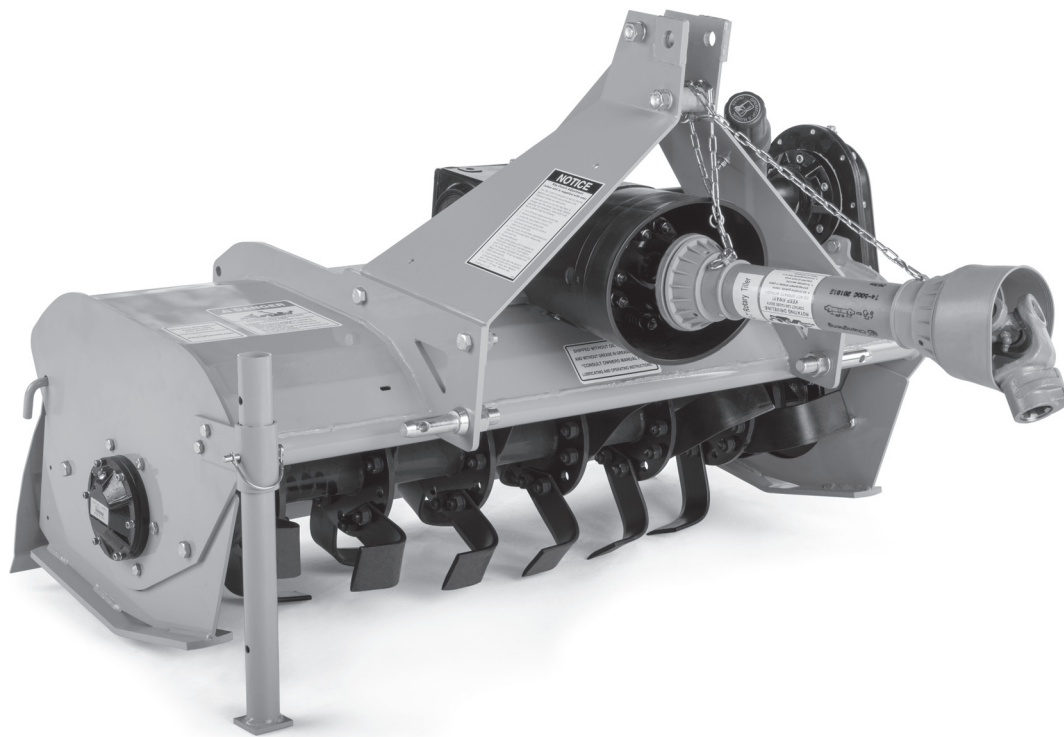




# COUNTYLINE<sup>®</sup>

## ROTARY TILLER

OPERATION AND ASSEMBLY MANUAL  
RT4LDCL



**For more information and questions, please contact  
Customer Service: 1-844-338-8721**

# INTRODUCTION

## TO THE OWNER:

Read this manual before operating your implement. Keep this manual handy for reference. Require all operators to read this manual carefully and become acquainted with all adjustments and operating procedures before attempting to operate the equipment.

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 standards required for safe and satisfactory operation.

## CUSTOMER INFORMATION

Name \_\_\_\_\_

Purchased From \_\_\_\_\_

Date Purchased \_\_\_\_\_

Model \_\_\_\_\_

Serial # \_\_\_\_\_

## PREPARATION CHECKLIST

Verify the following before operating your Rotary Tiller

1. Implement is completely assembled.
2. Gearbox is filled with oil and checked for possible leaks.
3. All fittings are lubricated.
4. All shields in place and in good condition.
5. All fasteners torqued to specifications in torque chart. (Pg. 27)
6. Check PTO driveline. Make sure it is the correct length to operate rotary tiller with intended tractor.
7. All decals in place and legible.
8. Overall condition good (i.e. paint, welds)
9. Operator's manual has been given to owner and the owner has been instructed on the safe and proper use of the Rotary Tiller.

For more information and questions, please contact

Customer Service:

1-844-338-8721

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# SAFETY

***Safety is a primary concern in the design and manufacturing of our products. Unfortunately, our efforts to provide safe equipment can be eliminated 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.***

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.

## TRAINING

Safety instructions are important! Read all attachments and power unit manuals; follow all safety rules and safety decal information. (Replacement manuals and safety decals are available by calling 1-844-338-8721) 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, please contact customer service at 1-844-338-8721.

Know your controls and how to stop the engine and implement 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, ears, and head; wear respirator or filter mask where appropriate.

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

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

Before servicing equipment, 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 servicing equipment.

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 servicing equipment. Inspect chain or rubber guards 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 of 20% of tractor and equipment weight must be on the tractor's front wheels when implements 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.

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

Make sure shields and guards 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.

## STARTING AND STOPPING

Check the tractor master shield over the PTO (power take off) stub shaft. Make sure it is in good condition and fastened securely to the tractor. Purchase a new shield if old shield is damaged or missing.

All tractors that are not equipped with a "live" power takeoff (PTO) must be equipped with an over-running PTO clutch. These are available through most farm equipment stores.

**NOTE:** The addition of an over-running PTO clutch may change the length of the PTO driveline required. Be sure to refer to the

**(Safety continued on next page)**

# SAFETY

## ***(Safety continued from previous page)***

instructions on the PTO driveline installation. Be sure that the driveline system guarding is adequate. Implement operating power is supplied from the tractor PTO. Refer to the tractor manual for PTO engagement and disengagement instructions.

Understand how to stop tractor and implement quickly in case of an emergency.

When engaging the PTO, the engine RPM should always be at idle speed. Once engaged and ready to start, raise PTO speed to 540-RPM and maintain throughout operation.

## **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 of 20% of tractor and equipment weight must be on the tractor’s front wheels when implements 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 implement. 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.

When encountering rough terrain during transport, reduce tractor speed to minimize the horizontal movement of implement.

Stabilizer bars should be used during transport to reduce lateral movement of implement

## **OPERATION**

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

servicing equipment.

Never discharge directly toward people, animals, or property.

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

This implement is 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 satisfactory artificial light.

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

Never allow riders on power unit or implement.

Operate tractor PTO at 540 RPM. Do not exceed

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.

Do not operate PTO during transport.

Look down and to the rear and make sure area is clear before operating in reverse (reverse operation is not recommended).

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.

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 lower.

## MAINTENANCE

Before detaching 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 driveline, raise Tiller, 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, 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, ears, and head; wear respirator or filter mask where appropriate.

Make sure implement is properly secured, adjusted, and in safe 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 underneath 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 procedures.

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

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

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

## 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.

## EQUIPMENT SAFETY GUIDELINES

Safety of the operator and bystanders is one of the main concerns in design and development. However, accidents always occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions and insist those working with you, follow them.

*In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with a safety shield removed. However, equipment should never be operated in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use.*

*Replace any safety sign that is illegible or missing. Location of such safety signs are indicated in this manual.*

*Never use alcoholic beverages or drugs that can hinder alertness or coordination while operating this equipment. Consult your doctor about operating this machine while taking prescription medications.*

*Under no circumstances should children under the age of 18 be allowed to operate this*

**(Safety continued on next page)**

# SAFETY

## **(Safety continued from previous page)**

equipment. Do not allow persons to operate or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and how it works. Review the safety instructions with all users annually.

This equipment can be dangerous to children and persons unfamiliar with its operation. The operator should be a responsible, properly trained and physically able person familiar with farm machinery and trained in this equipment's operations.

Use a tractor equipped with a Roll Over Protective System and seat belts. (ROPS)

Never exceed the limits of a piece of machinery. If its ability to perform a job safely, is in question, DON'T TRY IT.

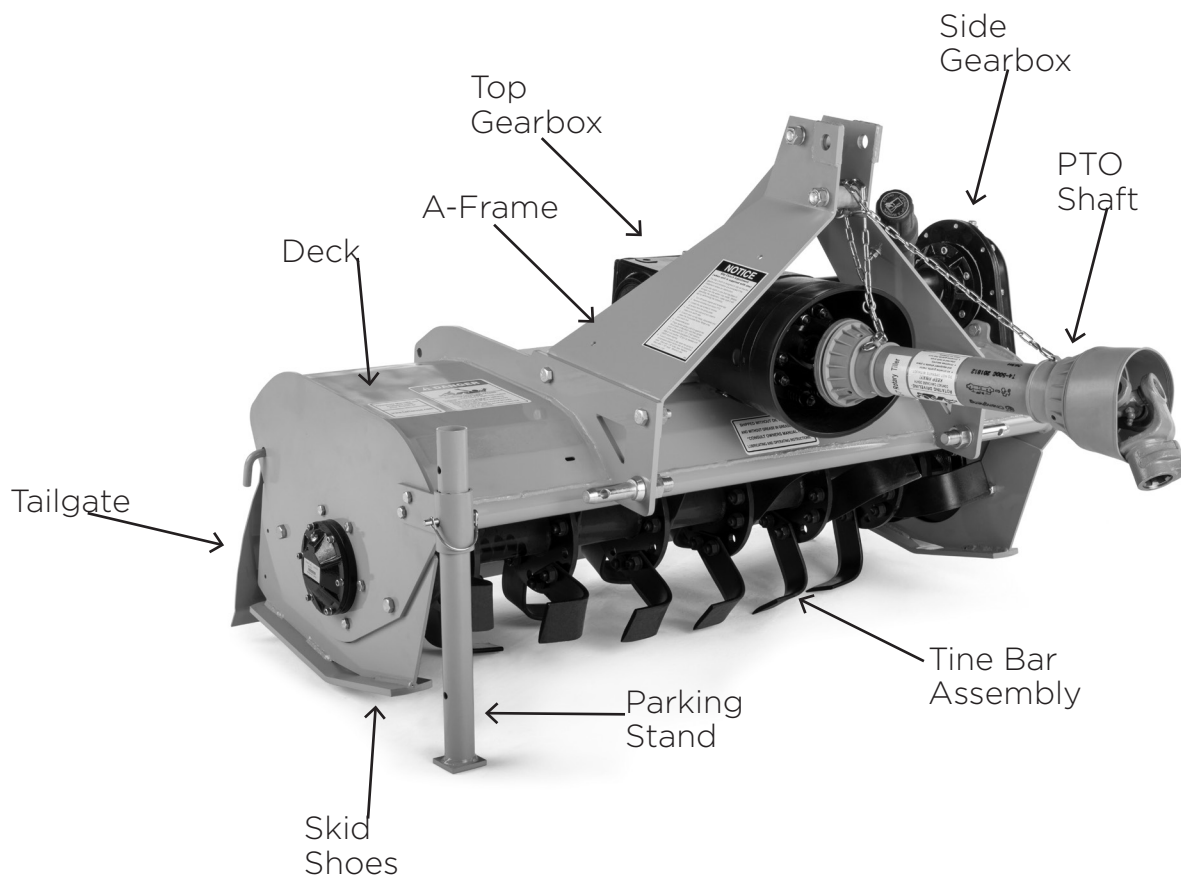
Do not modify the equipment in any way. Unauthorized modification could result in serious injury or death and may impair the function and life of the equipment.

