

21" Self-Propelled Rotary Mower

Operating Manual

Model No. TMO-37478A



Montgomery Ward

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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 Montgomery Ward are taking a quick moment out to say . . .

"Thank you for your business."

Sincerely,

MONTGOMERY WARD



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

NOTICE: A data plate with the model number and serial numbers of your unit is located on the top rear of the deck. Record these numbers in the spaces provided on the back cover of this guide.

BEFORE YOU CALL SERVICE

Check Spark Plug Wire

- Firmly attached?
- Wire terminal clean?

Check Crankcase Oil Level

- Overfilled/underfilled?

Check Fuel Tank

- Fuel in tank?
- Fuel dirty or stale?
- Fuel shut-off valve closed?
- If tank has been empty for a long period, fill tank completely.

Check Air Cleaner

- Clean?
- Choke plate stuck?
- Governor spring free to move?

Check under Blade Housing (**Disconnect Spark Plug First**)

- Blade obstructed or bent?

Check Starting Instructions

- Read instruction manuals and labels for specific instructions.

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.

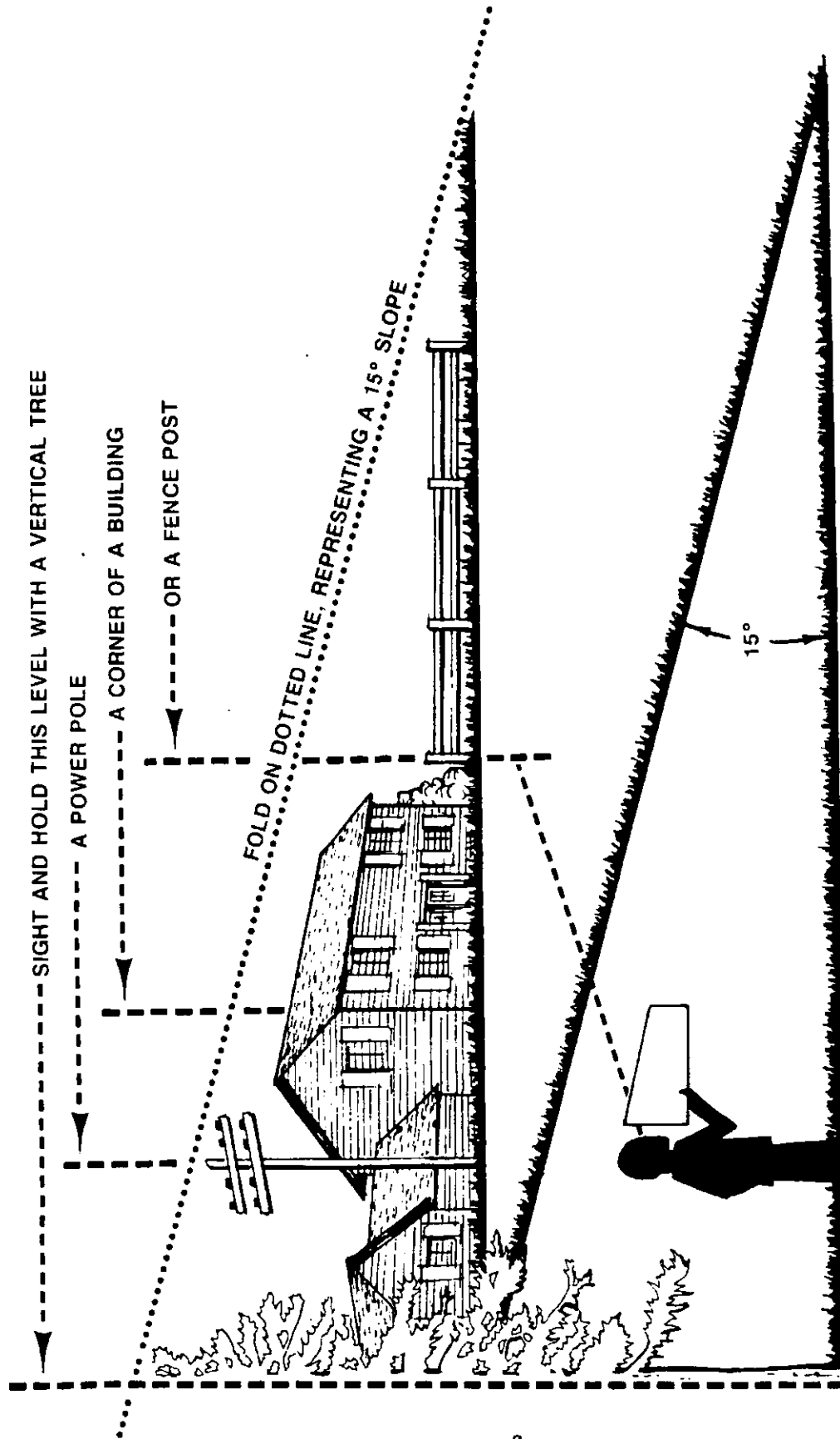
In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your nearest engine authorized service center.

SLOPE GAUGE

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

Cut Along This Line

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



Do not mow on inclines with a slope in excess of 15 degrees (a rise of approximately 2½ 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.

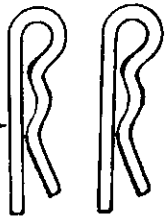
Operate RIDING mowers up and down slopes, never across the face of slopes.

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

CONTENTS OF HARDWARE PACK

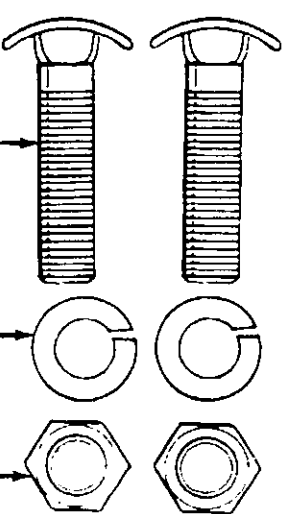
Remove this sheet from your owner's manual and lay the hardware on the illustration for identification purposes. After assembly, keep the Slope Gauge which is on the reverse side of this sheet for future use.
(Hardware pack may contain extra items which are not used on your unit.)

A ATTACHING THE LOWER HANDLE



Hairpin Clips

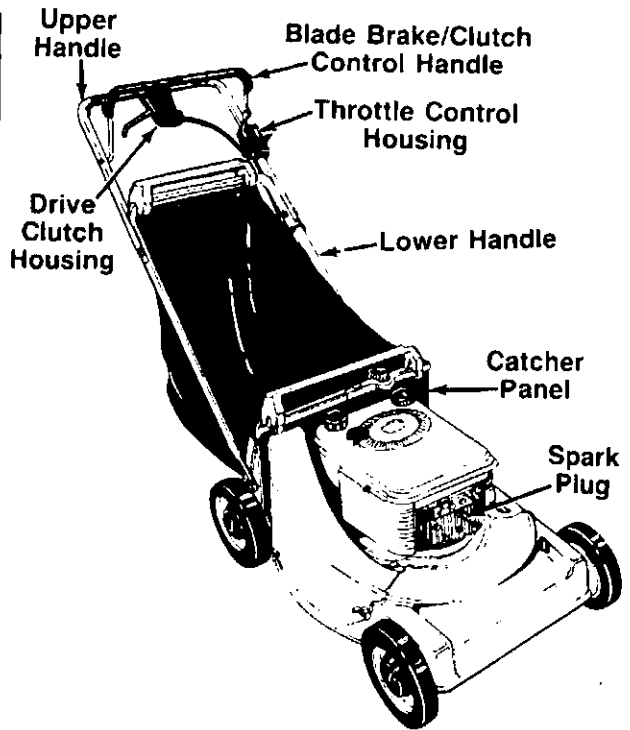
ATTACHING THE UPPER HANDLE



Curved Head Bolts

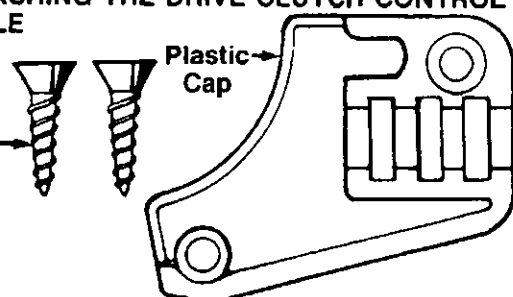
Split Washers 5/16" I.D.

