

OPERATOR'S MANUAL

ECHO HEDGE TRIMMER HC-200AE

CAUTION

Read Rules for Safe Operation
and Instructions Carefully



IMPORTANT

RULES FOR SAFE OPERATION

1. Obey Rules and/or Regulations in your area.
2. Read this Operator's Manual well to acquaint yourself with how to handle the unit safely and effectively before use.
 - Before starting operation, study the working procedures well.
 - If there are any questions, contact and inquire with an Echo distributor or dealer.
3. Never operate the unit when you are fatigued.
 - Fatigue causes carelessness.
 - Keep sufficient rest periods and breaks when operating the unit.
 - Be more cautious before rest periods and before the end of your shift.
4. Handle gasoline with care. It is highly inflammable.
 - Always store gasoline in an approved container.
 - Handle at a clean and cleared place and away from fire.
 - Do not smoke while handling fuel.
 - Always stop the engine to refuel the tank.
 - Do not refuel a hot engine. Wait until the engine has cooled down.
 - Avoid spilling fuel or oil. Spilled fuel should always be wiped up.
 - Move at least three meters (10 feet) away from the fueling point before starting engine.
 - Do not remove the fuel tank cap when engine is still warm or running.
5. When transporting, checking or adjusting the unit be sure the engine is stopped.
6. Do not operate in unventilated areas. Exhaust gas is highly poisonous.
7. Use only the cutter blade designated by the manufacturer for this model. Make sure that the blades are correctly attached. When crack is noticed on the cutter blade, never use it, but replace with a new one.
8. Before starting up the engine, make sure that the cutter blade is not touching anything.
9. Always wear safety footwear, safety goggles and ear protectors where possible.
10. Do not allow either people or animals into the work area.
 - When two or more operators are working together, a safe distance should be kept between them.
11. Do not smoke when operating.
12. Be sure of your footing when operating.
13. Always hold the unit firmly with both hands with the thumb and fingers encircling the handles.
14. To avoid hitting small stones or other debris, do not cut too close to the ground.
15. Before setting down the trimmer, switch off the engine.

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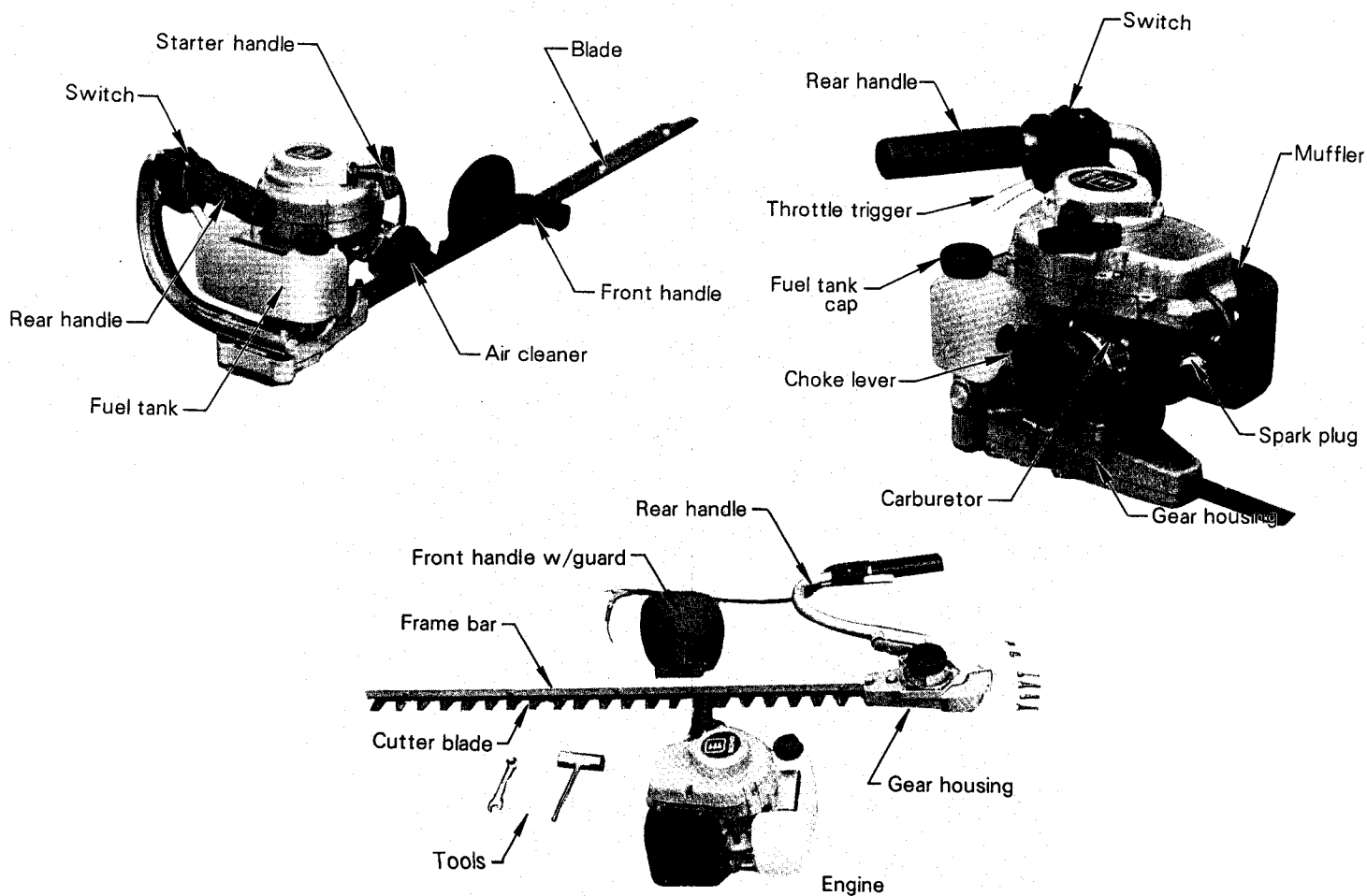
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TECHNICAL DATA

