FORM NO. 3312-894

TORO®

PART NO. 55-7800

OPERATOR'S MANUAL

ENGINE REPLACEMENT KIT (KAWASAKI)

SAFETY INSTRUCTIONS

This safety alert symbol means CAUTION, WARNING or DANGER — "personal safety instruction". Read and understand the instruction because it has to do with safety. Failure to comply with the instruction may result in personal injury.

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 DISENGAGE 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.

5. Keep all shields and safety devices in place. If a shield, safety device or decal is defective or damaged, 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

SAFETY INSTRUCTIONS

prevent possibility of accidental starting. Check cutting unit and traction unit for damage and defective 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.

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.

Note: The following models require additional parts to complete installation of kit and engine to mower. Order parts from your Authorized TORO Distributor.

MODEL (Engine)	Serial Numbers	Part	Part Number	Qty.
30108 & 30111 (8 & 11 hp Briggs)	40001 thru 49999	Control Panel Capscrew Locknut Deck Engagement Switch	54-2860 32105-6 3296-2 37-2610	1 2 2 1
30113 (JLO)	50001 thru 59999 ALL Serial Numbers	Throttle Control Key Gas Cap	51-4820 5-1336 55-3570	1 1 1
30116 (16 hp Briggs)	ALL Serial Numbers	Throttle Control	51-4820	1

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INSTALLATION INSTRUCTIONS

Note: Determine front, rear, left, and right sides of mower by standing in the normal operating position, behind handle.

1. Disconnect wire(s) from spark plug(s) and drain gasoline from fuel tank. Wipe up any spilled gasoline.

2. Remove cable ties securing wire harness and throttle cable to upper handle.

3. Disconnect wire harness from engine and clutch connector. Disconnect throttle cable and fuel line from engine.

4. Remove capscrews securing control panel and throttle/choke control(s) to upper handle and remove panel.

5. Disconnect wire harness from deck engagement switch and remove switch from control panel.

6. Disconnect wire harness from ignition switch and remove switch from control panel (if applicable).

7. Disconnect and remove plastic electrical box mounted to frame (if applicable).

8. Disconnect and remove starter solenoid, battery, and battery cables, on electric start models.

9. Remove cutting unit from carrier frame and disconnect deck drive belt from clutch pulley. Refer to operator's manual for deck removal instructions.

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

11. Remove left front engine mounting bolt securing clutch retainer to frame (Fig. 1). Unhook retainer from clutch and remove retainer.

12. Make sure in-line clutch connector is disconnected and remove traction belt from clutch. (Fig. 1). Remove grommet in frame hole allowing clutch connector to pass thru when removing clutch.

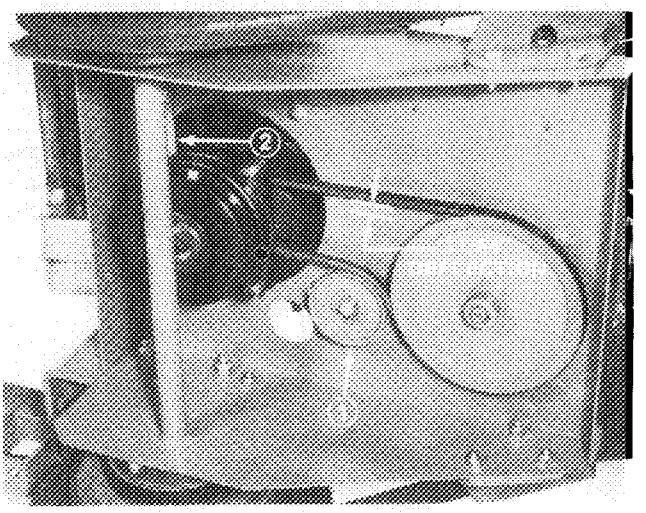


Figure 1

1. Idler pulley
2. Clutch retainer

13. Remove capscrew and washer securing clutch, spacers, traction pulley, key, and crankshaft adapter (if applicable) to engine crankshaft. Remove clutch.

