OWNER'S GUIDE

ASSEMBLY • OPERATION • MAINTENANCE • PARTS



21"
6 SPEED
CONVERTIBLE
ROTARY MOWER

Model Number 120-848R000

Important: Read Safety Rules and Instructions Carefully

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Dear Customer,

So often throughout the year we are all in a rush to meet our daily obligations.

However, we at MTD Products Inc are taking a quick moment out to say...

"Thank you for your business."

Sincerely, MTD PRODUCTS INC



INSTRUCTIONS GIVEN WITH THIS SYMBOL ARE FOR PERSONAL SAFETY. BE SURE TO FOLLOW THEM.

NOTE: The use of any accessory on this Rotary Mower other than those manufactured by the mower manufacturer is **not** recommended.



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 recommen lations.

For replacement bags, use only factory authorized replacement bag No. 764-0257.

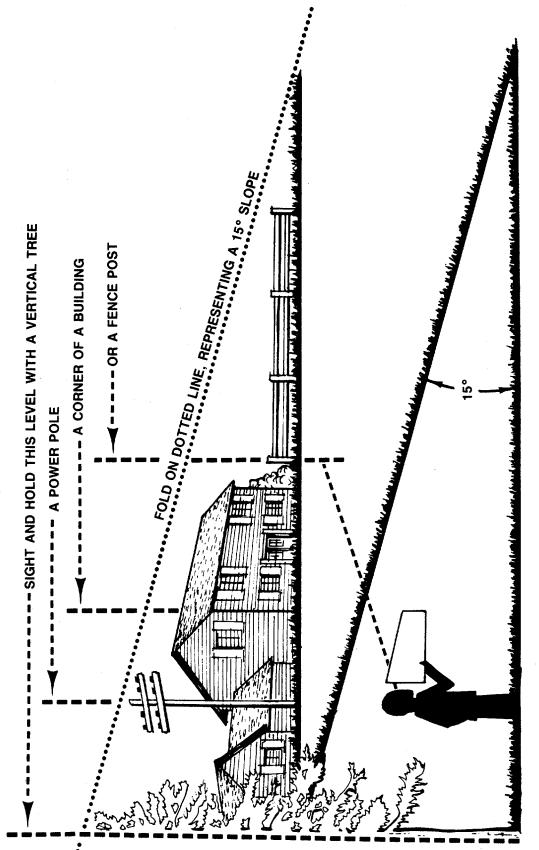
WARNING: This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester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

שוטות ושט

SLOPE GAUGE

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





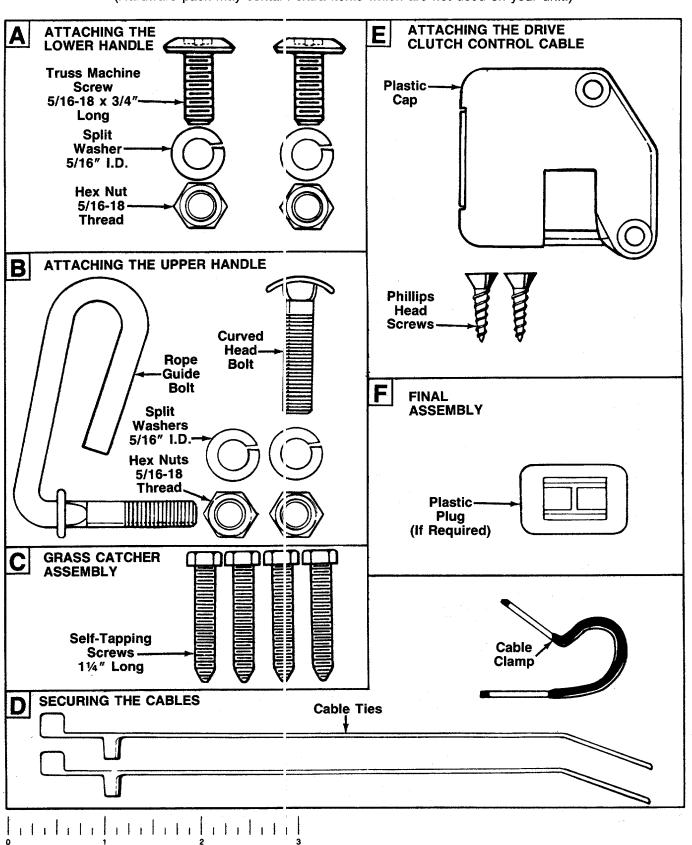
riding mower could overturn and cause serious injury. If operating a walk-behind mower on such a slope, it is Do not mow on inclines with a slope in excess of 15 degrees (a rise of approximately $2^{1/2}$ feet every 10 feet). A extremely difficult to maintain your footing and you could slip, resulting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

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



INCHES

IMPORTANT

RULES FOR SAFE OPERATION



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— A HEED ITS WARNING.





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

- 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.
- Your rotary mower is a precision piece of power equipment, not a plaything. Therefore, exercise extreme caution at all times.
- Never allow children to operate a power mower. 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 accidently thrown by the mower in any direction and cause serious personal injury to the operator or any others allowed in the area.



PREPARATION

- . 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.
- 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.
- Wéar sturdy, rough-soled work shoes and close-fitting slacks and shirts to avoid entanglement in the moving parts. Never operate a unit in bare feet, sandals, or sneakers.
- 4. Check the fuel 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 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.
- Never attempt to make a wheel or cutting height adjustment while the engine is running.
- Never operate the equipment 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. Mow 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

- Do not change the engine governor settings or overspeed the engine. Excessive engine speeds are dangerous.
- 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.
- 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.
- 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.
- Never operate mower without proper guards, plates or other safety protective devices in place.
- Do not operate this mower with the chute door open, unless the complete grass catcher or chute deflector is properly mounted on the mower.



MAINTENANCE AND STORAGE

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

ASSEMEILY 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) Phillips Head Screwdriver
- (1) 1/2" Wrench*
- (1) 7/16" Wrench*
- (1) Flat Blade Screwdriver
- *Or one 6" Adjustable Wrench.

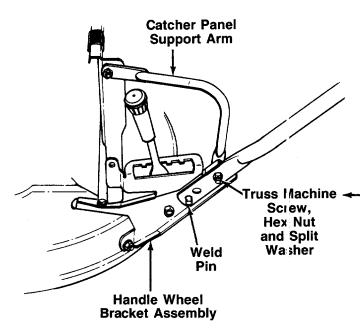


FIGURE 1.

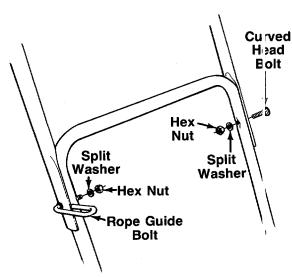


FIGURE 2.

