

ROTARY CUTTER

OPERATION AND ASSEMBLY MANUAL

PREPARATION CHECK LIST

THIS CHECKLIST IS TO REMAIN IN OWNER'S MANUAL
Complete the procedures listed below before operating your rotary cutter.

- 1. Implement is completely assembled.
- 2. Gearbox filled with oil and checked for possible leaks. (See page 15)
- 3. All fittings lubricated. (See page 23-24)
- 4. All shields in place and in good condition.
- 5. All fasteners torqued to specifications in Torque Chart. (See page 31)
- 6. Check PTO driveline. Make sure it is the correct length to operate rotary cutter with intended tractor. (See page 16)
- 7. Check front of input gearbox shaft and make sure that snap ring is properly installed.
- 8. Check shear/retaining bolt for proper grade and installation. (See page 27)
- 9. All decals in place and readable. (See page 8 - 9)
- 10. Overall condition good. (i.e. paint, welds)

SAFETY

IMPORTANT SAFETY MESSAGE FOR OWNERS/OPERATORS OF ROTARY CUTTERS

From members of the Farm Equipment Manufacturers Association's

Rotary Cutter Manufacturer Product Council

Safety is a primary concern in the design, manufacture, sale, and use of rotary cutters. As manufacturers of rotary cutters, we want to confirm to you, our customers, our concern for safety. We also want to remind you about the simple, basic, and common sense rules of safety when using a rotary cutter. Failure to follow these rules can result in severe injury or death to operators or bystanders.

It is essential that everyone involved in the assembly, operation, transport, maintenance, and storage of this equipment be aware, concerned, prudent, and properly trained in safety. The majority of accidents involve entanglement on the driveline or thrown objects. These risks become greater when you do not use proper shielding specified by the manufacturer.

Our current production machines include, as standard equipment, guards or shields for drivelines and input shafts, safety signs and operators manuals. If you have an older machine which does not have current standard safety equipment, please contact your dealer about bringing your machine up to the current level of safety.

Below are some of the most important safety rules to be understood and followed by anyone who works with rotary cutters:

Before operating a rotary cutter, an operator must read and understand all the information in the owner's manual and in the safety signs

attached to the product. A person who has not read or understood the owner's manual and safety signs is not qualified to operate the cutter. Accidents occur often on machines that are loaned or rented to someone who has not read the owner's manual and is not familiar with a rotary cutter. If you do not have an owner's manual or current production safety signs, contact the manufacturer or your dealer immediately.

Rotary cutters are designed for one-man operation. Never operate the cutter with anyone near, or in contact with, any part of the implement or PTO driveline. Be sure no one else, including bystanders, is near you when you operate this product

If operation of a rotary cutter around bystanders, animals, or property that may sustain damage (such as highway, park, or airport) is absolutely necessary, use safety guarding recommended by the manufacturer for thrown object prevention.

Following these simple, basic safety rules, as well as others identified in the owner's manual and in product safety signs, will help minimize the possibility of accidents and increase your productivity in using this product. Be careful and make sure that everyone who operates the cutter knows and understands that it is a very powerful piece of machinery, and if used improperly, serious injury or death may result. The final responsibility for safety rests with the operator of this machine.



A safety manual for Rotary Cutters is available through the FEMA office.

Phone: 314.878.2304
E-mail: staff@FarmEquip.org

TO THE OWNER:

Read this manual before operating your equipment. Keep this manual handy for ready reference. Require all operators to read this manual carefully and become acquainted with all adjustments and operating procedures before attempting to operate the equipment. Replacement manuals can be obtained from your selling dealer.

The equipment 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. Please observe all safety information in this manual and safety decals on the equipment.

Use only genuine service parts. Substitute parts will void the warranty and may not meet the required standards for safe and satisfactory operation.

Throughout this manual, the term IMPORTANT is used to indicate that failure to observe procedures 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 items of personal safety.



**This Safety-Alert Symbol indicates a hazard and means ATTENTION!
BECOME ALERT! YOUR SAFETY IS INVOLVED!**



DANGER

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.



WARNING

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed.



CAUTION

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury.

IMPORTANT

Indicates that failure to observe can cause damage to equipment.

NOTE

Indicates helpful information.

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General Information

The purpose of this manual is to assist you in operating and maintaining your rotary cutter for years of service. Read it carefully. The information and instructions in this manual 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.

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



WARNING

Some illustrations in this manual may show the rotary cutter with safety shields removed to provide a better view. The rotary cutter should never be operated with any safety shielding removed.

Throughout this manual, references are made to right and left direction. These are determined by standing behind the equipment facing the direction of forward travel. Blade rotation is counter-clockwise as viewed from the top of the mower.

All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

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 an operator's single careless act.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, judgment, 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 operator.

TRAINING

Safety instructions are important! Read all attachment and power unit manuals; follow all safety rules and safety decal information. (Replacement manuals and safety decals are available from your dealer.) 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 attachment 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.

Never allow children or untrained persons to operate equipment.

PREPARATION

Check that all hardware is properly installed.

Always tighten to torque chart specifications unless instructed otherwise in this manual.

Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.

Make sure attachment is properly secured, adjusted, and in good operating condition.

Make sure collar slides freely and is seated firmly in tractor PTO spline groove.

Before putting equipment into service, check and adjust driveline length as instructed in Operator's Manual. Driveline must not bottom out or pull apart throughout the full range of the tractor hitch. Do not operate until driveline length is correct.

Make sure driveline shield safety chain is attached as shown in this manual. Replace if damaged or broken. Check that driveline guards rotate freely on driveline before putting equipment into service.

Before starting power unit, check all equipment driveline guards for damage. Replace any damaged guards. Make sure all guards rotate freely on all drivelines. If guards do not rotate freely on drivelines, repair and replace bearings before putting equipment into service.

Inspect all guards and shields before each use. Replace if damaged.

Remove accumulated debris from this equipment, power unit, and engine to avoid fire hazard.

Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in "locked up" position at all times.

A minimum 20% of tractor and equipment weight must be on the tractor front wheels when attachments are in transport position. Without this weight, tractor could tip over, causing personal injury or death. The weight may be attained with a loader, front wheel weights, ballast in tires or front tractor weights. Weigh the tractor and equipment. Do not estimate.

(Safety Rules continued on next page)

(Safety Rules continued from previous page)

Make sure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)

Make sure shields and deflectors are properly installed and in good condition. Replace if damaged.

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

TRANSPORTATION

Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in "locked up" position at all times.

A minimum 20% of tractor and equipment weight must be on the tractor front wheels when attachments are in transport position. Without this weight, tractor could tip over, causing personal injury or death. The weight may be attained with a loader, front wheel weights, ballast in tires or front tractor weights. Weigh the tractor and equipment. Do not estimate.

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

Never allow riders on power unit or attachment.

Do not operate PTO during transport.

Watch for hidden hazards on the terrain.

Do not operate or transport on steep slopes.

Do not operate or transport equipment while under the influence of alcohol or drugs.

OPERATION

Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.

Never direct discharge toward people, animals, or property.

Use both front and rear deflectors to reduce the possibility of object being thrown.

These mowers are intended for agricultural applications only. Do not operate within 300 feet of bystanders or public roads or highways.

Do not operate or transport equipment while under the influence of alcohol or drugs.

Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.

Operate only in daylight or good artificial light. Always comply with all state and local lighting and marking requirements.

Never allow riders on power unit or attachment.

Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in "locked up" position at all times.

Always sit in power unit seat when operating controls or starting engine. Securely fasten seat belt, place transmission in neutral, engage brake, and ensure all other controls are disengaged before starting power unit engine.

Operate tractor PTO at 540 RPM. Do not exceed.

Do not operate PTO during transport.

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

Do not operate or transport 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.

(Safety Rules continued on next page)

(Safety Rules continued from previous page)

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Stop power unit and equipment immediately upon striking an obstruction. Turn off engine, remove key, inspect, and repair any damage before resuming operation.

Leak down or failure of mechanical or hydraulic system can cause equipment to drop.

MAINTENANCE

Before dismounting power unit or performing any service or maintenance, follow these steps: disengage power to equipment, lower the 3-point hitch and all raised components to the ground, set parking brake, stop engine, remove key, and unfasten seat belt.

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

Before working underneath, carefully read Operator's Manual instructions, disconnect drive line, raise mower, securely block up all corners with jack stands, and check stability. Secure blocking prevents equipment from dropping due to hydraulic leak down, hydraulic system failures, or mechanical component failures.

Do not modify or alter or permit anyone else to modify or alter the equipment or any of its components in any way.

Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.

Make sure attachment is properly secured, adjusted, and in good operating condition.

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

Never go underneath equipment (lowered to the ground or raised) unless it is properly blocked and secured. Never place any part of the body under neath equipment or between moveable parts even when the engine has been turned off. Hydraulic system

leak down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death. Follow Operator's Manual instructions for working underneath and blocking requirements or have work done by a qualified dealer.

Make certain all movement of equipment components has stopped before approaching for service.

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

Do not handle blades with bare hands. Careless or improper handling may result in serious injury.

Your dealer can supply genuine replacement blades. Substitute blades may not meet original equipment specifications and may be dangerous. Also, blade bolts must be changed when replacing blades.

Tighten all bolts, nuts, and screws to torque chart specifications. Check that all cotter pins are installed securely to ensure equipment is in a safe condition before putting unit into service.

Make sure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)

Make sure shields and deflectors are properly installed and in good condition. Replace if damaged.

STORAGE

Block equipment securely for storage.

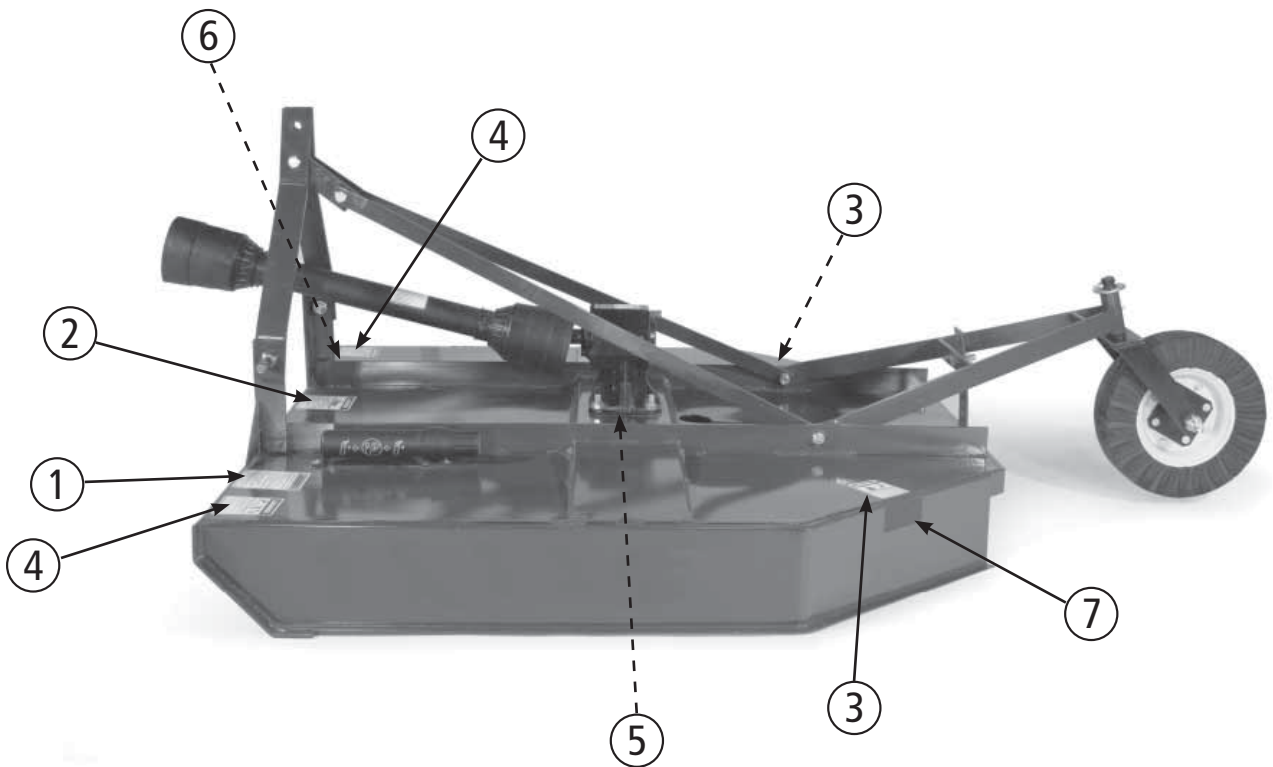
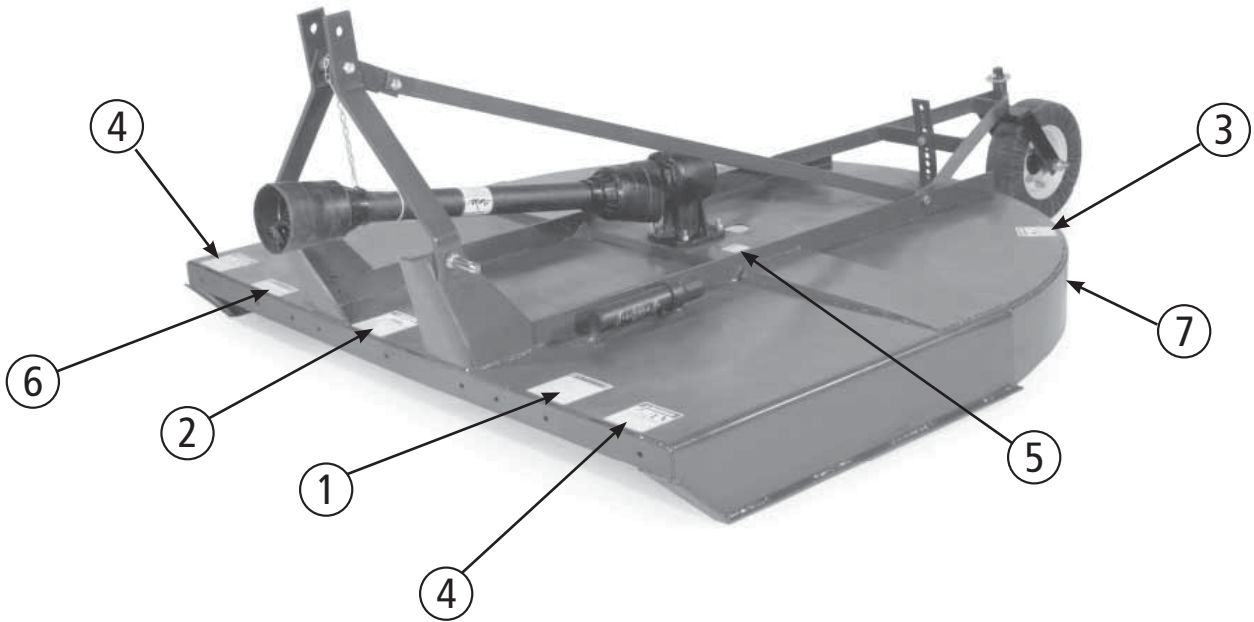
Keep children and bystanders away from storage area.

