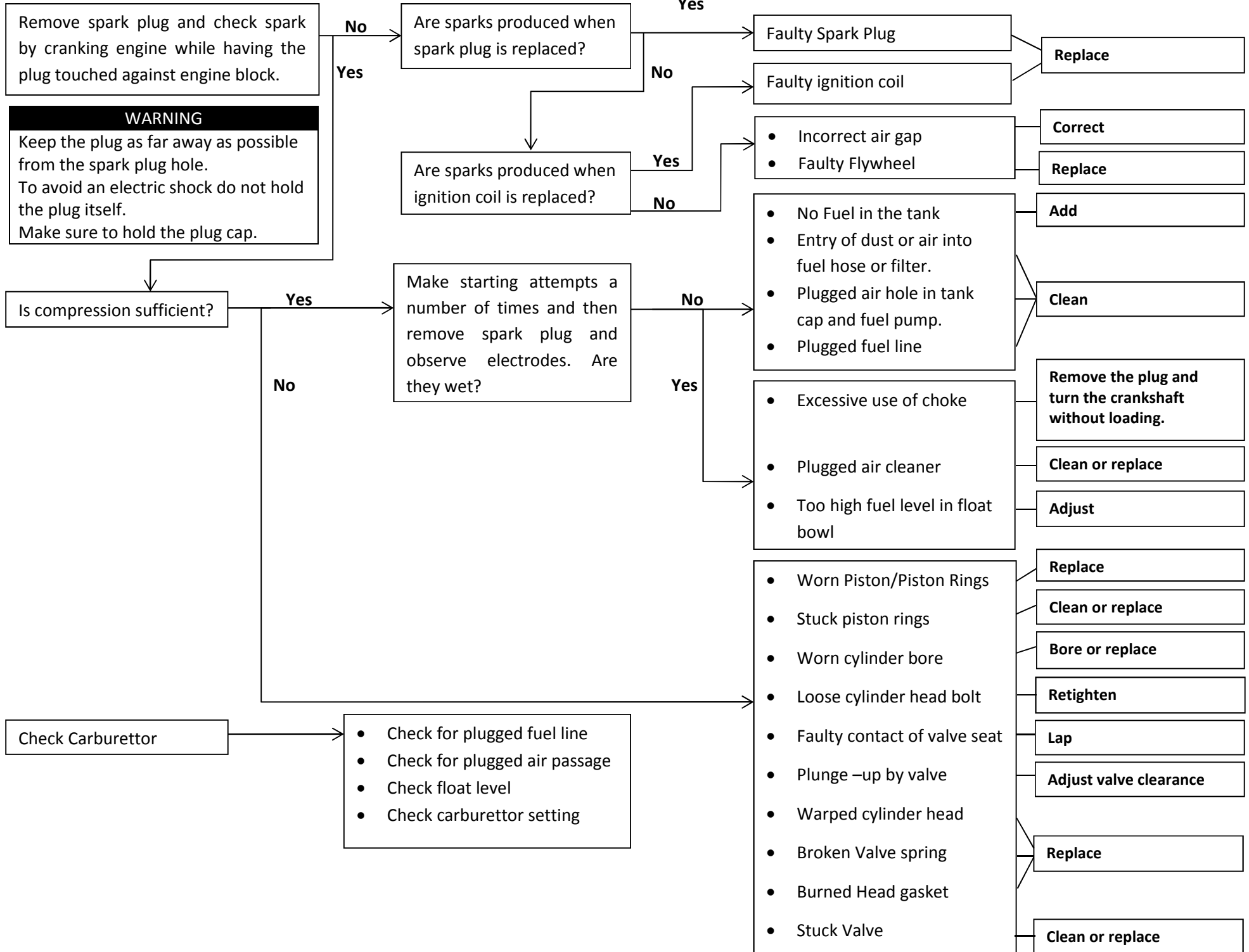


[Engine hard to start]



Remove spark plug and check spark by cranking engine while having the plug touched against engine block.

WARNING
Keep the plug as far away as possible from the spark plug hole. To avoid an electric shock do not hold the plug itself. Make sure to hold the plug cap.