UNPACKING

- 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.
- Disconnect and ground the spark plug wire by hooking it into the "V" slot on the engine. Check beneath the deck for any cardboard packaging. Remove if present.
- Stretch out all control cables 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.

ATTACHING THE LOWER HANDLE (Hardware A)

- For shipping purposes your mower is set with the wheels in the lowest cutting height position. Raise the mower to the highest setting for assembly of lower handle.
- On the left side of the mower, remove the truss machine screw, hex nut and split washer from the handle wheel bracket assembly as shown in figure
- 3. Attach the lower handle by placing the bottom holes in the lower handle over the weld pins on the handle wheel bracket assemblies.
- 4. Pivot catcher panel support arm in position as shown in figure 1. Insert truss machine screw through catcher panel support arm, wheel bracket assembly and handle. Secure using the split washer and hex nut removed in step 2. Tighten securely.
- 5. Secure the right side of the handle to handle wheel bracket assembly using truss machine screw, 5/16" split washer and hex nut. Tighten securely.

ATTACHING THE UPPER HANDLE (Hardware B)

1. Place the upper handle in position over the lower handle. The label on the throttle control housing and the control lever must be facing up.

NOTE: The right hand side of the handle will be secured with the rope guide bolt. However, left handed operators may assemble the rope guide bolt to the left side of the handle for easier starting by following steps 2 and 3 and reversing the left and right hand instructions.

- Secure the left hand side of upper handle using the curved head bolt, split washer and hex nut as —shown in figure 2.
- Insert the rope guide bolt through the right hand side of upper and lower handle from the outside in. Secure with split washer and hex nut, finger tight only.

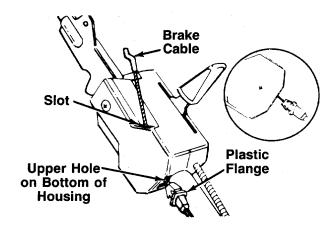


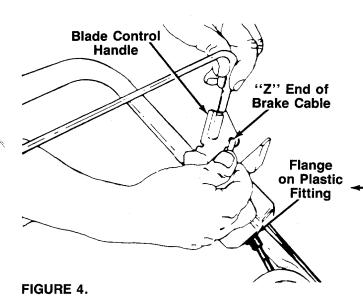
FIGURE 3.

ATTACHING THE BRAKE CABLE

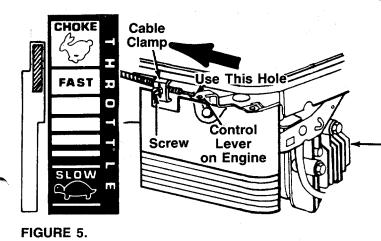
- 1. The brake cable is attached to the engine, and has a "Z" fitting on the loose end. Route the brake cable in back of the engine, to the outside of the height adjustment handle and handle mounting bracket, and below the lower handle. Place end of cable into the upper hole on the bottom of the control housing, and through the slot as shown. The angle of the plastic flange must be positioned downward as shown in figure 3. Be careful not to bend or kink the cable at any time.
- 2. Push the plastic fitting until it locks into the control housing.



WARNING: Brake cable must be assembled as shown for proper blade brake operation.



 Hook the "Z" end of the brake cable into the hole in the blade control handle from the inside to the outside as shown in figure 4.



ATTACHING THE THROTTLE CABLE

- 1. Push the throttle control lever on the handle all the way forward to CHOKE position. See figure 5.
- 2. The throttle control cable is attached to the upper handle. Route the throttle control cable under the lower handle. Route the cable to the **outside** of the handle wheel bracket assembly and height adjustment lever then in back of the engine. Hook the "Z" end of the throttle control cable into the hole in the control lever on the engine shown in figure 5.
- 3. Using a screwdriver, remove the screw and cable clamp shown in figure 5.
- 4. 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.

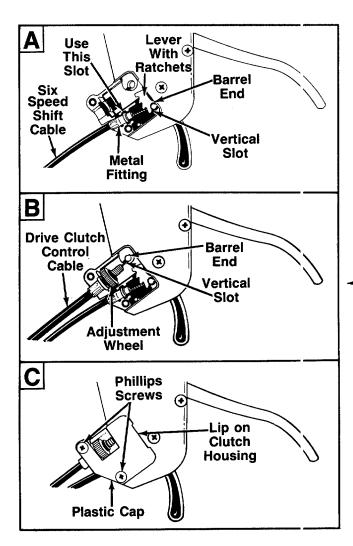
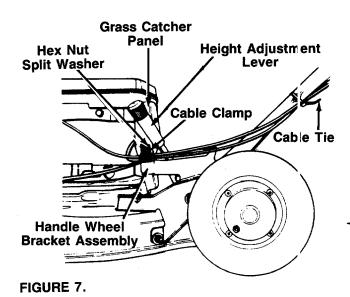


FIGURE 6.—Bottom View



ATTACHING THE SIX SPEED SHIFT CABLE AND DRIVE CLUTCH CONTROL CABLE (Hardware E)

Both the drive clutch cable and the six speed shift cable are attached to the deck. Attach both cables to the underside of the drive clutch control housing, located in the middle of the upper handle.

NOTE: The drive clutch cable is the cable with the adjustment wheel attached.

- 1. Place the shift lever (located on the bottom of the drive clutch housing) in 1st speed (slow) position.
- Route the six speed shift cable to the outside of the height adjustment handle and handle mounting bracket. Attach as follows.
 - a. Slide the barrel end of the six speed shift cable into the hole provided in the six speed shift lever—(lever with the ratchets). See figure 6A.
 - b. Slip the braided wire into the vertical slot as shown.
 - c. Slide the braided wire around in the horizontal slot.
 - d. Place the metal fitting on the end of the shift cable into the slot in the housing shown in figure
 6A. Hold the fitting in this position as you assemble the drive clutch control cable.
- 3. Assemble the drive clutch control cable as follows.
 - a. Slide the barrel end of the cable into the hole provided in the end of the drive clutch control lever. Slip the braided wire into the vertical slot as shown in figure 6B.
 - Slide the braided wire around in the horizontal slot.
 - c. Make certain the adjustment wheel is threaded onto the cable as far as possible as shown in figure 6B. Place the adjustment wheel into the clutch control housing.
- Secure the plastic cap to the clutch control housing using the two Phillips head screws. See figure 6C.



WARNING: Drive clutch adjustment must be checked before the unit is operated, as described in the operation section.

SECURING THE CABLES (Hardware D)

Attach the brake, throttle control and six speed shift cables to the left handle wheel bracket assembly as follows, using the cable clamp provided.

