

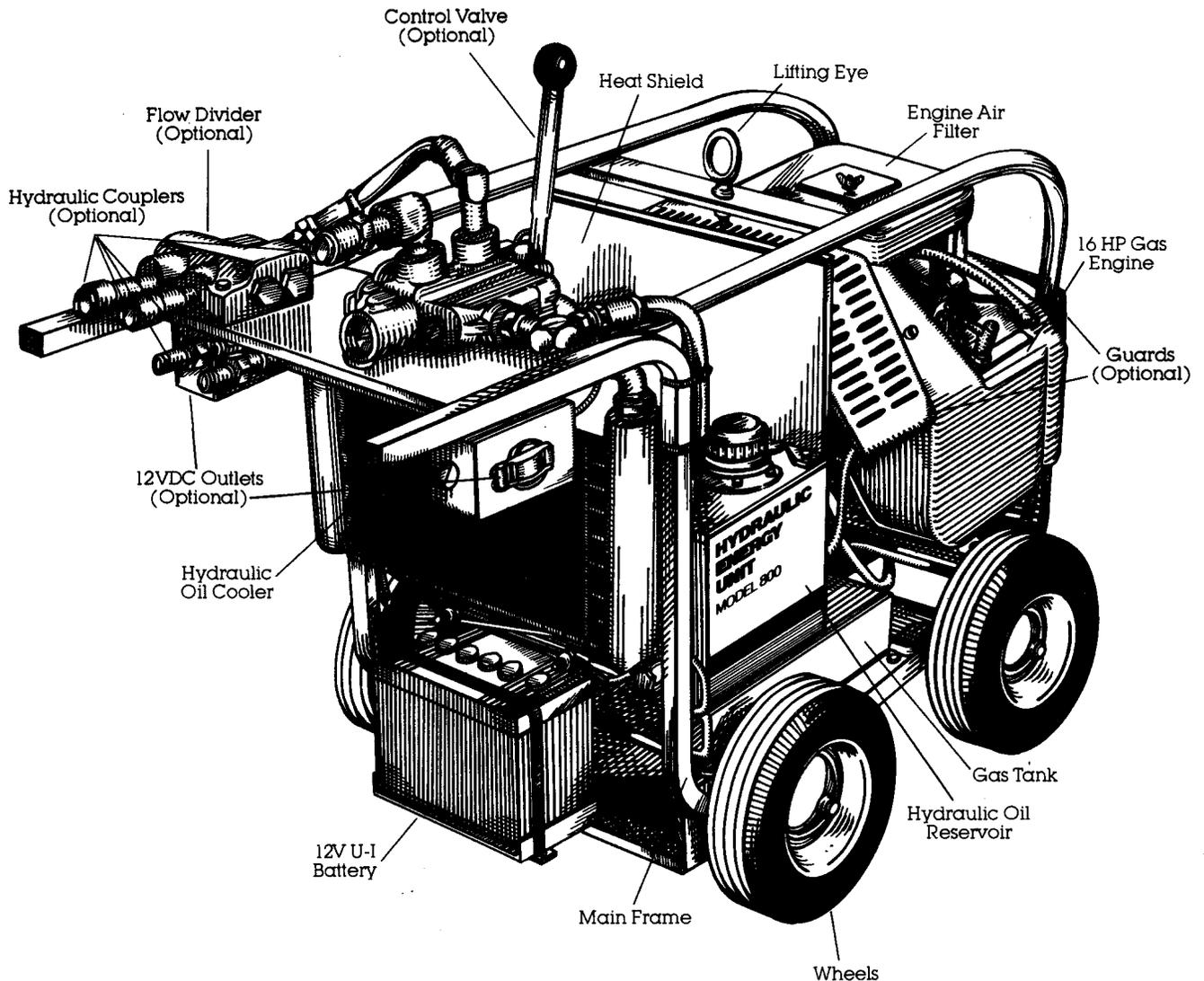
HYDRAULIC ENERGY UNIT* 800 (HYDRA-MITE) DESCRIPTION, USE AND MAINTENANCE

1. GENERAL

1.01 This section describes the Hydraulic Energy Unit 800, which provides power for hydraulic tools used in placing, splicing and maintenance operations (Fig.1).

