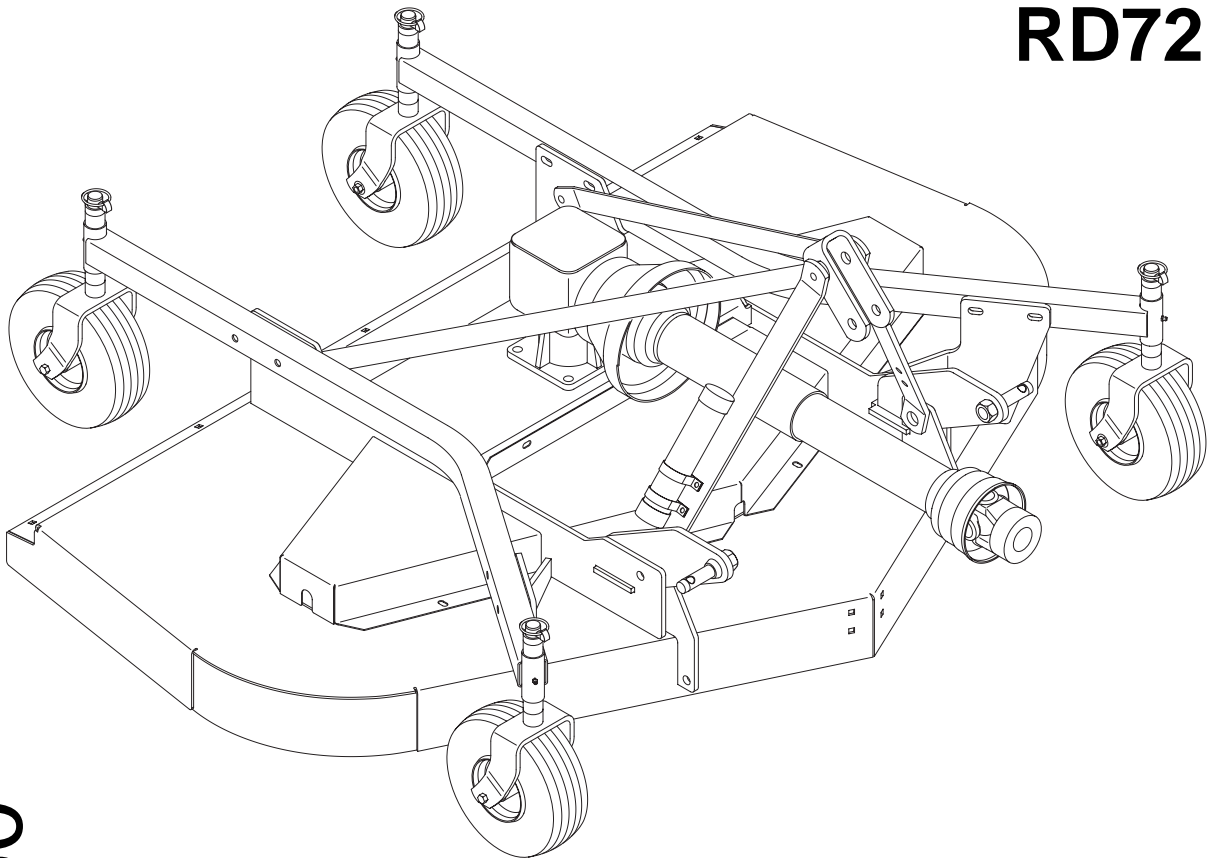


# WOODS HERITAGE REAR DISCHARGE MOWER

**RDC54**  
**RD60**  
**RD72**



**MAN0260**

Rev. 1/12/2007

**WOODS**<sup>®</sup>  
Tested. Proven. Unbeatable.

OPERATOR'S MANUAL

## TO THE DEALER:

Assembly and proper installation of this product is the responsibility of the Woods® dealer. Read manual instructions and safety rules. Make sure all items on the Dealer's Pre-Delivery and Delivery Check Lists in the Operator's Manual are completed before releasing equipment to the owner.

The dealer must complete the Product Registration included with the Operator's Manual. The customer must sign the registration which certifies that all Dealer Check List items have been completed. The dealer is to return the prepaid postage portion to Woods, give one copy to the customer, and retain one copy. **Failure to complete and return this card does not diminish customer's warranty rights.**

## TO THE OWNER:

Read this manual before operating your Woods equipment. The information presented will prepare you to do a better and safer job. Keep this manual handy for ready reference. Require all operators to read this manual carefully and become acquainted with all adjustment and operating procedures before attempting to operate. Replacement manuals can be obtained from your dealer. To locate your nearest dealer, check the Dealer Locator at [www.WoodsEquipment.com](http://www.WoodsEquipment.com), or in the United States and Canada call 1-800-319-6637.

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. Observe all safety information in this manual and safety decals on the equipment.

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

Use only genuine Woods service parts. Substitute parts will void the warranty and may not meet standards required for safe and satisfactory operation. Record the model number and serial number of your equipment in the spaces provided:

**Model:** \_\_\_\_\_ **Date of Purchase:** \_\_\_\_\_

**Serial Number: (see Safety Decal section for location)** \_\_\_\_\_

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

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



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



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



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.



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.

**WOODS®**

**ALITEC™**

**BMP®**

**CENTRAL FABRICATORS®**

**GANNON®**

**GILL®**

**WAIN-ROY®**

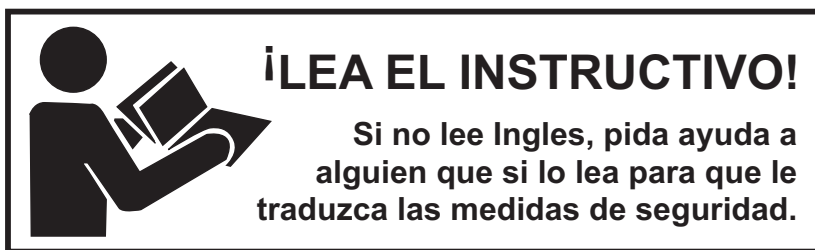
**WOODS®**

## 2 Introduction

Gen'l (Rev. 6/6/2005)

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This Operator's Manual should be regarded as part of the machine. Suppliers of both new and second-hand machines must make sure that this manual is provided with the machine.

# SPECIFICATIONS

<u>MODEL</u>	<u>RDC54</u>	<u>RD60</u>	<u>RD72</u>
3-Point Hitch	Limited Cat. 1	Cat. 1	Cat. 1
Cutting Width	54"	60"	72"
Cutting Height Range	1" - 4-1/2"	1" - 4-1/2"	1" - 4-1/2"
Operating Weight with Chain Shielding	417 lbs.	521 lbs.	624 lbs.
Blade Speed (feet per minute)	16,200	18,000	18,100
Blade Spindles	3	3	3
Number of Blades	3	3	3
Universal Drive Series	ASAE Cat. 3	ASAE Cat. 3	ASAE Cat. 3
Caster Wheels	3.5 x 4 x 10	3.5 x 4 x 10	3.5 x 4 x 10
Tractor PTO Speed RPM	540	540	540
Recommended Maximum Tractor Horsepower	15-25	25-35	25-35
Mower Frame Thickness	10 GA	8 GA	8 GA

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## GENERAL INFORMATION

The purpose of this manual is to assist you in operating and maintaining your mower. Read it carefully. It furnishes information and instructions that will help you achieve years of dependable performance. These instructions have been compiled from extensive field experience and engineering data. Some information may be general in nature, due to unknown and varying operating conditions. However, through experience and these instructions, you should be able to develop procedures suitable to your particular situation.

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

Throughout this manual, references are made to right and left directions. These are determined by standing behind the tractor facing the direction of forward travel.

 **WARNING**

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

# SAFETY RULES



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



Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by 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, judgement, and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

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

## **TRAINING**

- **Safety instructions are important! Read all attachment and power unit manuals; follow all safety rules and safety decal information. (Replacement manuals and safety decals are available from your dealer. To locate your nearest dealer, check the Dealer Locator at [www.WoodsEquipment.com](http://www.WoodsEquipment.com), or in the United States and Canada call 1-800-319-6637.) Failure to follow instructions or safety rules can result in serious injury or death.**
- **Know your controls and how to stop engine and attachment quickly in an emergency.**
- **If you do not understand any part of this manual and need assistance, see your dealer.**
- **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 entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.**
- **Make sure attachment is properly secured, adjusted, and in good operating condition.**

- **Make sure spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.**

- **Make sure driveline shield tether chains are attached to the tractor and equipment as shown in this manual. Replace if damaged or broken. Check that driveline guards rotate freely on driveline before putting equipment into service.**

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

- **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 systems in "locked up" position at all times.**

- **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 systems in "locked up" position at all times.**

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

- **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.**

- **A minimum 25% of tractor and equipment weight must be on the tractor front wheels when attachments are in transport position. Without this weight, tractor could tip over, causing personal injury or death. The weight may be attained with a loader. Weigh the tractor and equipment. Do not estimate.**

## **OPERATION**

- **Full chain shielding, designed to reduce the possibility of thrown objects, must be installed when operating in populated areas or other areas where thrown objects could injure people or damage property. If this machine is not equipped with full chain shielding, operation must be stopped when anyone comes within several hundred feet.**

# SAFETY RULES



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



- Inspect and clear area of stones, branches, or other hard objects that might be thrown, causing injury or damage.
- Never direct discharge toward people, animals, or property.
- Keep bystanders away from equipment.
- 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 requirements or have work done by a qualified dealer.
- Do not operate or transport equipment while under the influence of alcohol or drugs.
- Operate only in daylight or good artificial light.
- Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.
- Always comply with all state and local lighting and marking requirements.
- Never allow riders on power unit or attachment.
- Always sit in power unit seat when operating controls or starting engine. Securely fasten seat belt, place transmission in neutral, engage brake, and ensure all other controls are disengaged before starting power unit engine.
- Operate tractor PTO at 540 RPM. Do not exceed.
- Look down and to the rear and make sure area is clear before operating in reverse.
- Do not operate or transport on steep slopes.
- Do not stop, start, or change directions suddenly on slopes.
- Use extreme care and reduce ground speed on slopes and rough terrain.
- Watch for hidden hazards on the terrain during operation.
- Stop power unit and implement immediately upon striking an obstruction. Dismount power unit, using proper procedure. Inspect and repair any damage before resuming operation.

## TRANSPORTATION

- Use additional caution and reduce speed when under adverse surface conditions, turning, or on inclines.
- Do not operate PTO during transport.
- A minimum 25% of tractor and equipment weight must be on the tractor front wheels when attachments are in transport position. Without this weight, tractor could tip over, causing personal injury or death. The weight may be attained with a loader. Weigh the tractor and equipment. Do not estimate.
- Do not operate or transport on steep slopes.
- Do not operate or transport equipment while under the influence of alcohol or drugs.
- Always comply with all state and local lighting and marking requirements.
- Never allow riders on power unit or attachment.

## MAINTENANCE

- Before working underneath, carefully read Operator's Manual instructions, disconnect driveline, raise mower, securely block up all corners with jackstands, and check stability. Secure blocking prevents equipment from dropping due to hydraulic leak down, hydraulic system failures, or mechanical component failures.
- Do not modify or alter or permit anyone else to modify or alter the equipment or any of its components in any way.
- Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.
- Make sure attachment is properly secured, adjusted, and in good operating condition.
- Keep all persons away from operator control area while performing adjustments, service, or maintenance.
- Make certain all movement of equipment components has stopped before approaching for service.
- 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

# SAFETY RULES



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



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

- Frequently check blades. They should be sharp, free of nicks and cracks, and securely fastened.
- Do not handle blades with bare hands. Careless or improper handling may result in serious injury.
- Your dealer can supply genuine replacement blades. Substitute blades may not meet original equipment specifications and may be dangerous.
- Tighten all bolts, nuts, and screws to torque chart specifications. Check that all cotter pins are installed securely to ensure equipment is in a safe condition before putting unit into service.

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

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

- Wear gloves when installing belt. Be careful to prevent fingers from being caught between belt and pulley.

- Use care when installing or removing belt from spring-loaded idler. Springs store energy when extended and, if released suddenly, can cause personal injury.

## STORAGE

- Follow manual instructions for storage.

- Keep children and bystanders away from storage area.

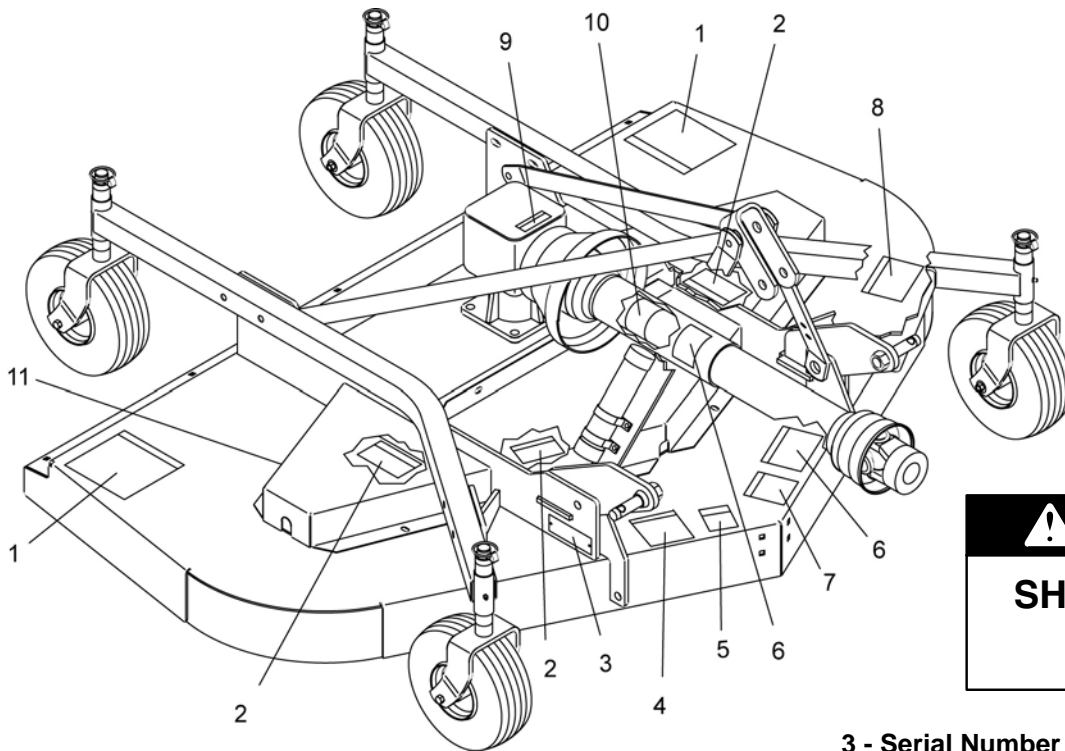




# SAFETY & INSTRUCTIONAL DECALS



**ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**  
**Replace Immediately If Damaged!**



2 - 18867

**⚠ DANGER**

**SHIELD MISSING**

DO NOT OPERATE  
PUT SHIELD ON

18867-B

11 - 20106 - Rear Reflector (RD60 & RD72 Only)

1 - 15503

**⚠ DANGER**

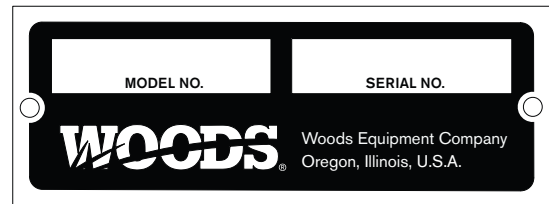
**ROTATING BLADES AND  
THROWN OBJECTS**

- Do not put hands or feet under or into mower when engine is running.
- Before mowing, clear area of objects that may be thrown by blade.
- Keep bystanders away.
- Keep guards in place and in good condition.

**BLADE CONTACT OR THROWN OBJECTS CAN  
CAUSE SERIOUS INJURY OR DEATH.**

15503-C

3 - Serial Number Plate



4 - 1003751

**⚠ WARNING**

**CRUSHING AND PINCHING HAZARD**

- Be extremely careful handling various parts of the machine. They are heavy and hands, fingers, feet, and other body parts could be crushed or pinched between tractor and implement.
- Operate tractor controls from tractor seat only.
- Do not stand between tractor and implement when tractor is in gear.
- Make sure parking brake is engaged before going between tractor and implement.
- Stand clear of machine while in operation or when it is being raised or lowered.

**FAILURE TO FOLLOW THESE  
INSTRUCTIONS COULD RESULT IN  
SERIOUS INJURY OR DEATH.**

1003751-A





# SAFETY & INSTRUCTIONAL DECALS

## ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

### Replace Immediately If Damaged!



**⚠ WARNING**

**DO NOT EXCEED PTO SPEED OF  
540 RPM**


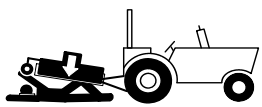
PTO speeds higher than 540 RPM can cause  
equipment failure and personal injury.

18866-D

5 - 18866

8 - 18865

**⚠ WARNING**

**FALLING OFF CAN RESULT IN BEING RUN OVER.**

- Tractor must be equipped with ROPS (or ROPS CAB) and seat belt. Keep foldable ROPS systems in "locked up" position at all times.
- Buckle Up! Keep seat belt securely fastened.
- Allow no riders.

**RAISED EQUIPMENT CAN DROP AND CRUSH.**

- Before working underneath, follow all instructions and safety rules in operator's manual and securely block up all corners of equipment with jack stands.
- Securely blocking prevents equipment dropping from hydraulic leak-down, hydraulic system failures or mechanical component failures.

**FALLING OFF OR FAILING TO BLOCK SECURELY CAN RESULT IN SERIOUS INJURY OR DEATH.**

18865-C

**⚠ DANGER**



**ROTATING DRIVELINE  
CONTACT CAN CAUSE DEATH  
KEEP AWAY!**

**DO NOT OPERATE WITHOUT -**

- All driveline guards, tractor and equipment shields in place
- Drivelines securely attached at both ends
- Driveline guards that turn freely on driveline

18864-C

6 - 18864

9 - 1004114

**⚠ DANGER**

If shaft connection is visible, shield  
is missing. Replace shield before  
operating equipment.

1004114

10 - 33347

**⚠ DANGER**



**GUARD MISSING.  
DO NOT OPERATE.**

**⚠ DANGER**



**GUARD MISSING.  
DO NOT OPERATE.**

33347E

**⚠ DANGER**

7 - 1002423

**⚠ WARNING**

**TO AVOID SERIOUS INJURY OR DEATH:**

- Read Operator's Manual before operating, servicing or repairing equipment. Follow all safety rules and instructions. (Manuals are available from your selling dealer.)
- Never allow riders.
- Keep bystanders away from equipment during operation.
- Operate from tractor seat only.
- Keep all shields in place and in good condition.
- Lower equipment to ground, stop engine, remove key and set brake before dismounting tractor.
- Never allow children or untrained persons to operate equipment.
- Do not transport towed or semi-mounted units over 20 MPH.

**FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.**

1002423-B

### BE CAREFUL!

Use a clean, damp cloth to clean safety decals. Avoid spraying too close to decals when using a pressure washer; high-pressure water can enter through very small scratches or under edges of decals causing them to peel or come off.

Replacement safety decals can be ordered free from your Woods dealer. To locate your nearest dealer, check the Dealer Locator at [www.WoodsEquipment.com](http://www.WoodsEquipment.com), or in the United States and Canada call 1-800-319-6637.

