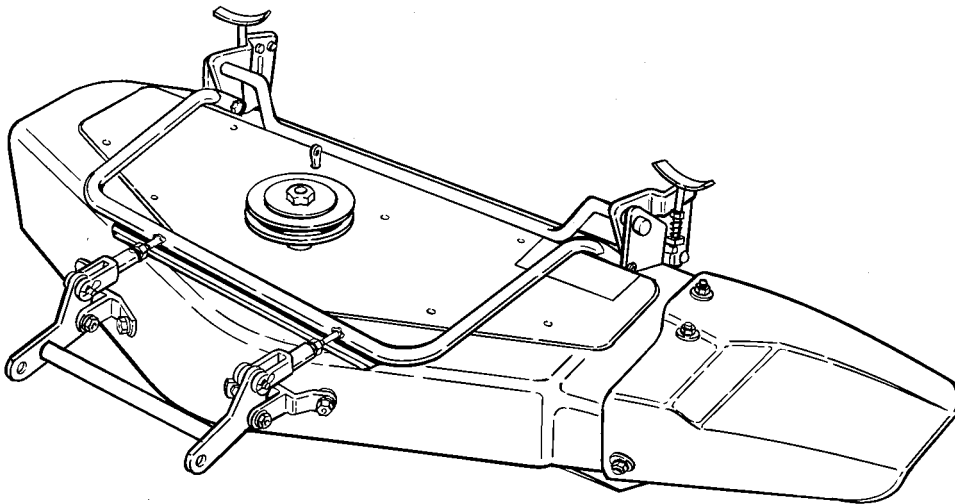


OPERATOR'S MANUAL

48" ROTARY MOWER



48" ROTARY MOWER
FOR DIESEL TRACTORS
MFG. NO. 1690769


FORM - 1671064
PRINTED IN U.S.A.
839

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Safety Rules



Read these safety rules and follow them closely. Failure to obey these rules could result in loss of control of vehicle, severe personal injury to yourself or bystanders, or damage to property or equipment. The triangle  in the text signifies important cautions or warnings which must be followed.

ALL WARNING, CAUTION, and instructional messages on your mower should be carefully read and obeyed. Personal bodily injury can result when these instructions are not followed.

GENERAL

- Read the Operating and Service Instructions carefully. Be thoroughly familiar with the controls and the proper use of the equipment.
- Never allow children to operate the machine. Do not allow adults to operate it without proper instruction.
- Do not carry passengers.
- Use only attachments or accessories designed for your machine. See your dealer for a complete list of recommended attachments or accessories.
- Keep the area of operation clear of all persons, particularly small children and pets.
- When using any attachments, never direct discharge of material toward bystanders or allow anyone near the vehicle while in operation.
- Make sure:
 - a. tractor and attachments are in good operating condition,
 - b. all safety devices and shields are in place and in good working condition, and
 - c. all adjustments (cutting height, etc.) have been made.

PREPARATION

- Handle fuel with care - it is highly flammable.
 - a. Use approved fuel container.
 - b. Never remove the cap of the fuel tank or add fuel to a running or hot engine, or fill the fuel tank indoors. Wipe up spilled fuel.
- Do not run the engine indoors. Exhaust fumes are deadly.

- Clear the work area of objects which might be picked up and thrown.
- Disengage all attachment clutches and shift into neutral before attempting to start the engine.
- Wear heavy footwear. Do not operate tractor when barefoot or when wearing open sandals or canvas shoes.

OPERATION

- Disengage power to attachment(s) and stop the engine before leaving the operator's position.
- Disengage power to attachment(s) and stop the engine before making any repairs or adjustments.
- Stop engine to unclog chute.
- Stay alert for holes in terrain and other hidden hazards. Be extra careful with operating on wet or slippery surfaces.
- The vehicle and attachments should be stopped and inspected for damage after striking a foreign object, and the damage should be repaired before restarting and operating the equipment.
- Disengage power to attachment(s) when transporting or not in use.
- When mowing, proceed as follows.
 - a. Mow only in daylight or in good artificial light.
 - b. Never operate the tractor without the mower clutch safety interlock switch properly attached and working.
 - c. Check the blade mounting bolts for proper tightness at frequent intervals.
- Do not stop or start suddenly when going uphill or downhill. Mow up and down the face of slopes; never across the face.

- Reduce speed on slopes and in sharp turns to prevent tipping or loss of control. Use extreme caution when changing direction on slopes.
- Be especially careful not to touch tractor or attachment parts which might be hot from operation. Allow such parts to cool before attempting to maintain, adjust, or service.
- Watch out for traffic when crossing or near roadways.
- If equipment begins to vibrate abnormally, disengage power to attachments and stop engine at once. Inspect for damage and correct before starting again.
- Use care when pulling loads or using heavy equipment.
 - a. Use only drawbar hitch point.
 - b. Limit loads to those you can safely control.
 - c. Do not turn sharply. Use care when backing.
 - d. Use counterweight(s) or wheel weights when suggested in the Operator's Manual.

ALL WARNING, CAUTION and instructional messages on your tractor and mower should be carefully read and obeyed. Personal bodily injury can result when these instructions are not followed. The information is for your safety, and it is important. The following are on your rotary mower.

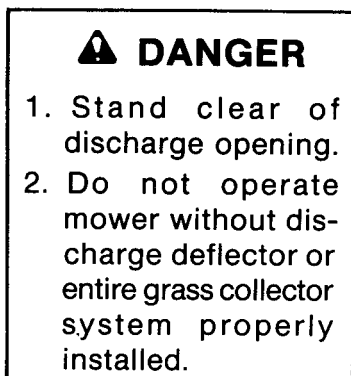
- Take all possible precautions when leaving the vehicle unattended, such as disengaging the power take-off, lowering the attachment(s), shifting into neutral, setting the parking brake, stopping the engine, and removing the key.

MAINTENANCE AND STORAGE

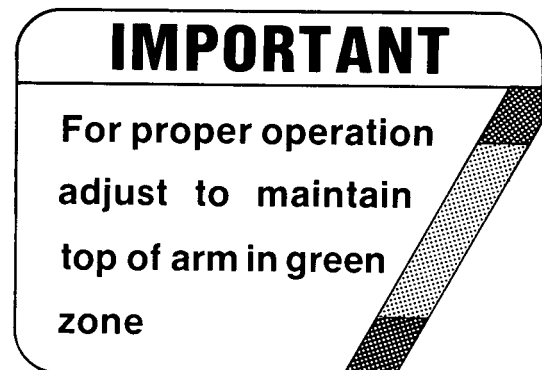
- Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
- Do not change the engine governor settings or overspeed engine.
- To reduce fire hazard, keep the engine free of grass, leaves, or excessive grease.
- Never store the equipment with fuel in the tank inside a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.



LOCATION: Right-Hand Top of Mower Deck



LOCATION: Near Discharge Opening



No. 1664808 - Located on the PTO idler pulley support bracket as shown in figure 10.

Mower Setup, Hitching & Unhitching

ATTENTION SETUP PERSONNEL:

As setup personnel you have an obligation to know the product better than the customer. This includes safety related items. Prior to actual setup, thoroughly familiarize yourself with the Operator's Manual. Pay special attention to all safety warnings. It is possible during setup to place yourself in a position which is more hazardous than when the unit is in operation. Remember, it is your responsibility to set up the product safely and to know it well enough to be able to instruct a customer in the safe use of his power unit.

Safety is a matter of common sense . . . A matter of thinking before acting. Most shops have specific safety practices. Follow them. The precautions listed in the Operator's Manual should not supersede existing practices but should be considered as supplemental information.



WARNING

Before leaving the operator's seat for any reason, make sure the front clutch switch is OFF, the engine is stopped, ignition key is removed and parking brake is set.

ASSEMBLY

Place the mower deck on a flat working surface and open the parts bag. Arrange all hardware according to size and type, and proceed as follows. (See Fastener ID Chart at back of manual). After assembly, recheck the mower with figure 26 to be sure mower is attached correctly.

1. Remove the two carriage bolts (E, figure 26) with their hardware from the mower deck.
2. Loosen, but do not remove, the hex nut holding the large flat washer (F).
3. Install the shield (D) as shown, making sure the notch in the shield is seated behind the large washer (F).
4. Install the two carriage bolts (E) from underneath up through the mower deck and deflector. To align holes, it may help to loosen nut (BB). Then install a large washer, a lockwasher, and a hex nut (A, B and C) on each carriage bolt and tighten all hardware in place. Be sure to also retighten the hex nut at the third large washer (F). Tighten nut (CC), if loosened.
5. When the mower is shipped from the factory, the hitch is installed backwards on the mower for shipping purposes. Remove the hitch by removing capscrews, attaching hardware, pins and clips. Insert spacers (H) in middle holes at each side of hitch and install between mower bracket (I) posts as

