



# Important!

## Audi

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# Technical Bulletin

Subject: **VAG 1687 Diagnostic Tool, Checking Intake System for Leaks**

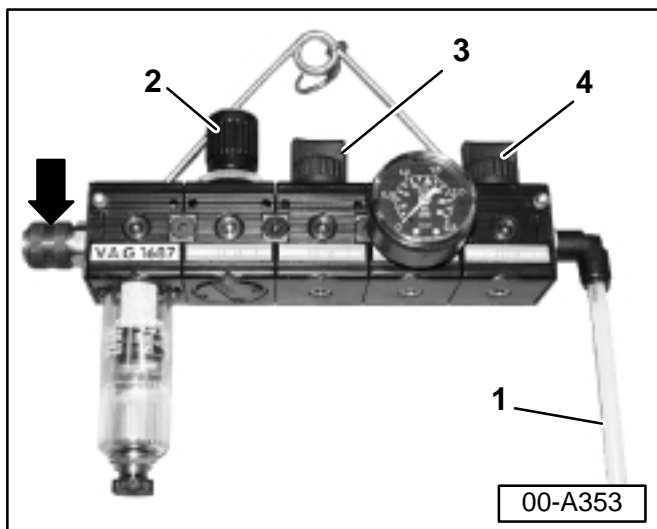
Group: **01**

Number: **01-01**

Model(s): **All with 1.8L Turbo  
All with 2.7L BiTurbo**

**1997 >  
2000 >**

Date: **Oct. 26, 2001**



## Condition

Diagnostic trouble codes (DTC's) related to fuel trim, charge (boost) pressure or Mass air flow (MAF), may be caused by:

- Leaking (worn/torn) intake hoses during charge conditions
- Incorrectly torqued or improperly placed, clamps on intake hoses etc., causing leaks during charge conditions

## Service

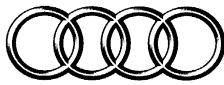
◀ The charge air pressure system can be checked using the VAG 1687 Charge air system tester along with the VAG1687/1 adapter as follows:

### Special tool VAG 1687 Charge air system tester, preliminary set-up

- ◀ – Back off pressure regulator knob -2- of VAG 1687 fully to protect gauge when shop air supply is applied to the assembly.
- Close valve -3- before gauge.
- Close valve -4- after gauge.
- ◆ Shop air supply line will later be attached to inlet of VAG 1687.
- Remove female fitting from tester (arrow) and install an appropriate “male” air fitting that will connect to your shop air supply line (See WARNING).