14. Remove (3) remaining engine mounting bolts and remove engine.

15. Position new engine on frame and align mounting holes.

16. Mount engine to frame using following fasteners (included in kit) at described locations:

A. Right rear — M8 x 40 mm lg. capscrew, lockwasher, washer, and jamnut.

B. Left rear and right front — M8 x 25 mm lg. capscrew, lockwasher and washer.

C. Left front — Do not install at this time.

17. Reinstall clutch, spacers, pulley and key to engine crankshaft with M10 x 55 mm lg. capscrew included in kit. Torque capscrew to approximately 240 in-lb. If replacing engine on a Model 30113, a new crankshaft key is required and crankshaft adapter, previously removed, is no longer required.

INSTALLATION INSTRUCTIONS

18. Install traction belt around clutch and drive pulley.

19. Reinstall clutch retainer to clutch, frame and engine with a M8 x 25 mm capscrew, lockwasher, and washer. Torque all engine mounting capscrews to approximately 170 in-lb.

20. Slide clutch connector thru hole in frame and reinstall grommet in hole.

21. Position and secure idler pulley to frame so belt deflection is not more than 11/64" when 5 1/2 lbs. of force is applied to midspan of long leg of belt (Fig. 1).

22. Apply new control panel decal to control panel. A new control panel and mounting fasteners are required if mounting kit on models with serial numbers 4000001 thru 4999999.

23. Align control panel with (2) existing holes in left side of upper handle. Using control panel as a template, mark and drill (2) 7/32" dia. holes thru right side of upper handle (if applicable).

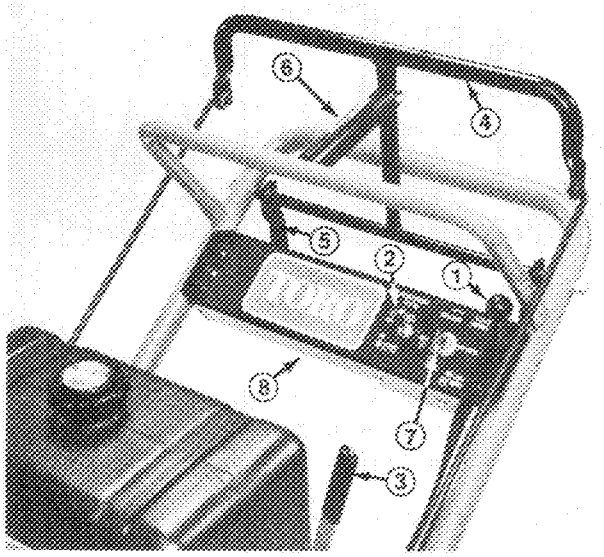


Figure 2

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

24. Using panel bottom as a template and dimensions in Fig. 3, locate and drill (4) 5/32" (.156) dia. holes in front and back of control panel.

25. Install ignition switch to control panel with lockwasher and nut.

26. Install deck engagement switch to control panel with locknut. A new deck engagement switch is required if installing kit on models with serial numbers 40001 thru 49999.

27. Route upper end of wire harness thru large hole in front of control panel and secure appropriate connectors to deck engagement switch and ignition switch (See wiring diagram, page 6).

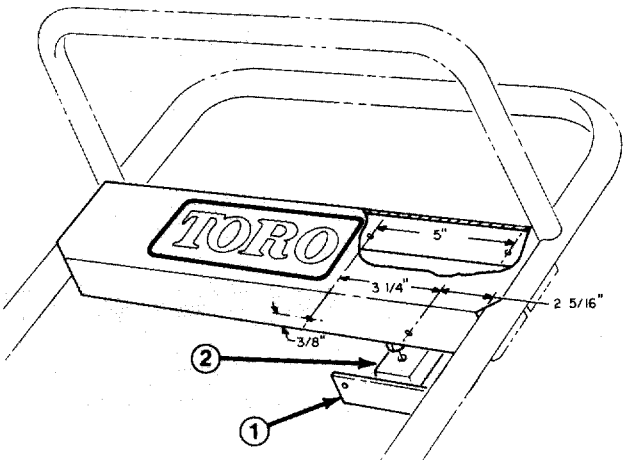


Figure 3

1. *Panel bottom*
2. *Bridge rectifier*

28. Install throttle control to control panel, routing cable thru upper hole in front of panel. A new throttle control is required if installing kit on a Model 30116 or Model 30113 serial number 50001 - 59999.

