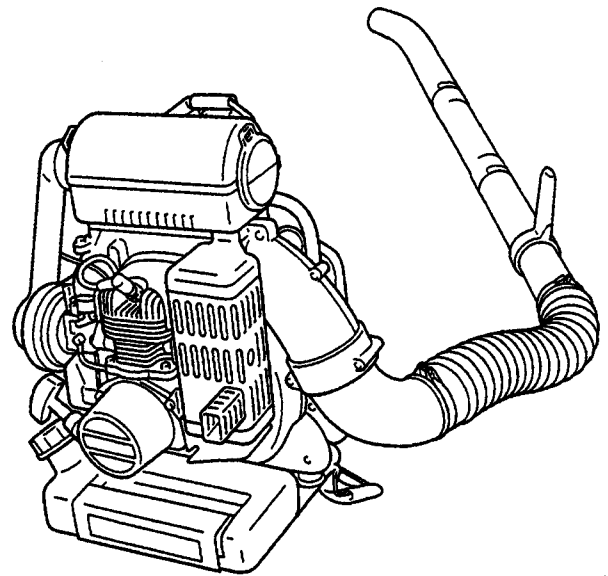


ECHO®



OPERATOR'S MANUAL

ECHO POWER BLOWER PB-400E TYPE2-E

CAUTION

**Read Rules for Safe Operation
and Instructions Carefully**

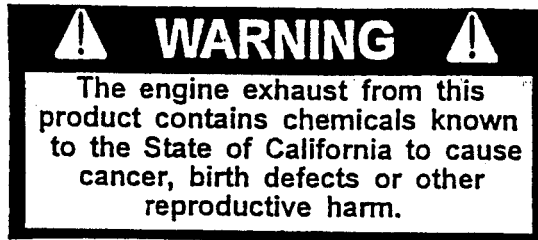


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IMPORTANT

RULES FOR SAFE OPERATION

1. Handle gasoline with care. It is highly inflammable.
 - Refuel before starting work.
 - Do not smoke while handling fuel.
 - Do not refuel a hot engine.
 - Avoid spilling fuel or oil. Always wipe unit dry before using.
 - Move at least 3m (10 feet) away from the fueling point before starting engine.
 - Always store gasoline in approved container.
2. Do not operate in unventilated area.
3. Do not allow bystanders in work area.
4. Do not point the blower in the direction of people.
5. Always wear safety glasses.
6. Always wear ear protectors where possible.
7. Avoid wearing loose clothing or loose scarf.
8. Always use a face filter mask to avoid breathing dust.
9. Do not block blower pipe in order to avoid engine damage due to over revolution.



CONTENTS

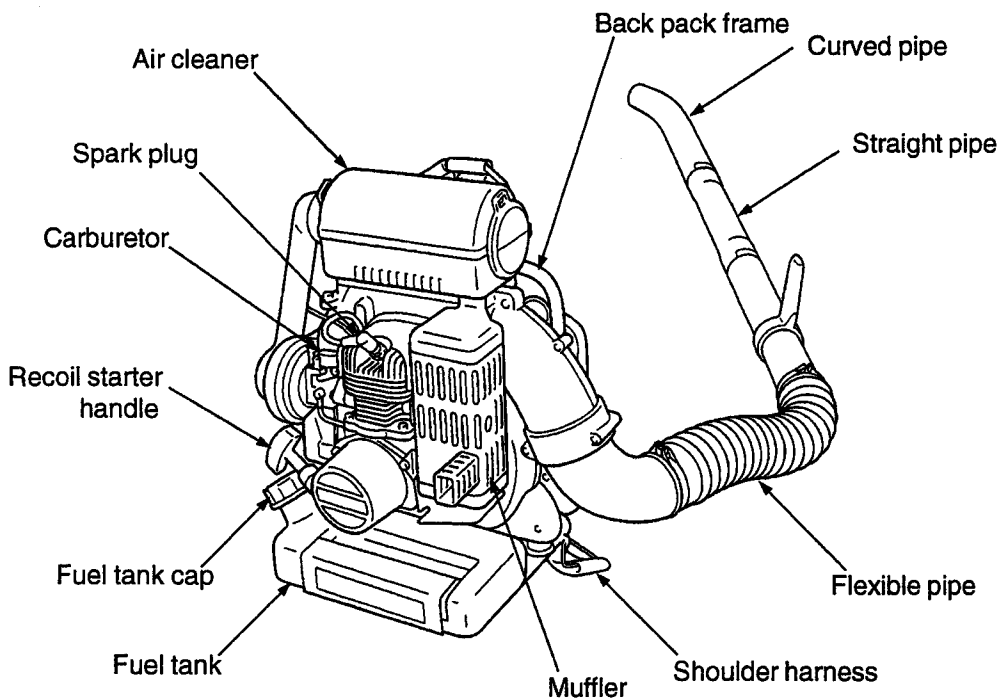
	Page
Rules for Safe Operation	2
Technical Data	3
Nomenclature of Parts	4
Assembling	4
Operation	5
Maintenance and Care	7
Trouble shooting	9
Storage After Use	11

