FAULT TRACING

Before having a look through the engine, or attemping to dismantle it, always remember the following points:

When complaints are made about excessive fuel or oil consumption or lack of power, the first course is to find out under what conditions the vehicle is operated.

Question the driver about the nature of operation and about his manner of driving.

Also ask him to take you for a short run and observe his driving habits.

Rapid acceleration, racing the engine, high idling speed setting, and high cruising speeds all produce high fuel and oil consumption.

High oil consumption may be the result of too high an oil level.

The oil need not be replenished until the level has fallen to, or slightly above, the lower mark on the dipstick. It must never be allowed to drop below this mark.

Various instruments can be used for fault tracing and the instructions for use with each individual instrument should be carefully followed.

FAULT	
REASON	REMEDY
Engine will not start	
No fuel in carburetor	
No fuel in tank.	Fill fuel.
Fuel pump diaphragm faulty.	Replace diaphragm.
Leaking fuel pump valve.	Replace defective valve.
Fuel filter clogged.	Dismantle and clean.
Leaking filter gasket.	Replace defective gasket.
Fuel line clogged or leaky.	Flush out, trace and repair leak.
Fuel tank vent hole stopped.	Remove filler cap and clean.
Ignition system	
Spark plugs fouled, breaker point gap too large.	Clean plugs, adjust gap, and test or replace plugs.
Distributor defective.	Inspect, adjust.
Battery run down.	Check acid specific gravity and recharge if below 1.230.
Condenser defective.	Test and replace if necessary.
Ignition coil defective.	Test and replace if necessary.
Damaged suppresser on spark plug.	Replace.
Carburetor	
Choke flap binding.	Check that spring can close flap.
Fuel inlet valve or jets clogged.	Dismantle and clean carburetor.
Defective gaskets.	Replace with new gaskets.
Air cleaner clogged.	Clean it.
Low compression	
Cylinders, pistons or piston rings worn or stuck.	Measure compression in all cylinders.
Valves sticky	
Cylinder head gasket defective.	Replace gasket.

Difficult starting

Carburetor	
Incorrect fuel level in float bowl.	Verify cause, and effect adjustments.
Faulty float or valve.	Dismantle and clean carburetor.
Clogged jets or passages.	Check needle valve and float. Clean or replace.
Flooding.	
Oil	
Thick or dirty oil.	Change oil.

Engine will not idle

Carburetor	
Incorrect fuel level in float bowl.	Check, adjust.
Leaky float valve.	Clean jet.
Idling jet clogged.	
Wrong idle setting, idling screw or idling air screw setting.	Carry out all idle adjustments.
Defective gasket between carburetor and intake manifold.	Replace gasket.
Leak at vacuum pipe connection.	Examine and repair.

Difficult starting (cold)

Choke flap not closed.	Remove air cleaner. Pull out knob on instrument panel to see if spring on choke spindle can close choke flap. Clean spindle and bearings, replace spring if necessary.
Rapid idling faultily adjusted.	Check setting, see "Adjusting rapid idling".

Excessive fuel consumption

Leakage	
Damaged fuel tank.	Check for leaks, and repair.
Damaged fuel line.	Replace damaged part.
Leaky nipples and fittings.	Tighten or replace defective part.
Ignition system	
Defective ignition timing.	Adjust ignition timing.
Defective distributor.	Test and adjust.
Defective ignition coil.	Test and replace if irreparable.
Defective condenser.	Test and replace if necessary.
Carburetor	
Mixture too rich.	Adjust settings. See below under "Fuel system".
Air cleaner clogged.	Clean thoroughly.
Economiser valve diaphragm or washers leaking.	Check that screws are tight. Replace washers or diaphragm.
Acceleration pump outlet valve ball jammed in upper position.	Remove valve and clean in alcohol or replace.