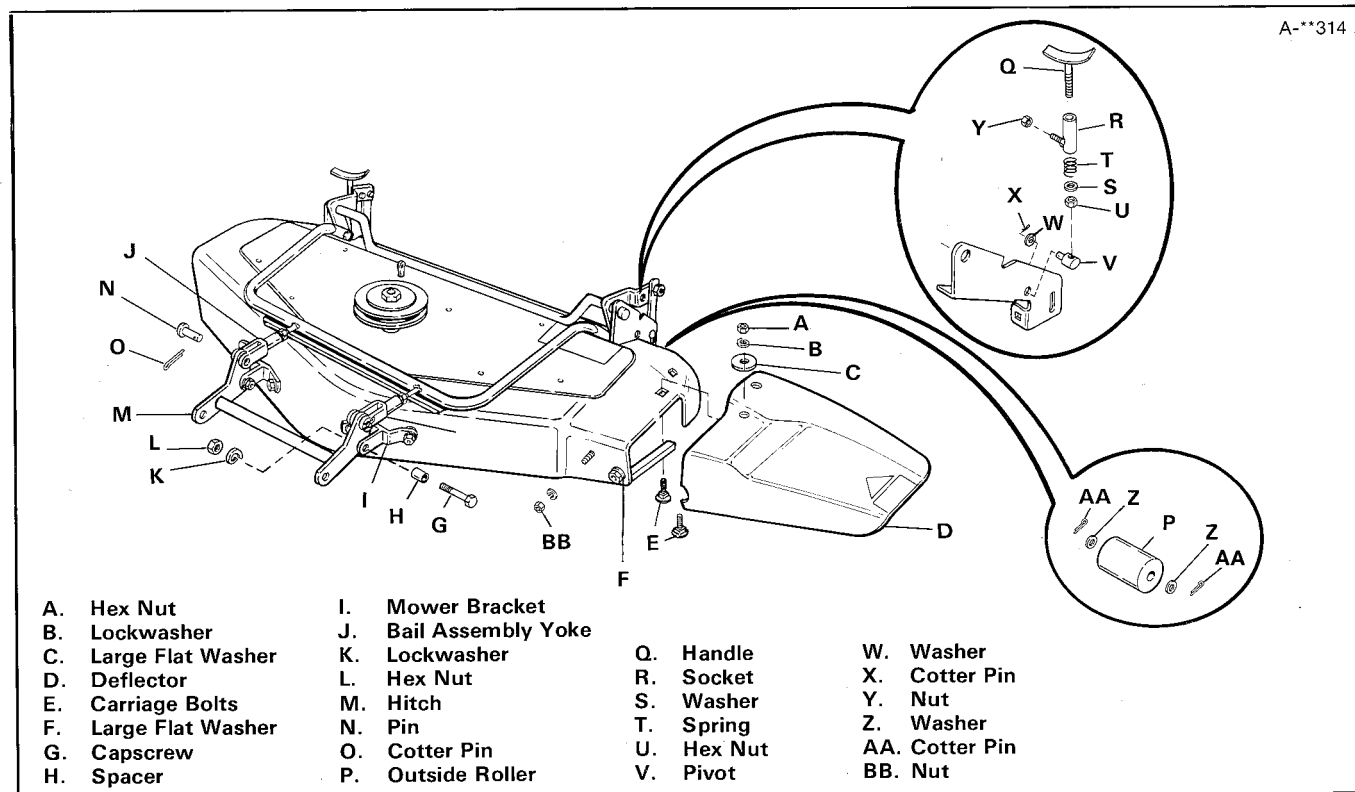


Figure 26. 48" Mower Assembly

shown so the spacers align with the bracket holes. Install capscrew (G) with lockwasher (K) at each side through bracket (I) and spacer (H) in the hitch. Tighten each capscrew with nut (L).

6. On each side, insert a pin (N) thru yoke (J) and hitch. Insert cotter pins (O) thru the pins and bend the legs fully.
7. The handle assemblies are assembled in a skin pack. Remove the assemblies from the skin pack and apply grease to the handle (Q) threads. Install both handle assemblies as follows.
8. Remove the nut (Y) from the socket (R). Remove the cotter pin (X) and washer (W) from the pivot (V).
9. Install the socket (R) into the rocker arm. Install the pivot (V) into the roller bracket.
10. Secure the socket (R) with the nut (Y). Secure the pivot (V) with the washer (W) and cotter pin (X).
11. The outside rollers (AA), washers (Z) and cotter pins (AA) are shipped loose. Slide a washer, roller, and other washer onto each end of roller bar. Insert cotter pins thru outer ends of roller bar and spread legs fully. On the left end of roller bar, an inner cotter pin is already installed to position the roller. Be sure legs are spread fully.
12. Check all three blade capscrews to be sure they are torqued from 50 to 70 ft. lbs. (68 to 96 N.m).

SETUP INSTRUCTIONS

NOTE

To install mower on tractor equipped with agricultural tires, you will need Kit #1690892.

1. Place the attachment lift in fully raised position. Stop engine and remove key before leaving seat.
2. Place the cable (L, figure 1) over the pulley (F). Insert the spacer (I). Attach the pulley (F) to bracket (K) with 1-1/2" pin (J) and spring clip (E).
3. Use the four capscrews (D), washers (C), lockwashers (B) and nuts (A) to attach bracket (K) to bottom of tractor. the bracket is shown installed in figure 2. Insert capscrews from top.
4. Install the 1" pin (G, figure 1) and spring clip (H) in the clevis until mower is hooked up.
5. Route the cable (B, figure 2) to the rear of the tractor.

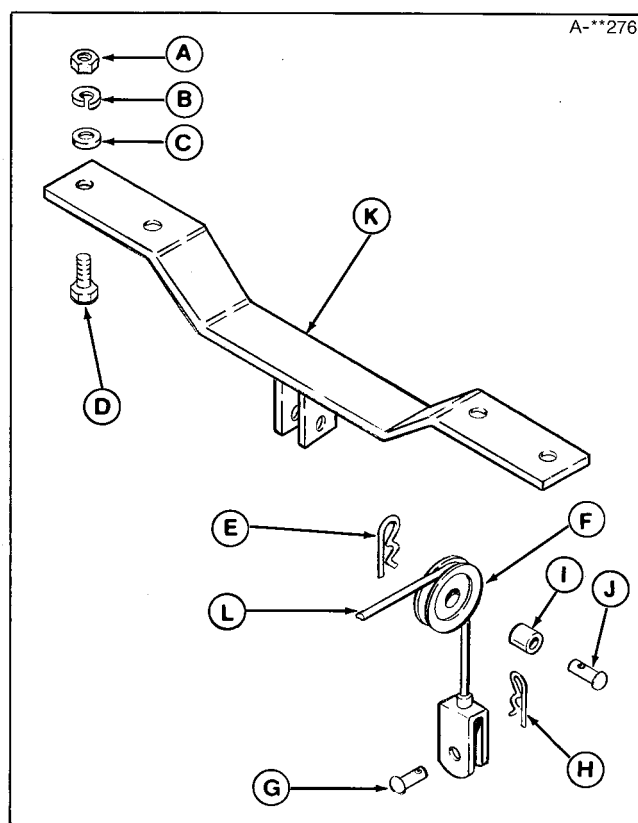


Figure 1. Pulley Support Bracket

- | | |
|-------------------------|---------------------------|
| A. Nut, 3/8-16 | G. Pin, 1" long shaft |
| B. Lockwasher, 3/8 | H. Spring Clip |
| C. Washer, 13/32 | I. Spacer |
| D. Capscrew, 3/8-16 x 1 | J. Pin, 1-1/2" long shaft |
| E. Spring Clip | K. Pulley Support Bracket |
| F. Pulley | L. Cable |

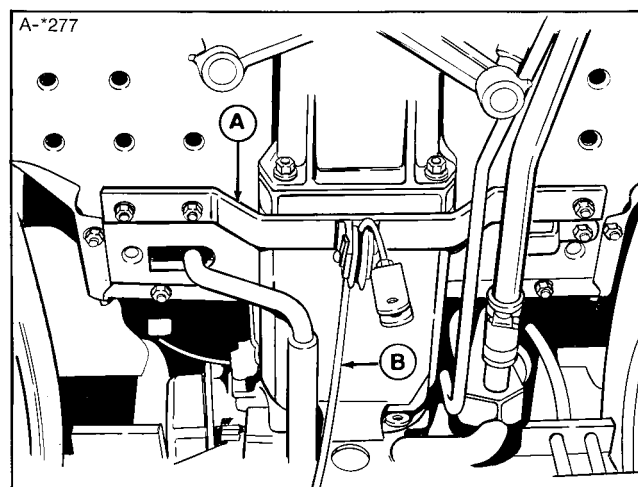


Figure 2. Pulley Support Bracket Installed

- | |
|---------------------------|
| A. Pulley Support Bracket |
| B. Cable |

- Remove the nut and washer (B, figure 3). Position the lift link (A) at 90° angle to arm (J). Reinstall nut and washer (B).

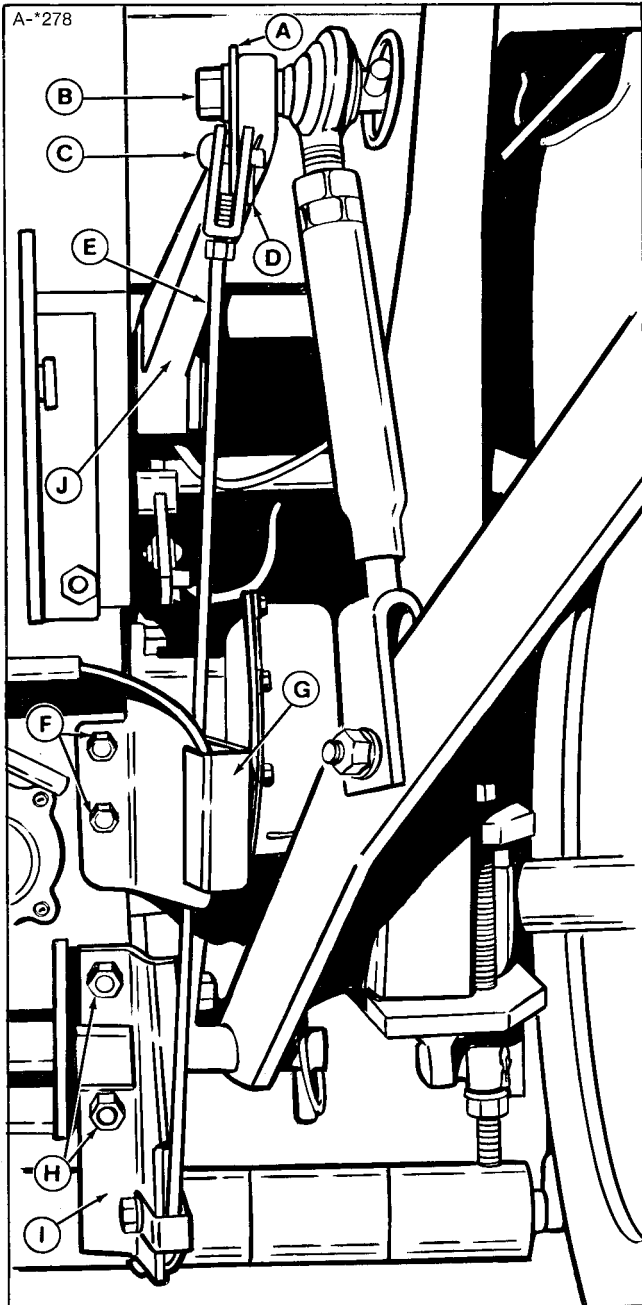


Figure 3. Lift Cable and Guards

- | | |
|-----------------------|----------------------------|
| A. Lift Link | F. Nuts |
| B. Nuts and Washer | G. Cable Guard |
| C. Pin, 1" long shaft | H. Nuts |
| D. Spring Clip | I. Pulley Mounting Bracket |
| E. Cable | J. Arm |

- Connect the cable clevis to the lift link with the 1" pin (C) and spring clip (D).
- Remove the two capscrews (F), position the cable guard (G) as shown, then reinstall capscrews to secure.
- Place the cable (D, figure 4) on the pulley (I). Assemble the capscrew (F), belt stops (G), pulley (I) and bracket (L) as shown. Check assembly by referring to item I in figure 3.