# OPERATION

The operator is responsible for the safe operation of the mower. The operator must be properly trained. Operators should be familiar with the mower, the tractor, and all safety practices before starting operation. Read the safety rules and safety decals on page 5 through page 9.

This mower is designed for lawn and grass mowing. It is not designed for rough conditions or heavy weed mowing. It is equipped with suction type blades for best results in lawn mowing.

Recommended mowing speed for most conditions is from 2 to 5 mph.

## **! DANGER**

■ Full chain shielding, designed to reduce the possibility of thrown objects, must be installed when operating in populated areas or other areas where thrown objects could injure people or damage property. If this machine is not equipped with full chain shielding, operation must be stopped when anyone comes within several hundred feet.

## **! WARNING**

- Never allow children or untrained persons to operate equipment.
- Keep bystanders away from equipment.
- Make sure spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.
- Operate tractor PTO at 540 RPM. Do not exceed.
- Before working underneath, carefully read Operator's Manual instructions, disconnect driveline, raise mower, securely block up all corners with jackstands, and check stability. Secure blocking prevents equipment from dropping due to hydraulic leak down, hydraulic system failures, or mechanical component failures.
- Keep all persons away from operator control area while performing adjustments, service, or maintenance.

## **! CAUTION**

■ Stop power unit and implement immediately upon striking an obstruction. Dismount power unit,

using proper procedure. Inspect and repair any damage before resuming operation.

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

## Tractor Stability

### **! WARNING**

■ A minimum 25% of tractor and equipment weight must be on the tractor front wheels when attachments are in transport position. Without this weight, tractor could tip over, causing personal injury or death. The weight may be attained with a loader. Weigh the tractor and equipment. Do not estimate.

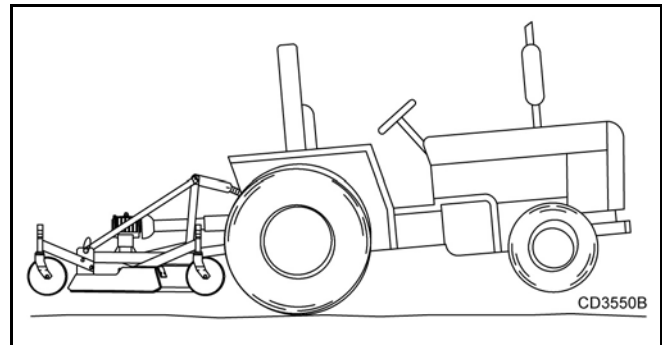


Figure 1. Tractor Stability

## Attach Mower to Tractor

### **! WARNING**

■ Make sure spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.

The standard 1-3/8" 6B-spline driveline with a QD yoke is used to connect the mower to the tractor.

1. Attach the mower hitch pins to the lower tractor lift arms and secure.
2. Attach tractor top link (1), Figure 2, to mower top link bracket attachment point (A). Connect the driveline to the tractor PTO shaft.
3. Attach tether chain to tractor drawbar (Figure 3).
4. Adjust the tractor lower 3-point arm anti-sway devices to prevent mower from swinging side to side during transport.

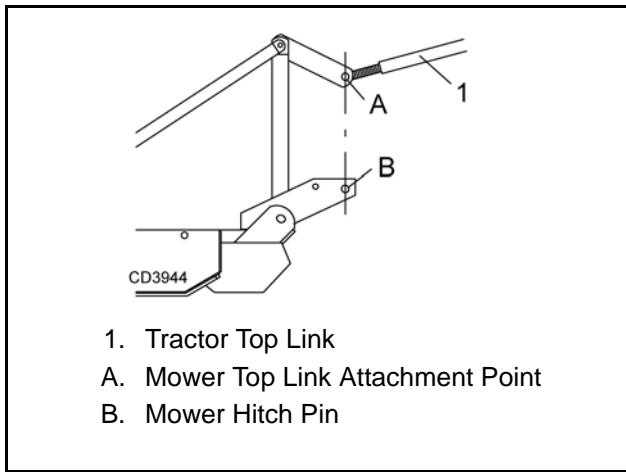


Figure 2. Attachment Points

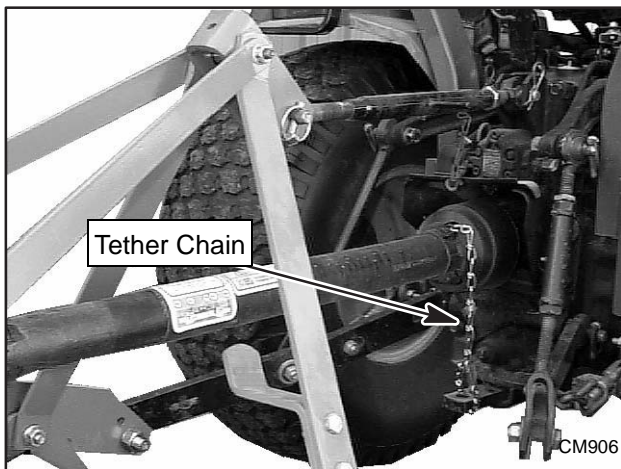


Figure 3. Attach Mower to Tractor

## Adjust Cutting Height

### **! WARNING**

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

### **IMPORTANT**

■ Avoid low cutting heights. Striking the ground with blades produces one of the most damaging shock loads a mower can encounter. Allowing blades to contact ground repeatedly will cause damage to mower and drive.

1. Level mower from side to side. Check by measuring distance from mower frame to the ground at each deck rail.
2. Verify that the same amount of spacers are under all caster arms.
3. Control cutting height by adjusting front and rear caster wheels.

4. To raise rear of mower, move caster adjustment spacers under rear caster arms.
5. To raise front of mower, move spacers under front caster wheel arms.

Table 1: Cutting Height Chart

Spacers Required Under Caster Arm Pivot Tube		
Cut Height	1/2" Spacer	1" Spacer
1"	0	0
1-1/2"	1	0
2"	0	1
2-1/2"	1	1
3"	0	2
3-1/2"	1	2
4"	0	3
4-1/2"	1	3

## Tractor Top Link Adjustment

When the cutting height is set, adjust tractor top link until mower top link attachment point (A), Figure 4, is aligned vertically with mower hitch pin (B). The front tires of the mower will lift off the ground before the rear tires when the unit is raised. This will allow the mower to follow the ground contour.

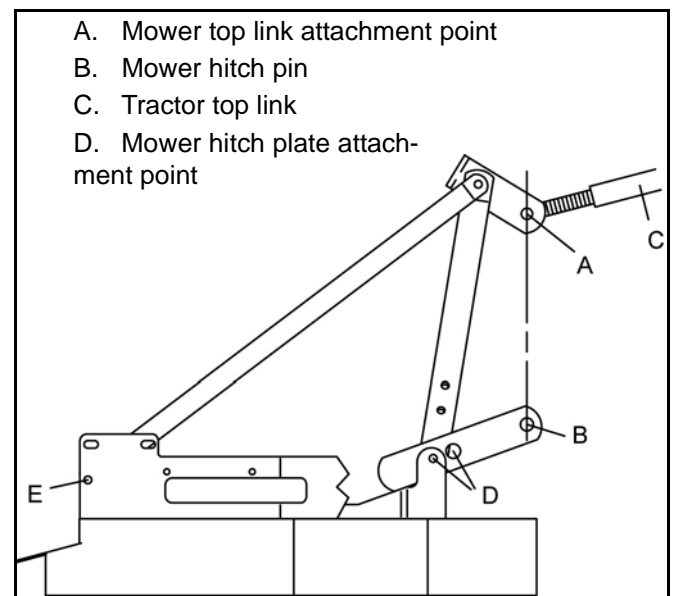


Figure 4. Top Link Adjustment

### RDC54 Only

The RDC54 has two mower hitch plate attachment points (D). It may be necessary to change the mower

hitch plate attachment point to obtain proper tire clearance and/or lift height.

## Front Caster Wheel Interference Check

### IMPORTANT

■ Do not operate tractor and mower until this interference check has been performed. If you change tractors, you must perform the check for that mounting.

Perform this check with all of the spacers and springs above the caster wheel arm. This will place the caster wheels in their highest position and provide the lowest cutting height for the mower.

1. Raise mower with tractor hydraulics to 16" at dimension C, Figure 5, or maximum height of tractor lift, whichever is less.
2. Pivot both front caster wheels forward and check that there is clearance between caster wheels and tractor tires.
3. If there is interference on RDC54 model, adjust mower hitch plate point as shown in Figure 4. On model RD60 and RD72, the hitch plate is not adjustable; see tractor operator's manual and adjust tractor wheels accordingly.

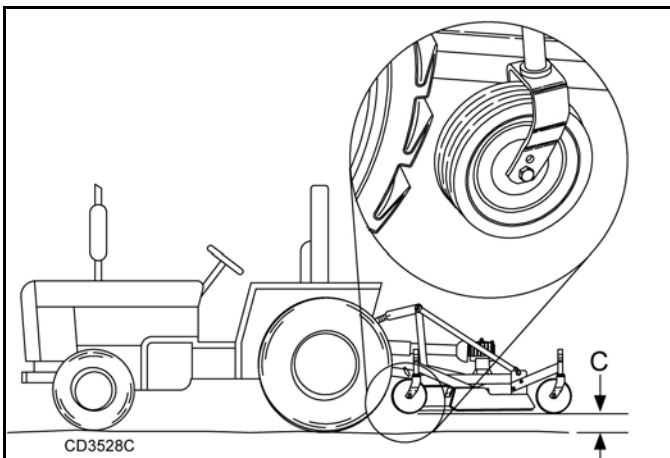


Figure 5. Front Caster Wheel Interference Check

### Front Roller (Optional)

The caster wheels effectively reduce scalping in most cases. However, you may encounter areas where the caster wheels and/or side skids drop into depressions and allow center of the mower to contact ground and scalp. An optional front roller may be installed to minimize scalping. See page 40.

### Operating Technique

## CAUTION

■ Stop power unit and implement immediately upon striking an obstruction. Dismount power unit, using proper procedure. Inspect and repair any damage before resuming operation.

Power for operating the mower is supplied by the tractor PTO. Operate PTO at 540 rpm. Know how to stop tractor and mower quickly in an emergency.

If mower becomes plugged causing belt to slip for over two seconds, follow these steps:

1. Maneuver equipment into a previously cut area and allow mower to clear accumulated material.
2. Continue running at least two minutes, allowing pulleys to cool. Stopping the mower when in contact with a very hot pulley will bake and ruin belt.

Proper ground speed will depend upon the terrain, the height, and type and density of material to be cut.

Normally, ground speed will range from 2 to 5 mph. Tall dense material should be cut at a low speed; thin medium-height material can be cut at a faster ground speed. Always operate tractor PTO at 540 rpm to maintain proper blade speed and produce a clean cut.

Under certain conditions, tractor tires may roll some grass down and prevent it from being cut at the same height as the surrounding area. When this occurs, reduce your ground speed, but maintain PTO at 540 rpm. The lower ground speed will permit grass to partially rebound.

In general, lower cutting heights give a more even cut and leave less tire tracks. However, it is better to cut grass frequently rather than too short. Short grass deteriorates rapidly in hot weather and invites weed growth during growing seasons. Follow local recommendations for the suitable cutting height in your area.

### Operating Tips

## WARNING

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

Extremely tall material should be cut twice. Set mower at a higher cutting height for the first pass. Then cut at desired height, 90 degrees to the first pass. Remember, sharp blades produce cleaner cuts and require less power.

Analyze area to be cut to determine the best procedure. Consider height and type of grass and terrain

type: hilly, level, or rough. Plan your mowing pattern to travel straight forward whenever possible. Mow with uncut grass to the right. This will distribute the clippings over the cut area.

### Uneven Terrain

#### **! WARNING**

- 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.

Pass diagonally through sharp dips and avoid sharp drops to prevent hanging up tractor and mower. Practice will improve your skills in maneuvering rough terrain.

### Removing Mower from Tractor - Storage

Follow cleaning procedure, page 17.

1. Disengage tractor PTO and raise mower with the 3-point hitch.
2. Disconnect mower driveshaft from tractor PTO.
3. Collapse driveshaft as far as possible and store it in PTO hanger bracket to prevent ground contact.
4. Place blocks under mower side skids. Lower mower onto blocks, disconnect mower from tractor 3-point hitch, and carefully drive tractor away from mower.

#### **! WARNING**

- Keep children and bystanders away from storage area.

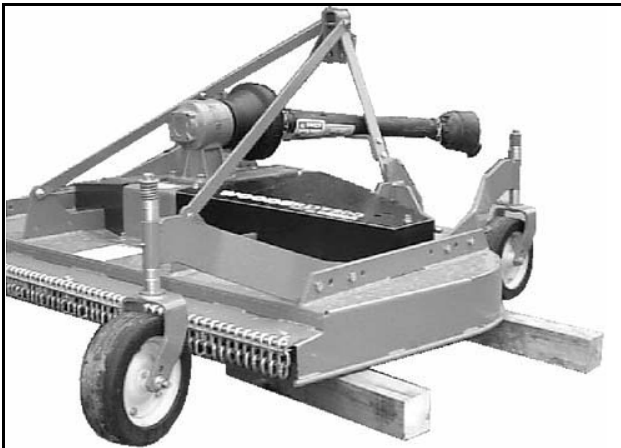


Figure 6. Mower Storage Position

## **OWNER PRE-OPERATION CHECK LIST**

### **(OWNER'S RESPONSIBILITY)**

- \_\_\_ Review and follow all safety rules and safety decal instructions on page 5 through page 9.
- \_\_\_ Check that all safety decals are installed and in good condition. Replace if damaged.
- \_\_\_ Check that all shields and guards are properly installed and in good condition. Replace if damaged.
- \_\_\_ Check that chain shielding is in good condition and replace any damaged chain links.
- \_\_\_ Check that all hardware and cotter pins are properly installed and secured.
- \_\_\_ Check to ensure blades are sharp, in good condition, and installed correctly. Replace if damaged.
- \_\_\_ Check that equipment is properly and securely attached to tractor.
- \_\_\_ Make sure driveline spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.
- \_\_\_ Make sure the driveline guards and tether chains are in good condition. Guards must rotate freely on driveline. Fasten tether chains to the tractor and the equipment as instructed.
- \_\_\_ Inspect area and remove stones, branches or other hard objects that might be thrown, causing injury or damage.
- \_\_\_ Do not allow riders.
- \_\_\_ Check all lubrication points and grease as instructed in "Lubrication Information" on page 14 & page 15. Make sure the PTO slip joint is lubricated and that the gearbox fluid levels are correct.
- \_\_\_ Set tractor PTO at correct rpm for your equipment.
- \_\_\_ Make sure tractor ROPS or ROPS cab and seat belt are in good condition. Keep seat belt securely fastened during operation.
- \_\_\_ Before starting engine, operator must be in tractor seat with seat belt fastened. Place transmission in neutral or park, engage brake, and disengage tractor PTO.



# OWNER SERVICE

The information in this section is written for operators who possess basic mechanical skills. If you need help, your dealer has trained service technicians available. For your protection, read and follow the safety information in this manual.

## CAUTION

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

## WARNING

■ Never allow children or untrained persons to operate equipment.

■ Keep bystanders away from equipment.

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

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

■ Make sure spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.

■ Operate tractor PTO at 540 RPM. Do not exceed.

## BLOCKING METHOD

Do not work underneath mower unless it is properly attached to the tractor and blocked securely. When properly attached, the unit will be anchored to minimize front to rear movement.

Raise mower completely, set tractor brakes, turn engine off, remove key, block tractor wheels front and rear, and disconnect mower driveline from tractor.

The only approved blocking devices for this mower are jackstands with a load rating of 1000 pounds or more. One jackstand under each corner of the mower (four total) must be installed before working underneath this unit.

When blocking, you must consider overall stability of the unit. Just blocking under the unit will not ensure your safety. The working surface must be level and

solid to support the loaded weight of the jackstands. Test jackstand stability before working under any portion of the mower.

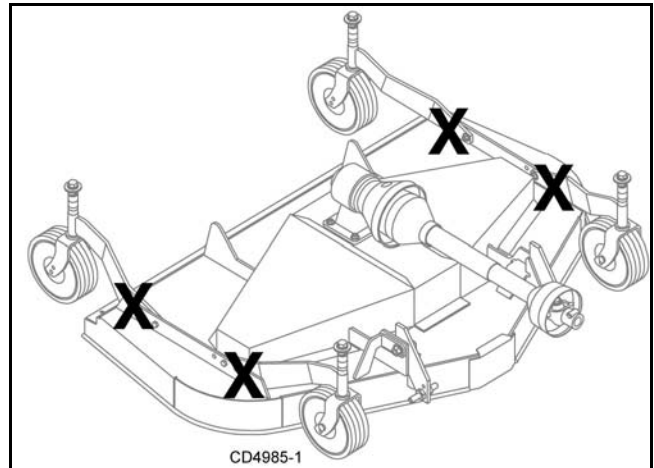


Figure 7. Jackstand Placement

## Lubrication Information

Do not let excess grease collect on or around parts, particularly when operating in sandy areas.

Figure 8 shows the lubrication points. The accompanying chart gives the frequency of lubrication in operating hours, based on normal operating conditions.

Severe or unusual conditions may require more frequent lubrication. Some reference numbers have more than one location; be sure you lubricate all locations.

Use a lithium grease of #2 consistency with a MOLY (molybdenum disulfide) additive for all locations. Be sure to clean fittings thoroughly before attaching grease gun. When applied according to the lubrication chart, one good pump of most guns is sufficient.

Use SAE 90W gear lube in the gearbox. Fill to plug on side of gearbox.

Check gearbox daily for evidence of leakage at both seals and the gasket between the housing and cover. If leakage is noted, repair immediately. There may be a small amount of lube emitted from the vent plug; this is not considered leakage.

Overfilling the gearbox will cause the excess gear lube to blow out vent plug and ruin the belt.

## Driveshaft Lubrication

Lubricate the driveshaft slip joint every 40 operating hours. Failure to maintain proper lubrication could result in damage to U-joints, gearbox, and driveshaft.

1. Lower mower to ground.

2. Remove front half of driveshaft.
3. Apply grease all around and along inner shaft.
4. Reassemble driveshaft halves.
5. Raise and lower mower several times to distribute grease.

## SERVICE BELT

### Replace Belt

One of the major causes of belt failure is improper installation. Before installing a new belt, check the following:

1. Check pulley shafts and bearings for wear.
2. Check pulley grooves for cleanliness.
3. Make sure spindles turn freely and without wobble.