1.02 (Reserved for future use)

1.03 The combination hydraulic power unit, and tools used with both power units, are described in separate sections.

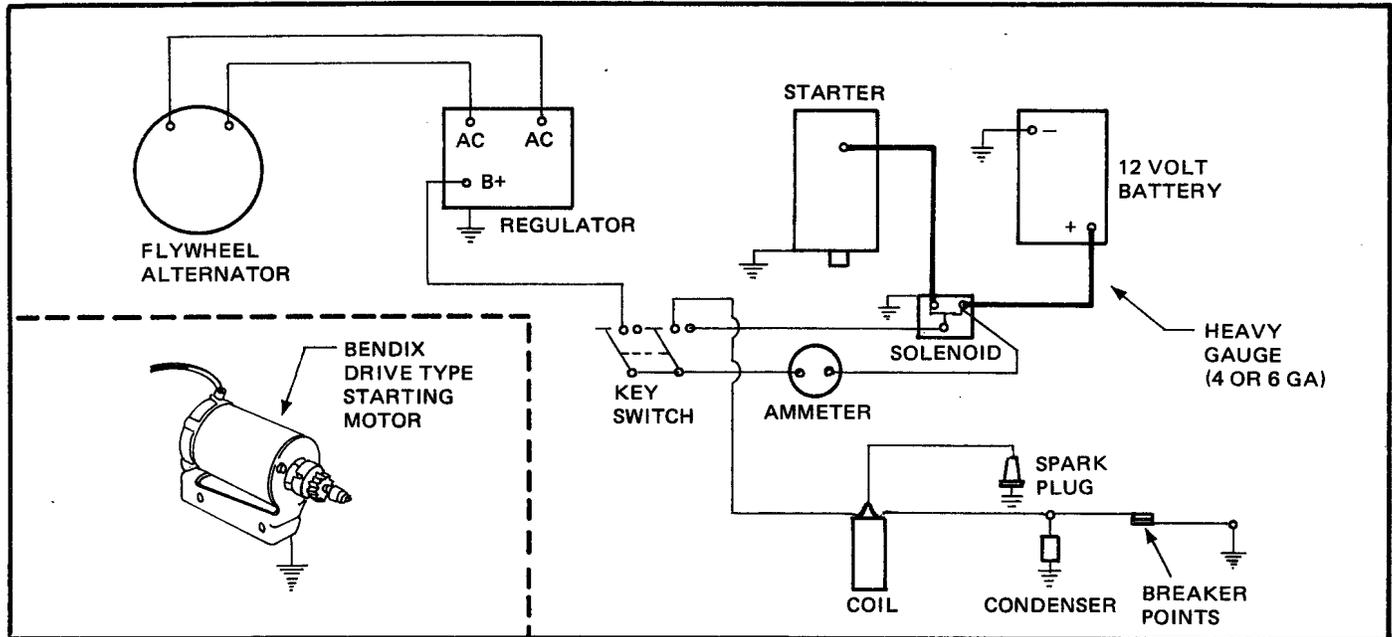


Hydraulic Energy Unit 800
Fig. 1

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NOTICE

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Bell System except under written agreement



Wiring Diagram for 15 AMP Alternator/Battery Ignition System
Fig. 2

2. DESCRIPTION

2.01 The model 800 is a self-contained portable unit powered by a 16 hp gasoline engine. It has an electric starter and a 12-volt battery (Fig. 2). It is mounted on rubber wheels and is small enough to be wheeled into back yards and elevators, up ramps, etc. It is transported by van, pickup or other mobile equipment.

2.02 Its hydraulic pump delivers 8 GPM of oil at 2000 psi to power various hydraulic tools. The oil travels from the pump to a control console, where the operator can select the appropriate flow for each tool.

