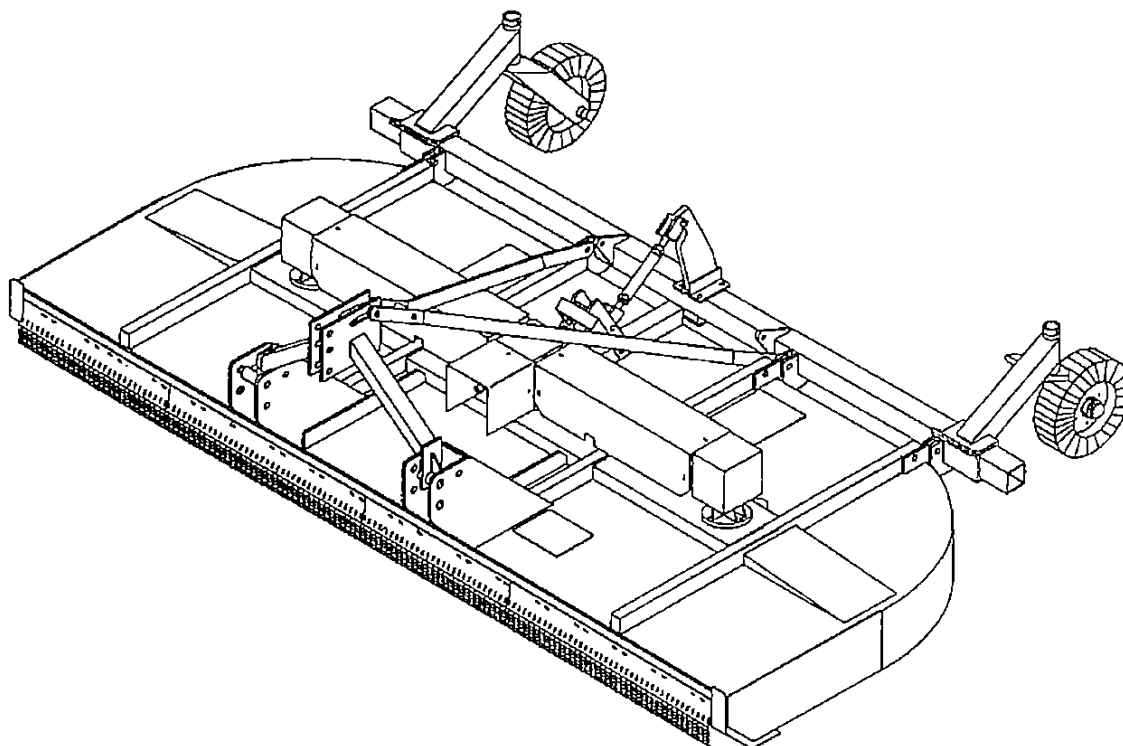




TAYLOR PITTSBURGH MFG., INC.
7 ROCKY MOUNT ROAD
ATHENS, TN 37303
423-745-3110

270 SERIES

10-ft ROTARY CUTTERS



OWNER'S MANUAL

Form 270/120
January 2009

TO THE DEALER:

The cutter assembly and proper installation to the tractor is the responsibility of the TAYLOR PITTSBURGH 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.

TO THE OWNER:

Read this manual before operating your TAYLOR PITTSBURGH 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 1-423-745-3110, in the USA and Canada only.

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 TAYLOR PITTSBURGH dealer has trained mechanics, genuine TAYLOR PITTSBURGH service parts, and the necessary tools and equipment to handle all your needs.

Provide your model number and serial number to your dealer to obtain correct repair parts.

LIMITED WARRANTY

TAYLOR PITTSBURGH 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. Warranty for commercial usage is 90 days. This warranty does not apply to any equipment which has been damaged or which has been subjected to abuse, 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 Taylor Pittsburgh Mfg., Inc.

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 approval by the manufacturer, the equipment or defective part must be returned to Taylor Pittsburgh Mfg., Inc., Athens, Tennessee 37371.

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 MANUFACTURER 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.

Taylor Pittsburgh 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 cutter and furnishes operating and maintenance recommendations to help you obtain long and satisfactory service.

SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



Throughout this manual, the term **IMPORTANT** is used to indicate that failure to observe can cause damage to equipment. The terms **CAUTION**, **WARNING** and **DANGER** are used in conjunction with the Safety-Alert Symbol, (a triangle with an exclamation mark), to indicate the degree of hazard for



The Safety-Alert Symbol means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**



CAUTION

Denotes a reminder of safety practices or directs attention to unsafe practices which could result in personal injury if proper precautions are not taken.



WARNING

Denotes a hazard exists which can result in injury or death if proper precautions are not taken.



DANGER

Denotes an extreme intrinsic hazard exists which would result in high probability of death or irreparable injury if proper precautions are not taken.

GENERAL INFORMATION

INTRODUCTION

READ THIS MANUAL carefully to learn how to operate and service your cutter correctly. Failure to do so could result in personal injury or equipment damage.

Throughout this manual, references are made to right and left direction. **RIGHT - HAND AND LEFT - HAND** sides are determined by standing behind the cutter facing the direction the cutter will travel when going forward.

The purpose of this manual is to assist you in operating and maintaining your cutter. Read it carefully. It furnishes information and instructions that will help you achieve years of dependable performance. These instructions have been compiled from extensive field experience and engineering data. Some information may be general in nature due to unknown and varying operating conditions.

However, through experience and these instructions, you should be able to develop procedures suitable to your particular situation.

Maintain your cutter with original repair parts to insure safety and optimum performance.



WARNING

- Some illustrations in this manual show the cutter with safety components removed to provide a better view. The cutter should never be operated with any safety components removed.

The illustrations and data used in this manual were current at the time of printing, but due to possible production changes, your cutter may vary slightly in detail. We reserve the right to redesign and change the cutters as may be necessary without notification.

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Cutter Specifications 10-Foot Lift & Pull Type

Cutting Height Range	2" to 11"
Cutting Width (Inches)	120"
Overall Width (Inches)	124-1/2"
Overall Length (Inches)	102-1/2"
Gearbox Rating (Hp)	90 (Hp) Outboard
	125 (Hp) Splitter
Tractor PTO	540 RPM
Tractor (Hp)	50-80
Driveline Size	CAT 6
Driveline Protection	Slipclutch
Number of Blades	6
Blade Size	1/2" X 4"
Blade Overlap (Inches)	6"
Blade Tip Speed (Feet per minute)	16,233 (FPM)
Brush Diameter Cut	Up to 2"
Cutter Frame Thickness	7 Gauge
Deck	
Sideframe	1/4"
Side Frame Depth (Inches)	10"
Tailwheels	Laminated
Lift Type	
Pull Type	Laminated or Aircraft
3 Point Hitch Category	CAT II (or) CAT III
Weight w/o Shields (lbs)	
Lift Type	2,256 (lbs)
Pull Type w/o Cylinder	2,550 (lbs)

SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by a single careless act of an operator.

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 involved in the operation, transport, maintenance and storage of equipment.

It has been said **"The best safety device is an informed, careful operator."** We ask you to be that kind of an operator.

TRAINING

- **Safety instructions are important!** Read this manual and the tractor manual; follow all safety rules and safety decal information. (Replacement manuals are available from dealer or call 1-800-456-7929.) Failure to follow instructions or safety rules can result in serious injury or death.
- **If you do not understand any part of this manual and need assistance, see your dealer.**
- **Know your controls and how to stop engine and cutter quickly in an emergency.**
 - **Operators must be instructed in and be capable of the safe operation of the equipment, its attachments and all controls. Do not allow anyone to operate this equipment without proper instructions.**
- **Do not allow children or untrained persons to operate equipment.**

PREPARATION

- **Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing and head.**
- **Ensure cutter is properly mounted, adjusted and in good operating condition.**
- **Tighten all nuts and bolts, and check that all cotter pins are installed securely to ensure equipment is in a safe condition before operating.**
- **Make sure spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.**
- **Tractor must be equipped with ROPS or ROPS CAB and seat belt. Keep seat belt securely fastened. Falling off tractor can result in death from being run over or crushed. Keep foldable ROPS systems in "locked up" position at all times.**
- **Remove accumulated debris from this cutter, tractor and engine to avoid fire hazard.**
- **Ensure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)**
- **Inspect chain/rubber shielding before each use. Replace if damaged.**
- **Ensure shields and guards are properly installed and in good condition. Replace if damaged.**

SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



(Safety Rules continued from previous page)

- A minimum 20% of a tractor and cutter weight must be on tractor front wheels with cutter in transport position. Without this weight, tractor could tip over causing personal injury or death. The weight may be attained with front wheel weights, ballast in tires or front tractor weights.

- Inspect and clear area of stones, branches or other hard objects that might be thrown, causing injury or damage.

OPERATIONAL SAFETY

- Keep bystanders away from cutter while it is in operation.

- Never direct discharge toward anyone.

- Operate only in daylight or good artificial light.

- Always comply with all state and local lighting and marking requirements.

- Do not allow other people in the area when operating, attaching, removing, assembling, or servicing cutter.

- Make certain all movement of cutter components has stopped before opening blade access cover.

- No riders are allowed on equipment.

- Always sit in tractor seat when operating controls or starting engine. Place transmission in park or neutral, engage brake and ensure all other controls are disengaged before starting tractor engine.

- Operate tractor PTO at 540 rpm. Do not exceed.

- Do not operate tractor PTO during transport.

- Look down and to the rear and make sure area is clear before operating in reverse.

- Do not operate on steep slopes.

- Do not stop, start or change directions suddenly on slopes.

- Use extreme care and reduce ground speed on slopes and rough terrain.

- Watch for hidden hazards on the terrain during operation.

- Stop tractor and cutter immediately upon striking an obstruction. Turn off engine, remove key, inspect and repair any damage before resuming operation.

- Disengage power to cutter. Lower all raised components to the ground. Operate valve levers to release any hydraulic pressure. Stop engine, set parking brake and remove key before dismounting tractor or performing any service or maintenance.

MAINTENANCE SAFETY

- Before performing any service or maintenance, disconnect driveline from tractor.

- Before working underneath, raise cutter to highest position, install transport locks, and block securely. Blocking up prevents cutter dropping from hydraulic leak down. hydraulic system failures, or mechanical component failures.

- Keep all persons away from operator control area while performing adjustments, service or maintenance.

- Frequently check blades. They should be sharp, free of nicks and cracks and securely fastened.

SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



(Safety Rules continued from previous page)

- Do not handle blades with bare hands. Careless or improper handling may result in serious injury.
- Your dealer can supply genuine replacement cutter blades. Substitute blades may not meet original equipment specifications.

STORAGE

- Block cutter securely for storage.
- Keep playing children and bystanders away from storage area.

TRANSPORTING SAFETY

- Use a Slow - Moving - Vehicle (SMV) emblem and proper lighting when transporting the cutter.
- Do not road the cutter over 20 miles per hour on the best surface conditions. Reduce speed when going up or down hills and when approaching ditches or corners.
- Do not operate tractor PTO during transport.
- Always comply with all state and local lighting and marking requirements.

