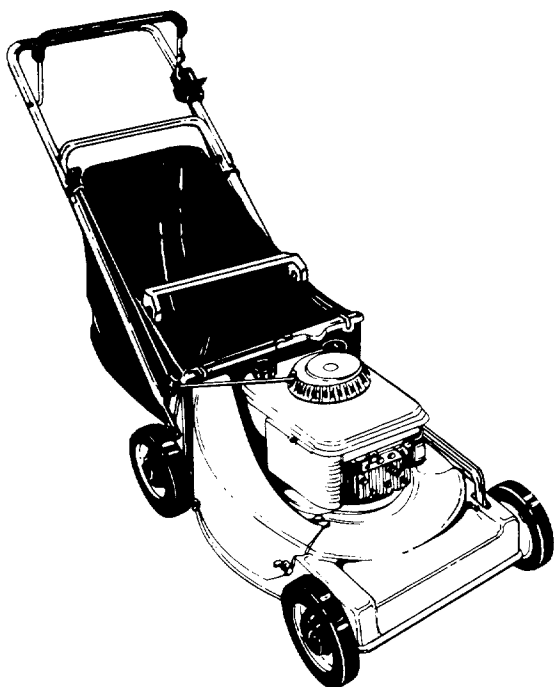


OWNER'S GUIDE

Thank you for purchasing an American-built product.

21" CONVERTIBLE ROTARY MOWERS



(Model 816R Shown)

Model Numbers

119-816R401

119-817R401

119-818R401

110-816R019

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.

LIMITED WARRANTY

For one year from the date of original retail purchase, MTD PRODUCTS INC will either repair or replace, at its option, free of charge, F.O.B. factory or authorized service firm, any part or parts found to be defective in material or workmanship. Transportation charges for the movement of any power equipment unit or attachment are the responsibility of the purchaser. Transportation charges for any parts submitted for replacement under this warranty must be paid by the purchaser unless such return is requested by MTD PRODUCTS INC.

This warranty will not apply to any part which has become inoperative due to misuse, excessive use, accident, neglect, improper maintenance, alterations, or unless the unit has been operated and maintained in accordance with the instructions furnished. This warranty does not apply to the engine, Peerless components, motor, battery (except as noted below) or component parts thereof. Please refer to the applicable manufacturer's warranty on these items.

A battery which proves defective within ninety (90) days will be replaced without charge. After 90 days but within one year from the date of purchase, MTD will replace the defective battery for a charge of 1/12 of the current retail price of the battery for each full 30 day period between the date of purchase and the date of return.

This warranty will not apply where the unit has been used commercially.

Warranty service is available through your local authorized service dealer or distributor. If you do not know the dealer or distributor in your area, please write to the Customer Service Department of MTD.

The return of a complete unit will not be accepted by the factory unless prior written permission has been extended by MTD.

This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

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.

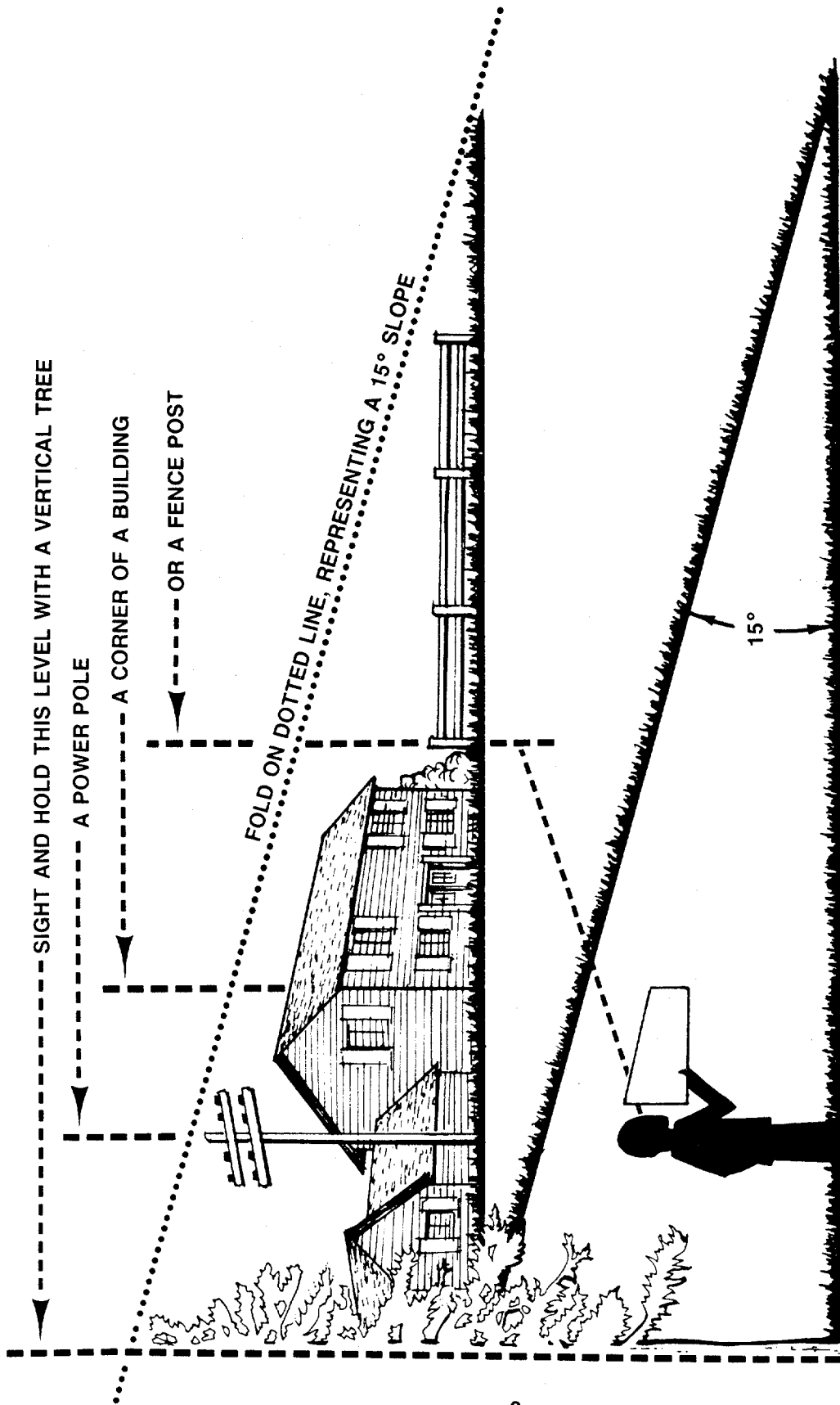
In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your nearest engine authorized service dealer.

Cut Along This Line

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

SLOPE GAUGE

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



Do not mow on inclines with a slope in excess of 15 degrees (a rise of approximately 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/PARTS IDENTIFICATION

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

Truss Machine Screw
5/16-18 x 3/4" Long

Split Washer
5/16" I.D.

Hex Nut
5/16-18 Thread

B ATTACHING THE UPPER HANDLE

Rope Guide Bolt

Curved Head Bolt

Split Washers
5/16" I.D.

