

WOODS ROTARY MOWER

L59KR17-1

**For use on Kubota L175 & L225 tractors
equipped with SFL-22 ROPS**

51642

Rev. 11/9/2007

WOODS®
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, 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 personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



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



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



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

IMPORTANT
or **NOTICE**

Is used to address practices not related to personal injury.

NOTE

Indicates helpful information.

WOODS®

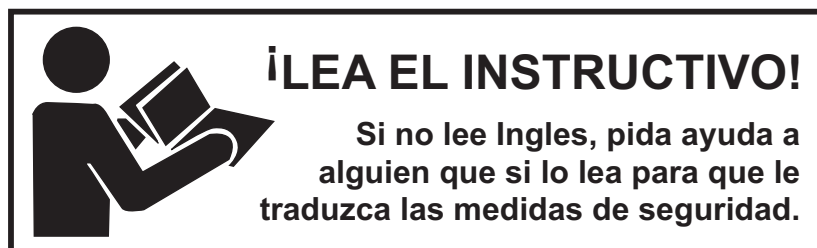
ALITEC™
BMP®
CENTRAL FABRICATORS®
GANNON®
GILL®
WAIN-ROY®
WOODS®

2 Introduction

Gen'l (Rev. 7/20/2007)

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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

Cutting Width	60"
Cutting Height Range	1.5" - 5"
Blade Speed (RPM)	2,410
Blade Tip Speed (feet per minute)	12,778
Blade Spindles	3
Number of Blades	3
Caster Wheels	Optional
Tractor PTO Speed (RPM)	1,000
Mower Frame Thickness	7 Gauge

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 but, due to possible inline production changes, your machine may vary slightly in detail. We reserve the right to redesign and change the machines as may be necessary without notification.

 **WARNING**

- **Some illustrations in this manual show the cutter with safety shields removed to provide a better view. The cutter should never be operated without necessary safety shielding.**

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, viewed from the **top** of the cutter, is counter-clockwise for center and right blade crossbars, and clockwise for left crossbar.



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 are available from dealer 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 entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head.**
- **Make sure attachment is properly secured, adjusted, and in good operating condition.**
- **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, tractor could tip over, causing personal injury or death. The weight may be attained with a loader, front wheel weights, ballast in tires or front tractor weights. Weigh the tractor and equipment. Do not estimate.**
- **Inspect and clear area of stones, branches, or other hard objects that might be thrown, causing injury or damage.**

OPERATION

- **You may not be able to stop the tractor safely if the clutch or brake pedal mechanisms are improperly adjusted, allowing them to contact mower components.**
- **When the mower lift stops are installed as instructed in this manual, properly adjusted clutch and brake pedal mechanisms will not contact mower components. You should frequently check that the tractor clutch and brake pedal mechanisms are in adjustment.**
- **If the clutch or brake pedal mechanisms can contact mower components, do not put mower into service until properly adjusted.**
- **Do not put mower into service unless either discharge chute or side shield is installed and in good condition. Replace if damaged.**
- **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.**
- **Never direct discharge toward people, animals, or property.**

SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



- 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.
- Before starting engine, place drive levers in neutral position and disengage blade clutch.
- Operate tractor PTO at the RPM speed stated in "Specifications" section.
- Do not operate PTO during transport.
- Do not operate auxiliary hydraulics during transport.
- Look down and to the rear and make sure area is clear before operating in reverse.
- Do not operate on steep slopes.
- Do not stop, start, or change directions suddenly on slopes.
- Use extreme care and reduce ground speed on slopes and rough terrain.
- Watch for hidden hazards on the terrain during operation.
- Stop power unit and equipment immediately upon striking an obstruction. Turn off engine, remove key, inspect, and repair any damage before resuming operation.

TRANSPORTATION

- Always comply with all state and local lighting and marking requirements.
- Never allow riders on power unit or attachment.
- Do not operate PTO during transport.
- Watch for hidden hazards on the terrain.
- A minimum 20% of tractor and equipment weight must be on the tractor front wheels when attachments are in transport position. Without this weight, tractor could tip over, causing personal injury or death. The weight may be attained with a loader, front wheel weights, ballast in tires or front tractor weights. Weigh the tractor and equipment. Do not estimate.
- Do not operate or transport on steep slopes.

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

MAINTENANCE

- Before performing any service or maintenance, lower mower to ground or block securely, turn off tractor engine, remove key, set parking brake, and remove belt from tractor PTO sheave.
- 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.
- 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.
- 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.
- Frequently check blades. They should be sharp, free of nicks and cracks, and securely fastened.
- Use a new Nylok blade bolt and cup washers when you replace the blade. Do not substitute any bolt for the special blade bolt. It is self-locking, meeting the non-loosening requirements for this application.
- 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.

SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



- 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.
- Do not disconnect hydraulic lines until machine is securely blocked or placed in lowest position

and system pressure is released by operating valve levers.

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

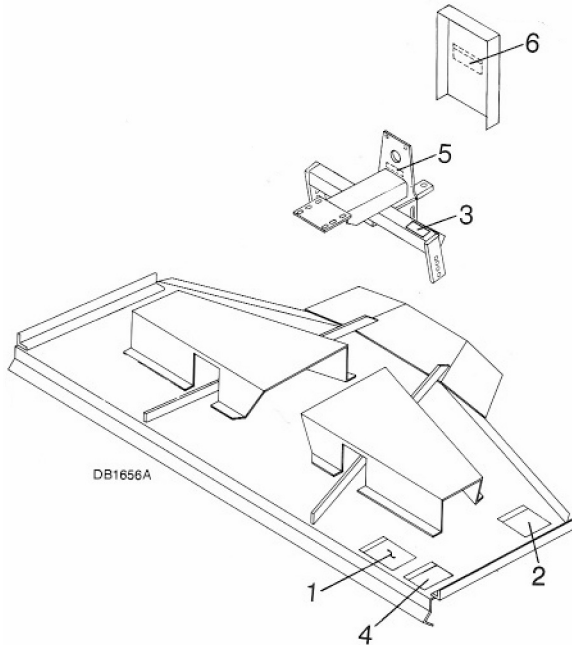
STORAGE

- Block equipment securely 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 - PN 18877

WARNING

TO AVOID SERIOUS INJURY OR DEATH:

- Read Operator's Manual (available from dealer) and follow all safety precautions.
- Keep all shields in place and in good condition.
- Operate mower from tractor seat only.
- Lower mower, stop engine and remove key before dismounting tractor.
- Allow no children or untrained persons to operate equipment.
- Do not transport towed or semi-mounted units over 20 mph.

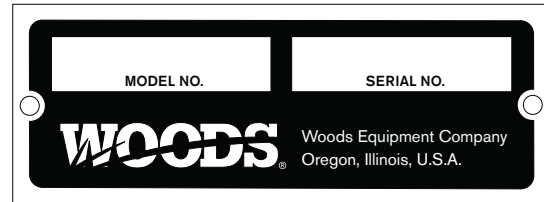
**FAILURE TO OPERATE SAFELY
 CAN RESULT IN
 INJURY OR DEATH.**

18877-C

1 - PN 19007

WARNING	
<p>FALLING OFF CAN RESULT IN BEING RUN OVER.</p> <ul style="list-style-type: none"> ■ 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. <p>RAISED EQUIPMENT CAN DROP AND CRUSH.</p> <ul style="list-style-type: none"> ■ 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. <p>FALLING OFF OR FAILING TO BLOCK SECURELY CAN RESULT IN SERIOUS INJURY OR DEATH.</p>	
19007-A	

3 - SERIAL NUMBER PLATE



4 - PN 53425

DANGER		
<p>ROTATING BLADES AND THROWN OBJECTS</p> <ul style="list-style-type: none"> ■ 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 discharge chute and guards in place and in good condition. <p>BLADE CONTACT OR THROWN OBJECTS CAN CAUSE SERIOUS INJURY OR DEATH.</p>		
53425-B		

5 - PN 18869

DANGER	
<p>SHIELD MISSING DO NOT OPERATE - PUT SHIELD ON</p>	
18869-B	



SAFETY & INSTRUCTIONAL DECALS

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



6 - PN 23376



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, or in the United States and Canada call 1-800-319-6637.

OPERATION

The designed and tested safety of this machine depends on it being operated within the limitations as explained in this manual. Be familiar with and follow all safety rules in the manual, on the mower and on the tractor.

The safe operation of this mower is the responsibility of the operator, who must be properly trained. The operator should be familiar with the equipment and all safety practices before starting operation. Read the safety information on page 5 through page 9.

This mower is designed for lawn and grass mowing and is equipped with suction-type blades for best results. Optional blades are available for varying soil and grass types. Refer to the Optional Equipment section for additional information.

Recommended tractor ground speed for most conditions is from 2 to 5 mph. Always operate tractor PTO at 1000 rpm.

WARNING

- Never allow children or untrained persons to operate equipment.
- Keep bystanders away from equipment.
- Before performing any service or maintenance, lower mower to ground or block securely, turn off tractor engine, remove key, set parking brake, and remove belt from tractor PTO sheave.
- Keep all persons away from operator control area while performing adjustments, service, or maintenance.

CAUTION

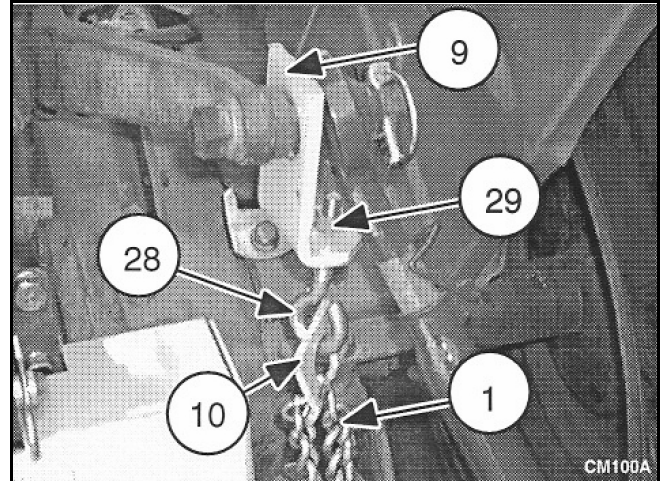
- Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.
- Stop power unit and equipment immediately upon striking an obstruction. Turn off engine, remove key, inspect, and repair any damage before resuming operation.

CUTTING HEIGHT ADJUSTMENT

Mower cutting height may be raised, lowered and maintained using tractor hydraulics and lift chains. Optional caster wheels may be used to maintain cutting height. Proper lift chain adjustment is essential for both cutting height control methods.

NOTICE

- Tractor upper stop of hydraulic control lever must be set to prevent any part of mower from coming closer than 1/4" to the tractor or mower lift bracket when mower is in the fully raised position.



1. Hook Chain
9. Lift Angle
10. Lift Lug
28. Eyebolt
29. 3/8" Hex Nut

Figure 1. Cutting Height Adjustment

Attach lift angle (9) to tractor upper lift rock shaft arm. Run a 3/8" hex nut (29) halfway down eyebolt (28), then assemble to lift angle with a second 3/8" hex nut. Do not tighten hex nuts until final adjustments are made.

Hook chain (1) into slotted lift lug (10). Slip slotted lift lug over the end of open-end eye bolt. Repeat for opposite side, making sure chains are untwisted and that the same chain link is inserted into the slotted lift lug.

Slowly raise mower to determine if correct chain link was selected which allows for sufficient lift. Once the correct chain link is selected, raise mower until no component is closer than 1/4" to tractor. Set the upper stop of the tractor hydraulic control lever at this point.

With the lift height set, side to side leveling adjustment can be made by adjusting the 3/8" hex nuts on each lift angle (9). Tighten hex nuts when adjustment is complete.

CAUTION

- Failure to properly adjust hydraulic control lever stops may result in damage to tractor and mower.

Without Optional Casters

With lift height set and mower leveled, lower mower to desired cutting height and set lower lift control stop. This allows the mower to be raised when necessary, then lowered back to a pre-set cutting height.

With Optional Casters

Caster adjustment is accomplished by placing axle in upper or lower hole in yoke, or by moving spacers to top or bottom of pivot shaft. With lift height set and mower leveled, lower mower on caster wheels at desired cutting height and set lower lift control stop. Proper setting of the lower lift stop will prevent chain from contacting belt and other mower components. Excess chain can be cut off after final adjustment is made.

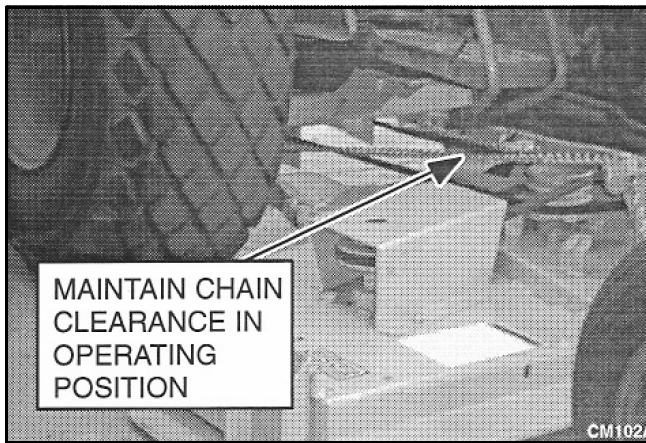


Figure 2. Chain Clearance from Drive Belt

NOTICE

■ Whenever adjustments are made with casters, carefully raise mower to ensure casters do not come in contact with any part of tractor. Should any interference occur, readjust lift chains.

■ Be sure lift chains do not interfere with drive belt (see Figure 2).

■ Always raise mower off casters when backing and turning at the same time to prevent casters from locking up on front tractor tires.