TECHNICAL DATA

			PB-400E TYPE2-E
Dimension	L x W x H	cm (in)	33×45×44.5 (13.0×17.7×17.5)
Masses		kg (lbs)	10.0 (22.0)
Engine	Type Displacement Carburetor Ignition Spark plug Starter	mL (cm ³)	Air cooled 2 stroke single cylinder 39.7 Walbro diaphragm type WT Flywheel magneto: C.D.I. (Capacitor Discharge Ignition) System NGK BM-6A or equivalent Recoil starter
Fuel	Mixing ratio		Mixture of gasoline (unleaded, 89 octane minimum) and specially blended 50:1 ECHO two cycle engine oil.
	Tank capacity	L(FL.OZ.US)	1.4 (47.3)
Blower	Air speed (Max.) Air volume (Max.)	m/s (MPH) m ³ /min (Cu.ft./min)	80 (180) 11 (388)

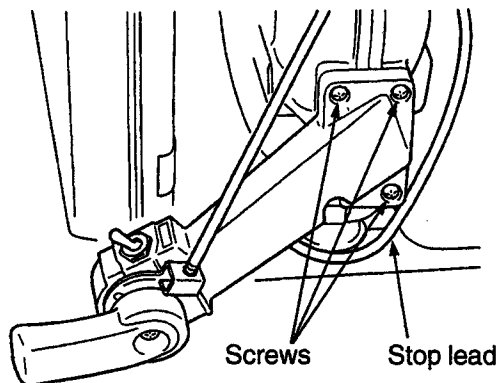
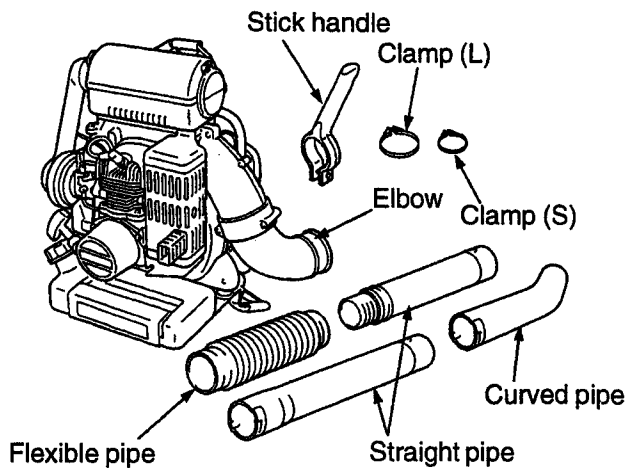
* Technical data subject to change without notice.