In addition to the design and the confirmation of this implement, including safety signs and safety equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of the machine. Refer also to safety messages and operation instruction in each of the appropriate sections of the tractor and implement manuals. Heed the safety signs affixed to both the tractor and implement.

## GENERAL DESCRIPTION

Your Rotary Tiller has been carefully designed for cultivating and stirring up soil for gardens, food plots and other tillage needs. This manual is provided to give you the necessary operation and maintenance instructions for keeping your rotary tiller 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. If any assistance or additional information is needed, contact us at 1-844-338-8721.

### Major Components



### NOTICE

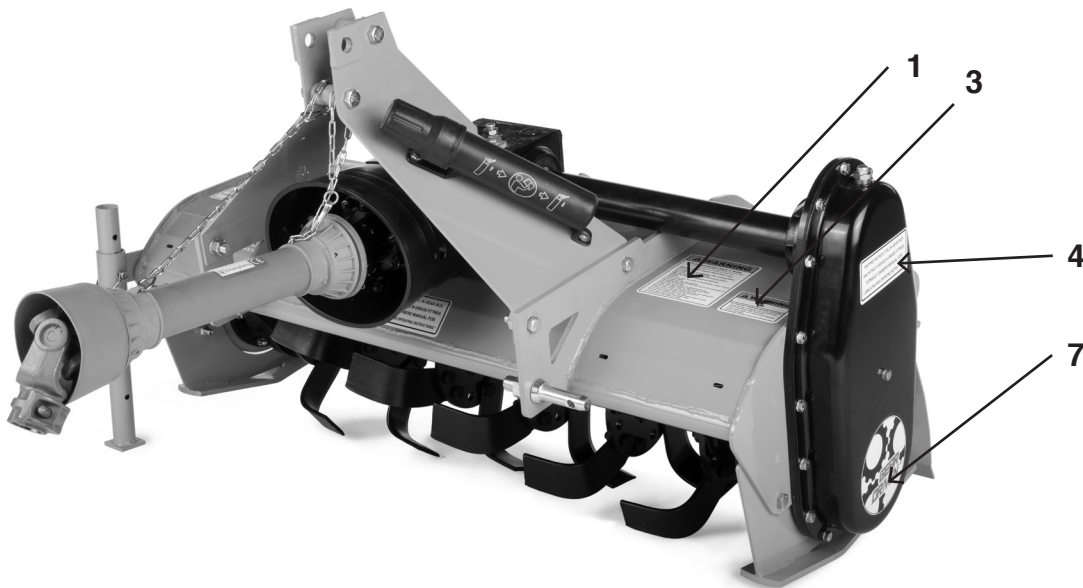
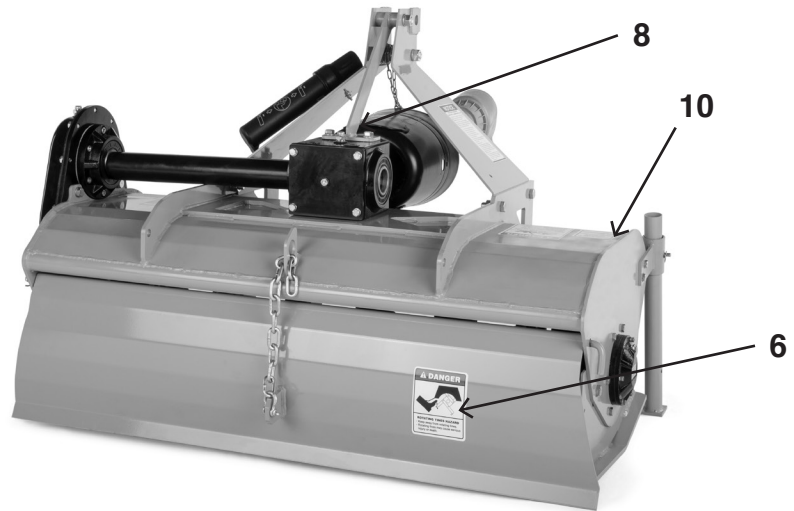
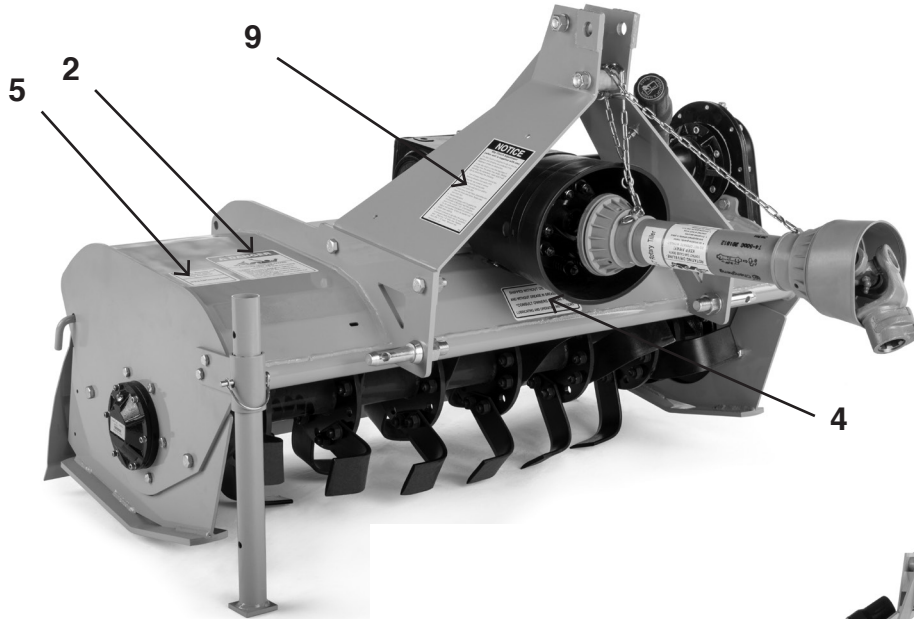
All information, illustrations, and specifications in this manual are based on the latest information available at the time of publication. Because we are always striving to improve our products, the images could differ slightly from actual equipment. Specifications are subject to change without notice. We also reserve the right to make changes at any time without notice.

# SAFETY AND INSTRUCTIONAL DECALS

## SAFETY and INSTRUCTIONAL DECALS

**⚠ ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED! ⚠**

**Replace Immediately if Damaged!**



## SAFETY and INSTRUCTIONAL DECALS

**⚠ ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED! ⚠**

**Replace Immediately if Damaged!**

**⚠ WARNING**

**To prevent serious injury or death:**  
*Sino lee ingles, pida ayuda a alguien que si lo lee para que le traduzca las medidas de seguridad.*

- Read and understand Operator's Manual before using. Review annually.
- Do not permit riders on the tractor or tiller, including children
- Do not allow children to operate tiller.
- Operate only with guards installed and in good condition.
- Keep away from moving parts.
- Operate only with tractor equipped with ROPS and seatbelts.
- Use extra care when operating on rough terrain or when rocks or debris are present.
- Do not operate in the raised position.
- Stop engine, lower tiller, set brake and wait for all moving parts to stop before dismounting.
- Support tiller securely before working beneath unit.
- Transport with clean reflectors, SMV and working lights as required by federal, state, and local laws.
- Keep yourself, others, and clothing away from the rotating PTO.
- Operate only at a safe distance from bystanders.
- Do not stand between tractor and tiller.
- Be careful on uneven terrain. Decrease speed when turning.
- Locate underground utility lines before tiling.
- Do not exceed a safe transport speed.

ITEM 1

**⚠ DANGER**



**ROTATING TINES HAZARD**

- Keep away from rotating tines.
- Rotating tines may cause serious injury or death.

