

# **HVYTH140AR**

## **Operator's Manual**



**LOOK FOR THIS SYMBOL TO POINT OUT IMPORTANT SAFETY PRECAUTIONS. IT MEANS - ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED.**



## **RULES FOR SAFE OPERATION**

**WARNING:** This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest covered, brush covered or grass covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or area laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator. (See REPAIR PARTS for part number identification).

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.

1. Know the controls and how to stop quickly. **READ THIS OWNER'S MANUAL** and instructions furnished with attachments.
2. Do not allow children to operate the machine. Do not allow adults to operate it without proper instruction.
3. Do not carry passengers. Do not mow when children and others are around.
4. Always wear substantial footwear. Do not wear loose fitting clothing that could get caught in moving parts.
5. Keep your eyes and mind on your tractor, mower, and the area being cut. Do not let other interests distract you.
6. Do not attempt to operate your tractor or mower when not in the driver's seat.
7. Always get on or off your tractor from the operator's left hand side.
8. Clear the work area of objects (wire, rocks, etc.) which might be picked up and thrown.
9. Disengage all attachment clutches before attempting to start the engine.
10. Disengage power to attachments and stop the engine before leaving the operator's position.
11. Disengage power to mower, stop the engine, and disconnect spark plug wire(s) from spark plug(s) before cleaning, making an adjustment, or repair. Be careful to avoid touching hot muffler or engine components.
12. Disengage power to attachments when transporting or not in use.
13. Take all possible precautions when leaving the vehicle unattended. Disengage the power take-off, lower the attachments, shift into neutral, set the parking brake, stop the engine, and remove the key.
14. Do not stop or start suddenly when going uphill or downhill. Mow up and down the face of slopes (not greater than 15°), never across the face. Refer to page 36.
15. Reduce speed on slopes and make turns gradually to prevent tipping or loss of control. Exercise extreme caution when changing direction on slopes.
16. While going up or down slopes, place gear shift control lever in 1st gear position to negotiate the slope without stopping.
17. Never mow in wet or slippery grass, when traction is unsure, or at a speed which could cause a skid.
18. Stay alert for holes in the terrain and other hidden hazards. Keep away from drop-offs.
19. Do not drive too close to creeks, ditches, and public highways.
20. Exercise special care when mowing around fixed objects in order to prevent the blades from striking them. Never deliberately run tractor or mower into or over any foreign objects.
21. Never shift gears until tractor comes to a stop.
22. Never place hands or feet under the mower, in discharge chute, or near any moving parts while tractor or mower is running. Always keep clear of discharge chute.
23. Use care when pulling loads or using heavy equipment.
  - a. Use only approved drawbar hitch points.
  - b. Limit loads to those you can safely control.
  - c. Do not turn sharply. Use care when backing.
  - d. Use counterweight or wheel weights when suggested in owner's manual.
24. Watch out for traffic when crossing or near roadways.
25. When using any attachments, never direct discharge of material toward bystanders nor allow anyone near the vehicle while in operation.
26. Handle gasoline with care - it is highly flammable.
  - a. Use approved gasoline containers.
  - b. Never remove the fuel cap of the fuel tank or add gasoline to a running or hot engine or an engine that has not been allowed to cool for several minutes after running. Never fill tank indoors. Always clean up spilled gasoline.
  - c. Open doors if the engine is run in the garage - exhaust fumes are dangerous. Do not run the engine indoors.
27. Keep the vehicle and attachments in good operating condition, and keep safety devices in place and working.
28. Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
29. Never store the equipment with gasoline in the tank inside a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.
30. To reduce fire hazard, keep the engine free of grass, leaves, or excessive grease. Do not clean product while engine is running.
31. Except for adjustments, **DO NOT** operate engine if air cleaner or cover directly over carburetor air intake is removed. Removal of such part could create a fire hazard.
32. Do not operate without a muffler, or tamper with exhaust system. Damaged mufflers or spark arresters could create a fire hazard. Inspect periodically and replace if necessary.
33. The vehicle and attachments should be stopped and inspected for damage after striking a foreign object, and the damage should be repaired before restarting and operating the equipment.
34. Do not change the engine governor settings or overspeed the engine; severe damage or injury may result.
35. When using the vehicle with mower, proceed as follows:
  - a. Mow only in daylight or in good artificial light.
  - b. Shut the engine off when unclogging chute.
  - c. Check the blade mounting bolts for proper tightness at frequent intervals.
36. Do not operate the mower without the entire grass catcher, on mowers so equipped, or the deflector shield in place.
37. Disengage power to mower before backing up. Do not mow in reverse unless absolutely necessary and then only after careful observation of the entire area behind the mower.
38. Under normal usage the grass catcher bag material is subject to deterioration and wear. It should be checked frequently for bag replacement. Replacement bags should be checked to ensure compliance with the original manufacturer's recommendations or specifications.

To assemble and adjust your Tractor you will need: one 3/4" wrench, one 9/16" wrench, a utility knife, one 1/2" wrench, two 7/16" wrenches, and one 11/16" wrench.

**WEAR EYE AND FACE SHIELD.**



**WASH HANDS OR CLOTHING IMMEDIATELY IF ACCIDENTALLY IN CONTACT WITH BATTERY ACID.**

**DO NOT SMOKE. FUMES FROM CHARGED BATTERY ACID ARE EXPLOSIVE.**

CUT AWAY VIEW

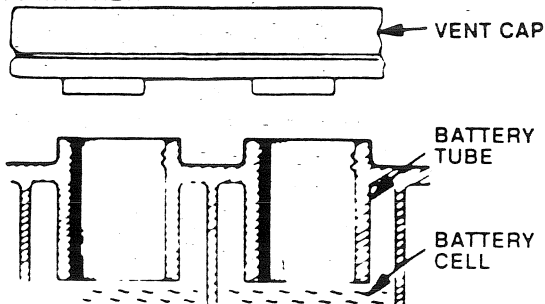


FIGURE 1

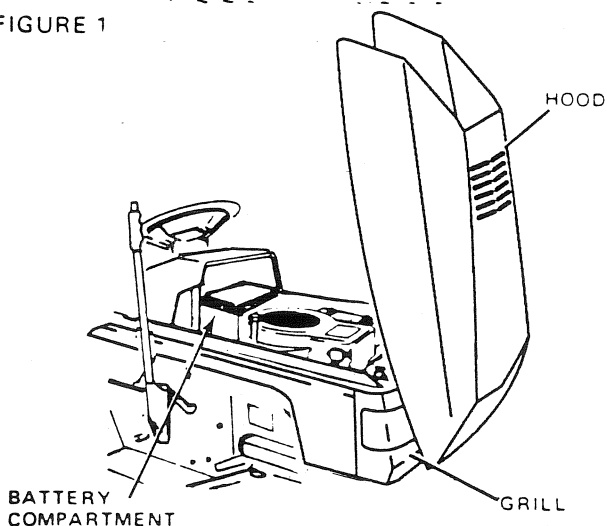


FIGURE 2

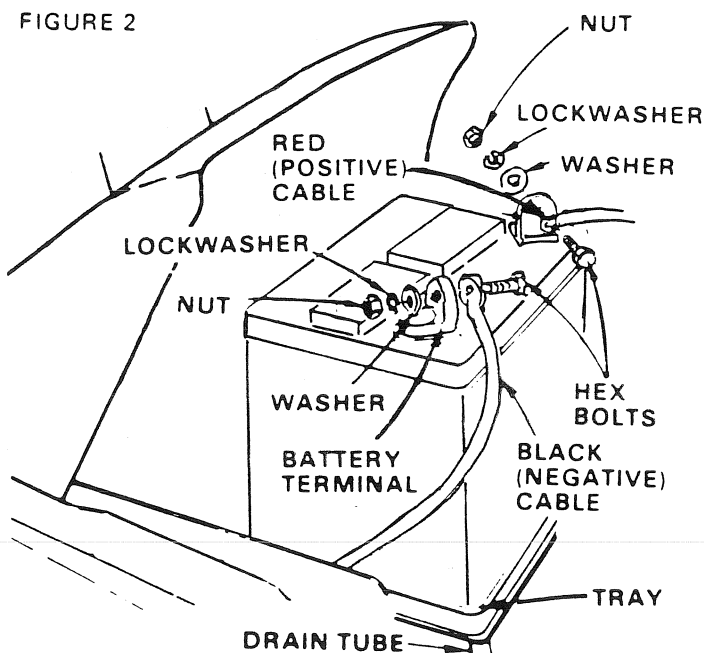


FIGURE 3

## ASSEMBLY

NOTE: RIGHT HAND (R.H.) AND LEFT HAND (L.H.) ARE DETERMINED FROM OPERATOR'S POSITION WHILE SEATED ON THE TRACTOR

1. Cut along solid line of carton, cut down four corners and remove carton from around tractor. Remove any banding holding tractor to skid. Also remove Battery, Steering Wheel and bag of parts.



**READ THE INSTRUCTIONS INCLUDED WITH THE BATTERY VENT CAPS IN THE BAG OF PARTS. ALWAYS WEAR GLOVES, CLOTHING AND GOGGLES TO PROTECT YOUR HANDS, SKIN AND EYES.**

2. Prepare Battery

Before installation in Tractor, follow the battery preparation steps below. Refer to detailed instructions found with battery vent caps in bag of parts.

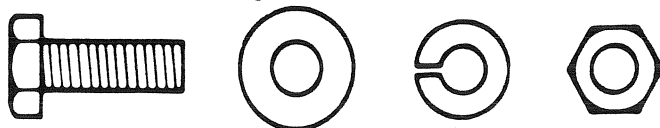
- a. Remove the tape from the battery cells. Fill each cell with acid. Add the acid until it reaches the bottom of the battery tube (Fig. 1). Do not add the acid beyond this level or additional acid can come out when the battery is charged.
- b. Wait 20 to 30 minutes before installing the vent caps. If the level of acid falls below the point as described in step (a), add more acid until the correct level is reached. Install the vent caps. Wash the top of the battery with water to remove any acid, then wipe dry.
- c. Neutralize excess battery acid for disposal by adding it to four inches of water in a five gallon plastic container. Stir with a wooden paddle or plastic paddle while adding baking soda until the addition of more soda causes no more foaming.
- d. Use a 12 volt battery charger. Charge battery at a rate of 6 amperes for 1 hour. Check the acid level after the battery is charged. If the acid has fallen below the correct level, add distilled water.



**DO NOT SHORT BATTERY TERMINALS. BEFORE INSTALLING BATTERY, REMOVE METAL BRACELETS, WRISTWATCH BANDS, RINGS, ETC. FROM YOUR PERSON.**

3. Install Battery

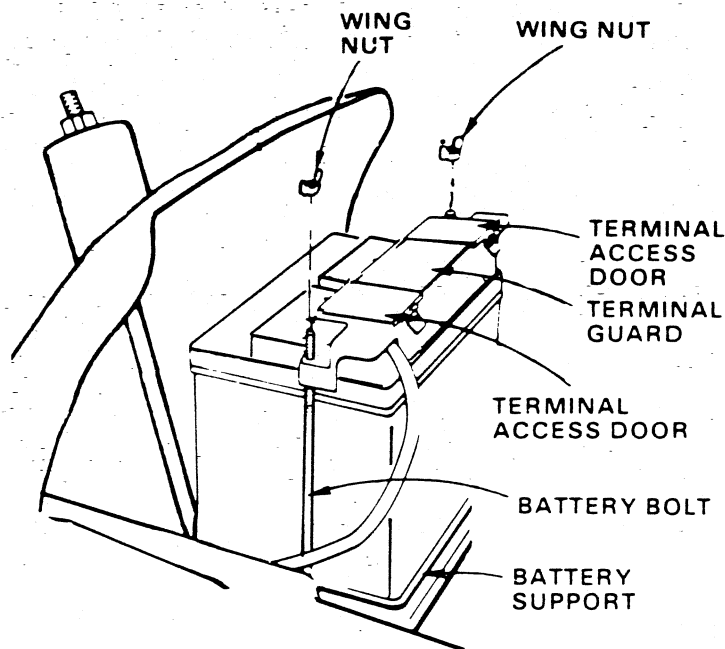
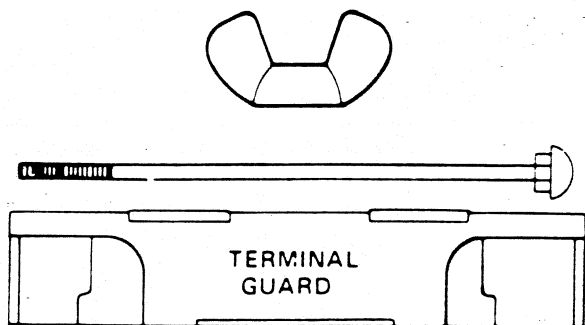
- a. Lift hood from rear sides (Fig. 2).
  - b. Make sure Drain Tube is fastened to Drain Hole in Battery Tray, and Battery Tray drain hole is positioned near the edge of Battery Support.
  - c. Place Battery in Plastic Tray (Battery Terminals to rear of Tractor) (Fig. 3).
4. Connect Battery Cables using two Hex Bolts, two Flat Washers, two Lockwashers, and two Hex Nuts (shown full size below) found in Bag of Parts.



**POSITIVE TERMINAL MUST BE CONNECTED FIRST TO PREVENT SPARKS FROM ACCIDENTAL GROUNDING.**

- a. Connect RED Battery Cable to Positive (+) Battery Terminal with Hex Bolt, Flat Washer, Lockwasher and Hex Nut (Fig. 3). Tighten securely.
- b. Connect BLACK Ground Cable to Negative (-) Battery Terminal with remaining Hex Bolt, Flat Washer, Lockwasher and Hex Nut (Fig. 3). Tighten securely.

5. Install Battery using: two Wing Nuts (shown full size below) and two Battery bolts and one Terminal Guard found in Bag of Parts.



- Using the slotted hole on one side of the Battery Support (Fig. 4) insert one Battery Bolt, head of Bolt down. Fasten the Battery Bolt to the Terminal Guard using Wing Nut as shown in Fig. 4.
- Assemble the remaining Battery Bolt to other side of Battery Support and fasten Terminal Guard to it with remaining Wing Nut. Tighten Wing Nuts securely by hand (Fig. 4).

NOTE: USE TERMINAL ACCESS DOORS (FIG. 4) FOR:

- Inspection for secure connections (tighten hardware).
- Inspection for corrosion.
- Testing battery.
- Jumping (if required).
- Charging (if required).

FIGURE 4



WHEN NOT IN USE, KEEP TERMINAL ACCESS DOORS CLOSED.

6. Install Steering Wheel

NOTE: POSITION FRONT WHEELS FORWARD.

- Use 3/4" wrench to remove Hex Locknut and 2-1/4" Dia. Washer from Steering Column (Fig. 5).
- Position Steering Wheel over Steering Wheel Adapter.
- Secure Steering Wheel to Steering Column using 2-1/4" Dia. Washer and Hex Nut (Fig. 5). Torque to 50 ft.-lbs.
- Snap Steering Wheel Insert into center of Steering Wheel. Steering Wheel Insert found in bag of parts.