Hex Nuts 5/16-18 Thread



PARTS INFORMATION

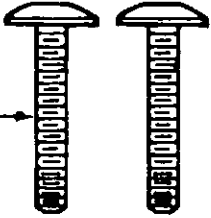
C ATTACHING THE DRIVE CLUTCH CONTROL CABLE



Phillips Head Screws

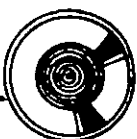
Plastic Cap

F ASSEMBLY OF GRASS CATCHER
(Upper Bag Support Is Not Shown)




Truss Machine Self-Tapping Screws

D ATTACHING THE BLADE BRAKE/CLUTCH CABLE



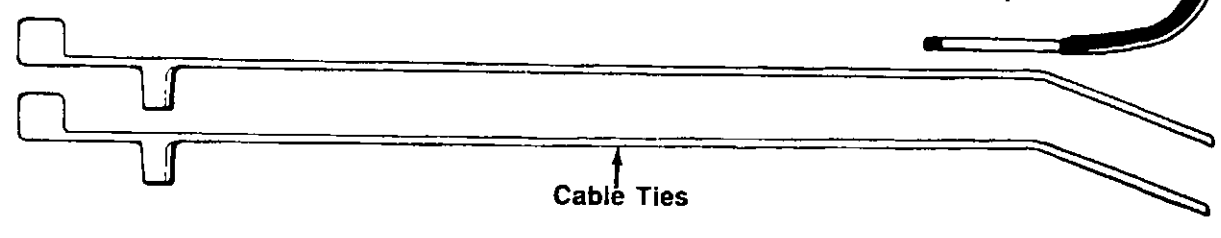
Push Cap

G FINAL ASSEMBLY
Hub Caps are Not Shown



Cable Clamp

E SECURING THE CABLES



Cable Ties


Cut Along This Line



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—  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

1. Read this owner's manual 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.
3. 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 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.
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 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.
7. Never attempt to make a wheel or cutting height adjustment while the engine is running.
8. 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.



OPERATION

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.
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. 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. Do not operate this mower with the chute door open, unless the complete grass catcher is properly mounted on the mower.



MAINTENANCE AND STORAGE

1. Check the blade and engine mounting bolts at frequent intervals for proper tightness
2. Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
3. 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.
4. To reduce fire hazard, keep the engine free of grass, leaves, or excessive grease.
5. Check the grass catcher bag frequently for wear or deterioration. For safety protection, replace only with new bag meeting original equipment specifications.

Rules for Safe Operation (Continued)

BLADE BRAKE/CLUTCH MAINTENANCE

NOTE: Any required repair work on the blade brake/clutch should be performed by an authorized service dealer. If you cannot locate an authorized service dealer, contact the manufacturer.

1. The blade brake/clutch hand control 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. This hand control must operate freely in both directions.
2. Striking a solid object can cause damage to the blade brake/clutch or to the engine crankshaft. Extensive vibration of the mower during operation is an indication of damage and the unit should be promptly inspected and repaired.

3. A leak in the lower engine crankshaft oil seal could expose the blade brake/clutch friction pads to excess oil resulting in blade or brake slippage, which could increase the stopping time of the blade. Oil collection on the floor beneath the mower during storage may be an indication of an oil seal leak. The unit should be checked by an authorized service dealer.
4. Periodically inspect the inner control cable in the area where it attaches to the hand control. If the cable becomes frayed, it could cause the blade brake/clutch to operate improperly. Also, be careful to avoid pinching the blade brake/clutch control cable when storing the handle.

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. Refer to parts identification illustration on page 4 for location of parts when assembling the mower.

ASSEMBLY INSTRUCTIONS

Tools Required for Assembly

- (1) Pair of Pliers
 - (1) Phillips Head Screwdriver
 - (1) 1/2" Wrench*
 - (1) 5/16" Wrench or Nutdriver*
 - (1) 7/16" Wrench*
- *Or one 6" Adjustable Wrench.

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. Check beneath the deck for any cardboard packaging. Remove if present.
3. 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)

1. 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.
2. Attach the lower handle by placing the bottom holes in the lower handle over the weld pins on the handle wheel bracket assemblies on the rear of the deck. Make certain the instruction label on the lower handle can be read from the operating position.
3. Using a pair of pliers, squeeze one leg of the lower handle against the handle wheel bracket assembly. Insert the hairpin clip into the **inner** hole on the weld pin. See figure 1. Repeat on other side.

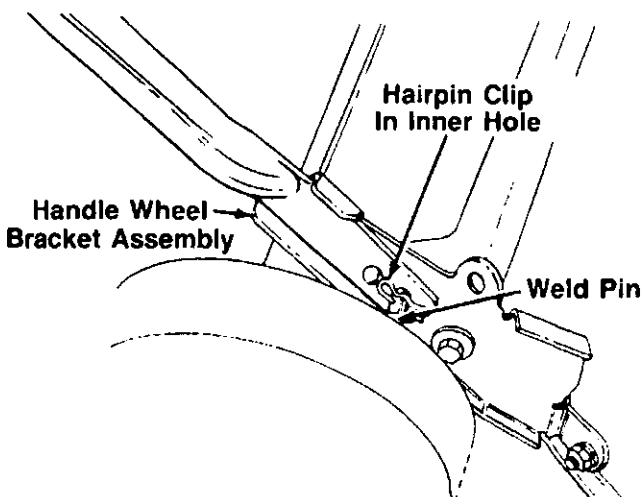


FIGURE 1.

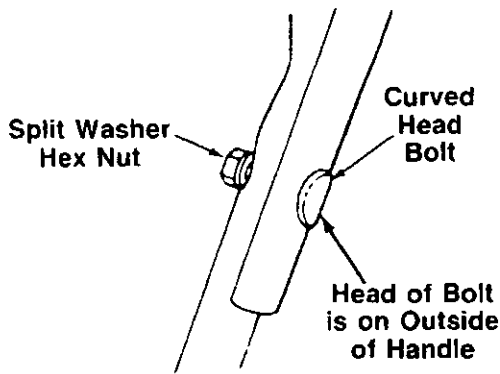


FIGURE 2.

ATTACHING THE UPPER HANDLE (Hardware B)

Place upper handle in position over lower handle. The label on the throttle control housing and the control lever must be facing up. Secure upper handle with two curved head bolts, split washers and hex nuts. See figure 2.

← figure 2.

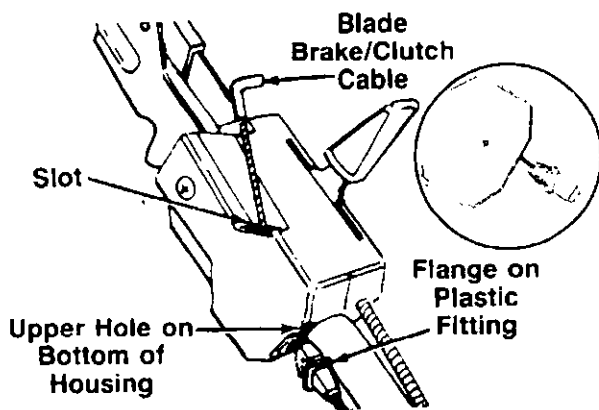


FIGURE 3.

ATTACHING THE BLADE BRAKE/CLUTCH CABLE (Hardware D)

The blade brake/clutch cable is the cable which has an "L" fitting on the loose end, and is attached to the blade brake/clutch underneath the deck.

1. Route the blade brake/clutch cable to the outside of the catcher panel and height adjustment lever, and under the lower handle. Place end of cable into the upper hole on the bottom of the control housing, and through the slot on the side of the housing 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 flange until it locks into the control housing.

←



The cable must be assembled as shown for proper blade brake/clutch operation.

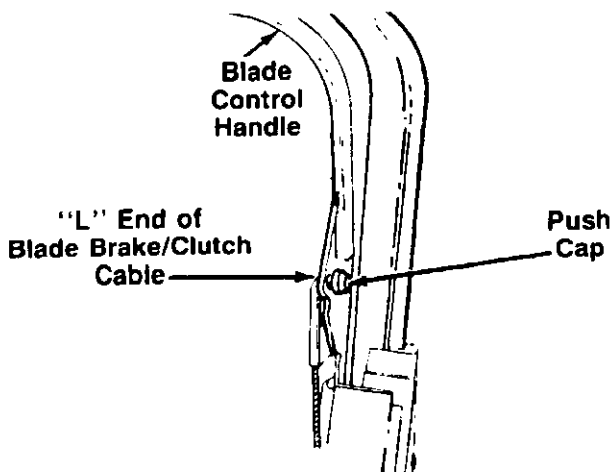


FIGURE 4.

3. Insert the "L" end of the blade brake/clutch cable into the hole in the blade brake/clutch control handle, from the inside to the outside as shown in figure 4. Hold the end of the cable, and press push cap on by hand.

