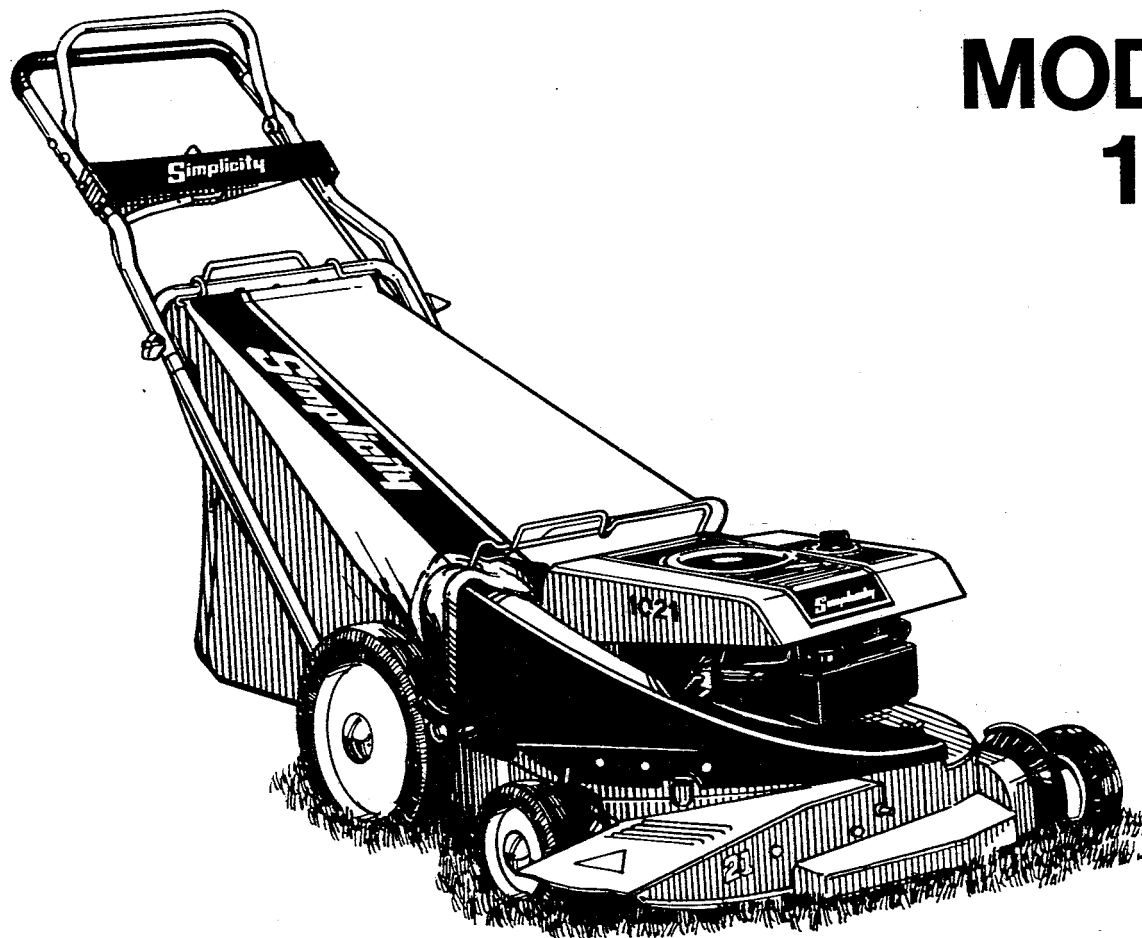


Simplicity[®]

OPERATOR'S MANUAL

MODEL 1021



1021 21" PUSH MOWER

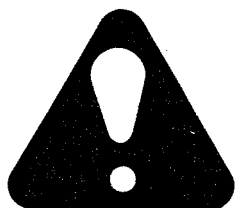
MFG. NO. 1690277

1021 21" S.P. MAN. START MOWER

MFG. NO. 1690278

1021 21" S.P. ELEC. START MOWER

MFG. NO. 1690279



**CAUTION: Read Manual Thoroughly
Before Operating**

21 Inch Walk Behind Mower



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Dear Customer,

Congratulations on your purchase of this walk behind rotary mower. It has been carefully designed and built to give you years of dependable service. This rotary mower has been built to meet or exceed O.P.E.I. certification requirements, according to ANSI Safety Specification B71.1a-1974, and has been certified by an independent testing laboratory. With proper care, it will help you do your mowing jobs efficiently.

To make sure you get the best use from your mower, study this manual carefully. Make sure that it is assembled properly, and that all adjustments are done correctly. Be sure that you (and anyone who operates this machine) know how to use the machine safely. Read this manual thoroughly and become familiar with the controls of the machine before operating.

For your own safety as well as others, study the safety rules in this manual. Review this information often. It is there for your benefit and is important.

This manual tells how to assemble, service, operate and adjust your rotary mower. If any help is needed with any of these procedures, your dealer will be happy to help you.

Measurements are given in this manual with metric equivalents in parentheses. For example, behind the measurement 1/8 inch would appear: (3 mm). So, the metric equivalent of 1/8 inch is 3 millimetres.

These metric measurements are provided for your convenience as an aid in converting to the metric system. A list of metric terms and abbreviations used in this manual is provided below.

LIST OF ABBREVIATIONS OF METRIC TERMS

1. °C = degree Celsius
2. cc = cubic centimetres
3. L = litres
4. m = metres
5. mm = millimetres
6. N-m = newton-metres
7. ml = millilitres
8. km/h = kilometres per hour



WARNING

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 affecting safety.

Safety Rules



This notation preceding Cautions and Warnings in the text signifies important precautionary steps which, if not properly followed, could result in personal injury or damage to your equipment affecting safety.

General

- Read the Operator's Manual carefully. Be thoroughly familiar with the controls and proper use of the equipment.
- Use only attachments or accessories designed for your machine. See your dealer for a complete list of approved attachments or accessories.
- Never allow children to operate a power mower.
- Keep the area of operation clear of all persons, particularly small children, and pets.

Preparation

- Thoroughly inspect the area where the equipment is to be used and remove all stones, sticks, wire, bones and other foreign objects.
- Do not operate equipment when barefoot or wearing open sandals. Always wear substantial footwear.
- Never operate equipment in wet grass. Always be sure of your footing; keep a firm hold on handle and walk, never run.
- Disengage self-propelling drive on units so equipped before starting engine.
- Never attempt to make a wheel height adjustment while engine is running.
- Mow only in daylight or in good artificial light.
- Handle gasoline with care — it is highly flammable.
 - a. Use approved gasoline container.
 - b. Never remove the cap of the fuel tank or add gasoline to a running or hot engine, or fill the fuel tank indoors. Wipe up spilled gasoline.
- Do not run the engine indoors. Exhaust fumes are deadly.

Operation

- Do not put hands or feet near or under rotating parts. Keep clear of discharge opening at all times.
- Stop engine when crossing gravel drives, walks or roads.
- Be especially careful not to touch mower or attachment parts which might be hot from operation. Allow such parts to cool before attempting to maintain, adjust or service.

PARTS MANUAL AVAILABLE FOR MODEL 1021 MOWERS

You can order a parts manual for your mower and attachment. Check the box below for the parts manual, enclose the form with a check or money order made out to SIMPLICITY in an envelope, and send them to:

Simplicity Manufacturing Co.
500 N. Spring Street
Port Washington, WI 53074

Parts manual TP-402 contains all walk-behind mowers, and leaf bag attachment.

☐ I would like a parts manual (TP-402) for my Model 1021 mower and leaf bag attachment. I am enclosing a check or money order for \$2.00.

NAME _____ Mower No. _____
STREET OR RFD _____
CITY _____ STATE _____ ZIP _____

(Allow Two To Three Weeks For Delivery)

Send this form with your check or money order to:

SIMPLICITY MANUFACTURING CO.
ATTN: CUSTOMER PUBLICATIONS
500 N. SPRING STREET
PORT WASHINGTON, WI 53074

Specifications

ENGINE	MAKE	Model No. 92908	TYPE: 0735-01	•				
	BRIGGS & STRATTON	Model No. 92998	TYPE: 0736-01		•			
		Model No. 92995	TYPE: 0737			•		
	HORSEPOWER: 3.5							
	CYCLES: 4							
	CYLINDER: 1							
	BORE: 2-9/16" (64.8 mm)							
	STROKE: 1-3/4" (44.5 mm)			•	•	•		
	DISP: 9.02 Cu. In. (148 cc)							
	OIL CAPACITY: 1-1/4 Pts. (0.5 L)							
FUEL CAPACITY: 1 Qt. (.95 L)								
MANUAL STARTER			Geared Re-Wind, Vertical Pull			•	•	
ELECTRIC STARTER			BATTERY: Sealed Ni-Cad Type GEAR DRIVE MOTOR: Electric 12 Volt VOLTAGE: 14.4 Volts (Nominal) CURRENT CAPACITY: .6 Amp Hr. (Nominal) CHARGING: Trickle — 100 Milliamps (Furnished)					f
MOWER HOUSING	MATERIAL: Die Cast Magnesium DISCHARGE LOCATION: Right Front Corner CATCHER LOCATION: Through Top of Deck			•	•	•		
BLADE AND DRIVE	Austempered Steel Blade Direct Drive			•	•	•		
WHEELS	ARRANGEMENT: Staggered			•	•	•		
	MATERIAL: Steel, Ball Bearing Mounted with Felt Seals				•	•		
	MATERIAL: High-Density Plastic, Integral Bearings			•				
	DIAMETER — FRONT WHEELS: 6 Inch (152.4 mm)			•	•	•		
	DIAMETER — REAR WHEELS: 10 Inch (254.0 mm)			•	•	•		
HEIGHT ADJUSTERS	TYPE: 3-Point, Fingertip Adjusted POSITIONS: 6 MATERIAL: Steel-On-Steel, All Positions CUTTING HEIGHT: 1 to 3 Inches (25.4 to 76.2 mm)			•	•	•		
HANDLE	OPERATING POSITIONS: Handle Height Adjustable to 2 Positions STORAGE POSITION: Folds Over Engine			•	•	•		
STANDARD MOWING OPTIONS	SIDE DISCHARGE			•	•	•		
	MULCHING			•	•	•		
	REAR GRASS CATCHER			•	•	•		
SELF-PROPELLED REAR WHEEL DRIVE	CLUTCH TYPE: 1-1/8 Inch (28.4 mm) Dia. Friction Roller CLUTCH ACTION: Soft CONTROL: TOUCH-A-MATIC Dead-Man Control SPEED RANGE, GOVERNED: HI = 2.72 (4.4 km/h), LO = 2.24 (3.5 km/h) SPEED RANGE, TOUCH-A-MATIC: 0 to Maximum				•	•		
	LENGTH (HANDLE IN HIGH POSITION): 57-1/2 Inches (1.44 m)			•	•	•		
DIMENSIONS AND WEIGHT	WIDTH (WITH GRASS CATCHER): 28 Inches (711.2 mm)			•	•	•		
	HEIGHT (HANDLE IN HIGH POSITION): 39-1/2 Inches (1.1 m)			•	•	•		

Put engine speed control knob in SLOW position. Turn idle adjusting screw (item B) until desired idle speed is obtained.

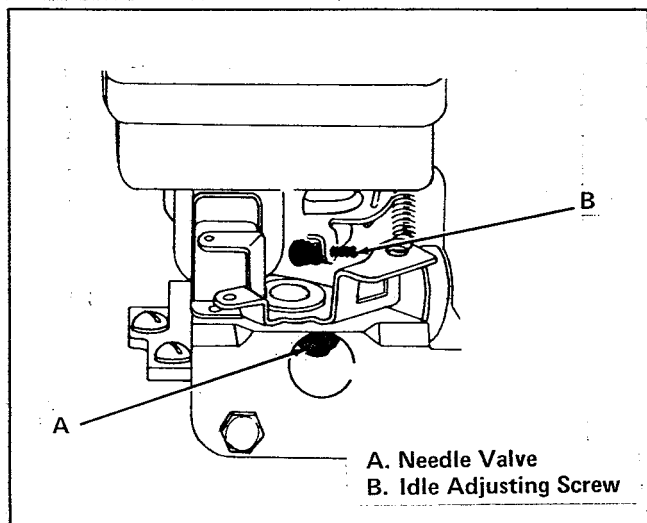


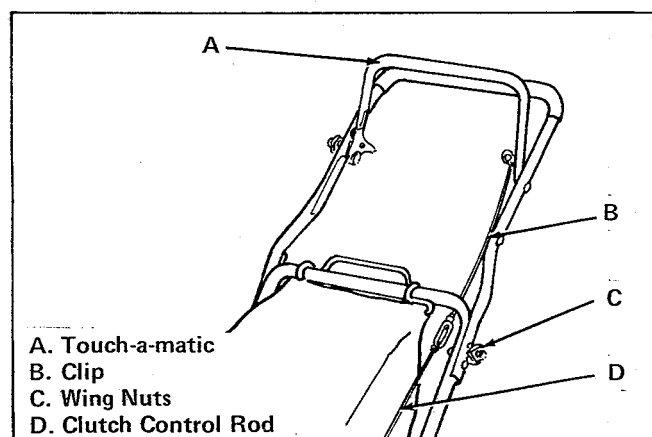
Figure 41. Carburetor Adjustment

REVERSING CLUTCH CONTROL (OPTIONAL)

The clutch control bar (item A, figure 42) is installed at the factory in such a way that the control must be pulled down towards the handle bar to engage, and released to disengage.