BOLT TORQUE CHART

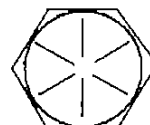
GRADE 2



GRADE 5



GRADE 8



TORQUE IN FOOT POUNDS

BOLT HEADS		3/8	1/2	5/8	3/4	7/8	1
HEX HEAD		9/16	3/4	15/16	1-1/8	1-5/16	1-1/2
UNC GRADE	2	18	45	89	160	252	320
	5	30	68	140	240	360	544
	8	40	100	196	340	528	792

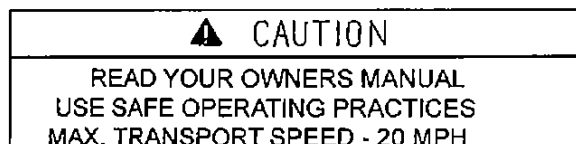
SAFETY DECALS



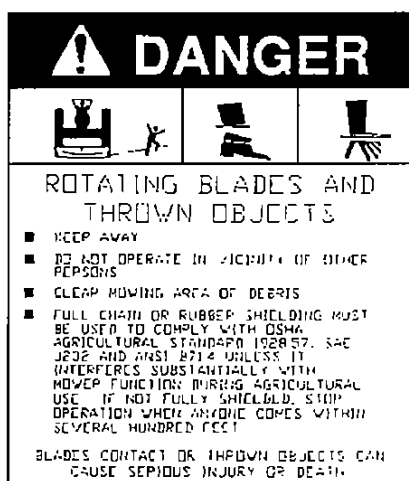
ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



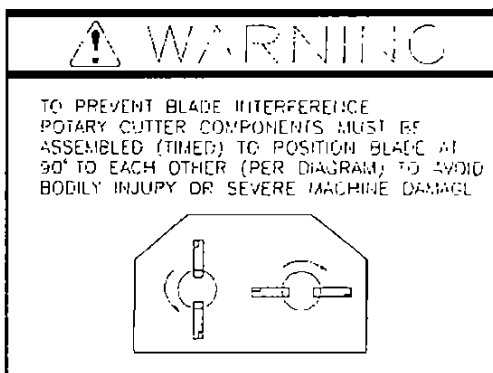
Replace Immediately If Damaged!



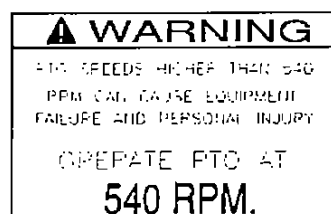
Next to Serial Plate



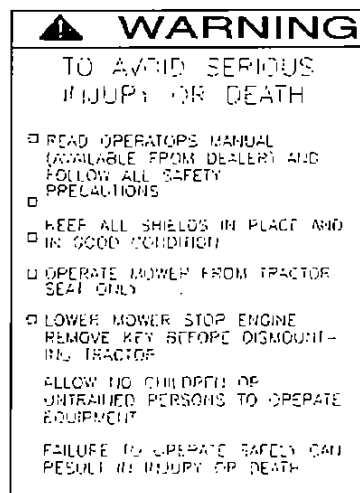
front of deck



front of deck 10'



next to gearbox 5' & 6'



front of deck



near access hole cover

INTRODUCTION

This manual covers the assembly, operation, and maintenance of your Series 270 Rotary Cutter. Studying and obeying these instructions will insure optimum product performance and longevity. Be sure to read all instructions carefully. Read all safety precautions prior to operation.

Maintain your cutter with original repair parts to insure safety and optimum performance.

MODIFICATIONS

It is the policy of the manufacturer to improve its products whenever possible and practical. We reserve the right to make changes, improvements, and modifications at any time without incurring the obligation to make such changes, improvements, and modifications on any cutter sold previously.

ASSEMBLY

General

Your Series 270 Rotary Cutter is shipped in bundles for assembly. Remove all wiring from bundles as they are called for. Choose a level area to arrange the parts conveniently. Assemble parts for each step loosely to insure fit. Use flatwashers with slotted holes. Always use lockwashers unless a lock nut is called for. Tighten hardware after parts are installed according to the torque chart given. Unless otherwise stated, all hardware is grade 5. The following assembly steps are given to minimize the need for adjustment after assembly. Remember that **LEFT** and **RIGHT** are determined by standing at the rear of the cutter and facing it.

WARNING

The manufacturer strongly recommends installation of deflector shields. A rotary cutter without deflector shields can discharge large objects at high speeds which could seriously injure bystanders or the operator. Check local laws governing the operation of equipment without shields.

10' PULL TYPE CUTTER

Drawbar (Refer to Figure 1)

1) Block cutter deck approximately 10" off the ground before starting the assembly procedures.

WARNING

Be sure deck is supported on all sides and is stable. Be sure cutter is level. **DO NOT** place hands or feet under cutter. **DO NOT** crawl under cutter for any reason.

2) Attach clevis to drawbar using a 1" x 6 1/2" bolt with locknut. Clevis must be free to rotate.

3) Attach drawbar to the deck using two pins with click pins. Drawbar must be free to rotate.

4) Mount the jack stand to the drawbar and use to support the drawbar for further assembly.

5) Attach female ends of the control rods to the drawbar and secure using pins with cotter pins.

Lift Roll (Refer to Figure 1)

1) Attach lift roll to deck using 1" x 3 1/2" bolts with locknuts. Lift roll must be free to rotate.

2) Attach male ends of control rods to female ends and secure.

10' LIFT TYPE CUTTER

A--Frame & Braces (Refer to Figure 2)

1) Install A--frame in hitch brackets and align with rear set of holes. Secure with 1" x 8" bolt and locknut. A--frame must be free to rotate.

2) Install lower link pins in bottom hole of hitch brackets. Secure with click pin and spring pin.

3) Position A--frame braces with end having two holes toward the hitch.

4) With one brace on each side of A--frame, insert a 1" x 5 1/2" bolt through braces and A-frame using the end hole in the braces. Secure with locknut.

5) Install another 1" x 5-1/2" bolt through remaining hole with a bushing between the braces. Secure with locknut.

6) Attach other end of braces to deck using a 3/4" x 3-1/2" bolt with bushing and locknut.

FIGURE 1 PULL TYPE COMPONENTS

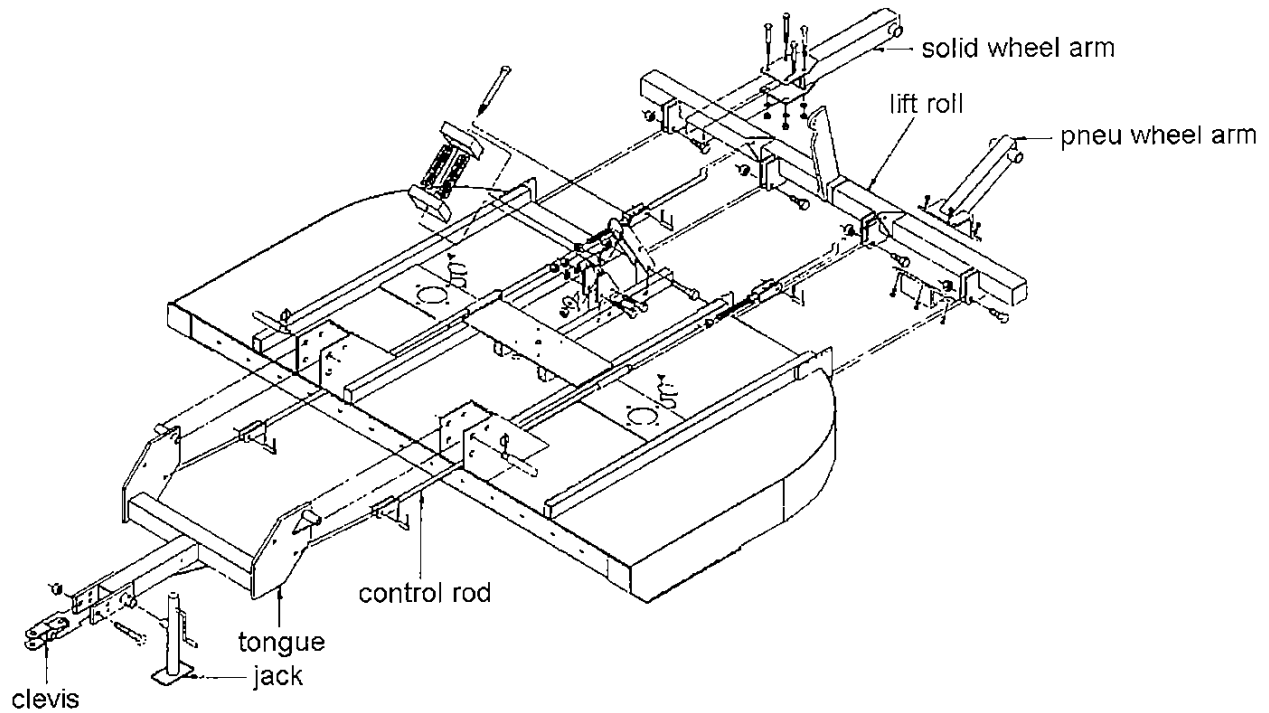
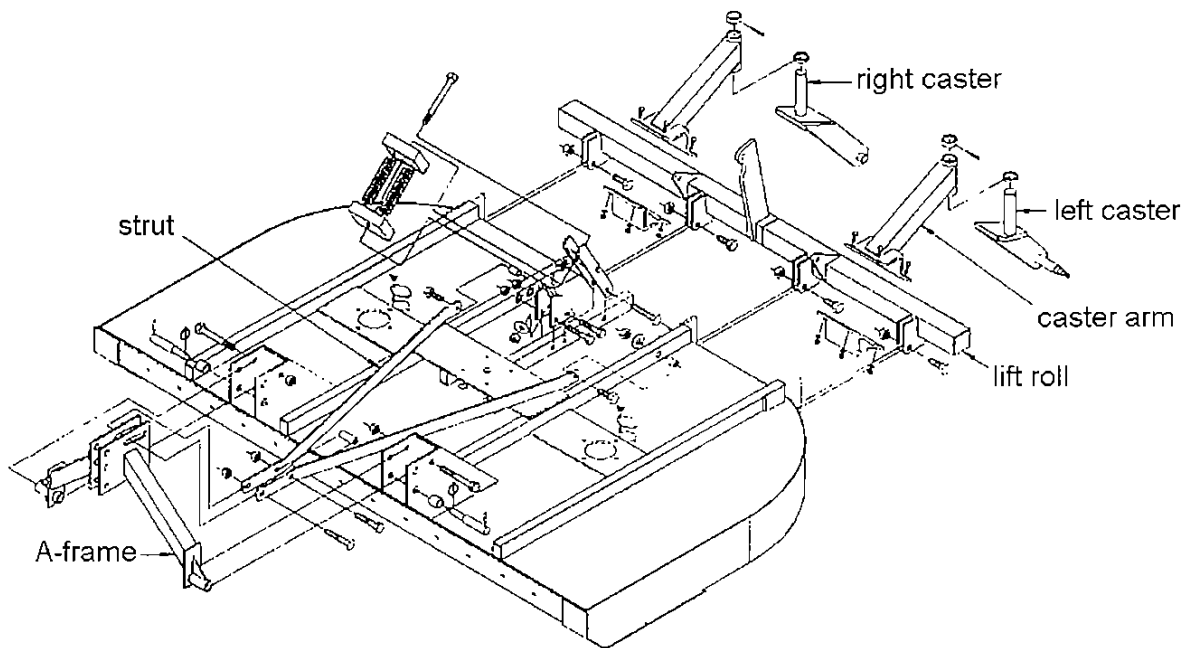


Figure 2 Lift Type Components



10' MODEL (Refer to Figure 1 & 2)

1) Attach lift roll to deck using 1" x 3" bolts with locknuts. Lift roll must be free to rotate.

2) Attach the caster type wheel arms to the lift roll using the wheel arm clamp and 5/8" x 2 1/4" bolts with lockwashers and nuts. **NOTE** the spindles point outward.

3) Attach wheels to casters using nut provided.

4) After tires are installed be sure they are resting on the ground and attach turnbuckle to the lift roll and the mount on the deck. Secure with pins and cotter pins provided. If you are using hydraulics refer to **HYDRAULIC COMPONENTS**.

Optional Deflector Shields

Shields are shipped fully assembled and need only be mounted to cutter deck.

1) Arrange shields on ground to be sure of placement on your cutter.

2) Attach deflector shields to cutter (front only on 5'&6') using hardware supplied in the shield bundle.

2) Check and tighten all hardware.

Installing Drive Line

WARNING

Keep drive line shields in place at all times and in good repair. Replace broken shields.

1) Depress push button on yoke of drive line while sliding it onto the input shaft of the gearbox.

2) With the drive line fed onto the input shaft, release the push button. Slide the drive line further onto the shaft until the push button releases, locking the drive line onto the shaft.

3) Push and pull the drive line to insure it is locked in place.