SIDE SKID ADJUSTMENT

With cutting height set, adjust side skids to within 1/2" of the ground. Side skids should be adjusted 1/2" higher than casters when they are used to set cutting height. Never operate mower with weight on both skids. Properly adjusted side skids are designed to carry mower over uneven ground and minimize scalping.

MOWER ATTITUDE

Position front of mower level with, or slightly below, the rear to provide closer cutting. Mowing with the front

end high will produce ragged cuts with a scalloped look, excessive shredding, and will require extra power.

Attitude will be adjusted with the rear end low when using the leaf mulcher. See instructions on page 27 for attitude adjustment.

PRE-OPERATION CHECK LIST

(OWNER'S RESPONSIBILITY)

- ___ Review and follow safety rules and safety decals on page 5 through page 9.
- ___ Check that all safety decals are installed and in good condition. Replace if needed.
- ___ Check that all shields and guards are properly installed and in good condition. Replace if needed.
- ___ Check that all hardware is properly installed and secured.
- ___ Mower vibration tends to loosen bolts during operation. All hardware should be checked regularly to maintain proper torque. It is a good practice to check mower before each operation to ensure all bolts are secure.
- ___ Check to ensure blades are sharp and secure and cutting edge is positioned to lead in a counter-clockwise rotation.
- ___ Check that equipment is properly and securely attached to tractor.
- ___ Inspect area and remove stones, branches or other hard objects that might be thrown, causing injury or damage.
- ___ Do not allow riders.
- ___ Lubricate all grease fitting locations.
- ___ Set tractor PTO at 1000 rpm.
- ___ Make sure tractor ROPS and seat belt are in good condition. Keep seat belt securely fastened during operation.
- ___ Check cutting height and attitude adjustment.
- ___ Place tractor PTO and transmission in neutral before starting engine.

STARTING & STOPPING MOWER

WARNING

■ Operate tractor PTO at 1000 rpm.

Power for operating the mower is supplied by the tractor PTO. Refer to your tractor manual for instructions on engaging and disengaging PTO. Always operate PTO at 1000 rpm. Learn how to stop tractor and mower quickly in case of an emergency.

Should mower become plugged, causing belt to slip for over two seconds, raise mower just enough to clear plug and continue running for at least two minutes, allowing pulleys to cool. Stopping the mower with belt in contact with a very hot pulley will bake and ruin belt. To reduce the risk of thrown objects, do not raise mower higher than necessary.

COMMENCING MOWING

DANGER

- **Do not put mower into service unless either discharge chute or side shield is installed and in good condition. Replace if damaged.**

WARNING

- **Keep bystanders away from equipment.**
- **Never direct discharge toward people, animals, or property.**
- **Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.**

CAUTION

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

When engaging PTO, the engine rpm should always be low. Once engaged and ready to start mowing, raise PTO speed to 1000 rpm and maintain throughout cutting operation.

The condition of the terrain to be cut will determine the smoothness of the final results. For best results, mower blades should be kept sharp at all times and the platform kept as level as possible. When mower blades show excessive wear, they should be replaced.

MOWING TECHNIQUES

Mowing Speed

Proper ground speed for mowing will depend on the height, type and density of grass to be cut. Normally,

ground speed will range from two to five miles per hour. Tall, dense grass should be mowed at low speeds, while thin, medium-height grass can be cut at a faster ground speed.

Always operate PTO at 1000 rpm when mowing. This is necessary to maintain proper blade speed to produce a clean cut.

Under certain seasonal conditions, front tractor tires or casters may roll some grass down and prevent it from being cut at the same height as the surrounding area. When this occurs, reduce the tractor ground speed but keep PTO rpm at 1000. The slower ground speed will permit grass to at least partially rebound and be cut. In general, lower mowing heights give a more even cut with less tendency to leave tire tracks.

Mowing Tips

Extremely tall grass should be mowed twice. Cut grass higher on the first pass. Cut the second time at desired height at 90° to the first pass.

Remember, sharp blades produce cleaner cuts and use less power.

Before mowing, analyze the area to determine the best mowing procedure. Consider the height, type of grass and the terrain type (hilly, level or rough).

WARNING

- **Inspect and clear area of stones, branches, or other hard objects that might be thrown, causing injury or damage.**
- **Keep bystanders away from equipment.**
- **Look down and to the rear and make sure area is clear before operating in reverse.**
- **Watch for hidden hazards on the terrain during operation.**

When using the discharge chute, mow with uncut grass to the right. This will distribute clippings over the cut area. Discharging clippings over uncut grass will cause a build-up and may prevent uniform cutting.

For a professional touch in large open areas, try the mowing pattern in Figure 3. Make a counter-clockwise pass or two to discharge clippings away from bordering objects. Then cut the lawn in half by mowing down the center. Turn clockwise (to the right) at each end of the area over grass previously mowed.

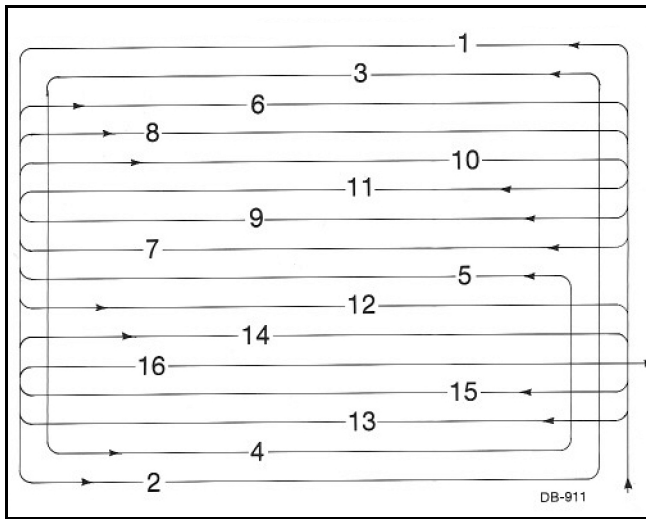


Figure 3. Suggested Mowing Pattern

Plan your mowing pattern to travel straight forward whenever possible. It is better to mow grass more often 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.

⚠ 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.

NOTICE

- On extremely uneven terrain, rear wheel weights should be used to improve traction.

The addition of rear tractor weight or liquid ballast in rear tires will increase tractor stability.

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

Avoid sudden starts and stops when traveling up or down hill.

Always mow down steep slopes--never up or across the face.

Slow down on sharp turns and slopes to prevent tipping or loss of control.

DISCHARGE CHUTE & SIDE SHIELD

⚠ DANGER

- Do not put mower into service unless either discharge chute or side shield is installed and in good condition. Replace if damaged.

⚠ WARNING

- Never direct discharge toward people, animals, or property.

A side shield and discharge chute are provided for the left side. Use the side shield for normal mowing. The discharge chute may be used to replace the side shield in very heavy mowing conditions.

OPTIONAL EQUIPMENT

⚠ WARNING

- Make sure attachment is properly secured, adjusted, and in good operating condition.
- Make sure shields and guards are properly installed and in good condition. Replace if damaged.
- Before working underneath, raise mower to highest position and block securely. Blocking up prevents mower dropping from hydraulic leak down, hydraulic system failures, or mechanical component failure.

⚠ 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.

OPTIONAL EQUIPMENT AVAILABLE

A leaf mulcher, low-suction blades, extra-suction blades, a front roller, and casters are offered as optional equipment for this mower.

Leaf Mulcher

Bothersome leaf raking, bagging or burning can be minimized by equipping your mower with a leaf mulcher attachment. With this attachment your mower will dispose of leaves by quickly and thoroughly shredding them. The shredded matter will decompose and form humus.

The use of extra suction blades is recommended with the leaf mulcher. It is also recommended that the leaf mulcher be removed for normal grass mowing.

Adjust mower with blades approximately 1-1/2" above ground and the front of the mower slightly higher than the rear. Operate tractor at a slow ground speed and with the PTO at 1000 rpm.

Blades

Low suction and extra suction blades are optional for this mower. In sandy areas where abrasive action could cause excessive blade wear, low suction blades are recommended.

Extra suction blades are designed to lift up fragile downed grasses for better cutting results. They are also recommended for use with WOODS lawn vacuum and leaf mulcher attachments.

Casters

Casters are used to adjust and maintain cutting height.

Front Roller

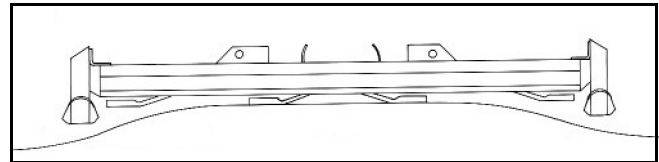


Figure 4. Scalping Without Front Roller

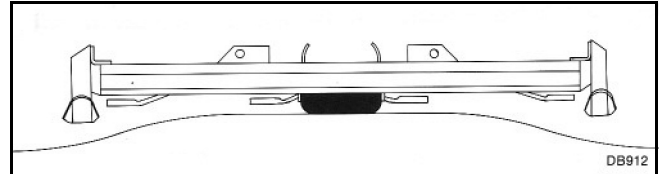


Figure 5. Front Roller Minimizing Scalping

The front roller should be used when scalping occurs. Side skids and casters effectively reduce scalping in most cases. However, you may encounter areas where side skids or casters will drop into depressions and allow the center of the mower to contact the ground and scalp. When this occurs, a front roller may be installed to minimize scalping.

OPTIONAL EQUIPMENT INSTALLATION

Front Roller Installation

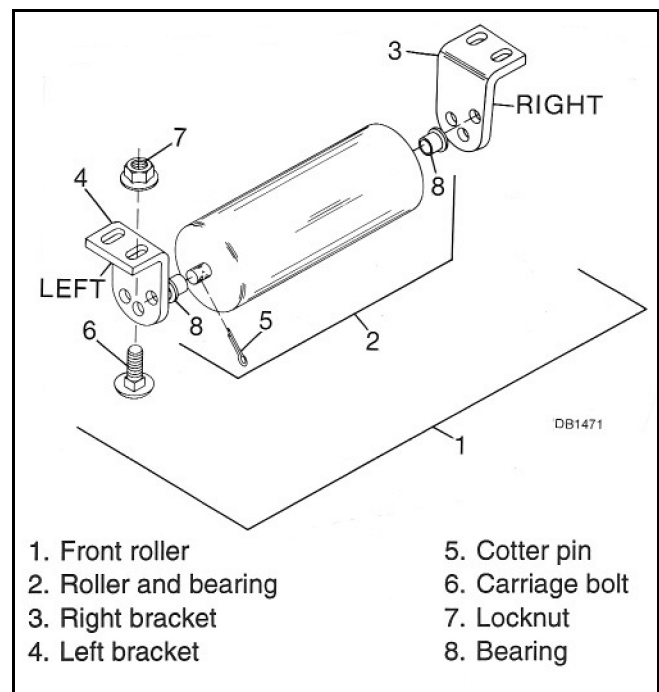


Figure 6. Optional Front Roller Installation

Place and secure mower in a vertical position to make front roller installation easier.

Four holes for mounting the front roller are provided in front center. Mount the left and right roller brackets in these holes.

Hole patterns determine right and left brackets. The left roller bracket should be installed with the highest hole to the rear and bracket angle extending left.

The right bracket should be installed with the highest hole to the rear of the rear and bracket angle extending right.

Attach brackets with 3/8 x 1" carriage bolts and flange lock nuts.

Insert rod through roller and install in rear bracket holes. Secure each end of the rod with a 3/16" cotter pin. Turn roller by hand to ensure it rolls freely.

Caster Installation (Figure 7)

Remove side skids.

Insert 3/8 x 1-1/4" bolts through frame rail as shown and mount caster arm with the offset outward as shown. Install side skid and secure with lock washer and nut. Repeat for opposite side.

Raise mower with tractor hydraulics very slowly, checking to make sure there is no interference between casters and tractor.

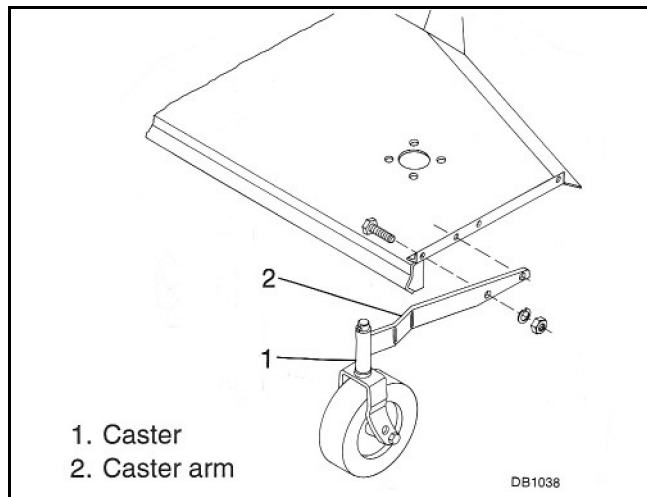


Figure 7. Optional Caster Installation

Leaf Mulcher Installation (Figure 8)

Place mower upside down on saw horses or other supports. Remove side shields (13), but do not remove side skids.

Remove front roller if installed.

Remove center baffle (7) and bracket (6). Rear baffle bracket should not be removed. Store baffle and bracket for reinstallation when leaf mulcher is removed.

Measure 14" from the center slot in front of mower to each side and make a mark. Measure 7/8" down from top of mower at these marks and drill a 7/16" hole at each mark.

Angle lugs (11) have a slot and hole. Insert bolt (10) through hole and attach to leaf mulcher side bracket. Place a flat washer (5), lock washer (4) and nut (3) on bolt, but do not tighten.

Place leaf mulcher (2) over blades.

