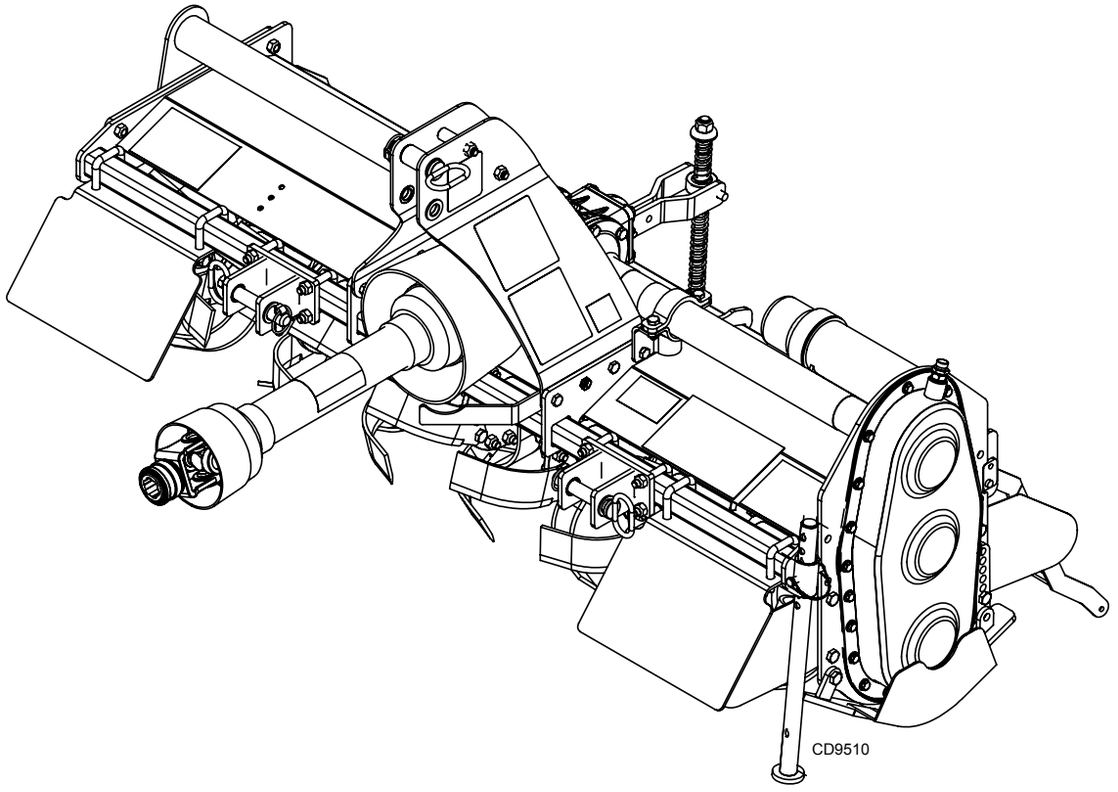
DIRTBREAKER™
ROTARY TILLER

DB4.20
DB5.20
DB6.20


CD9510

OPERATOR'S MANUAL

MAN1400
(Rev 04/24/2025)

WOODS®

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 Checklists in the Operator's Manual are completed before releasing equipment to the owner.

The dealer must complete the online Product Registration form at the Woods Dealer Website which certifies that all Dealer Checklist items have been completed. Dealers can register all Woods product at dealer.WoodsEquipment.com under Product Registration.

Failure to register the product 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 obtain complete warranty details, visit WoodsEquipment.com/warranty. You may also request a hard copy by calling 1-800-319-6637 or mail your request to: Woods Equipment Company, Attn: Warranty Dept. 2606 South Illinois Route 2, Oregon, IL 61061. To locate your nearest dealer, check the Dealer Locator at 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 **NOTICE** 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 is the safety alert symbol. It is used to alert you to potential physical injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

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

WARNING Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

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

IMPORTANT or ***NOTICE*** Is used to address practices not related to physical injury.

NOTE Indicates helpful information.

TABLE OF CONTENTS

¡LEA EL INSTRUCTIVO!

Si no lee Ingles, pida ayuda a alguien que si lo lee para que le traduzca las medidas de seguridad.

NOTICE:
If you would like to receive a free Spanish language translation of the Safety Rules section of this manual, plus a set of Spanish language safety decals, please contact your local Woods dealer.

AVISO:
Si desea recibir una traducción al español gratuita de la sección de Reglas de seguridad de este manual y un juego de etiquetas de seguridad en español, por favor comuníquese con su concesionario local de Woods.

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

Model	DB4.20	DB5.20	DB6.20
Tilling Width	47"	59"	71"
Overall Transport Width	53"	67"	76"
Maximum Tilling Depth	7"	7"	7"
Operating Weight	570 lbs	640 lbs	705 lbs
Rotor Swing Diameter	16"	16"	16"
Number of Blade Flanges	6	8	9
Number of Blades	36	48	54
Blade Rotation Direction	Forward (Travel Direction)		
Drive Type	Gear		
Tractor PTO Speed	540 RPM		
Rotor Speed	244 RPM		
Tractor Hitch Categories	Limited Category 1 & Category 1		
Quick Hitch Ready	Yes - Category 1		
Tractor Horsepower	15 - 25 HP	20 - 30 HP	25 - 35 HP
Skid Shoe Depth Adjustments	6 X 1/2"	6 X 1/2"	6 X 1/2"
Offset	0.4"	1.5"	0"
Input Gearbox Oil Capacity	1.2 Pints SAE 80W-90		
Side Gearbox Oil Capacity	1.8 Quarts SAE 80W-90		
Operating Temperature Range	15° - 110° F		

GENERAL INFORMATION

⚠ WARNING

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

The purpose of this manual is to assist you in operating and maintaining your tiller. 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 but, due to possible inline production changes, your machine may vary slightly in detail. We reserve the right to redesign and change the machines as may be necessary without notification.

Throughout this manual, references are made to right and left directions. These are determined by standing behind the equipment facing the direction of forward travel. Blade rotation is rearward as they contact the ground.

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

- **This machine is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.**
- **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, 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.**
- **If you do not understand any part of this manual and need assistance, see your dealer.**
- **Know your controls and how to stop engine and attachment quickly in an emergency.**
- **Operators must be instructed in and be capable of the safe operation of the equipment, its attachments, and all controls. Do not allow anyone to operate this equipment without proper instructions.**
- **Never allow children or untrained persons to operate equipment.**

PREPARATION

- **Check that all hardware is properly installed. Always tighten to torque chart specifications unless instructed otherwise in this manual.**
- **Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.**
- **Make sure attachment is properly secured, adjusted, and in good operating condition.**
- **Make sure spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.**
- **Before putting equipment into service, check and adjust driveline length as instructed in Operator's Manual. Driveline must not bottom out or pull apart throughout the full range of the tractor hitch. Do not operate until driveline length is correct.**
- **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 drive-lines, 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.**
- **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 20% of tractor and equipment weight must be on the tractor front wheels when attachments are in transport position. Without this weight, front tractor wheels could raise up resulting in loss of steering. The weight may be attained with front wheel weights, ballast in tires, front tractor weights or front loader. Weigh the tractor and equipment. Do not estimate.**
- **Inspect and clear area of stones, branches, or other hard objects that might be thrown, causing injury or damage.**
- **Connect PTO driveline directly to power unit PTO shaft. Never use adapter sleeves or adapter shafts. Adapters can cause driveline failures due to incorrect spline or incorrect operating length and can result in personal injury or death.**
- **Equip tractor with a fire extinguisher and first aid kit.**

SAFETY RULES

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

OPERATION

- **Only engage power when equipment is at ground operating level. Always disengage power when equipment is raised off the ground.**
- **Do not allow bystanders or animals in the area when operating, attaching, removing, assembling, or servicing equipment.**
- **Keep bystanders and animals away from equipment.**
- **Never direct discharge toward people, animals, or property.**
- **Do not operate 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.**
- **Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the machine and the tilling activity. Never assume that children will remain where you last saw them.**
- **Keep children out of the operating area and under the watchful care of a responsible adult other than the operator.**
- **Do not carry children, even with the blade(s) shut off. Children could fall off and be seriously injured or interfere with safe machine operation. Children who have been given rides in the past could suddenly appear in the tilling area for another ride and be run over by the machine.**
- **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.**
- **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.**
- **Always walk around tractor and machinery instead of stepping over or on the PTO driveline.**
- **Operate tractor PTO at 540 RPM. Do not exceed.**
- **Do not operate PTO during transport.**
- **Connect PTO driveline directly to power unit PTO shaft. Never use adapter sleeves or adapter shafts. Adapters can cause driveline failures due to incorrect spline or incorrect operating length and can result in personal injury or death.**
- **Disengage PTO and raise tiller before reversing tractor. Look down and to the rear to make sure area is clear before moving reward.**
- **Use extreme care when working close to fences, ditches, other obstructions, or on hillsides.**
- **Do not operate or transport on steep slopes.**
- **Do not stop, start, or change directions suddenly on slopes.**
- **Use extreme care and reduce ground speed on slopes and rough terrain.**
- **Watch for hidden hazards on the terrain during operation.**
- **Stop power unit and equipment immediately upon striking an obstruction. Turn off engine, set parking brake, remove key, inspect, and repair any damage before resuming operation.**
- **Do not operate at ambient temperatures above 110°F. Gearboxes may become too hot to safely touch.**
- **Continuous operation while the clutch is slipping could cause heat build-up resulting in fire. Adjust slip clutch pressure by tightening springs to the dimension shown in the "Owner Service" section. If clutch is set to minimum spring length, replace the friction disks as shown.**
- **Before performing any service or maintenance, disconnect driveline from tractor PTO.**
- **Before dismounting power unit or performing any service or maintenance, follow these steps: disengage power to equipment, lower the 3-point hitch and all raised components to the ground, operate valve levers to release any hydraulic pressure, set parking brake, stop engine, remove key, and unfasten seat belt.**

SAFETY RULES

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

- **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.**

MAINTENANCE

- **Service and maintenance work not covered in OWNER SERVICE must be done by a qualified dealership. Special skills, tools, and safety procedures may be required. Failure to follow these instructions can result in serious injury or death.**
- **Before dismounting tractor or performing any service or maintenance, follow these steps:**
  - **Disengage power to equipment and wait for all moving parts to stop.**
  - **Lower all raised components to the ground and operate valve levers to release any hydraulic pressure.**
  - **Place all controls in neutral and set parking brake.**
  - **Stop tractor engine, remove ignition key and unfasten seat belt.**
- **Before performing any service or maintenance, disconnect driveline from tractor PTO.**
- **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 modify or alter or permit anyone else to modify or alter the equipment or any of its components in any way.**
- **Your dealer can supply original equipment hydraulic accessories and repair parts. Substitute parts may not meet original equipment specifications and may be dangerous.**
- **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.**
- **Do not allow bystanders or animals in the area when operating, attaching, removing, assembling, or servicing equipment.**
- **Make sure attachment is properly secured, adjusted, and in good operating condition.**
- **Never perform service or maintenance with engine running.**
- **Keep all persons and animals away from operator control area while performing adjustments, service, or maintenance.**
- **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.**
- **Use a suitable lifting device of sufficient capacity. Use adequate personnel to handle heavy components.**

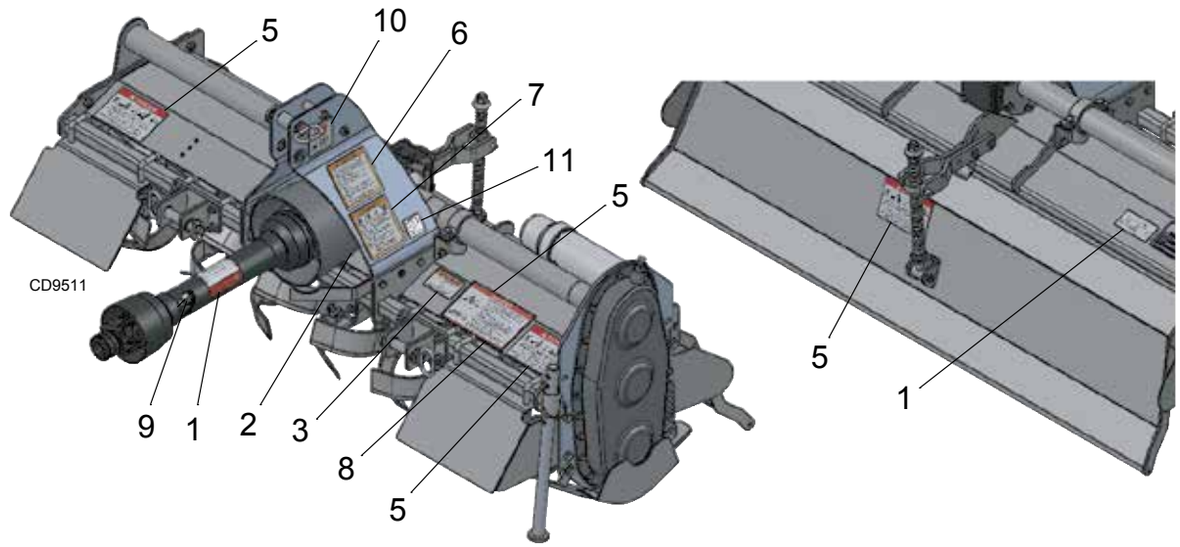
STORAGE

- **Before disconnecting and storing, follow these instructions:**
  - **Store on level, solid ground.**
  - **Disengage power to equipment and wait for all moving parts to stop.**
  - **Shut off tractor and engage parking brake.**
  - **Disconnect input driveline from tractor and place on the storage support provided.**
  - **Use parking stand to keep tiller in stable, upright position.**
- **Keep children, bystanders, and animals away from the equipment and the storage area.**

SAFETY & INSTRUCTIONAL DECALS

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Replace Immediately If Damaged!



