

OWNER'S GUIDE

• ASSEMBLY • OPERATION • MAINTENANCE •



20" and 22" ROTARY MOWERS

Model Series 030 thru 062

IMPORTANT!

Record the **Model No.** and **Mfg. Code** which appear on your unit in the space below. You **must** have these numbers, along with the date of purchase, in order to receive warranty or service.

MEETS ANSI SAFETY STANDARDS

MODEL NO.

MFG. CODE

**Important:
Read Safety Rules
and Instructions Carefully**



Made
in
AMERICA


WARNING: This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator.

In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your nearest engine authorized service dealer or contact the service department, P.O. Box 368022, Cleveland, Ohio 44136-9722.

IMPORTANT

SAFE OPERATION PRACTICES



THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS WHICH, IF NOT FOLLOWED, COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OF YOURSELF AND OTHERS. READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE YOUR LAWN MOWER. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY. WHEN YOU SEE THIS SYMBOL— HEED ITS WARNING.



DANGER: Your lawn mower was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. If you violate any of these rules, you may cause serious injury to yourself or others.



TRAINING

1. Read this owner's guide carefully in its entirety before attempting to assemble or operate this machine. Be completely familiar with the controls and the proper use of this machine before operating it. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
2. Your rotary mower is a precision piece of power equipment, not a plaything. Therefore, exercise extreme caution at all times. Your unit has been designed to perform one job: to mow grass. Do not use it for any other purpose.
3. Never allow children under 14 years old to operate a power mower. Children 14 years old and over should only operate mower under close parental supervision. Only persons well acquainted with these rules of safe operation should be allowed to use your mower.
4. Keep the area of operation clear of all persons, particularly small children and pets. Stop engine when they are in the vicinity of your mower to help prevent blade contact or thrown object injury. Although the area of operation should be completely cleared of foreign objects, an object may have been overlooked and could be accidentally thrown by the mower in any direction and cause serious personal injury to the operator or any others allowed in the area.



PREPARATION

1. Thoroughly inspect the area where the equipment is to be used. Remove all stones, sticks, wire, bones and other foreign objects which could be picked up and thrown by the mower in any direction and cause serious personal injury to the operator or any others allowed in the area. Plan your mowing pattern to avoid discharge of material toward roads, sidewalks, bystanders and the like.
2. Always wear safety glasses or eye shields during operation or while performing an adjustment or repair, to protect eyes from foreign objects that may be thrown from the machine in any direction.
3. Wear sturdy, rough-soled work shoes and close-fitting slacks and shirts. Shirts and pants that cover the arms and legs and steel-toed shoes are recommended. Do not wear loose fitting clothes or jewelry. They can be caught in moving parts. Never operate a unit in bare feet, sandals, or sneakers.
4. Before working with gasoline, extinguish all cigarettes, cigars, pipes and other sources of ignition. Check the fuel level before starting the engine. Gasoline is an extremely flammable fuel. Do not fill the gasoline tank indoors, while the engine is running, or until engine has been allowed to cool for at least two minutes after running. Replace gasoline cap securely and wipe off any spilled gasoline before starting the engine as it may cause a fire or explosion.
5. Disengage the self-propelled mechanism or drive clutch on units so equipped before starting the engine.
6. The blade control handle is a safety device. Never attempt to bypass its operation. Doing so makes the safety device inoperative and may result in personal injury through contact with the rotating blade. The blade control handle must operate easily in both directions and automatically return to the disengaged position when released.
7. Never attempt to make a wheel or cutting height adjustment while the engine is running.
8. Never operate the mower in wet grass. Always be sure of your footing. A slip and fall can cause serious personal injury. Keep a firm hold on the handle and walk, never run. Move only in daylight or in good artificial light.

9. For your safety, use the slope gauge included as part of this manual to measure slopes before operating this unit on a sloped or hilly area. If the slope is greater than 15° as shown on the slope gauge, do not operate this unit on that area or serious injury could result.



OPERATION

1. Do not change the engine governor settings or overspeed the engine. Excessive engine speeds are dangerous.
2. Do not put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times as the rotating blade can cause injury.
3. Stop the blade when crossing gravel drives, walks or roads.
4. After striking a foreign object, stop the engine, remove the wire from the spark plug, and thoroughly inspect the mower for any damage. Repair the damage before restarting and operating the mower.
5. If the equipment should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.
6. Shut the engine off and wait until the blade comes to a complete stop before removing the grass catcher or unclogging the chute. The cutting blade continues to rotate for a few seconds after the engine is shut off. Never place any part of the body in the blade area until you are sure the blade has stopped rotating.
7. Before cleaning, repairing or inspecting, make certain the blade and all moving parts have stopped. Disconnect the spark plug wire, and keep the wire away from the spark plug to prevent accidental starting.
8. Do not run the engine indoors.
9. Never cut grass by pulling mower toward you. Mow across the face of slopes, never up-and-down. Exercise extreme caution when changing direction on slopes. Do not mow excessively steep slopes. Always be sure of your footing. A slip and fall can cause serious personal injury.
10. Never operate mower without proper guards, plates or other safety protective devices in place.
11. Muffler and engine become hot and can cause a burn. Do not touch.