Excessive oil consumption

Leakage	
Leaky oil pan gasket.	Replace gasket.
Leaky gasket between fuel pump and cylinder block.	Replace gasket.
Damaged oilslinger or felt washer in timing gear casing.	Replace damaged parts.
Defective sealing at rear main bearing.	Replace felt seal.
Blocked drain hole at front or rear seal.	Check holes are open when replacing felt seals.
Defective gasket on oil cleaner.	Replace gasket after checking.
Cylinders, pistons, piston rings	
Worn cylinders, pistons or piston rings.	Check compression pressure in all cylinders; see "Compression Test".
Gummed or broken gudgeon pins.	Replace.
Worn valve guides.	Replace.

Low oil pressure

Oil pressure gauge	
Pressure gauge damaged.	Test gauge, replace faulty gauge.
Clogged oil line to gauge.	Clean, replace if damaged.
Relief valve	
Plunger stuck in open position.	Dismantle valve and replace plunger.
Broken or weak spring.	Replace spring.
Plunger worn.	Replace with new plunger.
Oil strainer and pipe	
Strainer clogged up.	Clean.
Leak in outlet pipe.	Examine.
Oil pump	
Worn gears.	Replace pump.
Main and connecting rod bearings	
Bearings damaged or worn.	Replace bearings. If crankshaft damaged, regrind journals.
Oil cleaner	
Element blocked.	Fit new element.
Faulty bypass valve in cleaner.	Replace valve.

Engine does not deliver full power

Low compression	
Worn cylinders, pistons, piston pins.	Check compression in all cylinders.
Valves sticking.	Grind valves.
Fuel tank, lines and pump	
Incorrect fuel .	Drain tank and clean.
Leaking valves in fuel pump.	Replace valves.
Filter clogged.	Dismantle and clean filter.
Carburetor	
Air cleaner blocked.	Dismantle filter and flush clean.
Jets clogged.	Clean jets.
Carburetor adjustment disturbed.	Clean and adjust carburetor.

Engine overheats

Coolant	
Insufficient water in cooling system.	Add water.
Water pump and thermostat	
Fan belts slips.	Tighten belt.
Pump impeller damaged.	Replace impeller.
Thermostat defective.	Replace thermostat.
Radiator, coolant hoses and passages	
Radiator stopped.	Clean.
Hoses or passages stopped by dirt and sludge.	See under "Stopped radiator".
Water distributor pipe clogged.	Dismantle and clean pipe.
Ignition timing and carburetion	
Wrong ignition timing.	Adjust ignition timing.
Too lean fuel mixture.	Clean and adjust carburetor.

Engine misses

Fuel tank, lines and pump	
Incorrect fuel, or water in fuel.	Drain tank, flush out, and fill new fuel.
Fuel line partly obstructed.	Examine and flush.
Fuel pump defective.	Verify cause and replace damaged part.
Distributor	
Poor contact in coil terminal.	Examine and adjust.
Loose contact in primary circuit.	Examine and adjust.
Open or short-circuit in primary circuit.	Trace fault and effect corrections.
Defective ignition cables.	Clean connections. Replace cables if insulation poor.
Faulty contact breaker gap.	Check and adjust.
Burned breaker points.	Replace.

Carburetor floods or leaks

Float system	
Dirt in inlet valve.	Clean valve and seat.
Valve or valve seat worn.	Replace damaged parts.
Float damaged.	Repair float.
Fuel pump pressure too high.	Check pressure.
Fuel line leakage at fitting.	Replace defective line or fitting.
Fuel level faulty through wrong washer thickness.	Check correct washer fitted between float valve and cover.

Jerky running when accelerating suddenly

Acceleration system	
Leaking inlet valve.	Replace valve.
Strainer clogged.	Clean strainer.
Plunger binds - impurities in barrel.	Clean acceleration pump.
Acceleration jet clogged.	Clean acceleration jet.

Uneven idling

Idling system	
Idling air screw wrongly set.	Adjust.
Dirt in idling jet.	Remove and clean.
Idle port partly blocked.	Remove carburetor, clean port.
Air leakage	
Air leak at carburetor gaskets.	Replace defective gasket or tighten bolts.
Air leak at vacuum pipe connection.	Adjust.