←

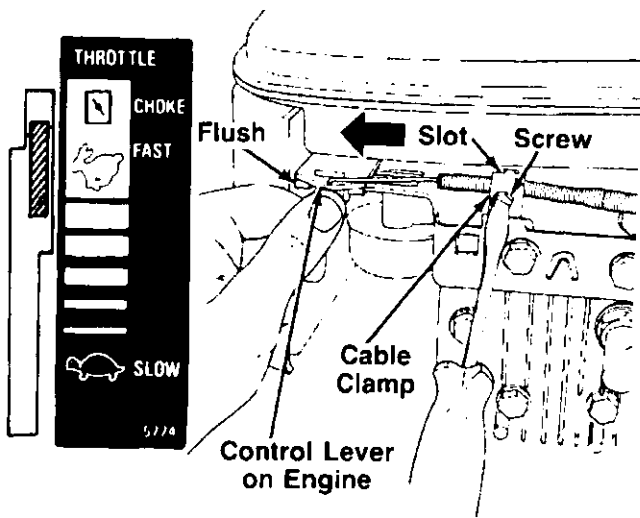


FIGURE 5.

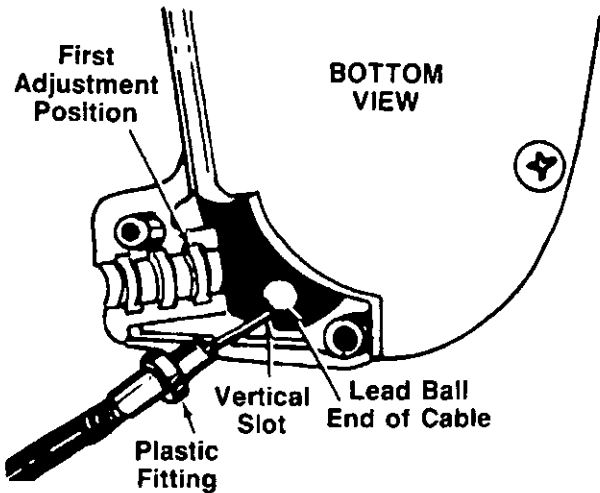


FIGURE 6.

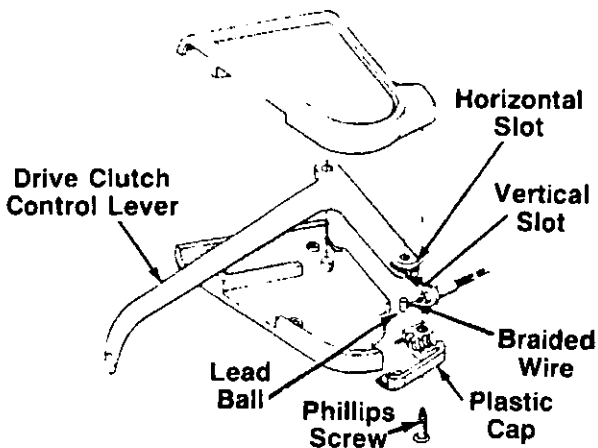


FIGURE 7.

ATTACHING THE THROTTLE CABLE

1. Push the throttle control lever on the handle all the way forward to CHOKE, then back it off two "clicks" (approximately 5/16"). See figure 5.
2. The throttle control cable is attached to the upper handle. Route the throttle control cable to the outside of the height adjustment lever and catcher panel. Hook the "Z" end of the throttle control cable into the hole in the control lever on the engine. See figure 5.
3. Using a 5/16" wrench or nutdriver, remove the screw on the cable clamp shown in figure 5. Slip the control cable under the clamp. Replace the screw (cable should be above the screw), but do not tighten screw (cable must still move freely beneath the clamp). Make certain the tab on the cable clamp is seated into the slot on the engine.
4. Push the control lever on the engine as far toward the **outside** of the engine as it will go. The edge of the control lever should be flush with the bracket on the engine. See figure 5. Hold the control lever in this position as you tighten the screw on the cable clamp to secure the throttle cable.
5. Loosen the screw on the clamp on the side of the engine. Slip the cable casing under the clamp to secure the cable **away from the muffler**. Be careful not to bend or kink the cable. Tighten the screw.

ATTACHING THE DRIVE CLUTCH CONTROL CABLE (Hardware C)

The drive clutch control cable is attached to the deck. Attach the cable to the lever in the clutch control housing, located in the middle of the upper handle, as follows.

1. Place the lead ball end of the cable into the fitting provided in the end of the clutch control lever. Slip the braided wire into the vertical slot as shown in figure 6.
2. Slide the braided wire around in the horizontal slot. See figure 7.
3. Place the plastic fitting on the control cable into the first adjustment position in the clutch control housing. See figure 6.
4. Secure the plastic cap to the clutch control housing using the two Phillips head screws. See figure 7.



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

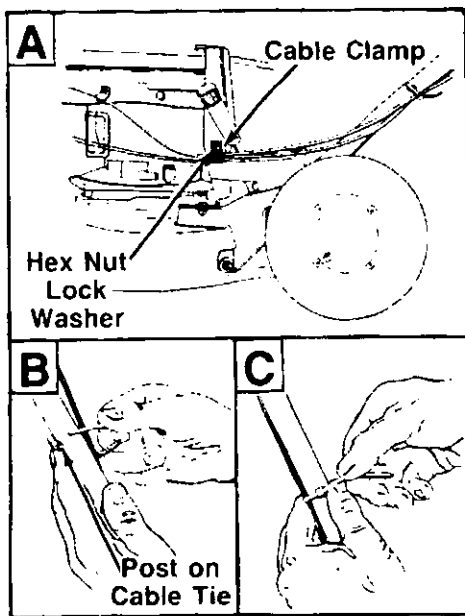


FIGURE 8.

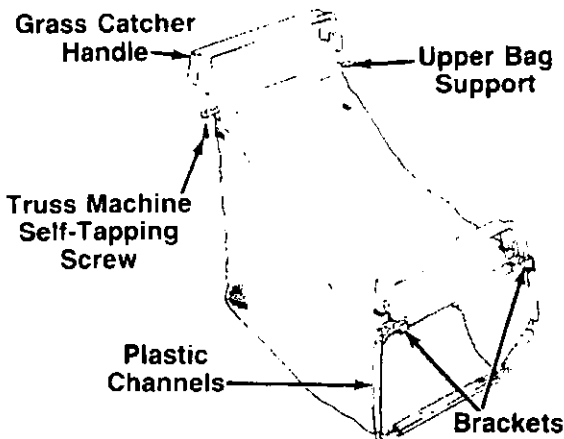


FIGURE 9.

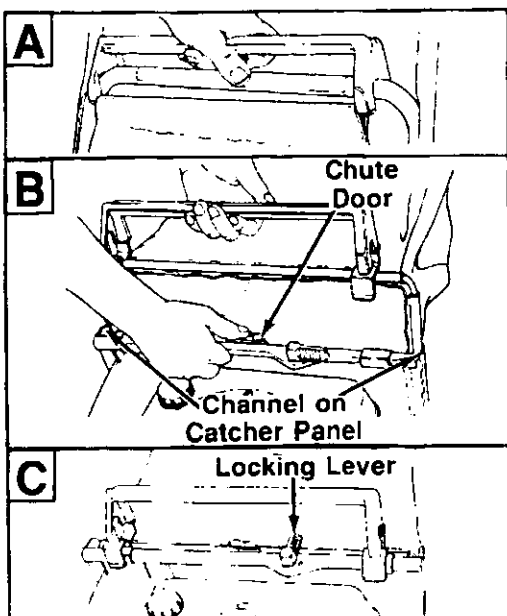


FIGURE 10.

SECURING THE CABLES (Hardware E)

Secure all cables to the grass catcher panel and lower handle as follows.

- A. Open the cable clamp provided in your hardware pack, and slip the cables inside. Remove the upper hex nut and lock washer from the side of the catcher panel. Attach cable clamp as shown in figure 9A. Secure with lock washer and hex nut.
- B. Place the height adjustment lever in the lowest position. Insert posts on cable ties into holes provided on the left side of lower handle, one near the top and one near the bottom of the handle. The holes may be on either the inside or outside of the handle. See figure 9B.
- C. Secure the cables with the cable ties, making certain to take the slack out of the cables so they do not contact the wheel. See figure 9C.
- D. Trim excess ends of cable ties.

ASSEMBLY OF GRASS CATCHER (Hardware F)

1. Place bag over frame (black plastic side is the bottom of bag). Handle on frame goes to the top of bag. Brackets hook toward the front. See figure 9.
2. Secure bag to frame by slipping plastic channels on bag over frame. See figure 9.
3. Insert the upper bag support into the pocket on the rear of the bag. Place grass catcher handle on top of grass catcher support as shown in figure 9. The handle should hook toward the rear of the bag as shown in figure 9. Secure with two truss machine self-tapping screws.

TO ATTACH BAG TO MOWER



DO NOT operate the mower unless the complete grass catcher or side chute deflector is properly mounted on the mower.

