PORSCHE 911T ENGINE MODIFICATION

911T (1970-71)

DESCRIPTION

Porsche 911T Engine Modification Exhaust Emission Control System consists of a specially designed carburetor incorporating a by-pass valve, which allows a predetermined amount of air/fuel mixture to enter combustion system during periods of deceleration (high manifold vacuum with throttle valves closed). Carburetor throttle plate by-pass valve is controlled by an RPM switch.

OPERATION

At speeds above 1350 RPM, during periods of high manifold vacuum with throttle plates closed (engine overrun), RPM switch is activated, causing electro magnetic valve to open allowing the high vacuum in intake manifold to reach diaphragm in by-pass valve and open it. This permits an additional air/fuel mixture to pass into inlet ducts of the individual cylinders, ensuring good combustion and optimum emission control. RPM switch is de-energized below 1300 RPM, shutting off by-pass valve and allowing normal idle speed system to come into operation. *NOTE – Should throttle plate by-pass valve be in operation, a micro switch located on accelerator linkage would shut off by-pass valve when throttle plates are re-opened.*

MAINTENANCE

CARBURETOR ACCELERATOR PUMP

Accelerator Pump Adjustment – Accelerator pump is designed to prevent a maximum amount of .5-.6 cc from being exceeded. To adjust, proceed as follows:

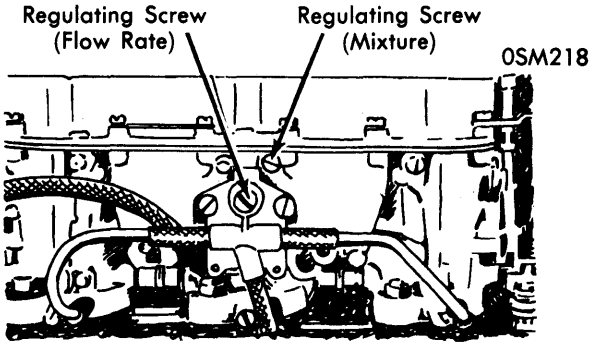
1) Screw in self locking adjusting screw on pump lever until the three operating lugs on accelerator pump shaft are approximately vertical. Loosen adjusting screws of operating lugs.

2) Screw in adjusting screws for accelerator pumps of cylinders one and four until they just touch pump plunger, lock adjusting screws. Measure amount of fuel injected for cylinders one and four. If amount is too much, screw adjusting screws in an additional amount.

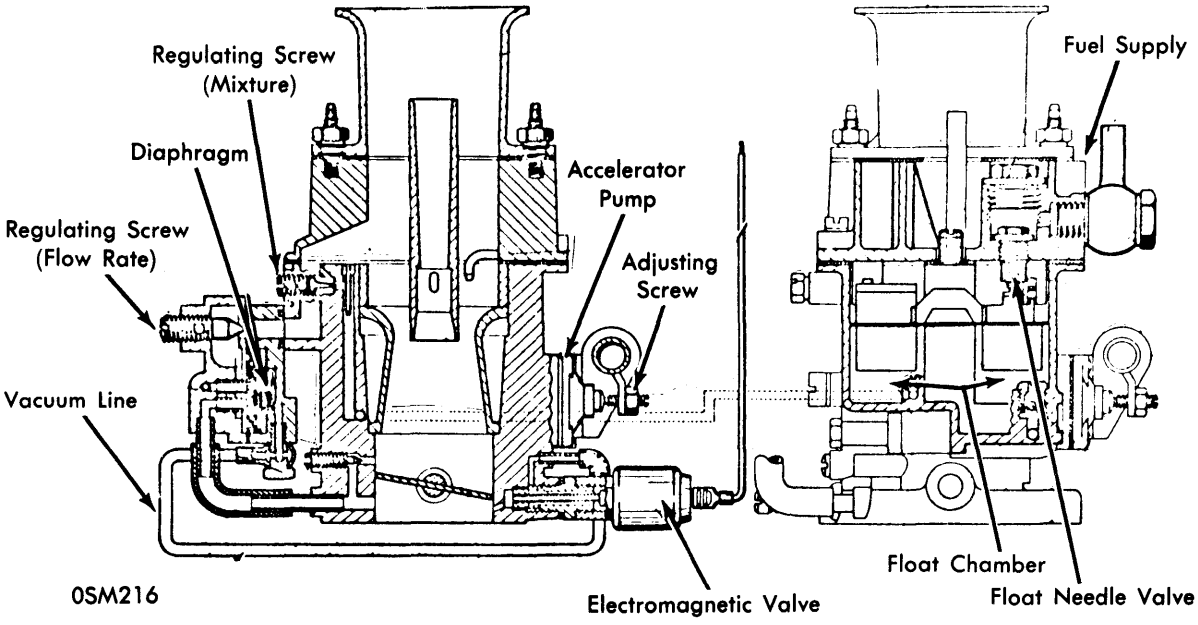
3) Perform above procedure for each of the remaining cylinders. Measure amount of fuel injected into each cylinder and correct if necessary.

THROTTLE BY-PASS VALVE

Throttle By-Pass Adjustment – Before by-pass valve can be correctly adjusted, ignition timing and idle speed must be accurately set and engine must be at normal operating temperature. Housings for both additional mixture valves are built into mixing chambers for cylinders two and five. Each additional mixture valve has a regulating screw to adjust flow rate. These regulating screws are used for metering additional mixture after it has been prepared. In addition, on the carburetor body above additional mixture valves, will be a regulating screw for each valve for the additional mixture. These regulating screws control air/fuel mixture. Turning screw to left enrichens mixture, turning screw to right leans mixture. For correct adjustments proceed as follows:



BY-PASS VALVE ADJUSTING SCREWS



CARBURETOR THROTTLE PLATE BY-PASS VALVE (CLOSED)

PORSCHE 911T ENGINE MODIFICATION (Cont.)