### **WARNING!**

**Use only approved air fittings to adapt shop air supply line to VAG 1687 tester.**

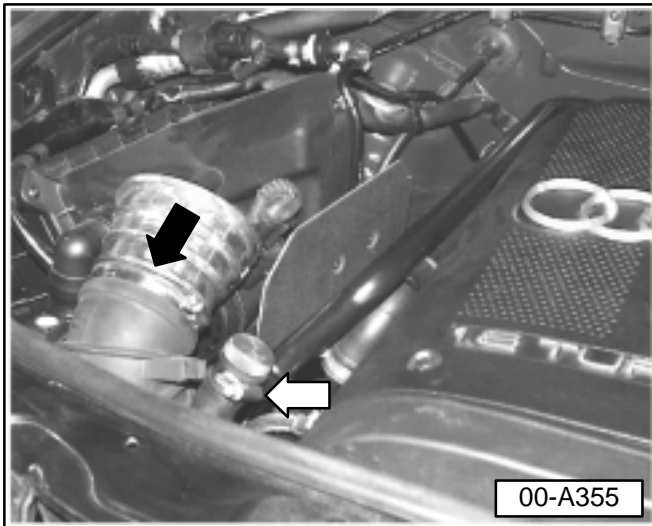


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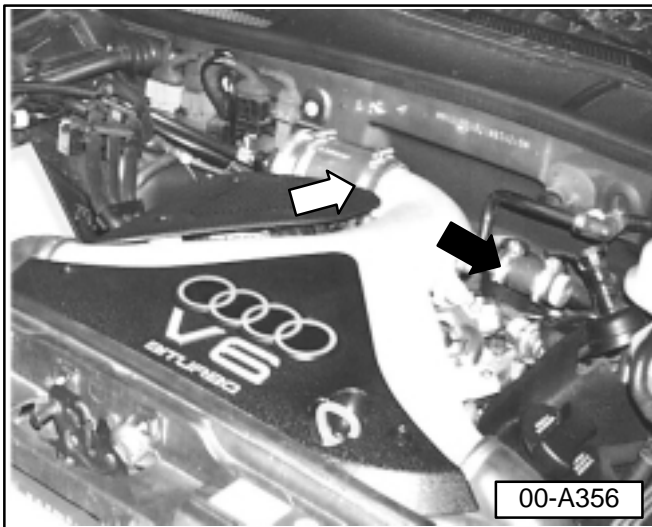
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## Special tool VAG 1687/1 pressure adapter, installing (1.8L Turbo)

- Separate intake hose from the Mass Airflow Sensor assembly (MAF).
- ◀ - Insert VAG 1687/1 pressure adapter in intake hose -black arrow- using existing clamp (as shown).
- Remove crankcase ventilation tube from intake hose at -white arrow-.
- Plug hose with appropriate metal plug and hose clamps supplied with VAG 1687/1 special tool kit at -white arrow-.



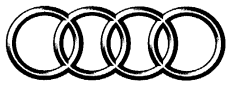
## Special tool VAG 1687/1 pressure adapter, installing (2.7L BiTurbo)

- Remove upper air cleaner housing and hoses to intake manifold as necessary (see AESIS Repair group - Maintenance, *Air cleaner housing, cleaning; air cleaner element, replacing*).
- ◀ - Insert VAG 1687/1 pressure adapter in intake hose -white arrow- using existing clamp (as shown).
- Disconnect engine crankcase ventilation hose from intake manifold -black arrow-.
- Plug intake manifold fitting (for crankcase ventilation hose) with appropriate hose and metal plug using clamps supplied with VAG 1687/1 special tool kit.

### **Note:**

*To help find small leaks, BEFORE pressurizing the system, fill system with smoke using special tool KLI9210 and adapter KLI9210/50 as described on page 3.*

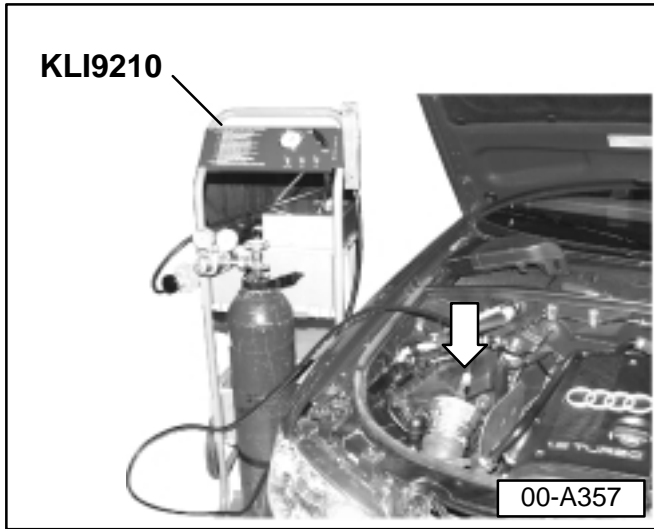
*An Ultrasonic detector may also be used to detect extremely small leaks where smoke may not be visible.*



