

SB/FS/13

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SERVICE PROBLEMS ENCOUNTERED ON TRIUMPH TR5
FITTED WITH PETROL INJECTION EQUIPMENT

Since the introduction of the Triumph TR5 (equipped with petrol injection), the service problems have been carefully analysed. From the list attached, it will be appreciated that many complaints of poor performance are due to dirty sparking plugs, incorrect ignition timing, misuse of choke control etc. These details must be checked, before testing the petrol injection system.

1. MISFIRING AFTER COLD START

Probably due to "sooted" or wet sparking plugs caused by misuse of the excess fuel control.

Suggested Remedy

Remove the sparking plugs. Clean and dry them.
Note also the following instructions issued by Standard Triumph.

- (i) Do not depress accelerator pedal during cold start.
- (ii) Do not leave ignition switch on, when engine is not running.
- (iii) Excessive use of full choke is damaging to engine life and must be avoided. (See "Use of Choke Control", Page 5).
- (iv) Do not run engine if misfiring persists after cold start.

2. INCORRECT IGNITION TIMING

It is essential to check the ignition timing before testing the petrol injection equipment.

- (i) Measure $\frac{3}{8}$ " (15.785 mm) from the existing T.D.C. mark in a clockwise direction around the periphery of the crankshaft pulley.
- (ii) Scribe a line on the pulley at this point.

- (iii) Rotate the engine in an anti-clockwise direction until the line coincides with the pointer on the timing case. This gives the correct timing position (11° B.T.D.C.).

Note: On some engines there is also a feint scribe-line on the crankshaft pulley in an anti-clockwise direction from the T.D.C. mark. This is required for certain export applications and should be ignored during ignition timing.

3. POOR PERFORMANCE

Probably the throttle butterflies are not synchronised. This must be corrected before the P.I. equipment is checked.

(a) To set the throttle butterflies

Procedure is basically the same as for a multi-carburettor engine.

- (i) Set the butterflies to open equally and fully to the throttle stop.
- (ii) When closed, the butterflies should just touch a 0.002" feeler gauge.

(b) To balance the throttle butterflies

- (i) Hold a length of rubber pipe against an intake of each pair of butterflies.
- (ii) Adjust the idling screws until a similar "hiss" is audible at each pipe.

4. ROUGH IDLING

Possibly caused by :-

- (a) Air Leaks in the injectors due to loose heat insulation bushes.
- (b) Excess fuel.
- (c) Throttle butterflies not set correctly.

Suggested Remedy

- (a) Air Leaks Tighten the bushes. (Not excessively, or the nylon will swell and possibly prevent reassembly).
- (b) Excess Fuel.
- (i) Check the gap between the excess fuel lever and the cam follower screw. Should be 0.004" - 0.008" (0.102 - 0.203 mm).

- (ii) Ensure that there are no obstructions in the pipe returning the leakage fuel from the metering unit to the tank.
- (iii) Examine 'O' ring, which prevents unmetered fuel from entering the outlet connections of the metering unit. Ensure 'O' ring is not damaged or badly positioned.
- (c) Throttle butterflies
See Section 3 (a) and (b) (Page 2).

5. POOR ACCELERATION

Possibly due to :-

- (a) Injector pipes being connected to wrong cylinders.
- (b) Incorrect timing of metering distributor.

Suggested Remedy

- (a) Reconnect the injector pipes to correct cylinders.
- (b) Reset timing of metering distributor (See Service Bulletin SB/FS/9).

6. LOW LINE PRESSURE

Probably caused by :-

- (a) Faulty pump seal on drive shaft between pump and motor.
- (b) Faulty relief valve.

Suggested Remedy

Replace pump seal or relief valve, as necessary.

7. LACK OF FUEL

Probably due to :-

- (a) Blocked Filter.
- (b) Faulty Pump.

Suggested Remedy

- (a) Check Filter and replace, if necessary.

- (b) Check that there is correct voltage at the pump motor, and that the pump is operating correctly.

8. EMISSION OF BLACK SMOKE AND ERRATIC RUNNING

Probably due to loss of vacuum in the depression chamber.

Suggested Remedy

- (a) Check the pipe from the manifold to the depression chamber for signs of fracture.
- (b) Check that the black domed cover is fixed securely.

9. NOISY PUMP MOTOR

Probably due to a faulty seal on the driving shaft.

Suggested Remedy

Replace seal, as necessary. The part numbers of all pump motors should be to suffix 'D' or later.

10. ENGINE NOT FIRING ON ALL CYLINDERS, AFTER "HOT SOAK"

Probably due to incorrect sealing of the non-return valves in the outlet connections of the metering unit.

Suggested Remedy

Test the valves as follows :-

- (a) Remove and dry the outlet connections.
- (b) Connect a short length of tube to the end which was screwed into the metering unit.
- (c) Apply an air pressure of 2 - 5 lbf/in² to the other end of the outlet and immerse the assembly in paraffin.
- (d) If bubbles appear in the paraffin, the valve is faulty and should be replaced.

11. ENGINE MISFIRES AFTER METERING UNIT REPLACED

Probably due to air in the injector pipes.

Suggested Remedy

Turn excess fuel lever to maximum position and increase throttle opening. Engine revs must not be excessive.

USE OF CHOKE CONTROL

- (a) Choke control must not be used for longer periods than necessary. Otherwise, the sparking plugs will become "sooted".
- (b) After engine has been started on full choke, erratic firing will commence, Choke control should then be pushed to midway position.