1. Hook the handle on the rear of the grass catcher over the lower handle of the mower. See figure 10A.
2. Hold the chute door on the catcher panel open as shown in figure 10B.
3. Slide the frame of the grass catcher down into the channels on the catcher panel. The top portion of the frame goes over the catcher panel.
4. Secure the grass catcher by turning the locking lever to the locked position as shown in figure 10C.

To remove the grass catcher, turn the locking lever to the unlocked position, unhook the rear handle and lift the grass catcher straight up.

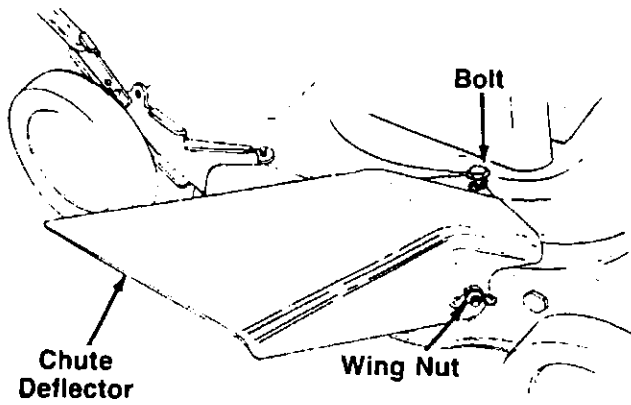


FIGURE 11.

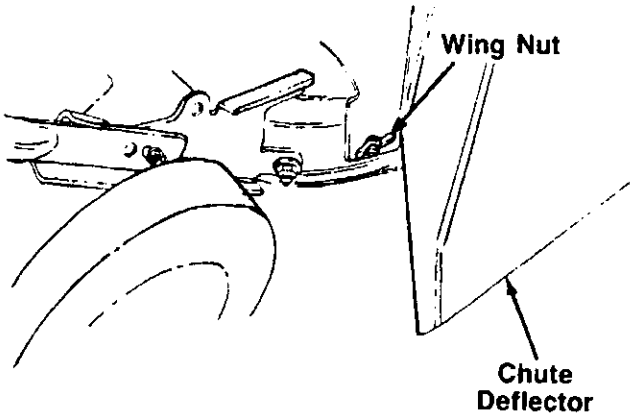


FIGURE 12.

TO CONVERT MOWER TO SIDE DISCHARGE

To convert your mower to a side discharge unit, remove only the grass bag and top discharge chute, and assemble the side chute deflector. It is not necessary to remove the catcher panel and brackets.

To remove the top discharge chute, proceed as follows. See figures 11 and 12.

1. Remove the wing nuts on the side of the deck.
2. Lift up on the front edge of the discharge chute, then slide it toward the side, removing it from the bolts in the side of the deck.
3. Attach the side chute deflector by first placing it over the rear bolt in the side of the deck, then over the front bolt and sliding it into position, with shoulder bolt on deck in notch on deflector. Secure with wing nuts.

FINAL ASSEMBLY OF MOWER (Hardware G)

1. Attach hub caps to the wheels by lining up the hub caps with the wheels. Push to lock in position.
2. Make certain all nuts and bolts are tightened securely.

CONTROLS

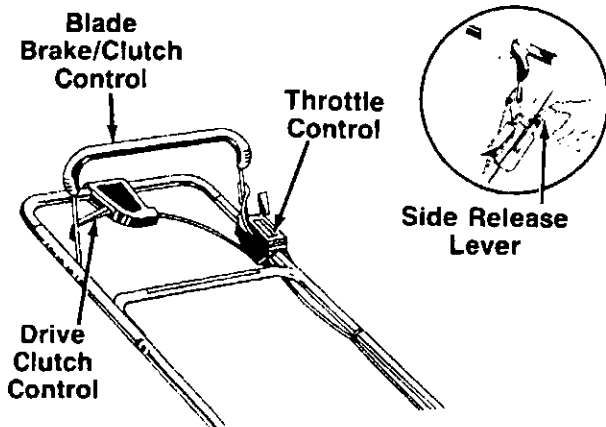


FIGURE 13.

THROTTLE CONTROL

The throttle is located on the left side of handle. It controls engine speed. See figure 13.

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 13.

BLADE BRAKE/CLUTCH CONTROL

WARNING
THIS CONTROL MECHANISM IS A SAFETY DEVICE NEVER ATTEMPT TO BYPASS ITS OPERATIONS

The blade brake/clutch control is located on the upper handle of the mower. The blade brake/clutch handle engages and disengages the blade.

To engage the blade, pull the side release lever away from the unit. See figure 13. Pull the blade brake/clutch control handle against the upper handle. Release side lever.

Release the blade brake/clutch control handle to stop the blade from turning.

OPERATION



FIGURE 14.

Keep hands and feet away from the chute area on cutting deck. See figure 14.

NOTE

For shipping purposes your mower is set with the wheels in a low cutting height position. 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.

NOTE

Your unit has been shipped without oil; however, a small amount of oil may be present from the factory. Do not overfill.



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.

TO START ENGINE



When starting the unit for the first time, 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. Check the position of the drive clutch control cable. The plastic fitting must be assembled in the first adjustment position inside the housing, all the way to the right, as shown in figure 6.

1. 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 15.

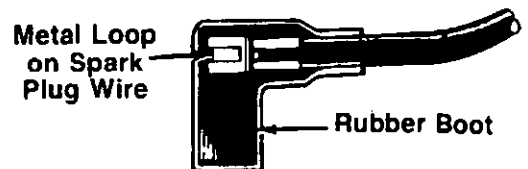


FIGURE 15.

2. The fuel shut-off valve is located beneath the fuel tank. The fuel shut-off valve should be in the open position. See figure 16. Open fuel shut-off valve if it is closed. It may be necessary to remove the discharge chute.

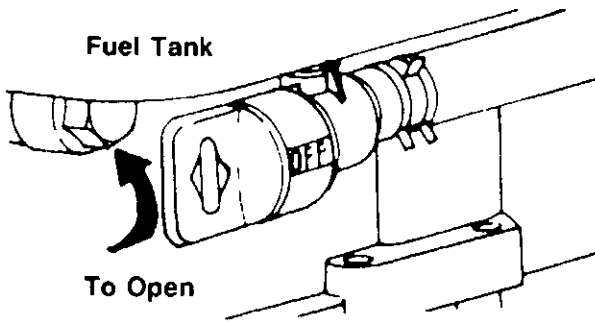


FIGURE 16.

3. Move throttle control lever to CHOKE position.

NOTE

A warm engine may not require choking.

4. With the blade brake/clutch handle **released**, crank engine by pulling recoil starter with a quick firm pull. Do not pull out so far that rope stops with a jerk as this will cause rope failure. Do not allow rope and handle to snap back into place.
5. After engine starts, move throttle control to desired engine speed.

TO STOP ENGINE

1. Move throttle control lever to STOP position.
2. Disconnect spark plug wire from spark plug and ground against the engine to prevent accidental starting while equipment is unattended.

NOTE

If any problems are encountered, refer to the Trouble Shooting Chart on page 22.



Never operate your unit without either the side chute deflector or entire top discharge chute and catcher panel assembly in place.

TO ENGAGE THE BLADE

1. Start engine as instructed previously. Allow the engine to warm up for **one minute** before attempting to engage the blade.
2. To engage the blade, pull the side release lever away from the unit. Pull the blade brake/clutch control handle down against the upper handle. Release the side lever. See figure 13.

NOTE

If a warm engine falters or stalls when attempting to engage the blade, refer to Carburetor Adjustment Section of this owner's manual.

3. Release the blade brake/clutch control handle to stop the blade from turning.

NOTE

Always release the blade brake/clutch control handle before stopping the engine. If the engine begins to stall, release the blade brake/clutch control handle immediately.

Should the engine stall with the blade brake/clutch control in the operating position (control handle **not** released), difficulty may be encountered in pulling the starter rope to restart the engine. Proceed as follows.

1. Disconnect the spark plug wire from the spark plug.
2. Move the throttle lever to STOP position.
3. Hold the blade brake/clutch control in the engaged position.
4. While holding the blade brake/clutch control handle in this position, pull the starter rope.
5. As the starter rope is being pulled, release the blade brake/clutch control handle.

The starter rope should now operate correctly. Reconnect the spark plug wire for normal operation.

USING YOUR ROTARY MOWER



DO NOT operate the mower with the chute door open unless the complete grass catcher is properly mounted on the 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.

Operate a new engine at intermediate speeds and light load for the first few hours as you would a new automotive engine.

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. Blade speed 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 effective job of bagging the cut grass.

➡ IMPORTANT

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.