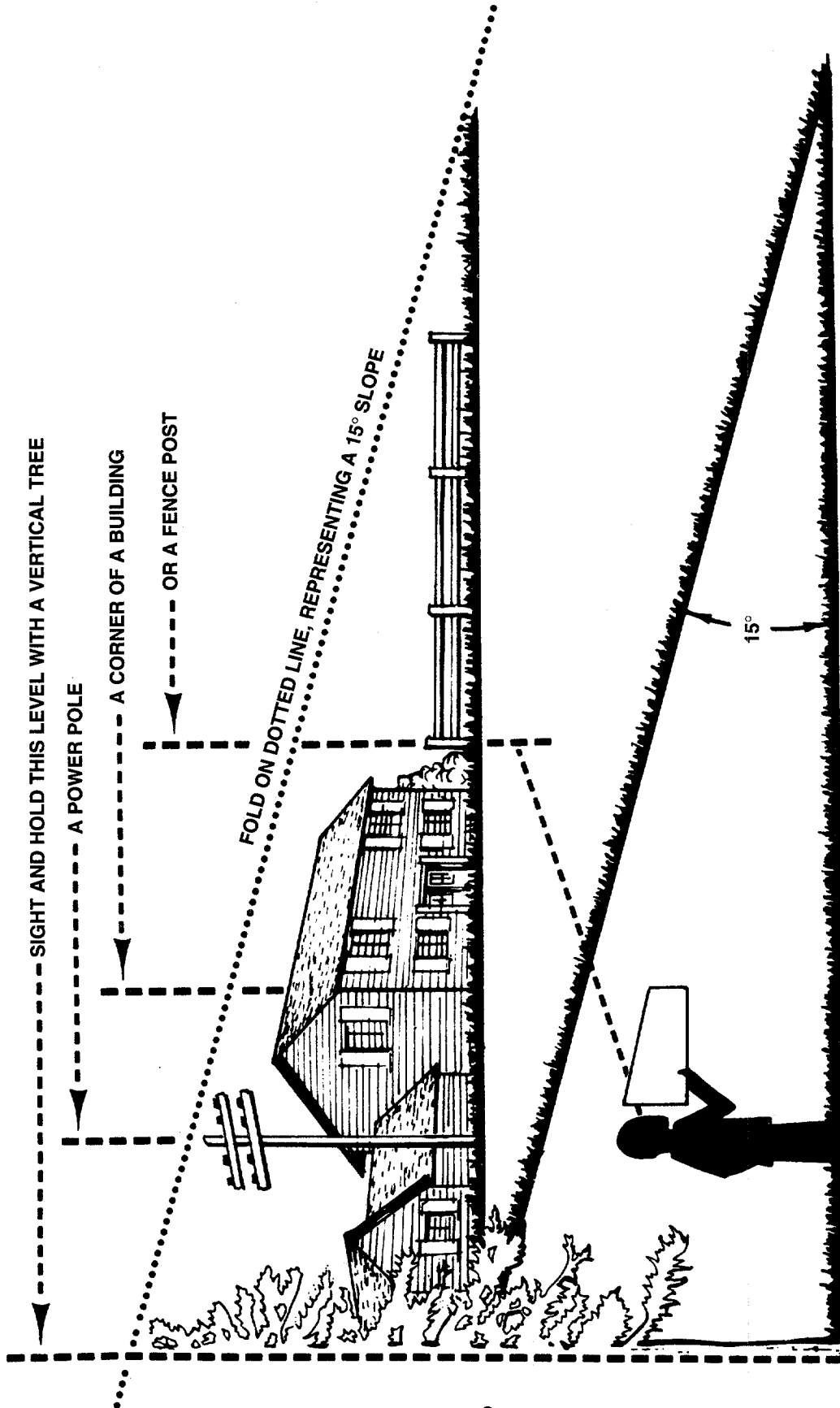
MAINTENANCE AND STORAGE

1. Check the blade and engine mounting bolts at frequent intervals for proper tightness. Also visually inspect blade for damage (e.g. bent, cracked). Replace with blade which meets original equipment specifications.
2. Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
3. Never store the mower with gasoline in the tank or gas containers inside of a building where fumes may reach an open flame or spark (e.g. gas hot water heater). Allow the engine to cool before storing in any enclosure.
4. To reduce fire hazard, keep the engine free of grass, leaves and excessive oil.
5. Check the grass catcher bag frequently for wear or deterioration. Replace a worn or damaged bag immediately. For safety protection, replace only with new bag meeting original equipment specifications.

USE THIS SHEET AS A GUIDE TO DETERMINE SLOPES WHERE YOU MAY NOT OPERATE SAFELY.

SLOPE GAUGE

(Keep this sheet in a safe place for future reference.)



Do not mow on inclines with a slope in excess of 15 degrees (a rise of approximately 2-1/2 feet every 10 feet). A riding mower could overturn and cause serious injury. If operating a walk-behind mower on such a slope, it is extremely difficult to maintain your footing and you could slip, resulting in serious injury.

Operate RIDING mowers up and down slopes, never across the face of slopes.

Operate WALK-BEHIND mowers across the face of slopes, never up and down slopes.

CONTENTS OF HARDWARE PACK

Remove this sheet from your owner's manual and lay the hardware on the illustration for identification purposes. After assembly, keep the Slope Gauge which is on the reverse side of this sheet for future use.

(Hardware pack may contain extra items which are not used on your unit. Part numbers are shown in parentheses.)

A ATTACHING THE LOWER HANDLE

Hex Bolts
3/8-24 x 1-1/2" Long
(710-0459)

Spacers 3/8" I.D. x
7/8" O.D.
(750-0910)

Cupped Washers
3/8" I.D. x 7/8" O.D.
(736-0105)

Hex Lock Nuts
3/8-24 Thread
(712-C355)

B ATTACHING THE UPPER HANDLE

Split Washers
5/16" I.D.
(736-0119)

Curved
Head
Bolts
(710-0671)

Hex Nuts
5/16-18 Thread
(712-0267)

C ATTACHING THE STARTER ROPE

Rope
Guide
(710-1205)

Hex Lock Nut
1/4-20 Thread
(712-0324)

D SECURING THE CABLES

Cable Ties
(726-0240)

E INSTALLATION OF WHEELS
(This hardware is shown one-half size)

Axle Bolts
(738-0533)

Cupped Washers
3/8" I.D. x 7/8" O.D.
(736-0105)

Cupped Washers
3/8" I.D. x
1-1/8" O.D.
(736-0331)

Hex Nuts
3/8-16 Thread
(712-0798)

Cut Along This Line



ASSEMBLY INSTRUCTIONS

IMPORTANT: This unit is shipped **WITHOUT GASOLINE or OIL.** After assembly, service engine with gasoline and oil as instructed in the separate engine manual packed with your unit.

