PORSCHE DIGITAL IGNITION TIMING CONTROL

Porsche
924 Turbo

DESCRIPTION

Porsche has developed a computerized engine control system called Digital Ignition Timing Control (DITC) for the 924 Turbo model. Using various engine sensors, the system provides the best ignition timing for optimum engine power, emission control and fuel economy under all operating conditions. The DITC systems consists of the following components: a computer control unit, igntion control unit, pressure sensor (located inside the computer control unit), temperature sensor, throttle switch, crankshaft sensor, distributor and an ignition coil. The crankshaft flywheel has an extra ring of 100 teeth with one tooth being a reference tooth.

OPERATION

As the crankshaft rotates, the crankshaft sensor sends pulses to the computer control unit. From these pulses, the computer control unit determines engine speed and crankshaft (piston position) position. When the engine is running, the computer control unit receives information from the various engine sensors and determines the appropriate time to signal the ignition control unit. The ignition control unit makes and breaks the circuit to the coil, thus firing the spark plug. The computer control unit also controls idle speed, whenever accessories (A/C, lights, etc.) are turned on, by advancing or retarding the ignition timing. With this system, idle speed is adjusted using a timing light.

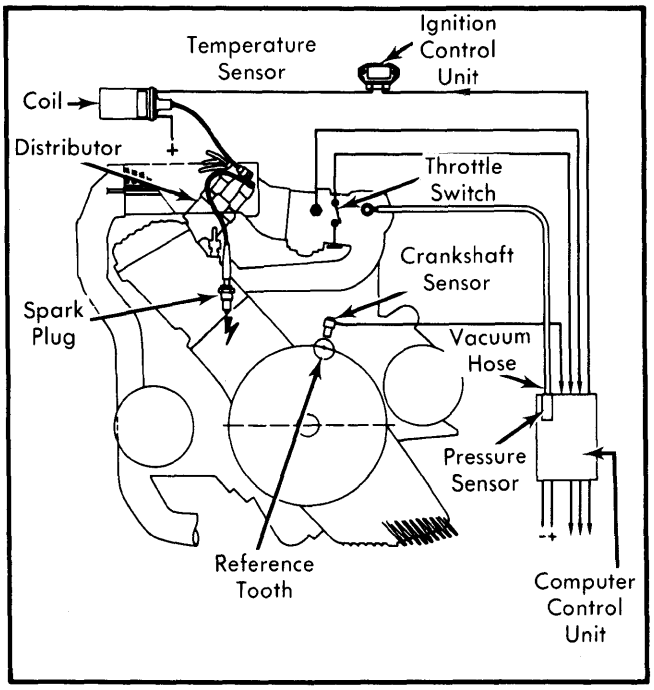

Fig. 1 Porsche Digital Ignition Timing Control Showing Component Location

NOTE – *Testing, Removal & Installation and Overhaul information not available from manufacturer.*

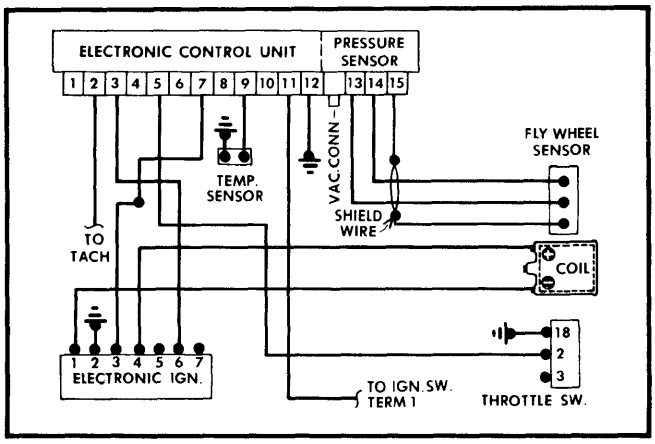

Fig. 2 Porsche Digital Ignition Timing Control Wiring Diagram

ADJUSTMENT

IDLE ADJUSTMENT

NOTE – *The Digital Ignition Timing Control system controls idle speed by varing the ignition timing. Idle speed adjustments are made using an ignition timing light.*

1) With engine off, remove temperature sensor from intake manifold and place it in the fresh air tray behind engine firewall. Leave wire connected to sensor. Install a plug into temperature sensr hole (in intake maifold).

2) Start and run engine until normal operating temperature is reached. Connect a CO tester as per maufacturers instructions. Attach a timing light to engine.

3) Turn the idle control screw (air by-pass screw) until ignition timing mark (dot on flywheel) is fully visible at timing pointer edge. Check idle speed. Speed should be below 900 RPM.

NOTE – *Timing mark (dot) will move around because of the computer regulating timing.*

4) If necessary, adjust CO level at same time idle adjustment is being made. With idle speed (and CO level) adjusted, turn engine off and remove all test equipment. Replace temperature sensor.

REMOVAL & INSTALLATION

DISTRIBUTOR

NOTE – *When removing distributor, crank engine until number 1 cylinder is at TDC (Z1 mark on flywheel will line up with timing pointer edge and mark on camshaft srocket will be opposite valve cover).*

NOTE – *When installing distributor, align distributor so that tab for distributor cap faces flywheel and mounting clips face in same direction as car (front to rear). Also, rotor must align with cylinder number 1 mark on distributor cap.*

NOTE – *Testing, overhaul and other component removal and installation procedures are not available from maufacturer.*