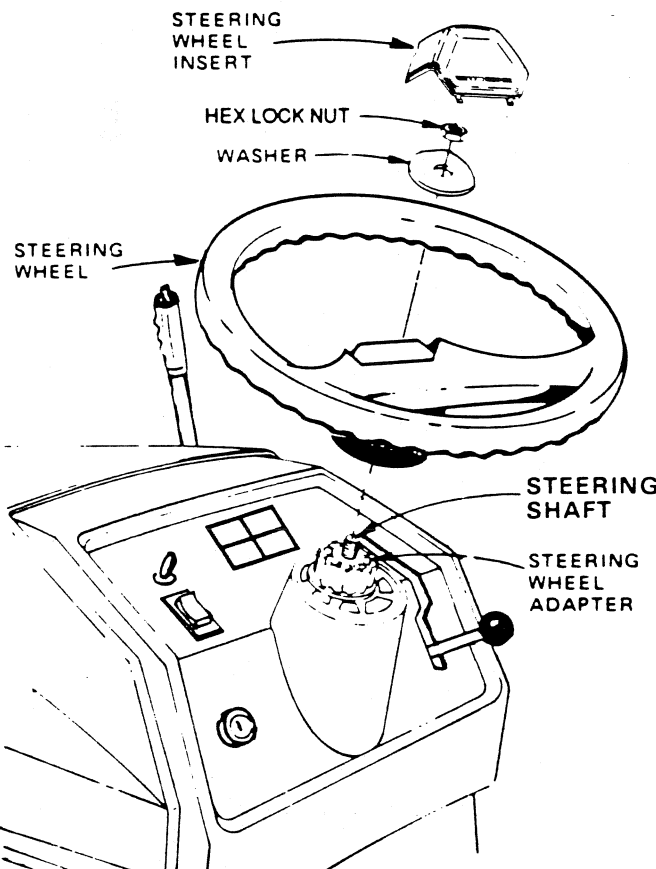


FIGURE 5

7. INSTALL SEAT

SEAT POSITION SHOULD BE ADJUSTED FORWARD OR REARWARD SO THAT THE OPERATOR CAN COMFORTABLY REACH CLUTCH/BRAKE PEDAL AND SAFELY OPERATE TRACTOR (FIG. 10)

- Place Seat on Seat Pan. Screw Hand Adjustment Knob, Flat Washer, and Shoulder Bolt into Seat (Fig. 7). Hand Adjustment Knob, Washer, and Shoulder Bolt found in Bag of Parts.
- Tighten Shoulder Bolt using a 1/2" wrench (Fig. 7). Note that Shoulder Bolt will be loose in Seat slot.
- Hand tighten Adjustment knob. (FIG. 7).
- Place clutch in operating position. Sit on the seat and press Clutch/Brake Pedal all the way down. If operating position is not comfortable, Adjust Seat.
- To Adjust: Raise Seat, loosen Hand Adjustment Knob, slide Seat to desired position, tighten Hand Adjustment Knob securely.



THE SEAT HAND ADJUSTMENT KNOB MUST BE TIGHTENED SECURELY TO PREVENT MOVEMENT OF SEAT.

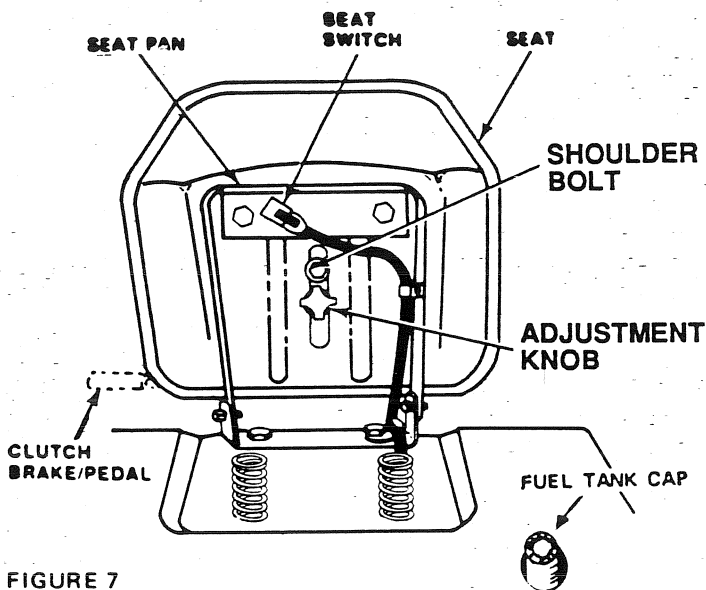


FIGURE 7

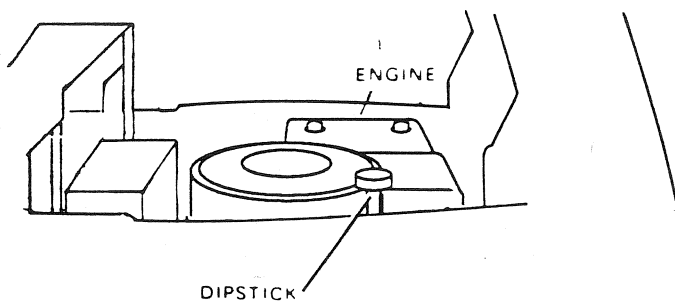


FIGURE 8

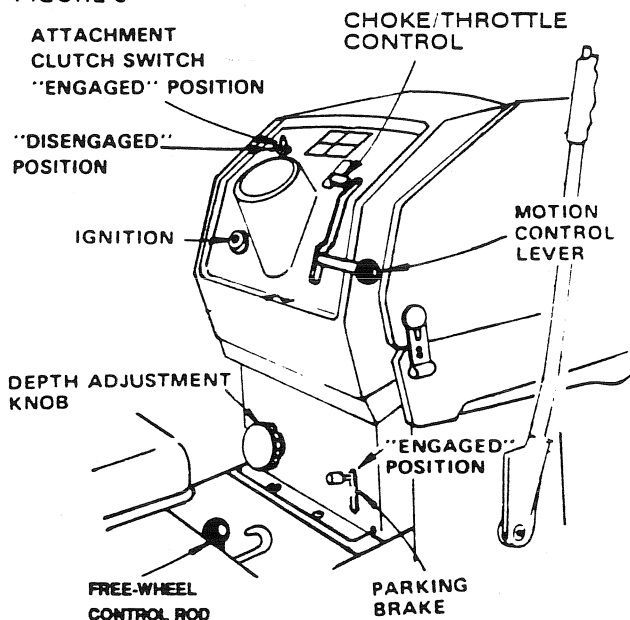


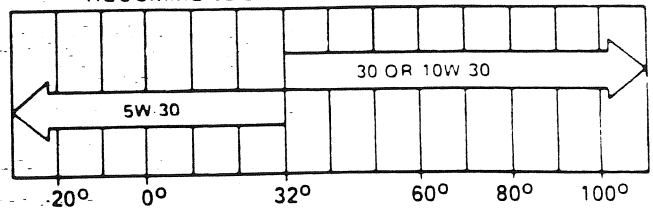
FIGURE 9

## INITIAL SERVICE

1. Raise Hood.
2. This engine has been shipped filled with summer weight oil. For cold weather operation, see chart below. Check engine oil level with Tractor on level ground. Wipe Dipstick (Fig. 8) clean, screw it in tight for a few seconds, remove and read oil level. If necessary, add oil until "FULL" mark is reached.

NOTE: BE CAREFUL NOT TO ALLOW DIRT TO ENTER THE ENGINE WHEN CHECKING OR ADDING OIL OR FUEL.

## RECOMMENDED SAE VISCOSITY GRADES



TEMPERATURE RANGE EXPECTED BEFORE NEXT OIL CHANGE. ALL OILS MUST MEET A.P.I. SERVICE CLASSIFICATION SD, SE, OR SF.

Capacity is 44 oz. NOTE: DO NOT OVERFILL Dipstick assembly must be securely tightened into tube at all times when engine is operating.

3. Fill Fuel Tank (Fig. 7). Use fresh, clean, regular "UNLEADED" automotive gasoline. Use of regular leaded gasoline is not an acceptable substitute. Use of leaded gasoline will increase carbon and lead oxide deposits and reduce valve life. Capacity is 3-1/2 gallons.

CAUTION: EXPERIENCE INDICATES THAT ALCOHOL BLENDED FUELS (CALLED GASOHOL OR USING ETHANOL OR METHANOL) CAN ATTRACT MOISTURE WHICH LEADS TO SEPARATION AND FORMATION OF ACIDS DURING STORAGE. ACIDIC GAS CAN DAMAGE THE FUEL SYSTEM OF AN ENGINE WHILE IN STORAGE.

TO AVOID ENGINE PROBLEMS, THE FUEL SYSTEM SHOULD BE EMPTIED BEFORE STORAGE OF 30 DAYS OR LONGER. DRAIN THE GAS TANK, START THE ENGINE AND LET IT RUN UNTIL THE FUEL LINES AND CARBURETOR ARE EMPTY. USE FRESH FUEL NEXT SEASON. SEE STORAGE INSTRUCTIONS FOR ADDITIONAL INFORMATION.

NEVER USE ENGINE OR CARBURETOR CLEANER PRODUCTS IN THE FUEL TANK OR PERMANENT DAMAGE MAY OCCUR



FILL TO BOTTOM OF GAS TANK FILLER NECK. DO NOT OVERFILL. WIPE OFF ANY SPILLED OIL OR FUEL. DO NOT STORE, SPILL OR USE GASOLINE NEAR AN OPEN FLAME.

4. Reduce tire pressure to 14 PSI in front and 12 PSI in rear Tires. (Tires were overinflated for shipping purposes).

## OPERATION



THIS TRACTOR IS EQUIPPED WITH INTERLOCK SWITCHES TO PREVENT STARTING OF THE TRACTOR ENGINE WHILE THE ATTACHMENT CLUTCH SWITCH (FIG. 9) IS IN THE "ENGAGED" POSITION AND/OR THE CLUTCH/BRAKE PEDAL IS IN THE CLUTCH POSITION (FIG. 10). IMMEDIATELY REPLACE SWITCHES THAT ARE NOT IN PROPER WORKING ORDER. DO NOT ATTEMPT TO DEFEAT THE PURPOSE OF THESE SWITCHES.



## CAUTION TO AVOID INJURY

1. Read owners manual.
2. Know location and function of all controls.
3. Keep guards, safety shields and switches in place and working.
4. Remove objects that can be thrown by blades.
5. Do not mow when children and others are around.
6. Never carry children or passengers.
7. Always look behind machine before backing.
8. Do not mow where machine can tip or slip.
9. If machine stops going uphill, stop blade and back slowly down.
10. Be sure blades and engine have stopped before placing hands or feet near the blades.
11. Remove key when leaving machine.

## STARTING THE ENGINE



**LEARN TO START, STOP AND REVERSE YOUR TRACTOR IN A LARGE, OPEN AREA. LEARN TO STOP BEFORE STARTING TRACTOR.**

**CAUTION: DO NOT ADD ADDITIONAL WEIGHT TO THE TRACTOR OTHER THAN THE OPTIONAL WHEEL WEIGHTS. EXCESSIVE WEIGHT MAY OVERLOAD AND DAMAGE THE TRANSMISSION.**

1. Place Attachment Clutch Switch in "DISENGAGED" position (Fig. 9).
2. Push Clutch/Brake Pedal fully into "BRAKE" position (fig. 10).
3. Place Motion Control Lever in "N" (neutral) position (Fig. 9).
4. Place Parking Brake in "ENGAGED" position (Fig. 9). Pedal should remain locked when released.
5. Move Throttle Control Lever (Fig. 9) to "F" (full throttle stop), then upward to "CHOKE" position. At the "F" position the Lever has a stop. The stop is provided so that you will know when you are at full throttle "F" position and prevents over-travel into choke position.
6. Turn Ignition Key clockwise to "START" position and release Key as soon as engine starts (Fig. 9). Immediately move Throttle Control Lever midway between "F" and "S" positions.  
NOTE: DO NOT RUN STARTER CONTINUOUSLY FOR MORE THAN THIRTY SECONDS AT A TIME. If engine does not start after several attempts, move Throttle Control to "F" (fast) position, wait a few minutes and try again. Refer to Trouble Shooting, page 12.
7. After engine starts move throttle control lever slowly to the "SLOW" position. The first time you start the engine, it will take extra cranking time to move fuel from tank to the engine. NOTE: ALLOW ENGINE TO WARM UP FOR A FEW MINUTES BEFORE ENGAGING CLUTCH OF TRACTOR OR ATTACHMENT.

## WARMING UP THE ENGINE

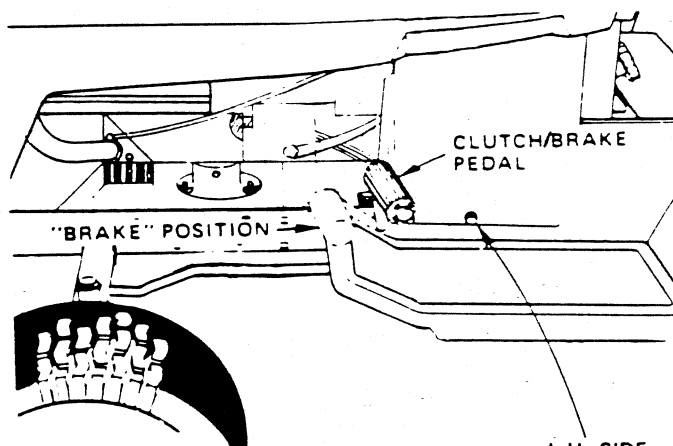
Move Throttle Control mid-way between "F" and "S" positions (Fig. 9). After engine warms up, move Throttle Control Lever to "F" position. NOTE: ALLOW ENGINE TO WARM UP FOR A FEW MINUTES BEFORE OPERATING.

When restarting a warm engine, move Throttle Control Lever to "F" position; "CHOKE" may not have to be used.

## TRACTOR OPERATION

NOTE: THIS TRACTOR IS EQUIPPED WITH AN OPERATOR PRESENCE SENSING SWITCH. ANY ATTEMPT BY THE OPERATOR TO LEAVE THE SEAT WITH THE ENGINE RUNNING AND THE ATTACHMENT CLUTCH SWITCH ENGAGED WILL SHUT OFF THE ENGINE.

1. With engine running and warm, place Throttle Control mid-way between "S" (Slow) and "F" (Fast) positions.
2. Push Clutch/Brake Pedal (Fig. 10) down firmly to disengage parking brake and release Clutch/Brake Pedal slowly.
3. Move Motion Control Lever to desired speed and direction (Fig. 9).
4. If ground travel speed is too slow, move Throttle Control to "F" (FAST) position. Move Motion Control Lever to



L.H. SIDE  
PANEL BOLT  
FIGURE 10

NOTE: ALWAYS OPERATE ENGINE AT FULL ENGINE RPM TO ASSURE BETTER PERFORMANCE AND PROPER DISCHARGE OF MATERIAL.

