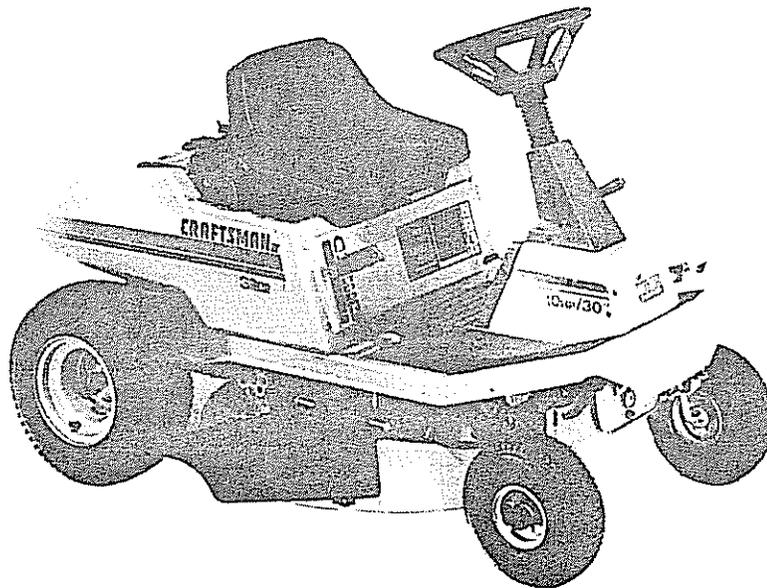


# SEARS

## owners manual

Model No.  
502.255020



# CRAFTSMAN<sup>®</sup>

## 10 HP. ELECTRIC START 30" MOWER / MULCHER

## 5 SPEED

## REAR ENGINE RIDER

### CAUTION:

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

- Assembly
- Operation
- Customer Responsibilities
- Maintenance
- Service and Adjustment
- Repair Parts

# SAFETY RULES

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

This cutting machine is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death to the operator or bystanders.

## GENERAL OPERATION:

1. Read, understand and follow all instructions in the Instruction Book, on the machine, the engine and with any attachments before starting.
2. Only allow responsible adults familiar with the instructions to operate the machine.
3. Clear the area of objects such as rocks, toys, wire, etc. which could be picked up and thrown by the blade.
4. Be sure the area is clear of other people before mowing. Stop the machine if anyone enters the area.
5. Never carry passengers.
6. Disengage power to the mower or any attachments before backing up. Do not mow in reverse unless absolutely necessary. Always look down and behind before and while backing.
7. Be aware of the direction the mower discharges. Do not point discharge from the mower at anyone or at places where people may be. Do not operate the mower without either the entire grass bagger or the mower guard in place.
8. Slow down before turning.
9. Never leave a machine unattended with the engine running. Always disengage the blade(s), set the parking brake, stop the engine and remove the key before dismounting.
10. Disengage power to attachment(s) when transporting or not in use. Disengage the blade(s) when not mowing.
11. Stop the engine before removing the grass bagger or unclogging the chute.
12. Mow only in daylight or good artificial light.
13. Do not operate the machine while under the influence of alcohol or drugs or when very tired.
14. Watch for traffic when operating near or crossing roadways.
15. Use extra caution when loading or unloading the machine when using a trailer or truck for transporting.
16. Disengage all attachment clutches and shift into Neutral before attempting to start the engine.
17. Always wear safety glasses or an 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 repair to the machine.
18. 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 counterweights or wheel weights when suggested in the Instruction Book.

## SLOPE OPERATION:

Slopes and rough terrain are major factors related to loss of control and tip over accidents which can result in severe injury or death. ALL slopes require extra caution. If you cannot back up the slope or if you feel uneasy on the slope, do not mow it. See the "Slope Guide" in the back of this book to check for safe operation.

### DO

1. Mow up and down slopes, not across.
2. Remove obstacles such as rocks, limbs, etc...
3. Watch for holes, ruts or bumps. Uneven terrain could overturn the machine. Tall grass can hide obstacles.
4. Use slow speed. Choose a low enough gear so that you will not have to stop or shift while on the slope.
5. Follow the manufacturer's recommendations for wheel weights or counterweights to improve stability.
6. Use extra care with grass baggers or other attachments, they can change the stability of the machine.
7. Keep all movement on the slopes **slow** and **gradual**. Do not make sudden changes in speed or direction.
8. Avoid starting or stopping on a slope. If tires lose traction, disengage the blades and proceed slowly straight down the slope.

### DO NOT

1. Do not turn on slopes unless absolutely necessary, then only turn slowly and gradually downhill, if possible.
2. Do not mow near drop-offs, ditches or embankments. A wheel over the edge or an edge caving in could cause a sudden overturn and an injury or death.
3. Do not mow on wet grass. Reduced traction could cause sliding.
4. Do not try to stabilize the machine by putting your foot on the ground.
5. Do not use a grass bagger or other rear mounted accessories on steep slopes (greater than 10°).

# SAFETY RULES - continued

## CHILDREN:

Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the machine and the mowing activity. NEVER assume that children will remain where you last saw them.

1. Keep children out of the mowing area and in the watchful care of an adult other than the operator.
2. Be alert and turn the engine off if children enter the area.
3. Before and when backing, look behind and down for small children.
4. Never carry children or any passengers. They may fall off and be seriously injured or interfere with the safe operation of the machine.
5. Never allow children to operate the machine. Instruct children in the dangers of the machine.
6. Use extra care when approaching blind corners, shrubs, trees or other objects that may obscure vision.

## SERVICE:

1. Use extra care when handling gasoline and other fuels. Fuels are flammable and the vapors are explosive.
  - a. Use only an approved container.
  - b. Never remove the gas cap or add fuel with the engine running. Allow the engine to cool for several minutes before refueling. Do not smoke.
  - c. Never refuel the machine indoors.
  - d. Never store the machine with fuel in the tank or fuel container inside where there is an open flame, such as a water heater.
2. Never start or run the engine inside a closed area.
3. Keep all nuts and bolts, especially the blade attachment nuts tight. Frequently check the blade(s) for wear or damage such as cracks and nicks. A blade that is bent or damaged must be immediately replaced with an original equipment blade from an authorized service dealer. For safety, replace the blade every two years. Keep the equipment in good condition.
4. Never tamper with the safety devices. Check their proper operation regularly.
5. To reduce fire hazards keep the machine free of grass, leaves or other debris build-up. Clean up oil or fuel spillage. Allow the machine to cool before storing.
6. Stop and inspect the equipment if you strike an object. Repair, if necessary, before re-starting.
7. Never make adjustments or repairs with the engine running. The carburetor can be adjusted with the engine running. Do not change the engine governor settings or overspeed the engine.
8. Grass bagger components are subject to wear, damage and deterioration, which could expose moving parts or allow objects to be thrown. For storage, always make sure the grass bag is empty. Frequently check components and replace with manufacturer's recommended parts when necessary.
9. Mower blade(s) are sharp and can cut. Wrap the blade(s) or wear gloves and use extra caution when servicing them or the blade housing area.
10. Check the brake operation frequently. Adjust and service as required.
11. Wait for all movement to stop before servicing any part of the unit.



Look for this symbol to indicate important safety precautions. This symbol indicates: "Attention! Become Alert! Your Safety Is At Risk."

Congratulations on your purchase of a Sears Rider. It has been designed, engineered and manufactured to give you the best possible dependability and performance.

If you experience any problems you cannot easily remedy, please see your nearest Sears Service Department. We have competent, well trained technicians and the proper tools to service or repair this unit.

Please read and retain this manual. The instructions will enable you to assemble and maintain your unit properly. Always observe the "Safety Rules".

### CUSTOMER RESPONSIBILITIES

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

**NOTE:** 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.

### MAINTENANCE AGREEMENT

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

### PRODUCT SPECIFICATIONS

Craftsman Engine 10 HP.  
Charging System 3 amperes at 3600 rpm  
Fuel Tank Size 3 quarts  
Type of Fuel Unleaded Regular  
Oil Capacity 32 ounces  
Oil Type Above 32 degrees SAE 30 or 10W30  
Below 32 degrees SAE 5W30  
Spark Plug (Gap 0.030") Champion J-8C  
Sears 71-33312  
STD361458  
Tire Air Pressure Front 24 psi  
Rear 14 psi  
All Gear Transaxle Five forward speeds and one reverse  
Ground Speed Range Forward 0-4.3 mph  
Reverse 0-2.1 mph  
Tilt Seat The seat tilts forward for easy access to the battery  
Side Panels Easily removed for access to the engine.  
Mower Housing The full-floating suspension and single blade give an even cut. A removable mulcher plate that lets you mulch the grass and leaves. The lift lever has eight positions from 1-1/2 to 4 inches.  
Blade Nut Torque 30 foot-pounds (ft-lbs)

### 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 decal attached to the seat support.

Model Number: 502.255020 \_\_\_\_\_

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

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

Keep these numbers for future reference.

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

For two (2) years from the date of purchase, if this riding equipment is maintained, lubricated and tuned up according to the instructions in the owner's manual, Sears will repair or replace, free of charge, any parts found to be defective in material or workmanship.

This warranty does not cover:

- Expendable items which become worn during normal use, such as blades, spark plugs, air cleaners and belts.
- Tire replacement or repair caused by punctures from outside objects, such as nails, thorns, stumps or glass.
- Repairs necessary because of operator abuse, negligence, improper storage or accident or the failure to maintain the equipment according to the instructions contained in the owner's manual.
- Riding equipment used for commercial or rental purposes.

### LIMITED 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 RETURNING THE RIDING EQUIPMENT TO THE NEAREST SEARS SERVICE CENTER/DEPARTMENT IN THE UNITED STATES.**

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

Sears, Roebuck and Co., D/731CR-W, Sears Tower, Chicago, Illinois 60684.

# TABLE OF CONTENTS

SAFETY RULES .....	2-3	MAINTENANCE .....	18-24
CUSTOMER RESPONSIBILITIES .....	4	SERVICE AND ADJUSTMENT .....	25-29
PRODUCT SPECIFICATIONS .....	4	STORAGE .....	30
WARRANTY .....	4	TROUBLE SHOOTING CHART .....	31
TABLE OF CONTENTS .....	5	REPAIR PARTS, MOWER .....	32-43
INDEX .....	5	REPAIR PARTS, TRANSAXLE .....	44-45
RIDER ATTACHMENTS .....	6	REPAIR PARTS, ENGINE .....	46-49
ASSEMBLY .....	7-11	ELECTRICAL SCHEMATIC .....	50
OPERATION .....	12-17	PARTS ORDERING/SERVICE .....	Back Page

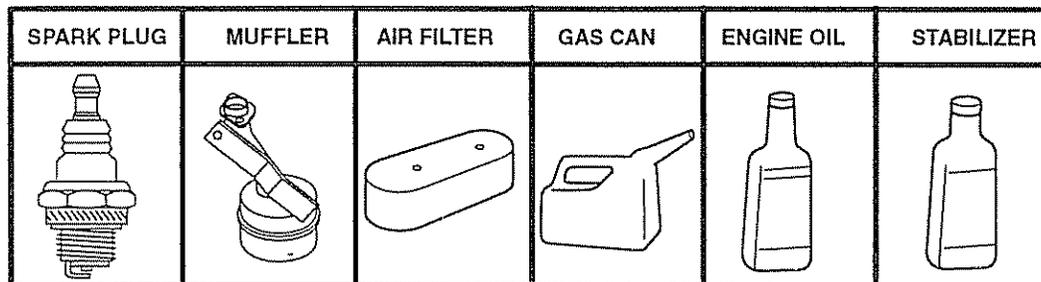
## INDEX

<b>A</b>		
Adjustments:	Starting .....	15
Blade Engagement Control .....	Stopping .....	13
Brake, Drive .....	Storage .....	30
Carburetor .....	Throttle Control .....	12, 25
Mower Housing, Level .....	Trouble Shooting Chart .....	31
Throttle Control Cable .....		
Air Screen .....	<b>F</b>	
Assembly .....	Filter, Air .....	24
Attachments .....	Fuel .....	15
	Fuel System, Storage .....	30
	Fuse .....	29, 31, 42
	<b>L</b>	
<b>B</b>	Lift Lever .....	12
Bagging Tips .....	Lubrication .....	17
Battery:	<b>M</b>	
Charge .....	Maintenance .....	18 - 24
Clean and Check .....	Air Filter .....	24
Emergency Start .....	Air Screen .....	23
Install .....	Battery .....	22
Storage .....	Blade .....	19
Belt:	Blade Engagement Control .....	20
Motion Drive, Replace .....	Brake .....	21
Mower Drive, Adjust .....	Clutch .....	21
Mower Drive, Replace .....	Engine Oil .....	23
Routing, Check .....	Lubrication .....	18
Blade, Remove and Install .....	Muffler, Check .....	24
Blade, Sharpen .....	Spark Arrester .....	4, 24
Blade Engagement Control:	Spark Plug .....	24
Adjust .....	Tires .....	22
Operation .....	Transaxle Brake .....	21
Brake, Check and Adjust Drive .....	Maintenance Schedule .....	18
Brake, Check and Adjust Transaxle .....	Mower Housing:	
Brake Pedal, Operation .....	Clean .....	29
	Level .....	28
	Remove and Install .....	26
	Mowing and Bagging Tips .....	16
	<b>O</b>	
<b>C</b>	Oil:	
Carburetor, Adjust .....	Check .....	23
Charge Battery .....	Change .....	23
Charge Mower Housing To Mulcher .....	Operating Tips .....	16
Clutch/Brake Pedal .....	Operation .....	12 - 17
Controls .....	Lift Lever .....	12
Cutting Height .....	Mower Housing .....	14
	Mulcher .....	16
	Operate On Hills .....	14
	<b>P</b>	
<b>E</b>	Parking Brake .....	12, 13
Electrical Schematic .....	Shift Lever .....	12, 13
Engine:	Start Engine .....	15
Carburetor .....	Stop The Unit .....	13
Oil, Change .....	<b>R</b>	
Oil Level, Check .....	Parking Brake .....	12, 13
Oil, Type .....	Parts Bag, Riding Mower .....	7
Operation Speed Chart .....	<b>S</b>	
	Replace Motion Drive Belt .....	27
	Replace Mower Drive Belt .....	27
	Safety Rules .....	2 - 3
	Seat, Install .....	11
	Service and Adjustment .....	25 - 29
	Battery, Emergency Start .....	29
	Mower Drive Belt .....	27
	Carburetor .....	25
	Height Of Cut .....	29
	Level Mower Housing .....	28
	Motion Drive Belt .....	27
	Mower Housing, Install .....	26
	Mower Housing, Remove .....	26
	Sharpen, Blade .....	19
	Shift Lever .....	12, 13
	Side Panel, Remove .....	22
	Slope Guide .....	51
	Spark Plug .....	24
	Specifications, Product .....	4
	Speed Control Chart .....	13
	Start Engine .....	15
	Steering Wheel .....	9
	Stop, Riding Mower .....	13
	Storage .....	30
	<b>T</b>	
	Throttle Control .....	14
	Throttle Control Cable, Adjust .....	25
	Tire Pressure .....	22
	Trouble Shooting Chart .....	31
	Transaxle Brake .....	21
	Transport .....	14
	<b>W</b>	
	Warranty .....	4
	Wheel, Align Front .....	29
	Wiring Schematic .....	50

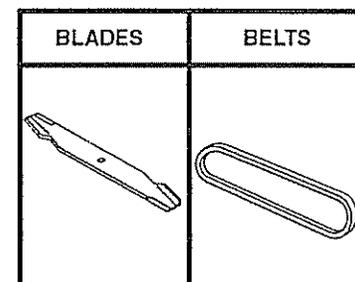
# ACCESSORIES AND ATTACHMENTS

These accessories and attachments were available when the unit was purchased. They are also available at most Sears retail outlets, catalog and service centers. Most Sears stores can order these items for you when you provide the model number of your riding mower.

## ENGINE



## MAINTENANCE



## PERFORMANCE

Sears offers a wide variety of attachments that fit your riding mower. Many of these are listed below with brief explanations of how they can help you. This list was current at the time of publication; however, it may change in future years – more attachments may be added, changes may be made in these attachments, or some may no longer be available or fit your model. **Contact your nearest Sears store for the accessories and attachments that are available for your unit.**

Most of these attachments do not require additional hitches or conversion kits (those that do are indicated) and are designed for easy attaching and detaching.