Are sparks produced when spark plug is replaced?

Are sparks produced when ignition coil is replaced?

Is compression sufficient?

Make starting attempts a number of times and then remove spark plug and observe electrodes. Are they wet?

Check Carburettor

- Check for plugged fuel line
- Check for plugged air passage
- Check float level
- Check carburettor setting

Faulty Spark Plug

Faulty ignition coil

- Incorrect air gap
- Faulty Flywheel

- No Fuel in the tank
- Entry of dust or air into fuel hose or filter.
- Plugged air hole in tank cap and fuel pump.
- Plugged fuel line

- Excessive use of choke
- Plugged air cleaner
- Too high fuel level in float bowl

- Worn Piston/Piston Rings
- Stuck piston rings
- Worn cylinder bore
- Loose cylinder head bolt
- Faulty contact of valve seat
- Plunge -up by valve
- Warped cylinder head
- Broken Valve spring
- Burned Head gasket
- Stuck Valve

Replace

Correct

Replace

Add

Clean

Remove the plug and turn the crankshaft without loading.

Clean or replace

Adjust

Replace

Clean or replace

Bore or replace

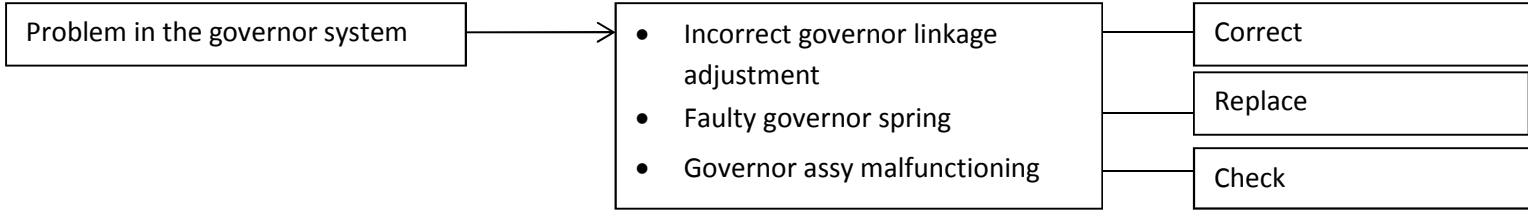
Retighten

Lap

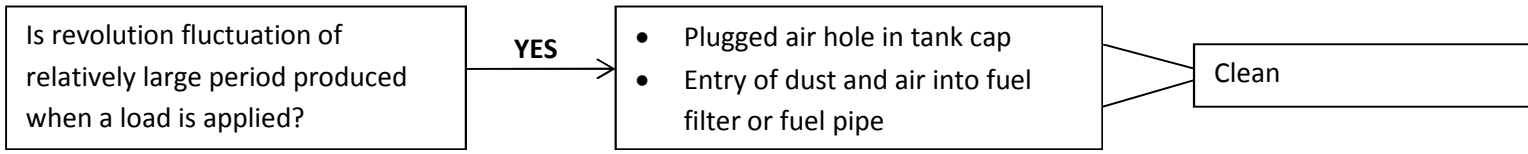
Adjust valve clearance

Replace

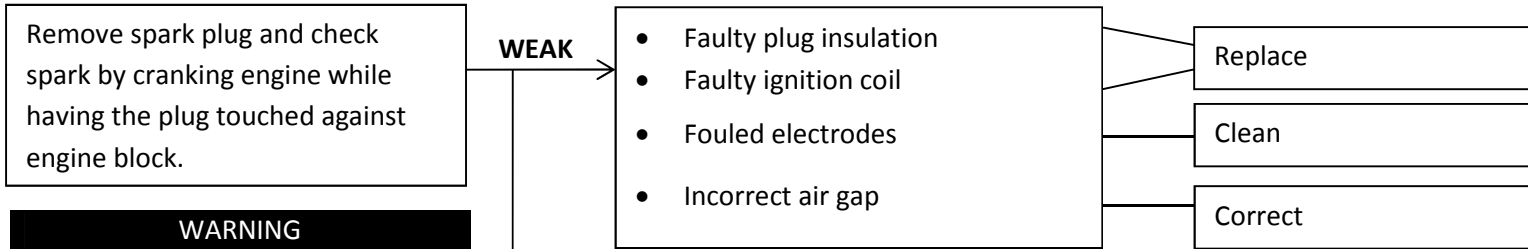
Clean or replace



[Engine malfunctions at high speed]