**CAUTION: BRING TRACTOR TO COMPLETE STOP BEFORE SHIFTING FROM FORWARD TO REVERSE OR VICE VERSA.**



**NEVER PLACE YOUR HANDS OR FEET IN OR UNDER ANY POWERED ATTACHMENT OR NEAR ANY MOVING PART WHILE TRACTOR OR ANY POWERED ATTACHMENT IS RUNNING.**

**DO NOT OPERATE THE MOWER WITHOUT EITHER THE ENTIRE GRASS CATCHER, ON UNITS SO EQUIPPED, OR THE DEFLECTOR GUARD IN PLACE.**

## STOPPING YOUR TRACTOR

**CAUTION: DO NOT CHOKE CARBURETOR TO STOP ENGINE.**

1. Push Clutch/Brake Pedal into full "BRAKE" position.
2. Move Motion Control Lever to "N" (Neutral Position).
3. Place Parking Brake Lever in "ENGAGED" position and release pressure from Clutch/Brake Pedal. Pedal should remain in "BRAKE" position.
4. Place Attachment Clutch Switch in "DISENGAGED" position (Fig. 9) and lower attachment with Attachment Lift Lever (Fig. 11).
5. Move Throttle Control to "S" (slow) position.
6. Turn Ignition Key to "OFF" position and remove key.



**REMOVE KEY WHEN LEAVING TRACTOR TO PREVENT UNAUTHORIZED USE. NOTE: MAKE SURE PARKING BRAKE WILL HOLD TRACTOR SECURE.**

## TRANSPORTING YOUR TRACTOR

For pushing or towing your Tractor, place Motion Control Lever in "N" (neutral) position (Fig. 9). Move the Free-Wheel Control Rod to "ENGAGED" position (Fig. 9) NOTE: DO NOT TOW YOUR TRACTOR FASTER THAN THREE MILES PER HOUR.

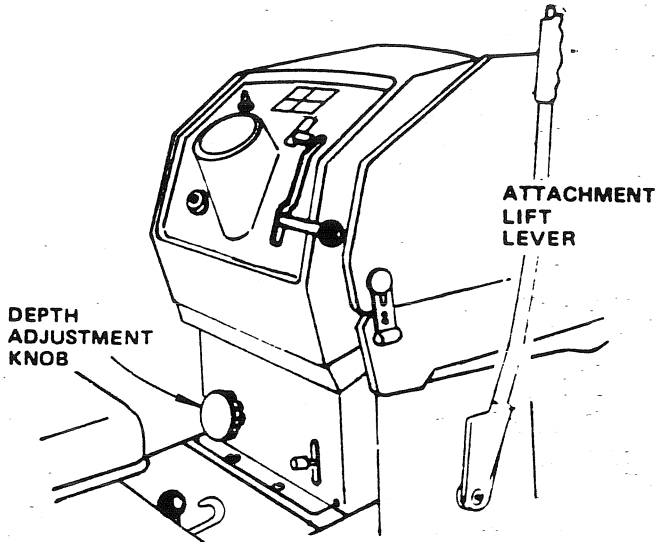


FIGURE 11

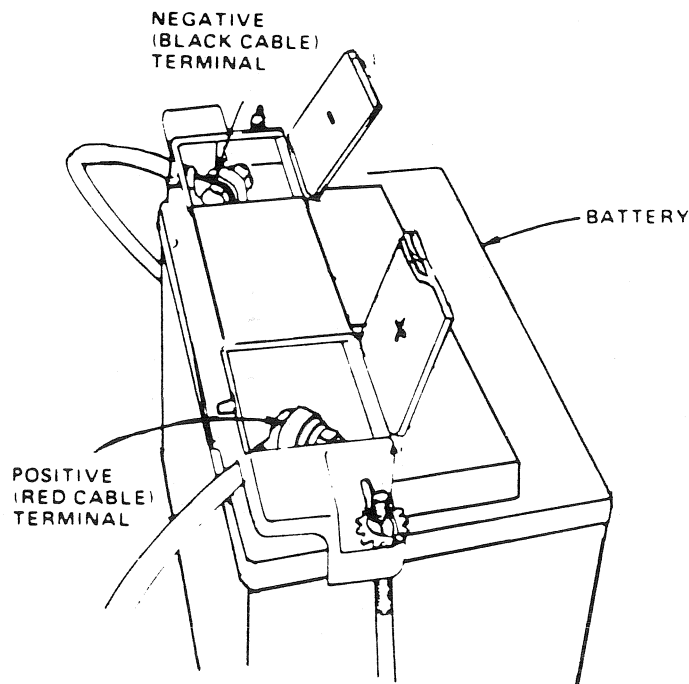


FIGURE 12

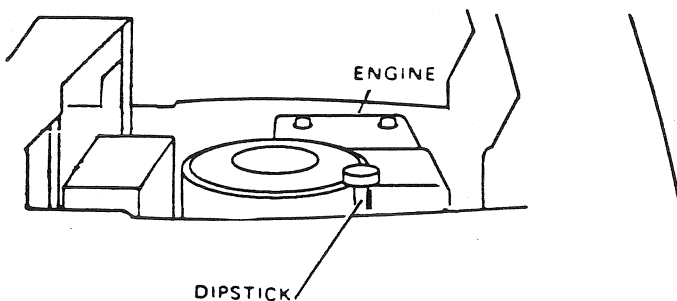


FIGURE 13

## TRACTOR OPERATION ON HILLS

1. Choose the slowest speed BEFORE starting up or down hills.



DO NOT DRIVE UP OR DOWN HILLS WITH SLOPES GREATER THAN 15°, AND DO NOT DRIVE ACROSS ANY SLOPE.

2. AVOID STOPPING OR CHANGING SPEEDS ON HILLS
  - a. If slowing is necessary, move Motion Control Lever toward "N" (neutral) position or Throttle Control Lever to middle position.
  - b. If stopping is absolutely necessary, push Clutch/ Brake Pedal quickly to "Brake" position and engage Parking Brake.
  - c. After stopping your tractor, disengage Parking Brake and release Clutch/Brake Pedal SLOWLY. To start tractor forward, move Motion Control Lever to desired speed.
  - d. Make all turns gradually.

## STARTING YOUR TRACTOR WITH A WEAK BATTERY

If your Battery is too weak to start engine, it should be recharged. If "Jumper Cables" are used for emergency starting follow this procedure: NOTE: YOUR TRACTOR IS EQUIPPED WITH A 12 VOLT NEGATIVE GROUND SYSTEM, THE OTHER VEHICLE MUST ALSO BE A 12 VOLT NEGATIVE GROUND SYSTEM.



LEAD-ACID BATTERIES GENERATE EXPLOSIVE GASES. KEEP SPARKS, FLAME, AND SMOKING MATERIALS AWAY FROM BATTERIES. ALWAYS WEAR EYE PROTECTION AROUND BATTERIES.

1. Open Terminal Access Doors (Fig. 12) to expose terminal connection.
2. Connect each end of the RED cable to the POSITIVE (+) terminals of each battery (taking care not to short against chassis) (Fig. 12).
3. Connect one end of the BLACK cable to the negative (-) terminal of fully charged battery.
4. Connect the other end of the BLACK cable to L.H. Side Panel Bolt (Fig. 10). (away from Gas Tank or Battery).
5. Disconnect cables in reverse order:
  - a. L.H. Side Panel Bolt (Fig. 10).
  - b. Negative terminal of fully charged battery.
  - c. Positive terminals.
6. Close Terminal Access Doors (Fig. 12).



DO NOT USE YOUR TRACTOR BATTERY TO START OTHER VEHICLES. MAKE SURE TERMINAL GUARD ACCESS DOORS ARE CLOSED BEFORE STARTING YOUR TRACTOR.

# TRACTOR MAINTENANCE INSTRUCTIONS

Mower Maintenance is listed on page 16. To keep your tractor running better, longer, perform necessary service using the following Maintenance Schedule.



**DISCONNECT SPARK PLUG WIRE TO PREVENT ACCIDENTAL STARTING BEFORE MAKING ANY INSPECTION, ADJUSTMENT OR REPAIR (EXCEPT CARBURETOR). BE CAREFUL TO AVOID TOUCHING HOT MUFFLER OR ENGINE COMPONENTS.**

## DAILY MAINTENANCE

Make sure all nuts and bolts are tight and cotter pins are secure. Observe all safety precautions. Keep Tractor well lubricated (refer to page 9).

## FIRST 2 HOURS

### 1. CHANGE ENGINE OIL

Changing Oil after the first two hours will help eliminate break-in residue which might be damaging to your Engine. NOTE: BE CAREFUL NOT TO ALLOW DIRT TO ENTER THE ENGINE WHEN CHANGING OIL.

- a. Drain Oil with Engine warm. Loosen Oil Drain Plug (Fig. 14) and remove dipstick (Fig. 13). Catch Oil in a suitable container. Replace Plug.
- b. Refill Engine Oil. (See chart, page 4) Refill capacity is 44 oz. NOTE: DO NOT OVERFILL. Replace Dipstick.

## DAILY OR EVERY 8 HOURS

### 1. CHECK ENGINE OIL LEVEL

NOTE: DO NOT CHECK ENGINE OIL LEVEL WITH ENGINE RUNNING.

Wipe dipstick (Fig. 13) clean, screw it down tight for a few seconds, remove and read Oil Level. If necessary, add Oil until "FULL" mark is reached. See chart, page 4). NOTE: DO NOT OVERFILL.

## EVERY 25 HOURS

### 1. BRAKE ADJUSTMENT

This tractor is equipped with an adjustable disc brake mounted on the right side of the transaxle (Fig. 16).



**IF TRACTOR REQUIRES MORE THAN SIX FEET STOPPING DISTANCE IN HIGHEST GEAR, THEN BRAKE MUST BE ADJUSTED.**

IMPORTANT: PARKING BRAKE MUST BE DISENGAGED AND GEAR SHIFT LEVER IN NEUTRAL WHILE MAKING ADJUSTMENT.

- a. Depress Clutch/Brake pedal and engage Parking Brake.
- b. Measure distance between Brake Operating Arm and Nut "A" on Brake Rod.
- c. If distance is other than 1-1/2", loosen Jam Nut (Fig. 16) and turn Nut "A" until distance becomes 1-1/2". Retighten Jam Nut against Nut "A".

Road test Tractor for proper stopping distance as stated above. Readjust if necessary.

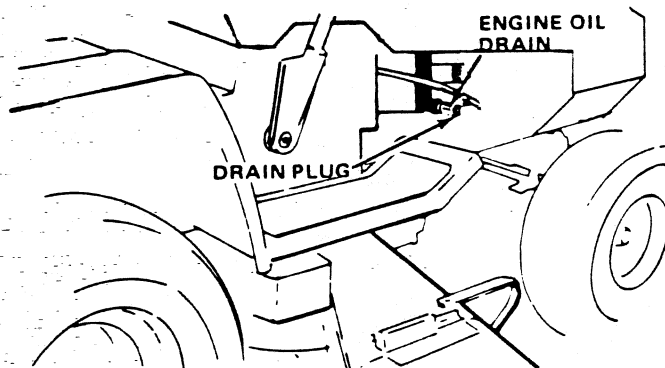


FIGURE 14

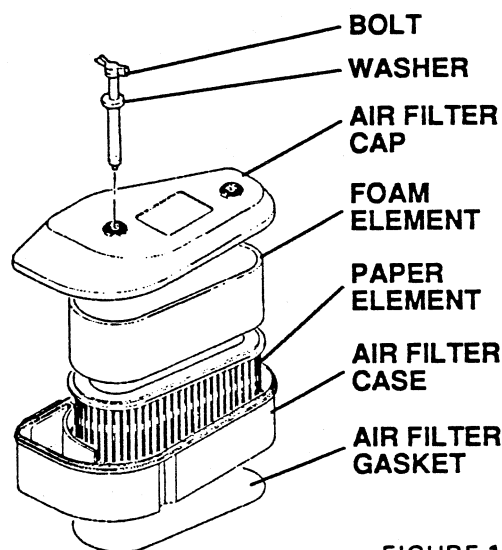


FIGURE 15

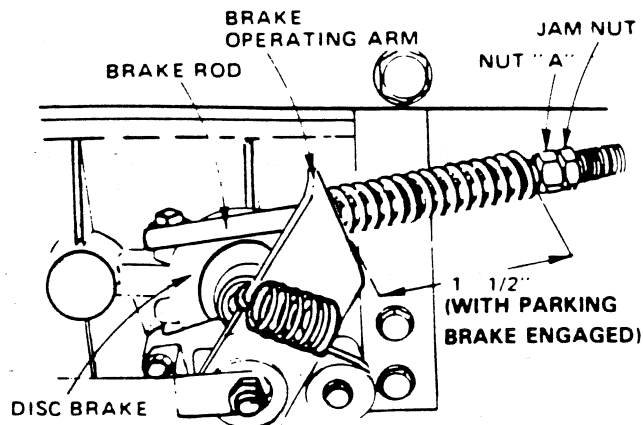


FIGURE 16



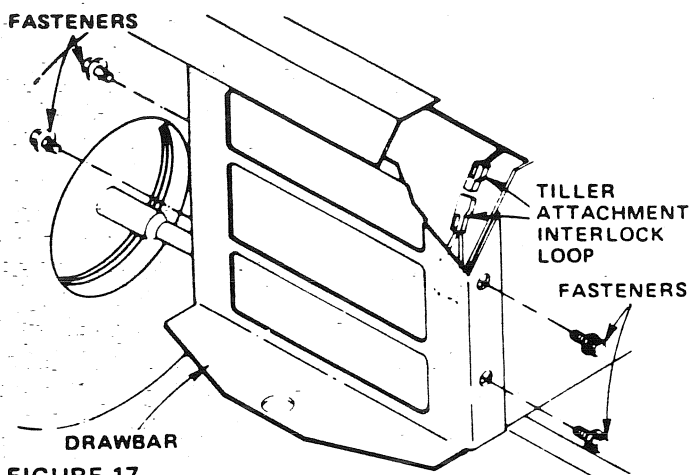


FIGURE 17

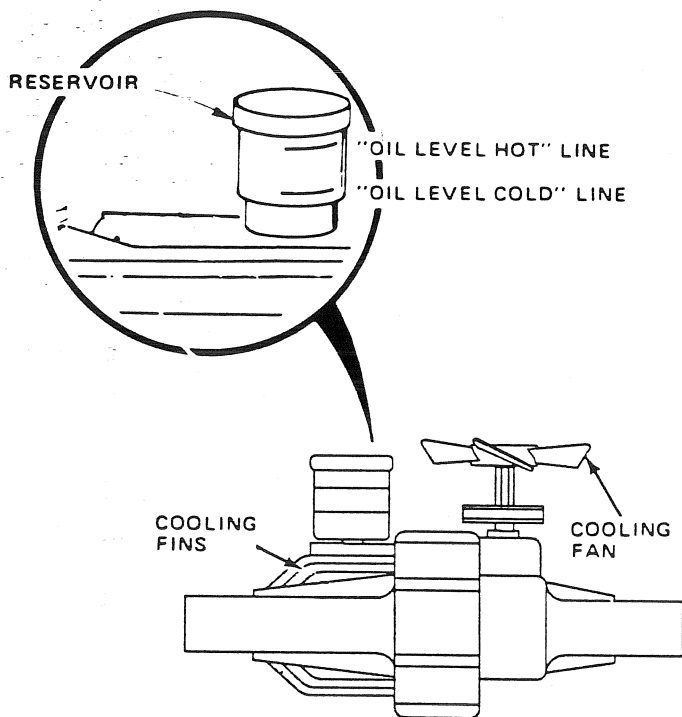


FIGURE 18

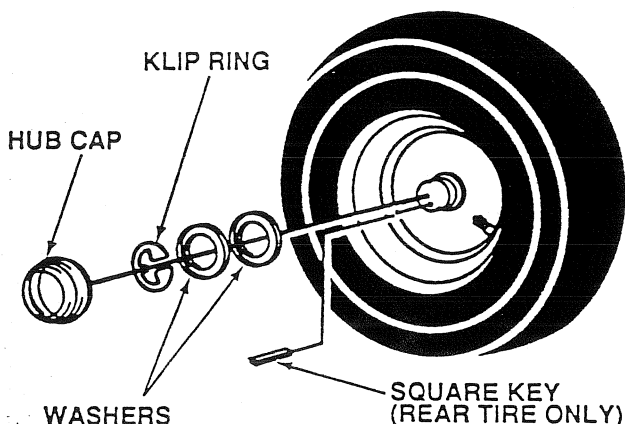


FIGURE 19

2. CHECK PUMP ASSEMBLY FLUID LEVELS.

NOTE: BEFORE CHECKING OIL LEVEL, CLEAN RESERVOIR AND CAP WITH CLOTH TO REMOVE DUST OR GRASS CLIPPINGS.