1 - SERIAL NUMBER PLATE

Model #
Serial #
(BAR CODE)
WOODS Woods Equipment Company Oregon, Illinois 61061 USA

2 - PN 18868

DANGER

SHIELD MISSING
DO NOT OPERATE
PUT SHIELD ON
18868-B

3 - PN 18866

WARNING

DO NOT EXCEED PTO SPEED OF
540 RPM
PTO speeds higher than 540 RPM can cause equipment failure and personal injury.
18866

4 - PN 18864

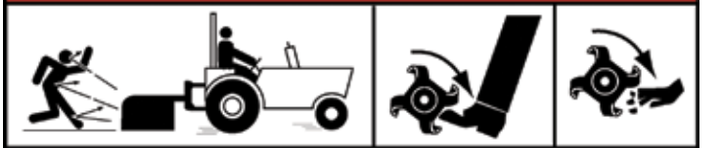
DANGER

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.
- Read the operator's manual.
- Do not use PTO adapters.

18864

5 - PN P0021

DANGER



KEEP AWAY FROM FRONT AND REAR OPENINGS WHEN TRACTOR IS RUNNING.
- **Objects can be thrown by rotating blades.**
- **Contact with rotating blades will cause injury.**

FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS INJURY OR DEATH.
P0021

SAFETY & INSTRUCTIONAL DECALS

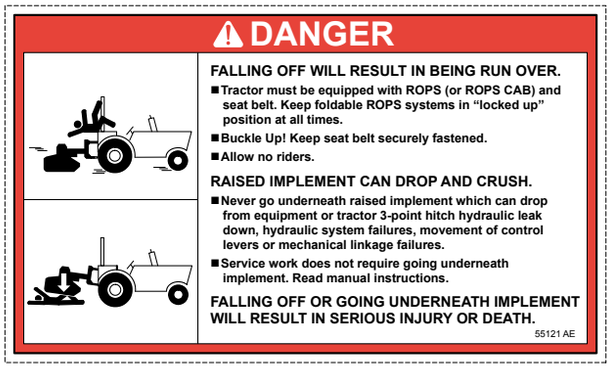
ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Replace Immediately If Damaged!

6 - PN 55122

7 - PN 1003751

8 - PN 55121



9 - PN 33347

10 - PN 1032572

11 - PN 607043

BE CAREFUL!

Keep safety decals clean and visible.

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.

Replace safety decals if they are missing or illegible.

Replacement safety decals can be ordered free from your Woods dealer, or in the United States and Canada call 1-800-319-6637.

OPERATION

The RT rotary tiller is designed for completion of plowing operations and seedbed preparation. It breaks up clods, levels the soil surface, destroys weeds, and mixes in fertilizer. Refer to the information in this manual for the specifications, parts, assemblies, and adjustments.

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

⚠ WARNING

- **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, 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.**
- **Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in "locked up" position at all times.**
- **Do not allow bystanders or animals in the area when operating, attaching, removing, assembling, or servicing equipment.**
- **Never allow children or untrained persons to operate 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.**
- **Before dismounting power unit or performing any service or maintenance, follow these steps: disengage power to equipment, lower the 3-point hitch and all raised components to the ground, operate valve levers to release any hydraulic pressure, set parking brake, stop engine, remove key, and unfasten seat belt.**
- **Make sure spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.**
- **Always walk around tractor and machinery instead of stepping over or on the PTO driveline.**
- **Operate tractor PTO at 540 RPM. Do not exceed.**
- **Make sure attachment is properly secured, adjusted, and in good operating condition.**

ATTACHING ROTARY TILLER TO TRACTOR

1. Move the tractor into position in front of the tiller. Move back slowly and carefully, not allowing anyone to be between the tractor and the tiller.
2. Turn off tractor engine.
3. Place the two lower arms of the 3-point hitch over outer hitch pins. Secure with klik pin. (not provided).
4. Attach the tractor center link to the upper hitch point of the rotary tiller. Adjust the length of the center link until the tops of the frame ends are parallel to the ground.
5. Adjust the tractor lower 3-point arm anti-sway devices to prevent tiller from swinging side to side during transport.
6. Attach the front PTO driveline from the rotary tiller to the tractor. (Slide the front section of the PTO driveline into the back section. Slide the PTO shaft onto the rear PTO output of the tractor).

NOTICE

- **If the PTO driveline is too long, severe driveline and gearbox damage is possible when hooking up the PTO driveline from the rotary tiller to the tractor. The front PTO driveline is long enough to fit a variety of tractors. It is possible that the front PTO driveline will need to be cut. There will be NO benefit by cutting only one telescoping section. Both sections of the driveline must be cut. DO NOT FORCE THE PTO TO FIT.**
- **WARRANTY IS VOID IF THE PTO DRIVELINE IS TOO LONG, resulting in gearbox, PTO, yoke or cross bearing damage.**

  NOTE: The PTO driveline, when attached to the tractor and gearbox, must not extend so there is less than four inches of overlap within the PTO driveline.

7. Raise park stand and secure in operating position.

Figure 1. Park Stand - Operating Position

Figure 2. Park Stand - Storage Position

DRIVELINE ATTACHMENT

Attach the rotary tiller to the tractor 3-point hitch (or quick hitch if available). Do not attach driveline. Raise and lower the tiller to determine maximum and minimum distance between the tractor PTO shaft and the gearbox input shaft. If the distance is too large, the driveline will be too short for proper engagement. If the distance is too small, the driveline may bottom out in operation and damage the tiller or tractor.

If the driveline is too short, please call your Woods dealer for a longer driveline.

If the driveline is too long, please follow the instructions for shortening the driveline.

SHORTENING DRIVELINE

1. Move the tiller up and down to get the shortest possible distance between tractor PTO shaft and gearbox input shaft. Leave the tiller in the minimum distance position. Install jack stands under the tiller for support.
2. Separate the driveline into two halves and connect them to the tractor and the gearbox.
3. Place driveline halves parallel to one another to determine how much to shorten the driveline.

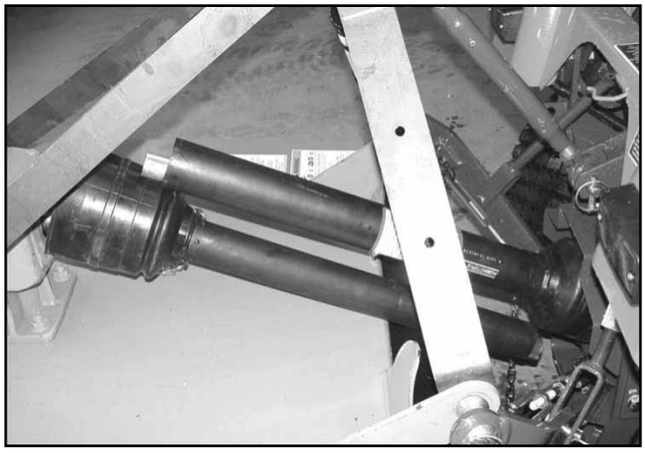


Figure 3. Drive Halves Placed Parallel

4. Measure from end of the upper shield to the base of the bell on the lower shield (A). Add 1-1/2" to dimension (A).

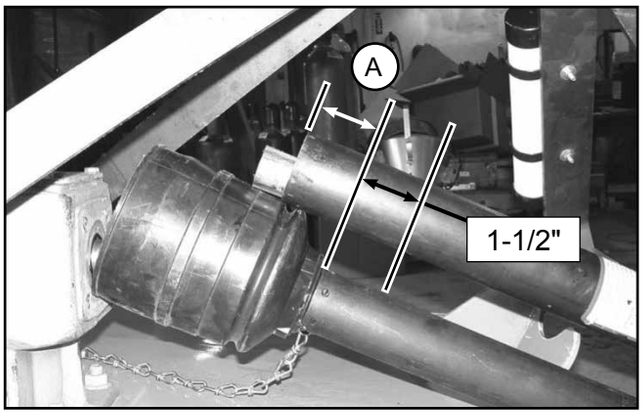


Figure 4. Determine Shield Length

5. Cut the upper shield to this overall dimension.

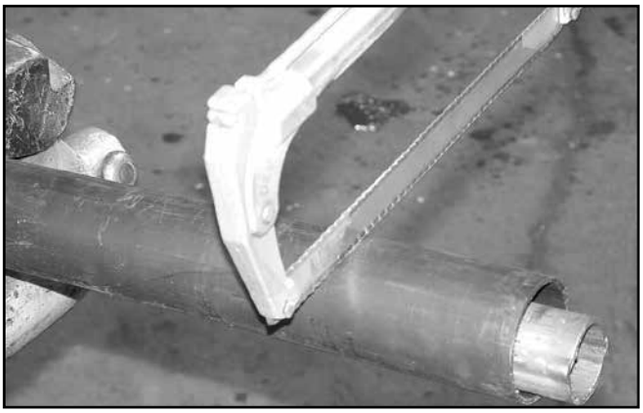


Figure 5. Cut Shield

6. Place the cut portion of the shield against the end of the shaft and use as a guide. Mark and cut the shaft.

Figure 6. Cut Shaft to Length

7. Repeat step 6 for the other half of the drive.
8. File and clean the cut ends of both drive halves. Ensure the drive halves slide smoothly together.

Do not run the tractor if proper driveline engagement cannot be obtained through these methods.

Connect the driveline to tractor PTO shaft, making sure the spring-activated locking collar slides freely and locks driveline to PTO shaft.

NOTICE

- **If attaching with quick hitch, the distance between the tractor PTO and gearbox input shaft will increase. Please follow the steps as you would for a 3-point hitch to insure proper engagement.**

WORKING DEPTH ADJUSTMENT

⚠ WARNING

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

1. Raise the tiller off the ground.
2. Level tiller side to side. Check by measuring from the forward skid shoe pivot to the ground on each side. (Figure 7)
3. Adjust, using tractor 3-point arm leveling device.

   NOTE: Keep the front of the tiller parallel to the ground.
4. Place two jack-stands under the tiller rotor shaft.

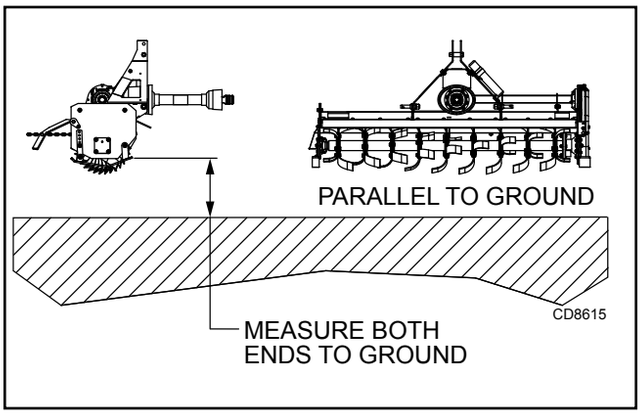
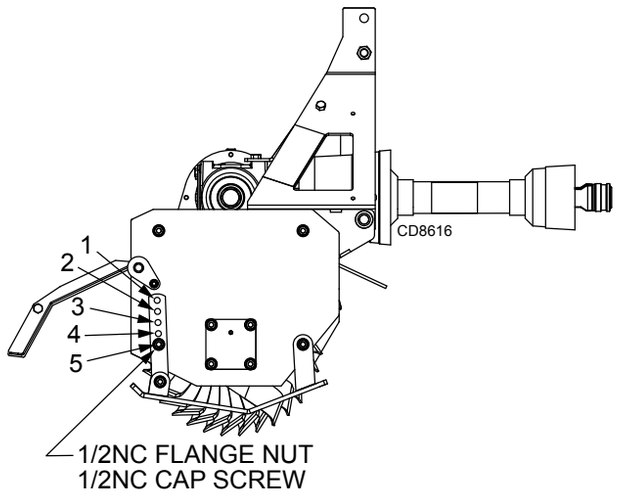


Figure 7. Leveling the Tiller

5. Loosen the 1/2" cap screws that act as the front pivots to the skid shoes. Remove the 1/2" cap- screws (46) that hold the rear of the skid shoes to the tiller frame.