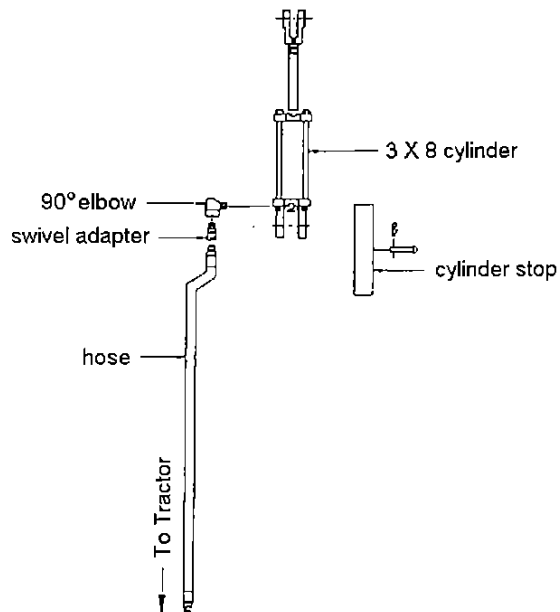


FIGURE 3- HYDRAULIC COMPONENTS

4) Attach shield retaining chain included with drive line to shield and A-frame or tongue. The chain keeps the drive line shield from rotating when the PTO is engaged. Make sure the chain is installed properly at all times to prevent rotation of shield.

10' CONNECTOR SHAFTS & SHIELD

The connector shafts attach between the center gearbox and the outboard gearboxes and are used on both the lift type and pull type machines.

- 1) Attach 1 3/4" end of shaft to the center gearbox and slide other end onto outboard gearboxes.
- 2) Attach shield using bolts in the top of the center gearbox.

Hydraulic Components (Refer to Figure 6)

- 1) Attach butt end of cylinder to mount on deck. Be sure cylinder ports are up.
- 2) Remove cylinder port plugs from cylinder body.
- 3) Extend piston to align clevis with arm on lift roll.
- 4) Pin clevis to arm using pin provided. Secure with hairpin clips.
- 5) Install 90° elbow into butt end cylinder port. Install swivel end of hydraulic line into elbow. Use a thread sealant to seal the fittings and prevent leakage. Be sure not to over tighten fittings.

BEFORE OPERATION

- 1) Tighten all loose hardware using the torque chart. **SEE ASSEMBLY**. Replace any missing hardware. On new machines, all hardware must be rechecked after first few hours of operation.
- 2) Replace any bent or broken parts.
- 3) Perform lubrication on cutter as recommended. **SEE MAINTENANCE**.
- 4) Refer to your Tractor's Owner's Manual for recommended adjustments and weight distribution.

- 5) Fill the cutter's gearbox with oil using SAE 90EP gear oil. DO NOT overfill.

- 6) Check gearbox mount bolts to see that they are tight.

- 7) Check all shields and make sure they are in place.

- 8) Check blades for signs of wear or damage. Sharpen dull blades and replace bent or broken blades. See **BLADE REPLACEMENT**.

- 9) Inspect hydraulic lines and fittings for wear and leaks. Repair or replace if needed.

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.

- 10) Read the **SAFETY** section of this manual to be sure of all precautions.

ATTACHING

LIFT TYPE

- 1) Back tractor to align three point hitch.

WARNING

Be sure bystanders are clear. Do not stand between cutter and tractor. Shut off tractor and engage parking brake prior to dismounting.

- 2) Attach tractor lower link arms to cutter. Secure using click pins.
- 3) Attach top link between tractor and cutter. Secure using click pins.
- 4) Attach drive line to tractor by pushing in on push button and sliding the yoke onto the tractor's PTO shaft. Make sure the push button releases and locks the drive line in place.

5) Attach shield retaining chain included with drive line to drive line shield and to cross member on A-frame. The chain keeps the drive line shield from rotating when the PTO is engaged. Make sure the chain is installed properly at all times to prevent rotation of shield.

PULL TYPE

- 1) Back tractor to align drawbar with clevis.
- 2) Insert drawbar pin through clevis and drawbar. Secure with hairpin clip.
- 3) Attach drive line to tractor. Make sure drive line locks in place.
- 4) Attach drive line shield retaining chain to drawbar to prevent rotation of shield during operation.
- 5) Attach hydraulic line to tractor hydraulic system.
- 6) Crank jack stand up and remove pin, then rotate 90° and reinstall pin.

OPERATION

- 1) With tractor at a slow idle, engage the PTO slowly and let the cutter run for several seconds.
- 2) Gradually increase throttle speed until operating speed is obtained. Listen for unusual noises or vibration. Shut the tractor off immediately if excessive noise or vibration occurs. Allow all moving parts to come to a complete stop and investigate cause.
- 3) A new gear box will sound noisy in the first few hours of operation until the gears mesh.
- 4) Get to know the feel of your new cutter on familiar ground that is free of obstacles.

ADJUSTMENTS

WARNING

Do not make any adjustments while cutter is in motion or when PTO is engaged.

LIFT TYPE

Side To Side Leveling

- 1) Your cutter should be level from side to side. With the cutter and tractor on level ground, use the tractor's link arm crank to adjust the lower link arm up or down as needed to level cutter.

Front To Rear Leveling

- 1) Using the tractor's three point lift, position the cutter at the desired cutting height.
- 2) Adjust the top link in or out so that the front of the cutter is about 1" lower than the back. At this slight angle, the cutter does not require as much power. Fuel efficiency and cutter performance are thereby improved.
- 3) Check the tail wheel to see that it contacts the ground. If it does not, reposition the rear tail wheel arm bolt to lower the tail wheel as needed to meet with ground.
- 4) If the tail wheel is too low causing too much front to rear tilt, adjust the tail wheel up by moving the rear bolt to the next hole. Readjust the top link to properly position deck with slight tilt forward.

PULL TYPE

Front to Rear Leveling

- 1) Park cutter on level ground
- 2) Position 1" thick blocks under rear corners of cutter deck.
- 3) Lower cutter so that front skids rest on ground and rear rests on blocks. Allow wheels to remain on the ground.

- 4) Support drawbar with jack stand and relieve weight from control rods.
- 5) Disconnect control rods from lift roll.
- 6) Use jack stand to adjust hitch clevis to new drawbar height.
- 7) Adjust control rod turnbuckles to realign with arms on lift roll.
- 8) Connect control rods to lift roll.

Cutting Height

Cutting height on your pull type cutter is changed by using the hydraulic lift or turnbuckle.

WARNING

When making height adjustment using the turnbuckle, be sure tractor is shut off, PTO is disengaged, and all moving parts have come to a complete stop prior to making adjustment.

Drive Line Interference (Lift Type Cutter)

- 1) Start the tractor engine and slowly lift cutter until the drive line is at its shortest position. At this point, the two telescoping shafts should lack two inches from touching.
- 2) Now lower the cutter until the drive line is extended to its longest position. At this point, the two shafts should engage at least six inches.
- 3) Be sure the drive line clears the cutter deck when the cutter is raised. If it does not, readjust the top link on the hitch to correct the problem. The tail wheel may then have to be adjusted so the cutter can be properly positioned for operation.

TRANSPORTING

- 1) Disengage PTO and allow all moving parts to completely stop.

- 2) Raise cutter to fully raised position.

- 3) On cutters with hydraulic lift, install cylinder stop and secure with pin provided. Retract cylinder to engage stop and relieve pressure from hydraulic lines.

- 4) Transport at no more than 20 MPH.

- 5) Use care when transporting on rough terrain.

- 6) When traveling on public roads, always have a slow moving vehicle (SMV) emblem mounted to the tractor such that it is visible from the rear.

- 7) Avoid travel on public roads at night. Check local laws governing lighting requirements in addition to SMV emblem.

MAINTENANCE

WARNING

Do not perform any maintenance while tractor is running or when cutter is in motion.

Gearbox

- 1) Check oil level in gear box about every 40 hours of use. Fill to side port using only SAE 90EP gear oil.

- 2) Check mount bolts before each use to be sure they are tight.

Blade Inspection and Replacement

Inspect blades before each use. Sharpen worn blades and replace in pairs if blades are damaged. To replace blades, follow the steps below.

- 1) **Support cutter from below on all sides. DO NOT** rely on tractor's hydraulic lift alone to support cutter. Be sure cutter is stable before proceeding.

2) Remove blade nuts through the hole in the cutter deck.

3) Using a punch, drive the blade bolts out of the blade holder.

4) Insert blade bolts in new blades so that flare in blade tip is up. Insert bolt with blade onto blade holder by aligning notch in hole with shoulder on bolt.

5) Replace nuts on bolts and tighten.

WARNING

On 10' models, if stump jumpers are removed, be sure to replace with blade sets positioned 90° apart. If not, blades will collide during rotation.

Slip Clutch

Operational Check:

On a new unit or one that has been stored between seasons, perform the following check:

1) Loosen all spring retaining nuts until springs can be turned with fingers.

2) With tractor at idle speed, engage PTO for 2--3 seconds. Clutch should slip without turning blades. If not, contact your dealer.

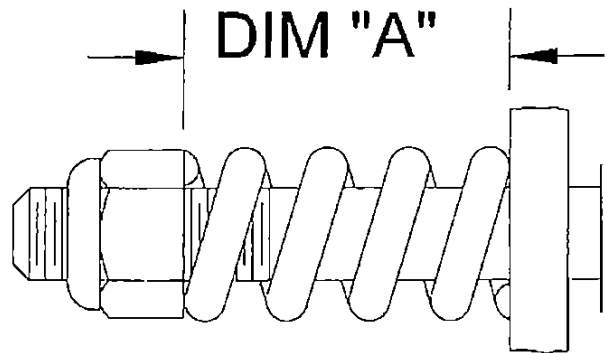
3) Retighten nuts to compress springs according to diagram. Dim "A" = 1.16" for Bondioli clutches & Dim "A" = 1.28" for Comer clutches.

WARNING

Failure to retighten nuts can cause damage to cutter and/or tractor due to improper slip clutch torque setting.

Adjustment:

The slip clutch is designed to slip when blades encounter heavy brush or solid permanent objects. If this is not occurring or if the clutch



SLIP CLUTCH SPRING ADJUSTMENT

slips too much (i.e. the clutch begins to smoke), adjustment should be made as follows.

1) Check to be sure that all springs are compressed to the correct length. Adjust spring length by tightening or loosening retaining nut.

2) If clutch still performs improperly, tighten or loosen all nuts in 1/32" increments until clutch performs properly.

3) If excessive adjustment is necessary, consult your dealer.

LUBRICATION SCHEDULE

Clean grease fittings before applying grease. Use multipurpose, lithium base grease.

Before Each Use

Tail Wheel -- Apply grease at arm fitting and hub fitting.

Drive Line -- Lubricate universal joints at fittings and drive line shield at fittings.

Every 8 Hours

Drive Line -- Lubricate universal joints at fittings and drive line shield at fittings.

Every 16 Hours

Drive line -- Lubricate push buttons with oil.

Disconnect drive line and separate sections. Apply a thin coat of grease to outside of male shaft. Reassemble drive line and install. Be sure drive line is locked in place and shield retaining chain is properly attached.

Wheel Bearings – Apply multipurpose grease slowly with grease gun until grease relieves around seal.

Gearboxes – Use 90 wt. Gear oil if needed.

STORAGE

- 1) Clean all debris from cutter deck and drive line.
- 2) Store cutter on a level surface sheltered from the weather.
- 3) Store cutter supported on blocks to allow air circulation beneath cutter.
- 4) Support tractor end of driveline to keep off the ground.