- a. Using a 9/16" wrench remove 4 fasteners to remove Drawbar (Fig. 17).
- b. Disconnect Tiller Attachment Interlock Loop (Fig. 17.)
- c. Check for proper fluid level in Reservoir.
- d. Fluid level should be above the "Oil Level Cold" line.
- e. Remove cap on reservoir, and bladder (Fig. 18), and fill to "Oil Level Cold" line with SAE 10W30. NOTE: RESERVOIR CAP IS REMOVED WITH A CLOCKWISE ROTATION.
- f. Replace Cap until snug (Do not overtighten).

3. CHECK HYDROSTATIC TRANSMISSION COOLING

DO NOT ATTEMPT TO CLEAN FAN OR TRANSMISSION WHILE ENGINE IS RUNNING OR WHILE HYDROSTATIC TRANSMISSION IS HOT.

- a. Inspect Cooling Fan (Fig. 18) to assure fan blades are intact and clean.
- b. Inspect Coolings Fins (Fig. 18) for dirt, grass clippings and other material that could hinder fan air from properly cooling transmission.
- c. Thoroughly clean the Coolings Fins with a cloth, brush or compressed air.

4. TIRE CARE

- a. Maintain tire pressure in front at 14 PSI and rear tires at 12 PSI.
- b. Keep tires free of gasoline, oil, or insect control chemicals which can harm rubber.
- c. Avoid stumps, stones, deep ruts and other hazards that may cause tire damage.
- d. Removing front wheel for tire repair (Fig. 19).
  - Block up front axle securely
  - Remove Hub Cap, Klip ring and Washer to allow wheel removal
  - Repair tire and reassemble. Replace washers and snap Klip Ring securely in axle groove. Replace Hub Cap.
- e. Removing rear wheel for tire repair (Fig. 19).
  - Block up rear axle securely.
  - Remove Hub Cap, Klip Ring and Washers to allow wheel removal.
  - Repair tire and reassemble. Replace Tire, Washers, Klip Ring and Hub Cap.

**! WHEN MOUNTING TIRES, UNLESS BEADS ARE SEATED, OVERINFLATION CAN CAUSE A FATAL EXPLOSION.**

## EVERY 50 HOURS



**WEAR SAFETY GLASSES IF USING COMPRESSED AIR.**

### 1. CLEAN AIR SCREEN

Air Screen (Fig. 21) must allow free-flow of air to prevent engine damage from overheating. Clean with a wire brush, compressed air or water pressure to remove dirt, chaff, stubborn dried gum and fibers.

### 2. CLEAN ENGINE COOLING SYSTEM

Grass, oil or dirt may clog the air cooling system, especially after prolonged service cutting dry grasses.

### 3. LUBRICATE STEERING AND FRONT WHEELS

There is a grease fitting on each front wheel and axle spindle. Using a grease gun, give each grease fitting two shots of Extreme Pressure Lubricating Grease (Fig. 22).

### 4. OIL PIVOT POINTS

Place several drops of S.A.E. 30 Oil at points where parts move against each other, especially:

- Hood Hinges
- Foot Pedal Shaft (both ends)
- Lift Shaft (both ends)

SEE LUBRICATION CHART, PAGE 13.

### 5. CHECK BATTERY

- Battery acid level in each battery cell should be even with bottom of tubes in cells (Fig. 23). Add distilled water if necessary. NOTE: DO NOT OVERFILL.
- Keep Battery and Terminals clean. Refer to step 6.
- Keep Battery Bolt tight.
- Keep Vent Caps tight and small vent holes in Caps open.
- Recharge at 6 amperes for 1 hour.

### 6. CLEAN BATTERY AND TERMINALS

Corrosion and dirt on the Battery and Terminals cause the Battery to "Leak" power and hinders the operation of the charging system.

- Remove the Battery from the Tractor and wash with four tablespoons of baking soda to one gallon of water. NOTE: BE CAREFUL NOT TO GET THE SODA SOLUTION INTO THE CELLS. Rinse the Battery with plain water, dry and reinstall on Tractor.
- Clean terminals and cable ends with a wire brush until bright. Replace Battery Cables. Coat terminal connections with Petroleum Jelly

### 7. CLEAN AIR CLEANER ELEMENT (FIG. 15)

- Remove two bolts and air filter cap.
- Remove foam element. Wash foam in liquid detergent and warm water to remove dirt. Wrap foam in cloth and squeeze dry. Soak foam in clean engine oil, then squeeze out excess oil.
- Remove paper element and clean by gently tapping or washing in detergent and water. Do not use pressurized air to paper element to avoid breakage. Do not oil paper element.

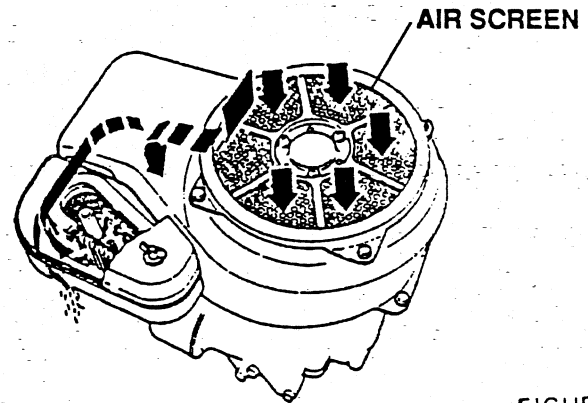


FIGURE 21

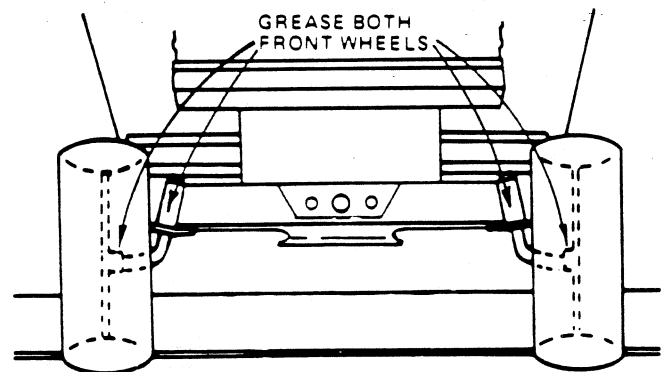


FIGURE 22

### CUT AWAY VIEW

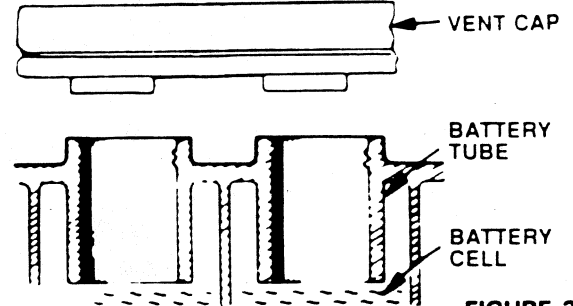


FIGURE 23

**CAUTION: PETROLEUM SOLVENTS ARE NOT TO BE USED TO CLEAN PAPER CARTRIDGE. THEY MAY CAUSE DETERIORATION OF THE CARTRIDGE. DO NOT OIL PAPER CARTRIDGE. DO NOT USE PRESSURIZED AIR.**

**NOTE: NEVER RUN ENGINE WITH AIR CLEANER REMOVED.**

### 8. CHANGE ENGINE OIL

The best time to drain Engine oil is at the end of a day's operation when all dirt and foreign materials are suspended

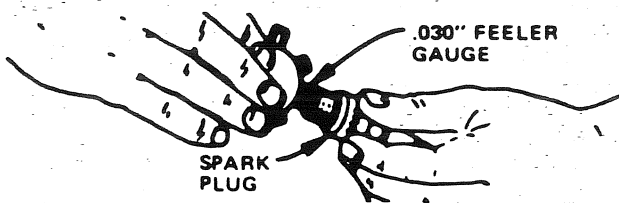


FIGURE 24

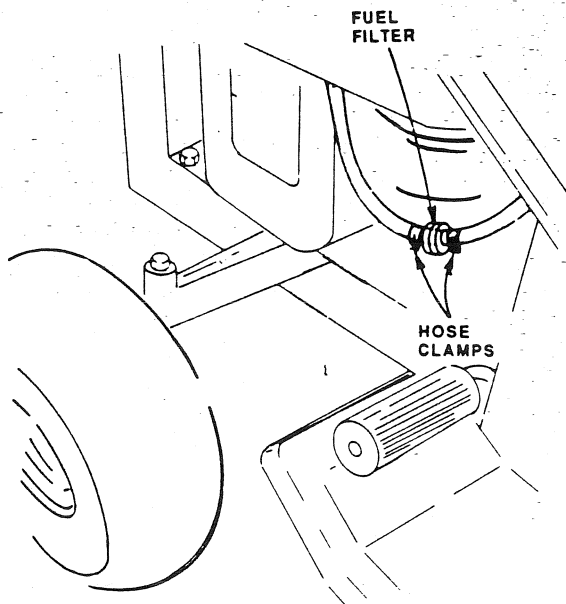


FIGURE 25

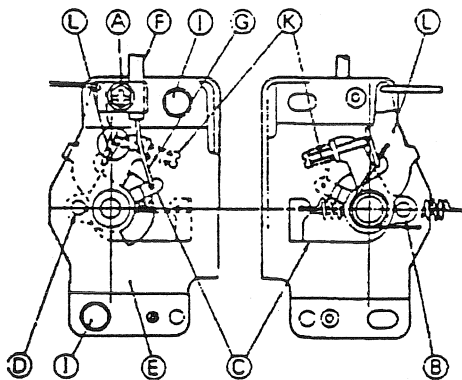


FIGURE 26

## 9. MUFFLER

Do not operate the tractor without Muffler or tamper with the exhaust system. Damaged Mufflers or Spark Arresters could create a fire hazard. Inspect periodically and replace if necessary. If your Engine is equipped with a Spark Arrester Screen Assembly, remove every 50 hours for cleaning and inspection. Replace if necessary.

## EVERY 100 HOURS

### 1. REPLACE SPARK PLUGS

Replace Spark Plugs at the beginning of each season or every 100 hours, whichever comes first. Gap should be set at .030 INCH (Fig. 24). Use Champion RN11YC or equivalent.

### 2. REPLACE AIR CLEANER PAPER CARTRIDGE

Refer to step 7, under Every 50 Hours.

### 3. REPLACE AIR CLEANER FOAM PRE-CLEANER

Refer to Step 7, under Every 50 Hours.

## EVERY 200 HOURS

### 1. REPLACE IN-LINE FUEL FILTER

- With Engine cool, remove Hose Clamps from Fuel Lines at Fuel Filter (Fig. 25)
- Remove filter and plug Fuel Line Sections as removed from both ends of Fuel Filter. (Fig. 25)
- Place New Fuel Filter in position with fuel line (arrow on side of filter in direction of Fuel Flow) and reinstall Hose Clamps.



**BE SURE THERE ARE NO FUEL LINE LEAKS AND THAT HOSE CLAMPS ARE PROPERLY INSTALLED.**

## AS NEEDED

### 1. THROTTLE CONTROL CABLE ADJUSTMENT

Never attempt to change maximum engine speed. This is preset at the factory and should only be changed by a qualified service technician.

- Link throttle cable (G) to speed control lever (C) and clamp throttle cable outer housing (F) temporarily (Fig. 26).
- With throttle lever on dash in "FAST" position, align hole (B) of speed control lever (C) with hole (D) of control plate (E) and insert 5 mm (0.24 in.) dia. pin or 5 mm bolt through two holes (Fig. 26).
- Pull out throttle cable outer housing (F) to remove any slack and tighten cable clamp bolt (A) (Fig. 26).
- Remove 6 mm pin and set throttle lever on dash in "CHOKE" position. Make sure carb. choke valve is completely closed (Fig. 26).

### 2. CARBURETOR ADJUSTMENT

**NOTE: AIR CLEANER MUST BE INSTALLED TO ENGINE BEFORE STARTING.**

#### Fast Idle Speed Adjustment

- Start and warm up engine without load.
- Loosen two control plate bolts (I) (Fig. 26).
- Align hole (B) of speed control lever (C) with hole (D) of control plate (E) and insert 6 mm (0.24 in.) dia. pin or 6 mm bolt through two holes (Fig. 26).

**NOTE: MAKE SURE CHOKE VALVE IS FULLY OPENED.**



**REFER TO "STARTING THE ENGINE" PAGE 5.**

- d. Adjust fast idle speed for specified rpm (3275-3425 rpm) by moving control plate (E) (Fig. 26).
- e. Tighten two bolts (I) securely in a manner to avoid changing specified speed (Fig. 26).
- f. Stop engine, remove 6 mm pin, and set throttle lever on dash in "CHOKE" position. Make sure carb. choke valve is closed completely (Fig. 26).