Hex Nuts
5/16-18 Thread

C ASSEMBLING THE GRASS CATCHER

Self-Tapping Screws
1" Long

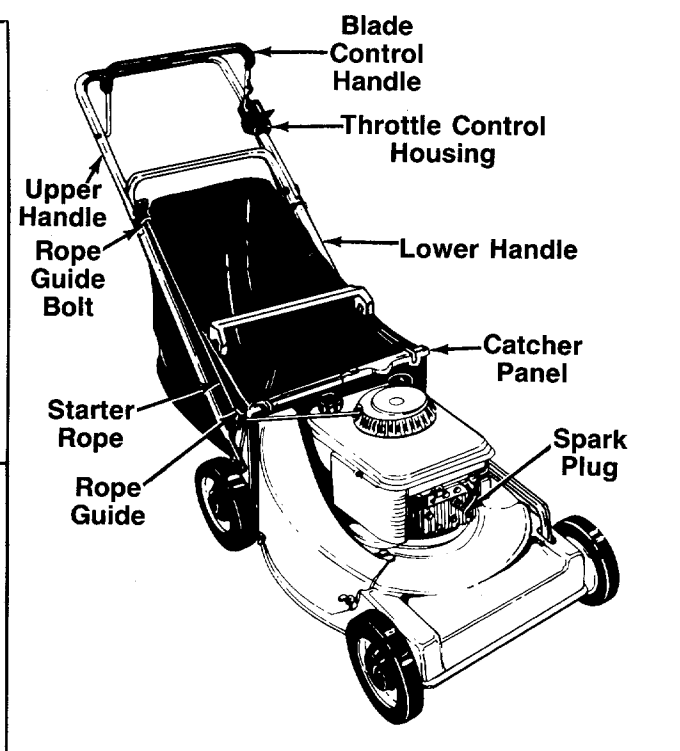
E SECURING THE CABLES

Cable Ties

Plastic Plug

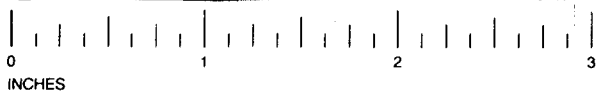
D FINAL ASSEMBLY

Cable Clamp



(Model 816R Shown)

PARTS IDENTIFICATION



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.



DANGER

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



TRAINING

1. Read this owner's 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.

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



OPERATION

1. Do not change the engine governor settings or overspeed the engine. Excessive engine speeds are dangerous.
2. Do not put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times as the rotating blade can cause injury.
3. Stop the blade when crossing gravel drives, walks or roads.
4. After striking a foreign object, stop the engine, remove the wire from the spark plug, and thoroughly inspect the mower for any damage. Repair the damage before restarting and operating the mower.
5. If the equipment should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.
6. Shut the engine off and wait until the blade comes to a complete stop before removing the grass catcher or unclogging the chute. The cutting blade continues to rotate for a few seconds after the engine is shut off. Never place any part of the body in the blade area until you are sure the blade has stopped rotating.
7. Before cleaning, repairing or inspecting, make certain the blade and all moving parts have stopped. Disconnect the spark plug wire, and keep the wire away from the spark plug to prevent accidental starting.
8. Do not run the engine indoors.
9. 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.

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 on page 4 for location of parts when assembling the mower.

ASSEMBLY INSTRUCTIONS

Tools Required for Assembly

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

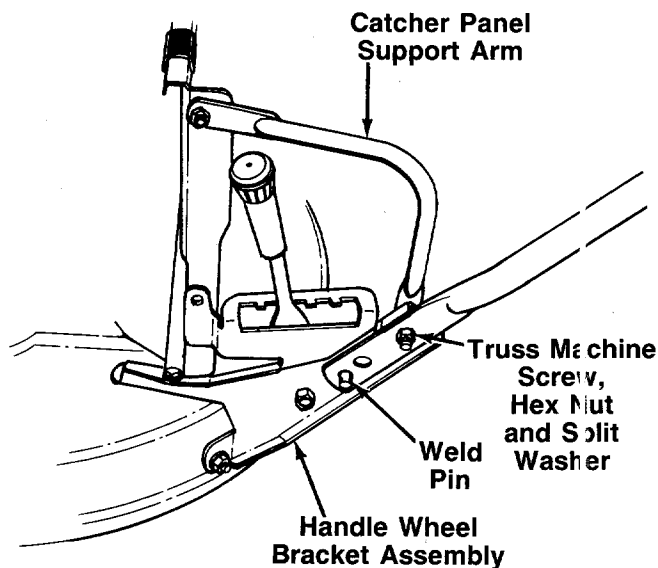


FIGURE 1.

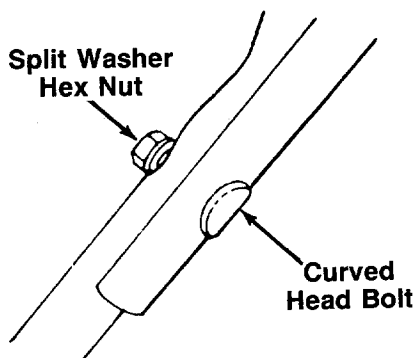


FIGURE 2.

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 by hooking it into the "V" slot on 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. 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 1.
3. Attach the lower handle by placing the bottom holes in the lower handle over the weld pins on the handle wheel bracket assemblies. Make certain the instruction label on the lower handle can be read from the operating position.
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.
2. Secure the left hand side of upper handle using the curved head bolt, split washer and hex nut as shown in figure 2.

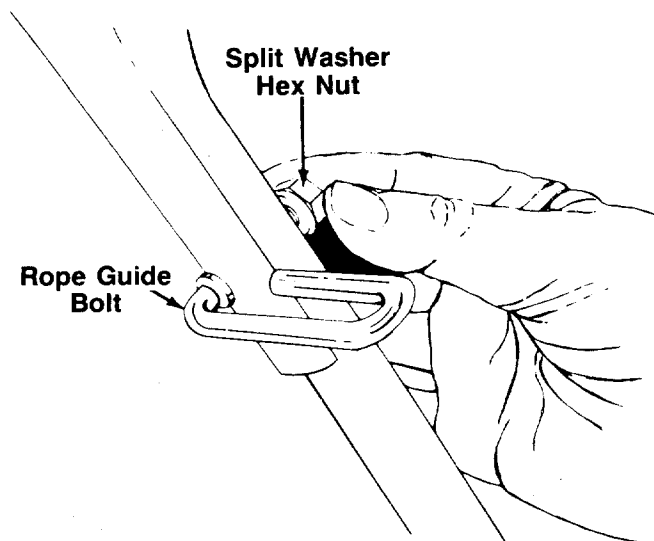


FIGURE 3.

3. Insert the rope guide bolt through the right hand side of upper and lower handle. See figure 3. Secure with split washer and hex nut, finger tight only.

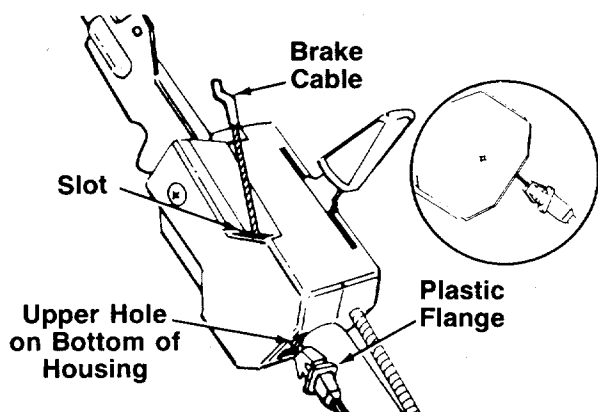


FIGURE 4.