Align angle lugs (11) with third hole from front of frame rail of mower and install angle lug between side shields and mower frame rail. Secure with bolts (10) and nuts (9). Use two flat washers (5) as spacers between rear hole of side shield (13) and mower frame rail.

Insert three bolts (12) with washers (5) through the existing hole and the ones you drilled in the front lip of mower. Install a spacer (1) on each bolt between mower and leaf mulcher. Should spacers be too long to allow leaf mulcher to center over blades, substitute 3/8" flat washers as spacers.

Drill four 7/16" holes in mower deck using holes in leaf mulcher as a template. Insert 3/8 x 1" bolts (10) through these holes and secure with a lock washer (4) and nut (3).

Tighten all hardware attaching leaf mulcher to mower. Turn each blade by hand and check to be sure you have at least 1/8" clearance between blade tip and mulcher ring. Should a blade contact a mulcher ring, reshape ring as necessary.

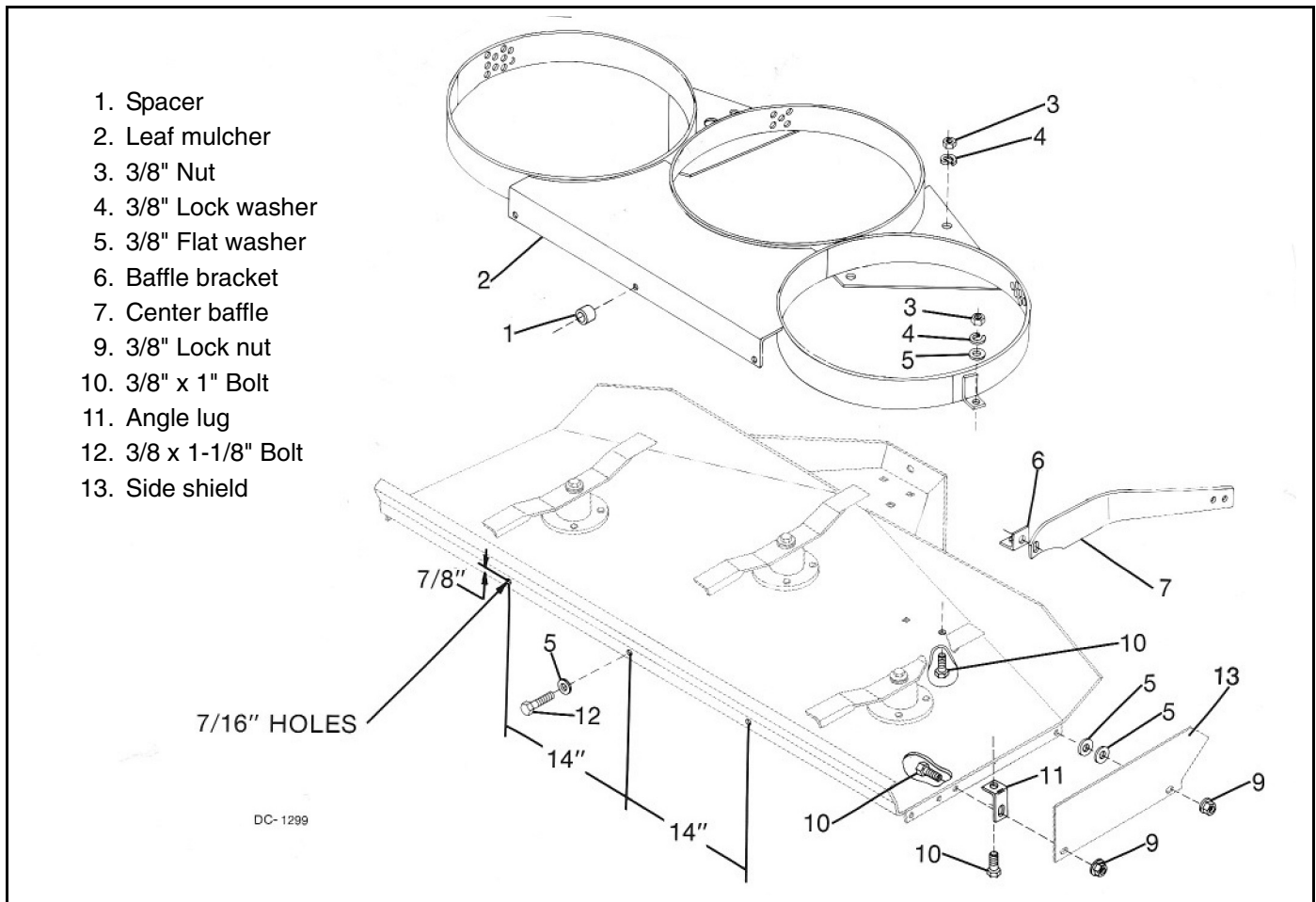


Figure 8. Optional Leaf Mulcher Installation

OWNER SERVICE

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

⚠ WARNING

- Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.
- Before performing any service or maintenance, lower mower to ground or block securely, turn off tractor engine, remove key, set parking brake, and remove belt from tractor PTO sheave.
- Before working underneath, raise mower to highest position and block securely. Blocking up prevents mower dropping from 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

- 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.

LUBRICATION

Do not let excess grease collect on or around parts. Be sure to clean fittings thoroughly before using grease gun.

Spindle Lubrication (Figure 9)

The three blade spindles may be lubricated without shield removal. Lubricate each spindle with a light multi-purpose grease every 8 hours of operation.

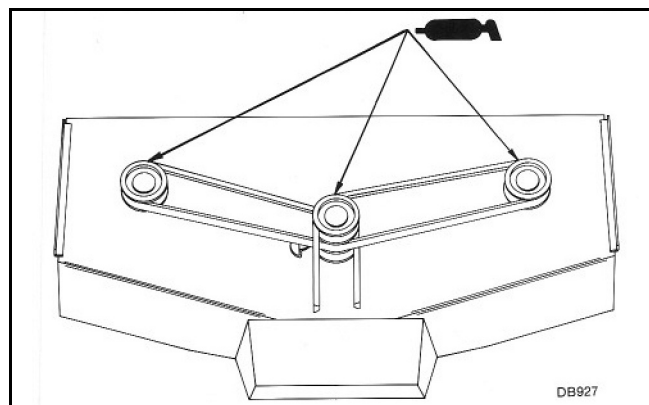


Figure 9. Spindle Lubrication

Caster Lubrication (Figure 10)

Lubricate caster pivot and caster wheel every eight (8) hours of operation with a medium grade multi-purpose type grease.

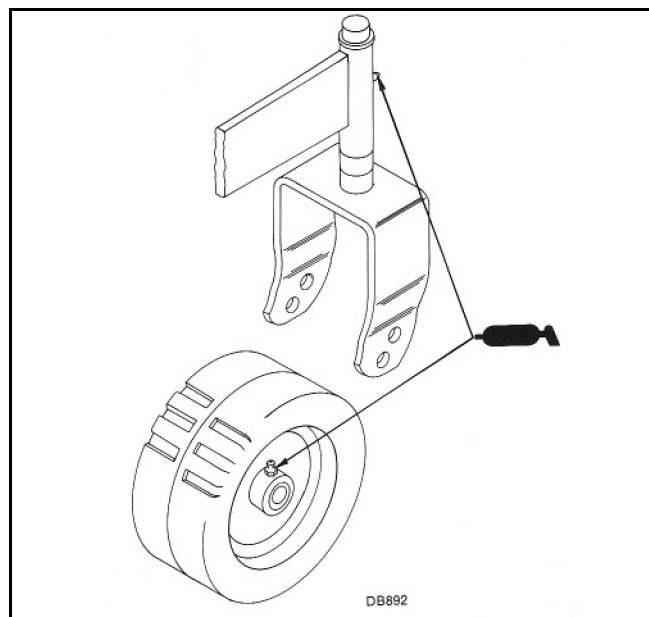


Figure 10. Caster Lubrication

BLADE SERVICING

⚠ WARNING

- Before working underneath, raise mower to highest position and block securely. Blocking up prevents mower dropping from hydraulic leak down, hydraulic system failures, or mechanical component failures.
- Do not handle blades with bare hands. Careless or improper handling may result in serious injury.

CAUTION

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

Remove mower from tractor and locate for easy access to bottom and top of mower. Secure to prevent mower from falling.

Inspect blades before each use to determine that they are tight and in good condition. Replace any blade that is bent, excessively nicked, worn, or has any other damage. Small nicks can be ground out when sharpening.

Blade Removal (Figure 11)

Wedge a block of wood between blade and mower housing or install blade wrench over spindle pulley bolts to prevent spindle from rotating while removing bolts. Loosen Nylok blade bolt which has left hand threads.

Remove bolt (6), cup washers (5), flat washer (4) and blade (3). Shoulder washer (2) will not normally come off machine unless intentionally removed.

Blade Installation (Figure 11)

Excessive blade slipping can cause the cup washers to burn and lose their clamping force. If this happens, the cup washers must be replaced. Inspect cup washers before installation and replace if necessary.

Install shoulder washer (2), if removed, small end up.

Position blade (3) with cutting edge leading in counter-clockwise rotation as viewed from the top of the mower. Install flat washer (4), cup washers (5) and special Nylok bolt (6) which has left hand threads. Torque bolt to 170 lbs-ft.

CAUTION

■ Use a new Nylok blade bolt and cup washers when you replace the blade. Do not substitute any bolt for the special blade bolt. It is self-locking, meeting the non-loosening requirements for this application.

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

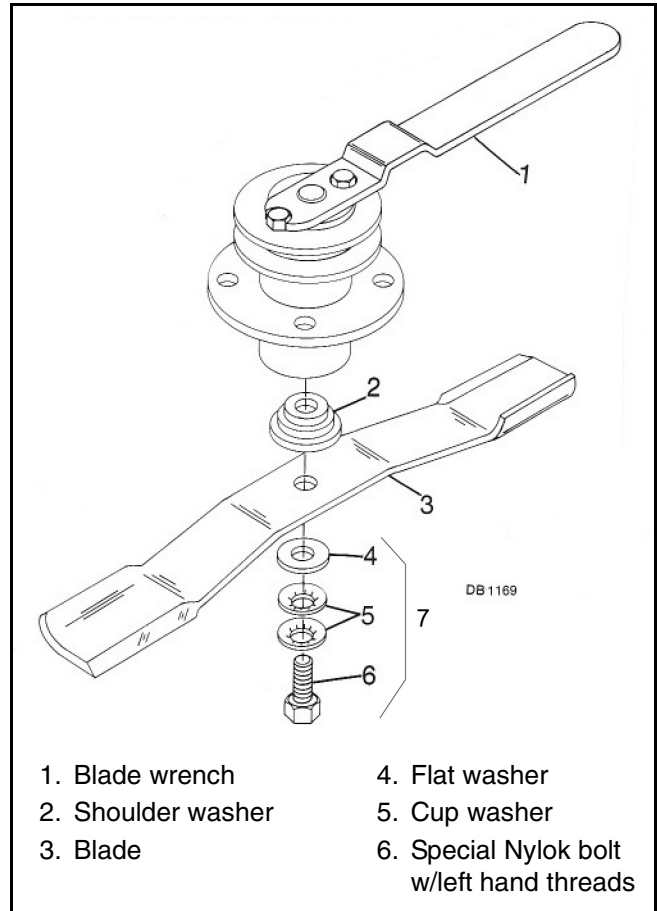


Figure 11. Blade Installation & Removal

Blade Sharpening (Figure 12)

Always sharpen both cutting edges of each blade at the same time, the same amount, to maintain balance.

Follow the original sharpening pattern as shown. Do not sharpen blade to a razor edge, but leave a 1/32" to 1/16" blunt edge. Do not sharpen back side of blade.

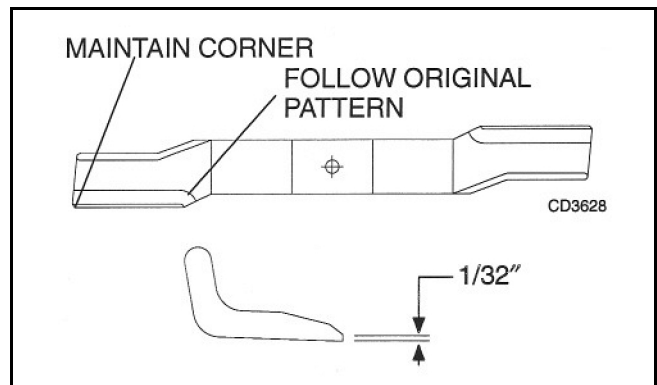


Figure 12. Blade Sharpening

DEALER SERVICE

The information in this section is written for dealer service personnel. The repair described herein 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

- Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.
- Before performing any service or maintenance, lower mower to ground or block securely, turn off tractor engine, remove key, set parking brake, and remove belt from tractor PTO sheave.
- Before working underneath, raise mower to highest position and block securely. Blocking up prevents mower dropping from 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

- 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.

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.

Periodically inspect blade spindles by grasping pulley, moving from side to side and up and down. If end play or wobble is noted, replace or repair.

Rotate spindle. If it feels rough (indicating bad bearings), replace or repair. Bearing adjustment is maintained by drilling a hole through the sleeve and spindle shaft and inserting a roll pin.

For reference, grease fitting is in top of housing.

Permatex® Aviation Form-A-Gasket or equivalent is recommended as a sealant.

Removal

Remove blade from spindle.

Remove belt from pulleys.

Disassemble split taper bushing (located on top of pulley) by removing the two bolts and inserting them into the threaded holes of bushing flange. Tighten them alternately to remove split taper bushing. Remove key and pulley.

Disassembly (Figure 13)

Remove bolts attaching spindle to mower frame and remove spindle.