#### Slow Idle Speed Adjustment

- a. Turn carb. pilot screw (B) in until it just seats and then back out 1-1/2 turns (Fig. 26a).
  - b. Start and warm up engine without load.
  - c. Move throttle lever on dash to "SLOW" position.
  - d. Adjust slow idle speed to specified rpm (1450-1650 rpm) by moving throttle stop screw(A) (Fig. 26a).
  - e. Adjust pilot screw (B) until engine idles at maximum speed and then turn pilot screw out additional 1/4 turn (Fig. 26a).
  - f. Re-adjust slow idle speed, to specified rpm (1450-1650 rpm).
3. REPLACE TRACTOR MOTION DRIVE BELT  
Park the tractor on level area. Engage Parking Brake.  
NOTE: BELT INSTALLATION DECAL UNDER LEFT FOOT REST
- a. Remove Mower (See Mower Section) (Page 18 ).
  - b. Remove Belt from Stationary Idler (Fig. 27).
  - c. Pull belt over top of Clutching Pulley.
  - d. Release Parking Brake. Pull Belt over top of Clutching Pulley (Fig. 27).
  - e. Place top side of Belt between blades of fan and rotate fan (Fig. 28). Remove Belt from Input Pulley (Fig. 28).
  - f. Using a 9/16" wrench, remove Clutch Locator (Fig. 27 - Inset).
  - g. Disconnect Clutch Wire Harness. Rotate Clutch housing and Remove belt from ground drive pulley and belt keepers.
  - h. Install Belt by reversing above procedure. NOTE: REPLACE ONLY WITH BELT LISTED IN REPAIR PARTS SECTION OF THIS MANUAL.
4. CLEAN BATTERY AND TERMINALS  
Corrosion and dirt on the Battery and Terminals cause the Battery to discharge.

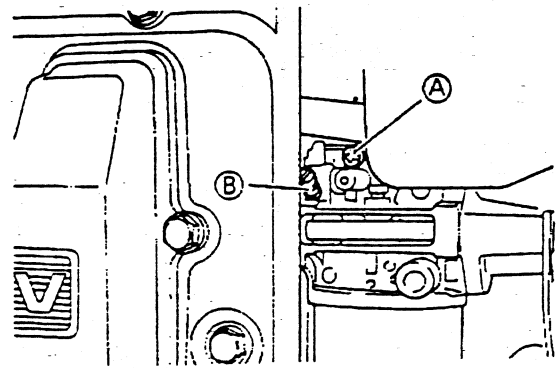


FIGURE 26A

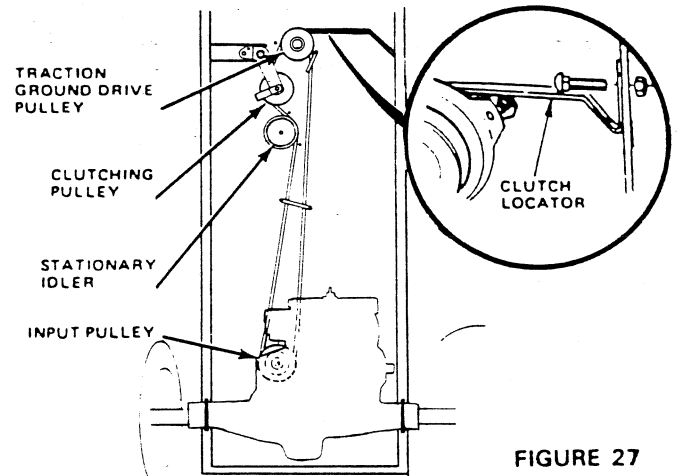


FIGURE 27

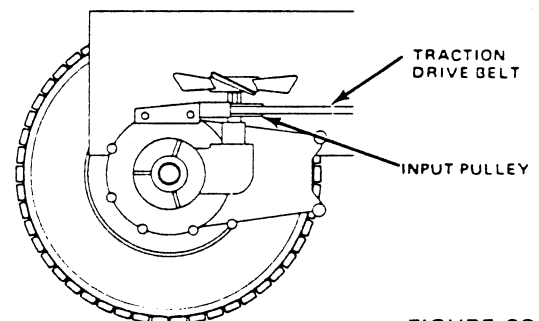
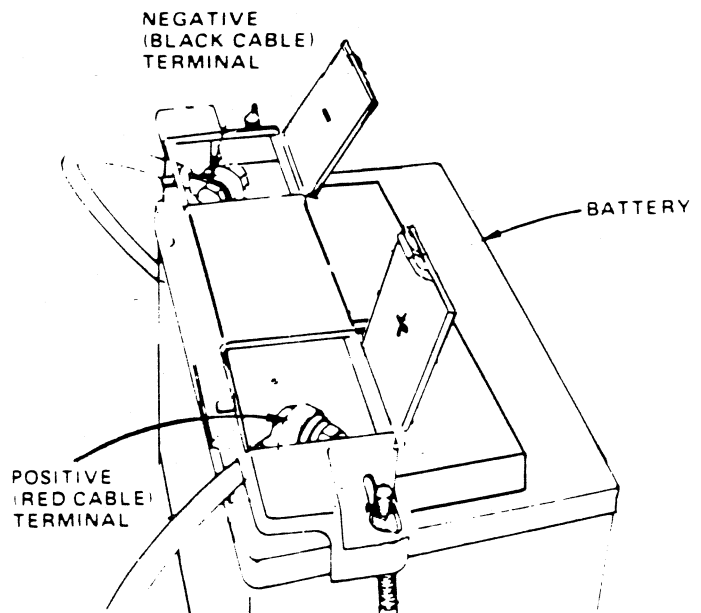


FIGURE 28



**LEAD-ACID BATTERIES GENERATE EXPLOSIVE GASES. KEEP SPARKS, FLAME, AND SMOKING MATERIALS AWAY FROM BATTERIES. ALWAYS SHIELD YOUR EYES AROUND BATTERIES.**

- a. Remove Terminal Guard (Fig. 29).
  - b. Disconnect BLACK Battery Cable first then RED Battery Cable and remove Battery from Tractor. Wash Battery with four tablespoons of baking soda to one gallon of water. NOTE: BE CAREFUL NOT TO GET THE SODA SOLUTION INTO CELLS. Rinse the Battery with plain water, dry and reinstall on Tractor.
  - c. Clean Terminals and Battery Cable ends with a wire brush until bright. Replace Battery Cables, connecting RED Battery Cable to Positive Terminal first, then BLACK Battery Cable to Negative Terminal (Fig. 29). Coat Terminal Connections with petroleum jelly.
  - d. Replace Terminal Guard.
5. FINISH  
Keep tractor finish area and seat free of gasoline, oil, insect chemicals or battery acid (electrolyte). Protect painted surfaces with automotive type wax.



# TROUBLESHOOTING

PROBLEM	POSSIBLE REMEDY
<b>WILL NOT START</b>	Fill Tank with Gasoline. Check Fuel Line and Carburetor (clean if necessary) Replace Fuel Filter. Use Fresh Fuel Recharge or replace Battery Check Wiring Replace Spark Plug(s) and adjust gap Drain and replace oil for proper temperature
<b>WILL NOT TURN OVER</b>	Push clutch/brake pedal into brake position Move attachment clutch switch to "disengaged position" Charge Battery Check fuse for fault and replace Check All Wire Connections Replace Ignition Switch Engage Interlock Switch Replace Interlock Switch Replace Solenoid Replace Spark Plug(s) Reattach Tiller Attachment Wire Loop
<b>ENGINE CLICKS BUT WON'T START</b>	Clean Battery Terminals Replace Solenoid or Starter Charge or Replace Battery Check all wire Connections and "ground" points.
<b>HARD TO START</b>	Place Throttle Control in "FAST" position and run starter several times to clear out gas Remove and clean Tank and lines. Replace Fuel Filter Remove Air Filter and clean Replace Spark Plug(s) and adjust gap Recharge or replace Battery Check the wiring and Spark Plug(s) Drain Fuel Tank and Carburetor, use fresh fuel and replace Spark Plug(s) Make necessary adjustments to Carburetor Major Engine Overhaul Use proper oil for cold weather conditions
<b>ENGINE MISSES OR LACKS POWER</b>	Shift to a lower gear or reduce load Check Spark Plug(s) and check for loose wires Replace Spark Plug(s) and adjust gap Remove and clean Air Cleaner Clean Air Screen Drain Fuel Tank & Carburetor, use fresh fuel Replace Fuel Filter Make necessary carburetor adjustments Add or change oil Major Engine overhaul
<b>ENGINE OVERHEATS</b>	Clean Air Screen Add or change oil Clean Engine Cooling Fins Remove and clean Muffler or replace Remove and clean Air Filter Use fresh fuel and adjust Carburetor
<b>NO LIGHTS</b>	Check Fuse, Switch and wire connections. Replace headlight bulbs.
<b>WON'T CHARGE</b>	Check fuse for fault and replace Replace Battery Replace Diode Assembly Replace Alternator
<b>OPERATOR PRESENCE SYSTEM WILL NOT SHUT DOWN ENGINE WHEN OPERATOR LEAVES SEAT</b> NOTE: This tractor is equipped with an operator presence sensing system. Any attempt by the operator to leave the seat with the engine running and the attachment clutch engaged will shut down the engine.	Check all wire connections Check seat switch Check operator presence relay. Check attachment clutch switch.
<b>TRACTOR WILL NOT ADVANCE</b>	Free Wheel Knob is depressed Add fluid to pump Replace motion control drive belt or correct routing Replace clutch spring for traction drive belt
<b>UNSATISFACTORY MOWER PERFORMANCE UNEVEN DISTRIBUTION OF CLIPPINGS</b>	Place throttle control in "FAST" position Check air pressure in tires Check front to rear and side to side mower adjustment Use a slower ground speed Replace mower blades Reinstall mower blades with top of blade up Clean underside of mower deck

**MOWER BLADES WILL NOT ROTATE.**

Install new Mower Drive Belt  
Reinstall Mower Drive Belt  
Replace Frozen Mandrel  
Replace Frozen Idler Pulley

**EXCESSIVE MOWER VIBRATION**

Replace Bent or Unbalanced Blades  
Replace Mandrel, Straighten Deck or replace

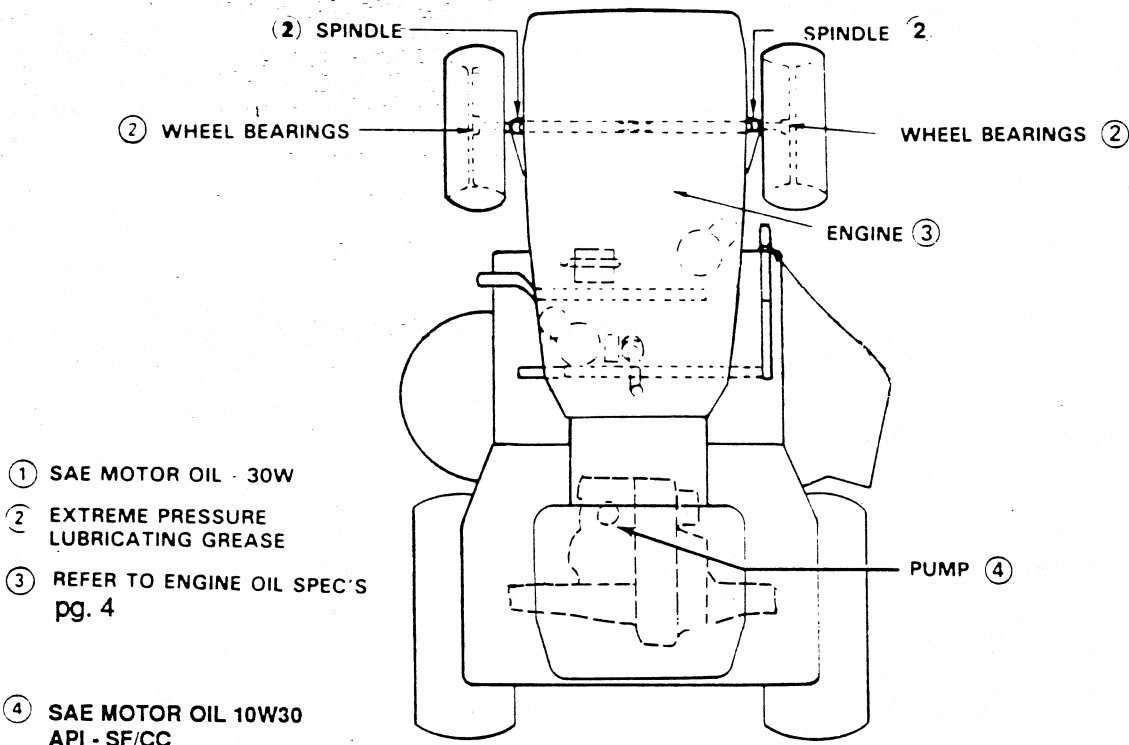
**UNEVEN CUT OR SCALPING**

Readjust Mower  
Replace Blades

**WIND ROWING STRIPPING OR DROPPING OF GRASS CLIPPINGS**

Let grass dry out  
Clean underside of Mower Deck  
Readjust Mower  
Replace Blades

## LUBRICATION CHART



## STORAGE

### 1. FUEL SYSTEM

IT IS IMPORTANT TO PREVENT GUM DEPOSITS FROM FORMING IN ESSENTIAL FUEL SYSTEM PARTS SUCH AS THE CARBURETOR, FUEL FILTER, FUEL HOSE, OR TANK DURING STORAGE. ALSO, EXPERIENCE INDICATES THAT ALCOHOL BLENDED FUELS (CALLED GASOHOL OR USING ETHANOL OR METHANOL) CAN ATTRACT MOISTURE WHICH LEADS TO SEPARATION AND FORMATION OF ACIDS DURING STORAGE. ACIDIC GAS CAN DAMAGE THE FUEL SYSTEM OF AN ENGINE WHILE IN STORAGE. TO AVOID ENGINE PROBLEMS, THE FUEL SYSTEM SHOULD BE EMPTIED BEFORE STORAGE OF 30 DAYS OR LONGER.

- Drain fuel tank and carburetor by allowing the engine to run out of gasoline.
- Dispose of gasoline if not to be used. NOTE: GASOLINE STORED FOR SEVERAL MONTHS LOSES ITS VOLATILITY (ABILITY TO BURN EFFECTIVELY).

### 2. ENGINE OIL

Drain (with engine warm) and replace with clean engine oil. (See chart, page 4).

### 3. CYLINDERS

- Remove Spark Plug.
- Pour one ounce of oil through spark plug holes into cylinders.
- Turn Ignition Key to "START" position for a few seconds to distribute oil.
- Replace with new Spark Plugs.

### 4. BATTERY

- Remove battery if tractor is not used regularly during winter months. Store in cool, dry place (above 50°F). CAUTION: A DIRTY BATTERY CAN RUIN A FLOOR. CLEAN BATTERY BEFORE STORAGE.
- Re-charge each month if necessary. NOTE: BATTERIES NOT IN USE FOR SEVERAL MONTHS AND NOT KEPT FULLY CHARGED, PRODUCE SULPHATE DEPOSITS ON PLATES WHICH CANNOT BE REMOVED BY RECHARGING.

### 5. GENERAL CLEANING

Clean engine, battery, seat, finish, etc. of all foreign matter.