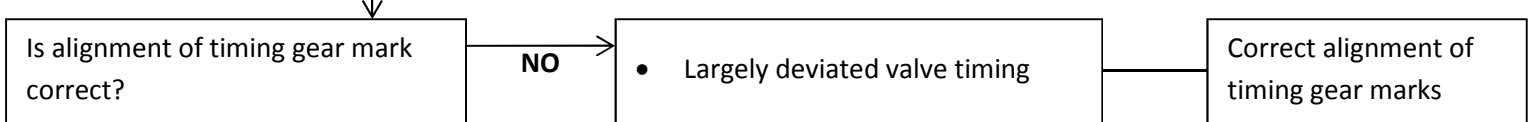
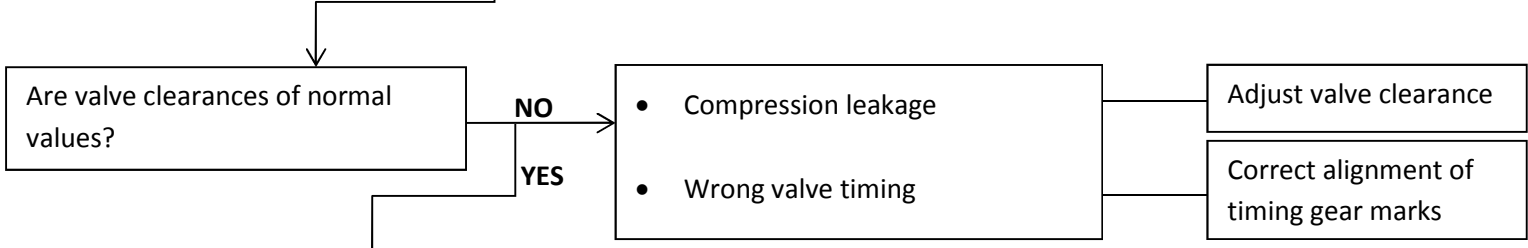
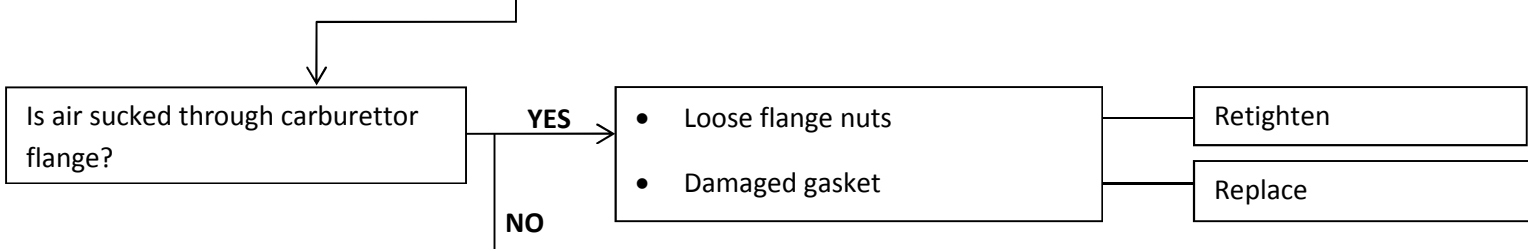
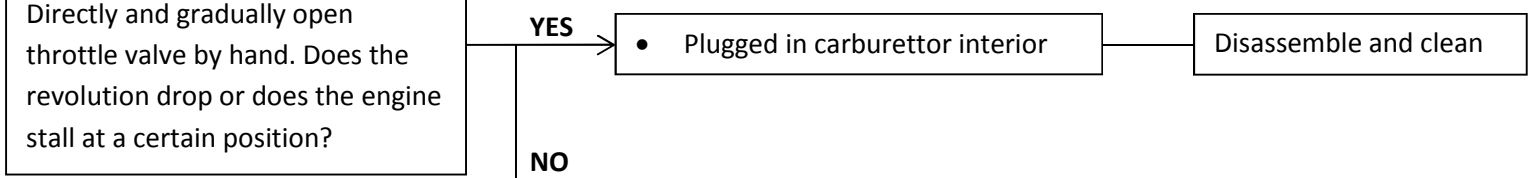
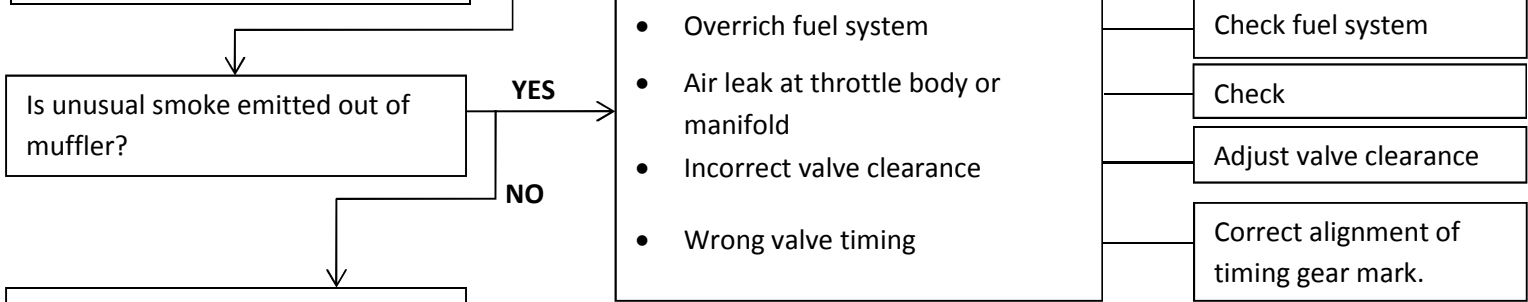


