

STANDARD SERIES ROTARY CUTTERS

STSRC48v1b, STSRC60v1b
191672, 191673



Operator's Manual

Read the Operator's Manual entirely. When you see this symbol, the subsequent instructions and warnings are serious follow without exception. Your life and the lives of others depend on it!

THESE ARE STANDARD PRACTICES THAT MAY NOT APPLY TO THE PRODUCTS DESCRIBED IN THIS MANUAL.

SAFETY AT ALL TIMES

Thoroughly read and understand the instructions given in this manual before operation. Refer to the "Safety Label" section, read all instructions noted on them. Do not allow anyone to operate this equipment who has not thoroughly read and comprehended this manual. Do not allow anyone who has not adequately trained in the safe operation of the equipment.

- The operator should be familiar with all functions of the unit.
- Operate implement from the driver's seat only.
- Make sure all guards and shields are in place and secured before operating the tool.
- Do not leave a tractor or implement unattended with the engine running.
- Dismounting from a moving tractor could cause severe injury or death.
- Do not allow anyone to stand between tractor and implement while backing up to implement.
- Keep hands, feet, and clothing away from power-driven parts.
- Wear snug-fitting clothing to avoid entanglement with moving parts.
- Watch out for wires, trees, etc., when raising implements. Make sure all persons are clear of the working area.
- Turning the tractor too tight may cause implement to ride upon wheels. This activity could result in injury or equipment damage.
- Do not carry passengers on the tool at any time.



LOOK FOR THE SAFETY ALERT SYMBOL

The **SAFETY ALERT SYMBOL** indicates a potential hazard to personal safety, and individuals must take safety precautions. When you see this symbol, be alert and carefully read the message that follows it. In addition to the design and configuration of equipment, hazard control and accident prevention depend on the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage.

BE AWARE OF SAFETY ALERT WORDS

DANGER: Indicates imminently hazardous practices. A situation that, if not avoided, will result in death or severe injury. The signal word is limited to the most extreme situation, typically for machine components that, for functional purposes, cannot be guarded.

WARNING: Indicates a potentially hazardous situation that, if not avoided, could result in death or severe injury, and includes hazards that are exposed when guards remove. Use warnings to alert against unsafe practices.

CAUTION: Indicates a potentially hazardous situation that may result in minor or moderate injury if not avoided. It may also be used to alert against unsafe practices.

FOR YOUR PROTECTION

Thoroughly read and understand the "Safety Label" section, read all instructions noted on them.

SHUTDOWN AND STORAGE

- Lower machine to the ground, put the tractor in park, turn off the engine, and remove the key.
- Detach and store implements in an area where children typically do not play

USE SAFETY LIGHTS AND DEVICES

- Slow-moving tractors, self-propelled equipment, and towed implements can create a hazard when driven on public roads. They are challenging to see, especially at night.
- Flashing warning lights and we recommend turn signals whenever driving on the public road.

TRANSPORT MACHINERY SAFELY

- Comply with state and local laws
- The maximum transport speed for implement is 20 mph, DO NOT EXCEED. Never travel at a rate that does not allow adequate control of steering and stopping. Some rough terrain requires a slower speed.
- Sudden braking can cause a towed load to swerve and upset. Reduce speed if the towed load is not equipped with brakes.

Use the following maximum speed – tow load weight ratios as a guideline:

- 20 mph when weight is less than or equal to the weight of the tractor.
- 10 mph when weight is double the weight of the tractor.

IMPORTANT: Do not tow a load that is more than double the weight of the tractor.

KEEP RIDERS OFF MACHINERY

- Riders obstruct the operator's view; they could be struck by foreign objects or thrown from the machine.
- Never allow children to operate equipment.
- Practice Safe Maintenance
- Understand procedure before doing work. Use proper tools and equipment; refer to

Operator's Manual for additional information.

- Work in a clean, dry area
- Lower the implement to the ground, put the tractor in park, turn off the engine, and remove the key before maintenance.
- Allow implement to cool completely.
- Do not grease or oil implement while it is in operation.
- Inspect all parts. Make sure details are in good condition and installed correctly.
- Remove the buildup of grease, oil, or debris.
- Remove all tools and unused parts from implementation before operation.

PREPARE FOR EMERGENCIES

- Be prepared if a fire starts.
- Keep a first aid kit and fire extinguisher handy
- Keep emergency numbers for doctor, ambulance, hospital, and fire department near the phone.

WEAR PROTECTIVE EQUIPMENT

- Wear protective clothing and equipment appropriate for the job. Avoid loose-fitting clothing.
- Prolonged exposure to loud noise can cause hearing impairment or hearing loss. Wear suitable hearing protection such as earmuffs or earplugs.
- Operating equipment safety requires the full attention of the operator. Avoid wearing radio headphones while operating machinery.

AVOID HIGH-PRESSURE FLUIDS HAZARD

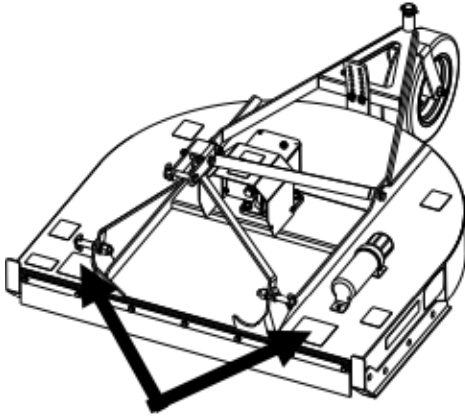
- Escaping fluid under pressure can penetrate the skin causing severe injury.
- Avoid the hazard by relieving pressure before disconnecting hydraulic lines or performing work on the system.
- Ensure all hydraulic fluid connections are tight and all hydraulic hoses and lines are in good condition before applying pressure to the system.
- Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks.
- Wear protective gloves and safety glasses or goggles when working with hydraulic systems.
- If an accident occurs, see a doctor immediately. Remember, any fluid injected into the skin must be treated within a few hours, or gangrene may result

TIRE SAFETY

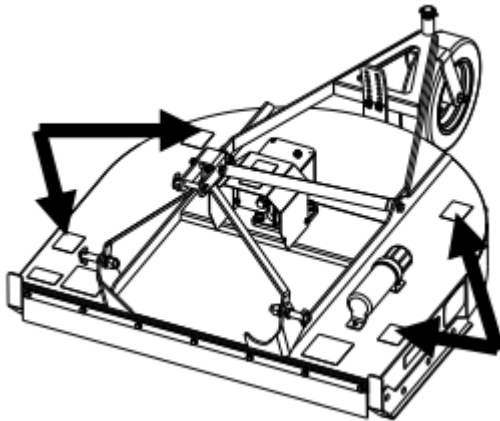
- Tire changing can be dangerous, and trained personnel should be the only ones using correct tools and equipment.
- When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.
- When removing and installing wheels, use wheel handling equipment adequate for the weight involved.

SAFETY LABELS

Your rotary cutter comes equipped with all safety labels in place. They were designed to help you safely operate your implement. Read and follow the directions.

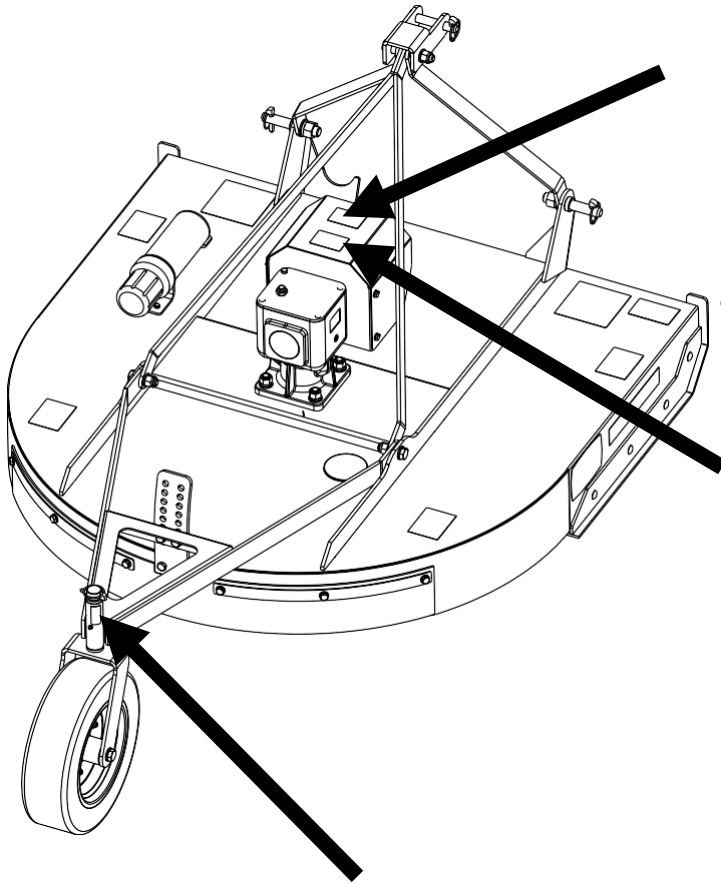


Warning



Danger: Keep hands and feet away

SAFETY LABELS



⚠ CAUTION
540 RPM PTO SPEED
Higher PTO speeds can cause equipment failure and personal injury.

Caution: 540 RPM PTO speed

⚠ CAUTION
FILL GEARBOXES WITH SAE 90 GEAR LUBE
Gearboxes are shipped without oil. Oil must be added before operation!

Caution: Fill gearbox with SAE 90gear lube



This shows the grease position.

INTRODUCTION

APPLICATION

TITAN Standard Series Rotary Cutters (STSRC) are ideal for clearing grass, weeds, and light brush. These cutters offer fast, clean, dependable mowing, and have been extensively tested to ensure safety. High blade tip speeds assure a clean cut in a variety of field conditions. This Rotary cutter is adapted for standard Category 1 – three-point hitch or Quick-Hitch system mounting. It's recommended to equip a slip clutch PTO shaft.

SECTION 1: ASSEMBLY AND SET-UP

TRACTOR REQUIREMENTS

Tractor horsepower should be within the range noted below. Tractors outside the horsepower range must not be used. Must be using a minimum of 40 hp when operating at maximum capability. The lower 3-Point arms must be stabilized to prevent side to side movement. Most tractors have sway blocks or adjustable chains for this purpose.

WARNING

To avoid serious injury or death:

Lightweight tractors with rear attached implements may need weights added to the front to maintain steering control.

Consult your tractor Operator's Manual to determine proper weight requirements and maximum weight limitations.

PACKING DESCRIPTION

1. REMOVE AND CHECK

Remove the packing and check goods to if there are any defects or part omission.

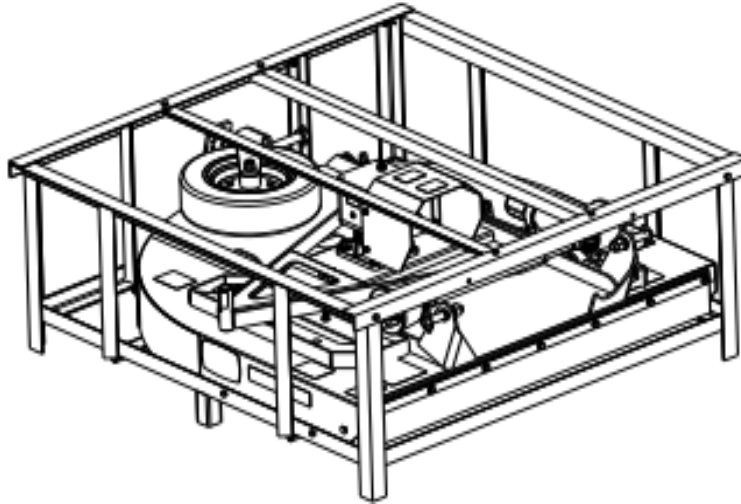


Figure 1-1: Your New Standard Rotary Cutter as it is shipped to You

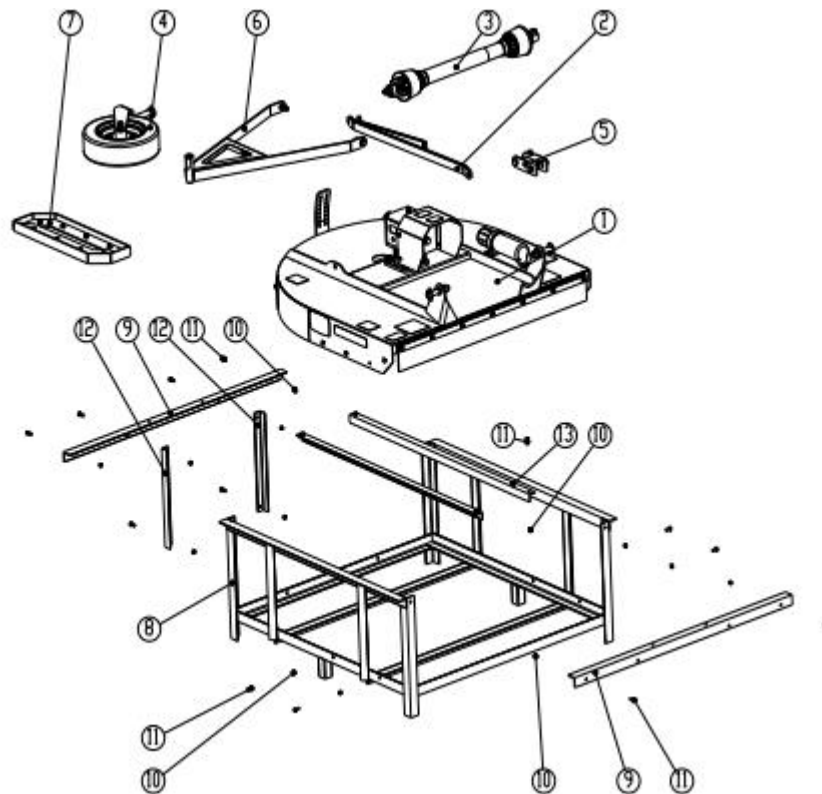


Figure 1-2: The Standard Rotary cutter and Accessory in Package

2. PACKING LIST

The detailed packing list of the mower and accessory as the following table 1-1.