Dimension	L x W x H	cm (in.)	102 x 28 x 24.2 (40.6 x 11.0 x 9.5)
Weight		kg (lbs)	5.2 (11.5):
Engine	Type Displacement Max revolution Carburetor Ignition Spark plug Starter Clutch	cc (cu.in.) rpm	Air cooled two stroke single cylinder 21.2 (1.29) 8,000 Walbro diaphragm type WA Flywheel magneto: T.C.I. (Transistor Control Ignition) system NGK-BM6A or CHAMPION CJ-8 Recoil starter Automatic centrifugal clutch
Fuel	Mixing ratio Tank capacity	 litre (Fl.oz.US)	 Regular grade gasoline 20 parts: ECHO brand motor oil (or an air cooled two stroke engine oil of a reputable brand name) 1 part 0.5 (16.9)
Blade	Action Length Gear Lubrication	cm (in.)	Reciprocating type (Double-action blade) 75 (29.5) Ratio 1:5.1 Reduction "SHELL" ALVANIA EP-2 or a equivalent grade of grease

Technical data subject to change without notice.

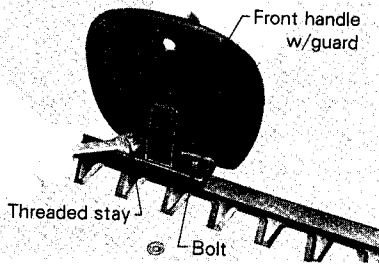
NOMENCLATURE OF PARTS



ASSEMBLING

FRONT HANDLE

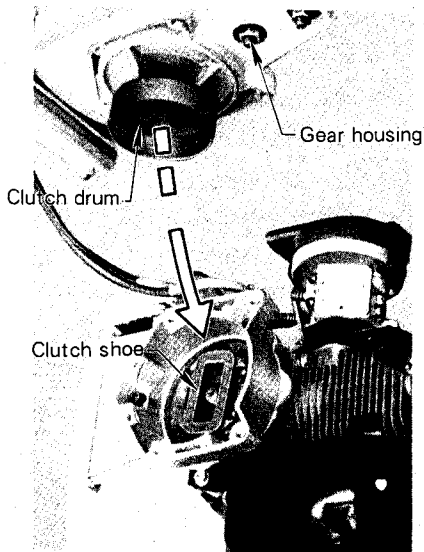
- Attach front handle to threaded stay and insert bolt through blades and front handle, tighten both nuts.