MISCELLANEOUS HARDWARE BY SIZE				
Size	Part Number By Item			
	Lockwasher	Flatwasher	Regular Hex Nut	Hex Locknut
1/4"	303951	-	304003	-
5/16"	303952	303968	304004	-
3/8"	303953	303969	304005	304018
7/16"	303954	303970	304006	304019
1/2"	303955	303971	304007	304020
5/8"	303956	303972	304008	304021
3/4"	303957	303973	304009	304022
7/8"	303958	303974	304010	304023
1"	303959	303975	304011	304024
1-1/8"	303960	303976	304012	304025
1-1/4"	303961	303977	304013	304026

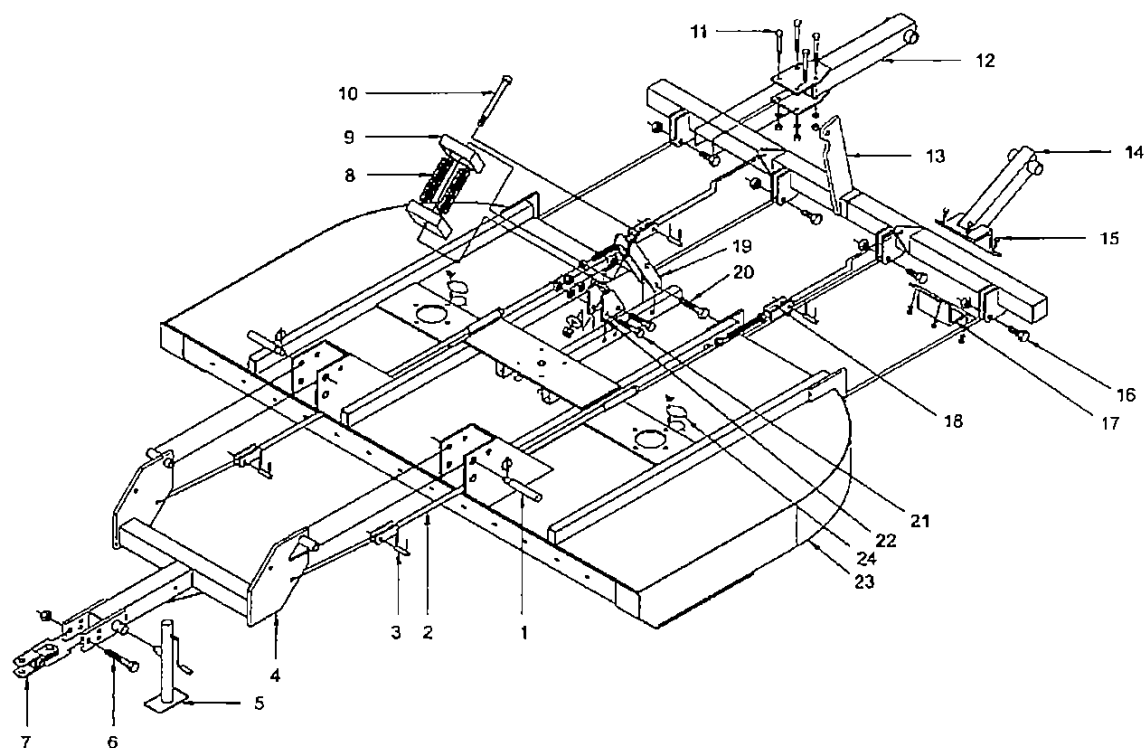


FIGURE 4 - 10' PULL TYPE COMPONENTS

Item	Part #	Description	Qty	Item	Part #	Description	Qty
1	042138	HITCH PIN	2	13	811347	LIFT ROLL	1
	303113	CLICK PIN	2	14	809382*	PNEU TAILWHL ARM	2
2	810688	CONTROL ROD/FEMALE	2	15	303677	HHCS 5/8" x 2 -1/4" GR5	8
3	204758	PIN/ 3/4 OD x 3-1/4" LONG	4	16	303757	HHCS 1" x 3" GR5	4
	304122	PIN/COTTER 1/4" x 1-1/2"	8	17	810715	WHEEL ARM CLAMP	2
4	810658	TONGUE	1	18	812237	CONTROL ROD/MALE	2
5	808026	JACK	1		304011	NUT/HEX 1" NC	2
6	303764	HHCS 1" x 6 -1/2" GR5	1	19	813753	CYL MOUNT	1
7	809451	CLEVIS	1	20	303762	HHCS 1" x 5 -1/2" GR5	1
8	206612	SPRING/COMP	2		812151	SPACER	2
9	812230	SPRING PAD	2	21	303707	HHCS 3/4" x 5" GR5	2
10	812241	SPRING ROD WELD	1		808557	SPACER	4
11	303709	HHCS 3/4" x 6" GR5	8	22	810703	SPRING ANCHOR BRKT	1
12	809382	SOLID TAILWHL ARM	2	23	811344	DECK/10' WELD	1

* WAS 810811

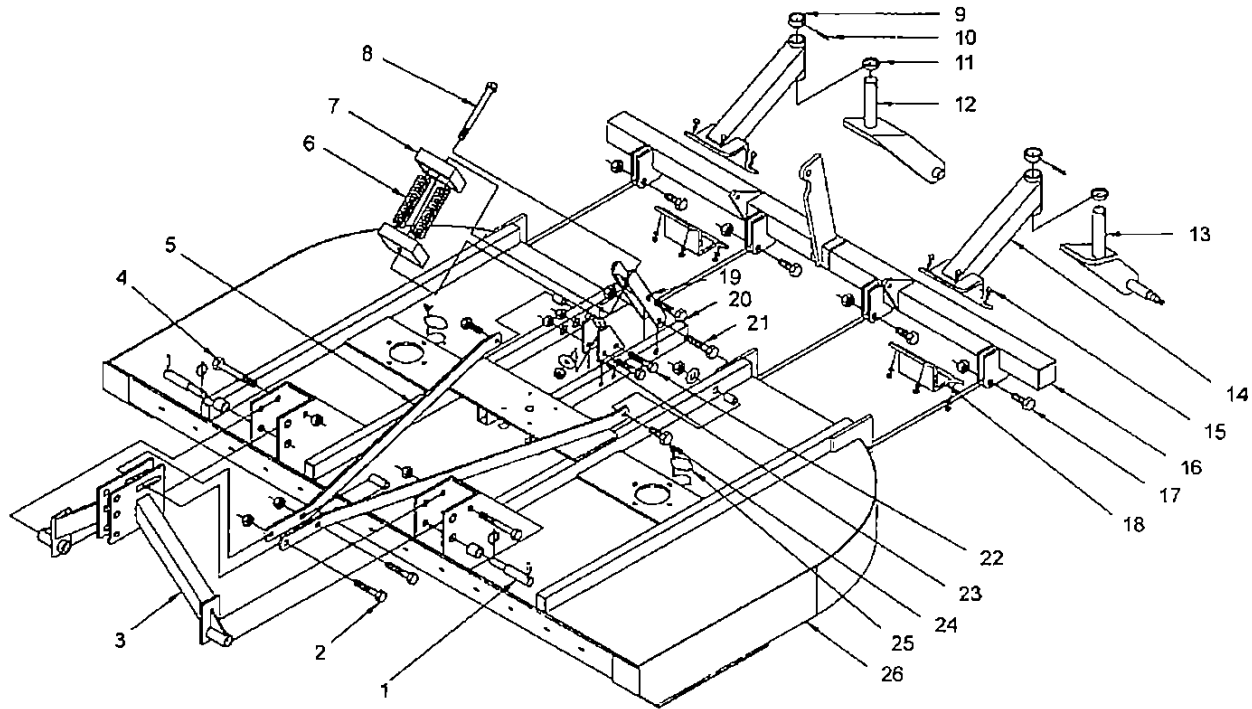


FIGURE 5 - 10' LIFT TYPE COMPONENTS

Item	Part #	Description	Qty	Item	Part #	Description	Qty
1	042137	CAT II LINK PIN	2	14	810714	CASTER WHEEL ARM	2
	607079	BUSHING	2	15	303677	HHCS 5/8" x 2 -1/4"	8
	304264	PIN/ROLL 7/16" x 2"	2	16	811347	LIFT ROLL	1
	303113	KLICK PIN	2	17	303757	HHCS 1" x 3" GR5	4
2	303762	HHCS 1" x 5 -1/2"	2	18	810715	WHEEL ARM CLAMP	2
	810684	SPACER	1	19	813753	CYL MOUNT	1
	304030	NUT/HEX LOCK 1" NC	2	20	303764	HHCS 1 x 6-1/2" GR5	1
3	810675	A-FRAME	1		304030	NUT/HEX LOCK 1" NC	1
4	303767	HHCS 1" x 8" GR5	2	21	303762	HHCS 1" x 5 -1/2" GR5	1
	304030	NUT/HEX LOCK 1" NC	2		812151	SPACER	2
5	812187	STRUT	2		304030	NUT/HEX LOCK 1" NC	1
6	206612	SPRING/COMP	2	22	303707	HHCS 3/4" x 5" GR5	2
7	812230	SPRING PAD	2		808557	SPACER	4
8	812241	SPRING ROD WELD	1	23	810703	SPRING ANCHOR BRKT	1
	303975	WASHER/FLAT 1"	2	24	303704	HHCS 3/4" X 3 -1/2"	2
	304030	NUT/HEX LOCK 1" NC	1		304022	NUT/HEX LOCK 3/4" NC	2
9	810736	BUSHING/SWIVEL	2		812152	BUSHING	2
10	304246	PIN/ROLL 5/16" x 3"	2	25	811650	ACCESS HOLE COVER	2
11	810722	BUSHING/WEAR	2		811344	NUT/WING 3/8"	2
12	810718	RIGHT CASTER ARM	1	26	811344	DECK/10' WELD	1
13	810737	LEFT CASTER ARM	1				

