LAND ROVER SERIES II ENGINE MODIFICATION

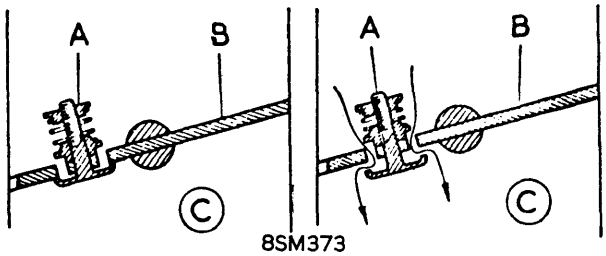
Land Rover Series II (1968-71)

DESCRIPTION

Exhaust emissions are controlled by alterations to the carburetion characteristics and by retarding ignition at lower speeds. Fuel system; modifications to carburetor, engine idling speed and setting procedure, and to filtration. Engine; modifications to distributor advance curve, spark plug type, exhaust valve arrangement, ignition timing procedure and engine breathing system.

OPERATION

Throttle Butterfly – Throttle butterfly has been modified in two ways. First, incorporation of a spring loaded poppet valve, which compensates for high manifold vacuum conditions (engine overrun at closed throttle conditions). Second , a .098" hole has been added to compensate for the effect of a higher idling speed on distributor vacuum advance characteristics.



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Butterfly poppet valve

A–Poppet valve, closed
B–Throttle butterfly disc
C–Low manifold vacuum

Butterfly poppet valve

A–Poppet valve, open
B–Throttle butterfly disc
C–High manifold vacuum

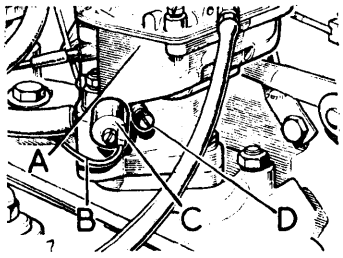
BUTTERFLY POPPET VALVE

Distributor – A special ignition distributor provides a retarded ignition setting (3° ATDC) at lower speed range while maintaining normal advance characteristics at higher engine speeds.

Ignition Timing – Static ignition timing may be used as an initial setting after engine rebuilding, but this must not be accepted as a final setting. It is essential that ignition timing be dynamically set with engine at idling speed.

Engine Exhaust Valve Freeing Mechanism – Modifications in exhaust valve arrangement have resulted in the following design changes. Exhaust valve spring cap and valve keepers have been modified to accept a valve sleeve which permits the valve to move under vibration effect exerted by valve springs during engine running. Exhaust valve spring free length is increased by .070".

Solenoid Operated Fuel Cut-Off Valve – Idle speed has been increased to 750-800 RPM. This increases air flow past throttle butterfly under closed throttle conditions and is complementary to throttle butterfly modifications. To prevent running-on due to high idle speed, a solenoid operated fuel cut-off valve has been incorporated in carburetor. This takes the form of a solenoid operated needle valve operating to cut off idle by-pass drilling and progression chambers when ignition is switched off. Solenoid is located externally on carburetor body and is electrically connected to switch side of ignition coil.



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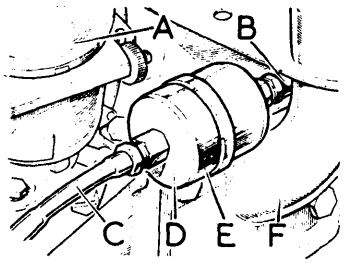
A – Carburetor
B – Electrical lead from coil
C – Fuel cut-off valve
D – Idling volume control screw

FUEL CUT-OFF VALVE

Fuel Filter – Filter assembly, located between carburetor and fuel pump, provides additional filtration to fuel system. Filter mesh is sealed inside filter body and no servicing is possible. Complete filter assembly must be discarded at the stipulated maintenance intervals, or before if foreign matter is suspected in fuel system.



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Location and view of fuel filter, RH side of engine

A – Distributor
B – Hose, filter to carburetor
C – Hose, pump to filter
D – Fuel filter
E – Filter mounting bracket
F – Oil filler tube

FUEL FILTER

MAINTENANCE

Fuel Filter – Replace every 24,000 miles or sooner if foreign matter is suspected in fuel system.

Spark Plugs – Clean every 4,000 miles. Replace every 8,000 miles.