- Ensure that clutch drum rotates freely by hand. Do not overtighten both nuts.

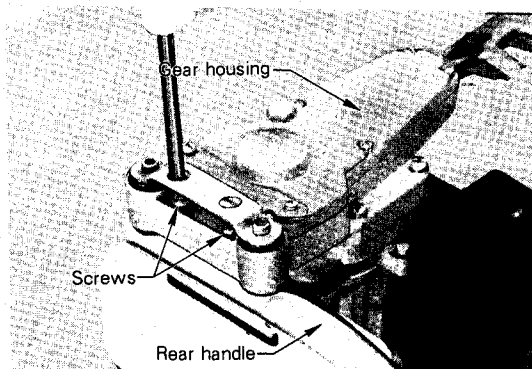
GEAR HOUSING

- Fit gear housing with clutch drum on the engine ensuring that clutch drum is correctly fitted.
- Tighten four screws of gear housing securely.



REAR HANDLE

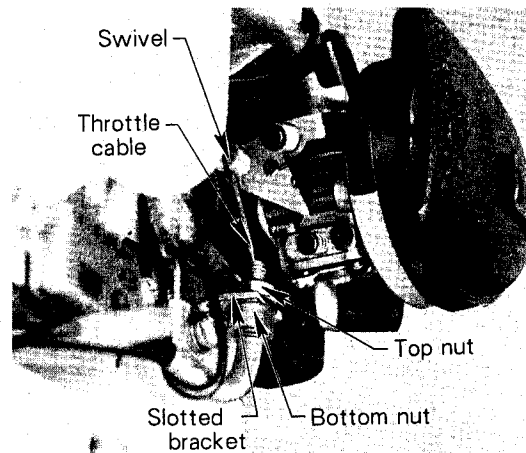
- Install rear handle to gear housing as shown.



THROTTLE CABLE

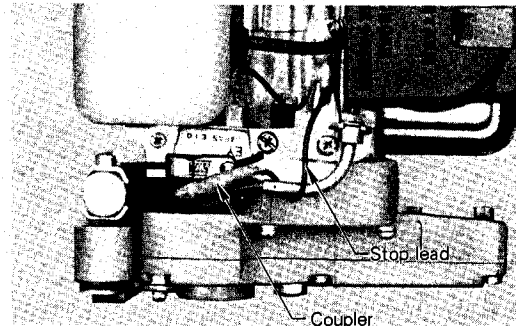
As the engine is delivered with throttle cable (engine side) separated, assemble the cable to carburetor as follows.

- Attach the inner cable to swivel on throttle lever ensuring that the nipple fits into socket provided on one side of slot.
- Attach the cable adjuster to slotted bracket with bottom nut fitting into slot as shown.
- Tighten top hexagon nut and washer to secure in this position.
- Check that throttle operates freely and returns to idle position.
- Do not loosen bottom nut unnecessarily, as it is located properly at the factory.



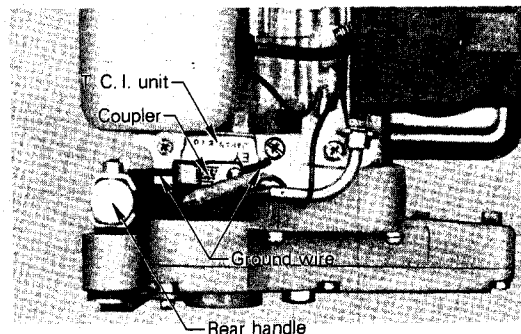
STOP LEAD

- Connect stop lead to coupler properly as shown.



GROUND LEAD

- Connect ground lead to rear handle as shown and connect the TCI unit by coupler.



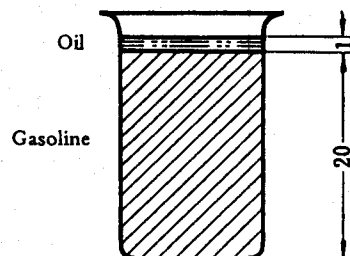
Handles should be sufficiently tightened.

OPERATION

- Check for loose nuts, bolts and screws each time before using the unit.