ITEM 6

LIFT HERE 

ITEM 8

**NOTICE**

**Slip Clutch Adjustment (when unit is supplied with one)**

The Slip Clutch is designed to slip so that the gearbox and driveline are protected if the implement strikes an obstruction. A new slip clutch or one that has been in storage over the winter may seize. Before operating the implement, make sure it will slip by performing the following:

1. Turn off tractor engine and remove key.
2. Remove driveline from tractor PTO.
3. Loosen the cap screws to remove all tension from the spring plate.
4. Hold clutch hub solid and turn shaft to make sure clutch slips.
5. If clutch does not slip freely, dissembled and clean the thrust plate faces, flange yoke, and clutch hub.
6. Reassemble clutch.
7. Finger tighten spring until it is against the thrust plate of the clutch and then tighten each of the nuts by 1 1/2 - 2 full rotations. Try the Implement and watch for clutch to slip. Adjust nuts another 1/2 turn as needed until clutch stops slipping.
8. If clutch continues to slip when the spring is compressed check friction disc for excessive wear. Discs are 1/8" when new. Replace discs after 1/16" wear. Minimum disc thickness is 1/16".

305L

ITEM 9

**⚠ DANGER**



**ROTATING DRIVELINE HAZARD  
KEEPAWAY**

To prevent serious injury or death from rotating driveline:

- Keep all guards in place when operating.
- Operate only at 540 RPM.
- Keep hands, feet, hair and clothing away from moving parts.
- Do not operate without driveline securely attached at both ends.
- Do not operate without driveline shields that turn freely on driveline.

ITEM 2

Operators Manuals are available from your dealer, or

[www.tarterusa.com](http://www.tarterusa.com)

ITEM 5

**⚠ WARNING**



**TO PREVENT SERIOUS INJURY OR DEATH**

- Keep hands and body out of hitch area when attaching tiller to tractor.
- Keep body clear of crush point between tractor and tiller.

ITEM 3

SHIPPED WITHOUT OIL IN GEAR BOX AND WITHOUT GREASE IN GREASE FITTINGS.

"CONSULT OWNERS MANUAL FOR LUBRICATING AND OPERATING INSTRUCTIONS."

ITEM 4



ITEM 7

**TARTER**



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000000 A30 ABC

1-800-RED-GATE  
TARTERUSA.COM

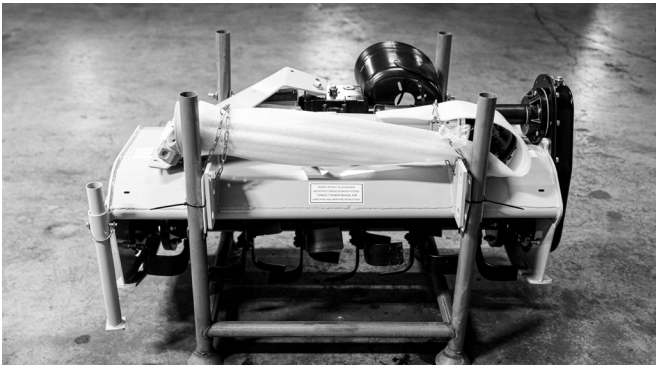
ITEM 10

# ASSEMBLY

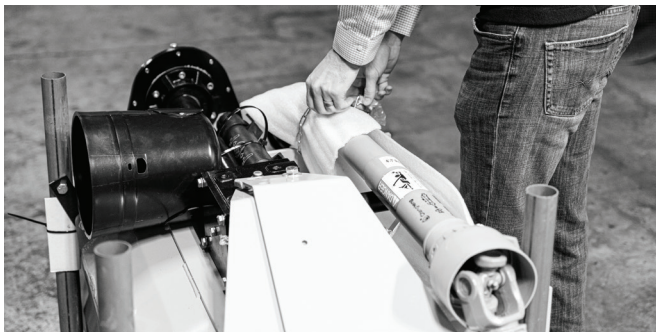
## TOOLS REQUIRED

- TIN SNIPS
- SOCKETS AND WRENCHES: 9/16", 3/4", 15/16", AND 1-1/4". (Impact wrench is preferred)

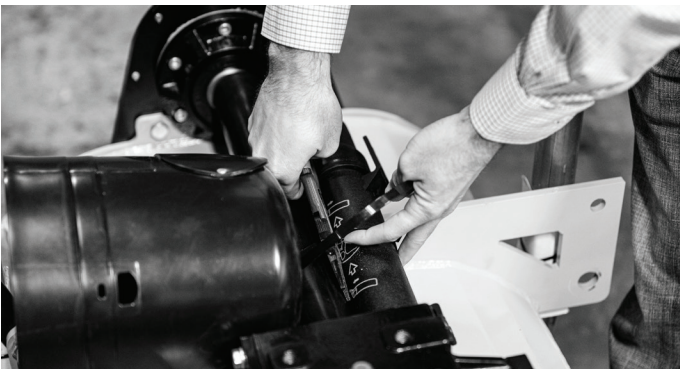
1. With rotary tiller still in the rack, set it on a level spot for assembly.



2. Remove the PTO shaft, leaving the chains attached to the PTO, and set aside.



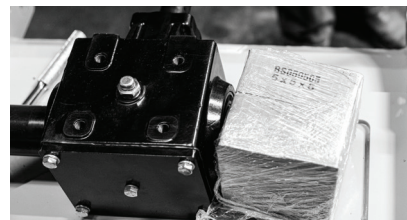
3. Cut the zip ties to the PTO shield and manual holder and set aside.



4. Using a 3/4" wrench, remove the bolt that holds the A-Arms on. Discard nut and bolt.



5. Remove the hardware box and set aside.



6. Using a lift strap, place it around the top gearbox. Raise slightly to relieve pressure from the shipping rack.

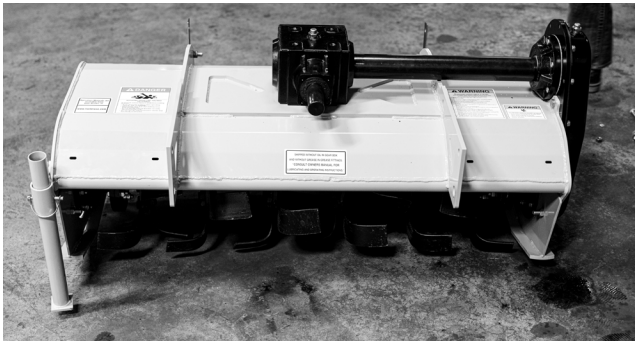


7. With pressure relieved from the shipping rack, using a 3/4" wrench and socket, remove hardware on the shipping rack. Discard the hardware.

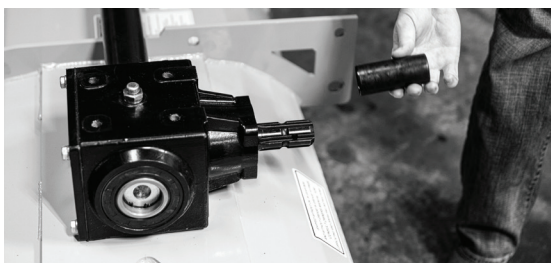


8. Remove the tiller from the shipping rack and set on level ground.

*\* Remove and discard brackets and hardware.*



9. Remove and discard plastic shield on the gearbox shaft.



10. Using the following:

- 1/4"-20 bolts
- 1/4" flat washers

Attach the slip clutch shield to the gearbox.



11. Using the following:

- 1/2"- 13 x 3/4" hex bolts
- Split lock washers

Attach the top link support to the top of the gearbox hand tighten.



12. Using the following:

- 5/8" x 1-3/4" hex bolt
- Split lock washers

Attach the A-Arm on the inside of the deck brace. Repeat on the opposite side, hand tighten.



13. Using the following:

- 5/8" x 3-1/2" hex bolt
- Lock washer
- Nut

Attach the right and left A-Arms to the top link support.



# ASSEMBLY

14. Using the following:

- 5/8" x 3-1/2" hex bolt
- Lock washer
- Nut

Place the quick attach spacer in the lower holes of the A-Arm.

*\*Tighten all hardware, using 15/16" wrench and socket, on the Lift Arms and Top Link.*



15. Using the following:

- 1/4"-20 x 3/4" hex bolt
- Nylon Lock Nut
- Flat washer

Remove the cap on the manual holder. Using a 7/16" wrench and socket, attach the manual holder to the left lift Arm. Tighten and place the cap back on the manual holder.



16. Place the chain and shackle on the back of the tailgate and set to desired setting.



17. Place the lift pins the lower holes of the lug. Use an adjustable wrench and large screw driver to tighten.



18. Using bolt, split lock washer, and nut, provided with PTO Shaft, attach the PTO Shaft to the input shaft of the gearbox.

19. Using 3/4" wrench and socket, tighten through the access hole. (Angled ratchet wrench)



20. Attach chain on the gearbox end of the PTO shaft.



21. Assembly of your Rotary Tiller is now complete.

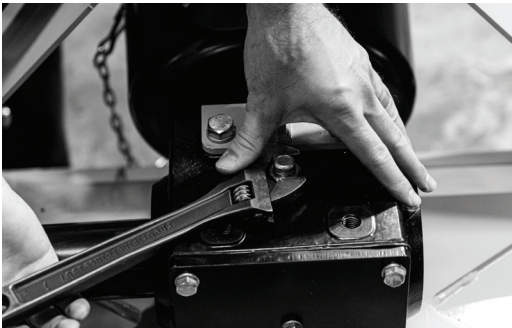
## BEFORE PUTTING YOUR ROTARY TILLER INTO SERVICE

**IMPORTANT:** This tiller was shipped without oil in the gearboxes and without grease in the the grease fittings. UNIT MUST BE SERVICED BEFORE USE.