Follow manual instructions for storage.

Always use a tractor to position equipment for storage. Never attempt to move equipment by hand.

⚠ SAFETY AND INSTRUCTION DECALS

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!
Replace Decals Immediately if Damaged!



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Replace Immediately if Damaged!



① SERIOUS INJURY



② ROTATING DRIVELINE



(2 needed)

③ THROWN OBJECT

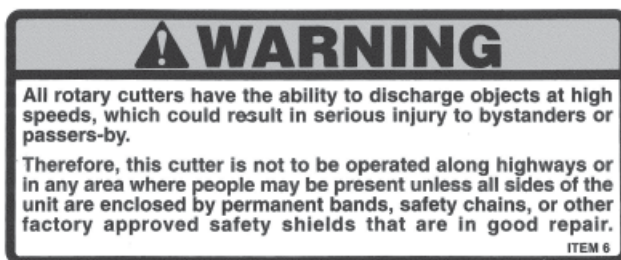


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④ ROTATING BLADES



⑤ NEEDS OIL



⑥ THROWN OBJECT

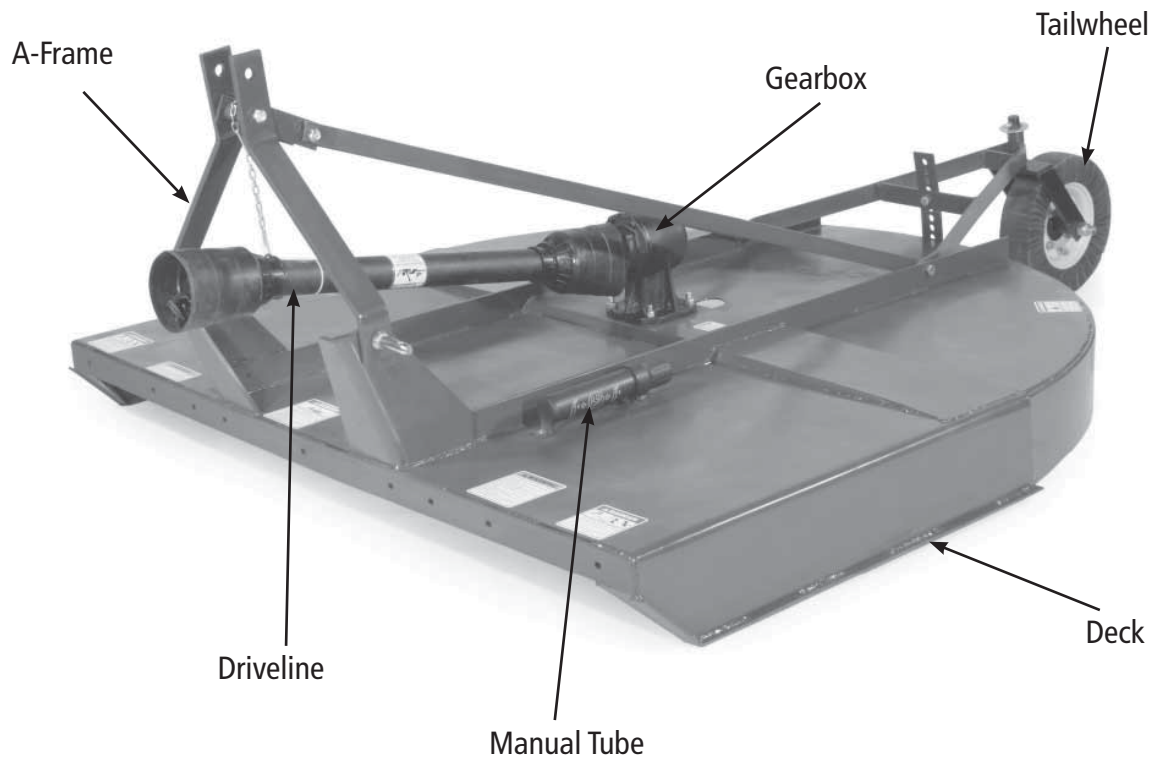
RED REFLECTOR
(2 Needed)

⑦ RED REFLECTOR

DESCRIPTION

Your Rotary Cutter has been carefully designed for cutting grass and small brush. This manual is provided to give you the necessary operation and maintenance instructions for keeping your rotary cutter in excellent operating condition. Please read this manual thoroughly. Understand the purpose of the controls and how to use them. Observe all safety precautions on the machine and as noted throughout this manual. Each cutter has free-swinging blades which reduce the shock on impact when a stationary object is hit. A shear bolt through the input shaft or slip clutch equipped driveline protects the gearbox and driveline from damage.

Major components



Model	4 foot SC	4 foot	5 foot	6 foot
Capacity				
Cutting Width, in. (mm)	48 (1220)	48 (1220)	60 (1524)	72 (1830)
Cutting Height, in. (mm)	1.5 to 9 (38 to 229)	1.5 to 9 (38 to 229)	1.5 to 9 (38 to 229)	1.5 to 9 (38 to 229)
Cutting Capacity (diameter), in. (mm)	0 to 1 (0 to 25)	0 to 1 (0 to 25)	0 to 1 (0 to 25)	0 to 1 (0 to 25)
Cutting Chamber Depth, in. (mm)	7.5 (190.5)	7.5 (190.5)	7.5 (190.5)	7.5 (190.5)
Tractor Compatibility				
Tractor PTO HP Range	18 - 45	18 - 45	18 - 45	18 - 45
Tractor PTO	540	540	540	540
Hitch				
Type	Lift-Type	Lift-Type	Lift-Type	Lift-Type
Category	Cat 0, Cat 1	Cat 1	Cat 1, adaptable to Cat 2	Cat 1, adaptable to Cat 2
Dimensions				
Overall Width, in. (mm)	51 (1291.4)	51 (1291.4)	63 (1600.2)	75 (1905)
Overall Length, in. (mm)	68 (1727.2)	68 (1727.2)	80 (2032)	92 (2336.8)
Deck Shape	Flat-open angled back	Flat-open angled back	Flat-open angled back	Flat-open angled back
Deck Type	Single	Single	Single	Single
Approx. Weight, lb. (kg)	360 (163.3)	360 (163.3)	460 (208.7)	580 (263.1)
Deck Thickness, gauge (mm)	14 (1.9)	14 (1.9)	14 (1.9)	14 (1.9)
Skirt Thickness, gauge (mm)	14 (1.9)	14 (1.9)	14 (1.9)	14 (1.9)
Driveline				
Type	Shear Bolt	Shear Bolt	Shear Bolt	Shear Bolt
Gearbox				
HP Rating	45	45	45	45
Blades				
Thickness, in. (mm)	0.5 (13)	0.5 (13)	0.5 (13)	0.5 (13)
Width, in. (mm)	3 (76)	3 (76)	3 (76)	3 (76)
Type	Heat Treated Suction	Heat Treated Suction	Heat Treated Suction	Heat Treated Suction
Blade Tip Speed, ft./min. (m/s)	9,982 (50.7)	9,982 (50.7)	12,478 (63.4)	14,974 (76.0)
Blade Holder				
Type	Round pan-type	Round pan-type	Round pan-type	Round pan-type
Diameter, in. (mm)	22.3 (567)	22.3 (567)	22.3 (567)	22.3 (567)
Wheels				
Type	Rubber, Dual	Laminated	Laminated	Laminated
Diameter, in. (mm)	10 (254)	15 (381)	15 (381)	15 (381)
Width, in. (mm)	3.25 (82.5)	3.75 (95.25)	3.75 (95.25)	3.75 (95.25)

PREPARATION

SELECTING TRACTOR PTO SPEED

IMPORTANT: Never operate a cutter equipped for 540 rpm PTO drive with a tractor equipped to 1000 rpm PTO.

Always run tractor at rated PTO speed.
Overspeed will cause damage to drive system.

Refer to your tractor Operator's Manual to change PTO stub shaft, if necessary.

POSITIONING DRAWBAR

IMPORTANT: To prevent damage to the driveline, remove, shorten, or place drawbar to one side. If equipped with clevis, remove it.

PREPARING THE CUTTER

Perform the following procedures before operating the cutter:

Gearbox

- Check oil level. (See Lubrication and Maintenance section.)
- Check hardware torque. (See Lubrication and Maintenance section.)
- Remove any material wound on gearbox shafts.
- Check oil seals for leakage.

Blades and Blade Holder

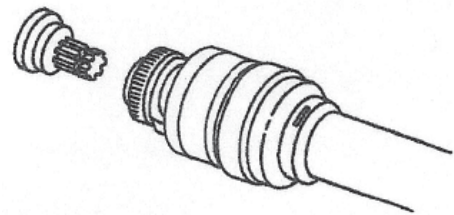
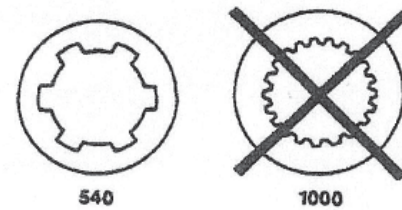
- Inspect blades for wear or damage. (See CHECKING BLADE WEAR in Service section.)
- Check blade hardware torque. (See Lubrication and Maintenance section.)
- Check blade holder hardware torque. (See Lubrication and Maintenance section.)

Hitch Pins

- Check torque on hitch pin lock nut.
- Insure all bolts on cutter are fastened securely.

Lubricating the Cutter

- Lubricate cutter and driveline. (See Lubrication and Maintenance section.)



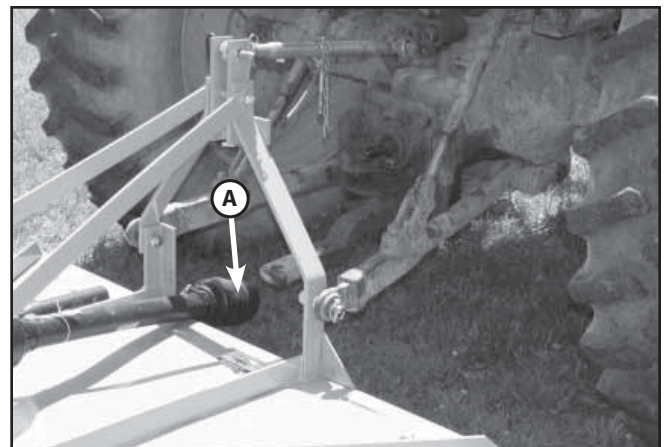
CHECKING DRIVELINE SHIELDS



Entanglement in rotating driveline can cause serious injury or death. Disengage PTO, engage parking brake or place transmission in "PARK", shut off tractor, and remove key before working near driveline.

Check driveline shields by making sure they rotate freely.

Lubricate or repair if necessary.



A - Driveline Shield

ASSEMBLING THE CUTTER



1. Place the rotary cutter on the ground on a flat surface.



2. Put blocks under each side of the rear mower deck. Make sure that rear tail wheel is off the ground.



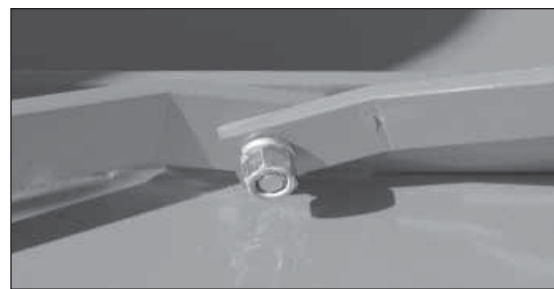
3. Use 15/16" wrench to remove bolt in rear tail-wheel adjustment strap.



4. Use 15/16" wrench to completely remove rear tail wheel attachment nuts and bolts.



5. Rotate A-Frame Lift Arms to an upward position to line up rear strap bolt holes for rear tail wheel attachment bolts.



6. Insert bolts through rear tail wheel connector and A-Frame lift arm connector straps. Note: Place A-Frame lift arm bracing strap on inside of rear wheel strap.



7. Tighten all bolts and Category I pins.

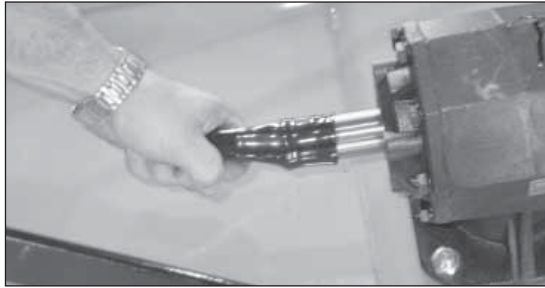


8. Remove PTO shaft from cutter by undoing chains.

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ASSEMBLY

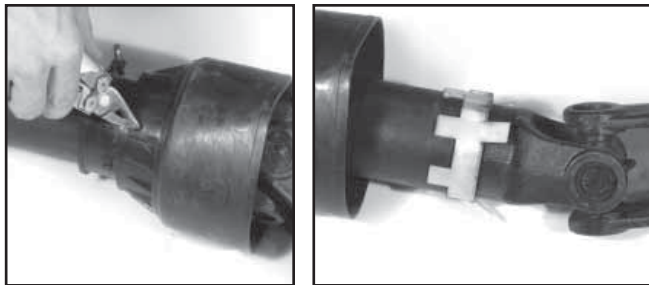
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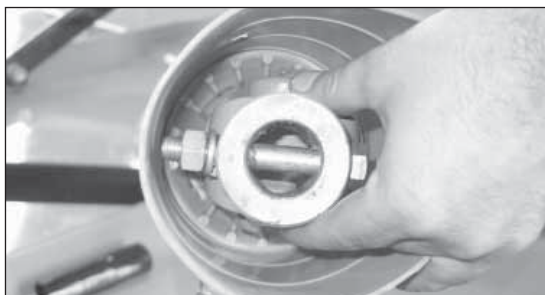
9. Remove shaft boot on PTO gearbox.