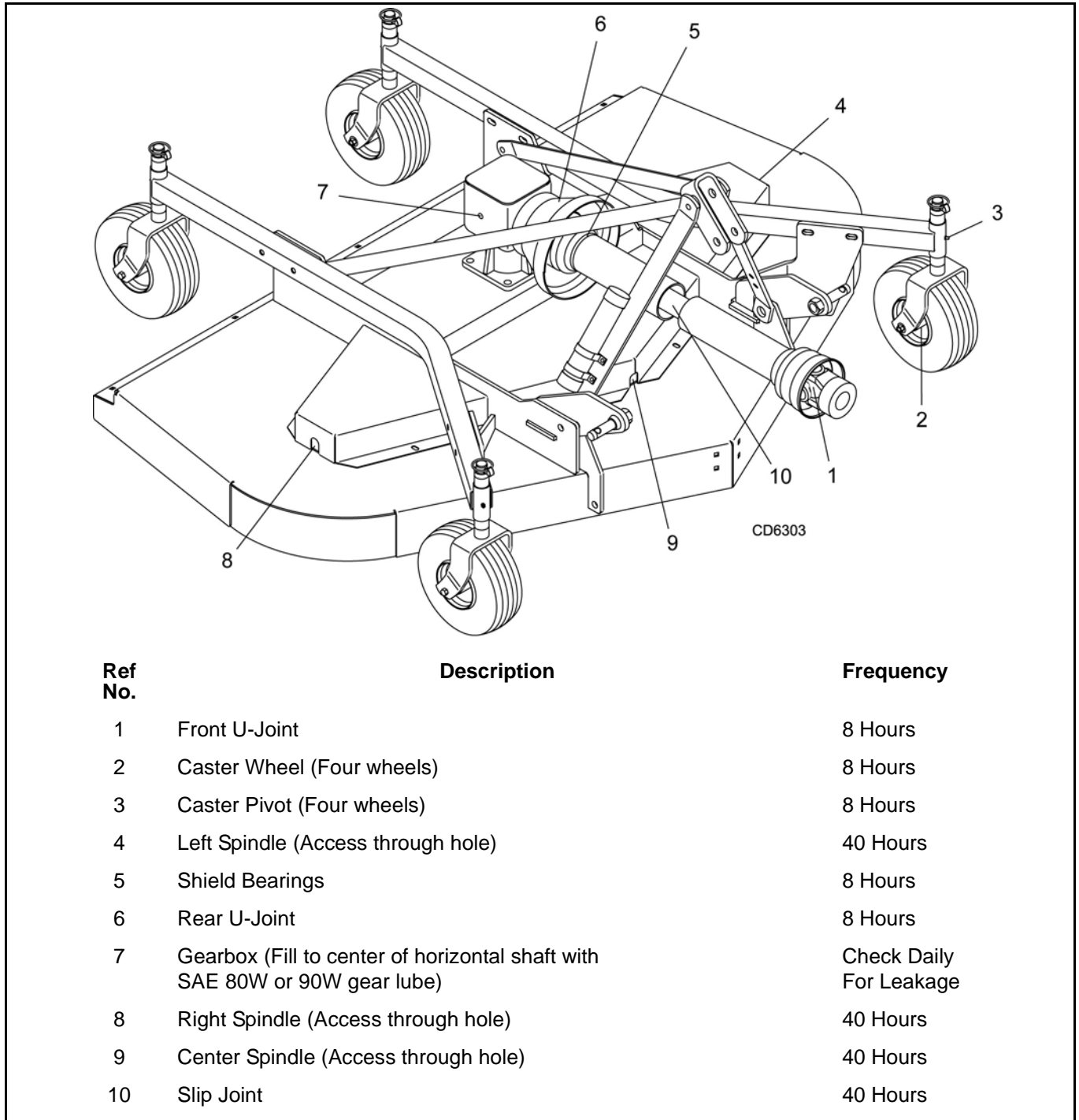


Figure 8. Lubrication Points & Chart



If grooves require cleaning, moisten a cloth with a non-flammable, non-toxic degreasing agent or commercial detergent and water.

Avoid excessive force during installation. Do not use tools to pry belt into pulley groove. Do not roll belt over pulleys to install. This can cause hidden damage and premature belt failure.

## Install Belt

Refer to Figure 9.

1. Slide belt under drive pulley A and over idler arm. Position belt around drive pulley A.
2. It may be necessary to remove front bolts (1) and swing gearbox stand up to gain access to pulley A. Route belt around pulley B, idler C, and pulley D as shown.
3. Make sure belt is on drive pulley A and route around idler F.
4. Grasp belt between spindle pulley E, spring-loaded idler F and spindle pulley D. Pull spring-loaded idler with belt to obtain enough belt length to route it over pulley E. Make sure spring-loaded idler pivots freely with belt installed.

## IMPORTANT

■ Use care when installing or removing belt from spring-loaded idler. Springs store energy when extended and, if released suddenly, can cause personal injury.

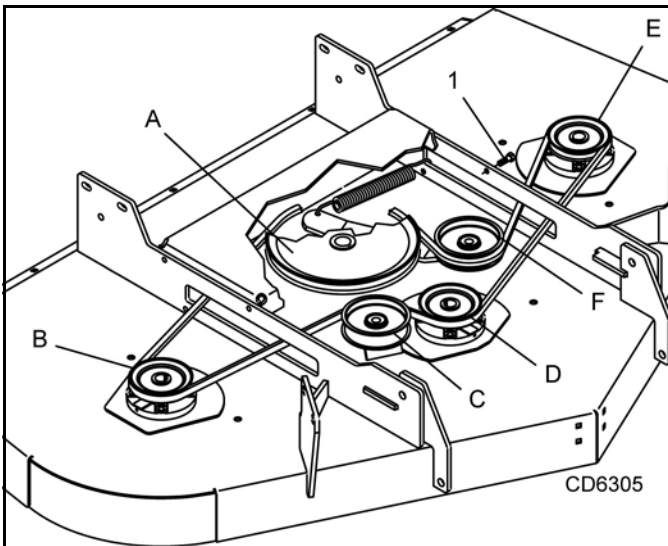


Figure 9. Belt Routing

## SERVICE BLADE

### ⚠ WARNING

- Before dismantling 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, operate valve levers to release any hydraulic pressure, set parking brake, stop engine, remove key, and unfasten seat belt.
- Keep all persons away from operator control area while performing adjustments, service, or maintenance.

### ⚠ CAUTION

- Frequently check blades. They should be sharp, free of nicks and cracks, and securely fastened.
1. Inspect blades before each use to determine that they are mounted securely and are in good condition.
  2. Replace any blade that is bent, excessively nicked, worn, or has any other damage.
  3. Small nicks can be ground out when sharpening.

## Remove Blades

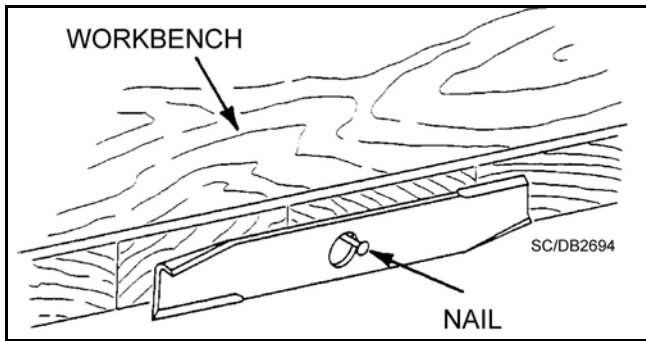
### ⚠ WARNING

- Do not handle blades with bare hands. Careless or improper handling may result in serious injury.
1. Remove bolt (1), Figure 11, which has right hand threads.
  2. Remove washer and blade.

## Sharpen Blades

## IMPORTANT

■ When sharpening blades, be sure to balance them. Unbalanced blades will cause excessive vibration that can damage blade spindle bearings. Vibration may also cause structural cracks in mower housings.



**Figure 10.** Blade Balancing

1. Follow original sharpening pattern.
2. Do not sharpen blade to a razor edge, but leave approximately 1/64" blunt edge.
3. Do not sharpen back side of blade.
4. Sharpen both cutting edges equally to keep blade balanced. Balance blade using the method shown in Figure 10.

### Install Blades

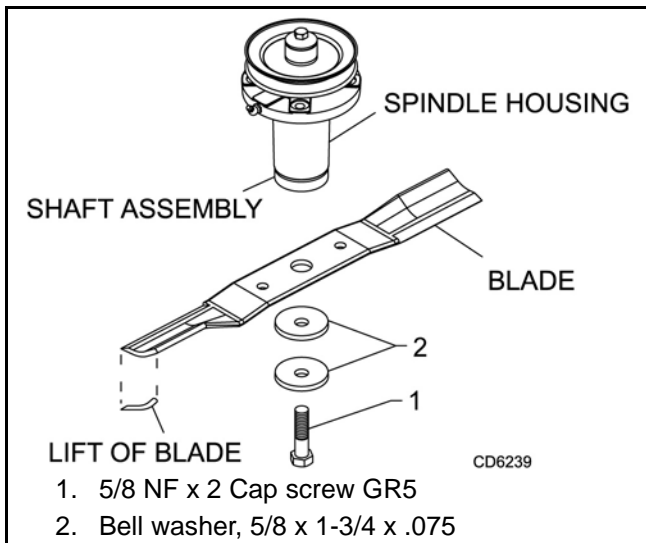
#### **CAUTION**

■ Your dealer can supply genuine replacement blades. Substitute blades may not meet original equipment specifications and may be dangerous.

#### **IMPORTANT**

■ When installing blade, the lift of the blade must be toward the spindle blade housing as shown in Figure 11. Torque bolt (1) into shaft assembly to 100 lbs-ft.

1. Place blade over blade pilot on the bottom of the shaft assembly.
2. Place bell washer (2) over blade and insert blade bolt (1). Torque blade bolt to 100 lbs-ft.



**Figure 11.** Blade and Spindle Assembly

### Chain Shielding

#### **DANGER**

■ Full chain shielding, designed to reduce the possibility of thrown objects, must be installed when operating in populated areas or other areas where thrown objects could injure people or damage property. If this machine is not equipped with full chain shielding, operation must be stopped when anyone comes within several hundred feet.

Check that chain shielding is in good condition and replace any damaged chain links.

### CLEANING

#### After Each Use

- Remove large debris such as clumps of dirt, grass, crop residue, etc. from machine.
- Inspect machine and replace worn or damaged parts.
- Replace any safety decals that are missing or not readable (supplied free by your Woods dealer).

#### Periodically or Before Extended Storage

- Clean large debris such as clumps of dirt, grass, crop residue, etc. from machine.
- Remove the remainder using a low-pressure water spray.
  1. Be careful when spraying near scratched or torn safety decals or near edges of decals as water spray can peel decal off surface.
  2. Be careful when spraying near chipped or scratched paint as water spray can lift paint.
  3. If a pressure washer is used, follow the advice of the pressure washer manufacturer.
- Inspect machine and replace worn or damaged parts.
- Sand down scratches and the edges of areas of missing paint and coat with Woods spray paint of matching color (purchase from your Woods dealer).
- Replace any safety decals that are missing or not readable (supplied free by your Woods dealer). See Safety Decals section for location drawing.

# TROUBLESHOOTING

## MOWING CONDITIONS

PROBLEM	POSSIBLE CAUSE	SOLUTION
Grass cut higher in center of swath than at edge	Height of mower higher at front than at rear	Adjust mower height and attitude so that mower rear and front are within 1/2 inch of same height. See instructions on page 11.
	Loose blade	Check blade hardware.
Grass cut lower in center of swath than at edge	Height of mower lower at front than at rear	Adjust mower height and attitude so that mower rear and front are within 1/2 inch of same height. See instructions on page 11.
	Loose blade	Check blade hardware.
Streaking conditions in swath	Conditions too wet for mowing	Allow grass to dry before mowing.
	Blades unable to cut that part of grass pressed down by path of tractor tires	Slow ground speed of tractor but keep engine running at full PTO rpm. Cutting lower will help. Adjust tractor tire spacing if possible.
	Dull blades	Sharpen or replace blades.
Material discharges from mower unevenly; bunches of material along swath	Loose blade	Check blade hardware.
	Material too high and too much material	Reduce ground speed but maintain 540 rpm at tractor PTO, or make two passes over material. Raise mower for the first pass and lower for the second and cut 90-degrees to first pass. Raise rear of mower high enough to permit material discharge, but not so high that conditions listed above occur.
	Grass is wet	Allow grass to dry before mowing. Slow ground speed of tractor but keep engine running at full PTO rpm.

# TROUBLE SHOOTING

## BELT CONDITIONS

PROBLEM	POSSIBLE CAUSE	SOLUTION
Belt slippage	Mower overloading; material too tall or heavy	Reduce tractor ground speed but maintain full PTO rpm. Cut material twice, one high pass and then mow at desired height. Cut 90-degrees to first pass.
	Oil on belt from over lubricating	Be careful not to over lubricate. Clean lubricant from belt and pulleys with clean rag. Replace oil-soaked belt.
	Belt hung up or rubbing	Check belt position in pulleys and idlers. Check belt for free travel in pulleys. Check under mower and around blade spindle shaft for wire, rags, or other foreign material. Clean all material from under mower.
Frayed edges on belt cover	Belt is misaligned	Re-align belt. Be sure belt does not rub any other part while running.
	Pulley is misaligned	Inspect to ensure belt is running in center of backside idler. Shim idler as necessary to align.
Belt rollover	Pulley is misaligned	Re-align.
	Damaged belt	Replace belt. *
	Foreign object in pulley groove	Inspect all pulley grooves for rust, paint, or weld spots and remove.
	Worn pulley groove	Replace pulley.
Damaged belt	Rollover, high shock loads or installation damaged	Replace belt. *
Belt breakage	High shock loads	Avoid abusive mowing. Avoid hitting the ground or large obstructions.
	Belt came off drive	Check pulleys for foreign material in grooves. Avoid hitting solid objects or ground.

\* Check belt for damage by laying it flat on the floor. A belt that does not lie flat (has humps or twists, indicating broken or stretched cords) must be replaced.

# DEALER SERVICE

The information in this section is written for dealer service personnel. The repair described here requires special skills and tools. If your shop is not properly equipped or your mechanics are not properly trained in this type of repair, you may be time and money ahead to replace complete assemblies.

## WARNING

■ Before working underneath, read manual instructions, securely block up, and check stability. Secure blocking prevents equipment from dropping due to hydraulic leak down, hydraulic system failure, or mechanical component failure.

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

## CAUTION

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

## BLOCKING METHOD

Do not work underneath mower unless it is properly attached to the tractor and blocked securely. When properly attached, the unit will be anchored to minimize front to rear movement.

Raise mower completely, set tractor brakes, turn engine off, remove key, block tractor wheels front and rear, and disconnect mower driveline from tractor.

The only approved blocking devices for this mower are jackstands with a load rating of 1000 pounds or more. One jackstand under each corner of the mower (four total) must be installed before working underneath this unit.

When blocking, you must consider overall stability of the unit. Just blocking under the unit will not ensure your safety. The working surface must be level and solid to support the loaded weight of the jackstands. Test jackstand stability before working under any portion of the mower.

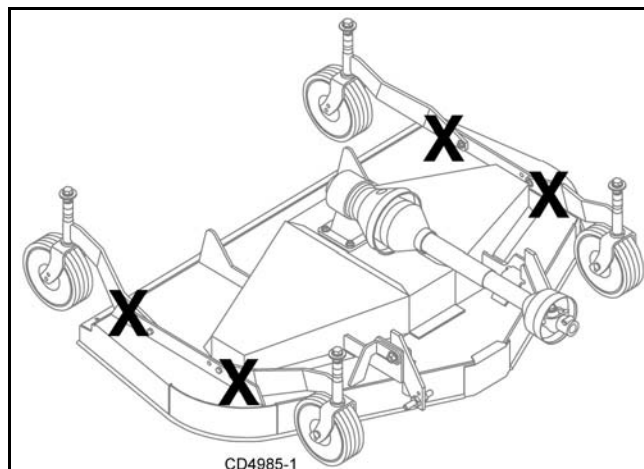


Figure 12. Jackstand Placement

## BLADE SPINDLE REPAIR

Spindle repair requires special skills and tools. If your shop is not properly equipped or your mechanics are not trained in this type of repair, you may be time and money ahead to use a new spindle assembly.

For reference, the grease fitting is in the top of the spindle shaft.

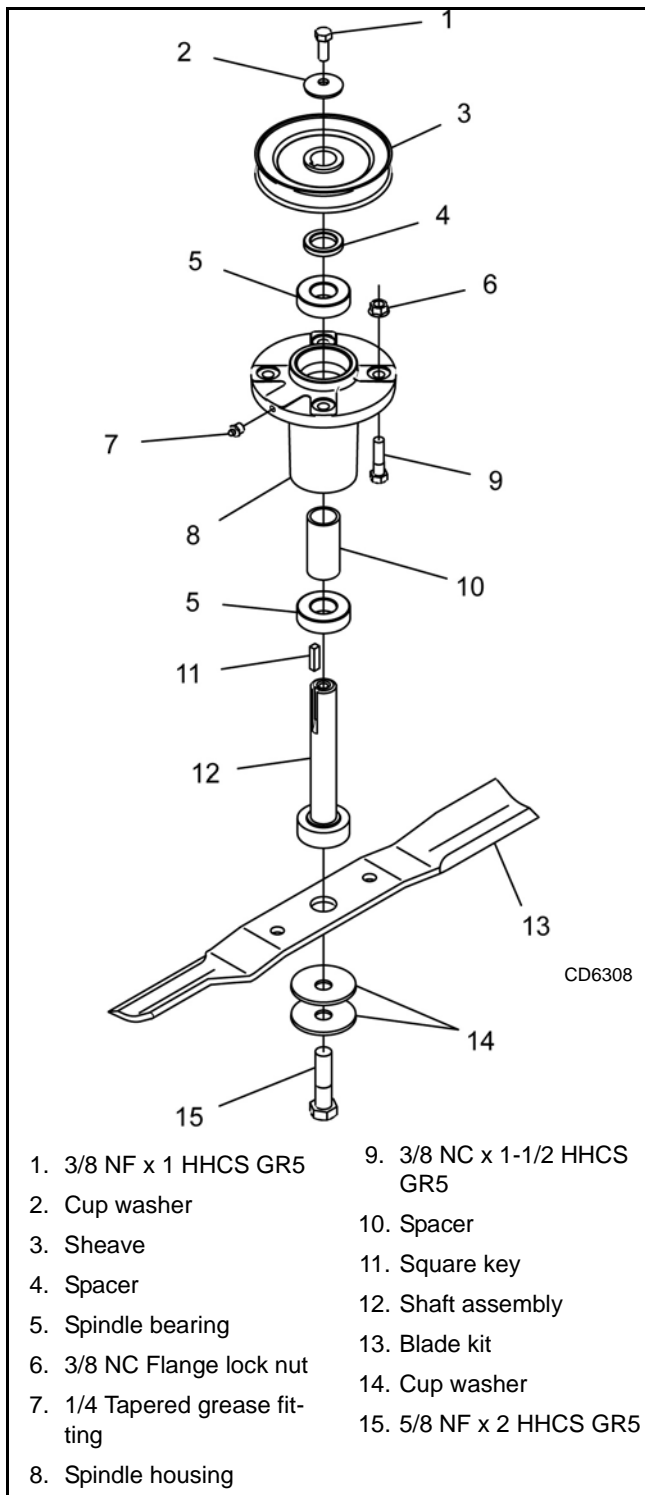
Permatex<sup>®</sup> 3D Aviation Form-A-Gasket or equivalent is recommended as a sealant.

### Remove Spindle

1. Remove belt shields from deck.
2. Remove belt.
3. Remove blade from spindle assembly.
4. Remove nuts (6) and bolts (9) that secure spindle to mower. (See Figure 13.)

