



MODEL NO. 30116 — 90001 &amp; UP

**OPERATOR'S  
MANUAL****116 COMMERCIAL WALK MOWER**

To assure maximum safety, optimum performance, and to gain knowledge of the product, it is essential that you or any other operator of the mower read and understand the contents of this manual before the engine is ever started. Pay particular attention to the **SAFETY INSTRUCTIONS** highlighted by this symbol —



The safety alert symbol means **CAUTION, WARNING or DANGER** — personal safety instruction. Failure to comply with the instruction may result in personal injury.



# FOREWORD

The commercial walk mowers have advanced concepts in engineering, design and safety; and if maintained properly, will give excellent service.

Since they are high-quality products, Toro is concerned about the future use of the machines and safety of the user. Therefore, read this manual to familiarize yourself with proper set-up, operation and maintenance instructions. The major sections of the manual are:

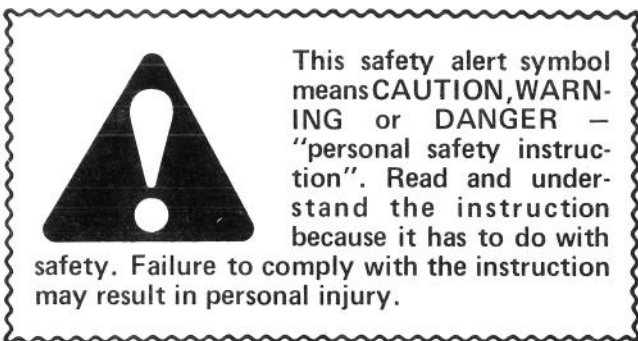
1. Safety Instructions
2. Set-up Instructions
3. Before Operating
4. Maintenance

Certain information in this manual is emphasized. DANGER, WARNING and CAUTION identify personal safety-related information. IMPORTANT identifies mechanical information demanding special attention. Be sure to read this directive because it deals with the possibility of damaging a part or parts of the machine. NOTE identifies general information worthy of special attention.

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## SAFETY INSTRUCTIONS



Improper use or maintenance of the machine can result in injury. To reduce the potential for injury, comply with the following safety instructions.

### BEFORE OPERATING

1. Read and understand the contents of this Operator's Manual before operating the machine.

Become familiar with all controls and know how to stop quickly. A free replacement manual is available by sending complete Model and Serial Number to:

The Toro Company  
8111 Lyndale Avenue South  
Minneapolis, Minnesota 55420

2. Do not allow children to operate the machine. Do not allow adults to operate the machine without proper instruction.

3. Before attempting to start engine, shift into neutral, move deck engagement switch into DIS-ENGAGE position and lock parking brake.

4. Remove all debris or other objects that might be picked up and thrown by the cutter blades. Keep all bystanders away from the mowing area.

# SAFETY INSTRUCTIONS

5. Keep all shields and safety devices in place. If a shield, safety device or decal is damaged, malfunctioning or illegible, repair or replace it before operation is commenced. Also tighten any loose nuts, bolts and screws to assure machine is in safe operating condition.

6. Do not operate machine while wearing sandals, tennis shoes, sneakers or shorts. Also, do not wear loose fitting clothing which could get caught in moving parts. Always wear long pants and substantial shoes. Wearing safety glasses, safety shoes and a helmet is advisable and required by some local ordinances and insurance regulations.

7. Fill fuel tank with gasoline before starting the engine. Avoid spilling gasoline. Since gasoline is flammable, handle it carefully.

- A. Use an approved gasoline container.
- B. Do not fill tank while engine is hot or running.
- C. Do not smoke while handling gasoline.
- D. Fill fuel tank outdoors and up to about one inch (25 mm) from top of the tank, not the filler neck.
- E. Wipe up any spilled gasoline.

## WHILE OPERATING

8. Start engine when parking brake is set, blade is disengaged, and transmission is in neutral.

9. Do not run the engine in a confined area without adequate ventilation. Exhaust fumes are hazardous and could possibly be deadly.

10. Using the machine demands attention, and to prevent loss of control:

- A. Mow only in daylight or when there is good artificial light.
- B. Watch for holes or other hidden hazards.
- C. Do not drive close to a sand trap, ditch, creek or other hazard.
- D. Reduce speed when making sharp turns and when turning on hillsides.

11. The grass deflector must always be installed and in down position on the side discharge cutting unit. If the cutting unit discharge area ever plugs, shut engine off before removing the obstruction.

12. Never raise the cutting unit while the blades are rotating.

13. If the cutting blades strike a solid object or the machine vibrates abnormally, shut the engine off. Remove high tension wire from spark plug to prevent possibility of accidental starting. Check cutting unit and traction unit for damage and

malfunctioning parts. Repair any damage before restarting the engine and operating the cutting unit. Be sure blades are in good condition and blade bolts are tight.

14. Cut grass slopes carefully. Do not start, stop, or turn suddenly.

15. Do not touch engine or muffler while engine is running or soon after it is stopped. These areas could be hot enough to cause a burn.

16. Before leaving the operator's position — behind handle or leaving mower unattended, shift transmission into NEUTRAL, apply parking brake, move deck engagement switch to OFF, and shut OFF engine.

## MAINTENANCE

17. Disconnect high tension wire from spark plug to prevent accidental starting of the engine when servicing, adjusting or storing the machine.

18. If tractor and mower must be tipped to perform maintenance or an adjustment, drain gasoline from fuel tank and oil from crankcase.

19. When driving unit forward, always use upper "Forward" traction drive handle. When backing up, always use lower "Reverse" traction drive handle.

20. To reduce potential fire hazard, keep the engine free of excessive grease, grass, leaves and accumulations of dirt.

21. Be sure machine is in safe operating condition by keeping nuts, bolts and screws tight. Check the blade mounting bolts and nuts frequently to be sure they are tightened to specification.

22. If the engine must be running to perform a maintenance adjustment, keep hands, feet, clothing and other parts of the body away from the cutting unit blades and other moving parts.

23. Do not overspeed the engine by changing governor settings. To be sure of safety and accuracy, have an Authorized TORO Distributor check maximum engine speed with a tachometer.

24. Engine must be shut off before checking oil or adding oil to the crankcase.

25. Allow engine to cool before storing mower in any enclosure such as a garage or storage shed. Make sure the mower fuel tank is empty if machine is to be stored in excess of 30 days. Do not store mower near any open flame or where gasoline fumes may be ignited by a spark. Always store gasoline in a safety-approved, red metal container. Close fuel shut-off valve before storing or transporting machine.

# SAFETY INSTRUCTIONS

26. Perform only those maintenance instructions described in this manual. If major repairs are ever needed or assistance is desired, contact an Authorized Toro Distributor. To ensure optimum performance and safety, always purchase genuine TORO replacement parts and accessories to keep the Toro all TORO. NEVER USE "WILL-FIT" REPLACEMENT PARTS AND ACCESSORIES MADE BY OTHER MANUFACTURERS. Look for the TORO logo to assure genuineness. Using unapproved replacement parts and accessories could void the warranty of The Toro Company.

## ⚠ CAUTION

1. KEEP ALL SHIELDS IN PLACE.
2. BEFORE LEAVING OPERATOR'S POSITION.
  - A. MOVE TRANSMISSION TO NEUTRAL.
  - B. SET PARKING BRAKE.
  - C. DISENGAGE DECK ENGAGEMENT CLUTCH.
  - D. SHUT OFF ENGINE.
3. WAIT FOR ALL MOVEMENT TO STOP BEFORE SERVICING MACHINE.
4. KEEP BYSTANDERS FROM AREAS BEING MOWED.



## SAFETY AND INSTRUCTION DECALS

The following decals are installed on the machine. If any become damaged or illegible, replace it. The decal part number is listed below and in your parts catalog. Replacement can be ordered from your Authorized Toro Distributor.

↑ **FORWARD - TRACTION DRIVE**  
↓ **PULL TO BRAKE**

ON UPPER CONTROL BAR  
(Part No. 54-2740)

↓ **REVERSE - TRACTION DRIVE**

ON LOWER CONTROL BAR  
(Part No. 52-2120)

### ⚠ DANGER

STOP ENGINE BEFORE LEAVING OPERATOR POSITION.  
KEEP BYSTANDERS FROM AREA BEING MOWED.  
KEEP ALL GUARDS IN PLACE.

READ OPERATORS MANUAL BEFORE OPERATING THIS MACHINE.  
REPLACEMENT MANUAL AVAILABLE BY SENDING MODEL  
AND SERIAL NUMBER TO: THE TORO CO., 8111 LYNDALE AVE.,  
MINNEAPOLIS, MN 55420.