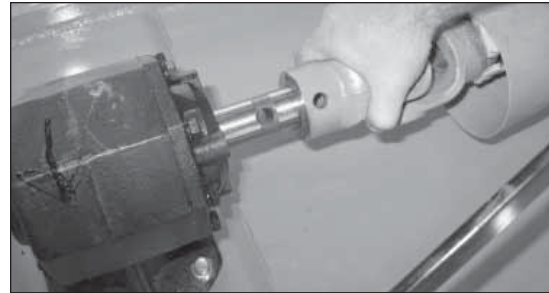
10. Remove PTO shaft snap-ring.



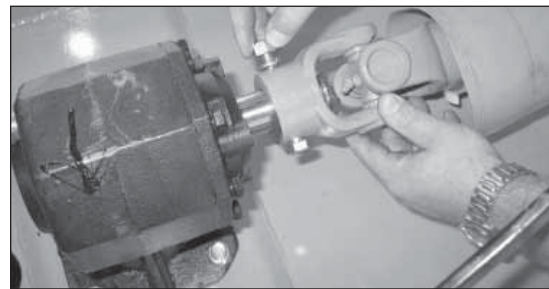
11. Remove PTO shaft cover key and slide cover back.



12. Remove PTO shear bolt from end of shaft.



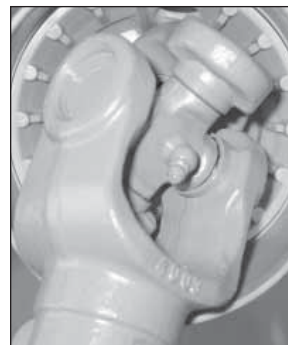
13. Slide PTO shaft onto gearbox shaft and align shear bolt holes.



14. Install and tighten PTO shaft shear bolt.



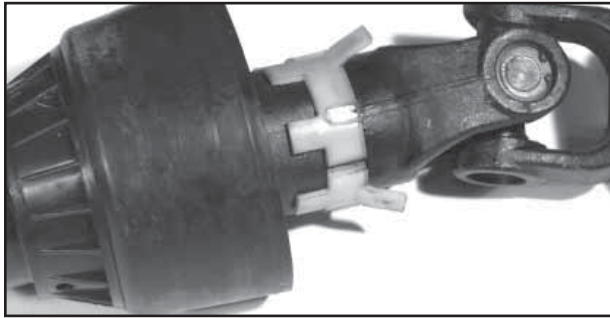
15. Reinstall snap ring on end of PTO shaft.



16. Grease two fittings on PTO shaft (one on each end of shaft in universal joint).

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17. Re-install cover by sliding tube toward universal joint. Align grease fitting on shield with white square tabs on collars. This will properly align the position notch and all three (3) tabs.



18. Grease two fittings in rear tailwheel assembly.

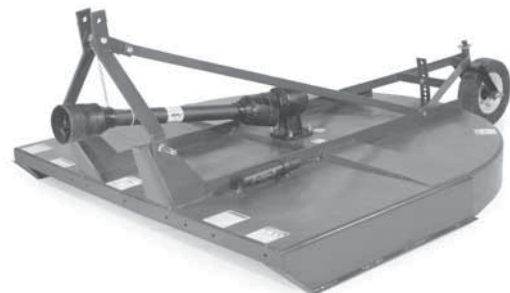
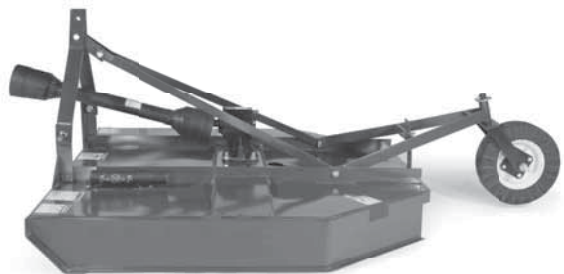


19. Remove both 7/8" fill plug and 1/8" level plug in back of gear box.

20. Fill gearbox with 80W/90 or 85W/140 gear oil until level with 1/8" level plug.



21. Replace both plugs.



22. Your Rotary Cutter is now ready to use.

MODIFY PTO DRIVELINE

Final Inspection and Adjustments

IMPORTANT: PTO driveline may be too long for some tractor models, causing tractor transaxle damage. Modify driveline if necessary.

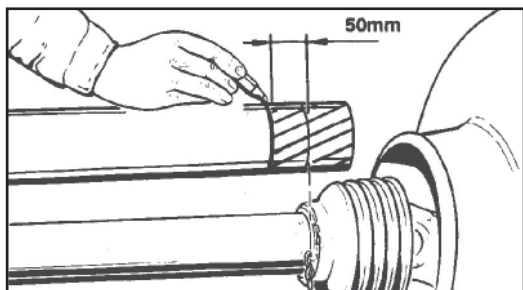
Attach rotary cutter to tractor and check cutter-to-tractor driveline telescoping length clearance. (See CHECKING DRIVELINE/CUTTER CLEARANCE in Attaching section.)

IMPORTANT: Blade hardware MUST be checked after the first hour and every eight (8) hours thereafter.

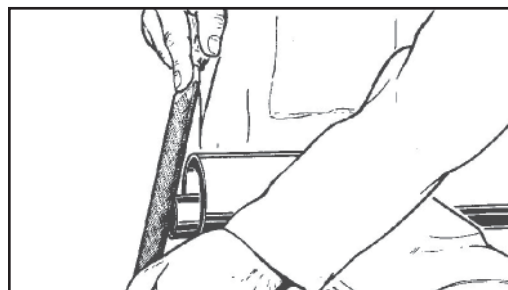
Check blade hardware torque. Re-tighten hardware after one hour of operation and every eight (8) hours thereafter.

(See MAINTENANCE BEFORE EACH USE in Lubrication and Maintenance section.)

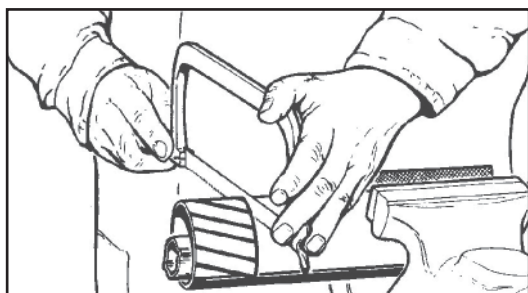
MODIFY PTO DRIVELINE (IF NECESSARY)



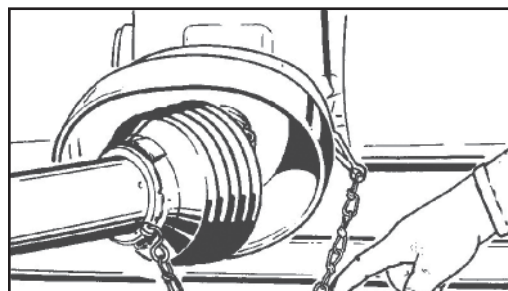
1. To adjust the length, hold the half-shafts next to each other in the shortest working position and mark them.



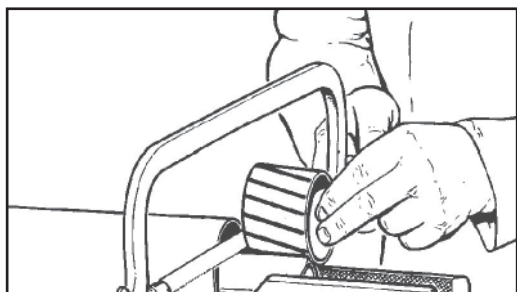
4. Round off all sharp edges and remove burrs. Grease sliding profiles. No other changes may be made to PTO drive shaft and guard.



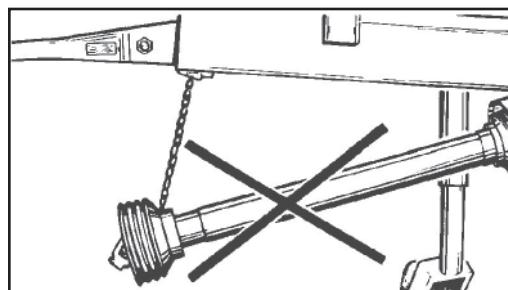
2. Shorten inner and outer guard tubes equally.



5. Chains must be fitted so as to allow sufficient articulation of the shaft in all working positions.



3. Shorten inner and outer sliding profiles by the same length as the guard tubes.



6. The PTO drive shaft must not be suspended from the chains!

ATTACHING CUTTER TO TRACTOR WITH THREE-POINT HITCH



To avoid bodily injury or machine damage whenever an implement is attached, put transmission in PARK position and check the full range of hitch for interference, binding, or PTO separation. Do not stand between tractor and implement.

1. Back up tractor to cutter with hitch points approximately in alignment.
2. Engage tractor parking brake and/or place transmission in "Park".
3. Shut off tractor engine and remove key.
4. Remove center link mounting hardware and hitch pin assemblies at both hitch masts.
5. Install tractor draft links on hitch pins. Secure with quick-lock pins (stored on tractor draft links.)

NOTE: If the tractor draft links will not open wide enough to fit over hitch pin assemblies in their normal configuration the hitch pins can be inverted so that the draft links can hook up to the inside.

6. Align center link with upper hole in cutter mast straps and install center link mounting hardware.



Shut off tractor engine before attaching PTO driveline. Entanglement in rotating driveline can cause serious injury or death.

IMPORTANT: Keep driveline and powershaft splines clean of paint, dirt and chaff. Apply grease to tractor PTO shaft before attaching PTO driveline.

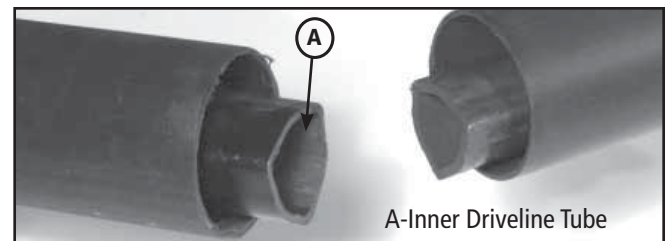
7. Shut off tractor engine.
8. Raise tractor PTO shield, if equipped.

IMPORTANT: Do not use shielding bell on driveline to lift driveline into position. Damage to shielding can occur.

9. Support driveline, cradling it in your hand.
10. Pull collar back toward cutter. Align splines by rotating cutter driveline. Push driveline onto tractor PTO shaft until collar snaps into place.
11. Pull back on shield to make sure driveline is locked.
12. Do not pull back on collar, this will release latch.
13. Lower tractor PTO shield, if equipped.

IMPORTANT: If so equipped, slip clutch components must be free to rotate when necessary. After thirty days or more, linings of slip clutch may draw moisture. Linings may bond to metal parts causing slip clutch to be ineffective, resulting in machine damage.

14. Slip clutch operational check. After the implement has been stored for thirty days or more perform the following operational check.



A-Inner Driveline Tube



- a. Loosen bolts and lock nuts progressively until tension is relieved.
- b. To aid in determining slippage, scribe/mark a line across clutch plate and Belleville Spring.
- c. With tractor at idle speed, engage tractor PTO drive 2 - 3 seconds. Clutch should slip without turning blades. If clutch does not slip, contact your authorized dealer.
- d. Tighten bolts and lock nuts progressively, leaving a gap of 4mm, between clutch plate and Belleville spring.

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15. Start tractor engine.
16. Slowly pull hitch control lever to raise cutter. Check for interference.
(See CHECKING DRIVELINE/CUTTER CLEARANCE in this section.)
17. Lower hitch to ground and adjust center link and/or lift links if necessary. (See procedures in your tractor Operator's Manual.)

CHECKING DRIVELINE/CUTTER CLEARANCE

IMPORTANT: Prevent driveline damage from contact with frame or machine damage from contact with tractor tires. Raise cutter slowly and check for interference. If necessary, shorten center link or lengthen lift links to provide clearance to full lift height.

1. Raise cutter slowly and check for clearance between driveline shield and cutter deck.
2. Check clearance between tractor tires and foot guards or chain deflector.
3. Check to see if hitch height position will provide clearance desired.

NOTE: Final adjustments should be made before operating cutter. See ADJUSTING CUTTING HEIGHT AND ANGLE in Operating the Cutter section. Center link should be installed in lowest hole at tractor end if there are multiple holes. Lift height may also be limited by installing stops on rockshaft control lever bracket.

4. Shorten center link or lengthen lift links to provide clearance. (See your tractor Operator's Manual.)

IMPORTANT: PTO driveline may be too long for some tractor models, causing tractor transaxle damage. Hold driveline sections parallel to each other and check for a minimum of 6 inches overlap.

5. Raise and lower cutter slowly to check for binding or interference. Check cutter-to-tractor driveline telescoping length to ensure it does not bottom out. Modify driveline if necessary. (See MODIFYING PTO DRIVELINE in Assembly section.)

DETACHING CUTTER FROM TRACTOR



CAUTION

To prevent personal injury caused by unexpected movement:

- a. Park machine on a level surface.
- b. Engage tractor parking brake and/or place transmission in "Park".
- c. Disengage PTO.
- d. Shut off tractor engine and remove key.

1. Park cutter on a level surface, or block tailwheel so machine cannot roll after detaching from the tractor.
2. Slowly push hitch control lever to lower cutter close to the ground.
3. Engage tractor parking brake and/or place transmission in "Park".



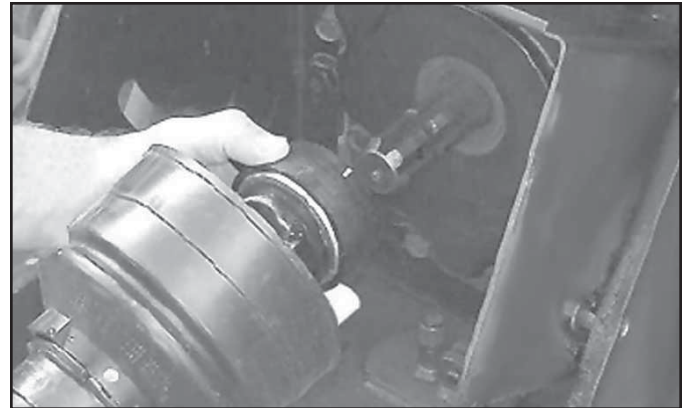
DANGER

Shut off tractor engine before detaching PTO driveline. Entanglement in rotating driveline can cause serious injury or death.

4. Shut off tractor engine and remove key.
5. Raise tractor PTO shield, if equipped.



IMPORTANT: Do not use plastic shield on driveline to hold driveline in position. Damage to shielding can occur.



6. Pull collar back toward cutter and slide driveline off tractor shaft.
7. Support and collapse driveline completely and lower onto PTO holder or onto mower deck.
8. Lower tractor PTO shield, if equipped.