NOMENCLATURE OF PARTS



ASSEMBLING

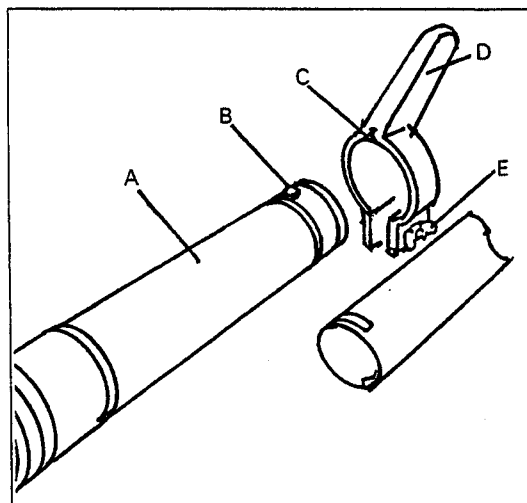
- Assemble throttle lever bracket to the fan case using four screws.
— Set stop lead into the recess of bracket.
- Assemble the flexible pipe thru elbow to the blower and tighten the clamp.
- Assemble the flexible pipe and the straight pipe w/swivel and tighten the clamp.
- Assemble the straight section of the pipe to the other end of the pipe.
- Assemble the curved pipe and rotate to the desired angle.
- Shoulder harness is adjustable to fit any operator.
- Adjust the length of strap for easier operation.



INSTALLATION OF STICK HANDLE

ECHO Model Backpack Blower is equipped with a Stick Handle. Use these instructions to properly mount the Stick Handle to swivel tube.

1. Remove blower pipe from swivel tube (A).
2. Loosen wing nut (E) completely and expand open handle clamp (D).
3. Align notches (C) in handle clamp with pipe pegs (B). Handle should be angled away from operator.
4. Slide handle onto swivel tube (A).
5. Position handle for comfortable operation and tighten wing nut (E).
6. Install blower pipe to swivel tube.



OPERATION

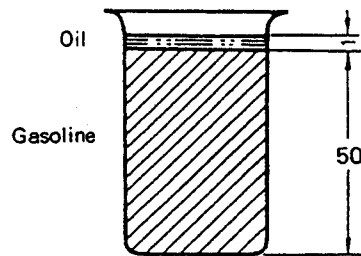
GENERAL CHECK

- Ensure that all nuts, screws and bolts installed are properly tightened.

FUEL STATEMENT

GASOLINE - Use 89 Octane [$\frac{R+M}{2}$] gasoline or gasohol known to be good quality. Gasohol may contain maximum 10% ethyl (grain) alcohol or 15% MTBE (methyl tertiary-butyl ether). Gasohol containing methyl (wood) alcohol is not approved.

OIL - ECHO brand premium two-stroke 50:1 oil is preferred. Mix oil and gasoline/gasohol according to instructions on the oil container label.



Fuel mix chart

MIXING - Follow directions on the oil container.

IMPORTANT

Stored fuel ages. Do not mix more fuel than you expect to use in thirty (30) days, ninety (90) days when a fuel stabilizer is added.

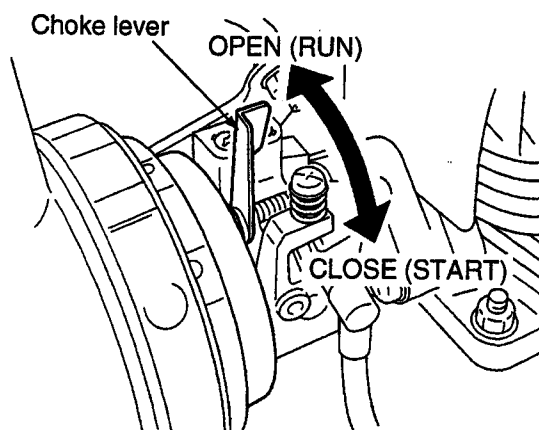
Stored two-stroke fuel may separate. ALWAYS shake fuel container thoroughly before each use.