For various reasons it may be more convenient to reverse the control bar so that it must be pulled up to engage the clutch. To reverse the control bar, proceed as follows:

1. Remove clutch control rod clip (item B, figure 42) attached to left handle bar.
2. Loosen wing nuts (item C) and fold handle bars rearward to put slack into clutch control rod (item D). Unhook top end of clutch control rod from control bar.



3. Remove three nuts and bolts from Touch-a-matic control bar.
4. To reinstall, reverse as shown in figure 43.
5. Install locknut (item A, figure 43) on handle stop bolt (item B).
6. Insert two bolts (item C) through Touch-a-matic control bar and add nuts (item D). Tighten nuts.
7. Install clutch control rod (item E).
8. Fold handle forward and fasten wing nuts.

⚠ WARNING

Clutch drive mechanism must be adjusted before using mower to insure drive mechanism will properly disengage.

9. Adjust clutch drive mechanism. See adjustment procedures on page 25.

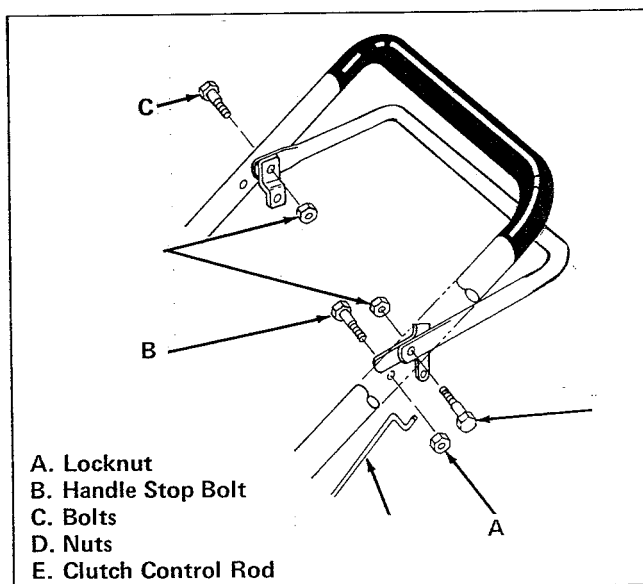


Figure 43. Reversing Touch-a-matic Control Bar

**Operation
(Cont'd.)**

- After striking a foreign object stop the mower, remove spark plug wire and fasten away from the plug. Thoroughly inspect the mower for any damage, and repair the damage before restarting and operating the mower.
- Do not change engine governor settings or overspeed engine.
- If the equipment should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.
- Stop engine whenever you leave the equipment, before cleaning mower housing, making any repair or inspection.
- When cleaning, repairing or inspecting, make certain blade and all moving parts have stopped. Disconnect spark plug wire and keep wire away from plug to prevent accidental starting.
- Shut engine off and wait until blade comes to a complete stop before removing grass catcher and/or unclogging chute.
- Mow across the face of slopes, never up-and-down. Exercise extreme caution when changing direction on slopes. Do not mow excessively steep slopes.
- Never operate mower without proper guards, plates or other safety protective devices in place.

**Maintenance
and Storage**

- Never store equipment with gasoline in the tank inside of a building where fumes may reach an open flame or spark. Allow engine to cool before storing in any enclosure.
- Check blade and engine mounting bolts at frequent intervals for proper tightness.
- Keep all nuts, bolts, and screws tight to be sure equipment is in safe working condition.
- To reduce fire hazard keep engine free of grass, leaves or excessive grease.
- Check grass catcher bag frequently for wear or deterioration. Replace with new bag for safe operation.

All WARNING, CAUTION, and other instructional messages on this unit 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.



LOCATION: AT KEY ON HANDLE-BAR PANEL (ELECTRIC START MODELS ONLY).

CAUTION
BEFORE SERVICING BLADE,
1. STOP ENGINE.
2. DISCONNECT PLUG WIRE
& GROUND TO ENGINE.
LIFT THIS SIDE

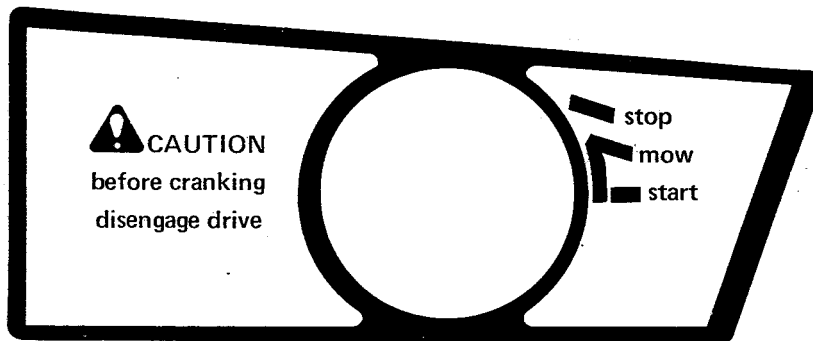
LOCATION: ON LEFT SIDE OF MOWER HOUSING.

CAUTION
do not use machine
without bag or cover plate.



LOCATION: ON LEFT SIDE OF MOWER HANDLE

LOCATION: EMBOSSED ON MOWER HOUSING AT



LOCATION: ON ENGINE COVER AT SPEED CONTROL KNOB.

keep hands & feet from under machine

**CAUTION
place foot here
when starting**

LOCATION: EMBOSSED ON LEFT SIDE OF MOWER HOUSING.



WARNING

**Do not run engine unless grass bag is in place.
Stop engine before clearing grass chute opening.**

LOCATION: EMBOSSED ON GRASS CATCHER CHUTE.



CAUTION

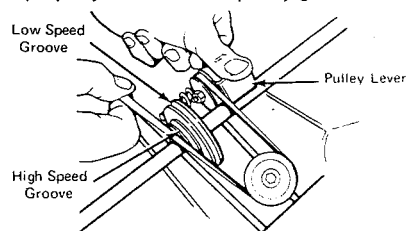
1. DO NOT REMOVE BAG WHILE ENGINE IS RUNNING OR OPERATE MOWER WITH BAG REMOVED.
2. UNDER NORMAL USAGE THIS BAG IS SUBJECT TO WEAR AND DETERIORATION AND SHOULD BE CHECKED PERIODICALLY. BE SURE ANY REPLACEMENT BAG MEETS MANUFACTURER'S SPECIFICATIONS.

LOCATION: PRINTED ON REAR FLAP OF GRASS BAG.



CAUTION

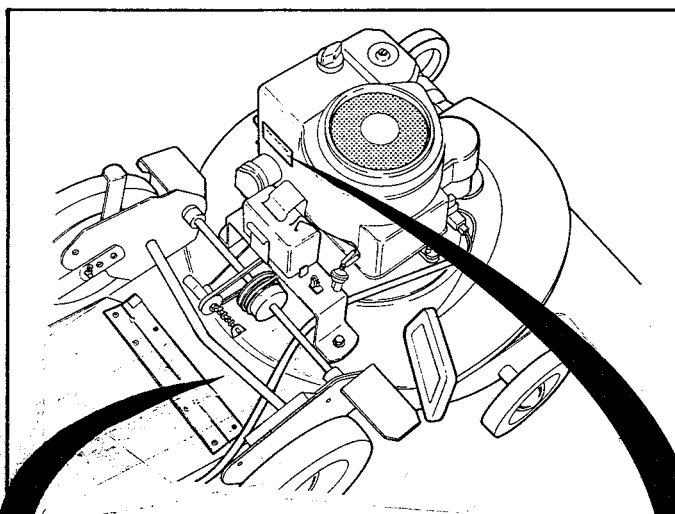
1. Stop engine before any speed adjustment.
 2. Avoid touching hot muffler by working from discharge chute side. (See illustration)
- TO CHANGE SPEED
1. Push pulley lever forward and pull all belt slack toward the double groove pulley. (See illustration)
 2. Place belt in desired speed groove.
 3. Release pulley lever and check to see that belt is properly seated in all pulley grooves.



LOCATION: ON UNDERSIDE OF ENGINE COVER NEAR DRIVE PULLEYS. (SELF-PROPELLED MODELS ONLY).

Identification

When ordering replacement parts for your rotary mower, be prepared to give your dealer the identification number found on the identification plate shown below.



SIMPLICITY MANUFACTURING CO.
A DIVISION OF ALLIS-CHALMERS CORPORATION
PORT WASHINGTON, WI U.S.A.
Refer to ID no. when writing or ordering parts
ID NO.

ROTARY MOWER IDENTIFICATION PLATE

MODEL	TYPE	CODE

ENGINE IDENTIFICATION PLATE

See your dealer if you wish to purchase the following optional accessory for your rotary lawn mower.

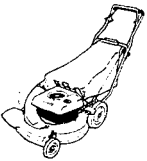
LEAF BAG KIT — includes large leaf bag, chute,
and attaching hardware.

Models illustrated in this manual may vary slightly from the model you have.

Owner Benefits



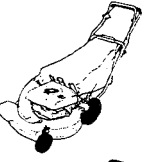
Grass catcher. Large bag has a zipper for easy unloading. Rear-mounted bag allows mowing close to objects.



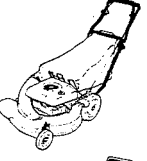
Briggs and Stratton easy-spin engine has an automatic choke, high-carbon nodular iron crankshaft, zinc fly-wheel key.



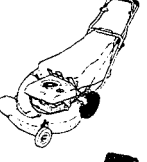
Magnesium deck is lightweight and won't rust. Over 3" (76 mm) deep above blade for greater air mixing to spread clippings evenly. Deck extends below blade all around for added safety.



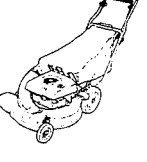
Adjustable wheels have 6 positions for selecting cutting height from 1" to 3" (25 to 76 mm). No tools needed for instant cutting height adjusters.



Adjustable handle can be folded down to engine cover and adjusted for height — all without tools.



Self-propelled with two forward speeds to handle mowing conditions (self-propelled models only).



Reversible Touch-a-matic control bar allows operator to choose position above or below handle.

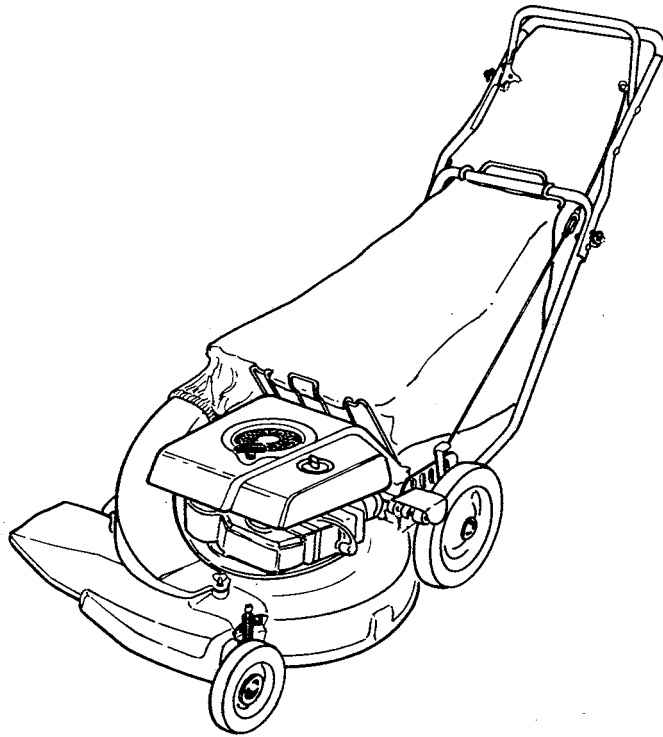
Sealed ni-cad battery can be tipped without danger of spilling acid. Requires no maintenance other than charging (electric start models only).