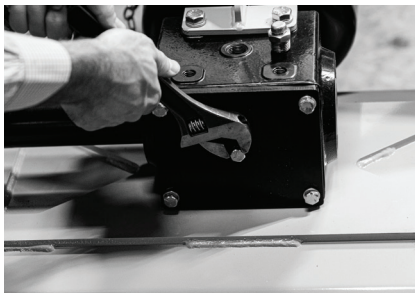
**NOTE:** Fill the gearboxes using 85W90 gear oil. For all grease fittings use TYPE/Grade II tube grease.

1. Please ensure that your Rotary Tiller is secure and level.

2. Using a 7/8" wrench, remove the vented pipe plug located on front of the gearbox, above the PTO shaft.



3. Using a 9/16" wrench remove the check plug, located on the back of the gearbox.



4. Fill the gearbox, the front, using specified gear oil, until oil begins to overflow from the check plug hole in the rear. (Holds approx. 1-1/2 quarts.)



5. Replace and tighten the check plug.



**DO NOT** overfill gearbox. This could cause damage to oil seals and can cause permanent damage to the gearbox. This issue will not be covered under warranty.

6. Replace and tighten the 1/2" vented pipe plug and clean away any excess oil.

7. Using a 7/8" wrench, remove the pipe plug located at the top of the side gearbox and using a 9/16" wrench, remove the check plug located on the side of the side gearbox.



8. Fill the side gearbox using specified gear oil until the oil begins to overflow from the check plug hole. (Holds approx. 2-1/2 quarts.)



**DO NOT** overfill gearbox. This could cause damage to oil seals and can cause permanent damage to the gearbox. This issue will not be covered under warranty.

9. Replace and tighten the vented pipe plug and the check plug. Clean away any excess oil.

# ASSEMBLY

10. Grease the grease fitting on the outboard hub.



11. Grease the two grease fittings on the PTO universal joints.



12. Grease the two grease fittings on the PTO safety shield.



13. Separate the PTO shaft and grease the inner surface.

## Final Inspection and Adjustments

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

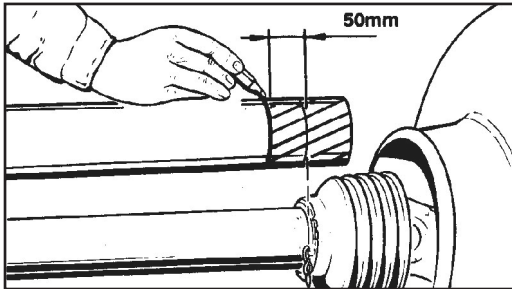
Attach rotary tiller to tractor and check tiller-to-tractor driveline telescoping length clearance.

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

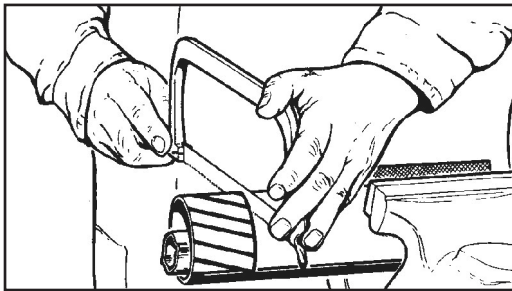
## MODIFY PTO DRIVELINE

### • Modify PTO Driveline (If Necessary)

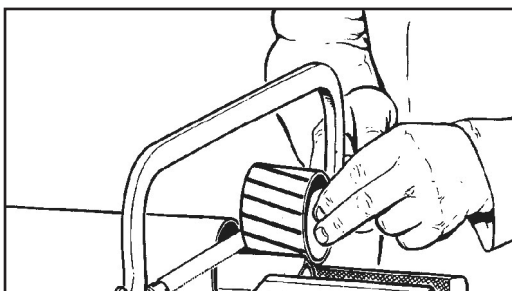
1. To adjust the length, hold the half-shafts next to each other in the shortest working position and mark them.



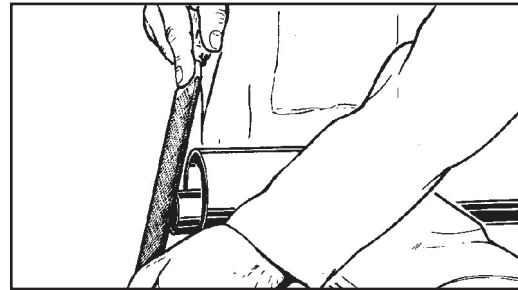
2. Shorten inner and outer guard tubes equally.



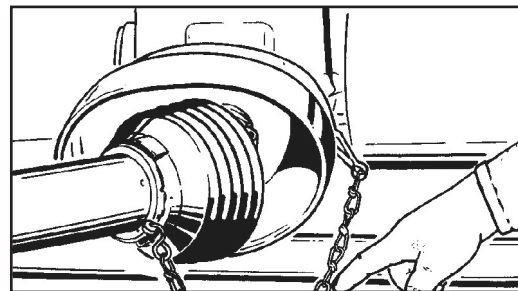
3. Shorten inner and outer sliding profiles by the same length as the guard tubes.



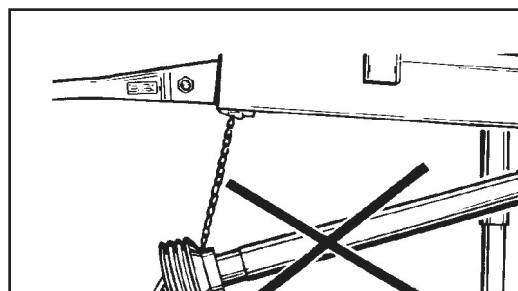
4. Round off all sharp edges and remove burrs. Grease sliding profiles. No other changes may be made to PTO drive shaft and guard.



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



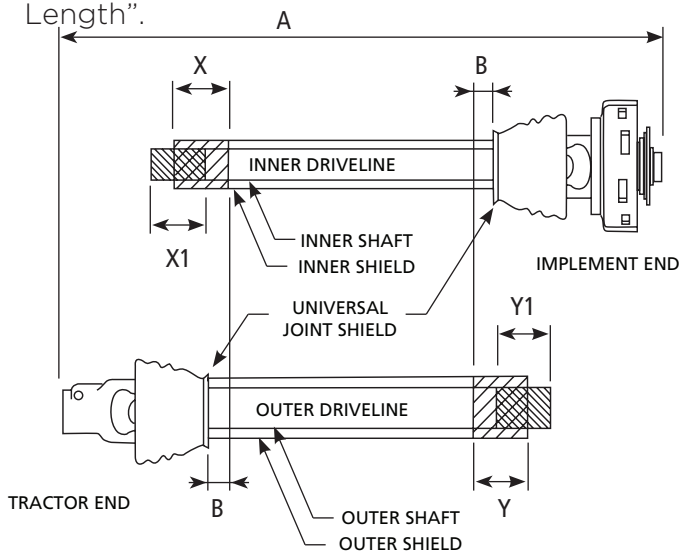
6. The PTO drive shaft must not be suspended from the chains!



## SIZING THE PTO SHAFT

Refer to Figure 1

1. Detach the driveline from tractor PTO shaft and pull outer and inner drivelines apart.
2. Reattach outer driveline to tractor PTO shaft. Pull on inner and outer drivelines to ensure universal joints are properly secured.
3. Hold inner and outer drivelines parallel to each other:
  - a. Measure 1" ("B" dimension) back from outer driveline universal joint shield and make a mark at this location on the inner driveline shield.
  - b. Measure 1" ("B" dimension) back from inner driveline universal joint shield and make a mark at this location on the outer driveline shield.
4. Remove driveline from tractor and gearbox shafts.
5. Measure from end of inner shield to scribed mark ("X" dimension). Cut off inner shield at the mark. Cut same amount off the inner shaft ("X1" dimension).
6. Measure from end of outer shield to scribed mark ("Y" dimension). Cut off outer shield at the mark. Cut same amount off the outer shaft ("Y1" dimension).
7. Remove all burrs.
8. Continue with "Check Driveline Maximum Length".



**Figure 1** - Driveline Shortening

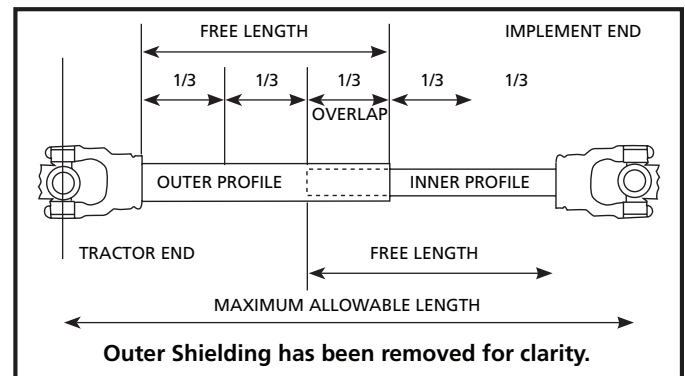
## CHECK DRIVELINE MAXIMUM LENGTH

Refer to Figure 2

Make sure driveline's collapsible length is acceptable.

The driveline maximum allowable length must, when fully extended, have a minimum overlap of the profile tubes by not less than 1/3 the free length with both inner and outer profile tubes being of equal length.

1. Apply multi-purpose grease to the inside of the outer shaft and reassemble the driveline.
2. Assemble the two driveline profiles together with 1/3 of the profile tubes overlapping as shown below. Once assembled, measure and record the maximum allowable length for future reference.