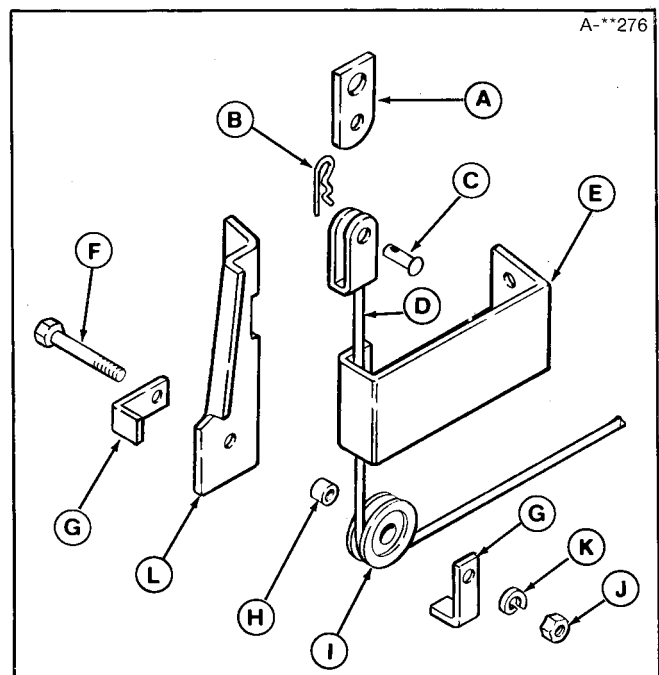


Figure 4. Lift Cable and Guards

- | | |
|-----------------------------|----------------------------|
| A. Lift Link | G. Belt Stops |
| B. Spring Clip | H. Spacer |
| C. Pin, 1" long shaft | I. Pulley |
| D. Cable | J. Nut, 3/8-16 |
| E. Cable Guard | K. Lockwasher, 3/8 |
| F. Capscrew, 3/8-16 x 1-1/2 | L. Pulley Mounting Bracket |

- Remove the two nuts (H, figure 3), position the pulley mounting bracket (I) as shown, then reinstall the nuts (H).

11. Make sure the lift bracket (A, figure 5) is installed with hardware (B) as shown inserting capscrew from inside. Use two 3/8-16 x 1 capscrews, 3/8 lockwashers and 3/8 nuts.

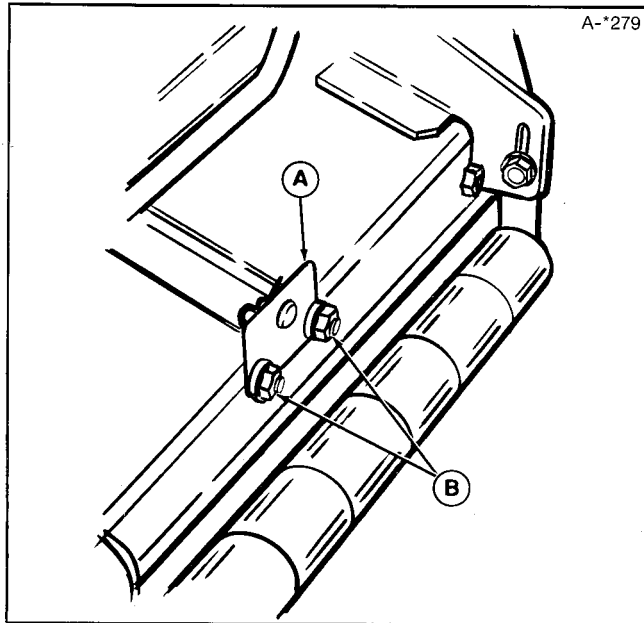


Figure 5. Lift Bracket

- A. Lift Bracket B. Hardware

12. Using the rear holes in each footrest, install the upstops (D, figure 6) as shown. See figure 7 to check installation. Notice for tractors with agricultural tires, different holes (B, figure 7) are used.

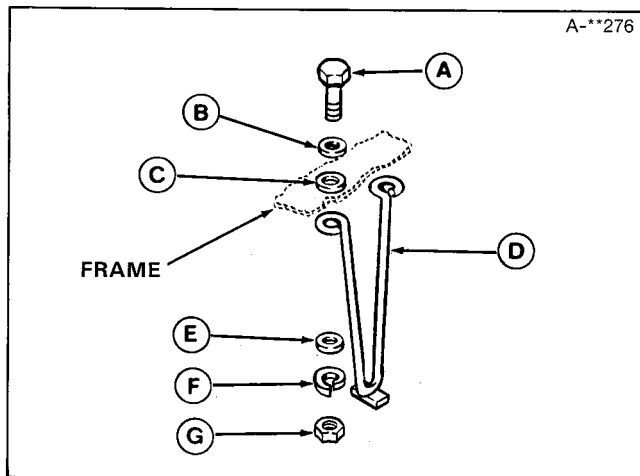


Figure 6. Upstop Brackets

- A. Capscrew, 5/16-18 x 1-1/2
 B. Washer, 5/16
 C. Washer, 13/32 x 1.5 (special)
 D. Upstop
 E. Washer, 5/16
 F. Lockwasher, 5/16
 G. Nut, 5/16-18

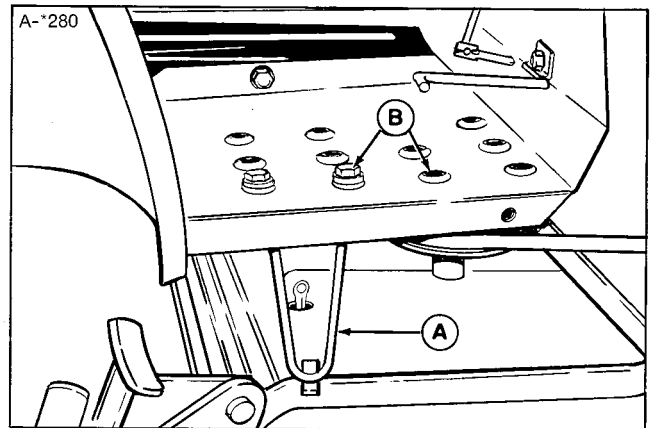


Figure 7. Upstop Brackets

- A. Upstop Bracket B. For Ag Tires

13. Attach the belt stop (H, figure 8) to the left-hand mower bracket with fasteners shown.

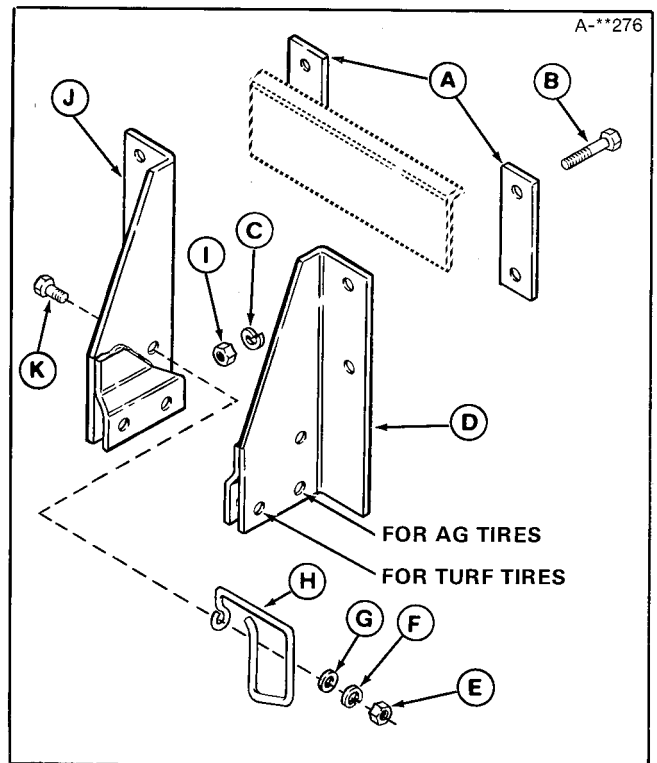


Figure 8. Mounting Brackets

- A. Spacer
 B. Capscrew, 7/16-14 x 3-3/4
 C. Lockwasher, 7/16
 D. Hitch, right-hand
 E. Nut, 5/16-18
 F. Lockwasher, 5/16
 G. Washer, 5/16
 H. Belt Stop
 I. Nut, 7/16-14
 J. Hitch, left-hand
 K. Capscrew, 5/16-18 x 1

14. Install the mounting brackets (D, figure 8) with four 7/16 x 2-1/4 capscrews, lockwashers and nuts as shown. The brackets are shown installed in figure 9. Do not tighten the hardware at this time. After you hitch the mower to this bracket (see Mower Hitching) you will center the bracket on the axle and then tighten the hardware.