| ITEM | DESCRIPTION | QTY | PACKAGE FORM |
|------|---|-----|------------------|
| (1) | MAIN BODY | 1 | NONE |
| (2) | FRONT AND REAR BRACES | 1 | BUBBLE FILM |
| (3) | DRIVELINE SHAFT WITH CLUTCH | 1 | BUBBLE FILM |
| (4) | WHEEL TIRE ASSEMBLY AND FITTINGS | 1 | BUBBLE FILM |
| (5) | PIVOTING UPPER HITCH-BLACK AND FITTINGS | 1 | BUBBLE FILM |
| (6) | TAILWHEEL ADJUTING BRACKET AND FITTING | 1 | BUBBLE FILM |
| (7) | R&L SKID WELDMENT AND FITTING | 1 | BUBBLE FILM |
| (8) | IRON CRATE | 1 | NONE |
| (9) | REMOVABLE ANGLE STEEL | 2 | CRATE ATTACHMENT |
| (10) | LOCK NUT M10 | 16 | CRATE ATTACHMENT |
| (11) | BOLT M10*20 | 16 | CRATE ATTACHMENT |
| (12) | REMOVABLE ANGLE STEEL SUPPORT | 2 | CRATE ATTACHMENT |
| (13) | BOLT M10*25 | 2 | CRATE ATTACHMENT |

Table 1-1: Packing List of The Standard Rotary Cutter and Accessory

The detailed description of front and rear braces

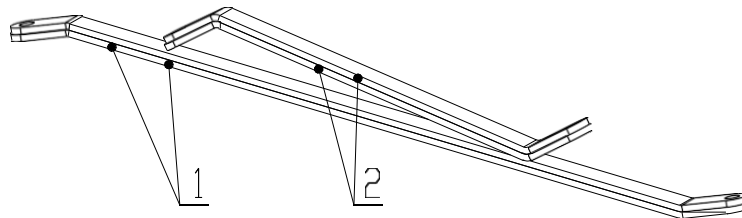


Figure 1-3: Front and

Rear Braces

| ITEM | DESCRIPTION | QTY |
|------|-------------|-----|
| (1) | REAR BRACE | 2 |
| (2) | FRONT BRACE | 2 |

Table 1-2: Front and Rear Braces

The detailed description of wheel tire assembly and fittings

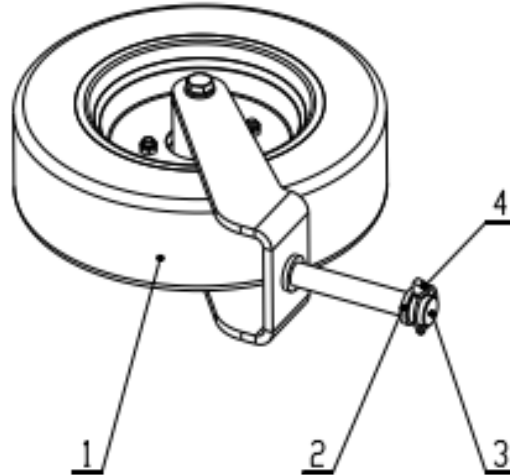


Figure 1-4: Wheel Tire Assembly and Fittings

| ITEM | DESCRIPTION | QTY |
|------|----------------------|-----|
| (1) | RUBBER TIRE ASSEMBLY | 1 |
| (2) | SPACER H=6 | 1 |
| (3) | CAP SHAFT MOUNT | 1 |
| (4) | SAFETY LOCK PIN 8*45 | 1 |

Table 1-3: Wheel Tire Assembly and Fittings List

The detailed description of pivoting upper hitch-black and fittings

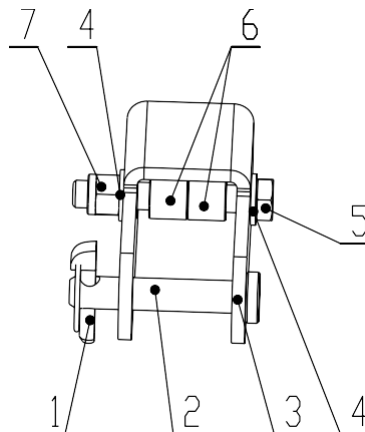


Figure 1-5: Pivoting Upper Hitch-Black and Fittings

| ITEM | DESCRIPTION | QTY |
|------|------------------------------|-----|
| (1) | SAFETY LOCK PIN 11*50 | 1 |
| (2) | HITCH PIN - UPPER | 1 |
| (3) | PIVOTING UPPER HITCH - BLACK | 1 |
| (4) | PLAIN WASHER 16 | 2 |
| (5) | BOLT M16*110 | 1 |
| (6) | SPACER | 2 |
| (7) | LOCKNUT M16 | 1 |

Table 1-4: Pivoting Upper Hitch-Black and Fittings List

The detailed description of tailwheel adjusting bracket and fittings

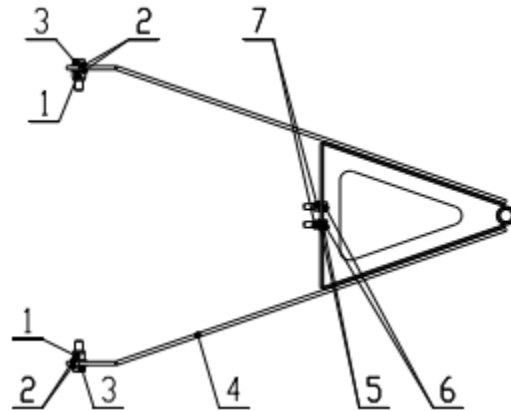


Figure 1-6: Tailwheel Adjusting Bracket and Fittings

| ITEM | DESCRIPTION | QTY |
|------|--------------------------------|-----|
| (1) | LOCKNUT M16 | 2 |
| (2) | PLAIN WASHER 16 | 4 |
| (3) | BOLT M16*55 | 2 |
| (4) | GAUGE WHEEL MAINFRAME WELDMENT | 1 |
| (5) | PLAIN WASHER 12 | 4 |
| (6) | BOLT M12*40 | 2 |
| (7) | LOCKNUT M12 | 2 |

Table 1-5: Tailwheel Adjusting Bracket and Fittings List

The detailed description of R&L skid weldment and fittings

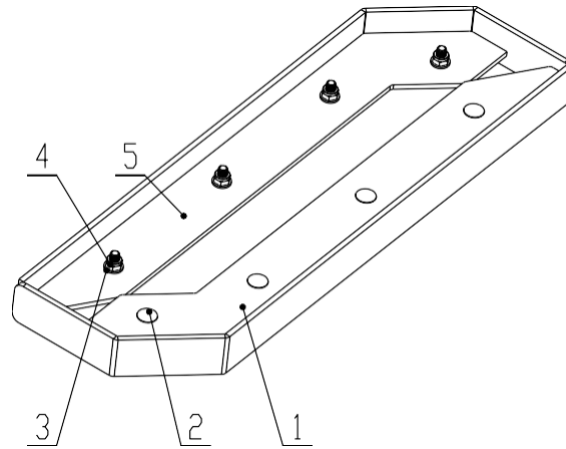


Figure 1-7: R&L Skid Weldment and Fittings

| ITEM | DESCRIPTION | QTY |
|------|-----------------------|-----|
| (1) | SKID WELDMENT - R | 1 |
| (2) | RHSNB M10*25 GRID10.9 | 8 |
| (3) | PLAIN WASHER 10 | 8 |
| (4) | LOCKNUT M10 | 8 |
| (5) | SKID WELDMENT - L | 1 |

Table 1-6: R&L Skid Weldment and Fittings List

ASSEMBLY INSTRUCTIONS

The assembly instruction will guide you to finish the final assembly of your newstandard rotary cutter.

TOOL REQUIRED

- 1/2" Ratchet Wrench with 17mm, 19mm and 24mm sleeves
- 17-19 spanner, 22-24 Spanner

TORQUE APPLICATION

Refer to bolt torque in Section 7 Appendix.

ASSEMBLY

STEP 1: INSTALLING FRONT & REAR BRACES, PIVOTING UPPER HITCH-BLACK, TAILWHEEL ADJUSTINGBRACKET AND FITTINGS

Remove the packaging of front & Rear braces, pivoting upper hitch-black, tailwheel adjusting bracket and fittings.

Installing front & rear braces, pivoting upper hitch-black, tailwheel adjusting bracket and fittings onto main body of the rotary cutter according to the figure 1-8.

Tighten item 7, item 17 completely. Tighten item 10 but make sure item 6 & item 13 can rotate freely.

- Item 1 – Main body of the rotary cutter
- Item 2 – Front brace (2pcs)
- Item 3 – Rear brace (2pcs)
- Item 4 – Plain washer 16 (6pcs)
- Item 5 – Bolt M16x60 (2pcs)
- Item 6 – Gauge wheel mainframe weldment (1 set)
- Item 7 – Locknut M12 (2pcs)
- Item 8 – Plain washer 12 (4pcs)
- Item 9 – Bolt M12x40 (2pcs)
- Item 10 – Locknut M16 (3pcs)
- Item 11 – Bolt M16x110 (1pcs)
- Item 12 – Spacer (2pcs)
- Item 13 – Pivoting upper hitch-black (1pcs)
- Item 14 – Hitch pin lower (2pcs)
- Item 15 – Plain washer 22 (2pcs)
- Item 16 – Spring washer 22 (2pcs)
- Item 17 – Hex Nut M16 (2pcs)

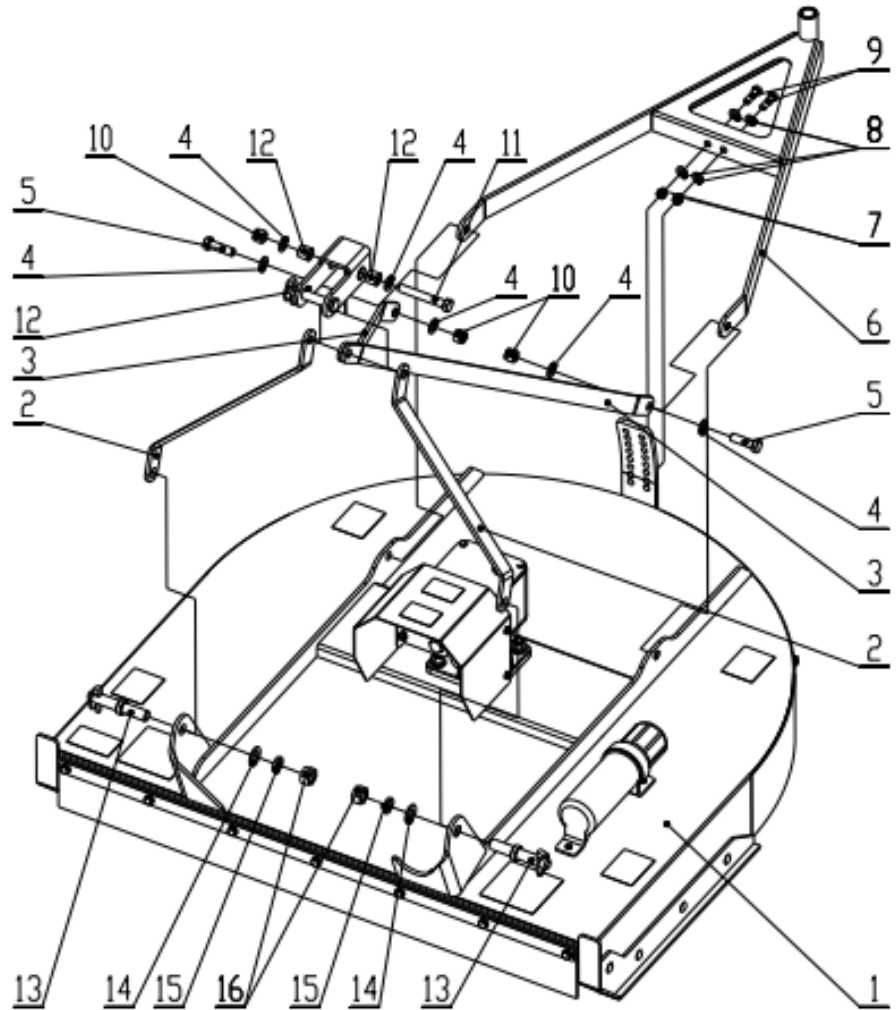


Figure 1-8: *Installing Braces, Pivoting Upper Hitch-Black, Tailwheel Adjusting Bracket and Fittings*

STEP 2: INSTALLING RIGHT & LEFT SKID WELDMENT AND FITTINGS

Remove the packaging of R&L skid weldment and fittings.

Align lower link arms of tractor to hitch and lower hitch pins into lower ball swivels.

Attach tractor top link arm to the pivoting upper hitch-black with hitch pin upper supplied. Secure with safety lock pin.

Raise rotary cutter from the ground. Install R&L skid weldment onto the rotary cutter. Tighten locknuts completely.

- Item 1 – RHSNB M10x25 GR10.9 (8pcs)
- Item 2 – Skid weldment – L (1pcs)
- Item 3 – Plain washer 10 (8pcs)
- Item 4 – Locknut M10 (8pcs)
- Item 5 – Main body of the rotary cutter
- Item 6 – Skid weldment – R (1pcs)

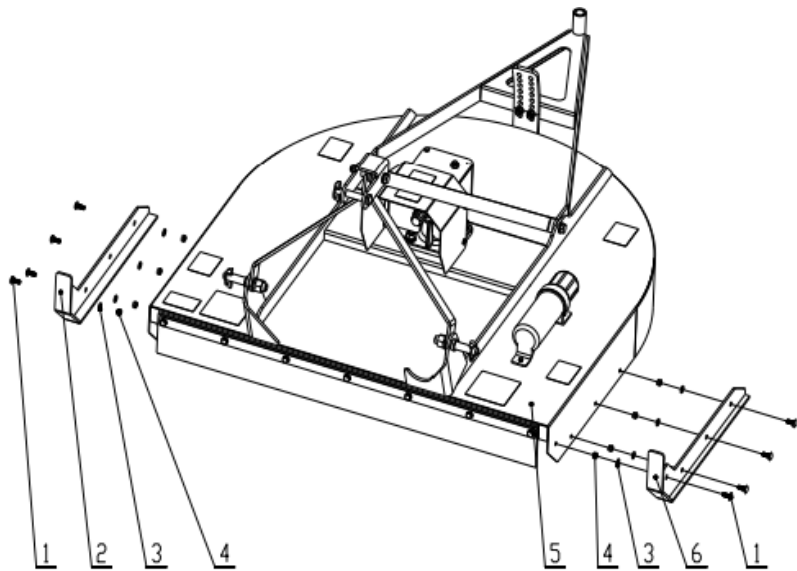


Figure 1-9: Installing R&L Skid Weldment and Fittings

STEP 3: INSTALLING WHEEL TIRE ASSEMBLY AND FITTINGS

Remove the packaging of wheel tire assembly and fittings.