Striking a solid object can cause damage to the blade brake/clutch or to the engine crankshaft. 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

If the unit does not self-propel with the drive clutch control engaged, remove the plastic cap from beneath the drive clutch control housing. Move the plastic fitting on the control cable to the next adjustment position on the left. Reassemble the plastic cap and retest. See figure 17.

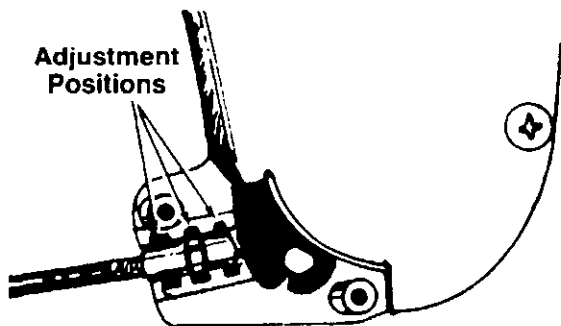


FIGURE 17.

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 18.

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

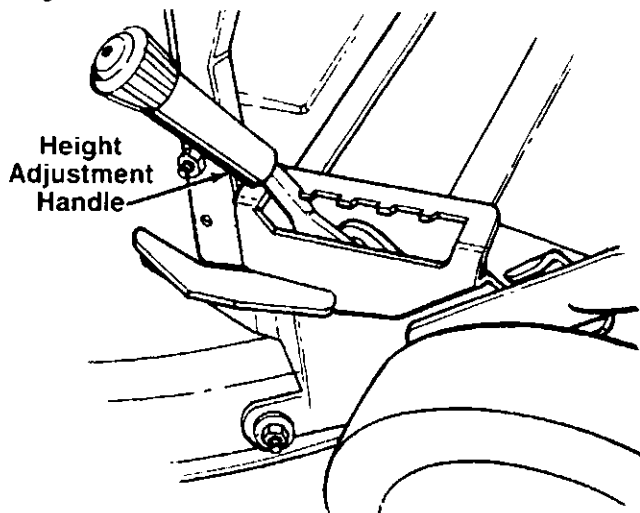


FIGURE 18.

THROTTLE

The throttle control wire assembly can be adjusted if necessary. Loosen the screw on the cable clamp shown in figure 5. Adjust as instructed in steps 1 and 4 of "Attaching the Throttle Control Cable" in Assembly Instructions.

CARBURETOR ADJUSTMENTS



WARNING

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

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

➡ NOTE

If a warm engine falters or stalls when attempting to engage the blade, the carburetor mixture should be adjusted 1/8 turn richer (counterclockwise). See figure 19.

The carburetor should be adjusted with the air cleaner in place and the blade control handle in the blade disengaged position.

NOTE

A dirty air cleaner will cause an engine to run rough. Be certain air cleaner is clean before adjusting carburetor. Refer to the separate engine manual.

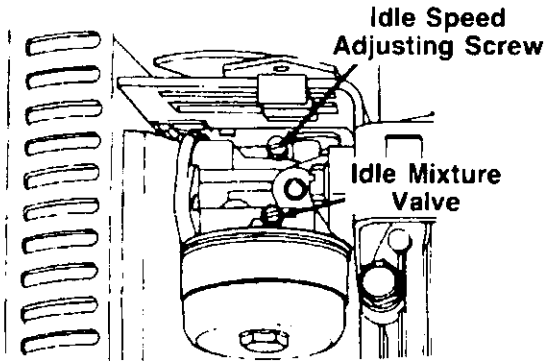


FIGURE 19.

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

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.

LUBRICATION



WARNING

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

Blade Brake/Clutch—Lubricate the pivot points on the blade brake/clutch handle and the cable at least once a season with light oil. The control must operate freely in both directions. See figure 20.

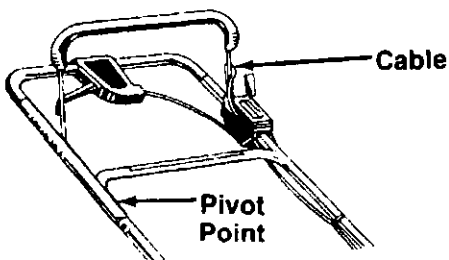


FIGURE 20.

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

To remove the cutting blade for sharpening or replacement, remove the two hex nuts and lock washers which hold the blade to the blade brake/clutch. Protect hands by using heavy gloves or a rag to grasp the cutting blade. See figure 21.

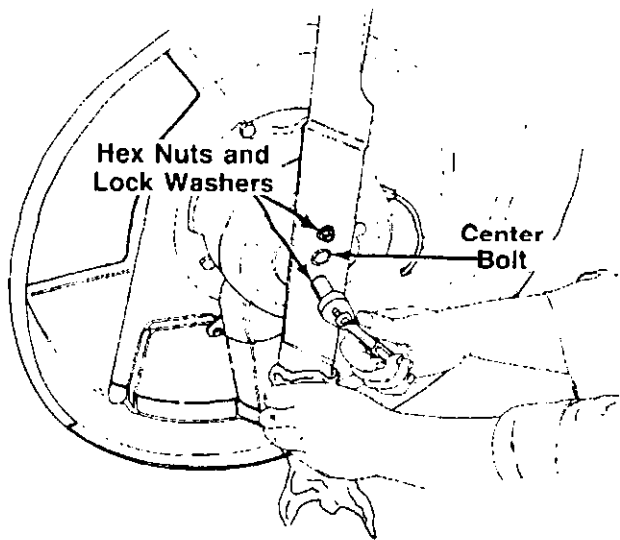


FIGURE 21.

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.

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

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

Make certain that the center bolt which secures the blade brake/clutch and the two hex nuts which secure the blade are tightened to between 350 inch pounds (minimum) and 600 inch pounds (maximum).

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

DECK

The underside of mower deck should be cleaned after each period of use as grass clippings, leaves, dirt and other matter will accumulate. This accumulation of grass clippings, etc., is undesirable as 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 or by washing with a stream of water from a garden hose.

NOTE

Do not direct the stream of water at a hot engine as damage to the engine may result.

ENGINE

Refer to the separate engine manual for all 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.

BLADE BRAKE/CLUTCH

This unit is equipped with a blade brake/clutch. If for some reason the blade brake/clutch becomes inoperative, it is suggested that all repair work on the blade brake/clutch should be performed by an authorized service dealer. The unit should be inspected by an authorized service dealer if any of the following conditions are noticed.

1. Frayed clutch control cable.
2. Leaking oil seal (oil collection on the floor during mower storage).
3. Extensive vibration of the unit.

BELT REMOVAL AND REPLACEMENT

1. 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. First remove the grass bag, discharge chute and catcher panel.
4. Remove the transmission belt cover by removing three bolts. Loosen the transmission belt guard. See figure 22.

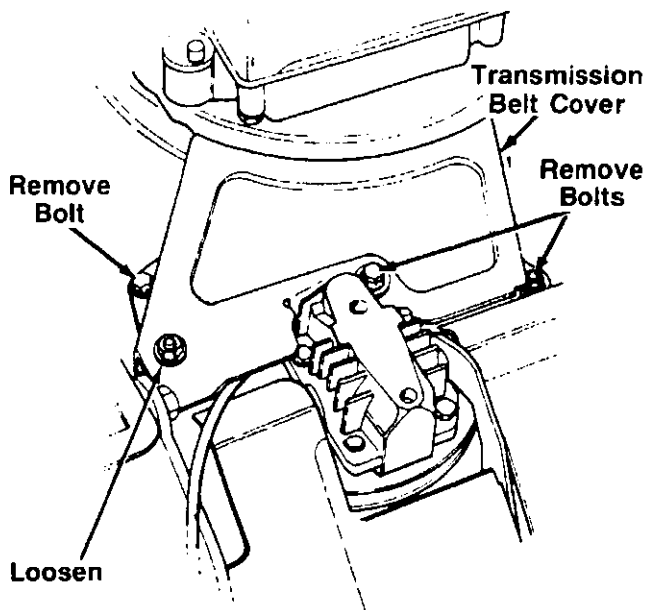


FIGURE 22.

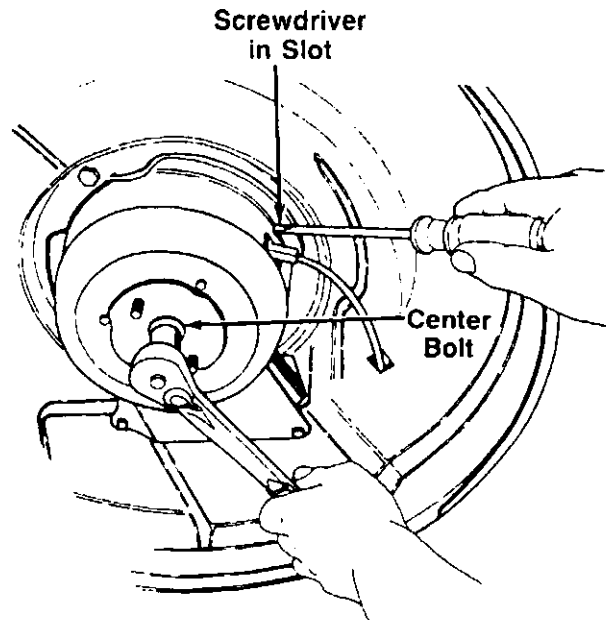


FIGURE 23.