### Disassemble Spindle

1. Remove bolt (1) and washer (2) from the top of the spindle.
2. Remove sheave (3) and spacer (4).  
**NOTE:** A wheel puller may be needed if sheave can not be removed by hand. Retain key (11).
3. Slide shaft assembly (12), lower bearing (5), and long spacer (10) out the bottom of spindle housing (8).
4. Remove upper bearing (5) and spacer (4) from top of spindle housing.
5. Inspect parts and replace as needed.



**Figure 13.** Blade Spindle Assembly

### Assemble Spindle

1. Slide lower bearing (5) over shaft assembly (12) with seal down.
2. Slide long spacer (10) on shaft assembly.
3. Insert shaft assembly with bearing and spacer into spindle housing from the bottom.

4. Install upper bearing (5) over shaft with the seal facing up.
5. Install spacer (4) and sheave (3) over shaft.
6. Align keyways in shaft and sheave and insert key (11).
7. Install washer (2), and bolt (1). Torque bolt to 35 lbs-ft.
8. Rotate sheave and check for free movement.
9. Lubricate spindle.

### GEARBOX REPAIR

Read this entire section before starting any repair. Many steps are dependent on each other.

Fill gearbox with SAE 80W or 90W gear lube until it runs out the side level plug.

Repair to this gearbox is limited to replacing bearings, seals, and gaskets. Replacing gears, shafts, and a housing is not cost effective. It is more economical to purchase a complete gearbox if repair to anything other than replacement of bearings, seals or gaskets is required.

Inspect gearbox for leakage and bad bearings.

Leakage is a very serious problem and must be corrected immediately.

Bearing failure is indicated by excessive noise and side to side or end play in gear shafts.

### Seal Replacement

Recommended sealant for gearbox repair is Permatex® Aviation 3D Form-A-Gasket or equivalent.

Leakage can occur at the vertical or horizontal gaskets and shaft seals.

Leakage at the horizontal gasket or seal can be repaired without removing the gearbox from the mower.

### Seal Installation

**NOTE:** Proper seal installation is important. An improperly installed seal will leak.

1. Clean area in housing where seal outer diameter (OD) seats. Apply a thin coat of Permatex.
2. Inspect area of shaft where seal seats. Remove any burrs or nicks with an emery cloth.
3. Lubricate gear shaft and seal lips.
4. Place seal squarely on housing, spring-loaded lip toward housing. Select a piece of pipe or tubing with an OD that will sit on the outside edge of the seal but will clear the housing. Tubing with an OD that is too small will bow seal cage and ruin seal.
5. Carefully press seal into housing, avoiding distortion to the metal seal cage.

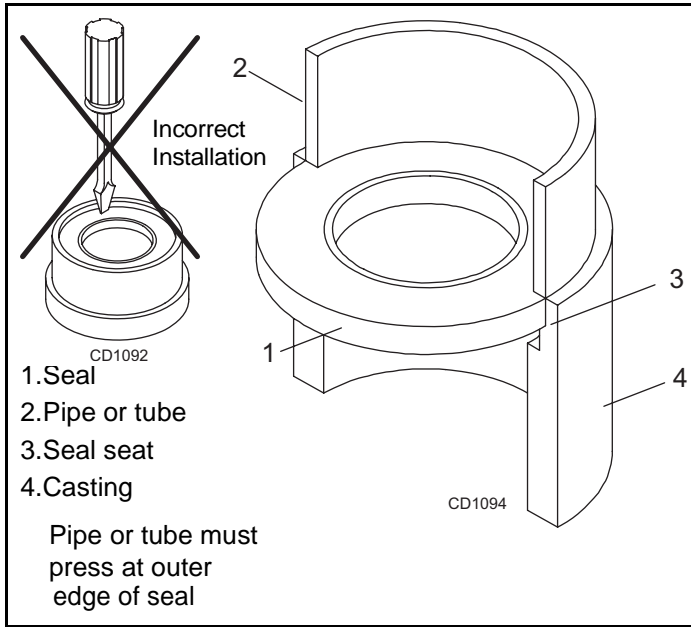


Figure 14. Seal Installation

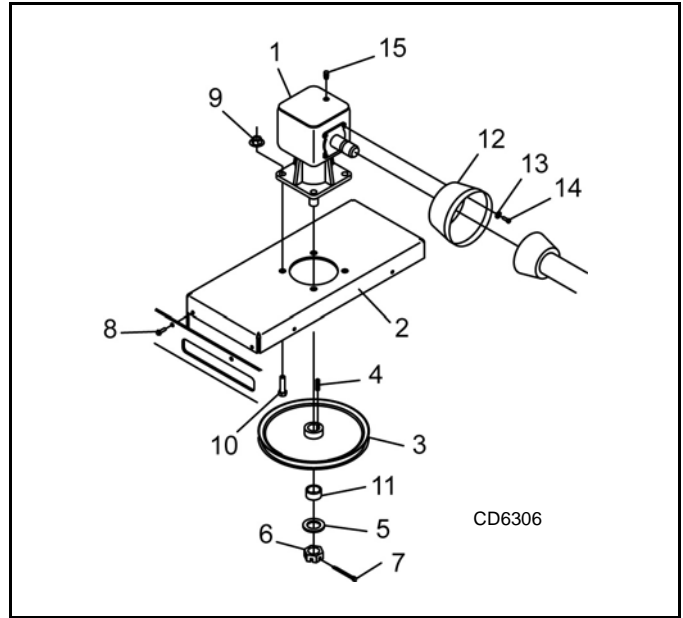


Figure 15. Gearbox Stand Assembly

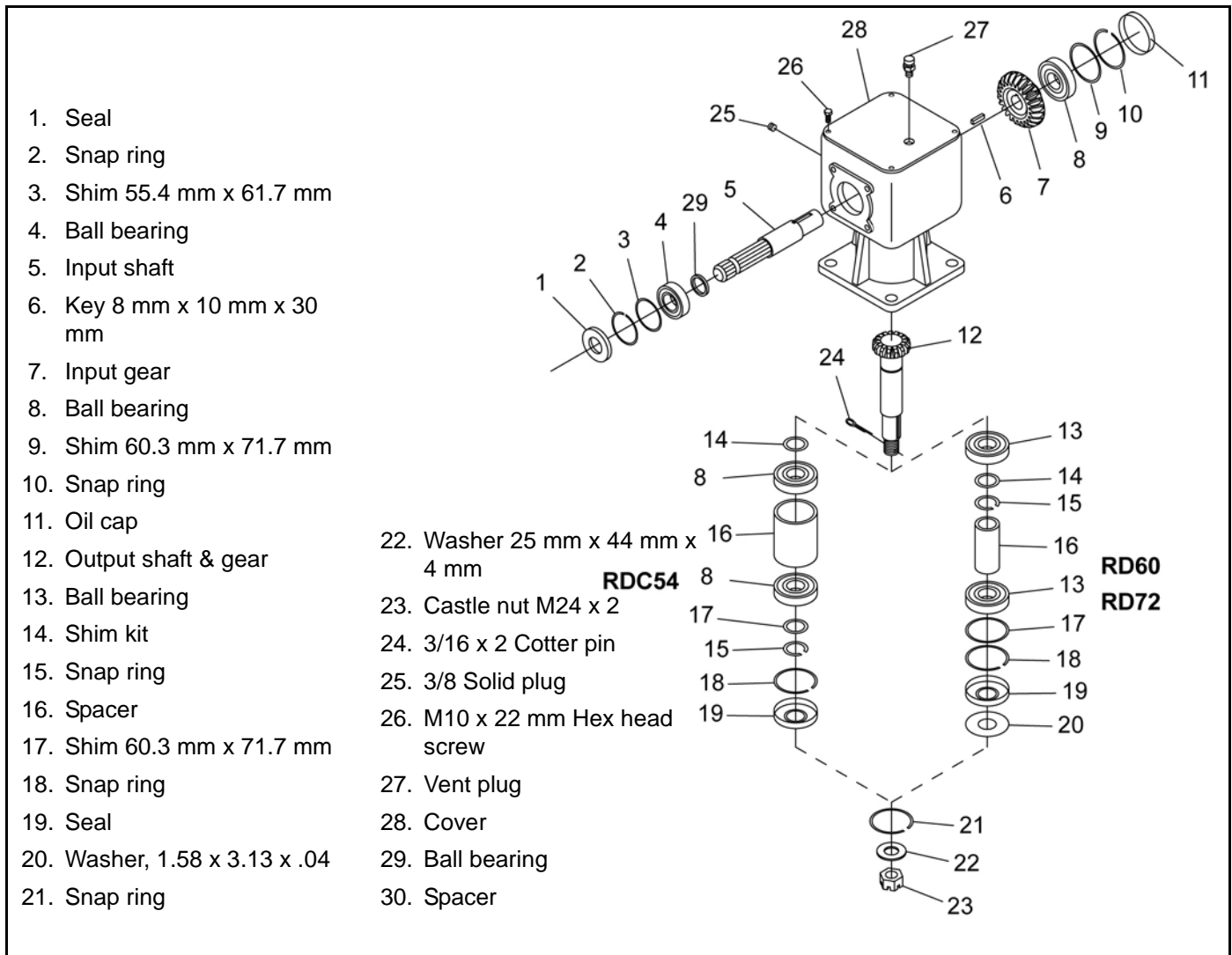


Figure 16. Gearbox Assembly



## Vertical Shaft Seal Replacement

Refer to Figure 15.

1. Disconnect and remove the driveline from the gearbox.
2. Remove vent plug (15) and siphon gear lube from housing through this opening.
3. Remove gearbox stand from mower deck.
4. Remove gearbox and pulley from stand (2).
5. Remove vertical shaft seal. Replace with new seal (see Seal Replacement, page 21).

Vertical seal should be recessed in housing. Horizontal seal should be pressed flush with outside of housing.

**NOTE:** Distortion to seal cage or damage to seal lip will cause seal to leak.

6. Fill gearbox with SAE 80W or 90W gear lube until it runs out the level plug.
7. Assemble gearbox and pulley to gearbox stand. Attach gearbox stand to mower deck.

## Horizontal Shaft Seal Replacement

1. Disconnect and remove the driveline from the gearbox.
2. Remove vent plug (27), Figure 16, and siphon gear lube from housing through this opening.
3. If the leak occurred at either end of horizontal shaft, remove oil cap (11) and/or oil seal (1). Replace with new one (see Seal Replacement, page 21).
4. Fill gearbox with SAE 80W or 90W gear lube until it runs out the level plug.

## Remove Gearbox from Mower

1. Disconnect and remove the rear driveline from the gearbox.
2. Remove vent plug (15), Figure 15, and siphon gear lube from housing through this opening.
3. Remove gearbox stand (2) from mower deck by removing four hex screws (8).
4. Remove four cap screws (14) and washers (13) and remove shield (12) from gearbox.
5. Remove castle nut (6) and hardware from output shaft of gearbox.
6. Remove sheave (3) from gearbox.
7. Remove four bolts (10) that attach gearbox to gearbox stand and remove gearbox.

## Disassemble Gearbox

1. Remove top cover (28), Figure 16, from housing. Turn gearbox upside down and pour out remaining gear oil from gearbox.
2. Remove oil cap (11) (to be replaced).
3. Remove snap ring (10) and shim (9) from input shaft (5).
4. Support gearbox in hand press and push on input shaft (5) to remove bearing (8).
5. Remove gear (7) from inside housing.
6. Remove oil seal (1) from front of housing (to be replaced).
7. Remove snap ring (2) and shim (3) from front of housing.
8. Remove input bearing (4) by using a punch and hammer from outside of housing.
9. Support housing in vise in a horizontal position.
10. The castle nut (23) and cotter pin (24) are already removed with the drive sheave. Remove the snap ring (18), washer (20), and seal (19).
11. Remove output shaft (12) and bearings by using a punch and hammer and tap on top to drive down.
12. Inspect gears for broken teeth and wear. Some wear is normal and will show on laded side. Forged gear surfaces are rough when new. Check that wear pattern is smooth.
13. Inspect vertical and horizontal shafts for grooves, nicks, or bumps in the areas where the seals seat. Resurface any damage with emery cloth.
14. Inspect housing and caps for cracks or other damage.

## Reassemble Gearbox (RD60, RD74 shown, RDC54 similiar)

Refer to Figure 16.

**NOTE:** Repair to this gearbox is limited to replacing bearings, seals, and gaskets. Replacing gears, shafts, and a housing is not cost effective. Purchasing a complete gearbox is more economical.

1. Clean housing, paying special attention to areas where seals will be installed.
2. Wash housing and component thoroughly. Select a clean area for gearbox assembly. Replace all seals and bearings. All parts must be clean and lightly oiled before reassembling.

## RD60 & RD72

3. Install upper output bearing (13), shims (14), and snap ring (15) on output shaft (12). Use new shims equal to the thickness of the original shims.
4. Press output shaft assembly into housing from the bottom opening.
5. Install spacer (16), lower output bearing (13), shims (17), and snap ring (18) in bottom of housing.

## RDC54

3. Install shims (14), upper output bearing (8), spacer (16), lower output bearing (8), shims (17), and snap ring (15) on output shaft. Use new shims equal to the thickness of the original shims.
4. Press output shaft assembly into housing from the bottom opening.
5. Install snap ring (18) in bottom of housing.

## All Models

6. Apply grease to lower seal lips (19), and press seal over output shaft (5), using a round tube of the correct diameter. Be sure not to damage the seal lip. Press in housing so that the seal is recessed.
7. Insert protective washer (20) (RD60 & RD72 only) by hand.
8. Install snap ring (21) and position it together with seal (19) by pressing it into position. Verify that the snap ring is seated properly.
9. Press bearing (8) into the housing, using a round tube of the correct diameter and a hand press. Secure with shims (9) and snap ring (10).
10. Install key (6) on input shaft (5).
11. Place gear (7) through top of housing and align the two gears so they match.
12. While holding gear (7) in place, slide input shaft (5) through the gear and bearing (8).
13. Slide spacer (29) (RDC54 only) and bearing (4) over input shaft (5) and press into housing, using a round tube of the correct diameter and a hand press.
14. Slide shim (3) over input shaft and secure with snap ring (2).
15. Check input shaft end float by moving the input shaft by hand. If the end float is more than .012", insert shim (9) between the rear bearing (8) and snap ring (10).
16. Check that gear backlash is between .006" and .016". You should not have to adjust the backlash.

17. Press in input seal (1), using a round tube of the correct diameter. Be careful not to damage the seal lip.
18. Press oil cap (11) on to the rear cover of housing, using a round tube of the correct diameter.
19. Check the gearbox housing for leaks by plugging all holes except one. Apply 4 psi compressed air and immerse the gearbox in water to verify that there are no leaks.
20. Remove the gearbox from water and dry off with compressed air. Add SAE 80W or 90W EP oil until it runs out of the side level hole. Tighten all plugs.

## Install Gearbox

**NOTE:** Gearbox is heavy: do not attempt to move without mechanical assistance.

1. Set gearbox on gearbox stand and fasten with bolts and nuts. Torque bolts to 175 lbs-ft.
2. Attach drive sheave to output shaft. Secure using castle nut and hardware previously removed.
3. Attach gearbox stand to mower using four hex screws.

## Install Drive Sheave

1. When gear stand is installed on mower, dimension A (from the top of the mower deck to the center line of the drive pulley) must be 2-1/16" ( $\pm 1/32$ "). This is a critical dimension and must be carefully adjusted for proper belt life. Add or subtract shim washers under idler pulley to align with drive pulley.
2. Tighten gear stand hardware.
3. Fill gearbox half full with SAE 90W gear lube.
4. Check level after waiting five minutes to permit lube to work through bearings. Add lube, if necessary, until gearbox is half full.
5. Replace driveline shield. Attach driveline to gearbox.

## UNIVERSAL JOINT REPAIR

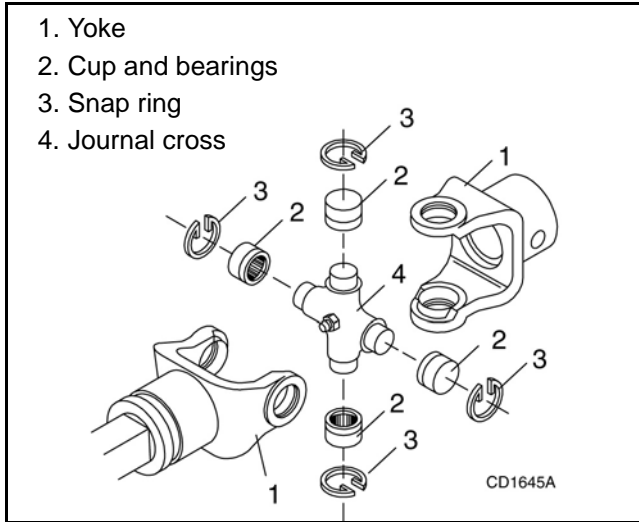


Figure 17. U-Joint Exploded View

### U-Joint Disassembly

1. Remove external snap rings from yokes in four locations as shown in Figure 18.

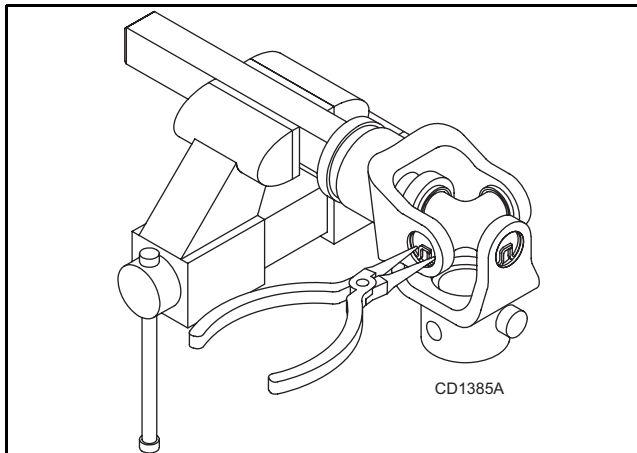


Figure 18

2. With snap rings removed, support drive in vise, hold yoke in hand and tap on yoke to drive cup up out of yoke. See Figure 19.
3. Clamp cup in vise as shown in Figure 20 and tap on yoke to completely remove cup from yoke. Repeat Step 2 & Step 3 for opposite cup.
4. Place universal cross in vise as shown in Figure 21 and tap on yoke to remove cup. Repeat Step 3 for final removal. Drive remaining cup out with a drift and hammer.