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 4. 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.

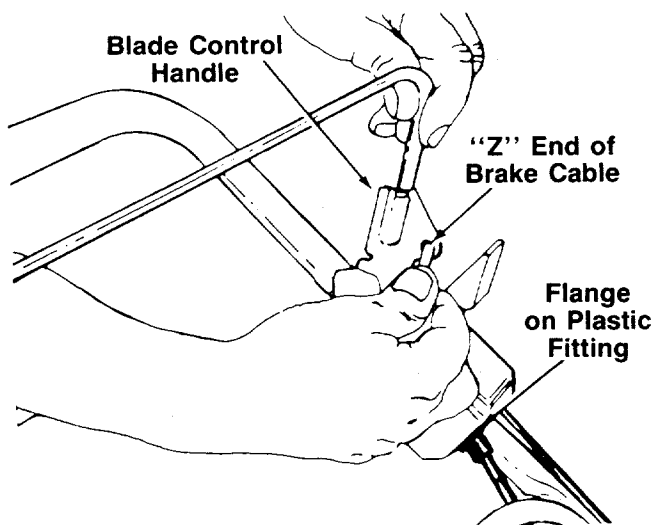


FIGURE 5.

3. 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 5.

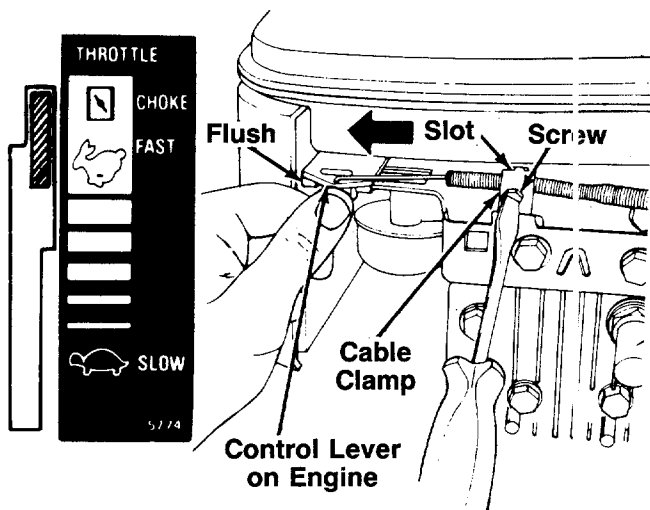


FIGURE 6A.—Model 816R

ATTACHING THE THROTTLE CABLE

Model 816R Only:

1. Push the throttle control lever on the handle all the way forward to CHOKE position. See figure 6A.
2. The throttle control cable is attached to the upper handle. Route the throttle control cable under the lower handle and to the outside of the handle wheel bracket assembly and height adjustment lever. Hook the "Z" end of the throttle control cable into the hole in the control lever on the engine. See figure 6A.
3. Using a 5/16" wrench or nutdriver, remove the screw on the cable clamp shown in figure 6A. 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 6A. 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 THROTTLE CABLE

Models 817R and 818R Only:

1. Place the throttle control lever on the handle in FAST position.
2. The throttle control cable is attached to the upper handle. Route the throttle control cable under the lower handle and to the outside of the handle wheel bracket assembly and height adjustment lever. Hook the "Z" end of the throttle control cable into the control lever on the engine as shown in figure 6B.

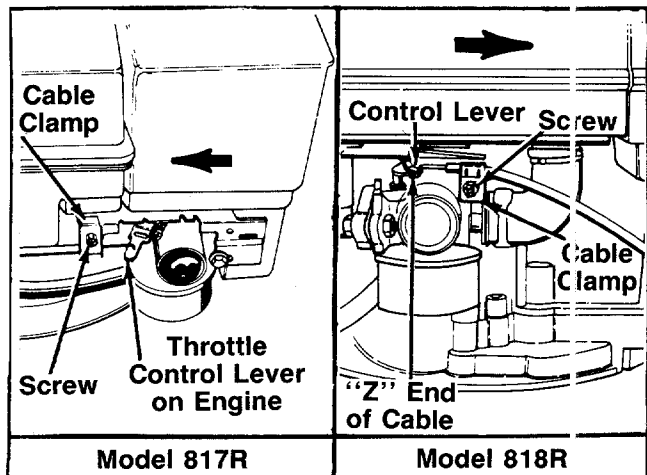


FIGURE 6B.—Models 817R and 818R

NOTE

- On model 817R, the control lever is on the **right** side of the engine. Hook the cable into the lever, then push the cable down between the engine and the catcher panel. Make certain the throttle cable does not interfere with the brake cable.
3. Loosen (do not remove) the screw on the cable clamp shown in figure 6B. Slip the control casing under the clamp (cable must move freely beneath the clamp).
 4. Place the control lever on the engine in the full open position by pushing it as far toward the **rear** of the unit as it will go. Tighten the screw on the cable clamp to secure the cable in this position.

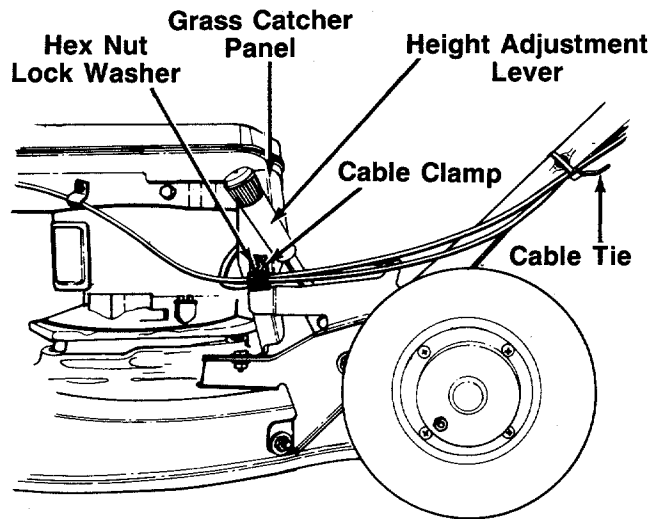


FIGURE 7.

SECURING THE CABLES (Hardware E)

Attach the brake and throttle control cables to the grass catcher panel as follows, using the cable clamp provided.

1. Open the clamp and slip the cables inside.
2. Remove the top hex lock nut and flat washer on the side of the grass catcher panel. Attach the cable clamp as shown in figure 7. Secure with flat washer and hex lock nut.
3. Place the height adjustment lever in the lowest position.

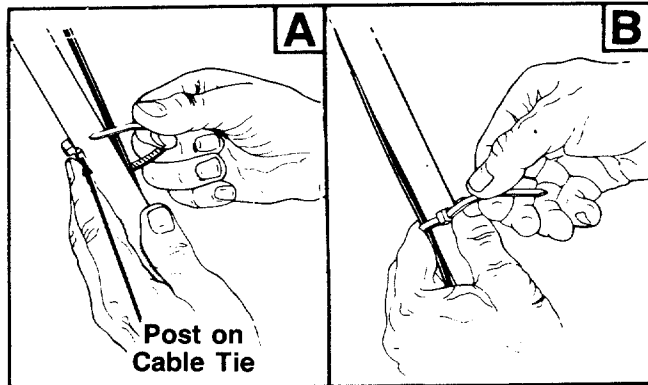


FIGURE 8.