NOTE: Reference to right or left hand side of the mower is observed from the operating position.

Tools Required for Assembly

- (1) 1/2" Wrench
- (2) 9/16" Wrenches
- (1) Phillips Screwdriver
- (1) Adjustable Wrench
- (Two 6" Adjustable Wrenches may be used instead of the above.)

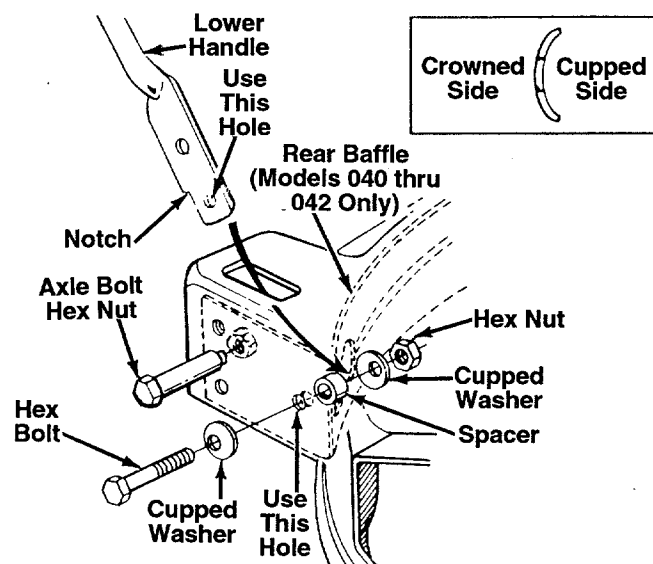


FIGURE 1A.—Models 040 thru 042 Shown

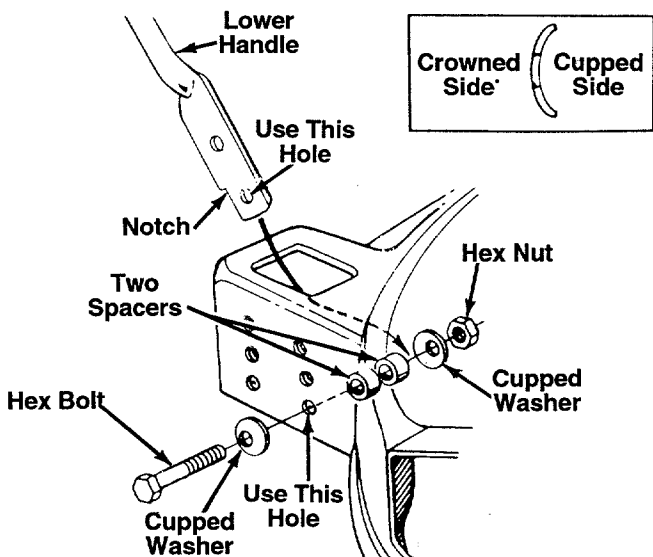


FIGURE 1B.—Models 050 thru 062 Shown

UNPACKING

1. Remove the lawn mower from the carton by opening the top flaps and lifting the unit out. Be careful of the staples. Make certain all parts and literature have been removed from the carton before the carton is discarded.
2. Disconnect and ground the spark plug wire against the engine.
3. Stretch out the control cables behind the mower and place on the floor. Be careful not to bend or kink the cables at any time during assembly.
4. Remove page four from this manual and lay the contents of the hardware pack on the illustration for identification.

NOTE: ALL MODELS—The handle on your mower can be adjusted to two different height settings. For a higher handle height, assemble the lower handle with the notch toward the rear of the mower. See figure 1. For a lower handle height, assemble the lower handle with the notch toward the front.

ATTACHING THE LOWER HANDLE (Hardware A)

Models 030 thru 042 only:

1. Raise the rear of the deck and block securely.
2. **Models 040 through 042 only:** Place the rear baffle in position inside the rear of the deck. Use one axle bolt and hex nut on each side of the rear of the deck to secure baffle temporarily so you can attach the lower handle. See figure 1.

NOTE: Remove axle bolt and nut when assembling the wheels, page 7.

3. Insert the ends of the lower handle through the slots in the rear of the deck.
4. Place one cupped washer on hex bolt (crowned side of washer goes against the head of the hex bolt).
5. Place one spacer between forward hole in baffle (or deck on Models 030 through 032) and bottom hole in lower handle.

NOTE: Use a screwdriver to pry the handle away from the baffle slightly in order to insert the spacer. The screwdriver can also be used to align the holes in the next step.

6. Insert hex bolt through forward hole in deck, baffle (Models 040 through 042 only), spacer and lower handle. Secure with cupped washer (cupped side against the handle) and hex nut, finger tight only.
7. Repeat steps 4 through 6 to attach the other side of the handle. Then tighten securely the two bolts and nuts used to attach the handle.

ATTACHING THE LOWER HANDLE (Hardware A)

Models 050 thru 062 only:

1. Raise the rear of the deck and block securely. Insert the ends of the lower handle through the slots in the rear of the deck.
2. Place one cupped washer on hex bolt (crowned side of washer goes against the head of the hex bolt).
3. Using the inside set of holes in the rear of the deck, insert hex bolt through bottom hole as shown in figure 1B.
4. Place two spacers on hex bolt. Then insert hex bolt through bottom hole in handle. Secure with cupped washer (cupped side against the handle) and hex nut, finger tight only.
5. Repeat steps 2 through 4 to attach the other side of the handle.
6. Tighten both hex bolts and nuts securely.