TRACTOR WITH THREE-POINT HITCH

1. Remove quick-lock pins from hitch pins and install in storage position on tractor draft links.
2. Remove and lower tractor draft links from hitch pins.
3. Disconnect center link from mast straps. Position tractor center link in transport location. Reinstall center link pin/hardware.
4. Carefully drive tractor away.

General Safety

Only qualified people should operate this machine. Wear close fitting clothing and safety equipment appropriate to the job. It is recommended that tractor be equipped with Rollover Protective Systems (ROPS) and a seat belt be used. Before beginning operation, clear work area of objects that may be picked up and thrown. Check for ditches, stumps, holes or other obstacles that could upset tractor or damage rotary cutter. Always turn off tractor engine, set parking brake, and allow rotary cutter blades to come to a complete stop before dismounting tractor.

PREPARING CUTTER FOR OPERATION



To help prevent severe injury or death to you or someone else:

- a. Do not engage tractor PTO when cutter is in fully raised position transport position).
- b. Keep all persons away from machine when raising and lowering cutter.

IMPORTANT: To avoid damaging the machine from impact on ground when lowering, adjust rate at which hitch will lower.

1. Adjust tractor rockshaft rate-of-drop. Allow at least two seconds for machine to lower from full lift height to the ground. (See your tractor Operator's Manual.)
2. If equipped, disengage tractor hitch/rockshaft control lever from transport lock position and lower cutter to the ground. (See your tractor Operator's Manual.)
3. Adjust tractor lift links to level machine side-to-side. (See your tractor Operator's Manual.)
4. Adjust cutting height and angle. (See Adjusting Cutting Height and Angle in this section.)

ADJUSTING CUTTING HEIGHT AND ANGLE



Help prevent bodily injury or death caused by entanglement in rotating driveline or blades. Entanglement in rotating driveline or being struck by blades can cause serious injury or death. Before making any adjustments:



- a. Lower machine until rear wheel just touches or is slightly above ground.
- b. Engage tractor parking brake and/or place transmission in "PARK".
- c. Disengage PTO.
- d. Shut off tractor engine and remove key.
- e. Wait until all moving parts have stopped.
- f. Disconnect PTO driveline from tractor.

1. Loosen bolt and lock nut (B), remove bolt, washers and lock nut (A), raise tailwheel to highest position and install bolt, washer and lock nut (A).
2. Using rockshaft control lever, position front of cutter at desired cutting height at location.
3. Adjust depth stop. (See your tractor Operator's Manual.)
4. Adjust center link so rear of cutter is approximately 2 inches (51 mm) higher than front.

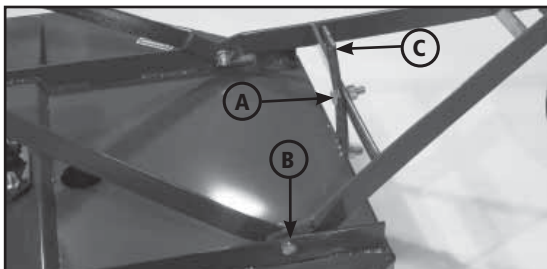
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NOTE: The rotary cutter should be operated at the highest position which will give optimal cutting results. This will help prevent the blades from striking the ground, reducing blade wear and undue strain on the cutter. For best results under heavier cutting conditions, always tilt the rotary cutter approximately 2 inches (51mm) lower in the front. This tilt decreases horsepower requirements and increases potential ground speed. When fine shredding is desired, adjust rotary cutter deck level or slightly lower in the rear. This will keep the foliage under rotary cutter until thoroughly shredded. More power is required for shredding.

5. Lower tailwheel to support rear of the cutter.
6. Install bolt, washers and lock nut (A) into one of seven holes (C) that aligns with hole in wheel support.
7. Reinstall bolt, washers and lock nut. Tighten lock nut. (A)

NOTE: The tailwheel supports the rear of the machine and the draft links support the front to allow the cutter to follow the ground contour.



A-B Lock Nut, Washers, Bolt C- Adjustment holes

Each rotary cutter can be adjusted to several cutting heights from 1.5 inches to 9 inches of cutting height by moving the rockshaft control lever in conjunction with moving the tailwheel adjustment bolt among the height adjustment holes (see photo above).

IMPORTANT: Loosening the center link may allow the driveline to contact the cutter frame or tractor tires to contact the foot guards or chain shield. Raise the cutter slowly and check for interference. Lengthen tractor lift links to provide clearance to full height.

NOTE: Lift height may also be limited by installing stops on rockshaft control lever bracket.

8. Lengthen tractor lift links, if necessary, to provide clearance.

FOLLOW SAFE OPERATING PROCEDURES

1. Perform BEFORE EACH USE maintenance in the Lubrication and Maintenance section.
2. Start tractor per tractor operator's manual.
3. Raise/lower 3-point hitch to place cutter in working position.
4. Look to be sure no one is near cutter.
5. With tractor at idle speed, slowly engage PTO drive.

! DANGER Stay clear of rotating driveline. Do not operate without driveline shields in place and in good condition. Failure to heed these warnings may result in personal injury or death.

6. Set tractor throttle for appropriate PTO speed (540RPM).

! DANGER Rotating cutter blades. Stand clear until all motion has stopped. To avoid an accidental fall from tractor and possible injury by mower, it is recommended that tractor be equipped with rollover protective system (ROPS) and a seatbelt be used by the operator for all mowing operations.


7. Place tractor in gear and proceed forward.

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NOTE: Tractor forward speed should be controlled by gear selection, not engine speed. For maximum cutting efficiency, forward speed should allow cutter to maintain a constant, maximum blade speed. If cutter stalls or tractor engine bogs, disengage PTO. Before re-engaging PTO, position cutter in a cut area and reduce tractor throttle to idle. If rotary cutter continuously stalls, select lower gear and/or increase cutting height.

KEEP RIDERS OFF MACHINE

 **DANGER** Keep riders off. Riders are subject to injury or death such as being struck by foreign objects and being thrown off the machine. Riders may also fall off and be run over by machine. Riders also obstruct the operator's view resulting in the machine being operated in an unsafe manner.

FOLLOW SAFETY OPERATING PROCEDURES

 **DANGER** To help prevent severe injury or death to you or someone else:

- Never operate cutter when other people are in the vicinity. Debris can be thrown hundreds of feet. Keep all deflectors in place. Including those on discharge opening at front and rear of deck. Before starting machine, lower to the ground. Engage tractor PTO and gradually increase the speed.**
- Operate tractor at rated PTO speed. If engine speed is too slow or too fast, machine may not perform properly.**
- Where conditions make it necessary to slow ground speed, shift to a lower gear rather than reducing engine speed. The engine will maintain rated speed and keep cutter running at optimum cutting speed.**
- Operate machine from tractor seat only. Never adjust machine while in motion.**
- Slow down when turning or traveling over rough ground.**
- Avoid holes when operating on hillsides. Tractor roll-over could result.**
- Shut off tractor engine and engage tractor parking brake and/or place transmission in "Park" when leaving tractor. Remove key when leaving tractor unattended.**
- Components behind shields may rotate several minutes after power is shut off. Look and listen for evidence of rotation before removing shielding.**

LUBRICATING AND MAINTAINING MACHINE SAFELY



Help prevent bodily injury or death caused by entanglement in rotating driveline or blades. Entanglement in rotating driveline or being struck by blades can cause serious injury or death.

Components will be hot after operation. Let all components cool before servicing.

Replace all shields after lubricating or servicing.

MAINTENANCE CHECK LIST

Perform scheduled maintenance as outlined below. Lower machine to ground, turn off tractor and set parking brake before doing maintenance inspections or work. All bolts should be torqued as recommended in the Torque Specifications unless otherwise indicated.

MAINTENANCE BEFORE EACH USE



Do not clean, lubricate, or adjust machine while it is in motion.

1. Check tractor tire air pressure. Refer to tractor operator's manual.
2. Check blades and spindles to be sure that no foreign objects such as wire or steel strapping bands are wrapped around them.
3. Check blade bolts for tightness. Locate blade hardware under hole in deck behind gear box. (Tighten to 425 ft./lbs.)

IMPORTANT: Operating with loose blade hardware will damage the blade holder and blades.

4. Inspect blades for wear. (See SERVICE SECTION Checking Blade Wear). Always replace both blades and bolts on blade holder at the same time.
5. Make certain driveline shields are in place and in good repair.
6. Inspect tailwheel for wear, damage, or foreign objects. (Repair or replace if necessary.)
7. Before each use refer to LUBRICATION LOCATIONS AND INTERVALS in this section.
8. During operation, listen for abnormal sounds which might indicate loose part, damaged bearings, or other damage.

MAINTENANCE AFTER EACH USE

1. Clean all debris from rotary cutter especially under side of deck. When cleaning underside of deck, securely block machine into position.

IMPORTANT: To help prevent structural damage caused by loose hardware, check all hardware after first eight (8) hrs of use and tighten all hardware to specifications.

OBSERVE LUBRICATION SYMBOLS

Lubricate with multipurpose grease.



NOTE: Blade bolt access hole is located behind gearbox.

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LUBRICATION AND MAINTENANCE

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LUBRICATION BEFORE EACH USE

1. Driveline Universal Joints

a. Apply multi-purpose grease with a grease gun.

2. Driveline Guard

b. Apply 2-3 shots of multipurpose grease with grease gun to plastic fitting.

3. Driveline Profile

c. Disconnect PTO Driveline.

d. Pull two sections apart.

e. Apply thin coat of multi-purpose grease to inside of female section.

f. Re-assemble sections.

NOTE: Pull each section to be sure driveline and shields are securely connected. Make certain PTO shielding is in good condition. Do not grease outer or inner plastic shields.

4. Tailwheel Pivot Tube

g. Apply multi-purpose grease with grease gun.

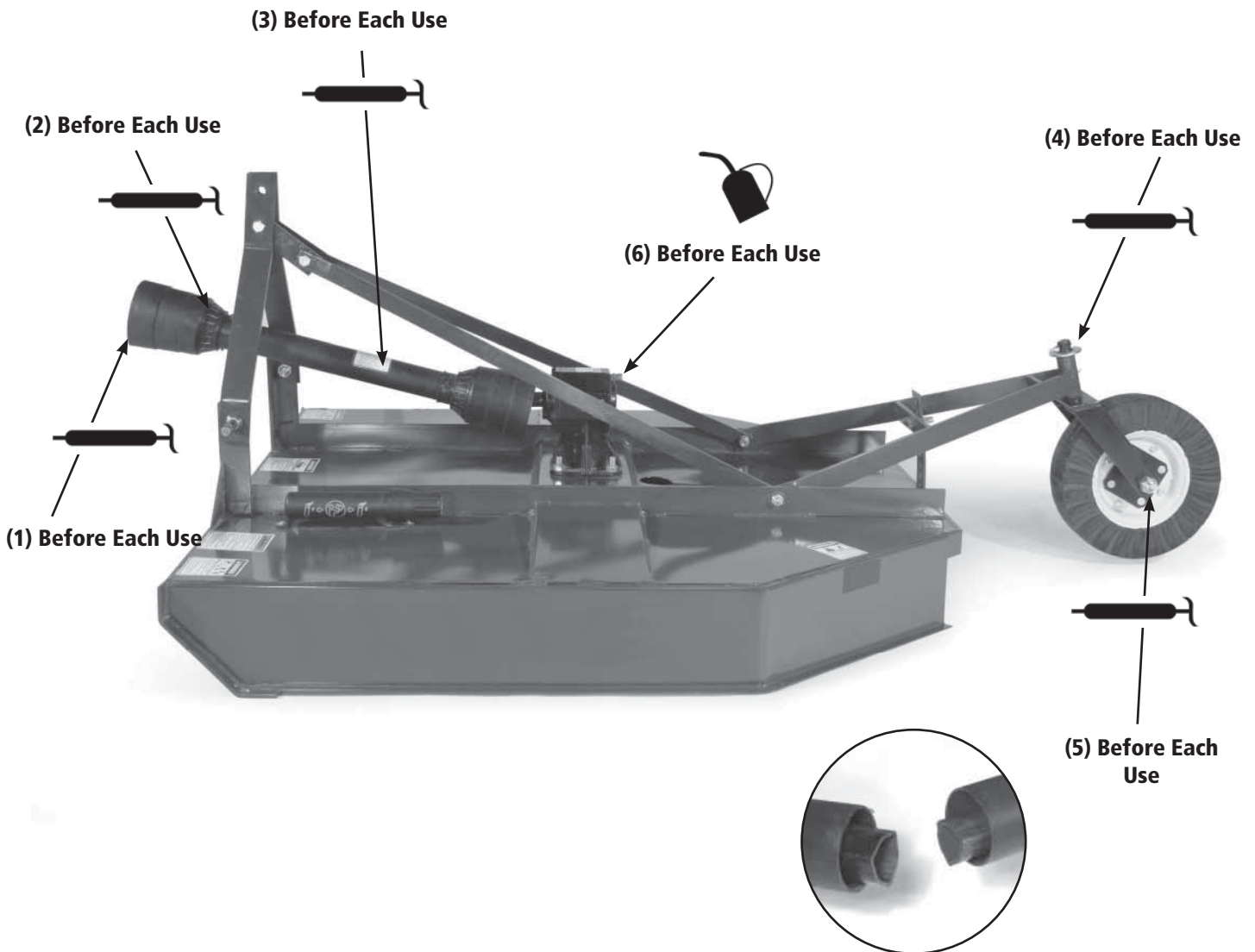
5. Tailwheel

h. Apply multi-purpose grease with grease gun.

6. Gearbox


i. Check oil level by removing oil level check plug on side of gearbox.

j. Add 90W gear oil if necessary to bring oil level to check plug hole.



3d. Pull two sections apart.

PRACTICE SAFE SERVICE PROCEDURES

CAUTION  To help prevent personal injury caused by unexpected movement, be sure to service machine on a level surface.

Before servicing or adjusting machine connected to a tractor:

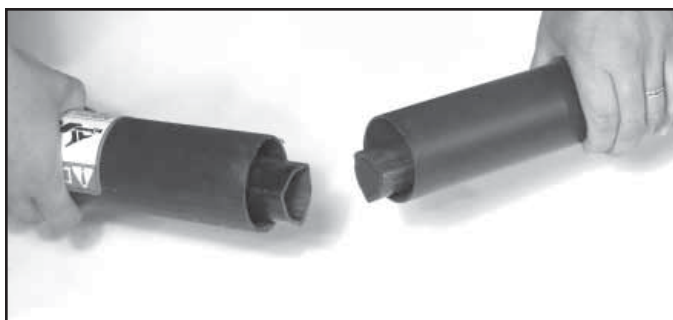
1. Lower machine to the ground.
2. Engage tractor parking brake and/or place transmission in "Park".
3. Disengage PTO.
4. Shut off tractor engine and remove key.
5. Wait until all moving parts have stopped.
6. Disconnect PTO driveline from tractor.