5. Tip the mower on its side, and block securely.
6. Remove the blade by removing two hex nuts and lock washers. Refer to figure 21.

NOTE

When reassembling, tighten hex nuts to between 350 and 600 in. lbs.

7. Remove the inside belt guard by removing two self-tapping screws. A 3/8" wrench is required. See figure 23.

8. Remove the center bolt as follows.
 - a. Insert a screwdriver into the slot provided in the blade brake/clutch housing where the control cable enters the housing. See figure 23.
 - b. Place a 5/8" wrench on the center bolt. Turn the wrench slowly until the screwdriver catches in a groove provided inside the clutch. The screwdriver will now keep the clutch from turning, and the center bolt and cupped washer may be removed. Lift off lower housing.

IMPORTANT

Upon reassembly, be certain to tighten center bolt to between 350 and 600 in. lbs.

9. Remove belt from the engine pulley half. Remove the belt from between the idler pulley and the belt guard on the idler pulley bracket. See figure 24.

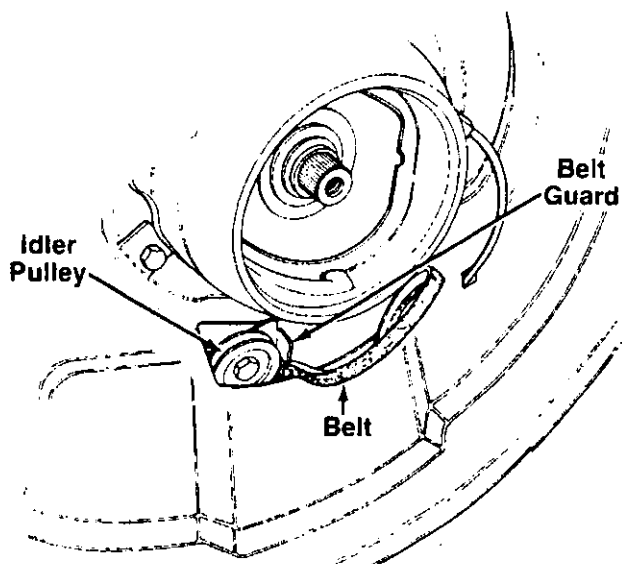


FIGURE 24.

10. Push the idler to the left and remove the belt from the transmission pulley. See figure 25.

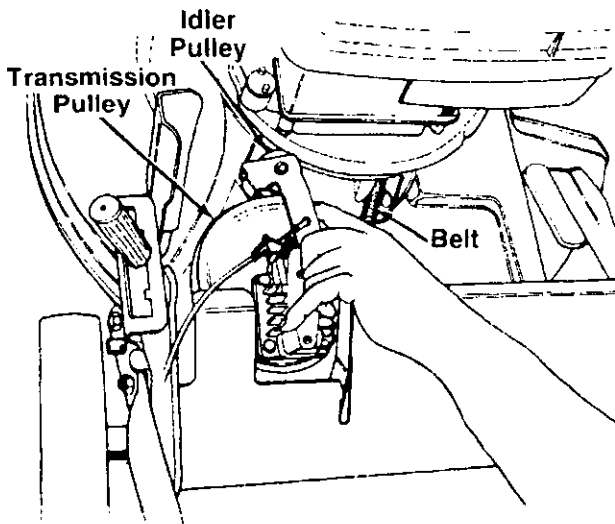


FIGURE 25.

11. Reassemble the new belt, following instructions in reverse order.

NOTE

When reassembling the transmission belt cover, be certain the transmission belt guard 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.

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.

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.

NOTE

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



WARNING

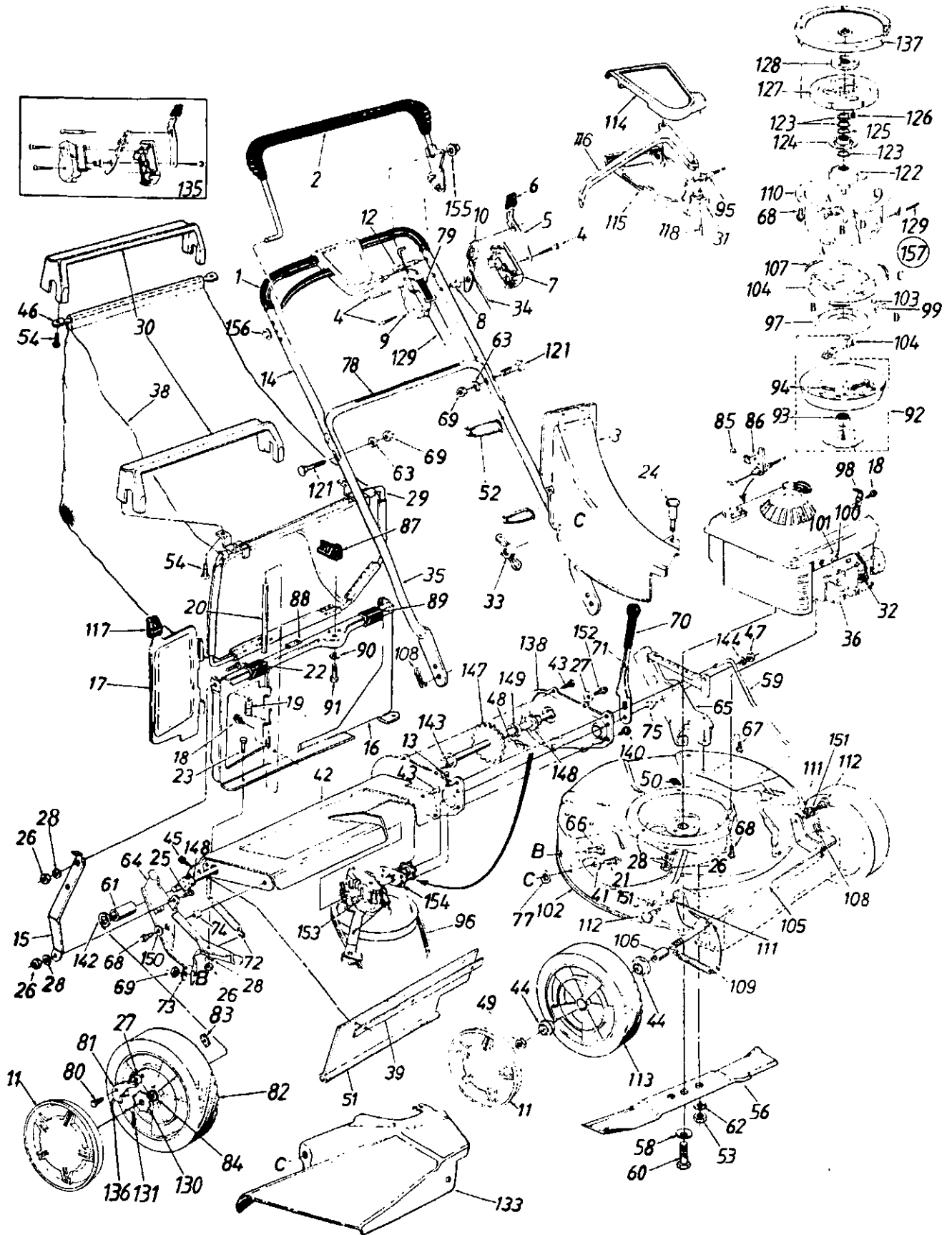
1. **DO NOT** operate the mower with the chute door open unless the complete grass catcher is properly mounted on the mower.
2. **DO NOT** operate the mower without the protective shield on the rear of the deck in place.

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.

For replacement bags, use only factory authorized replacement bag No. 764-0216.