Remove item4, item5 and one piece of item3 from wheel tire assembly. Insert the pivotshaft of wheel tire assembly into the bushing of the gauge wheel mainframe weldment and reinstall item4 to item5.

Secure with item3.

Item 1 – Main body of the rotary cutter

Item 2 – Wheel tire assembly – (1 set)

Item 3 – Spacer H=6 (2pcs)

Item 4 – Cap shaft mount (1pcs)

Item 5 – Safety lock pin $\varnothing 8 \times 45$ (1 pcs)

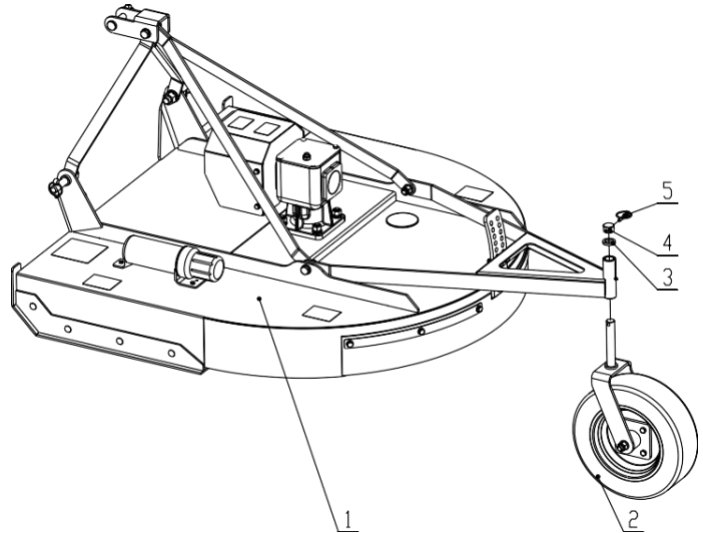


Figure 1-10: Installing Wheel Tire Assembly and Fittings

WARNING

SAE EP 90W Gear oil must be your first use. Overfilling or under filling gear oil may cause gearbox seizing or damage.

4. GEAR OIL FILLING

Check oil level in gearbox by removing the cap located on the side of the gearbox. Oil should be level with middle side of plug hole. Add necessary oil by removing top cap and side plug. Add oil until it flows from middle side plug hole.

Item 1 – Cap for inlet gearbox oil

Item 2 – gearbox

Item 3 – Plug for gearbox oil level

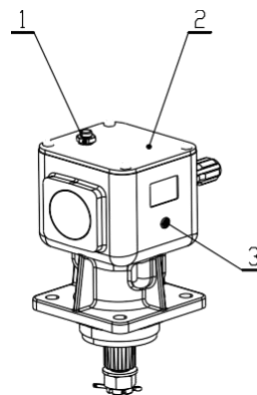


Figure 1-11: Gearbox construction

TRACTOR HOOK UP



To avoid serious injury or death:

A crushing hazard exists while hooking-up and unhooking the implement. Keep people and animals away while backing-up to the implement or pulling away from the implement. Do not operate hydraulic controls while a person or animal is directly behind the power machine or near the implement.



To avoid serious injury or death:

Lightweight tractors with rear attached implements may need weights added to the front to maintain steering control.

Consult your tractor Operator's Manual to determine proper weight requirements and maximum weight limitations.

Refer to Figure 1-12:

1. Slowly back tractor up to rotary cutter while using tractor's 3-Point hydraulic control lever to align lower lift arm hitch holes with cutter hitch pins. (Item 2)
2. Always Disengage power take-off, engage tractor park brake, shut tractor engine off, and remove switch key before dismounting from tractor.
3. Slide lower 3-point lift arms onto cutter hitch pins (Item 2). Secure hitch pins with safety lock pins (Item1).
4. Connect hitch hole in top center 3-Point link to upper clevis hitch with top hitch pin (Item 4) and safety lock pins (Item1).
5. Ensure that the lower hitch arms are locked to prevent excessive side movement.
6. Return to tractor and slowly raise and lower implement carefully to ensure drawbar tires, and other equipment on the tractor do not contact cutter frame and driveline. Move or remove drawbar as needed.
7. Manually adjust one of the two lower 3-point lift arms up or down to level the rotary cutter from left to right. Final adjustments will be made later during "Deck leveling & Cutting Height" on page 21.
8. The arm lift rods on your tractor's 3-point lift arm should be adjusted to allow for lateral float. Please consult your tractor's manual for adjusting instructions.

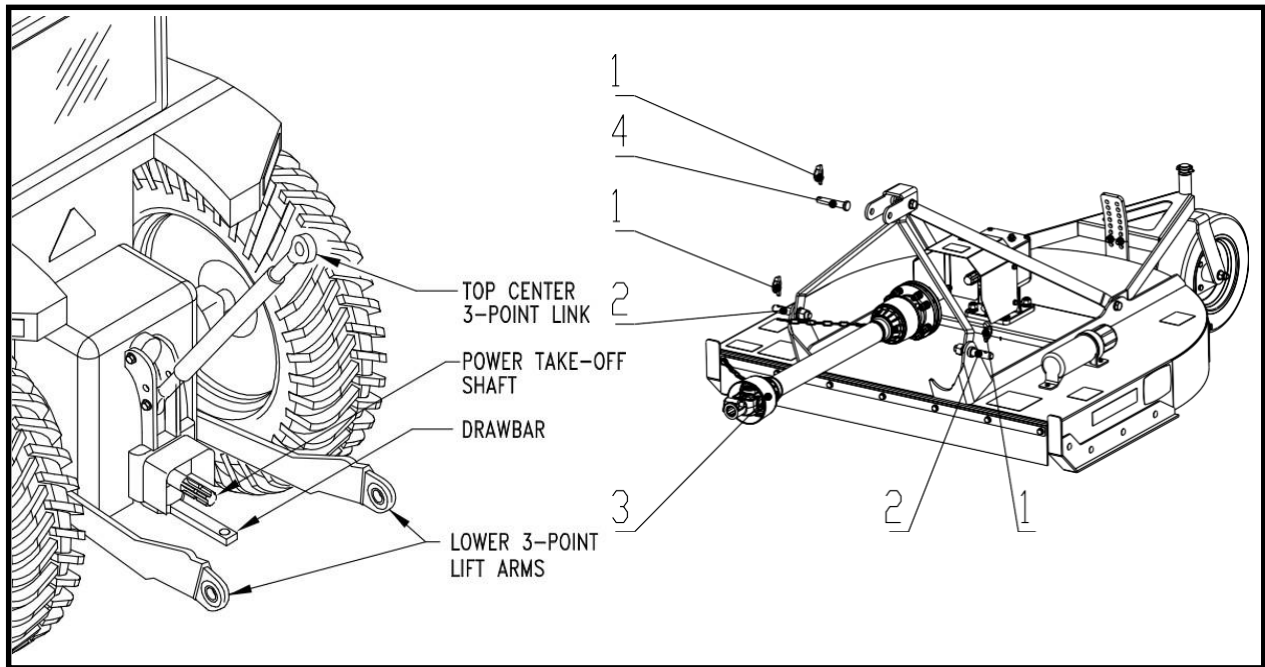


Figure 1-12: Tractor Hook-Up

DRIVELINE HOOK-UP



DANGER

To avoid serious injury or death:

- Tractor power take-off shaft shield, driveline shields, and implement input shield must be installed and in good working condition to avoid driveline entanglement and projectiles dislodging of the driveline.
- Do not engage power take-off while hooking-up or unhooking the driveline, or while someone is standing near the driveline. A person's body and/or clothing can become entangled in the driveline.
- Do not use a power take-off adapter. The adapter will increase strain on the tractor's power take-off shaft causing possible damage to shaft and driveline. It will also defeat the purpose of the tractor's power take-off shield.
- Make sure driveline yokes are securely fastened at each end. A loose yoke can work free allowing the driveline to rotate uncontrollably causing implement damage and bodily injury or death to anyone nearby.



WARNING

To avoid serious injury or death:

- Always follow "**Tractor Shutdown Procedure**" provided in this manual before dismounting the tractor.
- Check driveline when lowering implement to make sure it does not interfere with the tractor drawbar at maximum depth. If needed, shut tractor off and move or remove drawbar to prevent driveline damage.

IMPORTANT:

An additional driveline may be required if implement is attached to more than one tractor or if a Quick Hitch is used.

Drivelines with friction clutches must go through a “run-in” prior to initial use and after long periods of inactivity. For detailed instructions, see **“Slip-Clutch Protected Driveline”** on page 30. Check driveline minimum collapsible length before completing **“Driveline Hook-Up”** on page 17. Structural damage to the tractor and implement can occur if this check is not made. Refer to **“Check Driveline Collapsible Length”** on page 18.

1. If driveline collapsible length has not been checked, go to “Check Driveline Collapsible Length” on page 18. Otherwise, continue with step 2.
2. Park tractor and implement on a level surface.
3. Shut tractor down before dismounting. Refer to “Tractor Shut down Procedure” on page 26.
4. If tractor drawbar interferes with the driveline during hook-up, disconnect driveline and move drawbar forward, to the side, or remove.
5. Collapse driveline (Item3) by pushing tractor end of driveline toward the cutter gearbox.
6. Push in on push pin on the driveline and slide outer driveline universal joint over tractor power take-off shaft.
7. Release push pin on the driveline and continue to slide universal joint over tractor power take-off shaft until push pin releases and pops up.
8. Pull on driveline yokes at the tractor and implement end to make sure they are secured to the tractor power take-off shaft and implement gearbox shaft.
9. The tractor’s lower 3-point arms should be adjusted for lateral float. Please consult your tractor’s manual.
10. Continue with **“Check Driveline interference”** on Page 20.

CHECK DRIVELINE COLLAPSIBLE LENGTH

Refer to Figure 1-13:

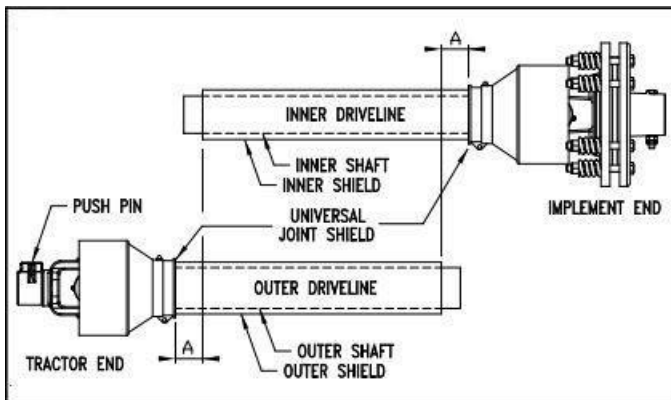
IMPORTANT:

Two small chains are supplied with the driveline to keep driveline shields from rotating. These chains must be attached to the outer and inner driveline shields and attach to the rotary cutter & tractor.

A driveline that is too long will bottom out causing structural damage to the tractor and mower. Always check driveline collapsible length during initial setup and when connecting to a different tractor. More than one driveline may be required to fit all applications.

The power take-off shaft and implement input shaft must be aligned and level with each other when checking driveline minimum length. A driveline that is too long can damage tractor and implement.

1. With driveline attached only to the implement, remove outer driveline (tractor end) from inner driveline to separate the two profiles.
2. Park tractor and implement on a level surface.
3. Raise implement until gearbox input shaft is level with tractor power take-off shaft. Securely block implement at this height to keep until from lowering.
4. Shut tractor down without removing support blocks. See "Tractor **Shutdown Procedure**" on page 26.
5. Attach outer driveline to the tractor's power take-off shaft. Refer to steps 5-8 under "**Driveline Hook-Up**" on page 17.
6. Hold inner and outer drivelines parallel to each other, or as close to parallel as possible. If dimension "A" is greater than or equal to 1", then skip to "Reassemble Driveline" on page 20. Otherwise continue with step 7.



- a) Measure from end of inner shield to scribed mark ("X" dimension) and record.
- b) Cutter off inner shield at the mark. Cut same amount off the inner shaft ("X1" dimension).
- c) 10. Cut off non-yoke end of outer driveline as follows:
- d) Measure from end of outer shield to scribed mark ("Y" dimension) and record.
- e) Cutter off outer shield at the mark.

SHORTEN DRIVELINE LENGTH

Refer to Figure 1-14:

7. If dimension "A" is less than 1", shorten driveline as follows:
 - a. Measure 1" ("B1" dimension) back from outer driveline shield and make a mark at this location on the inner driveline shield.
 - b. Measure 1" ("B2" dimension) back from the inner driveline shield and make a mark at this location on the outer driveline shield.
8. Remove outer driveline from the tractor power take-off shaft and inner driveline from the implement's gearbox shaft.
9. Cut off non-yoke end of inner driveline as follows:

REASSEMBLE DRIVELINE

Refer to Figure 1-14:

1. Apply multi-purpose grease to the inside of the outer shaft and reassemble the driveline.
2. Reattach driveline to tractor power take-off shaft and gearbox shaft, Refer to "Driveline Hook-Up" on page 17.
3. Continue with "Check Driveline interference" on page 20.