- 1. Open the clamp and slip the cables inside.
- Remove the hex nut and split washer from the side
 of the left handle wheel bracket assembly as
 —shown in figure 7. Attach the cable clamp to the
 left hand wheel bracket assembly as shown.
 Secure with hardware just removed.
- 3. Place the height adjustment lever in the lowest position.

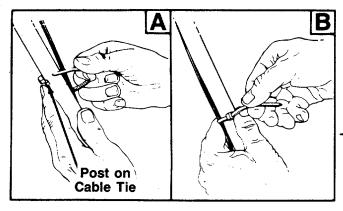


FIGURE 8.

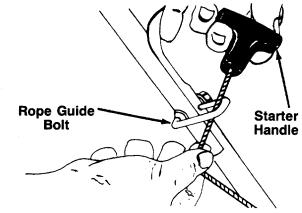


FIGURE 9.

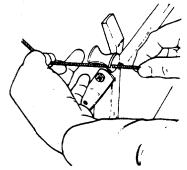


FIGURE 10.

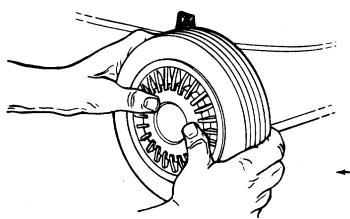


FIGURE 11.

Secure all the control cables to the left side of the handle with the cable ties as follows, taking the slack out of the cables so they do not contact the wheel.

- Insert posts on cable ties into holes provided on the lower handle, one near the top and one near the bottom of lower handle. The holes may be on either the inside or outside of the handle. See —figure 8A.
- Secure the cables with the cable ties. See figure 8B.
- 3. Trim excess ends of cable ties.

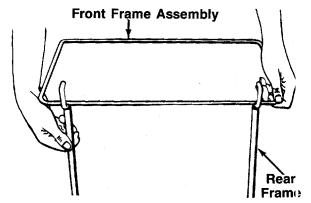
ATTACHING THE STARTER ROPE

- The starter rope protrudes from 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. Slip the starter rope into the rope guide bolt as shown in figure 9.
- 4. Tighten the hex nut on the rope guide bolt securely.

5. If not already assembled, slip the starter rope into the rope guide as shown in figure 10.

FINAL ASSEMBLY OF MOWER (Hardware F)

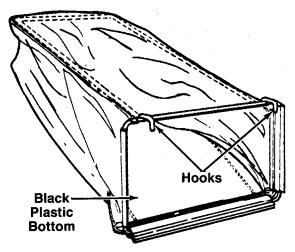
- 1. If plastic plug is needed and is not already assembled, insert plastic plug into hole in the top rear of the deck by slipping one end of plug into hole, then pressing down on the other end of plug. Use a soft hammer if necessary.
- 2. Place hub caps in position against the inner hub of the wheel. Press firmly around the center portion of hub cap in a circular motion, similar to installing a lid on a round, plastic container. See figure 11. The hub caps are flexible and will snap over the 3½" diameter wheel hubs.
- 3. Make certain **all** nuts and bolts are tightened securely.



GRASS CATCHER ASSEMBLY (Hardware C)

1. Join the rear frame and front frame assembly as ——shown in figure 12.

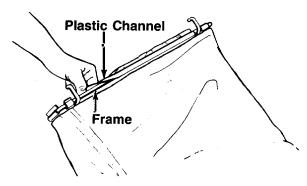
FIGURE 12.



NOTE: Make certain the grass bag is turned right side out before assembling (warning label will be on the outside).

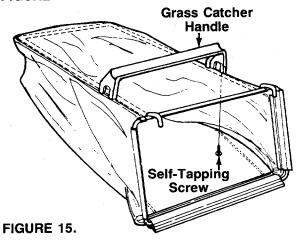
 Place the frame inside the grass catcher bag. The bottom of the grass bag is black plastic. The hooks on the front frame go toward the top of the bag.
 See figure 13.

FIGURE 13.



3. Secure front of bag to frame by working the plastic ——channels on bag over frame. See figure 14.

FIGURE 14.



Place the grass catcher handle in position on top
 of the grass bag and frame as shown in figure 15.
 Secure with four self-tapping screws.

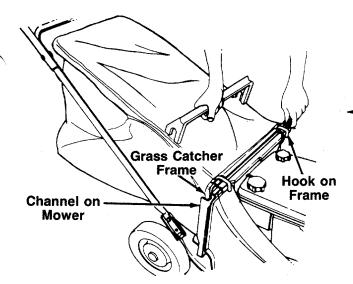


FIGURE 16.

TO ATTACH BAG TO MOWER

- 1. Hold the chute door on the catcher panel open as —shown in figure 16.
- Slide the frame of the grass catcher down into the channels on each side of the mower. The hooks on the frame go over the panel on the discharge chute. See figure 16.

To remove the grass catcher, lift the grass catcher straight up.

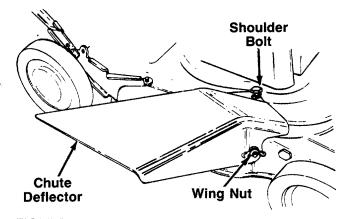


FIGURE 17.

TO CONVERT MOWER TO SIDE DISCHARGE

To convert your mower to a side discharge unit, proceed as follows.

- Remove the rear discharge chute assembly by removing two wing nuts. Lift up on the two bottom corners of the discharge chute assembly, and slide it off the deck.
- Attach the side chute deflector by first placing it over the rear bolt in the side of the deck. Then slide the notch in the top of the deflector around the shoulder bolt on top of the deck. Slide the notch in the side of the deflector around the front bolt in—the side of the deck. See figure 17.

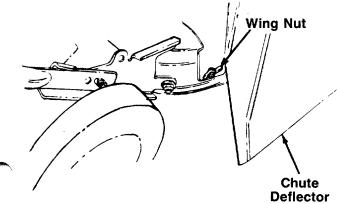


FIGURE 18.

 Secure the front of the chute deflector to the bolt on the side of the deck with one wing nut. See figure 17. Secure the back of the chute deflector in the same manner. See figure 18.

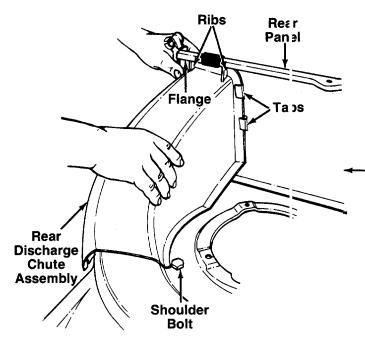


FIGURE 19.



WARNING: Never operate your unit without either the side chute deflector or entire rear discharge chute and grass catcher assembly in place.

To replace the rear discharge chute assembly, proceed as follows.