4. Secure 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.

- A. 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.
- B. Secure the cables with the cable ties. See figure 8B.
- C. Trim excess ends of cable ties.

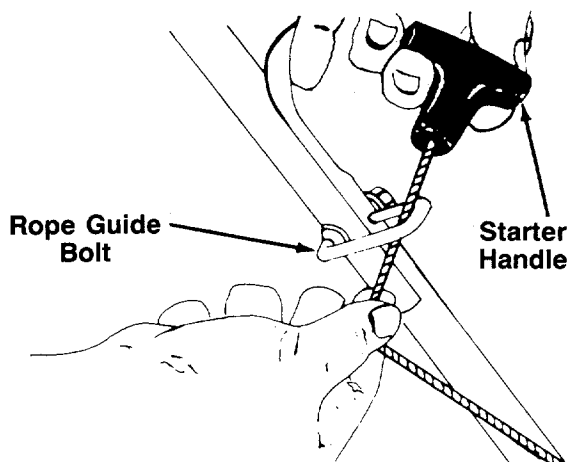


FIGURE 9.

ATTACHING THE STARTER ROPE

1. The starter rope protrudes from the top of the engine. The starter rope may be already attached to the rope guide at the catcher panel. 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.

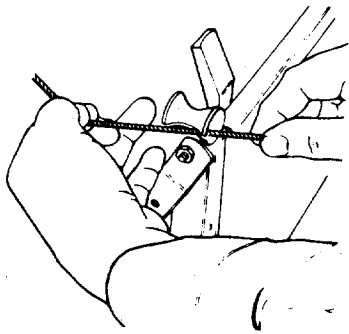


FIGURE 10.

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

FINAL ASSEMBLY OF MOWER (Hardware D)

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. Make certain all nuts and bolts are tightened securely.

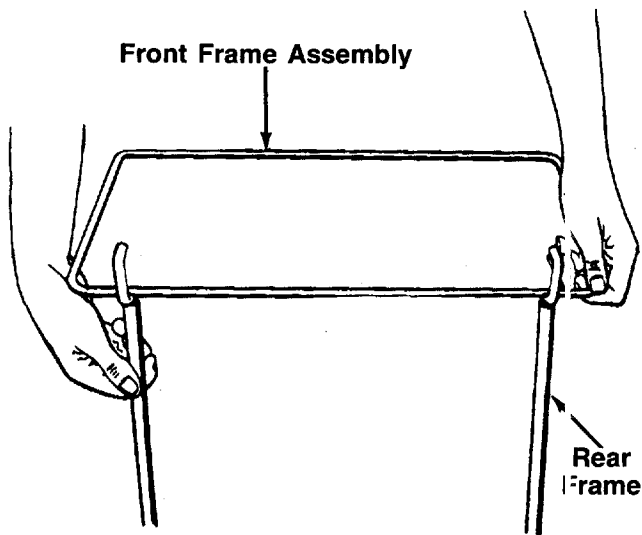


FIGURE 11.

ASSEMBLING THE GRASS CATCHER (Hardware C)

1. Join the rear frame and front frame assembly as shown in figure 11.

NOTE

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

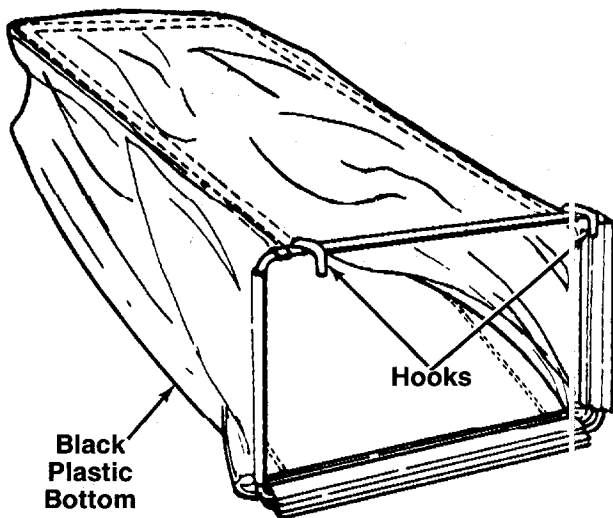


FIGURE 12.

2. 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 12.

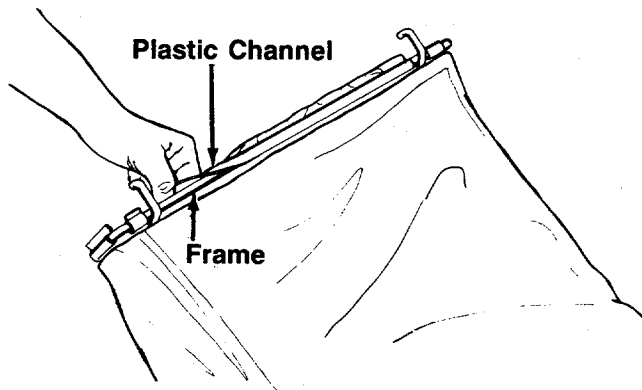


FIGURE 13.

3. Secure front of bag to frame by working the plastic channels on bag over frame. See figure 13.

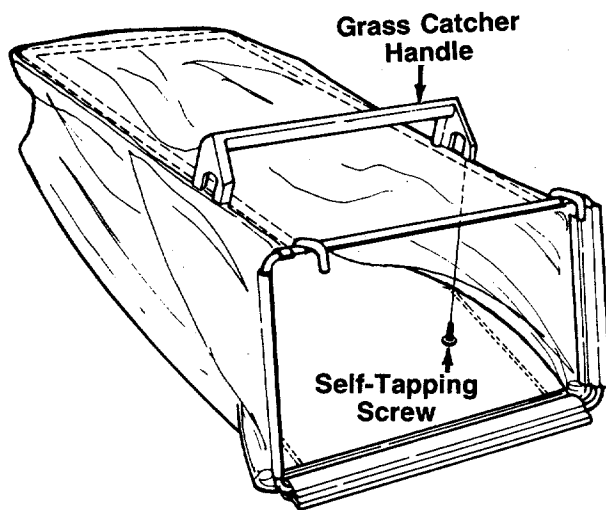


FIGURE 14.

4. Place the grass catcher handle in position on top of the grass bag and frame as shown in figure 14. Secure with four self-tapping screws.