FUEL

- Fuel use for this model is a mixture of regular grade gasoline and ECHO brand motor oil or an aircooled two stroke engine oil of a reputable brand name.
- Mixture ratio is
Gasoline 20 parts: Oil 1 part.
 - Fuel mixture at a rate other than 20:1 may cause malfunction of the engine.
 - Ensure mixture ratio is correct.
 - Power 1/2 of the gasoline into a safe container, add oil and mix thoroughly.
 - Now add the remainder of gasoline and mix again.
 - Do not use motor oil other than that recommended above.
 - Do not mix directly in engine fuel tank.
- After refueling, secure the fuel tank cap and wipe away all spilled fuel with a dry cloth.



Fuel mix chart

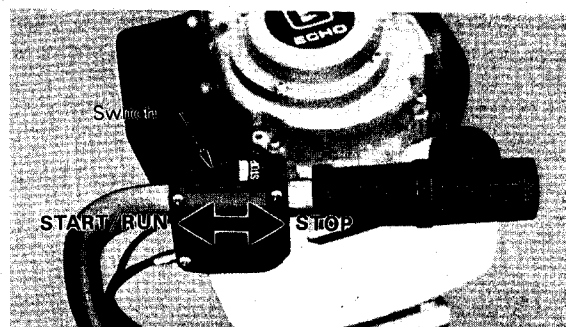
US		IMPERIAL		METRIC	
GAS	OIL	GAS	OIL	GAS	OIL
GAL.	FL. OZ.	GAL.	FL. OZ.	LITERS	C.C.
1	6.4	1	8	4	200
2	12.8	2	16	8	400
5	32.0	5	40	20	1,000 (1 Liter)

STARTING COLD ENGINE

- Turn switch to START/RUN position as shown.
Turn choke lever to START (Close) position.
- Pull recoil starter until the engine fires.
Now, turn choke lever to RUN (Open) position, and if necessary, restart the engine again and allow to warm up for a few minutes before using.
- After idling, gradually open throttle and cutter blade will start to operate as the engine attains clutch engagement speed of 3000 ~ 3400 RPM approx.

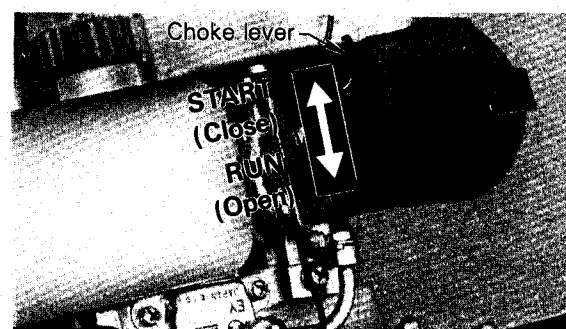
(NOTE)

Recoil starter: Use short pulls — only 1/2–2/3 of starter rope for starting.
Always hold the unit firmly with both hands.



STARTING WARM ENGINE

- When engine is warm, start it by pulling recoil starter rope with switch positioned at START/RUN.
(Keep choke lever in RUN (Open) position.)
- If engine does not start in a few tries, follow same procedures as to start cold engine.



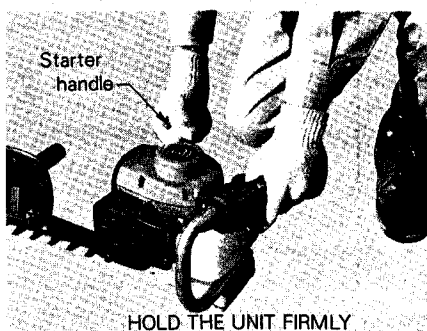
STOPPING ENGINE

- Release throttle trigger and allow to run at idle speed.
- Turn ignition switch to "STOP" position.

DIRECTION OF STARTER HANDLE

Pulling direction of starter handle can be changed as required.

- Remove the starter case. (Remove four screws.)
- Turn the location of starter handle close to the rear handle grip. Tighten four screws.



Do not leave engine running while gear housing with blades in unattended.

HEDGE TRIMMING

- To operate, after idling hold trimmer firmly, squeeze throttle trigger to accelerate engine, tilt trimmer so cutting teeth are angled slightly toward the hedge or shrub and proceed to cut. The unit is designed to cut any type of hedge or shrub; however; **thickness of branches should not exceed 1/4 inch in diameter.**
- Be careful of hidden metallic objects in the hedge or shrubbery which may damage trimmer.
- The engine continues running even when the blades have stopped due to an excessive load. In such cases, stop the engine and remove the cause of overload before again starting the engine and resuming the job.