### 6. STORE IN A CLEAN AND DRY AREA.

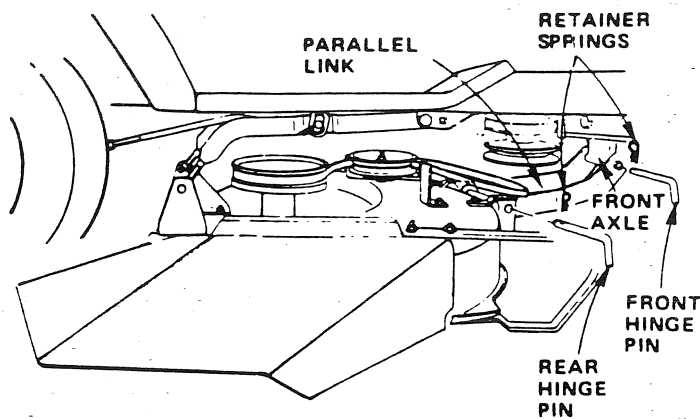


FIGURE 30

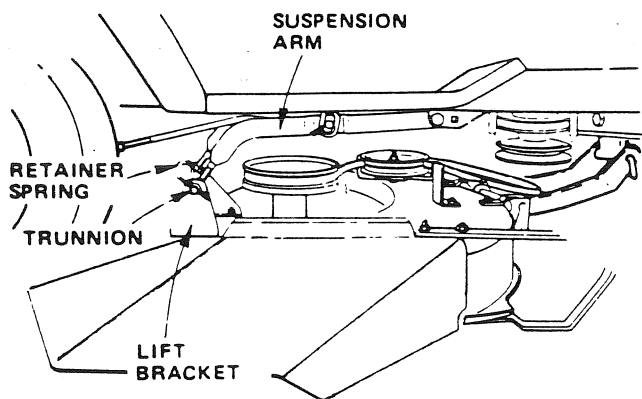


FIGURE 31

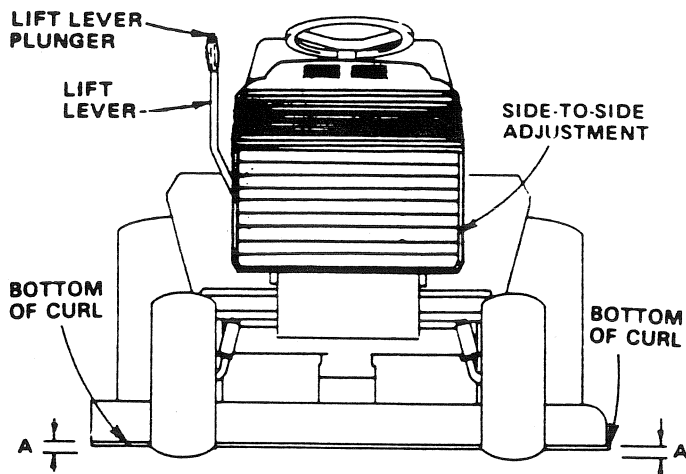


FIGURE 32

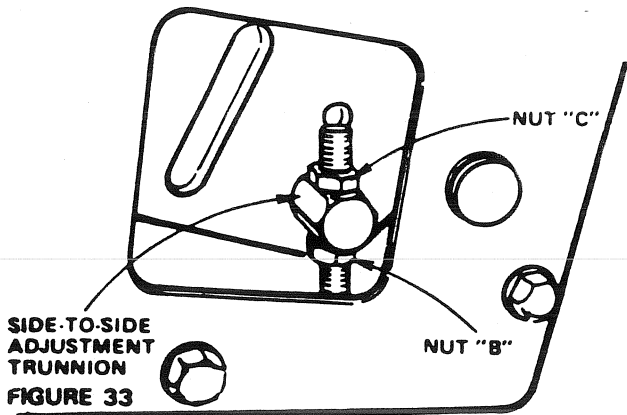


FIGURE 33

## MOWER INSTALLATION

Your 38" Mower installs without the use of tools. Raise Lift Lever to its highest position. Turn Depth Adjustment Knob to lowest position (Fig. 36).

1. Install Front Hinge Pin through Axle and Parallel Link (Fig. 30). Secure with Retainer Spring.
2. Install Rear Hinge pin through Mower Lift Brackets and Parallel Link (Fig. 30). Secure with Retainer Spring.
3. Move Lift Lever forward to lower Suspension Arms. Slide Trunnions through Lift Bracket holes and secure with Retainer Spring (Fig. 31).
4. With belt routed around R.H. Mower Mandrel and Idler Pulley, roll belt over Mower Drive Pulley (Fig. 43) Drive Schematic Decal on Mower Housing.

5. Roll Belt over L.H. Mower Mandrel.

6. Use Lift Lever to raise mower.

NOTE SEE MOWER ADJUSTMENT, BELOW

7. Turn Depth Adjustment Knob clockwise (↻) to the middle of its travel.

### FOR ANY ADJUSTMENTS, INSPECTION OR MAINTENANCE:

1. PUSH TRACTOR CLUTCH/BRAKE PEDAL COMPLETELY INTO "BRAKE" POSITION.
2. MOVE MOTION CONTROL LEVER TO "N" NEUTRAL POSITION.
3. PLACE PARKING BRAKE IN "ENGAGED" POSITION. REMOVE FOOT FROM PEDAL.
4. PLACE ATTACHMENT CLUTCH SWITCH IN "DISENGAGED" POSITION.
5. TURN IGNITION KEY TO "OFF" POSITION.
6. MAKE ABSOLUTELY SURE THE BLADES AND ALL MOVING PARTS HAVE COMPLETELY STOPPED.
7. REMOVE THE IGNITION KEY.
8. DISCONNECT THE SPARK PLUG WIRE FROM THE SPARK PLUG AND KEEP WIRE AWAY FROM THE PLUG TO PREVENT INJURY FROM ACCIDENTAL STARTING. BE CAREFUL TO AVOID TOUCHING HOT ENGINE OR MUFFLER COMPONENTS.

NOTE: BEFORE CHECKING THE SIDE TO SIDE AND FRONT TO REAR ADJUSTMENTS, BE SURE PRESSURE IN FRONT TIRES IS 14 PSI AND PRESSURE IN REAR TIRES IS 12 PSI. IF TIRES ARE OVER OR UNDER INFLATED YOU WILL NOT PROPERLY ADJUST YOUR MOWER.

### DEPTH ADJUSTMENT (Fig. 36)

Adjustment for mower height is made with the Depth Adjustment Knob. Raise mower cutting height by turning Depth Adjustment Knob clockwise (↻). Lower Mower cutting height by turning Depth Adjustment Knob counterclockwise (↺).

### LEVEL MOWER FROM SIDE TO SIDE

(SEE MOWER ADJUSTMENT, ABOVE)

1. Park tractor on level surface. Depress Lift Lever Plunger and use Lift Lever to raise mower to maximum cutting height.
2. Measure height from bottom of curl to ground level at front of mower. Distance "A" should be the same on both side of mower (Fig. 32).
3. If distance "A" needs to be changed, snap out Access hole Cover on L.H. Side above Footrest. Use 9/16" wrench on Nuts "B" and "C" at side-to-side adjustment Trunnion (Fig. 33).

4. To raise left side of mower, loosen Nut "B" and tighten Nut "C".
5. To lower left side of mower, loosen Nut "C" and tighten Nut "B".  
NOTE: ONE ROTATION OF ADJUSTMENT NUT IS EQUIVALENT TO APPROXIMATELY 3/16" HEIGHT CHANGE.
6. Be sure all Nuts are securely tightened.  
NOTE: SEE MOWER ADJUSTMENT, FRONT-TO-REAR.

## ADJUST MOWER FROM FRONT TO REAR

1. To obtain the best cutting results, your Mower Housing should be adjusted so the Front and Rear Flange distance "D" (Fig. 34) is 1/2" lower in front when the mower is positioned in the highest cutting position.  
NOTE: MEASURE DISTANCE "D" FROM GROUND LEVEL TO BOTTOM OF CURL ON RIGHT REAR FLANGE AND COMPARE TO DISTANCE "D" ON RIGHT FRONT FLANGE.
2. To raise rear of mower, loosen Nut "E" on both Rear Suspension Arms. Screw both Nuts "F" up EQUAL NUMBER OF TURNS (Fig. 35).
3. When distance "D" is 1/2" lower at front than at rear, tighten Nut "E".
4. To lower rear of mower, loosen Nut "F" on both Rear Suspension Arms an EQUAL NUMBER OF TURNS (Fig. 35).
5. When distance "D" is 1/2" lower at front than rear, retighten Nuts "E".

NOTE: WHEN ADJUSTING REAR SUSPENSION TRUNNIONS, ALWAYS ADJUST BOTH EQUALLY SO MOWER WILL STAY LEVEL.

## OPERATION - MOWER



READ THE "RULES FOR SAFE OPERATION" CAREFULLY BEFORE OPERATING YOUR MOWER.

THE MOWER MUST BE ADJUSTED PROPERLY FROM FRONT TO REAR AND LEVELED FROM SIDE TO SIDE BEFORE OPERATING. THIS IS NECESSARY FOR LEVEL AND EFFICIENT MOWING.

1. Place Attachment Clutch Switch in "DISENGAGED" position (Fig. 36).
2. Push tractor Clutch/Brake Pedal fully into "BRAKE" position.
3. Place Motion Control Lever in "N" (neutral) position.

NOTE: CLUTCH/BRAKE PEDAL MUST BE DEPRESSED AND ATTACHMENT CLUTCH SWITCH IN "DISENGAGED" POSITION BEFORE TRACTOR WILL START.

4. Start tractor and set engine speed to about 1/3 to 1/2 throttle before engaging mower. After mower is "ENGAGED" and you have started forward travel, set to FULL THROTTLE.

NEVER "ENGAGE" MOWER EXCEPT WHEN SITTING ON TRACTOR SEAT.



NOTE: THIS TRACTOR IS EQUIPPED WITH AN OPERATOR PRESENCE SENSING SWITCH. ANY ATTEMPT BY THE OPERATOR TO LEAVE THE SEAT WITH THE ENGINE RUNNING AND THE ATTACHMENT CLUTCH ENGAGED WILL SHUT OFF THE ENGINE.

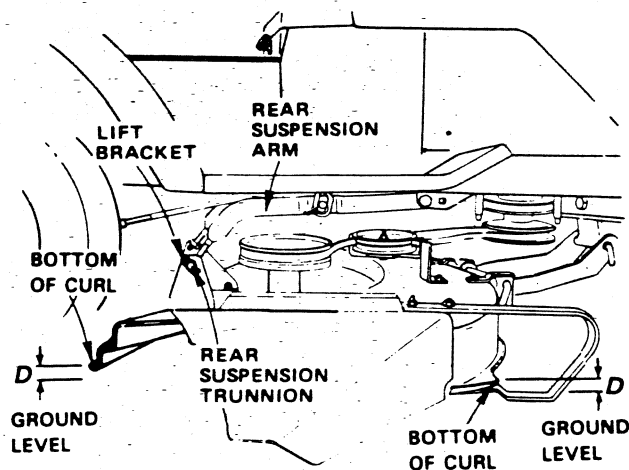


FIGURE 34

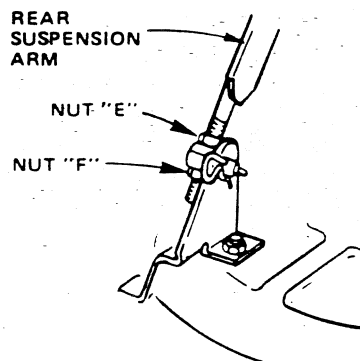


FIGURE 35

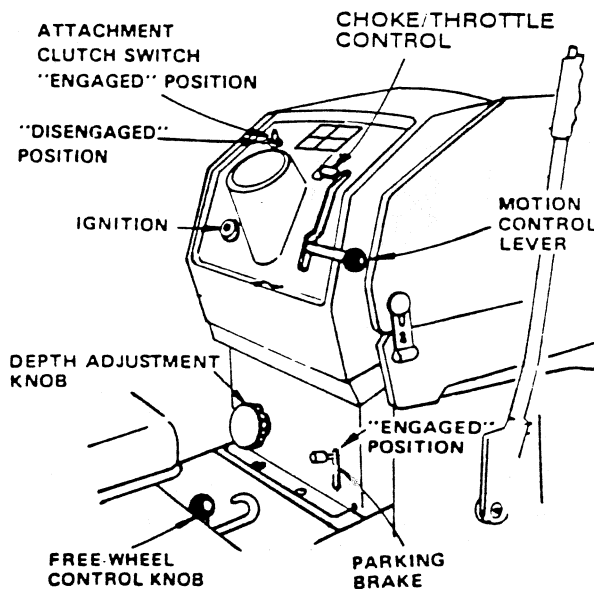


FIGURE 36



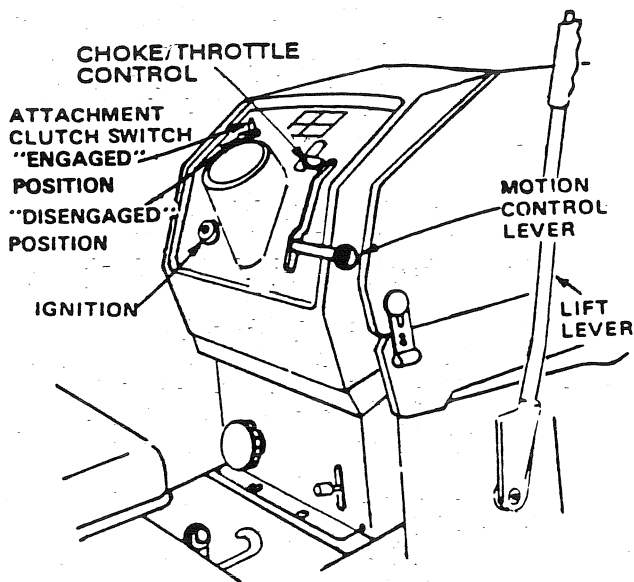


FIGURE 37

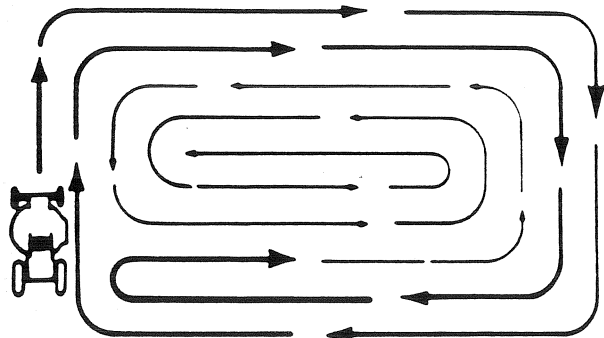


FIGURE 38

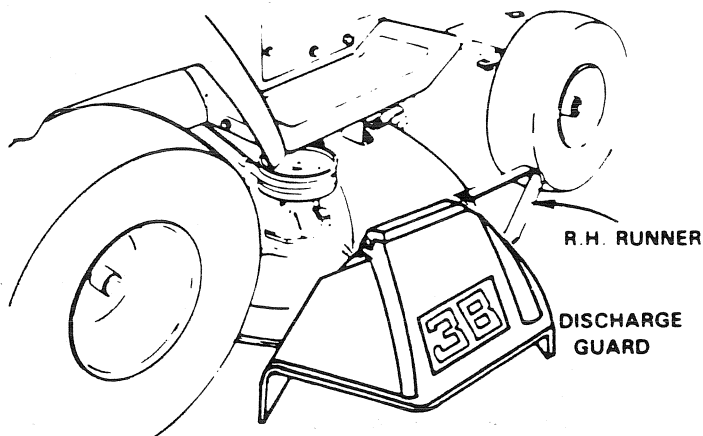


FIGURE 39

NOTE: ALWAYS MOW WITH THROTTLE CONTROL IN "FAST" POSITION. THIS RESULTS IN BETTER GRASS CUT, BETTER ENGINE COOLING, AND BETTER FUEL ECONOMY.