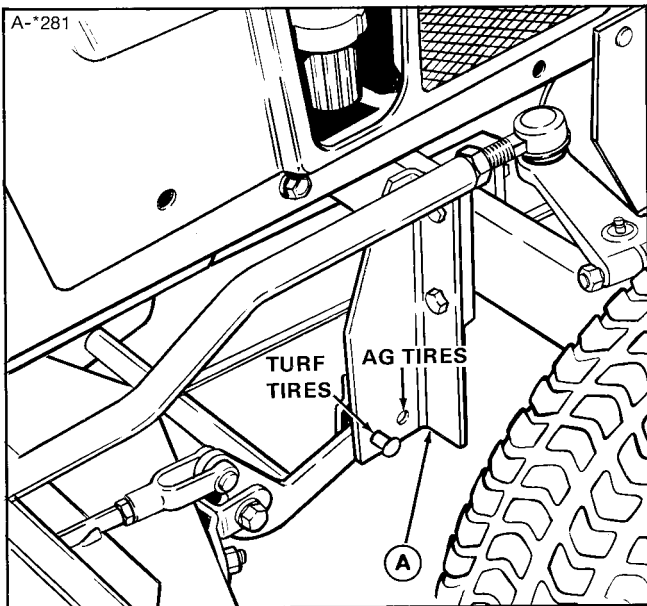


Figure 9. Mounting Brackets

A. Mounting Bracket

HITCHING THE MOWER

1. Make sure all parts have been installed as described in "Setup Instructions."
2. Make sure electric clutch has been installed as described in instructions supplied with the clutch.
3. Place tractor and mower on a smooth level surface.
4. Turn the front wheels for a sharp left turn and slide the mower under the tractor from the right side.
5. Align the mower hitch under the mounting brackets on tractor front axle (see figure 9). From front of tractor use a wood block as a support and a plank as a lever to lift the mower hitch into the mounting brackets. While holding mower up install a pin and spring clip in each side to attach mower to mounting brackets (procedure is most easily done by two persons). Use front holes for tractors with agricultural tires, rear holes for turf tires.
6. Center the mower on the axle, then tighten the hardware for the mounting brackets.
7. Install idler pulley bracket (A, figure 10) as follows. Attach front plate (D) with two 7/16 x 1 capscrews, 7/16 lockwashers and 7/16 nuts. Be sure lock-

washers and nuts are inside. Secure rear of bracket to hitch with pins and clips (C).

8. Pull V-belt up from idler pulley support bracket to front clutch (figure 10). Install the belt in the INNER GROOVE (closest to engine) of the front clutch. See figure 11.
9. Release the belt tension lever for slack and install the other end of the V-belt on the mower drive pulley.

Check to be sure belt is not twisted and is fully in all pulley grooves (figure 11).

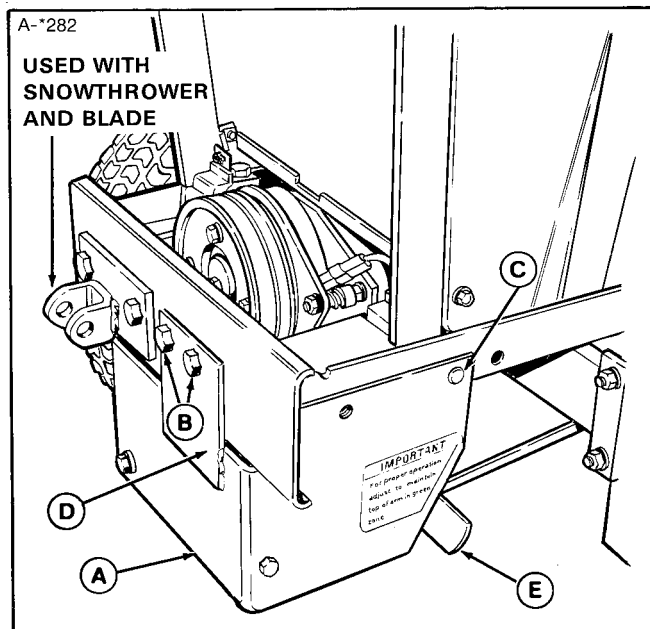


Figure 10. Idler Pulley Bracket

- | | |
|--------------------------|------------------------|
| A. Bracket, Idler Pulley | D. Front Support Plate |
| B. Capscrew, 7/16-14 x 1 | E. Belt Tension Lever |
| C. Pins and Clips | |

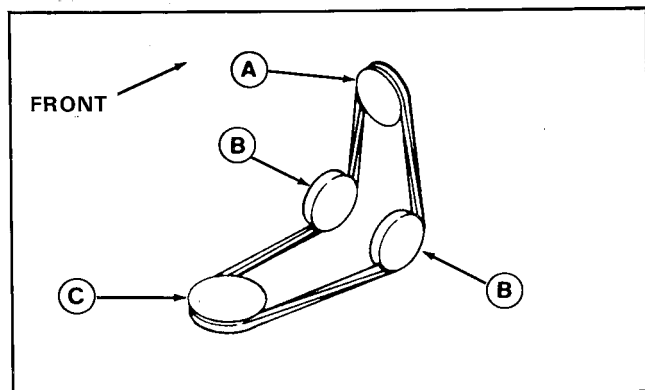


Figure 11. Belt Pattern

- | |
|------------------|
| A. Clutch Pulley |
| B. Idler Pulleys |
| C. Mower Pulley |

10. Attach the lift cable to the mower lift bracket (figure 12).

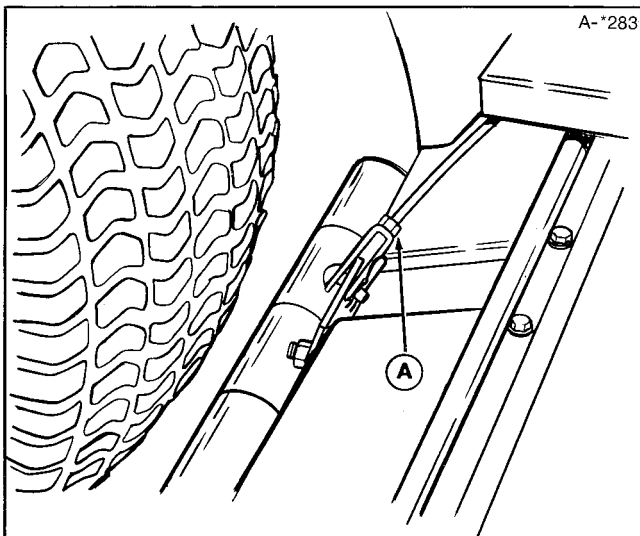


Figure 12. Mower Pulley

A. Lift Cable

UNHITCHING THE MOWER

1. Unhook lift cable from mower. To fasten cable out of the way, pin the cable end to the cable portion behind the lift pulley under the tractor.
2. Lift the belt tension lever (E, figure 10) for slack and remove the V-belt from the mower drive pulley.
3. Remove the idler pulley support bracket (A, figure 10) from the tractor. Remove clutch cover to remove V-belt from front clutch.
4. Use the same leverage system as for installation to remove the hitch pins and lower mower to ground. Store pins in mower hitch.
5. Remove mower from under tractor.

Operation

CONTROLS

Refer to figure 13 to identify the controls.

WARNING

Before leaving the operator's seat for any reason, make sure front clutch switch is off, the engine is stopped, ignition key is removed and parking brake is set.

GENERAL INSTRUCTIONS

The tractor supplies both power and motion for the mower. Therefore, tractor operation is vital to proper operation of your mower. Read this section and also the operating instructions in your tractor manual.

WARNING

Stop the engine, remove key, shift into neutral, set parking brake, disengage PTO, and wait for all moving parts to stop before attempting to service, inspect, or adjust the mower.

CHECKS BEFORE STARTING

1. Check the mower to be sure it is properly installed and to be sure that all nuts, bolts, and pins are securely fastened.
2. Refer to the Normal Care Section of this manual to determine and perform any needed care of the mower.
3. Clear the lawn of all sticks, stones, wires and other debris which may be caught or thrown by the mower blades.

STOPPING THE MOWER

To stop the rotary mower blades during operation, disengage the mower PTO by placing the clutch switch in the OFF position. Always disengage the mower PTO before raising the mower.