Pre-stressed blade is clamped in a rigid stiffener to reduce flutter.

Mulching baffle is easily installed without tools to cut and recut grass, making mulch for your lawn.

Ignition key starts and stops engine with no effort. Removable to prevent unauthorized starts (electric start models only).

Walk Behind Mower



Speed control selector gives one simple engine control.

Rear wheel drive provides better traction than front wheel drive.

Touch-a-matic control bar gives soft clutch action.

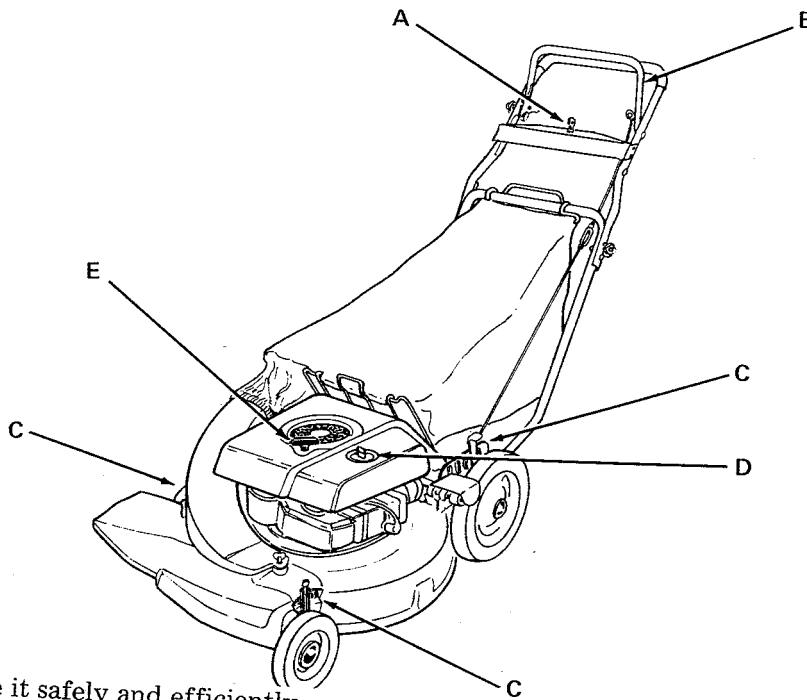
Operation

CONTENT OF SECTION

A brief description of the rotary mower controls, followed by the basic operating procedures, is given in this section to help you get to know your rotary

CONTROLS

Figure 1 shows the location, name and function of each of the operating controls. The control names given in figure 1 are used throughout this manual.



ver and how to operate it safely and efficiently.

Item	Name	Function
A	Ignition Switch (Elec. Start Only)	Operates with key to start, run or stop engine.
B	Touch-a-matic Control Bar (Self-Propelled Models Only)	Engages and disengages the rear driving wheels.
C	Height Adjusters	Control the cutting height of the mower, adjustable to 1-3 inch (25 to 76 mm) cutting height.

Item	Name	Function
D	Speed Control Knob	Controls the engine speed for heavy or light jobs. Engages the choke for easy starting, and stops the engine.
E	Starter Handle (Manual Start)	Starts the mower engine when pulled upward.

Figure 1. Locations and Functions of Controls

CHECKS BEFORE STARTING

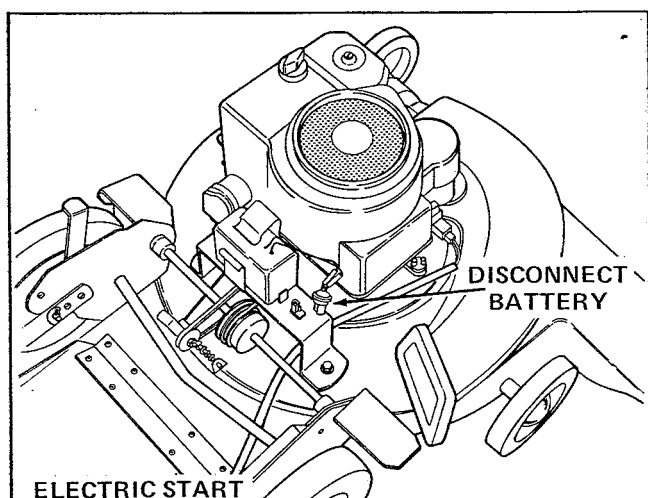
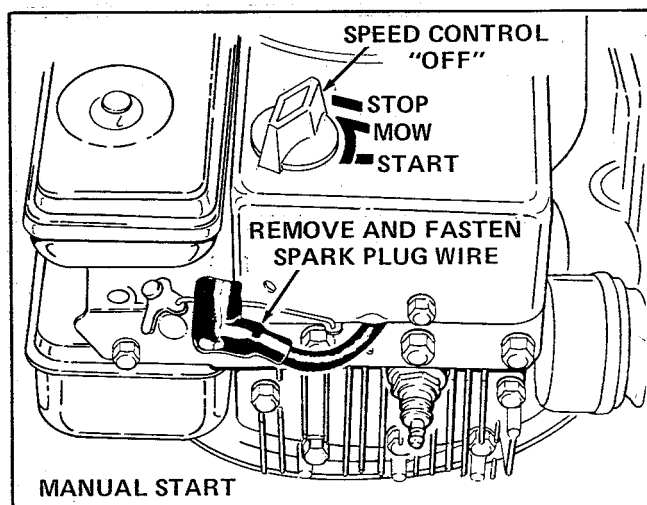
Read this manual completely before the first use of your mower, and thereafter as often as necessary to ensure safe and efficient mower operation.

The checks listed below should be performed before each use of the rotary mower.

1. Be sure to follow all safety precautions, and know the locations and uses of operating controls.

⚠ WARNING

For your personal safety, before attempting to inspect, adjust or service the rotary mower, stop the engine and be sure all moving parts have stopped. On manual start mowers turn engine speed control to OFF and remove spark plug wire. On electric start models, remove key or disconnect battery and also remove spark plug wire (see figure 2).



2. Be sure that all safety guards are in place and that all nuts, bolts and spring clips are secure. Be sure height adjusters are set to desired height. To adjust cutting height, see Adjustments section of this manual.
3. Refer to Normal Care section in this manual to determine and perform any needed care for your rotary mower.
4. Prepare rotary mower for kind of lawn care desired. See Attachment Installation section in this manual.
5. Check the fuel supply. Be sure you have enough fuel for the job you intend to perform. Fill the tank as follows:

⚠ WARNING

Gasoline is highly flammable and must be handled with care. Never fill the tank when the engine is hot. Do not allow open flame, smoking or matches in the area. Avoid overfilling and wipe up any spills.

- a. Lift engine cover (see figure 3) up to rear.

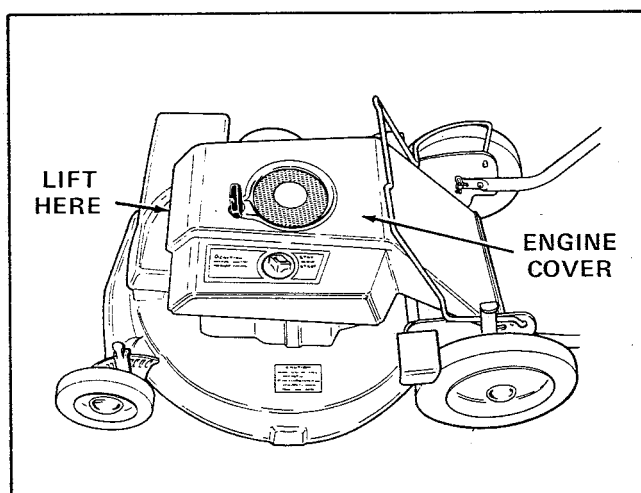


Figure 3. Lifting Engine Cover

- b. Remove the fuel cap (see figure 4).

NOTE

Do not mix oil with gasoline. Store gas in small quantities as prolonged storage produces gum.

- c. Fill tank with clean, fresh, leaded or non-leaded "regular" grade gasoline.

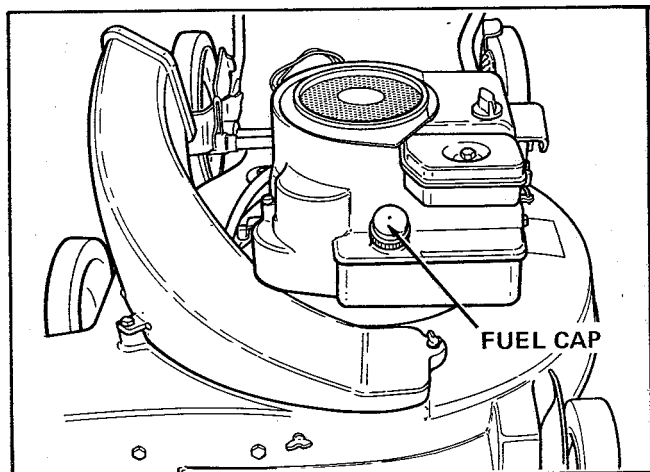


Figure 4. Fuel Cap

STOPPING FORWARD MOTION AND ENGINE

To stop forward motion of self-propelled models, release the Touch-a-matic control bar to disengage mower drive wheels (see figure 5).

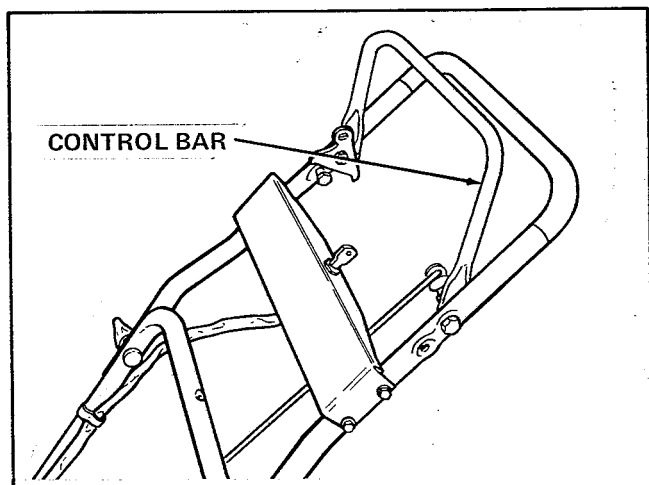


Figure 5. Control Bar

To stop engine, proceed as follows:

- On Manual Start Mowers turn the engine speed control knob to OFF (see figure 6). Disconnect spark plug wire after mowing to prevent unauthorized starting.

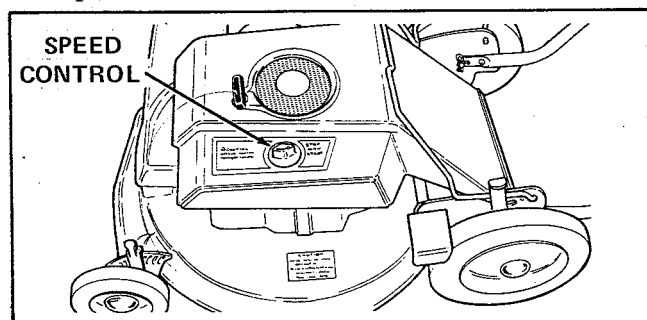


Figure 6. Speed Control to OFF

- On Electric Start Mowers, turn key to OFF, (figure 7). Always remove key to prevent unauthorized starting.

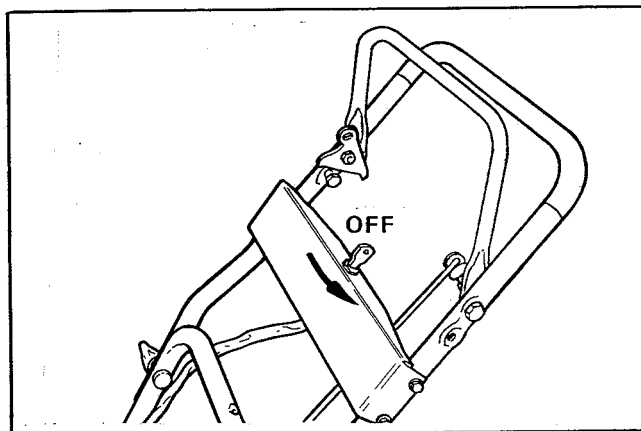


Figure 7. Turn Key to OFF

STARTING THE ENGINE

Complete the "Checks Before Starting" procedures. Then proceed as follows:

1. Place the mower on a flat surface in an open area. The engine will not start if the blade is in tall grass.

! WARNING

Do not start or run the engine in an enclosed area.