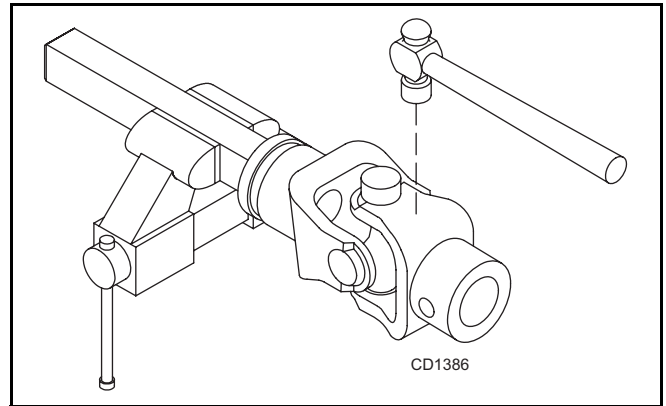


Figure 19

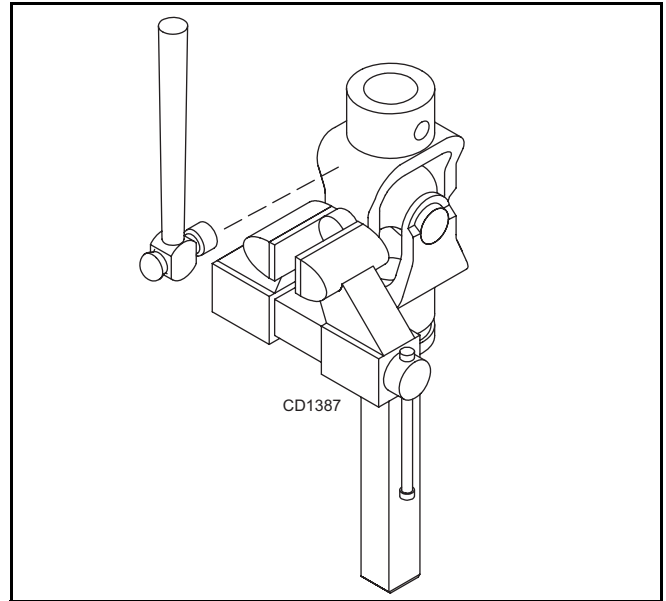


Figure 20

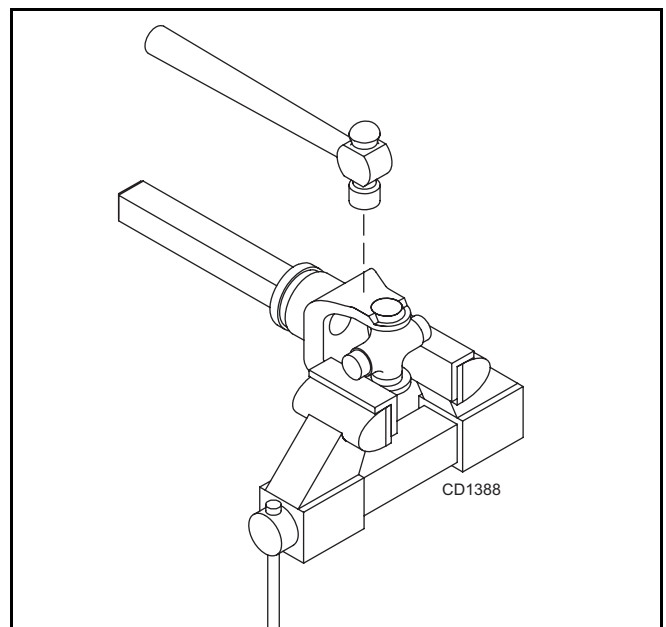
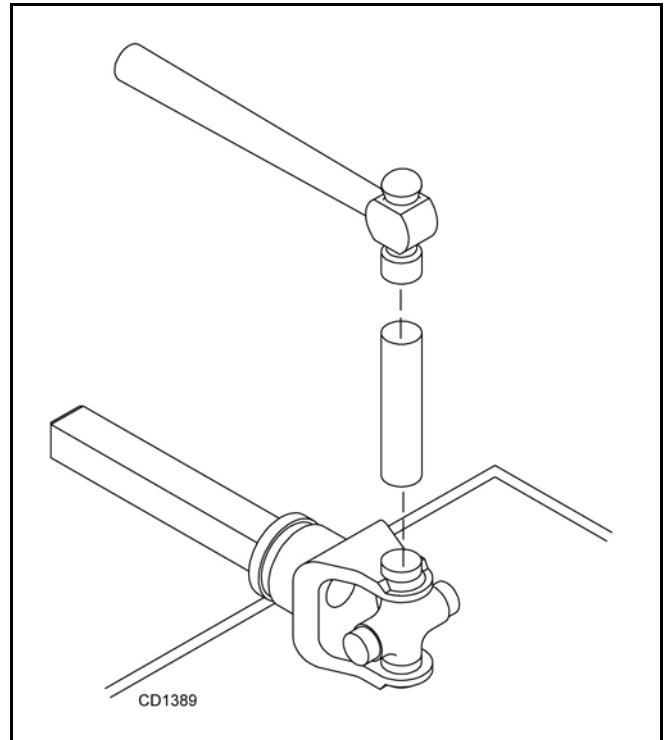


Figure 21

## U-Joint Assembly

1. Place seals securely on bearing cups. Insert cup into yoke from outside and press in with hand pressure as far as possible. Insert journal cross into bearing cup with grease fitting away from shaft. Be careful not to disturb needle bearings. Insert another bearing cup directly across from first cup and press in as far as possible with hand pressure.
2. Trap cups in vise and apply pressure. Be sure journal cross is started into bearings and continue pressure with vise, squeezing in as far as possible. Tapping the yoke will help.
3. Seat cups by placing a drift or socket (slightly smaller than the cup) on cup and rap with a hammer. See Figure 22. Install snap ring and repeat on opposite cup.
4. Repeat Step 1 & Step 2 to install remaining cups in remaining yoke.
5. Move both yokes in all directions to check for free movement. If movement is restricted, rap on yokes sharply with a hammer to relieve any tension. Repeat until both yokes move in all directions without restriction.



**Figure 22**

# ASSEMBLY INSTRUCTIONS

## DEALER SET-UP INSTRUCTIONS

Assembly of this mower is the responsibility of the Woods dealer. It should be delivered to the owner completely assembled, lubricated, and adjusted for normal cutting conditions.

Complete Dealer Check Lists on page 31 when you have completed the assembly.

The mower is shipped partially assembled. Assembly will be easier if components are aligned and loosely assembled before tightening hardware. Recommended torque values for hardware are located on page 43.

Select a suitable working area. Open parts boxes and lay out parts and hardware to make location easy. Refer to illustrations, accompanying text, parts lists and exploded view drawings.

### **WARNING**

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

### **CAUTION**

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

## Uncrate Mower

1. Remove sides and top of mower shipping crate.
2. Remove lag screws and brackets that secure mower to crate base.
3. Remove driveshaft wired to mower deck.

## Install A-Frame Arms

1. Loosen lock nuts (52) at lower hitch point and install A-frame arms (13) as shown.
2. Tighten nut securely.
3. Repeat for opposite side.

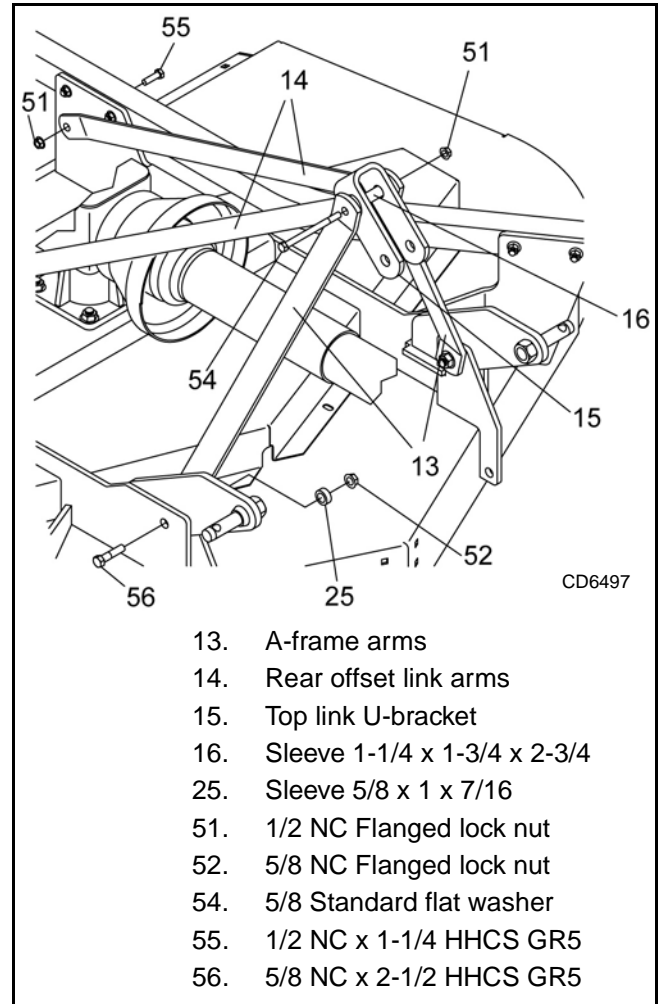


Figure 23. A-Frame Arms Installed

## Install Rear Offset Link Arms

1. Loosen nut (51) and bolt (55) at rear frame lug and attach rear offset link arm (14) as shown in Figure 24. (Do not use wheel tube bolt.)
2. Repeat for opposite side.
3. Do not tighten at this time.

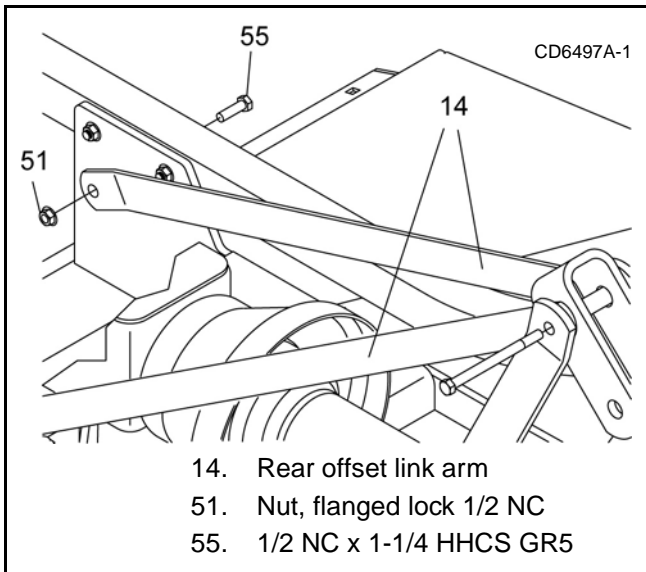


Figure 24. Right Rear Offset Link Installed

## Install Top Link

1. Insert cap screw (54) through A-frame arms (13), U-bracket (15), sleeve (16) and rear offset link arms (14) and tighten securely with nut (51).
2. Tighten hardware on rear frame lug and offset link.

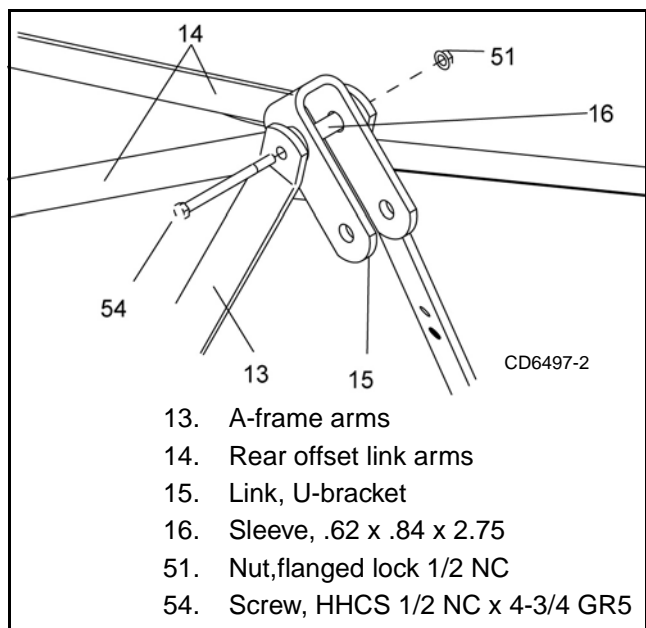


Figure 25. Top Link Assembled

## Install Driveshaft

1. Slide QD yoke of driveshaft assembly onto gearbox shaft. Make sure QD yoke pin is seated securely in groove of gearbox shaft.
2. Attach shield anti-rotation chain to drive shield.

## Fill Gearbox

1. Make sure vent plug hole is clear. Fill gearbox half-full with high quality gear oil that has a viscosity index of 80W or 90W and an API service rating of GL-4 or GL-5.
2. Fill gearbox until oil runs out the side plug on gearbox.
3. Pour in one pint of gear lube, wait five minutes and add additional gear lube until it just comes out of side hole.
4. Allow an additional five minutes for the lube to flow through bearings, then check to make sure oil level is at bottom of side hole. Replace side plug. Install vent plug.

## IMPORTANT

- Gearbox is not filled at the factory. Prior to delivery, make sure each gearbox is filled half-full with 80W or 90W API GL-4 or GL-5 gear lube.

## Install Chain Shielding (Optional)

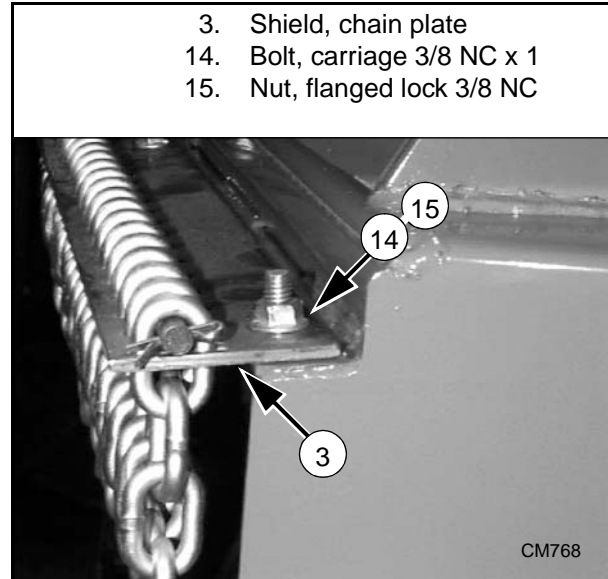
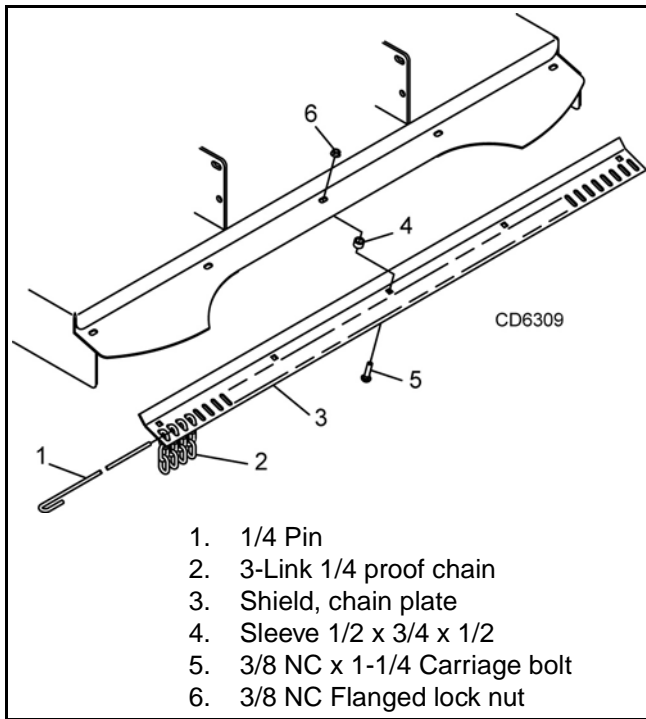


Figure 26. Chain Shielding Installed  
(RD60 & RD72 Only)



**Figure 27.** Chain Shield Installed (RDC54 Only)

**⚠ DANGER**

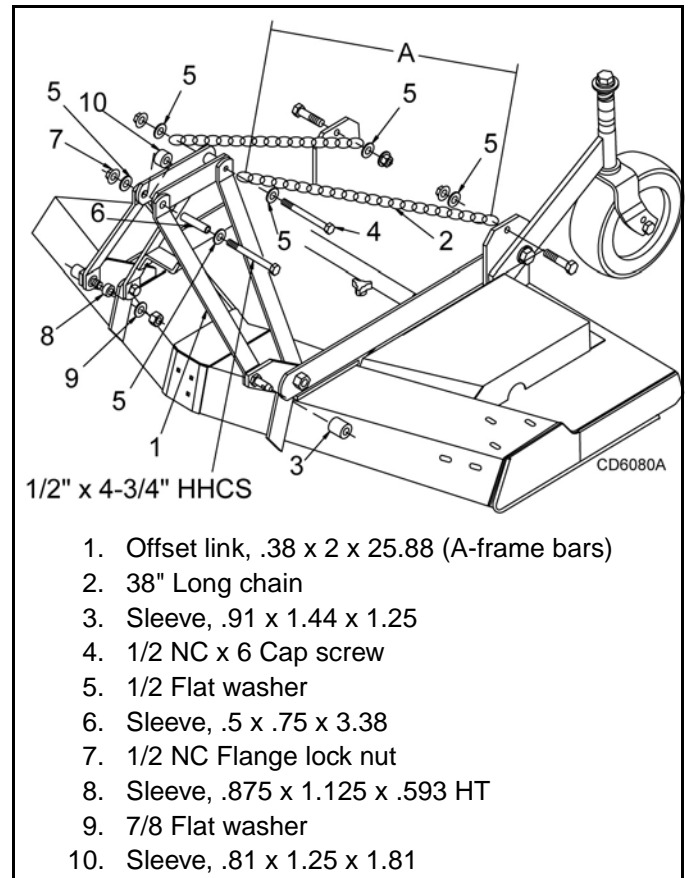
■ Full chain shielding, designed to reduce the possibility of thrown objects, must be installed when operating in populated areas or other areas where thrown objects could injure people or damage property. If this machine is not equipped with full chain shielding, operation must be stopped when anyone comes within several hundred feet.

1. Install chain shielding plate (3) to rear mower frame as shown.
2. Secure with carriage bolts (14) and flanged lock nuts (15).
3. Insert carriage bolts from bottom upward as shown.

**Install Quick Hitch Kit (Optional)  
(RD60 & RD72 Only)**

**NOTE:** Figure 28 shows RD60. Other models use the same assembly instructions.

**NOTE:** This kit allows mower to fit only Cat. 1 standard ASAE quick hitch.



1/2" x 4-3/4" HHCS

1. Offset link, .38 x 2 x 25.88 (A-frame bars)
2. 38" Long chain
3. Sleeve, .91 x 1.44 x 1.25
4. 1/2 NC x 6 Cap screw
5. 1/2 Flat washer
6. Sleeve, .5 x .75 x 3.38
7. 1/2 NC Flange lock nut
8. Sleeve, .875 x 1.125 x .593 HT
9. 7/8 Flat washer
10. Sleeve, .81 x 1.25 x 1.81

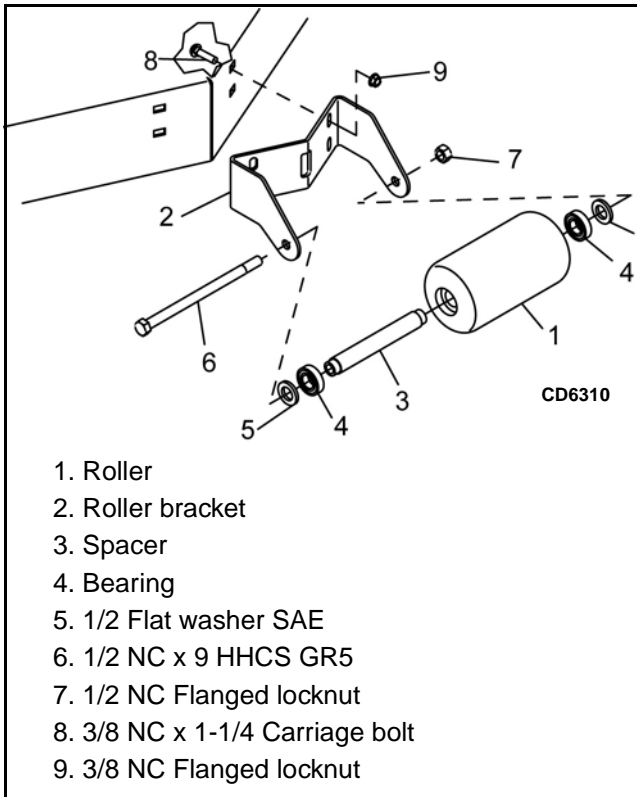
**Figure 28.** Quick Hitch Kit Installation

1. Attach offset link (1) to mounting pins, using 7/8" sleeve (8) and flat washer (9). Do not tighten hardware.
2. Attach upper end of offset link to pivot link, using flat washer (5), sleeves (6 & 10), flange lock nut (7), and 1/2" x 4-3/4" cap screw.
3. Remove rear offset links and replace with chains (2).
4. Attach chain to top of A-frame as shown, using cap screw (4), flat washer (5), and nut. Attach opposite end of chain (2) to rear mower frame as shown.
5. Cut chain to length (RD60 - 40", RD72 45"). Vary length slightly as desired. Twist chain to make finite adjustments in length until unit lifts level.  
**NOTE:** Do not bottom out the drive on front of deck.
6. Install sleeve (3) on mounting pins and retain with klik pin.