[Engine malfunctions at low speed]



WARNING

Keep the plug as far away as possible from the plug hole. To avoid electric shock, do not hold the plug itself. Make sure to hold the plug cap.



[Engine power loss]

Is engine overheated?

Yes

- Crankcase low on oil
- Too much oil in crankcase
- Excessive engine load
- Carb not properly adjusted
- Carbon deposit in combustion chamber
- Clogging of cooling system
- Damaged cooling fan

- Adjust level
- Adjust level or add
- Decrease Load
- Adjust
- Clean
- Replace

No

Is the ignition spark normal?

No

- Wrong spark plug
- Faulty ignition coil
- Incorrect air gap

- Replace
- Adjust gap

Yes

Is lubricating condition normal?

No

- Too much or too little oil in crankcase
- Excessively contaminated lubricating oil
- Defective Oil filter
- Faulty relief valve
- Faulty oil pump
- Clogging oil system

- Correct
- Change
- Replace
- Clean

Yes

Is unusual smoke emitted out of muffler?

Yes

- Carbon deposit in exhaust hole and muffler
- Carb. Not properly adjusted
- Too much oil in crankcase
- Worn piston/piston rings
- Worn cylinder bore
- Plugged air cleaner elements

- Clean
- Adjust
- Adjust Level
- Replace

No

Is compression sufficient?

No

- See "Engine hard to Start"

Yes

Is alignment of timing gear marks correct?

No

- Largely deviated valve timing

- Correct alignment of timing gear marks

[Engine runs erratically]

- Spark Plug fouled, pitted or gapped incorrectly

- Replace or adjust

Problem in the fuel system (lack of fuel)

- Entry of dust or water into fuel pipe, fuel filter or fuel tank
- Air or vapour lock in fuel line
- Plugged air vent of fuel tank cap
- Plugged air/fuel passes in carb
- Too little opening of carb pilot screw
- Carb. Not properly adjusted
- Carb. Flange leaking at gasket
- Throttle body assy flange leaking at gasket.
- Worn carb. Body and throttle shaft

- Clean
- Adjust
- Tighten or replace
- Adjust level

[Fuel consumption is excessive]

Is compression sufficient?

