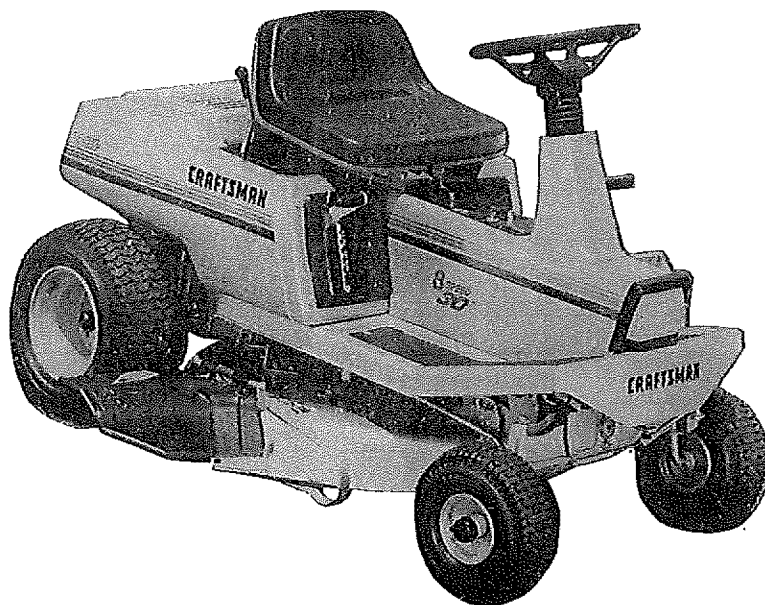


# SEARS

## owners manual

Model No.  
502.254152



# CRAFTSMAN

## 11 HP. ELECTRIC START 8 SPEED - 30" MOWER REAR ENGINE RIDER

**CAUTION:**  
Read And Follow  
All Safety Rules  
And Instructions Before  
Operating This  
Equipment.

- Assembly
- Operation
- Maintenance
- Repair and Adjustment
- Repair Parts

# SAFETY RULES

## Safe Operation Practices for Riding Vehicles As Recommended by American National Standards Institute

1. Know the controls and how to stop quickly. READ THIS INSTRUCTION BOOK and any instructions furnished with attachments.
2. Do not allow children to operate the machine. Do not allow adults to operate it without proper instruction.
3. Clear the work area of objects (wire, rocks, etc.) which might be discharged by the machine.
4. Handle gasoline with care. It is highly flammable.
  - a. Use an approved gasoline container.
  - b. Never remove the fuel cap or add gasoline to a running or hot engine or an engine that has not been allowed to cool for several minutes after running. Never fill the fuel tank indoors. Clean up spilled gasoline.
  - c. Do not run the engine indoors. Exhaust fumes are dangerous.
5. Always wear safety glasses or a eye shield when you operate the unit to protect your eyes from foreign objects that can be thrown from the unit. Always wear eye protection when you make an adjustment or repairs to the unit.
6. Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
7. Disengage all attachment clutches and shift into neutral before attempting to start the engine.
8. Disengage power attachment(s) when transporting or not in use.
9. Do not stop or start suddenly when going uphill or downhill. Mow up and down the face of steep slopes; never across the face. See the "Guide" in the back this book to check for safe operation.
10. Reduce speed and exercise extreme caution on slopes and in sharp turns to prevent tipping or loss of control. Be especially cautious when changing directions on slopes.
11. Stay alert for holes, rocks, roots in the terrain, and other hidden hazards. Keep away from drop-offs.
12. Use care when pulling loads or using heavy equipment.
  - a. Use only approved drawbar hitch points.
  - b. Limit loads to those you can safely control.
  - c. Do not turn sharply. Use care when backing.
  - d. Use counterweight(s) or wheel weights when suggested in the instruction book.
13. Watch out for traffic when crossing or near roadways.
14. When using any attachments, never direct discharge of material toward bystanders or allow anyone near the unit while in operation.
15. Disengage power to attachment(s) and stop the engine before leaving the operator's position.
16. To reduce fire hazards, keep the engine free of grass, leaves, or excessive grease.
17. The vehicle and attachments must be stopped and inspected for damage after striking a foreign object. All damage must be repaired before restarting and operating the equipment.
18. Do not change the engine governor settings or overspeed the engine.
19. When using the vehicle with a mower, proceed as follows:
  - a. Mow only in daylight or in good artificial light.
  - b. Never make a cutting height adjustment while the engine is running if the operator must dismount.
  - c. Stop the engine before removing a grass catcher or unclogging the chute.
  - d. Check the blade(s) and mounting nut(s) for proper tightness at frequent intervals. Frequently check the blade for wear or damage such as cracks and nicks. A blade that is bent or damaged must be immediately replaced with a factory replacement blade. For safety, replace the blade every two years. Frequently check the nut(s) that hold the blade(s). Replace damaged nuts and tighten loose nuts.
20. Disengage power to the mower before backing up. Do not mow in reverse unless absolutely necessary and then only after careful observation of the entire area behind the mower.
21. Under normal usage, the grass catcher bag material is subject to deterioration and wear. It should be checked frequently for bag replacement. Replacement bags should be checked to ensure compliance with the original manufacturers recommendations or specifications.
22. Do not operate the mower without either the grass catcher or guards in place. Read the instructions provided with the grass catcher.
23. Do not carry passengers. Do not mow when children and others are present.
24. Never store the equipment with gasoline in the tank inside a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.
25. Take all possible precautions when leaving the vehicle unattended, such as disengaging the blade engagement control lever, lowering the attachment(s), shifting into neutral, setting the parking brake, stopping the engine, and removing the key.
26. Keep the vehicle and attachments in good operating condition, and keep safety devices in place and working.
27. Disengage power to attachment(s) and stop the engine before making any repairs or adjustments. The carburetor can be adjusted with the engine running.
28. Wait for all movement to stop before servicing any part of the unit.
29. Read and follow the instructions in this book concerning safety and operation of the mower.

**WARNING:** This unit is equipped with an internal combustion engine and must 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 must 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. See an Authorized Service Center for a spark arrester for the muffler.



Look for this symbol to point out important safety precautions. It means: "Attention! Become Alert! Your Safety is Involved."

This product is made to give you many hours of performance and safe operation. To keep the unit in good condition, you must correctly service the unit. For safety and performance, follow the ASSEMBLY, OPERATION, and MAINTENANCE instructions. If you can not correct a problem, see the nearest Sears Service Center.

## CUSTOMER RESPONSIBILITIES

Follow all the assembly instructions. Correctly adjust the unit. Carefully read and follow the rules for safe operation. Inspect the unit. Complete all maintenance on the unit. Know how to operate all standard and accessory equipment on the unit. Make sure that the operator can correctly operate the unit. Operate the unit only with guards, shields, and other safety items in place and working correctly. Service the unit only with authorized or approved replacement parts.

### RIDING LAWN MOWER

Record in the space below the serial number and the date of purchase of this unit.

The model number and serial number are found under the seat on a plate attached to the seat support.

Serial Number: \_\_\_\_\_

Date of Purchase: \_\_\_\_\_

Keep these numbers for future reference.

## REAR ENGINE RIDER FEATURES

**Craftsman Engine** Air cooled and long life with solid state ignition.

**All Gear Transmission** Eight forward speeds and one reverse to let you select the correct speed for your type of yard. A drive chain connects the transmission to an automotive type differential.

**Tilt Seat** The seat tilts forward for easy access to the battery and the engine.

**Side Panels** The side panels can be easily removed for access to the engine.

**Mower Housing** The full-floating suspension and single blade give an even cut. The lift lever has an eight position height adjustment.

## ATTACHMENTS

This unit can use attachments available at the nearest Sears Store. This unit can pull attachments like a lawn sweeper, a lawn aerator, or a hopper spreader. This unit can not use attachments that engage the ground like a plow, a disk harrow, or a cultivator.

## MAINTENANCE AGREEMENT

A Sears Maintenance Agreement is available on this unit. See the nearest Sears Store for information.

### LIMITED TWO YEAR WARRANTY ON ELECTRIC START RIDING EQUIPMENT

For two years from the date of purchase, when this riding equipment is maintained, lubricated, and tuned up according to the operating and maintenance instructions in the Owner's Manual, Sears will repair free of charge any defect in material or workmanship in this electric start riding equipment.

This warranty excludes blade(s), blade adapter(s), spark plug(s), air cleaner, and belt(s), which are expendable and become worn during normal use.

This warranty does not cover:

- tire replacement or repair caused by punctures from outside objects (such as nails, thorns, stumps, or glass); and
- repairs necessary because of operator abuse or negligence, including the failure to maintain the equipment according to instructions contained in the Owner's Manual; and
- riding equipment used for commercial or rental purposes.

### FULL 90-DAY WARRANTY ON BATTERY

For 90 days from the date of purchase, if any battery included with this riding equipment proves defective in material or workmanship and our testing determines the battery will not hold a charge, Sears will replace the battery at no charge.

WARRANTY SERVICE IS AVAILABLE BY CONTACTING THE NEAREST SEARS SERVICE CENTER/DEPARTMENT IN THE UNITED STATES. This warranty applies only while this product is in use in the United States.

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

Sears, Roebuck and Co., D/698-731A, Sears Tower, Chicago, IL 60684

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# ASSEMBLY

## SET UP

Your unit was carefully inspected and put in a carton for protection from damage.

The unit is assembled except for the items shown on this page. These items are in the carton with a bag of fasteners and loose parts needed for assembly. Find and remove these items. The fasteners and loose parts are shown on the next page.

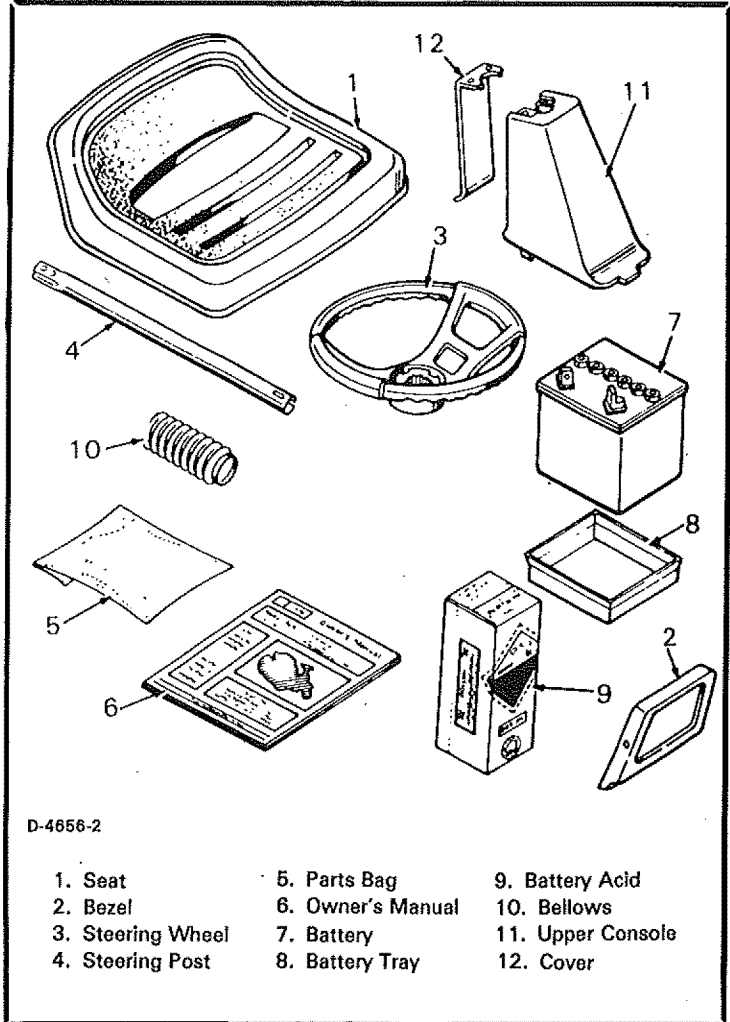
## HOW TO REMOVE FROM THE CARTON

To remove the riding mower from the carton, follow the instructions below.

1. Open the top of the carton.
2. The items shown at the right are in a small box. Remove and check each item. Remove the small box.
3. Cut each corner of the carton from the top to the bottom with a knife.
4. Move the shift lever to the NEUTRAL position.
5. Make sure the parking brake is disengaged.
6. Move the lift lever to the HIGH position.
7. Carefully push the riding mower backwards off the wood frame.

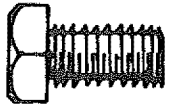
## TOOLS YOU NEED TO ASSEMBLE THE UNIT

1. Adjustable wrench
2. Open end wrench 1/2" - 9/16"
3. Open end wrench 7/16" - 1/2"
4. Blade type screwdriver
5. Phillips screwdriver
6. Low Tire pressure gauge
7. Knife

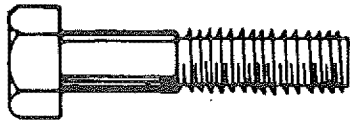


## PARTS BAG - contents

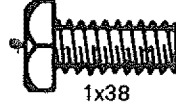
The fasteners and loose parts are shown below. The fasteners are shown full size with the quantities in brackets ( ).



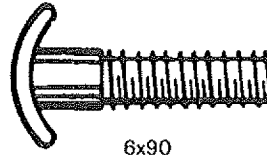
(4) Hex Bolt  
5/16" x 5/8"  
For Seat  
STD523106



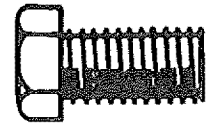
(1) Hex Bolt  
5/16" x 1-1/2"  
For Adapter  
STD523115



1x38  
(2) Hex Bolt  
1/4" -20 x 5/8"  
For Battery Cables  
STD522506



6x90  
(1) Bolt  
5/16" x 1-1/4"  
For Steering Post



(1) Hex Bolt  
3/8" x 3/4"  
For Steering Wheel  
STD523707



26x161  
(2) Screw  
#10x1/2" Type BT  
For Console Cover



(2) Screw  
For Bearing  
STD611005



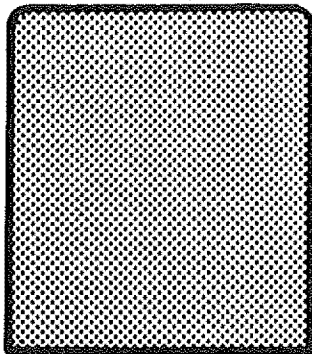
15x66  
(2) Locknut  
1/4"-20  
For Battery Cables  
STD541425



(1) Locknut  
5/16"-18  
For Adapter  
STD541431



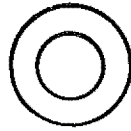
19x39  
(1) Lockwasher  
I.D. 3/8"  
For Steering Wheel  
STD551237



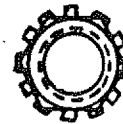
55804  
(1) Cover  
For Battery Clamp



(4) Lockwasher  
I.D. 5/16"  
For Seat  
STD551131



(4) Washer  
I.D. 11/32"  
For Seat  
STD551031



(2) Locknut  
5/16"-18  
For Steering Post (1)  
For Battery Clamp (1)  
STD541431



Not shown full size  
20094Z  
(1) Washer  
I.D. 13/32"  
For Steering Wheel



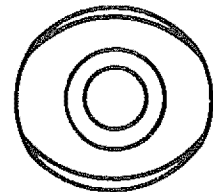
Not shown full size  
24582  
(4) Hub Cap  
For Wheels



Not shown full size  
20107  
(2) Seat Spring Cap  
For Seat Springs



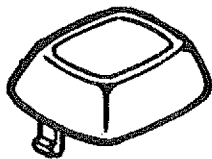
Not shown full size  
56022  
(1) Bearing  
For Steering Post



17x132  
(1) Washer  
I.D. .328"  
For Steering Post



Not shown full size  
55253Z  
(1) Clamp, Battery  
For Battery



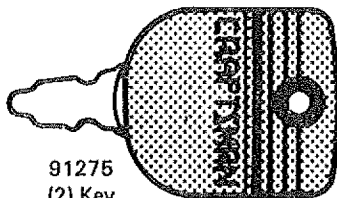
Not shown full size  
55919  
(1) Cap  
For Steering Wheel



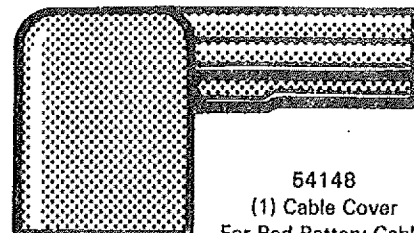
Not shown full size  
55911  
(1) Adapter  
For Steering Wheel



Not shown full size  
55705  
(1) Tube, Oil Drain  
For Engine



91275  
(2) Key  
For Ignition



54148  
(1) Cable Cover  
For Red Battery Cable

# ASSEMBLY

## HOW TO PREPARE AND CHARGE THE BATTERY

**IMPORTANT:** Before you install the battery, add the battery acid, (Electrolyte) to the battery. Battery acid will damage paint and parts.



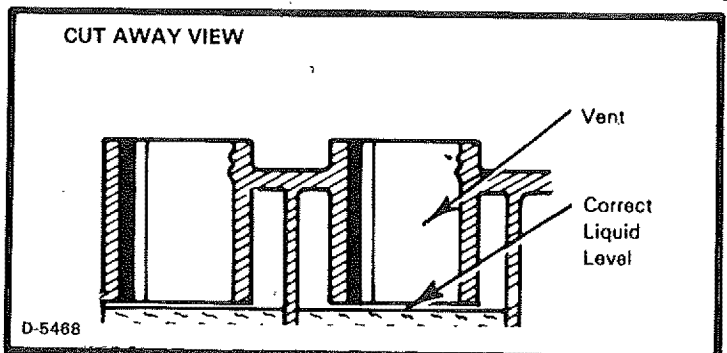
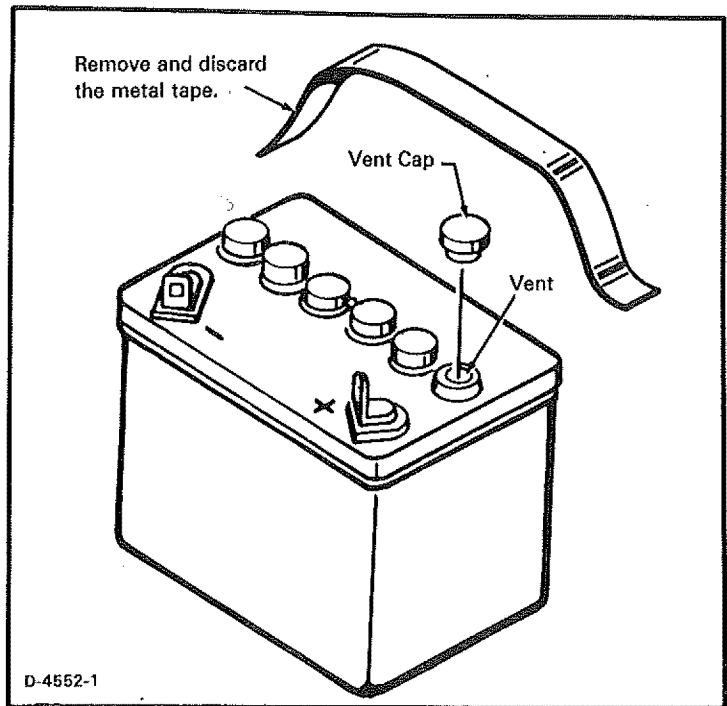
**WARNING:** Read the instructions included with the battery acid container. Protect your hands and eyes from the battery acid. Use clothing that will protect you.

1. If not installed on the battery, remove the vent caps from the plastic bag. Read the instructions included with the vent caps.
2. If metal tape covers the vents, remove the metal tape from the vents. Discard the metal tape.
3. Pour battery acid into each battery cell until the battery acid touches the bottom of the vent as shown. Do not add the battery acid above the bottom of the vent. If you add too much battery acid, the excessive battery acid will flow from the battery when you charge the battery.
4. Wait 20 to 30 minutes before you put the vent caps on the battery. The level of the battery acid can drop below the vent described in step 3. Add more battery acid until the correct battery acid level is reached. Install the vent caps. Wash the top of the battery with water to remove any battery acid.
5. Discard the battery acid container and any battery acid that was not used as follows. Fill the container half full with water. Add baking soda and mix together using a piece of wood. Add more baking soda until the solution does not foam. Discard the solution and wash the container with water. Destroy the container.



**WARNING:** When you charge the battery, do not smoke. Keep the battery away from any sparks. The fumes from the battery acid can cause an explosion.

6. Use a 12 volt battery charger to charge the battery. Charge at a rate of 2 amperes for 3 to 4 hours. After the battery is charged, check the level of the battery acid. If the level of the battery acid falls, add water. Do not add battery acid to a charged battery or the result can be an explosion.



### DANGER BATTERY ACID WILL CAUSE SEVERE BURNS



Contains sulphuric acid.

Do not let the battery acid come in contact with the skin, the eyes, or the clothing.

To prevent accidents, neutralize the battery acid that was not used. To neutralize, fill the container half full with water. Add baking soda and mix using a piece of wood until the solution does not foam. Discard the solution and wash the container with water. Destroy the container.

#### ANTIDOTE:

**External** - Wash the area with water, then wash with a solution of water and sodium bicarbonate.

**Internal** - Drink large amounts of water, milk, or milk of magnesia. Drink water mixed with the whites of eggs. Call a Doctor immediately.

**Eyes** - Flush with water for 15 minutes and then get immediate medical help.

#### POISON

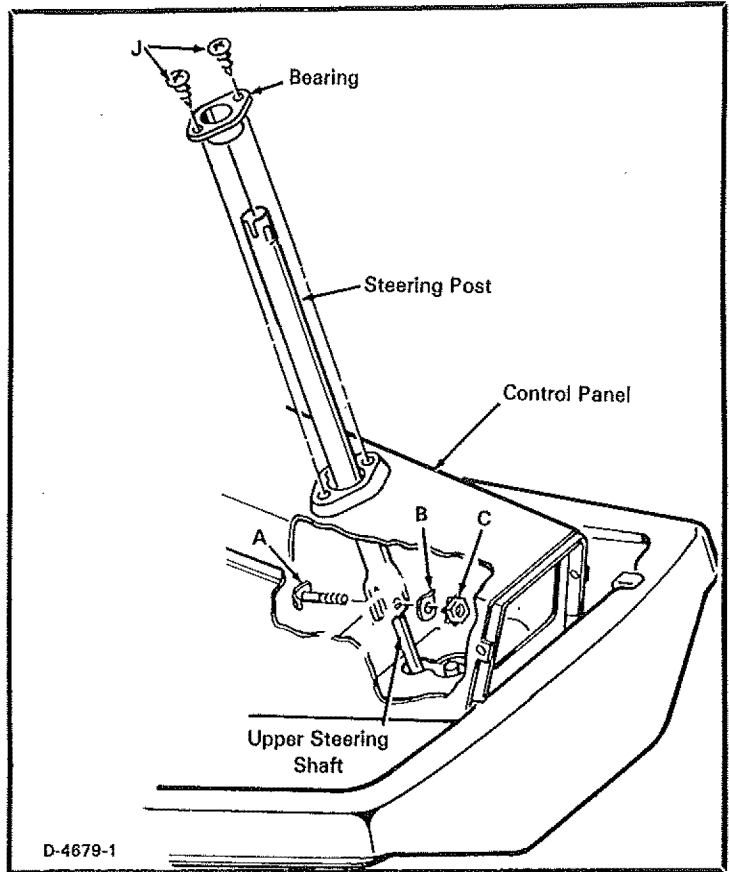
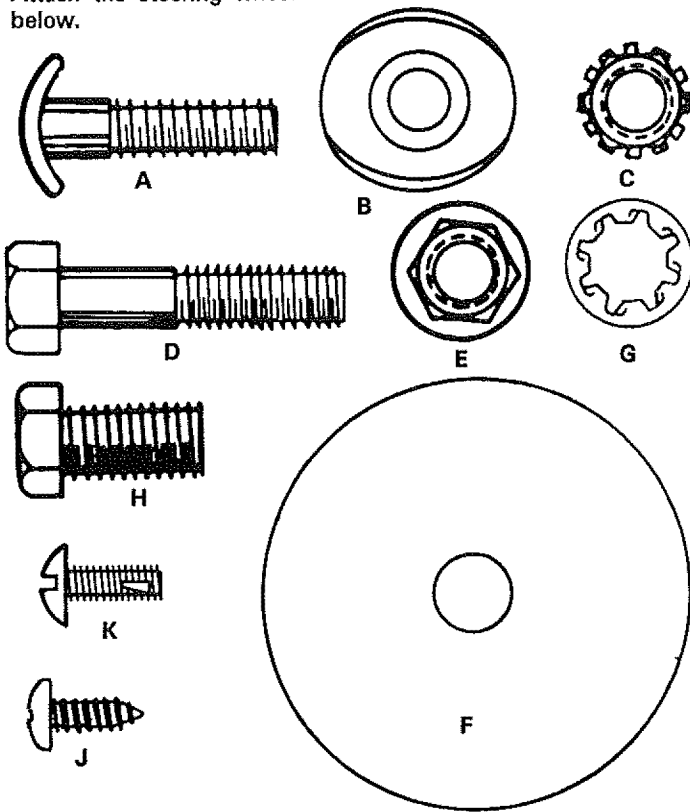
- KEEP AWAY FROM CHILDREN -

D-5213

# ASSEMBLY

## HOW TO INSTALL THE STEERING WHEEL

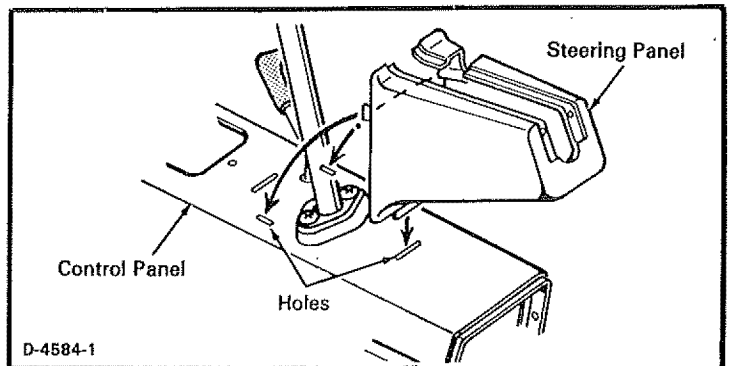
Attach the steering wheel with the fasteners shown full size below.



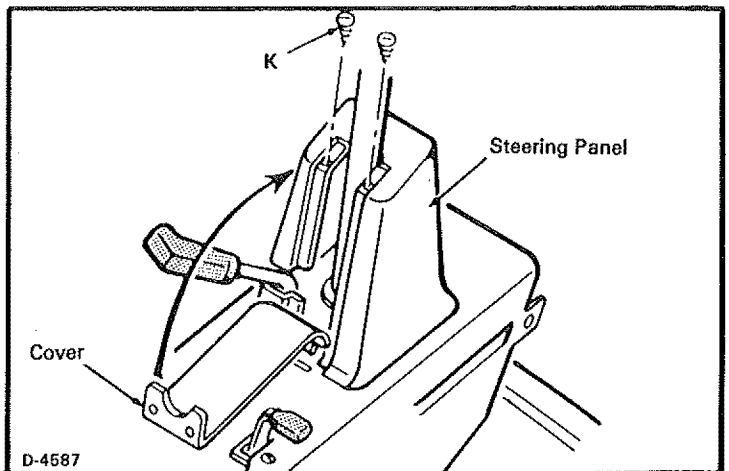
1. Look at the hole in the upper steering shaft. Turn the front tires to the left until the hole in the upper steering shaft points toward the front.
2. Slide the steering post through the control panel and on the upper steering shaft as shown. Fasten with the fasteners as shown in the illustration.
3. Turn the front wheels until a 1/2" wrench will fit on the locknut. Make sure the head of the bolt fits around the steering post. Tighten the locknut to a torque of 18 foot pounds.
4. Slide the bearing on the steering post. Align the holes in the bearing with the holes in the top of the control panel. Fasten the bearing with the screws as shown.



**WARNING:** For safe operation, make sure the bearing is correctly installed. If the bearing becomes loose or is damaged, replace immediately.