## Install Front Roller (Optional)

1. Insert four carriage bolts (8) through the front mower frame from inside out.
2. Place roller bracket (2) over bolts; then install flange lock nuts (9) on bolts and tighten.
3. Place front roller (1), sleeve (3), bearings (4), and washers (5) in roller bracket as shown in Figure 29.
4. Insert cap screw (3) through bracket and roller.
5. Secure with flanged lock nut (2). Do not overtighten, roller must spin freely.



**Figure 29.** Front Roller Installation

## NOTES

# DEALER CHECK LISTS

## DEALER PRE-DELIVERY CHECK LIST

(DEALER'S RESPONSIBILITY)

Inspect the equipment thoroughly after assembly to ensure it is set up properly before delivering it to the customer.

The following check lists are a reminder of points to inspect. Check off each item as it is found satisfactory or after proper adjustment is made.

- Check that all safety decals are installed and in good condition. Replace if damaged.
- Check that shields and guards are properly installed and in good condition. Replace if damaged.
- Check all bolts to be sure they are properly torqued.
- Check that all cotter pins and safety pins are properly installed. Replace if damaged.
- Check and grease all lubrication points as identified in "lubrication information" on page 14.
- Gearboxes are not filled at the factory. Prior to delivery, fill as specified in the "Service, lubrication information" on page 14 and check to see that there are no leaking seals.
- Check that blades have been properly installed.

## DEALER DELIVERY CHECK LIST

(DEALER'S RESPONSIBILITY)

- Show customer how to make adjustments and select proper PTO speed.
- Instruct customer how to lubricate and explain importance of lubrication.
- Point out the safety decals. Explain their meaning and the need to keep them in place and in good condition. Emphasize the increased safety hazards when instructions are not followed.
- Present Operator's Manual and request that customer and all operators read it before operating equipment. Point out the manual safety rules, explain their meanings and emphasize the increased safety hazards that exist when safety rules are not followed.
- Show customer how to make sure driveline is properly installed and that spring-activated locking pin or collar slides freely and is seated in groove on tractor PTO shaft.
- Show customer the safe, proper procedures to be used when mounting, dismounting, and storing equipment.
- Explain to customer the potential crushing hazards of going underneath raised equipment. Instruct that before going underneath to disconnect the driveline, securely block up all corners with jackstands and to follow all instructions in the "Service, blocking methods" section of the Operator's Manual. Explain that blocking up prevents equipment dropping from hydraulic leak down, hydraulic system failures, or mechanical component failures.
- For mounted units, add wheel weights, ballast in front tires, and/or front tractor weight to enhance front end stability. A minimum 25% of tractor and equipment gross weight must be on front tractor wheels. When adding weight to attain 25% of tractor and equipment weight on front tractor wheels, you must not exceed the ROPS weight certification. Weigh the tractor and equipment. Do not estimate!
- Make customer aware of optional equipment available so that customer can make proper choices as required.
- Point out all guards and shields. Explain their importance and the safety hazards that exist when not kept in place and in good condition.

# NOTES

### Rear Discharge Mowers:

**RDC54**

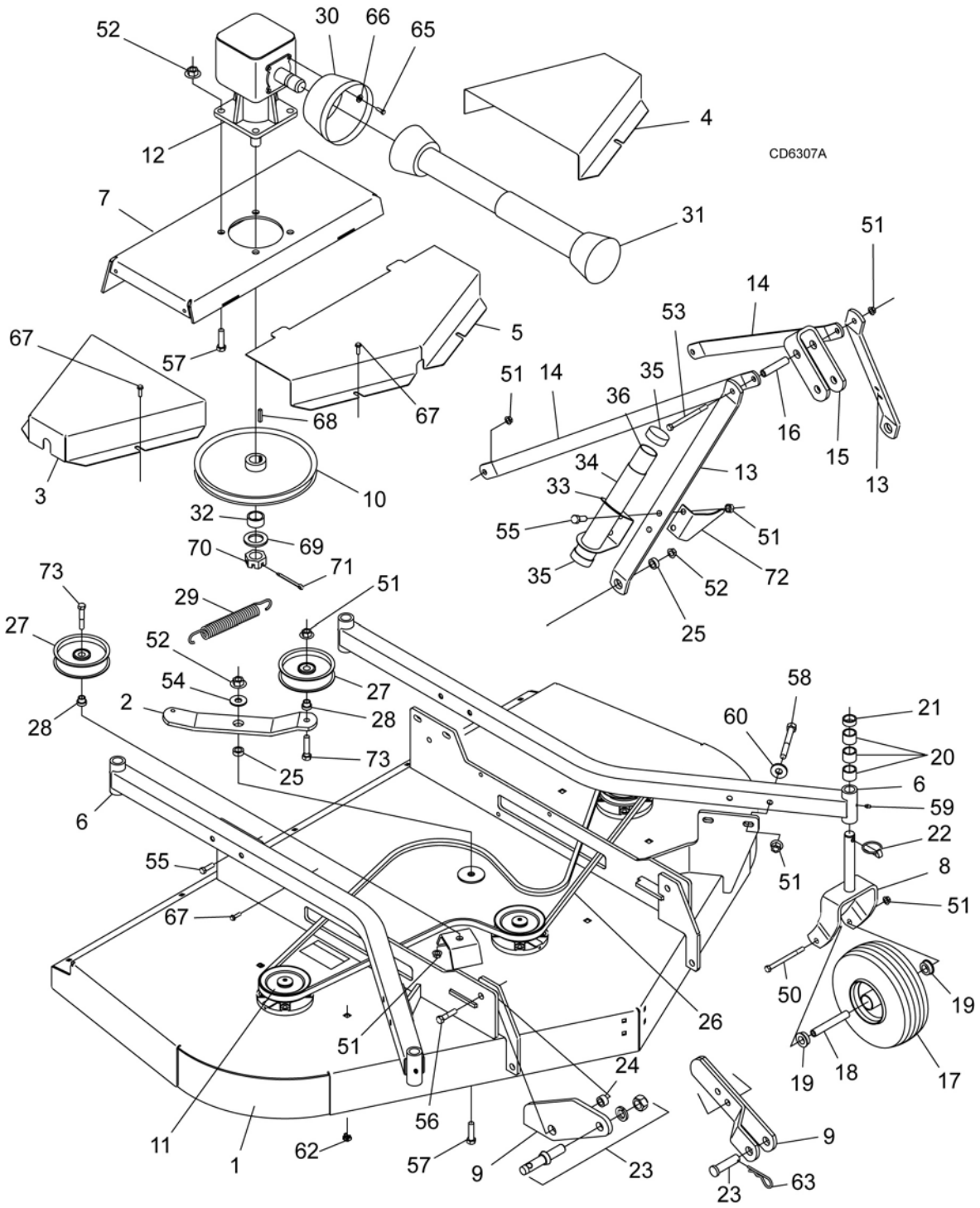
**RD60**

**RD72**

MAIN FRAME ASSEMBLY .....	34 & 35
GEARBOX ASSEMBLY .....	36
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QUICK HITCH (OPTIONAL) .....	42

# RDC54, RD60 & RD72 MAIN FRAME ASSEMBLY

36 - COMPLETE DECAL SET  
37 - SAFETY DECAL SET



REF	RDC54 PART	RD60 PART	RD72 PART	QTY	DESCRIPTION
1	----	----	----	1	Main frame (not sold separately)
2	1008044	1008044	1008044	1	Idler arm
3	1008022	1008069	1008166	1	Right shield
4	1008023	1008069	1008166	1	Left shield
5	1008024	1008167	1008167	1	Center shield

**34 Parts**

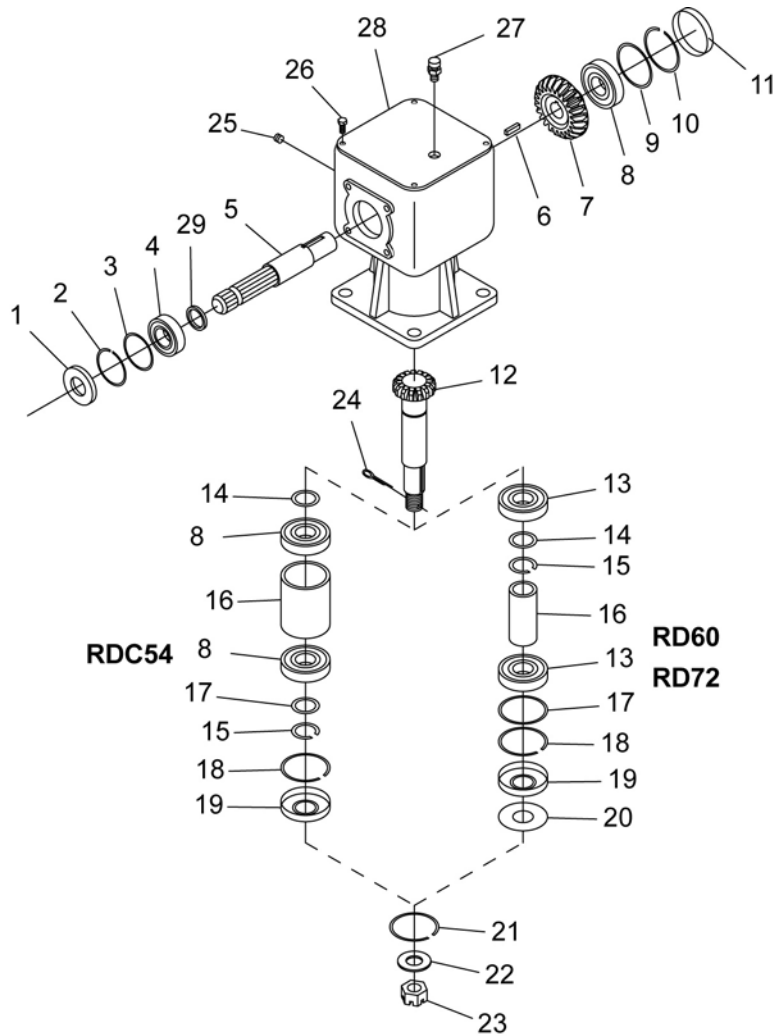
(Rev. 11/24/2006)  
MAN0260 (8/6/2004)

## RDC54, RD60 & RD72 MAIN FRAME ASSEMBLY

REF	RDC54 PART	RD60 PART	RD72 PART	QTY	DESCRIPTION
6	1008025	1008085	1008125	2	Caster tube
7	1008028	1008169	1008169	1	Gearbox stand
8	1008030	1008030	1008030	4	Caster yoke (pneumatic tire)
8	1008032	1008032	1008032	4	Caster yoke (solid tire)
9	1008045	18824	18824	2	Hitch
10	1008056	1008056	1008056	1	Gearbox sheave
11	----	----	----	3	Spindle (see page 40)
12	1006649	1006648	1006648	1	Gearbox (see page 36)
13	19579	19579	19579	2	A-frame arm
14	19056	55331	19578	2	Rear offset link arm
15	19605	19605	19605	1	Top link U-bracket
16	64814	64814	64814	1	Sleeve 1-1/4 x 1-3/4 x 2-3/4
17	1008097	1008097	1008097	4	Wheel, 10" pneumatic (includes items 19) <b>-or-</b>
17	1008096	1008096	1008096	4	Wheel, 10" solid (includes items 19)
18	19749	19749	19749	4	Sleeve 1/2 x 3/4 x 4-1/16 (pneumatic tire) <b>-or-</b>
18	29368	29368	29368	4	Sleeve 1/2 x 3/4 x 3-3/8 (solid tire)
19	24993	24993	24993	8	Ball bearing (pneumatic tire) <b>-or-</b>
19	65578	65578	65578	8	Flanged bushing (solid tire)
20	65130	65130	65130	12	1" Height spacer
21	65129	65129	65129	4	1/2" Height spacer
22	27542	27542	27542	4	7/16 Klik pin
23	20409	N/R	N/R	2	Clevis pin 7/8 x 3 <b>-or-</b>
23	N/R	33661	33661	2	Pin, Cat. 1 w/lockwasher & nut
24	N/R	1791	1791	2	Sleeve 5/8 x 1 x 9/16
25	484	484	484	3	Sleeve 5/8 x 1 x 7/16
26	20644	20644	18879	1	Belt
27	67283	67283	67283	2	5" Idler
28	67284	67284	67284	1	Shoulder sleeve
29	67131	67131	67131	1	Spring
30	1002048	1002048	1002048	1	Shield
31	1008098	1008099	1008099	1	Driveline (Walterscheid)
31	1020903	1009508	1009508	1	Driveline (Comer)
32	N/R	1008113	1008113	1	Sleeve 1-1/4 x 1-3/4 x 3/4
33	1008020	1008020	1008020	1	Manual tube holder
34	1004656	1004656	1004656	1	Manual tube - PVC
35	1004657	1004657	1004657	2	Caplug
36	1008196	1008196	1008196	1	Complete decal set
37	53591	53591	53591	1	Safety decal set

REF	PART	DESCRIPTION	REF	PART	DESCRIPTION
50	12305	* 1/2 NC x 5-1/2 HHCS GR5 (pneumatic tire) <b>-or-</b>	60	854	* 1/2 Standard flat washer
50	23479	* 1/2 NC x 5 HHCS GR5 (solid tire)	62	1008011	3/8 NC sq nut w/retainer
51	11900	* 1/2 NC Flanged locknut	63	18270	* 3/16 Safety pin
52	19025	* 5/8 NC Flanged locknut	65	39254	M8 x 1.25 x 16 mm Hex head screw
53	23479	* 1/2 NC x 5 HHCS GR5	66	4378	* 5/16 Standard flat washer
54	692	* 5/8 Standard flat washer	67	62153	3/8 NC x 1 Hex flange serrated
55	6100	* 1/2 NC x 1-1/4 HHCS GR5	68	6593	* 1/4 x 1/4 x 1 Key
56	941	* 5/8 NC x 2-1/2 HHCS GR5	69	20893	25 x 44 x 4 mm Flat washer
57	19024	5/8 NC x 1-3/4 Hex head flanged cap screw GR5	70	51946	M24 x 2 Hex castle nut
58	3489	* 1/2 NC x 3 HHCS GR5	71	64803	* 3/16 x 2 Cotter pin
59	12296	1/4 - 28 Grease fitting	72	52893	PTO Hanger bracket
			73	24576	1/2 NC x 1-3/4 HHCS GR5
					* Standard Hardware, Obtain Locally

## RDC54, RD60 & RD72 GEARBOX ASSEMBLY



REF	RDC54 PART	QTY	RD60 / 72 PART	QTY	DESCRIPTION	REF	RDC54 PART	QTY	RD60 / 72 PART	QTY	DESCRIPTION
A	1006649		1006648		Complete gearbox	17	1007862	1	1007862	1	Shim kit
1	39275	1	39275	1	Seal	18	57466	1	39251	1	Snap ring
2	1007861	1	1007861	1	Snap ring	19	57463	1	20900	1	Seal
3	1007865	1	1007865	1	Shim kit	20	----	1	20888	1	Washer, 1.58 x 3.13 x .04
4	51850	1	51850	1	Ball bearing	21	1007858	1	20897	1	Snap ring
5	N/S	1	N/S	1	Input shaft	22	20893	1	20893	1	Washer 25 x 44 x 4 mm
6	20894	1	20894	1	Key 8 x 10 x 30 mm	23	51946	1	51946	1	Castle nut M24 x 2
7	N/S	1	N/S	1	Input gear	24	64803	1*	64803	1*	3/16 x 2 Cotter pin
8	20890	4	20890	1	Ball bearing	25	N/S	1*	N/S	1*	3/8 Solid plug
9	1007864	1	1007864	1	Shim kit	26	N/S	4*	N/S	4*	M10 x 22 mm Cap screw
10	57466	1	57466	1	Snap ring	27	39325	1	39325	1	Vent plug
11	57374	1	57374	1	Oil cap	28	1007873	1	1007873	1	Cover
12	N/S	1	N/S	1	Output shaft & gear	29	1007857	1	----	1	Spacer
13	----	1	20891	2	Ball bearing						
14	1007866	1	1007863	1	Shim kit						
15	1007859	1	20895	1	Snap ring						
16	1007860	1	20886	1	Spacer						

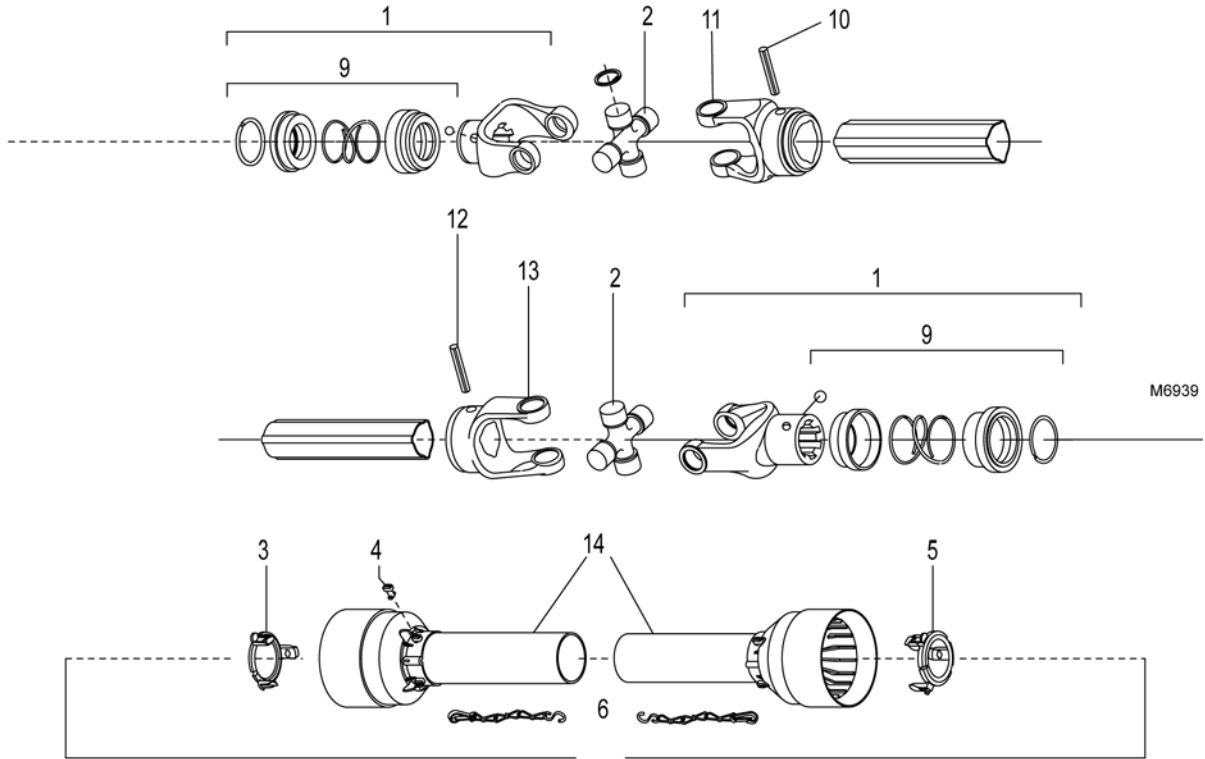
\* Standard hardware, obtain locally

# 36 Parts

(Rev. 6/10/2005)  
MAN0260 (8/6/2004)