Slide the ribs on the discharge chute assembly under the flange on rear panel as you insert the side of the discharge chute under the two tabs. See figure 19.

The edge of the discharge chute assembly goes under the shoulder bolt on deck. Push down on the chute assembly, and slide the bottom corner slots over the bolts on side of deck.

Press down on the discharge chute assembly and secure with wing nuts. Make certain wing nuts are seated properly.

CONTROLS

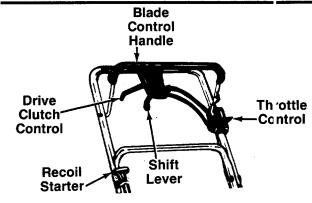


FIGURE 20.

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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 20. 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.

THROTTLE CONTROL

The throttle control is located on the left side of the upper handle. It is used to regulate the engine speed.



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

RECOIL STARTER

The recoil starter handle is attached to the handle. See figure 20. Stand behind the unit in the operating position to start the unit.

DRIVE CLUTCH CONTROL

Squeezing the drive clutch control engages the drive mechanism to the rear wheels. Releasing the clutch control stops the rear wheels from driving. Release the drive clutch control to slow down when negotiating an obstacle, making a turn or stopping. See figure 20.

SHIFT LEVER

The six speed shift lever is located on the drive clutch control housing on the upper handle. See figure 20. This lever is used to select the operating speed of the mower. Release the drive clutch control when changing speeds.

IMPORTANT: Move the shift lever ONLY when the engine is running. Shifting the speeds with the engine off can cause damage to the unit.

OPERATION



FIGURE 21.

Keep hands and feet away from the chute area on cutting deck. See figure 21.

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 over spectacles or standard safety glasses.

NOTE: For best results raise the cutting position until it is determined which height is best for your lawn. See cutting height adjustment section.

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.

BEFORE STARTING

 Before each use, check for proper drive clutch operation by performing the following before starting the engine:

With the drive clutch control released, push mower forward. It should move freely. Pull mower backward. It should move freely.

If it does not and the rear wheels tend to lock up, the clutch may not be releasing completely. Do not start the engine until corrections have been made. Check the control cable for severe bend, kinks and binding, or grass build-up in the pulley groove. Correct and adjust as required. Refer to adjustment section for additional information.

Attach spark plug wire to spark plug. Make certain the metal loop on the end of the spark plug wire (inside the rubber boot) is fastened securely over the metal tip on the spark plug. See figure 22.

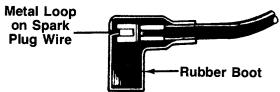


FIGURE 22.

 The fuel shut-off valve is located beneath the fuel tank. The fuel shut-off valve should be in the open position. See figure 23. Open fuel shut-off valve if it is closed.

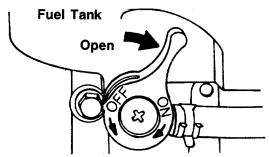


FIGURE 23.

TO START ENGINE AND ENGAGE BLADE

IMPORTANT: Move the shift lever only when the engine is running. Shifting the speeds with the engine off can cause damage to the unit. Disengage the drive clutch control when shifting speeds.



WARNING: When starting the unit for the first time, place mower in first speed (slow) position. Face the mower against a solid object such as a wall, fence, etc. Start the unit, and if it shows any signs of motion with the drive clutch control disengaged, shut the engine off immediately. Make certain the drive clutch control is adjusted so the drive belt is as loose as possible. Refer to the Adjustment Section.

- Move the throttle control lever to CHOKE position. (A warm engine may not require choking.)
- Standing behind the unit, depress the blade control handle and hold it against the upper handle. Make certain drive clutch control handle is released.

- 3. Grasp the recoil starter handle and pull back rapidly, extending rope fully. Return it slowly to the rope quide bolt.
- 4. After engine starts, move throttle control to FAST or desired engine speed.

NOTE: If any problems are encountered, refer to the Trouble Shooting Guide on page 22.



WARNING: Never operate your unit without either the side chute deflector or entire rear discharge chute and grass catcher assembly in place.

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.

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 accidently thrown by the rower in any direction and cause serious personal injury to the operator and others.

For the 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, thick grass or wet grass may require a narrower cut. Speed of the mower should be adjusted to the condition of the lawn.

When using the side discharge mower, 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 best results, cut off one-third or less 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 effect ve 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.

DRIVE CLUTCH CONTROL ADJUSTMENT

Use the adjustment wheel located on the underside of the clutch control housing to tighten the drive belt if mower does not self-propel with the drive clutch control engaged, or if drive belt is slipping (unit hesitates while engine maintains the same speed). See figure 24.

In addition, the adjustment wheel may also be used to determine the position in which the drive clutch control is engaged. If it is more comfortable to have the drive engaged with the lever further away from the handle, tighten the drive belt.

Make certain to retest the unit for neutral as instructed in the Operation Section. Move the adjustment wheel in the opposite direction to loosen the drive belt if necessary.

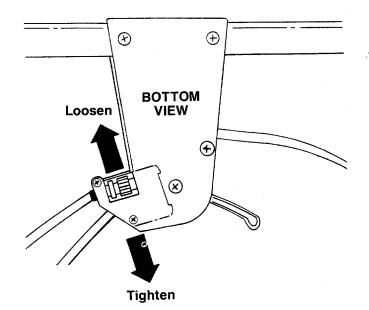
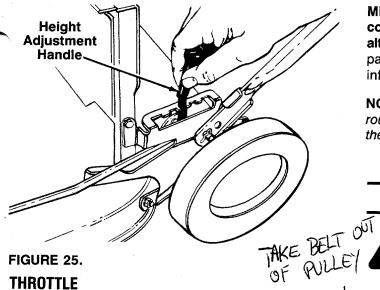


FIGURE 24.

CUTTING HEIGHT ADJUSTMENT

The height adjustment handle is located on the left side of the deck. The handle may be placed in one of nine cutting height positions. Push the handle to the left and then either forward to lower the cutting height or backward to raise the cutting height. See figure 25.

For rough or uneven lawns, move the height adjustment handle to a position which will give a higher cutting height.



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 27. The blade control must operate freely in both directions.

SELECTOR 6th SPD. **Brake** Cable **Point** FIGURE 27.

Wheels-Lubricate the wheel bearings at least once a season with light oil. Also, 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. A 4 oz. plastic bottle of light oil lubricant is available. Order part number 737-0170. Engine oil may also be used.

Engine-Follow engine manual for lubrication instructions.

Throttle—Periodically lubricate throttle control lever and throttle wire assembly with a few drops of light oil for ease of operation.

Transmission—The transmission is pre-lubricated and sealed at the factory. It does not require checking. If disassembled for any reason, fill with 2 ounces of Alvania grease, part number 737-0168.