**GRASS BAGGER** lets you collect grass clippings and leaves for a healthier, neater looking lawn. Two Grass containers hold 33-gallon disposable plastic bags and offers 7 bushel capacity.

**LAWN SWEEPERS** let you collect grass clippings and leaves.

**CARTS** make hauling easy. Variety of sizes available.

**ROLLER** for smoother lawn surface. 36-inch wide, 18-inch diameter water-tight drum holds up to 390-lbs of weight. Rounded edges prevent harm to turf. Adjustable scraper automatically cleans drum.

**SPREADER/SEEDERS** make seeding, fertilizing and weed killing easy. Broadcast spreaders are also useful for granular deicers and sand.

**CORING AERATOR** takes small plugs out of soil to allow moisture and nutrients to reach grass roots. 36-inch swath. 24 hardened 2.5-inch steel coring tips. 150-lb weight tray.

**AERATOR** promotes deep root growth for a healthy lawn. Tapered 2.5-inch steel spikes mounted on 10-inch diameter disc puncture holes in soil at close intervals to let moisture soak in. Steel weight tray for increased penetration.

**MULCH RAKE/DETHATCHER** loosens soil and flips thatch and matted leaves to lawn surface for easy pickup. Twenty spring tine teeth. Useful to prepare bare areas for seeding. Available for rear mounting only.

**SPRAYERS** use 12-volt DC electric motor that connects to the tractor battery or other 12-volt source. Includes booms for automatic spraying when pulling, and hand held wand for spot spraying. Wand has adjustable spray pattern. For applying herbicides, insecticides, fungicides and liquid fertilizers.

**MULCHER CONVERSION KIT** turns your rider into a mulching mower.

**NOTE:** Do not use pull-behind attachments on slopes that are greater than 10-degrees.

# ASSEMBLY

## PREPARATION

Before being put in the carton, the unit was carefully inspected. The carton was made to protect the unit during shipment. The unit is completely assembled except for the items shown on this page. These items are in the carton with a parts bag which contains the fasteners to assemble the unit. Find and remove these items.

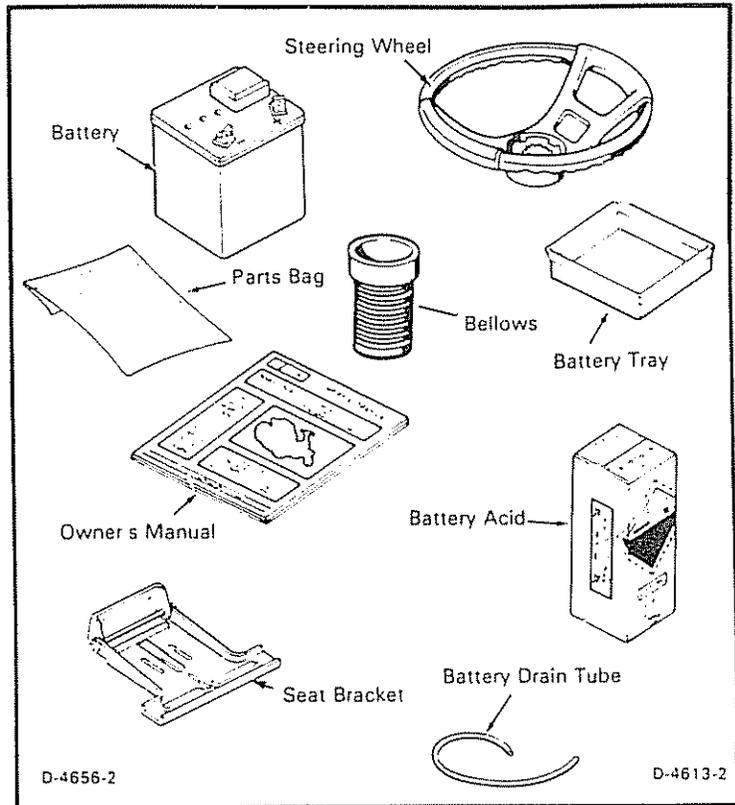
## HOW TO REMOVE FROM THE CARTON

To remove the unit from the carton, follow the instructions below.

1. Open the top of the carton.
  2. Remove the wood frame at the top of the carton.
  3. Remove the boxes labeled (A) and (B) from the carton. Remove the seat and containers from the carton. NOTE: the seat and containers are each covered with a protective sleeve.
  4. The items shown at the right are in a small unmarked box. Remove and check each item. Remove the small box.
  5. Cut each corner of the carton from the top to the bottom with a knife.
- NOTE:** See the Operation section for the location of the controls.
6. Move the shift lever to the NEUTRAL position.
  7. Move the lift lever to the HIGH position.
- CAUTION:** Check the bottom of the carton for staples. Remove any staples that are in the path of the tires.
8. From the back of the unit, carefully pull the unit backwards off the wood frame.

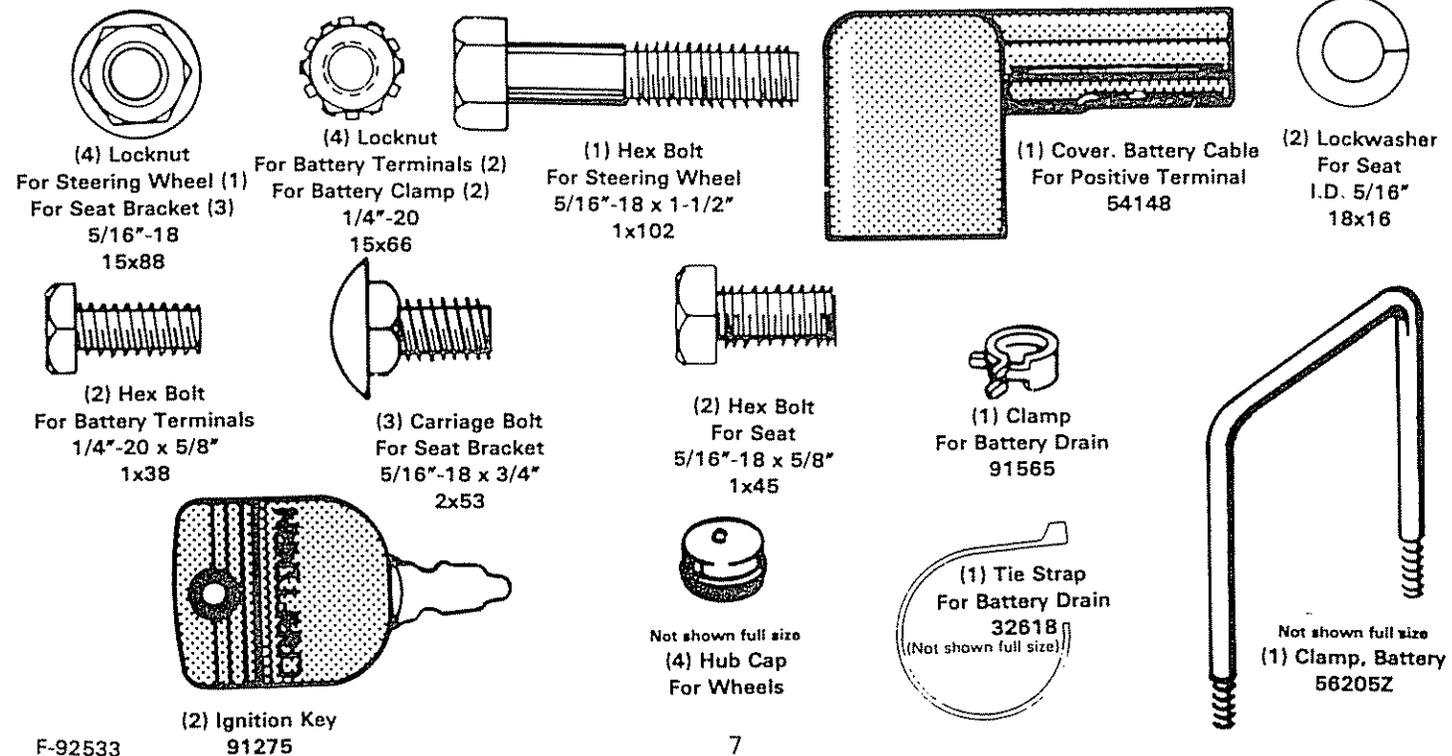
## TOOLS YOU NEED TO ASSEMBLE THE UNIT

- |                                 |                            |
|---------------------------------|----------------------------|
| 1. Adjustable wrench            | 5. Phillips screwdriver    |
| 2. Open end wrench 1/2" - 9/16" | 6. Low Tire pressure gauge |
| 3. Open end wrench 7/16" - 1/2" | 7. Knife                   |
| 4. Blade type screwdriver       | 8. Socket Set (Optional)   |



## PARTS BAG - contents for Riding Mower

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



# ASSEMBLY

## HOW TO PREPARE AND CHARGE THE BATTERY

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



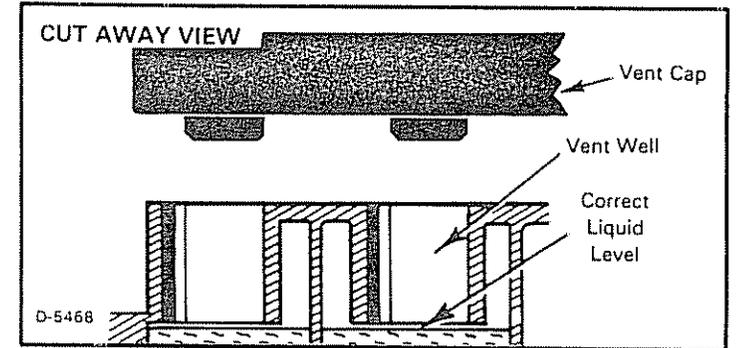
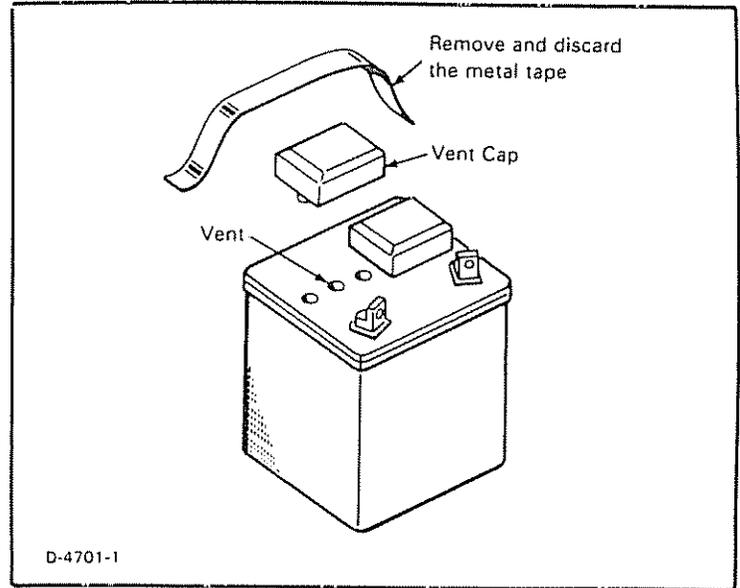
**WARNING:** Read the instructions included with the battery acid container. Protect your hands and eyes from the battery acid. Use clothing that will protect you.

- 1 If the vent caps are not installed on the battery, remove the vent caps from the plastic bag. Read the instructions included with the vent caps. Your unit will have one or the other types of batteries as shown.
- 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. While you wait for the battery, you can continue with the assembly of the unit.
- 5 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.
- 6 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.

- 7 Use a 12 volt battery charger to charge the battery. Charge at a rate of 6 amperes for 1 hour.
- 8 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.
- 9 The engine has a 3 amperes charging system. If you frequently start the engine or frequently use the headlight (if equipped), the battery will not stay fully charged. For longer life of the battery, charge the battery every three months.



### 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

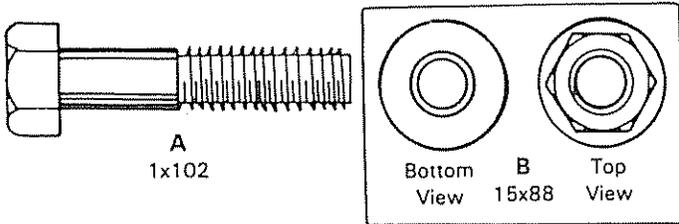
- KEEP AWAY FROM CHILDREN -

D-5213

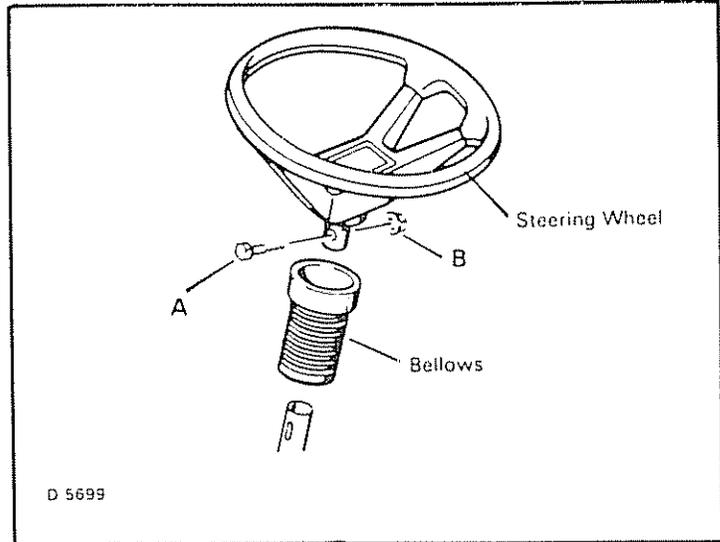
# ASSEMBLY

## HOW TO ASSEMBLE THE STEERING WHEEL

Use the fasteners shown below to install the steering wheel. The fasteners are shown at full size



1. Make sure the front wheels point forward. Slide the bellows over the steering post. Make sure the collar of the bellows is on top. Push on the top of the bellows
2. Attach the steering wheel to the steering post with the fasteners as shown. Tighten the fasteners



## HOW TO ATTACH THE HUB CAPS

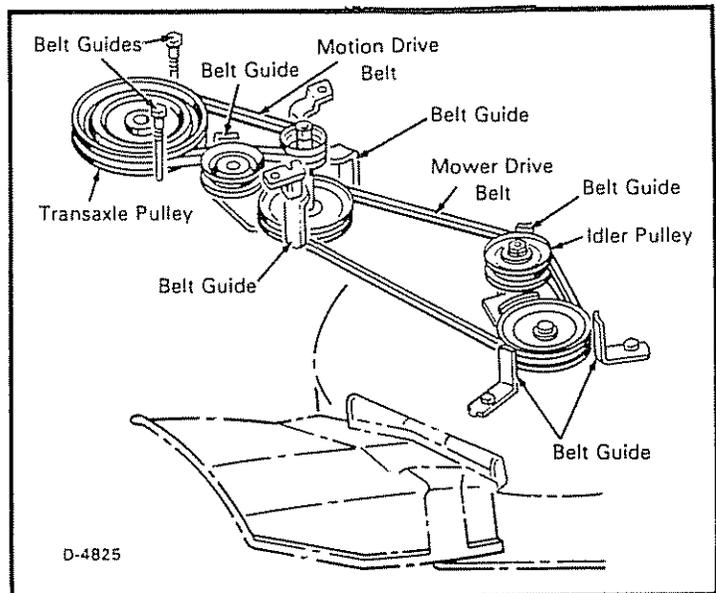
Push each hub cap onto the center hub of each wheel. Make sure the washer holds the hub cap in place.

## 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 (PSI) for each Rear Wheel is 14 PSI (10 kg/cm<sup>2</sup>) and for each Front Wheel the air pressure is 24 PSI (16 kg/cm<sup>2</sup>). Models that have semi-pneumatic front wheels will not have a PSI.

## CHECK THE BELTS

Check the routing of the belts. Make sure the belts are not twisted. Make sure the belts are inside all the belt guides



## CHECK THE DRIVE BRAKE

The drive brake can be easily checked as follows. Set the parking brake. Move the shift lever to the neutral (N) position. Push the unit. If the rear wheels rotate, adjust the drive brake. See "How To Check And Adjust The Drive Brake".