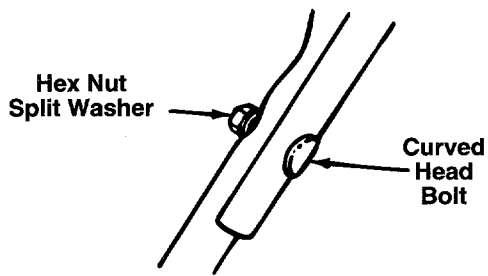


FIGURE 2.

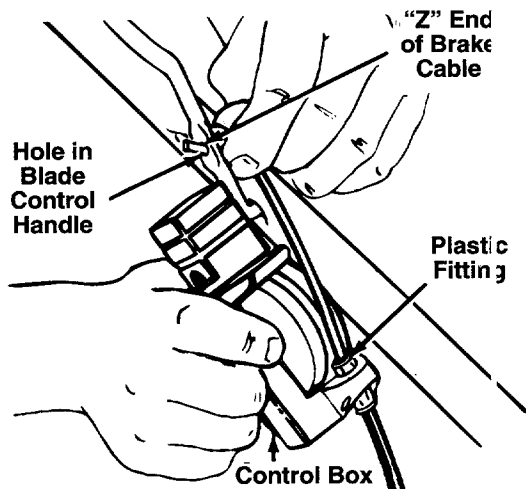


FIGURE 3.

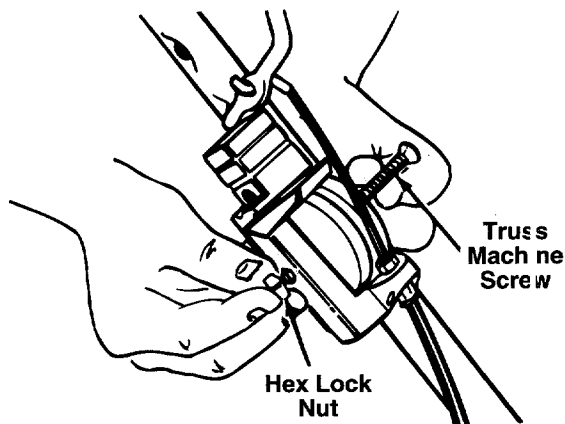


FIGURE 4.

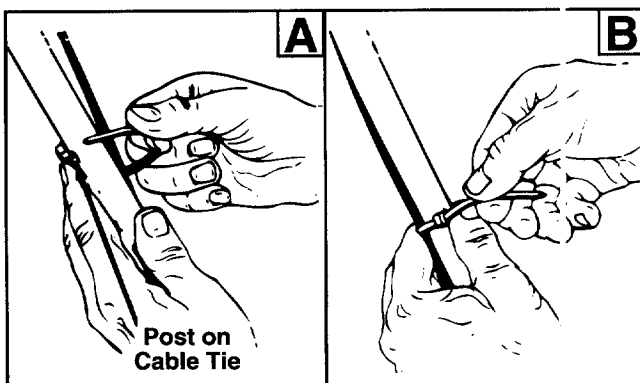


FIGURE 5.

ATTACHING THE UPPER HANDLE (Hardware B)

1. Place the upper handle in position over the lower handle. The hole in the side of the blade control handle (attached to the upper handle) must be on the **left** side.
- ← 2. Secure the upper handle to lower handle using the curved head bolts, split washers and hex nuts as shown in figure 2.

ATTACHING THE CONTROL BOX

One end of the throttle control cable and one end of the brake cable are attached to the engine. The other ends are attached to the control box. Attach the control box to the upper handle as follows.

- ← 1. Remove the truss machine screw and hex lock nut from the middle of the control box using a phillips screwdriver. Place your finger over the hex lock nut to hold it inside the control box so you can unscrew the truss machine screw.
2. Make certain the blade control handle is on **top** of the upper handle.
3. Route the control box (with cables attached) under the lower handle. Make certain the cables are not twisted.

NOTE: If the brake cable is not attached to the control box, insert the "Z" end of the cable into the control box as shown in figure 3. Push the plastic fitting until it locks into the control box.

4. Holding the control box near the left side of the upper handle (control box must be inside the handle), hook the "Z" end of the brake cable into the control handle from the **outside** to the **inside**. See figures 3 and 4.
- ← 5. Place the control box on the upper handle just below the end of the control handle as shown in figure 4. Secure with hardware removed in step one by placing hex lock nut into the indent on the inside of the control box. Screw the truss machine screw into the hex lock nut.

SECURING THE CABLES (Hardware D)

Secure the cables to the left side of the handle as follows.



WARNING: When attaching the control cables, the cables must be routed to avoid contact with all sharp edges and hot surfaces to prevent damage to the cables, which will render the controls inoperative.

- ← 1. Insert posts on cable ties into holes provided on the inside of the handle, one on the upper handle and two on the lower handle. The holes may be either on the inside or outside of the handles. See figure 5A.
2. Secure the cables with the cable ties. See figure 5B. Trim excess ends of cable ties.

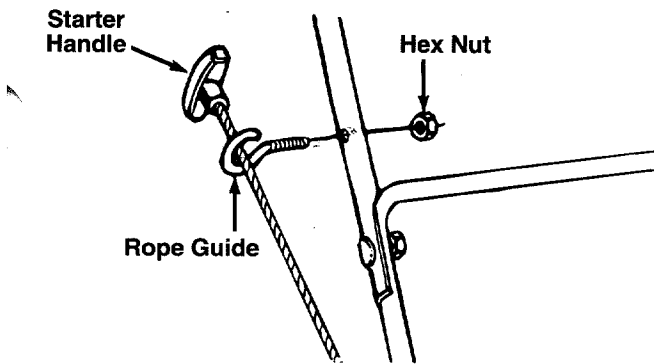


FIGURE 6.