2.03 Hydraulic tools connect to the power unit via dual oil-flow hoses and couplers. The male coupler is pressure into the tool and the female coupler is pressure return.

2.04 Tools that run on 12-volt power can also be connected to the model 800 at the outlets on either side. The engine must be running when the 12-volt outlets are being used.

3. PRECAUTIONS

3.01 *Do not operate the Model 800 in a confined space without providing for exhausting gas fumes to the outside.*

3.02 All quick-disconnect fittings must be fully engaged to both the power unit and the tool, and the control valve must be in the center position, or the engine will not start.

3.03 In cold weather, to provide adequate lubrication at high speed, allow at least three minutes warm-up time before operating the engine.

3.04 *Do not operate the engine with the blower housing or coupling shrouds removed.*

3.05 When either the 4 GPM or 6 GPM circuit is being used, **BOTH** must be hooked up to hoses or the power unit could be damaged.

4. USE

Preparation

4.01 Check the fluid levels (ie, motor oil, engine fuel, hydraulic oil, battery fluid). The hydraulic oil reservoir should be filled to approximately one inch from the top. If practicable, use automatic transmission fluid, which is the most stable for all climatic temperatures. Otherwise, use any good grade of petroleum base hydraulic fluid.

4.02 Uncoil the dual hydraulic hose set to avoid any kinks. Connect one end of the hoses to the power unit quick-disconnect couplers by inserting the male part into the female part until they are mated. Twist the movable rough band either clockwise or counterclockwise until locking tip hits end of the band slot. To unlock, twist the band to align tip with the center notch of the band slot. Pull the band back toward the female part of the coupler. Connect other end of hoses to tool with couplers. Ensure that all couplings are secure.

4.03 Place control valve handle in center position. When power unit is operating, handle should be pushed down or pulled up to direct oil flow.

4.04 When operating tools that require a large flow of oil, such as a pump or a pavement breaker, use the 8 GPM circuit and push the control valve handle down, *TOWARD THE ENGINE*.

4.05 When operating tools that require a smaller flow, such as racking jack and cable cutter (4 GPM) or impact wrench and pumps (6 GPM), use both the 4 GPM and 6 GPM circuits and pull the control valve handle up, *TOWARD THE VALVE*.

Starting the Power Unit

4.06 Make sure control valve handle is in the center position. Start engine by placing the ignition toggle switch in the "On" position and pushing the ignition button. Adjust choke and throttle until engine runs smoothly. When engine is warmed up, move control valve handle to pressurize desired circuit or connect 12-volt equipment to power outlets.

Changing Tools

4.07 Tools may be changed while the power unit is operating. Place control valve handle in

the center position. Uncouple the tool in use from the dual hoses and connect the tool to be used; secure the couplings. Move control valve handle to power the appropriate circuit for the tool to be used.

Stopping the Power Unit

4.08 Push throttle in and place control valve handle in the center position. Turn ignition toggle switch to the "Off" position.

5. MAINTENANCE

Lubrication

5.01 Check engine oil level daily and add oil as needed. *Do not* fill the oil reservoir above the F mark.

5.02 Use detergent oil SAE 30 in temperatures above 30°F and SAE 5W-20 in temperatures from 0°F to 30°F.

5.03 The oil and oil filter should be changed after every 100 hours of operation under normal conditions. The engine should be run just before changing the oil.