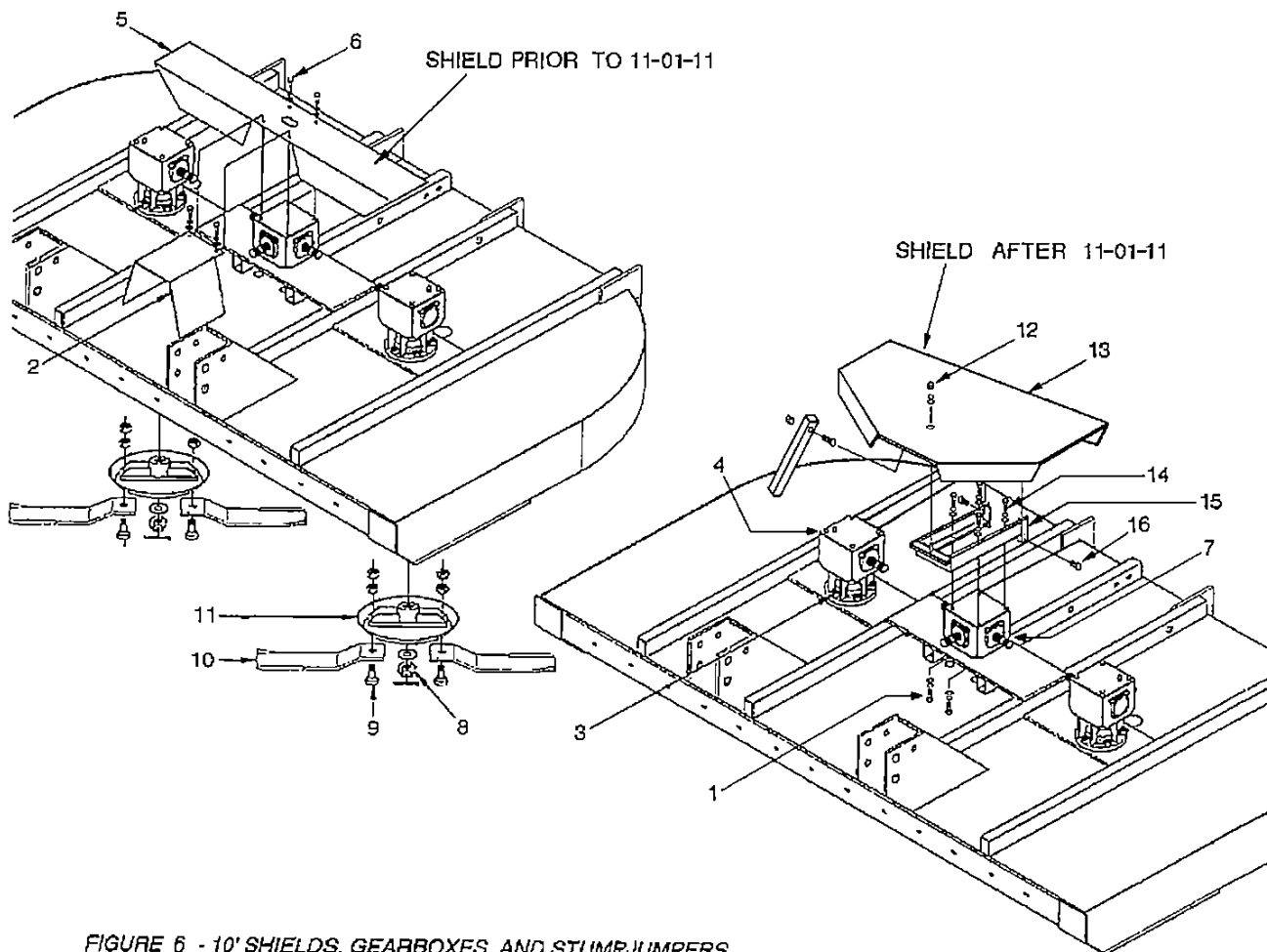


FIGURE 6 - 10' SHIELDS, GEARBOXES, AND STUMPJUMPERS

Item	Part #	Description	Qty
1	303651	HHCS 1/2" x 1-1/2" GR5	4
2	809254	C LUTCH SHIELD	1
3	303701	HHCS 3/4" x 2-1/2" GR5	8
4	608302	SPINDLE GEARBOX	2
5	809220	CONNECTOR SHIELD	1
6	303649	HHCS 1/2" x 1" GR5	4
7	608303	T-GEARBOX	1
8	505309	NUT/HEX CASTLE M30 X 2	2
	505308	WASHER/FLAT	2
	809286	PIN/COTTER	2
9	* 50573901	BLADE BOLT	4
	303960	WASHER/LOCK 1-1/8"	4
	304765	NUT/HEX CASTLE 1-1/8" GR8	8
10	811411	R.H. BLADE CCW (SHOWN)	2
	811412	L.H. BLADE CW (NOT SHOWN)	2
11	608202	STUMP JUMPER	2
12	304215	WING NUT	1
13	608460	TENT SHIELD	1
14	303649	HHCS 1/2" x 1" GR5	4
15	608465	SHIELD MOUNT	1
16	303649	HHCS 1/2" x 1" GR5	2
17	608471	SHIELD STAND	1
18	303618	HHCS 3/8" x 2-1/2" GR5	1

* BLADE BOLT SOLD AS A KIT

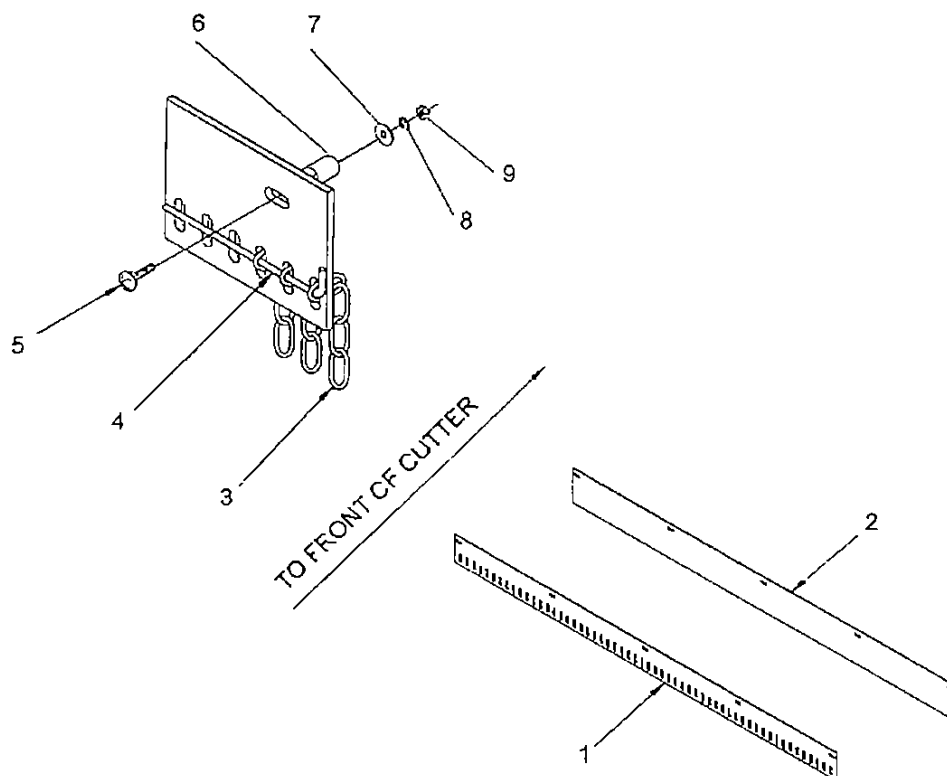


FIGURE 7 - SHIELD COMPONENTS all models

Item	Part #	Description	Qty	Item	Part #	Description	Qty
1	811355	FRONT & REAR CHAIN PLATE	8	5	303991	BOLT/CARR 3/8" x 2-1/2"	-
				6	028655	SPACER .84 OD x .54 ID x 1.06 (FRONT & REAR)	-
				7	303969	WASHER/FLAT 3/8	-
				8	303953	WASHER/LOCK 3/8	-
				9	304005	NUT/HEX 3/8 NC	-
2	811356	FRONT & REAR DEFLECTOR	8	SHIELD KITS			
				812185		CHAIN KIT 10'	-
3	805325	CHAIN 4 LINKS	-	812186		DEFLECTOR KIT 10'	-
4	806718	FRONT & REAR CHAIN ROD	8				

5-BOLT LAMINATED WHEEL COMPONENTS

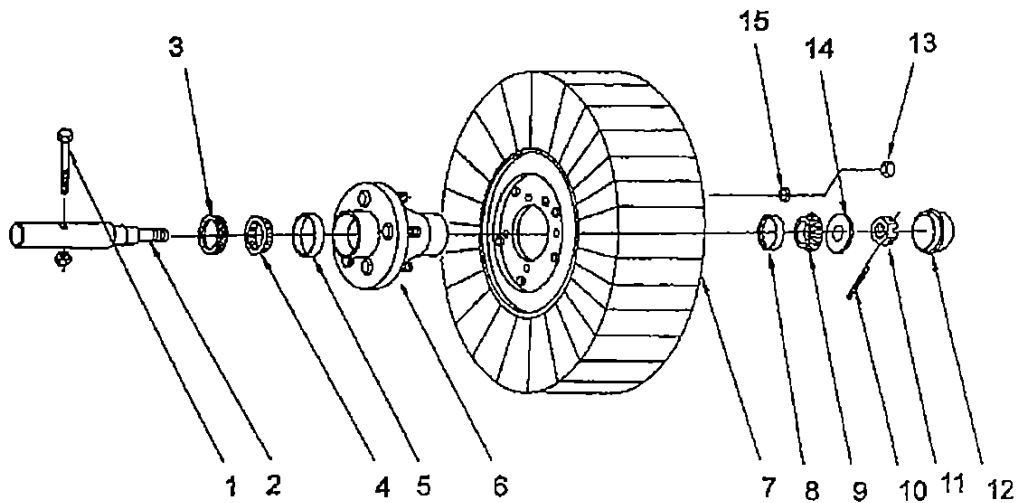


FIGURE 8 -- LAMINATED WHEEL COMPONENTS

Item	Part No.	Description	Qty.
1	303657	HHCS 1/2 x 3 GR5	1
	304020	NUT/HEX LOCK 1/2 NC	1
2	608632	SPINDLE/SINGLE ENDED	1
	608531	SPINDLE/DOUBLE ENDED	1
3	608530	SEAL/GREASE SINGLE LIP	1
4	608528	CONE/BRG LM48548	1
5	608527	CUP/BRG LM45810	1
6	608528	HUB/WHEEL 5 BOLT (INCL. 4&7)	1
7	608537	TIRE/LAMINATED 5-1/2 x 21 - 5 BOLT	1
8	206332	CUP/BRG LM67010	1
9	811199	CONE/BRG LM67048	1
10	304094	PIN/COTTER 5/32 x 1-1/4	1
11	403853	NUT/HEX SLOTTED 3/4 - 16 UNF	1
12	608529	CAP/HUB	1
13	050843	NUT/HEX LUG 1/2 - 20 UNF	5
14	608550	WASHER/3/4 HVY HT	1
15	303855	WASHER/LOCK 1/2	5

This Hub has 11804 cast on back

5 BOLT PNEUMATIC WHEEL COMPONENTS

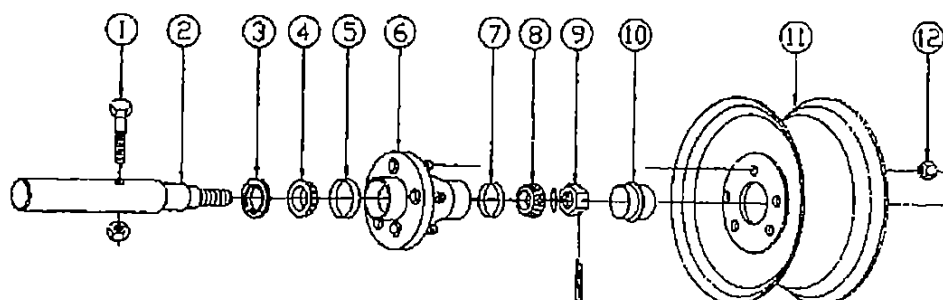


FIGURE 9 -- PNEUMATIC WHEEL COMPONENTS

Item	Part No.	Description	Qty.
1	303857	HHCS 1/2 x 3 GR5	1
	304020	NUT/HEX LOCK 1/2" NC	1
2	608532	SPINDLE/SINGLE ENDED	1
	608531	SPINDLE/DOUBLE ENDED	1
3	608530	SEAL/SINGLE LIP	1
4	608528	CONE/BRG LM48548	1
5	608527	CUP/BRG LM45810	1
6	608526	HUB/WHEEL 5 BOLT 5.50 BC (INCL. 5&7)	1
7	208332	CUP/BRG LM67010	1
8	811189	CONE/BRG LM67048	1
9	403853	NUT/HEX SLOTTED 3/4 - 16UNF	1
10	608529	CAP/HUB	1
11	039608	RIM/WHL 15x5 - 5 BOLT	1
12	050643	NUT/HEX LUG 1/2 - 20 UNF	5
-	304938	TIRE 7.00 -15 - 6 PR (NOT SHOWN)	1

This Hub has 11804 cast on back

4 BOLT AIRCRAFT WHEEL COMPONENTS

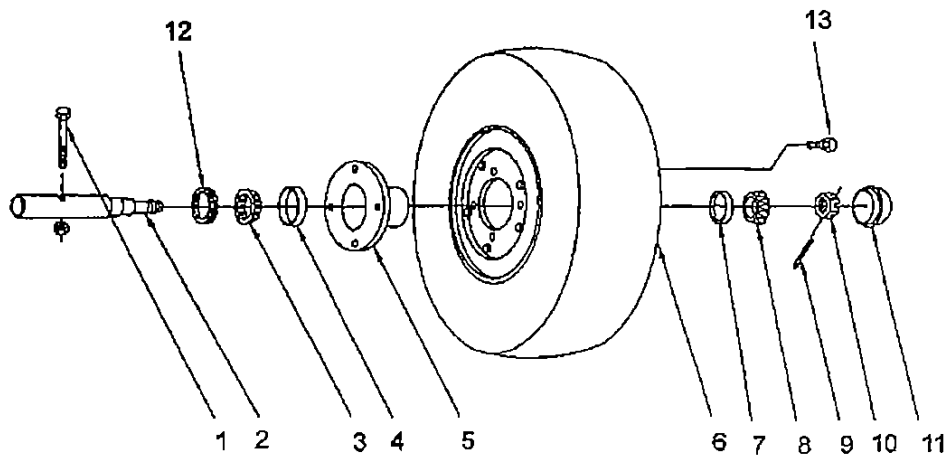


FIGURE 10 -- AIRPLANE WHEEL COMPONENTS

Item	Part No.	Description	Qty.
1	303657	HHCS 1/2 x 3 GR5	1
	304020	NUT/HEX LOCK 1/2"	1
2	807430	SPINDLE/SINGLE ENDED	1
	807431	SPINDLE/DOUBLE ENDED	1
3	811189	CONE/BRG LM67048	1
4	206332	CUP/BRG LM67010	1
5	038640	HUB/WHEEL 4 BOLT (INCL. 4&7) W669	1
6	809338	TIRE/AIRPLANE	1
7	206334	CUP/BRG LM11810	1
8	811200	CONE/BRG LM11849	1
9	304094	PIN/COTTER 5/32 x 1-1/4	1
10	403853	NUT/HEX SLOTTED 3/4 - 16UNF	1
11	044797	CAP/HUB	1
12	038628	SEAL CR16069	1
13	403817	LUG-BOLT 1/2 - 20UNF x 1-1/2	4