6. Adjust the skid shoe to the desired tilling depth (Figure 8). Reinstall the cap screws in the rear of the skid shoe and tighten all cap screws.



Hole	First Pass Depth
1	0"
2	1"
3	2"
4	3"
5	4"

Figure 8. Tiller Depth Adjustment

NOTE: Tillage depth is dependent on ground hardness, tractor speed, skid shoe setting, and tractor hitch adjustment. Multiple passes may be necessary to achieve tillage depth.

OPERATING PROCEDURE

⚠ WARNING

- **Only engage power when equipment is at ground operating level. Always disengage power when equipment is raised off the ground.**

Read and understand the rotary tiller and tractor operator's manuals before operating the tiller. Failure to do so may result in death, serious personal injury or property damage.

Never raise the tiller more than a few inches off the ground when traveling from job site to job site.

Shut off the engine, set brake, remove key and remove seat belt. Dismount the tractor.

Tractor Stability

⚠ WARNING

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

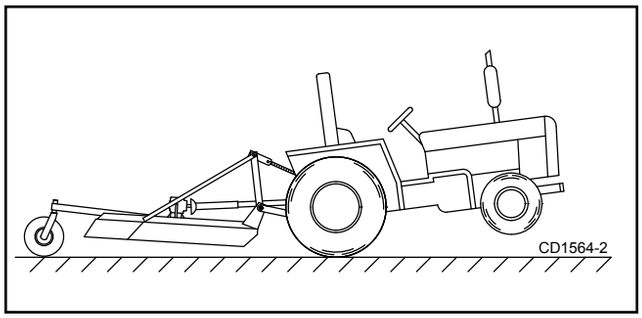


Figure 9. Tractor Stability (Typical)

Clutch Run-In

Clutch run-in must be done prior to initial use and before each season or whenever tiller has been setting idle for more than two months. See Slip Clutch Adjustment page 17 for the run-in procedure.

After you have completed the run-in of the clutch, return to the operating instructions and proceed with start-up. Failure to run the clutch in could result in premature driveline failure and warranty will be voided.

Start-Up Sequence

1. Start tractor engine.
2. Lower tiller slowly, nearly to the ground.
3. Engage tractor PTO.
4. Lower the tiller completely to the ground.
5. Increase engine rpm to normal operating speed of 540 rpm.
6. Move tractor forward. Select a slow tractor speed and increase slightly until operation is satisfactory.

Rear Shield Adjustment

The rotary tiller tailgate can be adjusted to control the tilth of the soil. The finest finish is achieved with the tailgate at the lowest adjustment. As the tailgate is raised, or adjusted up, the finish of the soil will become more coarse. Raising the tailgate reduces the amount of recirculation that occurs to the soil inside the tiller housing. If the soil conditions are very rocky, the tailgate should be run in a raised position so rocks may pass through the tiller more quickly.

NOTICE

- **Do not drop tiller to the ground with the rotor turning. Sudden high speed jolts multiply stress to the driveline and can cause extreme damage.**

OPERATING TECHNIQUES

Tilling Sod and Untilled Ground

For tearing up untilled sod or conditioning compacted soils, several shallow passes will be most productive. Set the skid shoes to one of the two most shallow positions. A gear should be selected on the tractor for a slow travel speed. Progressive passes can be done at progressively faster speeds.

NOTICE

- **After tilling for the first half hour, check for loose blades and retighten any loose hardware. Follow the shutdown procedure and blocking method before checking blades.**

Previously Tilled Ground

To pulverize the topsoil and prepare a good seedbed, set the skid shoes for a tilling depth equivalent to your deepest roots. Adjust the tailgate to the fully lowered position. A tractor gear should be selected such that the tiller does not lug the engine.

PRE-OPERATION CHECKLIST

(OWNER'S RESPONSIBILITY)

_____ Review and follow all safety rules and safety decal instructions on pages 5 through 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 all hardware is properly installed and secured.

_____ Check that equipment is properly and securely attached to tractor.

_____ Before starting tractor, check all equipment driveline guards for damage and make sure they rotate freely on all drivelines. Replace any damaged guards. If guards do not rotate freely on drivelines, repair and replace bearings before operating.

_____ Do not allow riders.

_____ Make sure driveline spring-activated locking collar slides freely and is seated firmly in tractor PTO spline groove.

_____ Keep all bystanders and animals away from equipment working area.

_____ Check all lubrication points and grease as instructed in the Lubrication Maintenance illustration, page 16.

_____ Make sure tractor ROPS or ROPS CAB and seat belt are in good condition. Keep foldable ROPS systems in "locked up" position at all times. Keep seat belt securely fastened during operation.

_____ Check to be sure gear lube runs out of the small check plug on the side of each gearbox.

_____ Check the condition of the tiller blades. Replace any blades that are broken or excessively worn.

_____ Check for objects that may be wound around the tiller rotor shaft. Objects like wire, string, tall grass and weeds can build up on the rotor shaft and affect tiller operation.

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.

⚠ WARNING

- **Keep all persons and animals away from operator control area while performing adjustments, service, or maintenance.**
- **Make sure shields and guards are properly installed and in good condition. Replace if damaged.**
- **Make sure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)**

⚠ CAUTION

- **If you do not understand any part of this manual and need assistance, see your dealer.**
- **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

⚠ WARNING

- **Before performing any service or maintenance, disconnect driveline from tractor PTO.**
- **Before dismounting power unit or performing any service or maintenance, follow these steps: disengage power to equipment, lower the 3-point hitch and all raised components to the ground, operate valve levers to release any hydraulic pressure, set parking brake, stop engine, remove key, and unfasten seat belt.**
- **Do not allow bystanders or animals in the area when operating, attaching, removing, assembling, or servicing equipment.**
- **Never perform service or maintenance with engine running.**
- **Do not modify or alter or permit anyone else to modify or alter the equipment or any of its components in any way.**
- **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.**

To minimize the potential hazards of working underneath the tiller, follow these procedures.

1. Jack stands with a load rating of 500 lbs or more are the only approved blocking device for this tiller. Install a minimum of two jack stands under the tiller, while tiller is still attached to tractor 3-point hitch, before working underneath it.
2. Consider the overall stability of the blocked unit. Just placing jack stands underneath will not ensure your safety. The working surface must be level and solid to support the weight on the jack stands. Make sure the jack stands are stable, both top and bottom. Make sure the tiller is approximately level.
3. With the full weight of the tiller on the jack stands, test blocking stability before working underneath.
4. Set the brakes and remove key before working underneath.
5. Securely block rear tractor wheels, in front and behind. Tighten tractor lower 3-point arm anti-sway devices to prevent side-to-side movement.

Regular preventive maintenance and immediate repair of broken or worn parts will ensure maximum efficiency and long life.

Because of the nature of the jobs the rotary tiller does, the tiller is constantly vibrating and shaking. Parts may become loose during use. One of the most important functions an operator can perform is observing and inspecting the equipment for loose or worn parts to prevent further damage or excessive downtime.

LUBRICATION INFORMATION

1. Do not let excess grease collect on or around parts, particularly when operating in sandy areas.
2. See Figure 10 for lubrication points and frequency of lubrication based on normal operating conditions. Severe or unusual conditions may require more frequent lubrication.
3. Use a lithium grease of #2 consistency with a MOLY (molybdenum disulfide) additive for all locations unless otherwise noted. Be sure to clean fittings thoroughly before attaching grease gun. Two good pumps of most guns is sufficient when the lubrication schedule is followed.

PTO DRIVE LINES

Periodically check the yokes on front PTO. Make sure the bolts and nuts are tight and the yoke is not moving on the shaft. PTO shafts and U-joints should be sparingly lubricated monthly.

QUALIFIED TECHNICIAN MAINTENANCE

Gearbox Lubrication

The gearboxes should be checked quarterly to be sure that the oil level is maintained at half full. Use plug located halfway up back face of gearbox to check/fill oil. A high quality gear oil with a viscosity index of 80W or 90W and an API service rating of GL-4 or -5 is recommended for use in the gearboxes. Oil should be changed after the first 30 hours or 30 days of operating; then checked regularly for leakage. In the case of seasonal usage, it is best to change the oil at the end of the season to remove moisture and corrosive contaminants.

Bearing Lubrication

Lubrication of the bearings will vary considerably with conditions. As a rule, bearings should be under-lubricated rather than over-lubricated. Over-lubrication can cause seals to blow out.

NOTICE

- **Replacement bearings should be only high quality original equipment bearings for longer life.**

Install new complete bearing housing if needed or just replace the bearing insert. The shafts should be straight, free of burrs, and up to size. If shaft is worn, replace it prior to completing assembly.

Rotor Shaft and Bearing Service

1. Place tiller on level, dry surface and block tiller. (See Blocking Method.)
2. Support rotor shaft with blocking or straps so that bearing assembly does not support weight of rotor assembly.
3. Remove M12 bolts from cover plate.
4. Remove end plate from frame by removing four M12 bolts and two M10 bolts.
5. Remove bolts to take hub assembly off shaft to replace, or to replace bearings or seals.
6. Replace parts and gasket as needed.
7. Follow instructions 3 through 5 in reverse order to reassemble.
8. Add grease through fitting in cover plate, (approximately 40 pumps).

Driveline Lubrication

1. Lubricate the driveline slip joint every 8 hours of operation. Failure to maintain proper lubrication could result in damage to u-joints, gearbox, and driveline.
2. Lower tiller to ground, disconnect driveline from tractor PTO shaft, and slide halves apart. Do not disconnect the halves from each other.
3. Apply a bead of grease completely around male half where it meets female half. Slide drive halves over each other several times to distribute grease.
4. Apply one pump of grease to each driveline u-joint grease fitting.
5. Apply one pump of grease to each of the plastic driveline shield bearings.

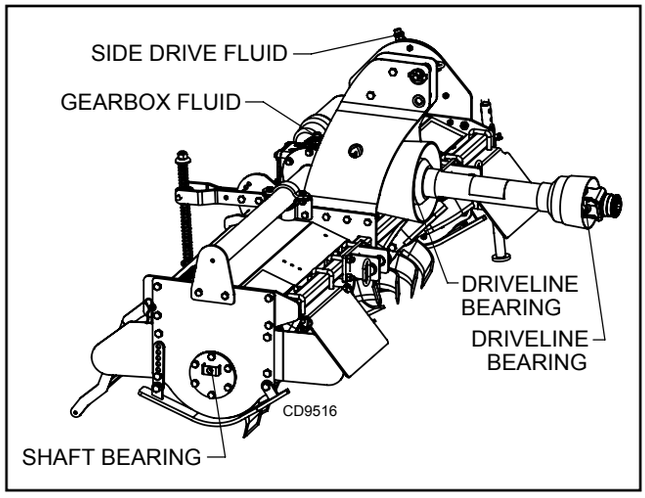
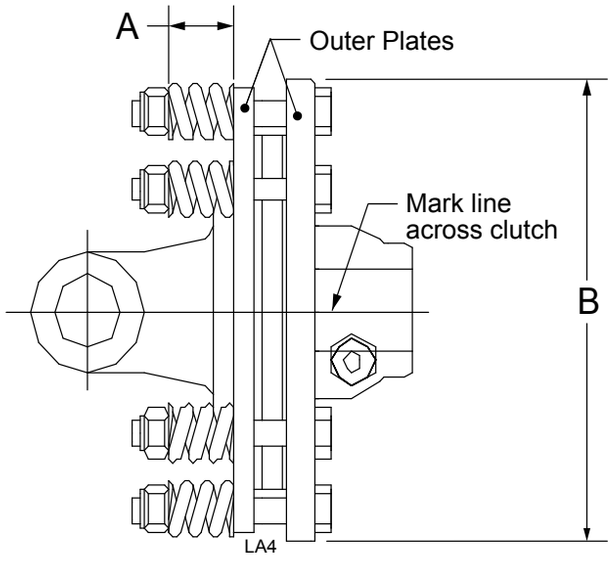


Figure 10. Lubrication Points

Slip Clutch Adjustment

1. Turn off tractor engine and remove key.
2. Loosen nuts on springs until the springs can rotate freely, yet remain secure on the bolts.
3. Mark outer plates of slip-disc clutch as shown in Figure 11.
4. Securely attach implement to the tractor and start the tractor.
5. Engage PTO for several seconds then quickly disengage it.
6. Turn tractor off and remove key.
7. The friction lining plates should have “slipped”, or moved. Check the marks placed on the outer plates of the slip-disc clutch in step 3 to make sure this is the case.
8. If clutch does not slip, check assembly for oil, grease and debris. Clean if necessary.
9. Reassemble clutch and tighten bolts no more than 1/8 of a turn at a time until desired compressed spring length.
10. If excessive slippage continues, check lining plates for excessive wear. They are .12" thick for the 4 and 5 foot tillers and .14 thick for the 6 foot tillers. They should be replaced when there is only .05" thickness left to ensure proper operation.