CAUTION

USE TRIMMER PROPERLY — Use only for trimming the types of shrub, growth, etc. described above.

DO NOT OVERREACH OR STAND ON UNSTABLE SUPPORT — Keep good footing and balance at all times.

MULTIPLE OPERATORS — Keep a safe distance between two or more operators when working together simultaneously.

Do not allow either people or animals into the work area.

In an emergency should the switch fail to stop the engine, turn the choke lever to the closed position and the engine will slowly come to a stand-still.



DRESS PROPERLY — Do not wear loose clothing or jewelry. They can be caught in moving parts. Use of sturdy gloves, non-skid footwear and safety glasses is recommended.

CUTTING HAZARD — KEEP HANDS AWAY FROM BLADES — Keep both hands on handles when power is on. Do not attempt to remove cut material nor hold material to be cut when blades are moving. Make sure engine switch is off when clearing jammed material from blades. Never grasp the exposed cutting blades on cutting edges of trimmer.

READ CAREFULLY SAFETY PRECAUTIONS (Page 1)

MAINTENANCE AND CARE

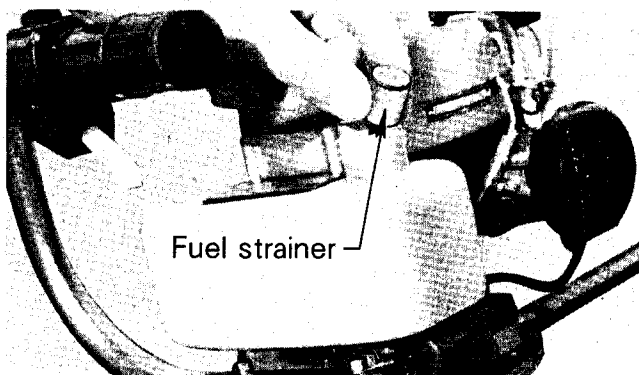
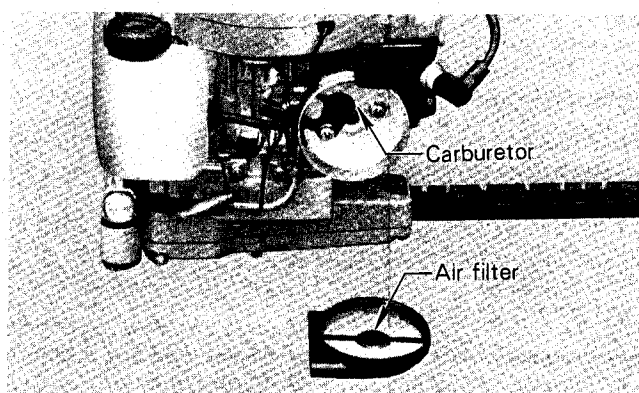
= ALWAYS KEEP THE UNIT CLEAN =

AIR FILTER

- Check before every use.
Remove air cleaner cover with filter.
- Brush off dust lightly or wash it in a non-inflammable solvent if necessary.
- Dry it completely before installation.

FUEL STRAINER

- Check periodically.
- Do not allow dust to enter fuel tank.
- Clogged strainer will cause difficulty in starting engine or abnormalities in engine performance.
- Remove the fuel strainer through fuel inlet port with a piece of steel wire or the like.
- When the strainer is dirty, wash it in gasoline.



BLADE LUBRICATION

- A few drops of oil should be placed at each bolt of frame bar, (Five points) approximately every four hours of normal operation.
- To obtain trouble free trimming, it is necessary to remove gum that collects on the blades. This should be done with a 50-50 mixture of kerosene and machine oil, after each use.

GEAR HOUSING

- The gear housing has been lubricated with a specific grease.
- Supply grease approximately every ten hours under normal operation.
 - Remove bolt of cover plate and grease up using grease gun as provided.(Screw the tip of gun into the hole of gear housing.)
- When blades are replaced, or any other time that the bottom cover plate is removed, check for * proper amount of grease in gear housing and use a new gasket to insure proper seating of cover plate.
 - * A half amount of gun capacity; 70 g (2.5 oz) approximately.

