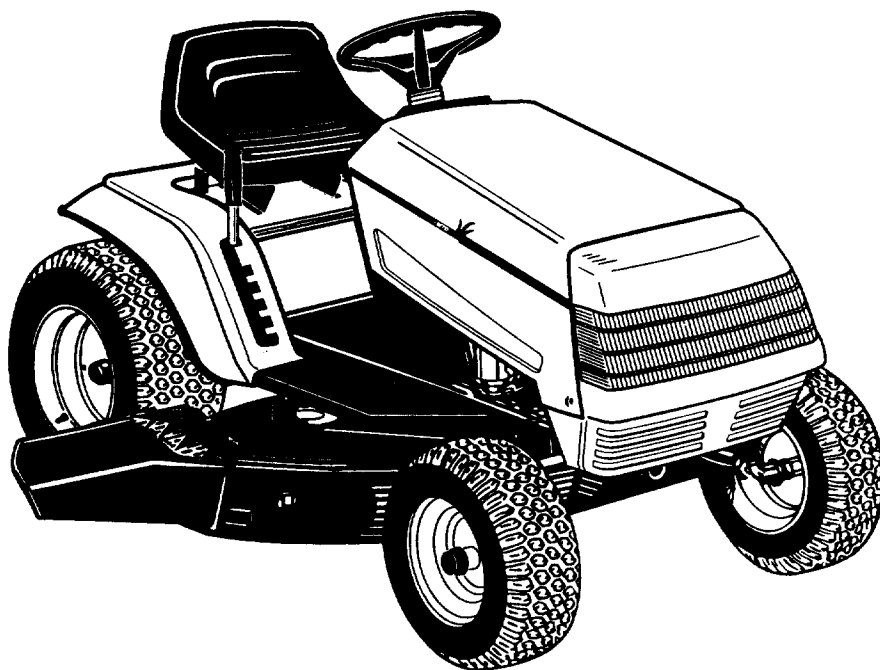




OWNER'S GUIDE



Model Series
400
FRONT ENGINE
LAWN TRACTORS



IMPORTANT: READ SAFETY RULES AND INSTRUCTIONS CAREFULLY


Warning: This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your nearest engine authorized service dealer or contact the service department, P.O. Box 368022 Cleveland, Ohio 44136-9722.

MTD PRODUCTS INC. P.O. BOX 368022 CLEVELAND, OHIO 44136-9722

IMPORTANT

SAFE OPERATION PRACTICES



THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS WHICH, IF NOT FOLLOWED, COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OF YOURSELF AND OTHERS. READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE YOUR UNIT. WHEN YOU SEE THIS SYMBOL—  **HEED ITS WARNING.**



DANGER:

Your lawn mower was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in injury. This lawn mower is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.



I. GENERAL OPERATION

1. Read, understand, and follow all instructions in the manual and on the machine before starting. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
2. Only allow responsible individuals familiar with the instructions to operate the machine. Know controls and how to stop the machine quickly.
3. Do not put hands or feet under cutting deck or near rotating parts.
4. Clear the area of objects such as rocks, toys, wire, etc., which could be picked up and thrown by the blade. A small object may have been overlooked and could be accidentally thrown by the mower in any direction and cause injury to you or a bystander. To help avoid a thrown objects injury, keep children, bystanders and helpers at least 75 feet from the mower while it is in operation. Always wear safety glasses or safety goggles during operation or while performing an adjustment or repair, to protect eyes from foreign objects. Stop the blade(s) when crossing gravel drives, walks or roads.
5. Be sure the area is clear of other people before mowing. Stop machine if anyone enters the area.
6. Never carry passengers.
7. Disengage blade(s) before shifting into reverse and backing up. Always look down and behind before and while backing.
8. Be aware of the mower and attachment discharge direction and do not point it at anyone. Do not operate the mower without either the entire grass catcher or the chute guard in place.
9. Slow down before turning. Operate the machine smoothly. Avoid erratic operation and excessive speed.
10. Never leave a running machine unattended. Always turn off blade(s), place transmission in neutral, set park brake, stop engine and remove key before dismounting.
11. Turn off blade(s) when not mowing.
12. Stop engine and wait until blade(s) comes to a complete stop before (a) removing grass catcher or unclogging chute, or (b) making any repairs, adjusting or removing any grass or debris.
13. Mow only in daylight or good artificial light.
14. Do not operate the machine while under the influence of alcohol or drugs.
15. Watch for traffic when operating near or crossing roadways.
16. Use extra care when loading or unloading the machine into a trailer or truck. This unit should not be driven up or down a ramp onto a trailer or truck under power, because the unit could tip over, causing serious personal injury. The unit must be pushed manually on a ramp to load or unload properly.
17. Never make a cutting height adjustment while engine is running if operator must dismount to do so.
18. Wear sturdy, rough-soled work shoes and close-fitting slacks and shirts. Do not wear loose fitting clothes or jewelry. They can be caught in moving parts. Never operate a unit in bare feet, sandals, or sneakers.
19. Check overhead clearance carefully before driving under power lines, wires, bridges or low hanging tree branches, before entering or leaving buildings, or in any other situation where the operator may be struck or pulled from the unit, which could result in serious injury.

20. Disengage all attachment clutches, thoroughly depress the brake pedal, and shift into neutral before attempting to start engine.
21. Your mower is designed to cut normal residential grass of a height no more than 10". Do not attempt to mow through unusually tall, dry grass (e.g., pasture) or piles of dry leaves. Debris may build up on the mower deck or contact the engine exhaust presenting a potential fire hazard.



II. SLOPE OPERATION

Slopes are a major factor 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 it, do not mow it.

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

DO:

Mow up and down slopes, not across.
Remove obstacles such as rocks, limbs, etc.
Watch for holes, ruts or bumps. Uneven terrain could overturn the machine. **Tall grass can hide obstacles.**
Use slow speed. Choose a low enough gear so that you will not have to stop or shift while on the slope. Always keep machine in gear when going down slopes to take advantage of engine braking action. Follow the manufacturer's recommendations for wheel weights or counterweights to improve stability.
Use extra care with grass catchers or other attachments. These can change the stability of the machine.
Keep all movement on the slopes **slow** and **gradual**. Do not make sudden changes in speed or direction. Rapid engagement or braking could cause the front of the machine to lift and rapidly flip over backwards which could cause serious injury.
Avoid starting or stopping on a slope. If tires lose traction, disengage the blade(s) and proceed slowly **straight** down the slope.

DO NOT:

Do not turn on slopes unless necessary; then, turn slowly and gradually downhill, if possible.
Do not mow near drop-offs, ditches or embankments. The mower could suddenly turn over if a wheel is over the edge of a cliff or ditch, or if an edge caves in.
Do not mow on wet grass. Reduced traction could cause sliding.
Do not try to stabilize the machine by putting your foot on the ground.
Do not use grass catcher on steep slopes.



III. 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.

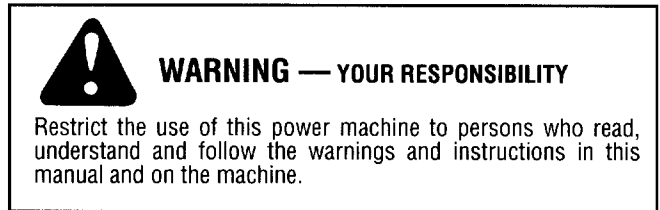
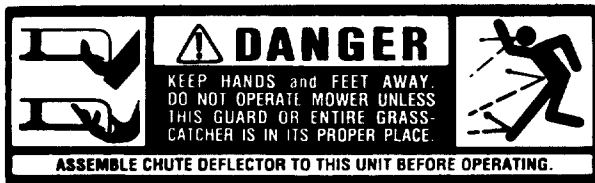
1. Keep children out of the mowing area and in watchful care of an adult other than the operator.
2. Be alert and turn machine off if children enter the area.
3. Before and when backing, look behind and down for small children.

4. Never carry children, even with the blades off. They may fall off and be seriously injured or interfere with the safe machine operation.
5. Never allow children under 14 years old to operate the machine. Children 14 years and over should only operate machine under close parental supervision and proper instruction.
6. Use extra care when approaching blind corners, shrubs, trees or other objects that may obscure your vision of a child or other hazard.
7. Remove key when machine is unattended to prevent unauthorized operation.

IV. SERVICE

1. Use extreme care in handling gasoline and other fuels. They are extremely flammable and the vapors are explosive.
 - a. Use only an approved container.
 - b. Never remove fuel cap or add fuel with the engine running. Allow engine to cool at least two minutes before refueling.
 - c. Replace fuel cap securely and wipe off any spilled fuel before starting the engine as it may cause a fire or explosion.
 - d. Extinguish all cigarettes, cigars, pipes and other sources of ignition.
 - e. Never refuel the machine indoors because fuel vapors will accumulate in the area.
 - f. Never store the fuel container or machine inside where there is an open flame or spark, such as a gas hot water heater, space heater or furnace.
2. Never run a machine inside a closed area.
3. To reduce fire hazard, keep the machine free of grass, leaves or other debris build-up. Clean up oil or fuel spillage. Allow machine to cool at least 5 minutes before storing.
4. Before cleaning, repairing or inspecting, make certain the blade and all moving parts have stopped. Disconnect the spark plug wire, and keep the wire away from the spark plug to prevent accidental starting.
5. Check the blade and engine mounting bolts at frequent intervals for proper tightness. Also, visually inspect blade for damage (e.g., excessive wear, bent, cracked). Replace with blade which meets original equipment specifications.

