

## 40 TIN 3-BARREL

Porsche 911 T (1969-71)

### DESCRIPTION

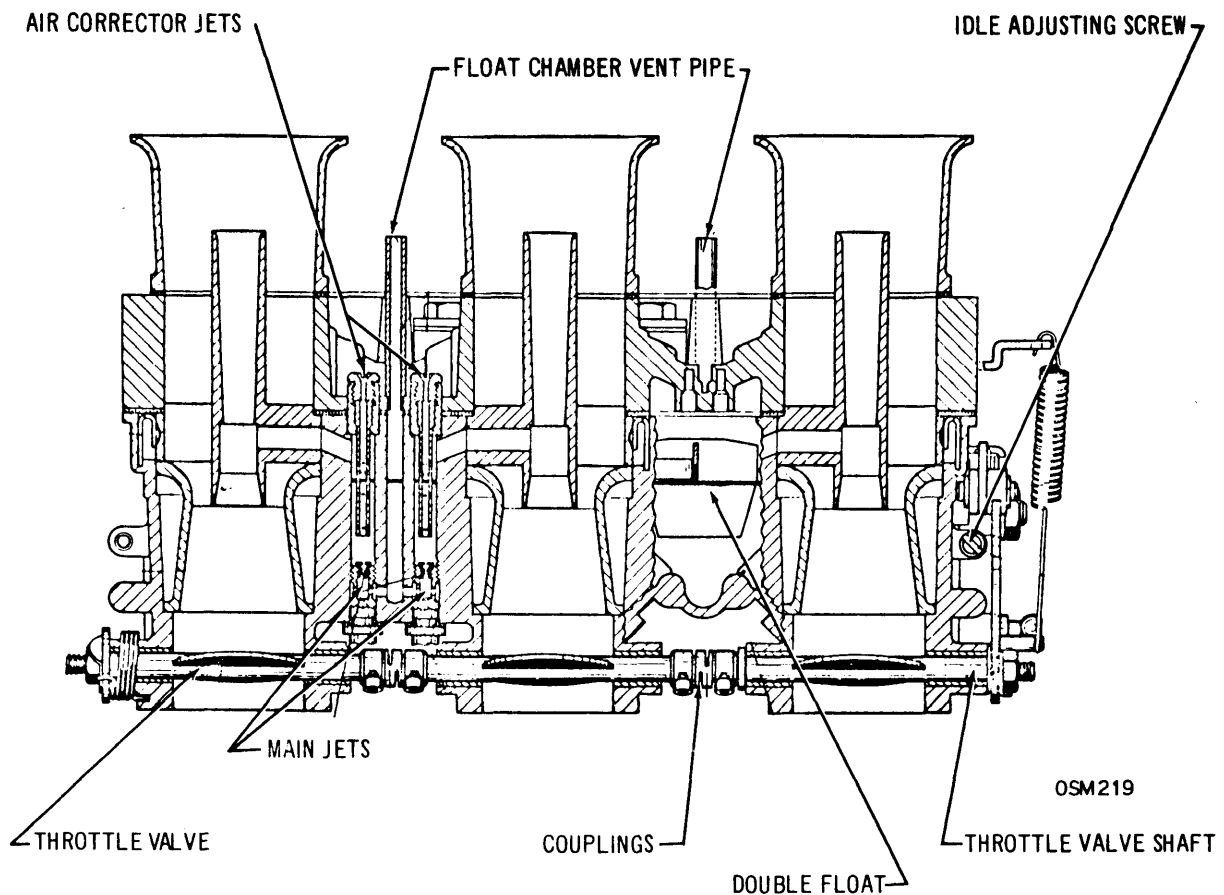
The Zenith 40 TIN is a three barrel downdraft carburetor. Three mixture chambers and two float chambers are combined in a single body. Each mixture chamber is provided with its own accelerator pump. Throttle valve shafts are linked together by couplings. One end of throttle valve shaft pivot incorporates throttle valve lever, which includes a cam track to operate the accelerator pumps by means of a shaft. Accelerator pumps can be adjusted independently by means of separate adjusting screws.

### OPERATION

**Idle Speed System** – Each mixing chamber has its own separate idle speed system. Fuel required at idle speed is obtained from main jet system. It is metered by idle jet and mixed with air drawn in through press fit idle air jet to form an emulsion. This emulsion then passes to a bore located below throttle valve. Quantity of emulsion passing through this bore is determined by idle mixture regulating screw. This emulsion when combined with air drawn in through narrow gap of throttle valve forms an idle speed air/fuel mixture. Air by-pass bores, located above closed throttle valves, do not come into action until throttle is opened. They improve transition from idle speed to main jet system.