THROTTLE

The throttle control wire assembly can be adjusted if necessary. Remove the screw and cable clamp shown in figure 5. Remove the cable from the clamp. Adjust as instructed in step 4 of "Attaching the Throttle Control Cable" in Assembly Instructions.

SIX SPEED SHIFT CABLE ADJUSTMENT VLACE

Periodic adjustment of the six speed shift cable may 1 N be required due to normal stretch and wear on the cable. Adjustment is needed if all six speeds cannot be obtained.

The adjustable cable bracket is located on the left side $v_{ij}^{\gamma\gamma}$ of the mower, beside the engine. To adjust, loosen the hex nut which secures the adjustable cable bracket. See figure 26. Pull backward on the bracket (toward the rear of the mower). Retighten the hex nut. Test the speeds on the mower (engine must be running).

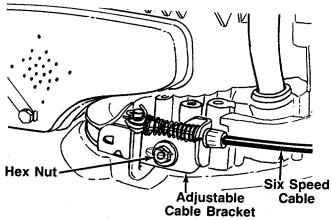


FIGURE 26.

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.

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 22 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 /ou 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 ard 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. A 4 oz. plastic bottle of light oil lubricant is available. Order part number 737-0170. Engine oil may also be used.

When replacing the blade, be sure to install the blade with the side of the blade marked "Bottor1" (or with part number) facing the ground when the rower is in the operating position.

Blade Mounting Torque

Center Bolt and Blade Adapter Bolts: 375 in. lb. min., 450 in. lb. 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 cliptings 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.

BELT REMOVAL AND REPLACEMENT

- Disconnect the spark plug wire and ground it against the engine.
- 2. Drain the fuel tank or place a piece of plastic beneath the cap to prevent gasoline leakage.
- 3. Remove the grass bag, rear discharge chute assembly and catcher panel.
- 4. Remove the transmission belt cover by removing three bolts. See figure 28.
- 5. Tip the mower on its side, and block securely.

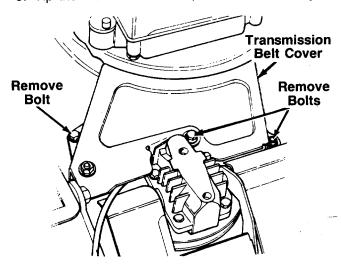


FIGURE 28.

- Remove the center bolt which secures the blade to the crankshaft. See figure 29. Remove the blade, blade adapter and pulley half. Remove the belt.
- Remove the inside belt guard by removing two selftapping screws. A 3/8" wrench is required. See figure 29.

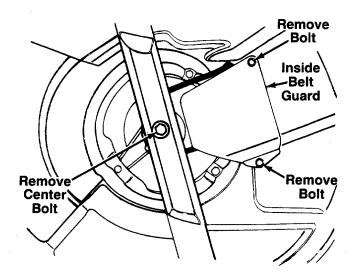


FIGURE 29.

- 8. Remove the belt from between the idler pulley and the belt guard on the idler pulley bracket. Refer to figure 31.
- 9. Remove the belt from the transmission pulley.
- 10. Assemble the new belt as follows.
 - A. Push the idler pulley up out of the way as shown in figure 30.
 - B. Slide the belt in from the rear of the deck, and place it around the transmission pulley. See figure 30.
 - C. Release the idler pulley so it falls down into position. Slide the belt in between the idler pulley and the belt guard on the idler pulley bracket as shown in figure 31.
 - D. Grease the crankshaft. Place belt between the two pulley halves, and reassemble the blade adapter and blade. Reassemble the inside belt guard.
 - E. Reassemble the transmission belt cover, following instructions in step 4 in reverse order.
- NOTE: When reassembling the transmission belt cover, be certain the belt guard on the transmission cover is approximately 1/8" away from the belt. Make certain to tighten all nuts and bolts securely. If plastic was placed under the gas cap, be certain to remove it.

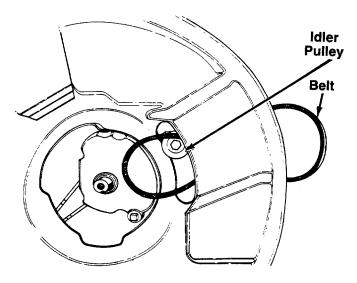


FIGURE 30.

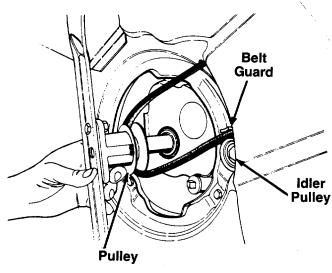


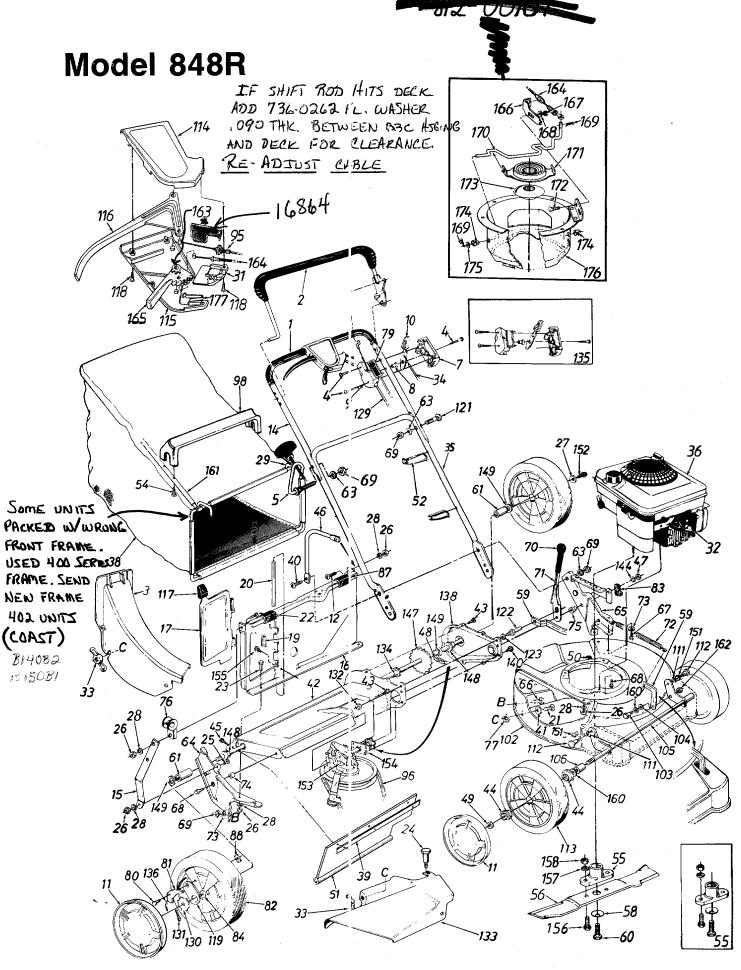
FIGURE 31.