The blades and blade pan may rotate for several minutes after PTO is shut off. Look and listen for rotating driveline to stop before working on the cutter.

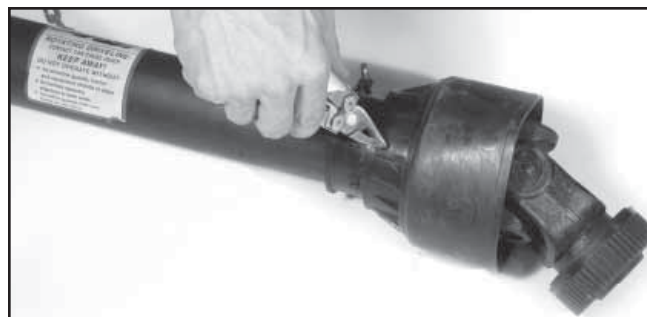
When servicing blades or blade pan, it will be necessary to work underneath cutter. Be sure to support cutter frame at all four corner locations with safety shop stands to prevent accidental lowering. Do not position safety stands under wheel support because these components can rotate.

DISASSEMBLING DRIVELINE SHIELD

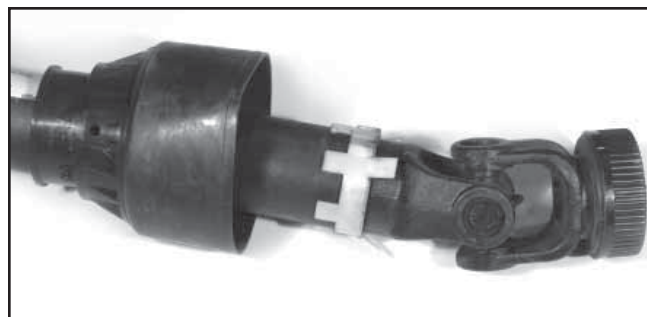
1. Unhook driveline safety chain from one end of driveline.



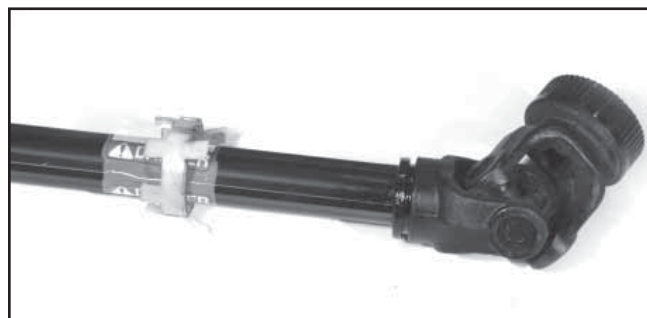
2. Separate driveline into two (2) pieces.




3. Using pliers, screwdriver or punch, depress white tabs in each of the release holes around the driveline shield. Driveline tab should "snap" somewhat when firmly depressed.



4. Slide shield collar back.



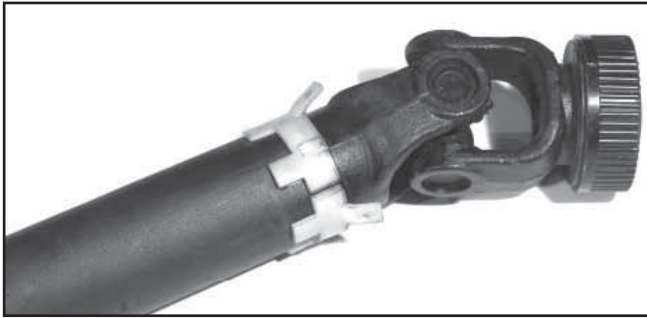
5. If needed, separate white tab collar and slide shield tube back.

CAUTION  **DO NOT** operate PTO shaft without shielding installed.

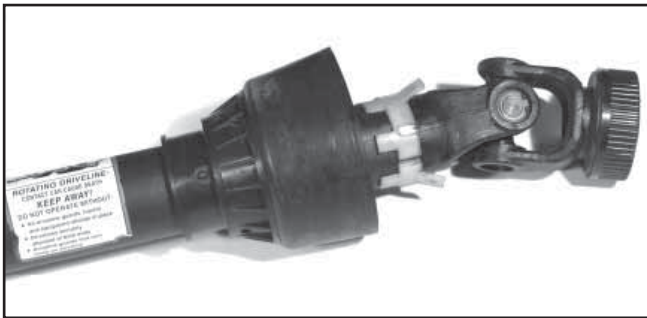
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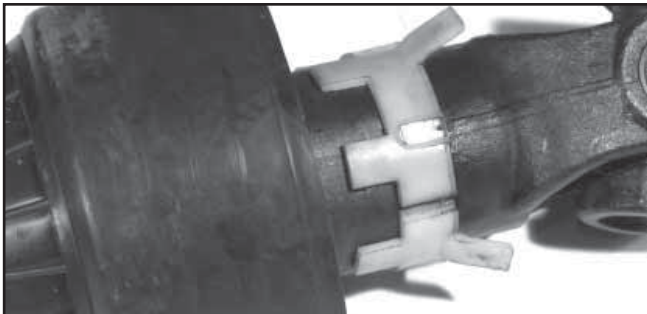
RE-ASSEMBLING DRIVELINE SHIELD



1. Replace white tabbed collar in groove of PTO shaft.

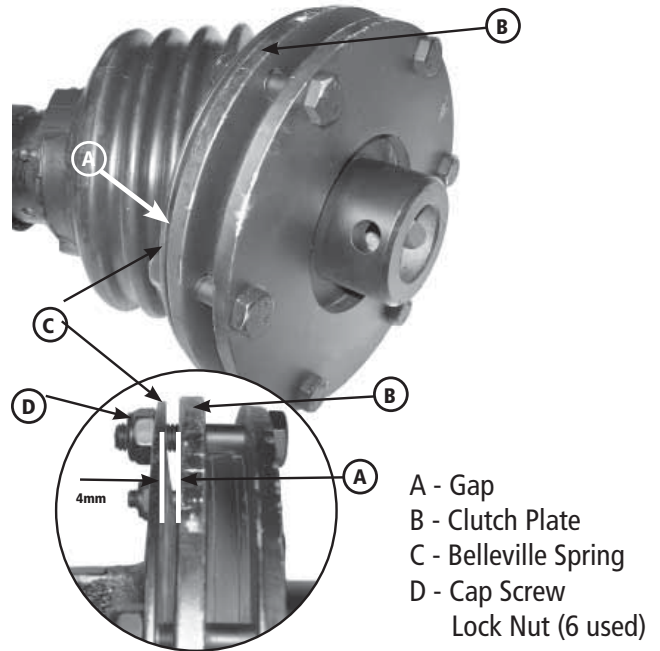


2. Slide driveline shield tube over white tab collar. Align slots/holes with holes in tube.



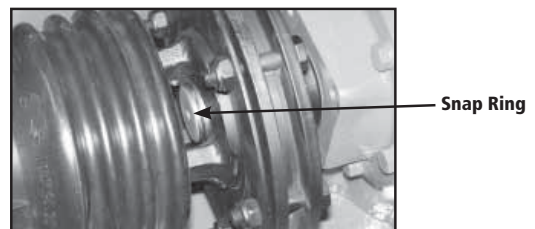
3. Slide universal joint cover up tube toward universal joint. Align grease fitting on shield with white square tabs on collars. This will properly align the position notch and all three (3) tabs.

4. Slide collar shield into place until locked.



REMOVING AND INSTALLING DRIVELINE-SLIP CLUTCH

1. Disconnect driveline shield chain.
2. Open access panel on shield.
3. Remove driveline assembly from gearbox output shaft by removing 1/2" x 3 1/2" **Gr 8 bolt** and lock nut.
4. Push driveline onto input shaft toward gearbox and remove snap ring.

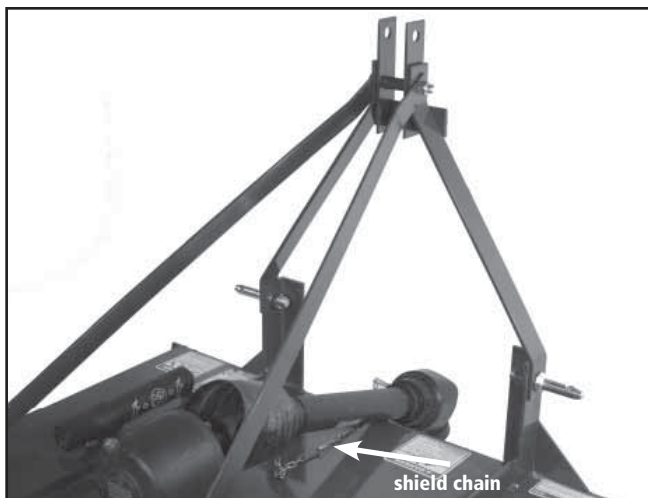


5. Pull driveline from gearbox shaft.
6. Make repairs as necessary:
 - a. Slip clutch service - See **DISASSEMBLING AND INSPECTING SLIP CLUTCH** in this section.
 - b. Driveline repair - Consult your dealer for repair or replacement.

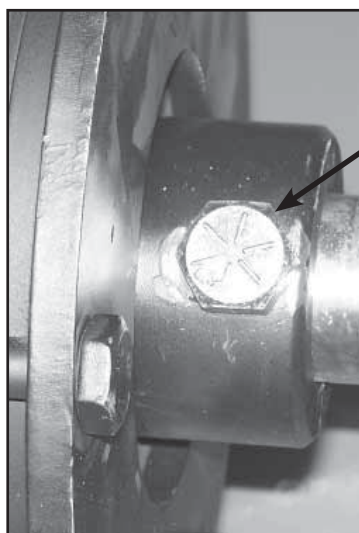
IMPORTANT: Apply multipurpose grease on gearbox input shaft. 1/2" x 3 1/2" Gr 8 bolt and lock nut required to attach driveline to gearbox input shaft.

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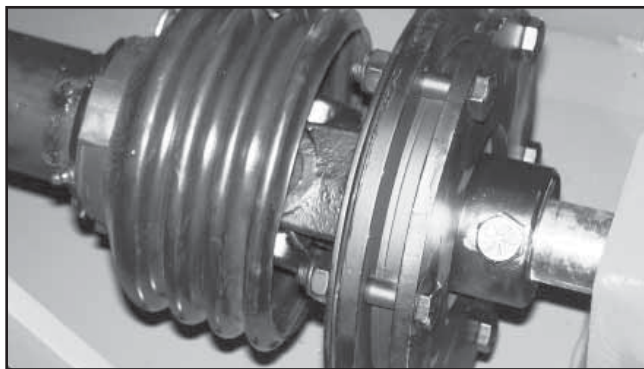
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(Disconnect driveline shield chain)



1/2" x 3 1/2"
Gr 8 bolt



NOTE: Slip clutch shield removed for illustration purposes.

REMOVING AND INSTALLING DRIVELINE (SHEAR BOLT)

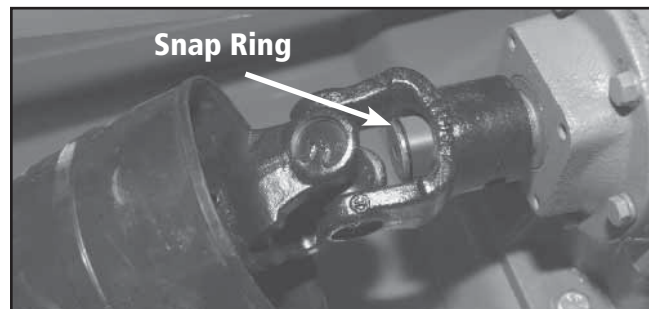
1. Disconnect driveline shield chain.
2. Bend back driveline shield cone.
3. Remove shear bolt and lock nut.
4. Push driveline onto input shaft toward gearbox and remove snap ring.
5. Pull driveline from gearbox shaft.
6. Replace or repair as necessary.
7. Install in reverse order of removal.

REPLACING DRIVELINE SHEAR BOLT

IMPORTANT: Avoid shear bolt failure at start up by engaging the PTO slowly at low engine rpm.

If shear bolt fails:

1. Bend back driveline shield cone.
2. If necessary remove sheared bolt with hammer and punch and realign holes in yoke and shaft.
3. Replace with 1/2" x 3 1/2" **Gr 2 bolt** and lock nut.



NOTE: Driveline shield pulled back for illustration purposes. Cutter drive components are protected from shock loads by a shear bolt.

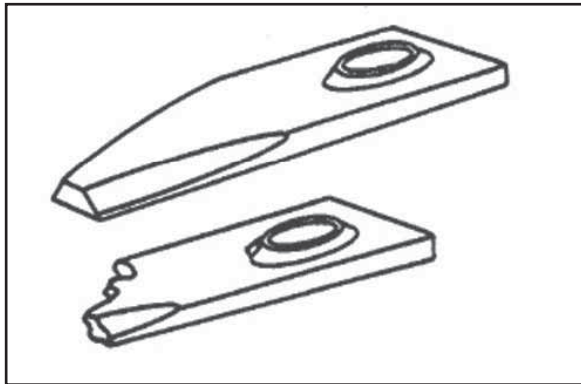
7. Install driveline in reverse order of removal.

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CHECKING BLADE WEAR

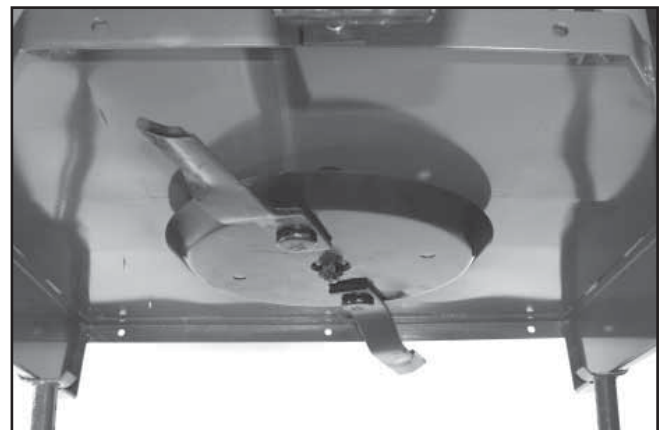
IMPORTANT: Operating with blades that are not alike will cause vibration. Always replace worn or broken blades in pairs. Never replace a single blade. Check blades regularly for wear or breakage.