**Main Jet System** – Each mixing chamber has its own separate main jet system. The main jets of both front mixing chambers are supplied by front float chamber. Main jet of rear mixing chamber is supplied by rear float chamber. Fuel flows through main jet into mixing tube cavity. Intake manifold vacuum, in mixing chamber, draws fuel out of mixing tube cavity by way of the outlet bore. This lowers fuel level in mixing tube. An equalizing air supply enters through air corrector jet and blends with refill fuel supply after passing through bores in mixing tube to form an emulsion. Air corrector jet ensures that composition of air/fuel mixture is correctly maintained in all speed ranges to suit requirements of engine.

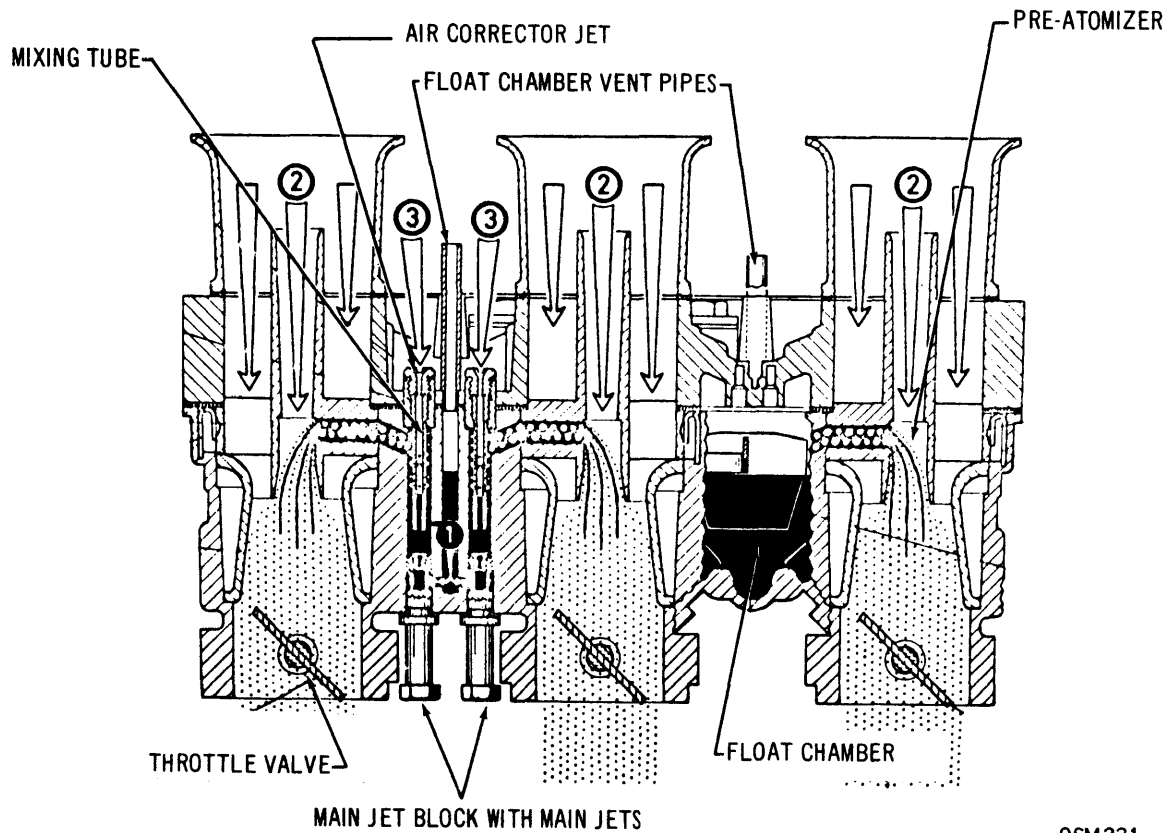
**Accelerator System** – Function of accelerator pump is to provide fuel when throttle is suddenly opened, and before main jet system begins to operate. On pressure stroke of pump, fuel is forced out of pump body through bores, and injected into mixing chambers through calibrated injector pipes. As soon as throttle valves are closed suction stroke of pump begins. During suction stroke fuel flows from float chamber, by way of pump valve, into body of pump. Pump suction valve prevents fuel from flowing back into float chambers during pressure stroke of pump. An additional ball valve, in injector pipe, prevents air from entering pump interior during suction stroke. Length of pump stroke governs amount of fuel to be injected. Calibration of injector pipe determines duration of fuel injection cycle.