USE REVERSE -  
TRACTION DRIVE  
BAR ONLY.

DO NOT SHIFT UNDER LOAD.  
USE FORWARD - TRACTION DRIVE BAR ONLY

R N 1 2 3 4

ON CONTROL PLATE  
(Part No. 52-2140)



ON CONTROL PANEL  
(Part No. 54-2870)

## SPECIFICATIONS

**16 hp Briggs & Stratton Engine:** 2 cylinder, four cycle, electric start, vertical shaft engine has output of 16 hp @ 3600 rpm and 25.7 ft-lb torque @ 2700 rpm. Displacement is 40 cubic inches. Crankcase oil capacity is 48 ounces and fuel tank capacity is 5 gallons. Correct spark plug is Champion RJ-12 or Autolite 308 or equivalent resistor type.

**Frame:** 11 ga. formed steel box with 1 in. dia. axle with 1/4 x 4 U-strap rear frame bolted to frame.

**Wheels and Tires:** 6.5 x 13 pneumatic tires are mounted on welded steel wheels which have greaseable ball bearings. Recommended tire pressure is 15 psi.

**Transmission:** Permanently lubricated and fully inclosed gear box. In line shift pattern with 4 forward speeds, neutral and reverse.

**Traction Drive Belts:** A-section, V-belt with 3 in. dia. take up idler to gear box from engine. 2 rib A-section banded belt to each wheel from gear box output shafts.

### Gear Drive Reduction:

- 1st gear — 9.2
- 2nd gear — 7.0
- 3rd gear — 4.5
- 4th gear — 3.0
- Rev. — 6.0

### Ground Speed @ 3200 Engine rpm:

- 1st gear — 1.5 MPH
- 2nd gear — 1.9 MPH
- 3rd gear — 3.0 MPH
- 4th gear — 4.5 MPH
- Rev. — 2.2 MPH

**Optional Accessories:** Sulky attachment, Model #30122.

# LOOSE PARTS

**Note:** Use this chart as a checklist to assure all parts have been received. Without these parts, total set-up cannot be completed.

DESCRIPTION	QTY.	USE
Upper Handle	1	Install upper handle to frame.
Flange Capscrew 3/8-16 x 1" lg.	4	
Flangenut 3/8-16	4	
Shift Lever	1	Install shift lever to transmission.
Lockwasher	1	
Plain Washer	1	
Capscrew 1/4-28 x 3/4" lg.	1	
Cable Clamp	1	Secure choke cable to engine.
Casing Clamp	2	Secure choke and throttle cables to engine.  Secure wire harness and negative battery cable to engine mounting bolt. Secure Positive battery cable to solenoid. Secure wire harness to solenoid. Secure wire harness to throttle cable.
Capscrew 1/4-20 x .75"	2	
Locknut — 5/16-18	1	
Locknut — 1/4-20	1	
Locknut — #10-32	1	
Wire Tie	2	
Rod Fitting	2	Install control rods.
Washer	2	
Hairpin Cotter	2	
Fuel Tank	1	Install fuel tank and fuel tank plate.
Fuel Tank Straps	2	
Fuel Tank Plate — Decal	1	
Capscrew 1/4-20 x .62"	6	
Locknut 1/4-20	6	
Battery	1	Install battery.
Battery holder	2	
Capscrew 3/8-16 x 1.25"	2	
Locknut 3/8-16	2	
Battery Strap	1	
Battery Support Rod	2	
Wing Nut 1/4-20	2	
Battery Pad	2	
Battery Cover	1	
Carriage Bolt 5/16-18	2	
Locknut 5/16-18	2	
Battery Cable — Positive	1	
Battery Cable — Negative	1	
Operators Manual	2	Read manual before operation. Fill out and return to Toro.
Registration Card	1	

## SET-UP INSTRUCTIONS

### INSTALL UPPER HANDLE

1. Align upper handle mounting holes with mounting holes in frame and secure each side with (2) 3/8-16x1" lg. flange capscrews and flangenuts (Fig. 1).

### INSTALL SHIFT LEVER

1. Insert shift lever thru slot in control panel and align mounting hole in lever with mounting shaft on transmission. Do not remove rubber washer on top of transmission. Secure lever to transmission with 1/4-28x3/4" lg. capscrew, lockwasher and plain washer. Torque capscrew to 100-125 in. lb (Fig. 1).

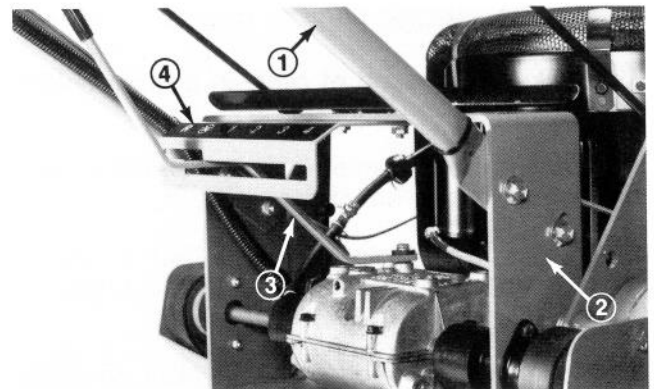


Figure 1

- 1. Upper handle
- 2. Frame
- 3. Shift lever
- 4. Control panel



# SET-UP INSTRUCTIONS

## CONNECT THROTTLE CONTROL

1. Position handle mounted throttle control in FAST position.
2. Hook wire Z bend of cable in hole of engine throttle lever (Fig. 2).

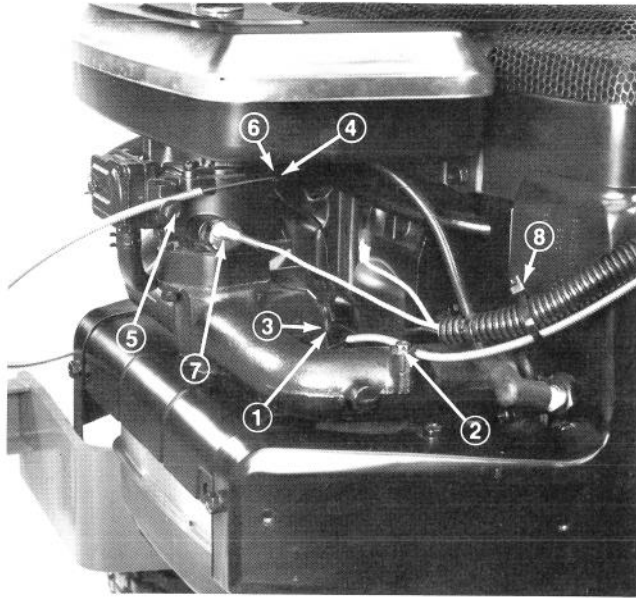


Figure 2

- |                                  |                               |
|----------------------------------|-------------------------------|
| 1. Throttle wire Z bend          | 5. Choke cable clamping screw |
| 2. Throttle cable clamping screw | 6. Choke lever                |
| 3. Throttle lever                | 7. Connectors                 |
| 4. Choke wire Z bend             | 8. Wire tie                   |

3. Loosen cable clamping screw allowing cable installation, but do not tighten (Fig. 2).

4. Pull control cable casing to full extent of throttle lever and tighten cable clamping screw (Fig. 2).

## CONNECT CHOKE CABLE

1. Position handle mounted choke control in full CHOKE position.
2. Hook wire Z bend of cable in bottom hole of engine choke lever (Fig. 2).
3. Loosen cable clamping screw allowing cable installation, but do not tighten (Fig. 2).
4. Pull control cable casing to full extent of choke lever travel and tighten cable clamping screw (Fig. 2).
5. Secure front section of choke cable to engine with casing clamp and 1/4-20 x .75" capscrew. Secure rear of cable to engine with cable clamp, using engine cover mounting bolt (Fig. 3).