TMO-37478A



TMO-37478A

4 H.P. 21" ROTARY MOWER PARTS LIST FOR MODEL TMO-37478A

REF. NO.	PART NO.	DESCRIPTION	NEW PART	REF. NO.	PART NO.	DESCRIPTION	NEW PART
1	720-0225	Grip (2 Req'd.)	N	58	736-0412	Bell-Wash. .46" I.D. x .88" O.D.	
2	16739	Control Handle Ass'y.—L.H.	N				
3	731-0734	Top Discharge Chute Ass'y.		59	747-0510	Height Adj. Rod 19.42" Lg.	
4	710-0796	Truss Mach. Scr. #12 x 1.50" Lg.		60	710-1002	Hex Bolt 7/16-20 x 2.0" Lg. (Grade 5)	
5	732-0401	Lockout Spring		61	748-0190	Spacer .513" I.D. x .703" O.D. x .69" Lg.	
6	720-0190	Spring Lever Knob					
7	731-0817	Control Panel Half		62	736-0169	L-Wash. 3/8" I.D.*	
8	731-0524	Control Disc Pin		63	736-0119	L-Wash. 5/16" I.D.*	
9	731-0816	Clutch Panel Half		64	16136	R.H. Handle Wheel Brkt. Ass'y.	
10	731-0528	Throttle Control Lever					
11	731-0975	Hub Cap	N	65	16137	L.H. Handle Wheel Brkt. Ass'y.	
12	731-0607	Lock Pin .314" Dia. x 1.75"					
13	714-0507	Cotter Pin 3/32" Dia. x .75"*		66	710-0260	Carriage Bolt 5/16-18 x .62"*	
14	749-0437	Upper Handle—Chrome		67	710-0603	Hex Wash. Hd. B-Tap Scr. 5/16-18 x .5" Lg.	
15	16129	Panel Support Brkt.					
16	17196	Top Catcher Panel Ass'y.	N	68	710-1007	Hex Wash. Hd. TT-Tap Scr. 3/8-16 x 1.5" Lg.	
17	17095	Top Discharge Door	N				
18	710-0429	Hex B-Tap Scr. #10 x .38"		69	712-0267	Hex Nut 5/16-18 Thd.*	
19	732-0483	Torsion Spring		70	720-0223	Grip	N
20	747-0514	Pivot Pin		71	732-0473	Height Adj. Lever	
21	710-0134	Carriage Bolt 1/4-20 x .62"*		72	732-0481	Extension Spring .50" O.D. x 3.80" Lg.	
22	710-0286	Truss Mach. Scr. 1/4-20 x .5" Lg.		73	736-0242	Bell-Wash. 5/16" I.D.	
23	710-0289	Hex Bolt 1/4-20 x .50" Lg.*		74	750-0526	Spacer .385" I.D. x .502" O.D. x .270" Lg.	
24	738-0704	Shoulder Bolt .312" Dia. x .18" Lg. Special		75	750-0624	Shld. Spacer .500" Dia. x .100"	
25	710-0258	Hex Bolt 1/4-20 x .62" Lg.*					
26	712-0287	Hex Nut 1/4-20 Thd.*		77	726-0233	Bolt Retainer 1/4 x .50" O.D.	
27	736-0270	Bell-Wash. 1/4" I.D.		78	777-5815	Instruction Label	
28	736-0329	L-Wash. 1/4" I.D.*		79	777-5811	Control Label	
29	16702	Front Grass Catcher Frame		80	738-0137	Shld. Scr. .342" Dia. x .268"	
30	731-0802	Grass Catcher Handle		81	748-0188	Pawl	
31	731-0619	S.P. Control Cover		82	734-1510	Wheel Ass'y. Comp.—Rear 8 x 2.0"	N
32	735-0639	Spark Plug Insulator					
33	712-0388	Wing Nut	N	83	712-0189	Flat Weld Nut 1/4-20 Thd.	
34	746-0672	Throttle Control Wire 58" Lg.	N	84	741-0486	Sleeve Bearing 1/2" I.D.	
35	749-0505	Lower Handle—Chrome		85	728-0171	Pop Rivet .156" Dia. x .379"	
36	4 H.P.	Engine B&S 110702-0212-03		86	14924	Cable Bracket	
38	764-0216	21" Top Discharge Grass Bag		87	720-0224	Grass Catcher Locking Knob	N
39	14835	Retaining Strip		88	722-0134	Foam Strip 1" Lg.	
41	736-0204	Fl-Wash. .344" I.D. x .62"		89	731-0883	Panel Clip	
42	17055	Chain—Axle Ass'y.	N	90	736-0271	Spring Wash. .32" I.D.	
43	710-0352	Hex B-Tap Scr. 1/4" x .38" Lg.		91	710-0875	Hex Tap Scr. 1/4-20 x .75" Lg.	
44	741-0180	Flange Ball Bearing 1/2" I.D.		92	14300	Clutch Blade Housing Ass'y.	
45	710-0776	Hex AB-Tap Scr. 1/4 x .62"		93	741-0124	Ball Brg. .669" I.D. x 1.574"	
46	747-0526	Upper Bag Support		94	732-0396	Comp. Spring .35" O.D. x 2.0" Lg.	
47	712-0296	Hex Patch L-Nut 3/8-24 Thd.		95	746-0650	S.P. Cable x 50" Lg.	
48	713-0353	#48 Chain .500" Pitch x 30 Links		96	754-0343	"V"-Belt	
49	712-0346	Hex L-Nut 1/2-20 Thd.		97	14304	Clutch Cone	
50	731-0564	Plug		98	12894	Casing Clamp	
51	731-0672	Rear Flap 3.75" x 17.30" Lg.		99	731-0520	Ball Block	
52	726-0240	Cable Tie		100	710-0436	Hex B-Tap Scr. #10 x .62"	
53	712-0328	Hex Nut 3/8-24 Thd. (Gr. 8)		101	751-0463	Casing Clamp	N
54	710-0969	Hex AB-Tap Scr. #12 x 1.0" Lg.	N	102	17075CC621	21" Deck Ass'y.	
56	742-0306	21" Blade		103	741-0326	Steel Ball .50" Dia.	
				104	14305	Brake Cup Cone	
				105	10662	Front Axle Ass'y.	