Drive roll pin out of sleeve and shaft.

Place spindle assembly in press and press the shaft down through housing.

Remove seals from housing.

Remove bearing cups from housing by placing a punch in slots provided and driving out. Alternate punch positions from side to side. Take care to prevent housing damage.

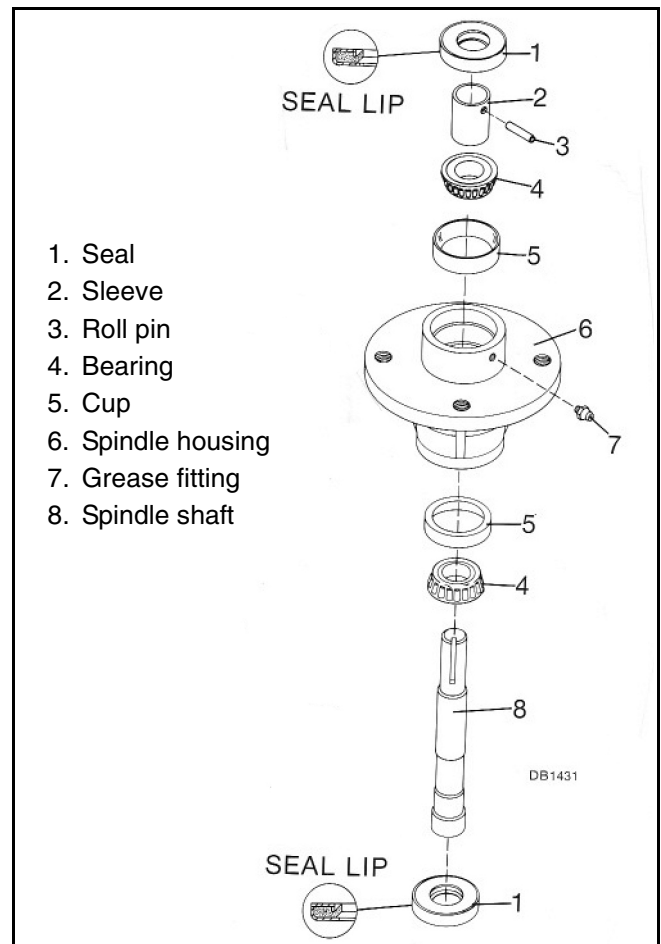


Figure 13. Blade Spindle Assembly

Blade Spindle Assembly (Figure 13)

Bearing cones and cups are designed to work together. It is important to position them so bearing cone taper mates with cup taper.

Lubricate new cups with a light oil. Place them in spindle housing so they will mate with bearing cones. Cups and cones are a press fit to minimize wear.

Seat cups securely with a press or place a large drift in the flat lip and drive cups into housing until they seat against machined shoulder of housing.

Place bottom bearing cone onto spindle shaft with taper positioned to mate with cup. Press onto shaft and seat on bottom shoulder of shaft.

Insert shaft and bearing through bottom of housing.

Fill housing cavity with a medium grade grease.

Install top bearing on shaft to mate with top cone.

Apply a thin coat of Permatex to shaft area where sleeve will seat. Install sleeve on shaft and press sleeve and bearing into housing until all free play is removed and there is a very light drag on bearings (similar to adjusting front wheel bearings on an automobile). Check by spinning spindle. It should turn freely.

Be careful not to overtighten bearings. Proper bearing adjustment is essential to good bearing life. Should you overtighten bearings, hold spindle housing and rap spindle shaft with a lead hammer.

Place a rag over bearings to protect them and drill a 3/16" hole 9/32" down from top of sleeve and drive roll pin through sleeve and shaft to hold bearing adjustment. Make sure roll pin does not extend past outer diameter of sleeve on either side.

NOTICE

■ **Improper positioning of seals can cause seal damage.**

Proper seal installation is important. An improperly installed seal will leak and could cause bearing failure.

Pull the rubber portion of seal back and locate spring. Lightly coat area of housing where seals seat with Permatex. Install bottom seal with spring up toward center of housing.

Place seal squarely on housing and select a piece of pipe or tubing with an OD that will set on outside edge

of seal. A tubing with an OD that is too small will bow seal cage.

Carefully press seal into housing, preventing distortion to metal seal cage. Seal should seat firmly and squarely against machined shoulder in housing.

Make sure seal lip did not roll under. Distortion to seal cage or damage to seal lip will cause seal to leak. Damaged seals must be replaced.

Carefully press top seal in with spring up away from center of housing. Top seal should be flush with, to 1/16" above, housing.

Lubricate spindle with a medium grade grease. Rotate housing on spindle shaft, checking for free movement.

Blade Spindle Installation

Install spindle through bottom of mower and install four mounting bolts. Be sure to position grease fittings toward lubrication access areas.

Blade Spindle Pulley Installation

Insert bolts through unthreaded holes in bushing and start into threaded holes of pulley. Install pulley, split taper bushing and key to spindle shaft. Set pulley dimension (see Figure 14) from top of mower frame and alternately tighten bushing bolts. Continue alternate tightening sequence until assembly is tight and all bolts are torqued to 12 lbs-ft.

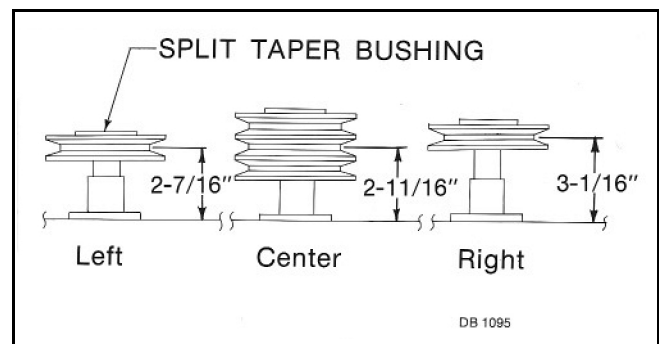


Figure 14. Belt Pulley Height Adjustments

WARNING

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

TROUBLESHOOTING

MOWING CONDITIONS

PROBLEM	POSSIBLE CAUSE	SOLUTION
Grass cut lower in center of swath than at edge	Height of cutter lower at rear or front	Adjust cutter height and attitude so that cutter rear and front are within 1/2" of same height. See instructions.
	Loose blade	Check clamping cup washers. Replace if flat or not holding.
Grass cut lower in center of swath than at edge	Height of mower lower at rear than at front	Adjust mower height and attitude so that mower rear and front are within 1/2" of same height.
	Loose blade	Check clamping cup washers. Replace if flat or not holding.
Streaking conditions in swath	Conditions too wet for mowing; blades unable to cut that part of grass pressed down by path of tractor tires, gauge rollers or casters	Allow grass to dry before mowing. Slow ground speed of tractor but keep engine running at full PTO rpm. Cutting lower will help. Under some conditions it is impossible to pick up and cut grass pressed down by tires.
	Dull blades	Sharpen or replace blades.
	Loose blade	Check clamping cup washers. Replace if flat or not holding.
Material discharges from mower unevenly; bunches of material along swath	Material too high and too much material	Reduce ground speed but maintain full rpm at tractor PTO, or make two passes over material. Raise mower for first pass. Lower to desired height for second and cut at 90° to first pass. Raise rear of mower high enough to permit material to discharge, but not so high that conditions listed above occur.
	Grass wet	Allow grass to dry before mowing. Slow ground speed of tractor but keep engine running at full PTO RPM. Cutting lower will help.
	Rear of cutter too low, trapping material under cutter	Adjust cutter height and attitude.
Erratic mower operation; mower slows down without tractor engine slowing	Belt slippage	See Belt Trouble Shooting.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Belt slippage	Belt too loose	Adjust belt tension.
	Mower overloading; material too tall or heavy	Reduce tractor ground speed but maintain full PTO rpm. Cut material twice; one high pass, then mow at desired height. Cut a partial swath.
	Oil on belt from over-lubrication	Be careful not to over-lubricate. Clean lubricant from belt and pulleys with a clean rag. Replace oil soaked belt.
	Belt hung up or rubbing	Check belt for free travel in pulleys and belt guides. Check under mower and around blade spindle shafts for wire, rags, or other foreign material. Clean all material from under mower.
	Belt or pulleys worn out	If the belt rides in bottom of pulley groove, either belt or pulley is worn and must be replaced.
Frayed edges on cover	Belt misaligned or belt rubbing guide	Realign belt or guide. Be sure belt doesn't rub any other part while running.
	Pulley misalignment	Inspect to ensure belt is running in center of backside idler. Shim idler as necessary to align.
Belt rollover	Pulley misalignment	Realign pulley.
	Damaged belt	Replace belt.*
	Foreign object in pulley grooves	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 damage	Replace belt.*
Belt breakage	High shock loads	Avoid abusive mowing. Avoid hitting the ground or large obstructions.
	Belt came off drive	Check drive alignment for foreign material in grooves. Ensure proper tension. Avoid hitting solid objects or ground.

* Check belt for damage by laying it flat on floor. If belt does not lie flat (has humps or twists), which indicates broken or stretched cords, it must be replaced.

ASSEMBLY

DEALER SET-UP INSTRUCTIONS

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

These instructions are for mounting the mower on tractors equipped with Kubota SFL-22 ROPS.

Set up the mower as received from the factory with these instructions. Complete the check lists on page 29 when it is set up.

Select a suitable working area to assemble mower. Open the accompanying parts box and lay parts out to make location easy. Refer to the illustrations in the text, parts lists and exploded view drawings.

This 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 given on page 37.

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, front wheel weights, ballast in tires or front tractor weights. Weigh the tractor and equipment. Do not estimate.**

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

■ **Do not put this equipment into service unless all side skids are properly installed and in good condition. Replace if damaged.**

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

■ **Before working underneath, raise mower to highest position and block securely. Blocking up prevents mower dropping from hydraulic leak down, hydraulic system failures, or mechanical component failures.**

■ **Disengage power to implement. Lower to ground the 3-point hitch and all raised components. Operate valve levers to release any hydraulic pressure. Stop engine, set parking brake and remove key before dismounting tractor or performing any service or maintenance.**

WARNING

■ **Keep all persons 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.**

Optional equipment such as front roller, leaf mulcher or blades should be installed before the mower is mounted on tractor. It is easier to install casters after mounting mower. Refer to Optional Equipment Installation, page 14, for instructions.

MOWER PREPARATION

Side Skids (Figure 15)

Attach side skids to outer rail with 3/8 x 1" bolts. Final adjustment of skids will be necessary when mowing height is established. Refer to page 11 for skid adjustment.

Side Shield or Discharge Chute

DANGER

■ **Do not put mower into service unless either discharge chute or side shield is installed and in good condition. Replace if damaged.**

Attach side shields to the right and left sides of mower. The baffled shield fits the left side. A side discharge chute may be used in place of the left side shield for mowing in heavy material.

Mount the shields or discharge chute with 3/8 x 1" bolts.

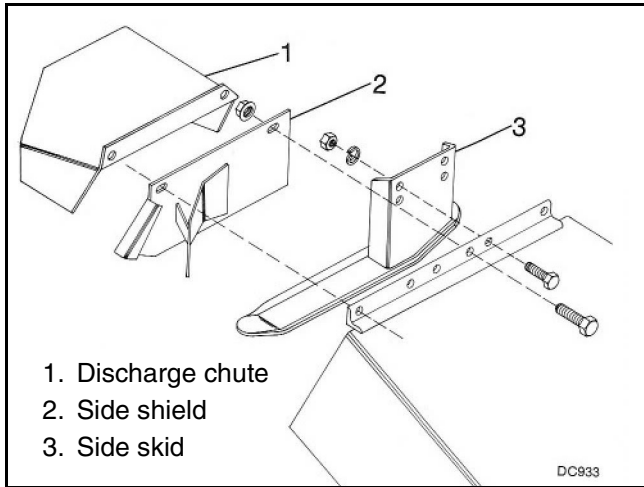


Figure 15. Side Skids, Side Shield & Discharge Chute Installation

CROSSWISE SUPPORT INSTALLATION

Attach crosswise support to mower deck, welded lug forward. Insert spacer bushing into hole. Insert bolt through deck and slide support onto bolt and attach with nut.

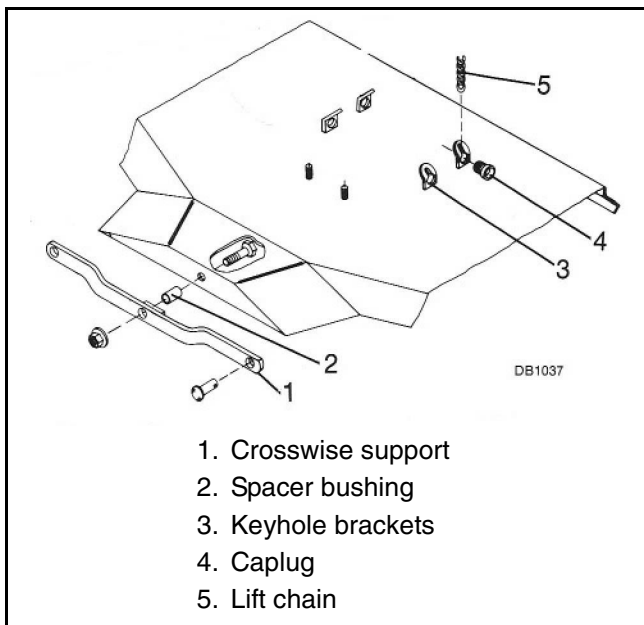


Figure 16. Crosswise Support Installation

CHANNEL ARM INSTALLATION

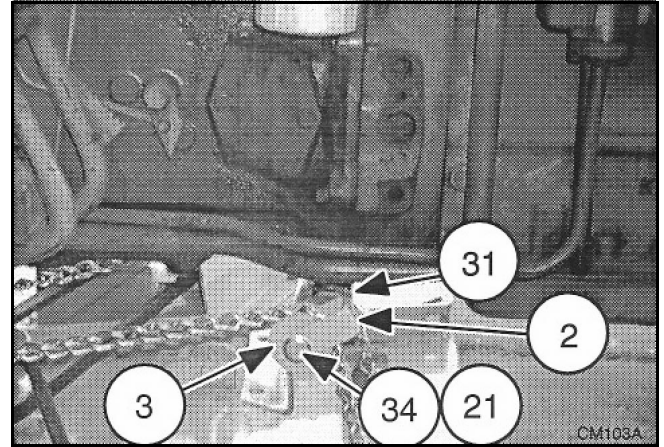
(Refer to parts drawing, page 32)

Attach push channels (12) to mower and secure with clevis pins (13) and safety pins (40). Pin crosswise rear support (15) between push channels and secure with clevis pins (13) and safety pins (40).