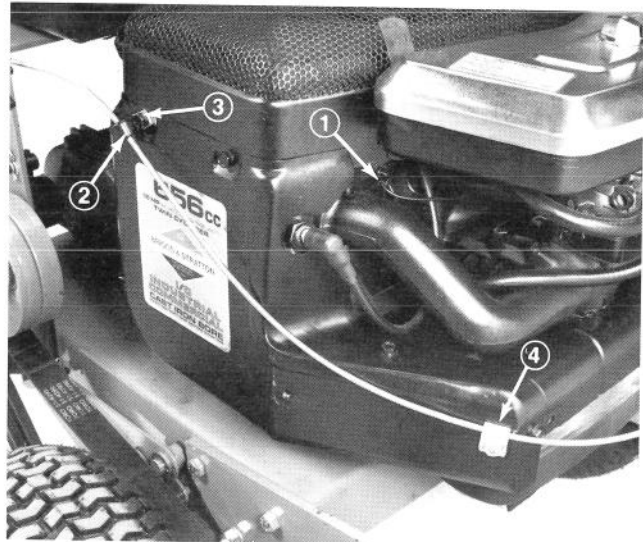


Figure 3

- |                |                      |
|----------------|----------------------|
| 1. Longer wire | 3. Engine cover bolt |
| 2. Cable clamp | 4. Casing clamp      |

## CONNECT WIRE HARNESS

1. At front end of wire harness there are (3) wires. Secure (2) short wires to appropriate connectors at left side of carburetor (Fig. 2). Secure third, longer wire to terminal at right side of carburetor (Fig. 3).

2. Secure male and female clutch connectors (Fig. 4). Secure ring terminal wire from clutch connector and black, negative (-) battery cable to engine mounting bolt with 5/16-18 locknut (Fig. 4).



Figure 4

- |                           |                           |
|---------------------------|---------------------------|
| 1. Clutch connectors      | 4. Positive battery cable |
| 2. Engine mounting bolt   | 5. Casing clamp           |
| 3. Negative battery cable | 6. Wire tie               |

# SET-UP INSTRUCTIONS

3. Secure larger ring terminal wire and red positive (+) battery cable to top terminal of starter solenoid with 1/4-20 locknut (Fig. 4).

4. Secure remaining wire to rear terminal of solenoid with #10-32 locknut (Fig. 4).

5. Secure throttle cable to blower shroud with casing clamp and 1/4-20 x .75" lg. capscrew (Fig. 4).

6. Secure wire harness to throttle cable with (2) wire ties (Figs. 2 & 4).

## INSTALL CONTROL RODS

1. Thread a rod fitting onto each control rod approximately 2" (Fig. 5).

2. Insert rod fitting ends into mounting holes in idler brackets (from outside) and secure with washers and hairpin cotters (Fig. 5).

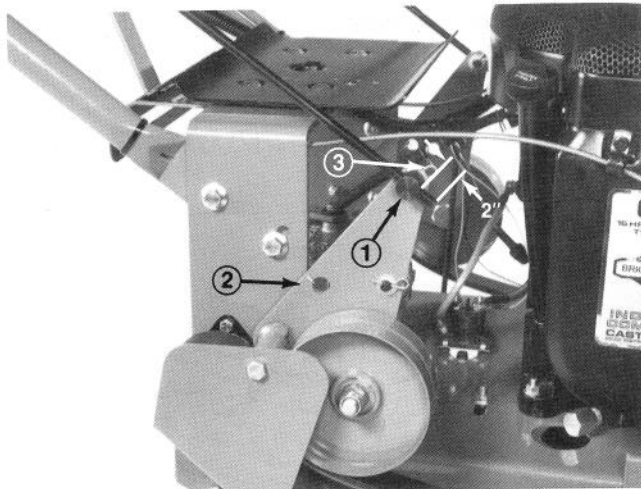


Figure 5

- 1. Rod fitting
- 2. Idler brackets
- 3. Washer & hairpin cotter

3. Control rods should be adjusted so parking brake lever can be swung into a snug position against the upper handle, while pulling back on upper control bar.

4. Check operation. If adjustment is required, remove hairpin cotter and washer, thread rod fitting up or down to proper position on rod and resecure to idler bracket.

**Note:** The control bar and upper handle must be parallel when in relaxed drive and brake positions.

5. Check travel of idler pulleys when fully engaging wheel belts. Pulley travel should be approximately 3/4" (Fig. 5)

6. If pulley travel is greater than 3/4", remove hairpin cotter and washer securing brake rod fitting to idler bracket.

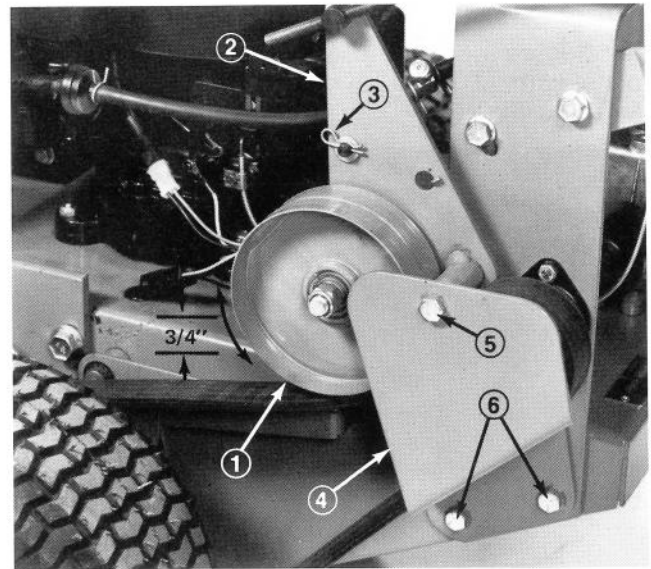


Figure 6

- 1. Idler pulley
- 2. Idler bracket
- 3. Hairpin cotter, washer & brake rod fitting
- 4. Idler support
- 5. Top capscrew
- 6. Bottom capscrews

7. Thread fitting down rod and resecure to idler bracket. Check adjustment and readjust if necessary.

8. Repeat procedure on opposite side if adjustment is required.

## MOUNT FUEL TANK

1. Position fuel tank onto mounting plate so fitting opening is to left side (Fig. 7).

2. Secure fuel line straps to rear of fuel tank mounting plate with (2) 1/4-20 x 5/8" lg. capscrews and locknuts (Fig. 7)

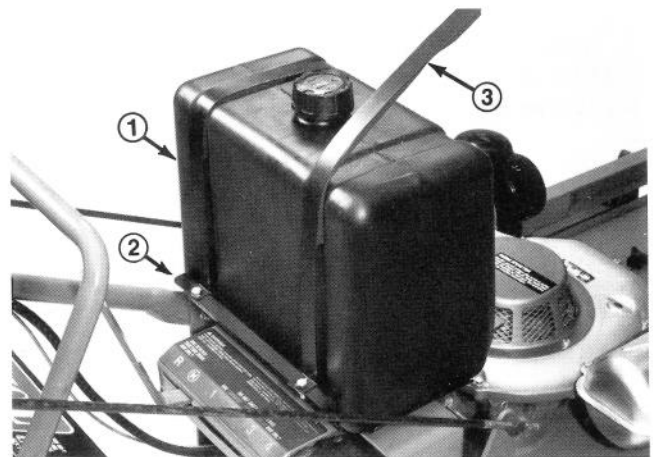


Figure 7

- 1. Fuel tank
- 2. Mounting plate
- 3. Fuel tank straps

# SET-UP INSTRUCTIONS

3. Wrap straps over tank and secure to front of mounting plate with (2) 1/4-20 x 5/8" lg. capscrews and locknuts (Fig. 8).

4. Secure fuel tank decal plate to front of mounting plate with (2) 1/4-20 x 5/8" lg. capscrews and locknuts (Fig. 8).

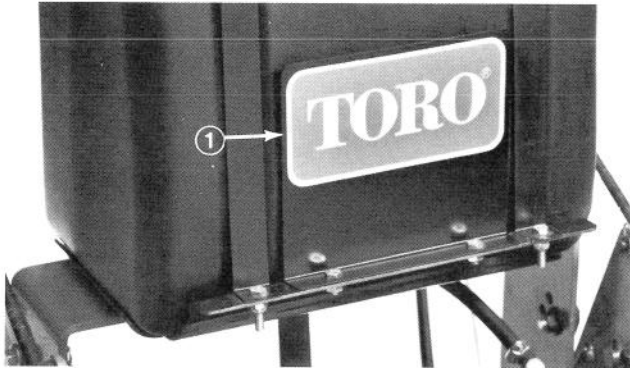


Figure 8

1. Fuel tank decal plate

5. Route fuel line thru hose clip and install onto fuel tank fitting with hose clamp (Fig. 9). Hose clip may be rotated to avoid kinking in fuel line.