Tiller Model	Dim. “A”	Dim. “B”
DB4.20 & DB5.20	1.210"	6.3"
DB6.20	1.180"	7.1"

Figure 11. Slip Clutch Adjustment

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.**

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 through your Woods dealer). See Safety Decals section for location drawing.**
- **See Safety Decals section for location drawing.**

BLADE INSTALLATION

Four Blade Installation

1. Remove any burrs on flanges generated from blades that have slipped.
2. Start blade assembly with first blade installed next to rotor shaft flange.

   NOTE: Blade cutting edges should face the direction of rotation.

3. Install blade to flange as shown in Figure 12.
4. Install bolts and nuts as shown, with nut on the flange side.
5. Hold head of each bolt and torque each nut to 90 lbs-ft.
6. Proceed by installing next blade of the same part number in next flange.
7. Repeat steps 2-6 installing opposite hand blade in next flange hole until all six rows of blades are installed.

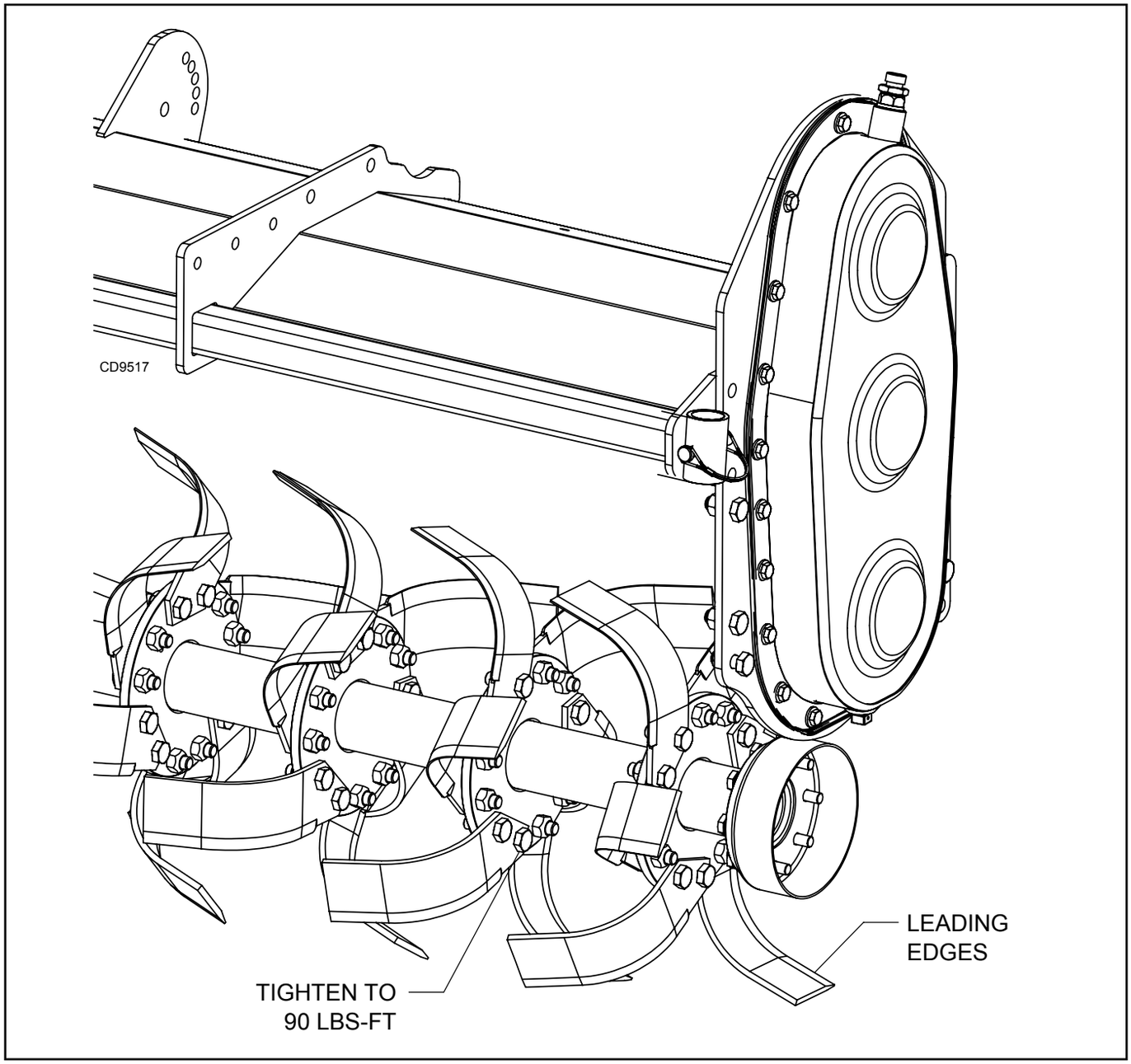


Figure 12. Blade Installation

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Rotor will not turn.	Tractor PTO not engaged.	Check control lever or tractor manual for resetting PTO.
	Clutch friction discs worn.	Check and replace.
	Obstruction between rotor and frame.	Check and clear obstruction.
	Gearbox damaged.	Check that output shaft rotates.
Tiller won't cut.	Skid shoes set too shallow.	Raise skid shoes one hole.
	Blade orientation does not match tiller rotation.	Reverse all blades.
Tiller stalls when tilling.	Skid shoes set too deep.	Lower skid shoes one hole.
Tilled soil is too fine.	Too much regrinding.	Raise tailgate or increase travel speed.
Tilled soil is too coarse.	Too little regrinding.	Lower tailgate or decrease travel speed.
Grass and Weeds wrapping rotor.	Grass too tall.	Mow grass before tilling.
	Tiller not level.	Adjust top link of 3-point hitch.
Oil leaks.	Worn or damaged seal.	Inspect and replace.
	Loose or damaged hoses or connections.	Check for leaks and repair or replace.
	Worn or damaged housing.	Inspect and replace if required.
	Breather leaking	Turn breather hole, check oil level.
	Wrong type of oil installed.	Check specification chart for proper oil grade.
Excessive Noise	Rotor blade hardware is loose or missing	Tighten loose blade hardware. Replace missing blade hardware.

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, disconnect driveline, raise cutter, lock in transport position, and block cutter securely. Hydraulic system leak down and failure of mechanical or hydraulic system can cause equipment to drop.**
- **Keep all persons and animals away from operator control area while performing adjustments, service, or maintenance.**

⚠ CAUTION

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

GEARBOX MAINTENANCE

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

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

   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.

2. 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 horizontal gaskets and shaft seals. These can be repaired without removing the gearbox from the tiller.

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.

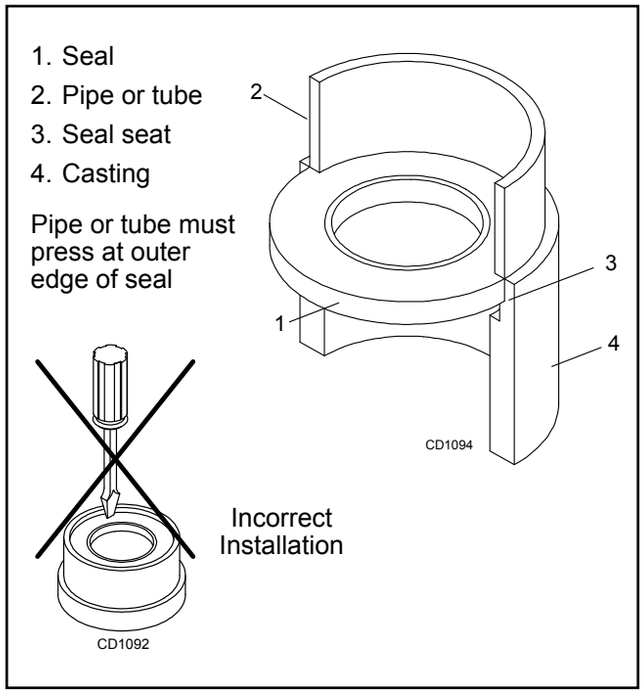


Figure 13. Seal Installation

Input Shaft Repair

1. Disconnect and remove the driveline and driveline shield from the gearbox.
2. Remove drain plug and drain gear lube from the gearbox.
3. Remove mast plates from the tiller frame.
4. Remove shaft seal. Replace with new seal (see Seal Installation, page 20).

   NOTE: Distortion to seal cage or damage to seal lip will cause seal to leak.
5. Reinstall drain plug and remove fill plug. Fill gearbox with SAE 80W or 90W gear lube until it runs out the level plug.
6. Follow the instructions 1-3 in reverse order for assembly.

Output Shaft Repair

1. Disconnect and remove the driveline from the gearbox.
2. Remove drain plug and drain gear lube from the gearbox.
3. Remove mast plates from the tiller frame.
4. Remove upper clamps from torque tube and gearbox shaft tube.
5. Remove torque tube from gearbox and frame end plate.
6. Disconnect gearbox housing from gearbox tube and slide housing off output shaft.
7. The faulty shaft seal can be removed and replaced with a new seal (refer to Seal Installation, page 20).
8. Follow instructions 1 through 6 in reverse order to reassemble.

Side Drive Repair

1. Place tiller on jack stands and turn off tractor.
2. Remove top breather.
3. Place oil catch basin underneath side drive and remove bolts and washers.
4. Remove cover pan and retain gasket, inspecting it for cracks or tears.
5. Repair and replace as needed.
6. Follow the instructions 1 through 4 in reverse order for reassembly.

UNIVERSAL JOINT REPAIR

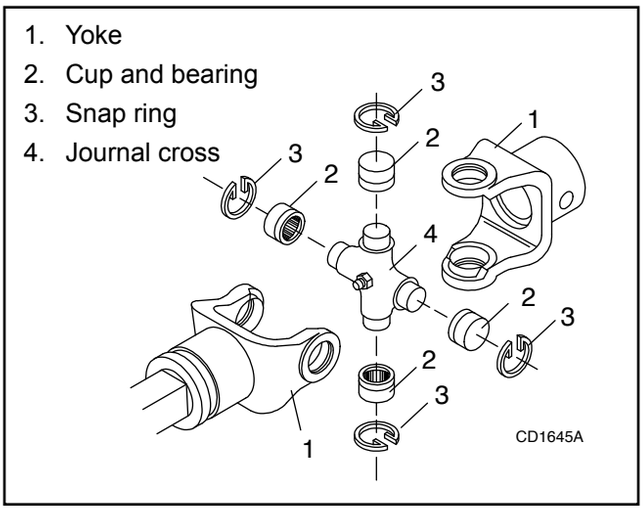


Figure 14. Universal Joint Parts Breakdown

U-Joint Disassembly

1. Remove external snap rings from yokes in four locations as shown in Figure 15.

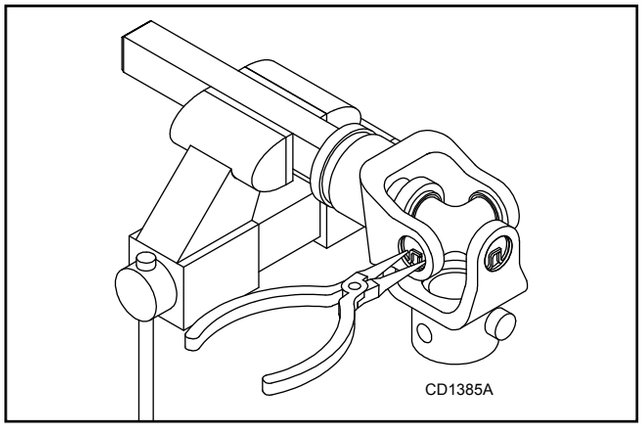


Figure 15. Remove Snap Ring

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 16.

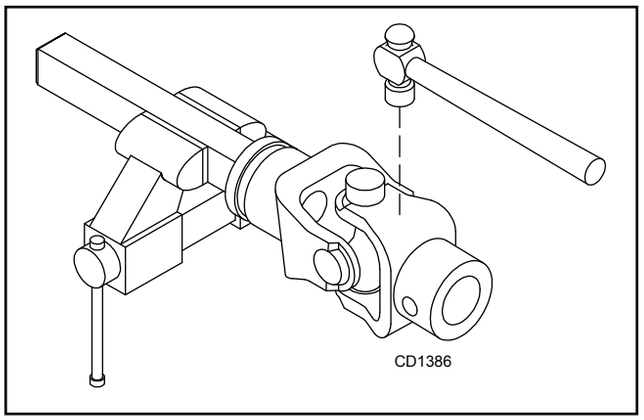


Figure 16. Remove Cups

3. Clamp cup in vise as shown in Figure 17 and tap on yoke to completely remove cup from yoke. Repeat Step 2 and Step 3 for opposite cup.