6. Keep all nuts, bolts and screws tight to be sure the equipment is in safe working condition.
7. Never tamper with safety devices. Check their proper operation regularly. Use all guards as instructed in this manual.
8. After striking a foreign object, stop the engine, remove the wire from the spark plug and thoroughly inspect the mower for any damage. Repair the damage before restarting and operating the mower.
9. Grass catcher components are subject to wear, damage and deterioration, which could expose moving parts or allow objects to be thrown. For your safety protection, frequently check components and replace with manufacturer's recommended parts when necessary.
10. Mower blades are sharp and can cut. Wrap the blade(s) or wear gloves and use extra caution when servicing blade(s).
11. Check brake operation frequently. Adjust and service as required.
12. Muffler, engine and belt guards become hot during operation and can cause a burn. Allow to cool down before touching.
13. Do not change the engine governor settings or overspeed the engine. Excessive engine speeds are dangerous.
14. Observe proper disposal laws and regulations. Improper disposal of fluids and materials can harm the environment and the ecology.
 - a. Prior to disposal, determine the proper method to dispose of waste from your local Environmental Protection Agency. Recycling centers are established to properly dispose of materials in an environmentally safe fashion.
 - b. Use proper containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them. Properly dispose of the containers immediately following the draining of fluids.
 - c. DO NOT pour oil or other fluids into the ground, down a drain or into a stream, pond, lake or other body of water. Observe Environmental Protection Agency regulations when disposing of oil, fuel, coolant, brake fluid, filters, batteries, tires and other harmful waste.



UNPACKING

TO REMOVE UNIT FROM CRATE

1. Remove all screws from the top of the crate using a 1/4" hex head socket or a flat blade screwdriver.
2. To remove ends, grasp top board on the end, and pull towards you in a downward motion.
3. Set panel aside to avoid tire punctures.
4. Repeat procedure for each side of the crate.
5. Remove and discard plastic bag which covers unit.
6. Loose parts (may include the owner's guide, steering wheel, optional oil drain sleeve, battery fluid, chute deflector, optional mulching kit, etc.) are on the seat and wrapped in plastic. Carefully cut and remove the plastic wrap. Remove the loose parts.
7. Make certain brake is released, and push the unit off the skid.

ASSEMBLY INSTRUCTIONS

This owner's manual covers various models of lawn tractors. The units illustrated may vary slightly from your unit. Follow only those instructions which pertain to your model lawn tractor.

IMPORTANT: After assembly, service engine with gasoline, and check oil level as instructed in the separate engine manual packed with your unit.

NOTE: Reference to right or left hand side of the unit is observed from the driver's seat, facing forward.

TOOLS REQUIRED FOR ASSEMBLY

- (1) 1/4" socket wrench or flat blade screwdriver
- (1) 1/2" wrench or socket wrench*
- (1) 9/16" wrench or socket wrench
- (2) 7/16" wrenches or socket wrenches

*If your steering wheel cap is square, you **must** have a socket wrench in order to install the steering wheel.

BATTERY INFORMATION



WARNING

- A. Battery acid must be handled with great care as contact with it can burn and blister the skin. It is also advisable to wear protective clothing (goggles, rubber gloves and apron) when working with it.*
- B. Should battery acid accidentally splatter into the eyes or onto the face, rinse the affected area immediately with clean cold water. If there is any further discomfort, seek prompt medical attention.
- C. If acid spills on clothing, first dilute it with clean water, then neutralize with a solution of ammonia/water or baking soda/water.

- D. Since battery acid is corrosive, do not pour it into any sink or drain. Before discarding empty electrolyte containers, rinse them with a neutralizing solution.
- E. NEVER connect or disconnect charger clips to battery while charger is turned on as it can cause sparks.
- F. Keep all lighted materials (cigarettes, matches, lighters) away from the battery as the hydrogen gas generated during charging can be combustible.
- G. As a further precaution, only charge the battery in a well-ventilated area.

***Always shield eyes, protect skin and clothing when working near batteries.**



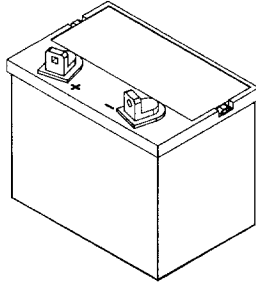
DANGER

Battery contains sulfuric acid. Refer to warning at right. Antidote: EXTERNAL—Flush with water. INTERNAL—Drink large quantities of water or milk. Follow with milk of magnesia, beaten eggs or vegetable oil. Call physician immediately. EYES: Flush with cool water for at least 15 minutes, then get prompt medical attention.

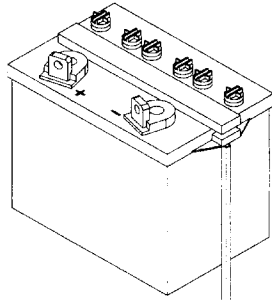
Since batteries produce explosive gases, keep all lighted materials (cigarettes, lighters, matches, etc.) away. Be sure to charge battery only in well-ventilated areas. Make certain venting path of battery drain tube (if equipped) is always open.

**KEEP BATTERIES
OUT OF THE REACH OF CHILDREN!**

BATTERY IDENTIFICATION



Type "A"



Type "B"

Compare the battery in your lawn tractor (located under the seat) with the illustration above. Type "A" batteries are activated and are ready to use. Type "B" batteries must be filled with battery fluid (acid) and charged before they are put into service. Follow the instructions which apply to the battery in your lawn tractor.

ACTIVATING AND CHARGING THE BATTERY (TYPE "B" BATTERY ONLY)

Do not activate battery (fill with battery acid) until battery is actually placed in service. Be certain to read previous battery warnings before activating the battery.

1. Pivot the seat forward. Unhook the strap which secures the battery. Disconnect the positive cable from the positive terminal. Save the hardware for reassembly.
2. Remove the battery from the lawn tractor, paying attention to how the battery is placed in the unit, and how the drain tube (attached to the battery) is routed.
3. Activate the battery as instructed in the "Quick Start" brochure included with the battery fluid. **Read instructions carefully.**

NOTE: You can continue assembling the lawn tractor while battery is standing for 30 minutes (after filling with acid), and later while you are charging the battery.

IMPORTANT: To obtain the maximum life from your battery, it **MUST BE CHARGED** prior to initial use.

CHARGE THE BATTERY after the 30 minute standing period. Battery P/N 725-1705B—Charge at 2-3 amps for one hour. Battery P/N 725-1707B and 725-0453E—Charge at 6 amps for one hour.

NOTE: If you charge the battery at a lower AMP rate, use a hydrometer to make sure the battery is completely charged. The hydrometer should read 1.260 minimum at an electrolyte temperature of 60-110°F. **DO NOT CHARGE AT MORE THAN 6 AMPS.**

ATTACHING THE STEERING WHEEL

1. The hardware for attaching the steering wheel has been packed inside the steering wheel. Carefully pry off the steering wheel cap and remove the hardware.
2. Remove the steering bellow from the lift lever on the right hand side of lawn tractor. Place steering bellow over the steering shaft extending through the dash.

NOTE: If the openings on each end of the steering bellow are two different sizes, the smaller end goes down against the dash of the lawn tractor.

3. **With the wheels of the tractor pointing straight forward**, place the steering wheel over the steering shaft, positioning steering wheel as desired.
4. Place the washer with the cupped side down over the steering shaft. Secure with hex lock bolt.

NOTE: If your steering wheel cap is square, you **must** use a socket wrench.

5. Place the steering wheel cap over the center of the steering wheel and seat it with your hand.

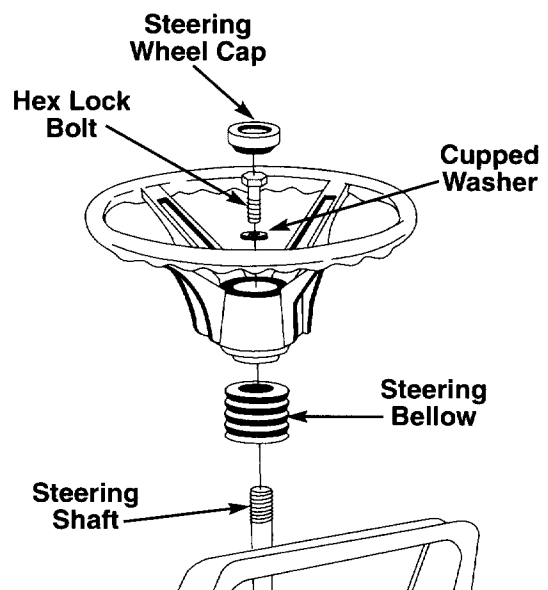


FIGURE 1.

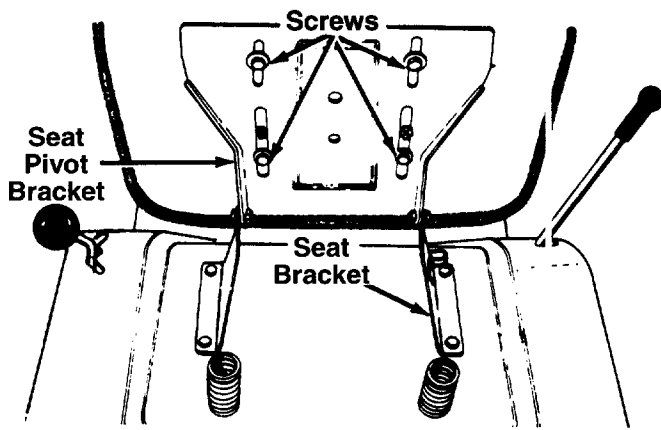


FIGURE 2.