5. Attach the steering panel to the control panel as follows. Attach the front tab into the control panel. Move the steering panel back. Put the two tabs of the steering panel in the control panel as shown.
6. To assemble the cover, put the tab in the control panel. Fasten the top of the cover with the two screws as shown.
7. Slide the bellows over the steering post. Make sure the collar of the bellows is on top. Push on the top of the bellows. Fasten the adapter to the steering post with the fasteners as shown.
8. Fasten the adapter to the steering post with the bolt and nut as shown. Tighten to a torque of 18 foot pounds.





# ASSEMBLY

9. Make sure the front wheels point to the front. Attach the steering wheel to the adapter. Fasten the steering wheel with the large washer, the lockwasher washer, and the bolt shown in the illustration.
10. Attach the steering wheel cap to the steering wheel.
11. Connect the ends of the wires for the headlight. Before the bezel can be assembled, the two screws at the front of the control panel must be removed. Put the bezel in position on the end of the control panel. Fasten the bezel with the screws that were removed.

**NOTE:** If you do not follow the above assembly instructions correctly, the steering system will feel loose and the unit will not steer correctly.

## HOW TO INSTALL THE TILT SEAT

Assemble the seat with the fasteners shown full size below.

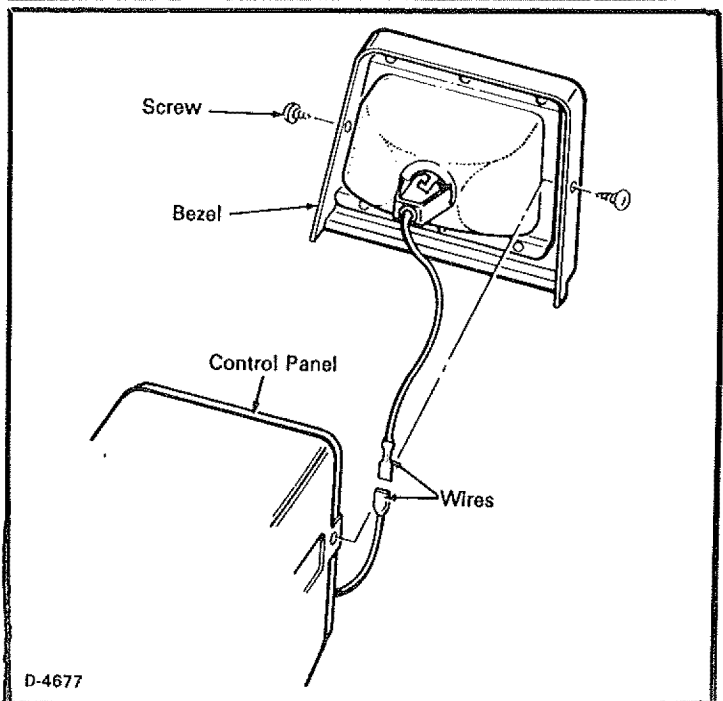
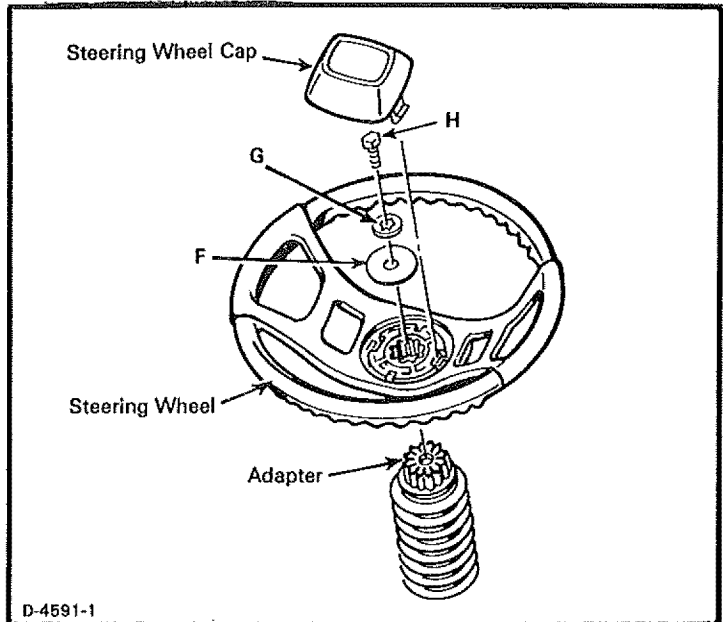
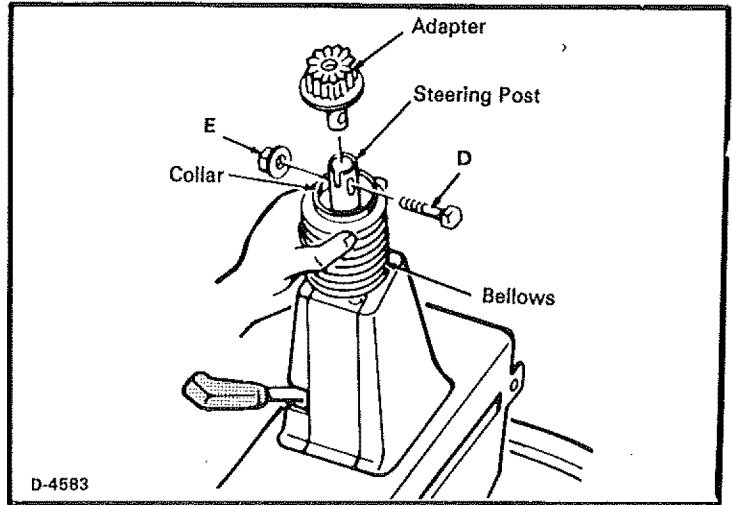
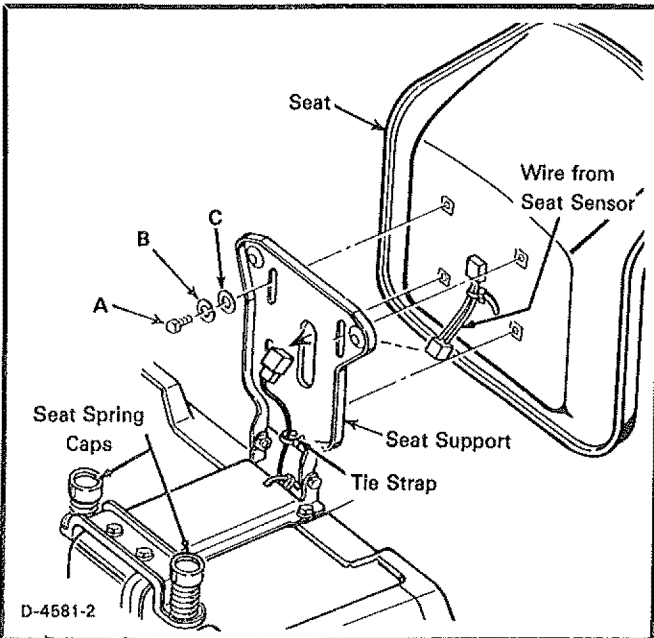


1. Align the four long holes in the seat support to the four holes in the seat. Make sure the wire from the seat switch sensor goes through the large hole in the seat support. Fasten the seat to the seat support with the fasteners as shown. Do not tighten.
2. Move the seat to the best position for operating the unit. Tighten the hex bolts.
3. Connect the wire from the seat switch sensor to the wire harness. Make sure the tab part of the connector, from the seat switch sensor, locks into the latch of the wire harness connector.



**WARNING:** For correct and safe operation of the unit, you must connect the wire from the seat switch sensor to the wire harness.

4. Some models have two seat spring caps in the parts bag. Mount the caps on the seat springs as shown.



# ASSEMBLY

## CHECK THE TIRES

Check the air pressure in the tires. Tires with too much air pressure will cause the unit to ride rough. Also, the wrong air pressure will keep the mower housing from cutting level. The correct air pressure is shown on the side of the tires. If the air pressure is not shown, inflate the tires from 10 to 12 PSI (0.7 to 0.85 kg/cm<sup>2</sup>).

## HOW TO CHECK THE MOWER HOUSING

Make sure the level of cut set at the factory is still correct. After you mow a short distance, look at the area that was cut. If the mower housing does not cut level, see the instructions on "How To Level The Mower Housing" in the maintenance section of this instruction book.

## HOW TO ATTACH THE HUB CAPS

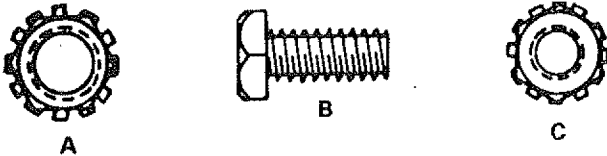
Push each hub cap onto the center hub of each wheel. Make sure the washer holds the hub cap in place.

## FINAL ASSEMBLY

1. The engine is filled with oil. Check the oil. See "How To Check The Oil" in the Maintenance section.
2. Make sure all the fasteners are tight.
3. Read and follow the instructions in the Operation section. Know the location and purpose of all the controls.

## HOW TO INSTALL THE BATTERY

Use the fasteners shown below to install the battery. The fasteners are shown full size.

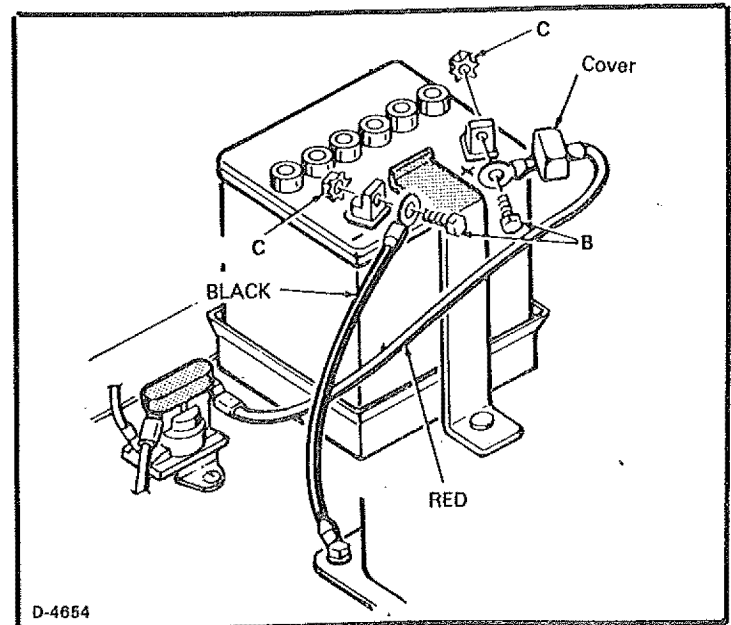
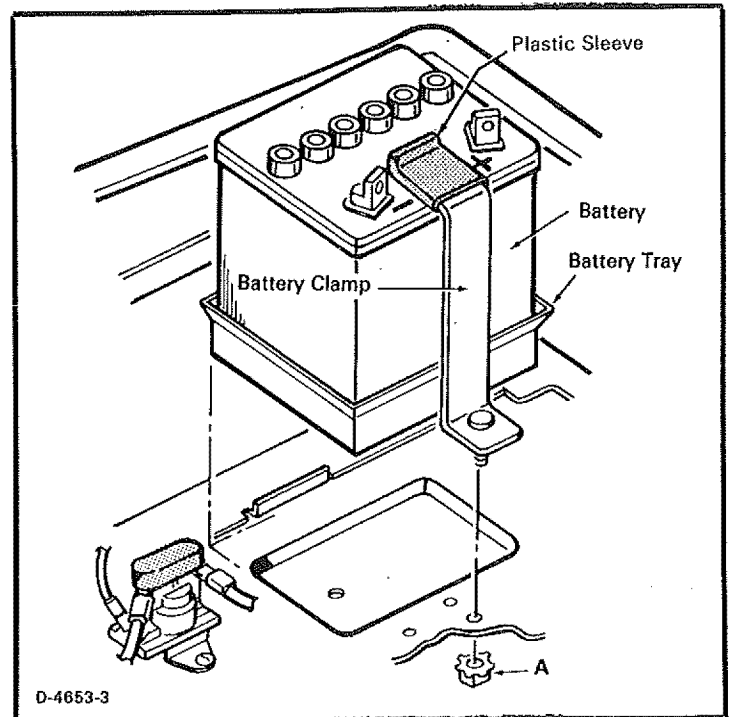
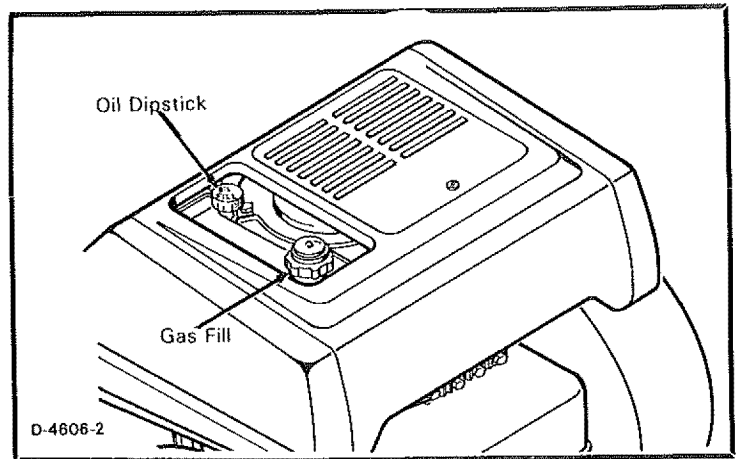


1. Check the level of the acid. If the acid has fallen below the correct level, add water to the correct level.
2. Install the battery and the battery tray as shown in the illustration. Make sure the positive (+) terminal is toward the front of the unit.
3. Slide the plastic sleeve over the end of the battery clamp. Fasten the battery with the battery clamp as shown.
4. Slide the cover for the positive terminal on to the red battery cable as shown.

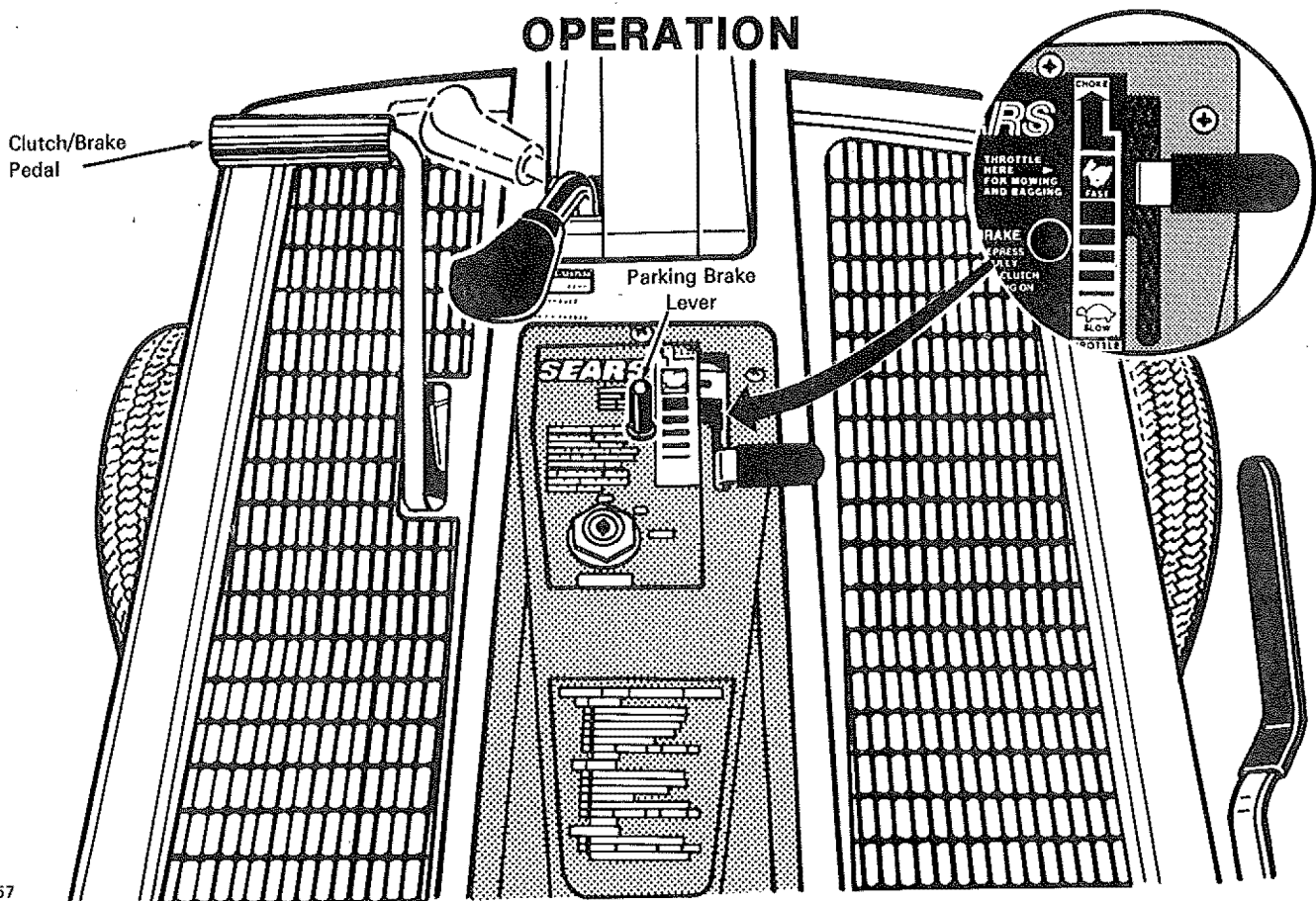


**WARNING:** To prevent sparks, fasten the red cable to the positive (+) terminal before you connect the black cable to the negative (-) terminal.

5. Fasten the red battery cable to the positive (+) terminal with the nut and bolt as shown in the illustration.
6. Slide the cover on to the positive (+) terminal.
7. Fasten the black battery cable to the negative (-) terminal with the nut and bolt as shown in the illustration.
8. To prevent corrosion, apply grease to the battery terminals.



# OPERATION



D-4757

## KNOW THE PRODUCT

Before you operate the unit, read this instruction book. If you understand the unit and how the unit operates, you will get the best performance. When you read this instruction book, compare the illustrations to the unit. Learn the location of the controls. To help prevent an accident, follow the operating instructions and the safety rules. Keep this instruction book for future reference.

## THE BLADE ENGAGEMENT CONTROL

See the location of the blade engagement control in the illustration. Use the blade engagement control to start and stop the rotary blade.

1. Before you start the engine, make sure the control lever is in the **DISENGAGE** position.
2. Move the control lever to the **ENGAGE** position to rotate the blade.
3. Move the control lever to the **DISENGAGE** position to stop the rotary blade. Before you leave the operator's position, make sure the blade has stopped rotating.
4. Before you ride the unit on a sidewalk or a road, move the control lever to the **DISENGAGE** position.



**WARNING:** Always keep your hands and feet away from the blade, deflector opening, and the mower housing when the engine runs.

## HOW TO USE THE CLUTCH/BRAKE PEDAL

This unit has only one pedal that is located on the left side of the unit. The pedal has two functions. The first function is a clutch. The second function is a brake. Push the pedal completely forward to stop the unit.

## HOW TO USE THE LIFT LEVER

The lift lever is on the right side of the unit. To change the height of cut, raise or lower the lift lever. When you ride on a sidewalk or a road, move the lift lever to the **H1** position.

## HOW TO SET THE PARKING BRAKE

1. Push the clutch/brake pedal completely forward. Hold the clutch/brake pedal in the down position. To engage the parking brake, raise the parking brake lever and then release the clutch/brake pedal.
2. To release the parking brake, depress the clutch/brake pedal. The parking brake will automatically disengage.



**WARNING:** Before you leave the operator's position, move the shift lever to the **neutral (N)** position. Set the parking brake. Move the blade engagement control to the **DISENGAGE** position. Stop the engine and remove the ignition key.

## HOW TO USE THE THROTTLE CONTROL

Use the throttle control to increase or decrease the speed of the engine. To start a cold engine, move the lever to the left and into the **START** or **CHOKE** position. For normal operations, move the lever to the **FAST** position. The engine governor is set at the factory for maximum performance. Do not adjust the governor to increase the speed of the engine.

# OPERATION

## HOW TO USE THE SHIFT LEVER

To change the forward speed or the direction of the unit, follow the steps below:

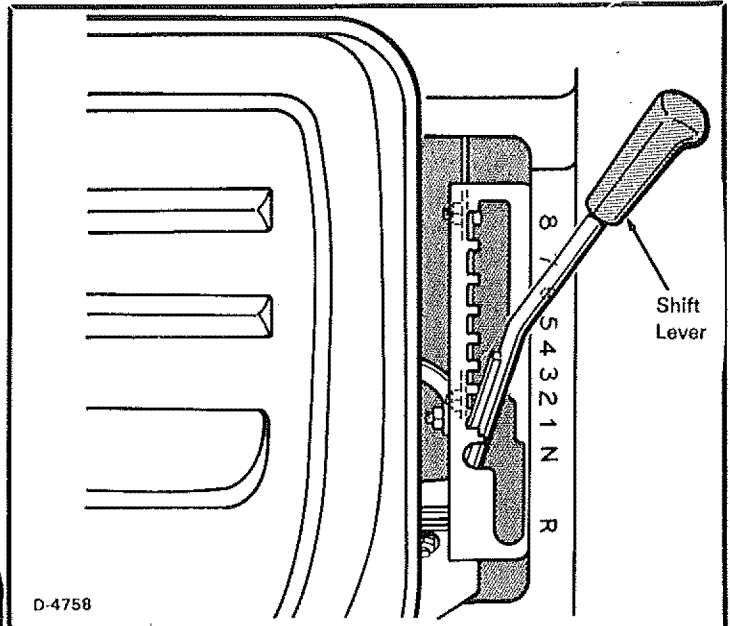
1. Fully apply the clutch/brake pedal.



**WARNING:** Before you move the shift lever in or out of NEUTRAL or REVERSE, fully apply the clutch/brake pedal.

2. Move the shift lever to FIRST or to REVERSE.
3. Slowly release the clutch/brake pedal. Do not ride with your foot on the clutch/brake pedal.
4. While the unit moves forward, you can select any forward speed. Just move the shift lever to the next faster or next slower speed. You do not have to use the clutch/brake pedal.
5. The shift lever positions for operation of your unit are shown in the chart below.

FUNCTION	SHIFT LEVER	THROTTLE
Trimming	1	<p>FAST</p>
Bagging grass	1 or 2	
Normal mowing	3 or 4	
Light mowing	5 or 6	
Transport	7 or 8	
Pull Behind Attachments	3 or 4	<p>SLOW-FAST</p>



5. Move the throttle control to the SLOW position.
6. To stop the engine, turn the ignition key to the OFF position. Remove the key.

## HOW TO START THE ENGINE



**WARNING:** The electrical system has an operator presence system that includes a sensor switch mounted in the seat. These components tell the electrical system if the operator is sitting on the seat. For your protection, always make sure this system operates correctly. This system will stop the engine when the operator leaves the seat if the blade engagement control is engaged.

1. Check the oil.
2. Fill the fuel tank with regular unleaded gasoline. Make sure the gasoline is clean. Leaded gasoline will increase deposits and shorten the life of the valves.

**NOTE:** Do not use gasohol or methanol. Do not use premium unleaded gasoline.

**WARNING:** Always use a safety gasoline container. Do not smoke when adding gasoline to the fuel tank. When inside an enclosure, do not add gasoline. Before you add gasoline, stop the engine and let the engine cool for several minutes.

3. Sit in the seat. Push the clutch/brake pedal completely forward. Keep your foot on the pedal.
4. Move the shift lever to the neutral (N) position.
5. Make sure the blade engagement control is in the DISENGAGE position.
6. Move the throttle control to the CHOKE position.
7. Turn the ignition key to the START position. Release the key when the engine starts.

**NOTE:** If the engine does not start after four or five tries, move the throttle control to the FAST position. Again try to start the engine. If the engine will not start, see the TROUBLE SHOOTING CHART.

8. Slowly move the throttle control to the SLOW position.
9. Let a cold engine run for several minutes. Begin work when the engine is warm. To start a hot engine, move the throttle control to a position between FAST and SLOW.

## HOW TO STOP THE UNIT

1. Push the pedal completely forward to stop the unit. Keep your foot on the pedal.
2. Move the blade engagement control to the DISENGAGE position.
3. Move the shift lever to the NEUTRAL position.
4. Set the parking brake.



**WARNING:** Make sure the parking brake will hold the unit.

# OPERATION

## HOW TO OPERATE WITH THE MOWER HOUSING



**WARNING:** The deflector is a safety device. Do not remove the deflector. The deflector forces the discharged material toward the ground. Always keep the deflector in the down position. If the deflector is damaged, replace it with a factory replacement part.

1. Start the engine.
2. Move the lift lever to a height of cut position. In high or thick grass, cut the grass in the high position first and then lower the lift lever to a lower position.
3. Move the throttle control to the SLOW position.
4. Move the blade engagement control to the ENGAGE position.
5. Push the clutch/brake pedal completely forward.
6. Move the shift lever to the first speed setting.  
**IMPORTANT:** When you mow in heavy grass or mow with a bagger, put the shift lever in the slowest speed.
7. Slowly release the clutch/brake pedal.
8. Move the throttle control to the FAST position. If you need to go faster or slower, move the shift lever to another speed setting.



**WARNING:** For better control of the unit, always select a safe speed.

## HOW TO OPERATE THE UNIT ON HILLS



**WARNING:** Do not ride up or down slopes that are too steep to back straight up. Never ride the unit across a slope. See the "Slope Guide" in the back of this book for information on how to check slopes.

1. Before you ride up or down a hill, move the shift lever to the slowest speed.
2. Do not stop or change speed settings on a hill. If you must stop, quickly push the clutch/brake pedal forward and set the parking brake.
3. To start again, make sure the shift lever is the slowest speed. Move the throttle control to the SLOW position. Slowly release the pedal.
4. If you must stop or start on a hill, always have enough space for the unit to roll when you release the brake and engage the clutch.
5. Be very careful when you change directions on a hill. To help prevent an accident, move the throttle control to the slow position on a slope and in a turn.

# MAINTENANCE

Use the following maintenance section to keep your unit in good operating condition.

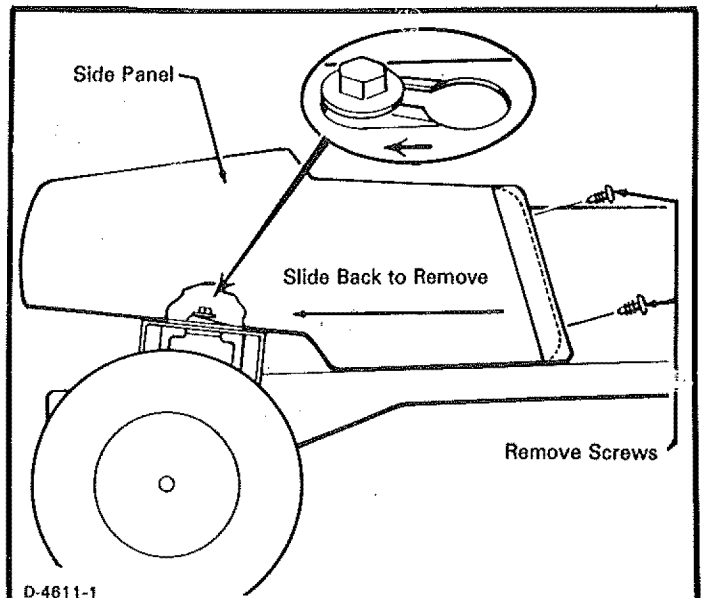


**WARNING:** Before you make an inspection, adjustment (except carburetor), or repair, disconnect the wire from the spark plug.

## HOW TO REMOVE THE SIDE PANEL

To help service and clean the engine or the transmission, the rear side panels can be easily removed.

1. Remove the large screws that hold the front of the side panel.
2. Slide the side panel back approximately one inch. Remove the side panel.