ATTACHING THE STARTER ROPE (Hardware C)

1. The starter rope is inside the top of the engine. Additional rope may be wound around the starter handle. If so, unwind the rope from the handle.
2. With the spark plug wire disconnected and grounded, depress the blade control handle and pull the rope out of the engine.
- ← 3. Place the rope guide around the starter handle, so the opening in the rope guide is toward the front of the mower as shown. Insert the rope guide into the right side of the handle, and secure with hex lock nut.

INSTALLATION OF WHEELS (Hardware E)

The three holes provide three cutting heights for your mower. Use the same hole location for all four wheels when assembling. If wheels are to be assembled in the lowest cutting position (highest hole in the deck), refer to the note below.

- ← If your mower has two sets of holes (see figure 7), the front wheels must be assembled in one of the three holes nearest the front of the deck. The rear wheels must be assembled in one of the three holes nearest the rear of the deck.

To assemble the wheels: (See figure 7)

1. Place axle bolt through wheel.
2. Place one smaller cupped washer on axle bolt, with the cupped side of washer toward the deck (away from wheel).
3. Secure wheel to deck with one larger cupped washer on the inside of the deck (cupped side against the deck) and hex nut. Tighten securely.
4. Assemble the other wheels in the same manner.

NOTE: If the lowest cutting position (highest hole in the deck) is used, it is necessary to place the larger washer on the outside of the deck and the smaller washer on the inside.

FINAL ASSEMBLY OF MOWER

1. The chute deflector on your mower is held in an upright position by a block for shipping purposes only. This shipping block must be removed and discarded before the mower is put into operation. See figure 8.

← To remove the shipping block, move the spring-loaded chute toward the engine by pushing above the shipping block. Remove the block and carefully lower the chute into operating position, keeping fingers out of the way.

2. Make certain all nuts and bolts are tightened securely.

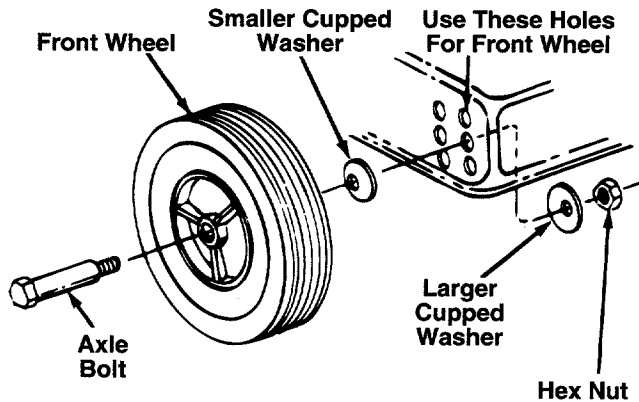


FIGURE 7.

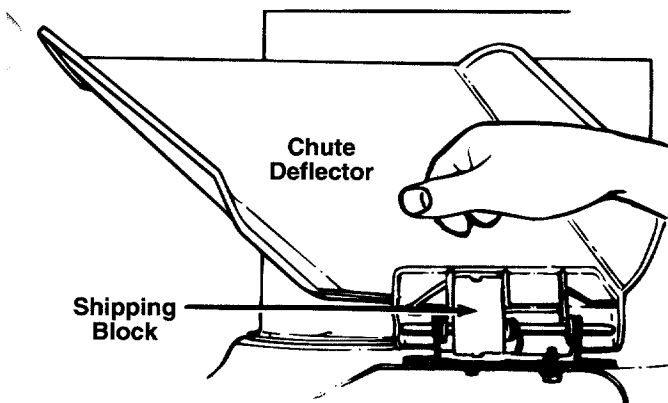


FIGURE 8.

CONTROLS

BLADE CONTROL HANDLE



WARNING: This control mechanism is a safety device. Never attempt to bypass its operations.

The blade control handle is located on the upper handle of the mower. See figure 9. The blade control handle must be depressed in order to operate the unit. Release the blade control handle to stop the engine and blade.



WARNING: The blade will be rotating whenever the engine is running.

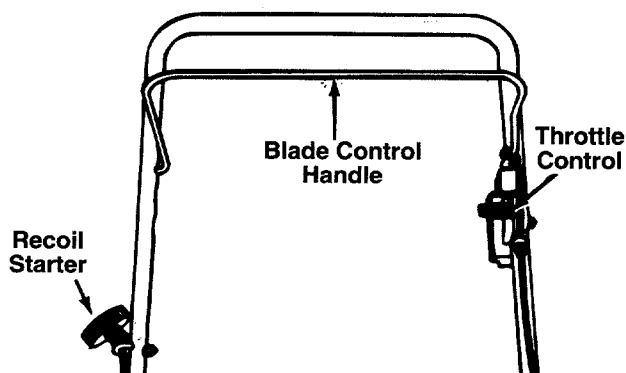


FIGURE 9.

THROTTLE CONTROL

The throttle control is located on the left side of the upper handle or on the engine. It is used to regulate the engine speed. The engine should be started with the engine in the FAST or START position.



WARNING: The throttle control cannot be used to stop the engine.

RECOIL STARTER

The recoil starter handle is attached to the handle. See figure 9. Stand behind the unit in the operating position to start the unit.

OPERATION



FIGURE 10.

Keep hands and feet away from the chute area on cutting deck. See figure 10.