ATTACHING THE SEAT

1. The seat on your lawn tractor may be mounted backward for shipping purposes. If so, remove the four screws which secure the seat to the seat pivot bracket.
2. Turn the seat around and place in position against the seat pivot bracket, lining up the slotted holes in the pivot bracket with the holes in the seat. Select desired position for the seat, and secure with the four screws. See figure 2.

NOTE: If seat was mounted correctly, adjust by loosening the four screws, sliding the seat forward or backward as desired, and retightening the screws.

ATTACHING THE CHUTE DEFLECTOR (32", 36" and 38" Decks)

The chute deflector must be attached to the right side of the deck so that it covers the chute opening.



WARNING: Do not operate your unit unless the chute deflector has been properly installed.

1. Make certain deck is raised to its highest position (lift lever pulled all the way back).

NOTE: Your mowing deck may be equipped with a optional mulching plug. Remove the mulching plug by removing the wing nut on top of the deck. Grasp the mulching plug and pull out of the deck.

2. Remove the hex head cap screws, cupped washers and hex nuts which are attached to the deck next to the chute opening.
3. Place the chute deflector in position as shown in figure 3. Secure with hardware just removed. Cupped sides of washers go against the chute deflector.
4. If you wish to mulch, lift up the chute and insert optional mulching plug through chute opening. Line up the bolt on mulching plug with the hole in the top of deck. Push up on the end of the mulching plug and secure with the wing nut.

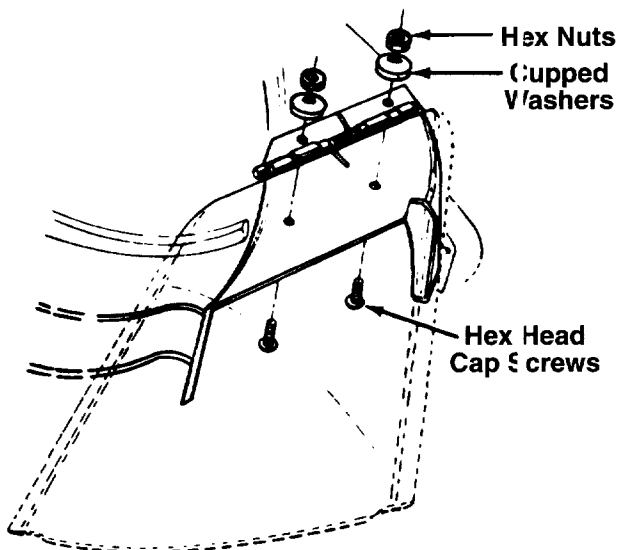


FIGURE 3.

TIRE PRESSURE

The tires on your unit may be over-inflated for shipping purposes. Reduce the tire pressure before operating the unit. Recommended operating tire pressure is approximately 12 p.s.i.



WARNING: Maximum tire pressure under any circumstances is 30 p.s.i. Equal tire pressure should be maintained on all tires.

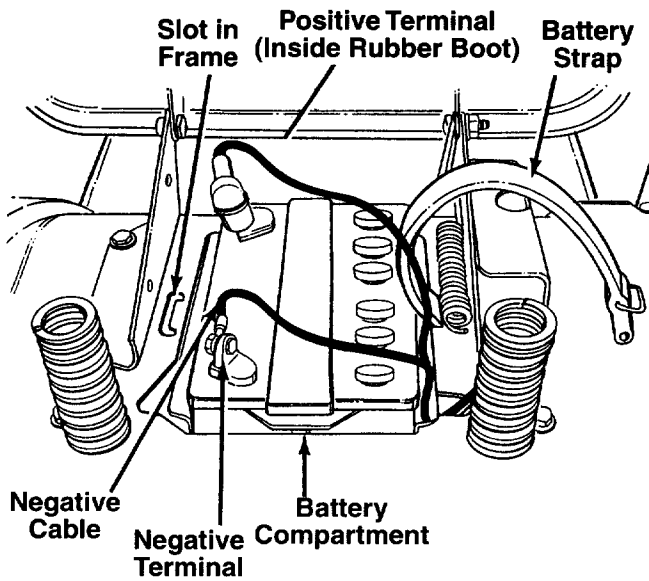


FIGURE 4.

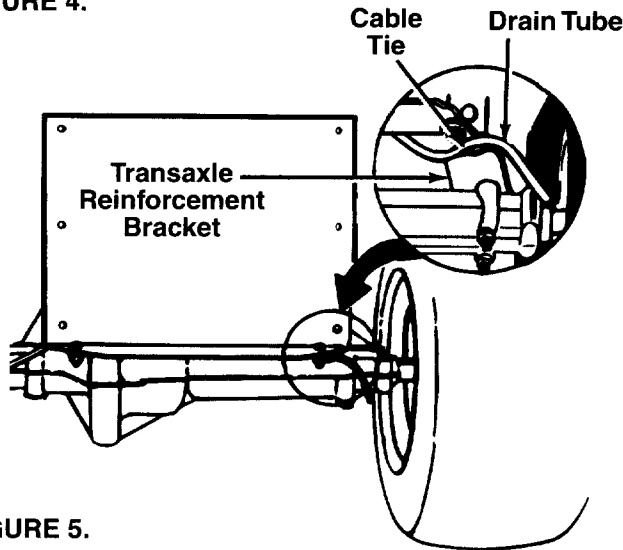


FIGURE 5.

INSTALLING THE BATTERY (TYPE "A" BATTERY)

NOTE: If battery is put into service after date shown on top of battery, charge for minimum of 1 hour at 6-10 amps.

1. Lift the seat.
2. Remove the plastic cover from the negative terminal.
3. Remove the hex bolt and nut from the negative (black) cable. Attach negative cable to the negative terminal with this bolt and nut.

INSTALLING THE BATTERY (TYPE "B" BATTERY)

1. Lift the seat.
2. Make certain both the negative (black) cable and the positive (red) cable are routed up through the battery compartment as shown in figure 4.
3. Replace the battery into the battery compartment in the same position as it was before (positive terminal is toward the front of the unit).
4. Attach the positive (red) cable to the positive terminal of the battery. Secure with hex bolt and nut previously removed. Slide rubber boot down over the positive terminal.
5. Remove the hex bolt and nut from the negative (black) cable. Attach negative cable to the negative terminal with this bolt and nut.
6. Secure battery by hooking battery strap into slot in frame.
7. Route the drain tube through the opening between the transaxle reinforcement bracket and the frame on the right rear of the unit. Insert the drain tube to the transaxle reinforcement bracket through the cable tie which is attached as shown in figure 5. Be certain drain tube is routed away from the wheel rim.
8. Draw cable tie secure, but do not overtighten or the drain tube could collapse. Trim excess end of cable tie.

CONTROLS

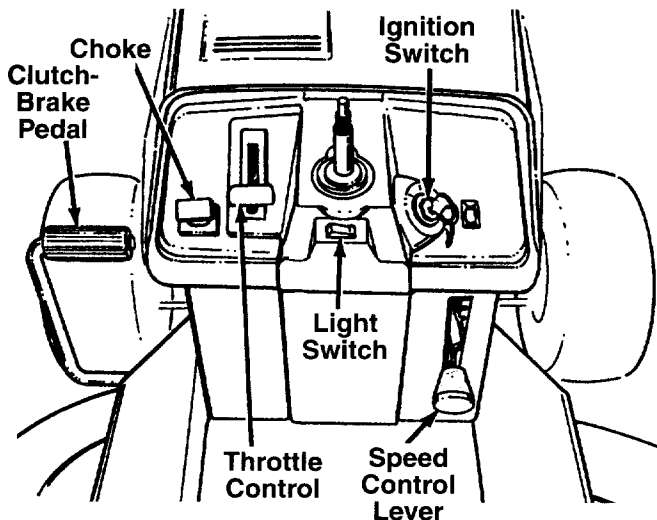


FIGURE 6.

THROTTLE CONTROL

The throttle control is used to regulate the engine speed. To get maximum efficiency from cutting, the throttle should be in the FAST position when operating the mower. See figure 6.

CHOKE CONTROL

The choke control is located on the dashboard and is operated manually. Details for the choke operation are covered in the separate engine manual packed with your unit. See figure 6.

SPEED CONTROL LEVER

The speed control lever allows you to regulate the ground speed of the lawn tractor. See figure 6. To select the ground speed, depress clutch pedal. Push speed control lever inward and move downward to slow lawn tractor, move upward to increase speed.

When desired speed has been obtained, release lever in that position. Whenever clutch is engaged, unit will automatically go to the pre-set speed.

IGNITION SWITCH

Turn the key to the START position to start the engine. When the engine is running, let the key return to the ON position. To stop the engine, turn the key to the left to the OFF position and remove it to prevent accidental starting. See figure 6.

LIGHT SWITCH (Optional)

Push the light switch to turn on the lights. The lights will only operate when the engine is running. See figure 6.