2. Set speed control knob (see figure 8) at START to position the automatic choke.

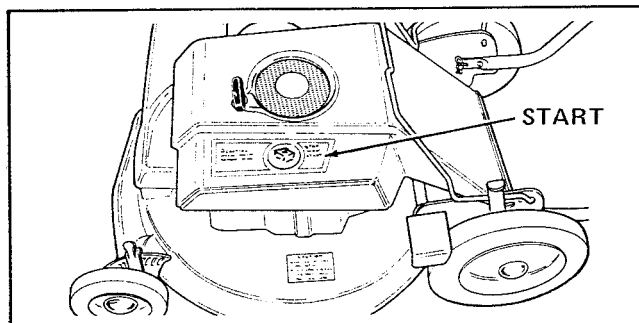


Figure 8. Set Speed Control to START

3. To start mower engine, proceed as follows:

! CAUTION

Keep hands and feet from under mower deck. On manual start, place your foot on the deck at "place foot here when starting" embossed on the mower.

- On Manual Start Mowers, place your foot on mower deck (see figure 9). Keep your other foot well away from the mower. Grasp the starter handle firmly and pull upward. Return the handle slowly to the cover by hand.

NOTE

Do not release the handle with the rope extended.

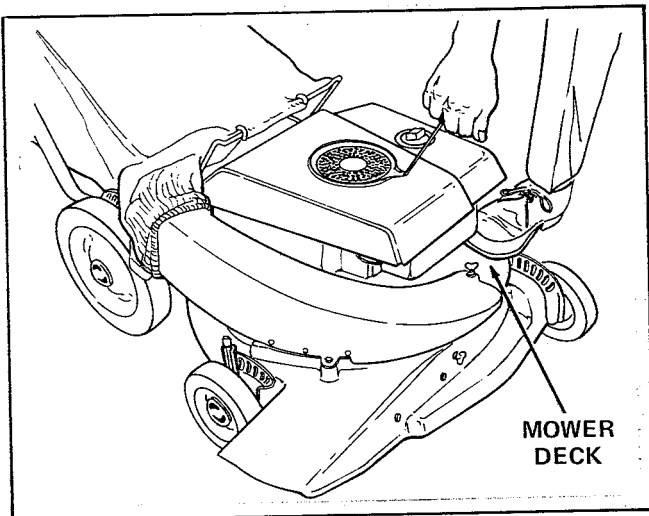


Figure 9. Manual Starting

- On Electric Start Mowers, insert ignition key (see figure 10) and turn it clockwise to START position. Release key when the engine starts. Key will automatically return to ON.

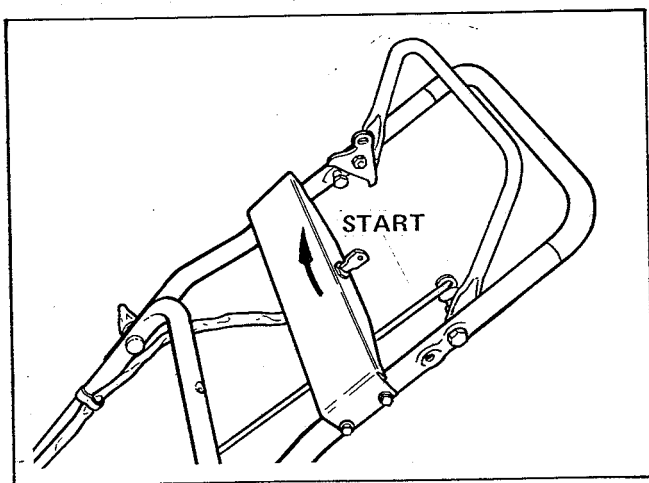


Figure 10. Turn Key to START

4. If engine fails to start see Troubleshooting section in this manual.
5. After the engine is running, warm up the engine one minute before mowing. Keep the speed control knob set at the START position

for both manual and electric start mowers if you desire full engine power. Set the control knob at MOW position for a slower engine speed.

⚠ WARNING

For your safety, when mower is running or the engine has just been shut off, keep hands and feet away from mower housing and the hot engine.

STARTING THE SELF-PROPELLED MOWER IN MOTION

⚠ CAUTION

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

Squeeze the control bar (see figure 11) toward mower handle to start mower in motion. Release to stop motion. For trimming around trees and shrubs the mower may be pushed forward and pulled backward manually, using only the mower handle.

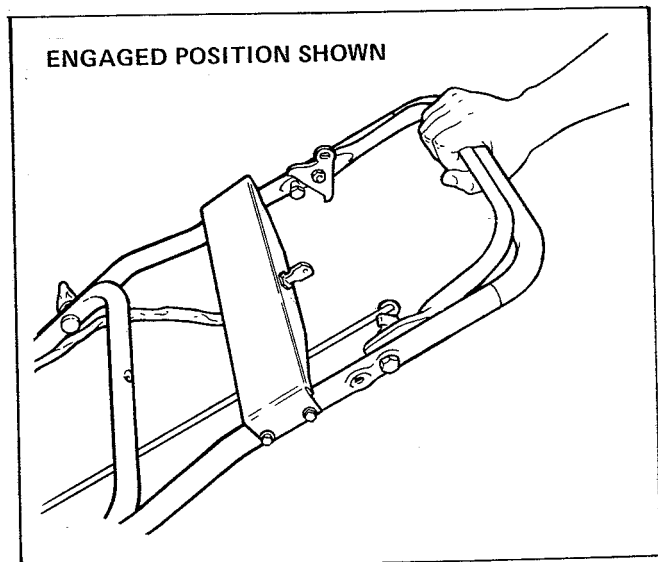


Figure 11. Starting and Stopping Mower Drive

RECHARGING BATTERY (ELECTRIC START)

The sealed, ni-cad battery requires no water or liquid electrolyte. It can be stored or placed in any position with no danger of damage. The only attention required is that of periodic recharging. It need not be recharged during the off-season. Prolonged storage will cause no harm.

⚠ WARNING

Use charger only in a dry place indoors. Getting the charger wet could result in a dangerous electrical shock to the user.

To charge the battery, proceed as follows:

1. Plug battery charger cord into battery connector (see figure 12).

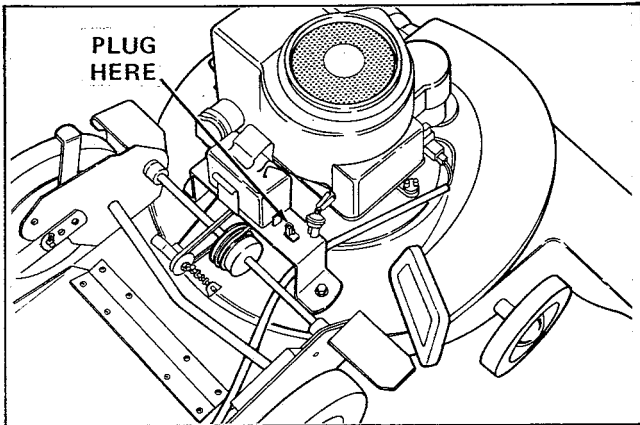


Figure 12. Charging Battery

NOTE

When the battery is too weak to crank the engine, it should be recharged. Use only the charger supplied with your mower. Other chargers may permanently damage the battery.

2. Plug battery charger into any 120 VAC outlet. Charge battery for 12 to 24 hours.

MOWER OPERATION

Handling the mower is the main part of mower operation. However, four additional items must be considered when mowing: cutting height, mowing pattern, engine speed, and forward speed.

CUTTING HEIGHT

Cutting height is controlled by moving the adjustable wheels up or down. For adjustment of cutting height, see Adjustments section in this manual.

Lawns that are not watered regularly are usually cut to a height of 2 or 2-1/2 inches (51 to 64 mm). With regular watering, a lower height may aid appearance and help to control weed growth.

For a thick, dense lawn, mow often to avoid removing too much grass at one time. Avoid mowing more than 1/3 of the height or more than one inch (25.4 mm) of grass in a single mowing. The exact cutting height will depend on the type

and condition of the grass as well as your own personal taste.

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

On springy grass or soft ground, the mower wheels may sink into your lawn. In this case, adjust cutting height to keep the grass at the desired 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 direction to keep the left side of the mower close to trees, shrubs, fences and buildings (see figure 13). This practice will eliminate most of your hand trimming. In addition, it will keep the cut grass off fences, buildings and sidewalks when the grass catcher is not being used.

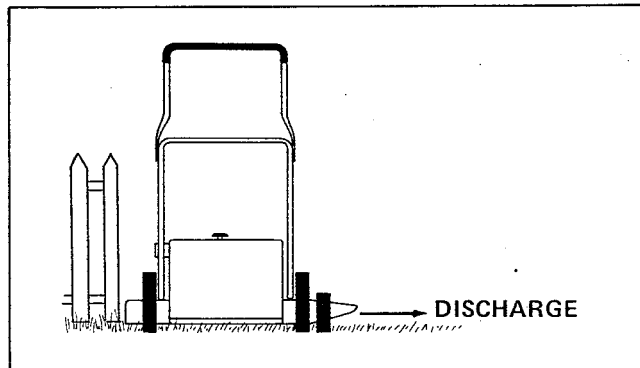


Figure 13. Trim with Left Side

Generally, the remainder of the lawn should be cut in a counterclockwise direction (see figure 14) when the grass catcher is not being used. This will prevent recutting of the grass and spread it evenly over the lawn.

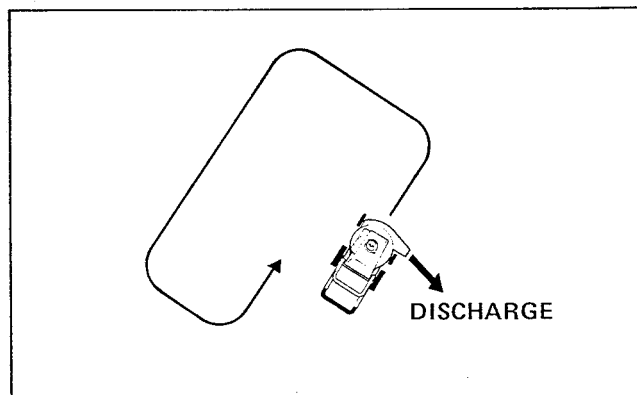


Figure 14. Mow Counterclockwise

Wherever possible, change the general mowing pattern for each cutting (see figure 15). Changing patterns will prevent matting of the lawn that causes an uneven appearance.

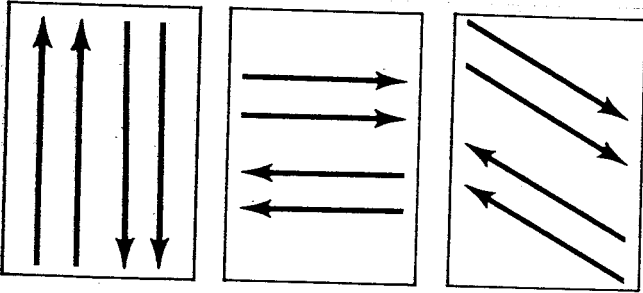


Figure 15. Change Mowing Patterns

ENGINE SPEED AND CUTTING HEIGHT

Three variables affect the performance of your mower: engine speed, cutting height, and forward speed (self-propelled models). The speed control knob (see figure 16) should be set to the desired position for all mowing conditions. The START position provides full engine speed when needed for heavy mowing jobs, while the MOW position allows a slower engine speed for light mowing conditions.

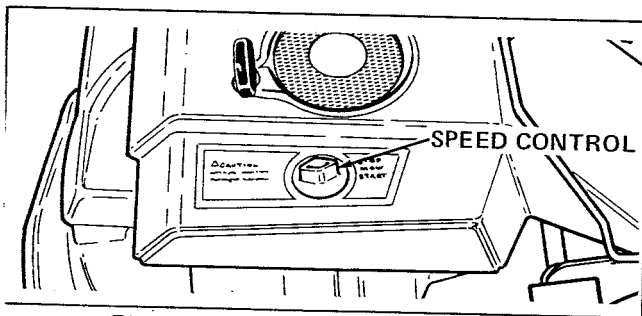


Figure 16. Engine Speed Control

Besides the proper speed control setting for the best mower performance, the cutting height and drive speed (self-propelled models) should also be selected to prevent lugging of the engine and loss of engine rpm. The reason for this is to ensure the maximum cutting quality and grass bagging ability from your mower. When the engine rpm begins to drop, the cutting height should be increased and, on self-propelled models, the mower adjusted to the slow ground speed. To adjust cutting height, see the Adjustment section of this manual.