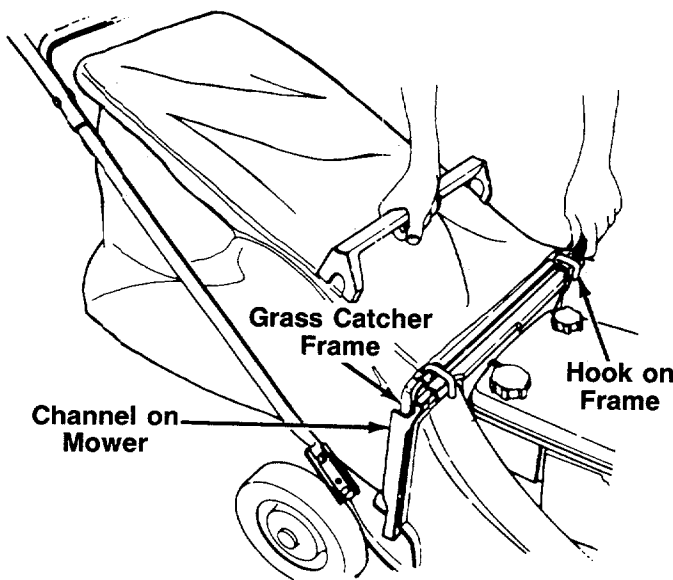


FIGURE 15.

TO ATTACH BAG TO MOWER



WARNING

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

1. Hold the chute door on the catcher panel open as shown in figure 15.
2. 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 15.

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

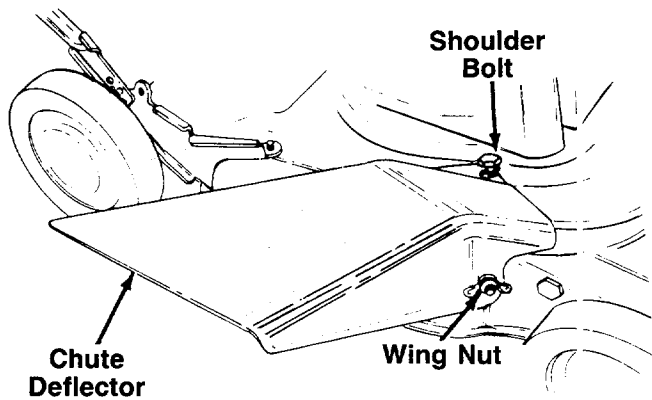


FIGURE 16.

TO CONVERT MOWER TO SIDE DISCHARGE

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

1. 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.
2. 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 16.

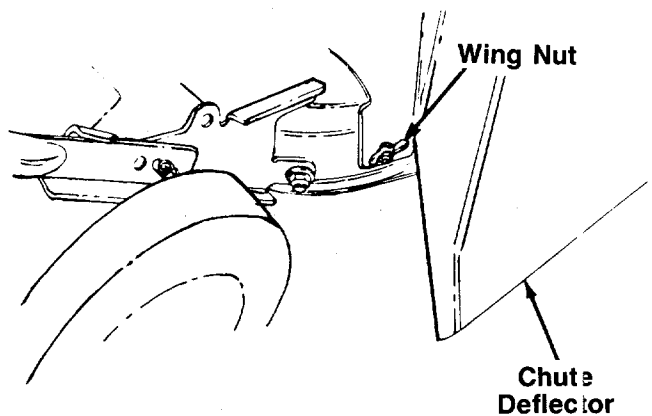


FIGURE 17.

3. Secure the front of the chute deflector to the bolt on the side of the deck with one wing nut. See figure 16. Secure the back of the chute deflector in the same manner. See figure 17.



WARNING

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

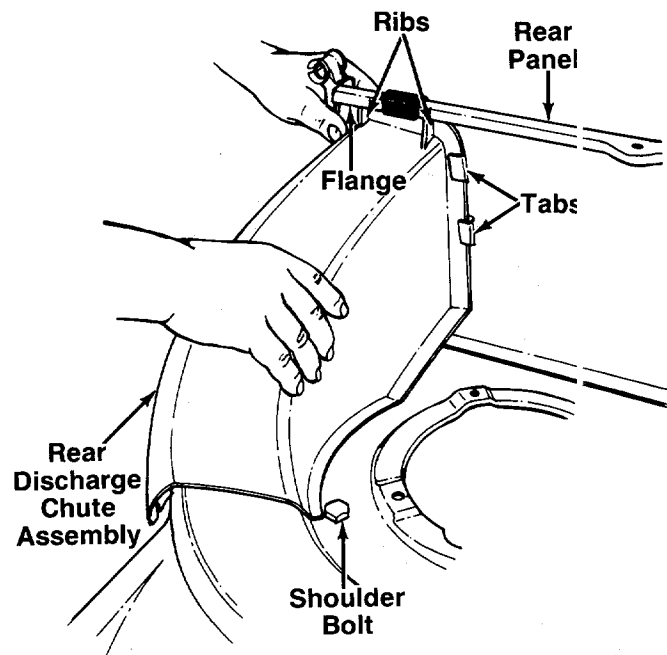


FIGURE 18.

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 18.

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

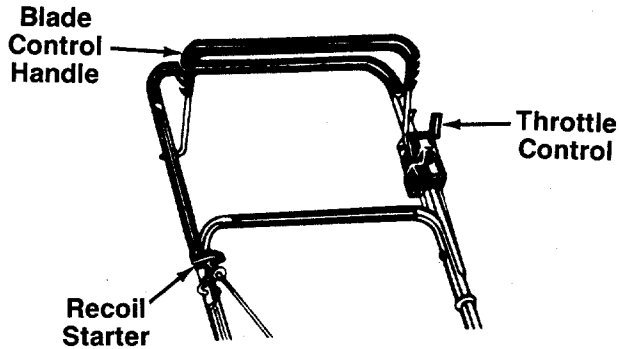


FIGURE 19.

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 19. The blade control handle must be depressed in order to operate the unit. Release the blade control handle to stop the engine and blade.



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.



The throttle control cannot be used to stop the engine.

RECOIL STARTER

The recoil starter handle is attached to the handle. See figure 19. Stand behind the unit in the operating position to start the unit.

OPERATION



FIGURE 20.

Keep hands and feet away from the chute area on cutting deck. See figure 20.

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.



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

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 21.

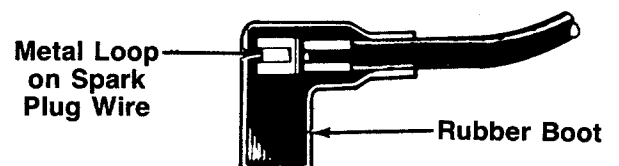


FIGURE 21.

- Model 816R:** The fuel shut-off valve is located beneath the fuel tank. The fuel shut-off valve should be in the open position. See figure 22. Open fuel shut-off valve if it is closed.

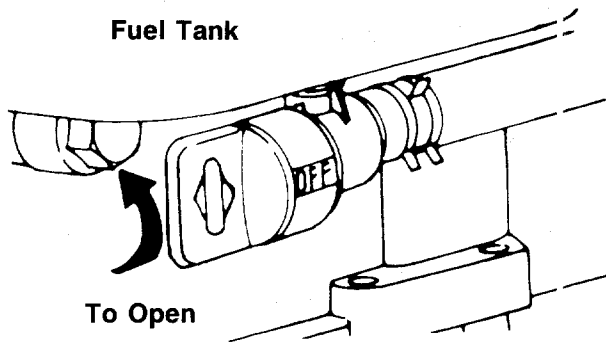


FIGURE 22.—Model 816R

TO START ENGINE AND ENGAGE BLADE

- Model 816R:** Move the throttle control lever to CHOKE position. A warm engine may not require choking.
Models 817R and 818R: Move throttle control lever to FAST or START position.
- Models 817R and 818R:** Prime engine as instructed in the separate engine manual packed with your unit.
- Standing behind the unit, depress the blade control handle and hold it against the upper handle.
- Grasp the recoil starter handle and pull back rapidly, extending rope fully. Return it slowly to the rope guide bolt.
- After engine starts, move throttle control to FAST or desired engine speed. (On Model 816R, move the throttle control lever at least halfway back, then forward to obtain FAST position.)