5 BOLT AIRCRAFT WHEEL COMPONENTS

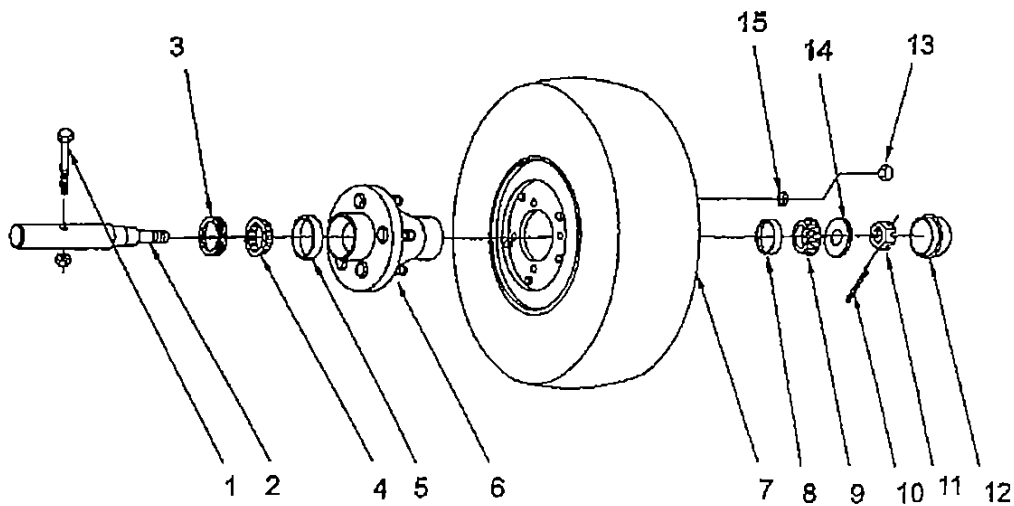


FIGURE 11 -- LAMINATED WHEEL COMPONENTS

Item	Part No.	Description	Qty.
1	303657	HHCS 1/2 x 3 GR5	1
	304020	NUT/HEX LOCK 1/2 NC	1
2	608532	SPINDLE/SINGLE ENDED	1
	608531	SPINDLE/DOUBLE ENDED	1
3	608530	SEAL/GREASE SINGLE LIP	1
4	608528	CONE/BRG LM48548	1
5	608527	CUP/BRG LM45810	1
6	608528	HUB/WHEEL 5 BOLT (INCL 4&7)	1
7	608537	TIRE/LAMINATED 5-1/2 x 21 - 5 BOLT	1
	608536	TIRE/USED AIRCRAFT 5 BOLT	1
8	208332	CUP/BRG LM67010	1
9	811199	CONE/BRG LM67048	1
10	304094	PIN/COTTER 5/32 x 1-1/4	1
11	403853	NUT/HEX SLOTTED 3/4 - 18 UNF	1
12	608529	CAP/HUB	1
13	050843	NUT/HEX LUG 1/2 - 20 UNF	5
14	608550	WASHER/ 3/4 HVY HT	1
15	303935	WASHER/LOCK 1/2	5

This Hub has 11804 cast on back

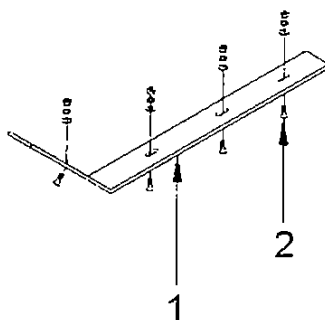


FIGURE 12 - FIELD INSTALLED SKID SHOE all models

Item	Part #	Description	Qty
1	809443	SKID SHOE	2
2	303945	BOLT/FH COURUNTERSUNK 5/16" x 1 -1/4"	8
812011 FIELD INSTALLED SKID SHOE KIT			-

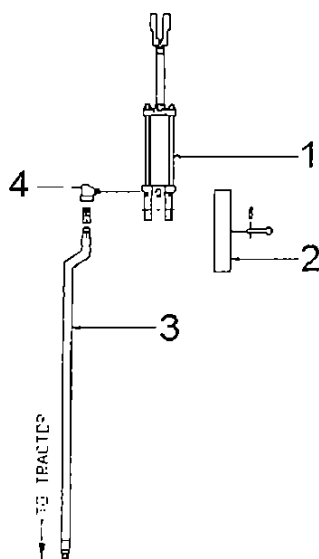
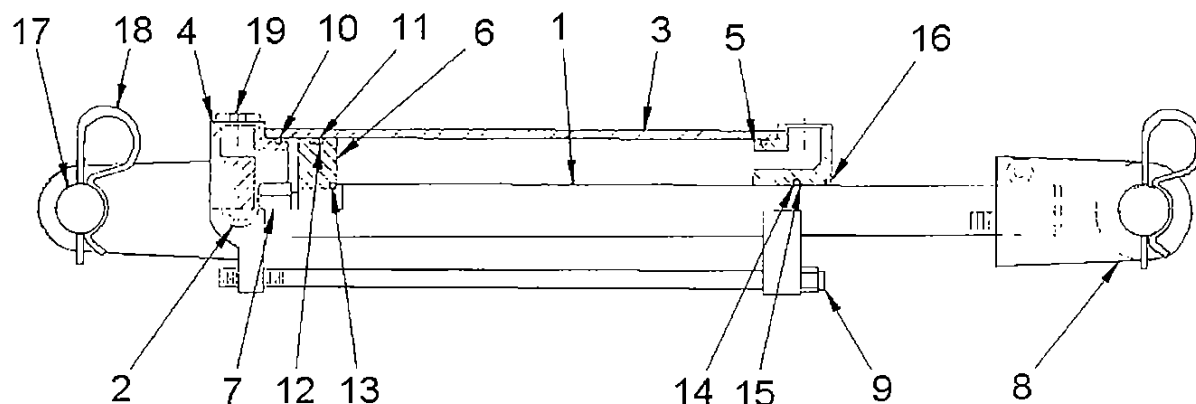


FIGURE 13 - HYDRAULIC COMPONENTS

Item	Part #	Description	Qty
1	505742	CYLINDER/HYD 3" x 8"	1
	807858	TURNBUCKLE ASSEMBLY (NOT SHOWN)	1
2	811314	CYLINDER STOP	1
	027189	PIN 1/2" x 2-1/2"	1
	304244	HAIRPIN COTTER 3/16" x 3-1/4"	1
3	210534	HOSE/HYD 168"	1
	605399	SWIVEL ADAPTER	1
4	207982	ELBOW 90°	1
	206553	HOLDER/SPRING HOSE	1
	808540	ANGLE/HOSE HOLDER BRKT	1
	811471	FILTER/CYL BREATHER (PIPE)	1
	806950	BREATHER/ "O" RING SAE	
	303651	HHCS 1/2 x 1-1/2" GR5	1
	303661	HHCS 1/2" x 5" GR5	1
	303955	WASHER/LOCK 1/2"	1
	303971	WASHER/FLAT 1/2"	1
	304020	NUT/HEX LOCK 1/2"	1
599040 KIT/HYDRAULIC LIFT			-



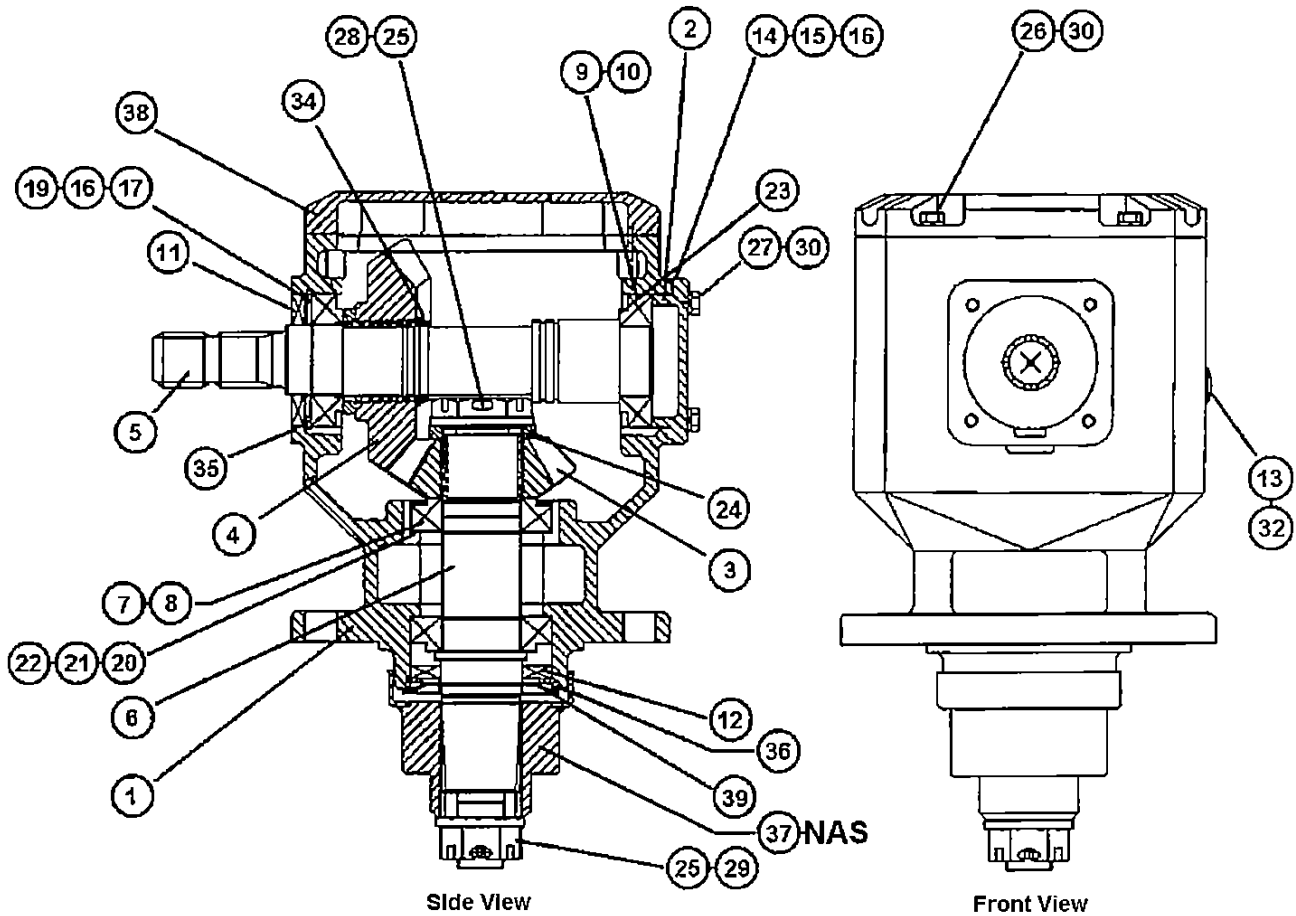
"These cylinders are tie rod design with square end."