(NOTE)

"SHELL ALVANIA EP-2", "SHELL MP" or a equivalent grease is recommended.

SPARK PLUG

- Check periodically.
- Standard spark gap is 0.6-0.7 mm (0.024-0.028 in.).
- Replace if either electrode is worn or if the insulator is fouled by oil or other deposits.
- TORQUE = 145 - 155 kg-cm (125 - 135 in. lb)

CAUTION

Do not over torque.

CARBURETOR (Fuel feed adjuster)

Normally, do not adjust the fuel adjusting needle valve. The needle is set at the optimum position at the time of shipment.

To adjust the carburetor, proceed as follows:

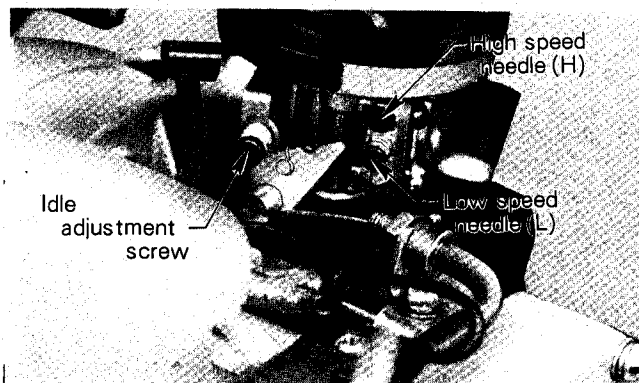
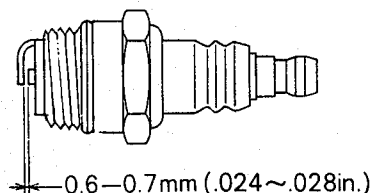
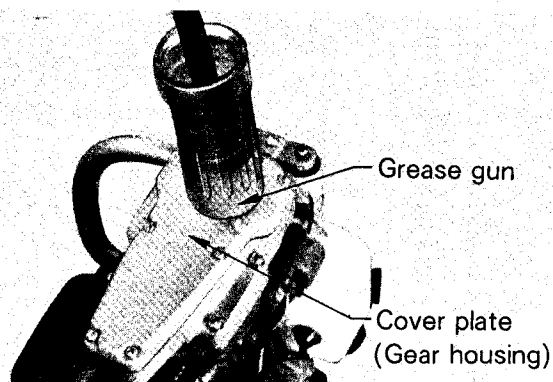
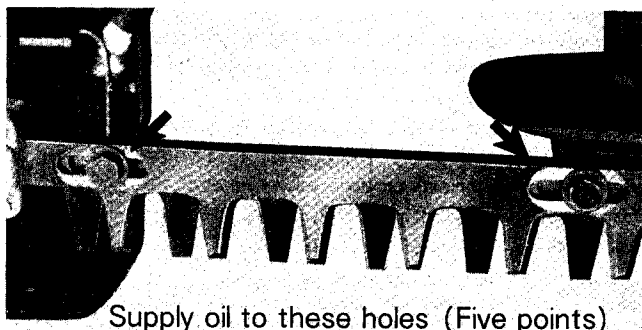
- Low-speed needle valve (L) 7/8-1 3/8 turn
Turn the needle valve lightly clockwise to fully closed position and return the needle by the number of turns indicated above.
- High-speed needle valve (H) 1-1 1/2
Turn the needle valve lightly clockwise to fully closed position and return the needle by the number of turns indicated above.
- Turn idle adjust screw clockwise until chain begins to turn, then back screw 1/2 turn.

CYLINDER FINS

- Check periodically.
- Clogged fins will result in poor engine cooling.
- Remove dirt and dust from between fins to let cooling air pass easily.
Engine must be at normal operating temperature.

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 wire connections and couplers assembling.



MUFFLER AND EXHAUST PORT

- Clean as necessary.
- Carbon deposit in cylinder exhaust port and muffler will reduce engine output.
 - Muffler can be removed by taking off muffler cover.
 - Be careful not to scratch cylinder or piston when cleaning cylinder exhaust port.

TROUBLE SHOOTING

Poor performance of the engine and/or trimming mechanism can normally be prevented by carefully following the above instructions.