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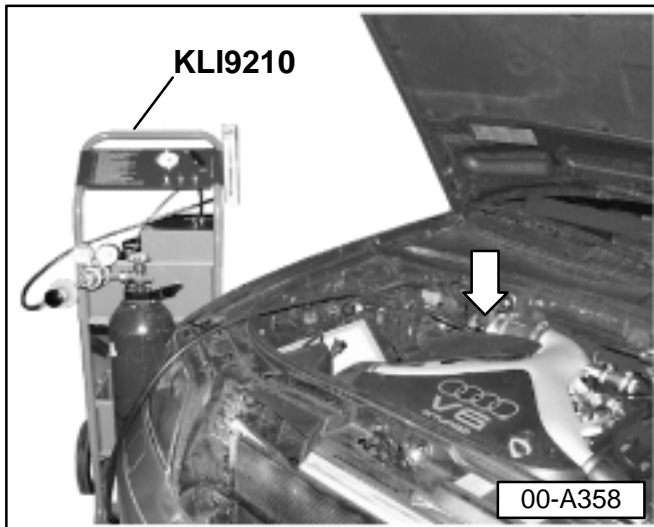
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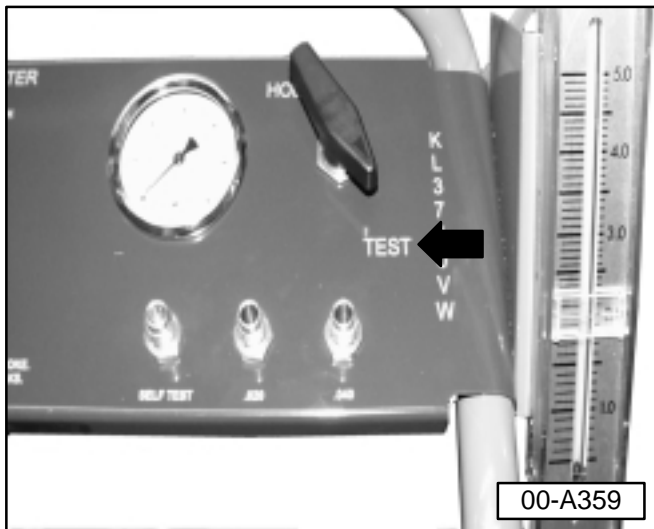
## Special tool KLI9210 (Evaporative system leak detector), connecting to 1.8L Turbo

- Install optional fitting KLI 9210/50 on hose of special tool KLI9210.
- ◀ - Connect KLI9210 to VAG 1687/1 adapter (KLI 9210 is shown attached to VAG1687/1 at arrow on 1.8L Turbo).



## Special tool KLI9210 (Evaporative system leak detector), connecting to 2.7L BiTurbo

- Install optional fitting KLI 9210/50 on hose of special tool KLI9210.
- ◀ - Connect KLI9210 to VAG 1687/1 adapter (KLI 9210 is shown attached to VAG1687/1 at arrow on 2.7L BiTurbo).



## Special tool KLI9210 (Evaporative system leak detector), preliminary set-up

- Connect smoke generator leads to vehicle battery.
- ◀ - Turn valve to test (black arrow).
- Press smoke generator button to fill system with smoke (see instructions printed on tester).

With system filled with smoke:

- Remove smoke generator hose and connect VAG 1687 quickly to prevent smoke from leaking out (see page 4).