ZENITH 40 TIN CARBURETOR

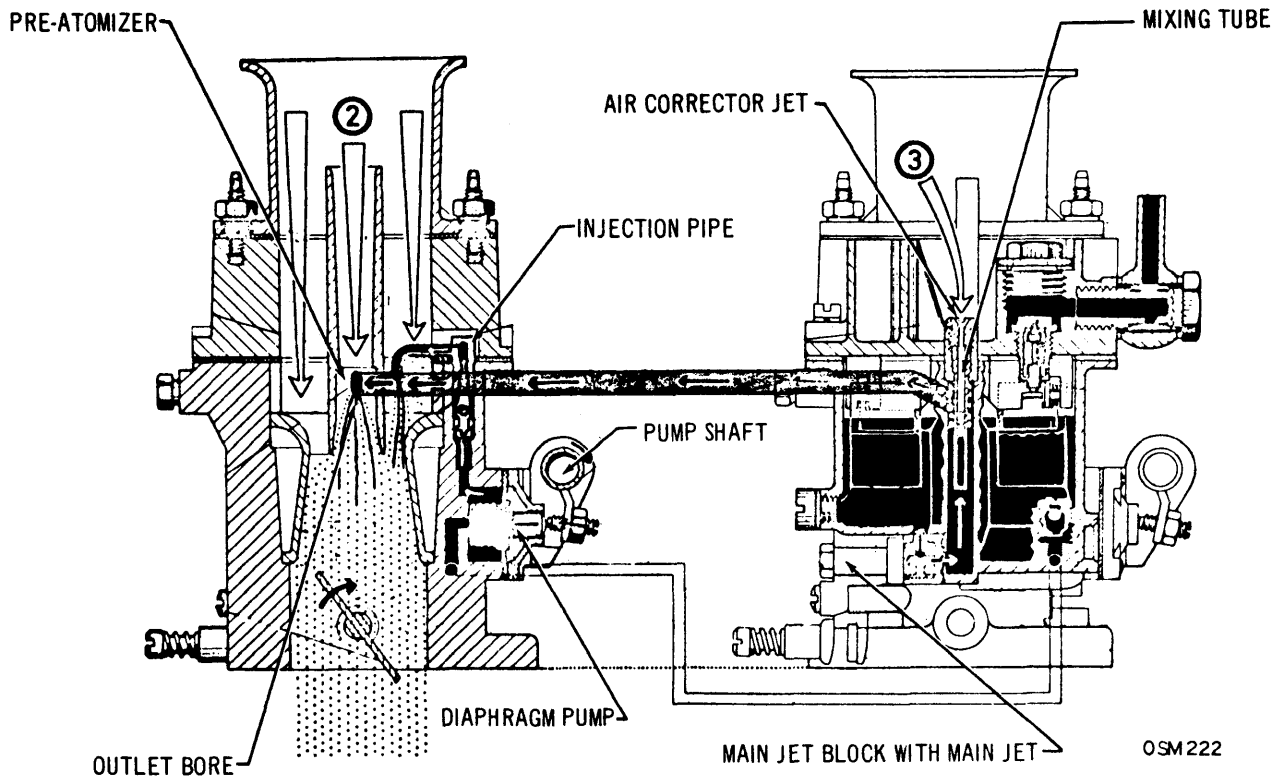
# Zenith Carburetors

## 40 TIN 3-BARREL (Cont.)



OSM221

MAIN JET SYSTEM



OSM222

ACCELERATION SYSTEM

## 40 TIN 3-BARREL (Cont.)

**Mixture Enrichment** – With wide open throttle, high manifold vacuum causes fuel to be drawn off by way of pump systems. This fuel emerges from injector pipes and enriches air/fuel mixture.

### CARBURETOR ADJUSTMENTS

**NOTE** – Before adjusting carburetor engine must be at normal operating temperature and ignition timing and cam angle be properly set.

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

- 1) Screw in self-locking adjusting screw on pump lever until the 3 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 1 and 4 until they just touch pump plunger, lock adjusting screws. Measure amount of fuel injected for cylinders 1 and 4. 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.