# MAINTENANCE

## FIRST 2 HOURS (after 2 mowings)

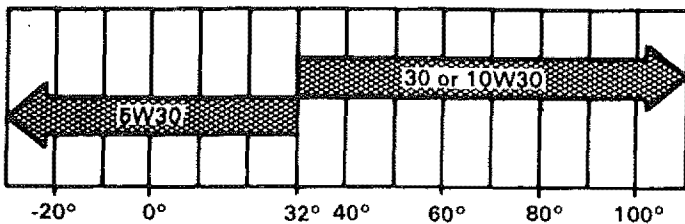
### HOW TO CHANGE THE OIL

**NOTE:** Drain the oil when the engine is warm. Be careful, do not get oil on the belts.

1. Put the plastic drain tube into the oil drain valve. Put the other end of the drain tube into a container as shown. Turn the oil drain valve counterclockwise to open the valve. Drain the oil completely from the engine. Turn the oil drain valve clockwise to close the valve. Remove the plastic drain tube.
2. Use a SD, SE, or SF detergent grade oil. Detergent oil helps to clean the engine. Nothing must be added to the oil.
3. Before you change the oil, use the temperature chart below to select the viscosity grade of the oil to use.

Temperature range before the next oil change. All oils must be A.P.I. service grade SD, SE, or SF.

Recommended SAE viscosity grades



**CAUTION:** To protect the starting system, use SAE 5W30 oil when the temperature is below 32 °F.

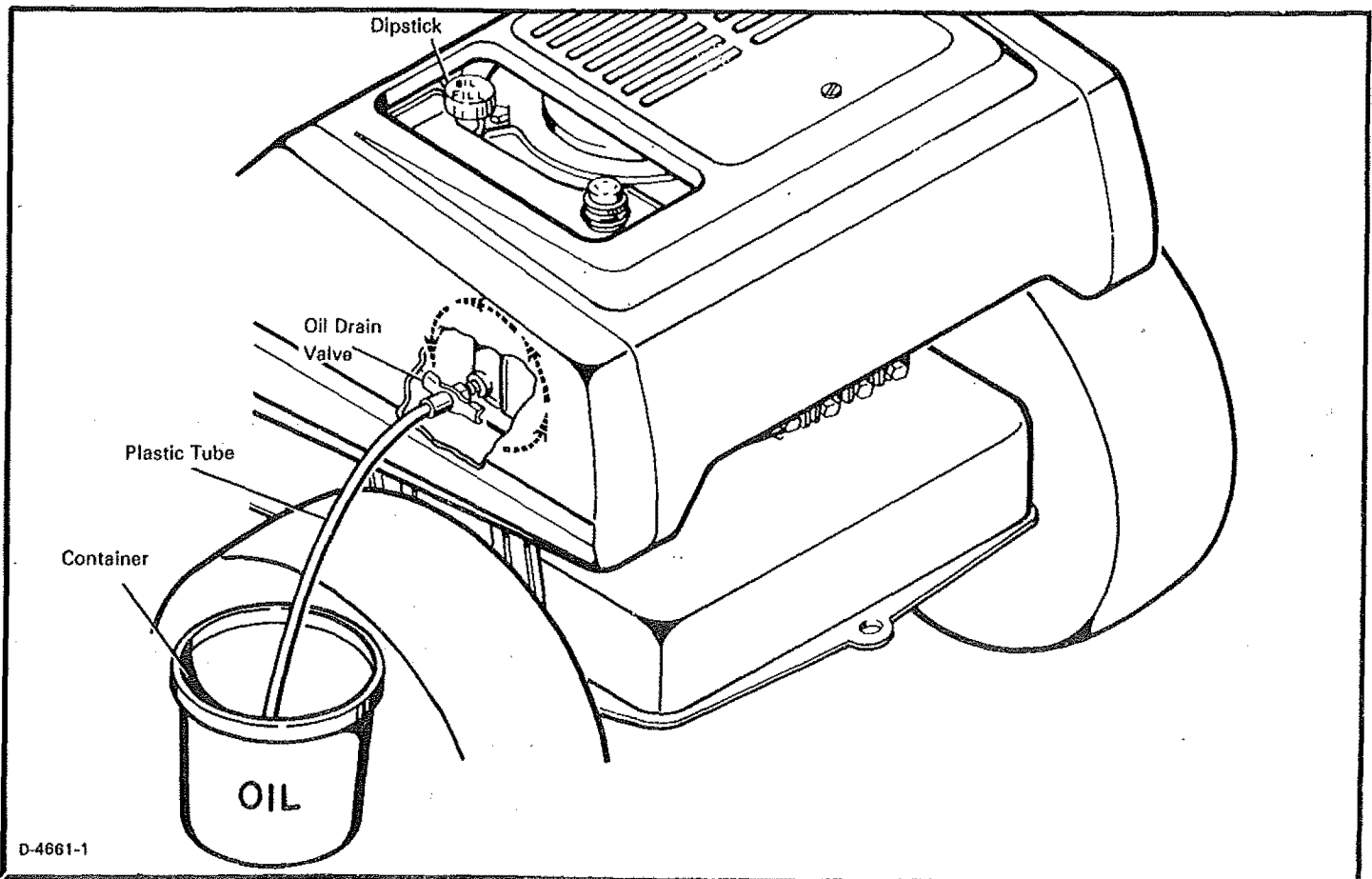
4. Clean the area around the dipstick. Remove the dipstick. Slowly pour approximately 3 pints (1.4 liters) of oil into the oil extension tube.
5. Insert the dipstick into the oil extension tube. Turn the dipstick in a clockwise direction until it is tight. Remove the dipstick. Check the oil level on the dipstick. The oil level must reach the FULL mark on the dipstick.

## EVERY 5 HOURS (every 5 mowings)

### HOW TO CHECK THE OIL

**IMPORTANT:** Do not check the level of the oil when the engine runs.

1. Stop the engine. Wait several minutes to let the oil drain. Make sure the unit is level.
2. Clean the area around the dipstick. Remove the dipstick. Wipe the oil from the dipstick.
3. Insert the dipstick into the oil fill tube. Turn the dipstick clockwise until it is tight. Remove the dipstick. Check the oil level on the dipstick. The oil level must reach the FULL mark on the dipstick.
4. If necessary, add oil until the oil reaches the FULL mark on the dipstick. Do not add too much oil.



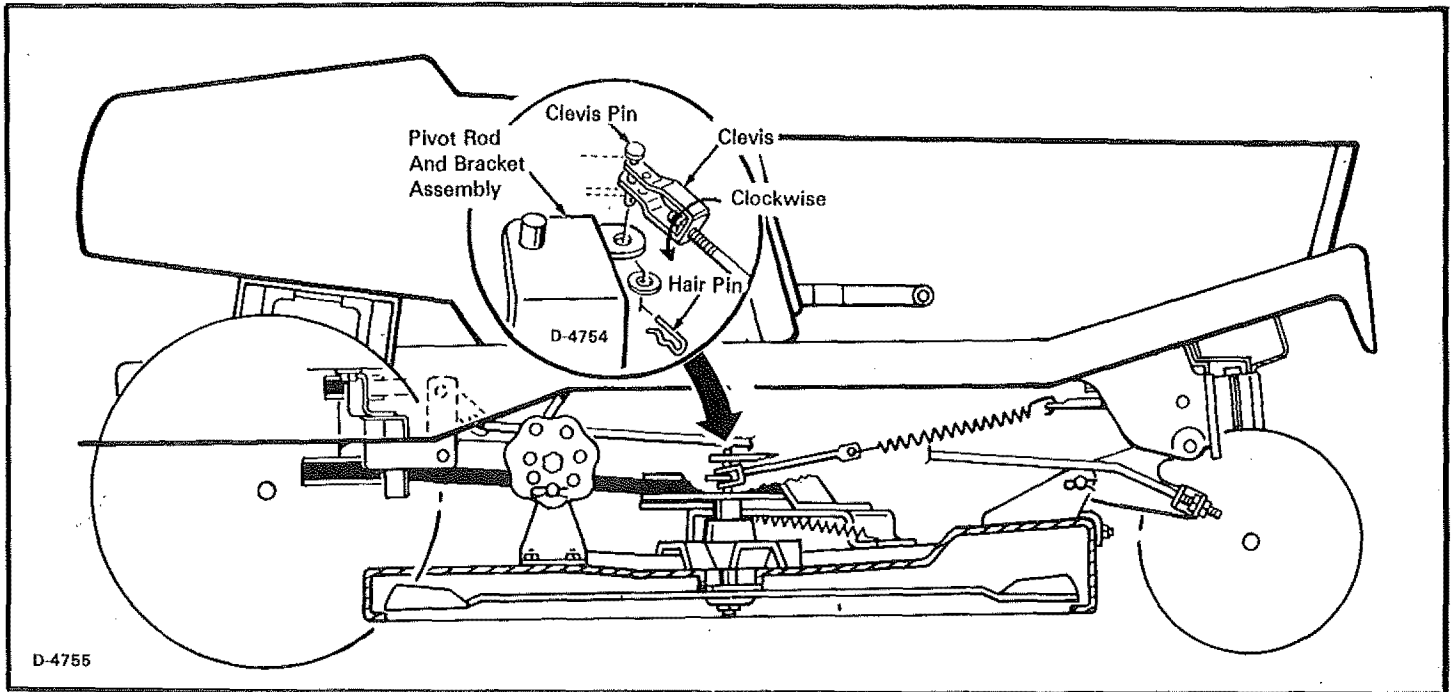
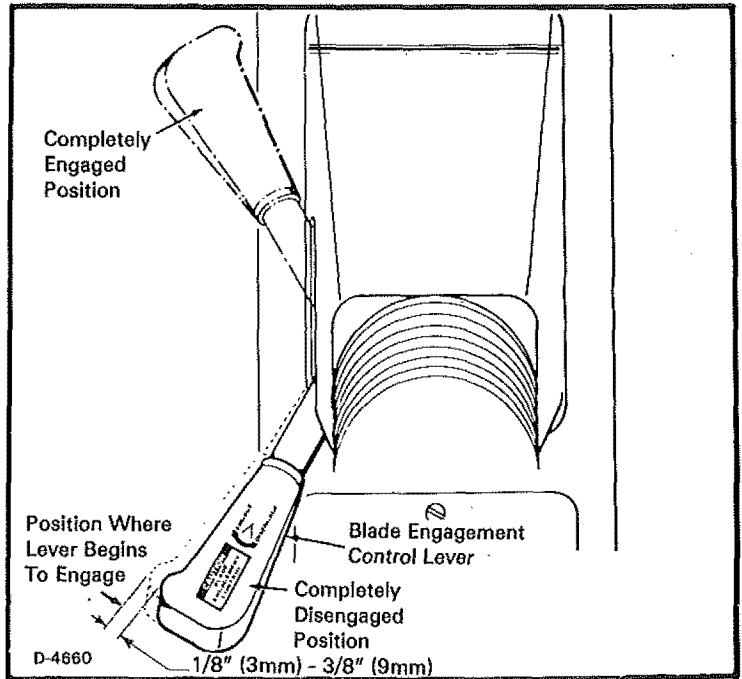
# MAINTENANCE

## EVERY 25 HOURS (twice a year) HOW TO CHECK AND ADJUST THE BLADE ENGAGEMENT CONTROL

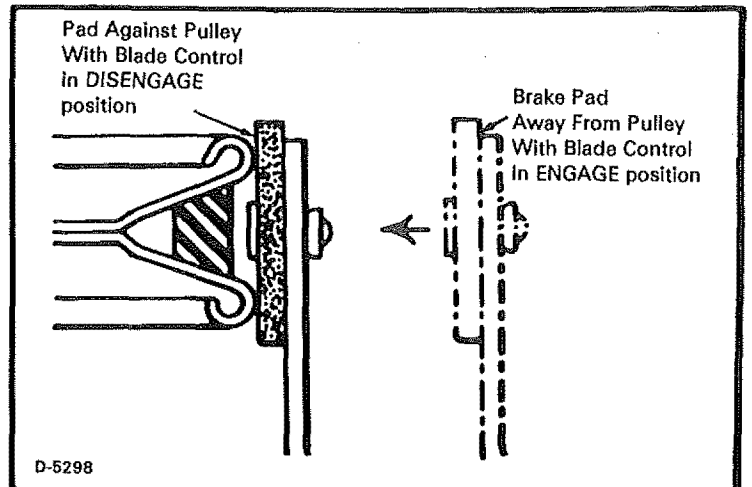


**WARNING:** To prevent an injury, the blade engagement control must operate correctly.

1. Stop the engine. Disconnect the wire from the spark plug.
2. Before you adjust the blade engagement control lever, check and level the mower housing. See "How To Level The Mower Housing".
3. Set the height of the mower housing in the lowest position.
4. Move the blade engagement control to the DISENGAGE position.
5. Check the blade engagement control lever. Before the blade engagement control engages, there must be 1/8" to 3/8" (3mm to 9mm) of free movement.
6. If an adjustment is needed, disconnect the clevis from the pivot rod and bracket assembly. Turn the clevis clockwise to decrease the free movement of the blade engagement control. Turn the clevis counterclockwise to increase the free movement.
7. Connect the clevis to the pivot rod and bracket assembly. Move the blade engagement control to the DISENGAGE position. Check the free movement of the blade engagement control.



8. Check the operation of the blade brake. Rotate the pulley with your hand. Make sure that the blade brake pad presses tightly against the pulley.
9. Move the blade engagement control to the ENGAGE position. Check the blade brake pad. If the blade brake pad is excessively worn or damaged, replace the blade brake pad assembly. Correct replacement parts and assistance are available from an authorized service center.
10. Mow for a short distance and again check the operation of the blade engagement control.
11. When you move the blade engagement control to the DISENGAGE position, all movement will stop within five seconds if the adjustment is correct. If all movement does not stop, again adjust the blade engagement control beginning with the first step. If you need assistance, take the unit to an authorized service center.
12. If you replace the mower drive belt, adjust the blade engagement control lever.



# MAINTENANCE

EVERY **25 HOURS** (twice a year)

## BLADE SERVICE



**WARNING:** Before you inspect the blade, disconnect the wire to the spark plug. If the blade hits an object, stop the engine. Disconnect the wire to the spark plug. Check the unit for damage.

Frequently check the blade for excessive wear, cracks, or other damage. Frequently check the nut that holds the blade. Keep the nut tight. If the blade hits an object, stop the engine. Disconnect the wire to the spark plug. See if the blade is bent or damaged. Before you operate the unit, replace damaged parts with factory replacement parts. Every three years, have an authorized service person inspect the blade or replace the old blade with a factory replacement blade.

Keep a sharp edge on the blade. A blade that is not sharp will cause the ends of the grass to become brown.

## HOW TO REMOVE AND INSTALL THE BLADE

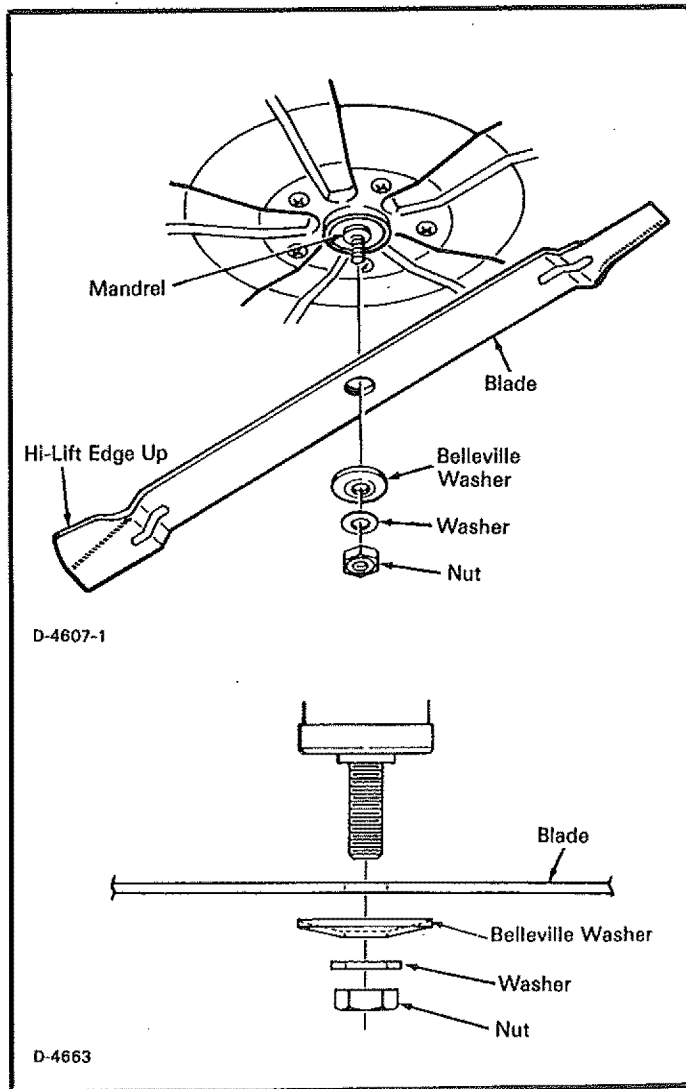


**WARNING:** Before you remove the blade, disconnect the wire to the spark plug. The blade has sharp edges. When you hold the blade, use gloves or cloth material to protect your hands.

1. Remove the mower housing. See the instructions on "How To Remove The Mower Housing".
2. Use a piece of wood to keep the blade from rotating.
3. Remove the nut that holds the blade.
4. Check the blade according to the "Blade Service" instructions. Replace a badly worn or damaged blade with a factory replacement blade.
5. Clean the top and bottom of the mower housing. Remove all the grass and debris.
6. Mount the blade so that the hi-lift edges are up as shown. If the blade is upside down, the blade will not cut correctly and can cause an accident.
7. Fasten the blade with the original washers and nut. Make sure the outside rim of the belleville washer is against the blade as shown.
8. Tighten the nut that holds the blade to a torque of 30 foot pounds (41,5Nm).



**WARNING:** Always keep the nut tight that holds the blade. A loose nut or blade can cause an accident.





# MAINTENANCE

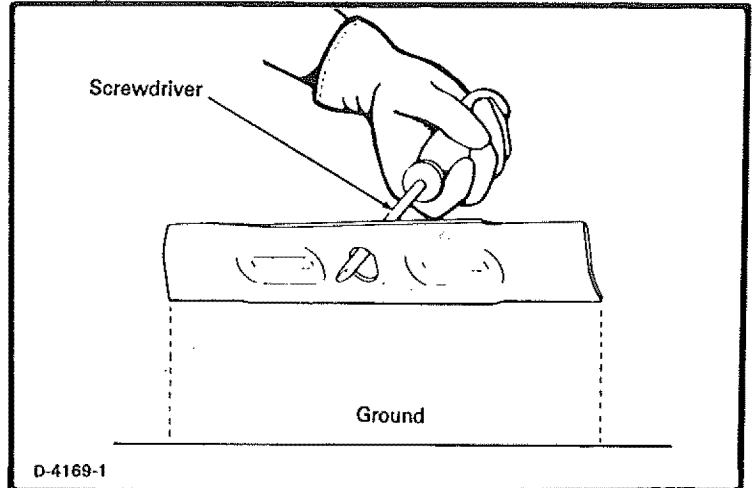
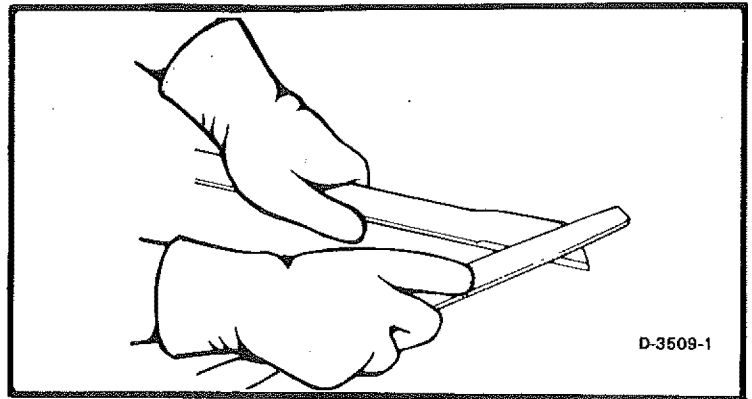
## EVERY 25 HOURS (twice a year)

### HOW TO SHARPEN THE BLADE



**WARNING:** Vibration can be caused if the blade is not correctly balanced or if the blade is damaged. A blade that is damaged with cracks can break and cause an accident.

1. Sharpen the blade two times a year or every 25 hours.
2. Remove the blade according to the instructions in "How To Remove The Blade".
3. Clean the blade with a brush, soap, and water. Check the blade. Look for cracks, nicks, or other damage. If the blade is bent, badly worn, or damaged, replace with a factory replacement blade.
4. Sharpen the blade with a file. Make sure you keep the original bevel angle.
5. Make sure the blade is balanced. Use a screwdriver and hold the blade parallel to the ground as shown. A blade that is balanced will stay parallel to the ground. If the blade is not balanced, the heavy end will rotate toward the ground. Sharpen the heavy end until the blade is balanced.
6. A new blade will cut better than a badly worn blade. Every three years, have an authorized service person inspect the blade or replace the old blade with a factory replacement blade.



### CHECK THE TIRES

Check the air pressure in the tires. Tires with too much air pressure will cause the unit to ride rough. Also, the wrong air pressure will keep the mower housing from cutting level. The correct air pressure is shown on the side of the tires. If the air pressure is not shown, inflate the tires from 10 to 12 PSI (0.7 to 0.85 kg/cm<sup>2</sup>).

# MAINTENANCE

## EVERY 50 HOURS (once a year)

### WHERE TO LUBRICATE



Lubricate the areas shown with engine oil.



Apply grease with a brush to the areas shown.

**IMPORTANT:** If the unit is operated in dry areas that have sand, use a dry graphite spray to lubricate the unit.

### HOW TO CHECK THE MUFFLER

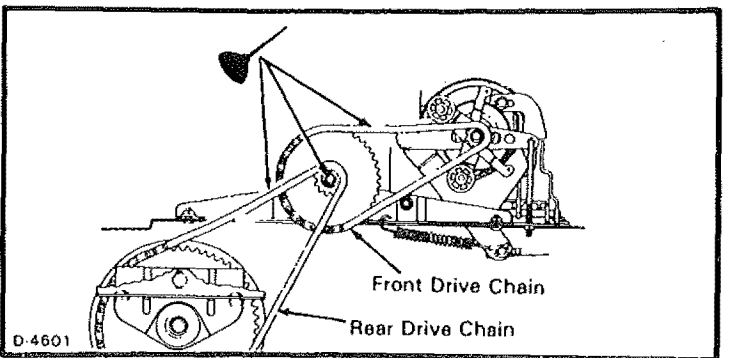
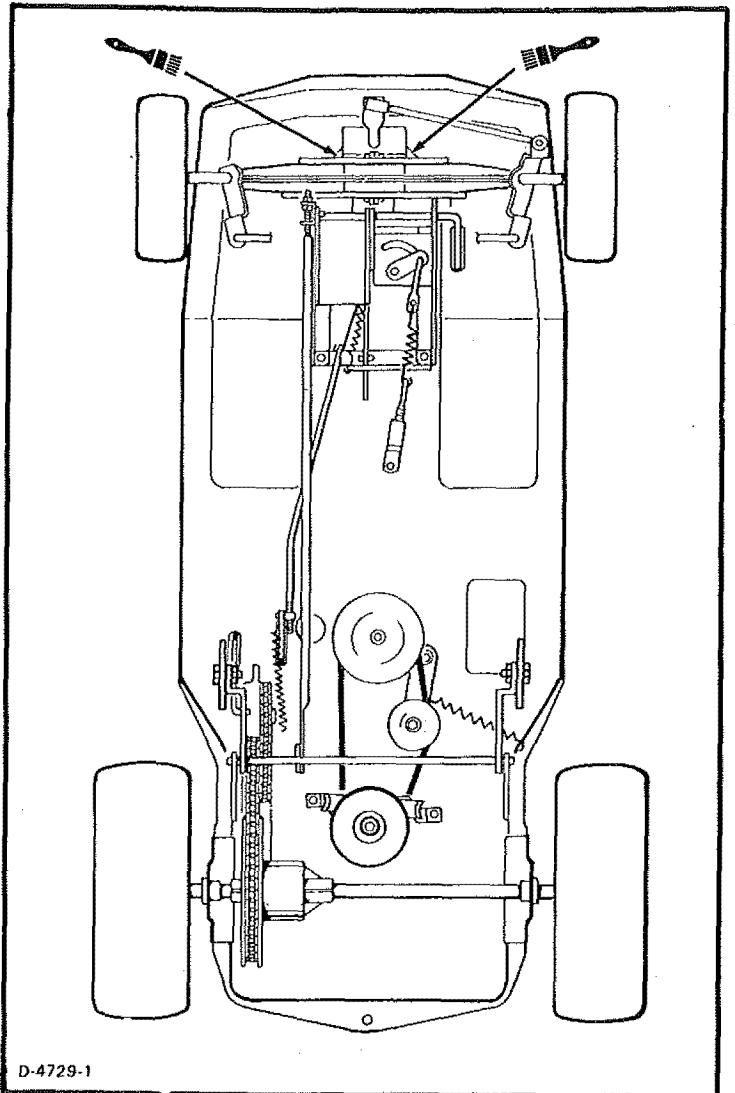
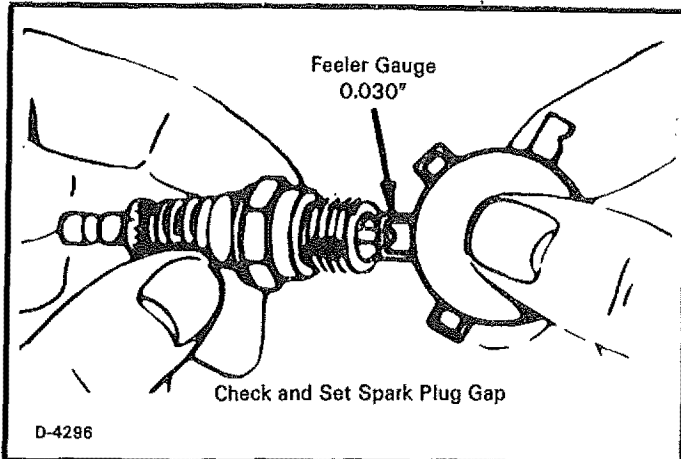
Check the muffler every 50 hours. Make sure the muffler is correctly mounted and is not loose. If the muffler is worn or burnt, replace with a new muffler. A worn muffler is a fire hazard and also can damage the engine.

If you mount a spark arrestor to the muffler, also check the spark arrestor every 50 hours. If the spark arrestor is worn or damaged, replace it with a new spark arrestor.

### HOW TO CLEAN AND CHECK THE BATTERY

1. Remove the black cable from the negative (-) terminal.
2. Remove the red cable from the positive (+) terminal.
3. Remove the battery clamp from the battery.
4. Remove the battery from the unit.
5. Wash the battery with a solution of one gallon of water and four tablespoons of baking soda (sodium bicarbonate). Make sure the solution does not get into the battery cells.
6. Clean the terminals and the ends of the cables with a wire brush.
7. Install the battery. See "How To Install The Battery".
8. Check the level of the battery acid. The battery acid must touch the bottom of the vent. If the battery acid has fallen below the correct level, add water to the correct level. Do not add battery acid to a charged battery or the result can be an explosion.

**IMPORTANT:** The battery will be damaged if the battery acid is not kept at the correct level.



### HOW TO CHECK THE SPARK PLUG

1. Check the gap of the spark plug with a feeler gauge. The correct gap is 0.030".
2. For easy starting and good performance, replace the spark plug every two years.

# MAINTENANCE

## EVERY 50 HOURS (once a year)

### HOW TO CLEAN THE AIR FILTERS

The engine has two filters, an outer foam filter around an inner paper filter. Clean the air filters every 50 hours. If you operate in dirty conditions, service more often.

**NOTE:** Never run the engine with the air filters removed. The air filters will help protect the engine against wear. For the correct replacement filter, see the parts list for the engine.

1. Remove the cover screws from the cover.
2. Remove the cover from the air cleaner.
3. Remove the filters.
4. Clean the inside of the base and the cover with a cloth.
5. Remove the foam filter from the paper filter.
6. Wash the foam filter in a detergent and water solution. To remove the water solution, tightly roll the foam filter in a dry cloth. Remove the foam filter from the cloth. Completely dry the foam filter.