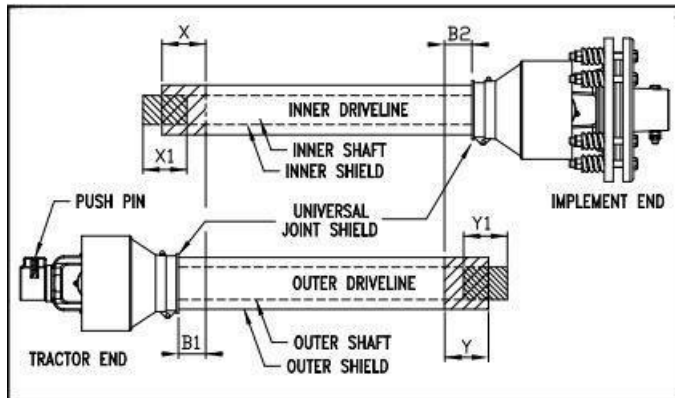


Figure 1-14: Driveline Shortening CHECK
DRIVELINE INTERFERENCE

Refer to Figure 1-15:

WARNING

To avoid serious injury or death:
A rotating driveline must not exceed an angle of 25 degrees up or down, and never engage a driveline while at an angle exceeding 25 degrees up or down. The driveline can break and send projectiles.

1. Start tractor and raise implement slightly off the support blocks used to "**Check Driveline Collapsible Length**". Drive forward until the implement is clear of the support blocks.
2. Slowly and carefully lower and raise the implement to ensure drawbar, tires, and other equipment on the tractor do not contact the implement's frame. If there is an interference:

- a. Back implement over the support blocks and lower it onto the blocks.
- b. Shut tractor down before dismantling. Refer to "**Tractor Shutdown Procedure**" on page 26.
- c. Move or remove drawbar if interferes with the implement and make any other necessary corrections
- d. Repeat steps 1-2 to verify the implement does not interfere with the tractor.

3. Start tractor, raise implement fully up. Back implement over the support blocks. Do not lower implement onto the support locks.
4. Without changing the 3-point lift height, shut tractor down using "**Tractor Shutdown Procedure**" on page 26.
5. Check to make sure driveline does not exceed 25° above horizontal.
6. Start tractor, raise implement slightly, and drive forward enough to clear the support blocks.
7. Lower implement to ground and shut tractor down using "**Tractor Shutdown Procedure**" on page 26.

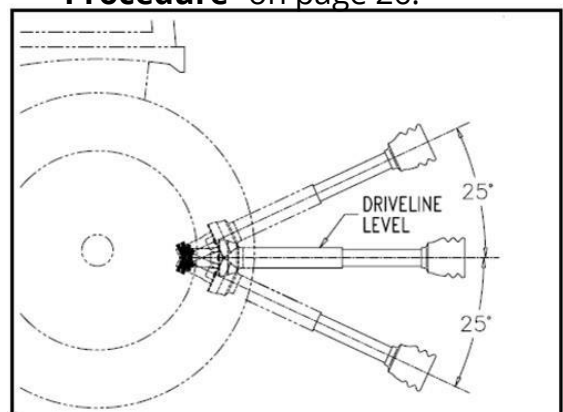


Figure 1-15: Maximum PTO driveline movement range during operation

SECTION 2: ADJUSTMENTS

DECK LEVELING & CUTTING HEIGHT

There are 4 primary adjustments that should be made prior to actual field operations:

- Deck leveling Left to Right
- Cutting Height Adjustment
- Center 3-Point Link Adjustment
- Tailwheel Height Adjustment

Proper adjustment of each of these items will provide for higher efficiency, improved cutting performance, and longer blade life.

The following tools will be needed:

- Pliable tape measure
- Spirit or carpenter's level
- Open and or Hex end wrench or socket set
- Protective gloves



WARNING

To avoid serious injury or death:

Always disengage power take-off, put tractor in park or set park brake, shut tractor engine off, remove ignition key, and wait for blades to come to a complete stop before dismounting tractor.

DECK LEVELING LEFT TO RIGHT

1. Locate tractor with Rotary Cutter on a flat, level surface.
2. Use tractor's hydraulic 3-point control lever to lower cutter until the tailwheel contacts the ground surface.
3. Place a level on the front of the cutter deck. Manually adjust either one or both tractor's lower 3-point arms to level the deck from left to right. Some tractors have only a single adjusting arm.

CUTTING HEIGHT ADJUSTMENT



WARNING

To avoid serious injury or death:

Avoid direct contact with cutter blades by wearing a pair of gloves. Cutter blades have sharp edges and burrs that can cause injuries.

IMPORTANT:

The front blade tip should be lower than rear blade tip by approximately 1". The cutter is subject to continuous material flow under the deck if the rear blade is at the same height or lower than the front blade causing horsepower loss, grass clumps, blade wear, and frequent blade sharpening.

1. Using tractor's 3-point hydraulic control, raise or lower than the 3-point arms until the front of the deck is slightly lower than the rear of the deck.
2. The top center link typically is adjusted with the upper clevis pin vertically above lower than hitch pins. As show in Figure 2-1.
3. With gloves on, carefully rotate each blade tip to the position shown in figure 2-1.
4. Measure distance from cutting tip of blade to ground surface. This distance is the cutting height.
5. If desired cutting height cannot be obtained by adjusting the lower 3-point arms, then readjust tailwheel height. See "**Tailwheel Height Adjustment**" on page 22.
6. Repeat steps 1 to 5 until desired cutting height is achieved.
7. Set tractor's 3-point hydraulic control stop at this height.

Adjust tractor 3-point link until pin is vertically lower hitch pins

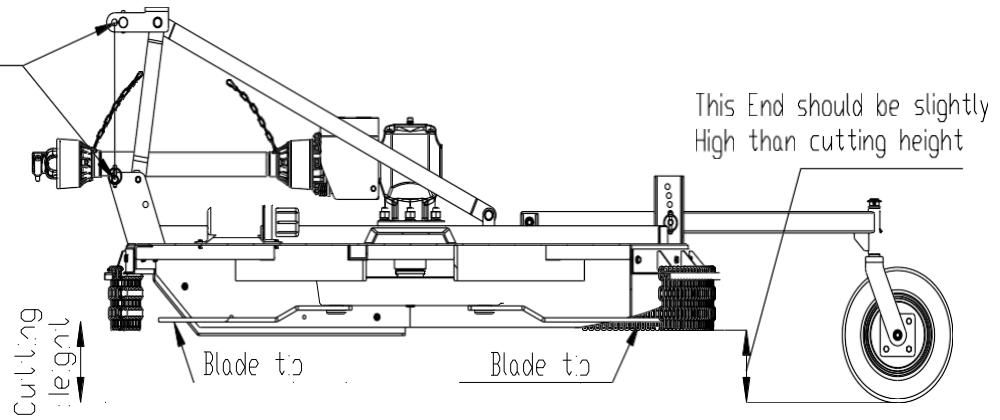


Figure 2-1: Cutting Height

CENTER 3-POINT LINK ADJUSTMENT

1. Lower cutter deck to the nominal cutting height.

Note: Customer may adjust center 3-point link to his or her preference. Lengthening center 3-point link allows more movement while going over raised surfaces.

Shortening the link allows more movement while crossing over ditches. Also, shortening center link allows the cutter to be carried higher while traveling. Never lengthen center link to where the cutter is carried too low.

2. Typically, the center 3-point link is adjusted so that the upper 3-point clevis pin is straight above the lower 3-point hitch pins. This arrangement allows for optimum ground contour following performances.
3. Adjustment on center 3-point link can be made depending on customer's preference.

TAILWHEEL HEIGHT ADJUSTMENT

Refer to Figure 1-8 on page 13:

The deck slope should be adjusted so that the cutting blades are slightly lower than at

the front of the cutter than at the back. If they are not, the tailwheel must be adjusted up or down until the deck slope is correct.

1. Make sure instructions for setting the "Cutting Height Adjustment" have been followed before continuing with adjusting tailwheel height below.
2. Use tractor's 3-point hydraulic control to lift tailwheel off the ground.
3. Remove Hex bolts M12x40 (#9), plain washers 12 (#8) and lock nuts M12 (#7). Adjustment
4. tailwheel as follows:
 - a. To lower blade height at the rear, raise tailwheel.
 - b. To raise blade height at the rear, lower tailwheel.
5. With tailwheel adjusted to the correct position, reinstall Hex bolts M12x40 (#9), plain washers 12 (#8) and lock nuts M12(#7). Draw locknut up snug, do not tighten until after rechecking deck cutting height.
6. Recheck deck cutting height. Refer to instructions for adjusting the "**Cutting Height Adjustment**" on page 21.
7. After the deck cutting height and tailwheel height are adjusted correctly, tighten locknuts M12 (#7) to the correct torque.

SECTION 3: OPERATING INSTRUCTIONS

OPERATING CHECKLIST

Hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training involved in the operation, transport, storage, and maintenance of the Rotary Cutter.

Important Safety information, page 2

Section 1: Assembly and Set-up, page 7

Section 2: Adjustments, page 21

Section 3: Operating Instructions, page 23

Section 4: Maintenance & Lubrication, page 30

Perform the following inspection before using your Rotary Cutter.

OPERATING CHECK LIST

| CHECK | DESCRIPTION | PAGE |
|-------|--|------|
| | Make sure all guards and shields are in place. Refer to "Important Safety Information" | 2 |
| | Read & follow hook-up & preparation instructions. Refer to "Section 1: Assembly and Set-up". | 7 |
| | Read and make all required adjustments, Refer to "Section 2: Adjustments" | 21 |
| | Lubricate cutter and driveline as needed. Refer to "Maintenance & Lubrication" | 30 |
| | Make sure all gearboxes are properly lubricated and that all oil plugs have been tightened properly. | 36 |
| | Check cutter initially and periodically for loose bolts and pins. Refer to "Bolt Torque". | 40 |

INSPECTION OF TRACTOR & CUTTER

Make the following inspections with cutter attached to a tractor, power take-off disengaged, and cutter blades stopped.

1. Park tractor and cutter on a level surface.
2. Disengage power take-off, place gear selector in park, set park brake, shut tractor off, and remove switch key. Make sure cutter blades have come

to a complete stop before dismounting from tractor.

3. Inspect tractor safety equipment to make sure it is installed and in good working condition.
4. Inspect cutter safety equipment to make sure it is installed and in good working condition.
5. Check driveline to make certain it is securely connected to the tractor power

Take-off shaft and cutter gearbox shaft.

6. Check driveline guards to make certain they are in good condition and in place. Carefully raise and lower implement to ensure that the drawbar, tires, and other equipment on the tractor do not contact cutter frame or driveline.
7. With cutter resting on solid supports, power take-off disengaged, and blade rotation completely stopped:
 - Check for and remove foreign objects wrapped around blade spindles.
 - Check for nicked, bent, broken, and worn cutting blade. Replace or sharpen blades as required. Refer to **“Cutter Blade Maintenance”** on page 32.
9. Remove solid supports from under the deck.
10. Verify cutter is set at the correct cutting height. See **“Deck Leveling & Cutting Height”** on page 21.

The remaining inspections are made by engaging the power take-off to check for vibrations.

WARNING

- *To avoid serious injury or death: Stop power take-off immediately if vibration continues after a few revolutions during start-up and anytime thereafter. Wait for all components to come to a complete stop before dismounting from tractor to check for probable causes. Make necessary repairs and adjustments before continuing.*
 - *Some tractors are equipped with two power take-off speeds. Be certain your tractor's power take-off shaft is set-up to operate at 540 rpm. Do not exceed 540 rpm power take-off speed or equipment breakage may result.*
11. Start tractor, set throttle to idle or slightly above idle, and slowly engage

power take-off, initial start-up vibration is normal and should stop after a few revolutions. Stop power take-off rotation immediately if vibration continues.

12. Once the cutter is running smoothly, increase tractor power take-off speed to 540 rpm. Stop power take-off rotation immediately if vibration occurs.
13. Investigate cause of vibration and make repairs before putting cutter back into service.

SAFETY INFORMATION

WARNING

To avoid serious injury or death:

- *Never place hands or feet under the deck or attempt to adjust the cutter with power take-off engaged. Cutter blades rotating at high speeds cannot be seen and are located close to the deck sides.*
- *Do not engage power take-off while hooking-up or unhooking the driveline, or while someone is standing near the driveline. A person's body and/or clothing can become entangled in the driveline.*
- *Do not use a power take-off adapter. The adapter will increase strain on the tractor's power take-off shaft causing possible damage to shaft and driveline. It will also defeat the purpose of the tractor's power take-off shield.*
- *Rotary Cutters can discharge objects at high speeds; therefore, the use of front & rear safety guards is mandatory with this cutter. Stop blade rotation if bystanders are in or around the area. It is recommended that a safety shield be placed between the operator and cutter on an open-air tractor.*
- *All guards and shields must be installed and in good working condition while operating the implement.*
- *Tractor power take-off shaft shield, driveline shields, and gearbox shaft shields must be installed and in good*

working condition to avoid driveline entanglement and projectiles flying off of the driveline.

- *Always disconnect driveline from power take-off shaft before servicing underside of cutter. The tractor can be started with power take-off engaged.*
- *Do not use cutter as a fan. Cutting blades are not properly designed or guarded for this use.*

WARNING

To avoid serious injury or death:

- *Do not operate and/or travel across inclines where tractor and/or implement can rollover. Consult your tractor's manual for acceptable inclines the tractor is capable of traveling across.*
- *Never carry riders on the implement or power machine. Riders can obstruct the operator's view, interfere with controls, be pinched by moving components, become entangled in rotating components, struck by objects, thrown about, fall off and be run over, etc.*
- *A rotating driveline must not exceed an angle of 25 degrees up or down, and never engage a driveline while at an angle exceeding 25 degrees up or down. The driveline can break and send projectiles.*
- *Do not operate a broken or bent driveline. Such a driveline will break apart while rotating at high speeds and can cause serious injury or death.*
- *Always remove the implement from use until the damaged driveline can be repaired or replaced.*
- *Always follow "**Tractor Shutdown Procedure**" provided in this manual before dismounting the tractor.*
- *Always disengage power take-off before lifting cutter fully up. Never operate cutter in the raised position. The cutter can discharge objects at high speeds.*
- *Do not use implement as a man lift or work platform. It is not properly designed or guarded for this use.*

- *Perform scheduled maintenance. Check for loose hardware, missing parts, broken parts, structural cracks, and excessive wear. Make repairs before putting the implement back into service.*
- *Do not use implement to lift objects; to pull objects such as fence posts, stumps, etc.; or to push objects. The unit is not designed or guarded for these uses.*
- *Select a safe ground speed when transporting. Never travel at a speed which does not allow adequate control of steering and stopping, and never exceed 20 mph (32.2 km/h) with attached equipment. Rough terrain requires a slower speed.*
- *Buildup of debris around moving components and gearboxes is a fire hazard. Keep rotating parts and gearboxes free from debris to avoid serious injury and property damage.*
- *Improper oil level can cause bearing failure and be a fire hazard. Maintain proper gearbox oil level to avoid serious injury and property damage.*
- *Do not exceed rated cutting capacity of your cutter. See **specifications & capacities** for specified cutting capacity. Exceeding rated cutting capacity can damage drive components, cutter blades, and deck components.*

TRACTOR SHUT DOWN PROCEDURE

The following are basic tractor shutdown procedures. Follow these procedures and any additional shutdown procedures provided in your tractor Operator's Manual before leaving the operator's seat.