Yes

- High fuel level in carburettor float chamber (including overflow)
- Too high idling R.P.M
- Excessively backed off carburettor pilot screw
- Choke partially closed

Adjust

Open choke

No

- Worn piston/piston rings
- Worn cylinder bore
- Broken valve spring
- Stuck piston
- Stuck valve
- Insufficient cylinder head tightness
- Faulty valve seat contact
- Plunge up of valve
- Wrong valve timing

Replace

Clean or replace

Retighten

Lap

Adjust valve clearance

Adjust

[Oil consumption is excessive]

Is compression sufficient?

Yes

- Plugged oil ring groove.
- Clogged breather valve
- Drain Back hole in breather chamber plugged
- High oil level
- Worn valve stems and/or valve guide
- Oil leakage from oil seal
- Oil leakage along governor shaft
- Oil leakage from mounting surface
- Oil leakage from drain plug
- Incorrect oil viscosity

Clean

Adjust

Replace

Replace gasket

Retighten or replace gasket

Correct

No

- Worn piston rings
- Worn cylinder bore
- Broken piston ring
- Stuck piston rings

Replace

Clean or replace

[Engine backfires]

- Loose carburettor or inlet manifold
- Lose cylinder head or leaking head gasket
- Burned or sticking inlet valve
- Faulty ignition coil
- Carburettor not properly adjusted

Retighten

Tighten

Replace

Adjust

[Engine knocks]

- Stale fuel
- Excessive carbon deposit in engine
- Excessive engine load
- Engine overheating
- Faulty ignition coil

Change

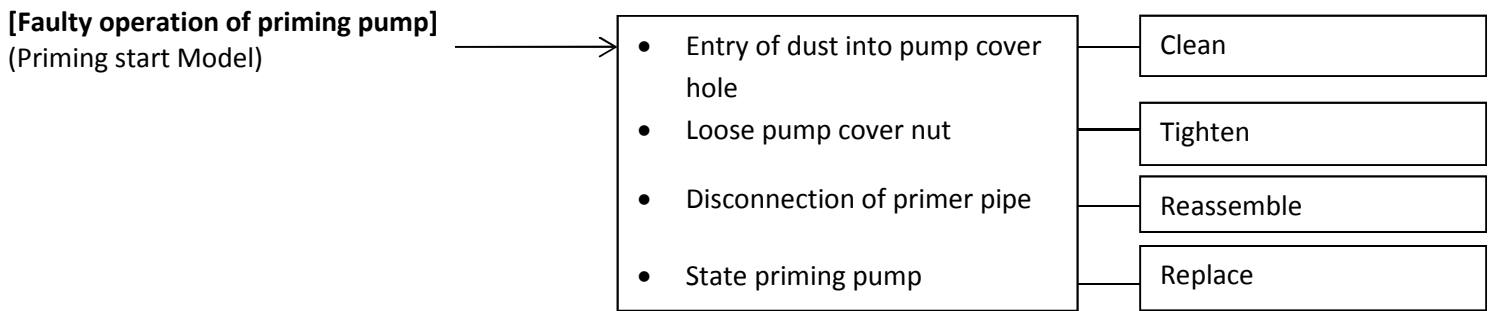
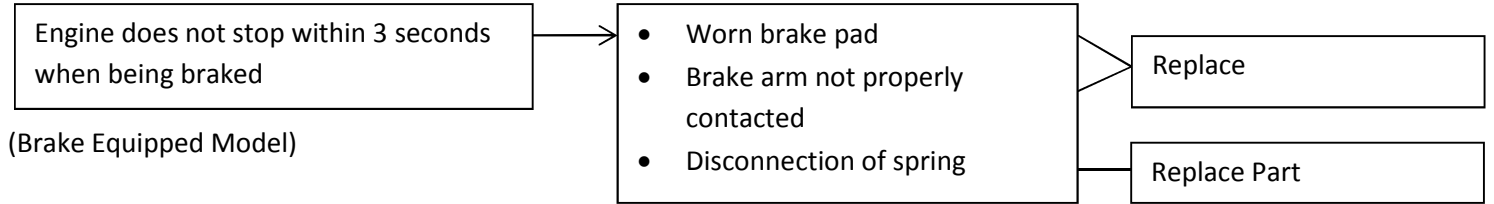
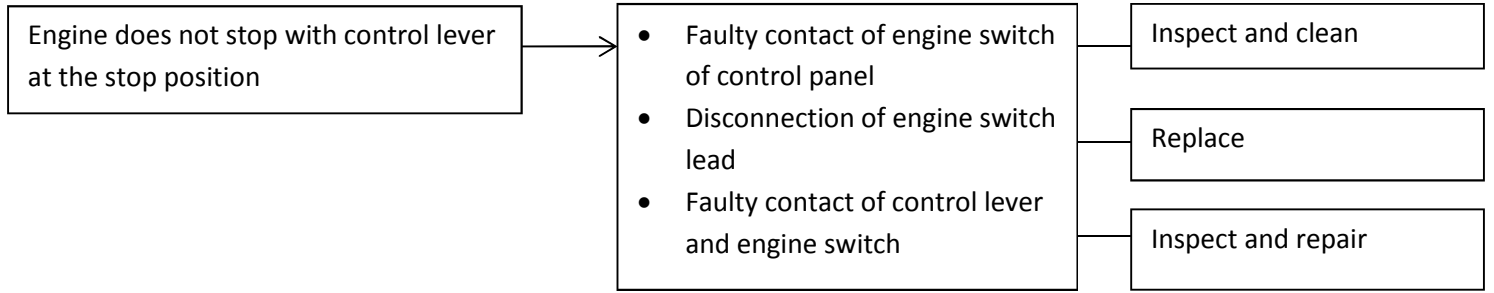
Clean