(50:1)

US		METRIC	
GAS	OIL	GAS	OIL
GAL.	FL. OZ.	L	mL
1	2.6	4	80
2	5.1	8	160
5	12.8	20	400

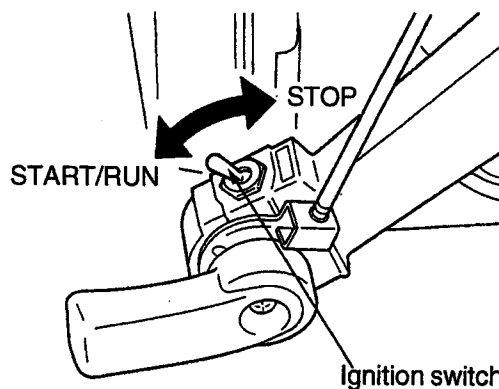
STARTING THE ENGINE

- Close the choke by moving the lever as shown.
- Set the throttle lever in partially open and the the switch to "on". (START/RUN position)
- Pull the starter handle until the engine starts.
 - Excessive cranking with the choke closed can cause flooding of the engine resulting in the accumulation of fuel in the crankcase.
 - In that case, remove the spark plug and pull starter handle several times. After replacing spark plug start the engine with choke lever fully open and run at fast idle until engine does not smoke.
- Open the choke gradually after the engine runs continuously.
- Allow the engine to warm up at a fast idle before reducing to idle speed.
- A warm engine can be started without using the choke.



STOPPING THE ENGINE

- Set the throttle lever in the idle position for a few minutes to cool down.
- Switch the ignition to "stop" position.



OPERATION OF THE POWER BLOWER

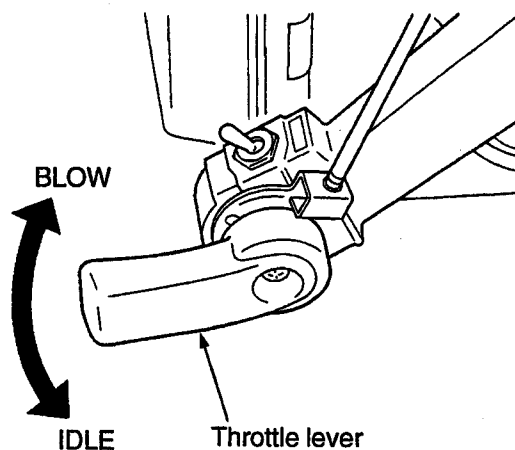
- Allow the engine to warm up at a fast idle for a few minutes.
- ECHO PB-400E can be run at any speed between an idle of 2000–2500 r/min and maximum load speed of 7500 r/min. The velocity of the air stream can therefore readily be controlled from a gentle breeze to a high speed blast moving at approximately 80 m/s (180 MPH) which will move debris ranging from garden leaves to bottles and can accumulated in sports stadiums.
 - Use a low speed to blow dry leaves from a lawn or flower bed.
 - Use a medium to high speed to clean grass and leaves from walks, patios and drives.
 - Use a high speed to move gravel, dirt, snow, bottles or cans from a driveway, street, parking lot, or stadiums.

(Caution)

Do not point the blower pipe in the direction of people or pets.

Always wear safety glasses and use a face filter mask.

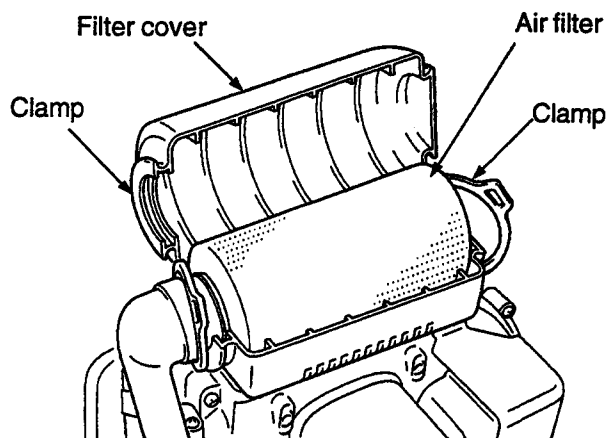
Read carefully "Rules for safe operation" on page 2.



MAINTENANCE AND CARE

AIR CLEANER

- Accumulated dust on the air filter will reduce engine efficiency, increase fuel consumption and allow abrasive particles to pass into the engine. Remove the air filter as often as necessary to maintain in a clean condition.
- Surface dust can readily be removed by tapping the filter.
 - Do not use high pressure air to clean the filter.
- To take out a air filter, loosen both clamps of air cleaner and remove filter cover as shown.