FIGURE 14 - HYDRAULIC CYLINDER COMPONENTS

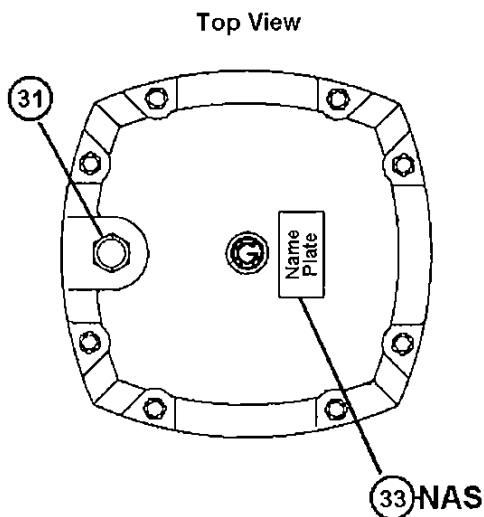
Item	Part #	Description	Qty
1	800572	PISTON ROD 3 x 8	1
2	800573	PLUG/ SAE #8 "O" RING	3
3	800574	BARRELL 3 x 8	1
4	800575	BUTT END	1
5	800576	GLAND	1
6	800577	PISTON	1
7	606941	NUT/HEX LOCK 3/4"	1
8	800584	CLEVIS ASSEMBLY 3 x 8	1
9	800578	TIE ROD 3 x 8	1
10	**	O-RING	2
11	**	O-RING	1
12	**	BU-WASHER	2
13	**	O-RING	1
14	**	O-RING	1
15	**	BU-WASHER	1
16	**	WIPER	1
17	606949	PIN/CLEVIS 1" x 3-1/2"	2
18	304244	HAIRPIN COTTER 3/16" x 3-1/4"	4
19	806950	BREATHER/ "O" RING SAE	1
**	800585	KIT/PACKING (INCLUDES 10 - 16)	1
505742		CYLINDER/HYD 3" x 8" COMPLETE	-

Outboard Gearbox

Figure 15



Oil Capacity- 57oz. / (1.7 liters)



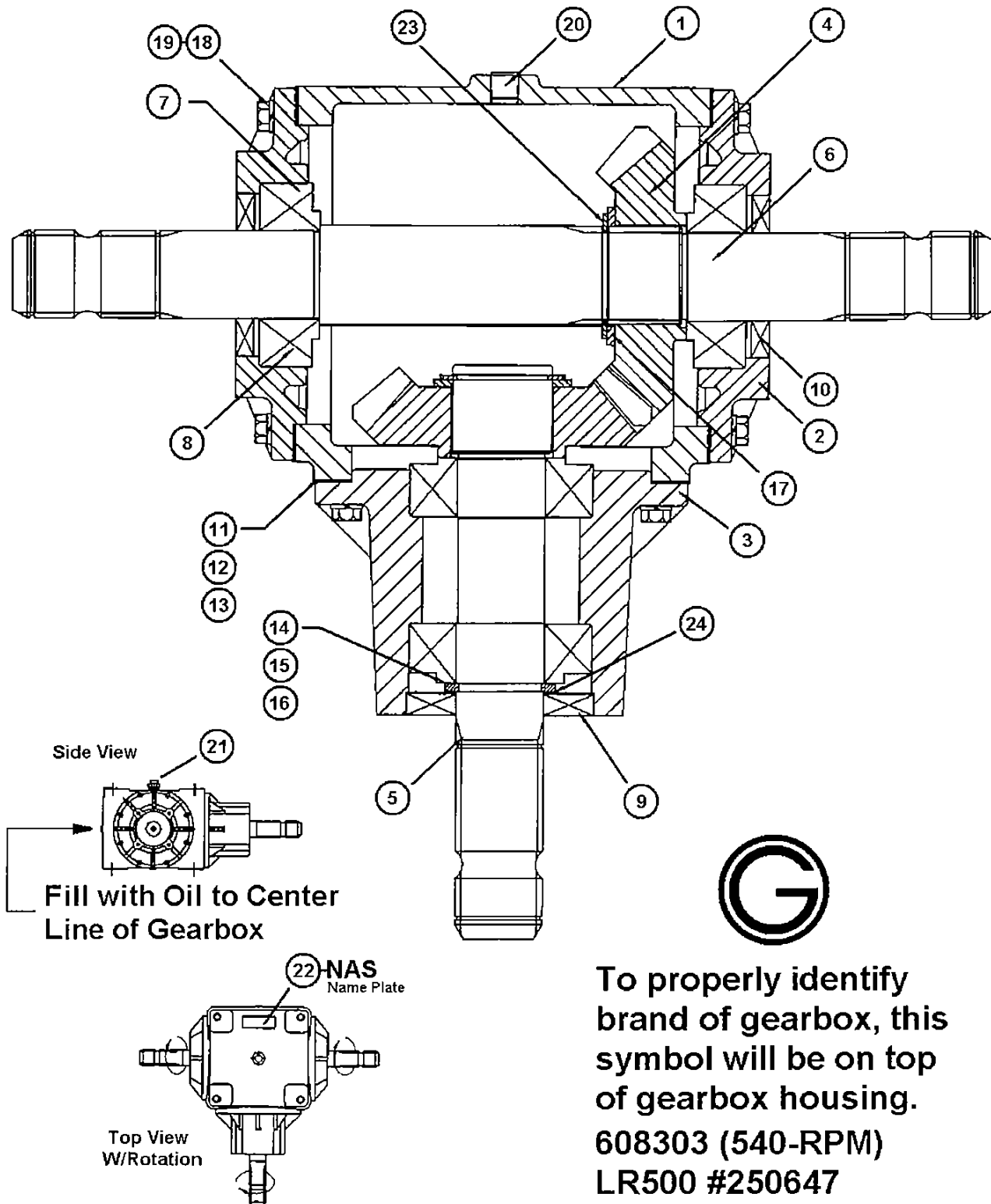
To properly identify
brand of gearbox, this
symbol will be on top
of gearbox housing.
608302 (540-RPM)
RC 100 #251060
Ratio 1:1.46

(608302 540-RPM) Outboard Gearbox

Item	Part # 540-RPM	Description	Qty
1	608320	Housing RC-100 Series	1
2	608321	Blank Cap	1
3	608322	Output Pinion (13-T 540-RPM)	1
	-----	Output Pinion (18-T 1000-RPM)	1
4	608323	Input Gear (19-T 540-RPM)	1
	-----	Input Gear (22-T 1000-RPM)	1
5	608324	Input Shaft	1
6	608325	Output Shaft	1
7	w/brg	Bearing Cup 30210	2
8	505303	Cone Bearing 30210	2
9	w/brg	Bearing Cup 30209	2
10	505974	Cone Bearing 30209	2
11	608330	Input Seal	1
12	608331	Output Seal	1
13	608332	O-Ring	1
14	608317	Gasket 0.2mm	Kit
15		Gasket 0.3mm	Kit
16		Gasket 0.5mm	Kit
17	608318	Input Shim 0.1mm	Kit
18		Input Shim 0.2mm	Kit
19		Input Shim 0.5mm	Kit
20	608319	Output Shim 0.1mm	Kit
21		Output Shim 0.2mm	Kit
22		Output Shim 0.5mm	Kit
23	608342	Spacer	1
24	608343	Spacer	1
25	608344	Cotter Pin	2
26	608345	Hex Cap Screw M8 - 1.25 X 25	8
27	608346	Hex Cap Screw M8 - 1.25 X 30	4
28	608347	Slotted Nut 1-3/8" - 18 UNEF	1
29	608348	Slotted Nut M30 X 2 - 6H	1
30	608349	Lockwasher M8	12
31	608350	Pressure Relief Plug 1/2"-14NPT	1
32	608351	Oil Site Gauge A10	1
33	-----	I.D. Tag "NOT A SERVICE PART"	-----
34	608353	External Retaining Ring	1
35	608354	External Retaining Ring 85	1
36	608355	External Retaining Ring 90	1
37	-----	Hub "NOT A SERVICE PART"	-----
38	608357	Inspection Cover	1
39	608358	Seal Protector	1
	608302	COMPLETE GEARBOX	

540-RPM T-BOX

Figure 16

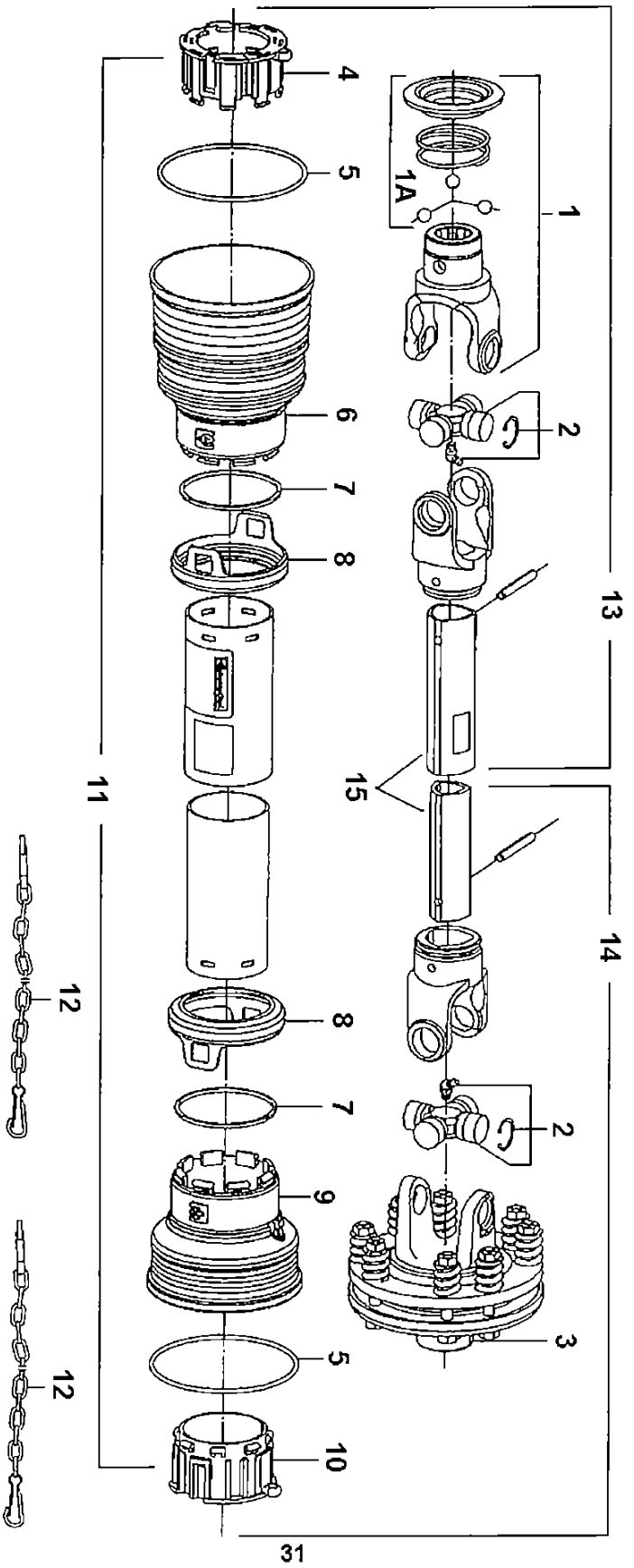


To properly identify brand of gearbox, this symbol will be on top of gearbox housing.
 608303 (540-RPM)
 LR500 #250647
 Ratio 1:1

608303 T-Gearbox

Item	Part #	Description	Qty
1	608359	Housing 500 Series	1
2	608360	Thru Cap	2
3	608361	Cantilevered Cap	1
4	608362	Gear 22-T (1:1)	2
5	608363	Input Shaft 1.75-20 Spline	1
6	608364	Cross Shaft 1.75-20 Spline	1
7	608365	Bearing Cup 33209	4
8	608366	Cone Bearing 33209	4
9	608367	Input Seal	1
10	608368	Cross Seal	2
11	608316	Gasket 0.1mm	Kit
12		Gasket 0.2mm	Kit
13		Gasket 0.5mm	Kit
14	608315	Input Shim 0.1mm	Kit
15		Input Shim 0.2mm	Kit
16		Input Shim 0.3mm	Kit
17	608375	Gear Spacer (1:1)	2
18	608376	Screw 3/8" - 16 UNC X 1-1/4"	24
19	303953	Lockwasher 3/8"	24
20	608377	Socket Head Plug 1/2"-14NPT	2
21	608350	Pressure Relief Plug 1/2"-14NPT	1
22	-----	I.D. Tag"NOT A SERVICE PART"	-----
23	608353	Retaining Ring 50	2
24	608378	Retaining Ring	1
	608303	COMPLETE T-GEARBOX	