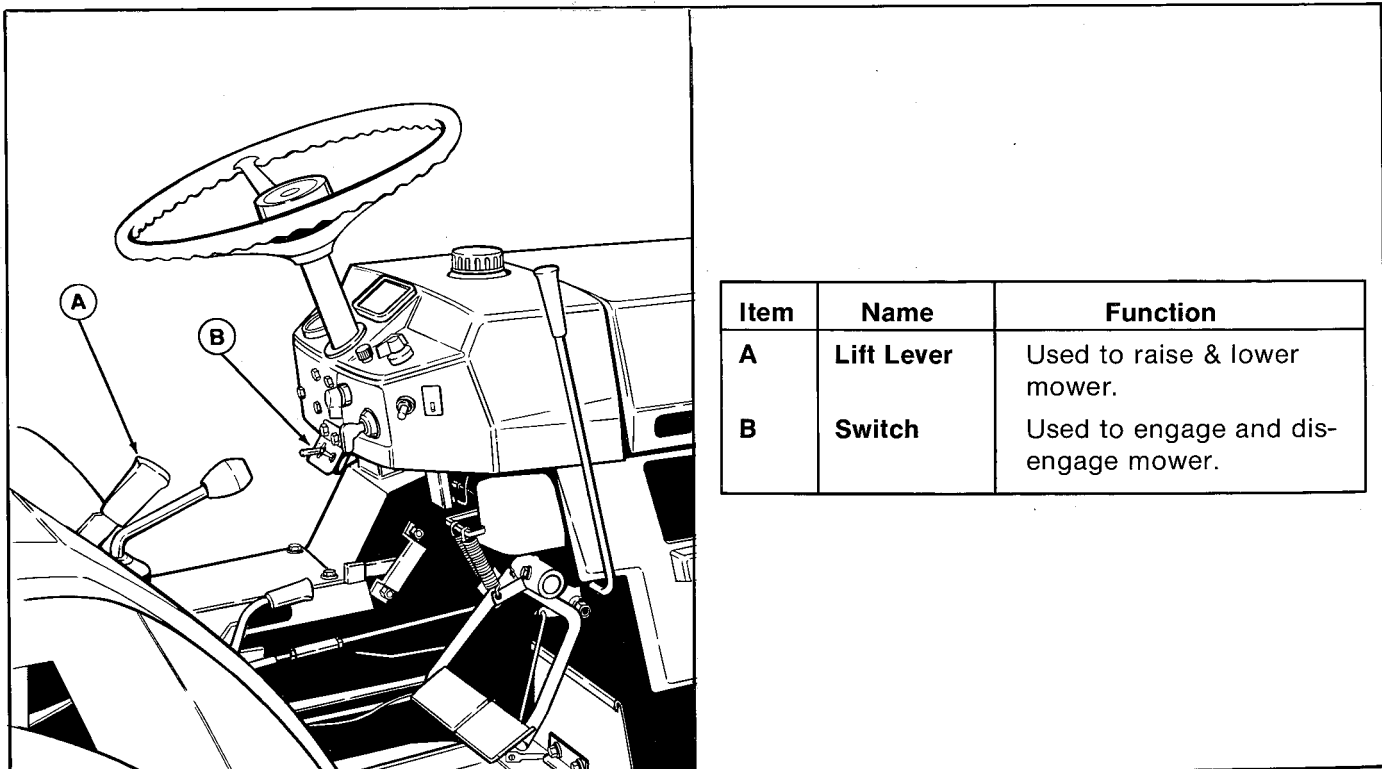


Figure 13. Locations and Functions of Controls

STARTING THE MOWER

To start the mower into operation when you arrive at the work site (engine running) proceed as follows.

1. Use the tractor lift lever to lower the mower to its work position.
2. Set engine speed control for desired mowing speed.
3. Engage the mower PTO clutch to start the mower blades.
4. Start the tractor into motion at ground speed best suited for conditions.



WARNING

For your personal safety, stop the mower immediately if mower or tractor begins to vibrate excessively or if you strike a foreign object. Then stop the tractor engine, remove key, and set the parking brake. Check the tractor and mower and correct the cause of vibration before starting again.

6. When operating the mower for the first time, begin on level ground at a slow tractor speed until you become familiar with all controls and the handling of your tractor.

CUTTING HEIGHT

The exact cutting height will depend upon the type and condition of your lawn and your own personal desires. Most lawn should be mowed to keep the grass approximately 2 to 3 inches (50 to 76 mm) high. Best results are obtained by mowing grass often and not too short. To help keep a green lawn, never mow more than 1/3 of the height or more than 1 inch (25 mm) off the grass in a single mowing.

For extremely tall grass, adjust for maximum cutting height for the first mowing. Then readjust for the desired height and mow again.

On thick or springy grass or soft ground, the mower roller may sink into the lawn. In this case, it will be necessary to readjust the cutting height to keep the grass at the same height.

The cutting height is changed by turning the two cutting height handles (see figure 14) equal amounts in the same direction. Turn these handles clockwise for higher cutting; turn handles counterclockwise for lower cutting.

NOTE

Do not use the tractor lift system to raise and lower the mower for height adjustments. Early belt failures and poor cutting will result from this practice.

If you want to adjust for a specific cutting height, make the adjustment on a hard level surface. Turn the blades so they point straight forward and backward. Then measure the distance between the surface and the rear tip of one blade.

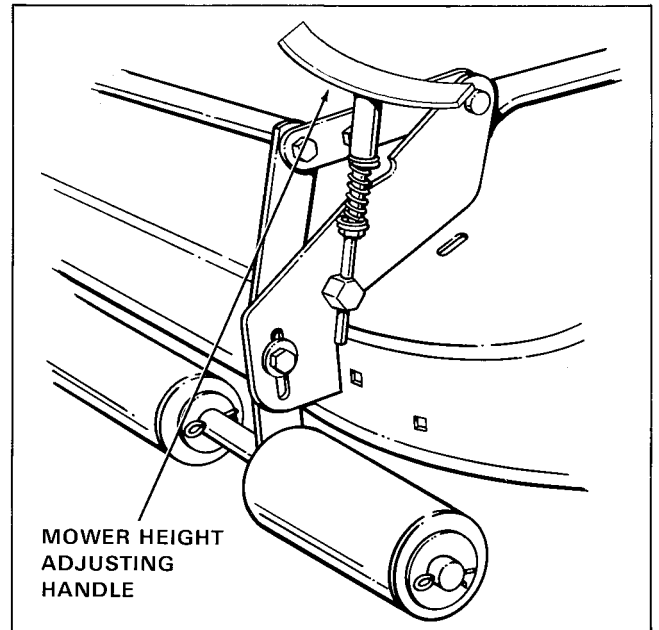


Figure 14. Adjust Cutting Height

MOWING PATTERNS

Plan your mowing patterns to fit the area to be mowed. In most cases, one or two passes should be made around the area in a counterclockwise direction to keep the right side of the mower close to trees, shrubs, fences, and buildings as shown in figure 15. This practice will help eliminate most of your hand trimming and keep the cut grass off fences, buildings, and sidewalks.

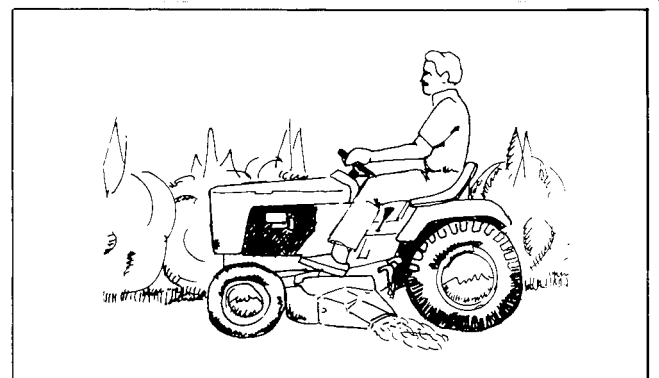


Figure 15. Mow With Right Side Near Obstructions

Normally, the remainder of the area should be cut in a clockwise direction as shown in figure 16. This will prevent recutting of the grass and spread it evenly over your lawn. The clippings, when decayed, make an excellent organic fertilizer.

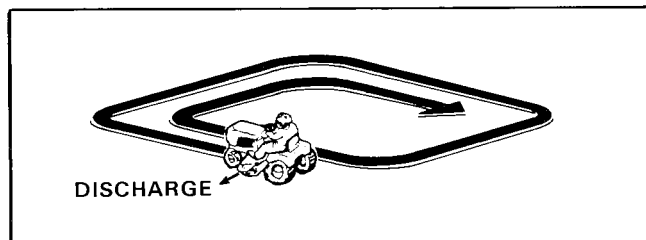


Figure 16. Mow In A Clockwise Direction

On frequently mowed lawns or when the grass is dry and light, it may be practical to mow in a counterclockwise direction. This practice will throw clippings toward the center of the lawn where they can be easily gathered and removed if desired.

Where possible, change the general mowing pattern for each cutting. See figure 17 for mowing pattern diagrams. Changing patterns will prevent matting of the lawn that causes an uneven appearance.

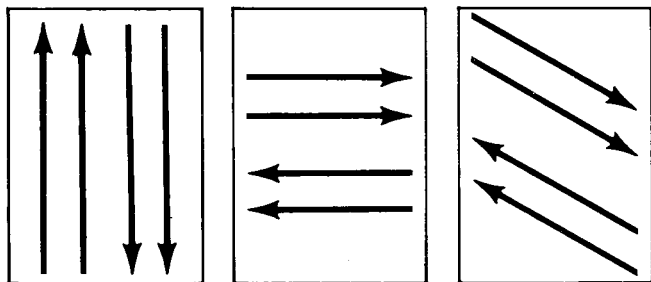


Figure 17. Change Mowing Patterns

TRACTOR SPEED

Most forward speeds of the tractor may be useful for mowing under some conditions. Higher speeds should be used only for transporting on level ground. Always select a speed slow enough to assure safe operation of the tractor and a smooth even cutting of the grass. See tractor manual, also.



WARNING

Operation On Slopes

For your personal safety, be especially careful when operating with the mower on slopes. Always mow up and down the face of slopes, and never across the face. For added stability use two rear wheel weights when mowing slopes from 20 to 35 percent (11.3 to 19.3 degrees). Never operate on slopes greater than 35 percent, which is a 3-1/2 feet rise in 10 feet forward.

Also, use slow tractor ground speeds for better handling and control when mowing slopes. Use care when changing directions on any slope.

Normal Care



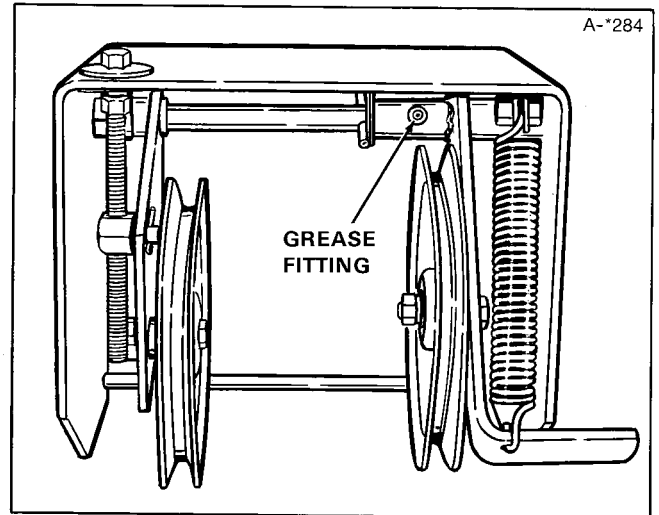
WARNING

Before performing any maintenance, make sure front clutch switch is off, the engine is stopped, ignition key is removed and parking brake is set.