REPLACING BLADES

IMPORTANT: Operating with loose blade hardware will damage the blade pan and blades. Whenever the blades have been removed or replaced, blade hardware **MUST** also be replaced. Check blade hardware torque after one hour of operation and every eight (8) hours thereafter.

NOTE: Suction blades have cutting edge on one side only. Note blade rotation when installing blades. (See DIRECTION OF BLADE ROTATION in this section.)



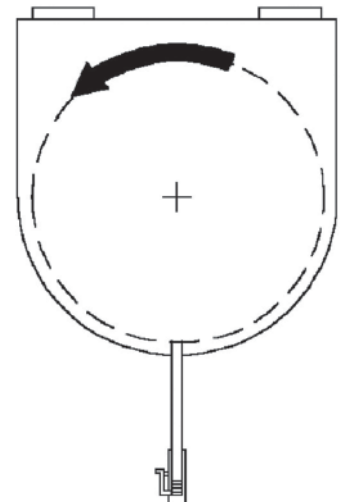
CAUTION

When replacing blades, blade hardware, and blade pan it will be necessary to work underneath cutter. Be sure to support cutter frame at all four corner locations with safety shop stands, blocks, or other firm supports to prevent accidental lowering. Do not position safety stands under wheel support because these components can rotate.

1. Manually rotate driveline to align blade lock nut with access hole in top of deck behind gearbox.
2. Remove old blade bolts and blades.
3. Use new blade bolt hardware to install new blades.
4. Tighten blade bolt lock nuts to 425 ft-lbs.

DIRECTION OF BLADE ROTATION


IMPORTANT: Cutter shown is viewed from the top. Take special note of blade rotation shown by the arrow.



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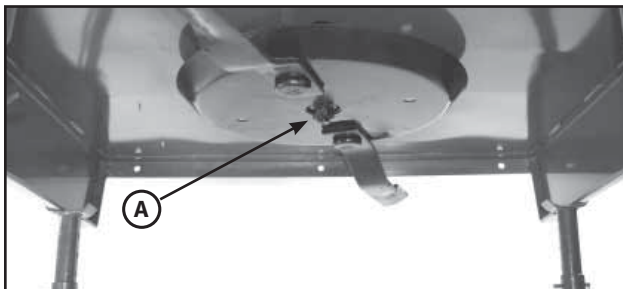
REPLACING BLADE PAN

CAUTION  **When replacing blades, blade hardware and blade pan it will be necessary to work underneath cutter. Be sure to support cutter frame at all four corner locations with safety shop stands to prevent accidental lowering. Do not position safety stands under wheel support because these components can rotate.**

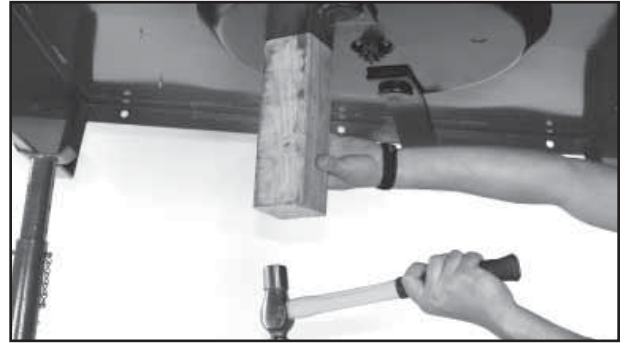
1. Remove the blades. (See Replacing Blades in this section.)
2. Remove cotter pin from output shaft of the gearbox underneath cutter.
3. Loosen castle nut to the bottom of the output shaft (A). Do not remove castle nut as it must hold the blade pan when it becomes loose.
4. Tap with a hammer around the hub using a block of wood as shown in photo.

NOTE: The output shaft of the gearbox is tapered. A few taps around the hub will loosen the blade pan.

5. Remove castle nut slowly and allow the blade pan to be removed.
6. Remove blade pan.



7. To reinstall blade pan, reverse the above steps. Be sure to tighten the castle nut and replace the cotter pin.
8. Replace blades. (See Replacing Blade in this section.)



STORAGE

AT THE END OF YOUR CUTTING SEASON

IMPORTANT: When the unit is going to be stored for an extended amount of time please perform the following steps to keep the oil seals from deteriorating.

1. Spray shaft extensions with a suitable dry film or similar preservative
2. Pack grease around seal to prevent drying and cracking
3. Fill the gearbox with enough oil so that it covers the top of the input seal
4. Remove the breather and replace with an airtight plug
5. Remember to drain the oil back to the correct level before using again
6. Check (and replace where necessary) blades, bolts, and nuts on the cutter.
7. Clean cutter and touch up any rust spots that may have appeared.
8. Replace any safety decals if damaged.
9. Store rotary cutter in a clean dry location.

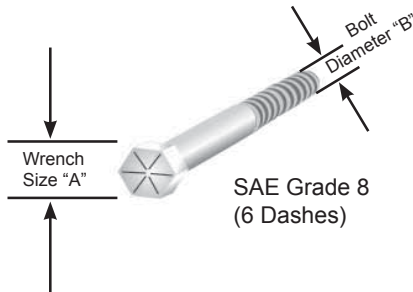
CAUTION  **Always use a tractor to position equipment for storage. Never attempt to move equipment by hand.**

TROUBLESHOOTING GUIDE

Problem	Possible Cause	Possible Remedy
Leaves a streak of uncut or partially cut grass.	<ol style="list-style-type: none"> 1. Rotary cutter not level, side to side. 2. Blade dull or bent. 3. Blades unable to cut that part of grass pressed by path of tractor 4. Possible build up of material under rotary cutter. 	<p>Level 3-pt. hitch linkage on tractor. Sharpen or replace blades.</p> <p>Slow ground speed of tractor but keep engine running at full PTO rpm. Cutting lower will help.</p> <p>Clean rotary cutter.</p>
Blade cuts grass lower in center of swath than at the edge.	<ol style="list-style-type: none"> 1. Height of rotary cutter lower at rear or at front. 	<p>Adjust rotary cutter height and altitude so that rotary cutter rear & front are with 1/2" of same height.</p>
Material discharges from cutter unevenly, or discharges clumps of grass.	<ol style="list-style-type: none"> 1. Grass or brush may be too high or thick. 2. Grass wet. 	<p>Reduce ground speed but maintain 540 rpm at tractor PTO, or make two passes over material. Raise rotary cutter for the first pass and lower for the second pass, preferably cutting 90° to the first pass. Raise rear of rotary cutter high enough to permit material to discharge.</p> <p>Allow grass to dry before mowing. Slow ground speed of tractor but keep engine running at full PTO rpm. Cutting lower will help.</p>
Gearbox overheating.	<ol style="list-style-type: none"> 1. Low on lubricant. 2. Improper lubricant type. 3. Excessive trash build up around gearbox. 	<p>Fill to proper level.</p> <p>Replace with proper lubricant.</p> <p>Remove trash.</p>
Rotary cutter will not cut. Rotary cutter will not cut all the time. (slip clutch only)	<ol style="list-style-type: none"> 1. Shear bolt sheared 2. Slip clutch slipping. 	<p>Install new shear bolt.</p> <p>Adjust slip clutch.</p>
Excessive vibration.	<ol style="list-style-type: none"> 1. Possible build up of material on blade 2. Blades locked into position. 3. Check for even wear on each blade tip. 4. Broken blade. 5. New blade or bolts not matched with worn blade or bolts. 	<p>Clean blade pan.</p> <p>Free blades so they swing free.</p> <p>Weigh each blade. Weight should be within 1 oz. Always replace both blades.</p> <p>Replace blades, in set.</p> <p>Replace blades or bolts in sets.</p>
Gearbox noisy.	<ol style="list-style-type: none"> 1. Low oil in gearbox. 	<p>Check oil level. Add oil.</p>

TORQUE SPECIFICATIONS

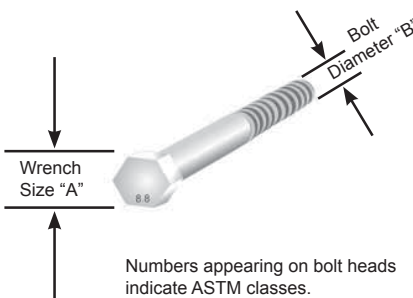
AMERICAN Bolt Head Markings



Proper torque for American fasteners used on manufactured implement.
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 - 20 UNC	6 (7)	8 (11)	12 (16)
7/16	1/4 - 24 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 (406)	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

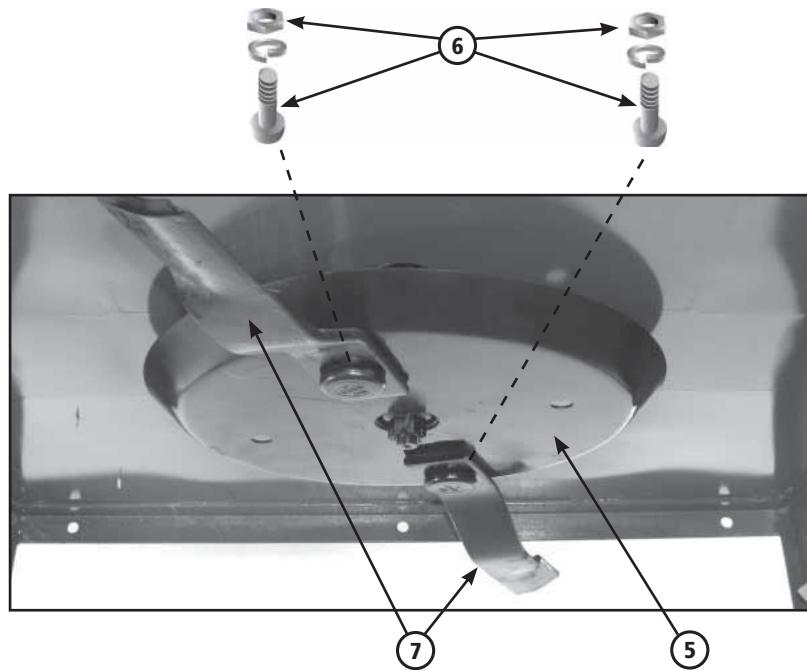
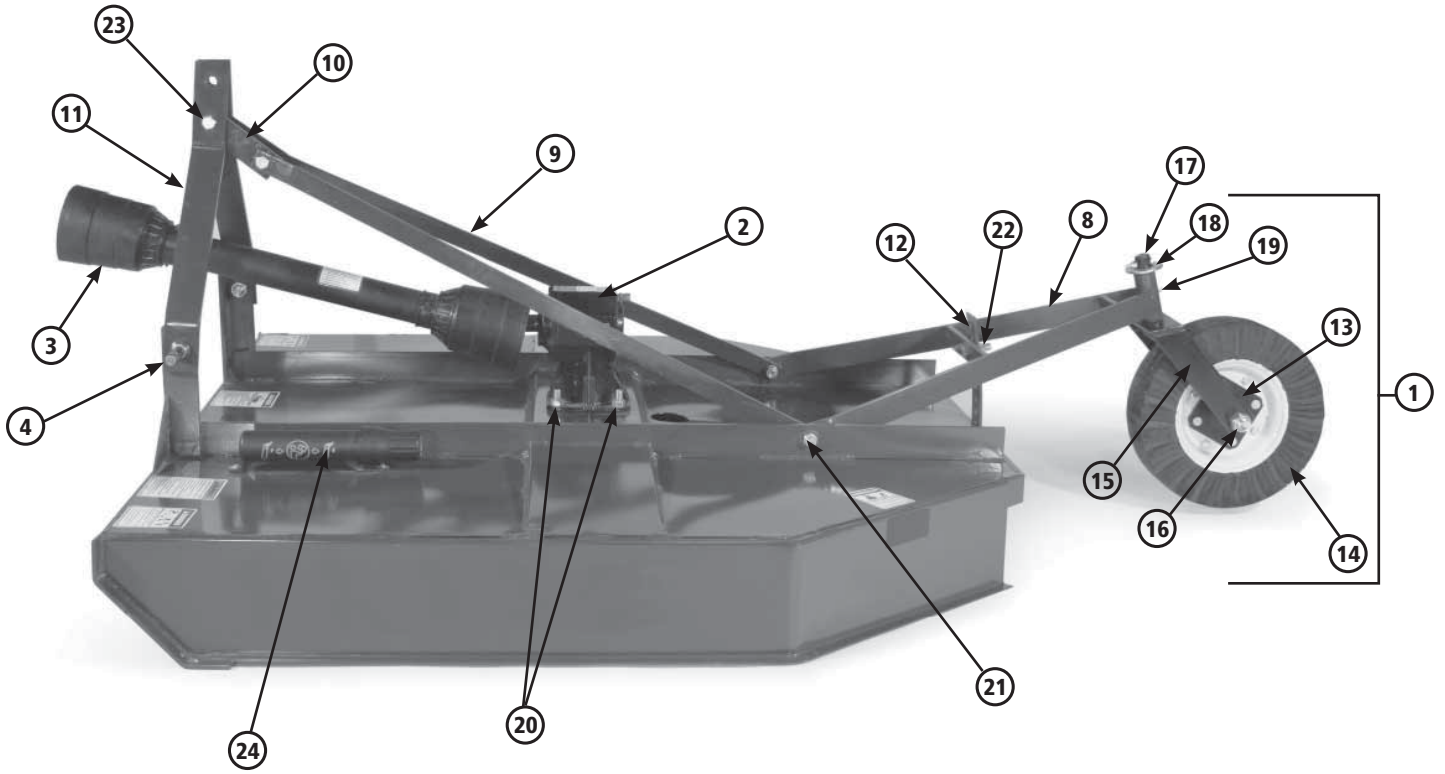


Proper torque for metric fasteners used on manufacturer implement.
Recommended Torque in Foot Pounds (Newton Meters).*

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)
31	27		821 (1112)		138 (1542)
46	30	418 (566)	1119 (1516)		1547 (2096)

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

PARTS



* For complete Safety Decals listing and locations refer to pages 8 and 9.

Because we are always striving to improve our products, this diagram could differ slightly from actual equipment. Specifications are subject to change without notice.