## RDC54 DRIVELINE ASSEMBLY (COMER)



NOTE: EXAMINE THE DRIVELINE PROFILE TO DETERMINE THE CORRECT REPAIR PARTS FOR THE UNIT

WALTERSCHEID  
PROFILE

COMER  
PROFILE



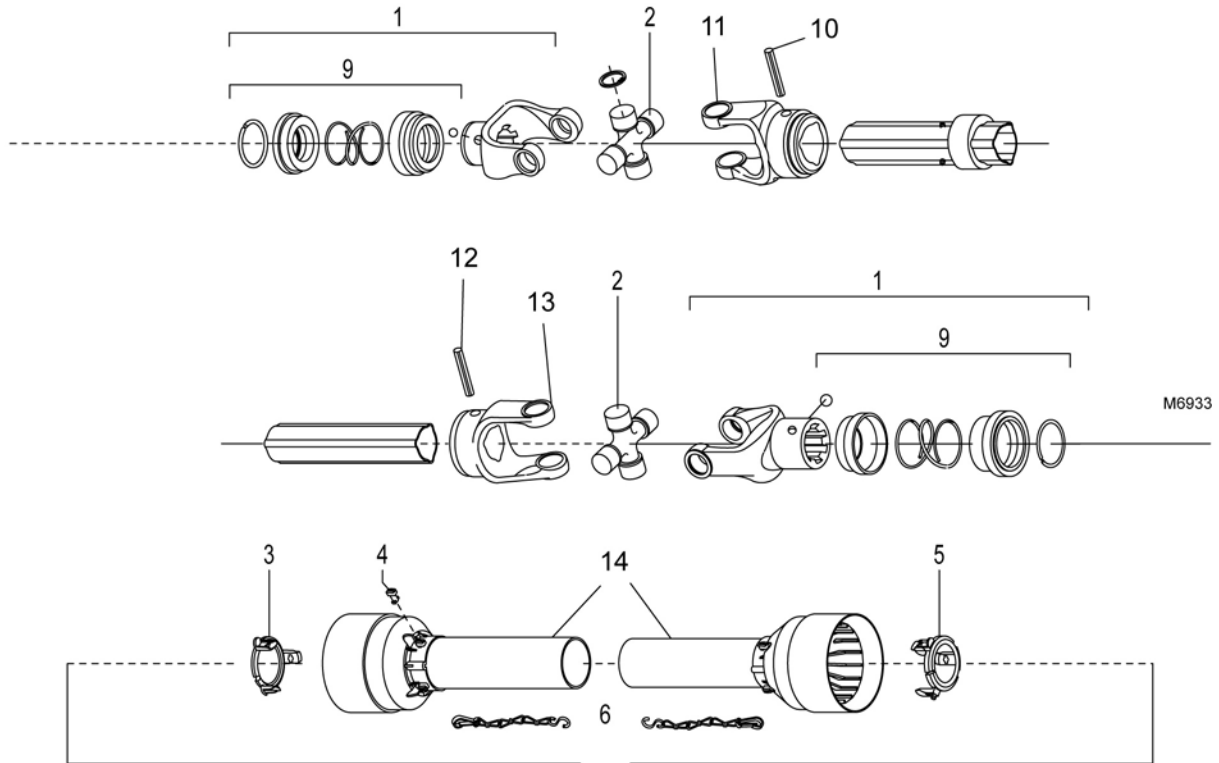
PG 39

PG 37

REF	PART	QTY	DESCRIPTION
A	1020903	1	Complete driveline assembly
1	1001300	2	Complete collar yoke C12 1-3/8 - 6
2	38478	2	Cross and bearing kit
3	1019442	1	Outer cone fix ring
4	30922	6	Protection fixing screw
5	1019444	1	Inner cone fix ring

REF	PART	QTY	DESCRIPTION
6	30917	2	Chain shielding tether
9	1001340	1	Lock collar repair kit
10	1001302	1	Flexible pin
11	1001301	1	Outer yoke tube
12	1001305	1	Flexible pin
13	1001306	1	Inner tube yoke
14	1021554	1	Complete shield

## RD60 & RD 72 DRIVELINE ASSEMBLY (COMER)



NOTE: EXAMINE THE DRIVELINE PROFILE TO DETERMINE THE CORRECT REPAIR PARTS FOR THE UNIT

WALTERSCHEID  
PROFILE

COMER  
PROFILE



PG 39

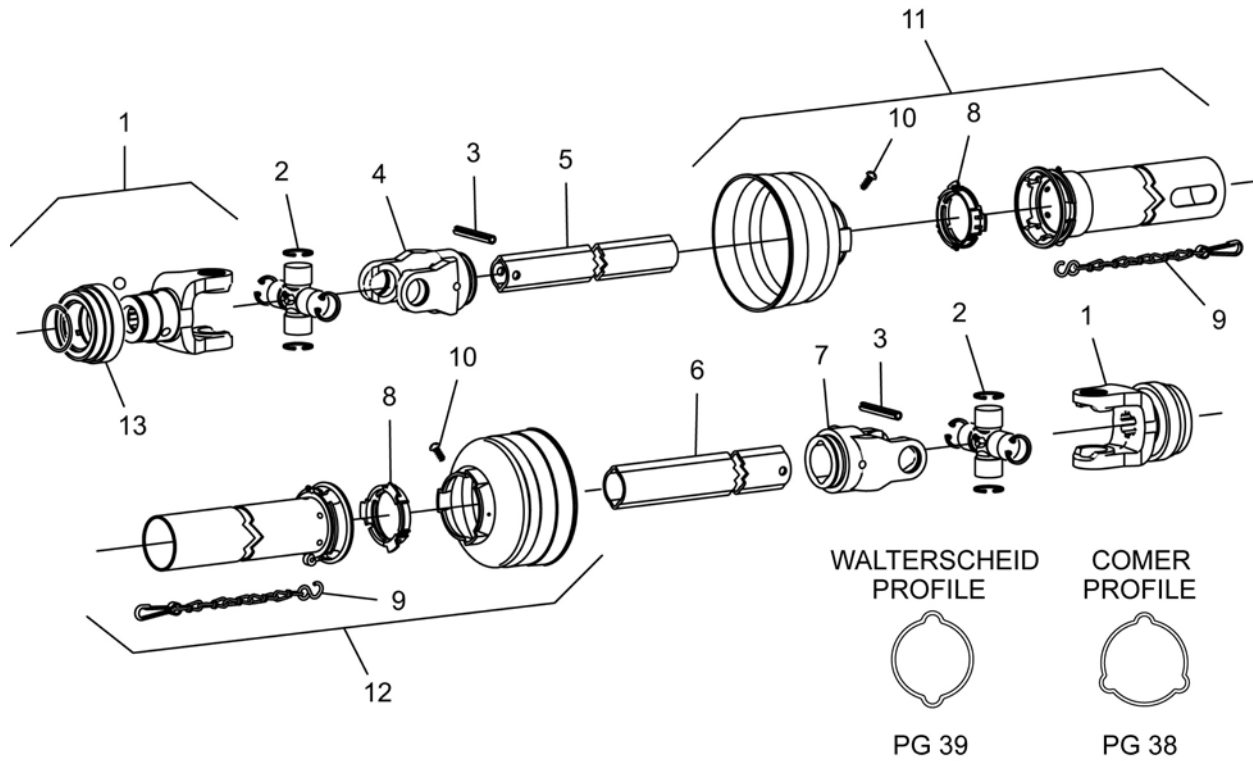
PG 38

REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
A	1009508	1	Complete driveline assembly	6	30917	2	Chain shield tether
1	1001300	2	Complete collar yoke C12 1-3/8 - 6	9	1001340	1	Lock collar repair kit
2	38478	2	Cross and bearing kit	10	1001302	1	Flexible pin
3	1019442	1	Outer cone fix ring	11	1001301	1	Outer yoke tube
4	30922	6	Protective fixing screw	12	1001305	1	Flexible pin
5	1019444	1	Inner cone fix ring	13	1001306	1	Inner tube yoke
				14	1021323	1	Complete shield

**38 Parts**

(Rev. 1/12/2007)  
MAN0260 (8/6/2004)

## RDC54, RD60 & RD72 DRIVESHAFT WALTERSCHEID (TWO-LOBE SHAFT)



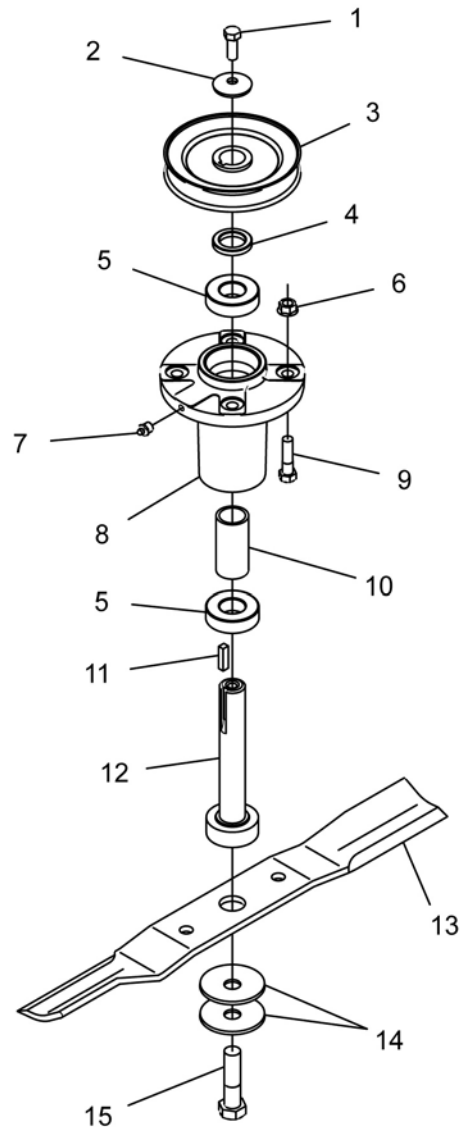
REF	PART	QTY	DESCRIPTION
A	1008098	1	Complete driveline RDC54 -or-
B	1008099	1	Complete driveline RD60, RD72
1	40571	2	Yoke, 1-3/8 - 6-Spline QD
2	154	2	U-Joint repair kit L14R
3	40775	2	Pin, spring 10 mm x 65 mm
4	40572	1	Yoke, inner profile
5	40583	1	Drive tube, inner profile
6	40592	1	Drive tube, outer profile
7	40573	1	Yoke, inner profile

REF	PART	QTY	DESCRIPTION
8	40776	2	Bearing ring, guard
9	40777	2	Chain, guard anti-rotation
10	40778	2	Screw, guard
11	40759	1	Guard, outer half (also includes items 8, 9, 10)
12	40761	1	Guard, inner half (also includes items 8, 9, 10)
13	40589	2	Slide lock collar repair kit (without yoke)

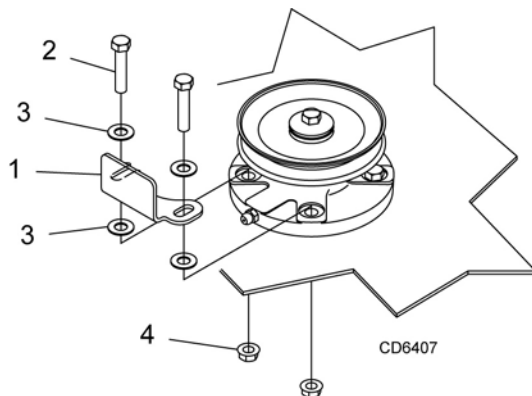
## RDC54, RD60 & RD72 BLADE & SPINDLE ASSEMBLY

REF	PART	QTY	DESCRIPTION
A	1009080	1	Complete spindle assembly (includes 1, 2, 4, 5 through 12, 14 & 15)
1	64518	1	3/8 NF x 1 HHCS GR5
2	70005	1	Cup washer
3	1008059	1	Sheave (RDC54) <b>-or-</b>
3	1008057	1	Sheave (RD60) <b>-or-</b>
3	1008040	1	Sheave (RD72)
4	1008055	1	Spacer
5	72933	2	Spindle bearing
6	14350*	4	3/8 NC Flange locknut
7	1972*	1	1/4 Tapered grease fitting
8	1008053	1	Spindle housing
9	976*	4	3/8 NC x 1-1/2 HHCS GR5
10	1008052	1	Spacer
11	70072*	1	Square key
12	1008042	1	Shaft assembly
13	78127KT	1	Blade kit, high suction 18.7" (includes 3 blades)(RDC54) <b>-or-</b>
13	1001513KT	1	Blade kit, high suction 21" (includes 3 blades)(RD60) <b>-or-</b>
13	1008199KT	1	Blade kit, high suction 25" (includes 3 blades)(RD72)
14	10635	2	Cup washer
15	1008095	1	5/8 NF x 2 HHCS GR5

\* Standard Hardware - Obtain Locally



## RDC54, RD60, RD72 BELT GUIDE (OPTIONAL)



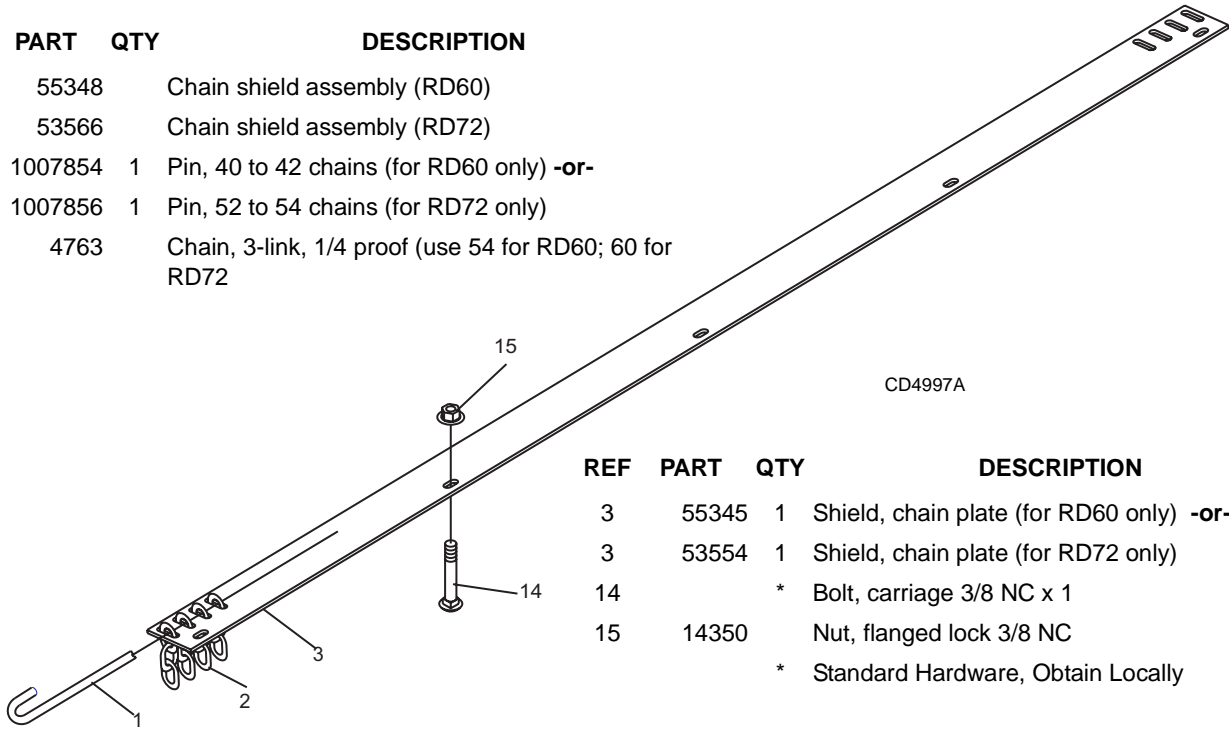
REF	PART	QTY	DESCRIPTION
A	1008181	1	Belt guide kit
1	N/A	1	Belt guide
2	3231*	2	3/8 NC x 2 Cap screw GR5
3	21575*	4	3/8 SAE Flat washer
4	14350*	2	3/8 NC Flange lock nut (not included)

**40 Parts**

(Rev. 12/15/2006)  
MAN0260 (8/6/2004)

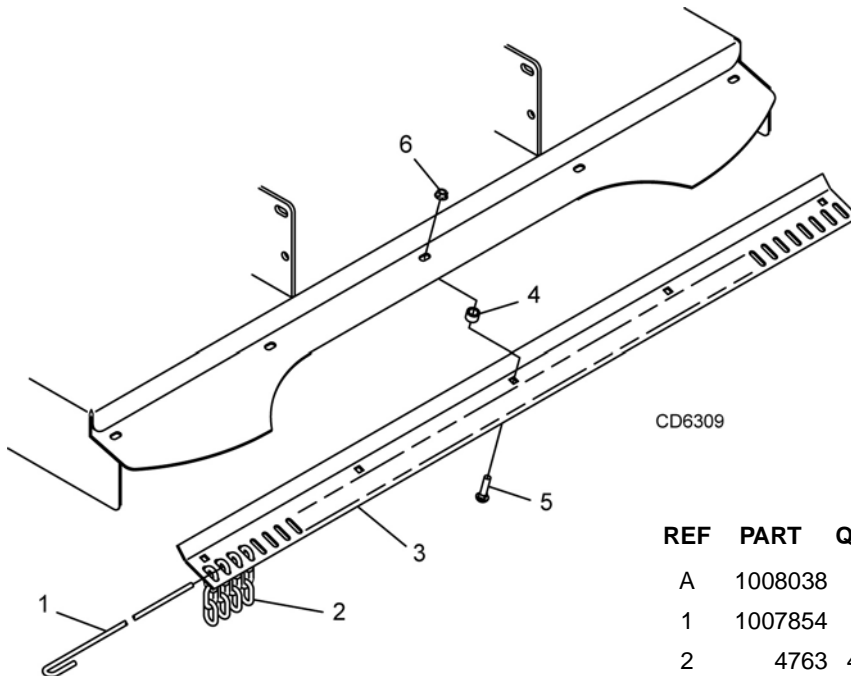
## RD60 & RD72 REAR CHAIN SHIELDING ASSEMBLY (OPTIONAL)