TMO-37478A

4 H.P. 21" ROTARY MOWER PARTS LIST FOR MODEL TMO-37478A (CONTINUED)

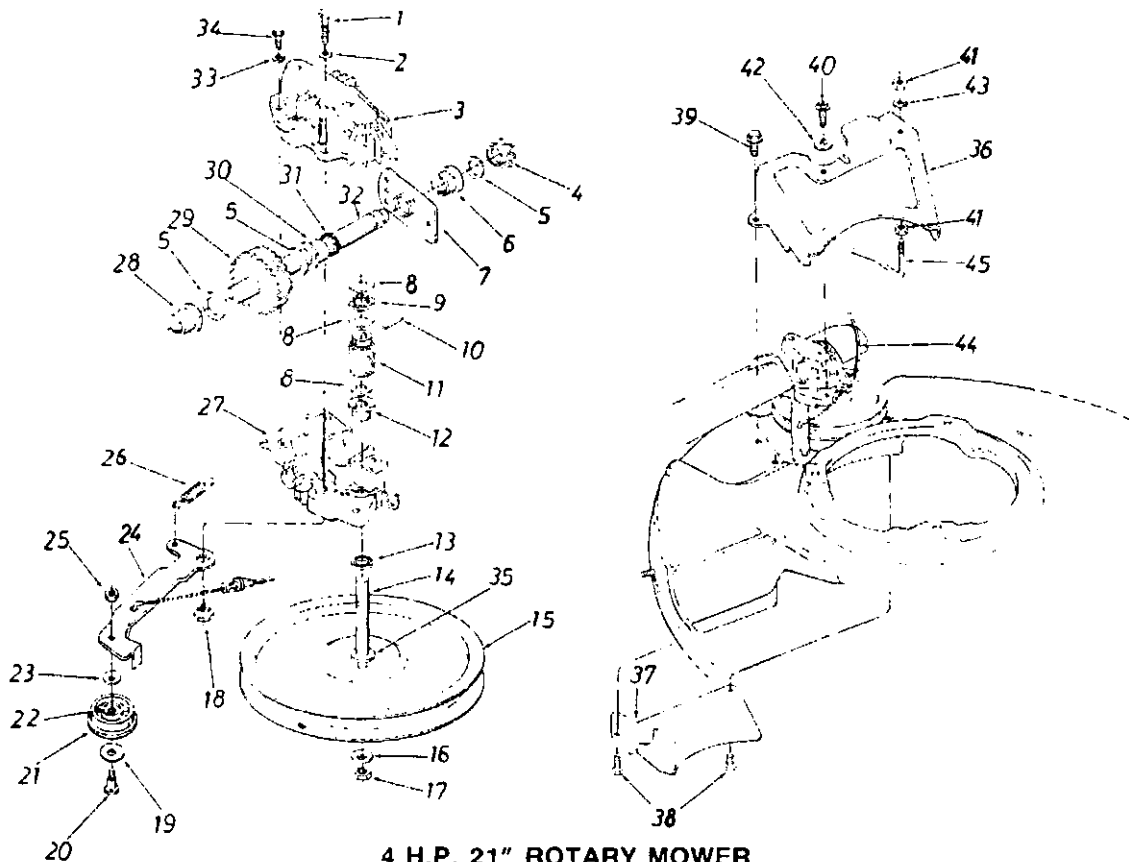
REF. NO.	PART NO.	DESCRIPTION	NEW PART	REF. NO.	PART NO.	DESCRIPTION	NEW PART
106	711-0313	Sleeve .526" I.D. x .690" O.D. x .880" Lg.		133	16559CC621	Side Chute Deflector Ass'y.	
107	732-0397	Ext. Spring 1.75" Lg.		135	753-0431	Kit—Control Housing Comp.	
108	714-0104	Intern. Cotter Pin 5/16" Dia.		136	10622	Spring—Nylon	
109	732-0482	Extension Spring .50" O.D. x 3.20" Lg.		137	17176	Engine Mounting Plate Cover	
110	14309	Clutch Housing		138	17053	Chain Cover	
111	736-0221	Intern. L-Wash. 3/8 I.D.*		140	710-0599	Hex Wash. S-Tap Scr. 1/4-20 x .50" Lg.	
112	738-0705	Shld. Bolt .623" Dia. x .425		142	736-0326	Fl-Wash. .510" I.D. x 1.0" O.D.	
113	734-1511	Front-Wheel Ass'y. Comp. 7 x 2.0"	N	143	741-0522	Hex Flange Brg. .506" I.D.	N
114	731-0617	Self-Propelled Control Cover		144	736-0300	Fl-Wash. .385" I.D. x .87" O.D.	
115	731-0618	Self-Propelled Control Cover		147	738-0719	Rear Shaft Ass'y. 21.94" Lg.	
116	731-0620	Control Lever		148	741-0324	Hex Flange Bearing .506" I.D. Plastic	
117	720-0190	Door Grip		149	736-0160	Fl-Wash. .531" I.D. x .930" O.D.	
118	710-0841	Fl-"C"-Sunk Hd. Tap Scr. #10 x .75" Lg.		150	736-0179	Fl-Wash. .531" I.D. x 1.25" O.D.	
121	710-0671	Curved Carr. Bolt 5/16-18 x 1.38" Lg.		151	741-0491	Flanged Nyliner Brg.	
122	756-0504	Fixed Pulley Adapter		152	710-0751	Hex Bolt 1/4-20 x .62" Lg. (Grade 5)	
123	736-0409	Serrated Washer 1.0" I.D.		153	717-0417	Transmission Comp. (See Breakdown)	
124	756-0503	Serrated Pulley Half		154	16500	Hex Bearing Cup	
125	736-0408	Wave Washer 1.005" I.D.		155	726-0245	Push Cap	
126	710-0618	Flat HD Tap Scr. 1/4-20 x .625" Lg.		156	726-0135	Push Cap	
127	748-0319	Flywheel		157	717-0845	Blade Brake Clutch Ass'y. Comp.	
128	748-0320	Flywheel Adapter					
129	746-0406	Control Cable—49" Lg.					
130	748-0318	Ratchet Wheel 1.62" O.D.					
131	714-0115	Cotter Pin 1/8" Dia. x 1.00" Lg.*					

*Common Hardware—May be purchased locally.
IMPORTANT: DO NOT order parts by reference
number (Ref. No.).

NOTE: Specifications subject to change without notice
or obligation.

Part No.	Description
8176B088-8	Hardware Pack
788-0621	Brilliant Fire Mist Spray Paint
777-7002	Montgomery Ward Plastic Logo
770-6474C	Operating Manual

TMO-37478A



4 H.P. 21" ROTARY MOWER
PARTS LIST FOR MODEL TMO-37478A

REF. NO.	PART NO.	DESCRIPTION	NEW PART	REF. NO.	PART NO.	DESCRIPTION	NEW PART
1	710-0106	Hex Bolt 1/4-20 x 1.25" Lg.*		22	741-0482	Needle Brg. .375" x .31†	
2	736-0329	L-Wash. 1/4" I.D.*		23	736-0270	Bell-Wash. .265" I.D. x .75"†	
3	717-0418	Upper Hsg. Half		24	17052	Idler Brk't. Ass'y.†	
4	713-0400	#48 Sprocket 7 Tooth x 1/2 Pitch		25	712-0138	Hex Patch L-Nut 1/4-28 Thd.†	
5	736-0336	FI-Wash. 5/8" I.D. x .030		26	732-0357	Extension Spring 1.12" Lg.†	
6	741-0413	Hex Flange Brg. .631" I.D.		27	717-0419	Lower Hsg. Half	
7	16500	Hex Bearing Cup		28	741-0415	Flange Bearing .566 Dia.	
8	736-0314	Thrust Wash. .382" I.D. x .70" O.D.		29	717-0422	33 Tooth Helical Gear	
9	741-0479	Thrust Bearing .375" I.D. x .812" O.D.		30	741-0414	Flange Bearing .629 Dia.	
10	715-0152	Spring Pin Spir. 1/8" x .62" Heavy		31	721-0213	Oil Seal .625 Dia.	
11	717-0420	11 Tooth Helical Gear		32	738-0607	Gear Sprocket Shaft	
12	748-0208	Flange Bearing		33	736-0722	L-Wash. #10 I.D.	
13	721-0212	Oil Seal		34	710-0436	Hex B-Tap Scr. #10 x .62"	
14	738-0708	Pulley-Transmission Shaft		35	736-0410	Hex Washer .26" x .88"†	
15	756-0330	FI-Pulley 5.06" O.D.†		36	17058	Transmission Belt Guard†	
16	736-0270	Bell-Wash. .265" I.D. x .75"†		37	17065	Belt Cover†	
17	712-0351	Hex L-Nut 1/4-28 Thd.†		38	710-0352	Hex B-Tap Scr. 1/4 x .38" Lg.†	
18	738-0440	Shld. Spacer .375" Dia. x .170†		39	710-0599	Hex AB-Tap Scr. 1/4 x .50" Lg.†	
19	736-0344	FI-Wash. .390" I.D. x 1.0"†		40	710-0896	Hex B-Tap Scr. 1/4 x .62" Lg.	
20	738-0691	Shld. Bolt .375" Dia. x .40"†		41	712-0287	Hex Nut 1/4-20 Thd.*†	
21	756-0447	FI-Idler Plastic 1.50" Dia.†		42	736-0270	Bell-Wash. .265" I.D. x .75"†	
				43	736-0329	L-Wash. 1/4" I.D.*†	
				44	746-0650	S.P. Cable—50" Lg.†	
				45	747-0549	S.P. Belt Guard†	
				—	717-0417	Transmission Comp.	

†Not Part of Transmission Complete

Trouble Shooting Chart

Problem	Cause	Remedy
1 Engine fails to start	A Check fuel tank for gas B Fuel shut-off valve closed C Spark plug lead wire disconnected D Throttle control lever not in the starting position E Faulty spark plug F Carburetor improperly adjusted, engine flooded G Old stale gasoline	A Fill tank if empty. B Open fuel shut-off valve. C Connect lead wire. D Move throttle lever to start position. E Clean, adjust gap or replace. F Remove spark plug, dry the plug, crank engine with plug removed, and throttle in off position. Replace spark plug and lead wire and resume starting procedures. G Drain and refill with fresh gasoline.
2 Hard starting or loss of power	A Spark plug wire loose B Carburetor improperly adjusted C Dirty air cleaner	A Connect and tighten spark plug wire. B Adjust carburetor. See separate engine manual. C Clean air cleaner as described in separate engine manual.
3 Operation erratic	A Dirt in gas tank B Dirty air cleaner C Water in fuel supply D Vent in gas cap plugged E Carburetor improperly adjusted	A Remove the dirt and fill tank with fresh gas. B Clean air cleaner as described in separate engine manual. C Drain contaminated fuel and fill tank with fresh gas. D Clear vent or replace gas cap. E Adjust carburetor. See separate engine manual.
4 Occasional skip (hesitates) at high speed	A Carburetor idle speed too slow B Spark plug gap too close C Carburetor idle mixture adjustment improperly set	A Adjust carburetor. See separate engine manual. B Adjust to .030". C Adjust carburetor. See separate engine manual.
5 Idles poorly	A Spark plug fouled, faulty, or gap too wide B Carburetor improperly adjusted C Dirty air cleaner	A Reset gap to .030" or replace spark plug. B Adjust carburetor. See separate engine manual. C Clean air cleaner as described in separate engine manual.
6 Engine overheats	A Carburetor not adjusted properly B Air flow restricted C Engine oil level low	A Adjust carburetor. See separate engine manual. B Remove blower housing and clean as described in separate engine manual. C Fill crankcase with the proper oil.
7 Excessive vibration	A Cutting blade loose or unbalanced B Bent blade	A Tighten blade. Balance blade. B Replace blade.

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

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