29. Mount throttle control, control module and control panel to upper handle with (4) #10-24 x 1/4" lg. machine screws and locknuts. Use front screw to mount module.

30. Mount bridge rectifier to panel bottom with a #10-24 x 3/4" machine screw and locknut.

31. Plug remaining wire harness connectors into bridge rectifier (See wiring diagram, page 6) and mount panel bottom to front and back of control panel with (4) #10-16 x 1/2" lg. self tapping screws.

32. Install new fuel lines, fuel filter and shut off valve with (4) fuel line clamps as shown in Fig. 4.

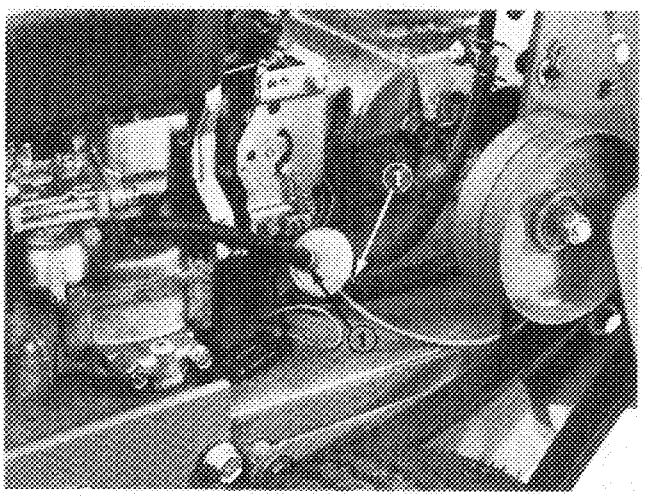


Figure 4

1. *Hose clamps*

INSTALLATION INSTRUCTIONS

33. Connect throttle cable to engine as follows:
    A. Route throttle cable under transmission shaft.
    B. Place remote control lever in FAST position.
    C. Hook wire Z-bend into hole of speed control lever (Fig. 5).
    D. Loosen cable clamp screw allowing cable installation, but do not tighten (Fig. 5).

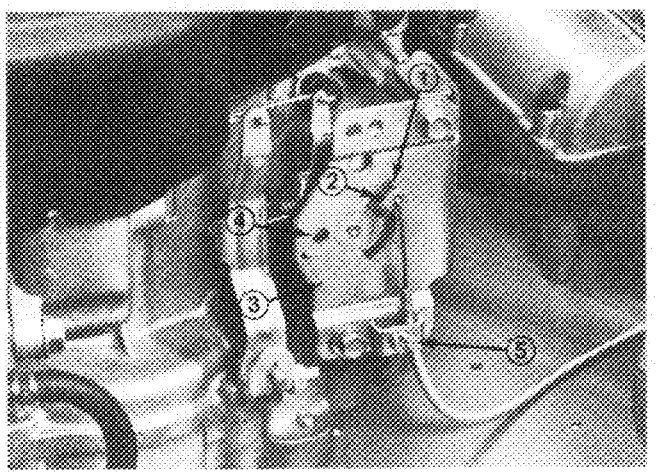


Figure 5

1. Wire Z-bend
2. Speed control lever
3. Base plate
4. Aligned holes
5. Cable clamp

    E. Move control cable casing and wire until hole in speed control lever is aligned with hole in base plate.

Note: A small dia. pin (.24) or bolt may be inserted into aligned holes to hold adjustment.

    F. Pull throttle cable slightly to remove any slack and tighten cable clamp screw to lock adjustment in place.
    G. Remove alignment pin if used and check control operation. Refer to Adjusting Throttle-Choke Control, page 11.

34. Connect wire harness as follows:
    A. Route wire harness over transmission shaft.
    B. Secure clutch and engine in-line connectors (Fig. 6).
    C. Mount (2) remaining wires to right rear engine mounting bolt (located behind oil dipstick) and secure with jamnut supplied in kit.