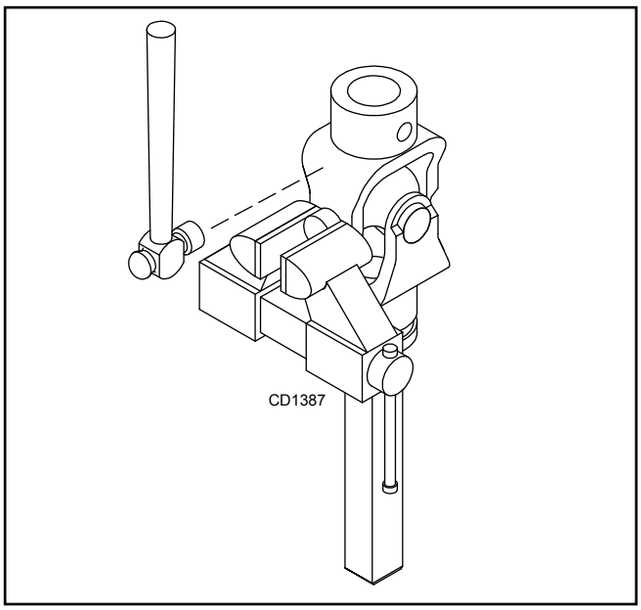


Figure 17. Remove Cups

4. Place universal cross in vise as shown in Figure 18 and tap on yoke to remove cup. Repeat Step 3 for final removal. Drive remaining cup out with a drift and hammer.

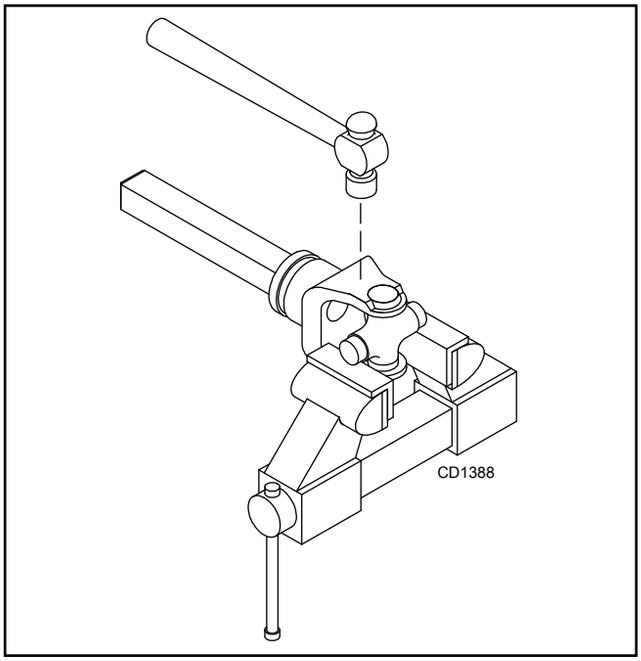


Figure 18. Remove Cups

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 19. Install snap ring and repeat on opposite cup
4. Repeat Step 1 and 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.

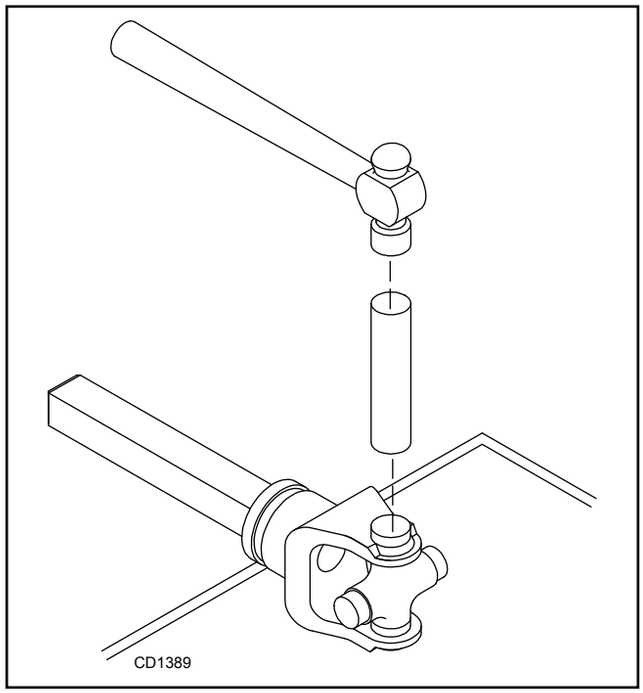


Figure 19. Install Cups

ASSEMBLY

Assembly of this rotary tiller is the responsibility of the WOODS dealer. It should be delivered to the owner completely assembled, lubricated and adjusted for normal conditions.

⚠ WARNING

- **Do not allow bystanders or animals in the area when operating, attaching, removing, assembling, or servicing equipment.**
- **Do not modify or alter or permit anyone else to modify or alter the equipment or any of its components in any way.**

⚠ CAUTION

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

DEALER SET-UP INSTRUCTIONS

The rotary tiller is shipped partially assembled. Assembly will be easier if components are aligned and loosely assembled before tightening hardware. See “Bolt Torque Chart” on page 36 for recommended torque values.

Complete the Pre-Delivery and Delivery Check Lists on page 26 when assembly is complete.

Select a suitable working area. Refer to illustrations, accompanying text, parts lists, and exploded view drawings.

For reference, front, back, left, and right directions are determined by sitting in the tractor operator’s seat.

DISASSEMBLE SHIPPING UNIT

⚠ WARNING

- **Use a mechanical lifting device and straps rated for at least 1000 lbs. when removing tiller from shipping frame.**

1. Cut straps to remove bundle of parts from top of tiller frame. Remove packaging material and lay out parts in a convenient location.
2. Cut straps to remove PTO driveline and shield from the shipping frame.
3. Use two straps positioned as shown in Figure 20 with mechanical lifting device to support tiller and shipping frame. Remove bolts holding the tiller to the shipping frame and remove from the supported tiller.
4. Install parking stand (5) using bale pin (20) as shown in Figure 23.
5. Lower tiller to the ground and make sure it is stable before removing lifting straps. Adjust parking stand as needed.
6. Recycle, or dispose of shipping frame according to local codes.

Figure 20. Lift Strap Locations

ASSEMBLY PROCEDURES

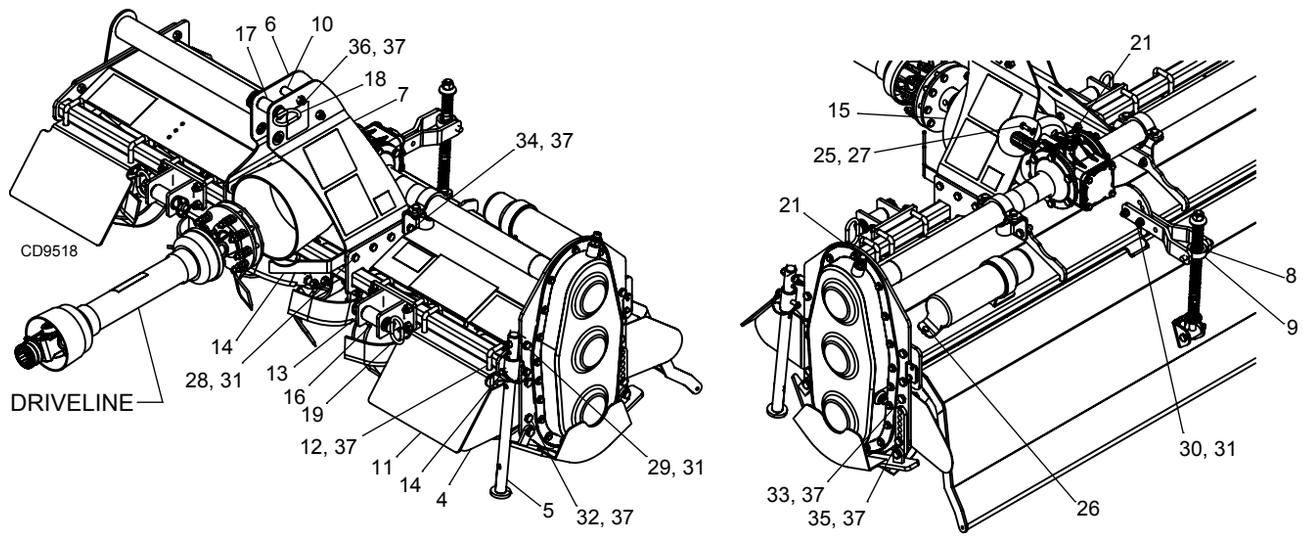
Required tools: 13mm, 17mm, 18mm, 19mm (3/4") and 27mm sockets and wrenches, torque wrench and jack stands.

1. Remove two M8 x 1.25 x 20 bolts and flat washers from front of gearbox. Install PTO shield to gearbox as shown in Figure 21. Torque to 15 lbs-ft.
2. Remove retaining bolt from driveline and install on gearbox shaft. Open access flaps on shield to reinsert retaining bolt and torque to 50 lbs-ft.
3. Remove lower hitch brackets from frame tube and reattach to tube as shown in Figure 23, using four u-bolts (12) and eight lock nuts (37). Before tightening fully, position as shown in Figure 22. Adjust overall width across inside surfaces of brackets to 26-3/4” for quick hitch compatibility.
4. Remove M12 x 40 bolt & lock nut (34, 37) at clamp and attach right mast (6) as shown in Figure 23 using three M10 x 30 bolts & lock nuts (28, 31) and reinstall bolt & lock nut at clamp. Do not tighten fully at this time.
5. Repeat process from item 4 to attach left mast (7).

Figure 21. Driveline Installation

6. Assemble two mast spacers (10) using M12 x 80 bolts and lock nuts (36, 37). Torque all mast hardware at this time.
7. Assemble upper quick hitch sleeve (17) using upper pin (18) and secure with retaining pin provided.
8. Assemble two front shields (11) using four u-bolts and lock nuts (12, 37).
9. Assemble right and left deflector plates, (3, 4) using four M12 x 30 bolts and lock nuts (32, 37)
10. Assemble right and left soil retention plates (1, 2) using two M12 x 35 bolts, two M12 x 45 bolts and four lock nuts (33, 35, 37).
11. Torque all remaining hardware.
12. Remove check plug in side gearbox using 18mm - 12 point socket or ratchet wrench. Check oil level in center gearbox using dipstick.
13. Remove fill plugs from both gearboxes, add 80-90 gear lube as needed, then replace check plug and dipstick.
14. Install two breather assemblies (21) and hand tighten.

Figure 22. Lower Hitch position



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	645198	1	Soil Retention Plate, Right (NS)	18	1037593	1	Pin, Upper Cat 1 w/ hair pin
2	645199	1	Soil Retention Plate, Left	19	SU105	2	Pin, Lower Cat 1 w/ lynch pin
3	645228	1	Deflector Plate, Right (NS)	20	33000	1	Bale Pin, 3/8 x 2-1/4
4	645229	1	Deflector Plate, Left	21	652616	2	Gearbox Breather
5	645239	1	Parking Stand	25	24801	2	Bolt, M8 x 1.25 x 20 Gr 8.8
6	652574	1	Mast, Right	26	30577	2	Bolt, M8 x 1.25 x 25 Gr 8.8
7	652575	1	Mast, Left - with Decals	27	35155	2	Flat Washer, M8
8	652582	2 or 4	Support Bracket	28	W307201	6	Bolt, M10 x 1.5 x 30 Gr 8.8
9	652584	1 or 2	Adjuster Assembly with Springs	29	W307207	1	Bolt, M10 x 1.5 x 40 Gr 8.8
10	652586	2	Sleeve, 13 x 20 x 53mm	30	62677	2	Bolt, M10 x 1.5 x 45 Gr 8.8
11	652604	2	Front Shield, DB4.20	31	66985	9	Lock Nut, M10 x 1.5
12	652607	8	U-Bolt, M12 X 1.75 X 55 X 76	32	62542	4	Bolt, M12 x 1.75 x 30 Gr 8.8
13	652608	2	Lower Link Bracket	33	62584	2	Bolt, M12 x 1.75 x 35 Gr 8.8
14	652615	1	Driveline Support	34	W307301	2	Bolt, M12 x 1.75 x 40 Gr 8.8
15	652622	1	Shield, PTO Clutch	35	58515	2	Bolt, M12 x 1.75 x 45 Gr 8.8
16	1002013	2	Sleeve, Lower quick hitch Cat 1	36	66354	2	Bolt, M12 x 1.75 x 80 Gr 8.8
17	1004661RP	1	Sleeve, Upper quick hitch Cat 1	37	58549	12	Lock Nut, M12 x 1.75

Figure 23. Tiller Assembly

DEALER CHECKLISTS

DEALER PRE-DELIVERY CHECKLIST

(DEALER'S RESPONSIBILITY)

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

The following check list is a reminder of points to inspect. Check off each item as it is found satisfactory, corrections are made, or services are performed.