FORWARD MOWING SPEED (SELF-PROPELLED)

A slow or a fast drive speed can be selected for various mowing conditions. To change forward speed, see Adjustments section in this manual. The

higher speed should be used on smooth level lawns with light to moderate grass crops. When mowing heavy grass, use the slower speed.

If it is necessary to cut wet grass, or grass over 2 inches (50.8 mm) high, use the slower speed. However, if possible avoid cutting wet grass. The most desirable time to mow is in the afternoon or evening when the moisture content is the lowest. This practice will reduce clogging of the discharge chute and provide maximum use of the grass catcher bag.

Generally, use the slower speed when mulching or using the grass catcher bag. Always select a speed for operator comfort and for smooth, even cutting of the grass.

OPERATION ON SLOPES

Accidents can result from the operator slipping when mowing up and down the face of slopes. Always mow across the face of slopes; NEVER up and down.

The chances of an operator slipping towards the mower are greatest when mowing up and down the face of slopes, so always mow across the face of slopes and never up and down. Do not attempt to mow excessively steep slopes, and always exercise extreme caution when changing directions on any slope. Also, do not mow on slopes when the grass is wet and slippery.

On self-propelled models, use the slow drive speed when mowing slopes.

ATTACHMENT INSTALLATION

Your rotary mower was designed to perform different kinds of lawn care, and can be changed from one kind to another in a matter of minutes.

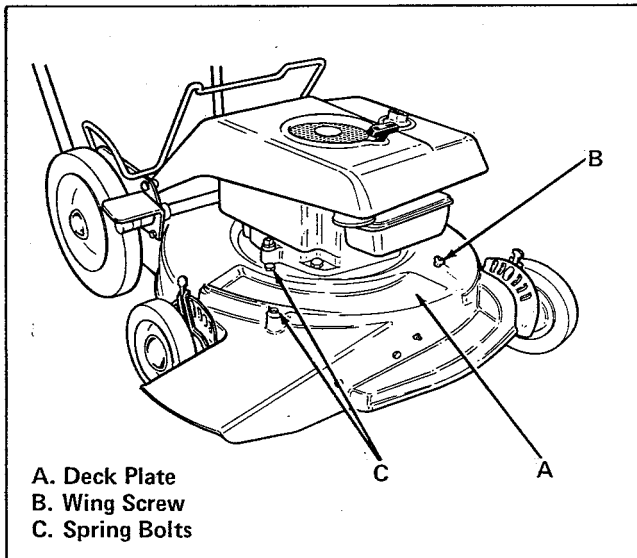
GRASS CATCHER — leaves lawn neat, clean and free of grass clippings.

MULCHER — fine-chops grass clippings and spreads them over the lawn. Clippings act as a mulch, preserving soil moisture.

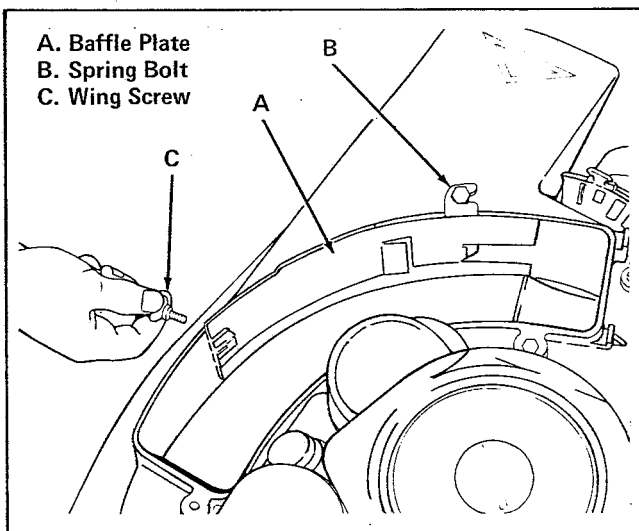
SIDE DISCHARGE — disperses grass clippings to the right side of mower. These clippings make excellent fertilizer when decayed.

INSTALLATING GRASS CATCHER

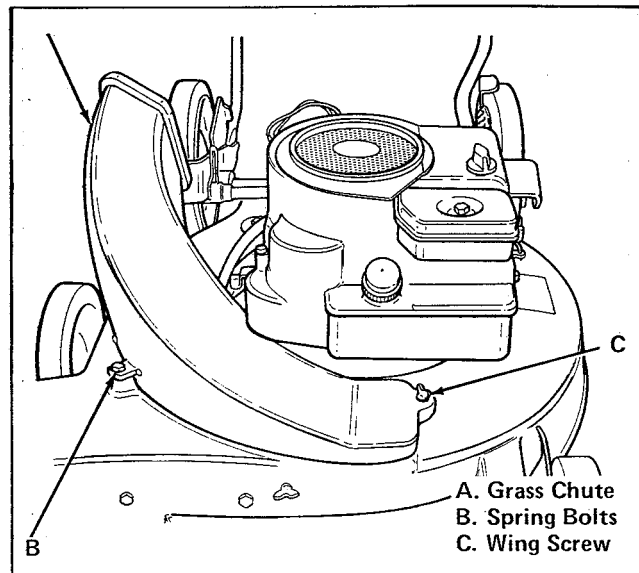
1. If the mower deck plate (item A, figure 17) is installed, remove it by unscrewing the wing screw (item B) at front of plate. Slide out plate from under the two spring bolts (item C).

**Figure 17. Remove Deck Plate**

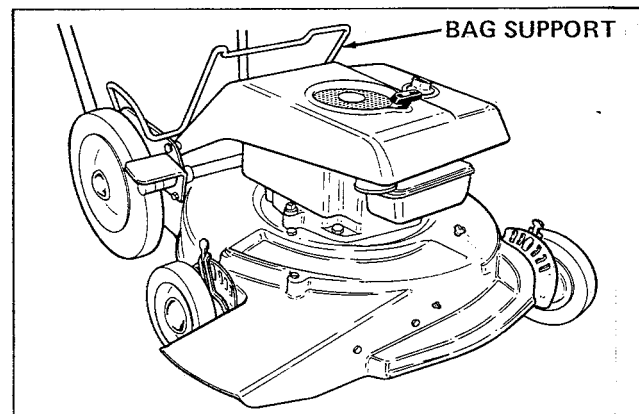
2. Install baffle plate (item A, figure 18) in the mower deck by sliding the slot under front spring bolt (item B).
3. Insert the wing screw (item C) through the mower deck and baffle and tighten.

**Figure 18. Install Baffle Plate**

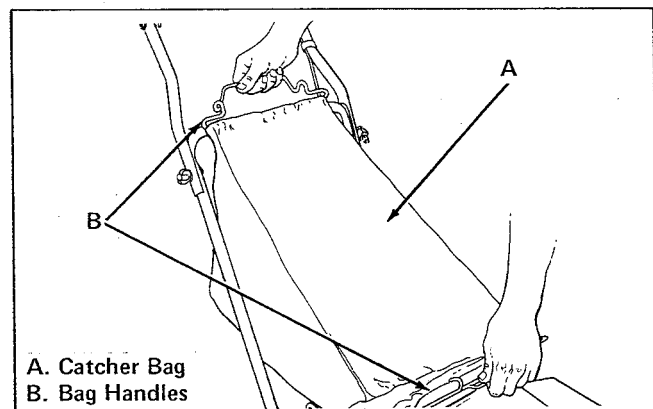
4. Install grass chute (item A, figure 19) over opening in mower deck by sliding both slots under the two spring bolts (item B). Tighten wing screw (item C) finger tight.

**Figure 19. Install Grass Chute**

5. Be sure front bag support (see figure 20) is moved forward.

**Figure 20. Bag Support**

6. Install grass catcher bag (item A, figure 21) into front and rear supports, using handles (item B) attached to bag.

**Figure 21. Installing Bag**

NOTE

The hanger at the rear of the grass bag can be installed in either of the two hems, whichever provides the best fit for the grass bag.

7. Slip bag intake (item A, figure 22) over discharge end of chute (item B). The elastic end of the bag will secure bag to discharge chute.

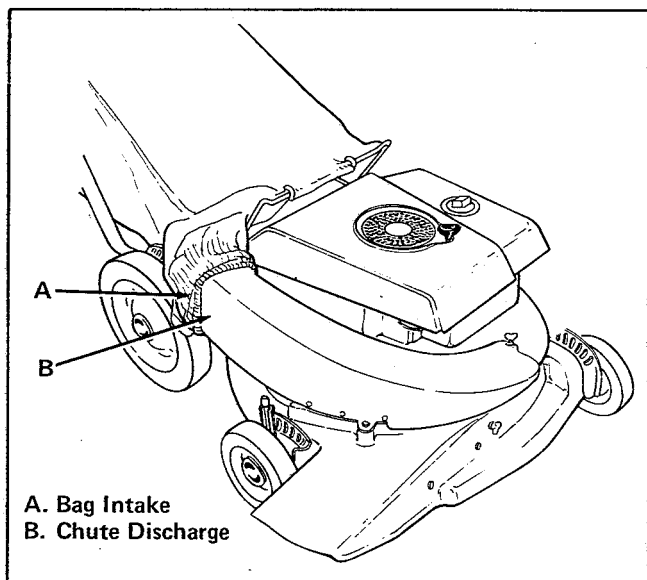


Figure 22. Installing Bag to Chute

EMPTYING GRASS CATCHER BAG

To empty the grass catcher bag use the following procedure.

WARNING

For your safety, before removing or opening the grass catcher bag, be sure the engine is shut off and all moving parts have stopped.

1. Pull off intake end (item A, figure 22) and lift bag from mower using handles (item B, Figure 21).
2. Dispose of grass clippings as desired by opening the bag zipper.

WARNING

For your safety, after installing the grass catcher bag, be sure it is properly installed in the supports and at the discharge chute before starting engine. Also, be sure the bag zipper is fully closed.

INSTALLING MULCHER

To install the deck plate for mulching, proceed as follows:

WARNING

For your safety, never operate mower without either the grass chute and bag or the mower deck plate installed.

1. Remove bag and grass catcher chute (see figure 22) if installed.

NOTE

For mulching do not remove inside baffle (see figure 18).

2. Install deck plate (item A, figure 23) by sliding plate with two slots under the two spring bolts (item B).
3. Insert and tighten the wing screw (item C) through the deck plate into the mower deck.

INSTALLING FOR SIDE DISCHARGE

1. Remove bag, grass discharge chute, and baffle plate.
2. Install only the deck plate (item A, figure 23) for side discharge.

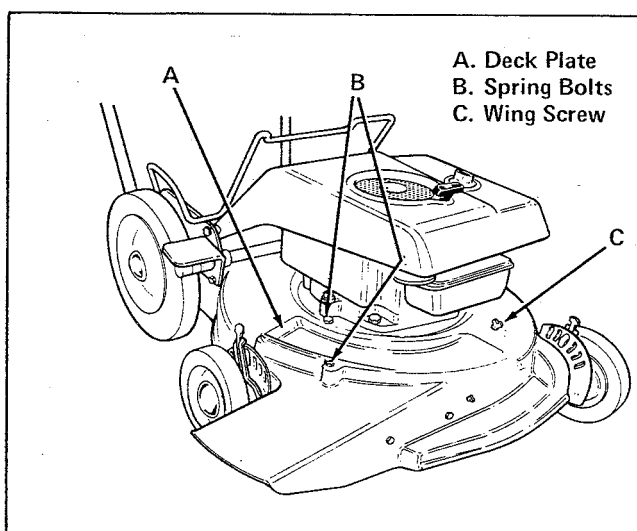


Figure 23. Install Deck Plate

Normal Care

CONTENT OF SECTION

Your rotary mower was designed and built to provide years of service with only minor care. Certain tasks, however, must be performed to keep the mower in good operating condition and to avoid costly repairs. This section describes and provides procedures for the necessary care of your mower.

SCHEDULED CARE

A schedule for routine care is provided in figure 24. Your dealer has performed the tasks required before the first use of the rotary mower. We suggest that you at least check these items to insure that the mower is ready for use. Performing

the checks will also help you become familiar with the care of your rotary mower.

All other scheduled care is preformed after operating for a specific amount of time. See figures 26 through 32.

Because the schedule is based on operating time, it will be necessary to estimate and keep a record of all operating time. A Maintenance Record (figure 33) is provided to help you keep a record of all operating time and maintenance repair actions.

NORMAL STORAGE

To protect your mower, store it in an enclosed, dry area. Do not store it in an enclosure where fumes from the fuel tank could reach an open flame.