The operation of any lawn mower can result in foreign objects being thrown into the eyes, which can result in severe eye damage. Always wear safety glasses or eye shields. We recommend wide vision safety mask for cover spectacles or standard safety glasses.



GAS AND OIL FILL-UP

Service the engine with gasoline and oil as instructed in the separate engine manual packed with your mower. Read instructions carefully.



WARNING: Never fill fuel tank indoors, with engine running or until the engine has been allowed to cool for at least two minutes after running.

TO START ENGINE AND ENGAGE BLADE:

1. Attach spark plug wire securely to spark plug.
2. Move the throttle control lever all the way forward.
3. Prime engine as instructed in the separate engine manual.
4. Standing behind the unit, depress the blade control handle and hold it against the upper handle as shown in figure 11.

5. Grasp starter handle and pull rope out slowly until engine reaches start of compression cycle (rope will pull slightly harder at this point). Let the rope rewind slowly.
6. Pull rope with a rapid, continuous, full arm stroke. Keep a firm grip on start handle. Return it slowly to the rope guide.
7. After engine starts, move throttle control lever to desired engine speed.

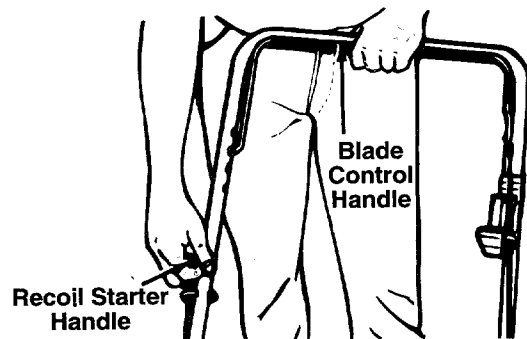


FIGURE 11.

NOTE: If any problems are encountered, refer to the Trouble Shooting Guide on page 11.

TO STOP ENGINE AND BLADE

1. Release the blade control handle to stop the engine and blade.



WARNING: The blade continues to rotate for a few seconds after the engine is shut off.

2. Disconnect the spark plug wire and ground it against the engine to prevent accidental starting while equipment is unattended.

USING YOUR ROTARY MOWER

Be sure that lawn is clear of stones, sticks, wire, or other objects which could damage lawn mower or engine. Such objects could be accidentally thrown by the mower in any direction and cause serious personal injury to the operator and others.

For best results, do not cut wet grass because it tends to stick to the underside of the mower, preventing proper discharge of grass clippings, and could cause you to slip and fall. New grass or thick grass may require a narrower cut.

The best mowing pattern is one that allows the clippings to discharge towards the uncut part of the lawn. This permits recutting of the clippings to further pulverize them. When cutting high weeds, discharge towards cut portion, then recut at right angles to first direction.

For a healthy lawn, never cut off more than one-third of the total length of the grass. Lawn should be cut in the fall as long as there is growth.

This mower is designed to be operated at full throttle to give you the best cut and do the most effective job of bagging the cut grass.



WARNING: If you strike a foreign object, stop the engine. Remove wire from spark plug, thoroughly inspect the mower for any damage, and repair the damage before restarting and operating the mower. Extensive vibration of the mower during operation is an indication of damage. The unit should be promptly inspected and repaired.

ADJUSTMENTS



WARNING: Do not at any time make any adjustment to lawn mower without first stopping engine and disconnecting spark plug wire.

CUTTING HEIGHT ADJUSTMENT

Adjustment may be made by removing and moving axle bolts to desired position. Cutting heights will be raised as axle bolts are moved to a lower hole and lowered as axle bolts are moved to a higher hole in the deck. All axle bolts must be mounted in the same relative position. Cupped washers must be assembled so that the cupped side of the washers are against the deck. Refer to figure 7.

THROTTLE CONTROL ADJUSTMENT

If the throttle control requires adjustment or if it has been replaced, adjust the throttle control as follows.

1. Remove the screw shown in figure 12. Remove the cable clamp from the cable.

NOTE: If you have a Tecumseh engine, simply loosen the screw shown in figure 12 so the cable will move freely beneath the clamp. It is not necessary to remove the screw and clamp completely.

2. Push the throttle control lever on the handle all the way forward as far as it will go, then back it off **one "click."** Make certain the throttle control lever remains in this position.
3. Push the control lever on the engine as far toward the rear of the engine as it will go. Secure the cable in this position with the cable clamp and screw.

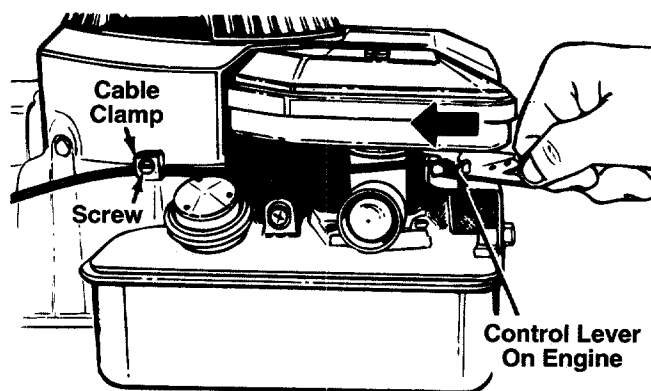


FIGURE 12A.—Briggs and Stratton Engine

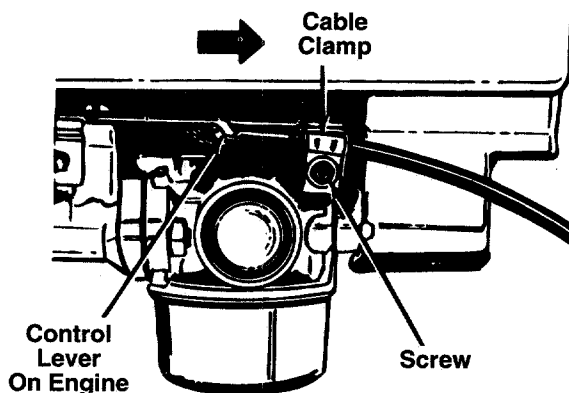


FIGURE 12B.—Tecumseh Engine

HANDLE HEIGHT ADJUSTMENT

The handle on your mower can be adjusted to two different height settings. Refer to the note on page 5 for instructions.