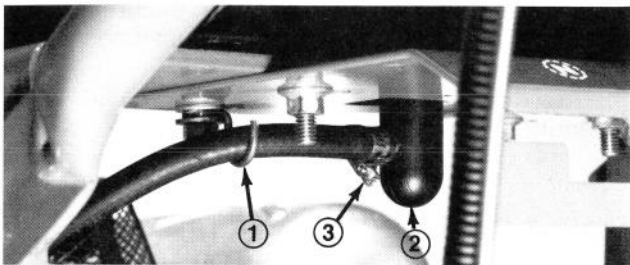


Figure 9

1. Hose clip  
2. Fuel tank fitting  
3. Hose Clamp

## INSTALL BATTERY

1. Mount battery holders to left rear corner of cutting unit carrier frame with (2) 3/8-16 x 1.25" capscrews and locknuts (Fig. 10).

2. Peel off backing from battery pads and affix pads to battery holder, positioning as shown in Fig. 10.

3. Fill battery with electrolyte and charge, refer to ACTIVATING AND CHARGING BATTERY, page 9.

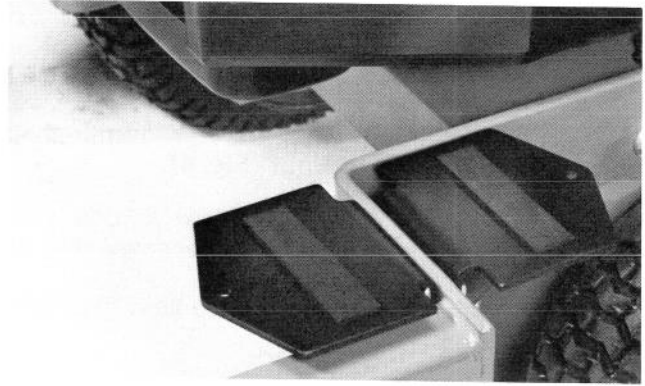


Figure 10

1. Battery holders  
2. Battery pads

4. Position battery onto holders with terminal posts toward engine (Fig. 11).

5. Install the positive cable to the positive (+) terminal and the negative cable (black) to the negative (-) terminal of the battery and secure with carriage bolts and locknuts.

6. Mount battery to holders with battery strap, (2) support rods, battery cover and (2) 1/4-20 wing nuts as shown in Fig. 11.

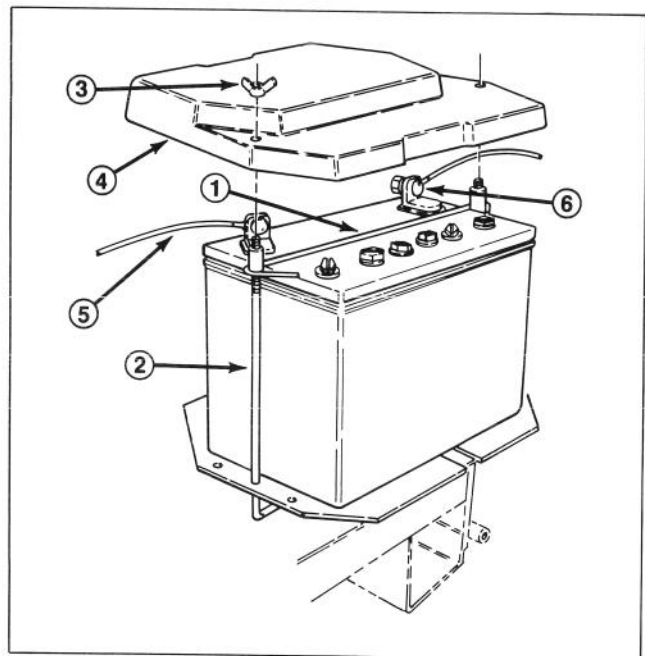


Figure 11

1. Battery strap  
2. Support rod  
3. Wing nut  
4. Cover  
5. Negative terminal  
6. Positive terminal



# BEFORE OPERATING

## ACTIVATING AND CHARGING BATTERY (12 VOLT)

Since the battery for the mower is not filled with electrolyte or activated, the battery, if you have not already done so, must be removed from the machine so it can be filled with electrolyte and charged. Bulk electrolyte with 1.260 specific gravity must be purchased from a local battery supply outlet. Remove the battery and activate it as follows:



### CAUTION

Wear safety goggles and rubber gloves when working with electrolyte. Charge the battery in a well ventilated place so gases produced while charging can dissipate. Since the gases are explosive, keep open flame and electrical spark away from the battery; do not smoke. Nausea may result if the gases are inhaled. Unplug charger from electrical outlet before connecting to or disconnecting charger leads from battery posts.

1. Remove filler caps from battery and slowly fill each cell until electrolyte is just above the plates. To obtain best results, let battery set for 20 minutes. Add electrolyte to the maximum capacity.
2. Leave filler caps off and connect a 3 to 4 amp battery charger to the battery posts. Charge the battery at a rate of 4 amperes or less for 4 hours.
3. When battery is charged, disconnect charger from electrical outlet and battery posts.
4. Slowly add electrolyte to each cell until level is up to fill ring. Install filler caps.

**IMPORTANT:** Do not overfill battery. Electrolyte will overflow onto other parts of the machine and severe corrosion and deterioration will result.

## FILL CRANKCASE WITH OIL

The engine does not have oil in the crankcase when it is shipped from the factory. If engine is started before oil is added to the crankcase, engine damage could result. Therefore, before engine is started for the first time:

1. Position mower on level surface.

2. Clean area around the oil dipstick to prevent foreign matter from entering the filler hole when dipstick is removed.

3. Remove dipstick by rotating cap counter-clockwise (Fig. 12).

4. Slowly pour approximately 48 ounces of oil into the filler neck. The engine uses any high quality detergent oil having the American Petroleum Institute — API — "service classification" SF, SC, SD or SE. The recommended oil to use is: SAE 30 or 10W-30.

5. Wipe end of dipstick with clean rag and insert it into filler neck. Rotate cap clockwise. Then remove the dipstick and check level of oil by reading the dipstick (Fig. 12). If level of oil is low, add only enough oil to raise level to FULL mark on dipstick. **DO NOT ADD OIL SO LEVEL RISES ABOVE FULL MARK BECAUSE ENGINE COULD BE DAMAGED WHEN IT IS STARTED.**



Figure 12

1. Dipstick

6. Insert dipstick into filler neck and rotate cap clockwise to lock.

**Note:** Check level of oil after every 5 operating hours or each time the mower is used. Initially, change oil after the first 5 hours of operation; thereafter, when conditions are normal, change oil after every 25 hours of operation. However, change oil more frequently when mower is operated in dusty or dirty conditions.

# BEFORE OPERATING

## FILL FUEL TANK WITH GASOLINE

THE TORO COMPANY STRONGLY RECOMMENDS THE USE OF CLEAN, FRESH **UNLEADED** REGULAR GASOLINE IN TORO GASOLINE POWERED PRODUCTS. UNLEADED GASOLINE BURNS CLEANER, EXTENDS ENGINE LIFE, AND PROMOTES GOOD STARTING BY REDUCING THE BUILD-UP OF COMBUSTION CHAMBER DEPOSITS. LEADED GASOLINE CAN BE USED IF UNLEADED IS NOT AVAILABLE.

**NOTE: NEVER USE METHANOL, GASOLINE CONTAINING METHANOL, GASOLINE CONTAINING MORE THAN 10% ETHANOL, GASOLINE ADDITIVES, PREMIUM GASOLINE, OR WHITE GAS BECAUSE ENGINE FUEL SYSTEM DAMAGE COULD RESULT.**

1. Clean area around fuel tank cap and remove cap from tank.
2. Fill fuel tank to within 1/2 inch (12.7 mm) from top of the tank with unleaded gasoline. Install fuel tank cap securely.
3. Wipe up spilled gasoline.



### DANGER

Because gasoline is flammable, caution must be used when storing or handling it. Do not fill fuel tank while engine is running, hot or when machine is in an enclosed area. Vapors may build up and be ignited by a spark or flame source many feet away. **DO NOT SMOKE** while filling the fuel tank to prevent the possibility of an explosion. Always fill fuel tank outside and wipe up any spilled gasoline before starting engine. Use a funnel or spout to prevent spilling gasoline, and fill tank to about 1/2 inch (12.7 mm) below the filler neck. Store gasoline in a clean safety-approved container and keep the cap in place on the container. Keep gasoline in a cool, well-ventilated place; never in an enclosed area such as a hot storage shed. To assure volatility, do not buy more than a 30 day supply of gasoline. Gasoline is a fuel for internal combustion engines; therefore, do not use it for any other purpose. Since many children like the smell of gas, keep it out of their reach because the fumes are explosive and dangerous to inhale.