Secure center of crosswise rear support to mower with bolt (52), sleeve (16) and flange lock nut (55). After belt is installed, pin rear of channel arms to idler bracket with clevis pins (14) and safety pins (40).

LIFT CHAIN INSTALLATION (FIGURE 17)

Install chain idlers (3) to front lift bracket (2) with clevis pin (34) and cotter pin (21). Attach front lift bracket assembly to tractor clutch housing with metric bolts (31).



- 2. Front lift bracket
- 3. Chain idler
- 21. 3/16 x 1" Cotter pin
- 31. 12 mm x 25 mm Metric bolt
- 34. 1/2 x 2" Clevis pin

Figure 17. Lift Chain Installation

BELT INSTALLATION (FIGURE 18)

One of the major causes of belt failure is improper installation. Before a new belt is installed, check pulley shafts and bearings for wear. Check pulley grooves for cleanliness and be sure they turn freely and with only slight wobble. If grooves require cleaning, use a cloth moistened 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. Always loosen idler pulleys prior to belt installation.

The belt may be completely installed with the mower mounted on tractor. However, it is easier to install belt on mower deck with mower detached. Remove belt shields.

Step 1. Insert belt in bottom right hand groove of center pulley and route around left pulley.

Step 2. Bring belt back to center pulley and insert in middle groove and thread around right pulley.

Step 3. Route belt to center pulley and insert in top groove and pull to rear.

Belt installation will be completed after mower is attached to tractor, as described on page 27.

NOTICE

- A new belt will wear into pulley grooves and it may be necessary to move mower ahead or use other means of tightening after use.

WARNING

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

TRACTOR PREPARATION (FIGURE 19)

It is necessary to remove some tractor components. Store them for later use.

Remove the sway chains, PTO shield, PTO protective cover and drawbar, if tractor is equipped with one.

IDLER PULLEY INSTALLATION (FIGURE 20)

Install carriage bolt (36) through left slide plate of idler bracket (8). Place three washers (39) and V-idler (5) over carriage bolt and secure with hex lock nut (37).

Install carriage bolt (36) through right slide plate of idler bracket (8). Place belt guide (20), two washers (39) and V-idler (5) over carriage bolt and secure with hex lock nut (37). Leave assembly loose until final belt adjustments are made.

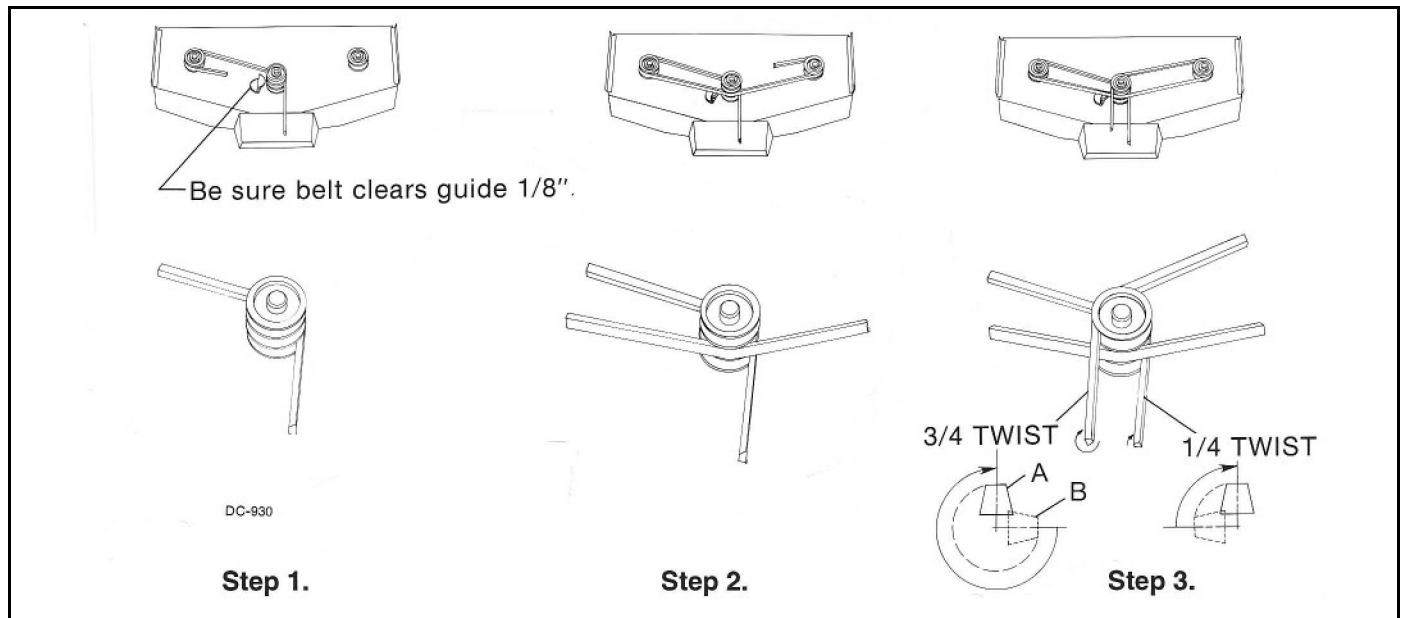


Figure 18. Belt Installation

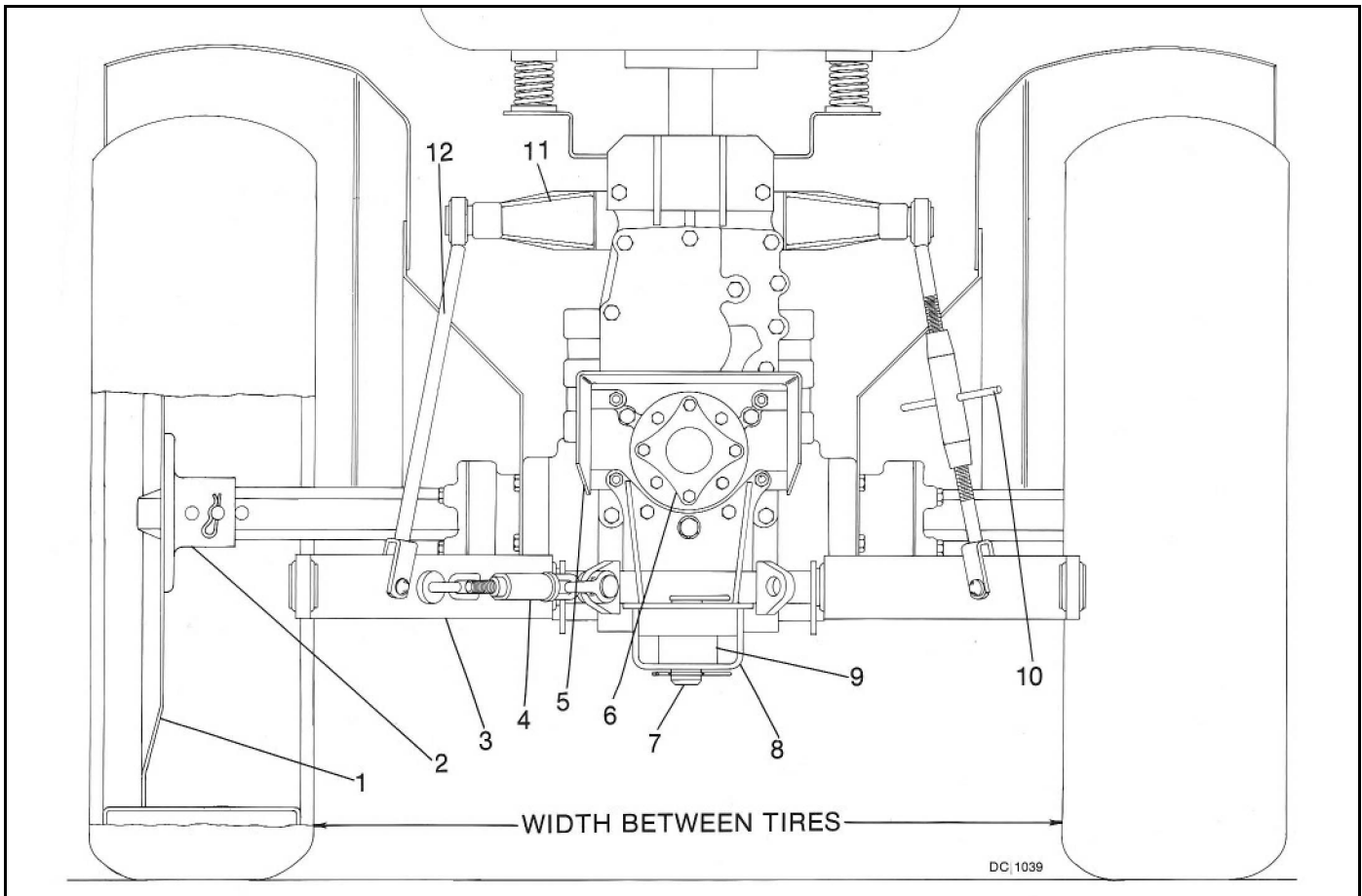


Figure 19. Rear View of Tractor

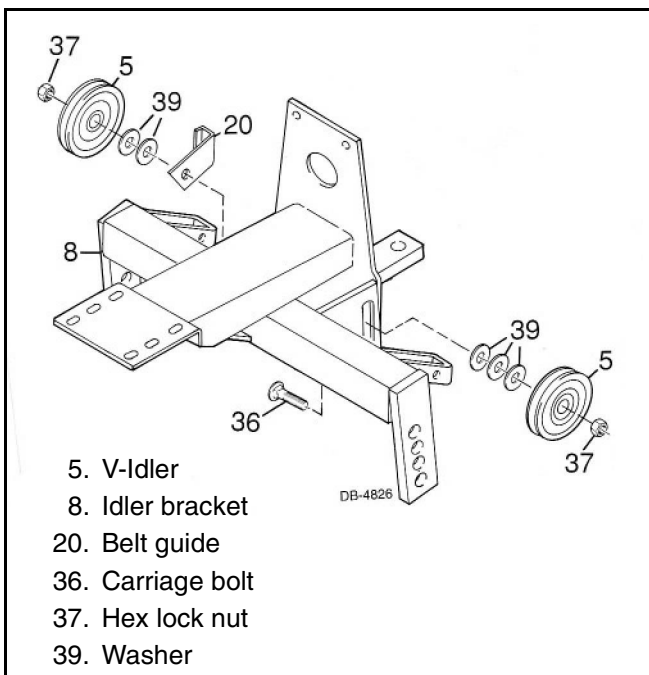


Figure 20. Idler Pulley Installation

IDLER BRACKET INSTALLATION

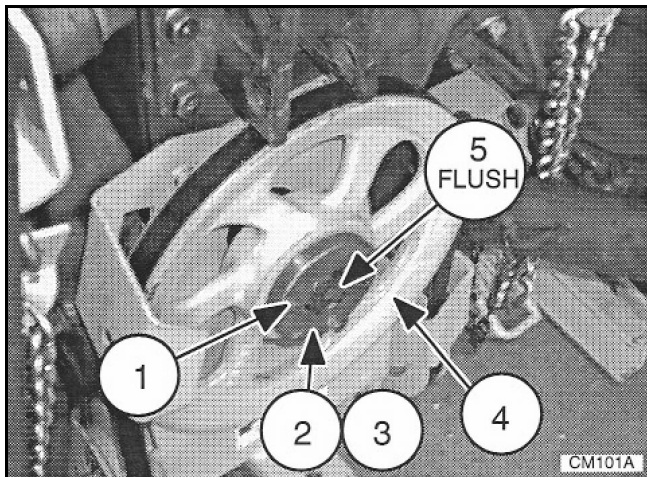
(See parts drawing on page 32)

Remove bolts holding muffler bracket to bottom of differential housing, just ahead of rear axle. Remove rear PTO tractor shield. Attach idler bracket (8) to tractor where shield was removed. Secure to tractor with hardware removed with shield.

Secure front four holes in idler bracket to tractor with metric cap screws (31). In the rear two holes, place muffler clamp against idler bracket and secure to tractor with metric cap screws. Tighten all hardware securely.

DRIVE PULLEY INSTALLATION **(FIGURE 21)**

Remove paint from center hole of drive pulley (4). Insert splined bushing (2) and key (3) into pulley. Insert bushing bolts (1) through unthreaded holes in bushing and start into threaded holes in pulley. Slide bushing and pulley onto tractor PTO shaft (5). Bushing will be flush with end of PTO shaft when properly aligned. Do not tighten bolts into pulley until belt is aligned (see Belt Alignment, page 27).