1. Reduce engine speed and disengage powertake-off if engaged.
2. Park tractor and implement on level, solidground.
3. Lower implement to ground or onto non-concrete support blocks.
4. Put tractor in park or set park brake, turn offengine, and remove switch key to prevent unauthorized starting.
5. Relieve all hydraulic pressure to auxiliaryhydraulic lines.
6. Wait for all components to come to a complete stop before leaving the operator'sseat.
7. Use steps, grab-handles and anti-slip surface when stepping on and off the tractor.

TRANSPORTING

WARNING

To avoid serious injury or death:

- *When traveling on roadways, travel in such a way that other vehicles may pass you safely. Always use LED lights, clean reflectors, and a slow-moving vehicle sign that is visible from theback to warn operators in other vehicles of your presence. Always comply with all federal, state, and local laws.*
 - *Always disengage power take-off and wait fordriveline to stop rotating before raising implement to transport position.*
1. Make sure driveline does not contact tractoror cutter when raising cutter to transport position.
 2. Reduce tractor ground speed when turning and leave enough clearance so cutterdoes not contact obstacles such as buildings, trees, or fences.

3. Limit transport speed to 20 mph. Transport only with a farm tractor of sufficient size and horsepower.
4. When traveling on roadways, transport in such a way that faster moving vehicles may pass you safely.
5. Shift tractor to a lower gear when traveling over rough or hilly terrain.

BLADE ENGAGEMENT & DISENGAGEMENT

Cutter blades can lock-up against each other during start-up and shut-down especially if the tractor's power take-off engagement is "INSTANT ON" and "INSTANT OFF". Follow blade engagement and blade disengagement instructions below will help eliminate blade lock up.

BLADE ENGAGEMENT

1. Increase throttle to a speed just enough to get the cutter started without stalling tractor while slowly engaging drivelines. Use tractor's power take-off soft start option if available.
2. Ensure that all power shafts are rotating and that the cutter is not vibrating excessively after ramping up to power take-off speed for at least 3 seconds. If excessive vibration continues after 3 seconds at full power take-off speed, disengage power take-off immediately, shut down tractor, and remove switch key.
3. Check blades for a lock-up situation. Block cutter deck up before working under the unit. Unlock blades, removesupport blocks, and repeat "**Blade Engagement**" instructions.

BLADE DISENGAGEMENT

1. Slowly decrease throttle speed until

engine idle speed is reached and then disengage power take-off.

2. Engage tractor park brake, shut tractor engine off and remove switch key. Stay on tractor until blades have come to a complete stop.

FIELD OPERATION

DANGER

To avoid serious injury or death: Clear area to be cut of debris and other unforeseen removable objects before cutting. Mark non-removable hazards such as trees stumps, post stubs, protruding objects, rocks, drop-offs, holes, etc. with a visible flag.

IMPORTANT:

Maintain correct power take-off speed. Loss of power take-off speed will allow blades to swing back resulting in ragged, uneven cutting. Your cutter is equipped with free swinging cutting blades to reduce shock loads when striking obstacles. However, it is best to avoid striking obstacles to extend cutter and blade life.

NOTE:

Do not cut in wet conditions. Wet material will build up on the deck underside creating poor discharge, high wear, and additional horsepower.

Periodically disengage power take-off, turn off tractor, remove key & check for objects wrapped around blade spindle. Block deck up before removing objects.

*Frequently inspect cutter for loose bolts and nuts. Tighten all loose hardware as indicated in the "**Bolt Torque**" on page 40.*

1. Thoroughly inspect area to be cut for debris and unforeseen objects. Mark any potential hazards.
2. Follow "**Blade Engagement**" instructions on page 26 to start cutter blades turning.
3. Optimum ground speed depends on

density of material being cut, horsepower rating of tractor, and terrain. Always operate tractor at cutter's full rated power take-off speed in a gear range that allows the cutter to make a smooth cut without lugging tractor down, usually between 2 to 5 mph.

4. Stop traveling and disengage power take-off after the first 50 feet to cutting. Check cutter levelness and cutting height to make certain it is adjusted properly.
5. Do not engage power take-off with 3-point cutter fully raised.
6. Periodically disengage power take-off, shut down tractor, remove key, and check for foreign objects wrapped around the blades spindle. Block cutter deck up before removing objects.
7. Frequently inspect cutter for loose bolts and nuts. Tighten all loose bolts and nuts as indicated in the "**Bolt Torque**" on page 40.
8. For additional information, see "**General Operating Instructions**" on page 28.

UNHOOK ROTARY CUTTER

Unhook rotary cutter from tractor as follows:

1. See "Long-Term Storage" on page 34 if cutter is to be stored for a long time.
2. Park on a level solid surface and lower deck to ground level or onto support blocks.
3. Engage tractor park brake, shut tractor engine off, and remove switch key. Stay on tractor until blades have come to a complete stop.
4. Disconnect driveline and safety chain from tractor.
5. Unhook 3-point hitch from tractor and drive tractor forward several feet.
6. Reinstall hitch pins, linchpins, and safety lock pins in cutter hitch for safe keeping.
7. Collapse driveline by pushing tractor end of driveline towards cutter gearbox.

8. Support collapsed driveline off the ground by rotating driveline hook holder under driveline and letting driveline rest in deck for storage.

GENERAL OPERATING INSTRUCTIONS

It is important that you have familiarized yourself with the Operator's Manual, completed the Operator's Checklist, properly attached cutter to your tractor, made leveling adjustments, and preset your cutting height before beginning a running operational safety check on your TITAN Rotary Cutter.

The running operational safety check may now be done. It is important that at any time during this safety check you detect a malfunction in either the cutter or tractor that you immediately shut the tractor off, remove its key, and make necessary repairs and/or adjustments before continuing on.

Make sure before starting the tractor that the park brake is engaged, the power take-off is disengaged, and the cutter is resting on the ground. Start the tractor and set the engine throttle speed at a low idle. Raise the cutter with the tractor's rear hydraulic lift control lever to transport position making sure that the power take-off shaft does not bind and does not contact the cutter frame. Lower the cutter to the ground and at a low engine speed engage the power take-off. If everything is running smoothly at a low idle, slowly raise the cutter to transport height

checking for bind or chatter in the driveline. Lower the cutter to the ground and increase the tractor's engine rpm until it reaches the cutter full power take-off operating speed of 540 rpm. If everything is still running smoothly, once more raise the cutter to transport height to check for driveline bind or chatter. Lower the cutter to the ground, return the engine to a low idle, and disengage the power take-off.

Position the adjustable stops on the tractor's 3-point lift lever so the cutter can be consistently returned to the same cutting height and transport height.

You should now be ready to transport your cutter to the site at a safe ground speed. On roadways, transport in such a manner that faster moving vehicles can easily see you and pass you safely. Reduce your speed when traveling over rough and hilly terrain. Avoid quick or sharp steering corrections. Take extra care to ensure that the mower doesn't come into contact with obstacles such as trees, buildings, or fences. Use accessory lights and appropriate reflective devices to provide adequate warning to pedestrians and other vehicle operators when traveling on public roads and in the dark.

Comply with all local, state, and federal laws.

It is important that you inspect the area where you will be cutting and clear it of safety hazards and foreign objects.

In the event you do strike an object stop the cutter and tractor immediately to inspect and make necessary repairs to the cutter before resuming operation.

You will need to maintain 540 rpm power take- off speed and 2 to 5 mph ground speed to produce a clean cut. Make a tractor gear and range selection that will enable you to maintain these speed combinations.

Generally, the quality of cut is better at lower ground speeds. Dense ground cover will create the need to slow down even more. In certain conditions tractor tires will roll grass down resulting in an uneven cut when grass fails to rebound. Should this happen, you may try reversing the direction of cut and/or double cut to achieve the desired finish. Avoid very low cutting heights especially on extremely uneven terrain.

Always cut downward on slopes and avoid crossing the face of steep slopes. Avoid sharp drops and cross diagonally through dips to prevent hanging up tractor and cutter. Slowdown in turns. Remember to look back often.

SECTION 4:

MAINTENANCE AND LUBRICATION

MAINTENANCE

Check all bolts after using the unit to be sure they are tight.

- *Buildup of debris around moving components and gearboxes is a fire hazard. Keep rotating parts and gearboxes free from debris to avoid serious injury and property damage.*
- *Improper oil level can cause bearing failure and be a fire hazard. Maintain proper gearbox oil level to avoid serious injury and property damage.*

SLIP-CLUTCH PROTECTED DRIVELINE

WARNING

*To avoid serious injury or death:
Always follow "Tractor Shutdown Procedure" provided in this manual before dismantling the tractor.*

Cutter drive components are protected from shock loads by a two-plate friction clutch.

CLUTCH RUN-IN

The clutch must be capable of slippage during operation to protect gearbox, driveline, and other drive train parts. Friction clutches should be "run-in" prior to initial operation and after long periods of inactivity. To prevent driveline and gearbox damage, repeat clutch "run-in" at the beginning of each season and when moisture and/or condensation seizes the inner friction plates.

Refer to Figure 4-1:

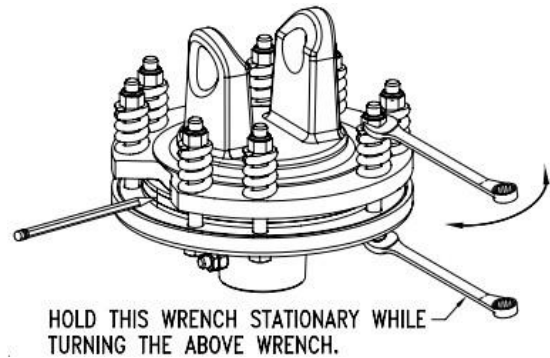


Figure 4-1: Clutch Run-In

1. Using a pencil or other marker scribe a line across the exposed edges of the clutch plates and friction disks.
2. Carefully loosen each of the 8 spring retainer nuts by exactly 2 revolutions. It will be necessary to hold the hex end of the retainer bolt in order to count the exact number of revolutions.
3. Start the tractor and engage the driveline drive for 2-3 seconds to permit slippage of the clutch surfaces. Disengage the driveline, then re-engage a second time for 2-3 seconds. Disengage driveline, shut off tractor, and remove key. Wait for all components to stop before dismantling from tractor.

4. Inspect the clutch and ensure that the scribed markings made on the clutch plates have changed position. Slippage has not occurred if any tow marks on the friction disk and plate are still aligned. A clutch that has not slipped must be disassembled to separate the friction disk plates. See **“Clutch Disassembly”** to disassemble clutch.
5. Tighten each of the 8 spring retainer nuts on the clutch housing exactly 2 revolutions to restore the clutch to the original setting pressure.
6. The clutch should be checked during the first hour of operation and periodically each week. An additional set of scribe marks can be added to check for slippage. See **“Clutch Assembly”** to adjust for proper spring length.

CLUTCH DISASSEMBLY

If the clutch run-in procedure, (See **“Clutch Run-in”** on page 30), indicated that one or more of the friction disks did not slip, the clutch must be disassembled to separate the friction discs.

IMPORTANT:

Refer to Figure 4-2. Be sure to measure and record length (“A”) of each clutch spring before disassembling the clutch.

Refer to Figure 4-2:

See **IMPORTANT NOTE** above before disassembling clutch. After measuring and recording each spring length, remove spring retainer nuts (#1), springs (#2), and bolts (#3). Each friction disc (#4) must then be separated from the metal surface adjacent to it.

INSPECTION

Inspect all parts for excessive wear and condition. Clean all parts that do not require replacement. The original friction disk thickness is 1/8” and should be replaced if the thickness falls below 3/32”. If the clutch have been slipped to the point of “smoking”, the friction disks may be damaged and should be replaced. Heat build-up may also affect the yoke joints.

CLUTCH ASSEMBLY

Refer to Figure 4-2:

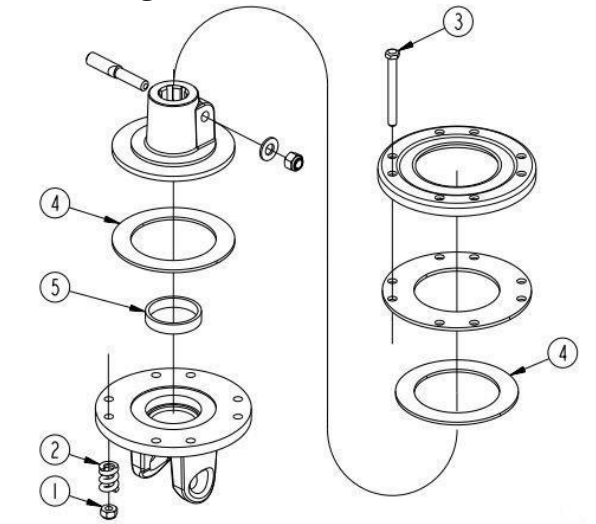


Figure 4-2: Clutch Disassembly

Reassemble each friction disk (#4) next to the metal plate it was separated from. Make certain all bushing are replaced in the same location as when removed. Install bolts (#3) through end plates and intermediate plates as shown. Place springs (#2) over the bolts and secure with nuts (#1).

Refer to Figure 4-3:

Progressively tighten each spring retainer bolt until correct spring height (“A” dimension) is reached.