## CHECK TIRE PRESSURE

Tires are over inflated at the factory. Check tires and insure they are inflated to 15 psi.

# CONTROLS

**Throttle Control (Fig. 13)** — The throttle control has two positions: FAST and SLOW.



Figure 13

1. Throttle control
2. Deck engagements switch
3. Gear shift lever
4. Upper control bar
5. Lower control bar
6. Parking brake lever
7. Choke control
8. Ignition switch

**Choke Control** — The Choke Control has two positions: CHOKE and RUN.

**Ignition Switch (Fig. 13)** — Switch is part of battery ignition system, and it has three positions: OFF, RUN and START. Key automatically returns to RUN position from START position when released after engine starts.

**Deck Engagement Switch (Fig. 13)** — Toggle switch releases blade brake and engages electromagnetic clutch to drive deck pulleys.

**Gear Shift Lever (Fig. 13)** — Transmission has four forward speeds, neutral and reverse, and has an in-line shift pattern. Do not shift while unit is moving, as transmission damage may occur.

**Upper Control Bar (Fig. 13)** — Shift to desired gear and push forward on control bar to engage forward traction operation and pull back to brake. Pull right side of control bar to turn right and left side to turn left.

**Lower Control Bar (Fig. 13)** — Shift transmission to reverse and pull rearward on lower control bar to engage rearward traction operation.

**Parking Brake Lever (Fig. 13)** — Pull back on upper control bar and swing brake lever up against the upper handle.

**Fuel Shut-off Valve** — Close fuel shut-off valve when storing mower.

## OPERATING INSTRUCTIONS

### STARTING AND STOPPING

1. Make sure high tension wires are installed on spark plugs and fuel valve is open.

2. Shift into neutral, move deck engagement switch to OFF.

**Note:** Engine will not start with deck engagement switch in ON position.

3. Move throttle control to "FAST" position.

4. Move choke control to CHOKE position before starting a cold engine.

**Note:** A warm or hot engine usually does not require as much choking.

5. Rotate ignition key to START. When engine starts, release key, gradually move choke to run position and regulate throttle to desired speed.

**Note:** Prolonged cranking of starter may cause damage to starter if cranked more than 15 seconds per minute.

6. To stop engine, release control bar, move deck engagement switch to OFF, shift to Neutral and turn ignition key to OFF and wait for all parts to stop moving before leaving the operating position behind handle.

7. Pull high tension wire off spark plug to prevent possibility of accidental starting before storing machine.

8. Close fuel shut off valve before storing or transporting machine.

# MAINTENANCE



## CAUTION

To prevent accidental starting of the engine while performing maintenance, shut engine off. Also, pull high tension wires off spark plugs. Make sure wires do not contact plugs accidentally.

## GREASE WHEELS

Lubricate the wheels every 8 hours w/No. 2 general purpose grease. Wipe up any excess grease.



Figure 14

## GREASE TRANSMISSION COUPLERS

Lubricate the transmission couplers (Fig. 15) every 250 hours with W/No. 2 general purpose grease. Pump grease gun about 4 times. Wipe up any excess grease.

## SERVICING AIR CLEANER

The foam pre-cleaner must be cleaned and re-oiled after every 25 hours engine operation if engine is operated in clean air conditions. However, air cleaner must be cleaned every few hours if operating conditions are extremely dusty or sandy.

1. Remove knobs and cover (Fig. 16).

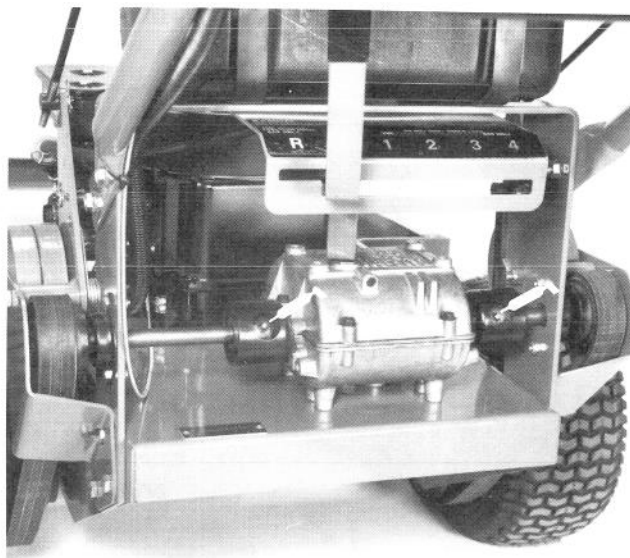


Figure 15

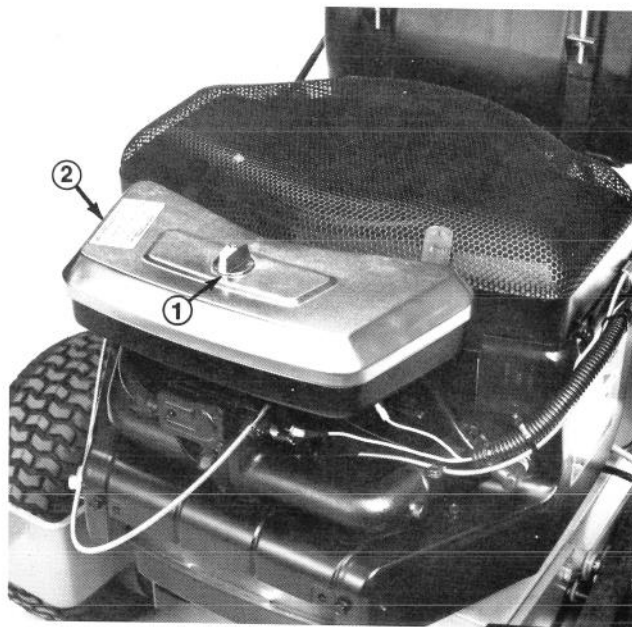


Figure 16

1. Knob
2. Cover

2. Remove foam pre-cleaner by sliding it off the paper cartridge (Fig. 17).
3. a. Wash foam pre-cleaner in kerosene or liquid detergent and water.  
b. Wrap foam pre-cleaner in cloth and squeeze dry.  
c. Saturate foam pre-cleaner in engine oil.  
Squeeze to remove excess oil.
4. Install foam pre-cleaner over paper cartridge. Reassemble cover and screw down tight.



# MAINTENANCE

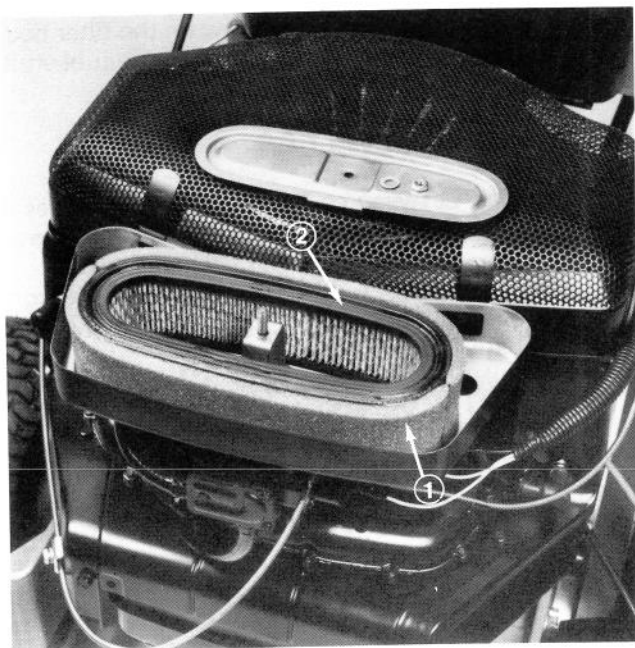


Figure 17

1. Foam pre-cleaner
2. Cartridge

Yearly or every 100 hours, whichever comes first, remove cartridge and clean.

1. Clean cartridge by tapping gently on flat surface.
  - a. If very dirty, replace cartridge or wash in a low or non-sudsing detergent and warm water solution.
  - b. Rinse thoroughly from INSIDE OUT until water is clear.
  - c. Cartridge must be allowed to stand and air dry thoroughly before using.
2. Reassemble air cleaner.



## CAUTION

Petroleum solvents, such as kerosene, are not to be used to clean cartridge. They may cause deterioration of the cartridge. **DO NOT OIL CARTRIDGE. DO NOT USE PRESSURIZED AIR TO CLEAN OR DRY CARTRIDGE.**

**IMPORTANT:** Always operate engine with air cleaner element in place or engine damage will result.

## CHANGING CRANKCASE OIL

1. Check level of oil before starting engine and after every 5 hours of operation. Maintain oil level at FULL mark on dipstick.