1) Screw in adjusting screw on micro switch (on accelerator linkage) until operating point of switch is just reached (switch action in clearly audible). Disconnect cable from engine RPM switch to micro switch. This cable is at left terminal("P" on switch case) of micro switch.

2) Using a suitable jumper wire, connect terminal 30 of rear fuse box with the free terminal on micro switch. Switch on the additional mixture device for testing. Start engine and run until normal operating temperature is reached. *NOTE — When additional mixture device is switched on, engine idle speed will increase.*

3) Screw out regulating screws for flow quantity (on additional mixture valve) until engine idle speed is increased to approximately 1200 RPM. *NOTE — Increased idle speeds of new engines are lower than when engines have completed break-in period. If adjustment is made while engine is new and increased idle speed of 1200 RPM cannot be obtained, the highest possible increased idle speed should be used.*

4) Using a suitable carburetor synchronizer, check air flow rate on cylinders two and five. Equalize, if necessary, by adjusting regulating screws for flow rate. *NOTE — If this process causes increased idle speed to change, it should be restored to original level by turning both regulating screws evenly.*

5) Using a suitable exhaust gas analyzer, measure CO content. With an increased idle speed of approximately 1200 RPM, CO content should be 3.5 to 4.5%. If CO content is not within values stated, proceed as follows.

6) Screw in regulating screws, on both carburetors, for additional mixture (located above additional mixture valves) until increased idle speed just begins to fall. Then unscrew both regulating screws by 1 to 1½ turns.

7) Evenly adjust both regulating screws for additional mixture to bring CO content within specified limits. *NOTE — Turning screw out enriches mixture, turning screw in leans mixture.* Check synchronization of additional mixture device, correct if necessary by following procedure outlined in step 4 above.

8) Make sure increased idle speed is again reached after throttle has been opened briefly. If increased idle speed, after opening and closing throttles, is higher, flow rate must be reduced by evenly screwing in both regulating screws on additional mixture valves. Recheck carburetor synchronization and CO content.

MICRO SWITCH

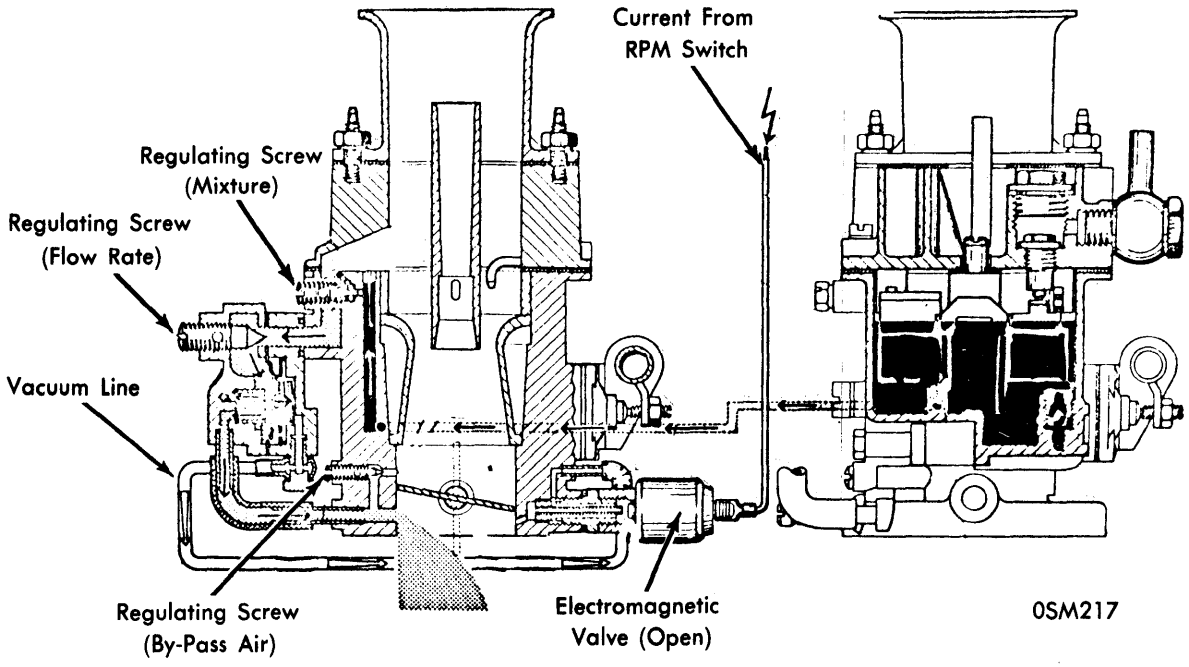
Micro Switch Check — Connect a power lead to one terminal on micro switch. Connect a test lamp to second terminal on micro switch and to ground. Turn on ignition. When switch button is depressed test lamp should light, when button is released lamp should go out.

ENGINE RPM SWITCH

RPM Switch Check — Connect a test lamp to terminal 30b and to ground. When engine speed exceeds 1350 RPM, test lamp should light. When engine speed falls below 1300 RPM, test lamp should go out.

ELECTRO MAGNETIC VALVE

Electro Magnetic Valve Check — Connect a power lead to electrical terminal on solenoid (electro magnetic valve). A clearly audible sound should be heard.



CARBURETOR THROTTLE PLATE BY-PASS VALVE (OPEN)