Care Required	See Figure	Schedule			
		Before Each Use	After Each Use	** Every 25 Hours	*** End of Mowing Season
Check mower and engine	26	•			
Clean underside of mower and grass catcher bag, if used.	27		•		
Clean engine and air filter***	28			•	•
Change engine oil*	29			•	•
Clean/sharpen mower blade	30			•	•
Lubricate handle pivots and height adjuster	31			•	•
Clean or replace spark plug	32				•

*Change original engine oil after first 5 hours of operation.

**More often in hot (over 70° F, 21° C) weather or dusty operating conditions.

***More often under heavy use.

Figure 24. Summary of Scheduled Care

To save space while the mower is being stored, the handle bars can be folded down over the engine. To do this, proceed as follows:

1. Lift off the grass catcher bag, if installed. Clean the inside of bag and store it in a dry area.
2. Completely loosen the two wing nuts (item A, figure 25) on the lower part of the mower handle so the handle (item B) can be folded back and over the lower part of the handle bars.
3. Push lower part of handle bars (item C) together to clear stops and pivot bars forward over the engine cover. Be sure clutch rod clip (item D) is positioned as shown.

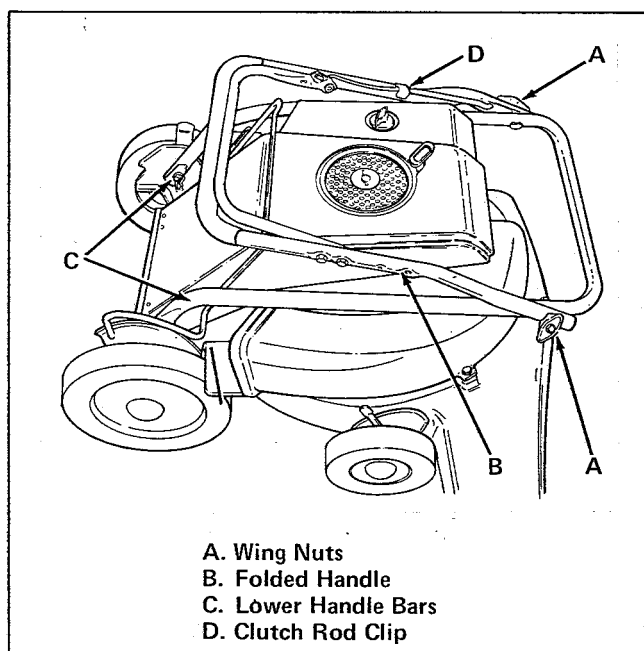


Figure 25. Folding Handle

4. To raise, pivot handle back to its normal position. Tighten wing nuts.

NOTE

To avoid damaging the clutch rod when folding the handles, always be sure the clutch rod clip (item D) is positioned as shown.

OFF-SEASON STORAGE

If you do not intend to use your mower for 30 days or more, follow the off-season storage instructions given in the paragraph below.

1. Drain the fuel tank completely by running the engine until it stops. If desired, fuel can be stored in properly marked containers or in the tank by using a gasoline stabilizer. Follow the directions on the can. This additive prevents formation of gum and varnish for up to one year and provides easier starting and a clean fuel system.
2. Follow all required care listed under End of Mowing Season. See Summary of Scheduled Care, figure 24.
3. Remove spark plug, pour 1 oz. (30 ml) 10W-30 oil into cylinder through plug hole. Crank engine a few times to distribute oil. Reinstall plug.
4. For electric start models, store the battery in a cool, dry area. Storage temperature of 100° F (37.8° C) or more accelerates self-discharge and should be avoided. Recharging during storage is not required.

⚠ WARNING

Use charger only in a dry place indoors. Getting the charger wet could result in a dangerous electrical shock to the user. Battery can be removed from mower to charge indoors.

STARTING AFTER STORAGE

Before starting the mower after off-season storage, perform the following:

1. Charge the battery for 12-24 hours to restore to full charge.
2. Remove spark plug and wipe dry. Crank engine several times to blow excess oil out of plug hole. Reinstall the plug.
3. Fill fuel tank with fresh gasoline (unless a fuel stabilizer was used).
4. Start engine outdoors. Do not run engine at high speeds immediately after starting.

⚠ WARNING

For your safety, before attempting to inspect, adjust, or service your mower, stop the engine and be sure all moving parts have stopped. On manual start mowers, turn engine speed control to OFF and remove spark plug wire. On electric start models remove key or disconnect battery and also remove spark plug wire.

1. Check mower and engine for loose bolts, oil leaks, etc.
2. Check/add engine crankcase oil.

NOTE

Mower should be level to check oil.

- A. Remove oil fill plug.
- B. Add oil if needed until ready to overflow. Use same weight and grade of oil used at last change.
- C. Install and tighten fill plug.

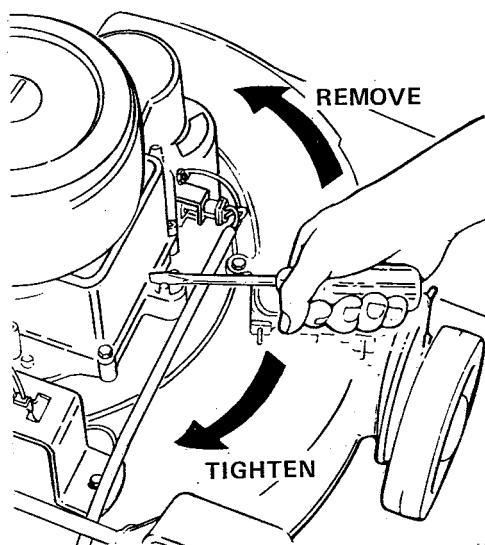


Figure 26. Check Mower and Engine (Before Each Use)

Clean all dirt and grass from underside of mower, discharge chute, and grass catcher bag. Tip mower as directed on decal: "LIFT THIS SIDE."

⚠ WARNING

For your safety, disconnect spark plug wire and fasten it away from the spark plug before tipping the mower to work underneath it. Disconnect electrical connector from battery on electric start models.

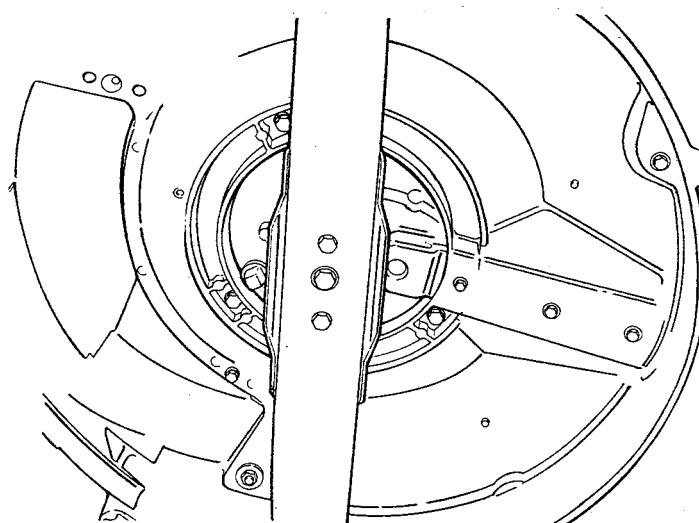


Figure 27. Clean Mower (After Each Use)

1. Clean all dirt and chaff from engine fins.
Remove engine blower housing.

2. Clean air filter.

- A. Remove screw from top of air filter,
and remove air filter.
- B. Wash foam filter with kerosene or
soap and water.
- C. Dry foam element thoroughly.
- D. Soak foam with engine oil, squeezing
it several times to distribute oil
through foam and to wring out
excess.
- E. Reassemble air filter.

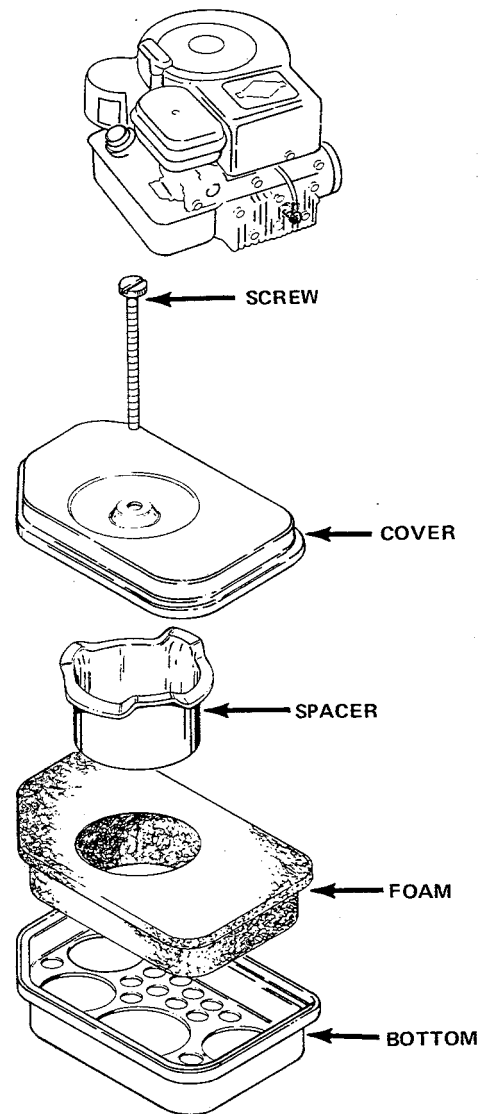


Figure 28. Clean Engine and Air Filter (25-Hour Care or More Often Under Dusty Conditions)

NOTE

Change oil while engine is still warm.

WARNING

For your safety, before working on or near mower blade, make sure the key is removed from the ignition switch on electric start models and the speed control knob is turned to stop on manual start models. Remove the spark plug wire and fasten it away from the plug. On electric start disconnect battery.

NOTE

Tip mower as directed on decal: "LIFT THIS SIDE."

1. Remove drain plug from underside of engine and drain oil into a container.
2. Install and tighten drain plug.
3. Remove fill plug.

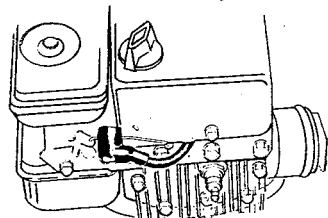
NOTE

To avoid engine damage, use only high quality detergent oil of the correct weight and grade. The grade (service) marking on the can may be MS, SE, SC or SD. Use SAE 30 or SAE 10W-30.

4. Add new oil until the fill pipe is about to overflow. The oil capacity is about 1-1/4 pints (0,5 L).
5. Install and tighten fill plug.

NOTE

DO NOT POLLUTE: Dispose of drain oil properly.



REMOVE ENGINE
SPARK PLUG WIRE

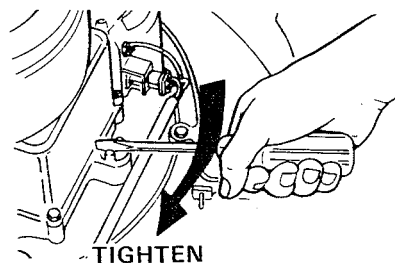
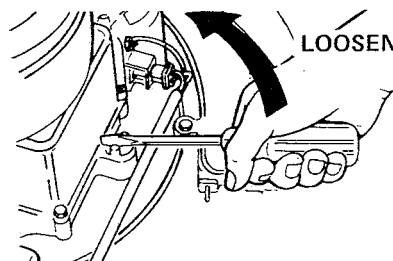
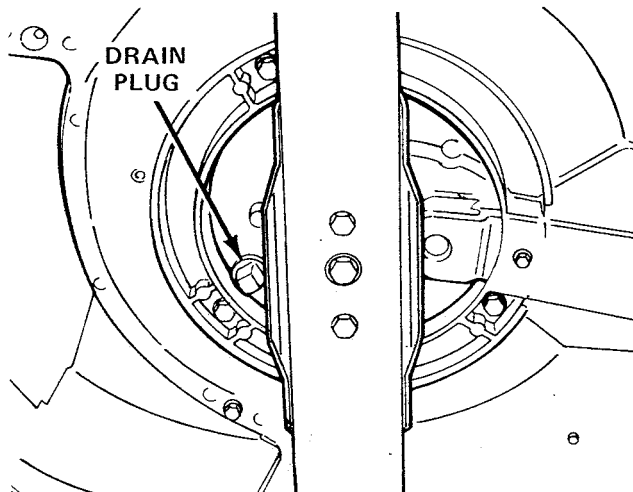


Figure 29. Change Engine Oil (25-Hour Care)

CAUTION

For your safety, use extreme care when handling mower blade. Careless or improper handling could result in serious injury.