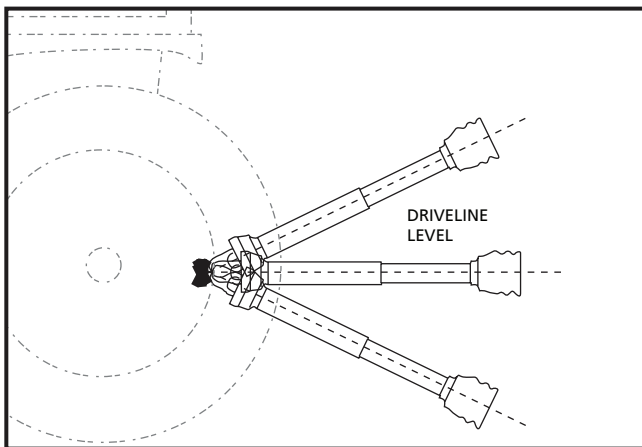


**Figure 2** - Driveline Maximum Extended Length

3. Attach inner driveline yoke to the tiller's gearbox shaft. Attach outer driveline yoke to the tractor's PTO shaft.
4. Move yoke ends of driveline back and forth to insure they are secured to the tractor and tiller shafts. Reattach any end that is loose.
 

**IMPORTANT:** Small chains are supplied with the driveline. They must be attached to the inner and outer driveline shields and to the tiller and tractor to restrict shield rotation.
5. Hook driveline safety chain on the tractor end of driveline to tiller frame. Re-latch safety chain to the driveline shield.

6. Hook driveline safety chain on the Rotary Tiller end of driveline to the tiller frame. Re-latch safety chain to driveline shield.
7. Start tractor and raise Rotary Tiller just enough to remove support blocks.
8. Slowly engage tractor hydraulic 3-point control lever to lower the tiller while checking for sufficient drawbar clearance. Move drawbar in, aside or remove if required.
9. Raise and lower implement to find maximum extended driveline length. Check to make certain the driveline does not exceed maximum allowable length recorded in step 2.
10. If needed, set tractor 3-point lift height to stop driveline from exceeding maximum allowable length.
11. Continue with “Check Driveline Maximum Angle” below.



**Figure 3** - Check Driveline Maximum Angle

## CHECK DRIVELINE MAXIMUM ANGLE

Refer to Figure 3

**IMPORTANT:** To avoid premature driveline breakdown, do not exceed an angle of 25° up or down with the driveline while driveline is rotating. If needed, set tractor 3-point left lever to limit driveline angle at a maximum of 25° up.

1. Raise and lower implement to find maximum driveline angle. Check to make certain the driveline does not exceed 25° up or down.
2. If needed, set tractor 3-point lift height to keep driveline from exceeding 25° up.

## OPERATING INSTRUCTIONS

1. Before each use, perform all necessary maintenance described in maintenance section on this page.
2. Read, understand, and follow the safety information pertaining to training, preparation, starting and stopping, operation, transportation, maintenance and storage at the beginning of this manual.
3. With the rotary tiller positioned on level ground, adjust the tractor lift arms so that when lifted, the rotor bar remains parallel to the ground.
4. With the rotary tiller attached to the tractor, raise and support the tiller with suitable blocks. Adjust the skids, located on the sides of the tiller. The adjustment bolts for both right and left sides should be positioned in the same adjustment hole. This allows the tiller to till the same depth on each side. Adjust the back plate with regulating chain,



Never attempt to adjust the rotary tiller while the tractor is running.

### WARNING

until the desired mulching effect is found.

5. Raise the tiller and remove the blocks.
6. With the tractor at idle RPM and the tiller lifted off of the ground, engage PTO and slowly advance throttle to 540 PTO RPM. **NOTE:** Rotary tiller is designed to run at 540 PTO RPM only.
7. Select a low gear for the tractor and begin to move forward. Tractor ground speed is to be controlled by gear selection only and not engine speed. As the tractor moves forward, slowly lower the tiller down. Allow the tiller tines to gradually engage the ground. **IMPORTANT:** Do not allow the tractor engine or rotary tiller to bog down or stall. This causes undue wear and tear on the tiller and tractor. If this continues to happen reduce ground speed and raise tilling depth of rotary

tiller. Never attempt to remove objects from the rotor bar until the tractor has been shut down and the tiller tines have completely stopped.

**IMPORTANT:** Never travel at a fast ground speed while using the tiller, as this could damage it. Never attempt to turn the tractor or travel in reverse with the PTO engaged and the tiller in the ground. Always raise the tiller out of the ground when backing up or attempting to turn. Failure to do so may cause damage to the tiller.

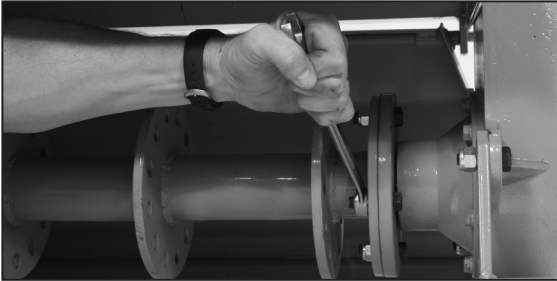
8. After each use clean all debris from the tiller tines. Replace any missing or illegible safety decals. Inspect for any damaged or worn parts and replace before next use. Store rotary tiller in a dry environment.

## MAINTENANCE

1. Periodically check and maintain proper gear oil level.
2. Every 8 hours, grease: (1) outboard hub, (2) PTO shaft universal joints, (3) PTO shaft safety shield and (4) PTO telescoping surface. **NOTE:** Use only a grade Type II tube grease. Do not grease the slip clutch assembly.
3. Before each use check to make sure all safety shields are installed and working properly.
4. Check tiller tines for cracks and breaks before every use.
5. Periodically check all nuts and bolts to ensure they are tight and secure.
6. Periodically loosen torque spring bolts and allow slip clutch to slip for approximately two (2) revolutions. Loosen the bolts until the springs lose contact with the flange yoke. This ensures that the slip clutch is not in a "locked" position.
7. Make sure that the clutch slips.
8. To retighten the slip clutch, tighten the torque spring bolts until the nut makes contact with the flange yoke and further tighten one and a (1 1/2) half turns. While this is a good starting point, further adjustments may need to be made based on soil conditions. **NOTE:** Do not over or under tighten slip clutch assembly or damage may occur.

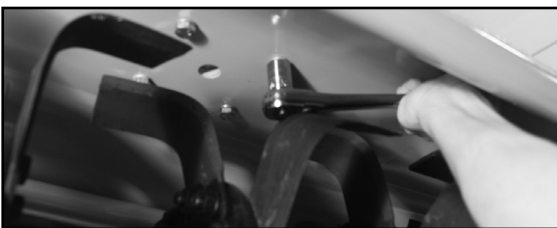
# REVERSING TILLER TINE DIRECTION

1. Detach tiller from tractor.
2. Make sure tiller is securely blocked and level.
3. Remove PTO shaft from tiller.
4. The tines must be reversed on the tiller before reverse operation.



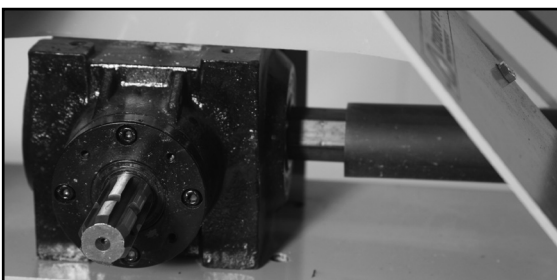
5. Remove four (4) bolts in each end of tine carrier
6. Carefully remove tine bar assembly and turn 180° and place in front of the tiller. Before reattaching the tines, remove gearbox..

**WARNING**  **Tine bar assembly is heavy and contains sharp edges. Handle carefully!**



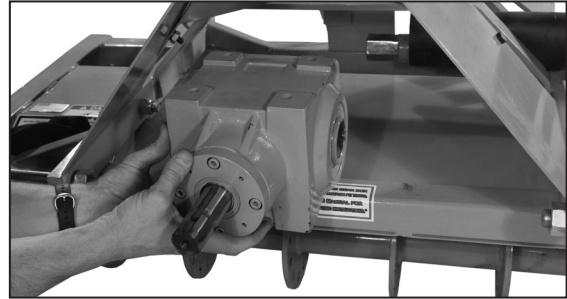
7. Loosen and remove a total of (6) bolts, (2) on top of gear box and (4) underneath.

**CAUTION**  **Gearbox is extremely heavy. Handle with care.**

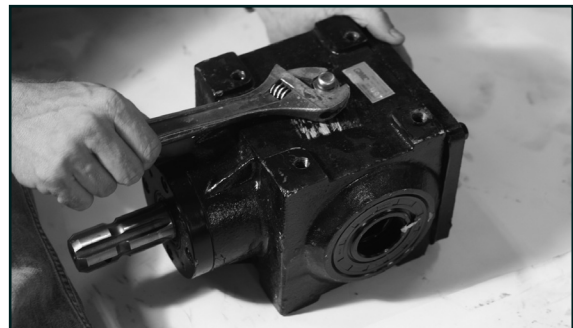


8. Slide gearbox to left approximately 5". Side keyshaft should drop out of gearbox on right hand side.

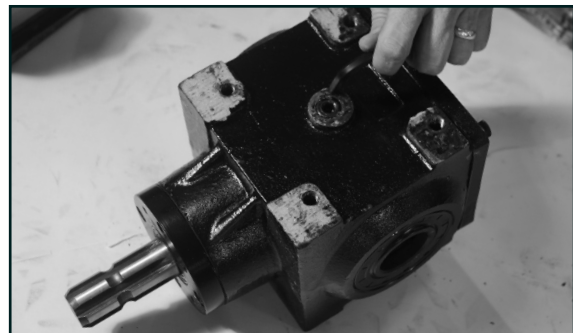
**NOTE:** If keyshaft does not come out of gearbox, simply slide keyshaft out of side gearbox first and then remove it from main gearbox.