SHIFT LEVER

The shift lever is located on the left fender and has three positions, FORWARD, NEUTRAL and REVERSE. See figure 7. The clutch-brake pedal must be depressed and the lawn tractor must not be moving when shifting gears. Do not force the shift lever. Release the clutch-brake pedal slightly to line up the shifting collar in the transmission. Then try to shift gears.

CLUTCH-BRAKE PEDAL

The clutch-brake pedal is located on the left side of the lawn tractor. Depressing the clutch-brake pedal part way disengages the clutch. Pressing the pedal all the way down disengages the clutch and engages the disc brake. See figure 6.

NOTE: *The clutch-brake pedal must be depressed to start the engine.*

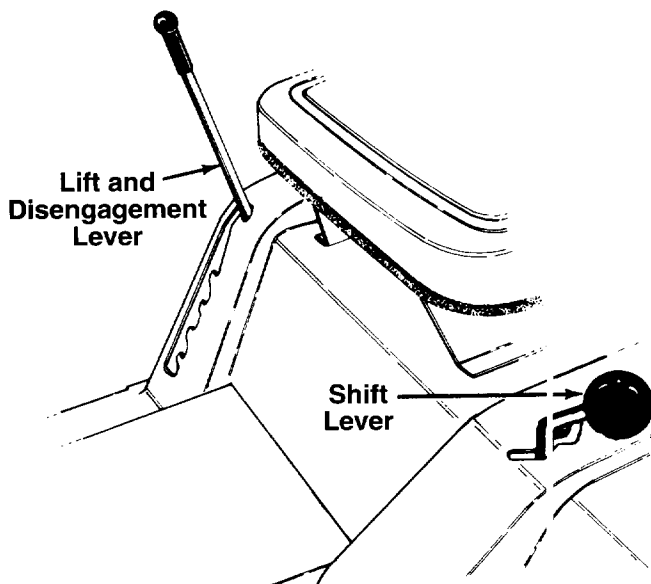


FIGURE 7.

PARKING BRAKE

The speed control lever is used to set the parking brake. To set the parking brake, depress the clutch-brake pedal. Press the speed control lever inward and all the way down. Release the speed control lever and the clutch-brake pedal.

To release the parking brake, depress the clutch-brake pedal, press the speed control lever inward and move to desired position. Release the speed control lever and the clutch-brake pedal.

NOTE: *The parking brake must be set if the operator leaves the seat with the engine running.*

AMMETER (Optional)

If your lawn tractor is equipped with an ammeter, it registers the rate of battery charge or discharge. The ammeter will register on the discharging side when starting the engine. It should register on the opposite side (charging) when the engine is running in the fast position until the battery is completely charged. With a fully charged battery or with the engine idling, the ammeter will not show a charge.

INTERLOCKS (Not Shown)

Interlock safety switches are located by the clutch-brake pedal, the lift and disengagement lever, the shift lever and under the seat.

Before the engine will start, the clutch-brake pedal must be depressed all the way and the lift and disengagement lever must be in the disengaged position.

Before the unit can be shifted into reverse or if the operator leaves the seat, the lift and disengagement lever must be in the disengaged position.

CUTTING CONTROLS

A. LIFT AND DISENGAGEMENT LEVER

The lift and disengagement lever is used to raise and lower the cutting deck which determines the cutting height. Pulling it all the way back and locking it disengages the blades. The lift and disengagement lever must be in the disengaged position when starting the engine, when shifting into reverse or if the operator leaves the seat. See figure 7.

B. DECK WHEEL HEIGHT ADJUSTMENT (OPTIONAL)

Set the deck wheels (if so equipped) so that the wheels are 1/4 to 1/2 inch above the ground, by moving the deck wheels to the desired hole location in the deck.

OPERATION



WARNING

AVOID SERIOUS INJURY OR DEATH

- GO UP AND DOWN SLOPES, NOT ACROSS. • AVOID SUDDEN TURNS.
- DO NOT OPERATE THE UNIT WHERE IT COULD SLIP OR TIP.
- IF MACHINE STOPS GOING UPHILL, STOP BLADE(S) AND BACK DOWNHILL SLOWLY.
- DO NOT MOW WHEN CHILDREN OR OTHERS ARE AROUND.
- NEVER CARRY CHILDREN.
- LOOK DOWN AND BEHIND BEFORE AND WHILE BACKING.
- KEEP SAFETY DEVICES (GUARDS, SHIELDS, AND SWITCHES) IN PLACE AND WORKING.
- REMOVE OBJECTS THAT COULD BE THROWN BY THE BLADE(S).
- KNOW LOCATION AND FUNCTION OF ALL CONTROLS.
- BE SURE BLADE(S) AND ENGINE ARE STOPPED BEFORE PLACING HANDS OR FEET NEAR BLADE(S).
- BEFORE LEAVING OPERATOR'S POSITION, DISENGAGE BLADE(S), PLACE THE SHIFT LEVER IN NEUTRAL, ENGAGE BRAKE LOCK, SHUT ENGINE OFF AND REMOVE KEY.

READ OPERATOR'S MANUAL

GAS AND OIL FILL-UP

NOTE: To open the hood, simply lift up on both sides of the hood.

Check oil level and add if necessary. Service the engine with gasoline as instructed in the separate engine manual packed with your tractor. Read instructions carefully.

IMPORTANT: Your tractor is shipped with oil; however, you **must** check the oil level before operating. Be careful not to overfill.



WARNING: Never fill fuel tank indoors, with engine running or while engine is hot.

STARTING THE ENGINE

1. Depress the clutch-brake pedal and set the parking brake.
2. Place the lift and disengagement lever in the DISENGAGED position. See figure 7.

NOTE: This unit is equipped with a **safety interlock system** for your protection. The purpose of the safety interlock system is to prevent the engine from cranking or starting unless the clutch-brake pedal is depressed and the lift and disengagement lever is in the disengaged position. In addition, the lift and disengagement lever must be in the disengaged position when the unit is put into reverse or the engine will shut off. If the operator leaves the seat with the lift and disengagement lever engaged and/or without setting the parking brake, the engine will shut off.



WARNING: Do not operate the lawn tractor if the interlock system is malfunctioning because it is a safety device, designed for protection.

3. Set the throttle control in the FAST position. See figure 6.
4. Pull out choke knob to choke engine. A warm engine may not require choking.
5. Turn the ignition key to the START position. When the engine is running, let the key return to the ON position. See figure 6.
6. Push choke knob in gradually. Move the throttle control to desired engine speed.

STOPPING THE ENGINE

Turn the ignition key to the left to the OFF position. Remove the key to prevent accidental starting.

IMPORTANT: If you strike a foreign object, stop the engine. Remove wire from spark plug, thoroughly inspect the unit for any damage, and repair the damage before restarting and operating the mower.

NOTE: If any problems are encountered, refer to the Trouble Shooting Chart on page 18.

OPERATING THE LAWN TRACTOR

1. Start the engine as instructed previously.
2. Move throttle control to 3/4 or full throttle to prevent strain on the engine and to operate the cutting blades.
3. Place the shift lever in either the FORWARD or REVERSE position.



WARNING: Look to the rear before backing up.

4. Release the parking brake by depressing the clutch-brake pedal, pressing outward on the speed control lever and moving to desired position. Use first speed position when operating the lawn tractor for the first time.
5. Release clutch-brake pedal slowly to put unit into motion.
6. The lawn tractor is brought to a stop by depressing the clutch-brake pedal.

NOTE: When operating the unit initially, there will be little difference between the highest two speeds until after the belts have seated themselves into the pulleys during the break-in period. Be certain to change oil in the crankcase after the first 5 hours of operation.

Be sure that the lawn is clear of stones, sticks, wire, or other objects which could damage lawn tractor, or the debris could be thrown by the blade in any direction and cause an injury. For best results and to insure more even grass distribution, do not mow when lawn is excessively wet.



WARNING: Before leaving the operator's position for any reason, disengage the blades, place the shift lever in neutral, engage the parking brake, shut engine off and remove the key.

When stopping the unit to empty a grass bag, etc., follow the instructions above. This procedure will also eliminate "browning" the grass, which is caused by hot exhaust gases from a running engine.

If unit stalls with speed control in high speed or if unit will not operate with speed control lever in a low speed position, proceed as follows.

1. Place shift lever in NEUTRAL.
2. Restart engine.
3. Place speed control lever in high speed position.
4. Release clutch-brake pedal fully.
5. Depress clutch-brake pedal.
6. Place speed control lever in desired position.
7. Place shift lever in either FORWARD or REVERSE, and follow normal operating procedures.

OPERATING THE CUTTING BLADES

The cutting blades may be engaged while the lawn tractor is moving or standing still. DO NOT engage the cutting blades abruptly as the sudden belt tension on the pulley may cause the engine to stall.



WARNING: When the blade drive is engaged, keep feet and hands away from the discharge opening, the blades or any part of the deck. When the unit is used for other than mowing, the blade drive should be disengaged.

Move the lift and disengagement lever into the DISENGAGED position to raise the deck and disengage the blades.

ADJUSTMENTS

SEAT ADJUSTMENT

To adjust the position of the seat, loosen the four self-tapping screws on the bottom of the seat. See figure 2. Slide the seat forward or backward as desired. Retighten the screws.

DECK LEVELING ADJUSTMENT

If an uneven cut is obtained, the deck may be leveled as follows.

1. Move the lift and disengagement lever forward (lower the cutting deck). Make certain the deck wheels (if so equipped) are not resting on the ground.