35. Secure wire harness and throttle cable to upper handle with (2) wire ties.

36. On model #30113 install new gas cap on fuel tank.

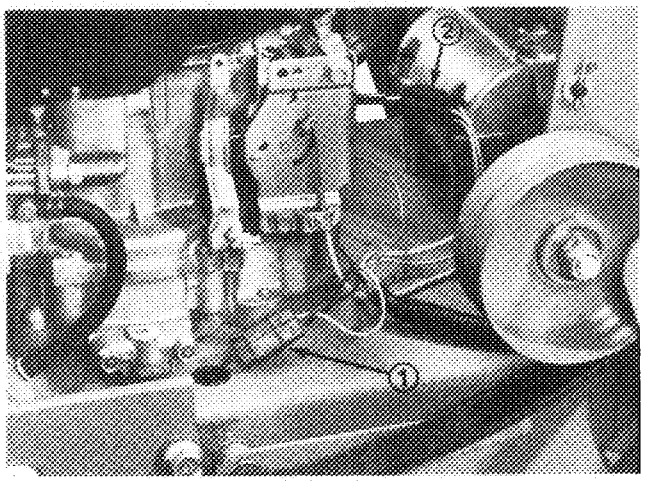
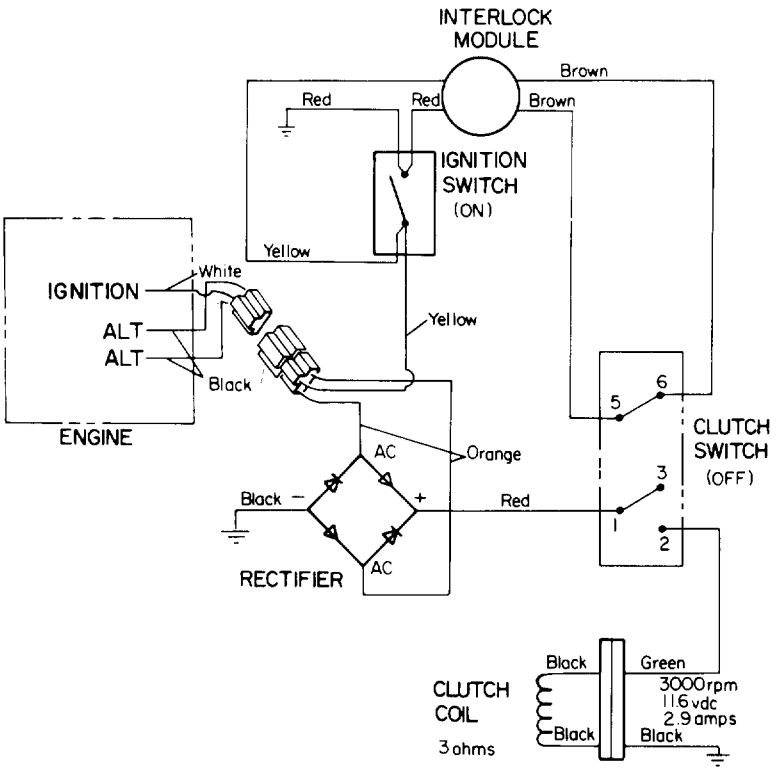


Figure 6

1. Clutch connectors
2. Engine connectors

WIRING SCHEMATIC



BEFORE OPERATING

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 (Fig. 7).

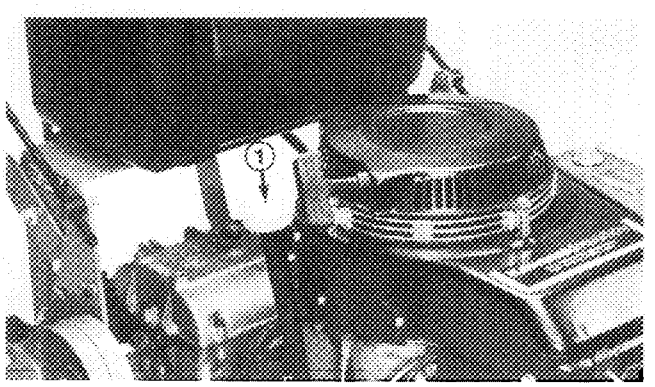


Figure 7

1. Dipstick

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, SE/CC, SD or SE. The recommended oil to use is: SAE 5W20 (below 32°F) SAE 30 (above 32°F).