CARBURETOR ADJUSTMENT

Every unit is run at the factory and the carburetor is set in compliance with California Emission Regulations. In addition, the carburetor is equipped with "H" (High Speed Needle) and "L" (Low Speed Needle) needle adjustment limiters that prevent settings outside acceptable limits.

1. Before adjusting carburetor clean or replace air filter and muffler, "Spark Arrestor Screen".
2. Start engine and run several minutes to bring to operating temperature. Flash choke twice during warm-up to clear any air from the fuel system.
3. Stop engine. Turn "H" speed needle CCW (Counter Clockwise) to stop. Turn "L" speed needle midway between full CW (Clockwise) stop and CCW stop.
4. Idle Speed Adjustment

- **Before adjusting blower, install all blower pipes.**

Start engine, turn "idle" speed adjustment screw either CW or CCW until the tip just contacts the throttle plate.

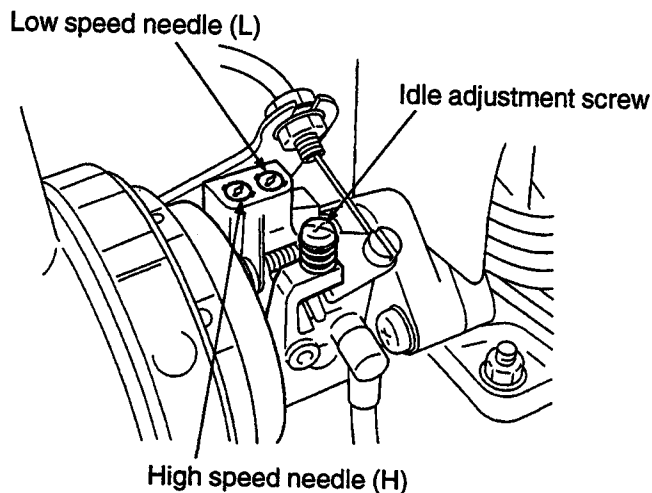
Then turn (2) two additional turns CW for initial setting.

Blower should operate with an even idle at low r/min.

5. Accelerate to full throttle for 2-3 seconds to clear any excess fuel in the engine, then return to idle. Accelerate engine to full throttle to check for smooth transition from idle to high speed. If engine hesitates turn "L" needle CCW 1/8 turn and repeat acceleration.

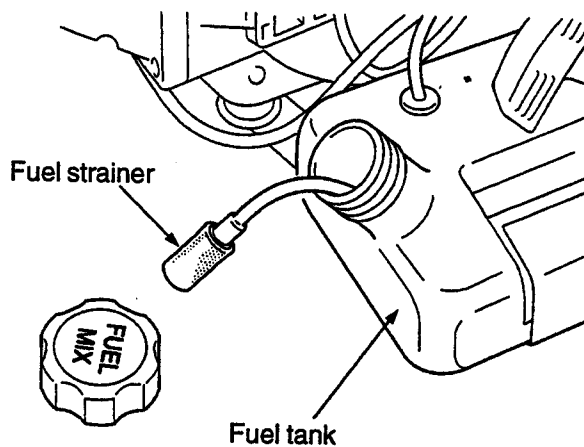
Continue adjustment until smooth acceleration results.

6. Check idle speed and reset if necessary as described in item 4.



FUEL STRAINER

- Fuel tank is fitted with a strainer.
 - Strainer is situated at the free end of fuel pipe and can be picked out through fuel inlet port with piece of steel wire or the like.
- Check the fuel strainer periodically.
 - Do not allow dust to enter into fuel tank.
 - Clogged strainer will cause difficulty in starting engine or abnormalities in engine performance.
 - When the strainer is dirty, wash it in suitable cleaning fluid. Dry it completely to remove moisture.
- When the inside of the fuel tank dirty, it can be cleaned by rinsing the tank out with suitable cleaning fluid.