9. Slide gearbox forward and out.



10. Remove fill plug from top of gear box.

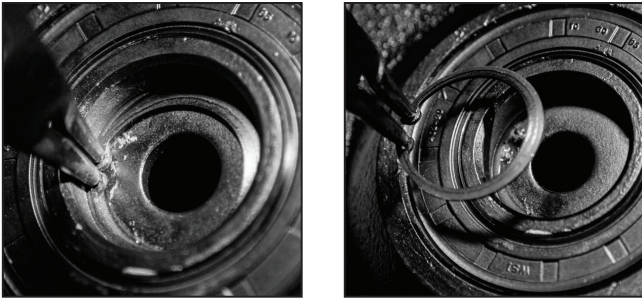


11. Remove flat plug from bottom of gear box. Switch the fill plug from top of gearbox to bottom and flat plug from bottom to top.

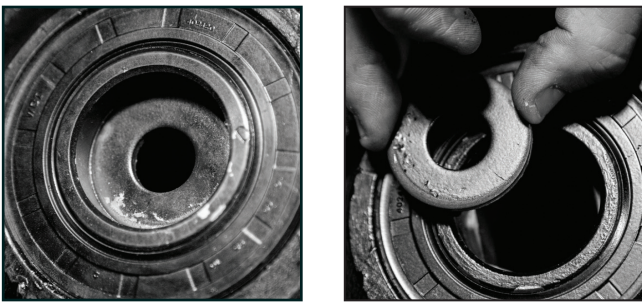


# REVERSING TILLER TINE DIRECTION

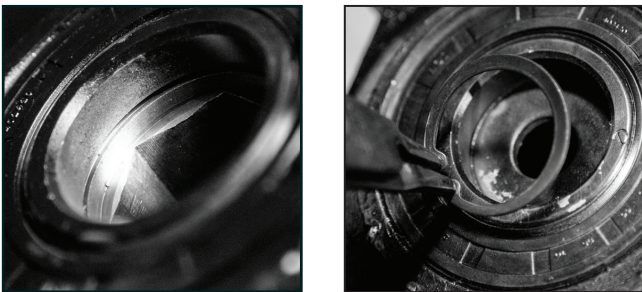
12. On the side opposite where key shaft was inserted, find washer held in by snap ring.



13. Using snap ring pliers, carefully remove snap ring.

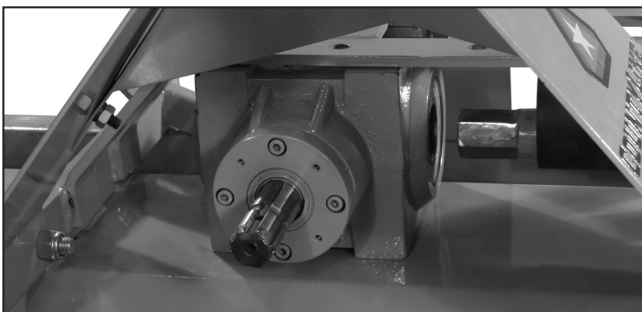


14. Remove washer from key shaft hole as well.



15. Put washer and snap ring back into the hole where the key shaft was just removed.

16. Flip gearbox over and re-insert into frame.



17. Slide key shaft into the now opened key shaft hole on opposite side of the gearbox.

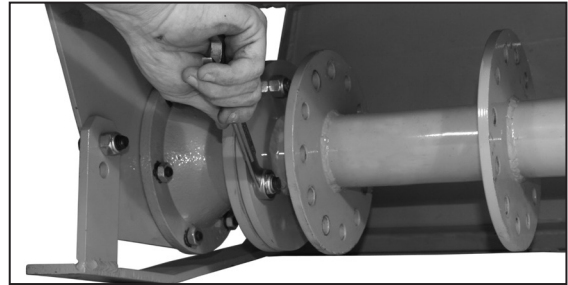
18. Slide gearbox back to center of tiller.

19. Reinsert 6 bolts (2 top, 4 bottom).

  
**WARNING**

**Do not tighten any of the six gearbox bolts until all six have been threaded and started, then tighten.**

20. Once key shaft is successfully reinserted and all 6 bolts are started by hand, tighten all 6 bolts on gearbox.



21. Carefully reattach the tine bar assembly to each hub.

  
**WARNING**

**Tine bar assembly is heavy and contains sharp edges. Handle carefully!**

**NOTE:** Instructions made with tines partially removed for instructional clarity only.

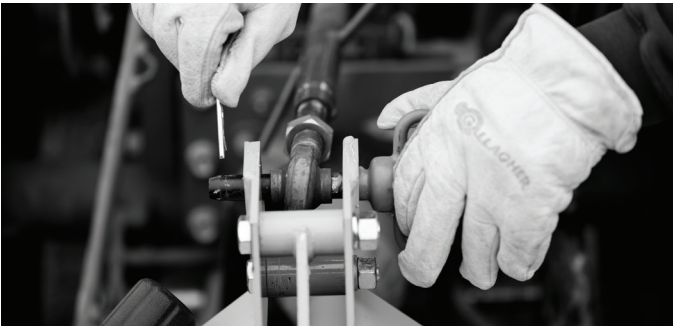
21. Your tiller unit should now turn and till with reverse direction.

## ATTACHING TO A TRACTOR

1. Place tiller and tractor on level ground.
2. Back tractor into position by lining up lift arms and Category I pins on the tiller. Attach lift arms to Category I pins and secure with lynch pins.



3. Attach top link using Category I lift pin and lynch pin.



4. Attach PTO driveline and secure anti-rotation chains.
5. Once everything is securely attached, raise tiller off the ground and adjust the top link so the tiller sets level from front to back.
6. Determine if the PTO shaft needs to be shortened.

**IMPORTANT:** A driveline that is too long to fit between tractor and tiller will bottom out causing structural damage to the tractor and tiller.

7. Always check driveline collapsible length during initial setup, when connecting to a different tractor and when alternating between using a quick hitch and a standard 3-point hitch. More than one driveline may be required to fit all applications.

8. Make sure driveline is properly installed and level before checking driveline collapsible length.
9. With driveline level, measure 1" back from universal joint shield to end of outer driveline shield as shown in. If measurement is less than 1", then shorten driveline using instructions provided in section "Sizing The PTO Shaft".

## STORAGE

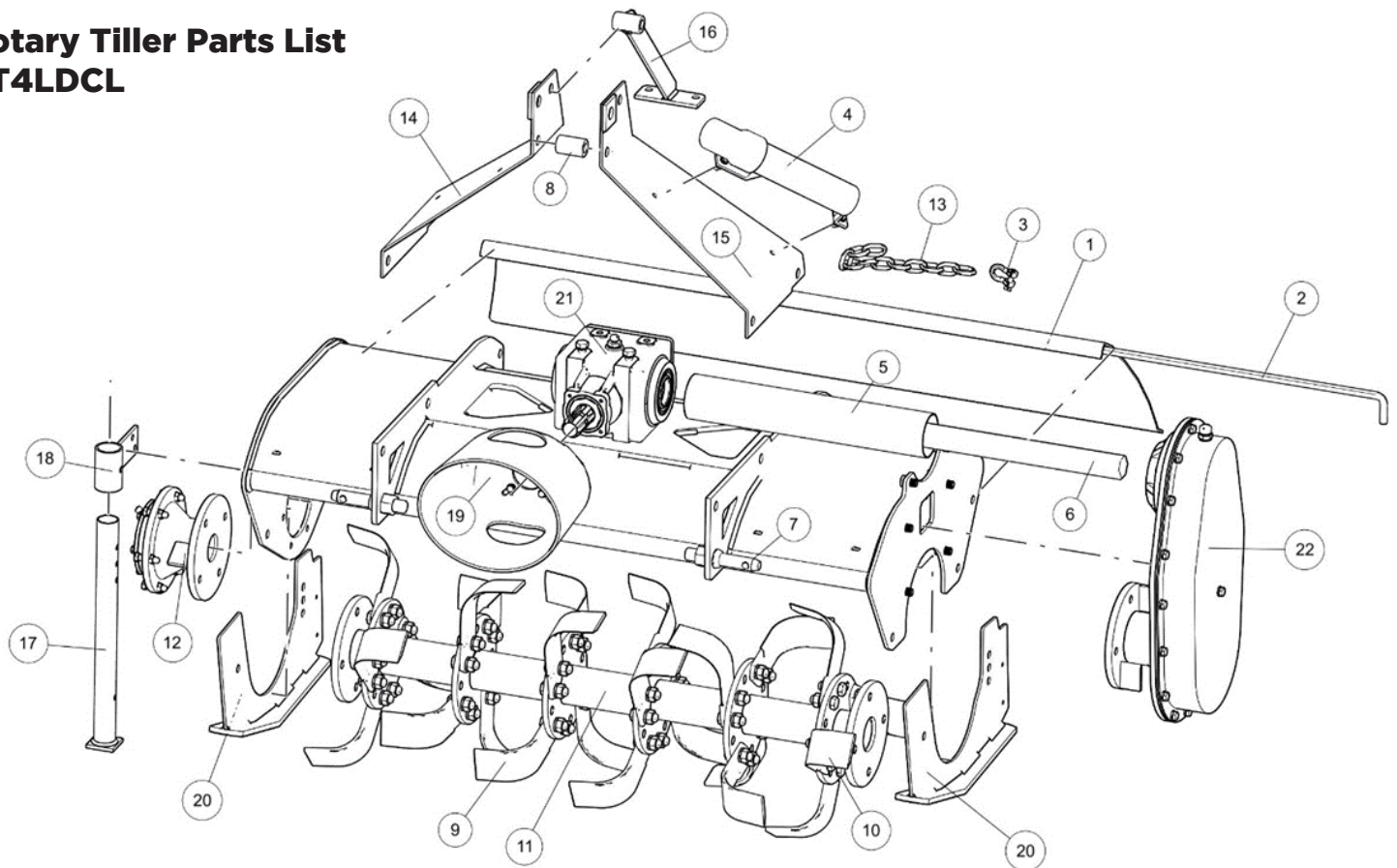
**IMPORTANT:** When the unit is going to be stored for an extended amount of time please perform the following steps to keep the oil seals from deteriorating.