5. Wipe end of dipstick with clean rag and insert it into filler neck. Then remove the dipstick and check level of oil by reading the dipstick (Fig. 7). 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.

6. Insert dipstick into filler neck and tighten.

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.

FILL FUEL TANK WITH GASOLINE

THE TORO COMPANY STRONGLY RECOMMENDS THE USE OF CLEAN, FRESH **UNLEADED** REGULAR GASOLINE IN TORO GASOLINE POWERED

BEFORE OPERATING

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, GASOHOL 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 inch (25 mm) from top of the tank. 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 inch (25 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.

CONTROLS

Throttle Control (Fig. 8) — The throttle control has three positions: CHOKE, FAST and SLOW.

Deck Engagement Switch (Fig. 8) — Toggle switch releases blade brake and engages electromagnetic clutch to drive deck pulleys.

Gear Shift Lever (Fig. 8) — 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. 8) — 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. 8) — Shift transmission to reverse and pull rearward on lower control bar to engage rearward traction operation.

Parking Brake Lever (Fig. 8) — Pull back on upper control bar and swing brake lever up against the upper handle.

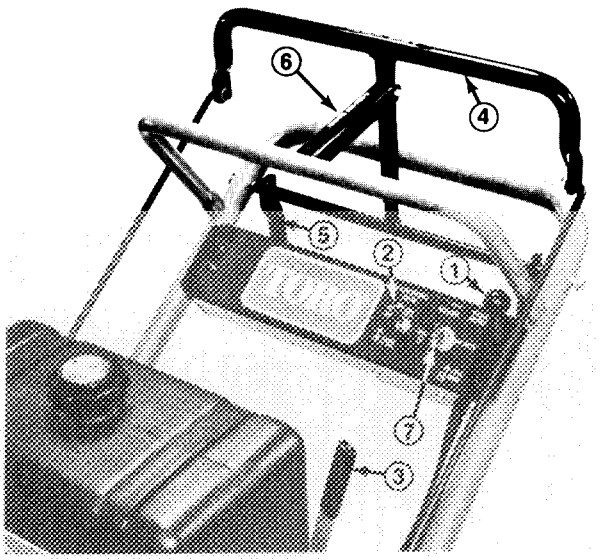


Figure 8

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

CONTROLS

Ignition Switch (Fig. 8) — Key switch is used in conjunction with recoil starter. Switch has two positions: RUN and OFF.

Recoil Starter — Pull recoil starter handle to start engine.

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

OPERATING INSTRUCTIONS

STARTING AND STOPPING

1. Make sure high tension wire is installed on spark plug and fuel valve is open.

2. Shift into neutral, move deck engagement switch to OFF, and turn ignition key to RUN.

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

3. Move throttle control to CHOKE position before starting a cold engine.

Note: A warm or hot engine usually does not require any choking. To start a warm engine, move throttle control to FAST position.

4. Grasp recoil starter handle firmly and pull out until positive engagement results; then pull handle vigorously to start engine and allow rope to recoil slowly.

IMPORTANT: Do not pull recoil rope to its limit or let go of the starter handle when rope is pulled out because rope may break or recoil assembly may be damaged.

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

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

7. Close fuel shut off valve before storing machine.

IMPORTANT: Make sure fuel shut off valve is closed before transporting or storing machine as fuel leakage may occur.

ENGINE MAINTENANCE

CAUTION

To prevent accidental starting of the engine while performing maintenance, shut engine off. Also, pull high tension wire off spark plug (Fig. 9). Make sure wire does not contact plug accidentally.