**CAUTION:** Do not wash the filters in gasoline or other solvents that will burn.

7. Evenly apply S.A.E. 30W oil to the dry foam filter.
8. To clean the paper filter, lightly tap the paper filter against a hard flat surface.
9. If the paper filter is very dirty, replace the filter or wash the paper filter in a detergent and warm water solution. Use a detergent that has low suds or no suds.
10. Wash the paper filter with water flowing from the inside out until the water is clear.
11. Before you assemble, let the paper filter completely dry in the air. Do not put oil on the paper filter.
12. Assemble the air filters.
13. Install the cover. Fasten the cover with the cover screws.

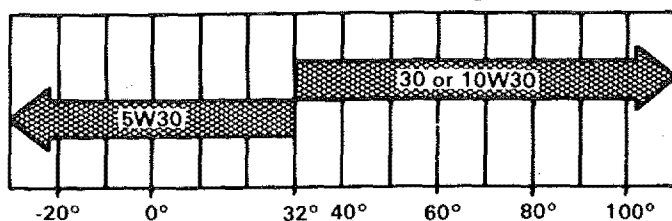
### HOW TO CHANGE THE OIL

**NOTE:** Drain the oil when the engine is warm. Be careful, do not get oil on the belts.

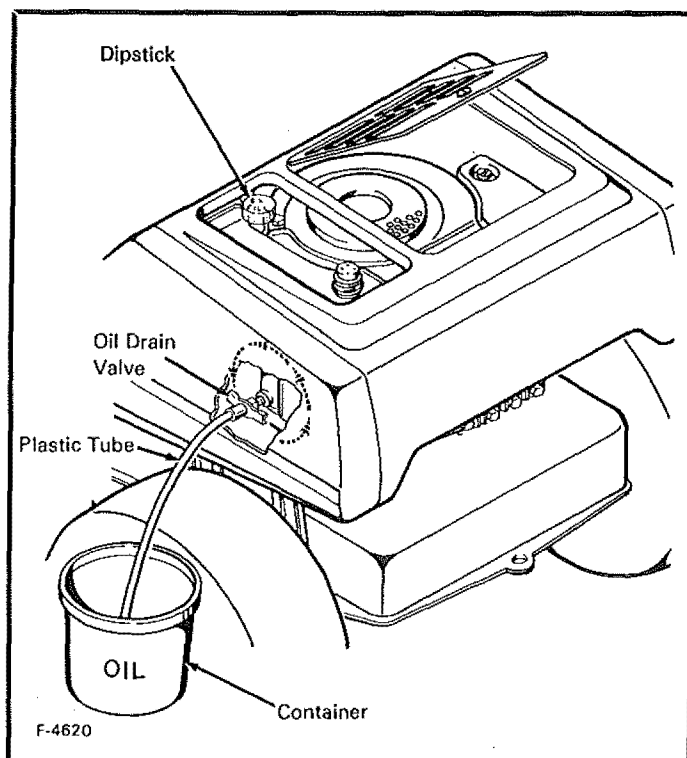
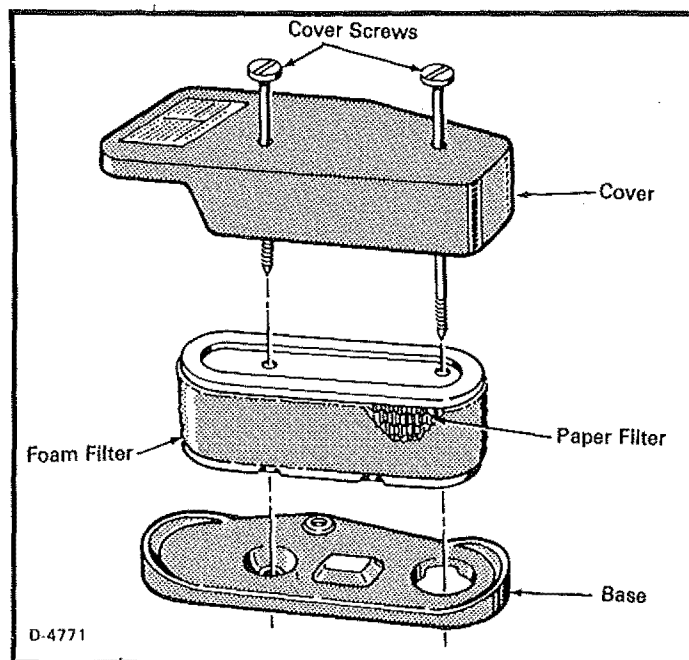
1. Put the plastic drain tube into the oil drain valve. Put the other end of the drain tube into a container as shown. Turn the oil drain valve counterclockwise to open the valve. Drain the oil completely from the engine. Turn the oil drain valve clockwise to close the valve. Remove the plastic drain tube.
2. Use a SD, SE, or SF detergent grade oil. Detergent oil helps to clean the engine. Nothing must be added to the oil.
3. Before you change the oil, use the temperature chart below to select the viscosity grade of the oil to use.

Temperature range before the next oil change. All oils must be A.P.I. service grade SD, SE, or SF.

Recommended SAE viscosity grades



**CAUTION:** To protect the starting system, use SAE 5W30 oil when the temperature is below 32 °F.



4. Clean the area around the dipstick. Remove the dipstick. Slowly pour approximately 3 pints (1.4 liters) of oil into the oil extension tube.
5. Insert the dipstick into the oil extension tube. Turn the dipstick in a clockwise direction until it is tight. Remove the dipstick. Check the oil level on the dipstick. The oil level must reach the FULL mark on the dipstick.

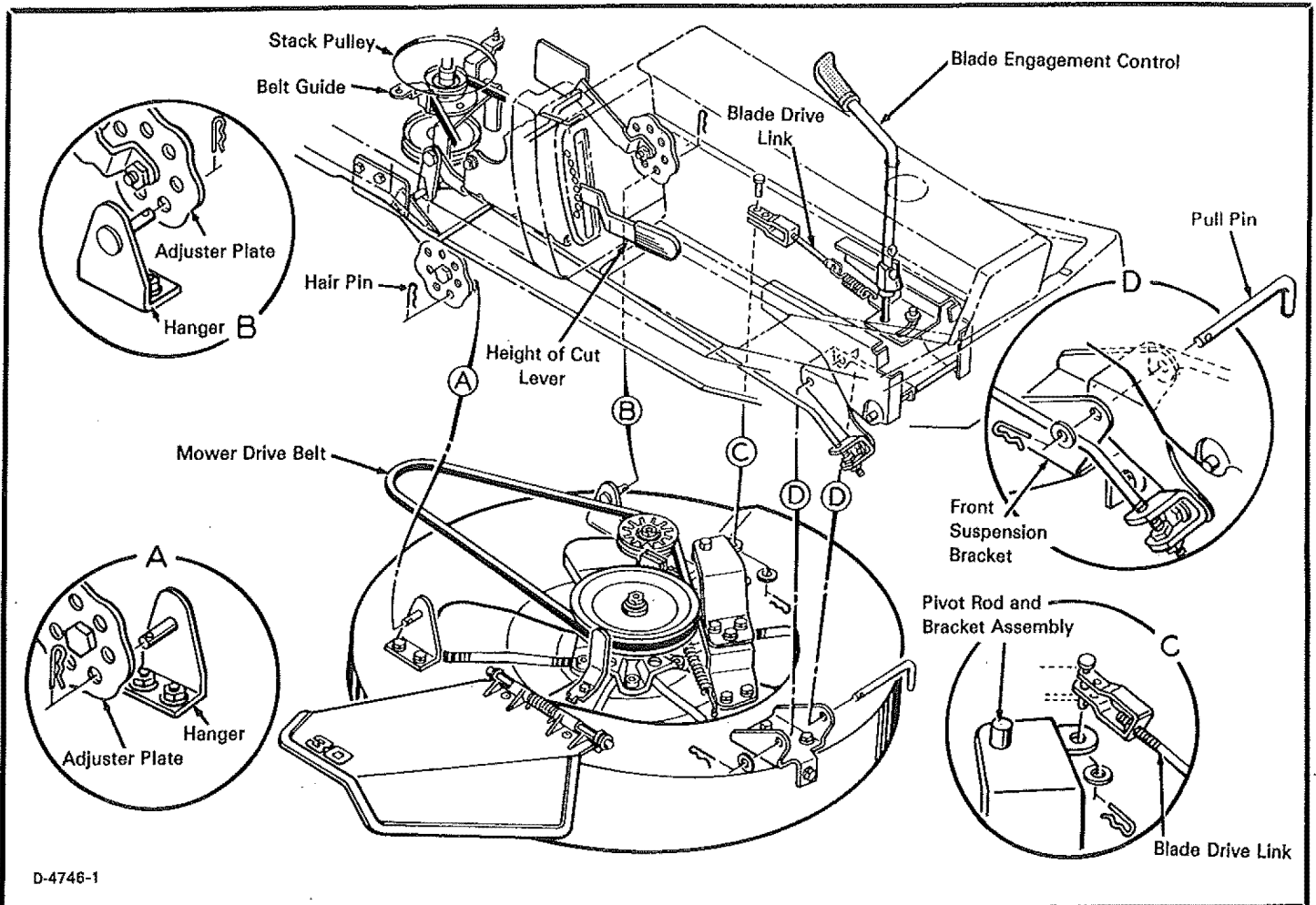
# REPAIR AND ADJUSTMENT

## HOW TO REMOVE THE MOWER HOUSING

1. Move the lift lever to the MIDDLE position.
2. Move the blade engagement control lever to the DIS-ENGAGE position.
3. Disconnect the blade drive link from the pivot rod and bracket assembly. See illustration "C" below.
4. Remove the hair pins that hold the hangers to the adjuster plates. See illustrations "A" and "B" below.
5. Move the mower housing to the left until the right side hanger separates from the adjuster plate. Then, move the mower housing to the right until the left side hanger separates from the adjuster plate.
6. Remove the long pin from the front suspension bracket. See illustration "D" below.
7. Remove the mower drive belt from the stack pulley. Slide the mower drive belt between the stack pulley and the belt guide.
8. Completely turn the steering wheel to the right. Pull the mower housing away from the left side of the unit.

## HOW TO INSTALL THE MOWER HOUSING

1. Completely turn the steering wheel to the right. Push the mower housing under the left side of the unit.
2. Slide the mower drive belt between the stack pulley and the belt guide. Put the mower drive belt around the stack pulley. Make sure the "V" side of the mower drive belt is against the stack pulley. Make sure the drive belt is not twisted.
3. Attach the mower housing to the front suspension bracket with the long pin. Fasten with the washer and hair pin. See illustration "D" below.
4. Attach the rear hangers to the adjuster plates. Fasten with the hair pins. See illustrations "A" and "B" below.
5. Connect the blade drive link to the pivot rod and bracket assembly. Fasten with a clevis pin and a hair pin. See illustration "C" below.
6. Move the blade engagement control lever to the ENGAGE position. Make sure the mower drive belt is inside all the belt guides.
7. Check the operation of the blade engagement control lever. See the instructions on "How To Adjust The Blade Engagement Control Lever."
8. Make sure the mower housing is level. See the instructions "How To Level The Mower Housing" in the maintenance section of this book.



# REPAIR AND ADJUSTMENT

## HOW TO REPLACE THE MOWER DRIVE BELT

1. Move the lift lever into the low cut position.
2. Slide the mower drive belt between the stack pulley and the belt guide. Remove the mower drive belt from the stack pulley.
3. Pull the belt guide away from the idler pulley. Remove the belt from the idler pulley.
4. While you push the belt guides away from the mandrel pulley, remove the mower drive belt from the pulley.
5. Install the new mower drive belt.
6. **IMPORTANT: Replace the mower drive belt with a factory replacement belt.**
7. Make sure the "V" side of the mower drive belt is against the mandrel pulley. Also make sure the mower drive belt is not twisted.
8. Pull the belt guide away from the idler pulley. Put the mower drive belt around the idler pulley. Make sure the "V" side of the mower drive belt is against the pulley. Also make sure the mower drive belt is not twisted.
9. Make sure the mower drive belt is inside all the belt guides.

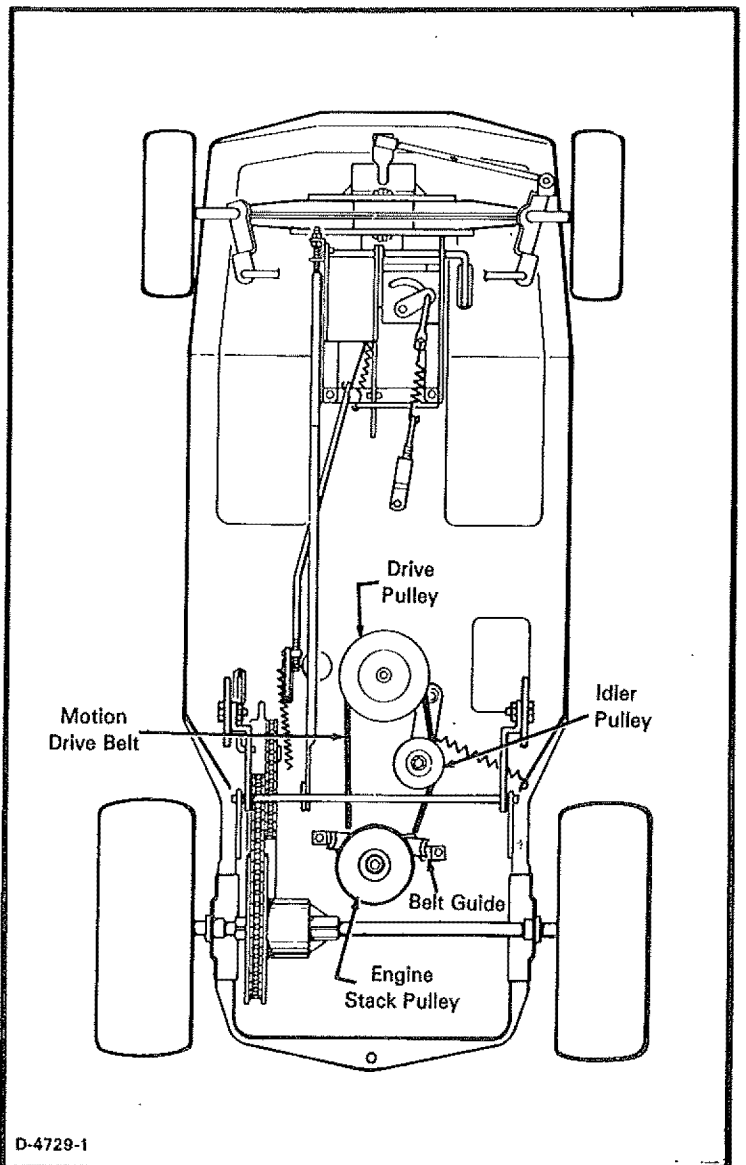
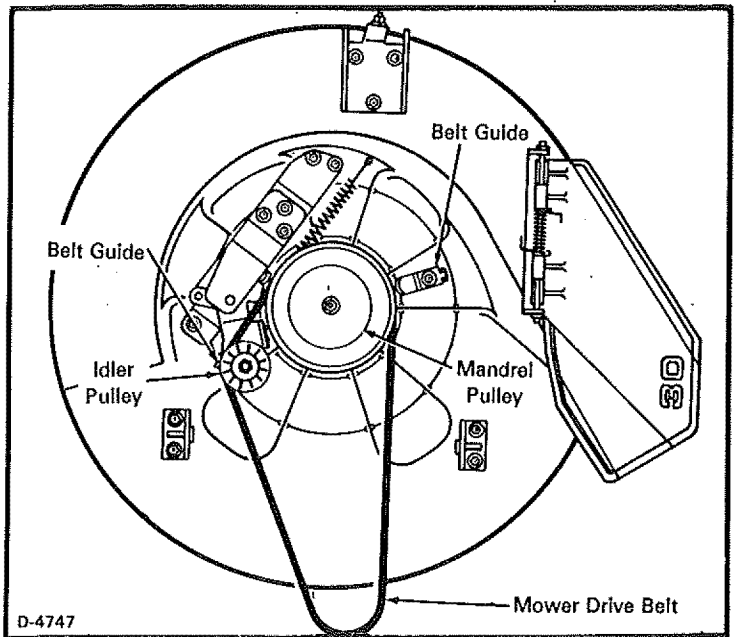
**WARNING:** If the mower drive belt is outside of a belt guide when the blade engagement control lever is in the DISENGAGE position, the blade can continue to rotate and damage the mower drive belt. Before you operate the mower, make sure the mower drive belt is inside all the belt guides.



9. Before you mow, check the blade engagement control lever. See the instructions on "How To Adjust The Blade Engagement Control Lever".

## HOW TO REPLACE THE MOTION DRIVE BELT

1. Remove the mower housing. See the instructions on "How To Remove The Mower Housing".
2. Slide the motion drive belt off the idler pulley.
3. Remove the motion drive belt from the drive pulley.
4. At the stack pulley, remove the motion drive belt from the upper pulley.
5. Remove the motion drive belt from the stack pulley as follows. Pull the motion drive belt completely toward the rear. Slide the motion drive belt between the stack pulley and the belt guide.
6. Install the new motion drive belt around the top pulley of the stack pulley.
7. **IMPORTANT: Replace the motion drive belt with a factory replacement belt.**
8. Make sure the "V" side of the motion drive belt is against the stack pulley.
9. Put the motion drive belt around the drive pulley.
10. Put the motion drive belt around the idler pulley as shown. Make sure the "V" side of the motion drive belt is against the idler pulley. Also, make sure the belt is not twisted.
11. Install the mower housing. See the instructions on "How To Install The Mower Housing".



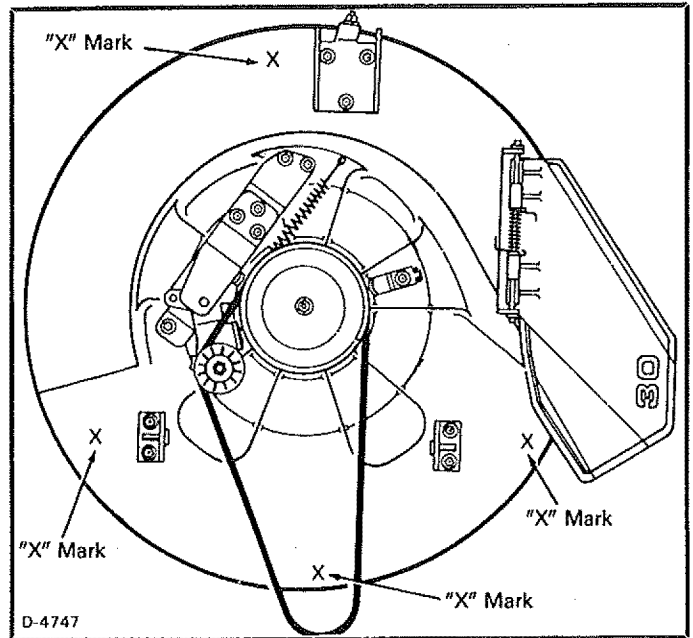
# REPAIR AND ADJUSTMENT

## HOW TO LEVEL THE MOWER HOUSING



**WARNING:** Before you make an inspection, adjustment, or repair to the unit, disconnect the wire to the spark plug. Remove the spark plug wire to prevent the engine from starting by accident.

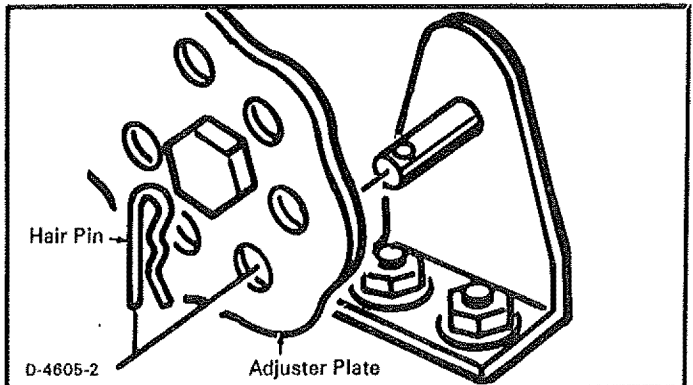
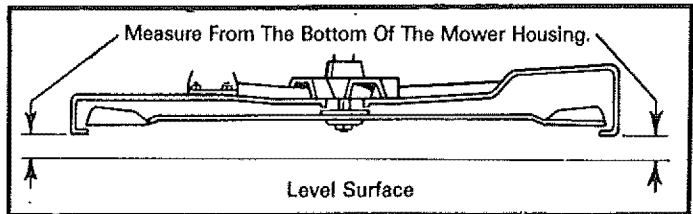
1. Make sure the unit is on a hard level surface.
2. Check the air pressure in the tires. If the air pressure is incorrect, the mower housing will not cut level. Make sure the tires are inflated to the pressure shown on the side of the tire. If the air pressure is not shown, inflate the tires from 10 to 12 psi.
3. Move the lever for the blade engagement control to the ENGAGE position. Move the lever for the height of cut to the middle position.
4. There are two adjustment procedures below that will level the blade housing.



### THE SIDE TO SIDE ADJUSTMENT

Use a ruler and measure the distance from the level surface to the bottom of the mower housing. Measure the distances at the bottom of the mower housing under the two side "X" marks. The "X" marks are on the top of the mower housing as shown in the illustration. The measurements must be within  $\frac{1}{8}$ " of the same height. If the measurements are more than  $\frac{1}{8}$ ", adjust as follows.

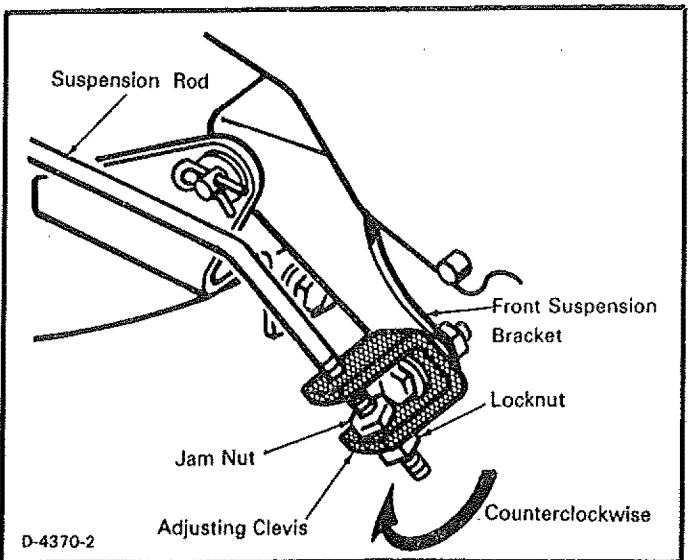
1. Disconnect one or both of the hangers from the adjuster plates.
2. The higher numbers on the side of the adjuster plates will raise the height of the mower housing. The lower numbers will lower the mower housing.
3. Connect the hangers into the hole of the adjuster plates that will level the mower housing. Fasten the hangers to the adjuster plates with the hair pins.
4. Check the measurements at each side of the mower housing. See the above instructions.



### THE FRONT TO BACK ADJUSTMENT

Use a ruler and measure the distance from the level surface to the bottom of the mower housing. Measure the distances at the bottom of the mower housing under the front "X" mark and the rear "X" mark. The "X" marks are on the top of the mower housing as shown in the illustration. The front measurement must be  $\frac{1}{4}$ " lower than the rear measurement. Adjust as follows.

1. Loosen the jam nut from the suspension rod. Turn the locknut clockwise to raise the front of the mower housing. Turn the locknut counterclockwise to lower the front of the mower housing.
2. Check the front and rear measurements for the correct adjustment. Tighten the jam nut as shown.



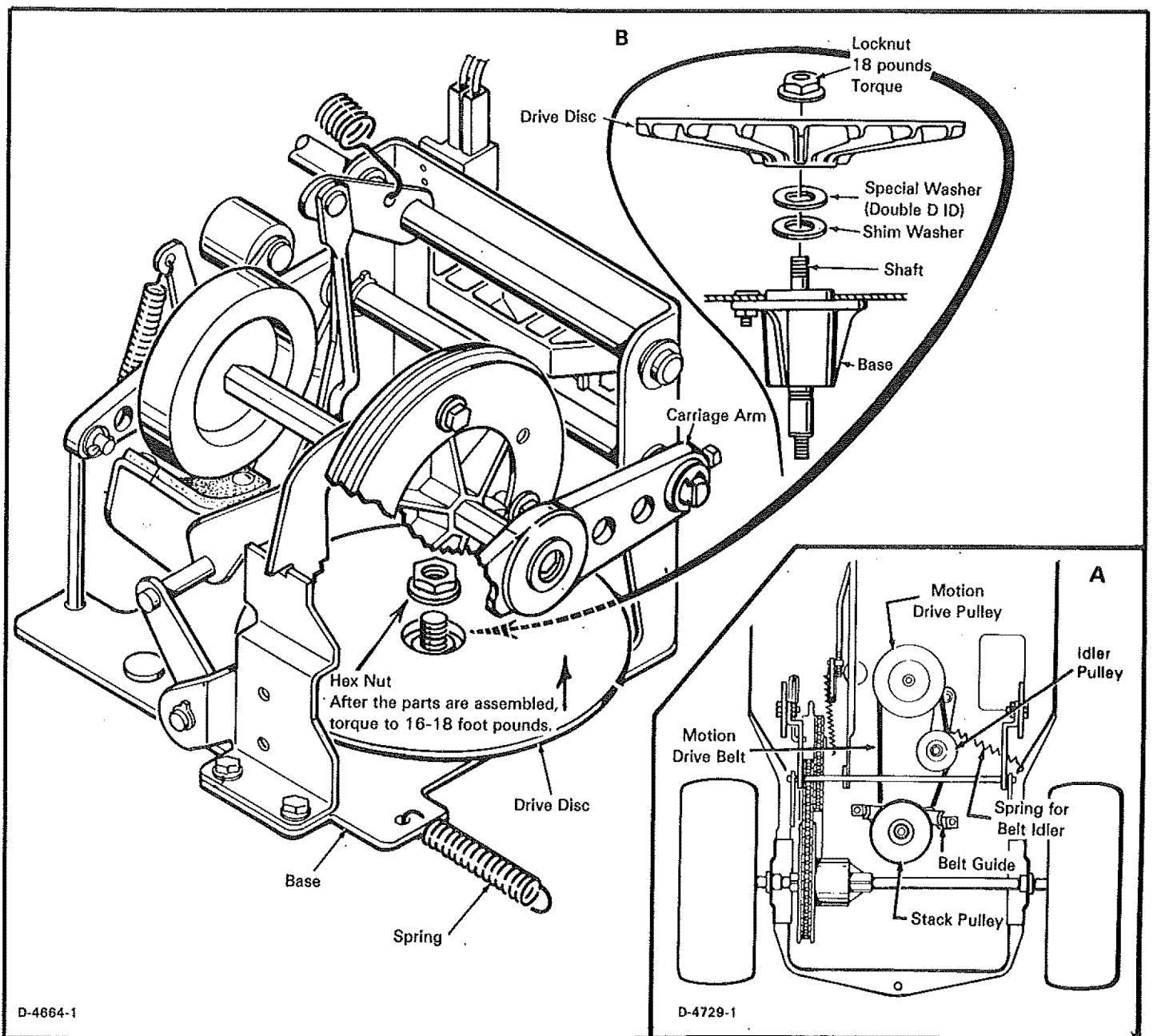
# REPAIR AND ADJUSTMENT

## HOW TO SERVICE THE FRICTION DRIVE

### How To Replace The Drive Disc

**NOTE:** It is not necessary to disassemble the friction drive system to replace the drive disc.

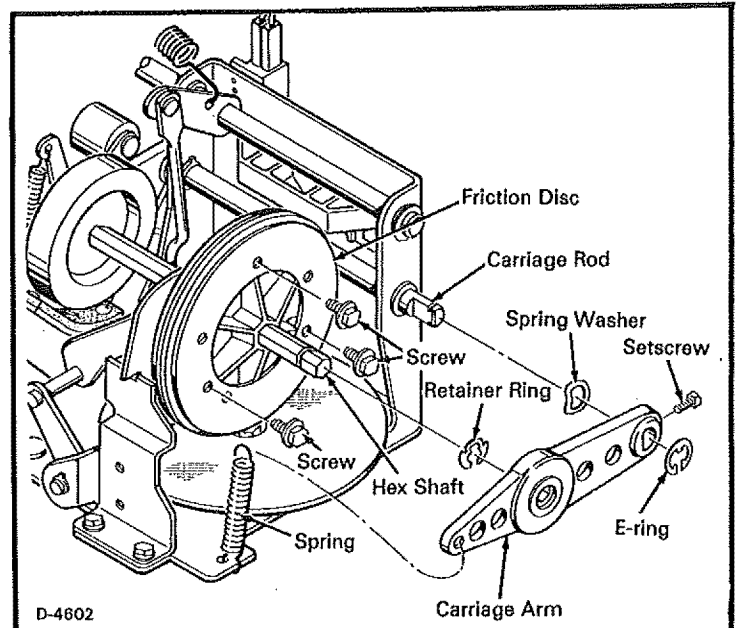
1. Engage the parking brake.
2. Move the shift lever to the fastest speed position.
3. Disconnect the spring from the carriage arm.
4. Set the mower housing in the lowest height of cut position.
5. To keep the drive disc from rotating, put a large screwdriver under the drive disc between the fins and the frame chassis.
6. Use a 9/16 inch socket wrench to remove the nut that holds the drive disc in place.
7. Remove the motion drive belt from the belt idler. See the drawing, Insert (A) below.
8. Pull on the motion drive pulley until the drive disc separates from the shaft.
9. Remove the old drive disc. Lift the motion drive pulley into position. Align the shim washer and the special (double D ID) washer on the shaft.
10. Replace the drive disc. Fasten the hex nut to the shaft. To keep the drive disc from turning, put a screwdriver under the drive disc between the fins and the frame chassis.
11. Use a 9/16 inch socket wrench and tighten the nut to a torque of 18 foot pounds. Remove the screwdriver.
12. Attach the spring to the carriage arm.