5. Use Lift Lever to lower mower into cutting position. Start mowing in the slow speed and increase speed as ground conditions will permit. Average cutting height is approximately 2-1/2 to 2-3/4 inches. Height of cut can be adjusted by means of the Depth Adjustment Knob (Fig. 36). Moving the Knob clockwise (↻) raises the mower (Fig. 36). Moving the knob counterclockwise (↺) lowers the mower.
6. Drive so that clippings are discharged onto the area that has been cut. Have the cut area to the right of the machine. This will result in a more even distribution of clippings and more uniform cutting. When mowing large areas (Fig. 38) start by turning to the right so that the clippings will be discharged away from shrubs, fences, driveways, etc. After *one* or *two* rounds, mow in the opposite direction making left hand turns until finished. If grass is extremely tall, it should be mowed twice. The first time cut relatively high. The second time to the desired height. The left hand side of mower should be used for trimming. Use the Runner on the right hand side as guide; the blade cuts approximately an inch outside the runner (Fig. 39).
7. Do not mow tall, dry grass over 6 inches tall. It is a fire hazard.

## FLIP-UP DISCHARGE GUARD

Your mower has a flip-up Discharge Guard (Fig. 39) for door or gate clearance when held in raised position.



MAKE SURE ATTACHMENT CLUTCH SWITCH IS IN "DISENGAGED" POSITION AND BLADES HAVE STOPPED BEFORE RAISING DISCHARGE GUARD (DEFLECTOR). NEVER OPERATE MOWER WITHOUT DISCHARGE GUARD IN OPERATING POSITION.

## MAINTENANCE - MOWER

BEFORE MAKING ANY INSPECTION, ADJUSTMENT OR REPAIR:

1. PUSH TRACTOR CLUTCH/BRAKE PEDAL COMPLETELY INTO BRAKE POSITION.
2. MOVE MOTION CONTROL LEVER TO NEUTRAL POSITION.
3. PLACE PARKING BRAKE IN "ENGAGED" POSITION. REMOVE FOOT FROM PEDAL.



4. PLACE ATTACHMENT CLUTCH SWITCH IN "DISENGAGED" POSITION.
5. TURN IGNITION KEY TO "OFF" POSITION.
6. MAKE ABSOLUTELY SURE THE BLADES AND ALL MOVING PARTS HAVE COMPLETELY STOPPED.
7. REMOVE THE IGNITION KEY.
8. DISCONNECT THE SPARK PLUG WIRES FROM THE SPARK PLUGS AND KEEP WIRES AWAY FROM THE SPARK PLUGS TO PREVENT INJURY FROM ACCIDENTAL STARTING. BE CAREFUL TO AVOID TOUCHING HOT ENGINE OR MUFFLER COMPONENTS.

## BLADE CARE

For best results mower blades must be kept sharp. The blade can be sharpened with a few strokes of a file or on a grind wheel. We suggest they be sharpened after every 25 hours of mowing. Do not attempt to sharpen while on mower. If you mow in sandy soil check the blades after each two mowings. The sand wears the blade away rapidly.

1. When grinding, care should be taken to maintain blade balance and the blade should be checked for proper balance before reinstallation on mower. Unbalanced or bent blade will cause excessive vibration when running, and eventual damage to mower or engine. Replace bent, damaged or unbalanced blades.

To check Blade balance, drive nail into beam or wall. Leave about one inch of the straight nail exposed. Place Center Hole of clean Blade over the head of the nail (Fig. 40). NOTE: CENTER HOLE OF BLADE ON NAIL. IF BLADE IS PROPERLY BALANCED, BLADE SHOULD REMAIN IN POSITION SHOWN IN FIG. 40. IF EITHER END OF THE BLADE MOVES DOWNWARD, BLADE IS NOT BALANCED. SHARPEN THE HEAVY END UNTIL BLADE IS BALANCED.

2. To ensure satisfactory operation, it is recommended that before the start of each mowing season, the old blades be discarded and replaced with new blades. Mower blades can be purchased from all Roper dealers.

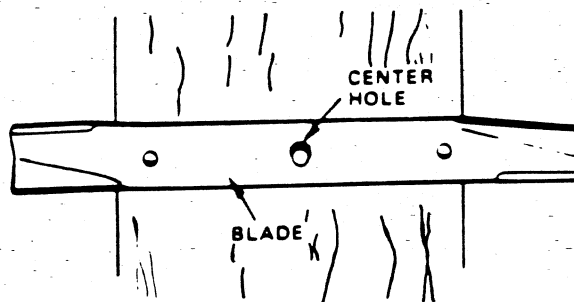


FIGURE 40

## DAILY MAINTENANCE

Make sure all nuts are tight and cotter pins and retaining springs are secure. Keep blades sharp. Observe safety precautions. Keep mower well lubricated. (Refer to pg. 9)

## CLEANING MOWER



**DISCONNECT SPARK PLUG WIRE TO PREVENT ACCIDENTAL STARTING BEFORE CLEANING. BE CAREFUL TO AVOID TOUCHING HOT MUFFLER OR ENGINE COMPONENTS.**

Water pressure from a garden hose will remove fresh clippings from underside of mower. Clean mower after each mowing.

## BLADE REPLACEMENT

Raise Mower to highest position to permit access to Blades or remove mower from tractor (See page 18).

1. Remove Bolt, Lockwasher and Washer (Fig. 41) (turn counterclockwise ↺).
2. Place new blade between flanges, (Install with sharp edge down), and secure with washer, lockwasher and bolt previously removed. TIGHTEN SECURELY.



**ALWAYS USE GRADE 5 HEAT TREATED BOLTS TO ATTACH BLADES. CHECK BOLTS IN BLADES OCCASIONALLY TO MAKE SURE BOLTS ARE TIGHT. TORQUE BOLTS 30 - 35 FT. LBS.**

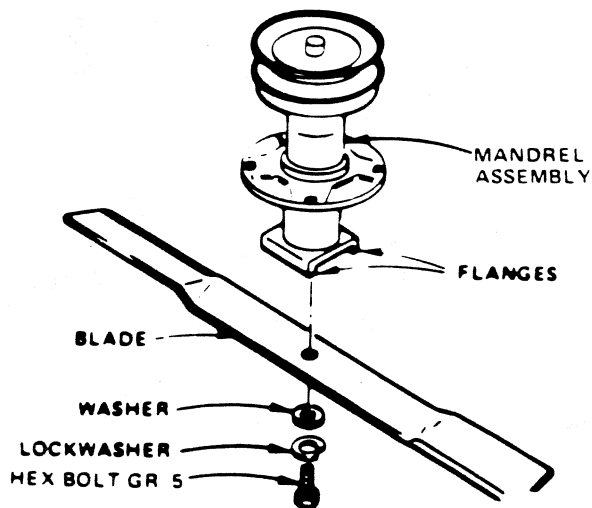
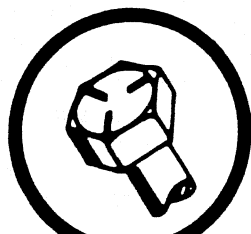


FIGURE 41



**A GRADE 5 HEAT TREATED BOLT CAN BE IDENTIFIED BY THREE LINES ON THE BOLT HEAD AS SHOWN AT LEFT.**

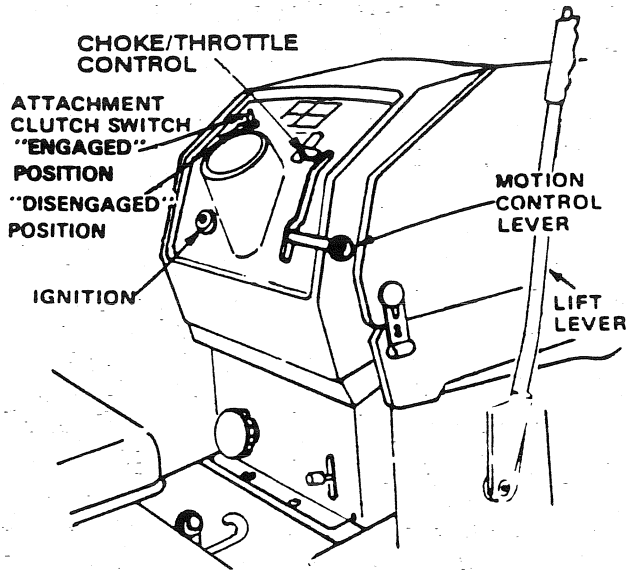


FIGURE 42

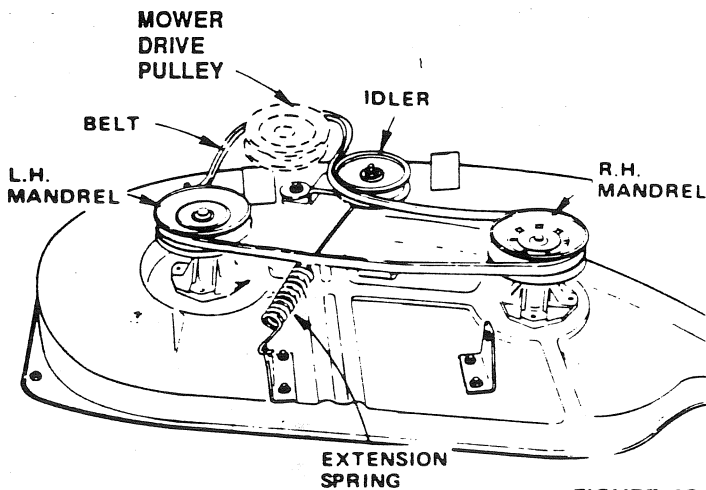


FIGURE 43

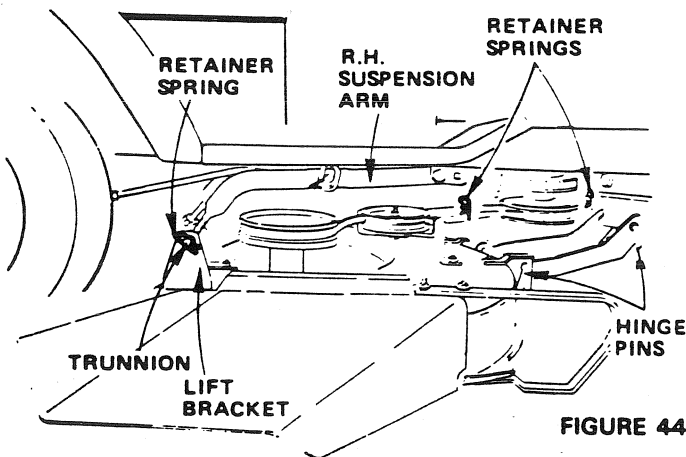


FIGURE 44

## TO REMOVE OR REPLACE MOWER DRIVE BELT

REPLACE ONLY WITH THE BELTS SPECIFIED IN THIS MANUAL.

1. Place Attachment Clutch Switch in "DISENGAGED" position (Fig. 42)
  2. Turn Depth Adjustment Knob to lowest position. Move Attachment Lift Lever (Fig. 42) forward to lower Mower to its lowest position.
  3. Roll Belt off L.H. Mandrel Pulley (fig. 43).
  4. Pull Belt off R.H. Mandrel, Idler and Mower Drive Pulley.
  5. To replace Mower Drive Belt, reverse above procedure. Make sure Drive Belt is engaged in all Pulleys.
- NOTE: REPLACE ONLY WITH BELTS SPECIFIED IN THIS MANUAL.

NOTE: MOWER BELT INSTALLATION DECAL LOCATED ON MOWER HOUSING.

## TO REMOVE MOWER

1. Remove mower belt per instructions under "To Remove Mower Belt"; through step 3.
2. Pull belt off the Engine Pulley.
3. Pull Retainer Springs out of Rear Suspension Trunnions. Remove Rear Suspension Trunnions from Lift Brackets (Fig. 44).
4. Pull Retainer Spring out of Rear Hinge Pin. Remove Rear Hinge Pin.
5. Pull Retainer Spring out of Front Hinge Pin. Remove Front Hinge Pin (Fig. 44).
6. Use Lift Lever to raise Suspension Arms. Slide mower out from under tractor.

NOTE: IF AN ATTACHMENT OTHER THAN THE MOWER DECK IS TO BE MOUNTED ON THE TRACTOR, THE L.H. AND R.H. SUSPENSION ARMS (FIG. 44). SHOULD BE REMOVED FROM TRACTOR.

## STORAGE

When mower is to be stored for a period of time, clean it thoroughly, remove all dirt, grease, leaves, etc. Give blades and underside of housing a good coat of grease or rust preventative. Store in a clean dry area.

## CLEANING MOWER



**DISCONNECT SPARK PLUG WIRE(S) TO PREVENT ACCIDENTAL STARTING BEFORE CLEANING. BE CAREFUL TO AVOID TOUCHING HOT MUFFLER OR ENGINE COMPONENTS.**

Water pressure from a garden hose will remove fresh clippings from underside of mower. Clean mower after each mowing.

SERVICE RECORD	SERVICE DATES						
	AFTER 2 HOURS	AS NEEDED	EVERY 8 HOURS	EVERY 25 HOURS	EVERY 50 HOURS	EVERY 100 HOURS	EVERY 200 HOURS
Check Engine Oil Level	/	/					
Change Engine Oil (see chart, page 4)				/	/		
Lubricate Pivot Points				/	/		
Check Brake Operation			/	/			
Clean Air Screen			/	/			
Clean Air Cleaner				/	/		
Replace Air Cleaner Paper Cartridge				/	/		
Clean Engine Cooling System				/	/		
Replace Spark Plug				/	/		
Check Battery Level				/	/		
Check Tire Pressure	/						
Replace In-Line Fuel Filter					/	/	
Clean Grill and Battery Terminals					/	/	
Check Muffler				/	/		
Carburetor Adjustment	/						
Check Reservoir & Pump Fluid Levels			/	/			
Check Hydrostatic Transmission Cooling			/	/			

## HOOD REMOVAL

- Lift Hood, Disconnect headlight wiring connection (Fig. 47)
- Unscrew one wingnut at rear of each side panel (Fig 48).
- Pivot hood and Side Panel Forward and lift off tractor (Fig. 47)
- To replace, reverse the above procedure.