CARBURETOR ADJUSTMENTS



WARNING: If any adjustments are made to the engine while the engine is running (e.g. carburetor), keep clear of all moving parts. Be careful of heated surfaces and muffler.

Minor carburetor adjustment may be required to compensate for differences in fuel, temperature, altitude and load. Refer to the separate engine manual packed with your mower for carburetor adjustment information.

NOTE: A dirty air cleaner will cause an engine to run rough. Be certain air cleaner is clean and attached to the carburetor before adjusting carburetor.

LUBRICATION



WARNING: Always stop engine and disconnect spark plug wire before cleaning, lubricating or doing any kind of work on lawn mower.

Blade Control—Lubricate the pivot points on the blade control handle and the brake cable at least once a season with light oil. See figure 13. The blade control must operate freely in both directions.

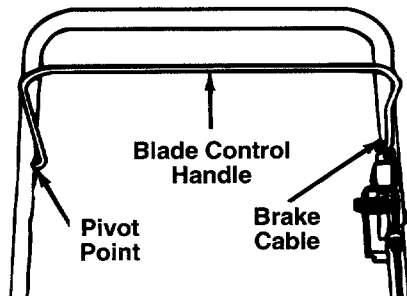


FIGURE 13.

Chute Deflector—The torsion spring and pivot point should be lubricated periodically with light oil to prevent any rust or binding. Deflector must work freely.

Wheels—The wheels require no lubrication. However, if the wheels are removed for any reason, lubricate the surface of the axle bolt and the inner surface of the wheel with light oil. Engine oil may also be used.

Engine—Follow engine manual for lubrication instructions.

MAINTENANCE



WARNING: Be sure to disconnect and ground the spark plug wire before performing any repairs or maintenance.

NOTE: When tipping the unit, empty the fuel tank and keep engine spark plug side up.

TROUBLE SHOOTING

Refer to page 11 of this manual for trouble shooting information.

CUTTING BLADE

When removing the cutting blade for sharpening or replacement, protect hands by using heavy gloves or a rag to grasp the cutting blade. Remove the bolt and bell washer which hold the blade and adapter to the engine crankshaft. Remove the blade and adapter from the crankshaft.

If the blade or blade adapter needs replacing, remove the two small bolts, lock washers and nuts which hold the blade to the adapter.



WARNING: Periodically inspect the blade adapter for cracks, especially if you strike a foreign object. Replace when necessary.

When sharpening the blade, follow the original angle of grind as a guide. It is **extremely important** that each cutting edge receives an equal amount of grinding to prevent an unbalanced blade. An unbalanced blade will cause excessive vibration when rotating at high speeds, may cause damage to the mower and could break, causing personal injury.

It is recommended that the blade always be removed from the adapter for the best test of balance.

The blade can be tested by balancing it on a round shaft screwdriver. Remove metal from the heavy side until it balances evenly.

Before reassembling the blade and the blade adapter to the unit, lubricate the engine crankshaft and the inner surface of the blade adapter with light oil. Lubricating the bolt holes, bolts and inner surface of the nuts with light oil is also recommended. Engine oil may also be used.

When replacing the blade, be sure to install the blade with the side of the blade marked "Bottom" (or with part number) facing the ground when the mower is in the operating position.

Blade Mounting Torque

Center Bolt: 450 in. lbs. min., 600 in. lbs. max.

Blade Adapter Bolts: 200 in. lbs. min., 350 in. lbs. max.

To insure safe operation of your unit, all nuts and bolts must be checked periodically for correct tightness.

DECK

The underside of the mower deck should be cleaned after each use to prevent a buildup of grass clippings, leaves, dirt or other matter. If this debris is allowed to accumulate, it will invite rust and corrosion, and may cause an uneven discharge of grass clippings at the next cutting.

The deck may be cleaned by tilting the mower and scraping clean with a suitable tool (make certain the spark plug wire is disconnected).

ENGINE

Refer to the separate engine manual for engine maintenance instructions.

Maintain **engine oil** as instructed in the separate engine manual packed with your unit. Read and follow instructions carefully.

Service **air cleaner** every 25 hours under normal conditions. Clean every few hours under extremely dusty conditions. Poor engine performance and flooding usually indicates that the air cleaner should be serviced. To service the air cleaner, refer to the separate engine manual packed with your unit.

The **spark plug** should be cleaned and the gap reset once a season. Spark plug replacement is recommended at the start of each mowing season; check engine manual for correct plug type and gap specifications.

Clean the engine regularly with a cloth or brush. Keep the cooling system (blower housing area) clean to permit proper air circulation which is essential to engine performance and life. Be certain to remove all grass, dirt and combustible debris from muffler area.

OFF-SEASON STORAGE

The following steps should be taken to prepare lawn mower for storage.

1. Clean and lubricate mower thoroughly as described in the lubrication instructions.
2. Refer to engine manual for correct engine storage instructions.

3. Coat mower's cutting blade with chassis grease to prevent rusting.
4. Store mower in a dry, clean area. Do not store next to corrosive materials, such as fertilizer.

NOTE: When storing any type of power equipment in an unventilated or metal storage shed, care should be taken to rust-proof the equipment. Using a light oil or silicone, coat the equipment, especially cables and all moving parts.