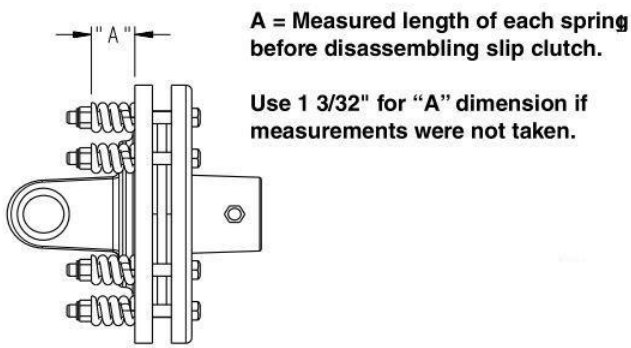


Figure 4-3: Clutch Adjustment

CUTTER BLADE MAINTENANCE

DANGER

To avoid serious injury or death:

- Always disconnect driveline from power take-off shaft before servicing underside of cutter. The tractor can be started with power take-off engaged.
- Always secure equipment with solid, non-concrete supports before working under it. Never go under equipment supported by concrete blocks or hydraulics. Concrete can break, hydraulic lines can burst, and/or hydraulic controls can be actuated even when power to hydraulics is off.

WARNING

To avoid serious injury or death:

- Do not operate cutter with blades that are out-of-balance, bent, excessively worn, excessively nicked, or with blade bolts that are excessively worn. Such blades can break loose at high speeds.
- Do not attempt to straighten a bent blade or weld on a blade. Do not attempt to modify a blade or weld on a blade. Do not attempt to modify a blade such as hard surfacing, heat treating, cold treating, or by any other method.

IMPORTANT:

Only replace cutting blades in pairs. Replacing single blades can result in an out-of-balance

condition that will contribute to premature bearing wear/breakage and/or structural cracks in gearbox and/or deck.

Always inspect cutting blades before each use. Make certain they are properly installed and are in good working condition. Replace any blade that is damaged, worn, bent, or excessively nicked. Never try to straighten a bent blade! Small nicks can be ground out when sharpening.

Remove cutting blades and sharpen or replace as follows:

1. Place tractor gear selector in park and/or set brakes, shut engine off, and remove ignition key.
2. Disconnect main driveline from tractor power take-off and secure cutter deck in the up position with solid supports before servicing underside of cutter.

Refer to Figure 4-4:

3. Remove access rubber cover (#5).
4. Rotate Blade bolt (#1) until in alignment with access hole (A).
5. Unscrew locknut (#3) to remove cutting blade (#6). Blade bolt (#1) is keyed and will not turn freely.
6. Both blades should be sharpened at the same angle as the original cutting edge and must be replaced or re-ground at the same time to maintain proper balance in the cutting unit. The following precautions should be taken when sharpening blades:
 - a. Do not remove more material than necessary.
 - b. Do not heat and pound out a cutting edge.
 - c. Do not grind blades to a razor edge. Leave a blunt cutting edge approximately 1.5 mm

- thick.
- d. Always grind cutting edge so end of blade remains square to cutting edge and not rounded.
- e. Do not sharpen back side of blade.
- f. Both blades should weigh the same with not more than 1 ½ oz. difference. Unbalanced blades will cause excessive vibration which can damage gearbox bearing and create structural cracks.

Refer to Figure 4-5:

7. Carefully check cutting edges of blades in relation to blade carrier rotation to ensure correct blade placement. Blade Rotation is counterclockwise with cutting edge leading.

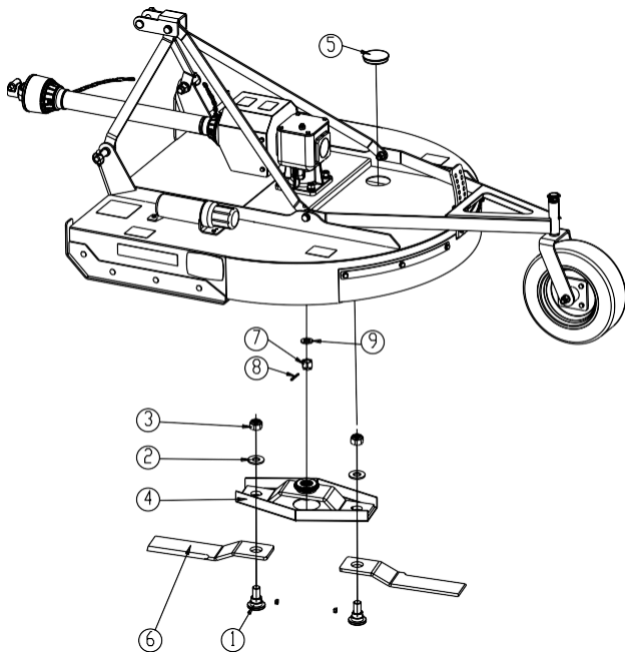


Figure 4-4: Cutter Blade Assembly
Refer to Figure 4-4:

To avoid serious injury or death:

A locknut that has been removed can lose its thread locking properties. Reusing a used locknut can result in a thrown blade. Always use a new locknut when installing blades.

IMPORTANT:

Examine blade bolts (#1) and flat washers (#2) for excessive wear and replace if worn.

8. Insert blade bolt (#1) through blade (#6), blade mount bracket (#4), and plain washer (#2). Secure blade with a new locknut (#3) and torque to 400 ft.-lbs.
9. Replace access rubber cover (#5).
10. If replaced blade mount bracket (#4), nut (#7) on gearbox output shaft should be torque to 450 ft.

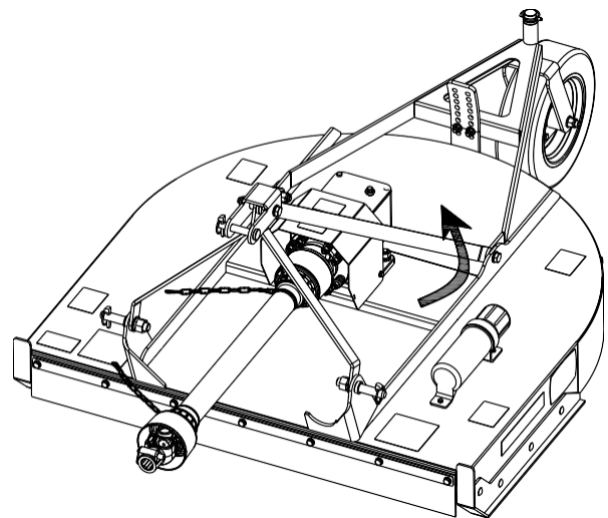


Figure 4-5: Counterclockwise Blade Rotation

WARNING

LONG-TERM STORAGE





Clean, inspect, service, and make necessary repairs to the implement when storing it for long periods and at the end of the season. This will help to ensure the unit is ready for field use the next time you hook-up to it.

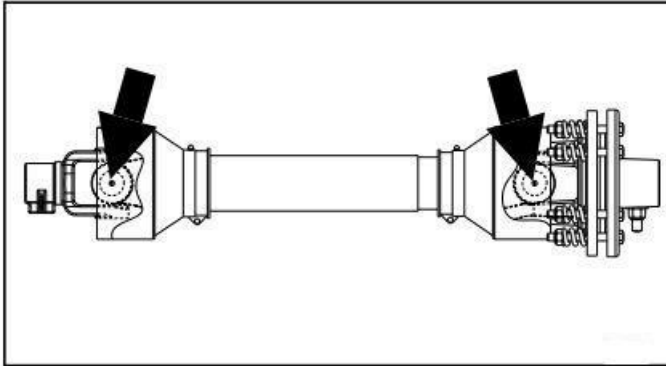
DANGER



To avoid serious injury or death:

- *Always disconnect driveline from power take-off shaft before servicing drivetrain and cutter blades. The power take-off can be engaged if tractor is started.*
1. Clean off any dirt and grease that may have accumulated on the cutter and moving parts. Scrape off compacted dirt from the bottom of deck and then wash surface thoroughly with a garden hose. A coating of oil may also be applied to the lower deck area to minimize oxidation.
 2. See “**Cutter Blade Maintenance**” on page 32. Check blades and blade bolts for wear and replace if needed.
 3. Inspect for loose, damaged, or worn parts and adjust or replace as need.
 4. Be certain to purge gauge wheel spindle tube with grease to keep moisture out.
 5. Lubricate all other wear surfaces as noted under “**Lubrication Points**” on page 35. Store cutter on a level surface in a clean, dry place. Inside storage will reduce maintenance and make for a long cutter life.
 6. Follow all unhooking instructions on page 27 when disconnecting tractor from cutter.

LUBRICATION POINTS

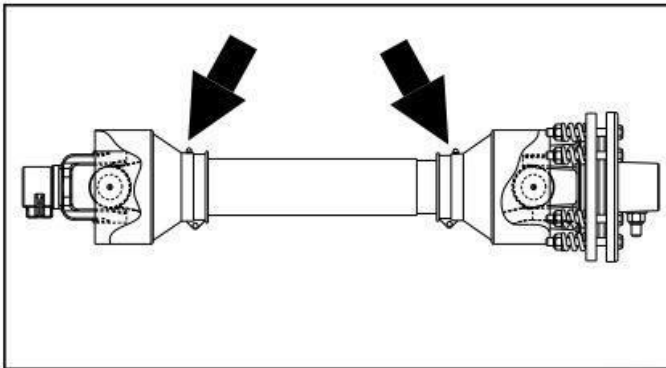
| | | | | | |
|--------------------|--|---|--|--|---|
| Lubrication Legend |  Multi-purpose spray lube |  Multi-purpose grease lube |  Multi-purpose oil lube |  50 hrs | Intervals in hours at which lubrication is required |
| | | | | | |



| | |
|--|---|
|  |  |
|--|---|

Driveline Shaft Yoke

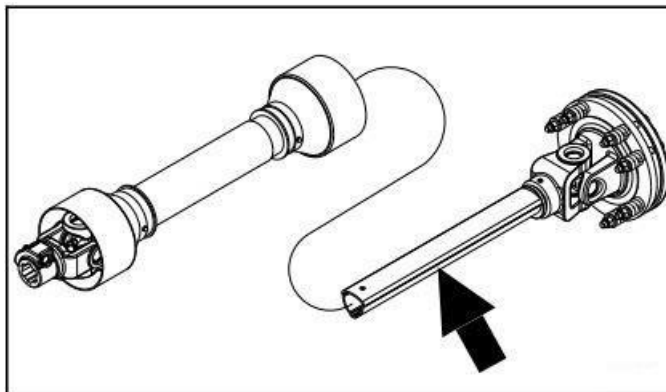
Type of lubrication: multi-purpose grease
Quantity: 4 to 8 pumps



| | |
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|  |  |
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Driveline Shield Bearing

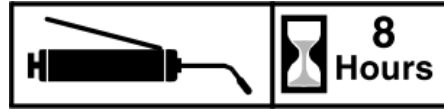
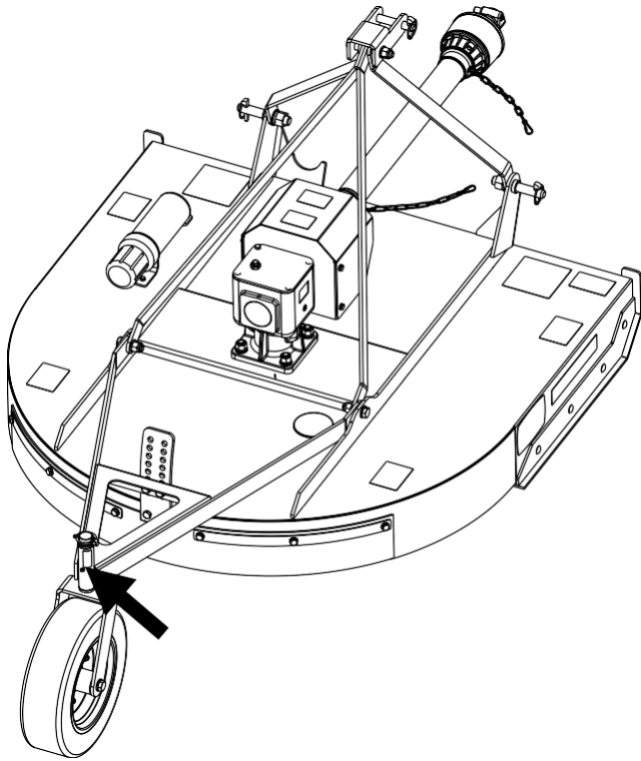
Type of lubrication: multi-purpose grease
Quantity: 4 to 8 pumps



| | |
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|  |  |
|--|---|

Driveline Profiles

Type of lubrication: multi-purpose grease
Quantity: Clean & coat inner profile tube of the driveline with a light film of grease and then reassemble.

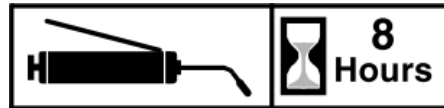
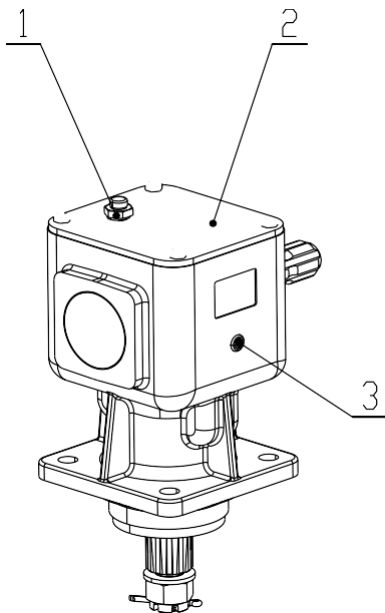


GAUGE WHEEL SPINDLE TUBE

Important: See Step 5 under “**Long-Term Storage**” on page 34 when parking unit for an extended period.

Type of lubrication: Multi-purpose grease

Quantity: Until grease purges from spindle tube.



GEARBOX

Note: Do not overfill!! Cutter should be level when checking oil.

Oil expands when hot, therefore, always check oil level when cold.

Remove the level plug (#3). If oil is below bottom of plug hole, add recommended gear lube through the oil inlet cap (#1) until oil flows out of the level plug hole.

Re-install and tighten the level plug (#3) and the oil inlet cap (#1).

Type of lubrication: SAE EP 90W Gear Oil

Quantity: Fill until oil begins to flow out the level plug hole in gearbox.