NORMAL CARE INSTRUCTIONS

1. **Before Each Use.** Check the mower to be sure all screws, nuts, bolts, and pins are in place and securely fastened.
2. **After Each Use.** Check the underside of the mower to remove all accumulated grass and dirt.
3. **Every 25 Hours.** With a grease gun, apply 2 or 3 shots of lithium base automotive grease to the grease fitting inside the idler support bracket (figure 18). Keep grass off belts and pulleys.
4. **Yearly.** At least once a year check and lubricate mower idler pulley pivot (see figure 19).
5. **Yearly.** At least once a year, and more often under heavy use and immediately after striking any hard object, clean, sharpen, and balance the mower blades. See figure 19.

6. **Yearly.** Check front clutch PTO shafts for rust and wear. Clean out any dirt and debris. Lubricate with light-weight oil or chain lube.



1. Remove mower from tractor. (Refer to procedure in Installation and Adjustment Section).
2. Remove cotter pins to lift the bail assembly.
3. Remove the taptite screws to remove the right-hand cover (both covers can be removed to check/clean inside of mower deck).
4. Apply a few drops of oil to idler pulley pivot. Be sure idler pivots freely.
5. Reinstall cover and taptite screws.
6. Reinstall adjusting rods or bail assembly and secure with cotter pins. Be sure to spread legs of cotter pins.

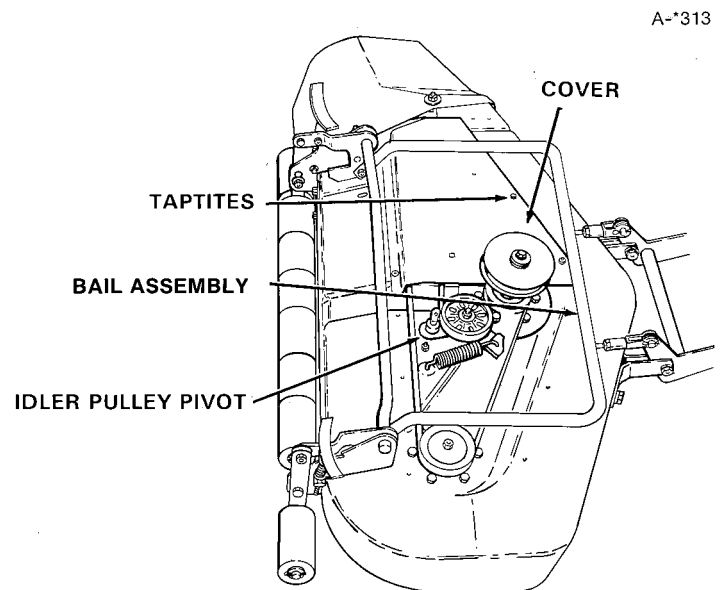


Figure 19. Lubricate Idler Pulley Pivot (Yearly Care)

STORAGE

To protect your mower, store it in an enclosed, dry area. To prepare the mower for off-season storage, perform the following.

1. Remove mower from tractor. (Refer to procedure in Installation and Adjustment Section).

2. Clean underside of mower to remove all grass and dirt.
3. Coat all bare metal surfaces with paint or light coat of oil to prevent rusting.
4. Check, sharpen, and balance the mower blades (see figure 20).

1. Remove mower from tractor. (Refer to procedure in Installation and Adjustment Section).
2. Check each of the three blades. Blades should be sharp and free of nicks and dents. If not, sharpen blades as described in remaining steps.

WARNING

For your personal safety, do not handle the sharp mower blades with bare hands. Careless or improper handling of blades may result in serious injury.

3. To remove blade for sharpening, use wooden block to hold blade while removing its blade mounting capscrew.
4. Use a file to sharpen blade to fine edge. Remove all nicks and dents in blade edge. If blade is severely damaged, it should be replaced.
5. Check and balance blade. Use a balancing machine or the fixture shown. File material off heavier end of blade until it is balanced.

WARNING

For your personal safety, blade mounting capscrews must be installed with the cup washer and spline washer and then securely tightened. Torque blade mounting capscrews to 45 to 55 Ft. Lbs. (61 to 74.6 N.m).

6. Reinstall each blade with the tabs pointing up toward deck and secure with capscrew, cup washer, and spline washer. Use a wooden block to prevent blade rotation and torque capscrews from 45 to 55 Ft. Lbs. (61 to 74.6 N.m).

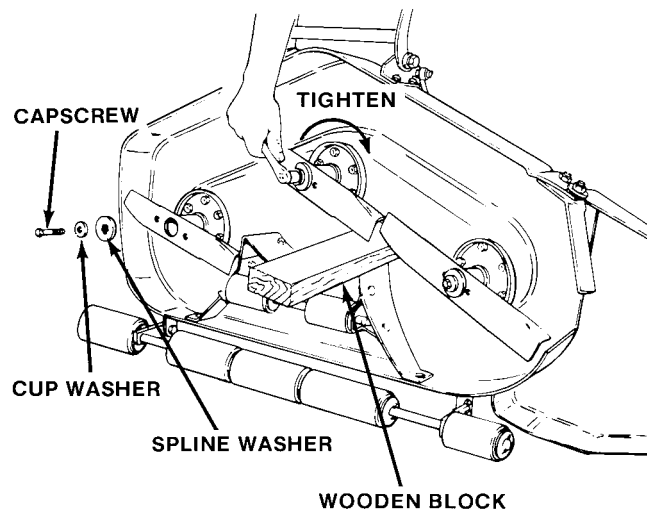
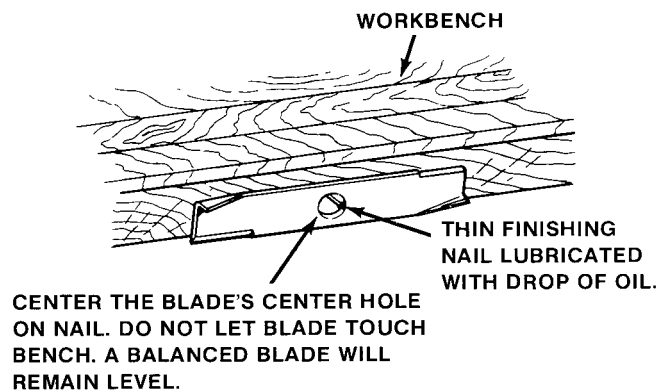
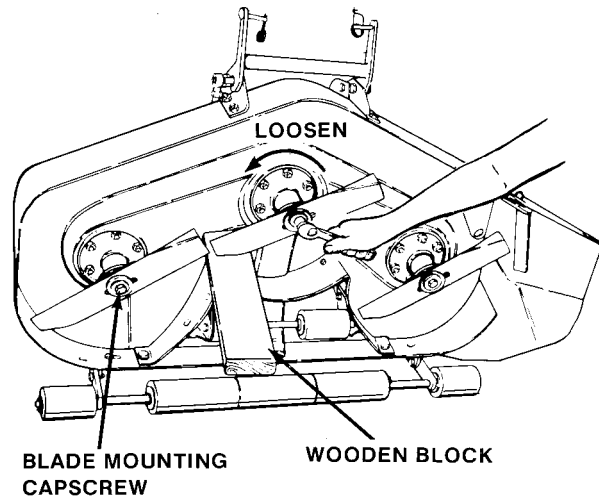


Figure 20. Check, Sharpen, and Balance Mower Blades (Yearly Care - or as needed)


Troubleshooting

CONTENT OF SECTION

This section of the manual provides troubleshooting and repair instructions for the more common and easily corrected problems. For problems not covered in this manual, it is recommended that you contact your dealer.

TROUBLESHOOTING PROCEDURES

Troubleshooting procedures are provided in figure 21. To use these procedures, first locate the problem description that best describes the trouble that you have encountered. Check the possible causes one at a time in the order that they are listed. Correct any problems that are found and operate the mower again to verify that you have eliminated the trouble.

 **WARNING**

Before performing maintenance, make sure front clutch switch is off, the engine is stopped, ignition key is removed and parking brake is set.

Problem	Cause/Remedy
1. Mower will not raise.	<ul style="list-style-type: none">A. Lift cable not attached or broken. Attach or replace as necessary.B. Lift lever problem. See tractor manual.
2. Mower cut is uneven.	<ul style="list-style-type: none">A. Mower not levelled properly. Repeat levelling adjustment in mower installation procedure.B. Tractor tires not inflated equally or properly. See tractor manual for correct pressures.C. Missing pin on mower hitch. Install pin.
3. Mower cut is rough looking.	<ul style="list-style-type: none">A. Engine speed too slow. Use 3/4 to full throttle.B. Tractor ground speed too fast. Use low gear or slower tractor ground speed.C. Blades dull and require sharpening.D. Mower drive belt oily or worn. Clean or replace belt as necessary.E. Mower idler pulley pivot sticking. Check/lubricate as necessary. (See Normal Care).F. Mower internal drive belt worm or broken. Replace as instructed on next page.G. Mower not levelled properly. See Adjustment.
4. Engine stalls easily with mower engaged.	<ul style="list-style-type: none">A. Tractor ground speed too fast. Use low gear or slower tractor ground speed.B. Engine speed too slow. Use 3/4 to full throttle.C. Cutting height set too low when mowing tall grass. Cut tall grass at maximum cutting height during first pass.D. Discharge chute jamming with cut grass. Mow grass with discharge pointing toward previously cut area or wait for drier conditions.

Figure 21. Troubleshooting Procedures

Problem	Cause/Remedy
5. Excessive mower vibration.	<p>A. Blade mounting capscrews are loose: Torque capscrews to 45 to 55 Ft. Lbs. (61 to 74.6 N.m).</p> <p>B. Mower blades are bent. Replace.</p> <p>C. Mower blades are out of balance. Remove, sharpen, and balance blades as in figure 12.</p>
6. Excessive belt breakage occurs.	<p>A. Loose or rough pulleys. File off rough edges or replace as necessary.</p> <p>B. Incorrect belt. Use belt designed for your mower.</p> <p>C. Damaged mower pulley. See your dealer.</p> <p>D. Mower not levelled properly. See Adjustment.</p>

Figure 21. Troubleshooting Procedures

V-BELT REPLACEMENT

To replace the V-belt between the tractor PTO and the mower, follow the mower removal and installation instructions provided in the Installation and Adjustment Section of this manual.

