TRIUMPH SPITFIRE MK III & TR-4A TUNE-UP

Spitfire Mk. III (1968-70)
TR-4A (1968)

DESCRIPTION

To control emission of hydrocarbon and carbon monoxide, Spitfire Mk III and TR4A are equipped with a special emission control system. Along with engine modifications which improve combustion characteristics, the emission control system includes specially designed carburetors and ignition distributors. All ignition distributors have an extended operation range to permit retarded spark at idle. Carburetor modifications include a throttle disc poppet valve, a new needle and a modified piston damper.

OPERATION

Ignition Distributor – A special ignition distributor is used which has an extended operating range. An extended operating range is needed to permit a retarded spark setting at idle while maintaining the normal advance characteristics at higher engine speeds. Normal advance at higher engine speeds and retarded spark at idle lower exhaust emissions.

Carburetor Modifications – A new needle is used to provide a leaner mixture. A new main metering jet is fitted to suit the revised needle. The piston damper is modified to restrict movement of the barrel. This modification provides a more immediate effect on the piston to give maximum acceleration with leaner carburetor settings. A throttle disc poppet valve is set in the carburetor throttle valve. At high manifold vacuum the valve opens and lets additional air in to mix with the air/fuel mixture. This valve, together with retarded ignition timing, maintains correct combustion and lowers exhaust emissions.

SERVICE PROCEDURES

To provide efficient engine operation and proper control of exhaust emissions, all normal tune-up items should receive careful and thorough attention.

Ignition Timing – *See Tune-Up Pages for proper ignition timing specifications.* With engine at normal operating temperature and idle speed set correctly, adjust ignition timing to specification.

Carburetor Adjustments – 1) Start engine and warm up to normal operating temperature at 2,500 RPM. Set idle speed to specifications by turning throttle stop screws equal amounts. *See Tune-Up Pages for proper carburetor specifications.*

2) With suitable air flow meter, check and adjust carburetor balance. *NOTE – On Spitfire Mk III models, mixture adjustment is permissible only within the limits of the restrictors.*

3) If satisfactory idle cannot be achieved after balancing turn jet adjusting nut on both carburetors the same amount (within limits of restrictor, if equipped) to lean mixture until engine speed just starts to fall off. Turn both nuts back one-half flat (or within limits of restrictor) to richen mixture and stabilize engine speed.

4) Recheck idle speed and carburetor balancing, and readjust if necessary. *CAUTION – Prolonged idling should be avoided. After each three minutes of idling engine should be run at approximately 2,000 RPM for one minute to prevent overheating.*