# REPAIR AND ADJUSTMENT

## How To Replace The Friction Disc

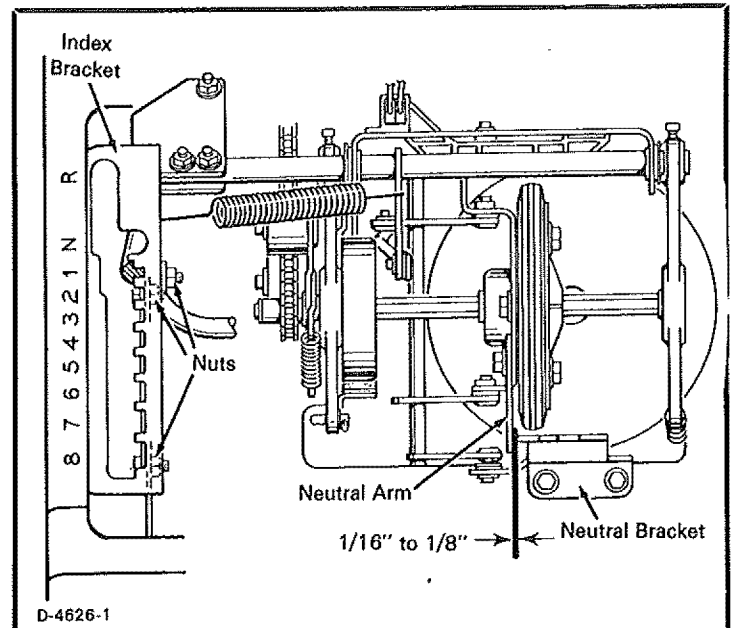
1. Move the shift lever to a forward speed position.
2. Disconnect the spring from the carriage arm.
3. Move the shift lever to the NEUTRAL position.
4. Use a screwdriver and remove the E-ring from the carriage rod.
5. Loosen the setscrew at the carriage arm.
6. Remove the carriage arm from the hex shaft and the carriage rod.
7. Use a 1/2 inch wrench to remove the three screws from the friction disc.
8. Remove the friction disc. Use a factory replacement part to replace the friction disc. Use the three screws to fasten the new disc in place. Tighten the screws to a torque of 36 to 40 inch pounds.
9. Slide the carriage arm on to the hex shaft and the carriage rod.
10. Fasten the E-ring on the carriage rod.
11. Tighten the setscrew on the carriage arm to a torque of 8 to 10 foot pounds.
12. Move the shift lever to a forward speed position.
13. Attach the spring to the carriage arm.



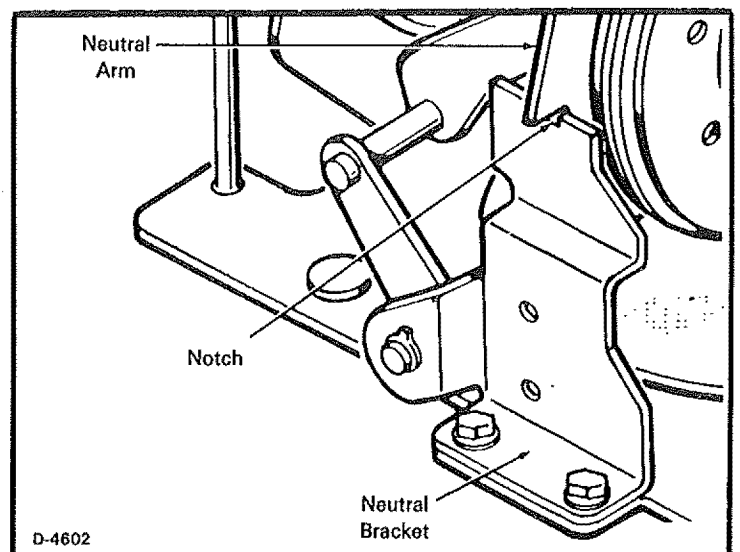
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## How To Adjust The Index Bracket

1. Engage the parking brake.
2. Move the shift lever to the slowest speed position.
3. Tilt the seat forward. Check the distance between the neutral arm and the neutral bracket. The distance must be approximately 1/16 inch as shown. If the distance is not correct, adjust as follows.
4. Loosen the two nuts on the index bracket.
5. To find the location for the index bracket, hold a 1/8 inch shim or a screwdriver between the neutral arm and the neutral bracket as shown. Move the index bracket so that the neutral arm is tight against the shim, but keep the shift lever in the slowest speed position.
6. Tighten the two nuts on the index bracket.
7. Move the shift lever to the NEUTRAL position. Make sure the neutral arm sets in the notch of the neutral bracket.
8. Move the shift lever to the slowest speed position. Check the distance between the neutral arm and the bracket. The distance must be approximately 1/16 to 1/8 inch.



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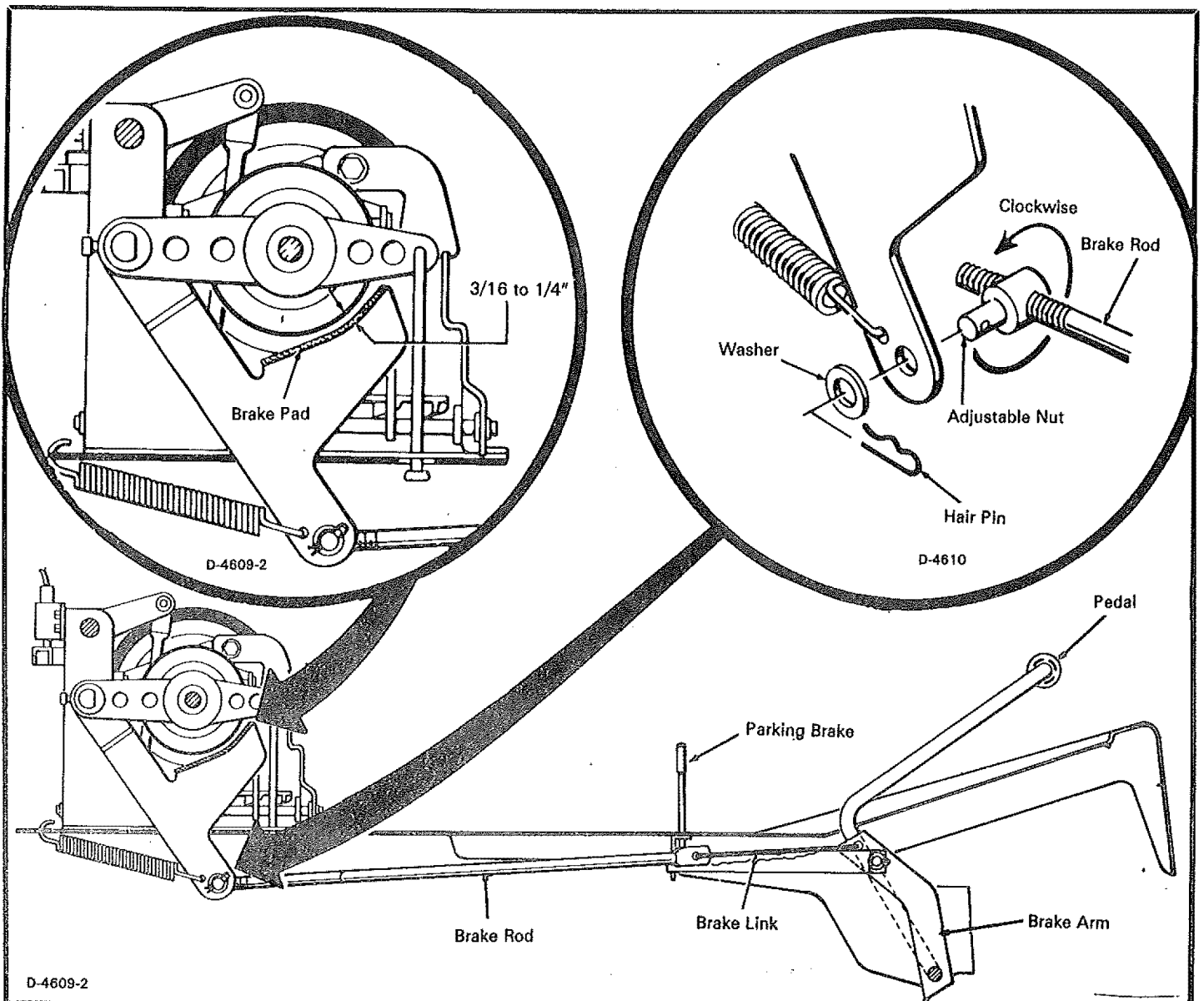
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# REPAIR AND ADJUSTMENT

## How To Adjust The Brake

1. Move the shift lever to any speed setting.
2. Release the parking brake.
3. Check the distance between the brake pad and the brake drum. The distance must be approximately  $3/16$  to  $1/4$  inch. If the distance is not correct, adjust as follows.
4. Move the mower housing to the lowest height of cut for more work clearance.
5. Disconnect the adjustable nut from the brake rod.
6. To reduce the distance between the brake pad and the brake drum, turn the adjustable nut clockwise. To increase the distance, turn the adjustable nut counterclockwise.

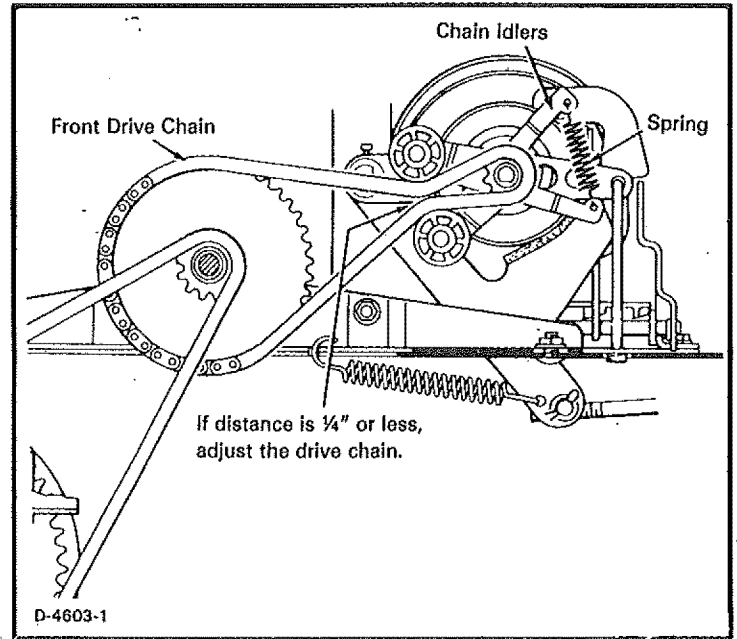


# REPAIR AND ADJUSTMENT

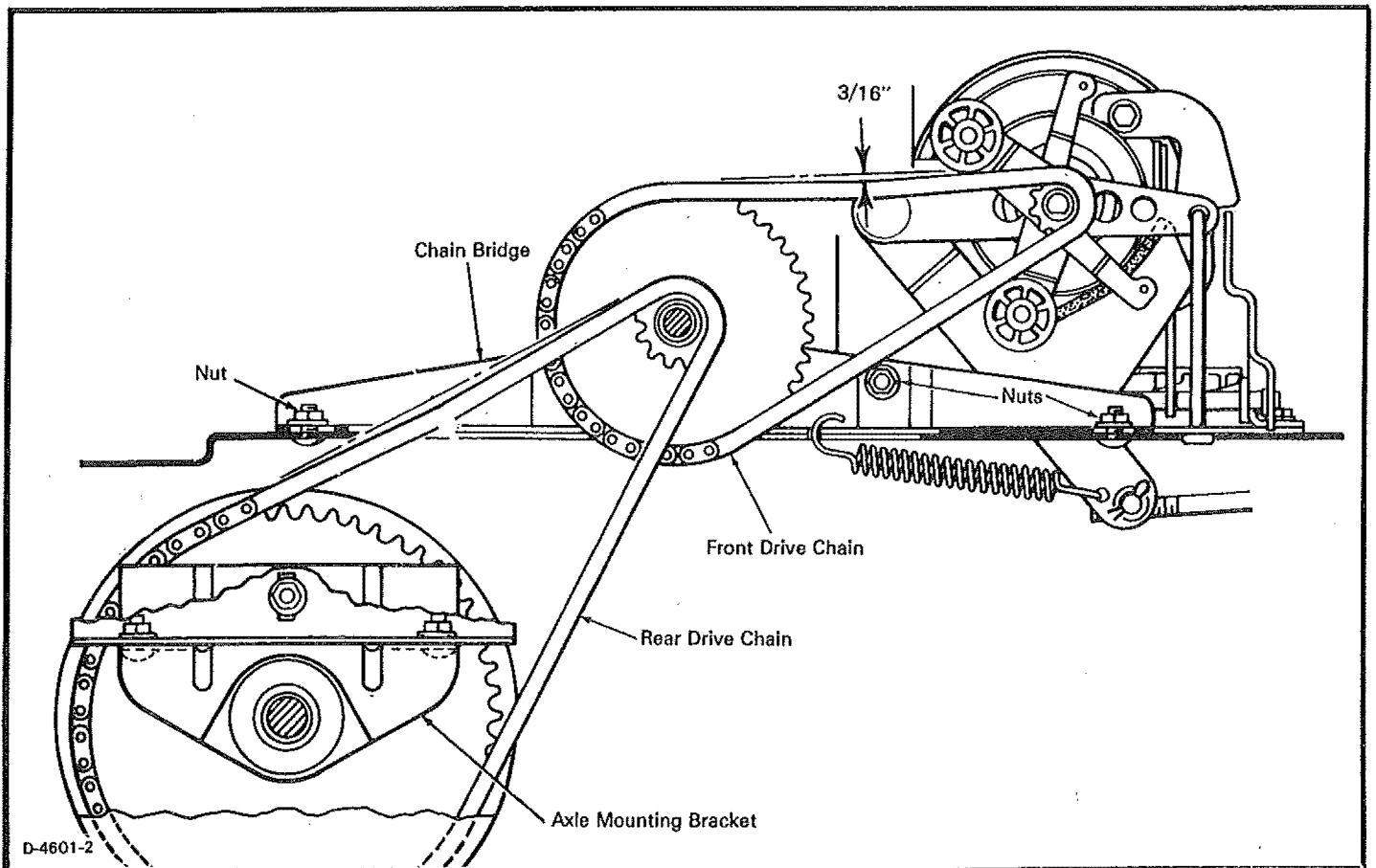
## How To Check The Front Drive Chain

Put the rider mower on a level surface. Stop the engine. Push the clutch/brake pedal forward. Move the shift lever to any forward speed. Release the clutch/brake pedal. Look at the distance between the top and bottom halves of the front drive chain. If the distance is  $\frac{1}{4}$ " or less, the drive chain must be adjusted as follows.

1. Make sure the brake is correctly adjusted. See the instructions on "How To Adjust The Brake".
2. Move the shift lever to the NEUTRAL position.
3. Disconnect the spring from the chain idlers.
4. Engage the parking brake.
5. Loosen the three nuts on the chain bridge.
6. To adjust the chain, slide the chain bridge back. Hold the bridge in place. Tighten the three nuts to hold the bridge in place.
7. Check the front drive chain. Make sure the chain has no more than  $\frac{3}{16}$  inch of movement as shown.
8. Connect the spring to the chain idlers.
9. After the front drive chain is adjusted, the rear drive chain must be adjusted. See the instructions on "How To Adjust The Rear Drive Chain".



**WARNING:** Before you tighten the front chain, engage the parking brake.



# REPAIRS AND ADJUSTMENTS

## How To Check The Rear Drive Chain

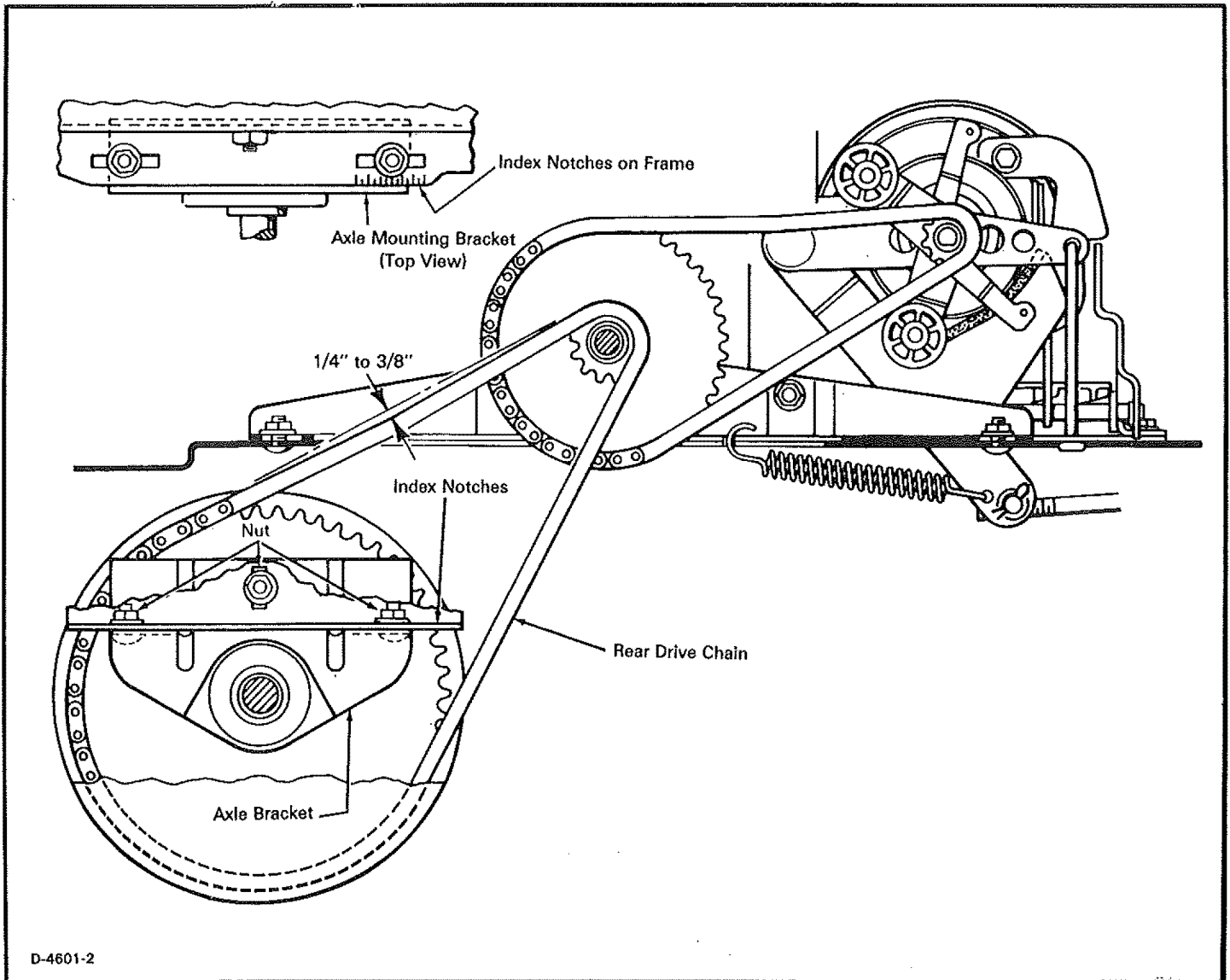
Engage the parking brake. Push the unit forward. This causes the loose part of the chain to be on top between the two sprockets. The top part of the rear chain must have 1/4 to 3/8 inch of movement as shown. If the movement is more than 3/8 inch, adjust as follows.

1. Engage the parking brake.
2. Loosen the three nuts on each axle bracket at the rear wheels.
3. Pull the right axle bracket toward the back of the unit until the chain is tight.
4. Hold the right axle bracket in place. Tighten one of the nuts to hold the axle bracket in place.
5. Look at the side of the frame above the axle. Find the index notches. These index notches are a measurement of the location of the axle brackets. Make sure the position of the axle bracket on the left side of the unit is like the right side. If the position is the same, tighten one of the nuts on the left side.

6. Check the tension of the chain. Make sure the chain has no more than 1/4 to 3/8 inch of movement as shown.
7. Tighten the other two nuts at each axle bracket.



**WARNING:** Do not wear clothing that is loose. Loose clothing can get into the moving parts.



# REPAIR AND ADJUSTMENT

## How To Replace The Bearings In The Carriage Arms

**NOTE:** The Bearings are pressed into the carriage arms.

1. Remove the carriage arms.
2. Put the carriage arm on a vise or between two blocks of wood. Allow enough clearance around the surface of the bearing so that the bearing can be removed.

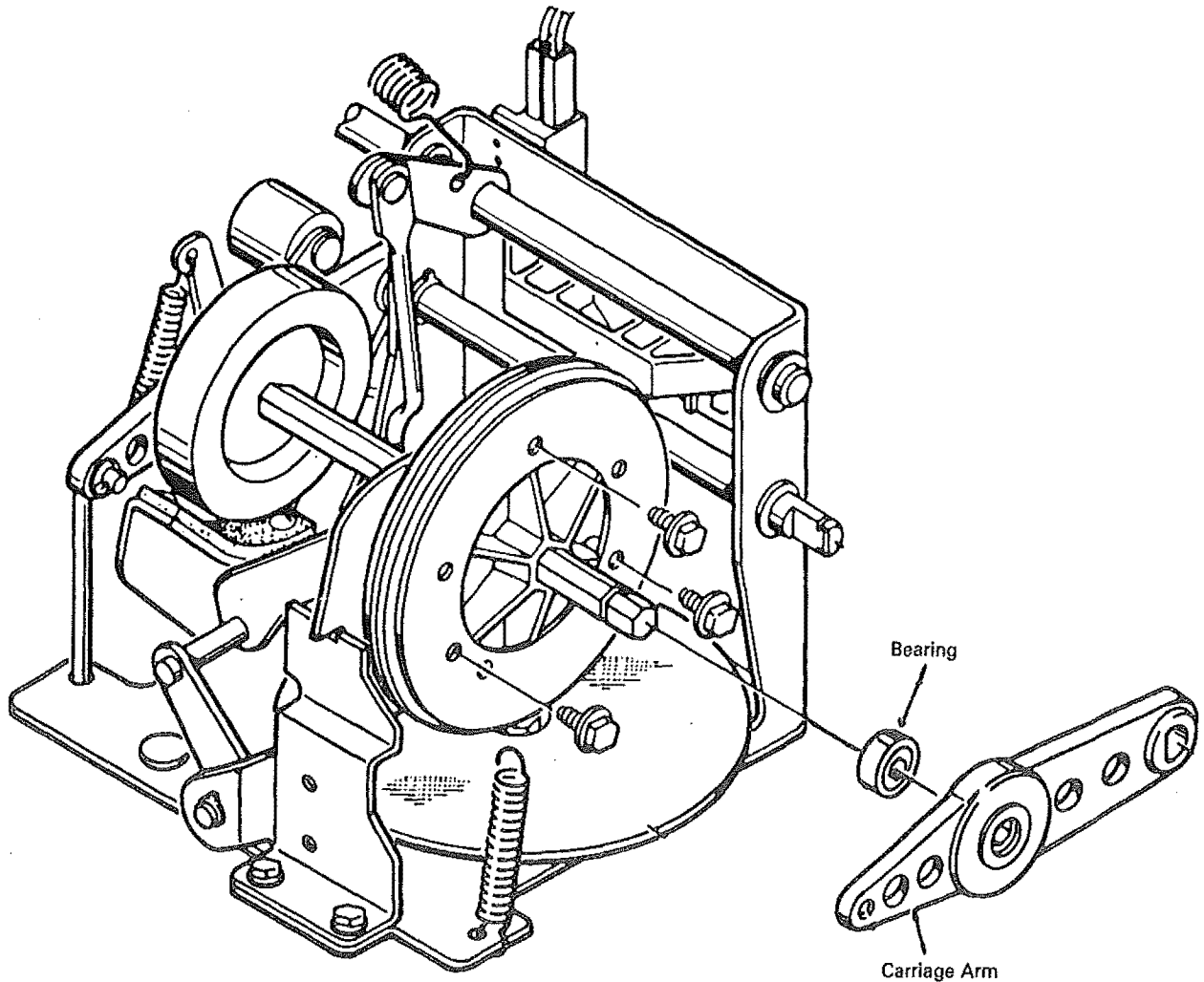


**WARNING:** For your protection, use safety eye glasses.

3. Put a punch against the top side of the bearing. Use a hammer and hit the punch until the bearing releases from the carriage arm.

**CAUTION:** Do not use a hammer to put the new bearing into place. You will damage the bearing.

4. Set the new bearing in the carriage arm. Put the carriage arm and bearing, with a piece of wood against the bearing, into a vise. Tighten the vise to press the bearing into the carriage arm.



# REPAIRS AND ADJUSTMENTS

## HOW TO ADJUST THE CARBURETOR

The carburetor was adjusted at the factory for most conditions. Differences in fuel, temperature and work load will require an adjustment follows.

1. Remove the side panel. See the instructions on "How To Remove A The Side Panel".
2. Turn the needle valve clockwise until it just closes. Turn the idle valve until it just closes.