To replace the internal V-belt, proceed as follows:

1. Remove the mower from the tractor as instructed in the Installation and Adjustment Section of this manual.
2. Lift slightly the bail assembly to provide access for cover removal.
3. Remove the 14 taptite screws (item E) from the covers.
4. Remove the cover (item D).
5. Remove the old belt.
6. Clean the interior of the mower belt housing.
7. Check the idler pulley pivot (item C) to be sure it moves freely. Lubricate the pivot with a drop or two of oil if necessary, and wipe up any excess oil.
8. Install the new belt. Check to be sure the belt is installed properly and is seated in all pulley grooves.
9. Reinstall the covers (item D) and secure them with the taptite screws. When installing the right-hand cover, be sure the belt is positioned in the belt guide which is located on bottom of cover.

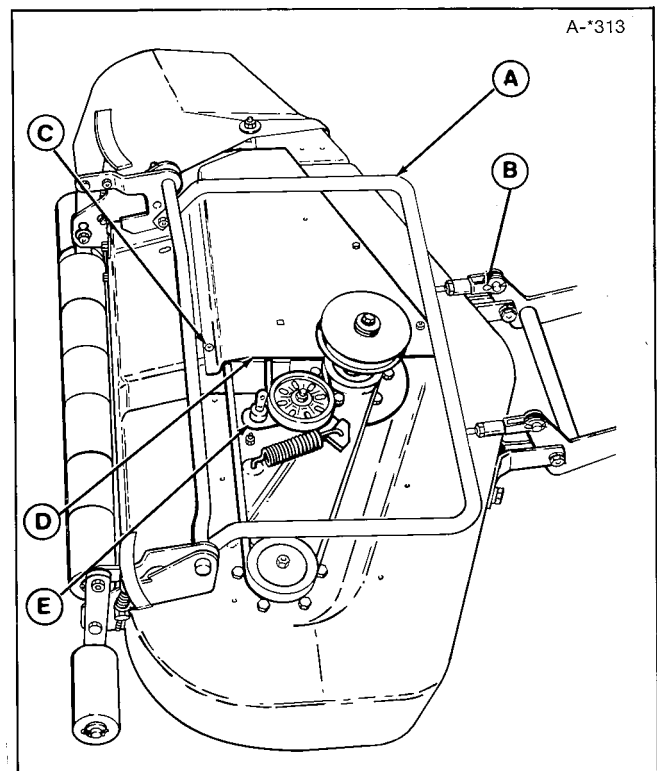


Figure 22. V-Belt Removal

- A. Bail Assembly
 - B. Cotter Pins
 - C. Taptite Screws
 - D. Cover
 - E. Pulley Pivot
10. Reinstall the level adjusting rods (item A) or the bail assembly. Reinstall the cotter pins (item B) and spread cotter pin legs.

Adjustments



WARNING

Before performing any adjustments, make sure front clutch switch is off, engine is stopped, ignition key removed and parking brake set.

DRIVE BELT TENSION

When the mower is fully installed, the top of the belt tension arm should be in the green zone of the adjustment decal on the idler support bracket (see figure 23). If not, the belt tension needs adjustment.

To adjust belt tension, first loosen the locking nut on the adjustment screw inside the idler support bracket. Then turn the adjusting screw to set the top of the arm in the green zone. Turning the screw clockwise increases belt tension; turning it counterclockwise decreases belt tension. Tighten locknut to hold adjustment.

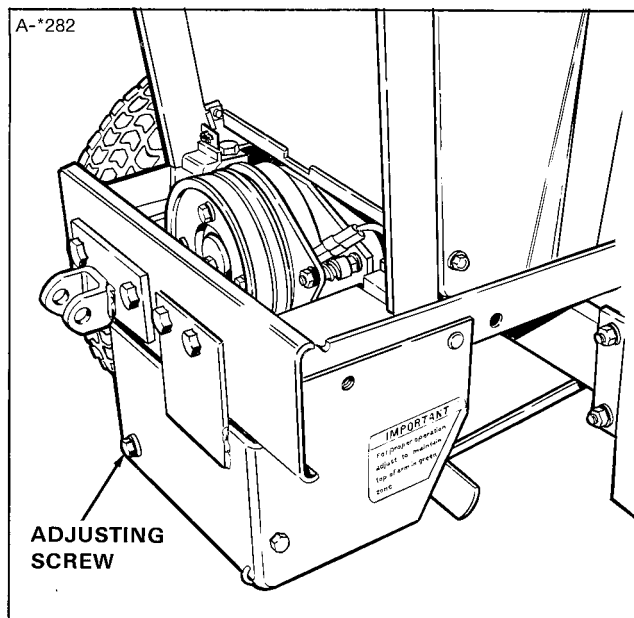


Figure 23. Belt Tension

MOWER LEVELING PROCEDURE

The following adjustment is important and should be performed before using the mower. This adjustment is normally required only when installing the mower for the first time or when reinstalling the mower after repairs were made to the tractor or mower hitches which might have affected the level. To level the mower, proceed as follows.

1. Check tractor tire pressures. The front tires should have equal pressure and the rear tires should have equal pressure. (Refer to your tractor Operator's Manual for correct tire pressure).
2. Turn both mower height adjustment handles (item A, figure 24) fully clockwise to the highest cutting height position.



WARNING

For your personal safety, do not handle the sharp mower blades with bare hands. Careless or improper handling of blades may result in serious injury

3. Rotate the mower blades so the tips point straight forward and backward as shown in figure 24.
4. Measure and note the distance from the front tip of the center blade to the ground.
5. Measure the distances from the rear tips of the two side blades to the ground. The side blade measurements should be the same, and the rear measurement should be 1/8 to 1/4 inch (3 to 6 mm) less than the measurement for the center blade front tip made in step 4.

NOTE

If the measurements taken are satisfactory the mower is level and needs no adjustment. If the measurements are incorrect, the mower bail assembly eyebolt must be adjusted according to step 6. Both eyebolts must be adjusted to level the mower front to back. If only slight side-to-side leveling of the two side blades is required, the eyebolt of only one side need be adjusted.

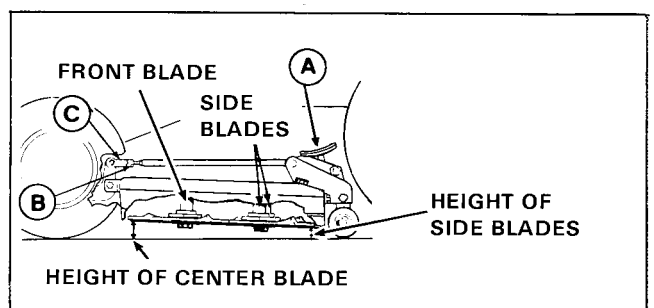


Figure 24. Level Mower

- A. Adjustment Handle C. Eyebolt
B. Jam Nut

WARNING

To avoid possible injury when performing step 6, block up the front of the mower before removing the eyebolts or yokes so the mower will not drop down.

6. Level the mower according to the following.
 - a. Loosen the jam nuts (item B, figure 24).
 - b. Remove the cotter pins and then disconnect the eyebolts or yokes (item C, figure 23) from the mower hitch.
 - c. Turning the eyebolts or yokes changes the length of the bail assembly arms. Shorten the bail assembly arms to decrease the front height of the mower. Lengthen the arms to increase the front height. Be sure to give both eyebolts or yokes an equal number of turns for front to back leveling.
 - d. Reinstall the eyebolts or yokes on the hitch (the cotter pins need not be reinstalled yet) to check the blade tip measurements. Continue the adjustment and check until the center blade front tip is 1/8 to 1/4 inch higher than the side blade rear tips.
 - e. Reinstall the eyebolts or yokes on the hitch and reinstall the cotter pins. Spread the cotter pins around the hitch pins. Then reinstall the jam nuts (item B).

FRONT PTO CLUTCH ADJUSTMENT

The front, electrically operated PTO clutch is adjusted at the factory and does not require frequent adjustment. However, if the clutch engages slowly or fails to engage at all, adjust it as follows:

1. Disconnect tractor headlight wires and then remove the hood. For easier access you may want to remove the battery and battery support. **REMEMBER**, remove **NEGATIVE BATTERY CABLE FIRST AND INSTALL IT LAST**.

NOTE

The best, most accurate way to adjust clutch is to remove V-belt pulley and check clutch movement using a dial indicator. Measure for .010 inch (.254 mm) clearance between mating clutch faces. If you don't have access to a dial indicator, the following procedure should still be sufficient to adjust clutch.

2. If clutch has been slipping, tighten each of the three adjusting nuts 1/3 turn (advance two faces of nut). Be sure that all three nuts are turned equally.
3. Insert a .010 inch (.254 mm) feeler gauge in the clearance gap as near to the adjusting nuts as possible (figure 25). You may need to use a wire feeler gauge or one designed with an angled end.
Do not insert feeler gauge more than 1/16 inch (1.6 mm). If feeler gauge can not be inserted at least 1/16 inch, turn the three adjusting nuts counterclockwise 1/2 of a turn and repeat check.

NOTE

With much wear a lip may form on larger clutch face which will prevent feeler gauge from reaching actual mating faces. At that time it may be necessary to adjust by trial and error. Set clutch for initial .010 inch clearance. If clutch still slips advance three adjusting nuts equally one face of nut at a time until test operation shows satisfactory engagement and disengagement.