_____ 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 all bolts to be sure they are properly torqued.

_____ Check and grease all lubrication points as identified in the Lubrication Maintenance illustration, page 16.

_____ Check the level of gearbox fluids before delivery. Service, if required, as specified on page 16.

_____ Check that blades have been properly installed.

DELIVERY CHECKLIST

(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.

_____ Point out all guards and shields. Explain their importance and the safety hazards that exist when not kept in place and in good condition.

_____ 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.

_____ Explain to customer the potential crushing hazards of going underneath raised equipment. Instruct customer that service work does not require going underneath unit and never to do so.

_____ Explain to customer that when equipment is transported on a road or highway, safety devices should be used to give adequate warning to operators of other vehicles.

_____ Inform customer to operate PTO at 540 rpm maximum.

_____ Explain to customer the importance of having the correct PTO driveline length so that it does not bottom out or come apart. Explain that it must be checked as instructed in the manual whenever using a different tractor.

_____ Show customer the safe, proper procedures to be used when mounting, dismounting, and storing equipment.

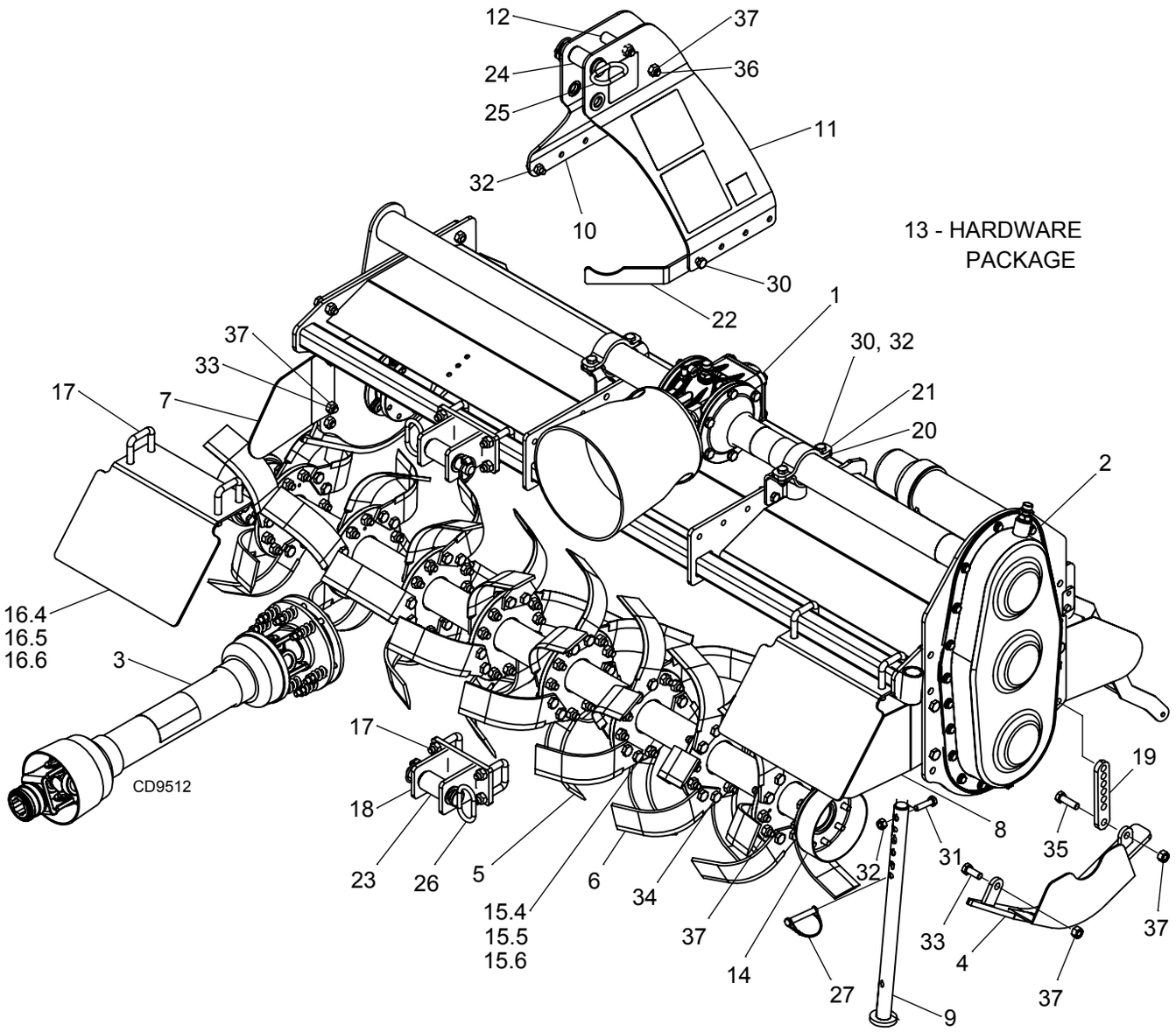
WOODS®

PARTS INDEX

Rotary Tillers

DB4.20
DB5.20
DB6.20

DB4.20, DB5.20 & DB6.20 ROTARY TILLER PARTS - FRONT



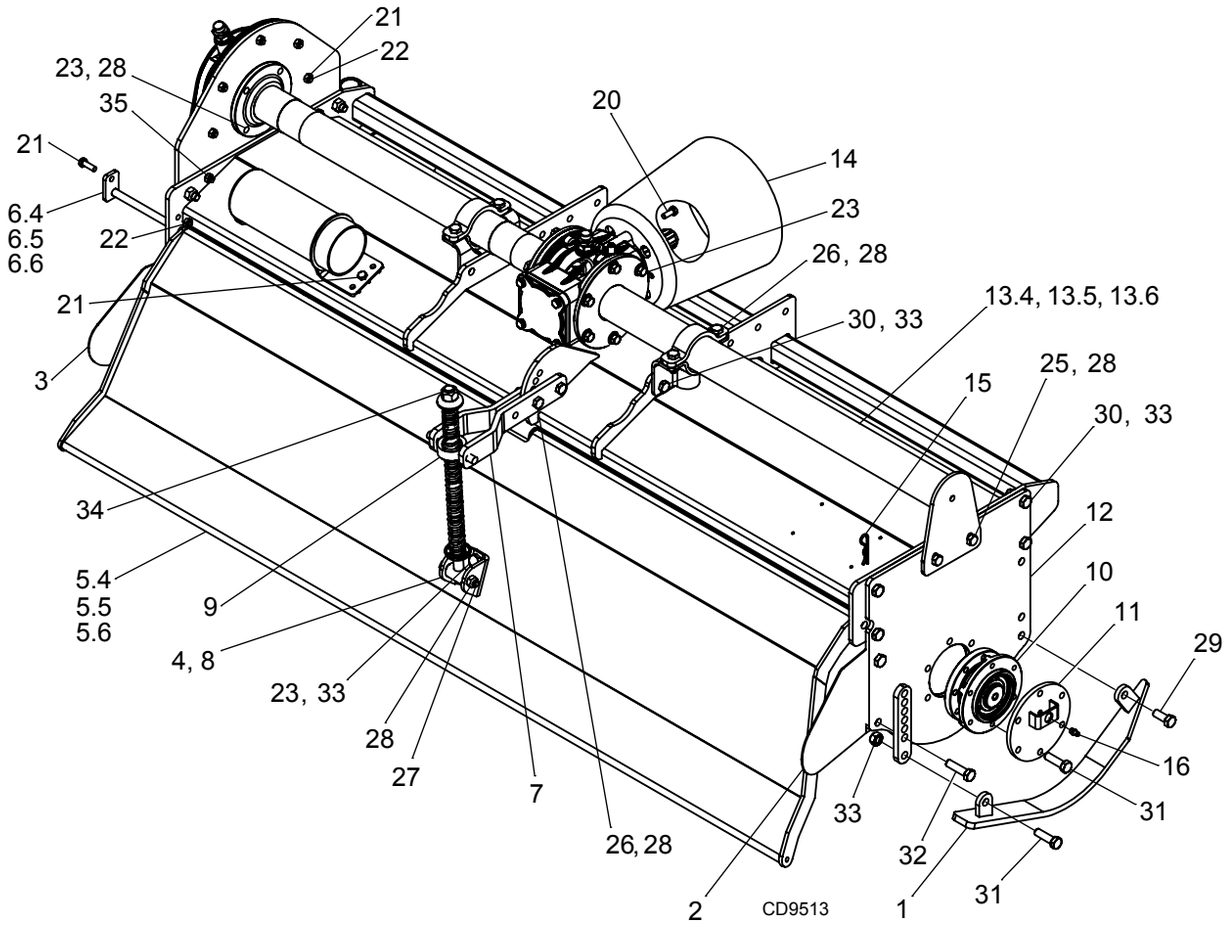
DB4.20, DB5.20 & DB6.20 ROTARY TILLER PARTS - FRONT

REF	PART	QTY	DESCRIPTION
1	-	1	Gearbox - See page 34 for details
2	-	1	Side Drive - See page 33 for details
3	-	1	Driveline - See pages 31 - 32 for details
4	645195	1	Skid Shoe, Left
5	645196	A/R	Blade, Right Hand
6	645197	A/R	Blade, Left Hand
7	645228	1	Deflector Plate, Right
8	645229	1	Deflector Plate, Left
9	645239	1	Parking Stand
10	652574	1	Mast, Right
11	652575	1	Mast, Left - with Decals
12	652586	2	Sleeve, 13 x 20 x 53mm
13	652587	-	Hardware Package (not shown)
14	652599	2	Rotor Hub Cover
15.4	652600	1	Rotor Shaft, DB4.20
15.5	652602	1	Rotor Shaft, DB5.20
15.6	652603	1	Rotor Shaft, DB6.20
16.4	652604	2	Front Shield, DB4.20
16.5	652605	2	Front Shield, DB5.20
16.6	652606	2	Front Shield, DB6.20
17	652607	8	U-Bolt, M12 X 1.75 X 55 X 76
18	652608	2	Lower Link Bracket
19	652609	2	Skid Adjuster Link
20	652610	2	Lower Clamp Support
21	652611	2	Upper Clamp
22	652615	1	Driveline Support
23	1002013	2	Sleeve, Lower quick hitch Cat 1
24	1004661RP	1	Sleeve, Upper quick hitch Cat 1
25	1037593	1	Pin, Upper Cat 1 w/ hair pin
26	SU105	2	Pin, Lower Cat 1 w/ lynch pin
27	33000	1	Bale Pin, 3/8 x 2-1/4
30	W307201*	10	Bolt, M10 x 1.5 x 30 Gr 8.8
31	W307207*	1	Bolt, M10 x 1.5 x 40 Gr 8.8
32	66985*	11	Lock Nut, M10 x 1.5
33	62542*	6	Bolt, M12 x 1.75 x 30 Gr 8.8
34	1028923*	A/R	Flange Bolt, M12 x 1.75 x 35 Gr 10.9
35	W307301*	2	Bolt, M12 x 1.75 x 40 Gr 8.8
36	66354*	2	Bolt, M12 x 1.75 x 80 Gr 8.8
37	58549*	A/R	Lock Nut, M12 x 1.75