### To check level of oil:

- A. Position mower on level surface.
- B. Clean the area around oil dipstick so foreign matter cannot enter filler hole when dipstick is removed.
- C. Unscrew dipstick and wipe oil off.
- D. Screw dipstick fully in to filler neck; then remove it and check oil level on dipstick. If level is low, add only enough oil to raise level to FULL mark. Do not overfill or engine damage may result.
- E. Screw dipstick back into filler neck.

2. Change oil after first 5 hours of operation; every 25 hours thereafter. Change oil more frequently when operating conditions are extremely dusty or dirty.

### To change oil:

- A. Position mower on level surface. Start and run engine for a period to warm the oil.
- B. Turn engine off and place drain pan under frame, below drain plug (Fig. 18). Remove drain plug and allow all oil to flow into drain pan. Install drain plug after oil stops flowing.

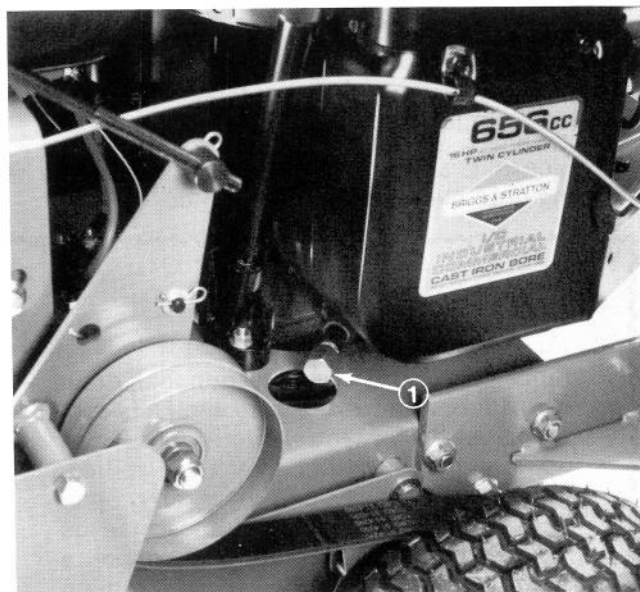


Figure 18

1. Drain plug

# MAINTENANCE

- C. Unscrew dipstick and add oil to crankcase. Refer to CHECK CRANKCASE OIL LEVEL, page 13. Capacity of crankcase is 48 oz. DO NOT OVERFILL or engine damage may result.

Use any high-quality A.P.I. classification SC, SD, SE, or SF engine oil. Recommended viscosity of oil to use is SAE 30 or 10W-30.

## FUEL FILTER REPLACEMENT

An in-line filter is incorporated into the fuel line between the fuel tank and carburetor (Fig. 19). Use the following procedures should replacement become necessary:

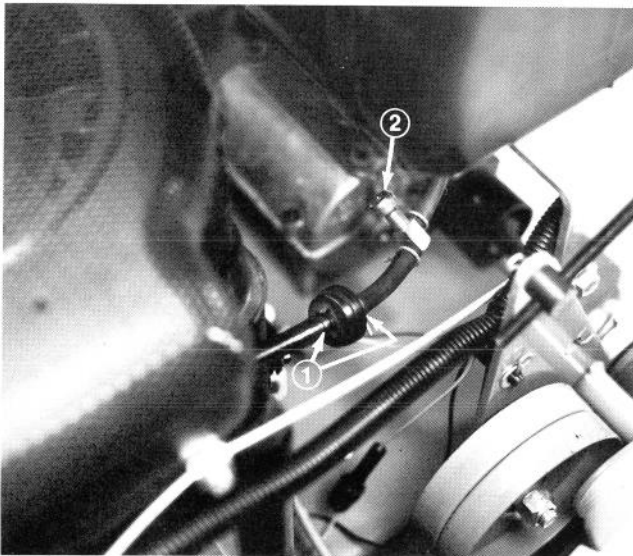


Figure 19

1. Hose clamps
2. Fuel shut-off valve

1. Close the fuel shut-off valve. Loosen the hose clamp on the carburetor side of filter and remove the fuel line from the filter.
2. Place a drain pan under filter, loosen the remaining hose clamp and remove filter.



### CAUTION

Since gasoline is highly flammable, drain it outdoors and make sure engine is cool to prevent a potential fire hazard. Wipe up any gasoline that may have spilled. Do not drain gasoline near any open flame or where gasoline fumes may be ignited by a spark. Do not smoke a cigar, cigarette, or a pipe when handling gasoline.

3. Install the new filter with arrow on the filter body pointing towards the carburetor. Open the fuel shut-off valve.

## REPLACING SPARK PLUGS

Since air gap between center and side electrodes of the spark plug increases gradually during normal operation of the engine, check condition of electrodes after every 25 operating hours. Recommended air gap is 0.030 of an inch (0.762 mm). Correct spark plug to use is:

Champion RJ-12 or Autolite 308.

**Note:** The spark plug usually lasts a long time; however, the plug should be removed and checked whenever the engine malfunctions.

1. Clean area around spark plug so foreign matter cannot fall into cylinder when spark plug is removed.
2. Pull high tension wire off spark plug and remove plug from cylinder head.
3. Check condition of side electrode, center electrode, and center electrode insulator to assure there is no damage.

**IMPORTANT:** A cracked, fouled, dirty or defective spark plug must be replaced. Do not sand blast, scrape, or clean electrodes by using a wire brush because grit may eventually release from the plug and fall into the cylinder. The result is usually a damaged engine.

5. Set air gap between center and side electrodes at 0.030 of an inch (0.762 mm) (Fig. 20). Install correctly gapped spark plug w/gasket seal, and tighten plug to 15 ft-lb (20.4 N·m). If torque wrench is not used, tighten plug firmly.

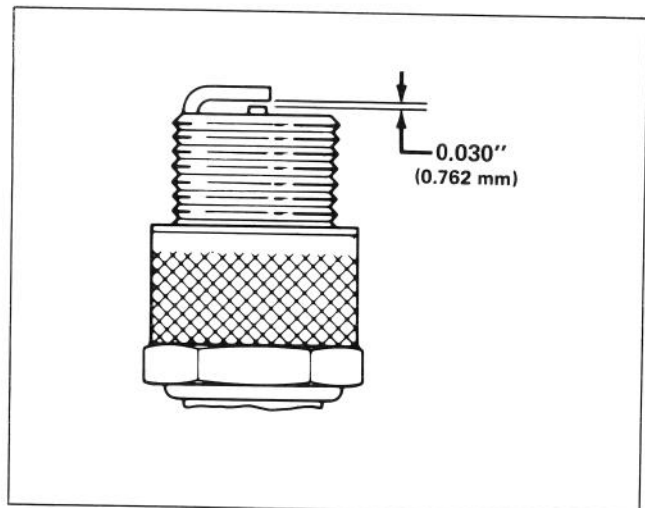


Figure 20

# MAINTENANCE

## ADJUSTING THROTTLE CONTROL

1. Move throttle control to SLOW position.
2. Throttle lever on carburetor should touch idle speed adjusting screw (Fig. 21).