**CAUTION:** If you turn the valves until they are tight, you can damage the valves.

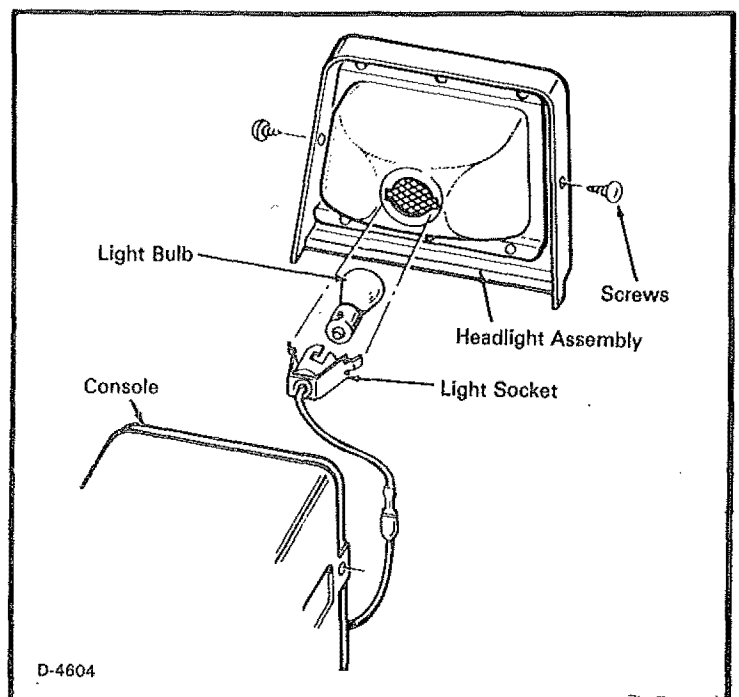
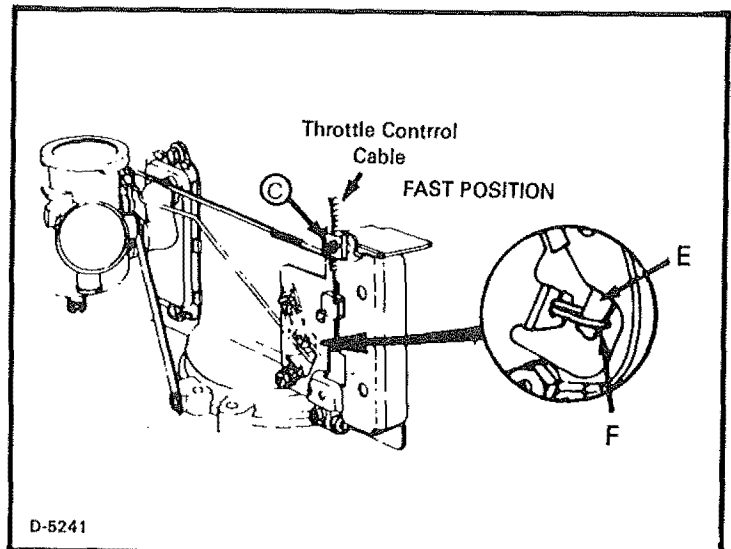
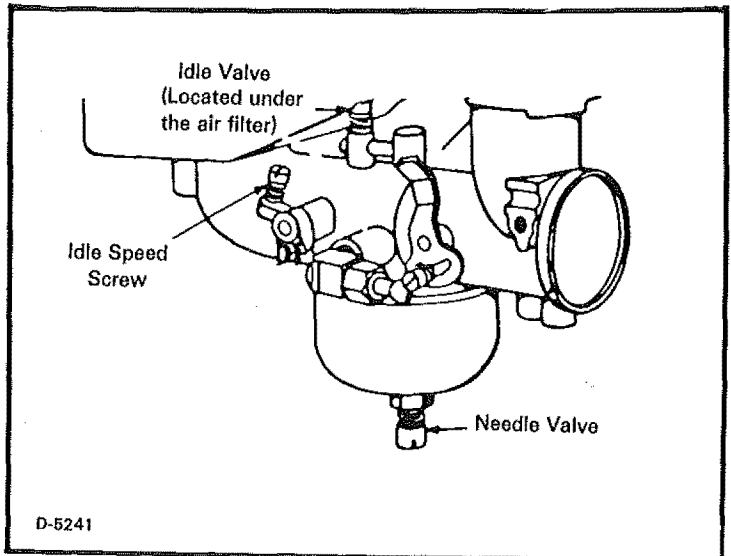
3. Turn the needle valve 1-1/2 turns counterclockwise. Turn the idle valve 1-1/4 turns counterclockwise. This first adjustment will permit the engine to start and get warm so that a last adjustment can be done.
4. Move the throttle control to the FAST position. Turn the needle valve clockwise until the engine starts missing (lean mixture). Then turn the needle valve counterclockwise past the smooth operating position (rich mixture).
5. Turn the needle valve to a position between rich and lean so that the engine can run smooth. (3400  $\pm$  100 RPM).
6. Adjust the RPM. Move the throttle control to the SLOW position. Turn the idle speed screw until a fast idle is obtained (1750  $\pm$  200 RPM). Turn the idle valve clockwise (lean) and counterclockwise (rich) until the engine idles smoothly. Then, turn the idle speed screw so that the engine idles at 1750  $\pm$  200 RPM).
7. Move the throttle control to the FAST position. If the engine does not accelerate correctly, adjust the carburetor to a rich mixture.

## HOW TO ADJUST THE THROTTLE CONTROL

1. Move the throttle control to the FAST position.
2. Loosen screw (C) that holds the throttle cable in position.
3. Pull the throttle cable up until the lever (E) touches link (F) as shown.
4. Tighten screw (C). Move the throttle control to the STOP position.

## HOW TO REPLACE THE LIGHT BULB

1. Remove the two screws from the headlight assembly.
2. Remove the headlight assembly. Press in the sides of the light socket. Remove the light socket from the bezel. Turn the light bulb counterclockwise and remove the bulb.
3. Install a new light bulb.
4. Fasten the headlight assembly with the two screws as shown.



# REPAIRS AND ADJUSTMENTS

## HOW TO START WITH A WEAK BATTERY

If the battery is too weak to start the engine, the battery needs to be charged. If "Jumper Cables" are used to start the engine in an emergency, follow the procedure below.

NOTE: The unit is equipped with a 12 volt negative to ground system. Also, the other vehicle must have a 12 volt negative to ground system.



**WARNING:** Do not smoke. The fumes from the battery acid can cause an explosion. Keep the battery away from any flames or sparks. To prevent sparks, fasten the red jumper cable to the positive (+) terminal before connecting the black jumper cable.

1. Put a wet cloth over the vent caps of each battery.
2. Connect each end of the RED "Jumper Cable" to the positive (+) terminals of each battery. Make sure you do not touch the chassis with the cables.
3. Connect one end of the BLACK "Jumper Cable" to the negative (-) terminal of the charged battery.
4. Connect the other end of the BLACK "Jumper Cable" to the engine block.
5. Start the engine that has the weak battery last. Allow the engine to run.
6. To disconnect the "Jumper Cables", reverse the above steps.

## STORAGE (Over 30 Days)

If the unit is not used for over 30 days, prepare the unit for storage as follows.

### THE ENGINE

1. Run the engine until the engine is warm.
2. Stop the engine.
3. Change the oil.
4. Clean the air filter.

### THE FUEL SYSTEM



**WARNING:** Always use a safety gasoline container. Do not smoke when adding gasoline to the engine. When inside an enclosure, do not fill with gasoline. Before you add gasoline, stop the engine. Let the engine cool for several minutes.

A gasoline stabilizer (Sta-Bil) must be added to the gasoline when the unit is put in storage. A gasoline stabilizer will prevent deposits from stopping up the carburetor.

### THE BATTERY

1. Completely charge the battery. See the instructions on "How To Prepare And Charge The Battery".
2. Clean the battery terminals and the top of the battery of any deposits.
3. Do not remove the battery from the unit.

**NOTE:** After a long period of time in storage, the battery must be charged.

### CLEAN THE UNIT

1. Clean the dirt and grass from the engine.
2. Clean the mower housing.
3. Use wax to protect the paint.

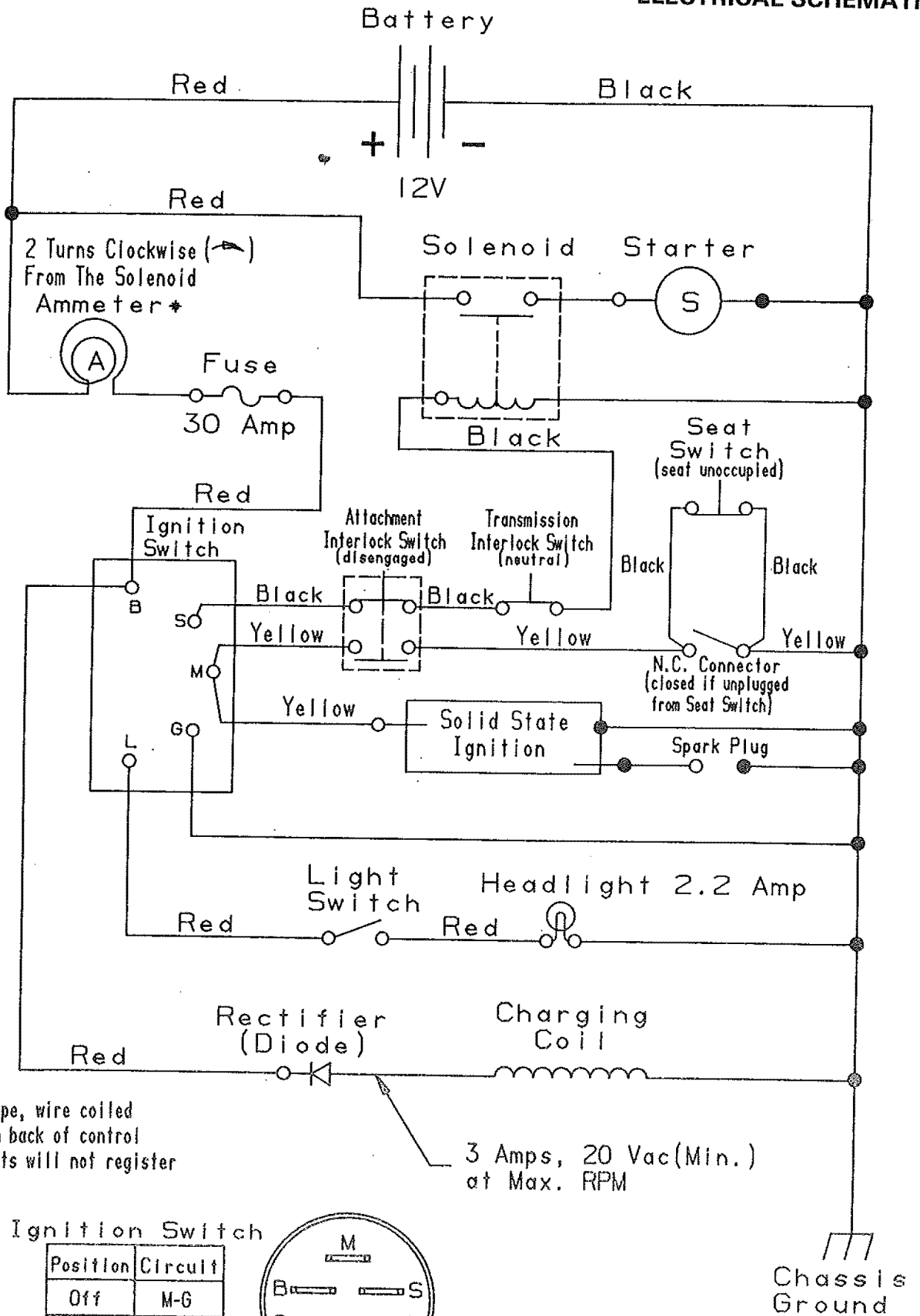
### LUBRICATE THE UNIT

See the "Lubrication" instructions in this book.

# TROUBLE SHOOTING CHART

(Recoil-Start And Electric Models)

Problem	Cause/Repair	
The engine will not start.	<ol style="list-style-type: none"> <li>1. Turn the ignition key to the ON position.</li> <li>2. Fill the fuel tank with clean gasoline.</li> <li>3. Connect the wire to the spark plug.</li> <li>4. Make sure the CHOKE is activated.</li> <li>5. Move blade engagement control to the DISENGAGE position.</li> <li>6. Push the pedal forward. Move the shift lever to the NEUTRAL position.</li> <li>7. Remove and dry the spark plug. Move the throttle to the OFF or SLOW position. Turn the ignition key several times to the START position. Install the spark plug.</li> <li>8. Replace the fuse.</li> </ol>	<ol style="list-style-type: none"> <li>9. Replace the spark plug.</li> <li>10. Tighten the limit switch. Check for a loose wire. See the wiring diagram.</li> <li>11. Adjust the carburetor.</li> <li>12. Drain the fuel tank. Clean the fuel line. Replace the fuel filter.</li> <li>13. Check the wiring harness for damage or loose connections. Repair damaged wire.</li> <li>14. Add water and charge the battery.</li> <li>15. Clean the battery terminals or tighten the battery cable.</li> <li>16. On electric-starts, replace the solenoid.</li> <li>17. On recoil-starts, replace the module.</li> </ol>
The engine stops when the blades are engaged.	<ol style="list-style-type: none"> <li>1. Check the wiring harness for damage or loose connections. Repair damaged wire.</li> </ol>	<ol style="list-style-type: none"> <li>2. Connect the wire to the sensor in the seat.</li> </ol>
The engine is difficult to start and the performance is bad.	<ol style="list-style-type: none"> <li>1. Connect and tighten the wire to the spark plug.</li> <li>2. Clean the air filter.</li> <li>3. Clean the air screen.</li> <li>4. Drain the fuel tank. Replace the fuel filter. Fill with clean gasoline.</li> </ol>	<ol style="list-style-type: none"> <li>5. Add oil.</li> <li>6. Adjust the carburetor.</li> <li>7. Move the throttle control to FAST. Try to start the engine to clear out excess fuel.</li> <li>8. Replace the spark plug.</li> </ol>
The engine does not run smooth at fast speed.	<ol style="list-style-type: none"> <li>1. Replace the spark plug.</li> <li>2. Adjust the throttle control.</li> </ol>	<ol style="list-style-type: none"> <li>3. Clean the air filter.</li> </ol>
On slopes, the engine stops.	<ol style="list-style-type: none"> <li>1. Mow up and down slopes. Never mow across a slope.</li> </ol>	<ol style="list-style-type: none"> <li>2. To activate the seat sensor, always sit in the middle of the seat.</li> </ol>
The engine will not idle.	<ol style="list-style-type: none"> <li>1. Replace the spark plug.</li> <li>2. Clean the air filter.</li> <li>3. Adjust the carburetor.</li> </ol>	<ol style="list-style-type: none"> <li>4. Adjust the throttle control.</li> <li>5. Drain the fuel tank. Clean the fuel line. Replace the fuel filter.</li> </ol>
A hot engine causes a reduction of power.	<ol style="list-style-type: none"> <li>1. Clean air screen.</li> <li>2. Add oil.</li> </ol>	<ol style="list-style-type: none"> <li>3. Adjust the carburetor.</li> </ol>
Excessive vibration.	<ol style="list-style-type: none"> <li>1. Replace the blade.</li> <li>2. Tighten the engine bolts.</li> <li>3. Decrease the air pressure in the tires. Correct air pressure on side of tire.</li> </ol>	<ol style="list-style-type: none"> <li>4. Adjust the carburetor.</li> <li>5. Check for a damaged belt or damaged pulley.</li> </ol>
The grass does not discharge correctly.	<ol style="list-style-type: none"> <li>1. Stop the engine. Clean the mower housing.</li> <li>2. Replace or sharpen the blade.</li> </ol>	<ol style="list-style-type: none"> <li>3. Move the shift lever to a slower speed.</li> <li>4. Move the throttle control to the FAST position.</li> </ol>
The height of cut is not level or the performance is bad.	<ol style="list-style-type: none"> <li>1. Replace or sharpen the blade.</li> <li>2. Check the air pressure in the tires. Correct air pressure on side of tire.</li> <li>3. Raise the height of cut.</li> </ol>	<ol style="list-style-type: none"> <li>4. Clean the mower housing.</li> <li>5. Adjust the level of the mower housing.</li> <li>6. Adjust the blade engagement control.</li> <li>7. Replace the blade idler spring.</li> </ol>
The unit will not move when the clutch is engaged.	<ol style="list-style-type: none"> <li>1. Adjust the clutch.</li> </ol>	<ol style="list-style-type: none"> <li>2. Replace the motion drive belt.</li> </ol>
The unit moves slow or stops when the clutch is engaged.	<ol style="list-style-type: none"> <li>1. Replace the motion drive belt.</li> </ol>	

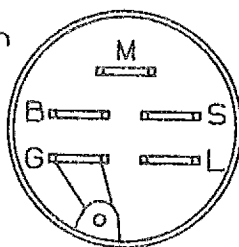


\* Inductive type, wire coiled as seen from back of control panel. Lights will not register on ammeter.

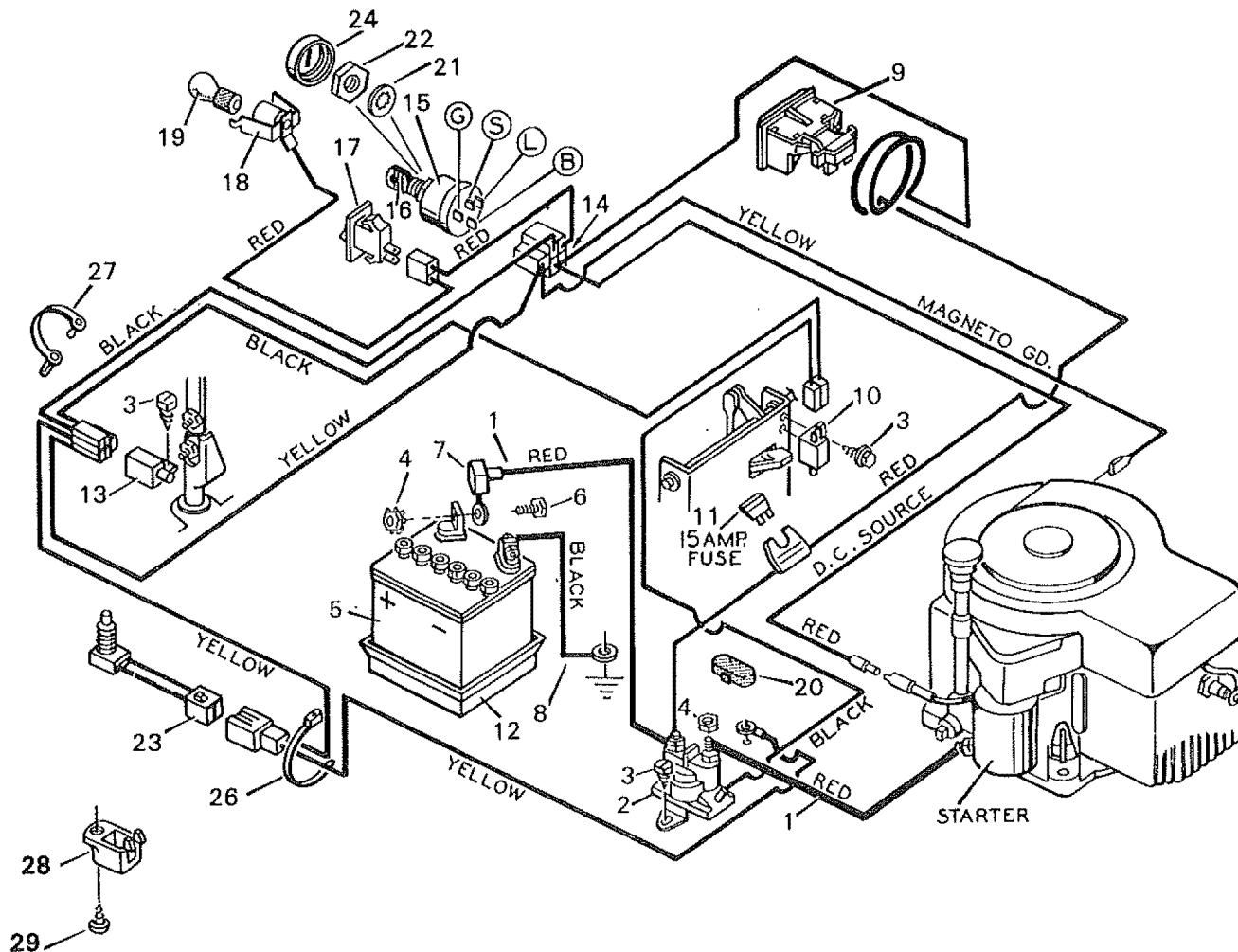
3 Amps, 20 Vac (Min.) at Max. RPM

Ignition Switch

Position	Circuit
Off	M-G
On	B-L
Start	B-S





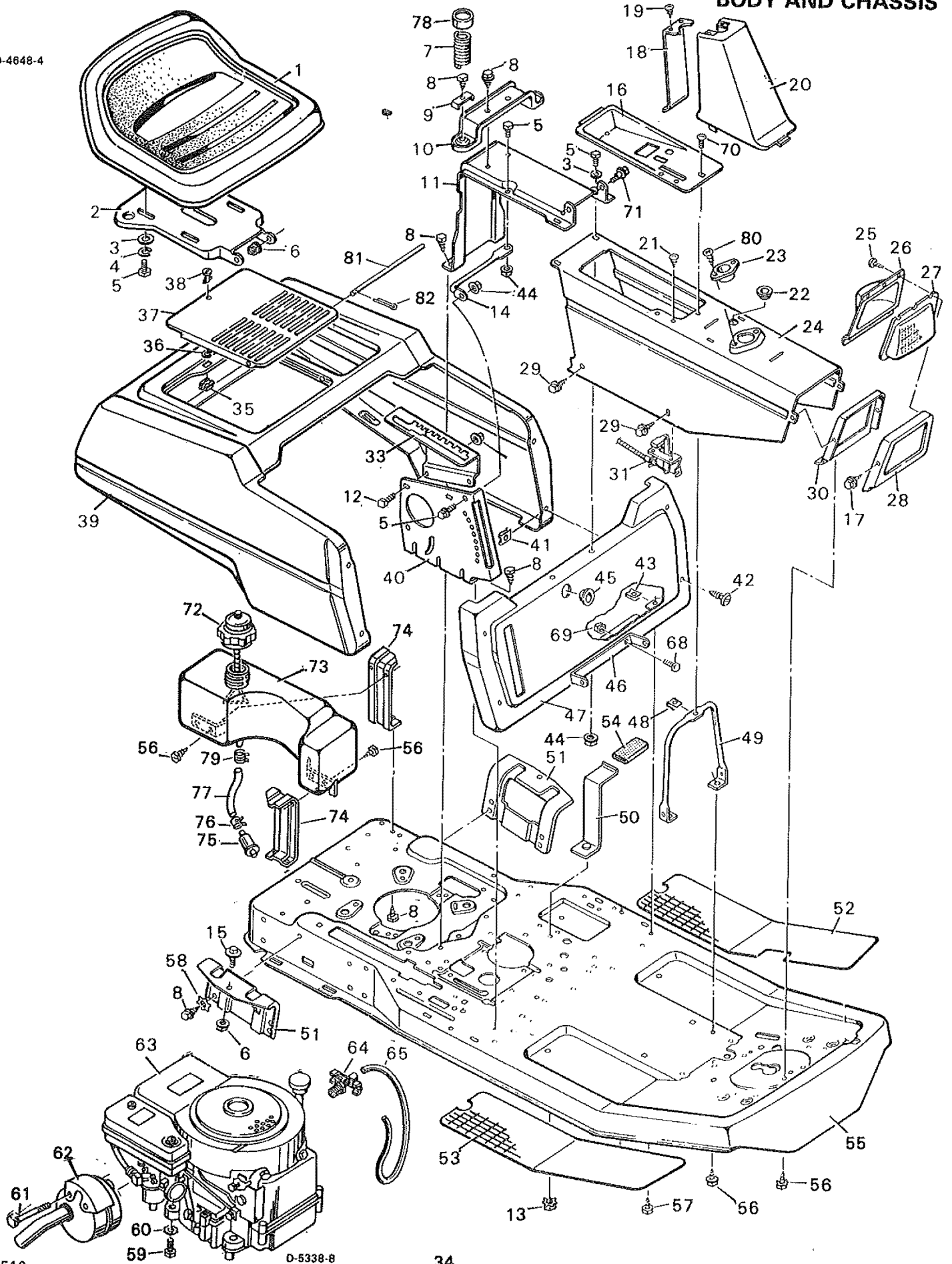


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KEY NO.	DESCRIPTION	PART NO.	MFG. NO.	KEY NO.	DESCRIPTION	PART NO.	MFG. NO.
1	Cable, Battery	24x24		14	Wiring Harness	250x5	
2	Solenoid	24285		15	Switch, Ignition	21064	
3	Screw	26x233		16	Key Only	91275	
4	Nut, Locknut 1/4"-20	STD541425	15x66	17	Light Switch	90647	
5	Battery Type: U1-7R	56033		18	Light Socket	90155	
--	Electrolyte (Battery Acid) *	90665		19	Light Bulb	90084	
6	Bolt, Hex 1/4"-20x5/8"	STD522506	1x38	20	Solenoid Cap	90565	
7	Cover, Battery Terminal	54148		21	Washer, Shakeproof	19x40	
8	Cable, Ground Battery	24x3		22	Nut, Hex	91489	
9	Ammeter	90729		23	Switch, Seat Sensor	91031SE	
10	Limit Switch	24273		24	Cap, Switch	91488	
11	Fuse, 15 AMP	54212		26	Tie, Wire	32618	
12	Tray, Battery	55792		27	Clamp, Wire	21980	
13	Limit Switch	91032		28	Cover, Seat Switch	56062	
				29	Screw	STD610803	26x159
				--	Owner's Manual *	F-88516	

\* Part is not shown.

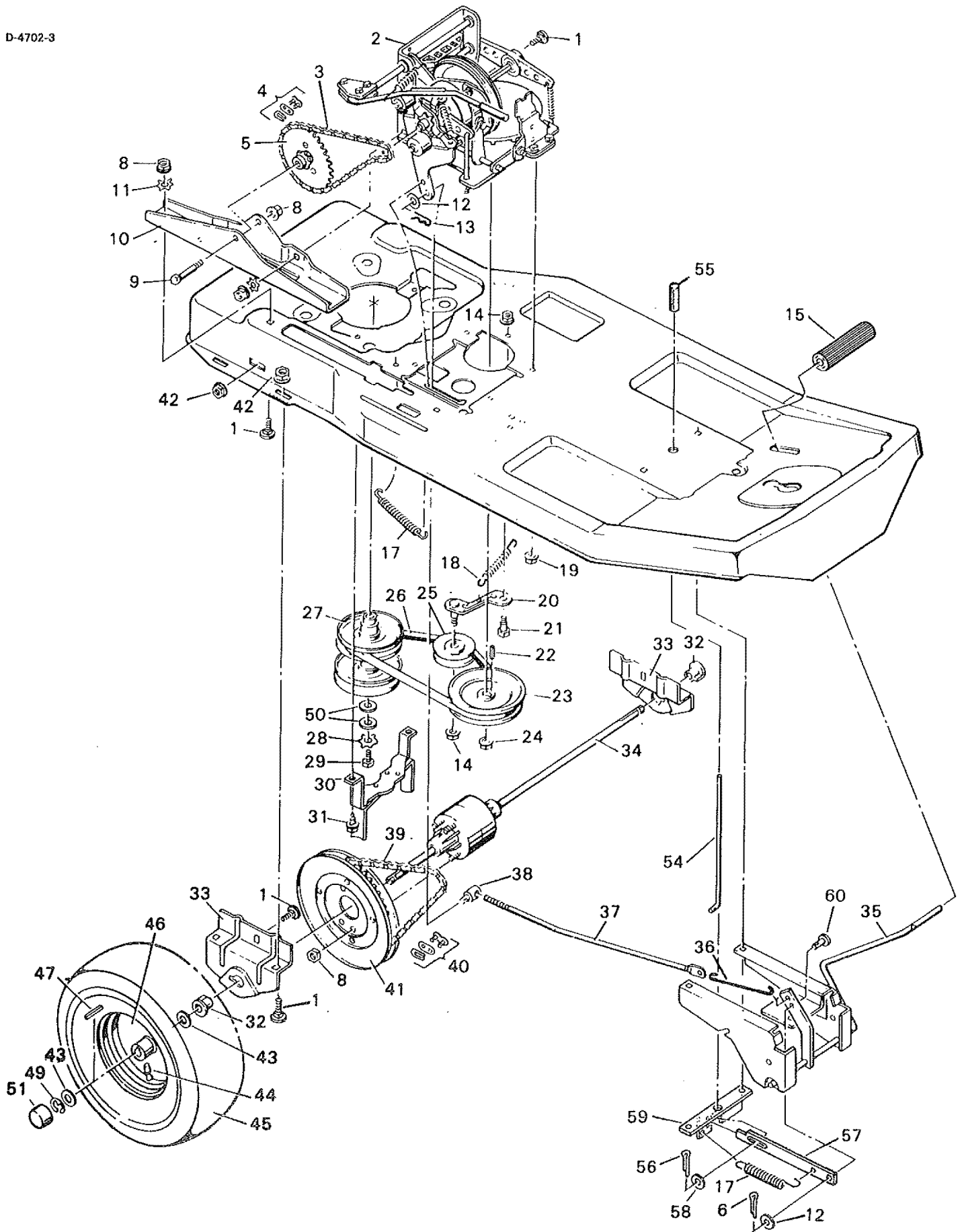
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KEY NO.	DESCRIPTION	PART NO.	MFG. NO.	KEY NO.	DESCRIPTION	PART NO.	MFG. NO.
1	Seat	91451		42	Screw	91330	
2	Seat Mount	55359E601		43	J-Nut 1/4"-20	28x18	
3	Washer	STD551031	17x47Z	44	Locknut 5/16"-18	STD541431	15x88
4	Lockwasher	18x16		45	Grommet	21268	
5	Bolt, Hex 5/16"-20x5/8"	STD523106	1x45	46	Bracket	55358E601	
6	Locknut 3/8"-16	STD541437	15x84	47	Panel, Front	55392E601	
7	Spring, Seat	164x17		48	U-Nut 1/4"-20	28x20	
8	Screw	26x49		49	Support, Console	55350E701	
9	Retainer, Seat Spring	90014		50	Clamp, Battery	55253Z	
10	Hanger, Seat Spring	55062		51	Support, Body	55360	
11	Support, Seat	55366		52	Mat, Left	55103	
12	Bolt, Hex 1/4"-20x5/8"	STD522506	1x38	53	Mat, Right	55102	
13	Locknut 5/16"-18	15x76		54	Cover, Battery Clamp	55804	
14	Strut, Index Bracket	55617E601		55	Frame Channel	55946	
15	Bolt, Shoulder	9x29		56	Screw	26x213	
16	Panel, Control	55823E701		57	Screw, Hex Head	6x74	
17	Screw 1/4" Type AB x1/2"	26x238		58	Washer, Shakeproof	STD551231	19x6
18	Cover, Upper Console	55414		59	Bolt, Engine Mount	25x6	
19	Screw	26x161		60	Washer, Shakeproof	19x8	
20	Console, Upper	55413		61	Bolt, Hex 5/16"-18x3/8"	1x118	
21	Screw	STD610803	26x159	62	Muffler	56029	
22	Bushing	55717		63	Engine, Briggs & Stratton Model 500.253707-0213-01 +	55811PA	
23	Bearing, Steering Post	56022		64	Fitting, Oil Drain	55704	
24	Console	70231SE		65	Hose, Oil Drain	55705	
25	Screw	26x201		68	Screw, HX #10-24x1/2"	4x20Z	
26	Reflector	55351C		69	Nut #10-24	15x81Z	
27	Lens	55428		70	Screw 1/4"-AB x3/4"	26x239	
28	Bezel	55422		71	Bolt, Shoulder	9x30	
29	Screw	26x214		72	Cap, Fuel Tank	55988	
30	Bulkhead	55349E701		73	Tank, Fuel	55805	
31	Throttle Control	55424		74	Bracket, Fuel Tank	55806E701	
32	Locknut 1/4"-20	STD541425	15x82	75	Filter, Fuel +	-----	
33	Bracket, Index	55430E601		76	Clamp, Hose	23713	
35	Receiver	55487		77	Hose, Fuel Line	91022	
36	Retainer, Stud	55485		78	Cover, Seat Spring	20107	
37	Panel, Access	56067E601		79	Hose Clamp	91174	
38	Stud	55486		80	Screw	STD611005	26x235
39	Body, Rear	70240		81	Rod, Hinge	56066Z	
40	Plate, Index	55365		82	Pin, Cotter	STD560907	30x50
41	Receptacle	28x52					

+ See replacement parts page 47 for component parts.