Air Cleaner

5.04 Clean air intake screen daily. Cover carburetor or air horn when air cleaner is removed.

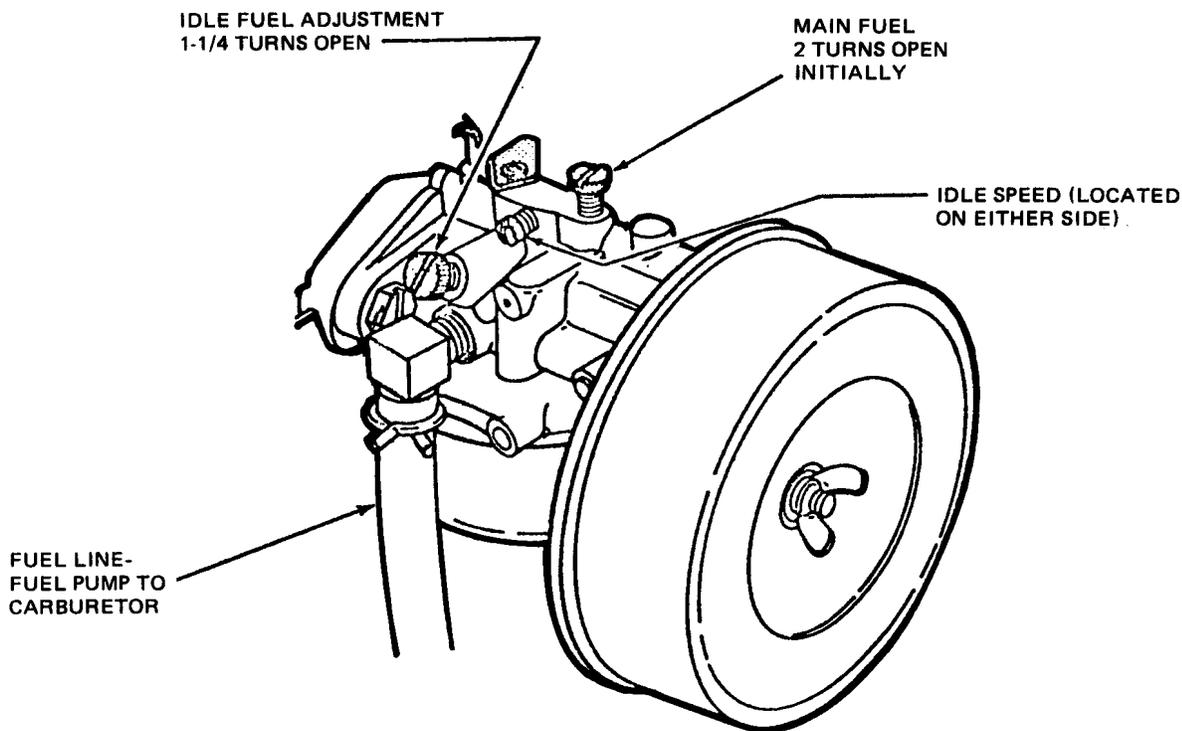
Fuel

5.05 Use a good grade of unleaded gasoline with an octane rating of at least 85. Do not add oil to the gasoline on 4-cycle engines. When storing the engine, drain fuel lines, tanks and carburetor bowl. Keep gas cap vent hole open.

Carburetor

5.06 For preliminary carburetor settings, adjust idle fuel and main fuel screws per Fig. 3. Rough idle is usually caused by too low an idle speed. To increase idle speed, turn idle screw in. Check to see if the air cleaner is clogged before readjusting the carburetor.

5.07 The governor is a speed-limiting device which is set at the factory and should not need adjusting. If adjustment is necessary, contact Hydraulic Energy Company for instructions.



**Gasoline Carburetor
Typical Location of Adjustments
Fig.3**

Ignition System



5.08 Check daily to see that each cell in the 12-volt battery is filled with enough fluid to cover the plates. If the fluid level is low, add distilled water to cover the plates. *Use extreme care not to overfill or splash the fluid, which contains sulfuric acid. If battery fluid gets into the eyes, IMMEDIATELY flush with clear, clean water. A delay in flushing the eyes could result in permanent eye damage. Neutralize any fluid spilled on skin or clothing with a soda solution followed by clear water.*

5.09 Inspect the battery connections and battery case monthly to ensure they are intact and free of corrosion. To remove corrosion build-up, first ensure the vent caps are in place. Scrub corroded areas with a water and soda solution, then rinse with water and wipe dry.

5.10 Periodically measure the specific gravity in each battery cell with a hydrometer. Recharge the battery to 1.220 in warm weather and 1.230 in freezing weather when the specific gravity is low.