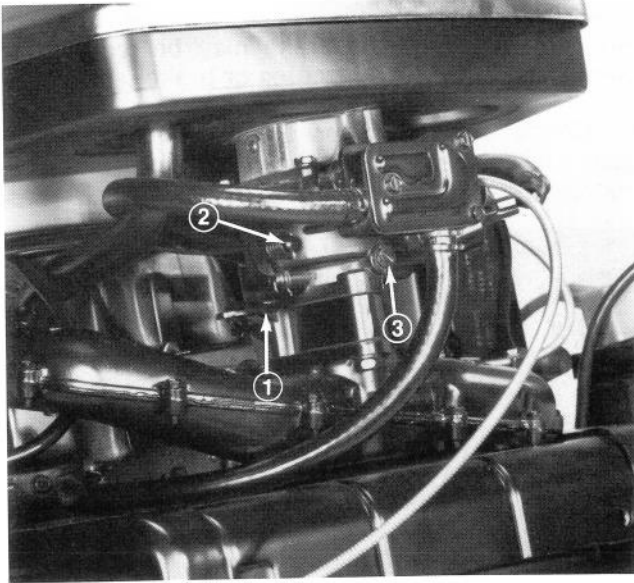


Figure 21

1. Throttle lever
2. Speed adjusting screw
3. Idle mixture valve

3. To adjust, loosen cable clamping screw securing throttle cable to engine (Fig. 22).

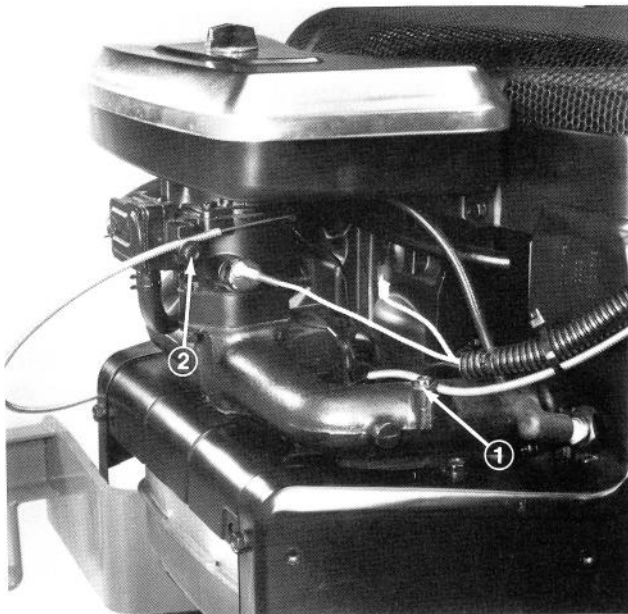


Figure 22

1. Throttle cable clamping screw
2. Choke cable clamping screw

4. Move cable casing and wire toward engine until throttle lever touches idle speed adjusting screw. Retighten cable clamping screw.

## ADJUSTING CHOKE CONTROL

1. Move choke control to CHOKE position. The carburetor choke should be closed.
2. To adjust, loosen cable clamping screw securing choke cable to engine (Fig. 22).
3. Move cable casing and wire until choke is completely closed. Retighten cable casing screw.

## ADJUSTING CARBURETOR

The carburetor has been set at the factory, but an occasional adjustment may be required. An adjustment may be required to compensate for differences in fuel, temperature and altitude.

1. Idle Mixture Valve (Fig. 21) — Close valve by gently rotating it clockwise.

**IMPORTANT:** Do not close valve too tight because valve may be damaged.

2. Rotate — open — the valve 1-1/2 turns counter-clockwise.

**Note:** The valve setting is an approximate; however, the setting will allow the engine to be started so the carburetor can be fine tuned.

3. Start engine and move throttle control to SLOW position.

4. Hold carburetor throttle lever (Fig. 21) against idle stop, and adjust idle speed screw to obtain: 1200 to 1400 RPM.

5. Rotate idle mixture valve slowly clockwise until speed starts to slow, then rotate valve 1/2 turn counterclockwise.

6. Adjust idle speed screw to obtain: 900 to 1200 RPM.



### WARNING

Engine must be running so final adjustment of the carburetor can be performed. To guard against possible personal injury, move deck engagement switch into OFF position, shift into neutral, and engage parking brake. Keep hands, feet, face, and other parts of the body away from the cutter blades, underside of mower housing, discharge area, and any rotating engine parts.

# MAINTENANCE

**IMPORTANT:** Air cleaner must be installed on the engine whenever speed is being adjusted.

## ADJUSTING AND REPLACING TRACTION BELT

1. Loosen capscrew and flange nut securing idler pulley to frame (Fig. 23). Slide pulley outward relieving belt tension.

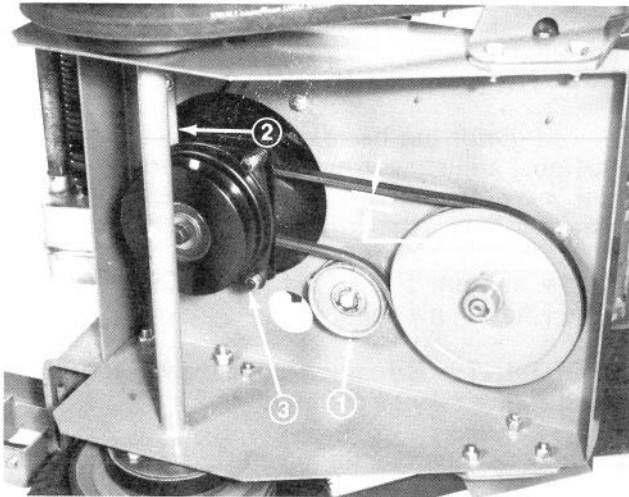


Figure 23

- 1. Idler pulley
- 2. Clutch retainer
- 3. Locknut on flange stud

2. Remove left front engine mounting bolt securing clutch retainer to frame (Fig. 23). Unhook retainer from clutch and remove retainer.

3. Disconnect in-line wire connector and remove belt from drive pulley and clutch (Fig. 23).

4. Install new belt around clutch and drive pulley.

5. Secure in-line connectors and reinstall clutch retainer to clutch and frame with engine mounting bolt. Torque engine mounting bolt to 170-220 in-lb.

6. Position and secure idler pulley to frame so belt deflection is no more than  $11/16$ " when 5-1/2 lb of force is applied to midspan of long leg of belt (Fig. 23).

## ADJUSTING CLUTCH

The clutch is adjustable to ensure proper engagement and proper braking.

1. To adjust clutch, tighten or loosen locknuts on flange studs (Fig. 23).

2. Check adjustment by inserting feeler gauge thru slots next to flange studs.

3. The proper disengaged clearance between the clutch plates is .012 - .018 inches. It will be necessary to check this clearance at each of the three slots to ensure the plates are parallel to each other.

## BRAKE ADJUSTMENT

An adjustment to the brake may be required to compensate for belt stretching or brake seating.

1. Check travel of idler pulleys when fully engaging wheel belts. Pulley travel should be approximately 3/4" (Fig. 24).

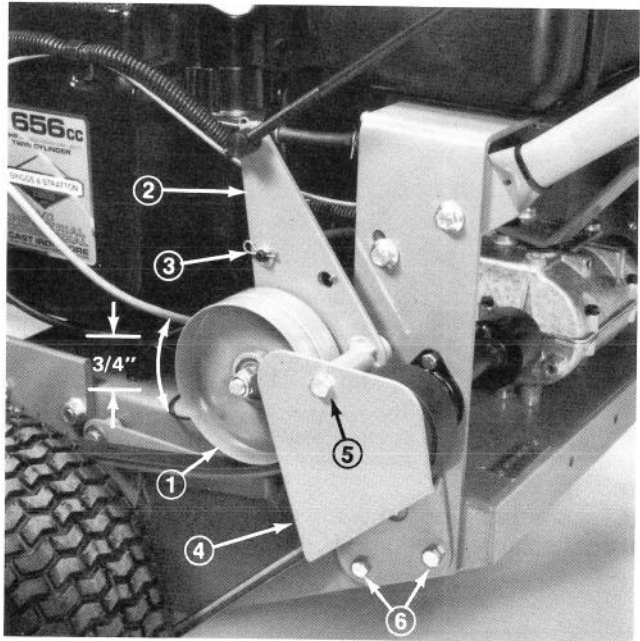


Figure 24

- 1. Idler pulley
- 2. Idler bracket
- 3. Hairpin cotter, washer & brake rod fitting
- 4. Idler support
- 5. Top cap screw
- 6. Bottom cap screws

2. If pulley travel is greater than 3/4", remove hairpin cotter and washer securing brake rod fitting to idler bracket.

3. Thread fitting down rod and resecure to idler bracket. Check adjustment and readjust if necessary.

4. Repeat procedure on opposite side if adjustment is required.

5. Readjust control rods, refer to Install Control Rods, page 7.

## DRIVE BELT REPLACEMENT

1. Remove top cap screw securing idler support and idler bracket to rear frame (Fig. 24).



# MAINTENANCE

2. Loosen bottom two mounting screws enough to allow belt to pass between drive pulley and idler support (Fig. 24).
3. Raise wheel off ground enough to allow belt removal.

## CONTROL PANEL ADJUSTMENT

An adjustment to the control panel may be required if transmission cannot be shifted into reverse or 4th gear.