- Spray shaft extensions with a suitable dry film or similar preservative
- Pack grease around seal to prevent drying and cracking
- Fill the gearbox with enough oil so that it covers the top of the input seal
- Remove the breather and replace with an airtight plug
- Remember to drain the oil back to the correct level before using again

# PRODUCT SPECIFICATIONS

Recommended Tractor PTO Horsepower	15-35
Weight	470 lbs.
Working Depth	7"
Working Width	46.5"
Overall Width	51.5"
Hitch	Limited Cat 1/ Quick Hitch Compatible
Driveline	540 RPM Slip Clutch Protection
Number of Flanges on Rotor	6
Number of Tines per Flange	4
Rotor Rotation	Reversible (FWD/ REV)
Rotor Shaft Speed	211 rpm @ 540 rpm PTO
Skid Shoes	Adjustable (0.4", 1.4", 2.4")
Top Gearbox Construction	Cast Iron Housing, Precision Forged Steel Gears
Side Drive Construction	Formed Steel Housing, Hardened Steel Gears
Top Gearbox Lubrication	EP 80-90W gear oil
Side Drive Lubrication	EP 80-90W gear oil

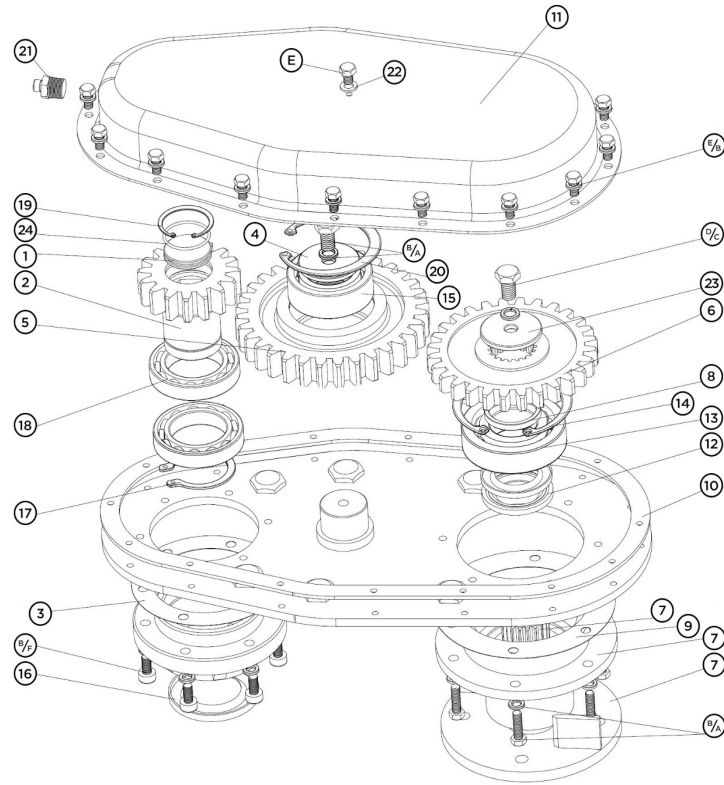
## Rotary Tiller Parts List RT4LDCL



Item	Part Number	Description
1	9000270	Rear Guard Assembly (orange) (4')
2	9000271	Rear Guard Steel Hinge w/ Hardware (orange) (4')
3	P-P1827	1/4" Chain Shackles
4	P-P1870	Tiller Manual Holder w/ Hardware
5	P-P1824	Driveline Shaft Guard (4')
6	P-P1825	Hexagon Drive Shaft (4')
7	CIL	Tiller Category 1 Lift Pin (4',5',6')
8	9000272	Top Link Spacer (orange)
9	9000012	Right Hand Tine Package w/ Hardware
10	9000013	Left Hand Tine Package w/ hardware
11	9000134	4' Light Duty Assembled Rotor w/ Tines
12	9000019	Tiller Outboard Hub Assembly Assembly w/ Hardware
13	1000783	Rear Tailgate Chain (11 Links)
14	9000273	RT4LD RH A-ARM (orange)
15	9000274	RT4LD LH A-ARM (orange)
16	9000275	RT4LD Hitch Support Weldment (orange)
17	9000276	Tiller Parking Stand Weldment (orange)
18	9000277	Tiller Parking Stand Mount Weldment (orange)
19	36-040	Black Gearbox Shield
20	9000278	RT4LD Universal Skid Shoe (orange)
21	2000169	RT4LD Top Gearbox
22	2000170	RT4LD Side Gearbox
Not Shown	4-30QDTL	Tiller PTO shaft Assembly
Not Shown	I12TPTO	Implement Half Tiller PTO Shaft
Not Shown	T12TPTO	Tractor Half Tiller PTO Shaft
Not Shown	FF0.3	PTO Shaft Friction Discs (2pk)

