

AUDI & VOLKSWAGEN IDLE SPEED CONTROL

DESCRIPTION & OPERATION

Audi 5000S; Volkswagen Quantum

An air control valve is located in vacuum hose between air intake and intake manifold. It is used to create a high idle for cold engine operation and maintain a constant idle speed during warm engine running with A/C on or off.

The control unit is located in the under dash relay panel. It receives signals from a throttle closed idle switch, negative side of the coil, coolant temperature switch and A/C engagement switch.

TESTING

TEMPERATURE SWITCH

Pull harness from temperature switch. With engine below 68°F (20°C), temperature sensor should have continuity between both terminals. With engine above 104°F (40°C), temperature sensor should show an open circuit between terminals. If not, replace temperature sensor.

AIR CONTROL VALVE SYSTEM

1) Warm engine to at least 122°F (50°C). Pull connector off control valve for idle stabilization. Turn

ignition on and ensure battery voltage is present across terminals. If no voltage, go to step 3).

2) Reconnect connector to control valve. Touch idle stabilization control valve and check for vibrations. If no vibrations, replace idle stabilization control valve.

3) If no voltage, check for open wire. Turn on ignition. Connect voltmeter between contact 14 of socket 11 and contact 5 of socket 12 on relay plate. There should be about battery voltage. Turn air conditioner on. Check for 12 volts between contact 2 and socket 12 on relay plate and ground.

4) Check for continuity between contact 11 of socket 11 and connector of idle stabilizer control valve. Check for continuity between contact 4 of socket 12 and connector of idle stabilizer control valve.

5) Pull throttle valve switch connector apart. Check for 12 volts between harness side of connector and ground.

6) Connect ohmmeter between throttle switch connector terminals. There should be continuity with throttle in idle position and infinity with throttle slightly open. If necessary, adjust or replace switch.

7) Check for continuity between contact 13 of socket 11 and thermoswitch wire (brown black). If okay, but idle stabilization is not okay (engine RPM varies) replace control unit.

AUDI THERMOSTATIC AIR CLEANER

5000

DESCRIPTION

A thermostatically-controlled air cleaner is used to preheat the incoming air. This system allows closer control of incoming air temperature which, in turn, allows closer calibrating of the combustion system for better performance and emission control.

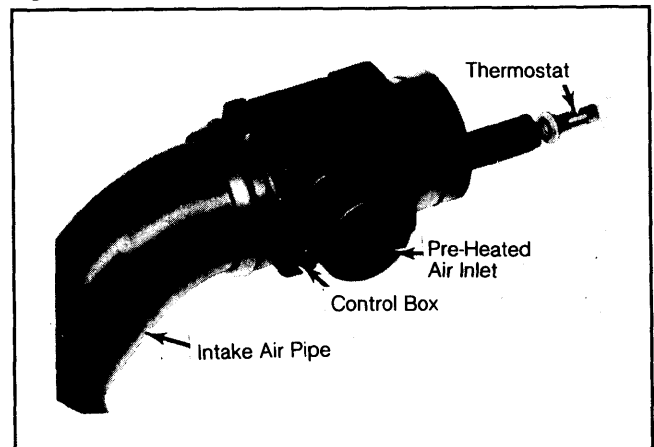
System consists of an air intake pipe for outside air, a shroud and pipe for manifold-heated air, a control box for allowing heated or cooled (or both) air in, and a thermostat which reacts to incoming air temperature to set the air door.

OPERATION

When engine and ambient temperature are cold, below 68°F (20°C), the air door inside the control box will be closed to outside air. The thermostat senses the cold ambient condition and moves the air door to heated air only.

As engine warms up and ambient air temperature increases, the thermostat begins to move the air door off its heat-only position and toward the cold air only position. When ambient air temperature is above 93°F (34°C), only colder, outside air is allowed to enter the intake system.

Fig. 1: Air Control Box with Thermostat



TESTING

1) Install thermostat in control box and screw it in 3 turns. Place thermostat in container of water at 68°F (20°C) for 2 minutes.

2) Air door must be in position to allow only heated air to enter. If not, screw thermostat in further until air door is shut. Lock thermostat in position using locking compound.