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.
- Coat mower's cutting blade with chassis grease to prevent rusting.
- 4. Store mower in a dry, clean area.

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



Model 848R

PARTS LIST FOR MODEL 848R ROTARY MOWER

REF.	PARTS LIST FOR MODEL 848R ROTARY MOWER						
NO.	NO.	CODE	DESCRIPTION	REF NO.		CODE	DESCRIPTION
1			Foam Grip—2 Req'd. (Optional) Control Handle Ass'y.—L.H.	60	710-0757		Hex Bolt 7/16-20 x 1.5" Lg.
3 4			Rear Discharge Chute Ass'y. Truss Mach. Scr. #12 x 1.50"	61	748-0190		(Grade 5) Spacer .513" I.D. x .703"
			Lg.	63	736-0119		O.D. x .69" Lg. L-Wash. 5/16" I.D.*
5			Rope Guide Bolt		16136A		R.H. Handle Wheel Brkt. Ass'y.
7			Control Panel Half		16137B		L.H. Handle Wheel Brkt. Ass'y.
8			Control Disc Pin	66			Carriage Bolt 5/16-18 x .62" *
9	731-0816A		Clutch Panel Half	67			Hex Wash. Hd. B-Tap Scr.
10			Throttle Control Lever				5/16-18
11		N	Hub Cap	68	710-0654A		Hex Wash. Hd. TT-Tap Scr.
12	710-0946		Truss Mach. Scr. 1/4-20 x .62"			-	3/8-16
4.4	740 04004		Lg	69	712-0267		Hex Nut 5/16-18 Thd.*
	749-0439A		Upper Handle—Painted		720-0223		Grip
	16129A		Panel Support Brkt.	71	732-0606		Height Adj. Lever
17	16862 17095		Rear Catcher Panel Ass'y.	72	732-0362		Extension Spring .75" O.D.
	732-0483A		Rear Discharge Door				x 8" Lg.
	747-0514		Torsion Spring Pivot Pin	73			Bell-Wash. 5/16" I.D.
21	710-0134		Carriage Bolt 1/4-20 x .62"*	74	750-0736		Spacer
22	710-0255		Truss Mach. Scr. 1/4-20 x	75	750-0624		Shld. Spacer .500" Dia.
	7.10 0200		34" Lg.		719-0279		Rope Guide
23	710-0289		Hex Bolt 1/4-20 x .50" Lg.*	77	726-0233		Bolt Retainer 1/4 x .50" O.D.
24	738-0704		Shoulder Bolt .312 Dia. x	79	777-5812 738-0137		Control Label
			.18 Lg.—Special	Q1	748-0188B		Shld. Scr342" Dia. x .268
25	710-0258		Hex Bolt 1/4-20 x .62" Lg.*	82	734-1510	t2	Pawl
	712-0287		Hex Nut 1/4-20 Thd.*	83	726-0175	0	Wheel Ass'y. Comp.
27	736-0270		Bell-Wash. ¼" I.D.		741-0486B		Clamp
28	736-0329		L-Wash. 1/4" I.D.*		731-0880		Bearing ½" I.D. Panel Clip
			Front Grass Catcher Frame		712-0189		Flat Weld Nut 1/4-20 Thd.
	731-0906	N	S.P. Control Cover	95	746-0710		S.P. Cable
32	735-0639		Spark Plug Insulator		754-0343		"V"-Belt
	712-0388		Wing Nut w/Washer		731-0801		Bag Handle
	746-0674		Throttle Control Wire 61" BLK		16859	638	21" Deck Ass'y.
	749-0725		Lower Handle—Painted	103	738-0234		Shld. Bolt .5" Dia. x .295
36	704 0057		Engine_	104	736-0253		Bell-Wash515" I.D. x 1.0"
	764-0257 14835		Grass Bag				O.D.
	710-0323		Retaining Strip		16856		Front Axle Ass'y.
40	/10-0323		Truss Mach. Scr. 5/16-18 x .75"	106	711-0313		Sleeve .526" I.D. x .690"
41	736-0204		Lg.				O.D. x .880" Lg.
	17055B	638	FI-Wash344" I.D. x .62" Chain—Axle Ass'y.		736-0221		Intern. L-Wash. 3/8 I.D.*
	710-0352	000	Hex B-Tap Scr. ¼" x .38" Lg.		738-0705	_	Shld. Bolt .575" Dia. x .42
	741-0180		Flange Ball Bearing 1/2" I.D.	113	734-1513 X		Wheel Ass'y. Comp.
	710-0776A		Hex AB-Tap Scr. ¼ x .62"	114	731-0904	N	Self-Propelled Control Cover
	749-0778			116	731-0905	N	Self-Propelled Control Cover
	712-0296		Hex Patch L-Nut 3/8-24 Thd.		731-0620 720-0190		Control Lever
	713-0353		#48 Chain .500" Pitch x 30		710-0841		Door Grip
			Links	110	/10-0641		FI-"C"-Sunk Hd. Tap Scr.
	712-0346			119	16855	-	#10 x .75" Lg. Pawl Plate
	731-0564		Plug		710-0671		Curved Carr. Bolt 5/16-18 x
	731-0672A	İ	Rear Flap 3.75" x 17.30" Lg.				1.38" Lg.
	726-0240		Cable Tie	122	711-0805		Shid. Pin 3/8-24 x 1.43" Lg.
	710-1025		Hex AB Scr. #12 x 1.25" Lg.	123	736-0169	-	L-Wash. 3/8" I.D.*
	753-0485		Blade Adapter Kit	129	746- 0477A ¢	480A	Control Cable 48" Lg. 46" LG. Re
	742-0306A		21" Blade	130		prined	Ratchet Wheel 1.62" O.D.
							TIGOROUS TATIONS 1.02 (3.1)
58	736-0453 16863		Bell-Wash46" I.D.	131	714-0115 712-0711	`	Cotter Pin 1/8" Dia. x 1.00" Lg.*

Model 848R

PARTS LIST FOR MODE L 848R ROTARY MOWER (CONTINUED)