D-4702-3



KEY NO.	DESCRIPTION	PART NO.	MFG. NO.
1	Bolt, Carriage	STD533107	2x53Z
2	Drive Assembly, Friction *	55650-701	
3	Chain, Roller	55839	
4	Link, Master	55556PA	
5	Sprocket Assembly	56018	
6	Pin, Cotter	STD560907	30x20
8	Locknut 5/16"-18	STD541431	15x88
9	Bolt, Shoulder	9x25	
10	Bridge	55838E601	
11	Washer, Shakeproof	STD551231	19x6
12	Washer	STD551037	17x53Z
13	Pin, Hair	STD624003	31x6
14	Locknut 3/8"-16	STD541437	15x84
15	Pedal	55825	
17	Spring, Brake Arm	165x58	
18	Spring, Drive Idler	165x43	
19	Locknut 5/16"-18	STD541431	15x76
20	Idler Arm Assembly	55512Z	
21	Bolt, Shoulder	9x30	
22	Key, Square	55634	
23	Pulley, Motion Drive	55100	
24	Locknut 3/8"-16	15x98	
25	Pulley, Idler	91178	
26	Belt, Motion Drive	37x51	
27	Pulley, Stack	55961Z	
28	Washer, Shakeproof	STD551243	19x35
29	Bolt, Hex 7/16"-20x1"	1x80	
30	Guide, Belt	55982Z	
31	Screw	26x49	
32	Bearing, Flange	55597	
33	Bracket, Rear Axle	55065E601	
34	Differential Peerless Model No. 100-029A +	55872	
35	Lever Assembly	55656	
36	Link, Spring Wire	55890	
37	Rod, Brake	55664Z	
38	Nut, Adjuster	21920	
39	Chain, Roller	55666	
40	Link, Master	407059	
41	Sprocket and Guard Assembly	55915	
42	Nut, Hex 5/16"-18	STD541031	15x79Z
43	Washer	17x115Z	
44	Valve Stem and Cap	24373	
45	Tire Only	90589	
46	Wheel Only	91523	
47	Key, Square	STD580105	21553
49	Retainer Ring	STD581075	11x3
50	Washer	STD551050	17x103
51	Hub Cap	24582	
54	Rod, Parking Brake	55822Z	
55	Grip, Parking Brake	55873	
56	Pin, Cotter	STD560907	30x50
57	Link, Parking Brake	55821Z	
58	Washer	17x36Z	
59	Stop, Parking Brake	55820	
60	Pin, Clevis	29x95	

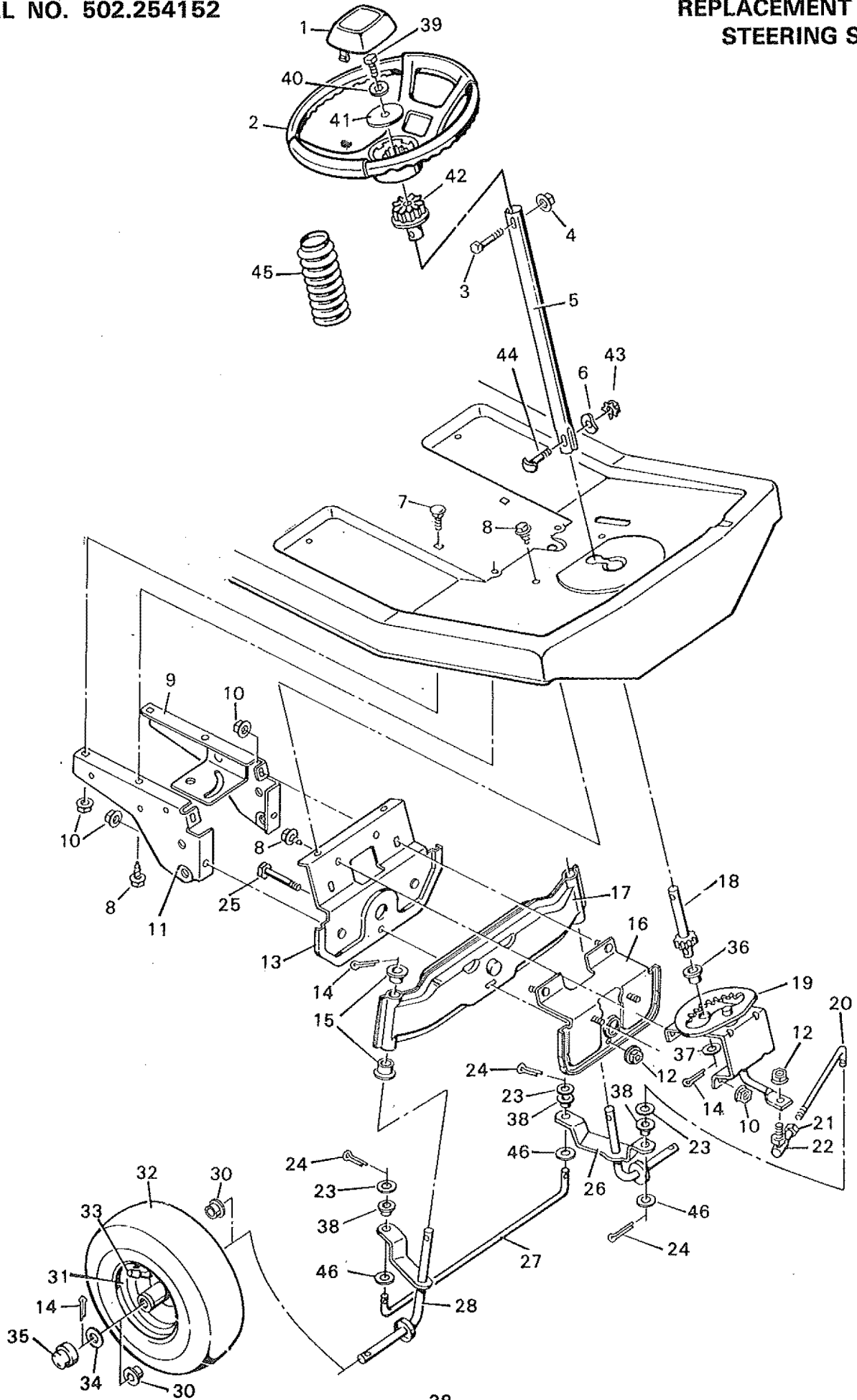
\* See replacement parts page 44 for component parts.

+ See replacement parts page 46 for component parts.

MODEL NO. 502.254152

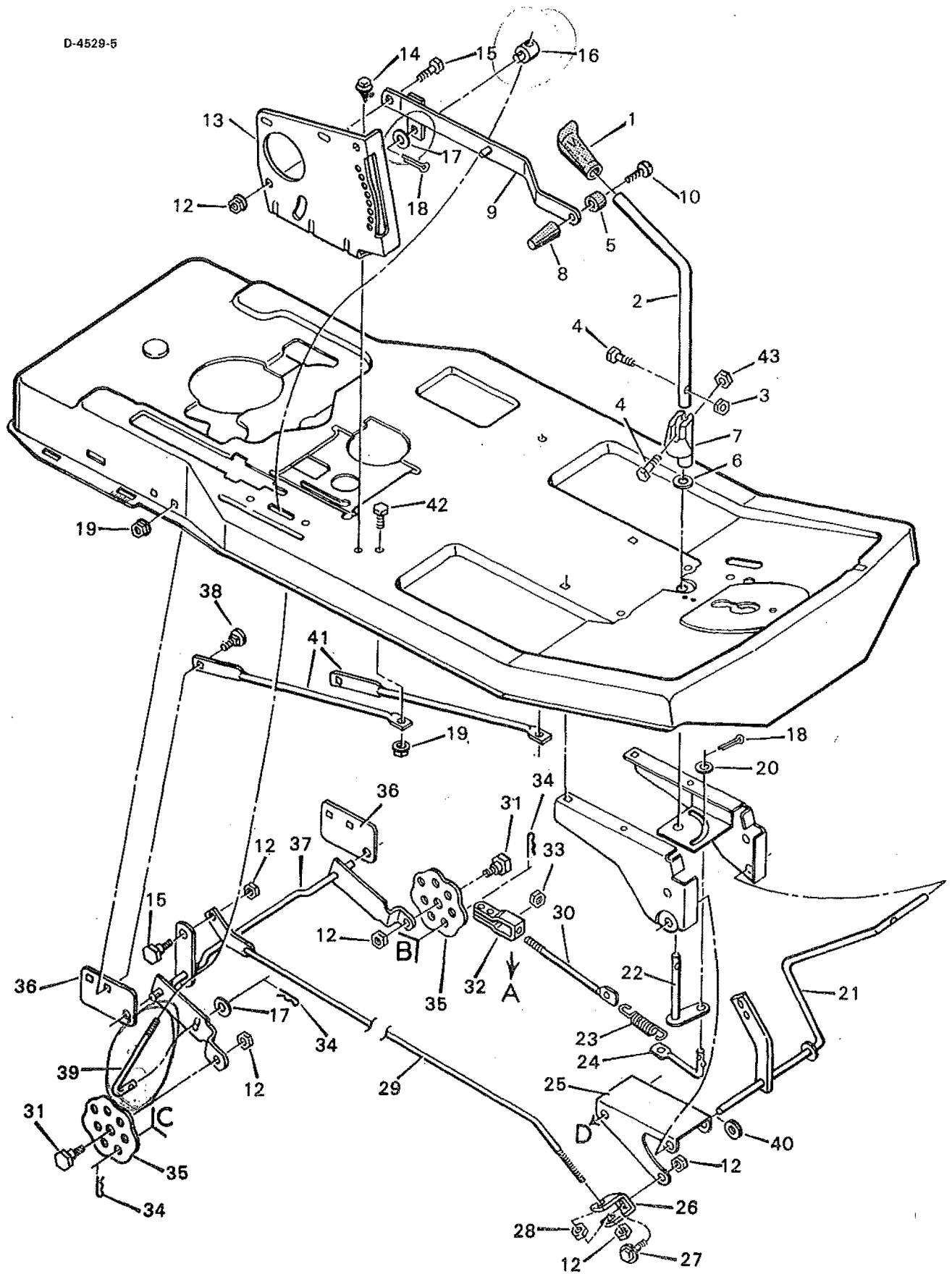
REPLACEMENT PARTS  
STEERING SYSTEM

D-4608-3



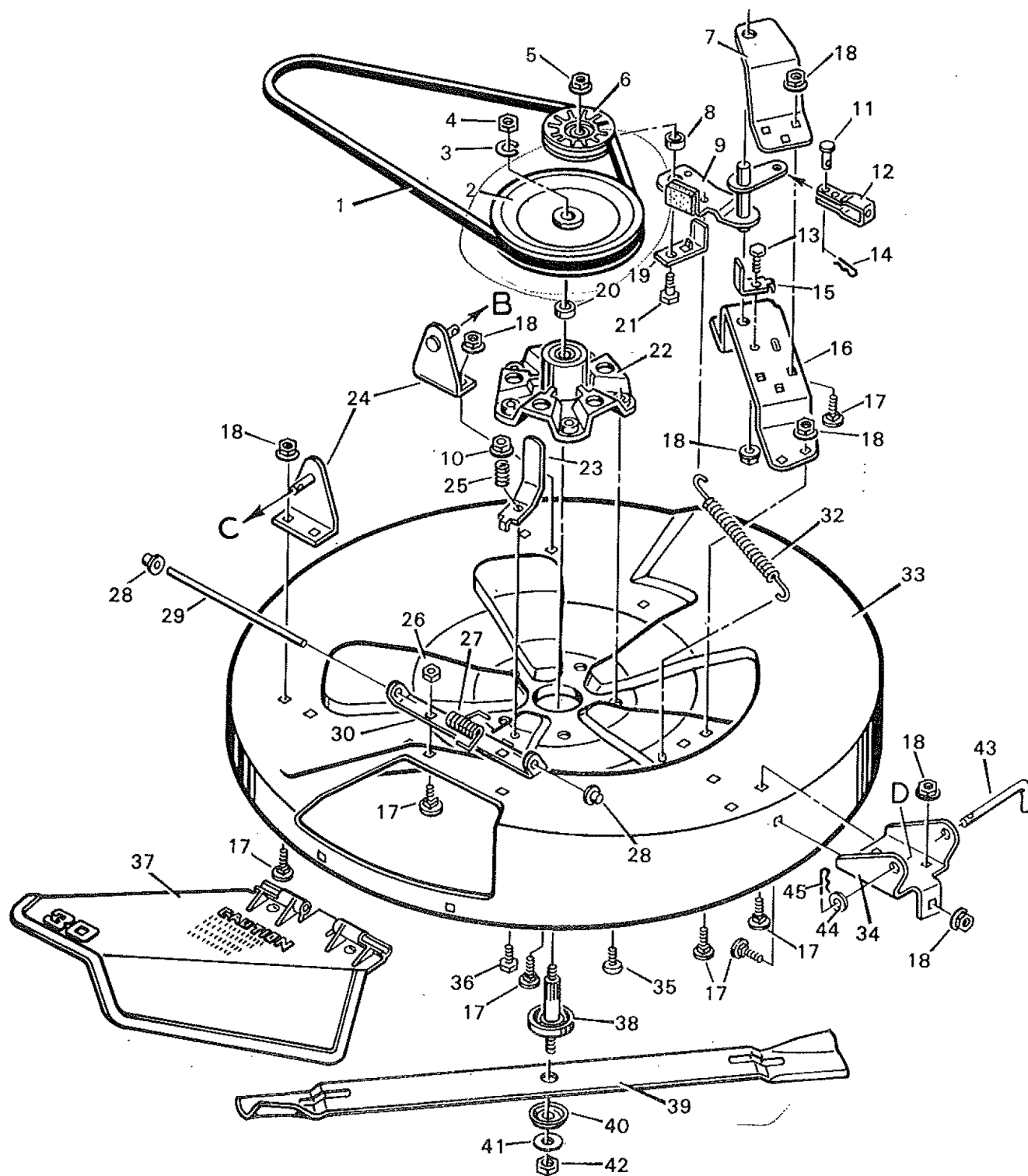
KEY NO.	DESCRIPTION	PART NO.	MFG. NO.
1	Cap, Steering Wheel	55919	
2	Steering Wheel	55909	
3	Hex Bolt 5/16" -18x1 1/2"	STD523115	1x102
4	Locknut, Flange 5/16" -13	STD541431	15x88
5	Steering Post	91444C	
6	Washer	17x132	
7	Carriage Bolt 5/16" -18x3/4"	STD533107	2x64
8	Screw, Tapping	26x49	
9	Suspension Plate, Left	55384	
10	Hex Nut, Flange 5/16"-18	STD541031	15x79
11	Suspension Plate, Right	56023	
12	Locknut, Flange 3/8" -24	STD541537	15x87
13	Front Axle Support Assembly	55937	
14	Cotter Pin	STD561220	30x49
15	Spindle Bearing	55003	
16	Front Axle Hanger Assembly	55655	
17	Front Axle Assembly	55024	
18	Pinion Gear	56057	
19	Sector Assembly	55746	
20	Drag Link	55046D	
21	Hex Nut 3/8" -24	15x61	
22	Steering Ball Joint	21031	
23	Washer	STD551037	17x53Z
24	Cotter Pin	STD560907	30x20
25	Hex Bolt 3/8" -24x2 3/8"	STD623725	1x69
26	Left Spindle Assembly	55381	
27	Tie Rod	55026D	
28	Right Spindle Assembly	55380	
30	Bearing, Flanged *	55598	
31	Wheel Only	91527	
32	Tire Only	55386	
33	Valve Stem and Cap	24373	
34	Washer	24583	
35	Hub Cap	24582	
36	Bearing	55168	
37	Washer	17x100	
38	Bushing, Nylon	55547	
39	Bolt, Hex 3/8"-16x3/4"	STD523707	1x85
40	Washer, Shakeproof	19x39	
41	Washer	20094Z	
42	Adapter, Steering Wheel	55911	
43	Locknut 5/16"-18	STD541431	15x76
44	Bolt, Contour 5/16"-18x1 1/4"	6x90	
45	Bellows, Steering Post	55410	
46	Washer, Formed	17x161	

\* The part is also included with Key No. 31.





KEY NO.	DESCRIPTION	PART NO.	MFG. NO.
1	Grip, Blade Control Lever	55449	
2	Lever, Blade Control	55928Z	
3	Locknut, Flange ¼" -20	STD541425	15x89
4	Bolt, Hex ¼" -20	STD522510	1x76
5	Cap, Lifter Lever Knob	55440	
6	Washer	STD551050	17x67Z
7	Cam, PTO	55853	
8	Grip, Knob	55439	
9	Lever Assembly, Lifter	56031	
10	Screw 5/16"-18x1½"	3x149	
12	Locknut, Flange ⅜" -16	STD541431	15x84
13	Plate, Index	55365	
14	Screw	26x49	
15	Bolt, Shoulder ⅜" -16	9x9Z	
16	Nut, Adjuster	21920	
17	Washer	STD551037	17x53Z
18	Pin, Cotter	STD560907	30x20
19	Nut, Hex Flange 5/16" -18	STD541431	15x88
20	Washer	17x48	
21	Lever Assembly	55656	
22	Rod & Arm Assembly	55930D	
23	Spring, Extension	165x67	
24	Link, Front Deck	55179D	
25	Bracket, Front Suspension	55139	
26	Clevis	55298	
27	Bolt, Shoulder ⅜" -16	9x17	
28	Nut, Hex Jam ⅜" -16	STD541237	15x73
29	Rod Assembly	55957	
30	Link	55271Z	
31	Bolt, Shoulder	9x4Z	
32	Clevis, Adjuster	24471Z	
33	Nut, Hex 5/16" -18	STD541031	15x2
34	Hairpin	STD624005	31x4
35	Plate, Adjuster	55344	
36	Plate, Mounting	55270	
37	Rod Assembly, Suspension	55346	
38	Bolt, Carriage	STD533107	2x64
39	Rod, Lifter	24839D	
40	Washer	17x122Z	
41	Strut, Frame	55326	
42	Bolt, Hex 5/16"-18x5/8"	STD523106	1x45
43	Locknut, Hex ¼"-20	STD541425	15x66

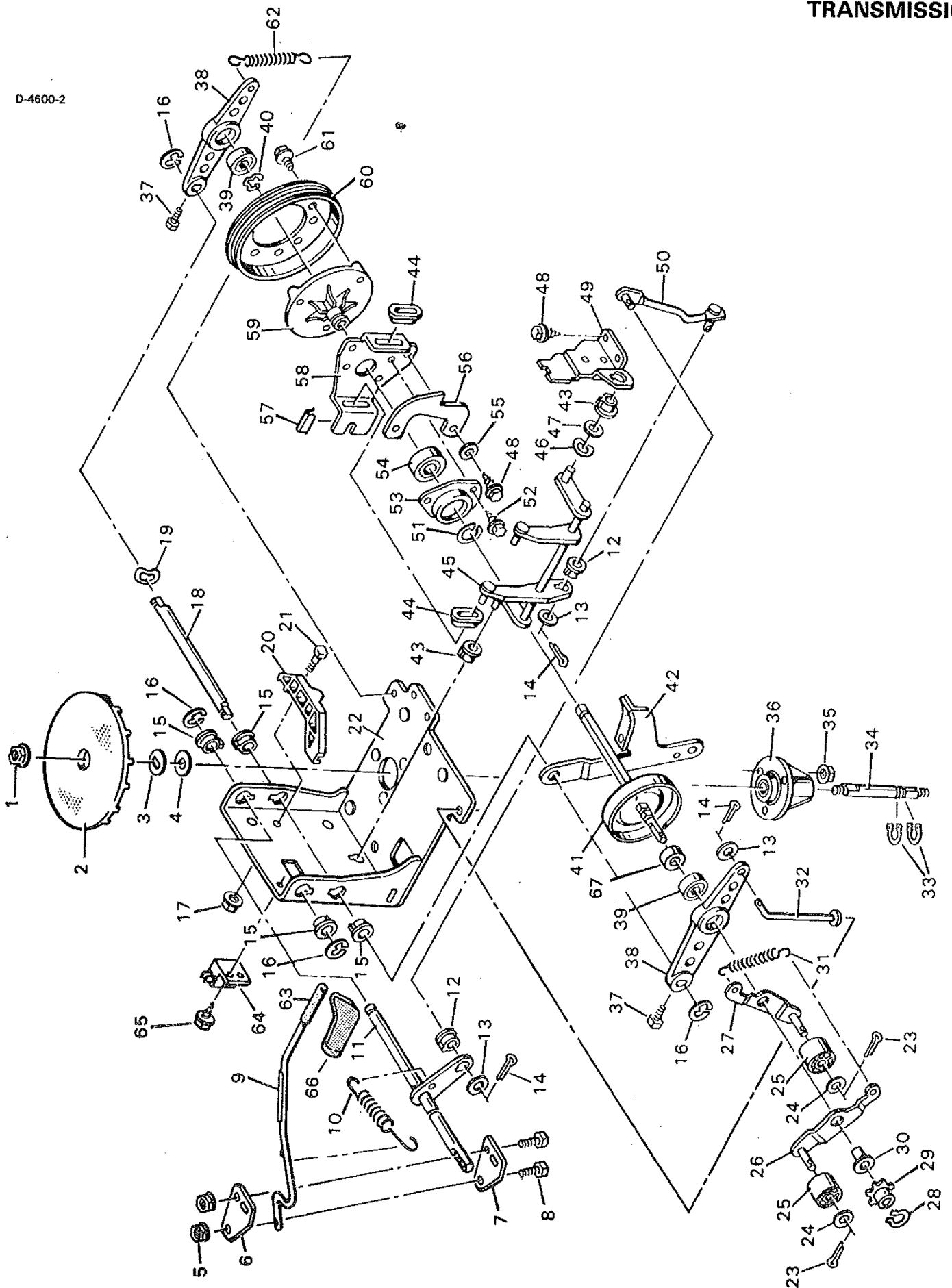


D-4745

KEY NO.	DESCRIPTION	PART NO.	MFG. NO.
1	Belt, Mower Drive	37x57	
2	Pulley, Splined	55452	
3	Lockwasher	18x33	
4	Locknut 9/16x18	15x101	
5	Nut, Hex	STD541450	15x41
6	Pulley, Idler	91178	
7	Bracket, Upper Idler	55921E601	
8	Spacer	55895	
9	Assembly, Blade Idler	55979	
10	Locknut, Flange	STD541431	15x88
11	Pin, Clevis	29x99	
12	Clevis	24471Z	
13	Bolt, Hex	STD523106	1x45
14	Pin, Hair	STD624003	31x6
15	Guide, Belt	55977	
16	Bracket, Lower Idler	55920E601	
17	Bolt, Carriage *	STD533107	2x53Z
18	Nut, Flange *	STD541031	15x79Z
19	Guide, Belt	55894	
20	Spacer	55273Z	
21	Bolt, Hex	STD525015	1x127
22	Housing, Mandrel	55962	
23	Guide, Belt	55956Z	
24	Bracket, Hanger *	55974	
25	Spring, Compression	164x1	
26	Nut, Hex *	STD541431	15x43Z
27	Spring, Torsional	166x4	
28	Push On Cap	28x23	
29	Rod	21197Z	
30	Bracket, Chute Deflector *	55963	
32	Spring, Extension	165x68	
33	Housing, Blade	56065E601	
34	Bracket, Front *	55916	
35	Screw	26x216	
36	Bolt, Hex 5/16"-18x7/8"	STD523117	1x75
37	Deflector, Chute	55971	
38	Mandrel	55445	
39	Blade	56060HT	
40	Washer, Belleville	17x155	
41	Washer, Hardened	17x154	
42	Nut, Hex 9/16"-18	15x100	
43	Pin, Pull	90828Z	
44	Washer	STD551050	17x67Z
45	Pin, Hair	STD624005	31x4
--	Mower Housing, Complete	403224	

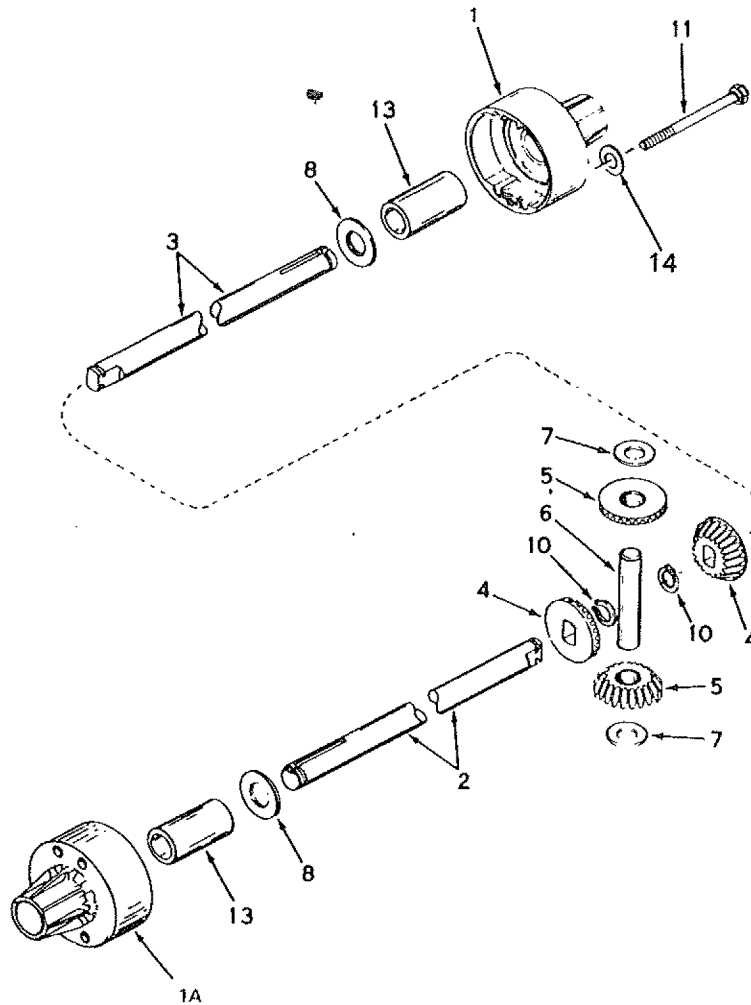
\* These parts are included with key no. 33.