➡ NOTE

If any problems are encountered, refer to the Trouble Shooting Guide on page 17.



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

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



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 accidentally thrown by the mower 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. 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 re-cutting 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. Extensive vibration of the mower during operation is an indication of damage. The unit should be promptly inspected and repaired.

ADJUSTMENTS



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

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 23.

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

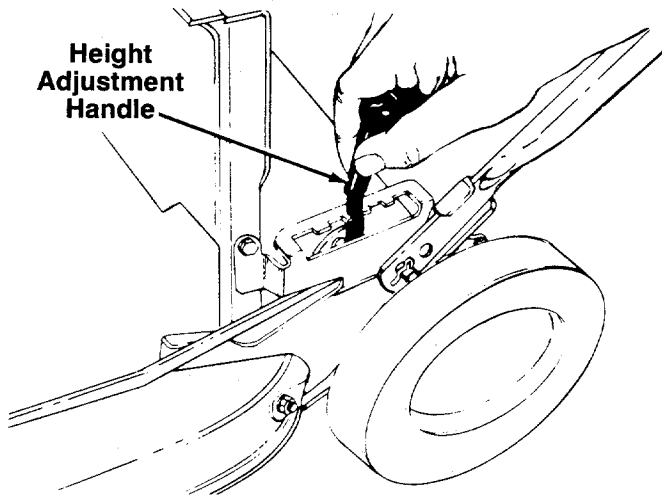


FIGURE 23.

THROTTLE

The throttle control wire assembly can be adjusted if necessary. Loosen the screw on the cable clamp shown in figure 6. 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), keep clear of all moving parts. Be careful of heated surfaces and muffler.

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



NOTE

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

LUBRICATION



WARNING

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

Blade Control—Lubricate the pivot points on the blade control handle and the brake cable at least once a season with light oil. See figure 24. The blade control must operate freely in both directions.

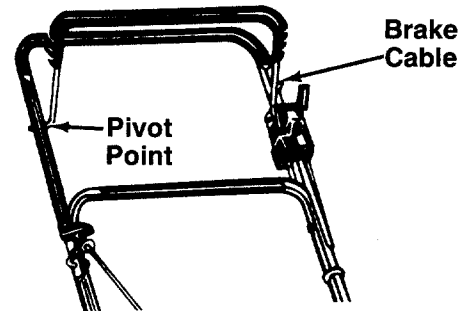


FIGURE 24.

Wheels—Mower is provided with ball bearing wheels. Lubricate 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.

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 17 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 blade bell washer which hold the blade and adapter to the engine crankshaft. Remove the blade and adapter from the crankshaft.



CAUTION

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

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

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, the inner surface of the blade adapter and the center bolt 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.

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

Blade Mounting Torque

Center Bolt 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 clippings at the next cutting.

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

ENGINE

Refer to the separate engine manual for 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.

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.