REF. NO.	PART NO.	CODE	DESCRIPTION	REF. NO.	PART NO.	CODE	DESCRIPTION
133	731-0884		Side Chute Deflector Ass'y.		712-0241		Hex Nut 3/8-24 Thd.
134	741-0522		Hex Flange Bearing		736-0108		Fl-Wash51" I.D. x .75" O.D.
135	753-0430		Kit—Control Housing Comp.		749-0764A		Rear Catcher Frame
136	10622B		Spring—Nylon		712-0266		Hex Jam Nut 3/8-16 Thd.
138			Chain Cover		713-0397	N	3 Tooth Rack Gear Insert
	710-0599		Hex Wash. S-Tap Scr. ¼-20	164	746-0706	N	Spd. Control Cable—50" Lg.
	. ,		x .50" Lg.	165	731-0924	N	6-Spd. Shift Lever_
144	736-0300		FI-Wash385" I.D. x .87"	166	17070	N	Adjustable Cable Brkt.
147			Rear Shaft Ass'y. 21.94" Lg.	167	712-0291		Hex Cent. L-Nut 1/4-20 Thd.
1	741-0324		Hex Flange Bearing .506" I.D. Plastic	168	736-0270	ļ	Bell-Wash265" I.D. x .75" O.D.
149	736-0160		Fl-Wash531" I.D. x .930"	169	714-0507		Cot-Pin 3/32" Dia. x .75" Lg.
	741-0491		Flanged Nyliner Brg.	170	747-0684	N	Shift Rod
	710-0751		Hex Bolt 1/4-20 x .62" Lg	171	741-0500 A	N	Movable Pulley Half Ass'y.
102	, 10 0, 0		(Grade 5)	172	710-0167		Carr. Boit 1/4-20 x .50" Lg.
153	717-0417B		Transmission Comp.	173	756-0503		Splined Pulley Half
130	71704170		(See Breakdown)	174	731-1137	N	Flanged Bushing
154	16500A		Hex Bearing Cup	175	736-0278		FI-Wash328" I.D. x .68" O.D.
	710-0429		Hex B-Tap Scr. #10 x .38	176	17073	N	Cable Mtg. Brkt. Ass'y.(HOUSING)
	710-1055		Hex Scr. 3/8-24 x 1.0" L ₃ .	177	732-0627	N	Shift Lever Spring
157			L-Wash. 3/8" I.D.				

^{*}For faster service obtain standard nuts, bolts and washers locally. If these items cannot be obtained locally, order by part number and size as shown on parts list.



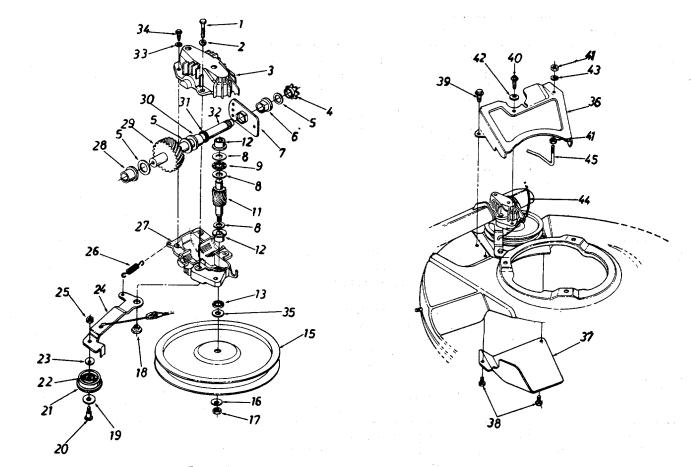
This instruction manual covers various models, and all specifications shown do not necessarily apply to your model. Specifications subject to change without notice or obligation.

CODE: N notates a new part (not previously existing). A three digit number is the color code. Specify color code as shown below if color or finish is important when ordering parts. [i.e., (part no.)-638 for Red Finish].

Color Codes

NOTE: The engine is not under warranty by the mower manufacturer. ...If repairs or service is needed on the engine, please contact you nearest authorized engine service outlet. Check the 'Yellow Pages' of your telephone book under "Engines—Casoline."

Model 848R



PARTS LIST FOR MODEL 848R ROTARY MOWER

REF. NO.	PART NO.	CODE	DESCRIPTION	REF.	PART NO.	CODE	DESCRIPTION
NO. 1 2 3 4 5 6 7 8 9 11 12 13 15 16 17 18 19 20	710-1062 726-0329 717-0418A 713-0400 736-0336 741-0413 16500A 736-0314 741-0479 717-1216 748-0208A 721-0212 756-0330A 736-0270 712-0351 738-0440 736-0344 738-0826 756-0558	N N	Hex Bolt ¼-20 x 1.25" Lg.* w/Patch L-Wash. ¼" I.D.* Upper Hsg. Half #48 Sprocket 7 Tooth x ½ Pitch FI-Wash. 5/8" I.D. x .030 Hex Flange Brg631" I.D. Hex Bearing Cup Thrust Wash382" I.D. x .70" O.D. Thrust Bearing .375" I.D. x .812" O.D. 11 Tooth Helical Gear Flange Bearing Oil Seal FI-Pulley 5.06" I.D.† Bell-Wash265" I.D. x .75"† Hex Nut ¼-28 L.H. Thd.† Shld. Spacer .375" Dia. x .170† FI-Wash390" I.D. x 1.0"† Shld. Bolt .375" Dia. x .40"† FI-Idler Plastic 1.50" Dia.†	NO. 24 25 26 27 28 29	NO. 17052A 712-0138 732-0357 717-0419A 741-0415 717-0422 741-0414 721-0213 738-0607 736-0722 710-0436 736-0410 17718 17064 710-0352 710-0599 710-0896 712-0287 736-0270 736-0329 746-0710 747-0549		Idler Brk't. Ass'y.† Hex Patch L-Nut ¼-28 Thd.† Extension Spring 1.12" Lg.† Lower Hsg. Half Flange Bearing .56 Dia. 33 Tooth Helical Gear Flange Bearing .629 Dia. Oil Seal .625 Dia. Gear Sprocket Shaft L-Wash. #10 I.D. Hex B-Tap Scr. #10 x .62" Hex Washer .26" x .88"† Transmission Belt Guard† Belt Cover Hex B-Tap Scr. ¼ x .38" Lg.† Hex AB-Tap Scr. ¼ x .50" Lg.† Hex AB-Tap Scr. ¼ x .62" Lg. Hex Nut ¼-20 Thd.*† Bell-Wash265" I.D. x .75"† L-Wash. ¼" I.D.*† S.P. Cable—48" Lg.† S.P. Belt Guard†
23	741-0556 736-0270	N	Needle Brg375" x .31"† Bell-Wash265" I.D. x .75"†	_	717-0417B	N	Transmission Comp.