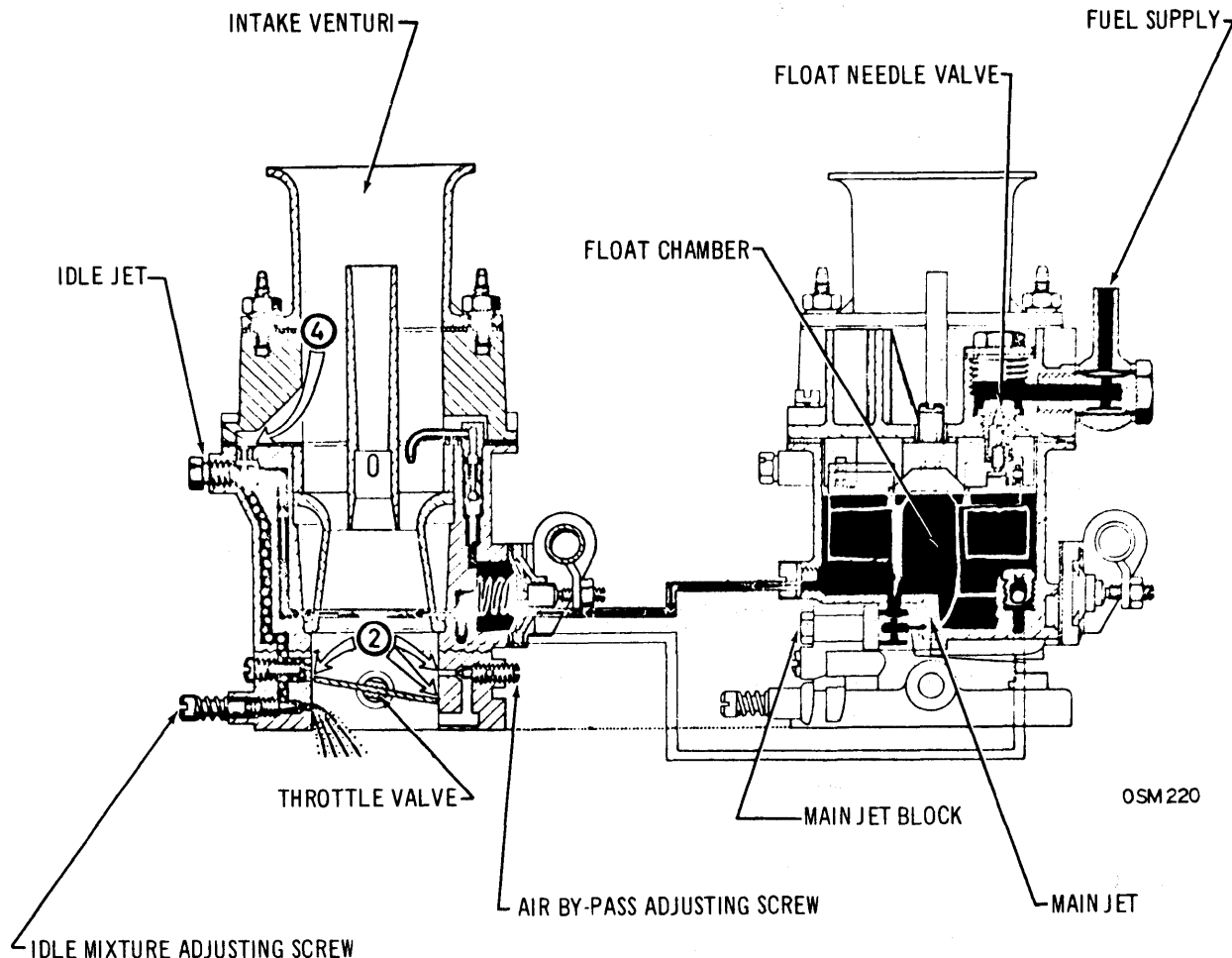
**Adjusting Idle Speed** – **NOTE** – Engine must be at normal operating temperature with ignition timing and cam angle properly set.

1) Inspect carburetor linkage for proper seating. Disconnect throttle actuating shaft connecting links and loosen throttle rod couplings. Using a suitable carburetor synchronizer, with engine idling at 1200-1400 RPM, synchronize throttle valves of all barrels. **NOTE** – Adjustment disc on synchronizer should be fully open to ensure carburetor air flow conditions are changed as little as possible.

2) Adjust actuating shaft stop screws to bring idle speed to 900 RPM. Using synchronizer, recheck throttle valve adjustments. Readjust idle mixture adjusting screws. Tighten throttle rod couplings and reconnect throttle actuating shaft connecting links. **CAUTION** – When reconnecting links make sure no preload exists. Perform a final adjustment with mixture adjusting screws.

### CARBURETOR SPECIFICATIONS

Idle Speed .....	900±50 RPM
Initial Idle Setting .....	2 1/2 Turns Out
Float Level Setting .....	.49-.51 in. (12.5-13.0 mm)
Accel. Pump Volume (cc/stroke) .....	.5±.1 cc



### IDLE SPEED SYSTEM