SECTION 5: SPECIFICATION & CAPACITIES

| TITAN-STANDARD SERIES ROTARY CUTTER SPECIFICATIONS | | |
|---|--|------------------------|
| DESCRIPTION | STSRC48v1b | STSRC60v1b |
| HORSEPOWER | 20*60HP | |
| HITCH | CAT. 1 | |
| WORKING WIDTH | 48" / 1219 | 60" / 1524 |
| OVERALL WIDTH | 53" / 1347 | 65" / 1652 |
| OVERALL LENGTH | 79.2" / 2012.5 | 91.2" / 2317.5 |
| NET WEIGHT | 448LB / 203KG | 526LB / 238.5KG |
| CUTTING HEIGHT | 1.5" - 11" | |
| CUTTING CAPACITY | 1" DIAMETER | |
| DECK THICKNESS | 3MM | |
| HECK HEIGHT | 7.38" / 187.5MM | |
| SAFETY GUARDS | FRONT AND REAR RUBBER GUARD | |
| SKIDS | THICKNESS 6MM, REPLACEABLE | |
| BLADES | THICKNESS 12MM, WIDTH 100MM, MATERIAL 60SI2MN | |
| GEARBOX RATING | 40HP | |
| GEARBOX | 540 RPM, PTO DRIVEN GEARBOX | |
| QUICK HITCH COMPATIBLE | YES | |
| PTO | SLIP CLUTCH PTO | |
| COLORS | CHARCOAL (MAIN BODY) + ORANGE (EVERYTHING ELSE) | |
| IRON CREASE SIZE (L X W X H) | 1410X1410X605MM | 1718X1706X605MM |

SECTION 6: TROUBLESHOOTING

| PROBLEM | CAUSE | SOLUTION |
|--|--|--|
| OIL LEAKING | GEARBOX OVERFILLED | DRAIN TO SIDE PLUG HOLE |
| | SEALS DAMAGED | REPLACE SEALS |
| | GRASS OR WIRE WRAPPED ON SHAFTIN SEAL AREA | CHECK SEAL AREAS DAILY |
| DRIVELINE YOKE OR CROSS | SHOCK LOAD | AVOID HITTING SOLID OBJECTS |
| | NEEDS LUBRICATION | LUBRICATE EVERY 8 HOURS |
| DRIVELINE CLUTCH IS SLIPPING | SCALPING THE GROUND | RAISE CUTTING HEIGHT |
| | CUTTING TOO FAST | REDUCE TRAVEL SPEED |
| | POWER TAKE-OFF BEING ENGAGED TOO FAST AT HIGH ENGINE RPM | SLOWLY ENGAGE POWER TAKE-OFF AT LOW ENGINE RPM |
| | CUTTING OVER SOLID OBJECTS | AVOID SOLID OBJECTS |
| | CLUTCH SPRING NOT SET CORRECTLY | CHECK DIMENSION FOR SPRING SETTING ON CLUTCH |
| BENT DRIVELINE (NOTE: DRIVELINE SHOULD BE REPAIRED OR REPLACED IF BENT) | CONTACTING FRAME | REDUCE LIFT HEIGHT IN TRANSPORT POSITION |
| | CONTACTING DRAWBAR | REPOSITION DRAWBAR |
| | BOTTOMING OUT | SHORTEN DRIVELINE |
| DRIVELINE TELESCOPING TUBE FAILING | NEEDS LUBRICATION | LUBRICATE EVERY 20 HOURS |
| | SHOCK LOAD | AVOID HITTING SOLID OBJECTS |
| DRIVELINE TELESCOPING TUBE WEARING | NEEDS LUBRICATION | LUBRICATE EVERY 20 HOURS |
| BLADES WEARING EXCESSIVELY | CUTTING ON SANDY GROUND | RAISE CUTTING HEIGHT |
| | CONTACTING GROUND FREQUENTLY | RAISE CUTTING HEIGHT |
| BLADE BREAKING | HITTING SOLID OBJECTS | AVOID HITTING SOLID OBJECTS |
| BLADES COMING LOOSE | BLADE DOES NOT TIGHTEN PROPERLY | TIGHTEN BLADE HARDWARE (REFER TO "CUTTING BLADE MAINTENANCE" ON PAGE 32. |
| | NOT USING NEW LOCKNUT WHEN REPLACING BLADES | USE NEW LOCKNUTS. |

SECTION 6: TROUBLESHOOTING

| PROBLEM | CAUSE | SOLUTION |
|------------------------------------|---|---|
| BLADE CARRIER BECOMES LOOSE | RUNNING LOOSE IN THE PAST | REPLACE GEARBOX OUTPUT SHAFT AND BLADECARRIER |
| | BLADE CARRIER HARDWARE NOT TIGHT ENOUGH | TIGHTEN TO SPECIFIED TORQUE |
| BLADE BOLT HOLES WORN | BLADE HARDWARE RUNNING LOOSE | REPLACE BLADES, BLADE BOLTS, AND LOCKNUT IF WORN |
| BLADE CARRIER BENT | HITTING SOLID OBJECTS | AVOID HITTING SOLID OBJECTS AND REPLACE BLADE CARRIER |
| EXCESSIVE SIDE SKID WEAR | CUTTING HEIGHT NOT LEVEL | ADJUST CUTTER HEIGHT |
| | SOIL ABRASIVE | ADJUST CUTTER HEIGHT |
| | CUTTING TOO LOW | ADJUST CUTTER HEIGHT |
| TAIL WHEEL SUPPORT FAILING | LOWERING TOO FAST | ADJUST RATE OF DROP |
| | HITTING OBJECTS WHEN TURNING | REDUCE SPEED ON TURNS |
| EXCESSIVE VIBRATION | DRIVELINE BENT | REPLACE DRIVELINE |
| | BLADES LOOSE | REPLACE DRIVELINE |
| | BLADE CARRIER BENT | REPLACE BLADE CARRIER |
| | BLADE BROKEN | REPLACE BLADE |
| | BLADE WILL NOT SWING | REMOVE AND INSPECT BLADE |
| | BLADES HAVE UNEQUAL WEIGHT | REPLACE BOTH BLADES |
| | DISH PAN BENT | REPLACE DISHPAN |

SECTION 7: APPENDIX

BOLT TORQUE

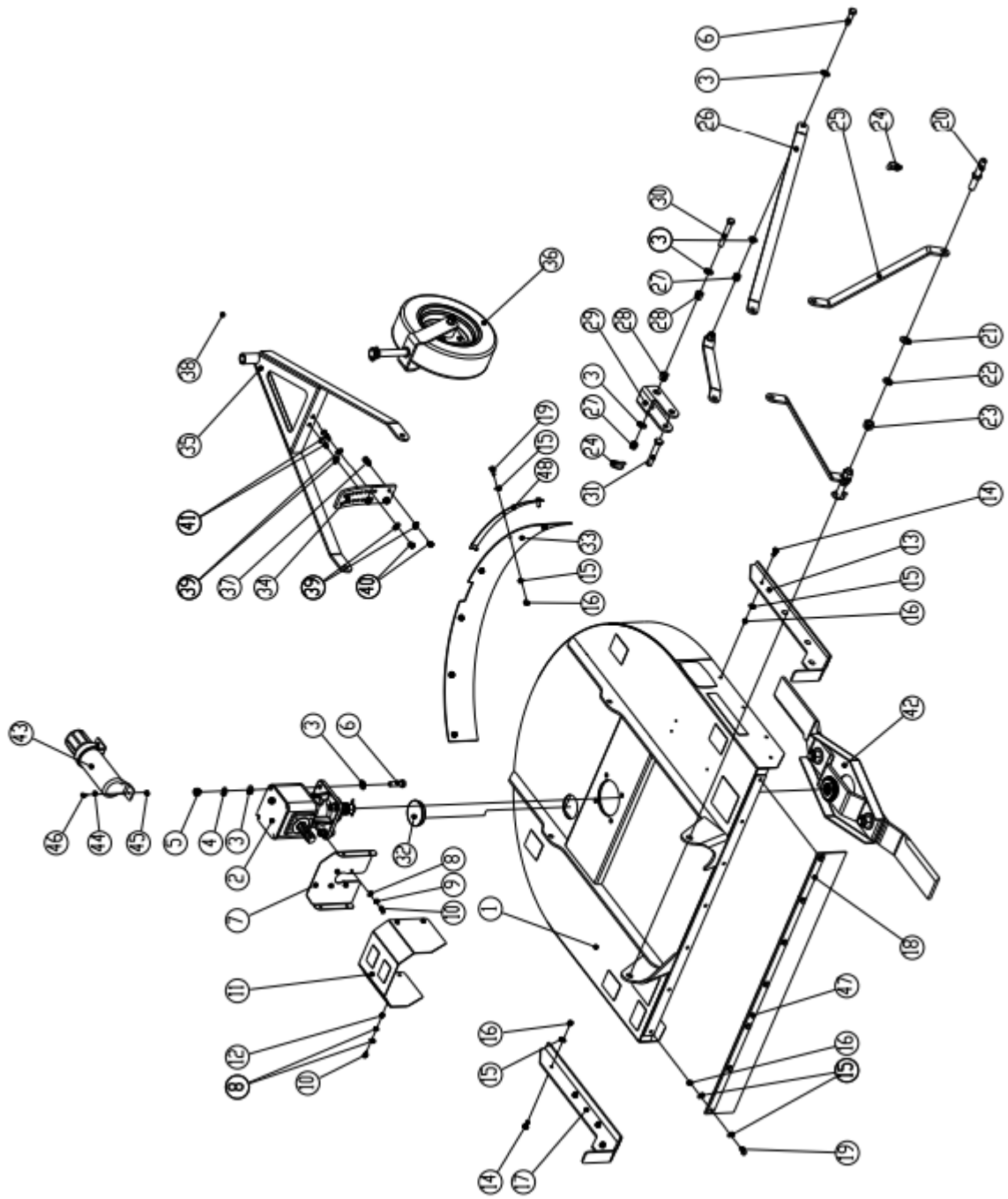
The tables shown below give correct torque values for various bolts and cap screws. Tighten all bolts to the torques specified unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.

| Torque Values Chart for Common Bolt Sizes | | | | | | | | | | | | | |
|---|--------------------------|--------------------|---------|-------|---------|-------|-------------------------|--------------------------|-------|-----------|-------|------------|-------|
| Bolt Size (Inches) | Bolt Head Identification | | | | | | Bolt Size (Metric) | Bolt Head Identification | | | | | |
| | Grade 2 | | Grade 5 | | Grade 8 | | | Class 5.8 | | Class 8.8 | | Class 10.9 | |
| in-tpi ¹ | N·m ² | ft-lb ³ | N·m | ft-lb | N·m | ft-lb | mm x pitch ⁴ | N·m | ft-lb | N·m | ft-lb | N·m | ft-lb |
| 1/4" - 20 | 7.4 | 5.6 | 11 | 8 | 16 | 12 | M 5 X 0.8 | 4 | 3 | 6 | 5 | 9 | 7 |
| 1/4" - 28 | 8.5 | 6 | 13 | 10 | 18 | 14 | M 6 X 1 | 7 | 5 | 11 | 8 | 15 | 11 |
| 5/16" - 18 | 15 | 11 | 24 | 17 | 33 | 25 | M 8 X 1.25 | 17 | 12 | 26 | 19 | 36 | 27 |
| 5/16" - 24 | 17 | 13 | 26 | 19 | 37 | 27 | M 8 X 1 | 18 | 13 | 28 | 21 | 39 | 29 |
| 3/8" - 16 | 27 | 20 | 42 | 31 | 59 | 44 | M10 X 1.5 | 33 | 24 | 52 | 39 | 72 | 53 |
| 3/8" - 24 | 31 | 22 | 47 | 35 | 67 | 49 | M10 X 0.75 | 39 | 29 | 61 | 45 | 85 | 62 |
| 7/16" - 14 | 43 | 32 | 67 | 49 | 95 | 70 | M12 X 1.75 | 58 | 42 | 91 | 67 | 125 | 93 |
| 7/16" - 20 | 49 | 36 | 75 | 55 | 105 | 78 | M12 X 1.5 | 60 | 44 | 95 | 70 | 130 | 97 |
| 1/2" - 13 | 66 | 49 | 105 | 76 | 145 | 105 | M12 X 1 | 90 | 66 | 105 | 77 | 145 | 105 |
| 1/2" - 20 | 75 | 55 | 115 | 85 | 165 | 120 | M14 X 2 | 92 | 68 | 145 | 105 | 200 | 150 |
| 9/16" - 12 | 95 | 70 | 150 | 110 | 210 | 155 | M14 X 1.5 | 99 | 73 | 155 | 115 | 215 | 160 |
| 9/16" - 18 | 105 | 79 | 165 | 120 | 235 | 170 | M16 X 2 | 145 | 105 | 225 | 165 | 315 | 230 |
| 5/8" - 11 | 130 | 97 | 205 | 150 | 285 | 210 | M16 X 1.5 | 155 | 115 | 240 | 180 | 335 | 245 |
| 5/8" - 18 | 150 | 110 | 230 | 170 | 325 | 240 | M18 X 2.5 | 195 | 145 | 310 | 230 | 405 | 300 |
| 3/4" - 10 | 235 | 170 | 360 | 265 | 510 | 375 | M18 X 1.5 | 220 | 165 | 350 | 260 | 485 | 355 |
| 3/4" - 16 | 260 | 190 | 405 | 295 | 570 | 420 | M20 X 2.5 | 280 | 205 | 440 | 325 | 610 | 450 |
| 7/8" - 9 | 225 | 165 | 585 | 430 | 820 | 605 | M20 X 1.5 | 310 | 230 | 650 | 480 | 900 | 665 |
| 7/8" - 14 | 250 | 185 | 640 | 475 | 905 | 670 | M24 X 3 | 480 | 355 | 760 | 560 | 1050 | 780 |
| 1" - 8 | 340 | 250 | 875 | 645 | 1230 | 910 | M24 X 2 | 525 | 390 | 830 | 610 | 1150 | 845 |
| 1" - 12 | 370 | 275 | 955 | 705 | 1350 | 995 | M30 X 3.5 | 960 | 705 | 1510 | 1120 | 2100 | 1550 |
| 1-1/8" - 7 | 480 | 355 | 1080 | 795 | 1750 | 1290 | M30 X 2 | 1060 | 785 | 1680 | 1240 | 2320 | 1710 |
| 1 1/8" - 12 | 540 | 395 | 1210 | 890 | 1960 | 1440 | M36 X 3.5 | 1730 | 1270 | 2650 | 1950 | 3660 | 2700 |
| 1 1/4" - 7 | 680 | 500 | 1520 | 1120 | 2460 | 1820 | M36 X 2 | 1880 | 1380 | 2960 | 2190 | 4100 | 3220 |
| 1 1/4" - 12 | 750 | 555 | 1680 | 1240 | 2730 | 2010 | | | | | | | |
| 1 3/8" - 6 | 890 | 655 | 1990 | 1470 | 3230 | 2380 | | | | | | | |
| 1 3/8" - 12 | 1010 | 745 | 2270 | 1670 | 3680 | 2710 | | | | | | | |
| 1 1/2" - 6 | 1180 | 870 | 2640 | 1950 | 4290 | 3160 | | | | | | | |
| 1 1/2" - 12 | 1330 | 980 | 2970 | 2190 | 4820 | 3560 | | | | | | | |

¹ in-tpi = nominal thread diameter in inches-threads per inch
² N·m = newton-meters
³ ft-lb = foot pounds
⁴ mm x pitch = nominal thread diameter in millimeters x thread pitch

Torque tolerance + 0%, -15% of torquing values. Unless otherwise specified use torque values listed above.