1. Check the mower blade. It should be sharp and free of nicks and dents. If not, sharpen the blade as follows:
2. To remove the blade for sharpening, use a wooden block to restrict blade from rotating while removing the blade mounting capscrews. Use a box-end wrench if available.
3. Use a file to sharpen blade to fine edge along the original bevel. Remove all nicks and dents in blade edge. If blade is severely damaged, it should be replaced.
4. Check and balance blade. Use a balancing machine or the fixture shown. File material off heavier end of blade until it is balanced.

CAUTION

Blade mounting capscrews must be installed with lockwashers and carefully tightened. Torque the blade mounting capscrews to 17 to 20 foot-pounds (23 to 27 N-m).

5. Install the blade with the tabs pointing up toward deck. Use a wooden block to hold blade while installing and tightening blade mounting capscrews and lockwashers.

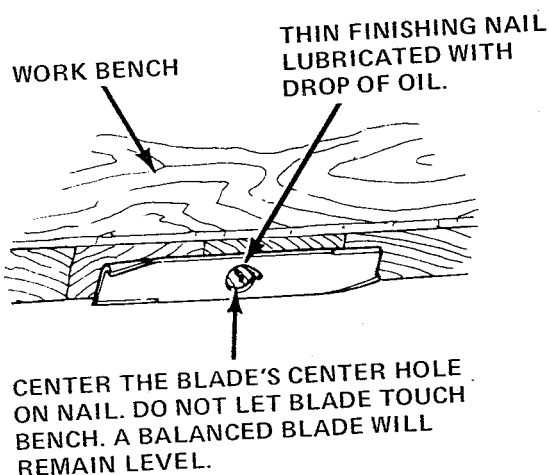
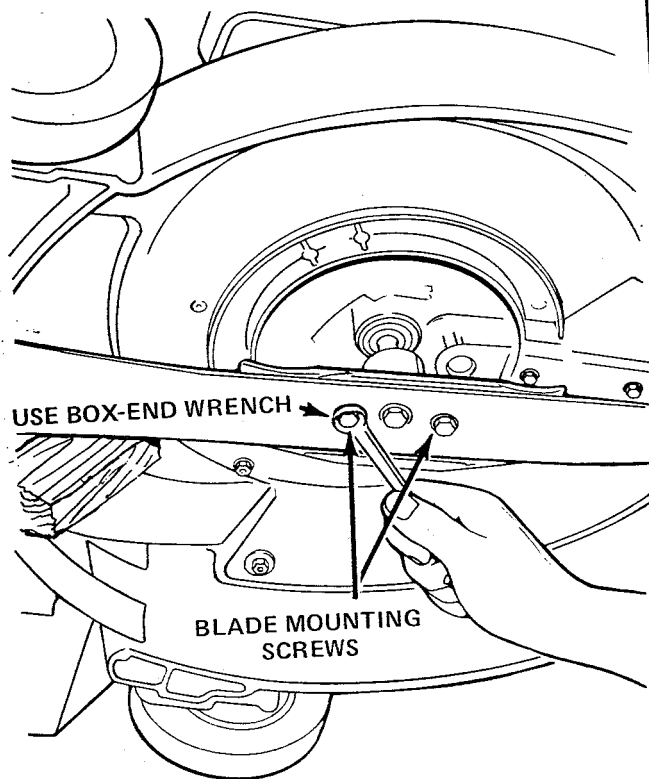


Figure 30. Check, Balance, Sharpen Mower Blade (25-Hour Care)

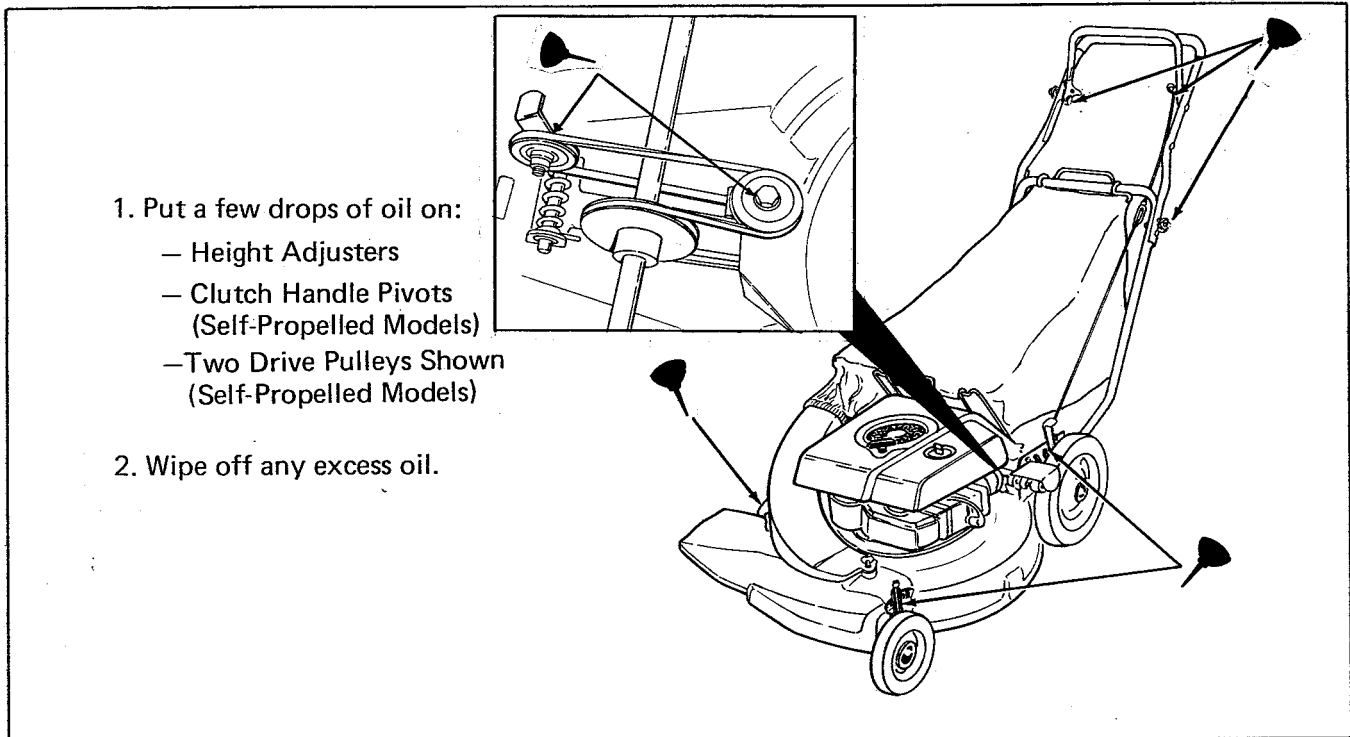


Figure 31. Lubricate Mower (25-Hour Care)

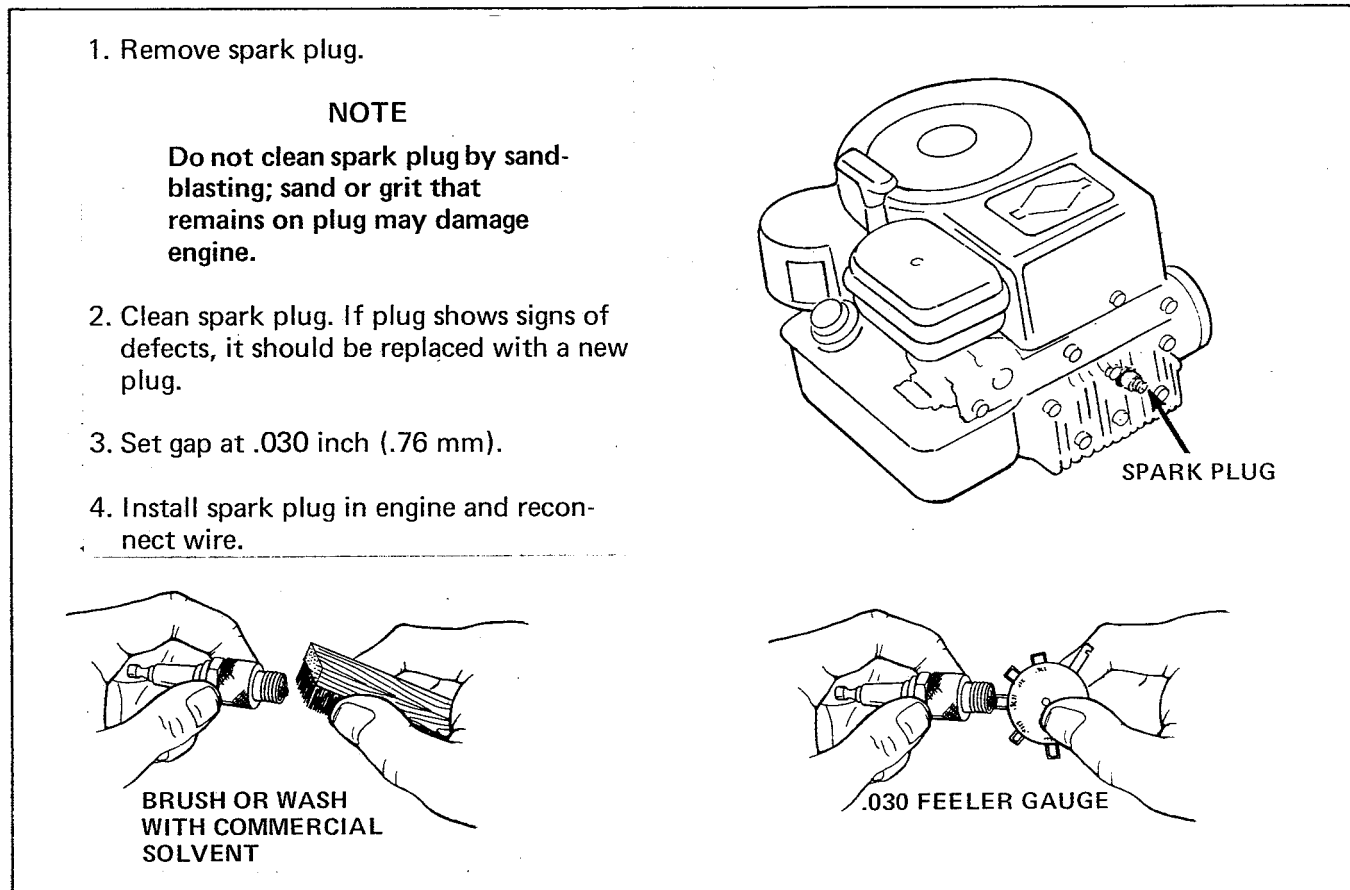


Figure 32. Clean or Replace Spark Plug (End of Season Care)

BELT REPLACEMENT (SELF-PROPELLED MODELS ONLY)

To replace a worn or broken belt on self-propelled models, proceed as follows:

WARNING

On manual start mowers turn engine speed control to OFF and remove spark plug wire. On electric start models lift cover and disconnect battery. Work from discharge chute side to avoid hot muffler if mower has been running.

1. Lift up engine cover.
2. Lift mower up from the spark plug side as directed on decal. Remove capscrew (item A, figure 34) holding on the belt shield (item B).

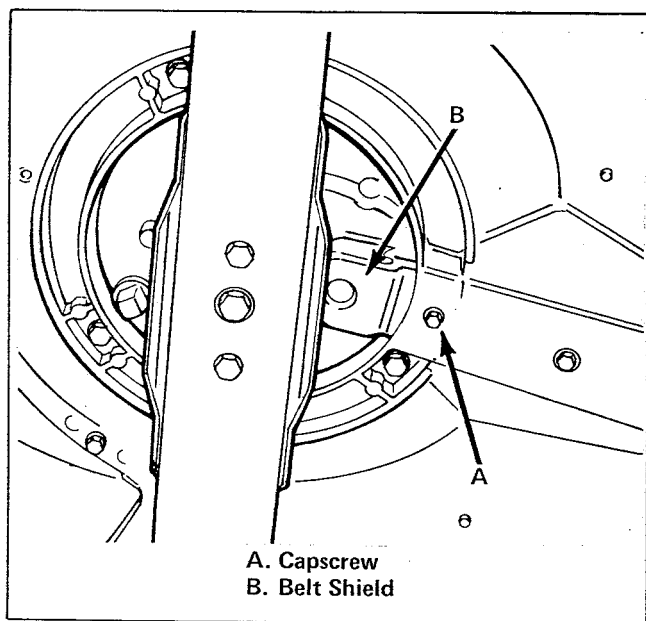


Figure 34. Removing Belt Shield

3. Push the spring loaded vertical idler pulley arm (item A, figure 35) forward and slip the old belt up off the horizontal pulley.
4. Slide belt shield out toward the mower blade.
5. Slip the old belt off the engine drive pulley and remove it from the mower deck.