Note: Further battery care and maintenance information is located in Section 720-340-100.

5.11 The spark plug condition and setting should be checked after every 100 hours of use. Set the gap at .025 inches and tighten the plug into the cylinder head with the torque wrench to 22 foot pounds. Replace badly corroded or fouled plugs.

5.12 Check ignition coils periodically to ensure that they are clean and that the terminals and connections are tight, providing a good electrical contact.

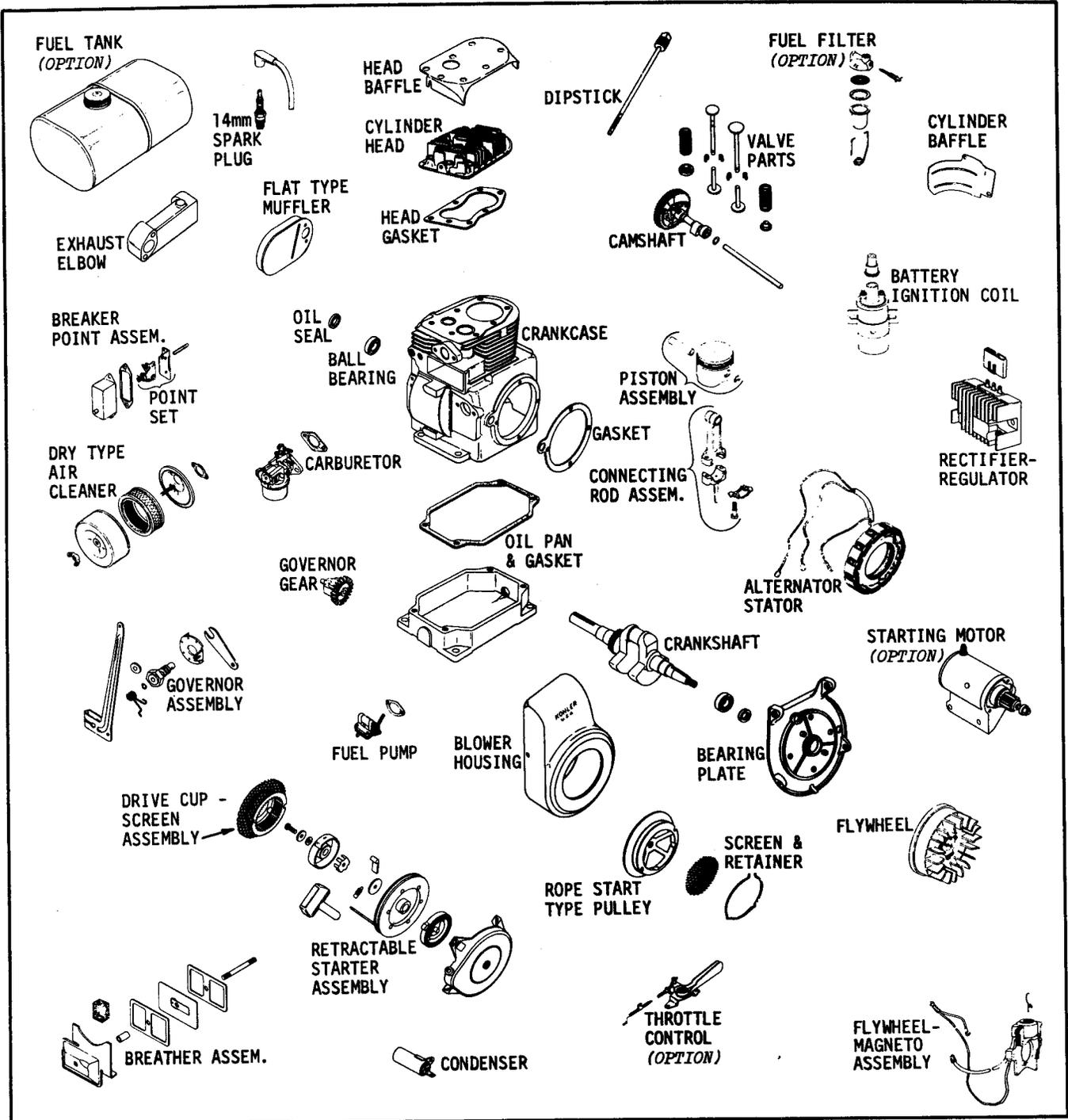
5.13 Replace the nipple on the high tension terminal if it is damaged to prevent current leakage.