1. Bolt
2. Splined bushing
3. Key
4. Drive pulley
5. Tractor PTO

Figure 21. Drive Pulley Installation

ATTACHING MOWER TO TRACTOR

Position mower under tractor. If a lifting device is not available, the mower frame is strong enough to back the tractor over mower. Use care to prevent damage to painted surface of mower. Place wood blocks in front of mower and behind tractor tires.

Drive forward over mower to remove from tractor.

MOWER ATTITUDE (FIGURE 22)

Position front of mower level with, or slightly below, the rear to provide closer cutting. Mowing with the front end high will produce ragged cuts with a scalloped look, excessive shredding and will require extra power.

For best mowing results, dimension "A" should not be more than 1/2" higher, and never lower, than dimension "B", except when using the leaf mulcher attachment.

Dimension "B" is set by adjusting casters, gauge wheels or lift chains.

Dimension "A" is set by raising or lowering push channel arms in idler bracket.

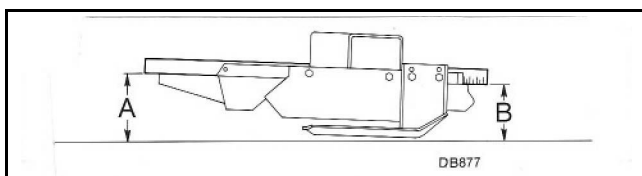


Figure 22. Mower Attitude Adjustment

NOTICE

■ Any adjustment to either dimension "A" or "B" will require adjustment to the other.

Check cutting height and attitude by placing a straightedge along the outside edge of mower frame as shown.

Measure from bottom edge of straightedge at the front and rear at least 32" apart.

The front measurement should be approximately 1/2" lower than the rear.

The blade is 4-5/8" below mower frame. To determine cutting height, measure the distance from bottom of straightedge to the ground and subtract 4-5/8".

When checking cutting height, be sure to take measurements on both sides of mower.

Be sure mower is level from side to side using these measurements. This may be changed by adjusting the eyebolt in the rear lift lug. Cut off excess (approximately 18") on each chain after mower is properly adjusted.

BELT

Belt Alignment

Belt alignment and tension should be set at the same time. Read both the alignment and tensioning sections before attempting either. Improper tension or alignment will affect belt life.

With mower level and cutting height set, check belt alignment.

Belt alignment is accomplished by adjusting idler pulleys. First, align drive pulleys with idler pulleys. Check with a straightedge (see Figure 23). Alternately tighten bolts on taper lock bushing to secure drive pulley in proper alignment. Continue to alternate tightening sequence until assembly is tight and all bolts are torqued to 12 lbs-ft. Recheck drive pulley to idler pulley alignment.

Alignment tolerances are shown in Figure 24 thru Figure 29. The best idler alignment is shown in Figure 24 & Figure 27. However, it is not always possible to achieve. Alignment may be set within the tolerances given, but the left idler must always be at least 1" higher than the right.

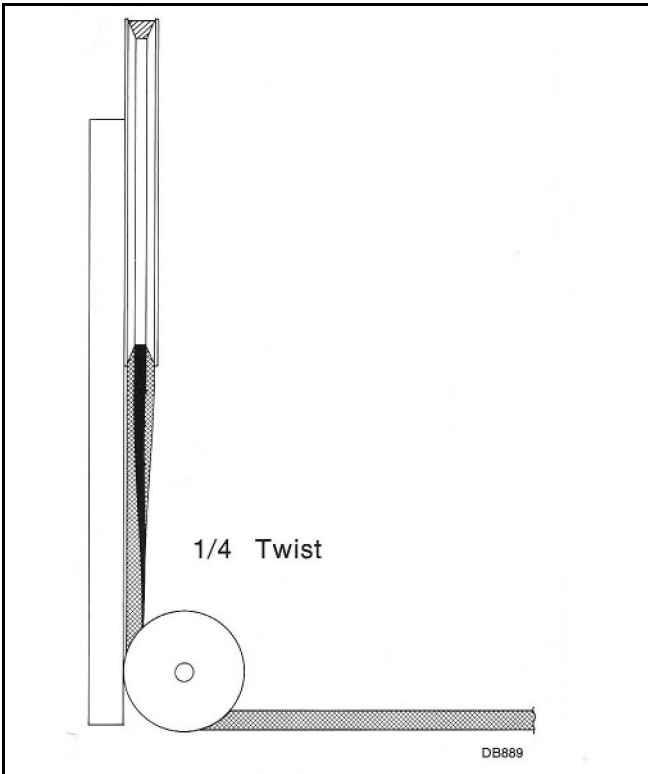


Figure 23. Drive Pulley to Idler Adjustment

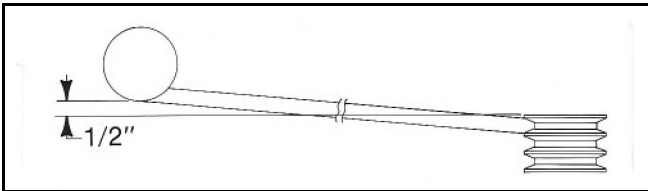


Figure 24. Best Possible Alignment of Left Idler

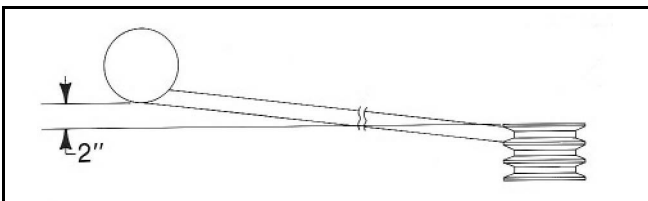


Figure 25. Maximum Left Idler Should be Raised

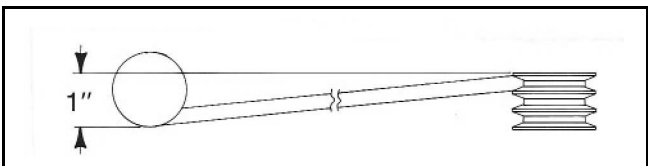


Figure 26. Maximum Left Idler Should be Lowered

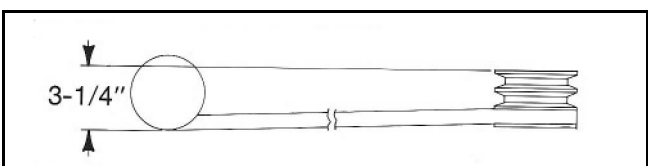


Figure 27. Best Possible Alignment for Right Idler

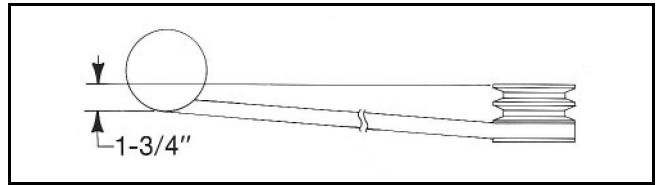


Figure 28. Maximum Right Idler Should be Raised

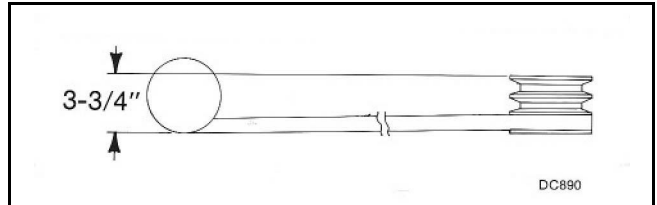


Figure 29. Maximum Right Idler Should be Lowered

BELT TENSION (FIGURE 30)

Set belt tension using a spring scale or other force measuring device. Remove left belt shield and attach scale between the center and left pulleys. Apply between three and four pounds of force. Belt deflection should measure $5/16$ " for normal conditions. Tension may be increased if necessary to prevent belt from slipping in heavy mowing conditions.

When checking tension without a force measuring device, the belt, when properly set, should feel very tight.

Cycle belt through at least two revolutions after any adjustment before checking tension. These belts are very strong and need to be adjusted very tightly. Belts are more likely to be damaged by excessive slippage than from being overtightened.

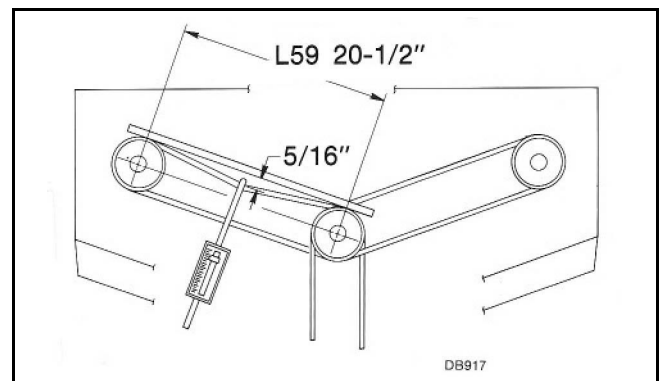


Figure 30. Proper Belt Tension

NOTICE

- **Belt must not rub deck or crosswise support.**

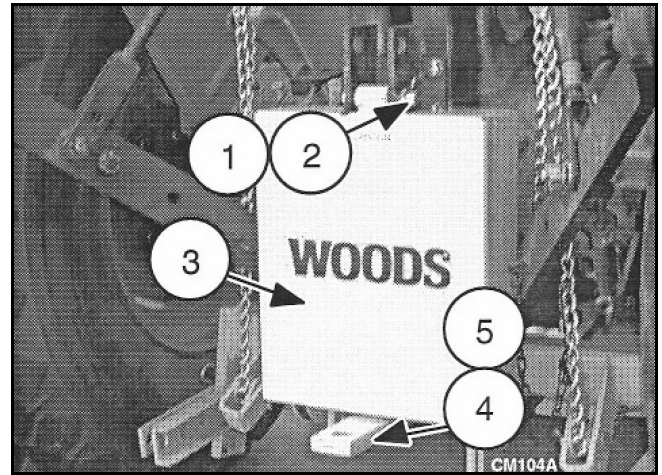
Minor tension adjustments are made by moving idler pulleys up or down. Major tension adjustments are made by moving mower deck forward or rearward.

NOTICE

- Make sure front or rear tires do not rub on mower.
- Alignment must be rechecked if it is necessary to move idler pulleys or the mower deck to get proper belt tension.
- Tension on a new belt should be readjusted every half hour for the first two hours and then checked every eight hours of operation.

BELT SHIELD INSTALLATION (FIGURE 31)

Insert shield bolt through drawbar bracket and secure with lock washer (4) and hex nut (5). Attach top of shield (3) to tractor top link and secure with clevis pin (1) and safety pin (2).



1. Top link pin, tractor hardware
2. Top link safety pin, tractor hardware
3. Belt shield
4. 3/8" Lock washer
5. 3/8 NC Hex lock nut

Figure 31. Belt Shield Installation

DEALER CHECK LISTS

PRE-DELIVERY CHECK LIST

(Dealer's Responsibility)

Inspect the mower thoroughly after assembly to be certain 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 or after proper adjustment is made.

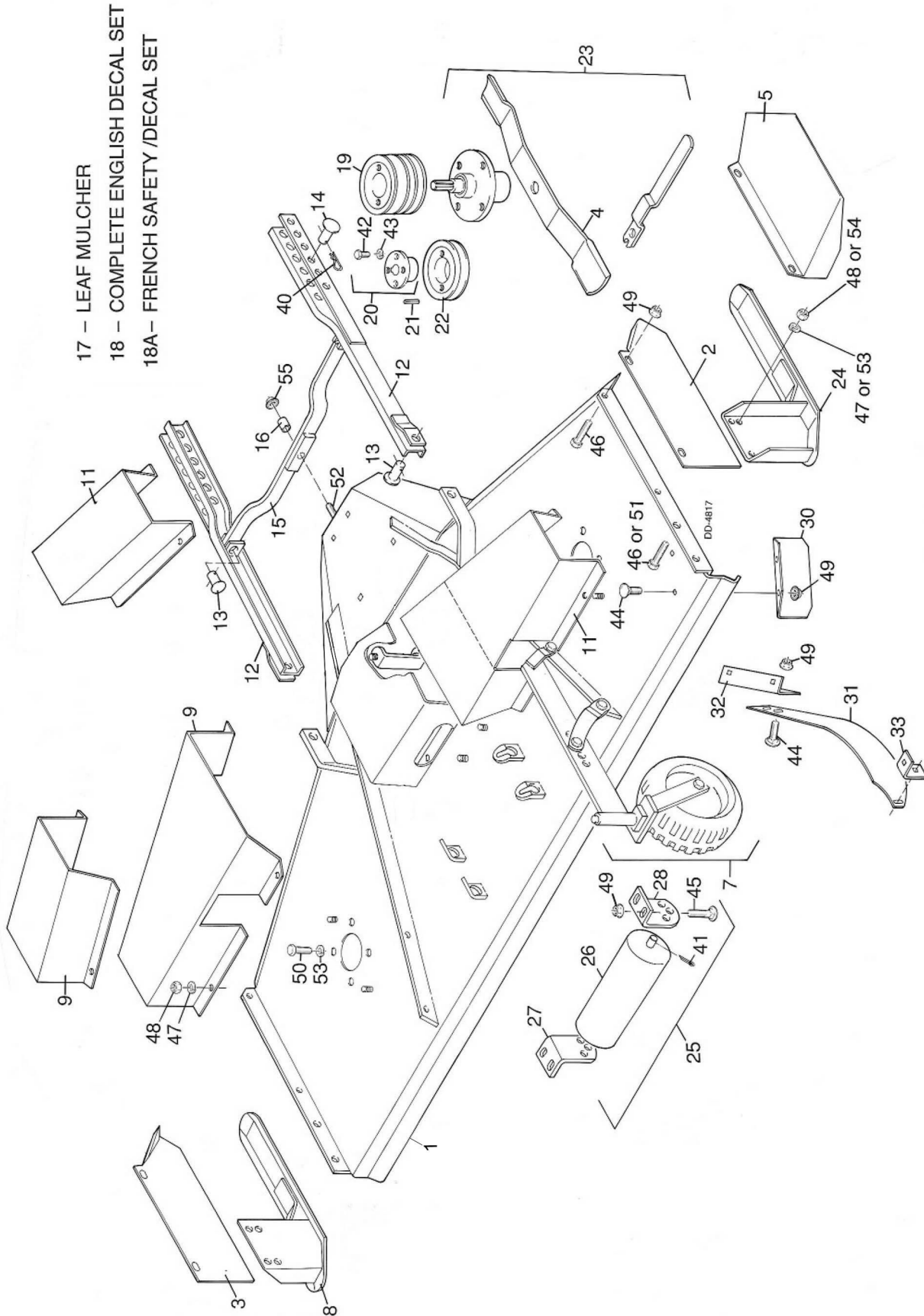
- ___ Check that all safety decals are installed and in good condition.
- ___ Check that shields and guards are properly installed and in good condition.
- ___ Properly attach equipment to tractor and make all necessary adjustments.
- ___ Check all bolts to be sure they are correctly torqued.
- ___ Check that all cotter pins and safety pins are properly installed.
- ___ Lubricate all grease fittings; check to make sure a small amount of grease comes out of seal.
- ___ Check that blades have been properly installed.
- ___ Check mower attitude and belt alignment.