Poor performances can easily be corrected even by a beginner.

When the engine does not function properly check the following three (3) points first.

- Is engine compression adequate?
- Is fuel system in good condition and is enough fuel being supplied?
- Is electrical system in good condition and is spark plug operating normally?

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 detailed **TROUBLE SHOOTING** refer to tables 1 and 2. Locate the problem on the following charts and repair as necessary.

Table 1

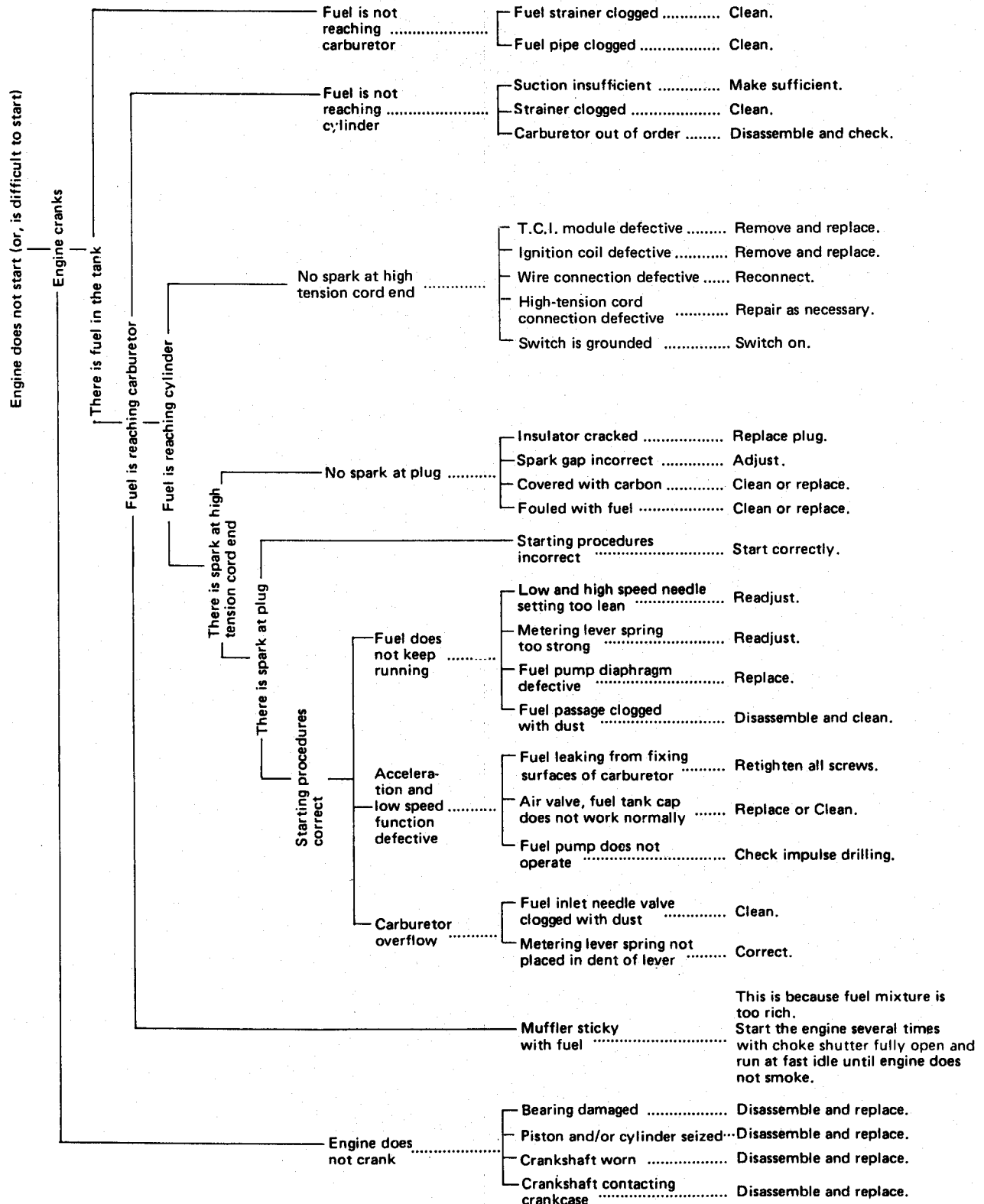