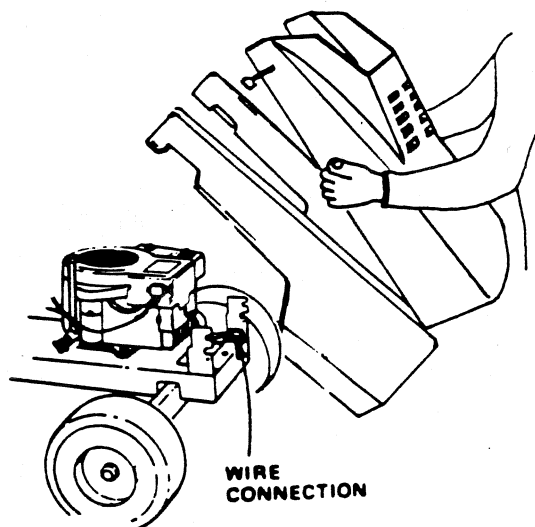


FIGURE 47

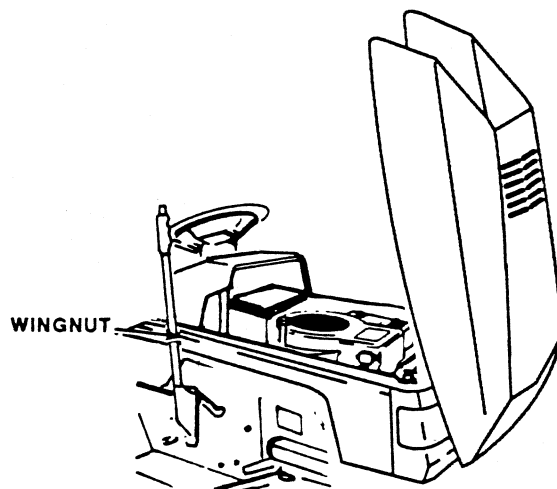
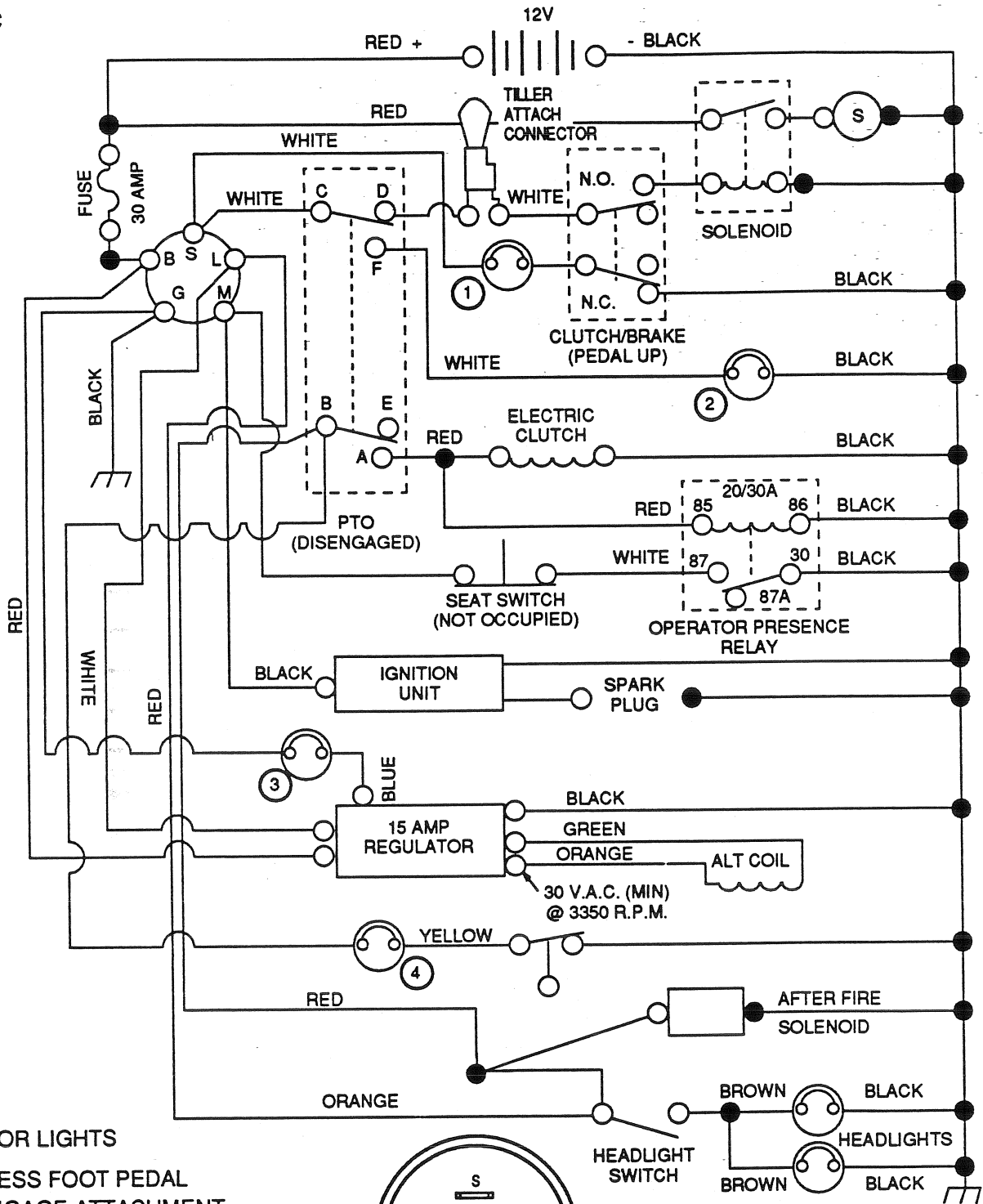


FIGURE 48

# REPAIR PARTS

## SCHEMATIC

### YARD TRACTOR



#### INDICATOR LIGHTS

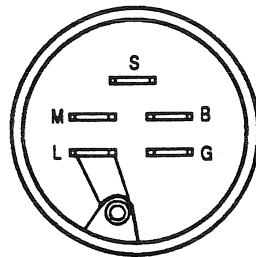
- ① DEPRESS FOOT PEDAL
- ② DISENGAGE ATTACHMENT
- ③ BATTERY DISCHARGING
- ④ CHECK OIL

#### WIRING INSULATED CLIPS

NOTE: If wiring insulated clips were removed for servicing of unit, they should be replaced to properly secure your wiring.

● NON-REMOVABLE CONNECTIONS

○ REMOVABLE CONNECTIONS

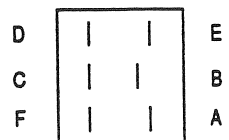


IGNITION SWITCH

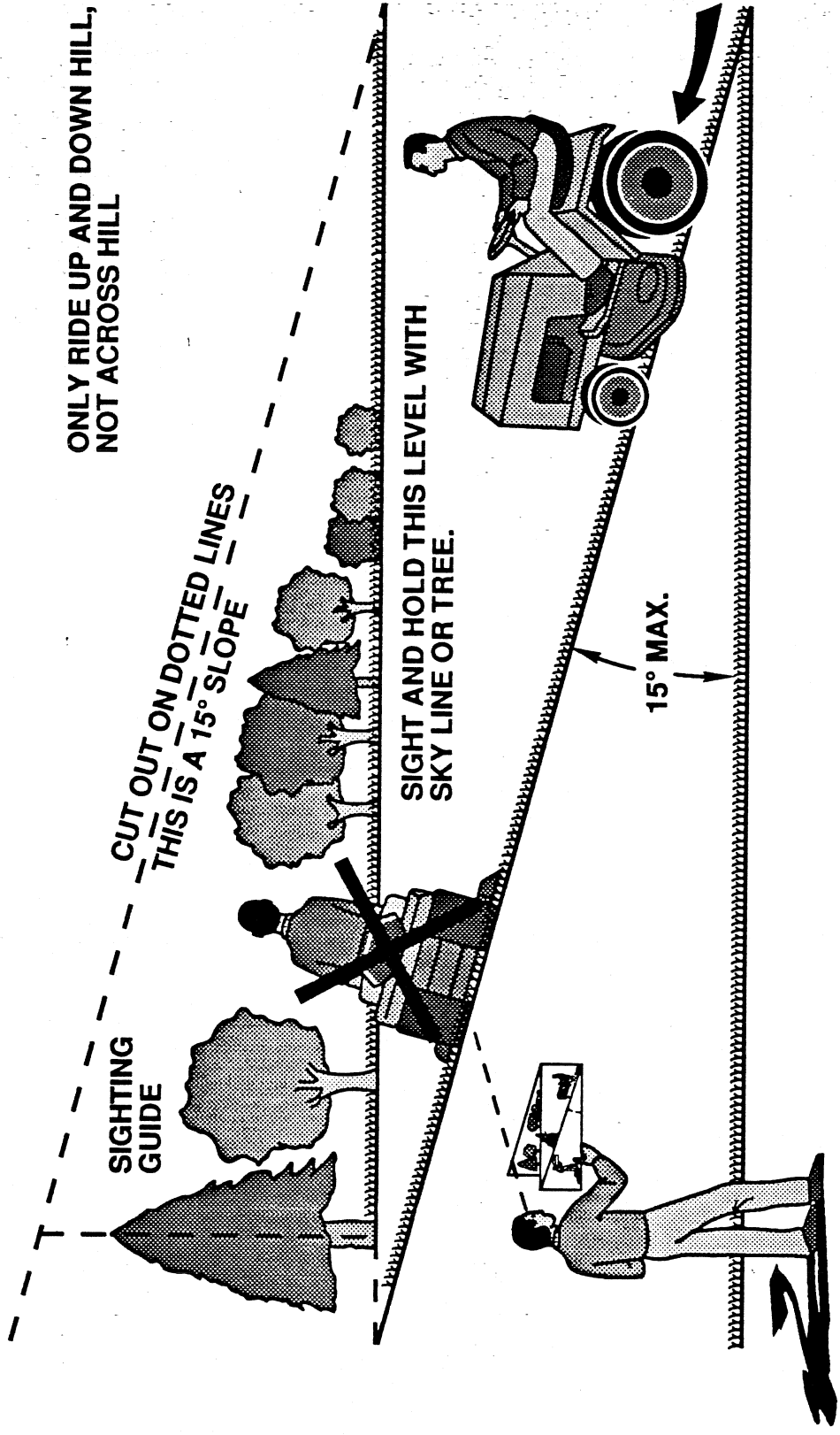
POSITION	CIRCUIT
OFF	M-G
ON	B-L
START	L+S


PTO SWITCH

POSITION	CIRCUIT MAKE
OFF	B&E, C&D
ON	B&A, C&F



# SUGGESTED GUIDE FOR SIGHTING SLOPES FOR SAFE OPERATION



 Operate your Tractor up and down the face of slopes (not greater than 15°) never across the face. Make turns gradually to prevent tipping or loss of control. Exercise extreme caution when changing direction on slopes.



# HUSQVARNA FOREST & GARDEN CO. WARRANTY STATEMENT

## SECTION 1: LIMITED WARRANTY

Husqvarna Forest & Garden Company ("Husqvarna") warrants Husqvarna product to the original purchaser to be free from defective material and workmanship from the date of purchase for the "Warranty Period" here stated dependent upon the type of product use. Warranty period is as follows for products listed:

**5 Year WARRANTY:** Plastic walk behind mower decks.

**2 Year Warranty:** Riding lawn mowers, yard and garden tractors, walk behind mowers, tillers and attachments for noncommercial, noninstitutional or nonincome producing use. Ignition systems on the chain saws, clearing saws and 18RL, 22R/RL & 25R/RL trimmers.

**1 Year Warranty:** Chain saws, clearing saws, trimmers, blowers and batteries for noncommercial, noninstitutional or nonincome producing use.

**90 Day Warranty:** Any Husqvarna product used for commercial, professional, or income producing use.

**30 Day Warranty:** Any Husqvarna product used for rental purposes. Husqvarna professional bow bars.

**Replacement Part Warranty:** Same length of time as original product warranty from the date of part purchase.

## SECTION 2: HUSQVARNA'S OBLIGATIONS UNDER THE WARRANTY

Husqvarna will remedy defects in material and workmanship during the warranty period by repairing or replacing, at Husqvarna's option, the defective component without charge for parts or labor.

## SECTION 3: ITEMS NOT COVERED BY THIS WARRANTY

The following items are not covered by this warranty:

- (1) Normal customer maintenance items (i.e., belts, blades, blade adapters, bulbs, filters, guide bars, lubricants, rewind springs, saw chain, spark plugs, starter ropes and lines).
- (2) Normal wear, normal adjustment, standard hardware or items worn through regular use.
- (3) Natural discoloration of material due to ultraviolet light.
- (4) The replacement of maintenance or worn items.
- (5) Briggs & Stratton, Kawasaki and Kohler engines, including starters, generators, alternators and accessories. These items are covered by the engine manufacturer's warranty as stated with the product information supplied at the time of purchase. All claims for specified engines, starters, generators, alternators and accessories should be sent to the appropriate manufacturer.
- (6) Foote, Sundstrand and Tecumseh-Perseus drive systems. These items are covered by the drive system manufacturer's warranty as stated with the product information supplied at the time of purchase. All claims for specified drive systems should be sent to the appropriate manufacturer.

## SECTION 4: EXCEPTIONS AND LIMITATIONS

This warranty shall be inapplicable to conditions resulting from the following:

- (1) Accident, abuse, misuse, negligence and neglect, including stale fuel, dirt abrasives, moisture, rust, corrosion, or any adverse reaction due to incorrect storage habits.

(2) Failure to operate or maintain the unit in accordance with the Owner's/Operator's manual or instruction sheet furnished by Husqvarna.

(3) Alterations or modifications that affect the unit's performance, operation, safety, durability, change its intended use, or cause failure of compliance with current regulatory standards or applicable federal, state or local laws.

(4) Use of parts or accessories which are not officially approved by Husqvarna Forest & Garden Company.

(5) Additional damage to parts or components due to continued use occurring after any of the above.

REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE CONSUMER. HUSQVARNA SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON THESE PRODUCTS EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THESE PRODUCTS IS LIMITED IN DURATION TO THE WARRANTY PERIOD AS DEFINED IN THE LIMITED WARRANTY STATEMENT. HUSQVARNA RESERVES THE RIGHT TO CHANGE OR IMPROVE THE DESIGN OF THE PRODUCT WITHOUT NOTICE, AND DOES NOT ASSUME OBLIGATION TO UPDATE PREVIOUSLY MANUFACTURED PRODUCTS.

Some states do not allow the exclusion of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

## SECTION 5: CUSTOMER RESPONSIBILITIES

The customer must exhibit reasonable care, maintenance, operation, storage and general upkeep as written in the maintenance section of the Owner's/Operator's manual. Should an operational problem or failure occur the product should not be used, but delivered as is to an authorized Husqvarna dealer for evaluation. Proof of purchase, as explained in section 6, rests solely with the customer.

## SECTION 6: PROCEDURE TO OBTAIN WARRANTY CONSIDERATION

It is the Owner's and Dealer's responsibility to make certain that the Warranty Registration Card is properly filled out and mailed to Husqvarna Forest & Garden Company. This card should be mailed within ten (10) days from the date of purchase in order to assist in the validation of the warranty and to provide post-sale service.

Proof of purchase must be presented to the authorized Husqvarna dealer in order to obtain warranty service. This receipt must include date purchased, model number, serial number, and complete name and address of the selling dealer.

To obtain the benefit of this warranty, the product believed to be defective must be delivered in a timely manner, within thirty (30) days from date of operational problem or failure, and during the warranty period, to any authorized Husqvarna dealer. The product must be delivered to the dealer, at the owner's expense. An authorized Husqvarna dealer can be normally located through the "Yellow Pages" of the local telephone directory.

**HUSQVARNA FOREST & GARDEN CO.**  
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ITASCA, ILLINOIS 60143