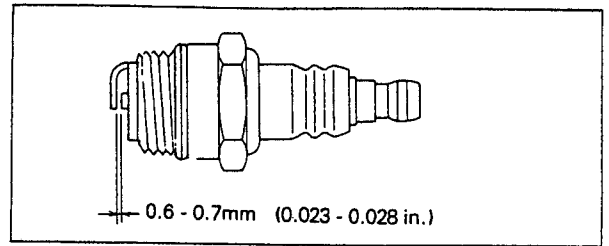


SPARK PLUG

- Do not attempt to remove the plug from a hot engine in order to avoid possible damage to the threads.
- Clean or replace the plug if fouled with heavy or oily deposits. Replace the plug if the center electrode is worn or rounded at the end.

Spark gap 0.6—0.7 mm (.023" — .028")

Fastening torque = 15 - 17 N•m (130 - 145 in•lb)

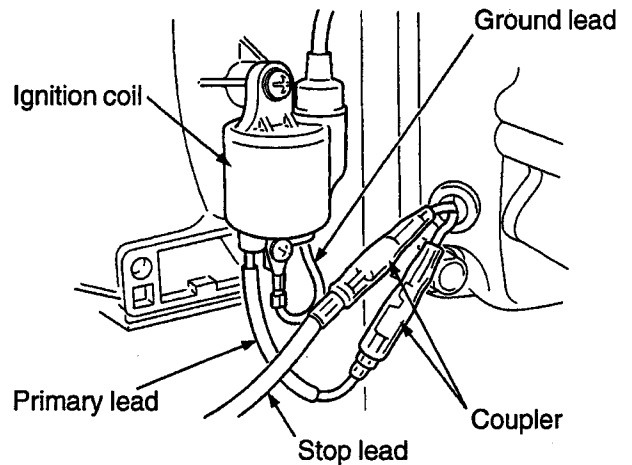


MAGNETO

- The unit is incorporated with magneto of C.D.I. (Capacitor Discharge Ignition) system, which does not require adjustment of ignition timing and the contact breaker point gap.

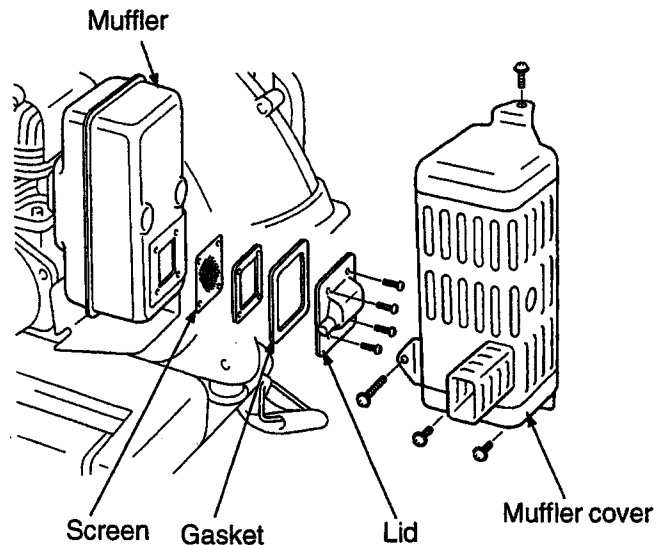
Ensure connections

- of the following lead
- Stop lead
 - Primary lead
 - Ground lead



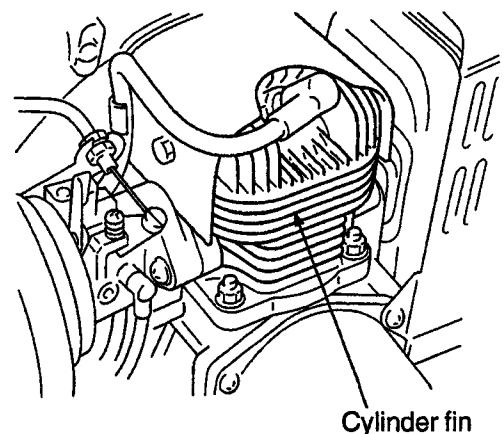
MUFFLER AND EXHAUST PORT

- In the event that the engine should lose power and overheat, the muffler should be removed and checked for excessive deposits. Carbon built up in the exhaust port should be removed with a piece of wood, ensuring that particles of carbon are not allowed to enter the cylinder. Remove all carbon deposits from the muffler flange area and wash the complete unit in a suitable solvent.