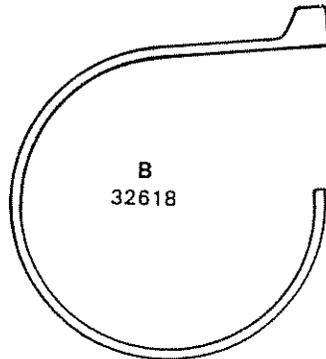
# ASSEMBLY

## HOW TO INSTALL THE BATTERY

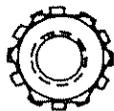
Use the fasteners shown below to install the battery. The fasteners are shown full size.



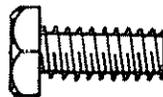
A  
91565



B  
32618



C  
15x66



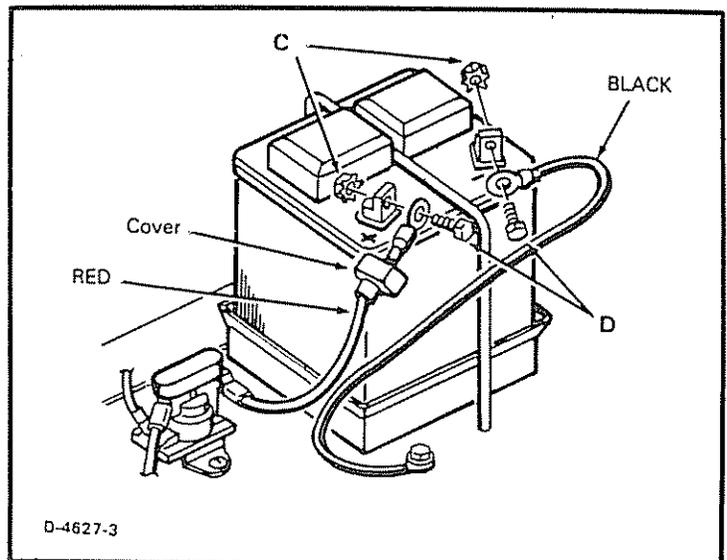
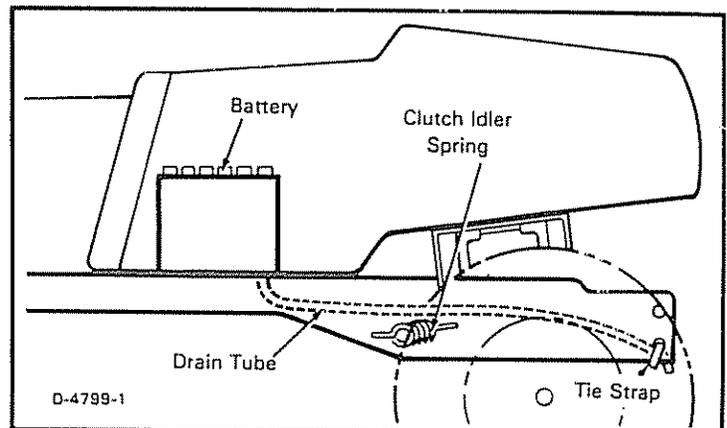
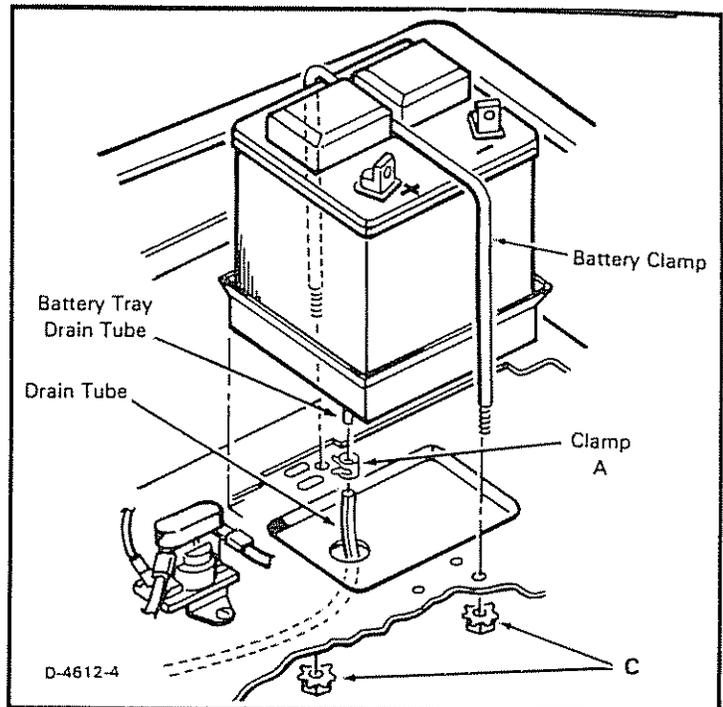
D  
1x38

1. Check the level of the acid. If the acid has fallen below the correct level, add water to the correct level.
2. Attach the drain tube to the bottom of the battery tray. Fasten the drain tube with clamp (A) as shown. Push the drain tube through the hole in the frame as shown. Pull the drain tube along the frame to the rear of the unit. Make sure the drain tube is above the clutch idler spring. Fasten the drain tube to the side of the frame with tie strap (B) as shown.
3. Set the battery in the battery tray. Make sure the battery terminals are towards the center of the frame. The correct position of the battery terminals are shown in the illustration. Make sure there are not any wires under the battery tray or the battery.
4. Fasten the battery with the battery clamp as shown. Make sure there are not any wires between the battery and the battery clamp.
5. Slide the cover for the positive (+) terminal onto 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.

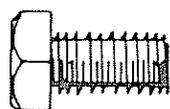
6. Fasten the red battery cable to the positive (+) terminal with the nut and bolt as shown.
7. Slide the cover over the positive (+) terminal.
8. Fasten the black battery cable to the negative (-) terminal with the nut and bolt as shown.
9. To prevent corrosion, apply grease to the battery terminals.



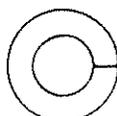
# ASSEMBLY

## HOW TO INSTALL THE SEAT

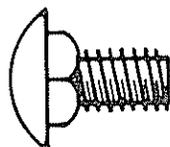
Use the fasteners shown below to install the seat. The fasteners are shown at full size.



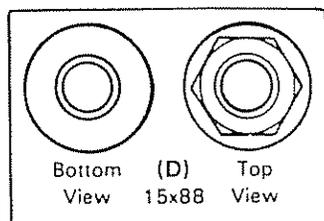
(A)  
1x45



(B)  
18x16



(C)  
2x53



(D)  
15x88

1. With the seat hinge towards the front of the unit, align the holes in the seat bracket with the holes in the seat support. Pull the wire harness between the seat hinge and the seat bracket as shown. Fasten the seat bracket to the seat support with the fasteners as shown. Do not tighten the fasteners.
2. Carefully remove the protective sleeve and the plastic bag from around the seat. Do not damage the wire under the seat. Align the holes in the seat hinge to the holes in the seat. Fasten the seat to the seat hinge with the fasteners as shown.
3. Check the operating position of the seat. If the seat needs to be adjusted, slide the seat forward or backward along the adjusting holes as shown. To keep the seat bracket straight, first tighten the rear nut and then tighten the two front nuts.
4. 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.

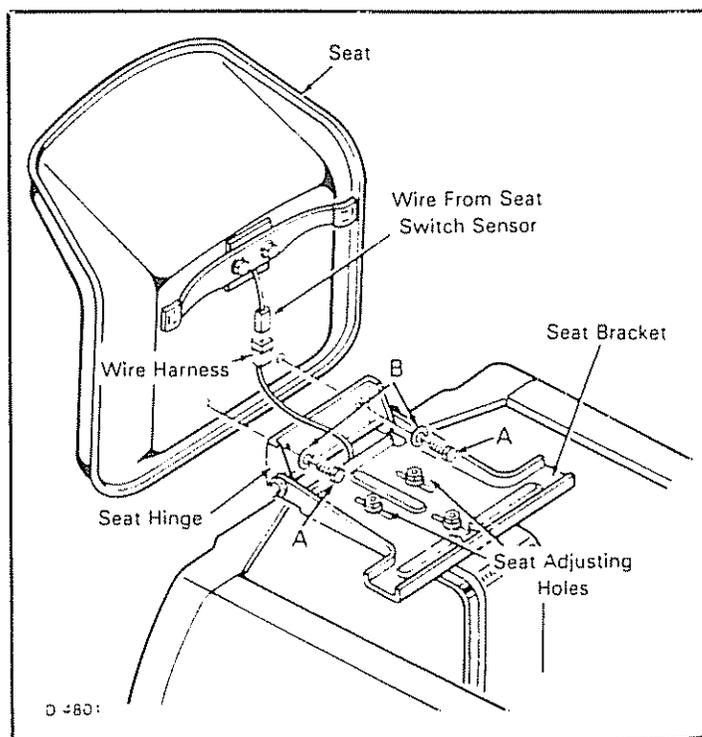
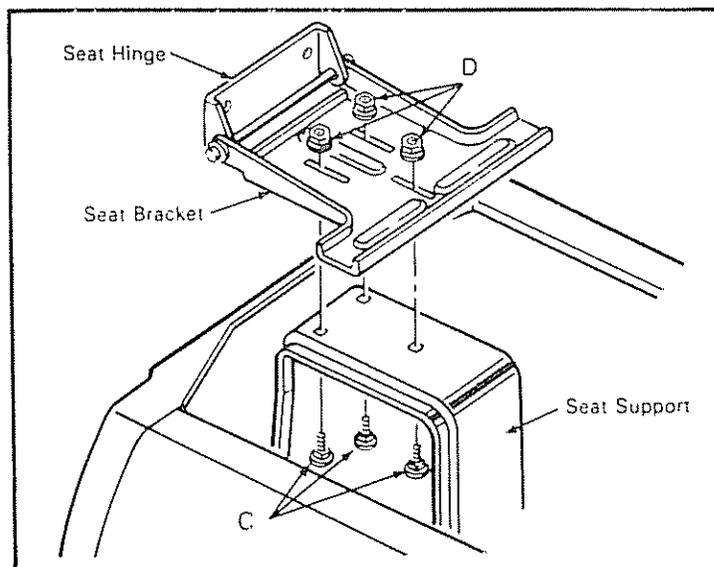


**WARNING:** For correct and safe operation of the unit, connect the wire from the seat switch sensor to the wire harness.

## CHECK THE LEVEL OF THE MOWER HOUSING

The level of cut was set at the factory. After the unit is fully assembled, completely read the Operation Section.

Make sure the level of cut is set at the height you like for your lawn. Check the operation of the mower housing. Mow a short distance and 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" F-92533



## SPECIAL MULCHER FEATURE

The mower housing has a special cover that lets you mulch the lawn for a clean, fine cut. To operate the mower housing as a standard discharge unit or if used with a grass bagger, the mulcher cover must be removed.

**IMPORTANT:** There are several different types of grass. Because of the different textures of grass, some grass is more difficult to cut. If you remove the mulcher cover and the performance of the mower discharge or grass bagger accessory is not acceptable you need to replace the mulcher blade with a standard blade. A standard blade, part number 56212, is available from your nearest Sears Service Department.

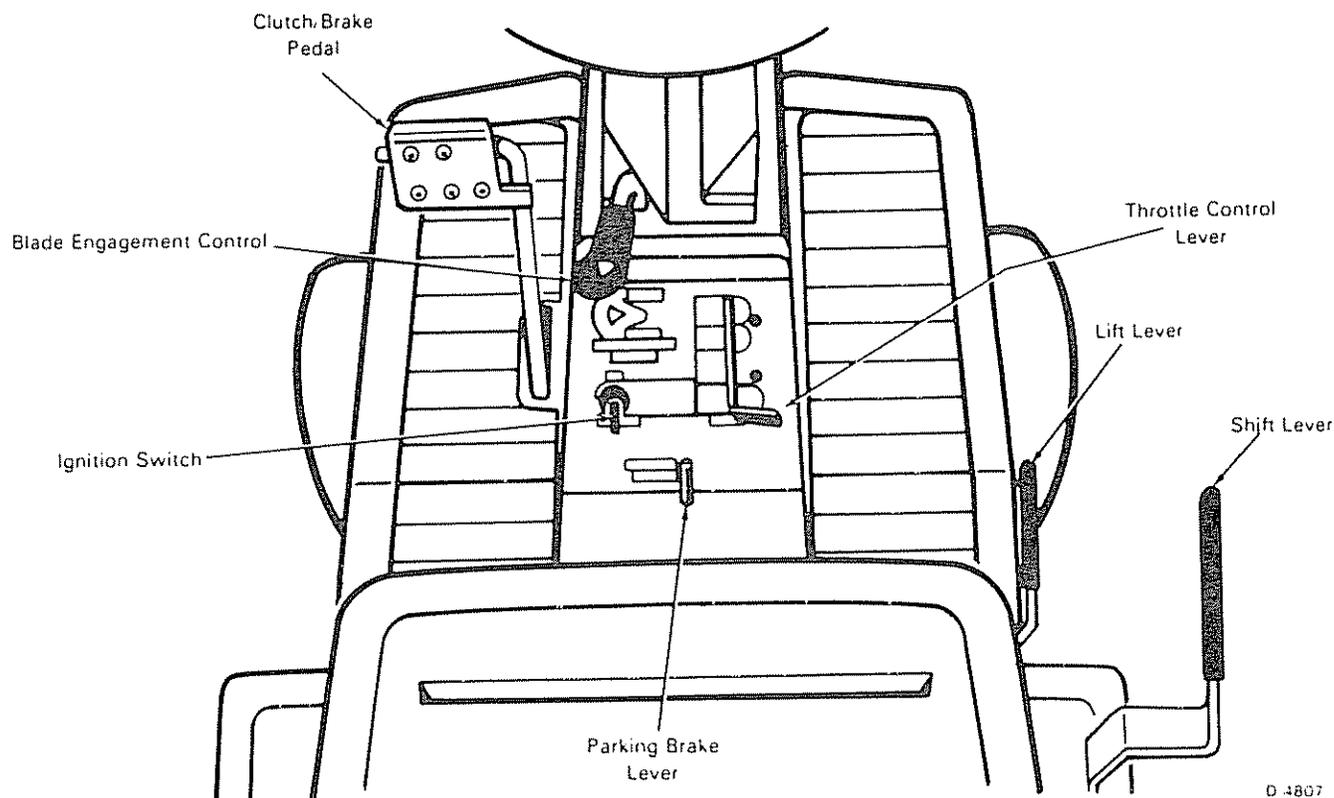
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# OPERATION

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## 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.



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## MEETS CPSC SAFETY REQUIREMENTS

Sears Mowers conform to the safety standards of the American National Standards Institute, and the U.S. Consumer Product Safety Commission.

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**BLADE ENGAGEMENT CONTROL LEVER:** Use the control lever to start and stop the rotation of the blade.

**CLUTCH/BRAKE PEDAL:** The pedal has two functions. The first function is a clutch. The second function is a brake.

**IGNITION SWITCH:** Use the ignition switch to start and stop the engine.

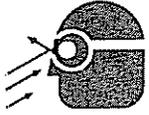
**LIFT LEVER:** Use the lift lever to change the height of cut.

**PARKING BRAKE LEVER:** Use the parking brake lever to engage the brake when you leave the unit.

**SHIFT LEVER:** Use the shift lever to change the speed of the unit.

**THROTTLE CONTROL LEVER:** Use the throttle control to increase or decrease the speed of the engine.

# OPERATION



The operation of any lawn mower can result in foreign objects thrown in the eyes, which can result in severe eye damage. Always wear safety glasses or eye shields before starting your lawn mower and while mowing. We recommend the Wide Vision Safety Mask for over the spectacles or standard safety glasses, available at Sears Retail or Catalog Stores.

## HOW TO USE THE MOWER

### HOW TO SET THE PARKING BRAKE

1. Completely push the clutch/brake pedal forward
2. Lift the parking brake lever
3. Remove your foot from the clutch/brake pedal and then release the parking brake lever. Make sure the parking brake will hold the unit.
4. To release the parking brake, completely push the clutch/brake pedal forward. The parking brake will automatically release.



**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 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.
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.