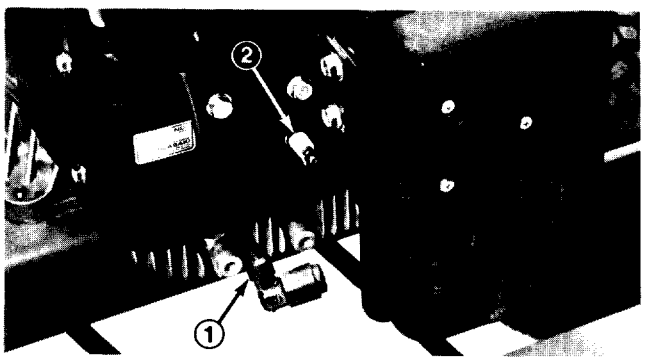


Figure 9

1. High tension wire
2. Spark plug

SERVICING AIR CLEANER

The foam air cleaner element must be cleaned after every 25 hours engine operation if engine is operated in clean air conditions. The paper element must be cleaned after every 50 hours engine operation if engine is operated in clean air conditions. However, elements must be cleaned every few hours if operating conditions are extremely dusty or sandy. Replace paper element yearly.

1. Remove (2) wing bolts and lift off air cleaner cover (Fig. 10).

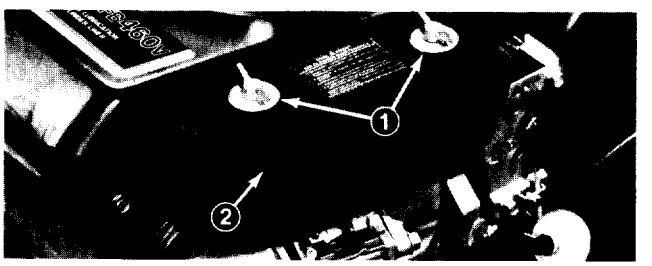


Figure 10

1. Wing bolts
2. Cover

ENGINE MAINTENANCE

2. Remove foam pre-cleaner by sliding it off the paper element (Fig. 11).

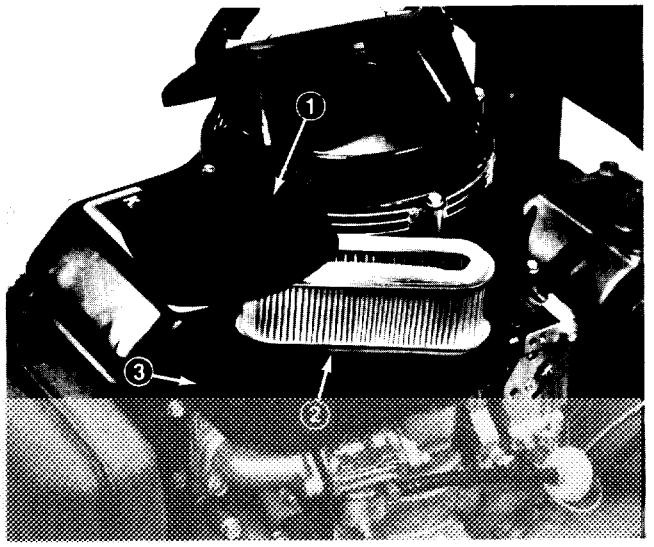


Figure 11

1. Foam element
2. Paper element
3. Air cleaner body

3. A. Wash foam pre-cleaner in detergent and warm water.

B. Wrap foam pre-cleaner in cloth and squeeze dry. Do not wring precleaner.

C. Saturate foam pre-cleaner in engine oil. Squeeze to remove excess oil.

4. Remove paper element and clean air cleaner body carefully to prevent dirt from entering carburetor.

5. Clean paper element 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 OUTSIDE IN until water is clear.

C. Cartridge must be allowed to stand and air dry thoroughly before using.

6. Reassemble air cleaner.

CAUTION

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

IMPORTANT: Always operate engine with air cleaner elements 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. Remove dipstick and wipe oil off.

D. Insert 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. Insert 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. 12). Remove drain plug and allow all oil to flow into drain pan. Install drain plug after oil stops flowing.