* Standard Hardware - Obtain locally

A/R As Required

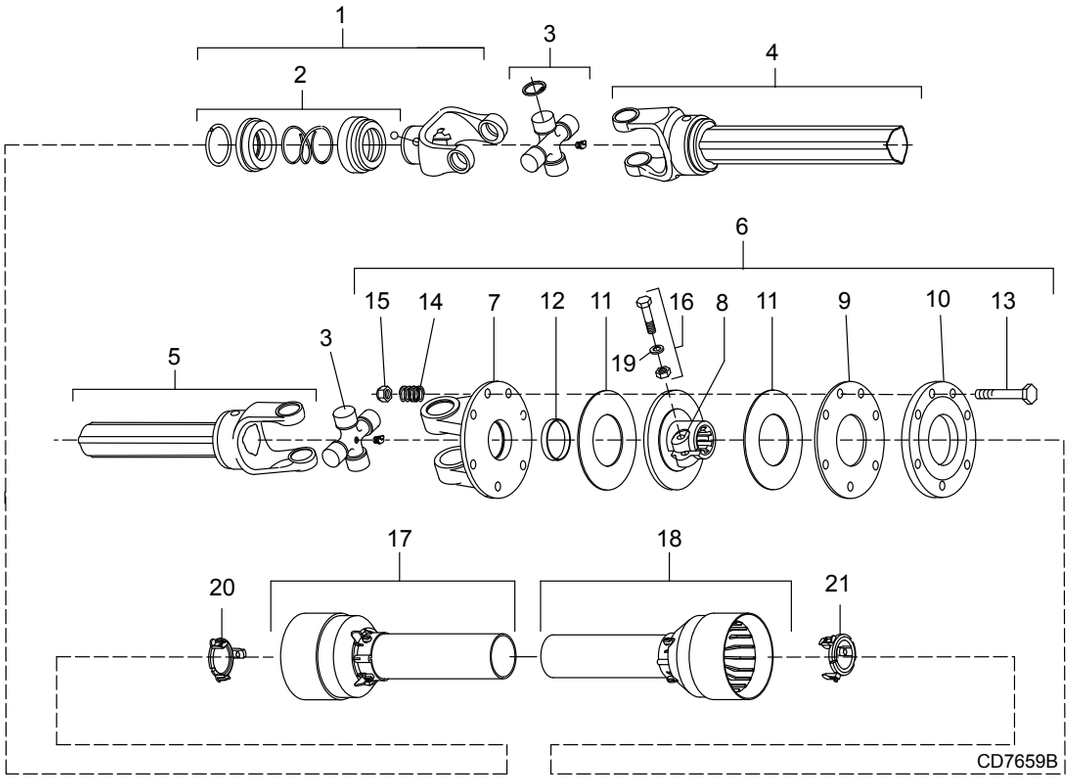
DB4.20, DB5.20 & DB6.20 ROTARY TILLER PARTS - REAR



REF	PART	QTY	DESCRIPTION
1	645194	1	Skid Shoe, Right
2	645198	1	Soil Retention Plate, Right
3	645199	1	Soil Retention Plate, Left
4	645243	1 or 2	Link, 2.0 X 70 X 75MM
5.4	652576	1	Tailgate DB4.20
5.5	652577	1	Tailgate DB5.20
5.6	652578	1	Tailgate DB6.20
6.4	652579	1	Hinge Rod, DB4.20
6.5	652580	1	Hinge Rod, DB5.20
6.6	652581	1	Hinge Rod, DB6.20
7	652582	2 or 4	Support Bracket
8	652583	1 or 2	Tailgate Clevis
9	652584	1 or 2	Adjuster Assembly with Springs
10	652595	1	Hub, Non-Driven Side
11	652596	1	Cover Weldment
12	652597	1	End Plate, Right
13.4	652612	1	Torque Tube, DB4.20
13.5	652613	1	Torque Tube, DB5.20
13.6	652614	1	Torque Tube, DB6.20
14	652622	1	Shield, PTO Clutch

REF	PART	QTY	DESCRIPTION
15	2688	1	Hair Pin Cotter, 1/8"
16	*	1	Grease Fitting, M8
20	24801*	-	Bolt, M8 x 1.25 x 20 Gr 8.8
21	30577*	-	Bolt, M8 x 1.25 x 25 Gr 8.8
22	1011792*	-	Lock Nut, M8 x 1.25
23	*	-	Flange Bolt, M10 x 1.5 x 25 Gr 8.8
24	W307201*	-	Bolt, M10 x 1.5 x 30 Gr 8.8
25	31813*	-	Bolt, M10 x 1.5 x 35 Gr 8.8
26	62677*	-	Bolt, M10 x 1.5 x 45 Gr 8.8
27	*	-	Bolt, M10 x 1.5 x 70 Gr 8.8
28	66985*	-	Lock Nut, M10 x 1.5
29	62542*	-	Bolt, M12 x 1.75 x 30 Gr 8.8
30	62584*	-	Bolt, M12 x 1.75 x 35 Gr 8.8
31	W307301*	-	Bolt, M12 x 1.75 x 40 Gr 8.8
32	58515*	-	Bolt, M12 x 1.75 x 45 Gr 8.8
33	58549*	-	Lock Nut, M12 x 1.75
34	1008146*	-	Lock Nut, M16 x 2.00
		*	Standard Hardware - Obtain locally

1042364 SLIP CLUTCH DRIVE ASSEMBLY
DB4.20 & DB5.20 ROTARY TILLERS

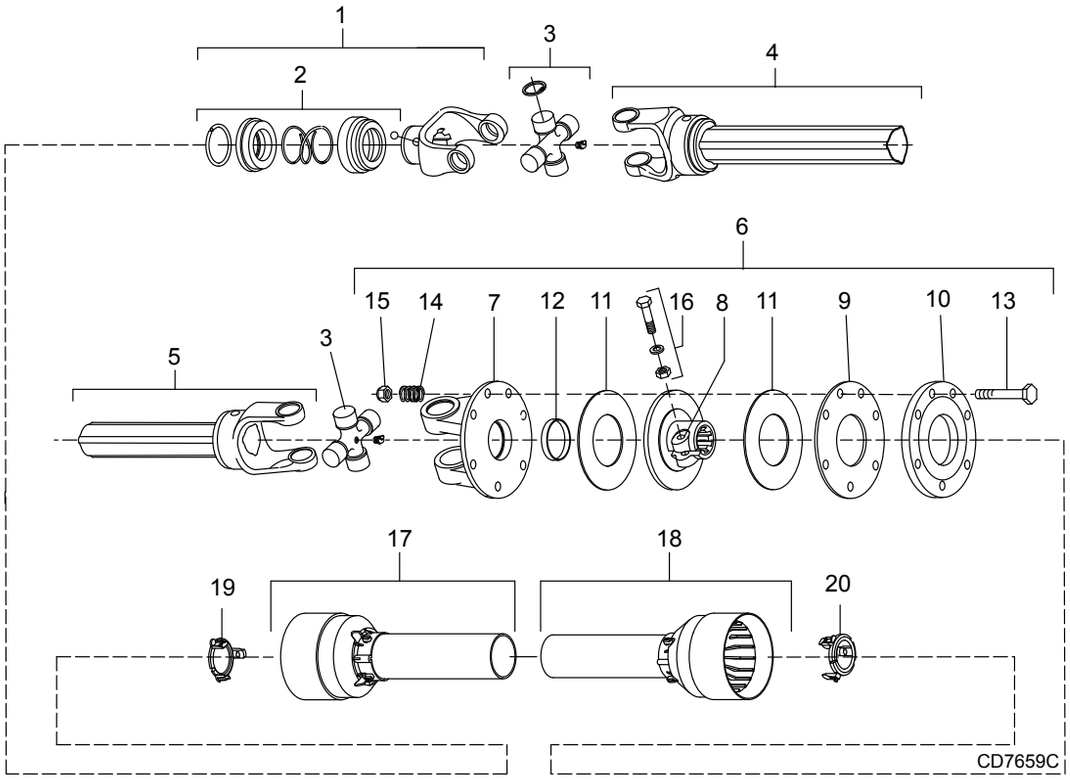


REF	PART	QTY	DESCRIPTION
A	1042364	1	Complete 540 driveline and clutch assembly
1	-----	1	Complete collar yoke 1-3/8-6 spline
2	1044063	1	Lock collar repair kit
3	1044065	2	U-Joint cross & bearing kit
4	-----	1	Outer profile tube & yoke
5	-----	1	Inner profile tube & yoke
6	-----	1	Friction clutch assembly
7	-----	1	Flange yoke
8	-----		Clutch hub
9	-----	1	Internal disc
10	-----	1	Pressure plate
11	1044055	2	Friction disc
12	1043994	1	Bushing
13	-----	8*	M10 x 1.5P x 85, HHCS
14	-----	8	Clutch spring
15	57260	8*	M10 x 1.5P nylon lock nut
16	1001315	1*	Bolt & nut, M12 x 65
17	1043998	1	Outer shield kit, T2 (includes item 20)
18	1043999	1	Inner shield kit, T2 (includes item 21)
19	-----	1	M12 spring washer
20	-----	1	Bearing, outer
21	-----	1	Bearing, inner

HHCS Hex Head Cap Screw

* Standard Hardware - Obtain locally

1042365 SLIP CLUTCH DRIVE ASSEMBLY
DB6.20 ROTARY TILLERS

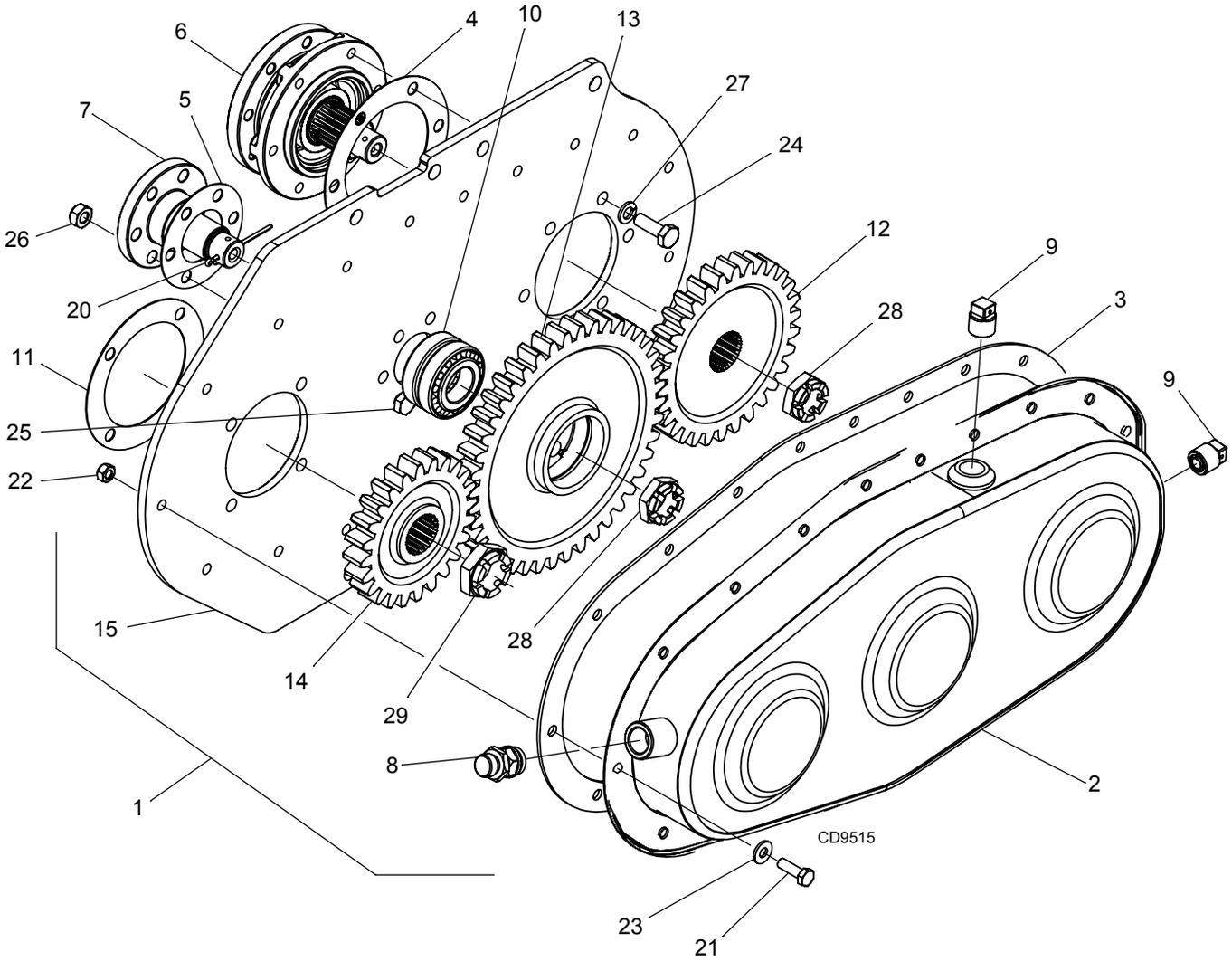


REF	PART	QTY	DESCRIPTION
A	1042365	1	Complete 540 driveline and clutch assembly
1	-----	1	Complete collar yoke 1-3/8-6 spline
2	1044050	1	Lock collar repair kit
3	1044052	2	U-joint cross & bearing kit
4	-----	1	Outer profile tube & yoke
5	-----	1	Inner profile tube & yoke
6	-----	1	Friction clutch assembly
7	-----	1	Flanged yoke
8	-----	1	Clutch hub
9	-----	1	Internal disc
10	-----	1	Pressure plate
11	1044083	2	Friction disc
12	1043994	1	Bushing
13	W307208	8*	M10 x 1.5P x 85, HHCS
14	-----	8	Clutch spring
15	57260	8*	M10 x 1.5P nylon lock nut
16	1044091	1	Tapered pin & nut
17	1044061	1	Outer shield kit, T40
18	1044062	1	Inner shield kit, T40
19	-----	1	Bearing, outer
20	-----	1	Bearing, inner