D-4600-2

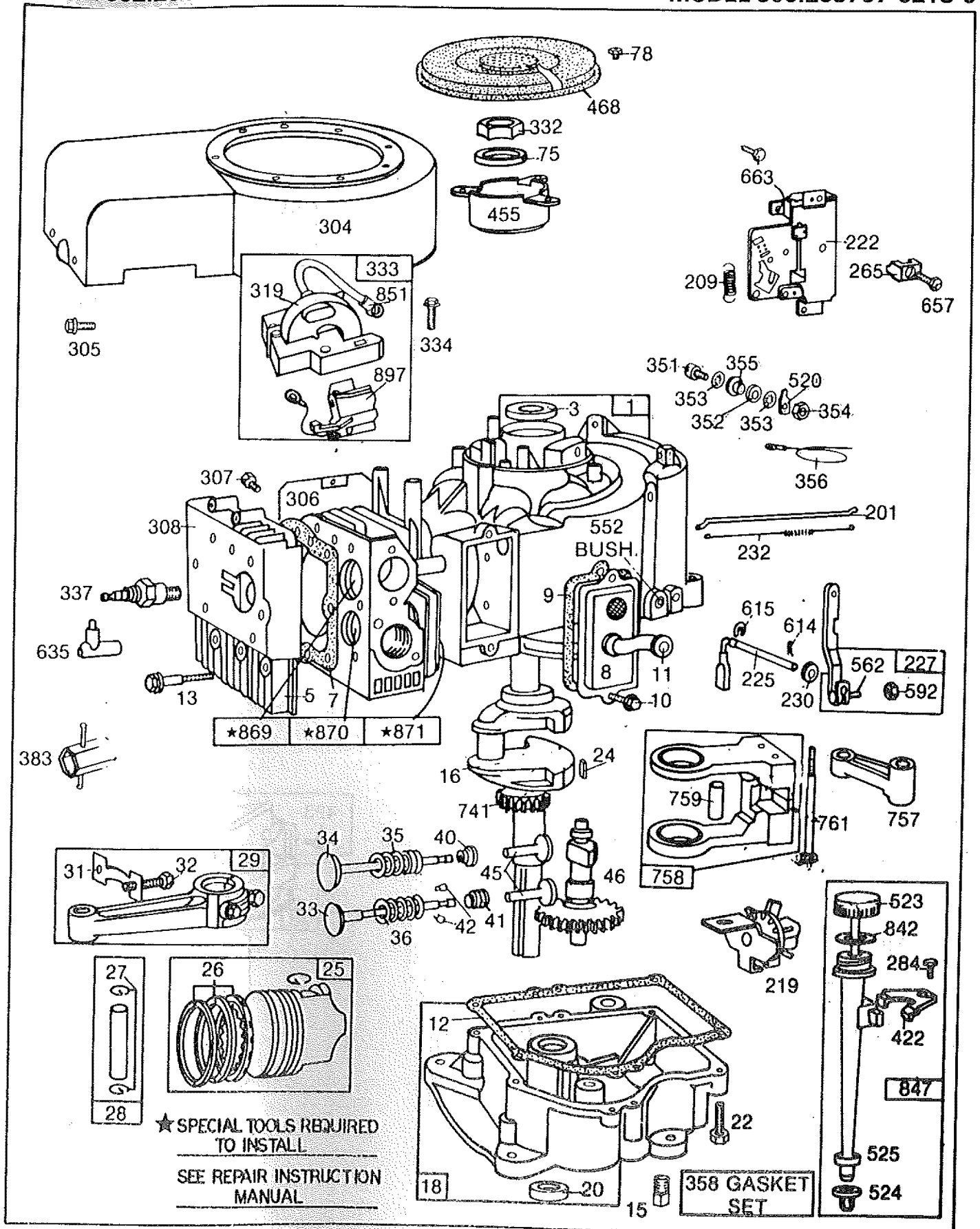


KEY NO. DESCRIPTION	PART NO.	MFG. NO.	KEY NO. DESCRIPTION	PART NO.	MFG. NO.
1 Locknut 3/8"-16	15x98		35 Locknut 5/16"-18	STD541431	15x88
2 Disc, Drive	55500		36 Housing, Bearing *	55596	
3 Washer, Thrust	17x147Z		37 Screw, Set	22x57	
4 Washer	17x149		38 Carriage Arm	55638	
5 Locknut 1/4"-20	STD541425	15x89	39 Ball Bearing Assmby	55639	
6 Yoke, Left	55578Z		40 Ring, Retainer	11x17	
7 Yoke, Right	55588Z		41 Hex Shaft Assembly	56020	
8 Bolt, Hex 1/4"-20x1 1/4"	STD522512	1x94	42 Brake Arm Assembly	55889	
9 Lever, Shift	55476Z		43 Bearing, Flanged	55547	
10 Spring, Extension	165x71		44 Bushing, Flanged	55546	
11 Shift Rod Assembly	55711Z		45 Pivot Rod Assembly	55569Z	
12 Bearing, Flanged	55549		46 Washer, Curved Spring	20x2	
13 Washer	17x36Z		47 Washer	STD551037	17x53Z
14 Pin, Cotter	30x50		48 Screw	26x49	
15 Bearing, Flanged	55548		49 Bracket, Neutral	55607Z	
16 Ring, Retainer	11x8		50 Linkage, Shifter	55526Z	
17 Locknut 3/8"-16	STD541437	15x84Z	51 Ring, Retainer	11x12	
18 Rod, Carriage	55559		52 Screw	26x174	
19 Washer, Curved Spring	20x1		53 Retainer, Bearing	55509Z	
20 Arm, Actuator	55643		54 Ball Bearing Assembly	55541	
21 Bolt, Shoulder	9x30		55 Washer	STD551031	17x47Z
22 Support, Carriage	55562E701		56 Arm, Neutral	55606Z	
23 Pin, Cotter	STD560907	30x20	57 Clip, Carrier Arm	55658Z	
24 Washer	STD551037	17x53Z	58 Arm, Carrier	55608Z	
25 Roller	55570		59 Hub, Friction Disc	55501	
26 Idler Assembly, Left	55514Z		60 Disc, Friction	55550	
27 Idler Assembly, Right	55513Z		61 Screw	26x207	
28 Ring, Retainer	11x18		62 Spring	165x46	
29 Sprocket, #35 9 Tooth	55543		63 Grip, Inner	20476	
30 Bearing, Flanged	55651		64 Switch, Limit	24273	
31 Spring, Extension	165x27		65 Screw	26x233	
32 Rod, Brake Stop	56021		66 Grip, Outer	55449	
33 Ring, Retainer	11x13		67 Spacer	115x2Z	
34 Mandrel	55635				

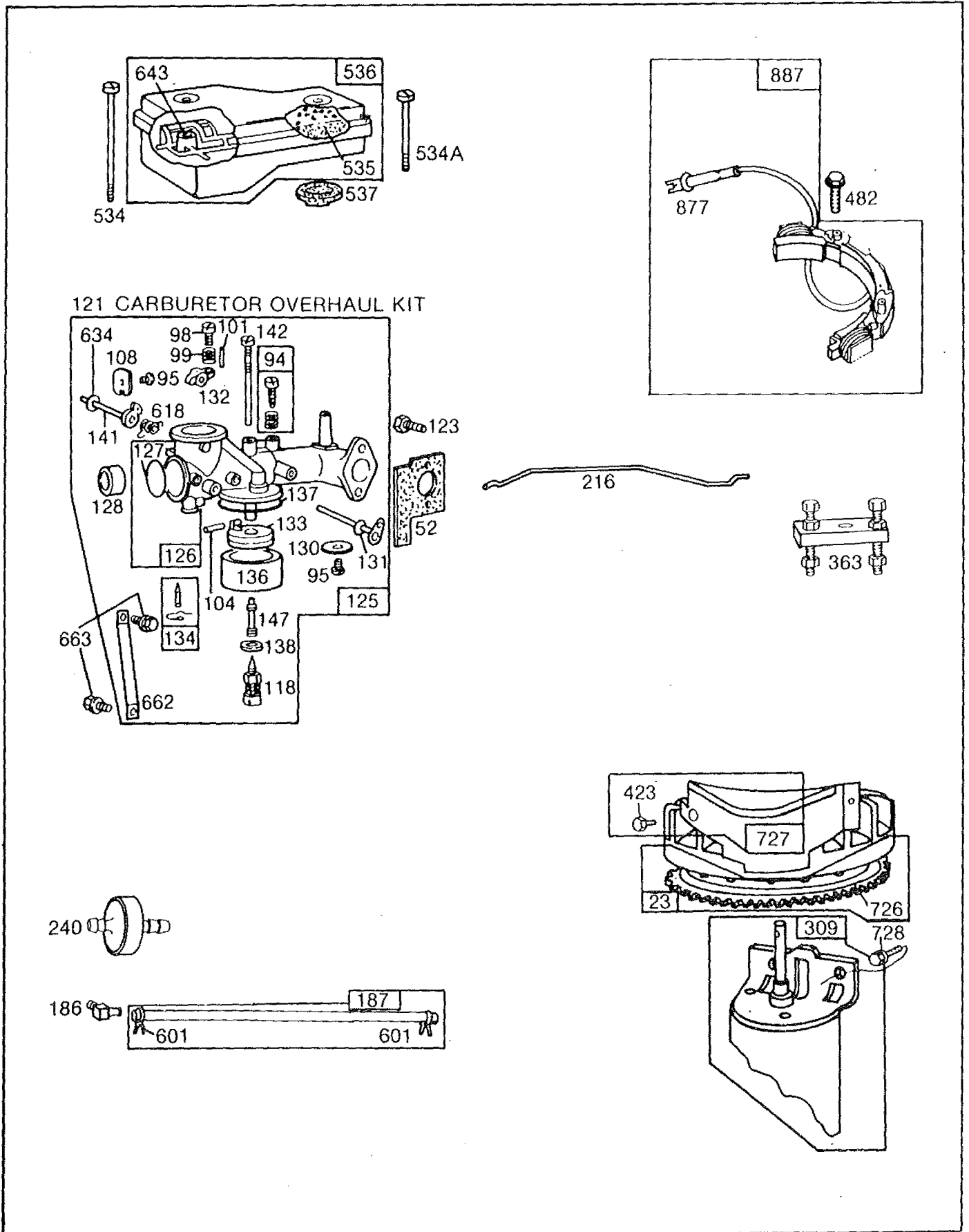
\* This part includes Key Number 34.



KEY NO.	DESCRIPTION	PART NO.
1	Housing, Differential carrier (Incl. No. 13)	774345
1A	Housing, Differential carrier (Incl. No. 13)	774344
2	Axle (8-1 1/64" long)	774532A
3	Axle (19-3/32" long)	774531A
4	Gear, Bevel	778067
5	Gear, Pinion	778068
6	Pin, Drive	786040
7	Washer, Thrust	780096
8	Washer	780001
10	Ring, Snap	792018
11	Screw, Hex 5/16"-18x3/4"	792041
13	Bushing	780077
14	Washer	792061



Assemblies include all parts shown in frames.

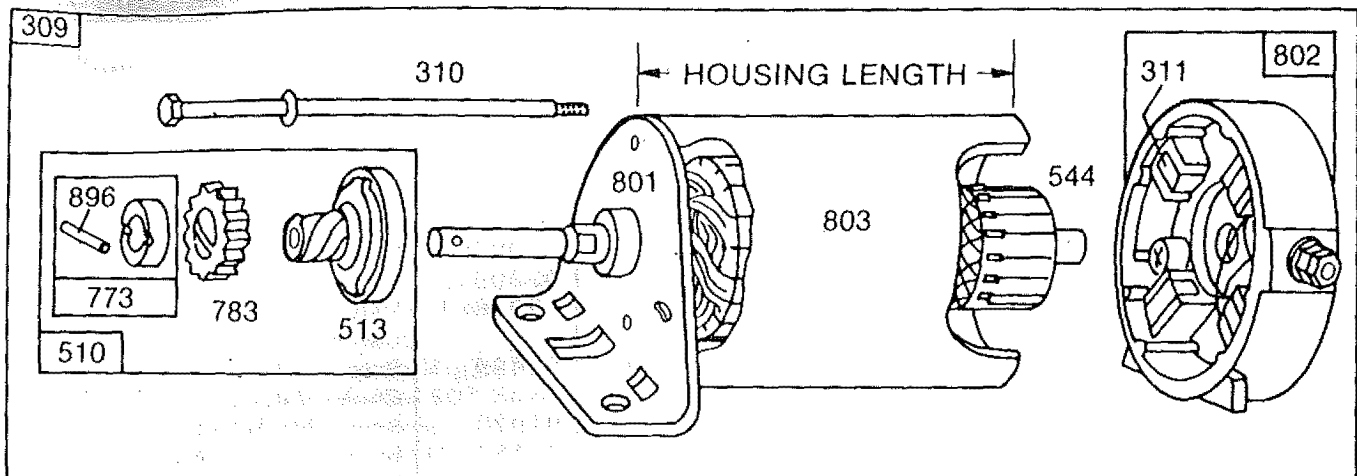


Assemblies include all parts shown in frames.



SEARS RIDING MOWER  
MODEL 502.254152

BRIGGS & STRATTON ENGINE  
MODEL 500.253707-0213-01



Assemblies include all parts shown in frames.

**SEARS RIDING MOWER  
MODEL 502.254152**

**BRIGGS & STRATTON ENGINE  
MODEL 500.253707-0213-01**

KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
1	395705	Cylinder Assembly	42	93630	Retainer-Exhaust
3	391086	Seal—Oil			Valve Rotocoil (2)
5	212914	Head—Cylinder	45	261183	Tappet—Valve
7	*271075	Gasket—Cylinder Head	46	212897	Gear—Cam
8	391406	Breather Assembly	52	*270872	Gasket-Carburetor
9	*27803	Gasket—Valve Cover			Mounting
10	93394	Screw—Sem	75	220865	Washer—Spring Sealing
11	280100	Tube—Breather	78	93805	Screw-Sem
12	*270808	Gasket—Crankcase-Cover—1/64" thick	94	†292681	Valve Assembly
	*270915	Gasket—Crankcase-Cover—.005" thick	95	93499	Carburetor Idle
	*270916	Gasket—Crankcase-Cover—.009" thick	98	91920	Screw—Throttle Valve
13	93723	Screw—Cylinder Head (3" long)	99	26157	Choke Valve Mtg. Sem
15	91084	Plug—Oil Drain	101	93043	Screw-Machine Fill.
16	392299	Crankshaft	104	†230896	Spring-Throttle Adjustment
	Note:	To replace Crankshaft Gear Pin Order Part No. 230978	108	222010	Pin-Throttle Stop
18	391784	Sump—Oil	118	†396568	Pin-Float Hinge
20	291675	Seal—Oil	121	394698	Valve—Choke
22	93585	Screw—Sump Mounting Sem	123	93357	Valve-Needle
23	391988	Flywheel and Ring Gear Assy.—Magneto	125	396501	Carburetor Overhall Kit
24	222698	Key—Flywheel	126	396574	Screw-Carburetor Mtg.
25	394661	Piston Assy.—Std.			Carburetor Assembly
	394662	Piston Assembly—.010" O.S.	127	†221997	Body Assembly
	394663	Piston Assembly—.020" O.S.	128	211960	Carburetor
	394664	Piston Assembly—.030" O.S.	130	222858	(Two 271013 Foam Washers Included in All Ref. 126)
	PISTON RING SETS:		131	391512	Plug-Welch
	Note:	For Chrome Piston Ring Set—Standard Size-Order No. 392331.	132	211712	Venturi-Carburetor
26	394665	Ring Set—Piston—Std.	133	299707	Valve-Throttle
	391781	Ring Set-Piston—.010" O.S.	134	†299096	Shaft and Lever—Throttle
	391782	Ring Set-Piston—.020" O.S.	136	221995	Stop-Throttle
	391783	Ring Set-Piston—.030" O.S.	137	†270511	Float-Carburetor
27	260924	Lock—Piston Pin	138	†222014	Float-Carburetor
28	299691	Pin Assembly-Piston-Standard	141	390684	Valve-Fuel Inlet
	391286	Pin Assembly-Piston—.005" O.S.	142	†299740	Bowl-Float
29	391775	Rod Assembly-Connecting	147	†231323	Gasket-Float Bowl
	Note:	For Connecting Rod with .020" undersize Crankpin Bore-Order No. 393712.			Washer-Float Bowl
31	222299	Lock-Conn. Rod Screw			Shaft and Lever-Choke
32	92909	Screw—Conn. Rod	186	67218	Nozzle-Carburetor
33	261185	Valve—Exhaust	187	299146	Screw-Nozzle
34	261462	Valve—Intake			
35	65906	Spring—Intake Valve	201	261609	Connector-Fuel Pipe
36	26828	Spring—Exhaust Valve			Line-Fuel (28" long) (Cut to Suit)
40	221596	Retainer-Intake Valve	209	261306	Link-Governor
41	292260	Rotocoil—Exhaust Valve	216	261610	Spring-Gov.
					Link-Choke

**SEARS RIDING MOWER**  
**MODEL 502.254152**

**BRIGGS & STRATTON ENGINE**  
**MODEL 500.253707-0213-01**

KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
219	391764	Oil Slinger, Gov. Gear and Bracket Assembly	592	231082	Nut-Hex 10-24
222	396199	Plate-Gov. Control	601	93053	Clamp-Fuel Pipe
225	231058	Crank-Governor (1/4" dia)	614	93306	Cotter-Hair Pin
227	391733	Lever Assy.-Governor (For 1/4" dia. Crank)	615	93307	Retainer-E-Ring
230	222450	Washer-Gov. Crank (1/4" I.D.)	616	261116	Spring-Choke Return
232	260584	Spring-Governor Link	634	270382	Washer-Choke Shaft
265	221535	Clamp-Casing	635	66538	Elbow-Spark Plug
284	93804	Screw-Clamp Mtg.	643	280118	Support-Air Cleaner Element
303	91308	Elbow-Muffler 90° Street	657	93496	Screw-Sem
304	391556	Housing-Blower	662	222311	Bracket-Carburetor
305	93158	Screw-Blower Housing Mounting Sem	663	93572	Screw
306	222744	Shield-Cylinder	726	392134	Gear-Ring (includes Mounting Parts)
307	93163	Screw-Cylinder Shield Mounting Sem	727	395405	Cover-Starter (Includes Mounting Screws)
308	222725	Cover-Cylinder Head	728	93535	Screw-Sem
309	394805	Motor-Starting (12 Volt) See Chart on Page 5 for Replacement Parts for Starting Motors.	741	261196	Gear-Timing
310	94003	Thru Bolt Assembly	757	212359	Link-Counterweight
311	395538	Brush Assembly	758	391373	Counterweight Assy.
319	395326	Armature Assy. (Less Trigger Coil)	759	298909	Pin-Counterweight (1)
332	92264	Nut-Hex	761	93875	Screw-Counterweight (1)
333	395492	Armature Group	801	394856	End Cap Assembly Drive
334	93381	Screw-Armature Mounting Sem	802	395537	End Cap Assembly Commutator
337	298809	Plug-Spark (1-1/2" high)	803	393825	Housing Assembly
351	91920	Screw-Terminal (Fillister Hd.)	842	270920	Seal-Oil Filler Cap
352	66068	Washer-Insulating	847	392067	Filler Group-Oil
353	92791	Washer-Lock-Shakeproof	851	221798	Terminal-Ignition Cable
354	90576	Nut-Hex -8-32 (2)	869	261463	Seat-Intake Valve (Standard)
355	66554	Collar-Insulating	870	210940	Seat-Exhaust Valve (Standard)
356	299500	Wire-Ground	871	291961	Guide-Exhaust Valve
358	393411	Gasket Set		Note:	231218 Guide-Exhaust Valve (brass) See Repair Manual.
363	19203	Puller-Flywheel	877	393814	Diode and Connector Assy. (D.C)
383	89838	Wrench-Spark Plug	887	391529	Stator Assembly-Alternator (D.C.)
422	222502	Clamp-Oil Filler Tube	897	394970	Trigger Coil
423	93964	Screw-Sem			
455	222561	Cup-Screen Mounting			
468	222562	Screen-Flush Rotating			
482	93621	Screw-Sem			
520	93722	Terminal-Spade			
523	391841	Cap And Dipstick-Oil Filler			
524	68838	Seal-Filler Tube			
525	280134	Tube-Oil Filler			
534	93323	Screw-Air Cleaner			
534A	93622	Screw-Air Cleaner			
535	270843	Element-Air Cleaner			
536	391786	Cleaner-Air			
537	270853	Gasket-Air Cleaner			
544	392747	Armature Assembly			
552	231055	Bushing-Gov. Crank (1/4" I.D.)			
562	92613	Bolt-Governor Lever			

†Included in Carburetor Overhaul Kit-Part No. 394698.

†Included in Carburetor Overhaul Kit-Part No. 394698.

\*Includes Brush Set

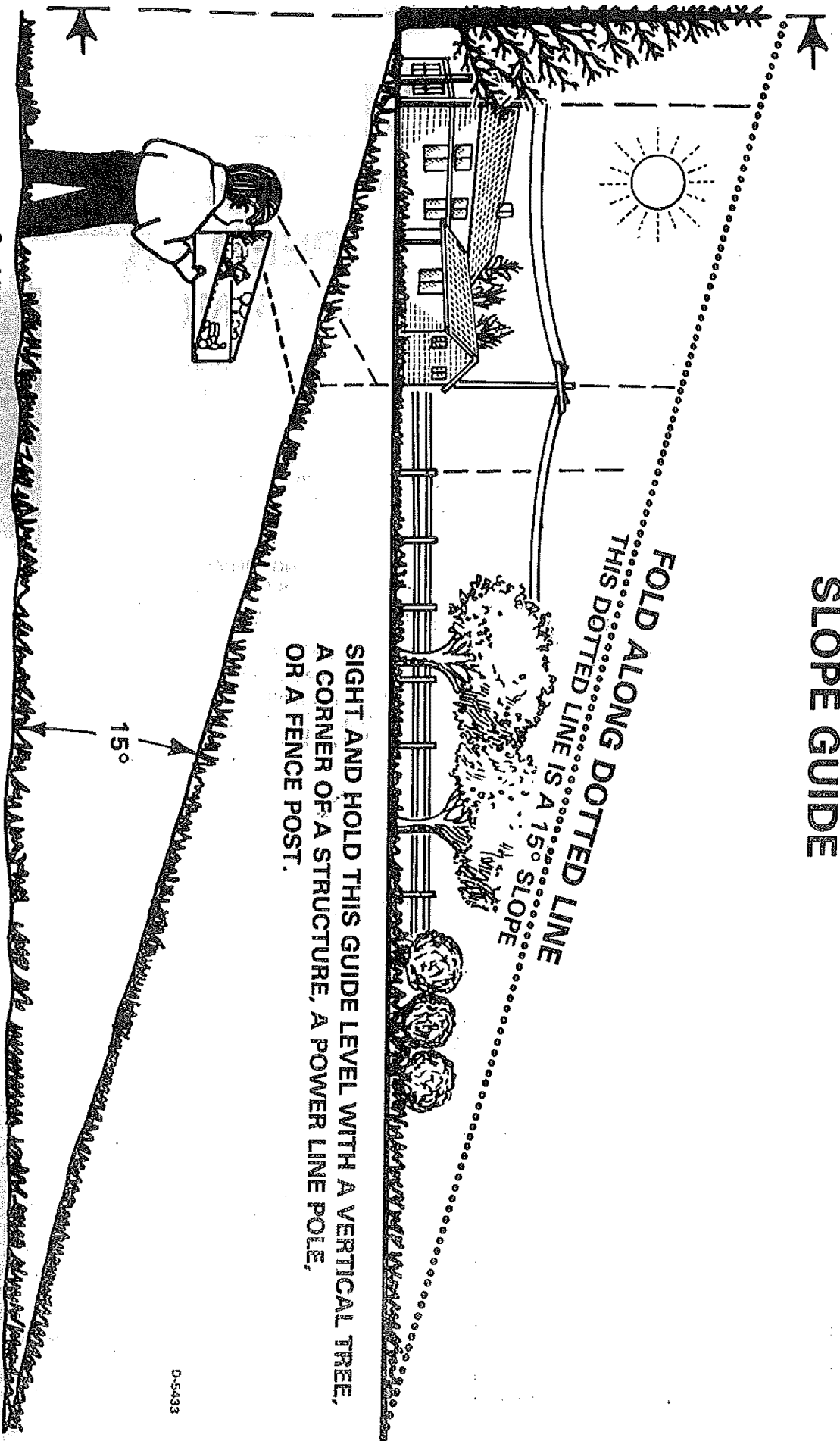
\*\*Includes #391135 Clutch Assembly (Ref. No. 513)  
#280104 Gear (Ref. No. 783)  
#391462 Retainer and Pin (Ref. No. 773)  
#93754 Rool Pin (Ref. No. 896)

# NOTES

# NOTES

# NOTES

# SLOPE GUIDE



SIGHT AND HOLD THIS GUIDE LEVEL WITH A VERTICAL TREE, A CORNER OF A STRUCTURE, A POWER LINE POLE, OR A FENCE POST.

15°

On riding mowers, the way to check a slope and determine if it is safe to mow is to: (1) disengage the blade(s), (2) put the unit in reverse, and (3) try to back straight up the slope. If you can back up the slope, it is generally safe to mow, however, if you do not feel safe, or if you are not completely sure, use this guide and do not mow a slope that is greater than 15°.

A 15 degree slope is a hill that increases in height at approximately 2.5 feet in 10 feet.

Use extreme care at all times, and avoid sudden turns or maneuvers. Follow other instructions in this manual for safety in mowing on slopes.



Operate a riding mower up and down slopes, never across the face of slopes. Operate a walking mower across the face of slopes, never up or down slopes.

D-5433

# SEARS

## owners manual

Model No.  
502.254152

## How to Order Repair Parts

# CRAFTSMAN

## 11-HP. ELECTRIC START 8 SPEED - 30" MOWER REAR ENGINE RIDER

The Model Number is found under the seat on a plate attached to the seat support. Always give the Model Number when you call for service or order repair parts for your unit.

Repair parts can be ordered from any Sears Service Center/Departments and most Sears Stores.

WHEN ORDERING REPAIR PARTS, ALWAYS HAVE THE FOLLOWING INFORMATION AS SHOWN IN THIS LIST.

1. PART NUMBER
2. PART DESCRIPTION
3. MODEL NUMBER
4. NAME OF ITEM
5. ENGINE MODEL NUMBER

Your Sears merchandise has added value when you consider Sears has service units nationwide staffed with Sears trained technicians. Sears technicians have the necessary parts, tools, and equipment to meet the Sears pledge, "We Service What We Sell".