2. With unit on hard, level surface, measure the distance from the bottom edge of the center of the left side of deck to the ground. Measure the same distance just behind the chute area on the right side of the deck. Or, place the blades in a straight line, and measure the distance from the outside edge of the blade tips to the ground.
3. Disconnect the adjustable deck links from the deck lift pivot brackets on the left side of the unit by removing the hairpin clips and flat washers. See figure 8.
4. Thread the adjustable links in or out as necessary. Reassemble the links. Check the adjustment, and readjust as necessary.

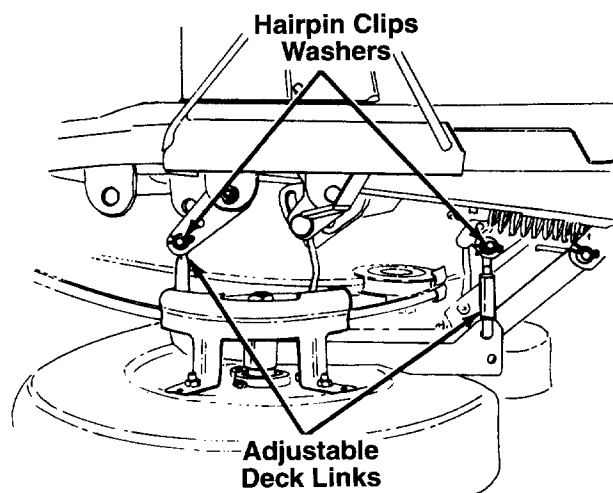


FIGURE 8.

SPEED CONTROL ADJUSTMENT (See Figure 9)

NOTE: When operating the unit initially or after replacing the belts, there will be little difference between the highest two speeds until after the belts have gone through a break-in period and have seated themselves into the pulleys.

First, adjust the speed control lever as follows:

1. Place the shift lever in Neutral position.
2. Start the engine.
3. Place the speed control lever in high speed position.
4. Release the clutch-brake pedal completely, then slowly depress the pedal all the way (to disengaged position). Hold the pedal in this position.
5. Turn the engine off.
6. After engine stops completely, release the clutch-brake pedal.
7. Disconnect the speed control link from the variable speed bracket by removing the hairpin clip and flat washer from the stud located on the bottom side of the variable speed bracket.

8. Depress the clutch-brake pedal forward until the stop on the clutch-brake pedal assembly hits solidly against the underside of the frame.
9. Remove the hairpin clip and flat washer from the rod attached to the back of the speed control lever.
10. Place the speed control lever in parking brake position.
11. Thread the ferrule on the rod until the ferrule slips into the bottom end of the slot in the speed control lever, then thread the ferrule down on the rod one full turn (to shorten).
12. Position speed control lever as follows:
 - a. **7-speed units:** Place speed control lever in second position.
 - b. **5-speed units:** Place speed control lever in first position.
13. Place ferrule into speed control lever slot, and secure with flat washer and hairpin clip. Release the clutch-brake pedal.

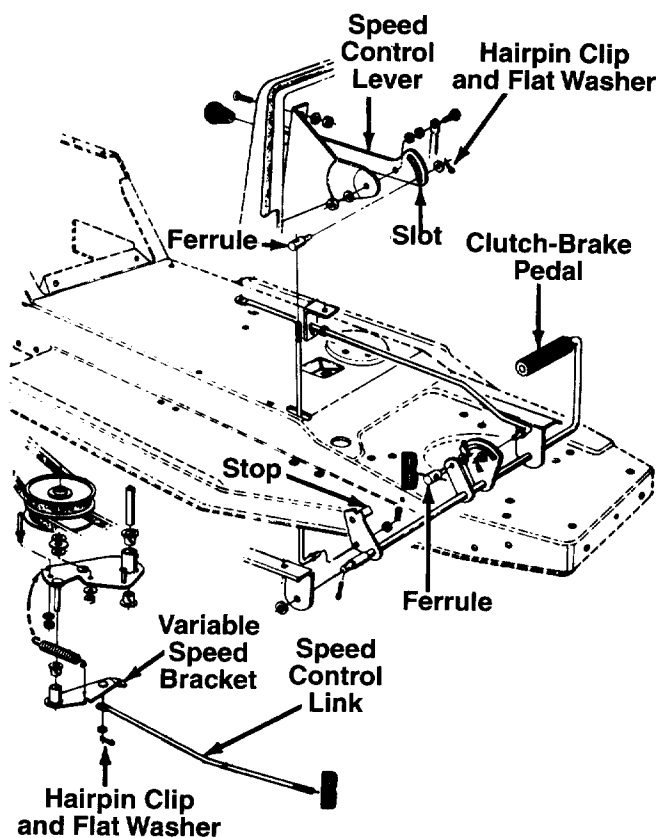


FIGURE 9.

Next, adjust the speed control link as follows to obtain the correct neutral adjustment.

1. Push the clutch-brake pedal backward by hand as far as it will go using light pressure. Hold it in this position as you make the following adjustment.

2. Thread the speed control link into or out of the ferrule until the eyelet on the opposite end of the link slips onto the stud on the bottom side of the variable speed bracket.
3. Secure the speed control link to the variable speed bracket with flat washer and hairpin clip.

NEUTRAL ADJUSTMENT (Wheel Drive)

1. Place the transmission in neutral. (The unit will move freely when pushed forward and backward with the parking brake released.)
2. Loosen the bolt which secures the shift lever assembly to the shift lever adjusting link. See figure 10.
3. Place the shift lever in the neutral slot. See figure 10.
4. Tighten the bolt to 13 foot pounds.

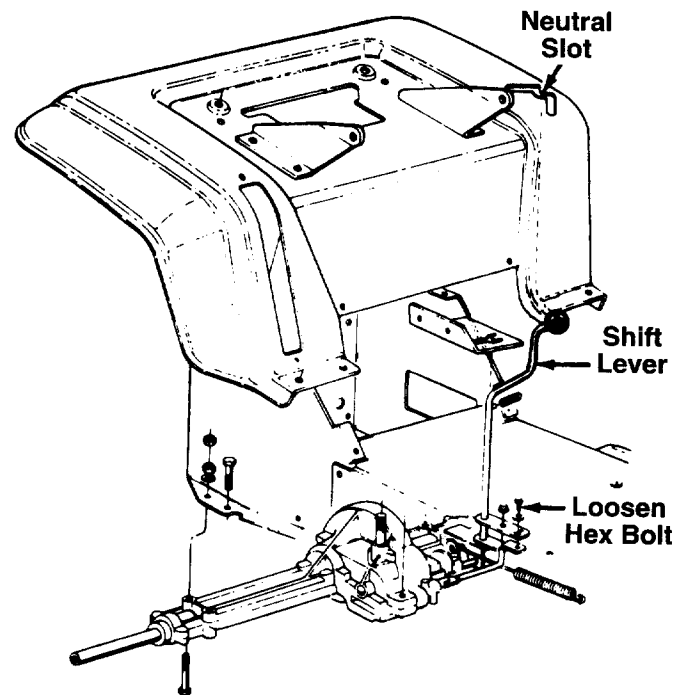


FIGURE 10.

CUTTING DECK ENGAGEMENT ADJUSTMENT

The cutting deck engagement may be adjusted to make certain deck is disengaged when lift and disengagement lever is in the disengaged position, or to obtain more drive in the cutting positions. Correct adjustment as follows.

Place the lift and disengagement lever in the highest cutting position (first notch down from disengaged position). The approximate adjustment is to have the lock nut on the threaded rod (above the rear of the deck) touching the end of the tubing. See figure 11.

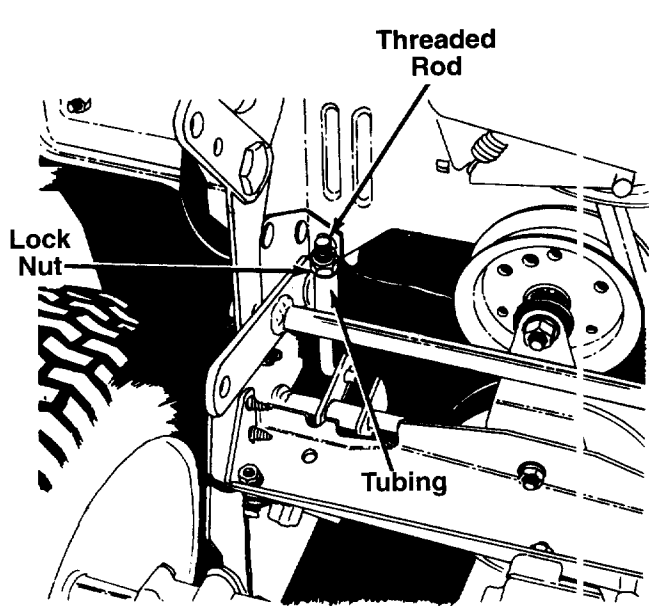


FIGURE 11.

Move the lock nut toward the tubing to start to disengage the deck earlier. Move the lock nut away from the tubing to obtain more drive in the cutting positions.



WARNING: Make certain the unit is adjusted so that the cutting blades are disengaged when the lift and disengagement lever is in the disengaged position.

WHEEL ADJUSTMENT

(If equipped with adjustable tie rods)

The caster (forward slant of the king pin) and the camber (tilt of the wheels out at the top) require no adjustment. Automotive steering principles have been used to determine the caster and camber on the tractor. The front wheels should toe-in 1/8 inch.

To adjust the toe-in, follow these steps.