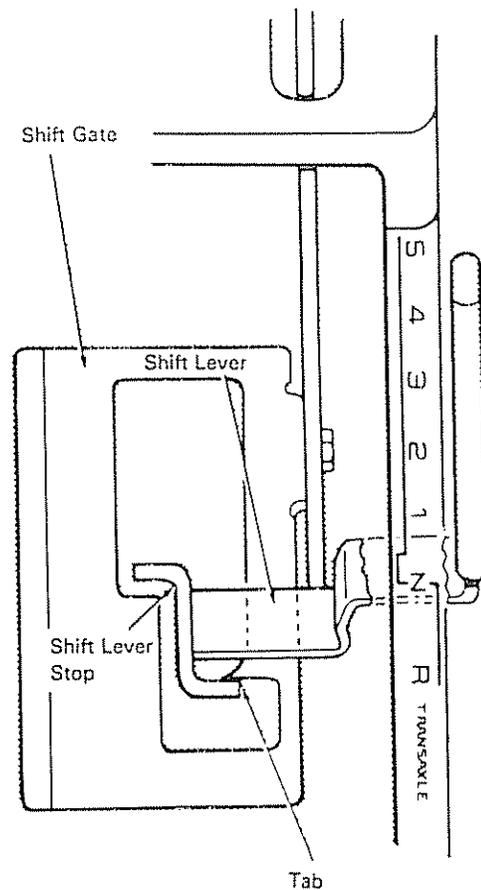
### HOW TO USE THE SHIFT LEVER

**CAUTION:** Before you move the shift lever, completely push the clutch/brake pedal forward to stop the unit. If the unit is not stopped, the transaxle can be damaged.

1. Completely push the clutch/brake pedal forward to stop the unit. Keep your foot on the pedal.
2. Move the throttle control lever to the SLOW position.
3. To move the shift lever to NEUTRAL from a forward gear, pull the shift lever back and then to the left until the lever goes past the tab.
4. To move the shift lever to a forward gear from NEUTRAL, pull the lever to the left. Then push the lever forward.
5. Slowly release the clutch/brake pedal. Do not keep your foot on the pedal.
6. Move the throttle control to the FAST position.
7. To move the shift lever to REVERSE, stop the unit. Move the shift lever to the NEUTRAL position. First move the shift lever to the right, until the shift lever stop clears the shift gate, and then move back to REVERSE.

**NOTE:** Belt noise can occur when the clutch is engaged. This noise is normal and does not affect the operation of the unit.

F-92533



FUNCTION	SHIFT LEVER	THROTTLE
Trimming	1	 FAST
Bagging grass	1 or 2	
Normal mowing	2 or 3	
Light mowing	4	
Transport	5	 SLOW-FAST
Pull Behind Attachments	2 or 3	

# OPERATION

## HOW TO USE THE THROTTLE CONTROL

Use the throttle control to increase or decrease the speed of the engine.

1. To start a cold engine, move the lever to the START or CHOKE position.
2. The FAST position is marked with a detent. For normal operations and when using a grass bagger, move the lever to the FAST position. For maximum charging of the battery and also for a cooler running engine, operate the engine in the FAST position.
3. For transport and to tow pull behind attachments, move the throttle control to the needed speed.
4. The engine governor is set at the factory for maximum performance. Do not adjust the governor to increase the speed of the engine.

## HOW TO CHANGE THE CUTTING HEIGHT

To change the cutting height, raise or lower the lift lever. The cutting height can be set from 1 ½ to 4 inches. When you ride on a sidewalk or a road, move the lift lever to the HI position and move the blade engagement control to the DISENGAGE position.

## HOW TO USE 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 rotation of the 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.  
**Note:** If the engine stops when you engage the blade(s), the seat switch is not activated. Make sure you sit in the middle of the seat. Also, make sure the wire is connected to the seat switch.
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 TRANSPORT THE UNIT

To transport the unit, follow the steps below.

1. Move the blade engagement control to the DISENGAGE position.
2. Raise the lift lever to the HI position.
3. Move the throttle control to a position between SLOW and FAST.
4. To go faster, move the shift lever to a faster speed.

## 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 mower housing 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 one of the speed settings.  
**NOTE:** 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, stop the unit and move the shift lever to another speed setting.
9. 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.



**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. When on a slope or in a turn on a hill, move the throttle control to the SLOW position to help prevent an accident.

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# OPERATION

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## BEFORE STARTING THE ENGINE

### CHECK OIL - Add as needed

**NOTE:** Do not check the level of the oil while the engine runs.

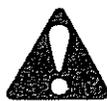
1. Make sure the unit is level
2. Clean the area around the dipstick. Remove the dipstick. Wipe the oil from the dipstick.
3. Insert the dipstick into the oil fill tube. Turn the dipstick clockwise until it is tight. Remove the dipstick. Check the oil level on the dipstick. The oil level must reach the FULL mark on the dipstick.
4. If necessary, add oil until the oil reaches the FULL mark on the dipstick. The quantity of oil needed from ADD to FULL is shown on the dipstick. Do not add too much oil.

### ADD GASOLINE

Fill the fuel tank with regular unleaded gasoline. Make sure the gasoline is fresh and clean. Leaded gasoline will increase deposits and shorten the life of the valves. Do not use premium unleaded gasoline.

**CAUTION:** A mixture of alcohol (ethanol or methanol) and gasoline (called gasohol), will attract moisture and cause acid deposits during storage. While the unit is in storage, the acids in the fuel can damage the fuel system.

To prevent engine problems with the fuel system, empty the fuel system before storage of 30 days or longer. Drain the fuel tank. Start the engine. Let the engine run until the fuel lines and the carburetor are empty. After storage, make sure you use fresh fuel. See the storage instructions for additional information. Never use engine cleaner or carburetor cleaner in the fuel tank or permanent damage can occur.



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

### CARBURETOR

The factory settings for the carburetor are for most conditions. If the engine is operated under the following conditions, you can adjust the carburetor mixture. See "How To Adjust The Carburetor" in the maintenance section.

1. The engine has a loss of power or does not run smooth.
2. A change from summer to winter operation.
3. A 40° change in the operation temperature. The carburetor was adjusted at 80° at the factory.
4. The engine is operated above 4 000 feet.

## 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.

**NOTE:** The engine will not start unless you depress the clutch/brake pedal, move the shift lever to the NEUTRAL position, and move the blade engagement control to the DISENGAGED position.

1. Sit in the middle of the seat. Completely push the clutch/brake pedal forward. Keep your foot on the pedal.
2. Move the shift lever to the NEUTRAL (N) position.
3. Move the blade engagement control to the DISENGAGE position.
4. Move the throttle control to the CHOKE position.
5. 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.

6. After the engine starts, move the throttle control from CHOKE to a needed speed.
7. Before you begin work, let a cold engine run for several minutes. To start a hot engine, move the throttle control to a position between FAST and SLOW.

## OPERATION

### HOW TO OPERATE THE UNIT AS A MULCHER

A Mulcher cuts the grass fine so that the grass can be easily recycled. Because the nutrients are returned to the soil, the lawn will need less fertilizer. To correctly mulch the lawn, follow the tips below.

- Operate the engine of the Riding Mower at the FULL throttle setting.
- The grass must be dry. If the grass is wet, it will be difficult to cut and cause clumps of grass.
- The grass must not be too high. Set the mower housing height of cut so that only the top third of the grass is cut. If the grass is too high, set the height of the mower housing to the maximum height. Then, lower the height of cut for the second mowing.
- During the mowing season when the grass grows quickly, you need to mow more than once a week.
- Keep a sharp edge on the blade. A blade that is not sharp will cause the ends of the grass to become brown.
- Clean the underside of the mower housing. Grass and other debris can keep the mower from working correctly.

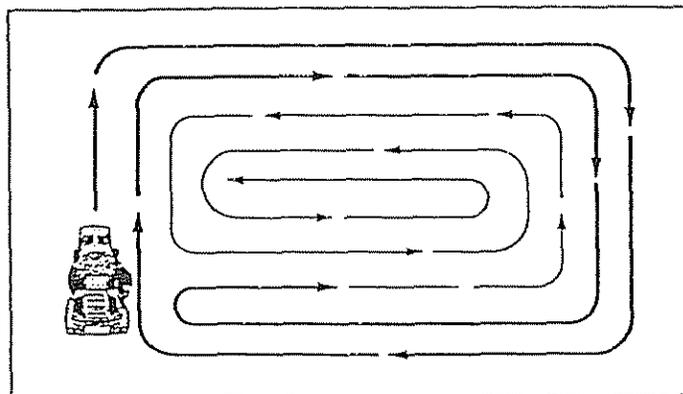
#### If the quality of cut is marginal, try the following:

- Set the height of cut at a higher cutting height.
- Cut the grass more frequently.
- Operate the mower at a slower ground speed and at the FAST throttle control position.
- Overlap the path of cut instead of using the full width of the mower housing.
- Mow across the marginal areas a second time.
- Keep the blade sharpened. See "How To Sharpen The Blade" in the maintenance section of the Owner's Manual for the Riding Mower.
- For a lawn to look better, check the cutting level of the mower housing. See "How To Level The Mower Housing" in the maintenance section of the Owner's Manual for the Riding Mower.

### MOWING AND BAGGING TIPS

1. For a lawn to look better, check the cutting level of the mower housing. See "How To Level The Mower Housing" in the maintenance section.
2. For the mower housing to cut level, make sure the tires have the correct amount of air pressure (PSI).
3. Every time you use the unit, check the blade. If the blade is bent or damaged, immediately replace the blade. Also, make sure the nut for the blade is tight.
4. Keep the blade(s) sharpened. Worn blades will cause the ends of the grass to turn brown.
5. Do not cut or bag grass that is wet. Wet grass will not discharge correctly. Let the grass dry before cutting.
6. Use the left side of the mower housing to trim near an object.

7. Discharge the cut grass onto the mowed area. The result is a more even discharge of cut grass.
8. When you mow large areas, start by turning to the right so that the cut grass will discharge away from shrubs, fences, driveways, etc. After one or two rounds, mow in the opposite direction making left turns until finished.



9. If the grass is very high, cut two times to decrease the load on the engine. First cut with the mower housing in the HIGH position and then lower the mower housing for the second cut.
10. For better engine performance and an even discharge of the cut grass, always operate the engine with the throttle in FAST position.
11. When you use a bagger, operate the engine with the throttle in FAST position and the shift lever in first or second gear.
12. For better cutting performance and a quality cut, mow with the shift lever in one of the slower speed gears.
13. After each use, clean the bottom and top of the mower housing for better performance. Also, a clean mower housing will help prevent a fire.

**IMPORTANT:** There are several different types of grass. Because of the different textures of grass, some grass is more difficult to cut. If you remove the mulcher plate and the performance of the mower discharge or grass bagger accessory is not acceptable you need to replace the mulcher blade with a standard blade. A standard blade, part number 56212, is available from your nearest Sears Service Department.

# OPERATION

## HOW TO CONVERT THE MOWER HOUSING

The mower housing has a special plate that lets you mulch the lawn for a clean, fine cut. The mulcher plate must be removed to convert the mower housing to freely discharge or bag the cut grass.

### How to remove the mulcher plate.



**WARNING:** Disconnect the wire to the spark plug to prevent the engine from starting by accident. Make sure the blade engagement control lever is in the DISENGAGE position.

1. Remove the two wing nuts and carriage bolts as shown.
2. Slide the mulcher plate to the front and lift the plate away from the mower housing.
3. Fasten the carriage bolts and wing nuts to the plate for future use.

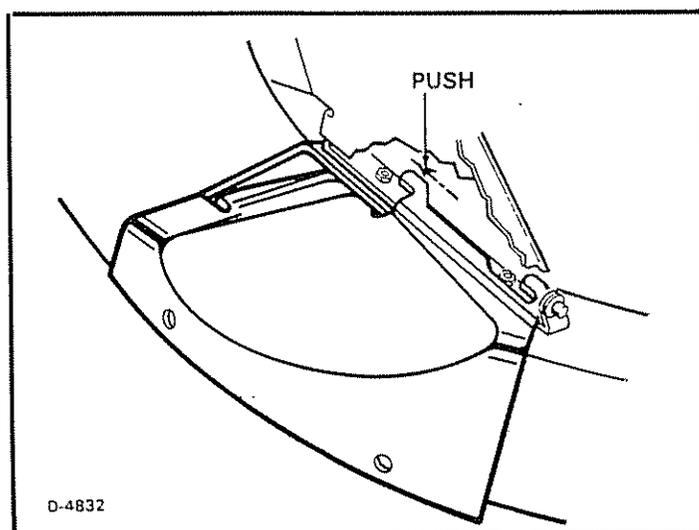
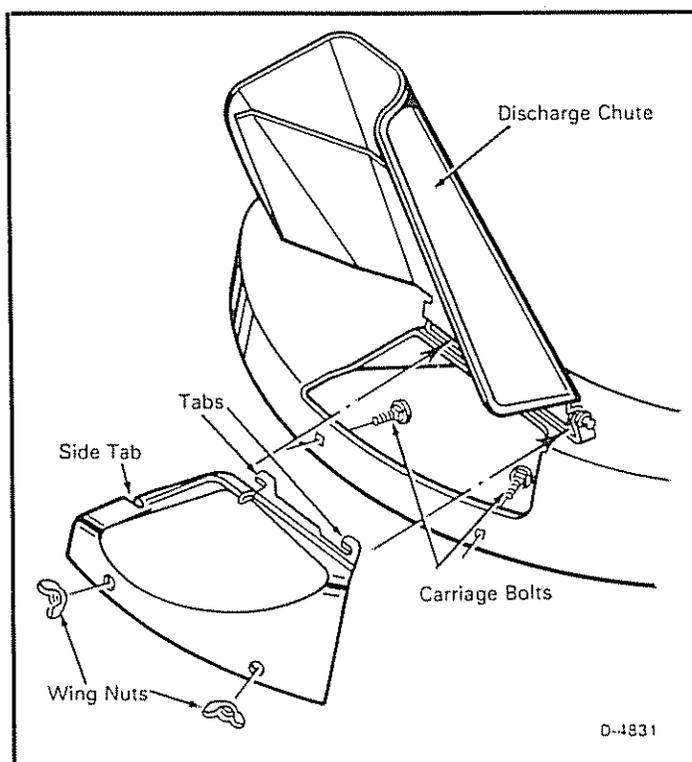
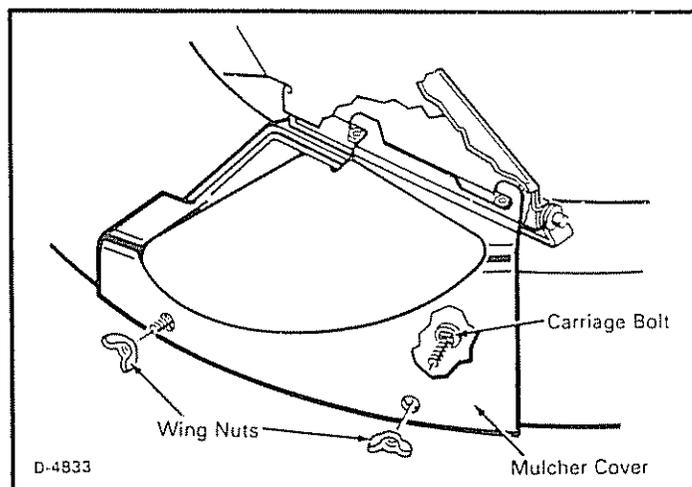
**IMPORTANT:** There are several different types of grass. Because of the different textures of grass, some grass is more difficult to cut. If you remove the mulcher plate and the performance of the mower discharge or grass bagger accessory is not acceptable you need to replace the mulcher blade with a standard blade. A standard blade, part number 56212, is available from your nearest Sears Service Department.

### How to assemble the mulcher plate.



**WARNING:** Disconnect the wire to the spark plug to prevent the engine from starting by accident. Make sure the blade engagement control lever is in the DISENGAGE position.

1. Remove the wing nuts and carriage bolts from the mulcher plate.
2. Lift the discharge chute. Slide the mulcher plate under the discharge chute from the front to the rear. Make sure the two tabs on the plate are to the front of the nuts for the chute bracket. Also, make sure the side tab fits inside the discharge opening. Push the plate to the rear so that the two tabs lock around the nuts as shown.
3. Fasten the mulcher plate with two carriage bolts and wing nuts as shown.