HHCS Hex Head Cap Screw

* Standard Hardware - Obtain locally

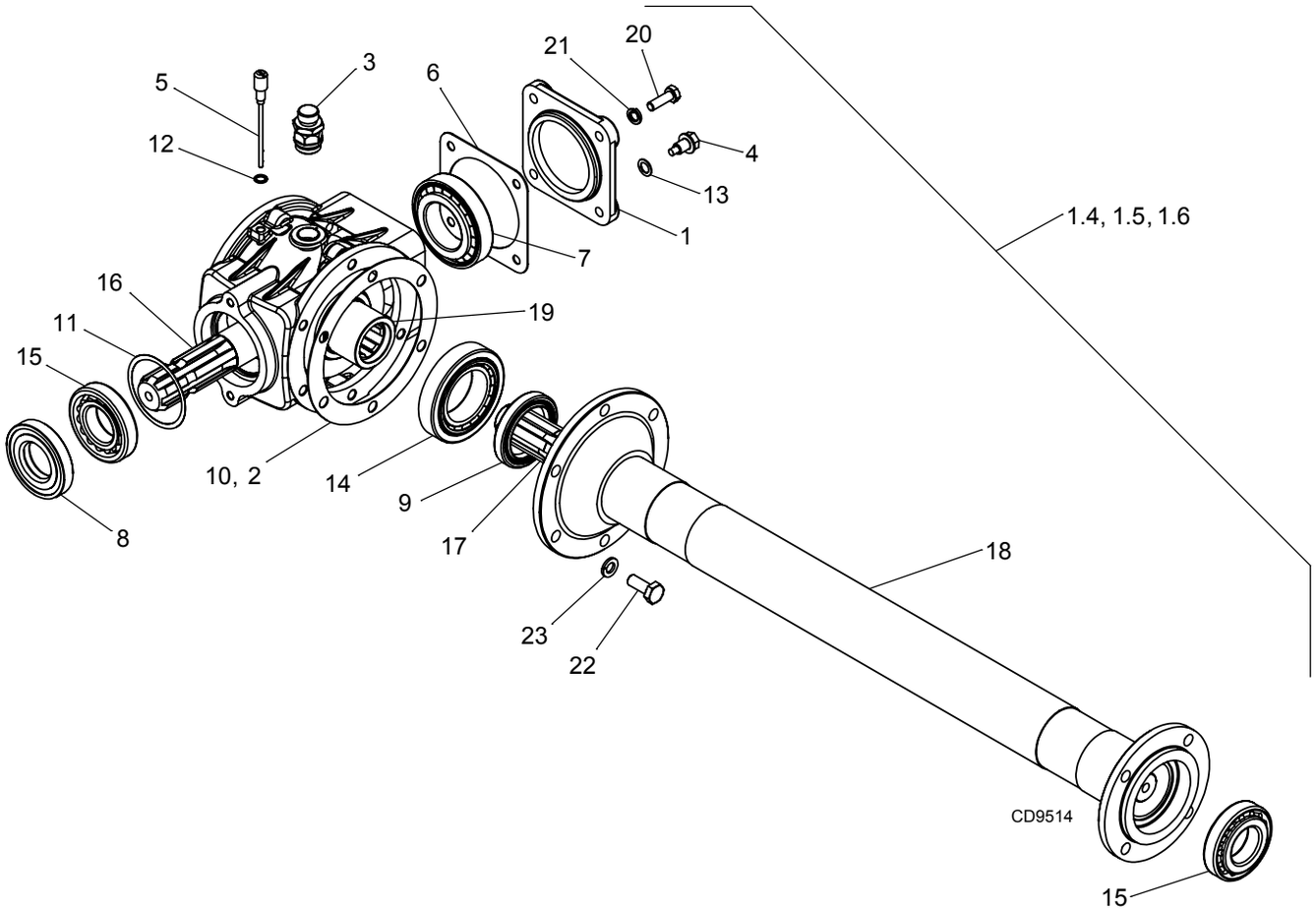
DB4.20, DB5.20 & DB6.20 TILLER SIDE DRIVE ASSEMBLY



REF	PART	QTY	DESCRIPTION
1	652588	1	Side Drive - Complete
2	652589	1	Cover, Side Drive
3	652590	1	Gasket, Side Drive Cover
4	652591	1	Gasket, Drive Hub
5	652592	1	Gasket, Idler Shaft
6	652593	1	Drive Hub Assembly
7	652594	1	Idler Shaft
8	652616	1	Gearbox Breather
9	652620	2	Magnetic Drain Plug, Square
10	652639	2	Bearing, 30X62X17.25MM
11	652646	1	Gasket, 90.3MM X 130MM
12	NSS	1	Spur Gear, 30 Teeth
13	NSS	1	Spur Gear, 42 Teeth
14	NSS	1	Spur Gear, 24 Teeth

REF	PART	QTY	DESCRIPTION
15	NSS	1	End Plate, Side Drive
20	*	3	Cotter Pin, 1/8 x 2-1/2
21	30577*	19	Bolt, M8 x 1.25 x 25 Gr 8.8
22	1011792*	19	Lock Nut, M8 x 1.25
23	*	19	Flat Washer, M8
24	W307107*	6	Bolt, M10 x 1.5 x 30 Gr 8.8
25	*	6	Bolt, M10 x 1.5 x 35 Gr 10.9
26	66985*	6	Lock Nut, M10 x 1.5
27	*	6	Lock Washer, M10
28	*	2	Castle Nut, M24 x 1.5 Thin
29	*	1	Castle Nut, M28 x 1.5
		*	Standard Hardware - Obtain locally
		NSS	Not Sold Separately

DB4.20, DB5.20 & DB6.20 TILLER GEARBOX ASSEMBLIES



REF	PART	QTY	DESCRIPTION
1.4	645240	1	Gearbox, complete - DB4.20
1.5	645241	1	Gearbox, complete - DB5.20
1.6	645242	1	Gearbox, complete - DB6.20
2	652585	1	Gasket, Support Flange
3	652616	1	Gearbox Breather
4	652618	1	Magnetic Drain Plug
5	652619	1	Dipstick, Tiller Gearbox
6	652621	1	Gasket, Rear Cover
7	652640	1	Bearing, 45X85X20.75MM
8	652641	1	Seal, 35 X 72 X 12MM
9	652643	1	Seal, 50 X 70 X 10MM
10	652644	A/R	Gasket Set, 122MM X 160MM
11	652645	A/R	Shim Set, 62MM X 71MM
12	652647	1	Washer, Copper 8.1 X 11.5MM
13	652648	1	WASHER, Copper 10.2 X 15.9

REF	PART	QTY	DESCRIPTION
14	39263	1	Bearing, 50X90X21.75MM
15	1032448	2	Bearing, 35X72X18.25MM
16	NSS	1	Input shaft
17	NSS	1	Output shaft
18	NSS	1	Tube
19	NSS	1	Gear set
20	30577*	-	Bolt, M8 x 1.25 x 25 Gr 8.8
21	*	-	Lock Washer, M8
22	W307205*	-	Bolt, M10 x 1.5 x 25 Gr 8.8
23	*	-	Lock Washer, M10

*	Standard Hardware - Obtain locally
A/R	As Required
NSS	Not Sold Separately

INDEX

BOLT TORQUE CHART

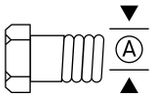
Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.

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



SAE Bolt Head Identification

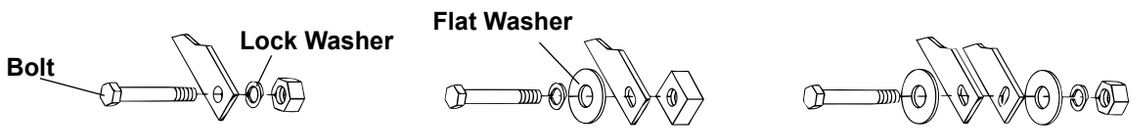
SAE Grade 2
(No Dashes)

SAE Grade 5
(3 Radial Dashes)

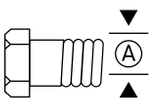
SAE Grade 8
(6 Radial Dashes)

Ⓐ		Marking on Head					
		SAE 2		SAE 5		SAE 8	
Diameter (Inches)	Wrench Size	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

TYPICAL WASHER INSTALLATIONS



METRIC SERIES TORQUE CHART



Metric Bolt Head Identification

Metric
Grade 8.8

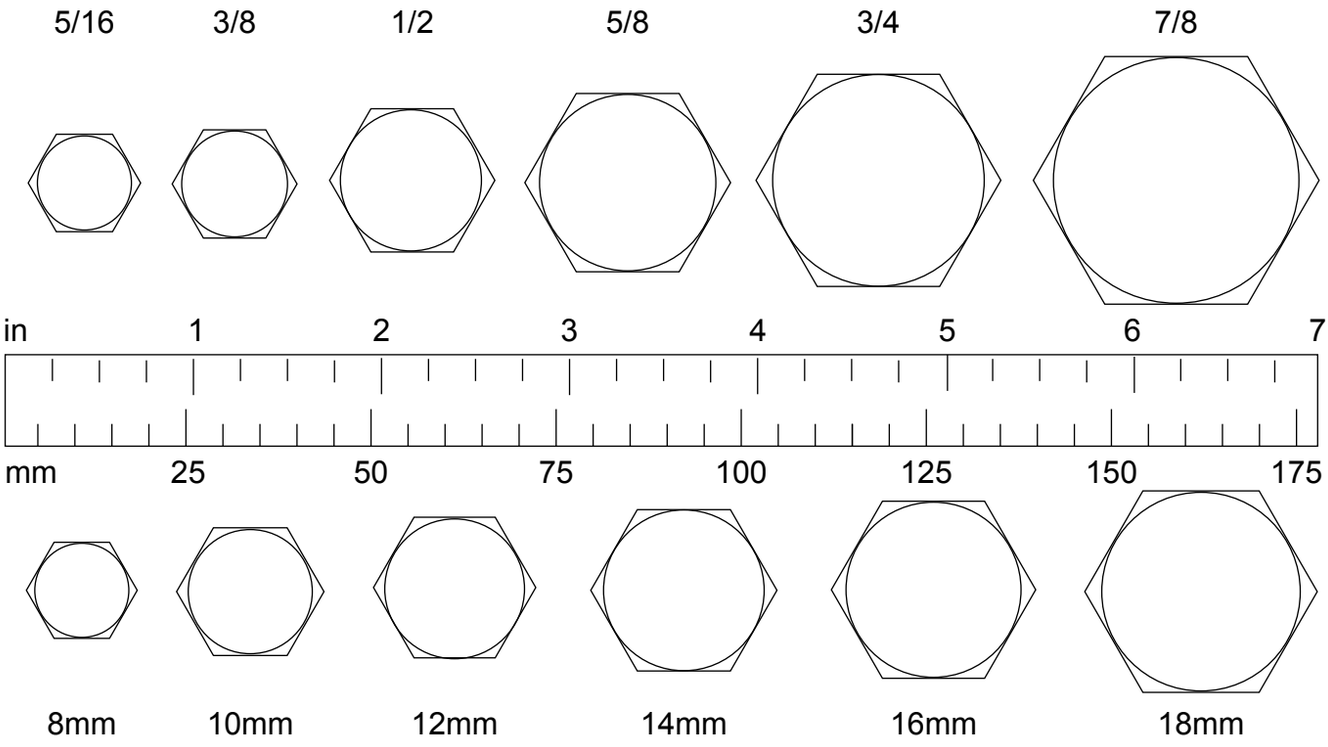
Metric
Grade 10.9

Ⓐ		Coarse Thread				Fine Thread				Ⓐ
		Marking on Head				Marking on Head				
		Metric 8.8		Metric 10.9		Metric 8.8		Metric 10.9		
Diameter & Thread Pitch (Millimeters)	Wrench Size	N-m	lbs-ft	N-m	lbs-ft	N-m	lbs-ft	N-m	lbs-ft	Diameter & Thread Pitch (Millimeters)
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

BOLT SIZE CHART

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

SAE BOLT THREAD SIZES



METRIC BOLT THREAD SIZES

ABBREVIATIONS

AG . . . . . Agriculture
ASABE . . . . . American Society of Agricultural & Biological Engineers (formerly ASAE)
ASAE . . American Society of Agricultural Engineers
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
FT . . . . . Full Thread
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

PART NO.

MAN1400

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