1. Remove the hex nut and lock washer, and drop the tie rod end from the wheel bracket. See figure 12.
2. Loosen the hex jam nut on tie rod.
3. Adjust the tie rod assembly for correct toe-in. See figure 13. Retighten hex jam nut.

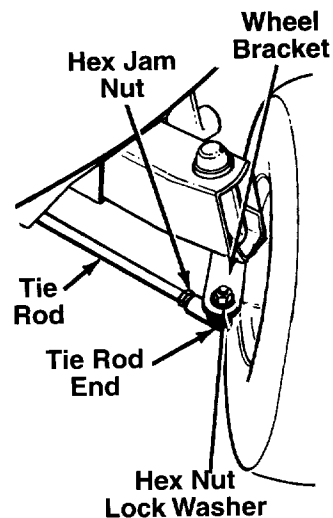


FIGURE 12.

Dimension "B" should be approximately 1/8" less than Dimension "A." See figure 13.

- A.) To increase Dimension "B," thread the rod into tie rod end.
- B.) To decrease Dimension "B," unscrew the tie rod from the tie rod end.
- C.) Reassemble tie rod. Check dimensions. Readjust if necessary.

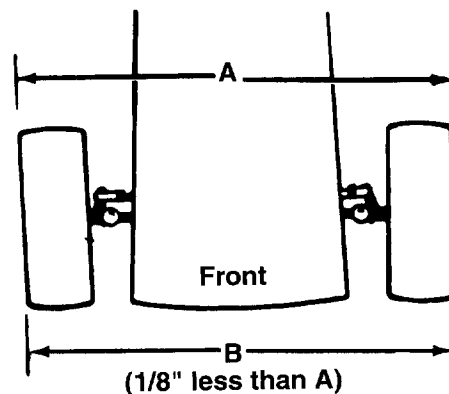


FIGURE 13.

CARBURETOR ADJUSTMENT



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

Minor carburetor adjustment may be required to compensate for differences in fuel, temperature, altitude and load. To adjust the carburetor, refer to the separate engine manual packed with your unit.

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

BRAKE ADJUSTMENT (See figure 14)

The brake is located by the left rear wheel inside the frame. During normal operation of this machine, the brake is subject to wear and will require periodic examination and adjustment.



WARNING: Do not have the engine running when you adjust the brake.

To adjust the brake, adjust the lock nut so the brake starts to engage when the brake lever is 1/4" to 5/16" away from the axle housing.

NOTE: Figure 14 is shown with the unit tipped up on rear wheels for clarity only.

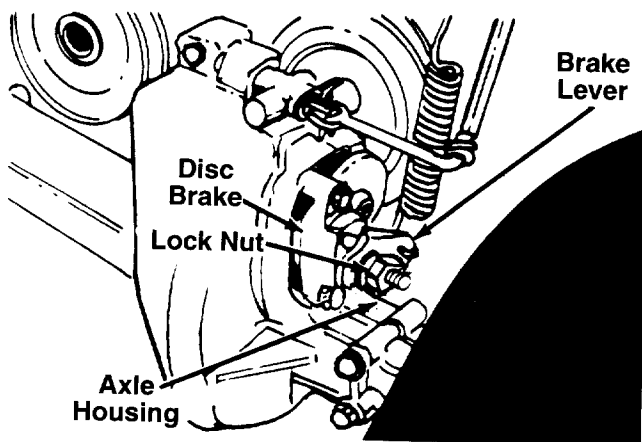


FIGURE 14.

LUBRICATION



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

STEERING GEARS

Lubricate teeth of steering gears with automotive multi-purpose grease after every 25 hours of operation or once a season.

STEERING SHAFT

Lubricate steering shaft at least once a season with light oil.

TRANSAXLE

The transaxle is lubricated and sealed at the factory and does not require checking. If disassembled for any reason, lubricate with 10 oz. of grease, part number 737-0148.

WHEELS

The front wheels are provided with grease fittings. The rear wheels must be removed from the axle for lubrication. Lubricate both front and rear wheels at least once a season with automotive multi-purpose grease.

PIVOT POINTS

Lubricate all pivot points with light oil at least once a season.

MAINTENANCE



WARNING: Disconnect the spark plug wire and ground against the engine before performing any repairs or maintenance.

TROUBLE SHOOTING

Refer to page 18 of this manual for trouble shooting information.

ENGINE

Refer to the separate engine manual for engine maintenance instructions.

Maintain **engine oil** as instructed in the separate engine manual packed with your unit. Read and follow instructions carefully.

Service **air cleaner** every 10 hours under normal conditions. Clean every few hours under extremely dusty conditions. Poor engine performance and flooding usually indicates that the air cleaner should be serviced. To service the air cleaner, refer to the separate engine manual packed with your unit.

The **spark plug** should be cleaned and the gap reset once a season. Spark plug replacement is recommended at the start of each mowing season; check engine manual for correct plug type and gap specifications.

CUTTING BLADE

A. Removal for Sharpening or Replacement



WARNING: Be sure to disconnect and ground the spark plug wire and remove ignition key before working on the cutting blade to prevent accidental engine starting. Protect hands by using heavy gloves or a rag to grasp the cutting blades.

(30" Deck)

1. Remove the hex bolt and cupped washer which secures the blade to the blade spindle.
2. Remove the blade from the spindle.

(32" and 36" Decks)

1. Remove the large bolt and lock washer which holds the blade and adapter to the blade spindle.
2. Remove the blade and adapter from the spindle.

- If the blade or blade adapter needs replacing, remove the two small bolts, lock washers and nuts which hold the blade to the adapter.

(38" Deck)

- Remove the hex flange nut which secures the blade to the blade spindle.
- Remove the blade from the spindle.

B. Sharpening

(All Decks) Remove the cutting blade by following the directions of the preceding section.

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

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

NOTE: (32" and 36" Decks) *It is recommended that the blade always be removed from the adapter for the best test of balance.*

C. Reassembly

(All Decks) Before reassembling the blade and the blade adapter (if equipped) to the unit, lubricate the spindle and the inner surface of the blade adapter with light oil (or engine oil). Lubricating the bolt holes, bolts and inner surface of the nuts is also recommended.

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

NOTE: (30" and 38" Decks) *Carefully align "star" on blade with "star" on the spindle.*

Blade Mounting Torque

(30" Deck) 7/16" Dia. Bolt 450 in. lb. min., 600 in. lb. max.

(32" and 36" Decks) 3/8" Dia. Bolt 420 in. lb. min., 500 in. lb. max., 5/16" Dia. Bolt 200 in. lb. min., 275 in. lb. max.

(38" Deck) Hex Flange Nut: 1080 in. lb. min., 1230 in. lb. max.

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

FUEL FILTER

Your unit is equipped with a replaceable in-line fuel filter. Replace filter whenever contamination or discoloration is noticed. Order replacement filter through your engine authorized service dealer.

BELT REMOVAL AND REPLACEMENT



WARNING: Disconnect the spark plug wire and ground it against the engine. Block the wheels of the unit.

NOTE: When changing the belts, a spring puller or other suitable tool is required to remove some of the springs. A spring puller (part number 732-0571) is available to assist in removal of springs.

Removing the Deck Belt (30" Deck)

- Place the lift lever in the disengaged position.
- Remove the two belt guard pins from the engine pulley belt guard. See figure 15.

NOTE: Make certain belt guard pins are reassembled as shown in figure 15.

- Unhook the deck belt from the engine pulley.
- Place the lift lever in the engaged (all the way forward) position.
- Disconnect the spring from the left rear transmission support bracket. See figure 16.
- Remove the two belt guard pins by the deck pulley.
- Remove the belt from the deck pulley.
- Remove and replace the belt, following the instructions in reverse order.

NOTE: Figures 15, 18 and 19 are shown with the unit tipped up for clarity. It is not necessary to tip the unit to remove the belts.

Removing the Deck Belt (32", 36" and 38" Deck)

- Place the lift lever in the disengaged position.
- Remove the two belt guard pins from the engine pulley belt guard. See figure 15.

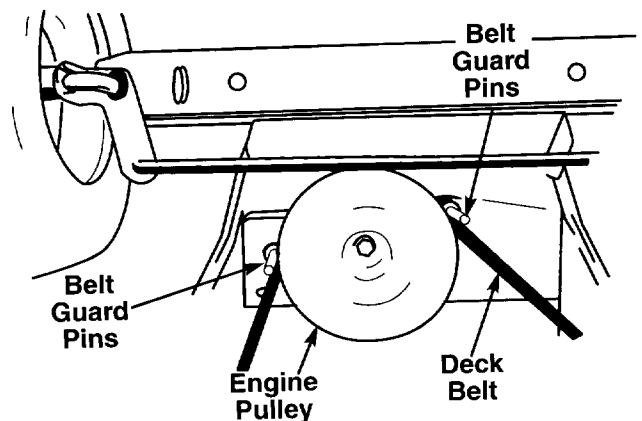


FIGURE 15.

NOTE: Make certain belt guard pins are reassembled as shown in figure 15.

- Unhook the deck belt from the engine pulley.
- Place the lift lever in the engaged (all the way forward) position.
- Disconnect the spring from the left rear transmission support bracket. See figure 16.
- Disconnect the two front deck links by removing the hairpin clips and flat washers.