# CUSTOMER RESPONSIBILITIES MAINTENANCE CHART

MAINTENANCE CHART							
PROCEDURE	EACH USE	FIRST 2 HOURS	EVERY 25 HOURS	EVERY 50 HOURS	EVERY 100 HOURS	BEFORE STORAGE	STORAGE DATES
<b>R I D E R</b>	Blade, Inspect & Sharpen			X			
	Blade Engagement Control, Check			X			
	Brake, Check			X			
	Clutch, Check			X			
	Tires, Check			X		X	
	Battery, Check & Charge			X		X	
	Battery, Clean				X	X	
	Lubrication				X	X	
<b>E N G I N E</b>	Oil, Check	X					
	Air Screen, Check	X				X	
	Oil, Change		X		X	X	
	Air Filter, Clean				X	X	
	Muffler, Check				X		
	Spark Plug, Check				X	X	
	Spark Plug, Replace					X	

## MOWER

### GENERAL RECOMMENDATIONS

1. It is the owner's responsibility to correctly maintain this product which extends the life of the product and to maintain warranty coverage.
2. Once a year you must check the spark plug, drive brake, lubricate the unit, and clean the air filter.
3. Check the fasteners and make sure they are tight.
4. Follow the 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.

### WHERE TO LUBRICATE



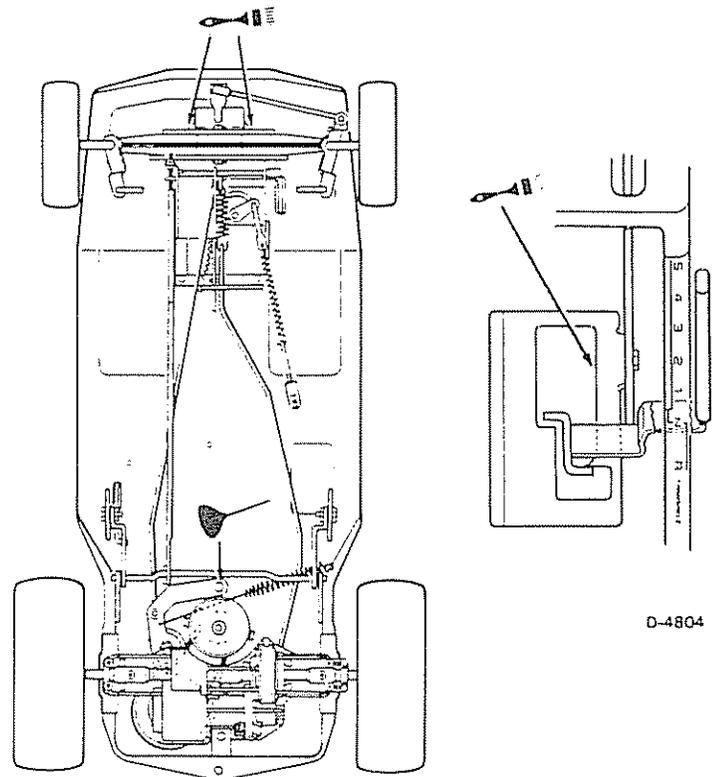
Lubricate the areas shown with engine oil.



Apply grease with a brush to the areas shown.

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

**CAUTION:** Do not lubricate the nylon bearings for the front wheels. Oil or grease will damage the bearings.



D-4804

D-4367-4

# MAINTENANCE

## INSPECT BLADE



**WARNING:** Before you inspect or remove the blade, disconnect the wire to the spark plug. If the blade hits an object, stop the engine. Check the unit for damage. The blade has sharp edges. When you hold the blade, use gloves or cloth material to protect your hands.

If you keep the blade sharp and inspect the blade for damage, the blade will cut better and be more safe to operate. 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. Check the blade adapter for damage. Before you operate the unit, replace damaged parts with an original equipment part. See the authorized service dealer in your area. Every three years, have an authorized service person inspect the blade or replace the old blade with an original equipment part.

## HOW TO REMOVE AND INSTALL THE BLADE

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 and the blade adapter according to the instructions for "Inspect Blade". Replace a badly worn or damaged blade with an original equipment blade. See an authorized service dealer in your area.
5. Clean the top and bottom of the mower housing. Remove all the grass and debris.
6. Mount the blade and blade adapter on the mandrel as shown.
7. 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.
8. Fasten the blade with the original washers and nut. Make sure the outside rim of the Belleville washer is against the blade as shown.
9. Tighten the nut that holds the blade to a torque of 30 foot pounds (41.5N-m)
10. Install the mower housing. See "How To Install The Mower Housing".



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

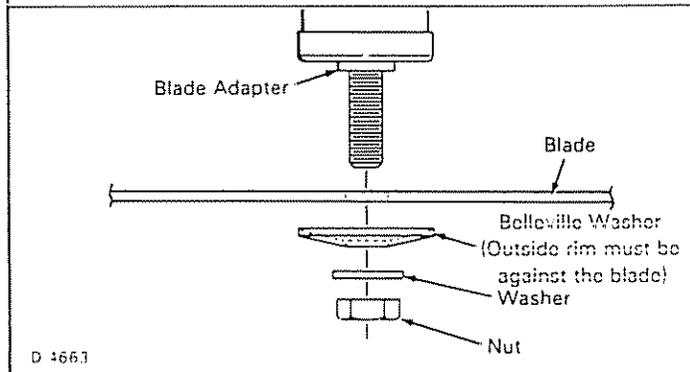
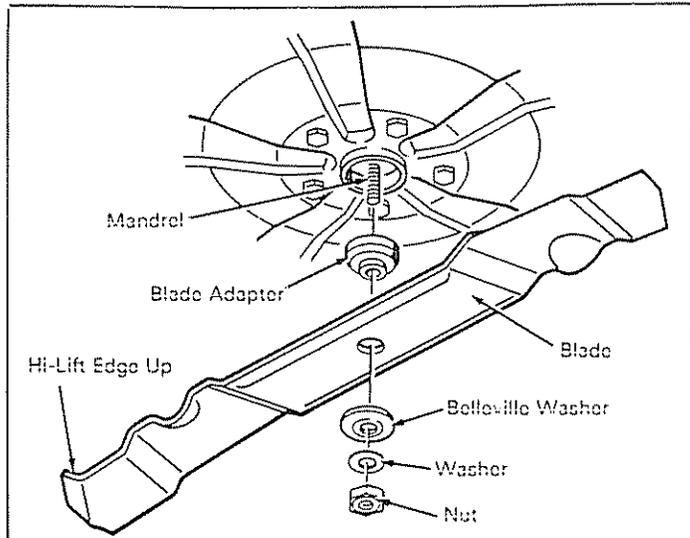
## HOW TO SHARPEN THE BLADE



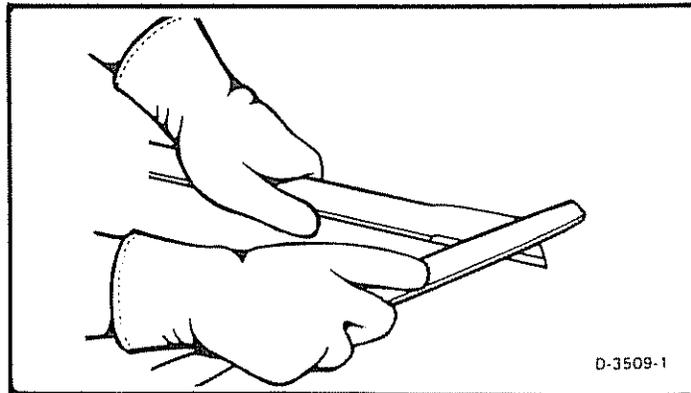
**WARNING:** Vibration can be caused if the blade is not correctly balanced or if the blade is damaged. A blade that is damaged with cracks can break and cause an accident.

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

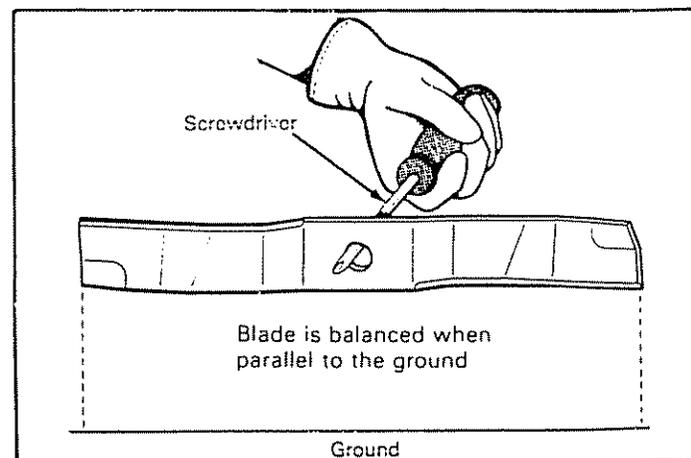
1. Sharpen the blade two times a year or every 25 hours.
2. Remove the blade according to the instructions in "How To Remove And Install The Blade"
3. Clean the blade with a brush, soap and water. Check the blade. Look for cracks, nicks, or other damage. Replace a badly worn or damaged blade with an original equipment blade. See an authorized service dealer in your area.
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 an original equipment blade.
7. Assemble the blade according to the instructions "How To Remove And Install The Blade"



D 466.1



D-3509-1



Blade is balanced when parallel to the ground

Ground

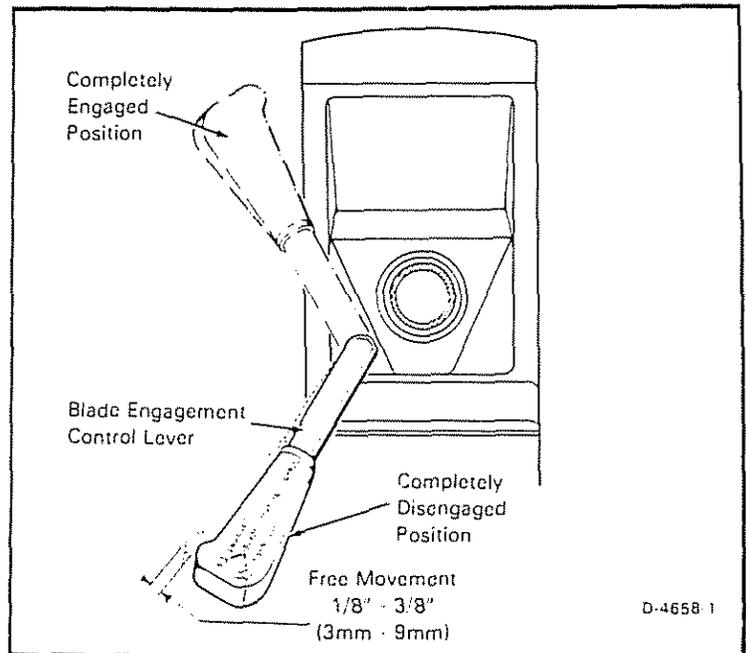
# MAINTENANCE

## HOW TO CHECK AND ADJUST THE BLADE ENGAGEMENT CONTROL

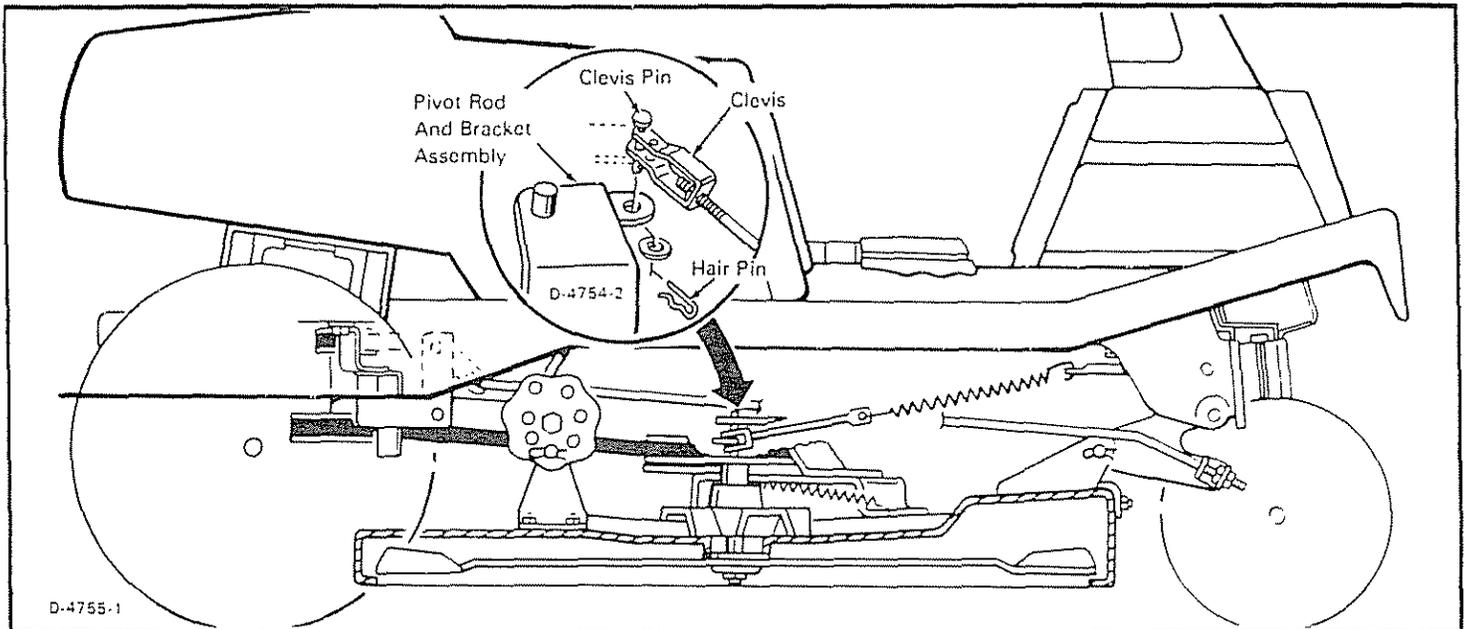


**WARNING:** To prevent an injury, the blade engagement control must operate correctly.

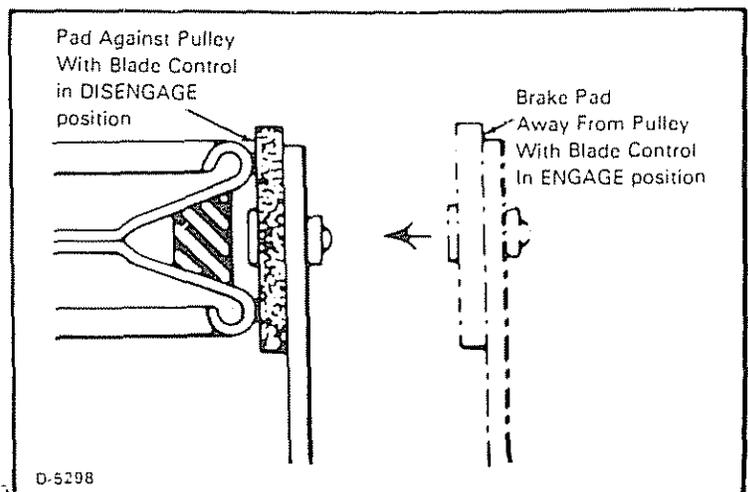
- 1 Stop the engine. Disconnect the wire from the spark plug.
- 2 Before you adjust the blade engagement control lever, check and level the mower housing. See "How To Level The Mower Housing"
- 3 Set the height of the mower housing in the lowest position.
- 4 Move the blade engagement control to the 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.