DELIVERY CHECK LIST

(Dealer's Responsibility)

- ___ Show customer how to make adjustments.
- ___ Explain importance of lubrication and show lubrication points to customer.
- ___ Point out all safety features of the equipment. Explain the importance and meaning of all safety decals and emphasize the potential hazards when not followed.
- ___ Present Operator's Manual and request that customer and all operators read it before operating equipment.
- ___ Show customer the safe, proper procedures to be used when mounting, dismounting, and storing equipment.
- ___ Explain to customer that when equipment is transported on a road or highway, a Slow Moving Vehicle (SMV) sign should be used to provide adequate warning to operators of other vehicles.
- ___ Make customer aware of optional equipment available so that customer can make proper choices as required.

MOWER FRAME ASSEMBLY



30 Parts

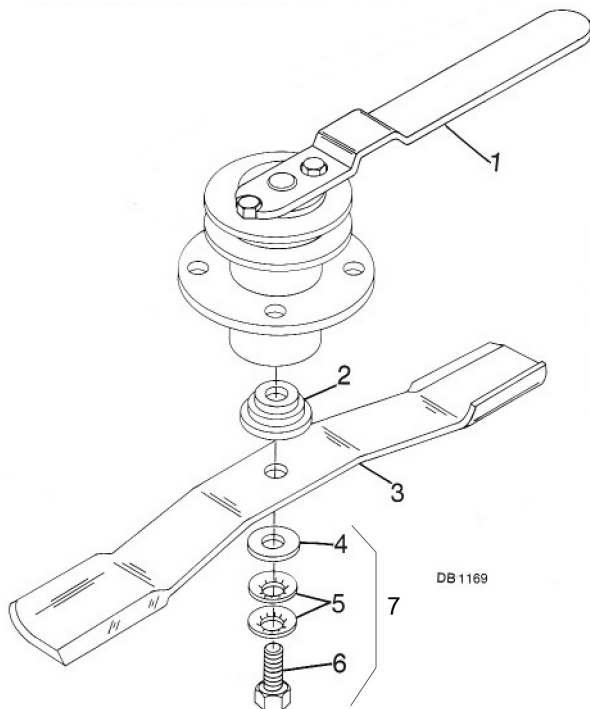
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MOWER FRAME ASSEMBLY

REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	9701	1	Frame only	23	-----	3	Spindle, blade and wrench
2	25511	1	Left side shield with baffle	24	4142	1	Left side skid
3	25510	1	Right side shield	25	24650	1	Front roller complete (optional)
4	23825KT	3	Blade, medium-suction CCW 20-1/4 (Standard) -or-	26	24583	1	Front roller, bearing and rod
4	25997KT	3	Blade, low-suction CCW 20-1/4 (Optional) -or-	27	24587	1	Left front roller bracket
5	26521	1	Side discharge chute	28	24586	1	Right front roller bracket
7	-----	2	Casters (optional)	40	2688*		1/8 Safety pin
8	4141	1	Right side skid	41	1256*		3/16 x 1 Cotter pin
9	25506	1	Right belt shield	42	10378*		1/4 NC x 1 HHCS GR5
11	25507	1	Left belt shield	43	1985*		1/4 Standard lock washer
12	18241	2	Push channel with clevis bar	44	24597*		3/8 NC x 3/4 Carriage bolt
13	4097	4	5/8 x 1-1/2 Clevis pin	45	6697*		3/8 NC x 1 Carriage bolt
14	410	2	5/8 x 1-3/4 Clevis pin	47	838*		3/8 Standard lock washer
15	18245	1	Crosswise rear support	48	835*		3/8 NC Hex nut, plated
16	3504	1	1/2 x 5/8 x 1-1/16 HT Sleeve	49	14350*		3/8 NC Flanged hex lock nut
17	-----	-	Leaf mulcher	50	4119		1/2 NF x 1 HHCS GR5
18	5753	1	Complete english decal set -or-	51	6100*		1/2 NC x 1-1/4 HHCS GR5
18A	52311	1	French safety decal set	52	3699*		1/2 NC x 2 HHCS GR5
19	6126	1	3.9 PD H Sheave (3 groove)	53	855*		1/2 Extra-Heavy lock washer
20	4227	3	H3/4 Straight bushing with bolts	54	1093*		1/2 NC Heavy hex nut
21	3885	3	3/16 x 3/16 x 1-1/4 Key	55	11900*		1/2 NC Flanged hex lock nut
22	4226	2	3.9 H Sheave (single groove)				

* Standard hardware, obtain locally

BLADE ASSEMBLY



REF	PART	QTY	DESCRIPTION
1	2974	1	Spindle lock wrench
2	4110	1	Shoulder washer, 2-1/4 dia.
3	23825KT	1	CCW 20-1/4 Medium-suction blade (standard) -or-
3	25997KT	1	CCW 20-1/4 Low-suction blade (optional)
4	692*	1	5/8 Standard flat washer
5	10635	2	5/8 x 1-3/4 x 14 GA Cup washer
6	10718	1	5/8 NC x 1-1/2 Nylok HHCS, HT, left hand threads
7	1015826	1	CCW blade bolt & washer kit (includes items 4, 5 & 6)

* Standard hardware, obtain locally

MOUNTING ASSEMBLY

LIFT CHAIN AND BRACKETS ARE SHOWN ON LEFT SIDE OF TRACTOR. INSTALL CHAINS AND BRACKETS TO RIGHT SIDE OF TRACTOR IN SAME WAY.

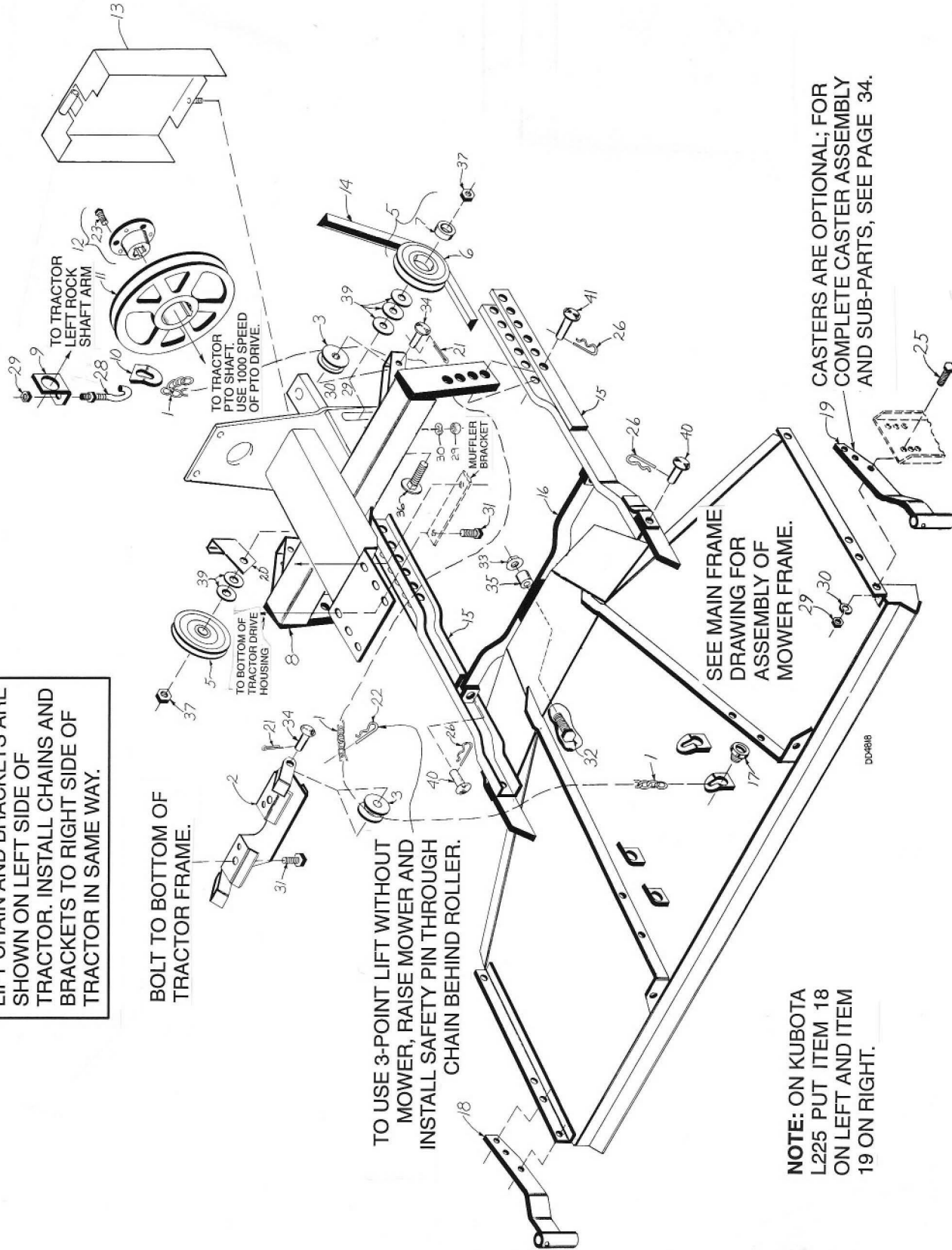
BOLT TO BOTTOM OF TRACTOR FRAME.

TO USE 3-POINT LIFT WITHOUT MOWER, RAISE MOWER AND INSTALL SAFETY PIN THROUGH CHAIN BEHIND ROLLER.

SEE MAIN FRAME DRAWING FOR ASSEMBLY OF MOWER FRAME.

NOTE: ON KUBOTA L225 PUT ITEM 18 ON LEFT AND ITEM 19 ON RIGHT.

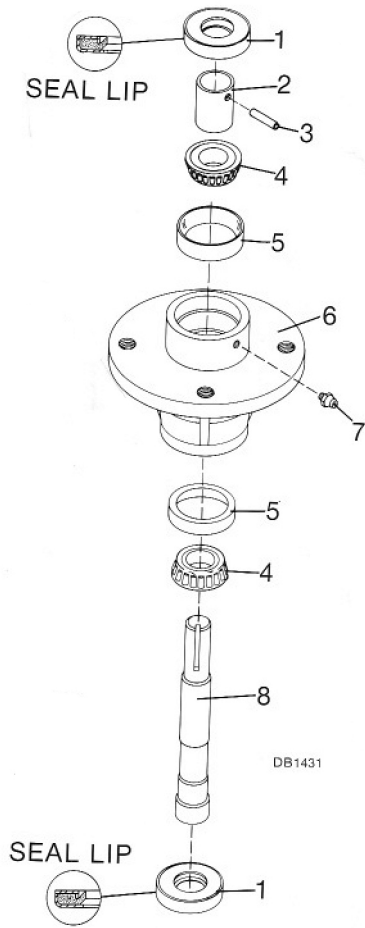
CASTERS ARE OPTIONAL; FOR COMPLETE CASTER ASSEMBLY AND SUB-PARTS, SEE PAGE 34.