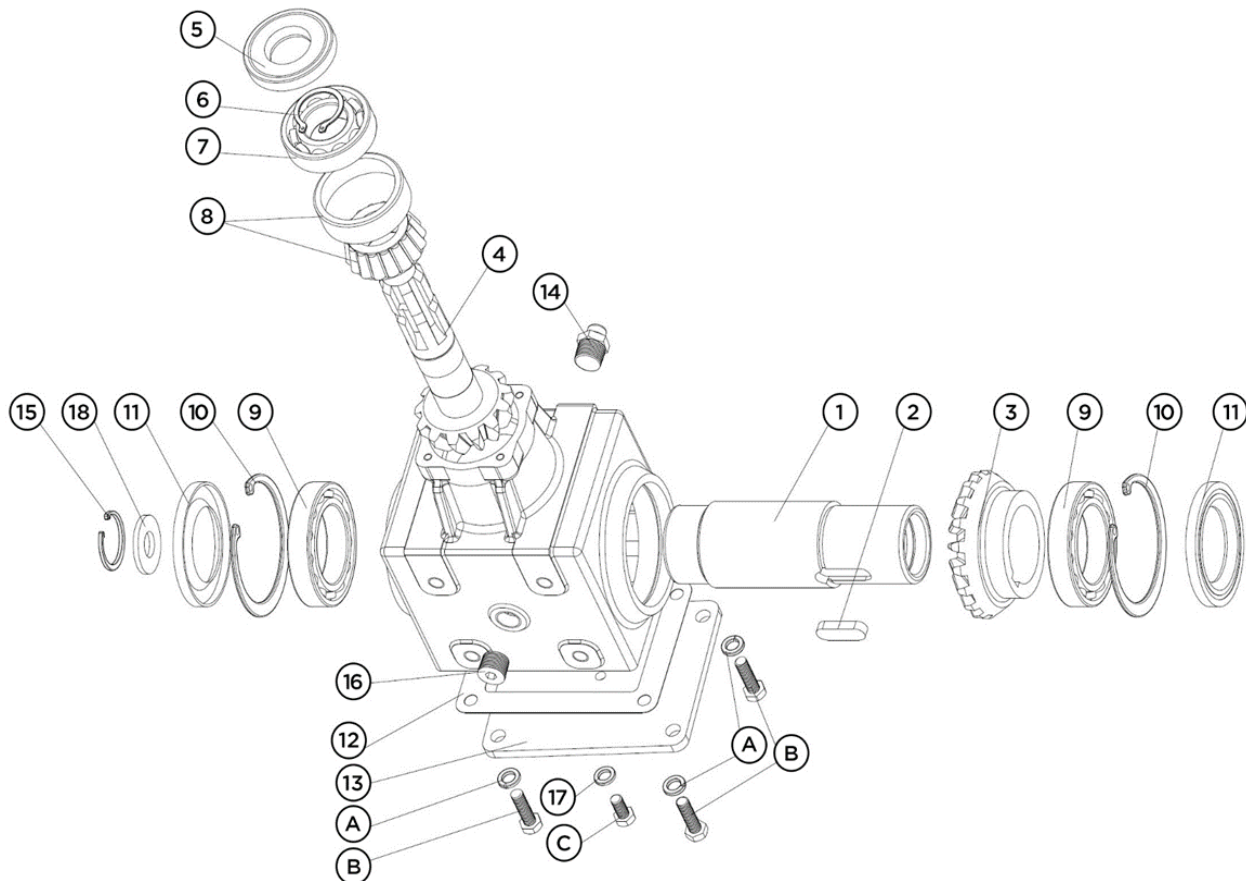
# PARTS

## RT4LDCL Side Gearbox 2000170



Item Number	Part Number	Description
1	H-C0245	Tiller Agriculture Side Input Shaft Sealed Cap
2	H-C0221	Tiller Side Gearbox Gear Shaft-Input
3	2000016	Tiller Side Gearbox Input Gasket 0.5mm
4	H-C0253	*416M* Tiller Ring
5	2000179	Center Idle Gear (H-C8008-02)
6	H-C0224	Tiller Side Gearbox Gear-Output
7	2000180	Lower Output Shaft assembly
8	H-C0252	*417M* Tiller Side Gearbox Spacer 2
9	2000018	Tiller Side Gearbox Output Gasket 0.5mm
10	2000019	Main Seal Ring
11	2000181	Side Gearbox Cover (H-C0215)
12	S-211	RTS Output Shaft Seal
13	S-133	Bearing
14	S-410	Tiller Side Agriculture Output Shaft Retaining Ring
15	S-126	Tiller Ball Bearing
16	S-212	Tiller Seal
17	S-411	Tiller Side Agriculture Output Shaft Retaining Ring
18	S-124	Agriculture Tiller Output Shaft Bearing
19	S-412	Tiller Side Agriculture Output Shaft Retaining Ring
20	2000182	Retaining Ring 90mm (S-417)
21	S-502	Tiller Agriculture Side Output Shaft Plug Pressure Relief
22	S-509	Seal Ring
23	H-C0255	Washer
24	2000183	Spacer ring (S-513)
A	Non-Service	3/8"-16 x 1" bolt
B	Non-Service	3/8" Washer
C	Non-Service	1/2"-13 x 1-1/4" Bolt
D	Non-Service	1/2" lock washer
E	Non-Service	3/8-16 x 5/8" bolt
F	Non-Service	3/8"-16 x 1" socket cap screw

## RT4LDCL Top Gearbox 2000169



Item	Part Number	Description
1	2000173	Output Shaft (H-C8007-01)
2	S-122	Agriculture Top Tiller Output Shaft Key
3	2000174	Output Gear (H-C8007-02)
4	2000175	Input Gear Shaft (H-C8007-04)
5	2000176	Input Shaft Seal 72x35x11 (S-218)
6	S-403	Agriculture Tiller Top Output Shaft Retaining Ring
7	S-102	Output Shaft Bearing
8	S-123	Agriculture Top Tiller Output Shaft Bearing 33207
9	S-124	Agriculture Tiller Output Shaft Bearing
10	S-406	Tiller Agriculture Output Shaft Retaining Ring
11	S-209	Tiller Agriculture Top Output Shaft Seal
12	2000177	Rear Cover Gasket (H-C8007-05)
13	2000178	Rear Cover (H-C8007-06)
14	S-502	Tiller Agriculture Side Output Shaft Plug Pressure Relief
15	S-407	Standard Tiller Top Output Retaining Ring
16	S-504	Tiller Agriculture Top Output Shaft Pipe Plug-Inner 6f
17	S-509	Seal Ring
18	1G150-45	Standard Tiller Top Agriculture Output Shaft Washer
A	Non-Service	3/8" Split Lock Washer
B	Non-Service	3/8"-16 x 1" bolt
C	Non-Service	3/8"-16 x 5/8" bolt

# TORQUE SPECIFICATIONS

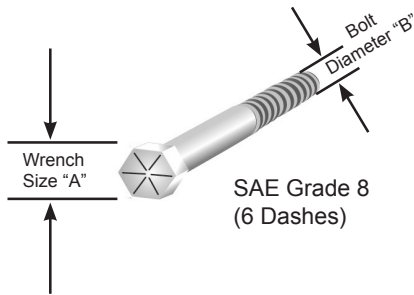
## AMERICAN Bolt Head Markings



SAE Grade 2  
(No Dashes)



SAE Grade 5  
(3 Dashes)

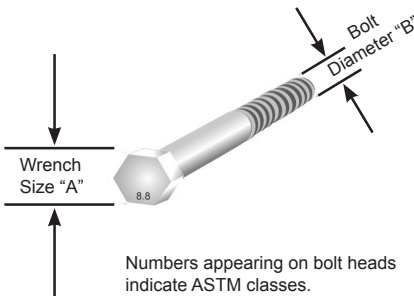


SAE Grade 8  
(6 Dashes)

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.

# TROUBLE SHOOTING

<b>PROBLEM</b>	<b>POSSIBLE CAUSE</b>	<b>POSSIBLE SOLUTION</b>
Cannot attach PTO shaft to the tractor	PTO shaft is too long, PTO yoke attachment pin is seized.	Cut PTO shaft per OM instructions, lubricate attachment pin.
Tillage depth insufficient	Tractor is holding tiller up, Tractor has insufficient power, skid shoes preventing lowering, tines are worn, ground is too hard.	Adjust lift arm settings on tractor, increase tractor PTO speed, adjust tiller skidshoes, replace tines, make multiple passes.
Soil is not tilled fine enough	Ground speed too fast, PTO speed too slow, tines assembled incorrectly.	Slow tractor ground speed, Increase tractor PTO speed, check tine assembly.
Driveline vibrates	Universal joint is worn, debris wrapped around tine bar, driveline is at extreme angle.	Replace universal joint/cross bearing, remove debris, lower tiller and adjust tractor lift stop.
Constant abnormal gearbox noise	Low oil level, worn gears, gearbox bearings.	Check oil level, replace gears/gearbox, replace bearings.
Tiller makes intermittent/abnormal noise	Tines are loose, gearbox has damaged tooth, debris is wrapped around tine bar.	Tighten tines, replace damaged gear, clear debris.
Gearbox is overheating	Oil level is low, gearbox needs service, ventplug is seized, tiller load is too great.	Check oil level, replace old oil, replace ventplug, reduce ground speed/tilling depth.
Oil Leaking from gearbox	Seals and or gaskets are damaged, gearbox is overfilled with oil.	Replace seals or gaskets, drain oil to correct level.
Rotor will not turn	Tractor PTO is not engaged, gear drive has damage, friction clutch not adjusted properly.	Engage tractor PTO, inspect and repair gears, reduce tiller load or adjust clutch.
Tiller shaking	Ground is compacted and or dry, debris entangled in tines	Make multiple passes with shorter tilling depth, irrigate soil, clear debris.
Rear tailgate impacts tines	Tailgate adjustment chain in wrong position.	Adjust tailgate adjustment chain to hold tailgate higher.

## MANUFACTURER'S LIMITED WARRANTY

Manufacturer warrants to the original purchaser that the purchased product is free from defects in material and workmanship for a period of one (1) year commencing on the date of original purchase, as evidenced by the original receipt, and will, at its option, repair, replace, or issue credit for any product or part found to be defective.

This limited warranty shall only apply if this product has been operated and maintained in accordance with the Operator's Manual furnished with the product, and has not been subject to misuse, abuse, commercial or industrial use, neglect, improper maintenance, alteration or accident, or which has been used for a purpose for which the product was not designed. Damage resulting from the installation or use of any part, accessory, or attachment not approved by manufacturer, for use with the product covered by the owner's manual, shall void the warranty as to any resulting damage.

This limited warranty is extended solely to the original purchaser of the product. Should the original purchaser sell or otherwise transfer this product to a third party, this warranty does not transfer to the third party in any manner.

### HOW TO MAKE A CLAIM:

To obtain warranty service through a local authorized retailer, a customer must present the following within thirty (30) days of product failure:

1. Proof of purchase within one (1) year of purchase date.
2. Photographs of or return of the actual product in question.
3. Photograph of UPC label

After receipt of the above information, if the product is alleged to be defective, manufacturer will process the claim and issue a Return Manufacturers Authorization number (RMA). Once an RMA number is issued, manufacturer will pick up the product from the authorized retailer and return to its facility for inspection. Manufacturer will replace, repair, or issue credit for any product, upon examination by manufacturer at manufacturer's facility, determined to be defective due to defects in material and workmanship.

For additional Warranty questions, please call 1-844-338-8721 for assistance.

**WARRANTY DISCLAIMER:**

This limited warranty is in lieu of, and manufacturer disclaims and excludes any express and implied warranties with respect to the product including, without limitation, merchantability and fitness for a particular purpose. No other express warranty, whether written or oral, given by any person or entity, including a retailer, with respect to any product, shall bind manufacturer.

Manufacturer's exclusive liability for breach of the limited warranty, as set forth above, on the product shall be to repair or replace the product within the warranty period in accordance with the terms of this limited warranty. The choice of remedy shall belong solely to manufacturer. In no event shall manufacturer be liable for any loss or damages of any other kind, whether direct, incidental, consequential including lost profits, exemplary, special or otherwise, including without limitation, expenses incurred for substitute or replacement product or for rental expenses to temporarily replace a warranted product.

Under no circumstance shall recovery, of any kind, be greater than the amount of the purchase price of the product purchased. Customer assumes all risk and liability for loss, damage, or injury to customer or customer's property and/or the property of others arising out of the misuse or inability to use the product.

**LEGAL RIGHTS:**

This limited warranty gives you specific legal rights, and you may also have other rights which may vary from state to state. Some states do not allow any limitation on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you.

**KEEP FOR YOUR RECORDS**

Record the model number, serial number, and the date of purchase with the original sales receipt. This information will be helpful to the retailer if parts or service are required.

**Model Number** \_\_\_\_\_

**Serial Number** \_\_\_\_\_

**Date of Purchase** \_\_\_\_\_

**Retailer** \_\_\_\_\_



For more information about  
Proposition 65, please visit;  
<https://www.p65warnings.ca.gov/>