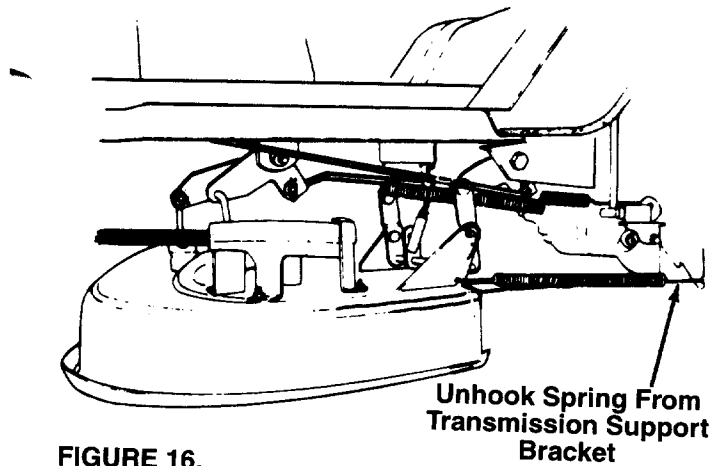


FIGURE 16.

7. Remove the belt guards at each deck pulley by removing the hex bolts, lock washers and hex nuts or self-tapping screws. See figure 17.
8. Remove and replace the belt, following the instructions in reverse order.

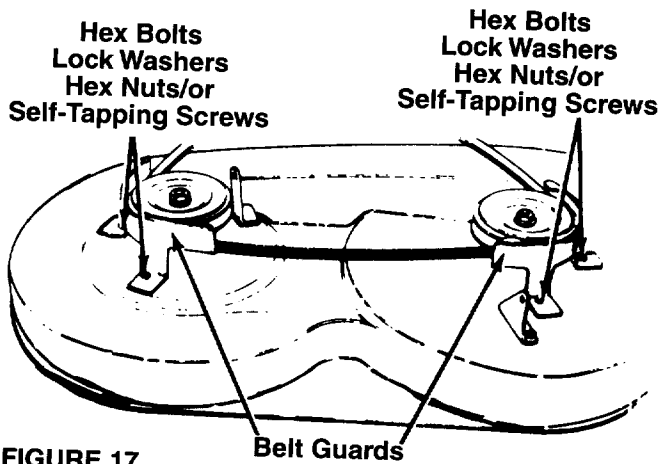


FIGURE 17.

Removing the Rear Drive Belt (Refer to figure 18)

1. Start the engine. Place shift lever in neutral. Place speed control lever in high speed position and turn engine off. Engage lift lever (move all the way forward). Do not set parking brake.
2. Disconnect the large spring from the transmission support bracket, using a spring puller or other suitable tool.

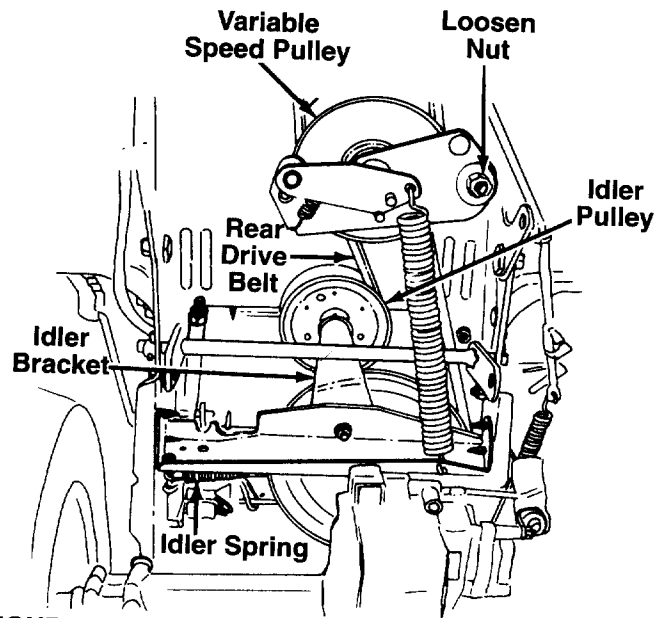


FIGURE 18.

3. Disconnect the idler spring from the bolt on the right side of the frame and transmission support bracket.
4. Loosen (do not remove) the hex nut which secures the variable speed pulley bracket to allow clearance in order to remove the belts. A 9/16" socket wrench is required.
5. Remove belt from transmission pulley and idler pulley. Remove the rear drive belt from around the top of the variable speed pulley.
6. Reassemble new belt, following instructions in reverse order.

Removing the Forward Drive Belt (See figure 19)

1. To remove the forward drive belt, first remove the rear drive belt (steps 1 through 5 of the preceding instructions).
2. Remove the deck belt from the engine pulley (steps 1 through 3 of "Removing The Deck Belt").
3. Remove the engine pulley belt guard by removing two self-tapping screws from each side of the frame. Remove the engine pulley belt guard by moving it back and to the left.
4. Remove the forward drive belt from the engine pulley and from the variable speed pulley.
5. Reassemble new belt, following instructions in reverse order.

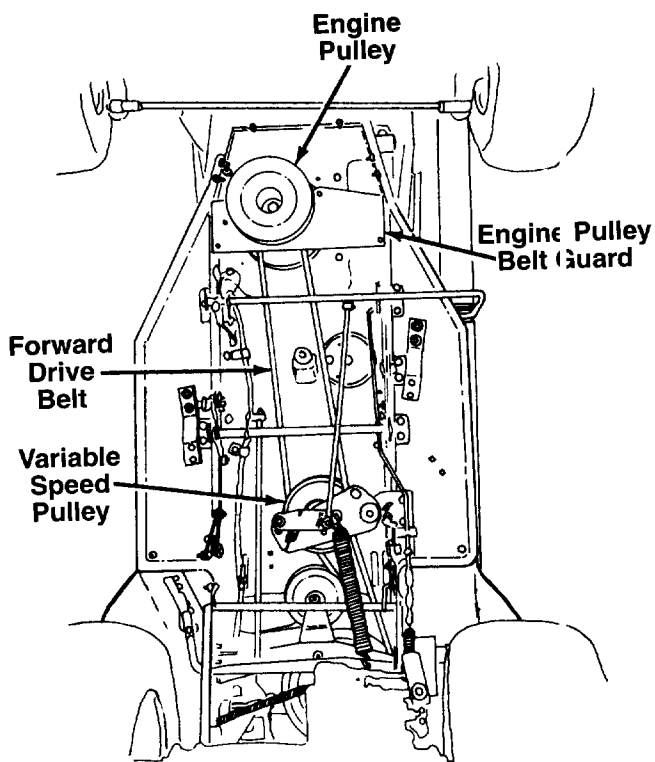


FIGURE 19.

BATTERY CARE AND MAINTENANCE (TYPE "A" BATTERY)

Type "A" batteries are sealed and are maintenance free.

BATTERY CARE AND MAINTENANCE (TYPE "B" BATTERY)

CHECK FLUID LEVEL

Check fluid level inside each cell of the battery every two weeks and before and after charging. Always keep level between maximum and minimum fill levels.

Add only distilled water. Never add additional acid or any other chemicals to the battery after initial activation.

NOTE: After operating the lawn tractor for a long period of time, check the fluid level in the battery as it can overheat and lose fluid.

CHARGING THE BATTERY

The engine is equipped with an alternator which charges battery when tractor is operated. Under normal conditions, the battery only needs to be charged before, during and after off-season storage. Follow the instructions under "Off-Season Storage."

To charge the battery: Battery P/N 725-1705B—Charge at 2-3 amps for one hour. Battery P/N 725-1707B and 725-0453E—Charge at 6 amps for one hour.

REMOVING / INSTALLING / JUMP STARTING



WARNING: When removing or installing the battery, follow these instructions to prevent the screwdriver from shorting against the frame.

Removing the Battery: Disconnect negative cable first, then positive cable.

Installing the Battery: Connect positive cable first, then negative cable.

Jump Starting

1. First, connect end of one jumper cable to the positive terminal of the good battery, then the other end to the positive terminal of the dead battery.
2. Connect the other jumper cable to the negative terminal of the good battery, then to the FRAME OF THE UNIT WITH THE DEAD BATTERY.



WARNING: Failure to use this procedure could cause sparking, and the gas in either battery could explode.

CLEAN THE BATTERY

Clean the battery by removing it from the unit and washing with a baking soda and water solution. If necessary, scrape the battery terminals with a wire brush to remove deposits. Coat terminals and exposed wiring with grease or petroleum jelly to prevent corrosion.

BATTERY FAILURES

Some common causes for battery failure are: incorrect initial activation, lack of water, adding chemicals other than water after initial activation, undercharging, overcharging, corroded connections, freezing. **These failures do not constitute warranty.**

TIRES

Recommended operating tire pressure is approximately 12 p.s.i. (check sidewall of tire for tire manufacturer's recommended pressure). Maximum tire pressure under any circumstances is 30 p.s.i. Equal tire pressure should be maintained on all tires.

When installing a tire to the rim, be certain rim is clean and free of rust. Lubricate both the tire and rim generously. Never inflate to over 30 p.s.i. to seat beads.



WARNING: Excessive pressure (over 30 p.s.i.) when seating beads may cause tire/rim assembly to burst with force sufficient to cause serious injury.

OFF-SEASON STORAGE

If the machine is to be inoperative for a period longer than 30 days, prepare for storage as follows.

1. Clean the engine and the entire unit thoroughly.
2. Lubricate all lubrication points. Wipe the entire machine with an oiled rag to protect the surfaces.