6. Insert new belt through mower deck opening. Place belt onto engine drive pulley, making sure that it is seated properly in the pulley groove.
7. Keep tension on the belt (item B) while tipping the mower back on its wheels so that the belt does not slip from mower drive pulley.

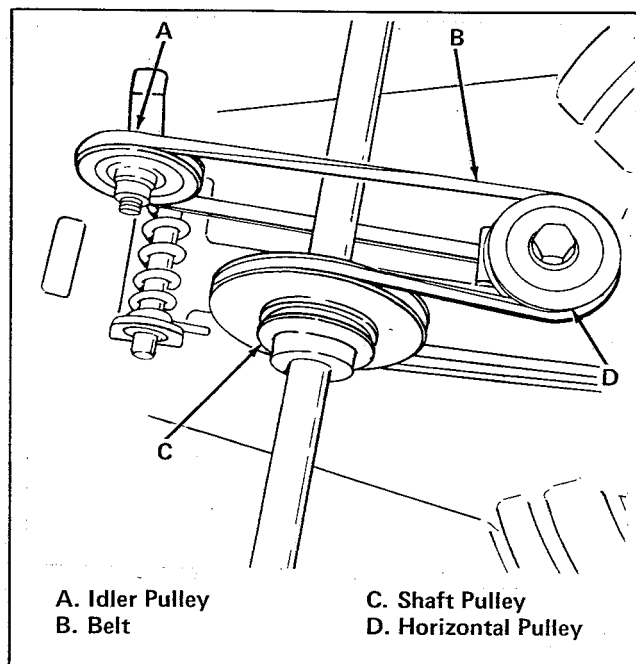


Figure 35. Belt Installation

8. Run the belt under the shaft pulley (item C) and idler pulley, then around to the top horizontal pulley (item D). Make certain that the belt is properly installed, as in figure 35.
9. Tip the mower back up from the proper side, checking that the drive belt is properly seated in the drive pulley groove. Replace the belt shield and capscrew.
10. Check to be sure that the belt is seated properly in all pulley grooves.
11. Replace spark plug wire on manual start models. Connect battery on electric start models.

Troubleshooting

CONTENT OF SECTION

This section provides troubleshooting instructions for the more common and easily corrected rotary mower problems. For other problems, it is recommended that you contact your dealer.

WARNING

Before working on or near mower blade, make sure the key is removed from the ignition switch. Remove the spark plug wire and fasten it away from the plug.

TROUBLESHOOTING PROCEDURES

Troubleshooting procedures are provided in figure 36. 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 try to operate the rotary mower again to see if you have eliminated the trouble.

Problem	Cause/Remedy
1. Engine will not start.	A. No fuel in tank. Refill tank. B. Engine speed control not on START; reposition. C. Spark plug wire not connected; reconnect. D. Check all connections (electric start models only). E. Engine flooded. Turn speed control knob to STOP. On manual start crank six times, on electric start turn key on for 2 to 3 seconds. Then attempt to start engine with speed control on START. F. Battery charge too weak. Recharge battery (electric start). G. Flywheel key sheared — See your dealer.
2. Mower will not drive (self-propelled models only).	A. Wheels packed with grass. Clean wheels. B. Drive rollers slipping at the tires. Adjust the control rod turnbuckle (see Adjustment section). C. Drive belt slipping. Check belt and pulleys. D. Drive belt broken; replace with proper belt.
3. Mower cut uneven.	A. Wheels not leveled properly. Check wheel adjustments. B. Mower blade dull. Check/resharpen.
4. Mower vibrates excessively.	A. Blade mounting screws are loose. Tighten to 17 to 20 foot-pounds (23 to 27 N-m). B. Out of balance blade. Check balance (figure 30).

Figure 36. Troubleshooting Procedures

Adjustments

CONTENT OF SECTION

There are a number of adjustments that can be made on the rotary mower. This section describes how to make these adjustments.

WARNING

For your safety, before making any adjustments to the rotary mower stop the engine. Remove the key from the ignition switch (electric start models). Remove spark plug wire and fasten it away from the plug.

MOWING HEIGHT ADJUSTMENT

Mowing height is controlled by moving the adjustable wheels up or down, enabling the mower to cut from 1 to 3 inches (25 to 76 mm).

The front wheels are individually adjusted by moving the spring tabs (item A, figure 37) to the desired height. Both rear wheels are adjusted by moving the rear adjuster arm (item B) up or down. Be sure to place both spring tabs and rear adjuster arm in the same notch (item C) to keep the mower level.

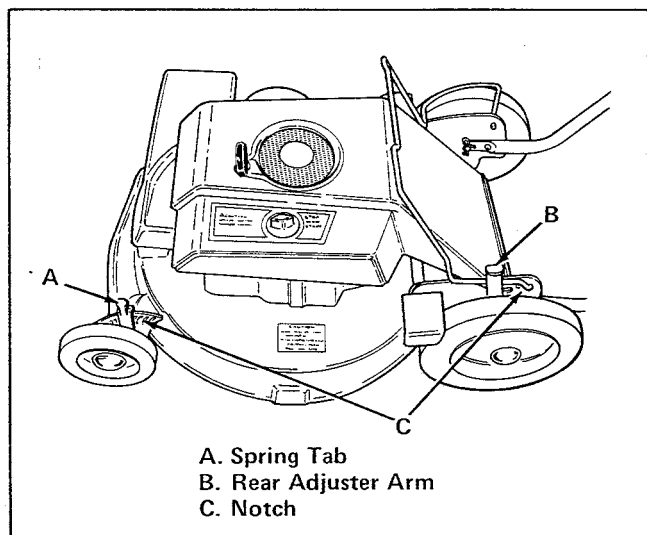


Figure 37. Mowing Height Adjustment

MOWER BELT ADJUSTMENT (SELF-PROPELLED)

Two forward mowing speeds are available by adjusting the drive belt in two different pulley positions. To change speed, proceed as follows:

WARNING

For your safety, stop engine, remove key, or move speed control knob to OFF. Remove spark plug wire and fasten wire away from plug.

1. Lift up engine cover.

WARNING

Be careful working in the area of the belt drive if the engine has been running. The muffler is very hot and can cause injury.

2. Move spring loaded idler (item A, figure 38) forward towards the engine to release tension on the belt (item B).
3. Grasp belt with fingers to pull slack toward the double groove pulley. The large groove (item C) is for slow forward speed and the small groove (item D) is for a faster forward speed.

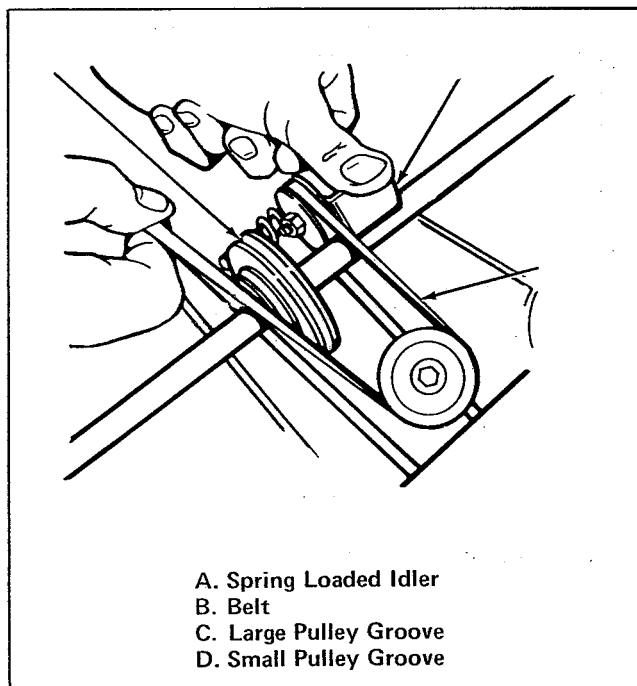


Figure 38. Belt Adjustment

4. Carefully move spring loaded idler away from engine to tighten belt.

NOTE

Check to be sure belt is seated in the pulley grooves and belt is twisted properly.

HANDLE HEIGHT ADJUSTMENT**⚠ WARNING**

For your safety, after changing handle height you must readjust the mower drive mechanism or the mower drive may not disengage.

Each end of the handle bars has three holes. By placing the handle retaining pins through the holes shown (item A, figure 39) the handle height is convenient for medium to tall operators. Placing the pins through the rear holes (item B) lowers the handle height for short operators. See next paragraph to adjust the mower drive mechanism for self-propelled mowers.

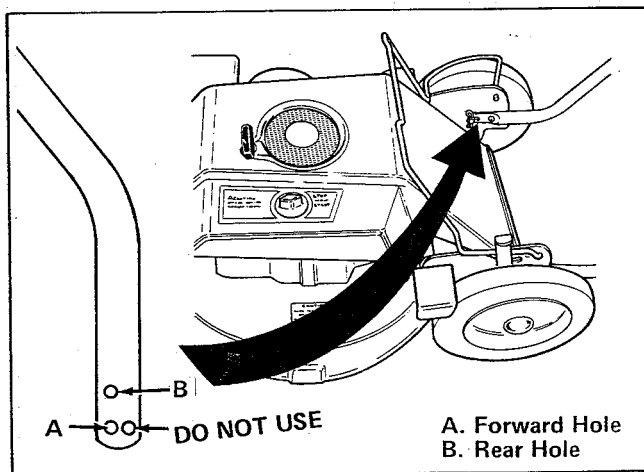


Figure 39. Adjusting Handle Height

MOWER DRIVE MECHANISM ADJUSTMENTS (SELF-PROPELLED)

Adjustment of the mower drive is required when:

1. Handle bar height is changed.
2. One or both of the drive wheels slip when the Touch-a-matic control bar is fully engaged.

To adjust, proceed as follows:

1. Loosen two nuts on turnbuckle (item A, figure 40).
2. Adjust turnbuckle to give 1/16 inch (1.6 mm) clearance between left-hand drive roller (item B) and the tire.
3. Hold turnbuckle from turning and tighten nuts.
4. Loosen right-hand bellcrank pivot nut (item C).
5. Position right-hand bellcrank so there is 1/16 inch (1.6 mm) clearance

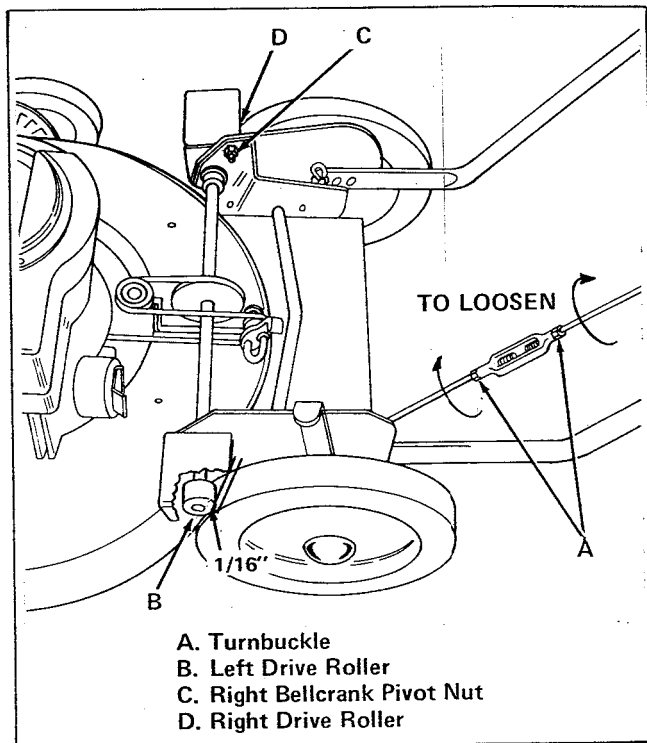


Figure 40. Adjusting Mower Drive

between the roller and tire.

6. Tighten bellcrank pivot nut.
7. Recheck clearance on both drive wheels. Repeat above steps if required.

CARBURETOR ADJUSTMENTS

Carburetors are adjusted by manufacturer and normally do not need adjustment unless they have been disassembled.

NOTE

Do not overtighten needle valves during adjustment; overtightening can damage needle valve seats.

INITIAL ADJUSTMENT

Close needle valve (item A, figure 41) (turn clockwise), then open 1-1/2 turns (turn counterclockwise). This initial adjustment will permit the engine to be started and warmed up before making final adjustment.

FINAL ADJUSTMENT

With engine at full speed, close the needle valve (item A) until engine starts to lose speed (lean mixture). Then slowly open needle valve (item A) past the point of smoothest operation. Then reset needle valve midway between these two points.