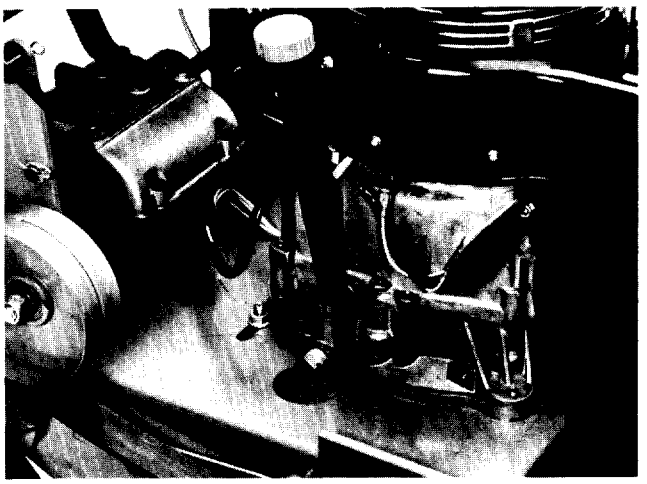


Figure 12

1. Drain plug

C. Remove dipstick and add oil to crankcase. Refer to CHECK CRANKCASE OIL LEVEL, page 10. 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 5W20 (below 32°F) or SAE 30 (above 32°F).

FUEL FILTER REPLACEMENT

An in-line filter is incorporated into the fuel line between the fuel tank and carburetor (Fig. 13). Use the following procedures should replacement become necessary:

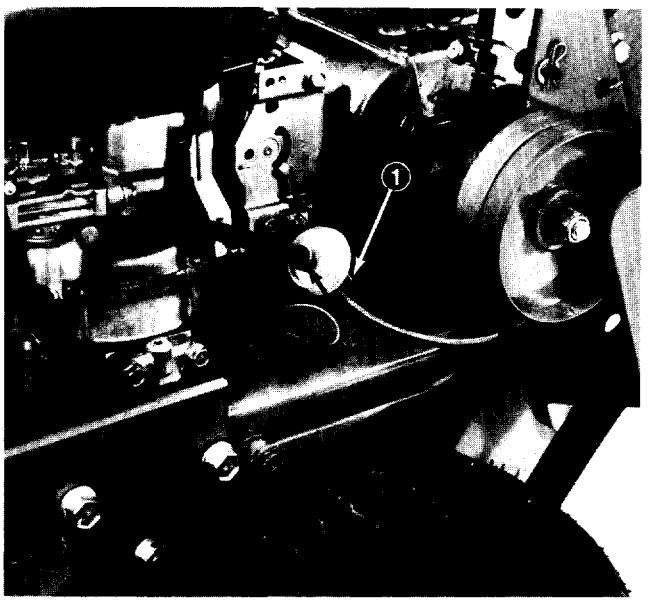


Figure 13

1. Hose clamps

1. 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.

REPLACING SPARK PLUG

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 0.024-0.027 of an inch (0.6-0.7 mm). Correct spark plug to use is:

NCK BMR-4A or Champion RCJ-8.

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 0.024-0.027 of an inch (0.6-0.7 mm) (Fig. 14). 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.

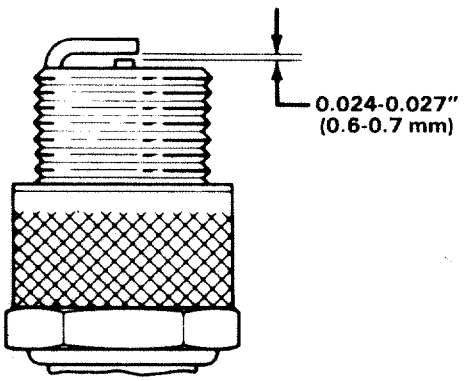


Figure 14

ENGINE MAINTENANCE

ADJUSTING THROTTLE-CHOKE CONTROL

Proper choke operation is dependent upon proper adjustment of remote controls. Before adjusting the carburetor, assure the throttle-choke control is operating properly.