CYLINDER FINS

- Check periodically.
 - Clogged fins result in poor engine cooling.
- Clean the passage of air between the cylinder fins to let cooling air pass easily.



TROUBLE SHOOTING

- **FAILURES** such as difficulty in starting engine, irregularity in functions and abnormality in performances can normally be prevented completely if careful attention is paid in advance.
- When the engine does not function properly, check the following 3 points in particular:
 - Whether compression of the engine is adequate or not.
 - Whether the fuel system is in good condition and fuel is supplied fluently, or not.
 - Whether the ignition system is in good condition and the spark plug sparks correctly, or not.
- When there is serious trouble with the unit, do not try to repair it yourself, but have your distributor or dealer do it for you.
- For details of TROUBLE SHOOTING refer to Table 1 and 2.
 - Locate the problem on the following charts and repair as necessary.

Table 1

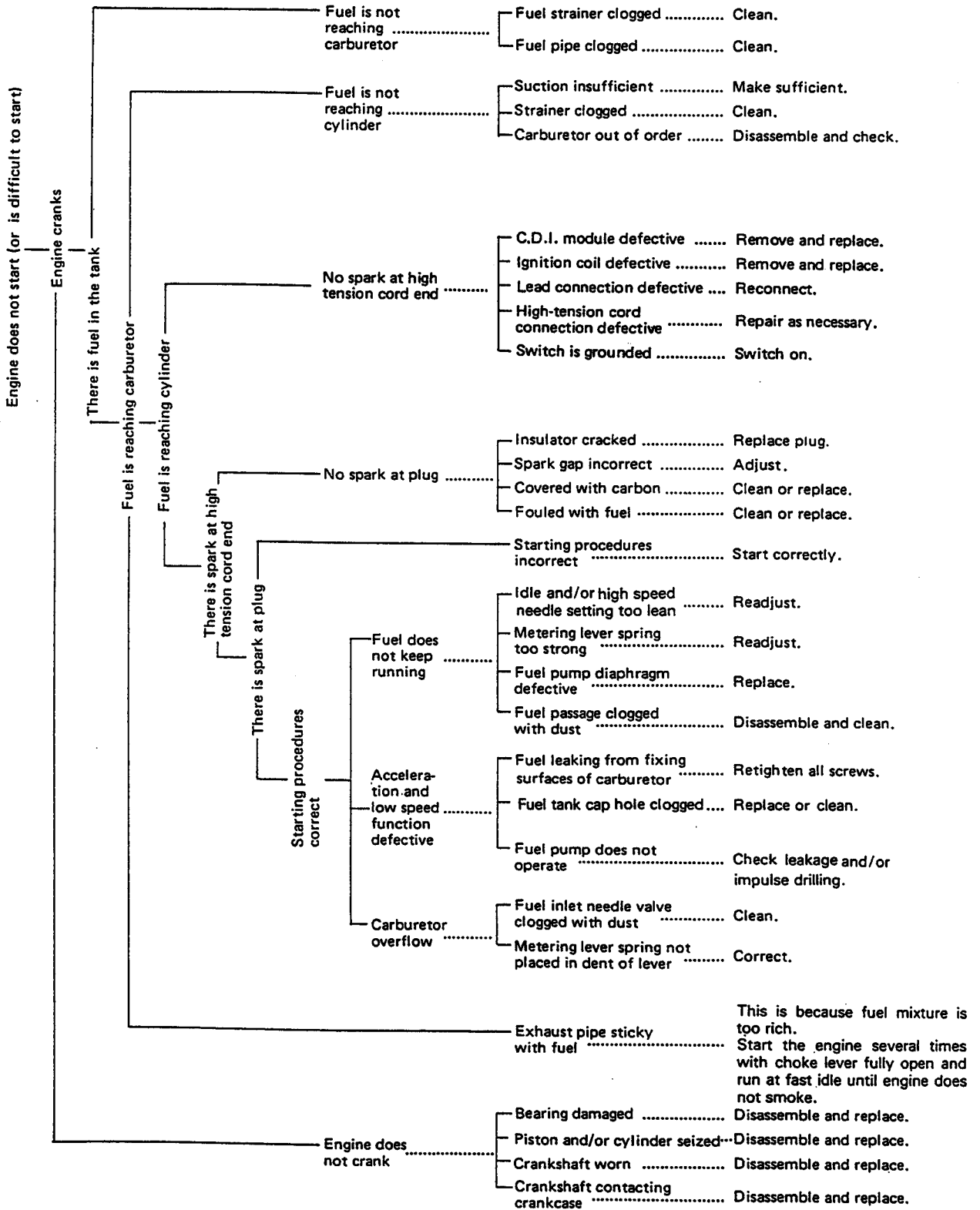
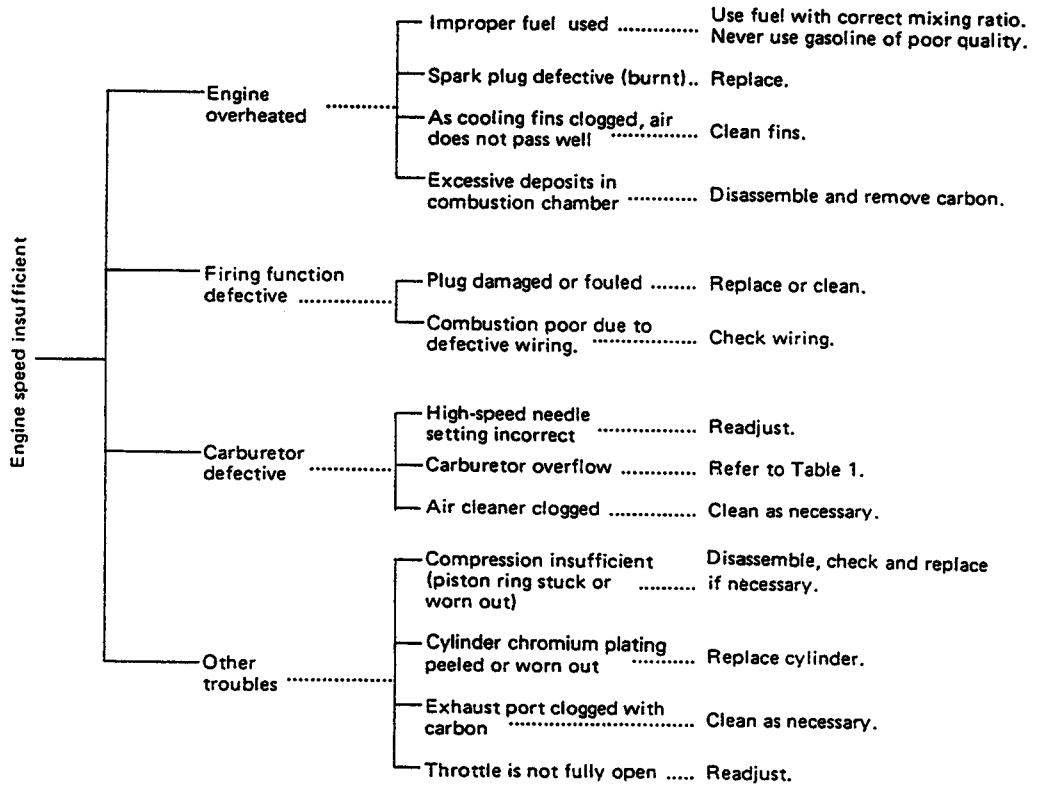


Table 2



STORAGE AFTER USE

- Inspect and adjust every part of the unit.
 - Completely clean every part, and repair, if necessary.
 - Apply thin coating of clean oil on metal parts to prevent rust.
 - Remove the flexible pipe and pipes from the unit.
- Drain fuel tank, pull starter handle slowly a few times to drain fuel from carburetor.
- Pour a little amount of clean motor oil into spark plug hole of the cylinder, pull starter handle and then crank the engine until TOP DEAD CENTER.
- Store in a dry area, free from dust.

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