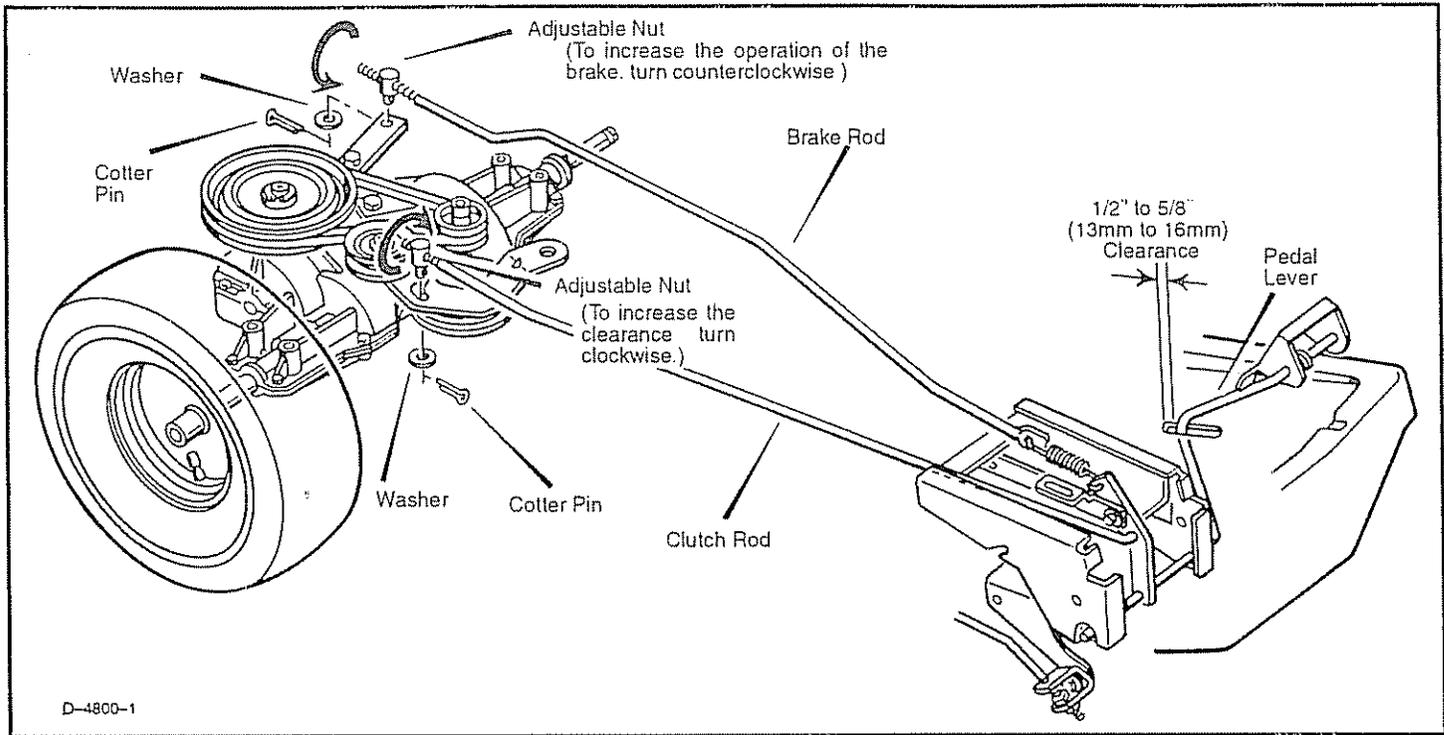
D-4658-1



- 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 Connect the wire to the spark plug. 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



D-4800-1

## HOW TO CHECK AND ADJUST THE DRIVE BRAKE

1. Before you adjust the brake, check the clutch adjustment. See the instructions on "How To Check And Adjust The Clutch."
2. Make sure the shift lever is in the NEUTRAL (N) position.
3. Disconnect the adjustable nut from the brake arm as shown.
4. Carefully push the brake arm forward and hold in position.
5. With the brake arm forward, rotate the adjustable nut counterclockwise on the brake rod until the adjustable nut is in line with hole in the brake arm.

**NOTE:** If the adjustable nut will not line up with the hole in the brake arm, go to step 6. If the adjustable nut does line up with the hole in the brake arm, go to step 12.

6. Pull the brake arm to the rear of the unit.
7. The brake adjustment of the transaxle is located on the underside of the transaxle on the left side. Use one wrench to hold the adjuster rod while you loosen the hex nut approximately 2 turns with another wrench.
8. Turn the adjuster rod clockwise 1/2-turn. Try to push the unit. If the unit rolls, continue this step until you feel resistance from the brake when you push the unit.
9. Turn the adjuster rod counterclockwise one turn. Then, hold the adjuster rod with one wrench while you tighten the hex nut with another wrench.
10. Carefully push the brake arm forward and hold in position.
11. With the brake arm forward, rotate the adjustable nut clockwise on the brake rod until the adjustable nut is in line with the hole in the brake arm.
12. Connect the adjustable nut to the brake arm with the washer and cotter pin.
13. Apply the parking brake. Try to push the unit. If the rear wheels do not turn, the brake is correctly adjusted. Release the parking brake. Push the unit to see if the wheels will freely roll.

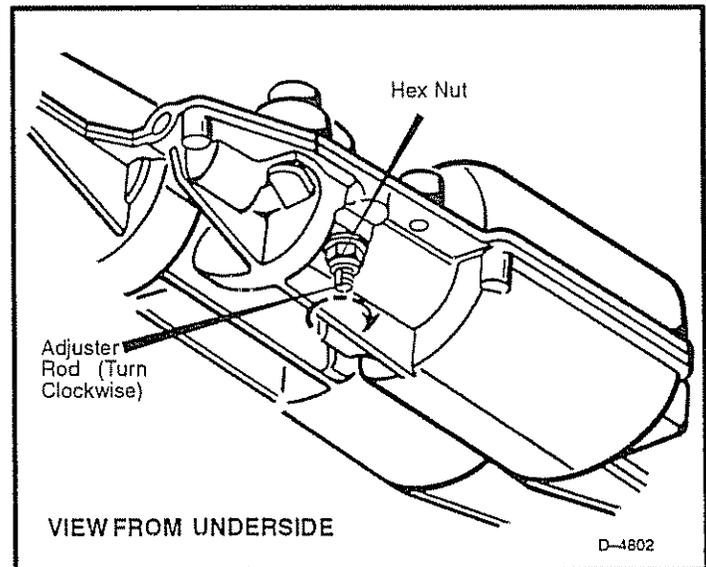


**WARNING:** If you cannot correctly adjust the drive brake, take the unit to an Authorized Service Center.

## HOW TO CHECK AND ADJUST THE CLUTCH

If the unit will not move when the clutch is engaged or if the belt slips when going uphill or when pulling a load, the motion drive belt is loose. Check the clearance between the rear of the pedal lever and the back of the hole as shown. If there is more or less than the clearance shown in the illustration, adjust the pedal as follows:

1. Disconnect the adjustable nut from the idler bracket as shown.
2. Turn the adjustable nut clockwise to increase the length of the clutch rod. There must be 1/2-to-5/8-inch clearance at the back of the clutch/brake pedal as shown. This adjustment will increase the clearance at the pedal.
3. Assemble the adjustable nut to the idler bracket. Check the clearance at the pedal.
4. After making an adjustment to the pedal, check the brake rod as described in the instructions, "How To Check And Adjust The Drive Brake."



VIEW FROM UNDERSIDE

D-4802

# MAINTENANCE

## HOW TO REMOVE THE SIDE PANEL

To help service and clean the engine or the battery, 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.

## BATTERY

To charge or clean the battery, remove the battery from the unit as follows.



**WARNING:** To prevent sparks, disconnect the black battery cable from the negative (-) terminal before you disconnect the red cable.

**WARNING:** The battery contains sulphuric acid which is harmful to the skin, eyes and clothing. If the acid gets on your body or clothing, wash with water immediately.

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.

## HOW TO CHECK AND CHARGE THE BATTERY

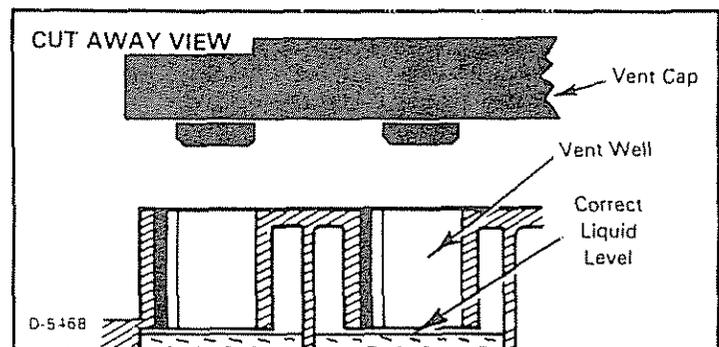
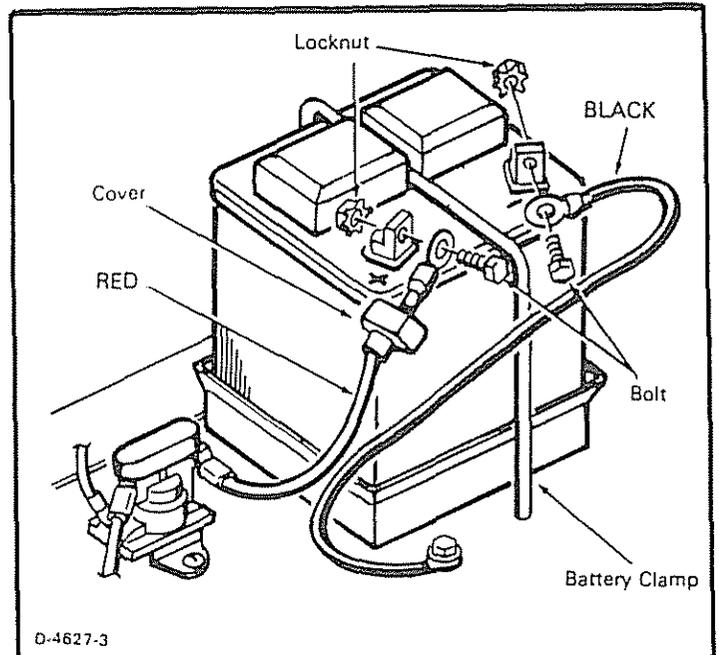
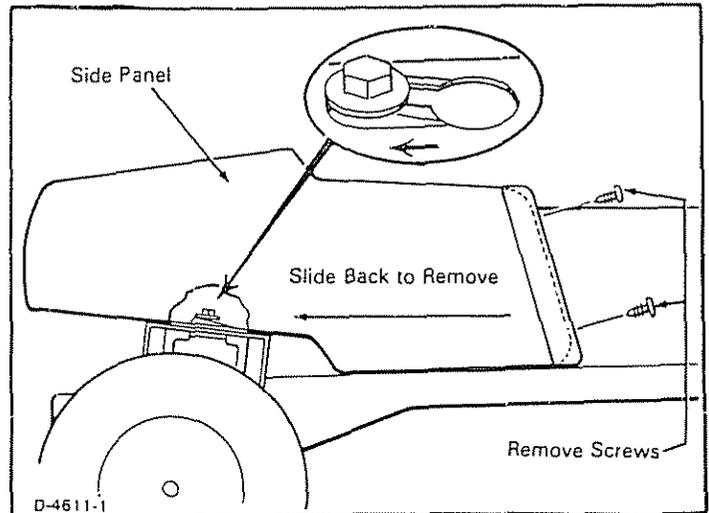


**WARNING:** When you charge the battery, do not smoke. Keep the battery away from any sparks. The fumes from the battery acid can cause an explosion.

1. The battery will be damaged if the battery acid is not kept at the correct level. 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.
2. The engine has a 3 amperes charging system. If you frequently start the engine or frequently use the headlight, the battery will not stay fully charged. For longer life of the battery, charge the battery every three months.
3. Before you charge the battery, remove the battery.
4. Use a 12 volt battery charger to charge the battery. Charge at a rate of 3 amperes for 2 to 3 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.
5. Install the battery. See "How To Install The Battery" in the assembly section.

## HOW TO CLEAN THE BATTERY

1. Remove the battery from the unit.
  2. 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.
  3. Clean the terminals and the ends of the cables with a wire brush.
  4. Install the battery. See "How To Install The Battery" in the assembly section.
  5. To prevent corrosion, apply grease to the battery terminals.
- F-92533



## 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 (PSI) for each Rear Wheel is 14 PSI (10 kg/cm<sup>2</sup>) and for each Front Wheel the air pressure is 24 PSI (16 kg/cm<sup>2</sup>). Models that have semi-pneumatic front wheels will not have a PSI

# MAINTENANCE

## ENGINE

### HOW TO CHECK THE OIL

**NOTE:** Do not check the level of the oil while the engine runs.

- 1 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. The quantity of oil needed from ADD to FULL is shown on the dipstick. Do not add too much oil.

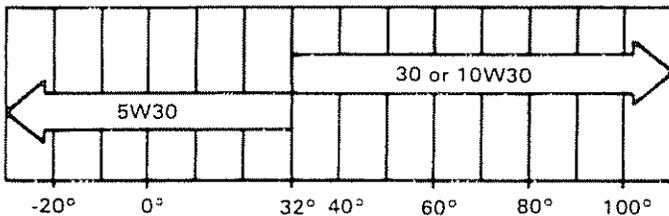
### HOW TO CHANGE THE OIL

**NOTE:** Do not drain the oil from a cold engine. Before you drain the oil, let the engine run for several minutes. Make sure you do not get oil on the belts.

- 1 Remove the oil drain cap. Drain the oil completely from the engine. Install and tighten the oil drain cap
- 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. Oil must be a SD, SE or SF grade oil.

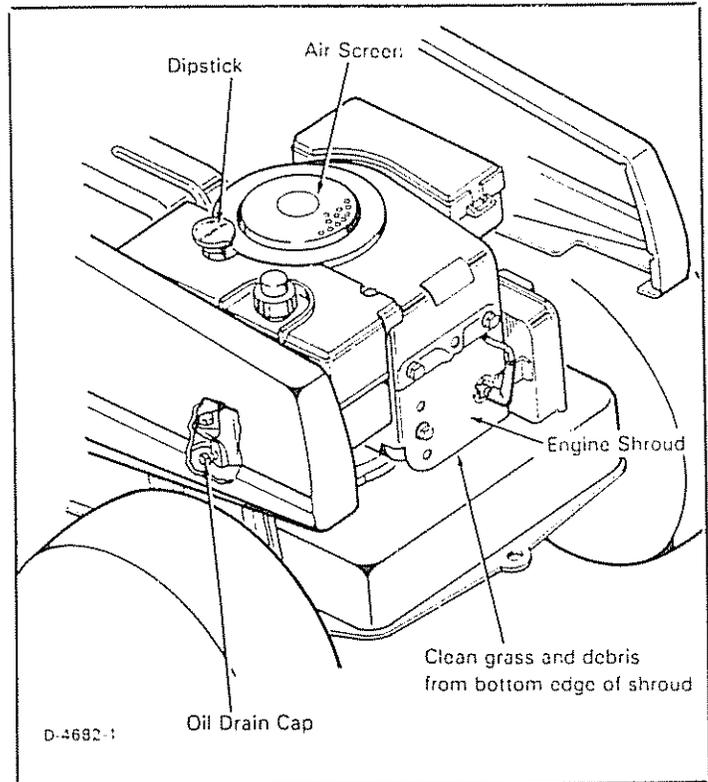
Required SAE viscosity grades



D-4682-1

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

- 4 Clean the area around the dipstick. Remove the dipstick. Slowly pour approximately 32 ounces (0.9 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



### HOW TO CLEAN THE ENGINE COOLING SYSTEM

The engine on this unit is air cooled. The air that cools the engine enters through the air screen on top of the engine.

- 1 Remove any grass, dirt or debris from the air screen with a cloth or brush
- 2 Inspect the edge of the engine shroud for grass or debris. Remove any grass or debris visible at the bottom edge of the engine shroud

# MAINTENANCE

## HOW TO CLEAN THE AIR FILTERS

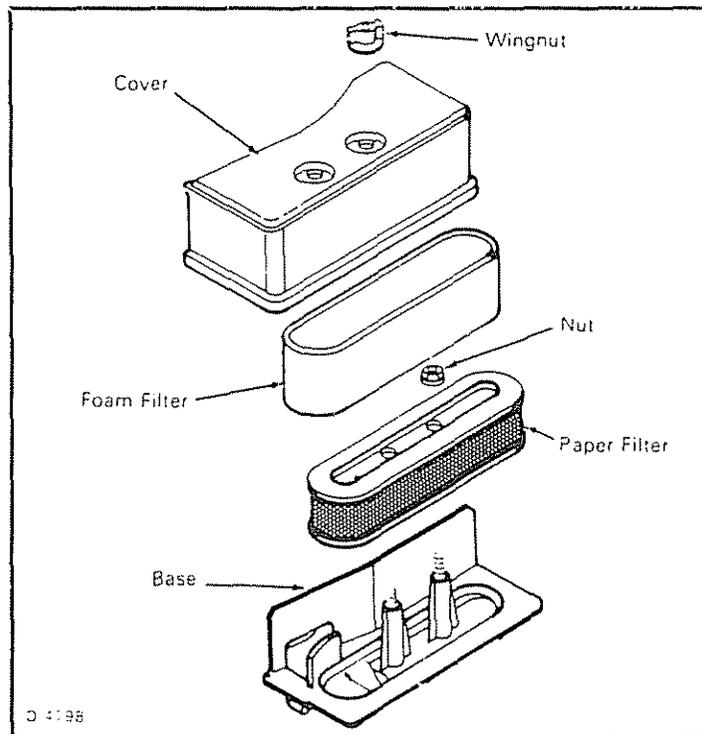
Some engines have two filters, an outer foam filter around an inner paper filter. Clean the air filters every 50 hours. If you operate in dirty conditions, service more often.