1. Remove the wing bolts holding air cleaner in place and lift air cleaner assembly off carburetor.

2. Move remote control lever to CHOKE position and check the position of the choke butterfly; it should be fully closed.

3. Move remote control lever to FAST position. The butterfly should be in the fully open position.

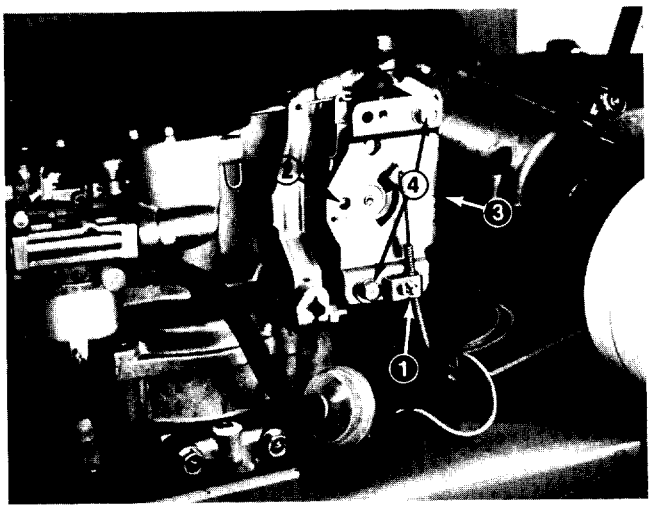


Figure 15

1. Clamp screw
2. Aligned holes
3. Control plate
4. Mounting screws (2)

4. If the choke butterfly is positioned as described in steps 2 and 3, replace the air cleaner assembly and continue operation.

If either the choke butterfly does not close or is not fully open in the FAST position, adjust the remote control lever as follows:

1. Place remote control lever in FAST position.

2. Loosen the throttle cable clamp screw (Fig. 15) and move the control cable casing and wire until the hole in speed control is aligned with hole in control plate. Tighten cable clamp.

3. Turn in choke adjusting screw (located behind control plate) until light contact is made with flange on control lever.

4. Reassembly air cleaner to carburetor.

5. Start engine and let it warm up for approximately two minutes. Next, make sure throttle control is in FAST position.

WARNING

Engine must be running so final adjustment of the throttle 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.

6. Loosen (2) control plate mounting screws (Fig. 15).

7. Slide control plate fore or aft to obtain 3200±100 RPM.

8. Tighten control plate mounting screws making sure adjustment is not disturbed.

9. Recheck choke adjusting screw adjustment per instructions in step #3.

10. After throttle is adjusted, stop engine.

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 or temperature.

IMPORTANT: Before the carburetor is adjusted, throttle control must be checked for proper operation: refer to Adjusting Throttle/Choke Control.

1. Idle Mixture Screw (Fig. 16) — Close screw by gently rotating it clockwise.

IMPORTANT: Do not close the screw too tight because the valve and seat in carburetor will likely be damaged.

2. Rotate — open — the screw 1-1/8 turns counterclockwise (Fig. 16).

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

3. Start engine and let it warm up for approximately two minutes. Next, move throttle control in SLOW detent.

ENGINE MAINTENANCE

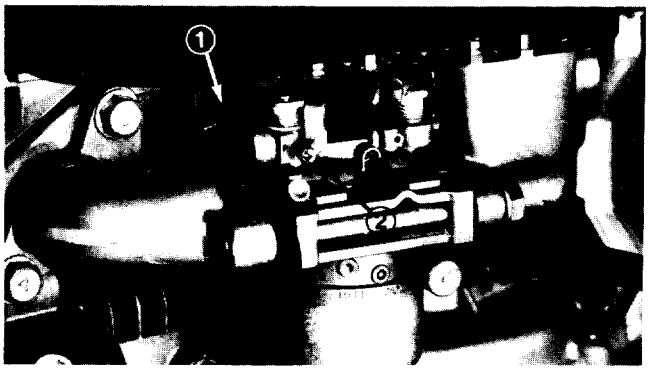


Figure 16

1. Idle mixture screw
2. Throttle stop screw

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.

IMPORTANT: Air cleaner must be installed on the engine whenever it is being adjusted. The air cleaner mounting bolts must also be installed when engine is run.

4. Adjust the throttle stop screw to 1400±100 RPM by turning it in or while holding the end of the screw against the carburetor body.

5. Adjust the idle mixture screw by turning it clockwise (lean) or counterclockwise (rich) until it idles smoothly.

6. Rotate idle mixture screw 1/4 turn counterclockwise.

7. Check and adjust the throttle stop screw to obtain 1400±100 RPM when idling.

8. After carburetor is adjusted, shut engine off.

Carburetor — High Altitude Correction:

Carburetor jetting should be changed for high altitude operation.

Standard Main Jet Size is #112.5.
Above 3000 feet, use Main Jet Size #110.
Above 6000 feet, use Main Jet Size #107.5.

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.