STANDARD SERIES ROTARY CUTTER PARTS LIST

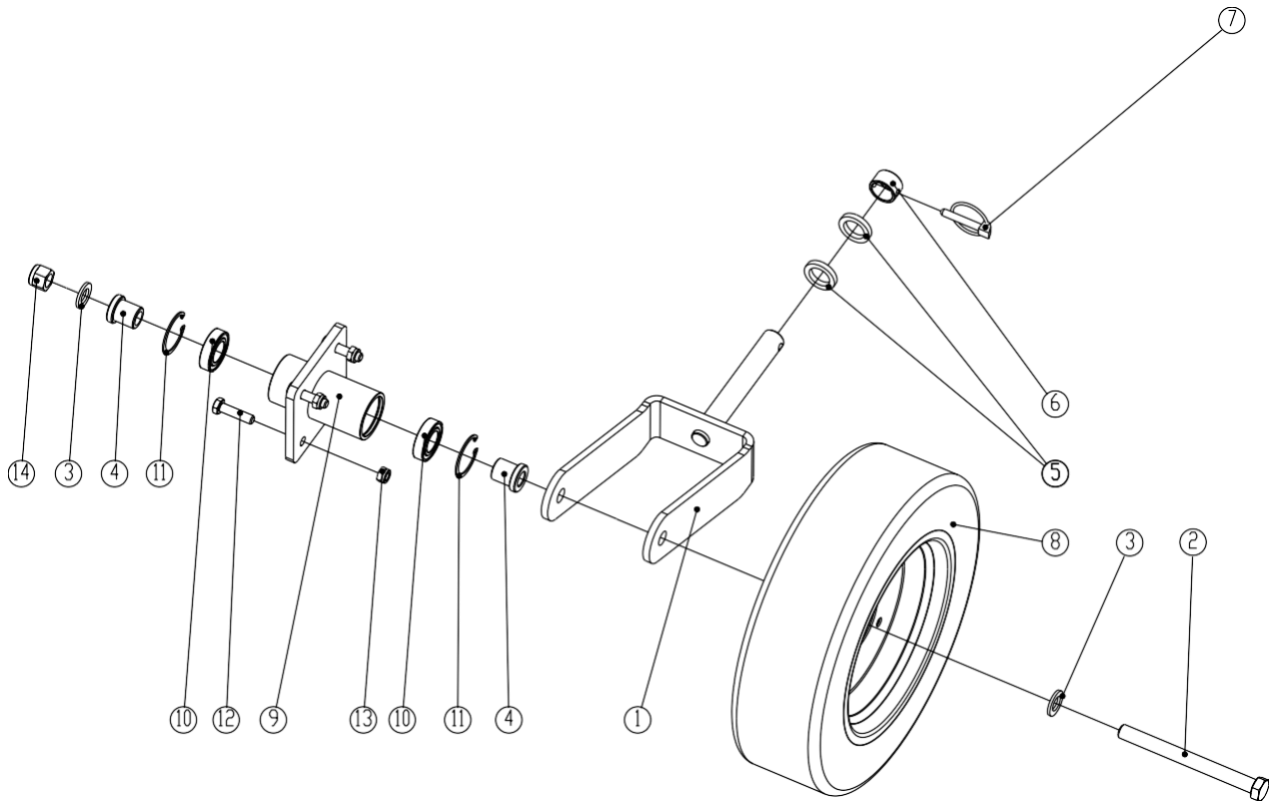


STANDARD SERIES ROTARY CUTTER PARTS LIST

| ITEM | REF. NO. | DESCRIPTION | QTY | REMARK |
|------|------------------|------------------------------|-----|---------|
| (1) | 4030100344 | CUTTER DECK | 1 | STSRC48 |
| | 4030100345 | | | STSRC60 |
| (2) | 4040100018 | GEARBOX 40HP | 1 | |
| (3) | 7040100008 | PLAIN WASHER 16X30X3 | 14 | |
| (4) | 7040400008 | SPRING WASHER | 4 | |
| (5) | 7030100008 | HEX. NUT M16 | 4 | |
| (6) | 7010200023 | BOLT M16X60 | 6 | |
| (7) | 4010000183 | PTO GUARD MOUNT | 1 | |
| (8) | 7040100004 | PLAIN WASHER 8X16X1.6 | 12 | |
| (9) | 7040400004 | SPRING WASHER 8 | 4 | |
| (10) | 7010100006 | BOLT M8X20 | 8 | |
| (11) | 4010000165 | PTO GUARD | 1 | |
| (12) | 7030500016 | LOCKNUT M8 | 4 | |
| (13) | 4030100347 | SKID WELDMENT - R | 1 | STSRC48 |
| | 4030100351 | | | STSRC60 |
| (14) | 7010400004 | RHSNB M10X25 GR10.9 | 8 | |
| (15) | 7040100005 | PLAIN WASHER 10X20X2 | 34 | STSRC48 |
| | | | 36 | STSRC60 |
| (16) | 7030500017 | LOCKNUT M10 | 21 | STSRC48 |
| | | | 22 | STSRC60 |
| (17) | 4030100346 | SKID WELDMENT - L | 1 | STSRC48 |
| | 4030100350 | | | STSRC60 |
| (18) | BCL120.00.00.001 | FRONT RUBBER GUARD | 1 | STSRC48 |
| | BCL150.00.00.001 | | | STSRC60 |
| (19) | 7010100013 | BOLT M10X25 | 13 | STSRC48 |
| | | | 14 | STSRC60 |
| (20) | 4020000001 | HITCH PIN - LOWER | 2 | |
| (21) | 7040200010 | PLAIN WASHER 22X39X3 | 2 | |
| (22) | 7040400010 | SPRING WASHER 22 | 2 | |
| (23) | 7030100010 | HEX. NUT M22 | 2 | |
| (24) | 4300100004 | SAFETY LOCK PIN Φ 11X50 | 3 | |
| (25) | 4010000184 | FRONT BRACE | 2 | |
| (26) | 4010000185 | REAR BRACE | 2 | STSRC48 |
| | 4010000188 | | | STSRC60 |
| (27) | 7030500020 | LOCKNUT M16 | 3 | |
| (28) | 4020000193 | SPACER L = 19 | 2 | |
| (29) | 4010000144 | PIVOTING UPPER HITCH - BLACK | 1 | |
| (30) | 7010200010 | BOLT M16X110 | 1 | |

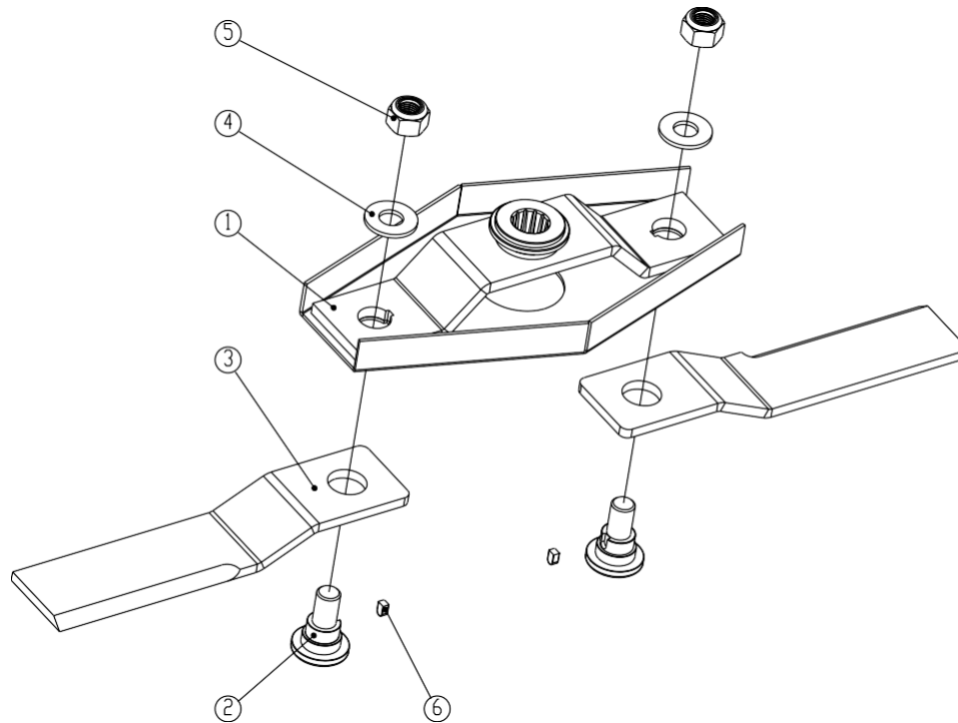
| | | | | |
|------|--------------------|---------------------------------|---|---------|
| (31) | 4020000017 | HITCH PIN - UPPER | 1 | |
| (32) | 4100200027 | ACCESS RUBBER COVER Φ 91.3 | 1 | |
| (33) | BCL120.00.00.008 | REAR RUBBER GUARD | 1 | STSRC48 |
| | BCL150.00.00.002 | | 1 | STSRC60 |
| (34) | 4010000187 | TAILWHEEL ADJUSTING BRACKET | 1 | |
| (35) | 4030100349 | GAUGE WHEEL MAINFRAME WELDMENT | 1 | |
| (36) | BC180.00.00.001-1 | WHEEL TIRE ASSEMBLY | 1 | |
| (37) | 7010100004 | BOLT M12X30 | 2 | |
| (38) | 4300400002 | PRESSURE LUBRICATOR M8X1 | 1 | |
| (39) | 7040100006 | PLAIN WASHER 12X24X2.5 | 6 | |
| (40) | 7030500018 | LOCKNUT M12 | 2 | |
| (41) | 7010100008 | BOLT M12X40 | 2 | |
| (42) | BCL120.00.00.000-1 | BLADE MOUNT ASSEMBLY | 1 | STSRC48 |
| | BCL150.00.00.000-1 | | | STSRC60 |
| (43) | 4100200001 | MANUAL HOLDER | 1 | |
| (44) | 7040100003 | PLAIN WASHER 6X12X1.6 | 3 | |
| (45) | 7030500015 | LOCKNUT M6 | 3 | |
| (46) | 7010100001 | BOLT M6X20 | 3 | |
| (47) | 4010000197 | FRONT RUBBER MOUNTING PLATE | 1 | STSRC48 |
| | 4010000199 | | | STSRC60 |
| (48) | 4010000198 | REAR RUBBER MOUNTING PLATE | 2 | STSRC48 |
| | 4010000200 | | | STSRC60 |

WHEEL TIRE ASSEMBLY PARTS LIST



| ITEM | REF. NO. | DESCRIPTION | QTY |
|------|------------|-----------------------------------|-----|
| (1) | 4030100297 | TAILWHEEL YOKE | 1 |
| (2) | 7010200031 | BOLT M16X170 | 1 |
| (3) | 7040100008 | PLAIN WASHER 16X30X3 | 2 |
| (4) | 4020000166 | BUSHING | 2 |
| (5) | 4020000081 | SPACER H=6 | 1 |
| (6) | 4020000086 | CAP SHAFT MOUNT | 1 |
| (7) | 4300100003 | SAFETY LOCK PIN Φ8X45 | 1 |
| (8) | 4100700003 | RUBBER TIRE 4.50-8 | 1 |
| (9) | 4030100309 | TAIL WHEEL HUB | 1 |
| (10) | 7060100006 | DEEP GROOVE BALL BEARING 6005-2RZ | 2 |
| (11) | 7090200011 | CIRCLIP FOR HOLE Φ47 | 2 |
| (12) | 7010100028 | BOLT M10X40 | 4 |
| (13) | 703050001 | LOCKNUT M10 | 4 |
| (14) | 7030500020 | LOCKNUT M16 | 1 |

BLADE MOUNT ASSEMBLY PARTS LIST



| ITEM | REF. NO. | DESCRIPTION | QTY | REMARK |
|------|------------------|----------------------|-----|---------|
| (1) | 4030100348 | BLADE MOUNT WELDMENT | 1 | STSRC48 |
| | 4030100352 | | | STSRC60 |
| (2) | 4020000194 | BLADE BOLT | 2 | |
| (3) | 4290200015 | CUTTER BLADE | 2 | STSRC48 |
| | 4290200013 | | | STSRC60 |
| (4) | 4010000163 | BLADE PLAIN WASHER | 2 | |
| (5) | 7030500021 | LOCKNUT M27 | 2 | |
| (6) | BCL120.00.00.007 | FLAT KEY 10X8X16.5 | 2 | |

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The use of any equipment, including this one, involves the potential risk of injury. Apart from any warranty claim that might be presented for a claimed defect in material or workmanship of the product, you accept and assume full responsibility for any and all injuries, damages (both economic and non-economic), and losses of any type, which may occur, and you fully and forever release and discharge Titan, its insurers, employees, officers, directors, associates, and agents from any and all claims, demands, damages, rights of action, or causes of action, present or future, whether the same be known or unknown, anticipated, or unanticipated, resulting from or arising out of the use of said equipment.

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