**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 two wingnuts from the cover.
- 2 Remove the cover from the air cleaner.
- 3 Remove the two nuts from the filters.
- 4 Remove the filters.
- 5 Clean the inside of the base and the cover with a cloth.
- 6 Remove the foam filter, (if equipped), from the paper filter.
- 7 If equipped, 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.

- 8 Evenly apply S.A.E. 30W oil to the dry foam filter.
- 9 To clean the paper filter, lightly tap the paper filter against a hard flat surface.
- 10 If the paper filter is very dirty, replace the filter.
- 11 Assemble the air filters with the two nuts.
- 12 Install the cover. Fasten the cover with the two wingnuts.



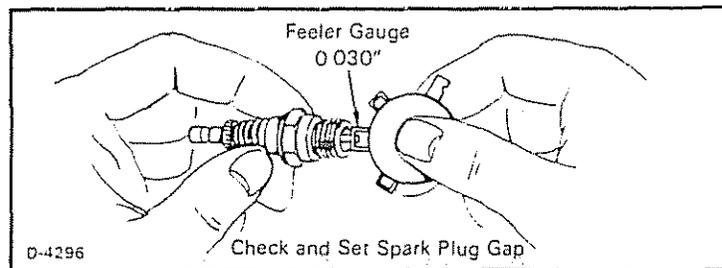
## HOW TO CHECK THE MUFFLER

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 when you check the muffler. If the spark arrestor is worn or damaged, replace it with a new spark arrestor. See your nearest authorized service dealer for a spark arrestor.

## 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.



# SERVICE AND ADJUSTMENT

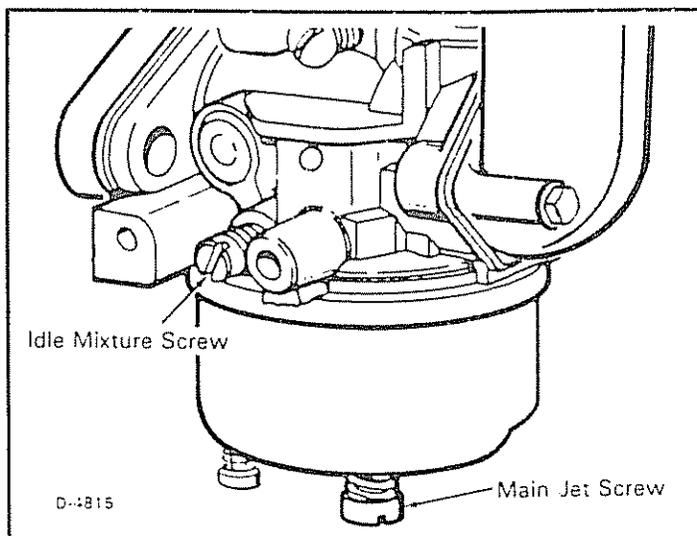
## HOW TO ADJUST THE CARBURETOR

The factory settings for the carburetor are for most conditions. If the engine is operated under the following conditions, you can adjust the carburetor mixture.

1. The engine has a loss of power or does not run smooth.
2. A change from summer to winter operation.
3. A 40° change in the operation temperature. The carburetor was adjusted at 80° at the factory.
4. The engine is operated above 4,000 feet.

If an adjustment is needed, follow the steps below.

1. Remove the side panel. See "How To Remove The Side Panels".
2. With your hand, turn the idle mixture screw in a clockwise direction until you feel some resistance. Turn the main jet screw in a clockwise direction until you feel some resistance.  
**CAUTION:** Do not over tighten the idle mixture screw or the main jet screw. The carburetor will be damaged.
3. Turn the idle mixture screw counterclockwise 1-1/4 turns. Turn the main jet screw counterclockwise 1-5/8 turns.
4. Start the engine. Run the engine for several minutes.
5. Move the throttle control to SLOW position.
6. Turn the idle mixture screw clockwise until the engine begins to loose speed. Note the position of the slot in the idle mixture screw.
7. Slowly turn the idle mixture screw counterclockwise until the engine runs rough. Note the position of the slot in the idle mixture screw.
8. Set the idle mixture screw between the two positions in steps 6 and 7.
9. Move the throttle control to FAST position.
10. Turn the main jet screw in a clockwise direction until the engine begins to loose speed (lean mixture). Note the position of the slot in the main jet screw.

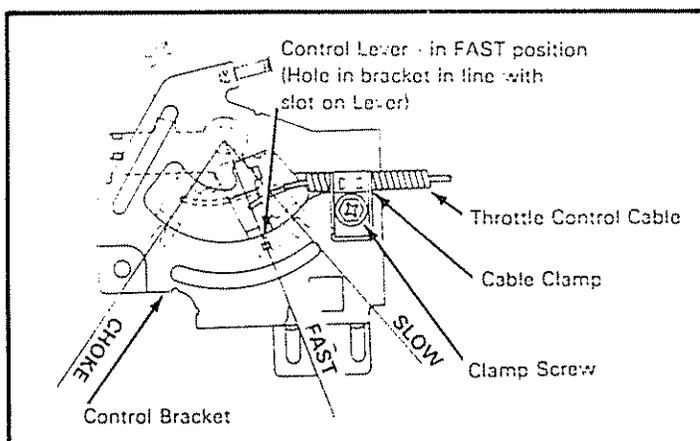


11. Slowly turn the main jet screw in a counterclockwise direction until the engine runs rough (rich mixture). Note the position of the slot in the main jet screw.
12. Set the main jet screw between the two positions in steps 10 and 11.
13. To check the adjustment, operate the engine. If the engine stops when the blade(s) are engaged, the carburetor mixture is set too lean. Turn the main jet screw counterclockwise 1/16 turn.
14. If the engine runs rough when the blade(s) are engaged, the carburetor mixture is set too rich. Turn the main jet screw clockwise 1/16 turn.
15. Again check the engine by engaging and disengaging the blade(s). If necessary, repeat steps 13 or 14.

## HOW TO ADJUST THE THROTTLE CONTROL

For the best engine performance, set the throttle control as follows:

1. Move the throttle control to the FAST position.
2. Loosen the clamp screw so that the cable for the throttle control can move in the cable clamp. Do not remove the cable clamp from the control bracket or disconnect the cable from the engine control lever.
3. Move the engine control lever until the slot in the is aligned (lines up) with the hole in the control bracket as shown.
4. Tighten the clamp screw. Move the throttle control to the SLOW position and then back to the FAST position. Check the alignment of the control lever. See step 3.
5. The throttle control is now set at the correct speed. When the throttle control is at the FAST position, the engine speed is  $3400 \pm 100$  RPM. When the throttle control is in the SLOW position, the engine speed is  $2150 \pm 100$  RPM.



**IMPORTANT:** Do not change the engine governor. If the engine governor needs an adjustment, go to the nearest Sears Service Center. They have the equipment and experience to make the adjustment.

# SERVICE AND ADJUSTMENT

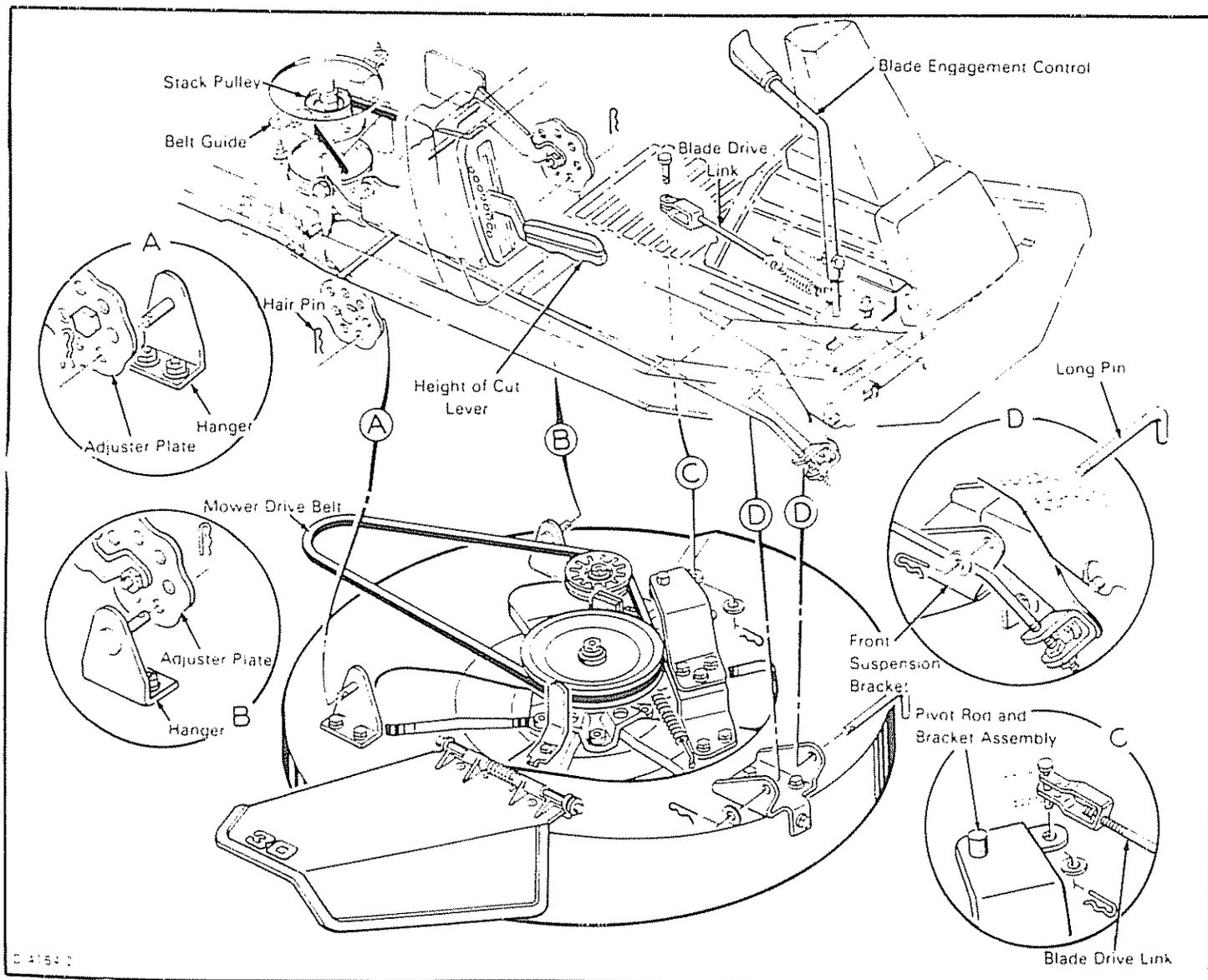
## HOW TO REMOVE THE MOWER HOUSING

- 1 Move the lift lever to the MIDDLE position
- 2 Move the blade engagement control lever to the DISENGAGE 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

- 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

## HOW TO INSTALL THE MOWER HOUSING

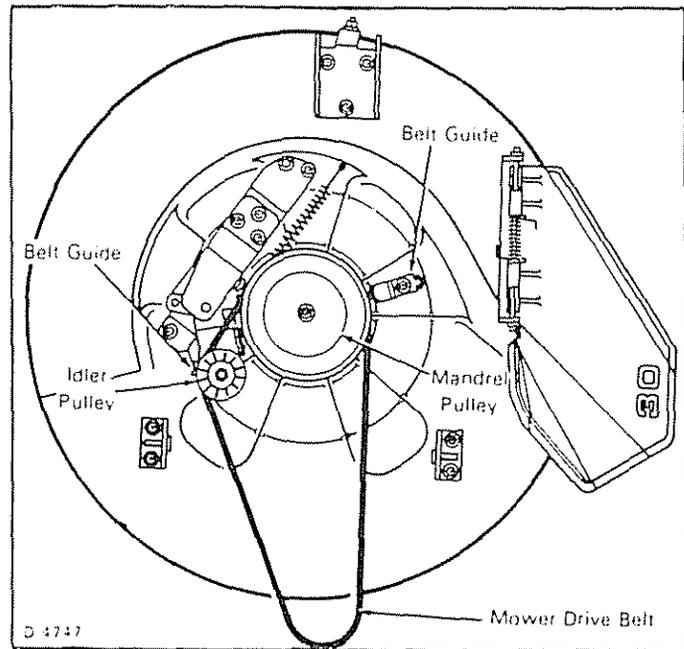
- 1 Completely turn the steering wheel to the right Push the mower housing under the left side of the unit



# SERVICE AND ADJUSTMENT

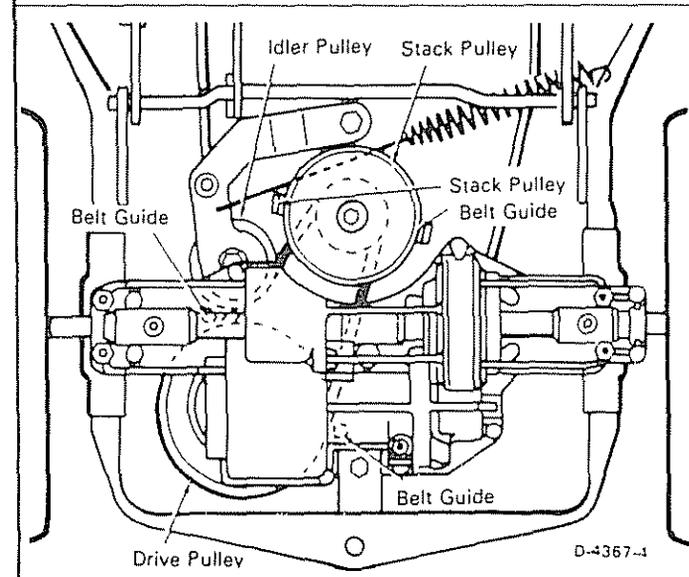
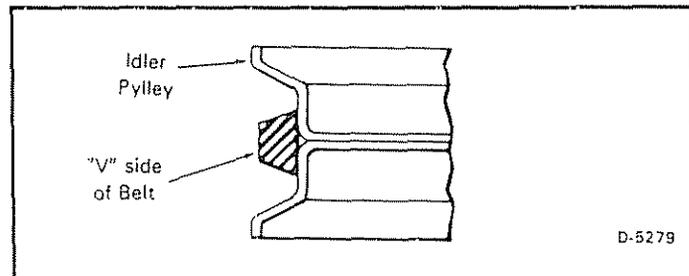
## HOW TO REPLACE THE MOWER DRIVE BELT

- 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.  
**NOTE: Replace the mower drive belt with a factory replacement belt.**
- 6 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.
- 7 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.
- 8 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 Engage the parking brake.
- 3 Disconnect the adjustable nut from the brake rod at the brake arm. Push the brake rod to the side of the unit.
- 4 Try to push each belt guide away from the drive pulley so that the motion drive belt can be pulled over the top of the drive pulley. If the belt guides do not provide enough clearance, use one wrench to hold the head of the belt guide on top of the frame while you use another wrench to loosen the nut under the frame for each belt guide.
- 5 Remove the motion drive belt from the idler pulley. Pull the drive belt toward the front of the unit.
- 6 Loosen the belt guide at the stack pulley. Remove the motion drive belt from the top pulley of the stack pulley. Slide the belt between the stack pulley and the belt guide. Remove the belt from the lower pulley.  
**NOTE: Inspect the idler pulley, stack pulley and the drive idler spring for damage. Replace if necessary.**
- 7 Install the new motion drive belt on the top pulley of the stack pulley.  
**NOTE: 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 idler pulley. Make sure the "V" side of the belt faces away from the idler pulley. Also, make sure the belt is not twisted.
- 10 While you push the two belt guides away from the drive pulley, install the motion drive belt on the drive pulley.