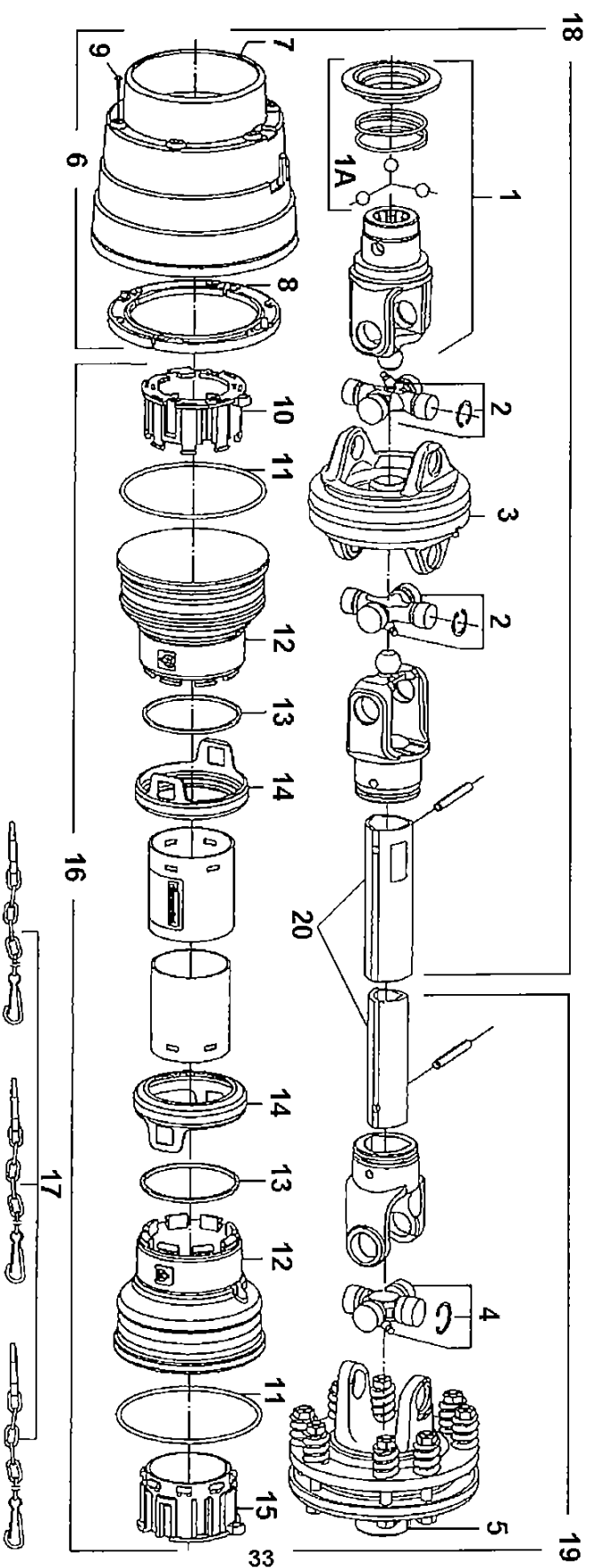
812176 Lift Type Driveline Components



812176 Lift Type Driveline Components

Item	Part #	Description	Qty
1	813898	TRACTOR YOKE WITH COLLAR	1
1A	699526	PULL COLLAR KIT	1
2	505872	CROSS KIT - 60	2
3	699504	COMPLETE SLIPCLUTCH	1
4	699563	OUTER SHIELD BRG.	1
5	699570	STIFFENING RING	2
6	699553	OUTER CONE	1
7	699572	STOP RING	2
8	699593	SAFETY SLEEVE	2
9	699550	INNER CONE	1
10	699558	INNER SHIELD BRG.	1
11	699580	COMPLETE SHIELD	1
12	505103	SAFETY CHAIN	2
13	699599	TRACTOR HALF SHAFT	1
14	699511	IMPLEMENT HALF SHAFT W/CLUTCH	1
15	699631	EXT. TUBE KIT (Includes both tubes) *Must cut to length	1
	812176	COMPLETE DRIVELINE W/CLUTCH	

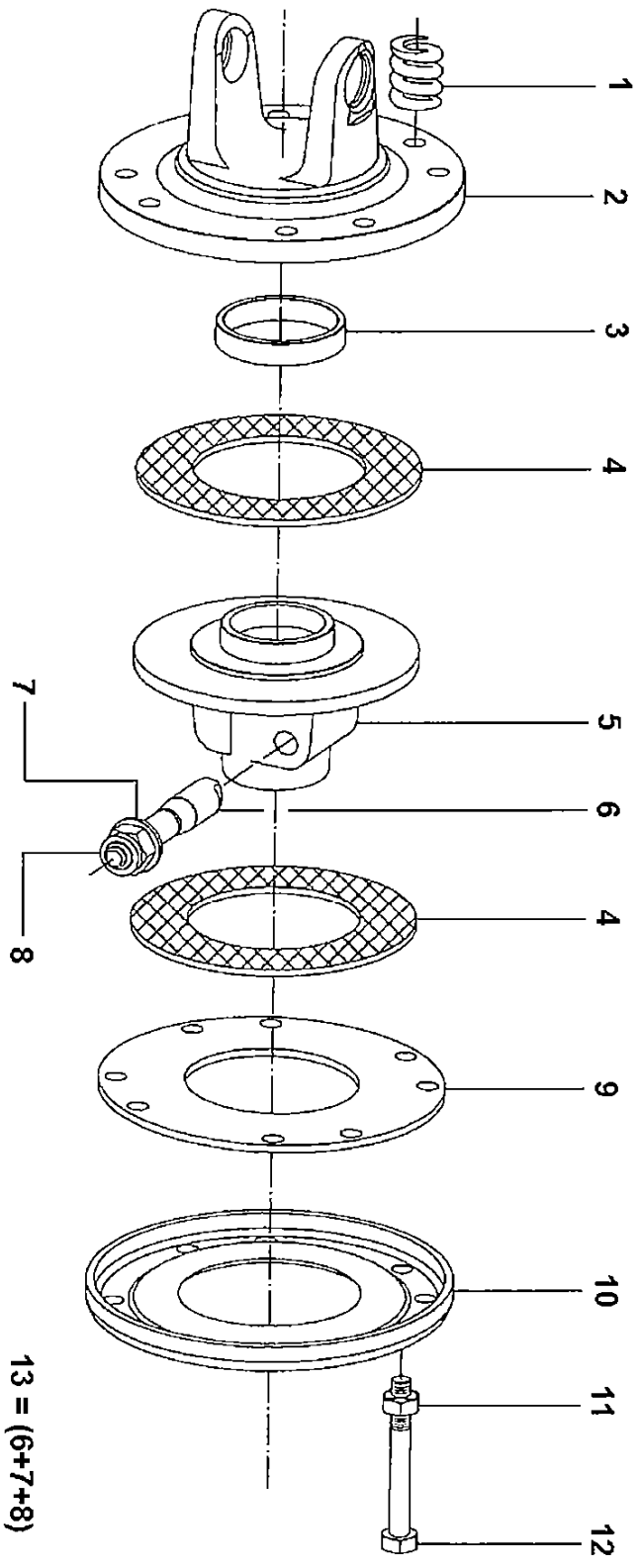
812177 Pull Type Driveline Components



812177 Pull Type Driveline Components

Item	Part #	Description	Qty
1	699525	TRACTOR YOKE WITH COLLAR	1
1A	699526	PULL COLLAR KIT	1
2	699527	CROSS KIT G06	2
3	699540	CENTRALIZER CV-80	1
4	505872	CROSS KIT 60	1
5	699504	COMPLETE SLIPCLUTCH	1
6	699591	MASTER SHIELD FRONT W/BRGS	1
7	699628	SOFT CONE	1
8	699566	BRG. SOFT CONE	1
9	699568	SELF TAPPING SCREW	6
10	699563	OUTER SHIELD BRG.	1
11	699570	STIFFENING RING	2
12	699550	SHORT CONE	2
13	699572	STOP RING	2
14	699593	SAFETY SLEEVE	2
15	699558	INNER SHIELD BRG.	1
16	699574	COMPLETE SHIELD	1
17	505103	SAFETY CHAIN	3
18	699597	TRACTOR HALF SHAFT W/CV	1
19	699615	IMPLEMENT HALF SHAFT W/SLIPCLUTCH	1
20	699630	EXT. TUBE KIT (Includes both tubes)	
	812177	COMPLETE C.V. DRIVELINE W/CLUTCH	

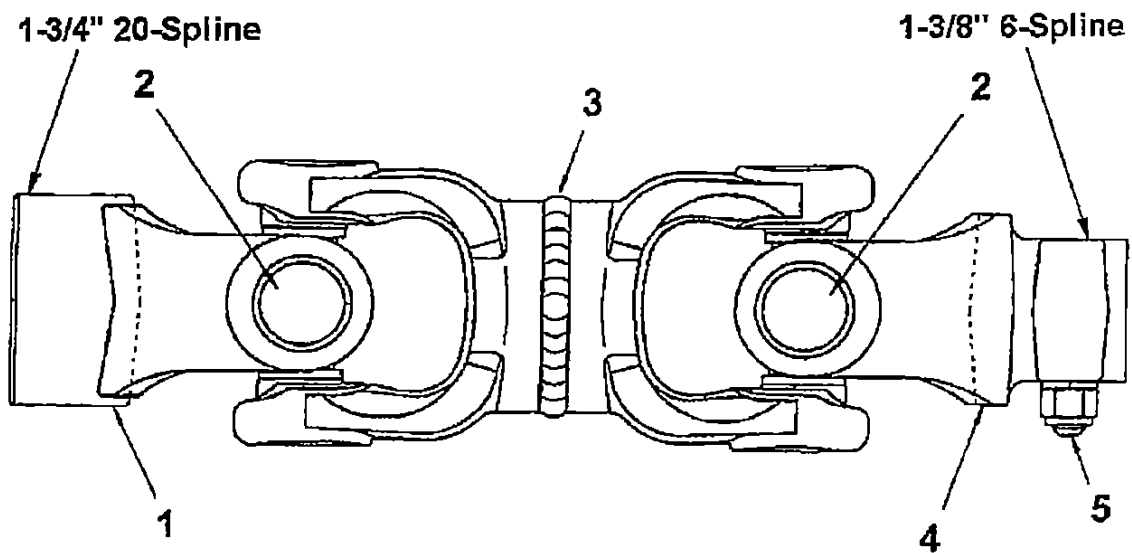
Slipclutch Components



699504 Slipclutch Components

Item	Part #	Description	Qty
1	699534	HH BOLT M10 X 90	8
	699537	HEX NUT M10	8
2	699516	PRESSURE PLATE	1
3	699514	INNER PLATE	1
4	699520	FRICTION DISC .12 X 3.82 X 6.31	2
5	699529	CONNICAL BOLT KIT	2
6	699512	HUB 1-3/4" 20-SPLINE	1
7	699592	BUSHING	1
8	699509	FLANGE WITH YOKE	1
9	699518	SPRING	8
	699504	COMPLETE CLUTCH	

Connector Shaft



Item	Part #	Description	Qty
1	812457	YOKE 1-3/4" 20-SPLINE	1
2	812458	CROSS KIT - 60	2
3	812459	DOUBLE YOKE	NAS
4	809983	YOKE 1-3/8" 6-SPLINE	1
5	699530	CONICAL BOLT KIT	1
	811360	COMPLETE CONNECTOR SHAFT	