Parts Overall View - Shear Pin Series

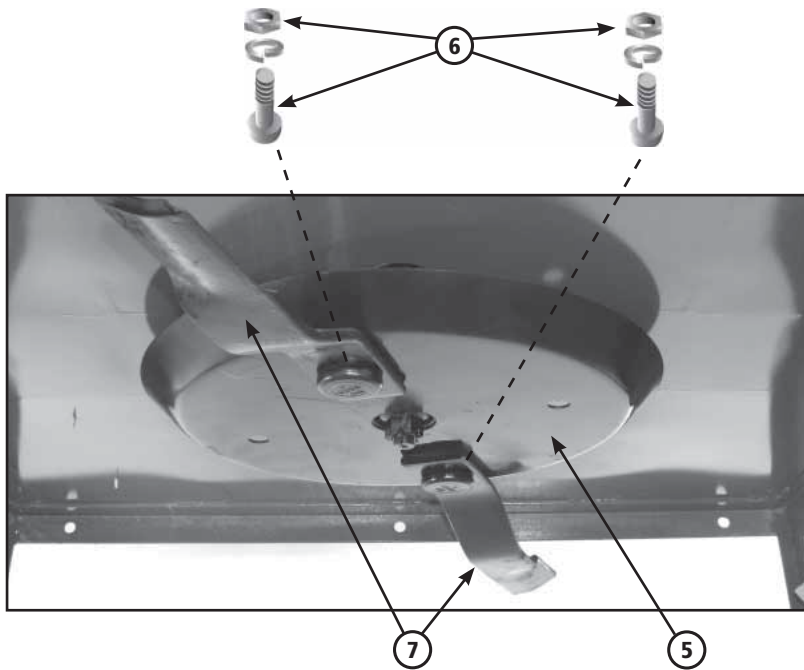
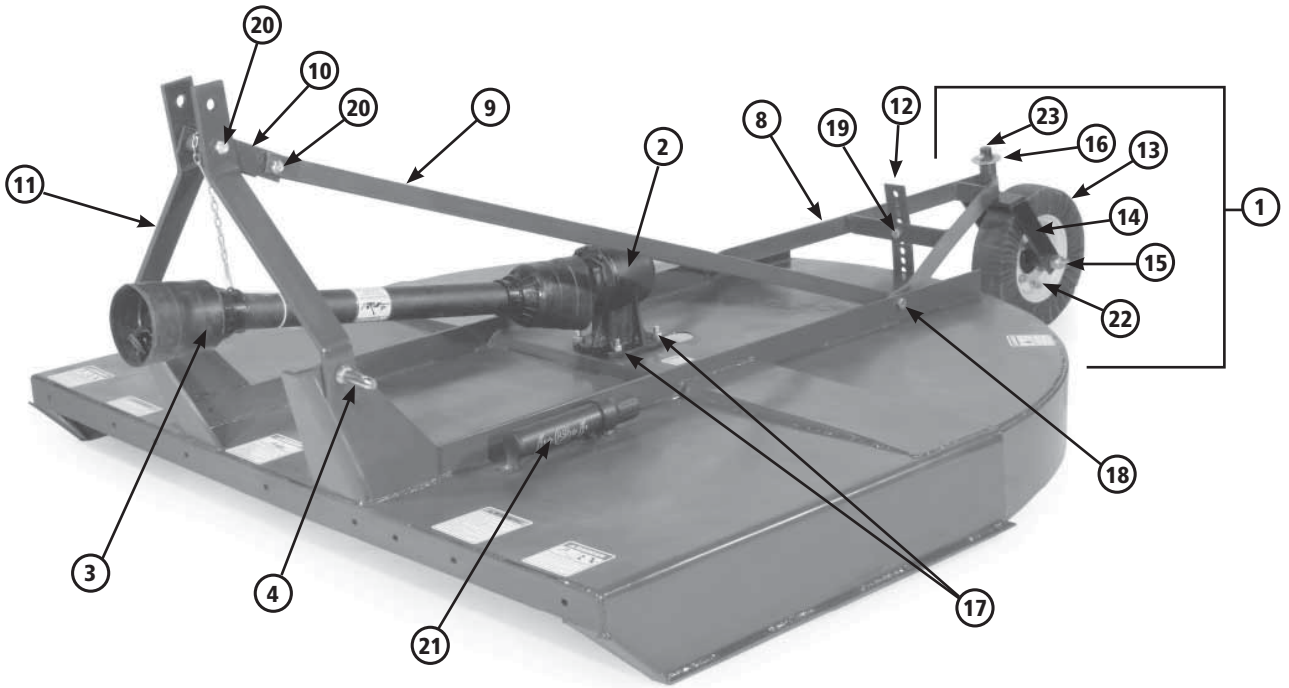
RC4, RCGR4, RC5, RCGR5, RC6, RCGR6

Parts Not Shown

Item Number	Part Number	Description
1	RCTA	Tire/Wheel Fork Assembly (4', 5', & 6')
2	RCGBAHA	Gear Box w/Castle Nut & Cotter Pin
3	RCS45A	Combo PTO Shaft (4' & 5')
3a	RCS6A	PTO Shaft (6')
4	C1L	Category I Lift Pin
5	RCBH	Blade Pan (Stump Jumper)
6	RCBBWW	Blade Bolt Hardware Set
7	RCBL4	Blade Set (2pk) (4')
7a	RCBL5	Blade Set (2pk) (5')
7b	RCBL6	Blade Set (2pk) (6')
8	RCTWAF4A	A-Frame Assembly (Yellow) (4')
8a	RCTWAF4AG	A-Frame Assembly (Gray) (4')
8b	RCTWAF56A	A-Frame Assembly (Yellow) (5' & 6')
8c	RCTWAF56AG	A-Frame Assembly (Gray) (5' & 6')
9	NSRCBB4Y	Lift Arm Brace (Yellow) (2pk) (4')
9a	NSRCBB4G	Lift Arm Brace (Gray) (2pk) (4')
9b	NSRCBB5Y	Lift Arm Brace (Yellow) (2pk) (5')
9c	NSRCBB5G	Lift Arm Brace (Gray) (2pk) (5')
9d	NSRCBB6Y	Lift Arm Brace (Yellow) (2pk) (6')
9e	NSRCBB6G	Lift Arm Brace (Gray) (2pk) (6')
10	RC4PPY	Pivot Plate (Yellow) (2pk) (4')
10a	RC4PPG	Pivot Plate (Gray) (2pk) (4')
10b	RCPPY	Pivot Plate (Yellow) (2pk) (5', 6', & 7')
10c	RCPPG	Pivot Plate (Gray) (2pk) (5', 6', & 7')
11	NSRCBB4AY	Lift Arms (Yellow) (2pk) (4')
11a	NSRCBB4AG	Lift Arms (Gray) (2pk) (4')
11b	NSRCBB5AY	Lift Arms (Yellow) (2pk) (5')
11c	NSRCBB5AG	Lift Arms (Gray) (2pk) (5')
11d	NSRCBB6AY	Lift Arms (Yellow) (2pk) (6')
11e	NSRCBB6AG	Lift Arms (Gray) (2pk) (6')
12	RCAFHA	A-Frame Height Adjuster (Yellow)
12a	RCAFHAG	A-Frame Height Adjuster (Gray)
13	HUB	Wheel Hub
14	LTWWB	Laminated Tire & Wheel w/Bolts
15	RCWF	Wheel Fork
16	FHBWN	Fork & Hub Bolt w/Nut (4', 5', & 6')
17	WFBWN	Wheel Fork Bolt w/Nut (4', 5', & 6')
18	114W	1-1/4" Flat Washer
19	GZ	Grease Zerk (5pk)
20	RCGBH	Gearbox Hardware (4pk)
21	NSRCBSH	Backstrap Hardware (4pk)
22	RCAFHAH	A-Frame Height Adjuster Hardware (4pk)
23	RCPPH	Pivot Plate Hardware (2pk)
24	MHWH	Manual Holder w/Hardware

Item Number	Part Number	Description
N/A	PTOBWS	Shear Pin PTO Shaft Hardware Kit
N/A	IPPBY	Inner Pivot Plate Bushing (Yellow) (2pk)
N/A	IPPBG	Inner Pivot Plate Bushing (Gray) (2pk)
N/A	OPPBY	Outer Pivot Plate Bushing (Yellow) (2pk)
N/A	OPPBG	Outer Pivot Plate Bushing (Gray) (2pk)
N/A	SR	Gearbox Snap Ring (3pk)
N/A	B	Gearbox Breather
N/A	4PBY	Pin Bushing (Yellow) (2pk) (4')
N/A	4PBG	Pin Bushing (Gray) (2pk) (4')
N/A	56PBY	Pin Bushing (Yellow) (2pk) (5' & 6')
N/A	56PBG	Pin Bushing (Gray) (2pk) (5' & 6')
N/A	RCGRDG4	Front Rubber Guard Kit (Gray Brace) (4')
N/A	RCGRDY4	Front Rubber Guard Kit (Yellow Brace) (4')
N/A	RCGRDG5	Front Rubber Guard Kit (Gray Brace) (5')
N/A	RCGRDY5	Front Rubber Guard Kit (Yellow Brace) (5')
N/A	RCGRDG6	Front Rubber Guard Kit (Gray Brace) (6')
N/A	RCGRDY6	Front Rubber Guard Kit (Yellow Brace) (6')
N/A	RCRGRDG4	Rear Rubber Guard Kit (Gray Brace) (4')
N/A	RCRGRDY4	Rear Rubber Guard Kit (Yellow Brace) (4')
N/A	RCRGRDG5	Rear Rubber Guard Kit (Gray Brace) (5')
N/A	RCRGRDY5	Rear Rubber Guard Kit (Yellow Brace) (5')
N/A	RCRGRDG6	Rear Rubber Guard Kit (Gray Brace) (6')
N/A	RCRGRDY6	Rear Rubber Guard Kit (Yellow Brace) (6')
N/A	RCGRDKG4	Front & Rear Rubber Guard Kit (Gray) (4')
N/A	RCGRDKY4	Front & Rear Rubber Guard Kit (Yellow) (4')
N/A	RCGRDKG5	Front & Rear Rubber Guard Kit (Gray) (5')
N/A	RCGRDKY5	Front & Rear Rubber Guard Kit (Yellow) (5')
N/A	RCGRDKG6	Front & Rear Rubber Guard Kit (Gray) (6')
N/A	RCGRDKY6	Front & Rear Rubber Guard Kit (Yellow) (6')

PARTS



* For complete Safety Decals listing and locations refer to pages 8 and 9.

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Parts Overall View - Shear Pin Series

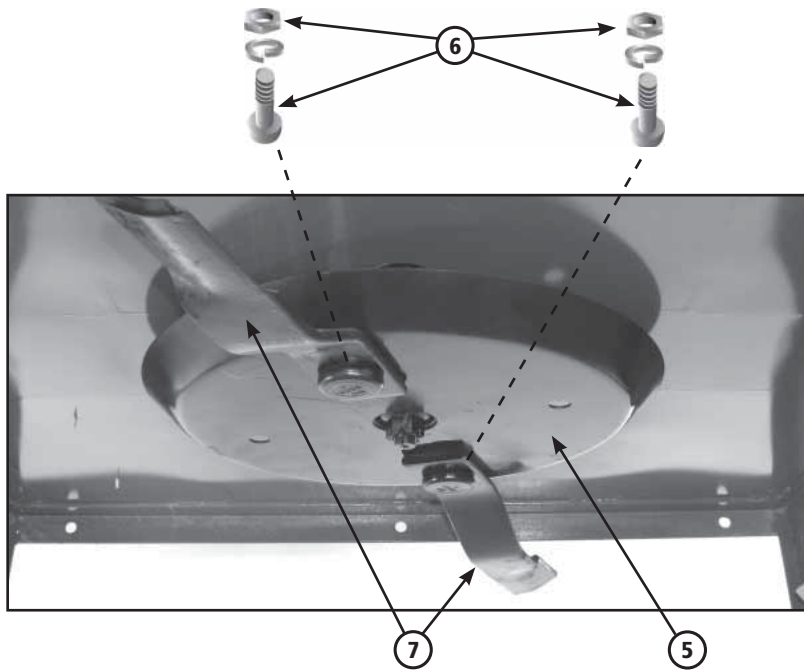
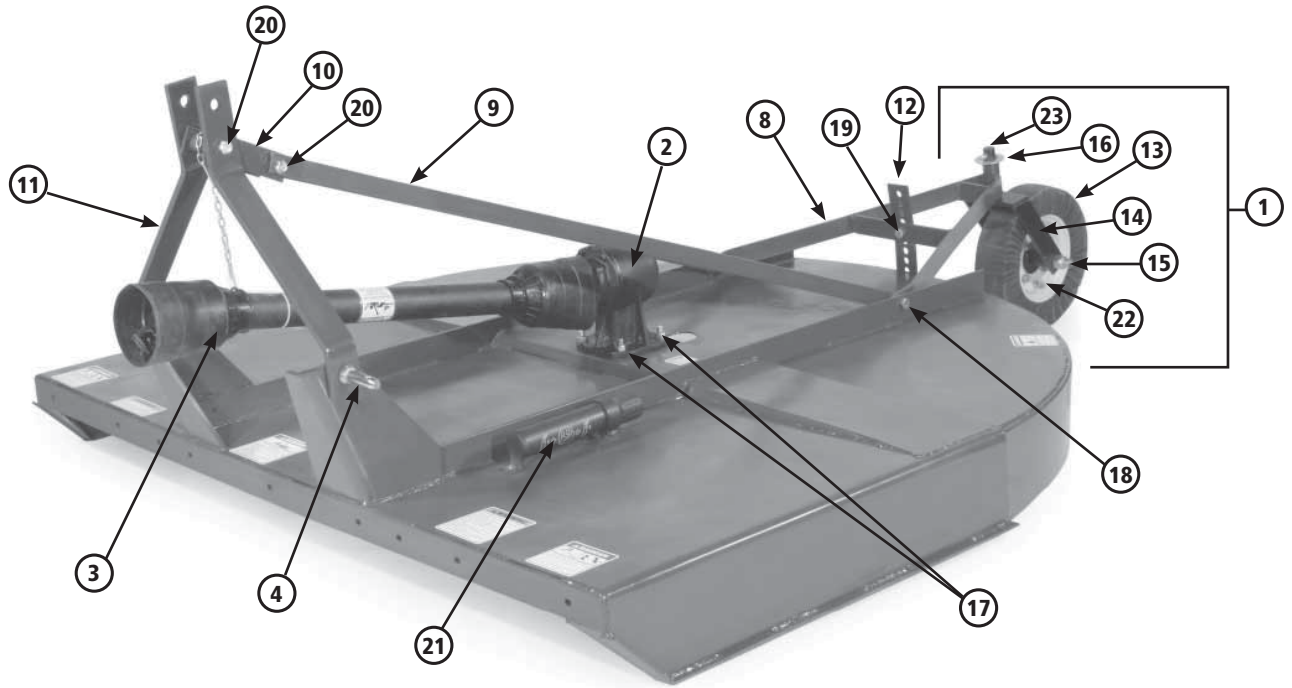
RBRC5, RBRC6

