

# FUEL EVAPORATION SYSTEM

## Article Text

1987 Volkswagen Quantum/Quantum Syncro

For Volkswagen Technical Site

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Sunday, March 19, 2000 01:45AM

## ARTICLE BEGINNING

1987 Fuel Evaporation Systems  
VOLKSWAGEN

Gasoline Models

## DESCRIPTION

The sealed fuel evaporation system prevents fuel vapor from escaping into the atmosphere. The system consists of a fuel tank, expansion tank(s), charcoal canister, fuel tank breather gravity valve(s), control valve, and connecting lines and hoses.

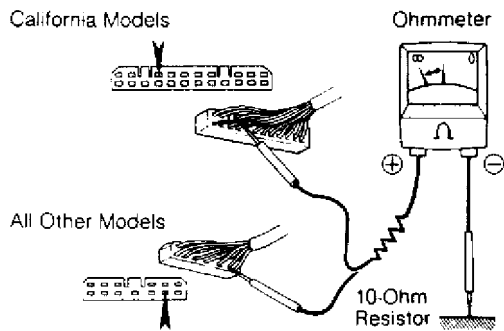


Fig. 1: Jetta, Fox, Golf & GTI Fuel Evaporation System

## OPERATION

As fuel expands in tank, vapor is forced out of tank through an upper vent port. On all models except Vanagon, vapor flows up through a gravity valve and into an expansion tank where liquid fuel condenses and returns to fuel tank as temperature drops. On Vanagon models, vapor flows up from fuel tank vent lines into a left and a right expansion tank.

Fuel vapor then flows from an upper vent port on expansion tank (from gravity vent valves on Vanagon), through a control valve, and into the charcoal canister, where it is absorbed until manifold vacuum pulls it out of canister for burning.

When the engine is running at speeds greater than idle, a vacuum signal opens control valve and canister vapor is drawn from canister, through control valve and into intake manifold for burning.

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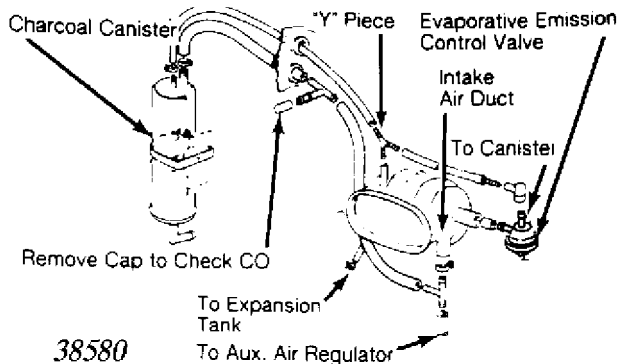


Fig. 2: Cabriolet, Scirocco & Quantum Canister-to-Intake Manifold Flow

Courtesy of Volkswagen United States, Inc.

## TESTING

### EVAPORATIVE EMISSION CONTROL VALVE

All Models Except Vanagon

1) Remove hose leading to canister from control valve. Blow into valve. Check that air flow is blocked and that air does not leak from valve seams.

2) Remove hose from control valve's vacuum advance port. Remove vacuum retard hose from distributor. Connect it to control valve's vacuum advance port. Remove hoses from other 2 valve ports.

3) Start engine. Blow air into valve's canister port. Check that air flow is blocked and that air does not leak from valve seams. If valve performs incorrectly in either test, replace valve.

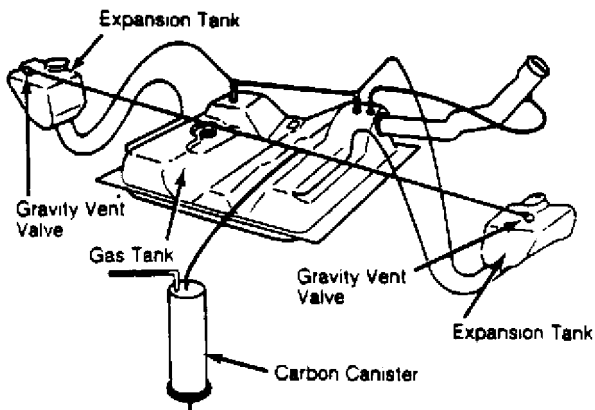


Fig. 3: Vanagon Fuel Evaporation System

### GRAVITY VALVE

All Models Except Vanagon

1) Remove hoses from gravity valve. Remove valve from body, above and to the right of the fuel tank. See Fig. 4. Attach one end of a hose to valve's expansion tank port. Submerge other end of hose

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in water.

2) Hold valve vertically. Blow into valve's port to fuel separator. Check that air flows through valve into water. Gradually tilt valve while blowing air into it. Check that air stops flowing through valve when it is tilted at a 45 degree angle. If valve does not function properly, replace it.

#### Vanagon Models

Ensure that each gravity vent valve is open when in the vertical (upright) position and closed when tilted 180 degrees.

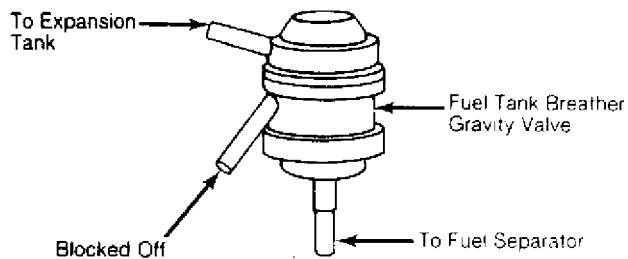


Fig. 4: Checking Gravity Valve Operation (All Models Except Vanagon)

Hold valve vertically when testing.

## MAINTENANCE

Visually inspect entire system every 15,000 miles. Check for leaks and damaged or deteriorated hoses and components.

**END OF ARTICLE**