Adjust

See engine loss power

Replace

[Engine hard to stop]



Starter Motor Troubleshooting Guide

1. Disconnect spark plug caps from the spark plugs.
2. Turn engine switch to "START" position and check condition.

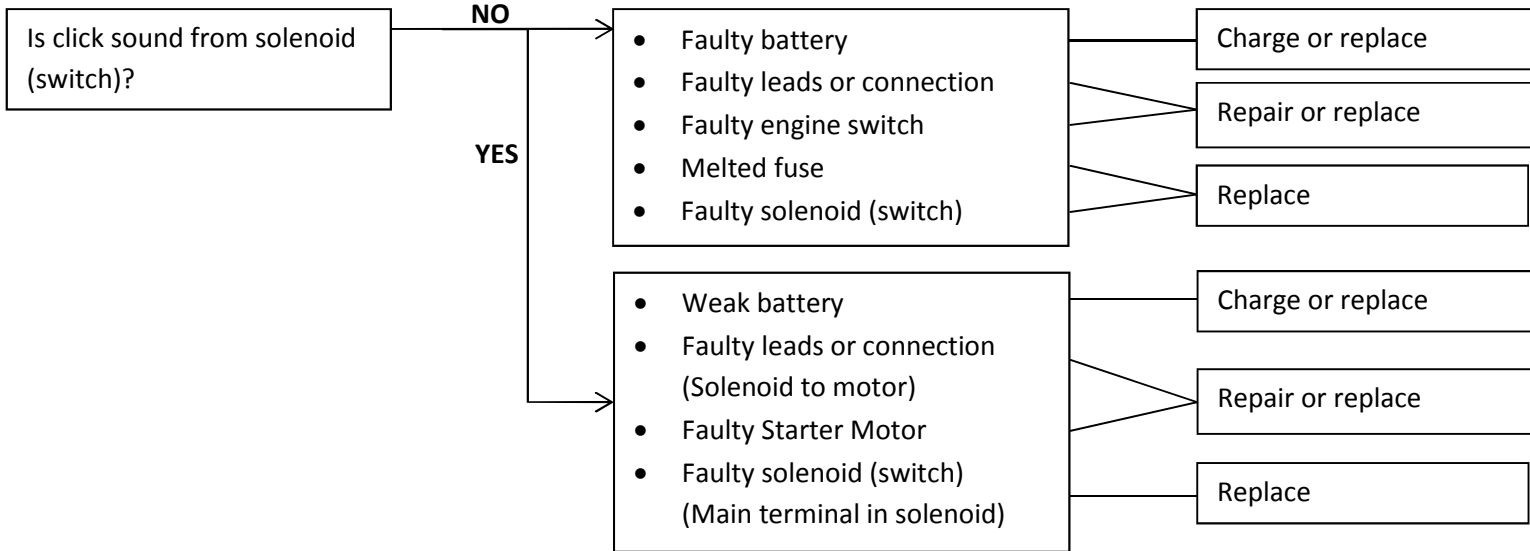
WARNING

Engine may be cranked in this test. Do not touch any rotating parts of engine and equipment during test.