MOUNTING ASSEMBLY

REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	6673	2	2/0 Twist link chain, 78"	22	18270*		3/16 Safety pin
2	23930	1	Lift bracket assembly	23	14562*		5/16 NC x 1 HHCS GR5
3	6696	4	Chain idler	25	12169*		3/8 NC x 1-1/4 HHCS GR5
5	4336	2	V-Groove idler sheave with bearing	26	2688*		1/8 Safety pin
6	4335	2	4.5 OD V-Groove idler sheave without bearing	27	64824		3/8 NC x 1-1/2 Carriage bolt, full thread
7	6095	2	.626 ID x 1.85 OD Ball bearing	28	5762		3/8 NC x 3-1/4 Open eyebolt
8	20990	1	Idler bracket	29	835*		3/8 NC Hex nut, plated
9	18327	2	Lift angle	30	838*		3/8 Standard lock washer
10	18335	2	7 GA x 1-3/4 x 2-9/16 Lift lug	31	23599		12mm x 1.25P x 25mm HHCS
11	1481	1	Sheave, 9.40 1B P1	32	639*		1/2 NC x 2-1/2 HHCS GR5
12	4001	1	P1 1-3/8 Splined bushing	33	11900*		1/2 NC Flanged hex lock nut
13	20993	1	Rear belt shield	34	409		1/2 x 2 Clevis pin
14	18186	1	V-Belt W165	35	3504		1/2 x 5/8 x 1-1/16 Sleeve HT
15	18241	2	Push channel with clevis bar	36	5079*		5/8 NC X 2-1/4 Carriage bolt
16	18245	1	Crosswise rear support	37	6239*		5/8 NC Hex lock nut
17	18336	2	Caplug, 1-1/16 - 121D SAE thread	39	692*		5/8 Standard flat washer
18	29747	1	Left caster arm assembly (optional)	40	4097		5/8 x 1-1/2 Clevis pin
19	29746	1	Right caster arm assembly (optional)	41	410		5/8 x 1-3/4 Clevis pin
20	23636	1	V-Belt guide				* Standard hardware, obtain locally
21	1256*		3/16 x 1 Cotter pin				

BLADE SPINDLE ASSEMBLY



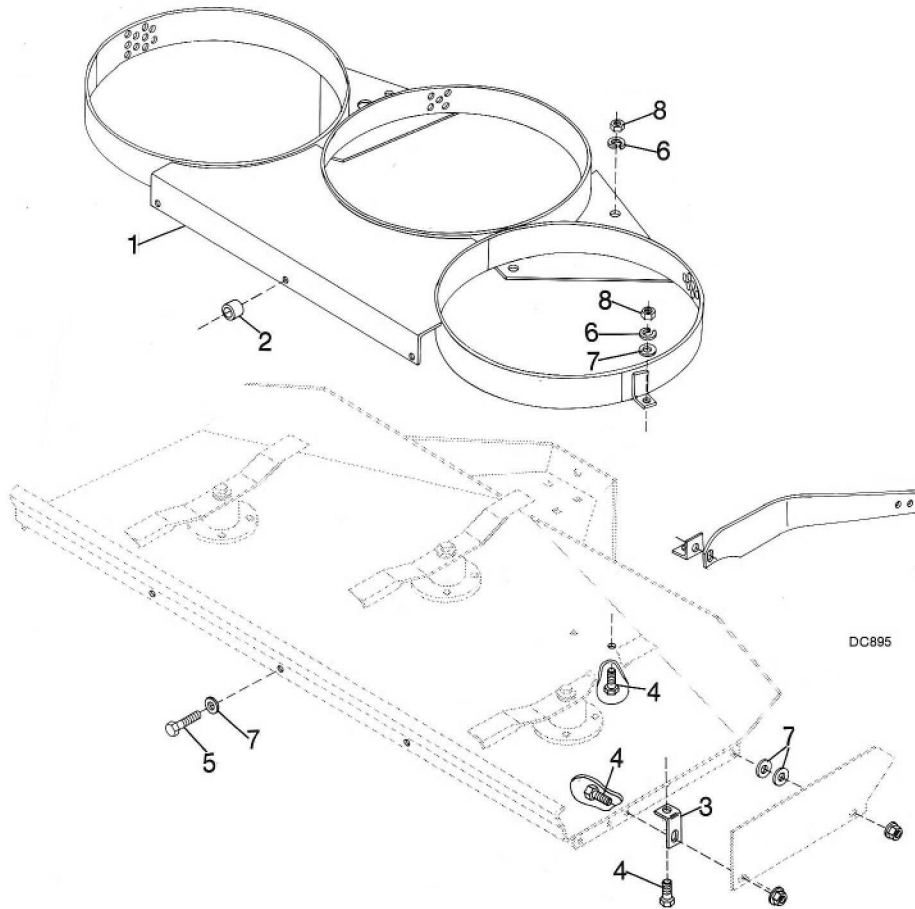
REF	PART	QTY	DESCRIPTION
1	5089	2	1.06 x 2.0 x .44 Seal
2	4114	1	27/32 x 1-1/16 x 1-7/16 Sleeve
3	4115*	1	3/16 x 1-1/8 Spring pin
4	4107	2	Bearing cone
5	4106	2	Bearing cup
6	4117	1	Spindle housing with cups
7	1972*	1	1/4 - 28 Tapered thread grease fitting
8	28897	1	Spindle shaft, HT with left hand thread

* Standard hardware, obtain locally

34 Parts

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LEAF MULCHER (OPTIONAL)



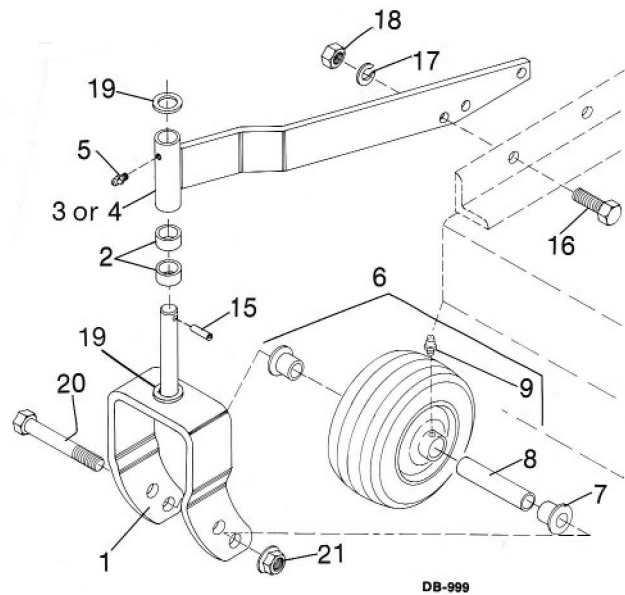
REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
-	7080	1	L59 Leaf mulcher complete	5	976*	-	3/8 NC x 1-1/2 HHCS GR5
1	-----	1	Leaf mulcher attachment	6	838*	-	3/8 Standard lock washer
2	23218	3	3/8 Schedule 40 pipe, 5/8 long	7	565*	-	3/8 Standard flat washer
3	7076	2	Angle lug	8	835*	-	3/8 NC Hex nut, plated
4	839*	-	3/8 NC x 1 HHCS GR5				

* Standard hardware, obtain locally

CASTER ASSEMBLY

REF	PART	QTY	DESCRIPTION
A	29750	-	Right and left caster bundle (includes mounting hardware)
1	12240	1	Caster yoke, 1/2" hole
2	4181	2	25/32 x 1 x 1/2 HT Sleeve
3	29746	1	Right caster arm assembly (shown)
4	29747	1	Left caster arm assembly
5	12296*	1	1/4 - 28 Straight grease fitting, 15/32"
6	19703	1	8-1/2 Caster wheel with sleeve
7	29375	2	3/4 x 1-1/8 Flange bearing for wheel
8	29368	1	1/2 x 3/4 x 3-3/8 sleeve
9	-----*	1	Straight 1/4 self-tap grease fitting
15	21020	1	1/4 x 1-1/4 Spirol pin
16	12169*	1	3/8 NC x 1-1/4 HHCS GR5
17	838*	1	3/8 Standard lock washer
18	835*	1	3/8 NC Hex nut, plated
19	22240	1	3/4 x 1-3/16 x 10 GA Washer
20	23479	1	1/2 NC x 5 HHCS GR5
21	765*	1	1/2 NC Hex lock nut

* Standard hardware, obtain locally



DB-999

36 Parts

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BOLT TORQUE CHART

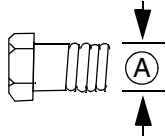
Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.

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 Grade 2
(No Dashes)

SAE Bolt Head Identification

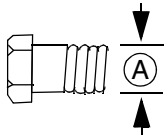


SAE Grade 5
(3 Radial Dashes)



SAE Grade 8
(6 Radial Dashes)

Ⓐ 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



8.8
Metric
Grade 8.8

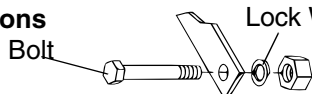
Metric Bolt Head Identification



10.9
Metric
Grade 10.9

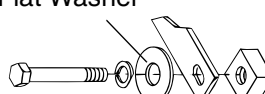
Ⓐ Diameter & Thread Pitch (Millimeters)	Wrench Size	Coarse Thread				Fine Thread				Ⓐ Diameter & Thread Pitch (Millimeters)
		Marking on Head				Marking on Head				
		Metric 8.8		Metric 10.9		Metric 8.8		Metric 10.9		
		N-m	lbs-ft	N-m	lbs-ft	N-m	lbs-ft	N-m	lbs-ft	
6 x 1.0	10 mm	8	6	11	8	8	6	11	8	6 x 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



Lock Washer

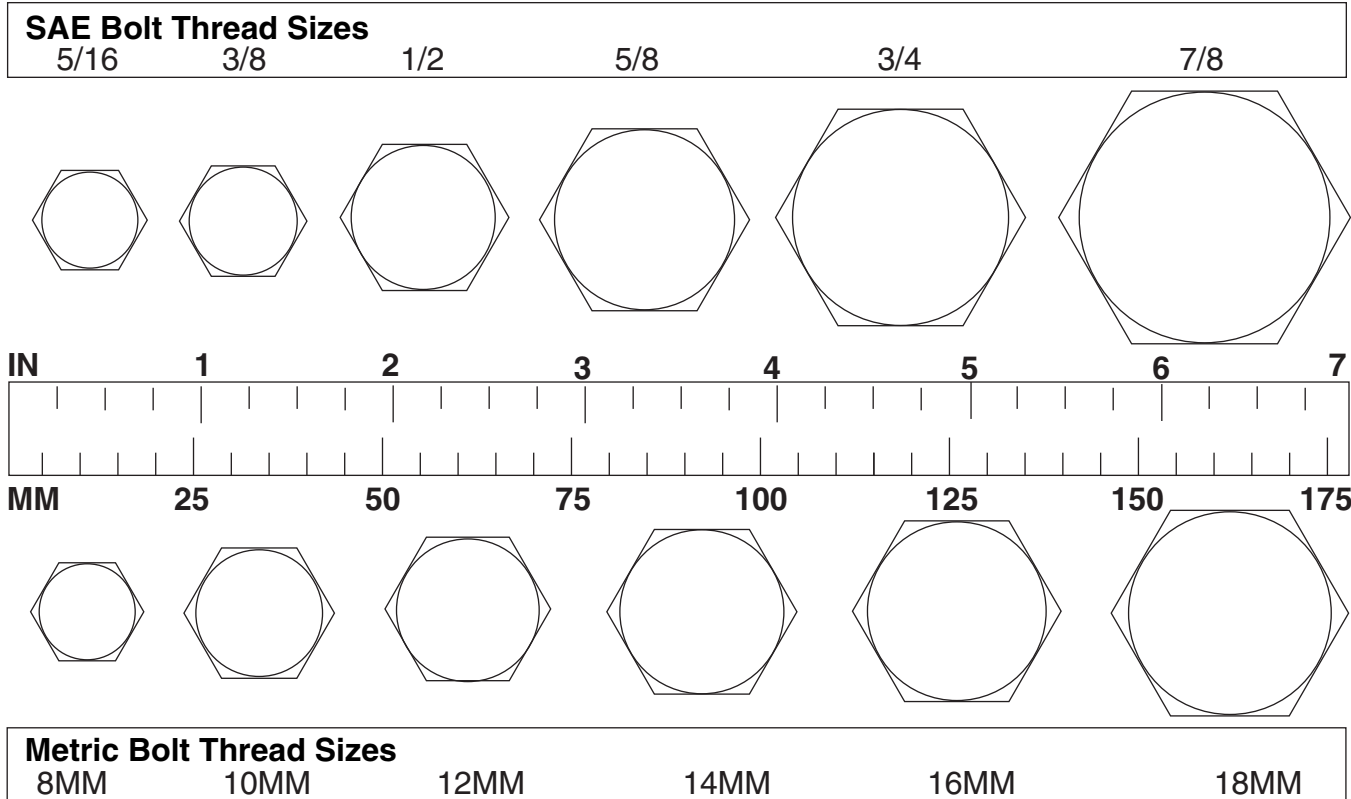
Flat Washer



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
 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

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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:

Part or Condition Warranted	Model Number	Duration (from date of delivery to the original purchaser)
Gearbox components	BW1260, BW1800	8 years
	BB48X, BB60X, BB72X, BB84X, BB600X, BB720X, BB840X, BB6000X, BB7200X, BB8400X, DS1260, DSO1260, DS1440, TS1680, BW126-2, BW180-2	6 years
	PHD25, PHD35, PHD65, PHD95, 2162, 3240, DS96, DS120, RCC42, RM550-2, RM660-2, RM990-3, PRD6000, PRD7200, PRD8400, 7144RD-2, 9180RD-2, 9204RD-2, S15CD, S20CD, S22CD, S25CD, S27CD	5 years
	RDC54, RD60, RD72	3 years (1 year if used in rental or commercial applications)
Blade spindles	RM550-2, RM660-2, RM990-3, PRD6000, PRD7200, PRD8400, 7144RD-2, 9180RD-2, 9204RD-2	3 years
Rust-through	BB600, BB720, BB840, BB6000, BB7200, BB8400, BW126-2, BW180-2, BW1260, BW1800, 2162, 3240, DS1260, DSO1260, DS1440, TS1680	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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WOODS shall not be liable for any incidental or consequential losses, damages or expenses, arising directly or indirectly from the product, whether such claim is based upon breach of contract, breach of warranty, negligence, strict liability in tort or any other legal theory. Without limiting the generality of the foregoing, Woods specifically disclaims any damages relating to (i) lost profits, business, revenues or goodwill; (ii) loss of crops; (iii) loss because of delay in harvesting; (iv) any expense or loss incurred for labor, supplies, substitute machinery or rental; or (v) any other type of damage to property or economic loss.

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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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