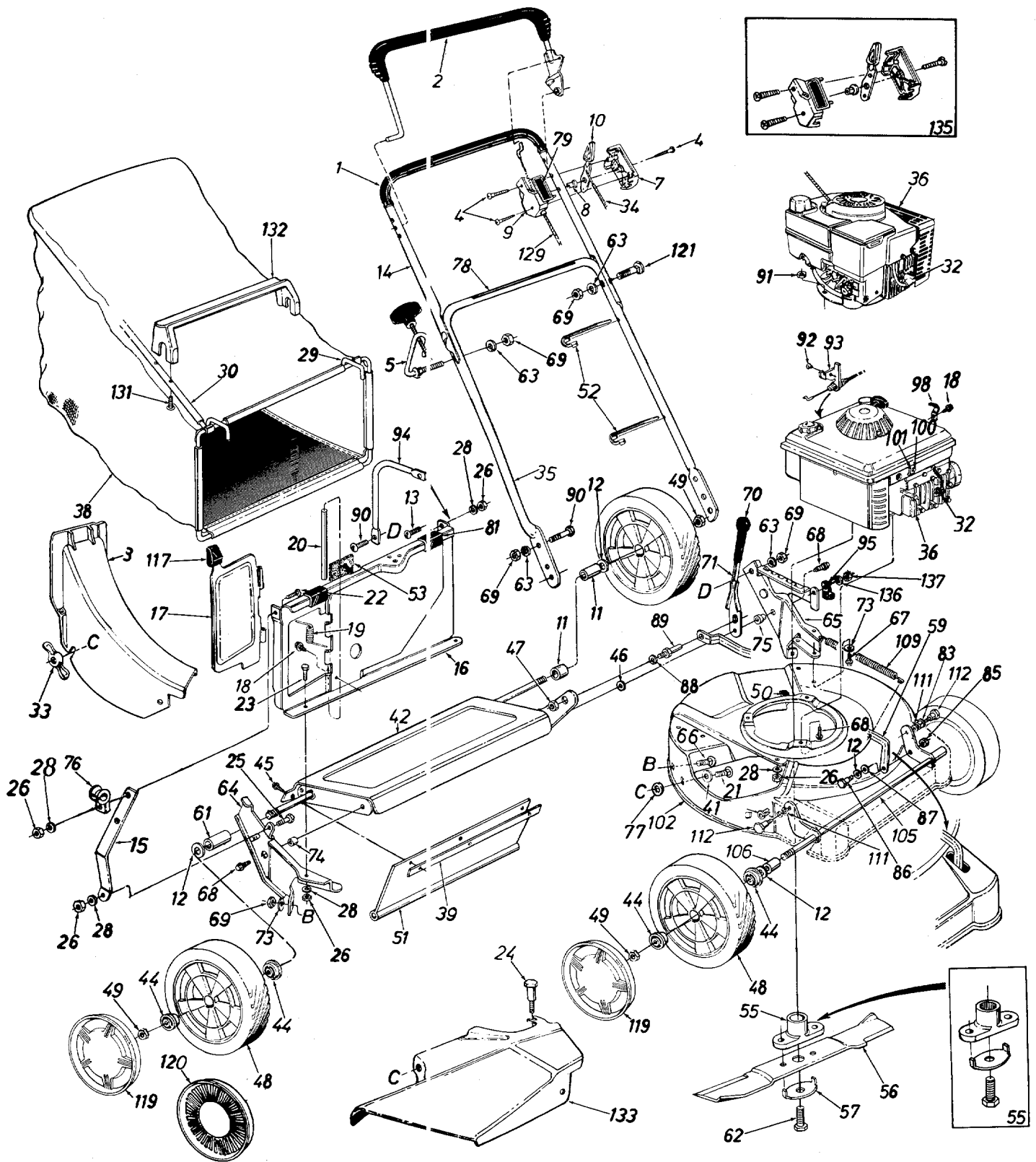
Trouble Shooting Guide

Trouble	Possible Cause(s)	Corrective Action
Engine fails to start	<ol style="list-style-type: none"> 1. Blade control handle disengaged. 2. Spark plug wire disconnected. 3. Throttle control lever not in CHOKE or START position. 4. Fuel shut-off valve closed (if so equipped). 5. Fuel tank empty, or stale fuel. 6. Blocked fuel line. 7. Faulty spark plug. 8. Engine flooded. 	<ol style="list-style-type: none"> 1. Engage blade control handle. 2. Connect wire to spark plug. 3. Move throttle lever to CHOKE or START position. 4. Open fuel shut-off valve. 5. Fill tank with clean, fresh gasoline. 6. Clean fuel line. 7. Clean, adjust gap or replace. 8. Remove spark plug, dry the plug, and crank engine with plug removed and throttle in off position. Replace spark plug, connect wire and resume starting procedures.
Engine runs erratic	<ol style="list-style-type: none"> 1. Unit running in CHOKE or START position. 2. Spark plug wire loose. 3. Blocked fuel line or stale fuel. 4. Vent in gas cap plugged. 5. Water or dirt in fuel system. 6. Dirty air cleaner. 7. Carburetor out of adjustment. 	<ol style="list-style-type: none"> 1. Move throttle lever to FAST position. 2. Connect and tighten spark plug wire. 3. Clean fuel line; fill tank with clean, fresh gasoline. 4. Clear vent. 5. Drain fuel tank. Refill with fresh fuel. 6. Clean air cleaner.† 7. Adjust carburetor.†
Engine overheats	<ol style="list-style-type: none"> 1. Engine oil level low. 2. Air flow restricted. 3. Carburetor not adjusted properly. 	<ol style="list-style-type: none"> 1. Fill crankcase with proper oil. 2. Remove blower housing and clean.† 3. Adjust carburetor.†
Occasional skip (hesitates) at high speed	<ol style="list-style-type: none"> 1. Carburetor idle speed too slow. 2. Spark plug gap too close. 3. Carburetor idle mixture adjustment improperly set. 	<ol style="list-style-type: none"> 1. Adjust carburetor.† 2. Adjust gap to .030". 3. Adjust carburetor.†
Idles poorly	<ol style="list-style-type: none"> 1. Spark plug fouled, faulty or gap too wide. 2. Carburetor improperly adjusted. 3. Dirty air cleaner. 	<ol style="list-style-type: none"> 1. Reset gap to .030" or replace spark plug. 2. Adjust carburetor.† 3. Clean air cleaner.†
Excessive vibration	<ol style="list-style-type: none"> 1. Cutting blade loose or unbalanced. 2. Bent cutting blade. 	<ol style="list-style-type: none"> 1. Tighten blade and adapter. Balance blade. 2. Replace blade.
Mower will not discharge grass	<ol style="list-style-type: none"> 1. Engine speed too low. 2. Wet grass. 3. Excessively high grass. 	<ol style="list-style-type: none"> 1. Set throttle between 3/4 and full throttle. 2. Do not mow when grass is wet; wait until later to cut. 3. Mow once at a high cutting height, then mow again at desired height or make a narrower cutting swath (1/2 width).
Uneven cut	<ol style="list-style-type: none"> 1. Wheels not positioned correctly. 2. Dull blade. 	<ol style="list-style-type: none"> 1. Place all four wheels in same height position. 2. Sharpen or replace blade.

†Refer to separate engine manual packed with your unit.

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

Models 816R, 817R and 818R



Models 816R, 817R and 818R

PARTS LIST FOR MODELS 816R, 817R AND 818R ROTARY MOWERS

REF. NO.	PART NO.	CODE	DESCRIPTION	REF. NO.	PART NO.	CODE	DESCRIPTION
1	720-0226		Grip	59	16863	N	Height Adj. Connecting Arm
2	731-0609		Control Handle Ass'y.—L.H.	61	711-0313		Sleeve .526" I.D. x .69"
3	731-1023	N	Top Discharge Chute Ass'y.	62	710-0757		Hex Bolt 7/16-20 x 1.5" Lg.
4	710-0796		Truss Mach. Scr. #12 x 1.50" Lg.				(Grade 5)
5	710-0842B	N	Rope Guide Bolt	63	736-0119		L-Wash. 5/16" I.D.*
7	731-0817		Control Panel Half	64	16136A	N	R.H. Handle Wheel Brkt. Ass'y.
8	731-0524		Control Disc Pin	65	16137B	N	L.H. Handle Wheel Brkt. Ass'y.
9	731-0816		Clutch Panel Half	66	710-0260		Carriage Bolt 5/16-18 x .62"*
10	731-0972		Throttle Control Lever	67	710-0603		Hex Wash. Hd. B-Tap Scr. 5/16-18
11	711-0500		Spacer .526" I.D. x .690" O.D. x .640" Lg.	68	710-0654A	N	Hex Wash. Hd. TT-Tap Scr. 3/8-16
12	736-0108		FI-Wash. .510" I.D. x .75"	69	712-0267		Hex Nut 5/16-18 Thd.*
13	710-0946		Truss Mach. Scr. 1/4-20 x .62"	70	720-0223		Grip
14	749-0438A	N	Upper Handle	71	732-0606	N	Height Adj. Lever
15	16129A	N	Panel Support Brkt.	73	736-0242		Bell-Wash. 5/16" I.D.
16	16862		Top Catcher Panel Ass'y.	74	750-0736		Spacer .383" I.D. x .503" O.D.
17	17095		Top Discharge Door	75	750-0624		Shld. Spacer .500" Dia.
18	710-0429		Hex B-Tap Scr. #10 x .38"	76	719-0279		Rope Guide
19	732-0483A	N	Torsion Spring	77	726-0233		Bolt Retainer 1/4 x .50" O.D.
20	747-0514		Pivot Pin	78	777-5816		Instruction Label
21	710-0134		Carriage Bolt 1/4-20 x .62"*	79	777-5814		Control Label
22	710-0225		Truss Mach. Scr. 1/4-20 x .75" Lg.	81	731-0880	N	Panel Clip
23	710-0289		Hex Bolt 1/4-20 x .50" Lg.	83	741-0491		Flanged Nyliner Brg.
24	738-0704		Shoulder Bolt .312 Dia. x .18 Lg. Special	85	712-0266		Hex Jam Nut 3/8-16 Thd.
25	710-0258		Hex Bolt 1/4-20 x .62" Lg.*	86	738-0234		Shld. Bolt .50" Dia. x .295"
26	712-0287		Hex Nut 1/4-20 Thd.*	87	736-0253		Bell-Wash. .515" I.D. x 1.0" O.D.
28	736-0329		L-Wash. 1/4" I.D.*	88	736-0169		L-Wash. 3/8" I.D.*
29	747-0705		Front Grass Catcher Frame	89	711-0805		Shld. Pin 3/8-24 x 1.43" Lg.
30	749-0764	N	Upper Bag Support	90	710-0323		Truss Mach. Scr. 5/16-18 x .75"
32	735-0639		Spark Plug Insulator	91	712-0798		Hex Nut 3/8-16 Thd. (817R)
33	712-0388		Wing Nut w/Washer	92	728-0171		Pop Rivett†
34	746-0672		Throttle Control Wire 58" (816R) & (817R) 746-0674	93	14924		Cable Bracket†
	746-0673		Throttle Control Wire 47" (818R)	94	749-0778	N	Catcher Panel Support Arm
35	749-0725	N	Lower Handle	95	726-0175		Clamp
36	—		Engine	98	12894A	N	Cable Clamp†
38	764-0255		21" Top Discharge Grass Bag (Grey)	100	710-0436		Hex B-Tap Scr. #10 x .62" Lg.†
	764-0257		21" Top Discharge Grass Bag (Black)	101	751-0463		Cable Clamp†
39	14835		Retaining Strip	102	16858	N/629	21" Deck Ass'y.
41	736-0204		FI-Wash. .344" I.D. x .62"	105	16856	N	Front Axle Ass'y.
42	16131A	N	Rear Axle Ass'y.	106	711-0313		Sleeve .526" I.D. x .690" O.D. x .880" Lg.
44	741-0180		Flange Ball Bearing 1/2" I.D.	109	732-0362		Extension Spring 8" Lg.
45	710-0776A	N	Hex AB-Tap Scr. 1/4 x .62"	111	736-0221		Intern. L-Wash. 3/8 I.D.*
46	736-0258		FI-Wash. .38" I.D. x 1.0"	112	738-0705		Shld. Bolt .575" Dia. x .42"
47	712-0711		Hex Jam Nut 3/8-24 Thd.	117	720-0190		Door Grip
48	734-1513A	N	Wheel Ass'y.—Comp. 8" x 2"	119	731-0975A	N	Hub Cap
49	712-0346		Hex L-Nut 1/2-20 Thd.	120	731-0981A	N	Hub Cap
50	731-0564		Plug	121	710-0671		Curved Carr. Bolt 5/16-18 x 1.38" Lg.
51	731-0671A	N	Rear Flap 3.75" x 17.30" Lg.	129	746-0478A	N	Control Cable—49" Lg. (817R)
52	726-0240		Cable Tie		746-0480A	N	Control Cable 46" Lg. (816R) — 818-1
53	722-0139		Foam Strip 1" Lg.		746-0479A	N	Control Cable 47" Lg. (818R)
55	753-0463		Blade Adapter Kit	131	710-0969		Hex AB-Tap Scr. #12 x 1.0"
56	742-0306		21" Blade	132	731-0801		Bag Handle
57	736-0415		Blade Bell-Wash. .44" I.D. x 2.38"	133	731-0884		Side Chute Deflector Ass'y.
				135	753-0430		Kit—Control Housing Comp.
				136	736-0300		FI-Wash. .385" I.D. x .87" O.D.
				137	712-0296		Hex Patch L-Nut 3/8-24 Thd.