REF	PART	QTY	DESCRIPTION
A	55348		Chain shield assembly (RD60)
B	53566		Chain shield assembly (RD72)
1	1007854	1	Pin, 40 to 42 chains (for RD60 only) <b>-or-</b>
1	1007856	1	Pin, 52 to 54 chains (for RD72 only)
2	4763		Chain, 3-link, 1/4 proof (use 54 for RD60; 60 for RD72)



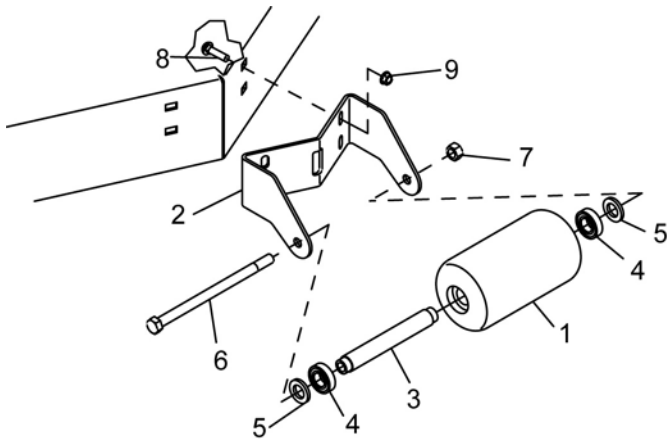
REF	PART	QTY	DESCRIPTION
3	55345	1	Shield, chain plate (for RD60 only) <b>-or-</b>
3	53554	1	Shield, chain plate (for RD72 only)
14		*	Bolt, carriage 3/8 NC x 1
15	14350		Nut, flanged lock 3/8 NC
			* Standard Hardware, Obtain Locally

## RDC54 REAR CHAIN SHIELD ASSEMBLY (OPTIONAL)



REF	PART	QTY	DESCRIPTION
A	1008038		Chain shield assembly
1	1007854	1	1/4 Pin
2	4763	49	3-Link 1/4 proof chain
3	1008037	1	Chain shield plate
4	22086	5	Sleeve 1/2 x 3/4 x 1/2
5	24890*	5	3/8 NC x 1-1/4 Carriage bolt
6	14350*	5	3/8 NC Flanged locknut
			* Standard Hardware, Obtain Locally

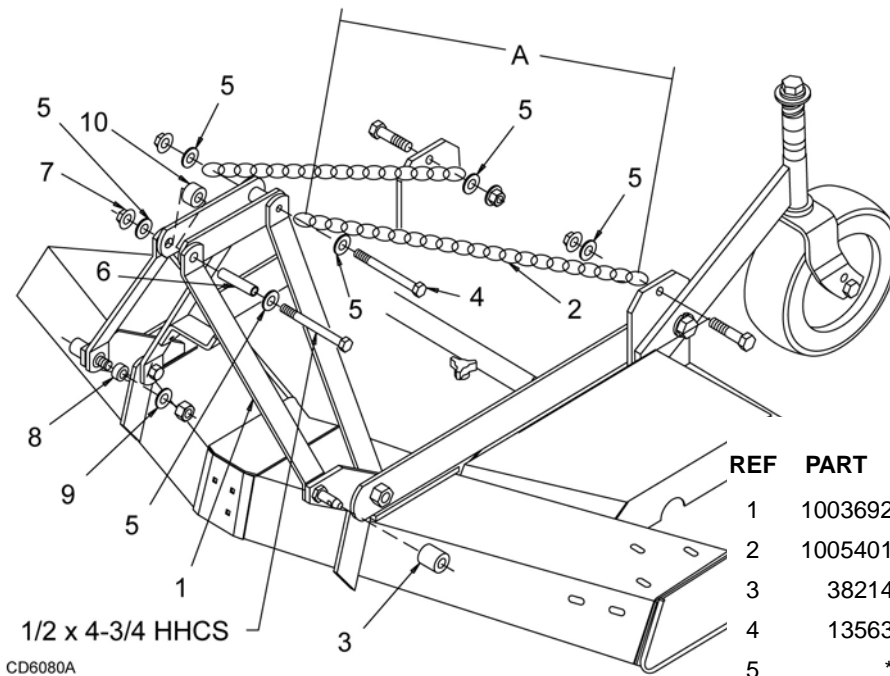
## RDC54, RD60 & RD72 FRONT ROLLER ASSEMBLY (OPTIONAL)



REF	PART	QTY	DESCRIPTION
A	1008035KT		Front roller kit, complete
1	1006418	1	Roller
2	1008034	1	Roller bracket
3	1006420	1	Spacer
4	35193	2	Bearing
5	3598	2	1/2 Flat washer SAE
6	38107	1	1/2 NC x 9 HHCS GR5
7	11900	1	1/2 NC Flanged locknut
8	24890*	4	3/8 NC x 1-1/4 Carriage bolt
9	14350*	4	3/8 NC Flanged locknut

\* Standard Hardware, Obtain Locally

## RD60 & RD72 QUICK HITCH KIT (OPTIONAL)



REF	PART	QTY	DESCRIPTION
1	1003692	2	Link, offset .38 x 2.0 x 15
2	1005401	2	Chain 3/8 proof coil 38 link
3	38214	2	Sleeve, .91 x 1.44 x 1.25
4	13563	1	Screw, HHCS 1/2 NC x 6 GR5
5	*	6	Washer, flat 1/2 ZP
6	29368	1	Sleeve, .50 x .75 x 3.38
7	11900	1	Nut, flange lock 1/2 NC
8	29281	2	Sleeve, 7/8 x 1-1/8 x 19/32 HT
9	*	2	Washer, flat 7/8
10	1003614	1	Sleeve, .81 x 1.25 x 1.81

\* Standard Hardware, Obtain Locally

**42 Parts**

(Rev. 12/15/2006)  
MAN0260 (8/6/2004)

# BOLT TORQUE CHART

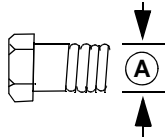
Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.

Fasteners must always be replaced with the same grade as specified in the manual parts list.

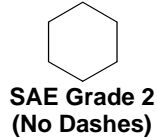
Always use the proper tool for tightening hardware: SAE for SAE hardware and Metric for metric hardware.

Make sure fastener threads are clean and you start thread engagement properly.

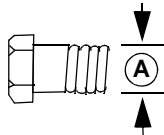
All torque values are given to specifications used on hardware defined by SAE J1701 MAR 99 & J1701M JUL 96.



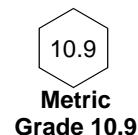
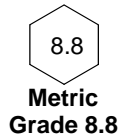
## SAE SERIES TORQUE CHART



A Diameter (Inches)	Wrench Size	MARKING ON HEAD					
		SAE 2		SAE 5		SAE 8	
		lbs-ft	N-m	lbs-ft	N-m	lbs-ft	N-m
1/4"	7/16"	6	8	10	13	14	18
5/16"	1/2"	12	17	19	26	27	37
3/8"	9/16"	23	31	35	47	49	67
7/16"	5/8"	36	48	55	75	78	106
1/2"	3/4"	55	75	85	115	120	163
9/16"	13/16"	78	106	121	164	171	232
5/8"	15/16"	110	149	170	230	240	325
3/4"	1-1/8"	192	261	297	403	420	569
7/8"	1-5/16"	306	416	474	642	669	907
1"	1-1/2"	467	634	722	979	1020	1383

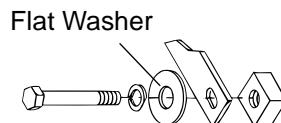
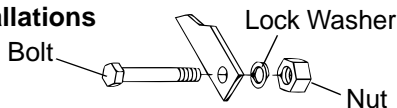


## METRIC SERIES TORQUE CHART



A Diameter & Thread Pitch (Millimeters)	Wrench Size	COARSE THREAD				FINE THREAD				A Diameter & Thread Pitch (Millimeters)
		MARKING ON HEAD								
		Metric 8.8		Metric 10.9		Metric 8.8		Metric 10.9		
		N-m	lbs-ft	N-m	lbs-ft	N-m	lbs-ft	N-m	lbs-ft	
6 x 1.0	10 mm	8	6	11	8	8	6	11	8	6 x 1.0
8 x 1.25	13 mm	20	15	27	20	21	16	29	22	8 x 1.0
10 x 1.5	16 mm	39	29	54	40	41	30	57	42	10 x 1.25
12 x 1.75	18 mm	68	50	94	70	75	55	103	76	12 x 1.25
14 x 2.0	21 mm	109	80	151	111	118	87	163	120	14 x 1.5
16 x 2.0	24 mm	169	125	234	173	181	133	250	184	16 x 1.5
18 x 2.5	27 mm	234	172	323	239	263	194	363	268	18 x 1.5
20 x 2.5	30 mm	330	244	457	337	367	270	507	374	20 x 1.5
22 x 2.5	34 mm	451	332	623	460	495	365	684	505	22 x 1.5
24 x 3.0	36 mm	571	421	790	583	623	459	861	635	24 x 2.0
30 x 3.0	46 mm	1175	867	1626	1199	1258	928	1740	1283	30 x 2.0

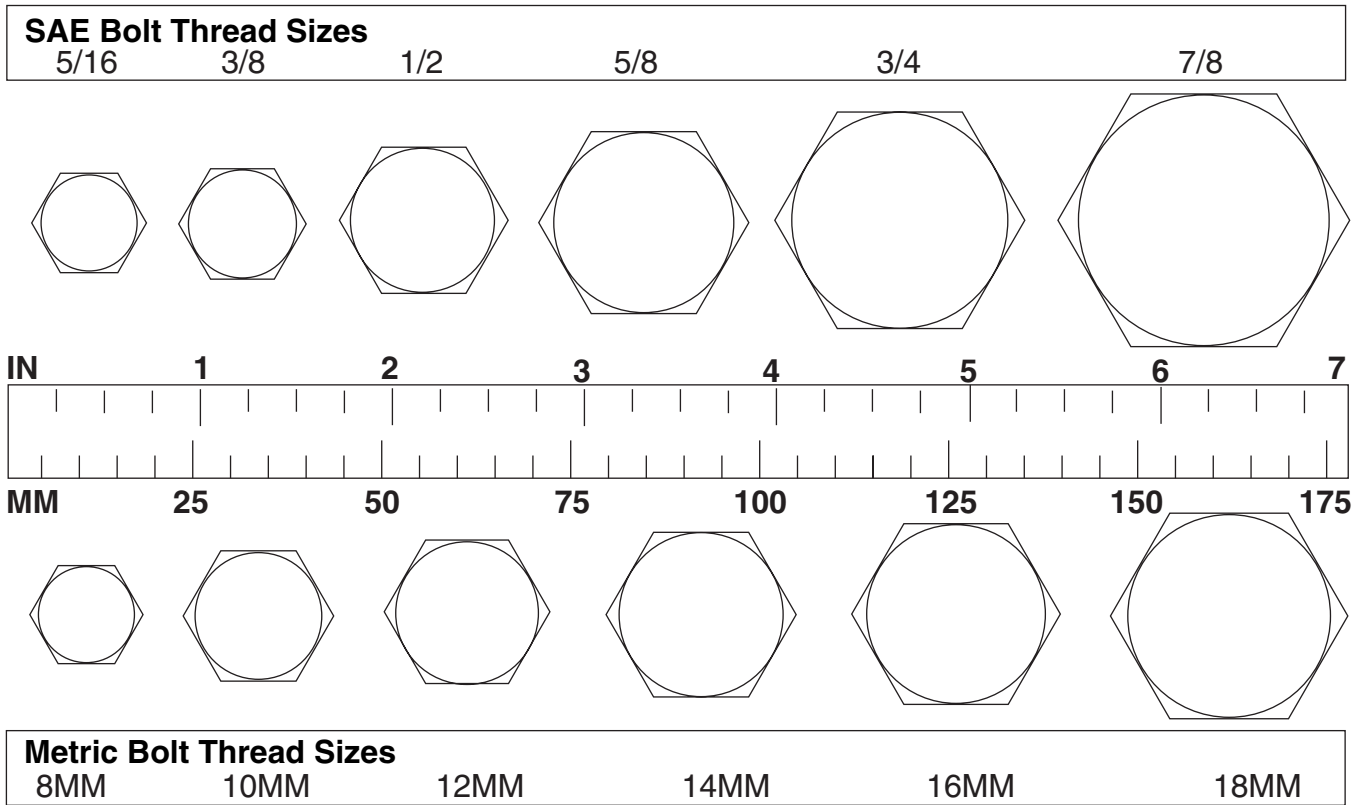
### Typical Washer Installations



8/9/00

# BOLT SIZE CHART

**NOTE:** Chart shows bolt thread sizes and corresponding head (wrench) sizes for standard SAE and metric bolts.



## ABBREVIATIONS

AG .....Agriculture  
 ATF ..... Automatic Transmission Fluid  
 BSPP ..... British Standard Pipe Parallel  
 BSPTM ..... British Standard Pipe Tapered Male  
 CV ..... Constant Velocity  
 CCW ..... Counter-Clockwise  
 CW ..... Clockwise  
 F ..... Female  
 GA ..... Gauge  
 GR (5, etc.) ..... Grade (5, etc.)  
 HHCS ..... Hex Head Cap Screw  
 HT ..... Heat-Treated  
 JIC ..... Joint Industry Council 37° Degree Flare  
 LH ..... Left Hand  
 LT ..... Left  
 m ..... Meter  
 mm ..... Millimeter  
 M ..... Male  
 MPa ..... Mega Pascal  
 N ..... Newton

NC ..... National Coarse  
 NF ..... National Fine  
 NPSM ..... National Pipe Straight Mechanical  
 NPT ..... National Pipe Tapered  
 NPT SWF ..... National Pipe Tapered Swivel Female  
 ORBM ..... O-Ring Boss - Male  
 P ..... Pitch  
 PBY ..... Power-Beyond  
 psi ..... Pounds per Square Inch  
 PTO ..... Power Take Off  
 QD ..... Quick Disconnect  
 RH ..... Right Hand  
 ROPS ..... Roll-Over Protective Structure  
 RPM ..... Revolutions Per Minute  
 RT ..... Right  
 SAE ..... Society of Automotive Engineers  
 UNC ..... Unified Coarse  
 UNF ..... Unified Fine  
 UNS ..... Unified Special



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# WARRANTY

(All Models Except Mow'n Machine™ Zero-Turn Mowers and Woods Boundary™ Utility Vehicles)

Please Enter Information Below and Save for Future Reference.

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

From (Dealer): \_\_\_\_\_

Model Number: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Woods Equipment Company ("WOODS") warrants this product to be free from defect in material and workmanship. Except as otherwise set forth below, the duration of this Warranty shall be for TWELVE (12) MONTHS COMMENCING ON THE DATE OF DELIVERY OF THE PRODUCT TO THE ORIGINAL PURCHASER.

Woods backhoe models BH70-X, BH80-X, and BH90-X are warranted for two (2) years from the date of delivery to the original purchaser.

The warranty periods for specific parts or conditions are listed below:

Model Number	Part or Condition Warranted	Duration (from date of delivery to the original purchaser)
PHD25, PHD35, PHD65, PHD95, 1260, 2162, 3240, BB48, BB60, BB72, BB84, BB600, BB720, BB840, BB6000, BB7200, BB8400, BW180-2, BW1800, DS96, DS120, RCC42, RM550-2, RM660-2, RM990-3, PRD6000, PRD7200, PRD8400, 7144RD-2, 9180RD-2, 9204RD-2, S15CD, S20CD, S22CD, S25CD, S27CD	Gearbox components	5 years
RDC54, RD60, RD72	Gearbox components	3 years (1 year if used in rental or commercial applications)
RM550-2, RM660-2, RM990-3, PRD6000, PRD7200, PRD8400, 7144RD-2, 9180RD-2, 9204RD-2	Blade spindles	3 years
BB600, BB720, BB840, BB6000, BB7200, BB8400, BW126, BW180, BW1260, BW1800, 1260, 2162, 3240	Rust-through	10 years

Under no circumstances will this Warranty apply in the event that the product, in the good faith opinion of WOODS, has been subjected to improper operation, improper maintenance, misuse, or an accident. This Warranty does not apply in the event that the product has been materially modified or repaired by someone other than WOODS, a WOODS authorized dealer or distributor, and/or a WOODS authorized service center. This Warranty does not cover normal wear or tear, or normal maintenance items. This Warranty also does not cover repairs made with parts other than those obtainable through WOODS.

This 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 purchaser in any way. There are no third party beneficiaries of this Warranty.

WOODS makes no warranty, express or implied, with respect to engines, batteries, tires or other parts or accessories not manufactured by WOODS. Warranties for these items, if any, are provided separately by their respective manufacturers.

WOODS' obligation under this Warranty is limited to, at WOODS' option, the repair or replacement, free of charge, of the product if WOODS, in its sole discretion, deems it to be defective or in noncompliance with this Warranty. **The product must be returned to WOODS with proof of purchase within thirty (30) days after such defect or noncompliance is discovered or should have been discovered, routed through the dealer and distributor from whom the purchase was made, transportation charges prepaid.** WOODS shall complete such repair or replacement within a reasonable time after WOODS receives the product. THERE ARE NO OTHER REMEDIES UNDER THIS WARRANTY. THE REMEDY OF REPAIR OR REPLACEMENT IS THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY.

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This Warranty is subject to any existing conditions of supply which may directly affect WOODS' ability to obtain materials or manufacture replacement parts.

No agent, representative, dealer, distributor, serviceperson, salesperson, or employee of any company, including without limitation, WOODS, its authorized dealers, distributors, and service centers, is authorized to alter, modify, or enlarge this Warranty.

Answers to any questions regarding warranty service and locations may be obtained by contacting:

## Woods Equipment Company

2606 South Illinois Route 2  
Post Office Box 1000  
Oregon, Illinois 61061

800-319-6637 tel  
800-399-6637 fax  
www.WoodsEquipment.com



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## WARRANTY

(Replacement Parts For All Models Except Mow'n Machine™  
Zero-Turn Mowers and Woods Boundary™ Utility Vehicles)

Woods Equipment Company ("WOODS") warrants this product to be free from defect in material and workmanship for a period of ninety (90) days from the date of delivery of the product to the original purchaser with the exception of V-belts, which will be free of defect in material and workmanship for a period of 12 months.

Under no circumstances will this Warranty apply in the event that the product, in the good faith opinion of WOODS, has been subjected to improper operation, improper maintenance, misuse, or an accident. This Warranty does not cover normal wear or tear, or normal maintenance items.

This 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 purchaser in any way. There are no third party beneficiaries of this Warranty.

WOODS' obligation under this Warranty is limited to, at WOODS' option, the repair or replacement, free of charge, of the product if WOODS, in its sole discretion, deems it to be defective or in noncompliance with this Warranty. **The product must be returned to WOODS with proof of purchase within thirty (30) days after such defect or noncompliance is discovered or should have been discovered, routed through the dealer and distributor from whom the purchase was made, transportation charges prepaid.** WOODS shall complete such repair or replacement within a reasonable time after WOODS receives the product. THERE ARE NO OTHER REMEDIES UNDER THIS WARRANTY. THE REMEDY OF REPAIR OR REPLACEMENT IS THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY.

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