4. When adjustment is complete reinstall battery (if removed) and tractor hood.

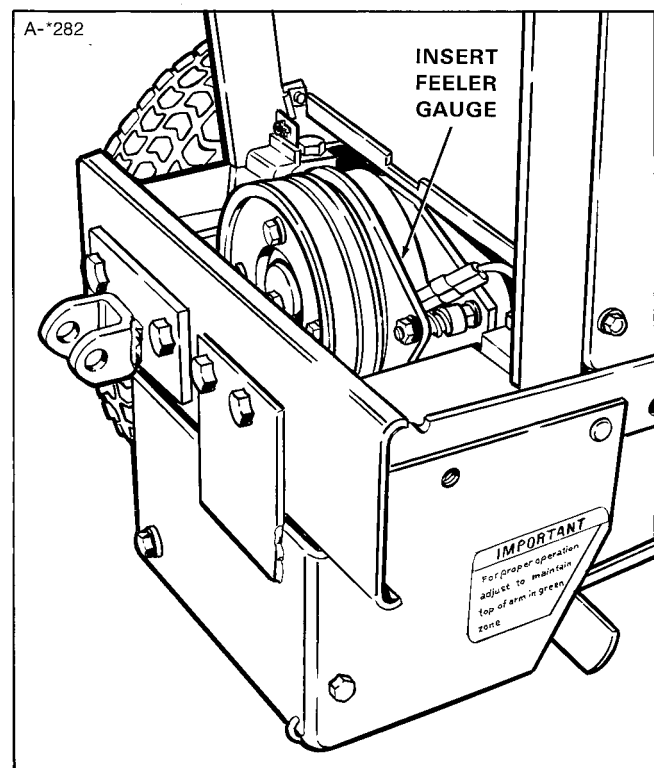


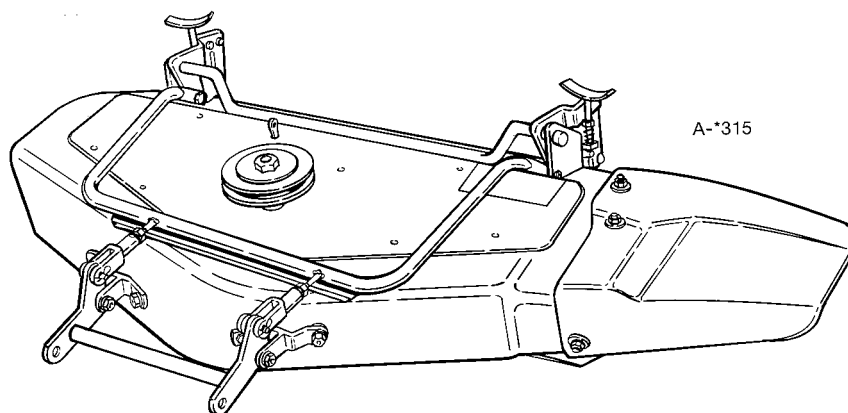
Figure 25. Clutch Adjustment

CONVERSION CHART		
The following chart is for reference only.		
FRACTION	DECIMAL	METRIC
1/32"	.031	.79 mm
1/16"	.062	1.59 mm
3/32"	.094	2.38 mm
1/8"	.125	3.17 mm
5/32"	.156	3.97 mm
3/16"	.187	4.76 mm
7/32"	.219	5.56 mm
1/4"	.250	6.35 mm
9/32"	.281	7.14 mm
5/16"	.312	7.94 mm
11/32"	.344	8.73 mm
3/8"	.375	9.53 mm
13/32"	.406	10.32 mm
7/16"	.437	11.11 mm
15/32"	.469	11.91 mm
1/2"	.50	12.7 mm
17/32"	.531	13.49 mm
9/16"	.562	14.29 mm
19/32"	.594	15.08 mm
5/8"	.625	15.87 mm
21/32"	.656	16.77 mm
11/16"	.687	17.46 mm
23/32"	.719	18.26 mm
3/4"	.75	19.05 mm
25/32"	.781	19.84 mm
13/16"	.812	20.64 mm
27/32"	.844	21.43 mm
7/8"	.875	22.23 mm
29/32"	.906	23.02 mm
15/16"	.937	23.81 mm
31/32"	.969	24.61 mm
1"	1.0	25.4 mm

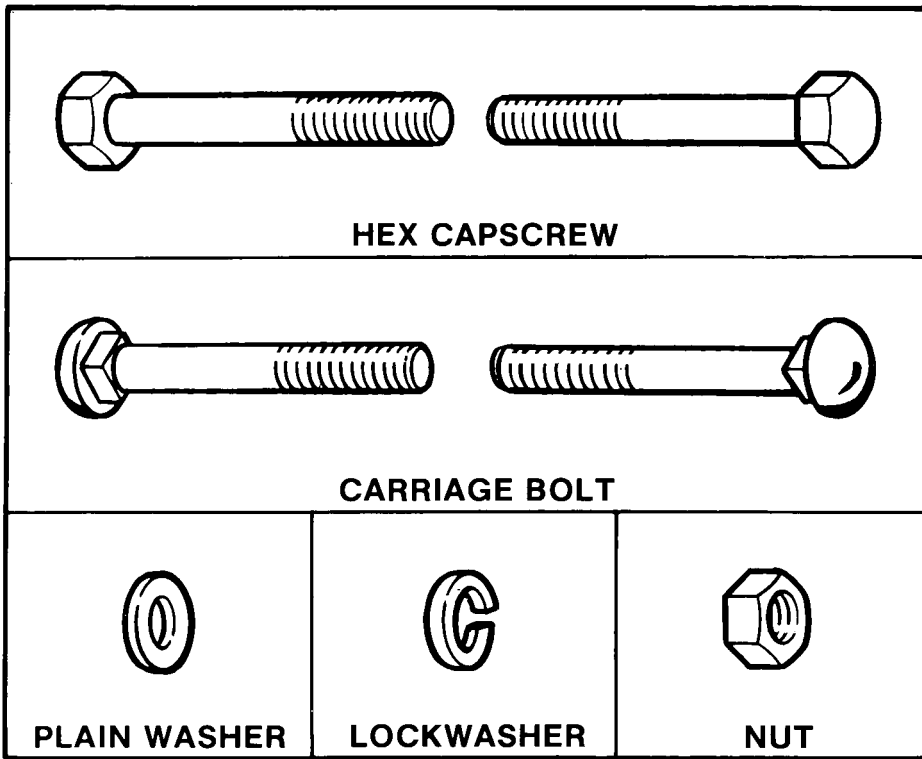
Identification

When ordering replacement parts for your mower, be prepared to give your dealer the identification number found on the identification plate as shown below. Record the number here for easy reference.

Refer to ID no. when
writing or ordering parts.
ID NO.

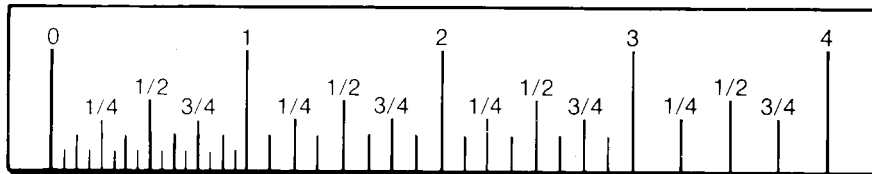
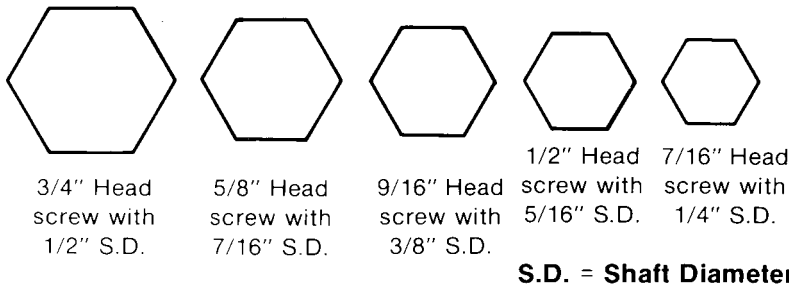


ROTARY MOWER IDENTIFICATION PLATE



HEX CAPSCREW IDENTIFICATION

Shown below are actual size hex heads for standard screw sizes. Example: a 1/4" screw has a 7/16 head and thus requires a 7/16 wrench. To measure length, use the scale below.



WASHER AND NUT IDENTIFICATION

Place the washer or nut on the above scale to determine the inside diameter. The actual inside diameter can vary 1/16 inch. Use the scale for comparison.

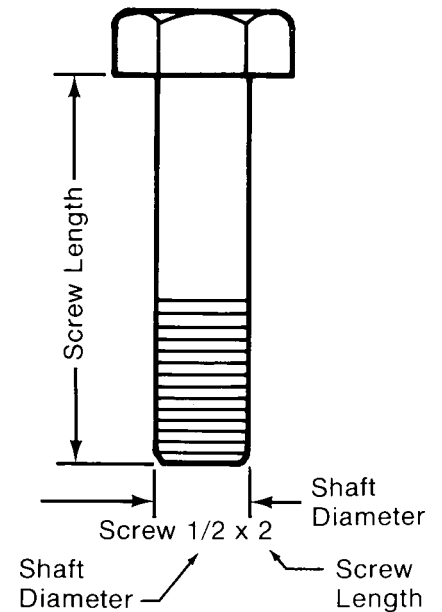
STANDARD FASTENER IDENTIFICATION CHART

Hardware sizes are given in the illustrations throughout this manual.

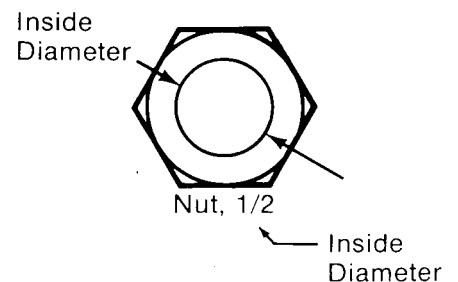
If a washer or nut is identified as "washer, 1/2" or "nut, 1/2", this means the inside diameter is 1/2 inch.

If a screw is identified as "screw, 1/2 x 2", this means the shaft diameter is 1/2 inch and the shaft of the screw is 2 inches long. If a screw is identified as "screw, 1/2-16 x 2", the number "16" means that the screw has 16 threads per inch.

SAMPLE: SCREW IDENTIFICATION



SAMPLE: NUT IDENTIFICATION



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