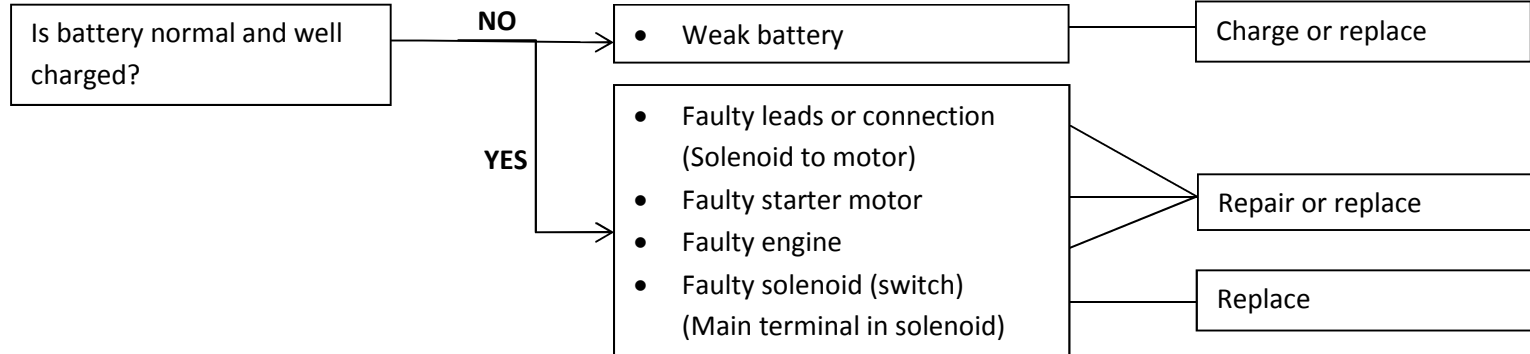
CAUTION

If starter does not stop by engine switch OFF, disconnect negative (-) cable from battery as soon as possible.

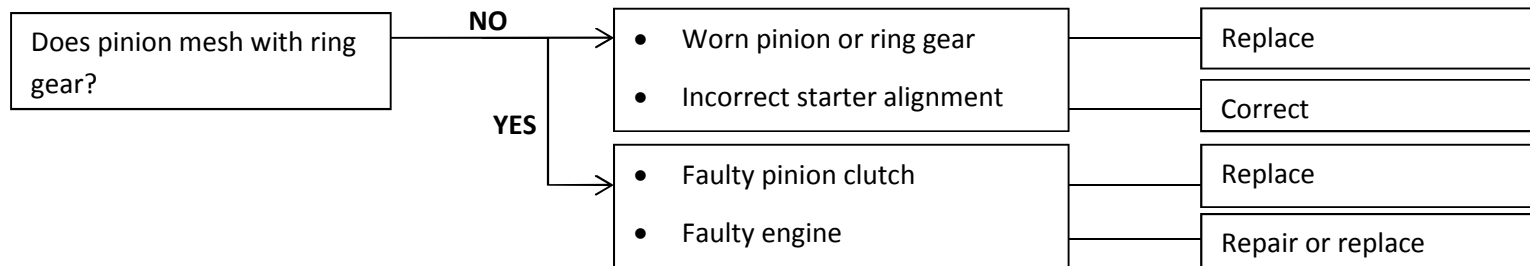
[Starter does not rotate]



[Starter rotates but slow]



[Starter rotates but engine can not crank]



[Starter does not stop in engine switch "OFF"]