3. Refer to the engine manual for correct engine storage instructions. The engine must be completely drained of fuel to prevent gum deposits from forming on essential carburetor parts, fuel lines and fuel tanks.
4. **Charge battery fully.** The battery loses some of its charge each day when the unit is not used. NEVER store battery without a full charge. Recharge battery before returning to service or every two months, whichever occurs first.
5. When storing unit for extended periods, disconnect battery cables. Removing battery from unit is recommended.
6. Store unit in a clean, dry area. Do not store next to corrosive materials, such as fertilizer.

NOTE: *When storing any type of power equipment in an unventilated or metal storage shed, care should be taken to rustproof the equipment. Using a light oil or silicone, coat the equipment, especially any chains, springs, bearings and cables.*

GRASS COLLECTOR AVAILABLE

GRASS COLLECTOR Model 190-063-000 is available as optional equipment for the lawn tractors with 36" and 38" decks (requires mounting kit model 190-084-000).



WARNING: The mower should not be operated without the entire grass catcher or chute deflector in place.

NOTE: *Under normal usage bag material is subject to wear, and should be checked periodically. Be sure any replacement bag complies with the mower manufacturer's recommendations. For replacement bags, use only factory authorized replacement bag.*

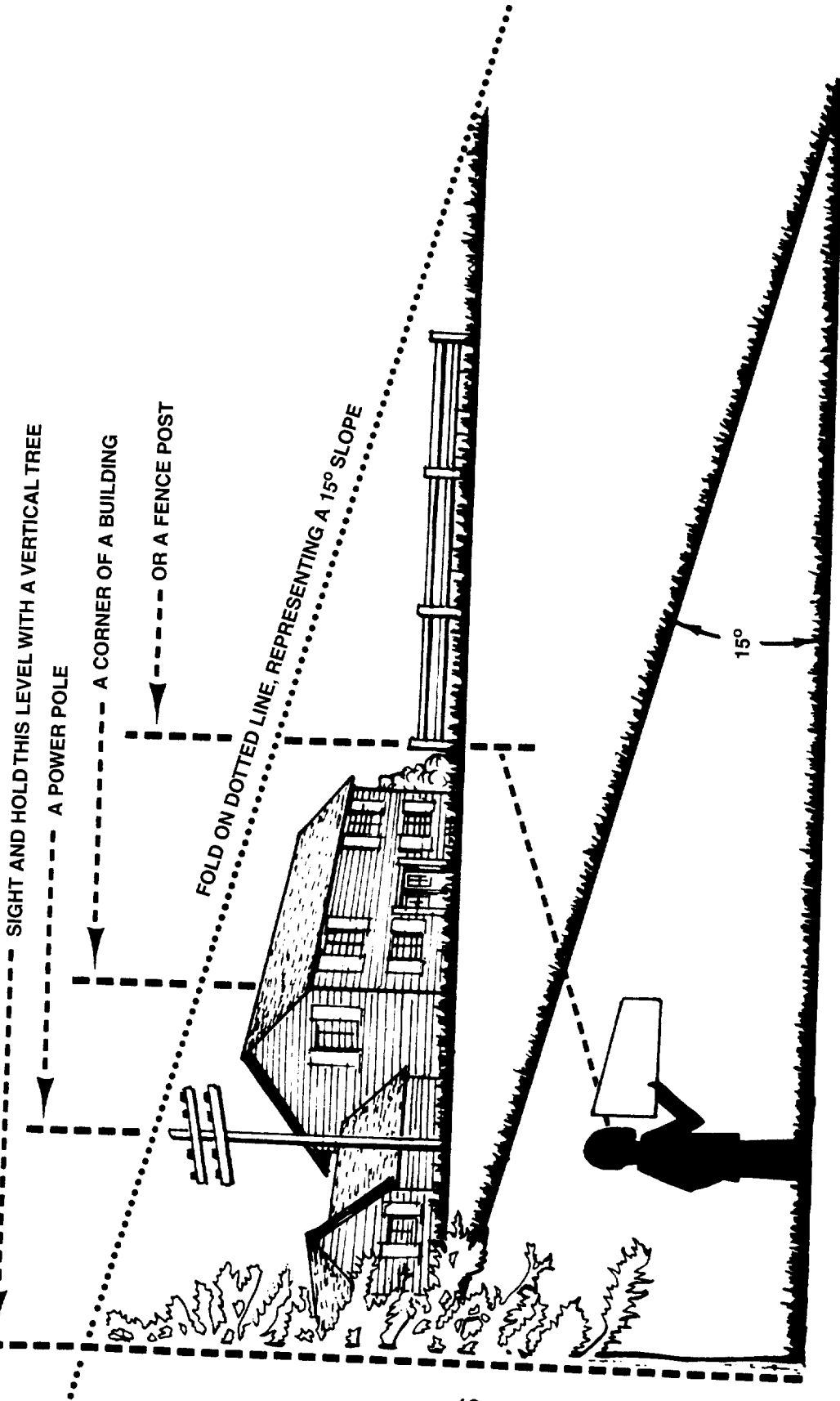
TROUBLE SHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Engine will not crank	Safety switch button not depressed	There are two switches in the starting circuit of your unit: the clutch pedal switch and the deck lift lever switch. Make certain the actuator is fully depressing the buttons on each switch.
	Battery installed incorrectly	The battery must be installed with negative terminal attached to black ground wire. Negative terminal is identified at the post by "NEG", "N" or "-". The positive terminal, identified by "POS", "P" or "+", must be attached to the big red wire which goes to the solenoid.
	Battery is dead or weak	Check fluid level in battery. If fluid is low, fill between maximum and minimum fill lines with water. Charge with 6 amp charger until fully charged.
Engine cranks but will not start	Throttle or choke not in starting position	Check owner's guide for correct position for throttle control and choke for starting.
	No spark to spark plug	Spark plug lead disconnected. Connect lead. Place spark plug lead away from engine block about 1/8". Crank engine. There should be a spark. If not, have engine repaired at authorized engine service dealer. Faulty spark plug. To test, remove spark plug. Attach spark plug lead to spark plug. Ground the spark plug body against the engine block. Crank the engine. The spark plug should fire at the electrode. Replace if it does not.
	No fuel to the carburetor	Gasoline tank empty. Fill. Fuel line or in-line fuel filter plugged. Remove and clean fuel line. Replace filter if necessary.
	Air filter dirty	If the air cleaner is dirty, the engine may not start. Clean or replace as recommended by the engine manufacturer.
Engine smokes	Engine loses crankcase vacuum	Dipstick not seated or broken. Replace defective part. Engine breather defective. Replace.
Excessive vibration	Bent or damaged blade spindle	Stop engine immediately. Check all pulleys, blade adapters, keys and bolts for tightness and damage. Tighten or replace any damaged parts.
	Bent blade	Stop engine immediately. Replace damaged blade. Only use original equipment blades.
Mower will not discharge grass or leaves uncut strips	Engine speed low Speed selection Blades short or dull	Throttle must be set at full throttle. Use lower ground speed. The slower your ground speed, the better the quality of cut. Sharpen or replace blades (uncut strip problem only).

If the above steps fail to correct the problem, take the unit to your local authorized service dealer for repair.

SLOPE GAUGE

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



Do not mow on inclines with a slope in excess of 15 degrees (a rise of approximately 2-1/2 feet every 10 feet). A riding mower could overturn and cause serious injury. If operating a walk-behind mower on such a slope, it is extremely difficult to maintain your footing and you could slip, resulting in serious injury.

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

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

**Copy the information from
your model plate here:**
(Located Under The Seat)

MTD PRODUCTS INC
CLEVELAND, OHIO 44134

*Please help us
help you!*

**Have your
model number
available
when you call**

Engine Oil (SAE 30)	7: 7-0208	Transmission V-Belt Front	754-0280
Throttle Control Wire 18.5" Lg.	7: 6-0776	Transmission V-Belt Rear	754-0281
Throttle Control Wire 22" Lg.	7: 6-0638	38" DECK: Blades	742-0610 (2)
Battery	725-1705B	V-Belt (Deck)	754-0329A
Steering Wheel*	731-1693	36" DECK: High Lift Blades	742-0496 (2)
Steering Wheel Cap (Round)	731-0220	Blade Adapter	748-0300 (2)
Steering Wheel**	731-1687	V-Belt (Deck)	754-0364
Steering Wheel Cap (Square) MTD	7: 1-1459A	Twin Bag Grass Collector	
Steering Wheel Cap (Square) No Logo	7: 1-1460A	36" and 38" Decks (Optional)	190-063-000
Front Hub Cap (Black)	731-0484A (2)	Requires Adapter Kit	190-084-000
Front Wheel Bearings (Plastic)	74-0487A (4)	32" DECK: Blades	742-0487 (2)
Front Wheel Bearings (Ball Bearings)	741-0569 (4)	Blade Adapter	748-0300 (2)
Head Lamp Bulbs	725-0963 (2)	V-Belt (Deck)	754-0363
Fuel Cap	51-0603	30" DECK: Blade	742-0609
Deck Wheel 5"+	7: 4-0973 (2)	V-Belt (Deck)	754-0445
Circuit Breaker	725-0459	Illustrated Parts Lists	Order By Model No.
Ignition Key	725-0201		

* Uses Round Steering Wheel Cap ** Uses Square Steering Wheel Cap + Optional

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WARNING:

The Engine Exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.