1. Loosen four locknuts securing control panel to rear frame (Fig. 25).

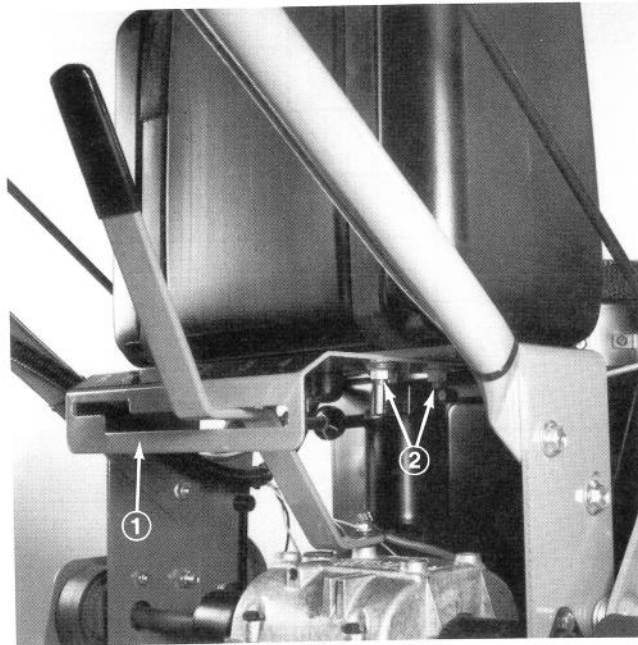


Figure 25

1. Control panel
2. Mounting screws & locknuts

2. Control panel mounting holes are slotted to enable it to be moved from side to side. Position control as needed to achieve full shift range.
3. Retighten locknuts.

## CLEANING COOLING SYSTEM

Clean cooling system frequently, by removing any build-up of grass, dirt or other debris from the cylinder and cylinder head cooling fins, air intake screen on flywheel end, and carburetor-governor levers and linkage. This will help insure adequate cooling and correct engine speed and will reduce the possibility of overheating and mechanical damage.

## OPTIONAL SPARK ARRESTOR

1. If a spark arrestor is required because of local, state or federal regulations, it may be purchased at an authorized Briggs & Stratton Dealer. Or the part may be ordered directly from:

Briggs & Stratton Corporation  
Milwaukee, Wisconsin 54201

2. The parts are approved by the United States Department of Agriculture and the United States Forest Service.

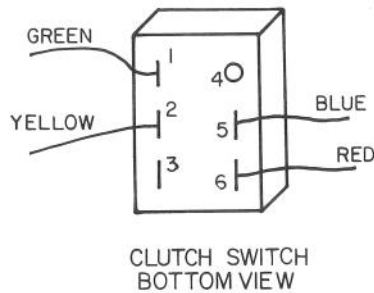
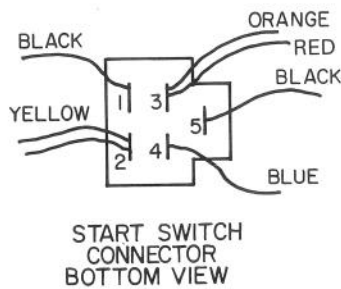
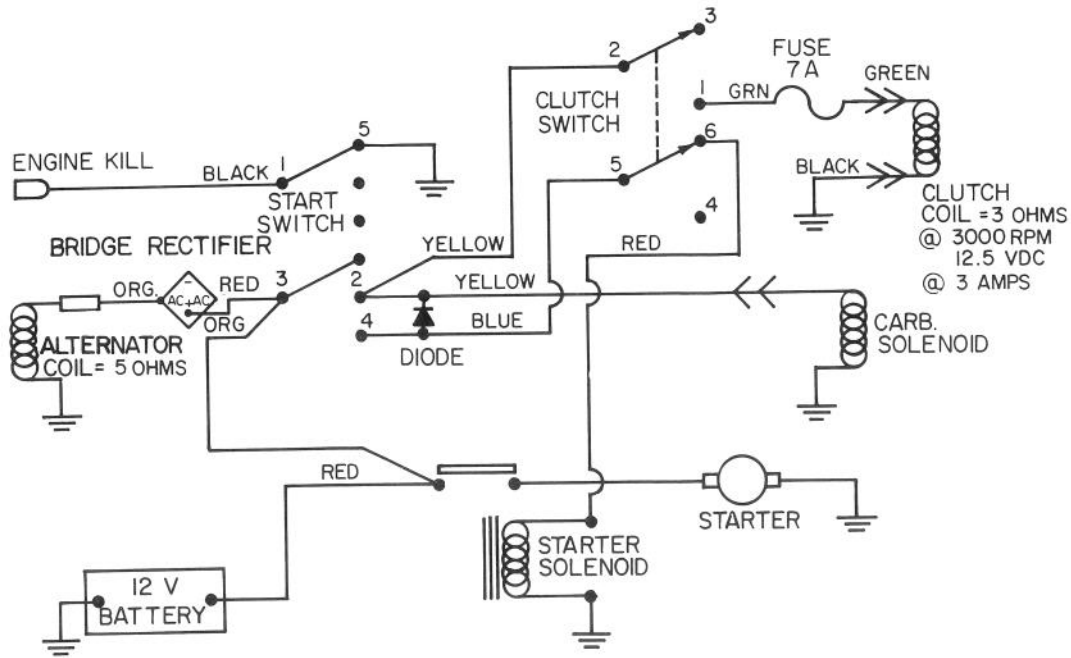
**Note:** When mower is operated on any California forest, brush or grass covered land without a properly operating spark arrestor, the operator is violating state law, Section 4442 Public Resources Code.

3. If muffler is equipped with spark arrestor remove it after every 50 operating hours for cleaning and inspection. Replace if it has deteriorated enough to affect performance.

## MAINTENANCE RECORD

[illegible]

# WIRING SCHEMATIC



## IDENTIFICATION AND ORDERING

The mower has two identification numbers: a model number and a serial number. The two numbers are stamped into a plate that is riveted to the frame at rear of mower. In any correspondence concerning the mower, supply the model and serial numbers to assure that correct information and replacement parts are obtained.

To order replacement parts from an Authorized TORO Service Dealer, supply the following information:

1. Model and serial numbers of the mower.
2. Part number, description and quantity of part(s) desired.

# The Toro Promise

## A ONE YEAR LIMITED WARRANTY

*The Toro Company promises to repair your TORO Product if defective in materials or workmanship. The following time periods from the date of purchase apply:*

Commercial Products . . . . . 1 Year

*The costs of parts and labor are included, but the customer pays the transportation costs on walk rotary mowers with cutting unit widths of less than 25".*

If you feel your TORO product is defective and wish to rely on The Toro Promise, the following procedure is recommended:

1. Contact your Authorized TORO Distributor or Commercial Dealer (the Yellow Pages of your telephone directory is a good reference source).
2. The TORO Distributor or Commercial Dealer will advise you on the arrangements that can be made to inspect and repair your product.
3. The TORO Distributor or Commercial Dealer will inspect the product and advise you whether the product is defective and, if so, make all repairs necessary to correct the defect without an extra charge to you.

If for any reason you are dissatisfied with the distributor's analysis of the defect or the service performed, you may contact us.

Write:

TORO Commercial Products Service Department  
8111 Lyndale Avenue South  
Minneapolis, Minnesota 55420

The above remedy of product defects through repair by an Authorized TORO Distributor or Commercial Dealer is the purchaser's sole remedy for any defect.

**THERE IS NO OTHER EXPRESS WARRANTY. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE ARE LIMITED TO THE DURATION OF THE EXPRESS WARRANTY.**

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

This Warranty applies only to parts or components which are defective and does not cover repairs necessary due to normal wear, misuse, accidents, or lack of proper maintenance. Regular, routine maintenance of the unit to keep it in proper condition is the responsibility of the owner.

All warranty repairs reimbursable under the Toro Promise must be performed by an Authorized TORO Commercial Dealer or Distributor using Toro approved replacement parts.

Repairs or attempted repairs by anyone other than an Authorized TORO Distributor or Commercial Dealer are not reimbursable under the Toro Promise. In addition, these unauthorized repair attempts may result in additional malfunctions, the correction of which is not covered by warranty.

**THE TORO COMPANY IS NOT LIABLE FOR INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE USE OF THE PRODUCT INCLUDING ANY COST OR EXPENSE OF PROVIDING SUBSTITUTE EQUIPMENT OR SERVICE DURING PERIODS OF MALFUNCTION OR NON-USE.**

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion 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.

### COUNTRIES OTHER THAN THE UNITED STATES OR CANADA

Customers who have purchased TORO products exported from the United States or Canada should contact their TORO Distributor (Dealer) to obtain guarantee policies for your country, province or state. If for any reason

you are dissatisfied with your Distributor's service or have difficulty obtaining guarantee information, contact the TORO importer. If all other remedies fail, you may contact us at The Toro Company.