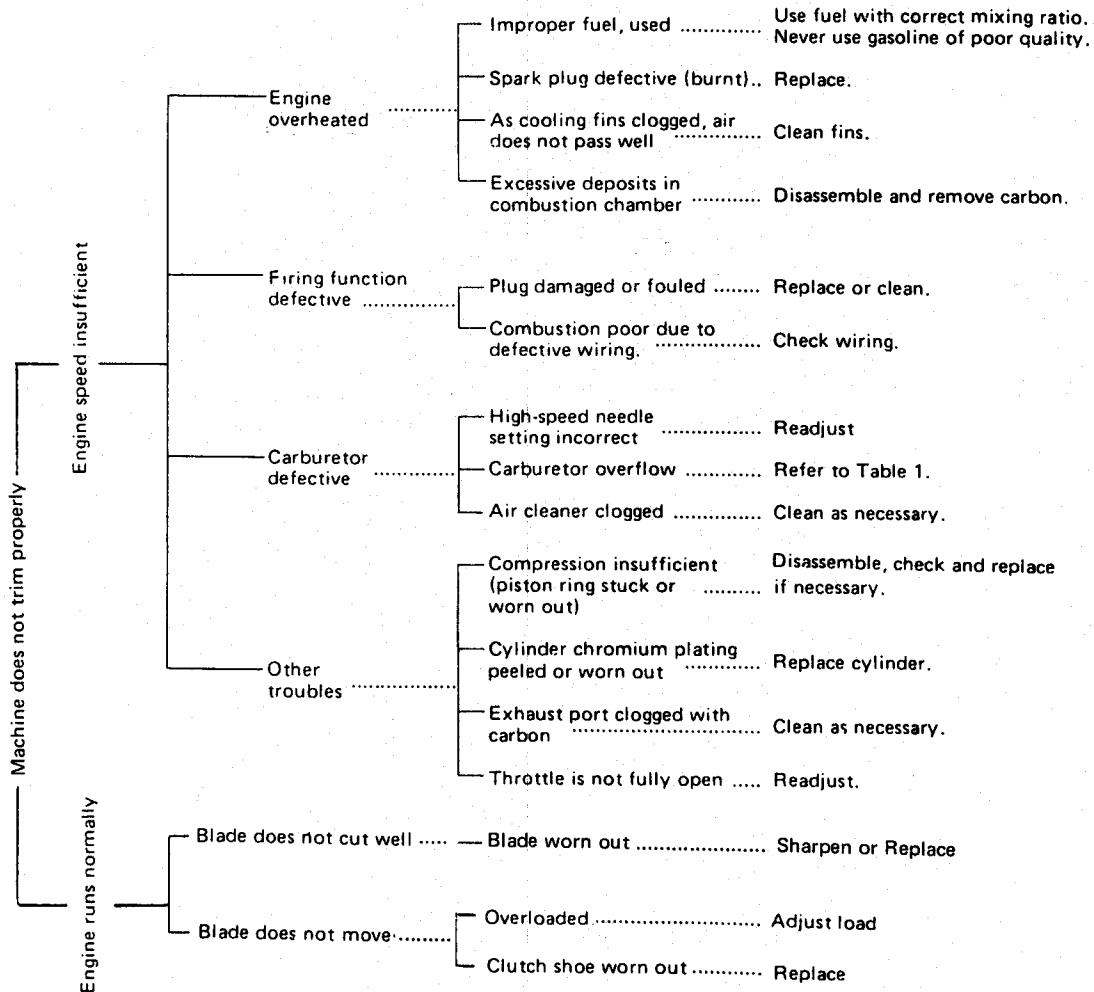


Table 2



STORAGE

- Inspect and adjust every part of the machine.
 - Completely clean every part, and repair, if necessary.
 - Apply thin coating of oil on metal parts to prevent rust.
- Drain fuel tank, pull starter slowly a few times to drain fuel from carburetor.
- Pour a small amount of clean motor oil into spark plug hole, pull starter and crank the engine until TOP DEAD CENTER.
- Store in a dry area, free from dust.
- Lubricate the cutter blades with a heavy coat of motor oil to avoid rusting.