Hydraulic System

5.14 Check hydraulic oil level daily and fill as necessary. If there is water in the oil, drain the water. Change oil after every 500 hours of operation or whenever oil becomes cloudy. Remove lid and empty reservoir of oil. Wipe inside of tank with a clean cloth and refill it with clean oil. In replacing

the lid, be sure to maintain fan alignment so fan does not hit fan guard. Replace oil filter after first 50 hours of operation and then after every 200 hours.

5.15 Check all hydraulic components regularly for leakage and replace defective parts.



Parts Identification — Exploded View
Fig. 4

Cooling System

- 5.16 Keep heat exchange core and cooling fins clean for maximum cooling and efficiency.
- 5.17 Check all belts and pulleys for tightness and alignment.

Replacement Parts

- 5.18 When ordering replacement parts for the engine, refer to the model, serial and specifica-

tion numbers shown on the blower housing. (See Fig. 4 for parts identification.)

6. TROUBLE SHOOTING

- 6.01 Some problems that may occur with the Model 800 are shown with possible causes in Table A.

**TABLE A
TROUBLE SHOOTING GUIDE**

<p>HARD STARTING OR LOSS OF POWER</p> <ul style="list-style-type: none"> a. Faulty ignition. <ul style="list-style-type: none"> 1. Leads grounded or loose. 2. Breaker points faulty or improperly gapped. 3. Spark plug faulty or improperly gapped. 4. Coil or condenser defective. b. Faulty carburetion. <ul style="list-style-type: none"> 1. Fuel line clogged (dirt-gum). 2. Fuel pump faulty. 3. Carburetor dirty or improperly adjusted. c. Poor compression. <ul style="list-style-type: none"> 1. Head loose or gasket leaking. 2. Valves sticking or leaking. 3. Piston rings worn. d. Incomplete hydraulic circuit. <ul style="list-style-type: none"> 1. Hoses or tools uncoupled. 2. Couplers not fully engaged. e. Low hydraulic oil level. f. Ruptured hose. g. Fittings loose. 	<p>OPERATING ERRATICALLY</p> <ul style="list-style-type: none"> a. Clogged fuel line. b. Water in fuel. c. Vent in gas cap plugged. d. Faulty fuel pump. e. Gasket leaking (carb.-manifold). f. Governor improperly set. g. Carburetor improperly adjusted. <p>KNOCKING</p> <ul style="list-style-type: none"> a. Fuel octane too low. b. Ignition timing wrong. c. Carbon build-up in combustion chamber. d. Engine overheated. <p>OCCASIONAL "SKIP" AT HIGH SPEED</p> <ul style="list-style-type: none"> a. Spark plug fouled, faulty or gap too wide. b. Ignition timing wrong. c. Carburetor improperly adjusted. 	<p>OVERHEATING</p> <ul style="list-style-type: none"> a. Air intake screen or fins clogged. b. Oil level top high (or low). c. Fuel mixture too lean. d. Ignition timing wrong. e. Engine overloaded. f. Tappet clearance too close. g. Fan inoperative. <ul style="list-style-type: none"> 1. Belt off pulley. 2. Belt broken. <p>IDLES POORLY</p> <ul style="list-style-type: none"> a. Idle speed too low. b. Idle fuel improperly adjusted. c. Gasket leaking (carb.-manifold). d. Spark plug gap too close. <p>BACKFIRING</p> <ul style="list-style-type: none"> a. Carburetor set too lean (main fuel). b. Breaker points improperly gapped (timing). c. Valve sticking.
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