Parts Not Shown

Item Number	Part Number	Description
1	RCTA	Tire/Wheel Fork Assembly (5', & 6')
2	RCGBAHA	Gear Box w/Castle Nut & Cotter Pin
3	RCS45A	Combo PTO Shaft (4' & 5')
3a	RCS6A	PTO Shaft (6')
4	C1L	Category I Lift Pin
5	RCBH	Rotary Cutter Blade Holder
6	RCBBWW	Blade Bolt Hardware Set
7	RCBL5	Blade Set (2pk) (5')
7a	RCBL6	Blade Set (2pk) (6')
8	RCTWAF56AG	A-Frame Assembly (5' & 6')
9	NSRBRCBB5	Lift Arm Brace (2pk) (5')
9a	NSRBRCBB6	Lift Arm Brace (2pk) (6')
10	RCPPG	Pivot Plate (2pk)
11	NS56RCLAG	Lift Arms (2pk) (5' & 6')
12	RCAFHAG	A-Frame Height Adjuster
13	LTWWB	Laminated Tire & Wheel w/Bolts
14	RCWF	Wheel Fork
15	FHBWN	Fork & Hub Bolt w/Nut
16	114W	1-1/4" Flat Washer
17	RCGBH	Gearbox Hardware (4pk)
18	NSRCBSH	Backstrap Hardware (4pk)
19	RCAFHAH	A-Frame Height Adjuster Hardware (4pk)
20	RCPPH	Pivot Plate Hardware (2pk)
21	RBRC56MHWH	Manual Holder w/Hardware (5' & 6')
22	HUB	Wheel Hub
23	WFBWN	Wheel Fork Bolt w/Nut

Item Number	Part Number	Description
N/A	IPPBG	Inner Pivot Plate Bushing (2pk)
N/A	OPPBG	Outer Pivot Plate Bushing (2pk)
N/A	PTOBWS	Shear Pin PTO Shaft Hardware Kit
N/A	SR	Gearbox Snap Ring (3pk)
N/A	B	Gearbox Breather
N/A	GZ	Grease Zerk (5pk)
N/A	PTOGZ	PTO Shaft Grease Zerk w/45 Degree Bend
N/A	56PBG	Pin Bushing (2pk) (5' & 6')

PARTS



* For complete Safety Decals listing and locations refer to pages 8 and 9.

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Parts Overall View - Slip Clutch Series

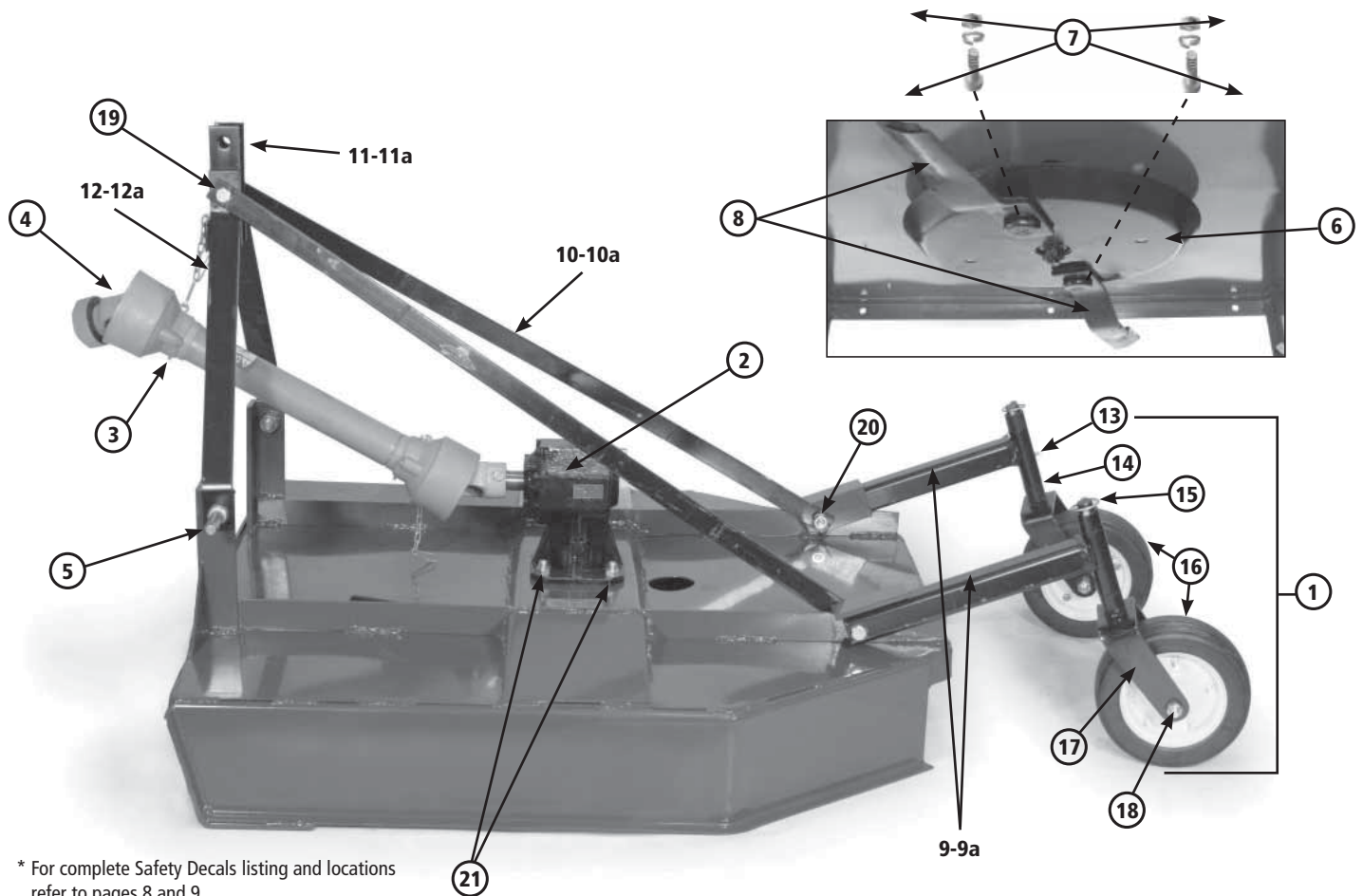
RBRCGS5, RBRCGS6, RBRCGS7

Item Number	Part Number	Description
1	RCTA	Tire/Wheel Fork Assembly (5' & 6')
1a	RBRC7TA	Tire/Wheel Fork Assembly (7')
2	5GB	Gearbox (RBRCGS5) (5')
2a	6GB	Gearbox (RBRCGS6) (6')
2b	RBRC7GB	Gearbox (RBRCGS7) (7')
3	RCSC56A	Slip Clutch PTO Shaft w/Hardware (5' & 6')
3a	RBRC57A	Slip Clutch PTO Shaft (7')
4	C1L	Category I Lift Pin (5' & 6')
4a	P7212	Category II Lift Pin (7')
5	RCBH	Rotary Cutter Blade Holder (5' & 6')
5a	RBRC7BH	Rotary Cutter Blade Holder (7')
6	RCBBWW	Blade Bolt Set (2pk)(5' & 6')
6a	RBRC7BBHS	Blade Bolt Set (2pk)(7')
7	RCBL5	Blade Set (2pk) (5')
7a	RCBL6	Blade Set (2pk) (6')
7b	RBRCBL7	Blade Set (2pk) (7')
8	RCTWAF56AG	A-Frame Assembly (5' & 6')
8a	RCTWAF7	A-Frame Assembly (7')
9	NSRBRCBB5	Lift Arm Brace (2pk) (5')
9a	NSRBRCBB6	Lift Arm Brace (2pk) (6')
9b	RBRCBB7	Lift Arm Brace (2pk) (7')
10	RCPPG	Pivot Plate
11	NS56RCLAG	Lift Arms (2pk) (5' & 6')
11a	NS7RCLA	Lift Arms (2pk) (7')
12	RCAFHAG	A-Frame Height Adjuster
13	LTWWB	Laminated Tire & Wheel w/Bolts (5' & 6')
13a	RBRC7LTWWB	Laminated Tire & Wheel w/Bolts (7')
14	RCWF	Wheel Fork (5' & 6')
14a	7RCWF	Wheel Fork (7')
15	FHBWN	Fork & Hub Bolt w/Nut (5' & 6')
15a	ABK	Axle Bolt Kit
16	114W	1-1/4" Flat Washer
17	RCGBH	Gearbox Hardware (5' & 6')
17a	RBRC7GBH	Gearbox Hardware (7')
18	NSRCBSH	Backstrap Hardware (5' & 6')
18a	7RCBSH	Backstrap Hardware (7')
19	RCAFAHAH	A-Frame Height Adjuster Hardware (4pk)
20	RCPPH	Pivot Plate Hardware (2pk) (5' & 6')
20a	RCPPH7	Pivot Plate Hardware (2pk) (7')
21	RBRC56MHWH	Manual Holder w/Hardware
22	HUB	Wheel Hub (5' & 6')
22a	7HUB	Wheel Hub (7')
23	WFBWN	Wheel Fork w/Nut (5' & 6')
23a	RP	Roll Pin (7')

Parts Not Shown

Item Number	Part Number	Description
N/A	IPPBG	Inner Pivot Plate Bushing (2pk)
N/A	OPPBG	Outer Pivot Plate Bushing (2pk)
N/A	SCPTOBWS	Slip Clutch PTO Shaft Hardware Kit
N/A	SR	Snap Ring (3pk)
N/A	B	Breather
N/A	GZ	Grease Zerk
N/A	PTOSWH	PTO Shaft Shield w/Hardware
N/A	56PBG	Pin Bushing (5' & 6')
N/A	7PB	Pin Bushing (7')
N/A	LABB	Lift Arm Brace Bushing (2pk)

PARTS



* For complete Safety Decals listing and locations refer to pages 8 and 9.

Because we are always striving to improve our products, this diagram could differ slightly from actual equipment. Specifications are subject to change without notice.

Parts Overall View - Sub-Compact RCSC4, RCSCR4

Item Number	Part Number	Description
1	RCTWFASCA	SC Tailwheel & Fork Assembly (4')
2	RCGBAHA	Gear Box w/Castle Nut & Cotter Pin
3	RCS45A	SC PTO Shaft (4')
4	PTOBWS	PTO Shaft Shear Pin Hardware Kit
5	C1L	Category I Lift Pin
6	RCBH	Blade Pan (Stump Jumper)
7	RCBBWW	Blade Bolt Hardware Set
8	RCBL4	Blade Set (2pk) (4')
9	RCTWASC4R	SC Tailwheel Arm (Red) (2pk) (4')
9a	RCTWASC4O	SC Tailwheel Arm (Orange) (2pk) (4')
10	RCBB4AR	SC Lift Arm Brace (Red) (2pk) (4')
10a	RCBB4AO	SC Lift Arm Brace (Orange) (2pk) (4')
11	RCTB4AR	SC Trip (Red) (4')
11a	RCTB4AO	SC Trip (Orange) (4')
12	RCASF4AR	SC Lift Arms (Red) (2pk) (4')
12a	RCASF4AO	SC Lift Arms (Orange) (2pk) (4')
13	GZ	Grease Zerk (5pk)
14	RCSCFS	SC Rotary Cutter Fork Spacers (2pk) (4')
15	716LP	7/16" Lynch Pin
16	RCSCWT	SC Rotary Cutter Wheel & Tire (4')

Item Number	Part Number	Description
17	RCSCWF	SC Rotary Cutter Wheel Fork (4')
18	RCSCWFH	SC rotary Cutter Wheel Fork Bolt w/Hardware (4')
19	RCTH4	SC Rotary Cutter Trip Hardware (2pk) (4')
20	RCBSH	Backstrap Hardware (4pk)
21	RCGBH	Gearbox Hardware (4pk)

Parts Not Shown

Item Number	Part Number	Description
N/A	SR	Gearbox Snap Ring (3pk)
N/A	B	Gearbox Breather
N/A	RCB4R	SC Trip Bushing (Red) (4')
N/A	RCB4O	SC Trip Bushing (Orange) (4')
N/A	PTOGZ	PTO Shaft Grease Zerk w/45 Degree Bend
N/A	RCGRDR4	SC Front Rubber Guard Kit (Red Brace) (4')
N/A	RCGRDO4	SC Front Rubber Guard Kit (Orange Brace) (4')
N/A	RCRGRDR4	SC Rear Rubber Guard Kit (Red Brace) (4')
N/A	RCRGRDO4	SC Rear Rubber Guard Kit (Orange Brace) (4')
N/A	RCGRDKR4	SC Front & Rear Rubber Guard Kit (Red Braces) (4')
N/A	RCGRDKO4	SC Front & Rear Rubber Guard Kit (Orange Braces) (4')

Many replacement parts that your store currently provides will fit our implements, including but not limited to: tailwheels, blades, blade bolts, gear boxes, and category pins.

The manufacturer offers a 1-year manufacturers defect warranty on all non-commercial use of standard and sub-compact products. Any use by commercial, state, and municipalities will void warranty. Please contact your dealer to initiate all warranty claims.

Warranty specifications:

- Must show proof of purchase within 1 year of purchase date.
- Photos must be provided to ensure proper warranty claim.

The above information must be provided in order for us to process your claim and for you to receive a Return Manufacturers Authorization # (RMA) from the manufacturer. Any product determined to be defective and has been issued an RMA # by the manufacturer will be picked up by the manufacturer and returned to our facility for complete inspection. Once a warranty claim is accepted, the manufacturer will issue full credit or exchange the product at no cost to the store or customer.

Warranty limitations:

- Normal wear items are excluded from the manufacturer's warranty.
 - Normal wear parts include but are not limited to: tailwheels, blades, blade bolts, belts, shear pins, category pins, etc.
- No claim will be accepted for improper gear box or tailwheel lubrication, as recommended by manufacturer.

If you have questions concerning our warranty program or any questions concerning our products, please contact your dealer.