- 11 Make sure the motion drive belt is inside the belt guides and the guide arm of the idler pulley. Tighten the belt guide for the stack pulley.
- 12 Before you use the unit, check the adjustment of the clutch. See "How To Check And Adjust The Clutch".
- 13 Assemble the adjustable nut to the brake rod at the brake arm. Make sure the brake is correctly adjusted. See the instructions on "How To Check And Adjust The Drive Brake".
- 14 Install the mower housing. See the instructions on "How To Install The Mower Housing".

# SERVICE AND ADJUSTMENT

## HOW TO LEVEL THE MOWER HOUSING

If the mower housing is level, the mower will cut easier and the lawn will look better.

- 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 rear tires are inflated to 14 psi (10 kg/cm<sup>2</sup>) and the front tires are inflated to 24 psi (16 kg/cm<sup>2</sup>)
- 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



**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.

### THE SIDE TO SIDE ADJUSTMENT

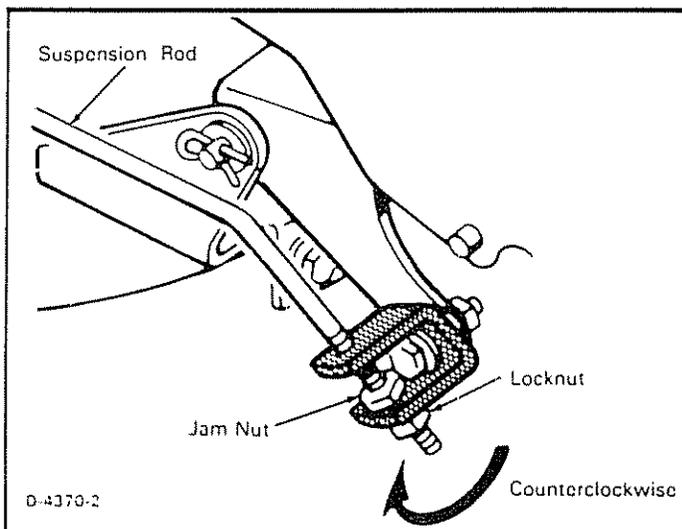
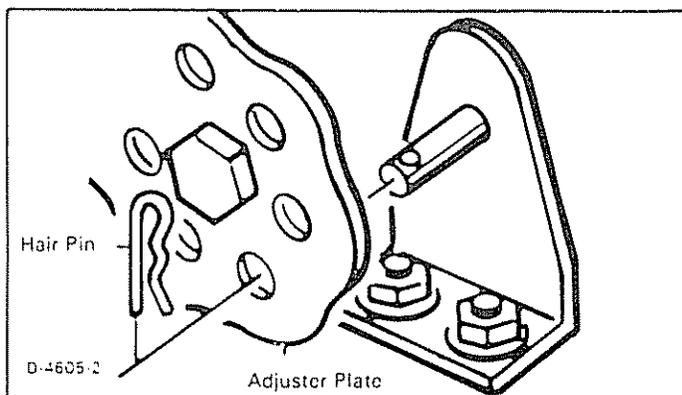
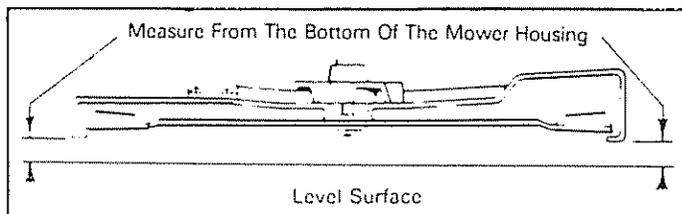
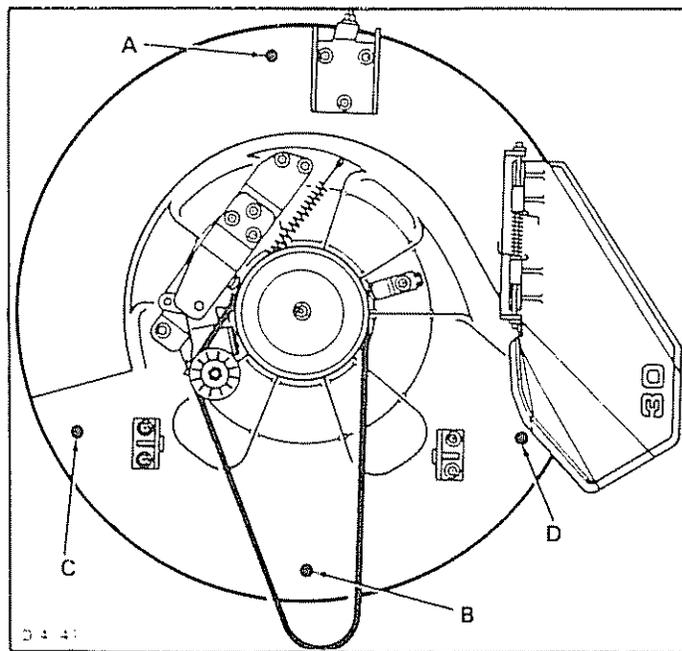
Use a ruler and measure the distance from the level surface to the bottom of the mower housing. Measure from the locations indicated by the small round dimples (or X marks) at points C and D. In correct adjustment, the mower housing at points C and D must be within 1/4" (6 mm) of the same height. If the difference in the measurement is more than 1/4" (6 mm), 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 from the locations indicated by the small round dimples (or X marks) at points A and B. In correct adjustment, the front of the mower housing at point A will be 1/8" to 3/8" (3mm to 9 mm) lower than the back of the mower housing at point B. 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.
- 3 Connect the wire to the spark plug.



## SERVICE AND ADJUSTMENT

### HOW TO SET THE HEIGHT OF CUT

The height of cut is set at the factory from 1 ½ to 4 inches. To lower or raise the height of cut, make an adjustment to the lifter rod as follows:

1. Move the lift lever to the LOW cut position.
2. Disconnect the lifter rod from the lifter arm.
3. Turn the lifter rod clockwise to lower or counterclockwise to raise the height of cut.
4. Attach the lifter rod to the lifter arm.
5. Move the lift lever to the HIGH position. Make sure the pulleys or belt do not touch the bottom of the frame.

### 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.

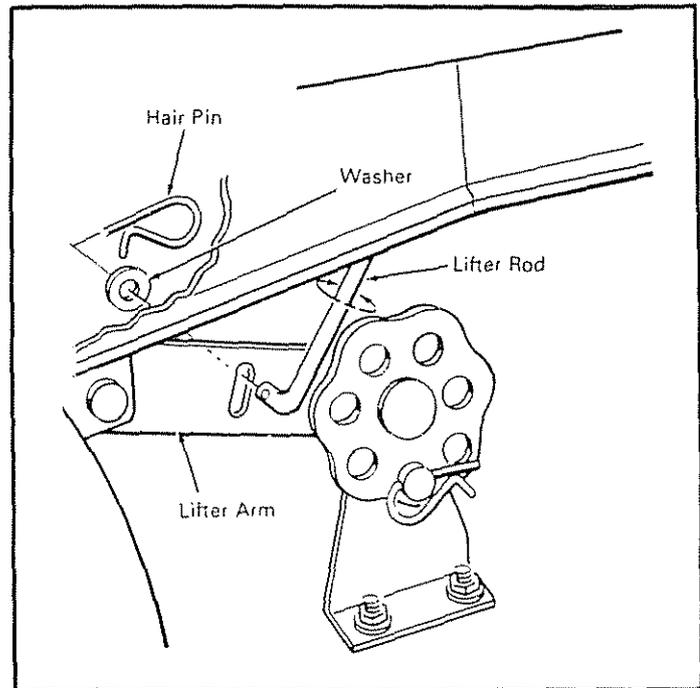
### HOW TO CLEAN THE MOWER HOUSING



**WARNING:** Before you clean the mower housing, stop the engine and disconnect the wire to the spark plug.

Grass and other debris on top of the mower housing can keep the belt from working correctly. Clean the mower housing as follows:

1. Move the lever for the blade engagement control to the ENGAGE position.
2. Clean the top of the mower housing.
3. Move the lever for the blade engagement control to the DISENGAGE position.
4. Again clean the top of the mower housing.
5. After you cut the grass, clean the bottom of the mower housing.



### HOW TO REPLACE THE FUSE

If the fuse is blown, the engine will not start. The location of the fuse is next to the battery. Remove the fuse and replace with a 15 amp Automotive fuse.

### FRONT WHEEL ALIGNMENT

The alignment of the front wheels cannot be adjusted. If the steering is damaged and the alignment has changed, see your nearest Sears Service Center.

## STORAGE (Over 30 Days)

At the end of each year, prepare the unit for storage as follows

### MOWER

#### CLEAN THE UNIT

- 1 Clean the mower housing. See "How To Clean The Mower Housing".

#### LUBRICATE THE UNIT

See the "Lubrication" instructions in this book.

### ENGINE

- 1 Clean the dirt and grass from the engine.
- 2 Change the oil. See the instructions, "How To Change The Oil".
- 3 Check the air screen. See the instructions, "How To Clean The Air Screen".
- 4 Check the spark plug. See "How To Check The Spark Plug".

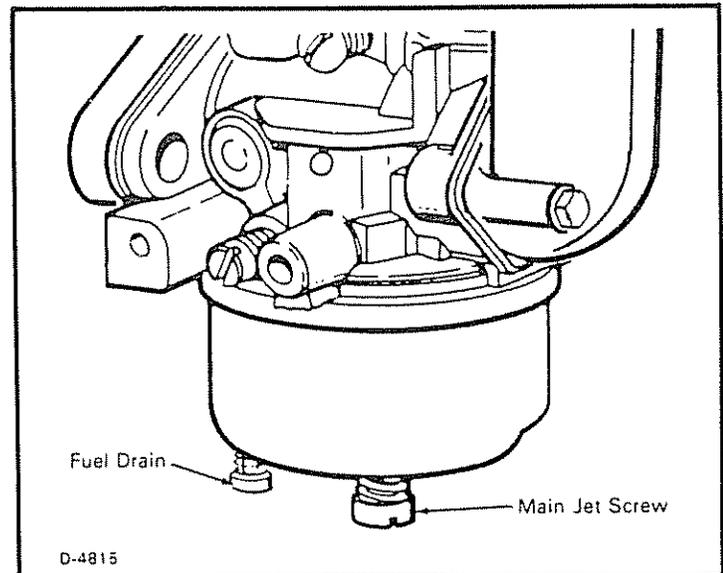
#### THE FUEL SYSTEM



**WARNING:** Do not drain the gasoline inside a building or near a fire. Do not smoke or the fumes from the fuel can cause an explosion.

**CAUTION:** During storage, it is important to prevent deposits from occurring in fuel system parts like the carburetor, fuel filter, fuel hose and the fuel tank. Alcohol gasoline mixtures (called gasohol or using ethanol or methanol) attract moisture causing acid deposits during storage. While the unit is in storage, the acids in the fuel can damage the fuel system. To prevent engine problems with the fuel system, empty the fuel system before storage of 30 days or longer.

- 1 Start the engine.
- 2 Run the engine until the fuel tank and the carburetor are out of fuel and the engine stops. Do not leave fuel in the fuel tank or the carburetor. The fuel can damage the function of the fuel system.
- 3 After storage, make sure you use fresh fuel.



### BATTERY

- 1 Remove the battery.
- 2 Clean the battery terminals of any deposits. See "How To Clean The Battery".
- 3 Completely charge the battery. See the instructions, "How To Check And Charge The Battery".
- 4 Store the battery in a cool, dry place.

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

# TROUBLE SHOOTING CHART

(Recoil-Start And Electric Models)

**PROBLEM:** The engine will not start.

- 1 Follow the steps How To Start The Engine in this book
- 2 Clean the battery terminals Tighten the cables
- 3 Check for a loose wire. Tighten the limit switches (See the wiring diagram )
- 4 Drain the fuel tank. Clean the fuel line Replace the fuel filter
- 5 Remove the spark plug(s) Move the throttle to the SLOW position Turn the ignition key to the ON position Try to start the engine several times. Install the spark plug
- 6 Replace the spark plug
- 7 Adjust the carburetor.

**PROBLEM:** The engine will not turn over.

- 1 Follow the steps. How To Start The Engine in this book
- 2 Check the level of the acid in the battery If needed, add water Charge the battery
- 3 Replace the fuse
- 4 Check the wiring harness for damage or a loose connection Repair the damaged wire
- 5 Electric-Start Models: replace the solenoid.  
Recoil-Start Models: replace the module.

**PROBLEM:** The engine is difficult to start.

- 1 Adjust the carburetor
- 2 Replace the spark plug.
- 3 Replace the fuel filter

**PROBLEM:** The engine does not run smooth or has a loss of power.

- 1 Check the oil
- 2 Clean the air filter
- 3 Clean the air screen
- 4 Replace the spark plug
- 5 The engine is working too hard Use a lower gear
- 6 Adjust the carburetor
- 7 Replace the fuel filter

**PROBLEM:** The engine does not run smooth at fast speed.

- 1 Replace the spark plug.
- 2 Adjust the throttle control
- 3 Clean the air filter
- 4 Replace the fuel filter

**PROBLEM:** The engine stops when the blades are engaged

- 1 To activate the seat sensor, always sit in the middle of the seat
- 2 Check the wiring harness for damage or a loose connection Repair the damaged wire

**PROBLEM:** On slopes, the engine stops.

- 1 Mow up and down slopes Never mow across a slope
- 2 To activate the seat sensor, always sit in the middle of the seat

**PROBLEM:** The engine will not idle.

- 1 Replace the spark plug
- 2 Clean the air filter
- 3 Adjust the carburetor
- 4 Adjust the throttle control
- 5 Drain the fuel tank Clean the fuel line Replace the fuel filter

**PROBLEM:** A hot engine causes a decrease in power

- 1 Clean the air screen
- 2 Check the oil.
- 3 Adjust the carburetor
- 4 Replace the fuel filter

**PROBLEM:** Excessive vibration.

- 1 Replace the blade
- 2 Check for loose engine bolts
- 3 Check the air pressure in the tires
- 4 Adjust the carburetor.
- 5 Check for a damaged belt or damaged pulley Replace the damaged parts

**PROBLEM:** The grass does not discharge correctly.

- 1 Stop the engine Clean the mower housing
- 2 Raise the height of cut
- 3 Replace or sharpen the blades(s)
- 4 Move the shift lever to a slower speed
- 5 Move the throttle control to the FAST position
- 6 Replace the spring for the blade idler

**PROBLEM:** The mower housing does not cut level.

- 1 Check the air pressure in the tires.
- 2 Adjust the level of the mower housing
- 3 Check the front axle If the front axle does not freely pivot, loosen the two axle bolts

**PROBLEM:** The mower blades will not rotate.

- 1 Check the mower drive belt Make sure the belt is installed correctly
- 2 Replace the mower drive belt

**PROBLEM:** The unit will not move when the clutch is engaged.

- 1 Adjust the clutch
- 2 Replace the motion drive belt
- 3 Check the motion drive belt Make sure the belt is installed correctly

**PROBLEM:** The unit moves slower or stops when the clutch is engaged.

- 1 Replace the motion drive belt
- 2 Adjust the clutch

**PROBLEM:** When the clutch/brake pedal is released, belt noise can be heard.

- 1 Temporary belt noise does not change the operation of the unit If belt noise is continuous, check the routing of the belt. Make sure the belt is inside all belt guides
- 2 If the noise is continuous, adjust the clutch.

**PROBLEM:** The rear wheels spin over uneven terrain

- 1 Check the front axle If the front axle does not freely pivot, loosen the two axle bolts

# SEARS

## owners manual

Model No.  
502.255020

## How to Order Repair Parts

# CRAFTSMAN®

## 10 HP. ELECTRIC START 30" MOWER / MULCHER 5 SPEED REAR ENGINE RIDER

The Model Number for the mower is found under the seat on a decal attached to the seat support. The Model Number for the engine is found on the blower housing above the spark plug. 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.

- PRODUCT - REAR ENGINE RIDER
- MODEL NUMBER - 502.255020
- ENGINE MODEL NO. - 143.426072
- PART NUMBER
- PART DESCRIPTION

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".