TROUBLE SHOOTING GUIDE

Trouble	Possible Cause(s)	Corrective Action
Engine fails to start	<ol style="list-style-type: none"> 1. Blade control handle disengaged. 2. Spark plug wire disconnected. 3. Throttle control lever not in FAST or START position. 4. Fuel tank empty, or stale fuel. 5. Blocked fuel line (if so equipped). 6. Faulty spark plug. 7. Engine flooded. 	<ol style="list-style-type: none"> 1. Engage blade control handle. 2. Connect wire to spark plug. 3. Move throttle lever to FAST or START position. 4. Fill tank with clean, fresh gasoline. 5. Clean fuel line. 6. Clean, adjust gap or replace. 7. Remove spark plug, dry the plug, and crank engine with plug removed and throttle in off position. Replace spark plug, connect wire and resume starting procedures.
Engine runs erratic	<ol style="list-style-type: none"> 1. Unit running in START position. 2. Spark plug wire loose. 3. Blocked fuel line (if so equipped) or stale fuel. 4. Vent in gas cap plugged. 5. Water or dirt in fuel system. 6. Dirty air cleaner. 7. Carburetor out of adjustment. 	<ol style="list-style-type: none"> 1. Move throttle lever to FAST position. 2. Connect and tighten spark plug wire. 3. Clean fuel line; fill tank with clean, fresh gasoline. 4. Clear vent. 5. Drain fuel tank. Refill with fresh fuel. 6. Clean air cleaner. † 7. Adjust carburetor. †
Engine overheats	<ol style="list-style-type: none"> 1. Engine oil level low. 2. Air flow restricted. 3. Carburetor not adjusted properly. 	<ol style="list-style-type: none"> 1. Fill crankcase with proper oil. 2. Remove blower housing and clean. † 3. Adjust carburetor. †
Occasional skip (hesitates) at high speed	<ol style="list-style-type: none"> 1. Spark plug gap too close. 2. Carburetor idle mixture adjustment improperly set. 	<ol style="list-style-type: none"> 1. Adjust gap to .030". 2. Adjust carburetor. †
Idles poorly	<ol style="list-style-type: none"> 1. Spark plug fouled, faulty or gap too wide. 2. Carburetor improperly adjusted. 3. Dirty air cleaner. 	<ol style="list-style-type: none"> 1. Reset gap to .030" or replace spark plug. 2. Adjust carburetor. † 3. Clean air cleaner. †
Excessive vibration	<ol style="list-style-type: none"> 1. Cutting blade loose or unbalanced. 2. Bent cutting blade. 	<ol style="list-style-type: none"> 1. Tighten blade and adapter. Balance blade. 2. Replace blade.
Mower will not discharge grass	<ol style="list-style-type: none"> 1. Engine speed too low. 2. Wet grass. 3. Excessively high grass. 	<ol style="list-style-type: none"> 1. Set throttle between 3/4 and full throttle. 2. Do not mow when grass is wet; wait until later to cut. 3. Mow once at a high cutting height, then mow again at desired height or make a narrower cutting swath (1/2 width).
Uneven cut	<ol style="list-style-type: none"> 1. Wheels not positioned correctly. 2. Dull blade. 	<ol style="list-style-type: none"> 1. Place all four wheels in same height position. 2. Sharpen or replace blade.

†Refer to separate engine manual packed with your unit.

Note: For repairs beyond the minor adjustments listed above, please contact your local authorized service dealer.

NOTE: The use of any accessory on this Rotary Mower other than those manufactured by the mower manufacturer is not recommended. GRASS CATCHER model 190-110 is available as optional equipment for the mowers shown in this manual.



WARNING: To reduce the risk of injury, do not operate mower unless rear trailing shield and guard or entire grass catcher is in its proper place.

NOTE: Under normal usage bag material is subject to wear and should be checked periodically. Be sure any replacement bag complies with the mower manufacturer's recommendations.

Model No.	-030	-040	-041	-042	-050	-051	-052	-060	-062
Grass Catcher	190-110-000	190-110-000	190-110-000	190-110-000	190-110-000	190-110-000	190-110-000	190-110-000	190-110-000
Mulching Kit	N/A	N/A	N/A	N/A	190-102-000	190-102-000	190-102-000	190-100-000	190-100-000
Engine Oil (SAE 30)	737-0208 (20 oz. req'd.)	737-0208 (20 oz. req'd.)	737-0208 (21 oz. req'd.)	737-0208 (20 oz. req'd.)	737-0208 (20 oz. req'd.)	737-0208 (21 oz. req'd.)	737-0208 (20 oz. req'd.)	737-0208 (20 oz. req'd.)	737-0208 (20 oz. req'd.)
Blade	742-0620	742-0620	742-0620	742-0620	742-0620	742-0620	742-0620	747-0622	742-0622
Blade Adapter Kit	753-0484	753-0484	753-0484	753-0484	753-0484	753-0484	753-0434	753-0484	753-0484
Throttle Cable	746-0842	746-0842	746-0842	746-0842	746-0842	746-0844	746-0842	746-0842	746-0842
Brake Cable	746-0550	746-0550	746-0550	746-0550	746-0550	746-0550	746-0552	746-0550	746-0550
Spark Plug	J19LM	J19LM	J19LM	J19LM	J19LM	J19LM	J19LM	J19LM	J19LM
Air Filter Element	See Your Engine Service Dealer.								

The only way to insure the performance of your product is to use original equipment parts and accessories, which are designed and engineered to exacting specifications. When you substitute, you take a chance on quality, reliability, safety and performance. Use original equipment parts—See your local service dealer.

**For Replacement Parts, Contact:
SERVICE DEPARTMENT • P.O. BOX 368022 • CLEVELAND, OHIO 44136-9722**

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