Trouble Shooting Guide

Trouble	Possible Cause(s)	Corrective Action
Engine fails to start	 Blade control handle disengaged. Spark plug wire disconnected. Throttle contro lever not in CHOKE position. Fuel shut-off valve closed. Fuel tank empty, or stale fuel. Blocked fuel line. Faulty spark p ug. Engine flooded. 	 Engage blade control handle. Connect wire to spark plug. Move throttle lever to CHOKE position. Open fuel shut-off valve. Fill tank with clean, fresh gasoline. Clean fuel line. Clean, adjust gap or replace. 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	 Unit running ir CHOKE position. Spark plug wire loose. Blocked fuel line or stale fuel. Vent in gas cap plugged. Water or dirt in fuel system. Dirty air cleaner. Carburetor out of adjustment. 	 Move throttle lever to FAST position. Connect and tighten spark plug wire. Clean fuel line; fill tank with clean, fresh gasoline. Clear vent. Drain fuel tank. Refill with fresh fuel. Clean air cleaner.† Adjust carburetor.†
Engine overheats	 Engine oil level low. Air flow restric ed. Carburetor not adjusted properly. 	Fill crankcase with proper oil. Remove blower housing and clean.† Adjust carburetor.†
Occasional skip (hesitates) at high speed	Spark plug ga) too close. Carburetor idle mixture adjustment improperly set	Adjust gap to .030". Adjust carburetor.†
Idles poorly	 Spark plug fouled, faulty or gap too wide. Carburetor improperly adjusted. Dirty air cleanor. 	 Reset gap to .030" or replace spark plug. Adjust carburetor.† Clean air cleaner.†
Excessive vibration	 Cutting blade loose or unbalanced. Bent cutting blade. 	Tighten blade and adapter. Balance blade. Replace blade.
Mower will not discharge grass	 Engine speed too low. Wet grass. Excessively high grass. 	 Set throttle between 3/4 and full throttle. Do not mow when grass is wet; wait until later to cut. Mow once at a high cutting height, then mow again at desired height or make a narrower cutting swath (1/2 width).
Uneven cut	Dull blade.	Sharpen or replace blade.

†Refer to separate engine manual packed with your unit.

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

PARTS INFORMATION

POWER EQUIPMENT PARTS AND SERVICE

Parts and service are available through the authorized service firm: listed below. All orders should specify the model number of your unit, part numbers, description of parts and the quantity of each part rec uired.

BRIGGS AND STRATTON, TECUMSEH AND PEERLESS PARTS AND SERVICE

Briggs & Stratton, Tecumseh and Peerless parts and service should be handled by your nearest authorized engine service firm. Check the yellow pages of your telephone directory under the listing **Engines—Gasoline**, Briggs & Stratton or Tecumseh Lauson.

NOTE: If any parts are found to be missing or defective upon assembly of this unit, write to advise the factory so that immediate replacement can be made.

ARKANSAS Sutton's Lawn Mower Shop	NORTH LITTLE ROCK 5301 Roundtop Drive Box 368, Rt. 4 '2117	NORTH CAROLINA Dixie Sales Company OHIO
CALIFORNIA Billious	PORTERVILLE 75 North D Street 93257	Stebe's Mid-State Mo
COLORADO Spitzer Industrial Products Co	DENVER	Bleckrie, Inc
Spitzer industrial Products Co	Washington St30229	National Central
FLORIDA Radco Distributors	JACKSONVILLE 4909 Victor St.	Burton Supply Co
Small Eng. Dist	Box 5459	PENNSYLVANIA EECO Inc
ILLINOIS	LYONS 8615 Ogden Ave (i0534	Bluemont Co
INDIANA	ELKHART	Frank Roberts & Son
Parts & Sales Inc	2101 Industrial Pkwy. Box 2776516	Scranton Auto Ignitio
IOWA Power Lawn & Garden Equip.	DUBUQUE 5251 J.F. Kennedy 52001	TENNESSEE Ace Distributors
MARYLAND Center Supply Co	BELTSVILLE	Chilton Air Cooled Er
	#208	TEXAS Marr Brothers, Inc
	SPRINGFIELD 300 Birnie Ave(1107	UTAH Powered Products
MICHIGAN Power Equipment Dist	MOUNT CLEMENS 340 Hubbard48043	VIRGINIA RBI Corp
_	12795 16th Ave. North . 5441	WASHINGTON Equip. Northwest
MISSOURI Oscar Wilson Engine & Parts	EARTH CITY 4159 Shoreline Dr€3045 KANSAS CITY	WISCONSIN Wisconsin Magneto Ir
Automotive Equip. Service	3117 Holmes St(4109	
NEW YORK Gamble Dist., Inc.	CARTHAGE West End Ave. Box 389	Island Distribution Ce

NORTH CAROLINA Dixie Sales Company	BROWNS SUMMIT . 5920 Summit Ave 27214
OHIO Stebe's Mid-State Mower Supply	CARROLL Society Box 366, 71 High St 43112
Bleckrie Inc	CLEVELAND 7900 Lorain Ave 44102
	WADSWORTH
	. 687 Seville Rd 44281 YOUNGSTOWN
Burton Supply Co	. 1301 Logan Ave. Box 92944501
	HARRISBURG
	. 4021 N. 6th St 17110 PITTSBURGH
	. 11101 Frankstown Rd15235 PUNXSUTAWNEY
Frank Roberts & Sons	. R.D. 2
Scranton Auto Ignition Co	1133-35 Wyoming Ave18509
Ace Distributors	KNOXVILLE 2103 Magnolia37917
Chilton Air Cooled Engine	NASHVILLE . 319 4th Ave. S 37210
TEXAS Marr Brothers, Inc	DALLAS 423 E. Jefferson
UTAH Powered Products	SALT LAKE CITY . 1661 N. Beck St 84116
VIRGINIA RBI Corp	ASHLAND 101 Cedar Ridge Dr 23005
WASHINGTON Equip. Northwest	SEATTLE 1410 14th Ave98122
WISCONSIN Wisconsin Magneto Inc	MILWAUKEE 4727 N. Teutonia St 53209
PUERTO RICO Island Distribution Center	PAMEY 102 N. St

WARRANTY PARTS AND SERVICE POLICY

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The purpose of warranty is to protect the customer from defects in workmanship and materials, defects which are NOT detected at the time of manufacture. It does not provide for the unlimited and unnestricted replacement of parts. Use and maintenance are the responsibility of the customer. The manufacturer cannot assume responsibility for conditions over which it has no control. Simply put, if it's the manufacturer's fault, it's the manufacturer's responsibility; if it's the customer's responsibility.

CLAIMS AGAINST THE MANUFACTURER'S WARRANTY INCLUDES:

- 1. Replacement of Missing Parts on new equipment.
- 2. Replacement of Defective Parts within the warranty period.
- 3. Repair of Defects within the warranty period.

All claims MUST be substantiated with the following information:

- Model Number, Serial Number and/or Date Code of unit involved.
- 2. Date unit was purchased or first put into service.
- 3. Date of failure—Date Repaired.
- 4. Nature of failure-Correction.