†Model 816R Only.

NOTE: Specifications subject to change without notice or obligation.

*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.

PARTS INFORMATION

POWER EQUIPMENT PARTS AND SERVICE

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

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.

ALABAMA	BIRMINGHAM	NEW YORK	CARTHAGE
Auto Electric & Carburetor Co.	2625 4th Ave. S. Box 2466 35233	Gamble Dist., Inc.	West End Ave. Box 389 13619
ARKANSAS	NORTH LITTLE ROCK	NORTH CAROLINA	GREENSBORO
Sutton's Lawn Mower Shop	5301 Roundtop Drive Box 368, Rt. 4 72117	Dixie Sales Company	335 N. Green Box 1408 27402
CALIFORNIA	PORTERVILLE	OHIO	CARROLL
Billious	75 North D Street 93257	Stebe's Mid-State Mower Supply	Box 366, 71 High St. 43112
COLORADO	DENVER	Bleckrie, Inc.	CLEVELAND
Spitzer Industrial Products Co.	6601 N. Washington St. 80229	National Central	7900 Lorain Ave. 44102
FLORIDA	JACKSONVILLE	Burton Supply Co.	WADSWORTH
Radco Distributors	4909 Victor St. Box 5459 32207	PENNSYLVANIA	687 Seville Rd. 44281
Small Eng. Dist.	HIALEAH	EECO Inc.	YOUNGSTOWN
GEORGIA	7995 W. 26th Court 33016	Thompson Rubber Co.	1301 Logan Ave. Box 929 44501
East Point Cycle & Key Inc.	EAST POINT	Bluemont Co.	HARRISBURG
ILLINOIS	2834 Church St. 30344	Frank Roberts & Sons	4021 N. 6th St. 17110
Keen Edge Co.	LYONS	Scranton Auto Ignition Co.	WILLOW GROVE
INDIANA	8615 Ogden Ave. 60534	Ace Distributors	850 Davisville Rd. 19090
Parts & Sales Inc.	ELKHART	American Sales & Service, Inc.	PITTSBURGH
IOWA	2101 Industrial Pkwy. Box 277 46516	Marr Brothers, Inc.	11101 Frankstown Rd. 15235
Power Lawn & Garden Equip.	DUBUQUE	Engine House Inc.	PUNXSUTAWNEY
LOUISIANA	2551 J.F. Kennedy 52001	TENNESSEE	R.D. 2 15767
Jourdan Engine Co.	LAFAYETTE	American Sales & Service, Inc.	SCRANTON
MARYLAND	214 W. Vermillion St. Box 3503 70501	Marr Brothers, Inc.	1133-35 Wyoming Ave. 18509
Center Supply Co.	TAKOMA PARK	TEXAS	KNOXVILLE
MASSACHUSETTS	6867 New Hampshire Ave. 20912	Marr Brothers, Inc.	2103 Magnolia 37917
Morton B. Collins Co.	SPRINGFIELD	Engine House Inc.	MEMPHIS
MICHIGAN	300 Birnie Ave. 01107	UTAH	3035-43 Bellbrook 38116
Power Equipment Dist.	MOUNT CLEMENS	Powered Products	DALLAS
MINNESOTA	340 Hubbard 48043	VIRGINIA	423 E. Jefferson 75203
Hance Distributing Inc.	PLYMOUTH	RBI Corp.	SAN ANTONIO
MISSOURI	12795 16th Ave. North 55441	WASHINGTON	4918 Golden Quail 78249
Oscar Wilson Engine & Parts	EARTH CITY	Equip. Northwest	SALT LAKE CITY
Automotive Equip. Service	4159 Shoreline Dr. 63045	WISCONSIN	1661 N. Beck St. 84116
NEW JERSEY	KANSAS CITY	Wisconsin Magneto Inc.	ASHLAND
Piersons	3117 Holmes St. 64109	PUERTO RICO	101 Cedar Ridge Dr. 23005
	ALLOWAY	CIE & Associates, Inc.	SEATTLE
	Canal St., Box 494 08001		1410 14th Ave. 98122
			MILWAUKEE
			4727 N. Teutonia St. 53209
			AGUADILLA
			Box 427 Ramey Station 00604

WARRANTY / PARTS AND SERVICE POLICY

(0588)

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 unrestricted 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 fault, 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:

1. Model Number, Serial Number and/or Data Code of unit involved.
2. Date unit was purchased or first put into service.
3. Date of Failure.
4. Nature of Failure.

REPLACEMENT PARTS • P.O. BOX 360900 • CLEVELAND, OHIO 44136