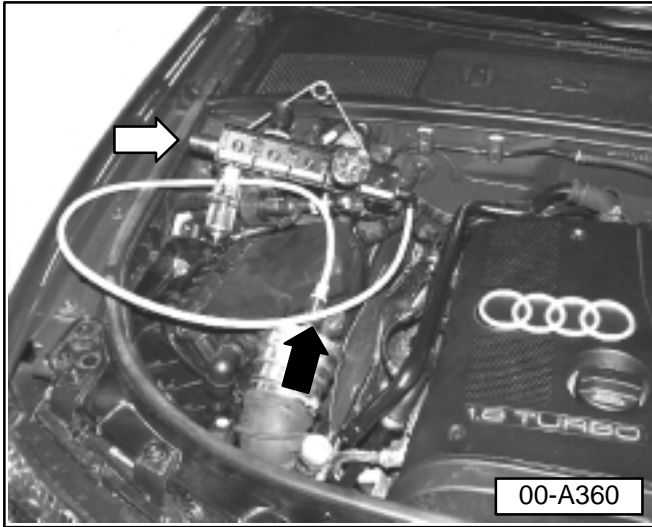


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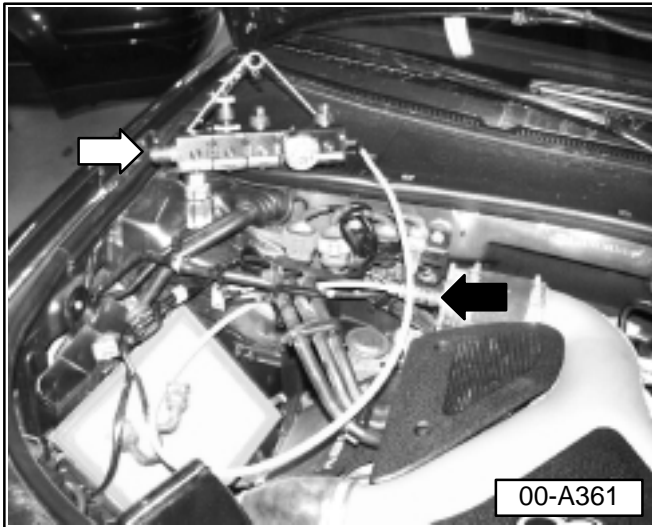
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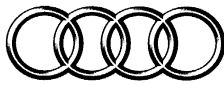
### Special tool VAG 1687 connecting to pressure adapter 1687/1 (1.8L Turbo),

- ◆ For Illustration purposes VAG 1687 is shown lying in engine compartment. In practice tool should be hung from hood.
- Connect VAG 1687 quickly to prevent smoke from leaking out.
- ◀◆ VAG 1687 is shown connected to VAG 1687/1 (black arrow)
- ◆ Shop air supply will be connected to VAG 1687 at (white arrow).
- Perform pressure test (see page 5).



### Special tool VAG 1687 connecting to pressure adapter 1687/1 (2.7L BiTurbo),

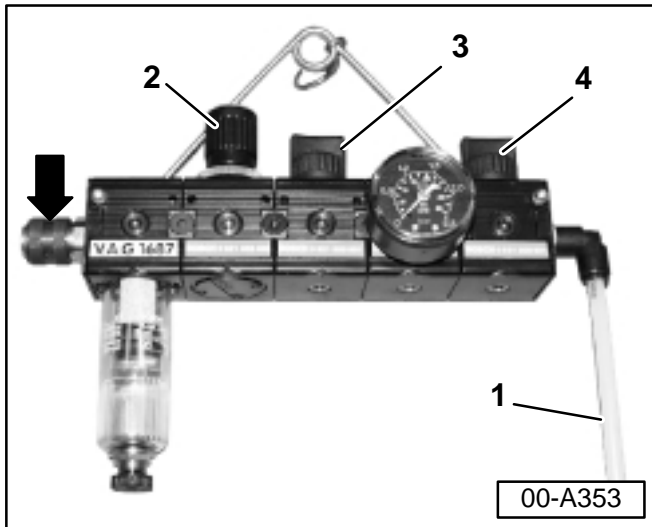
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- Connect VAG 1687 quickly to prevent smoke from leaking out.
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- Perform pressure test (see page 5).



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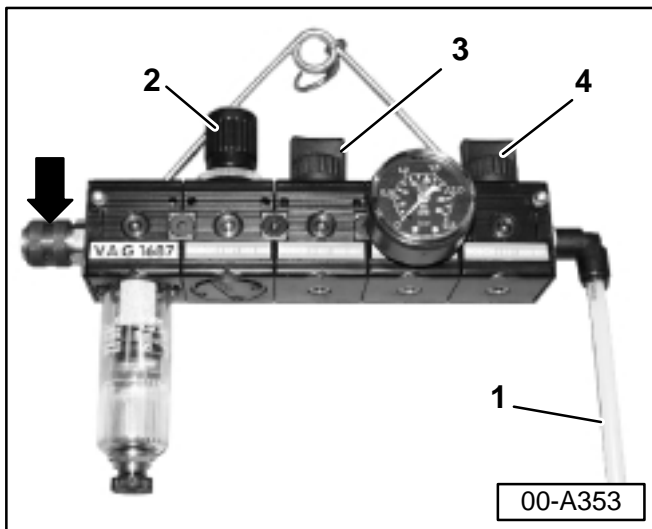
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## Performing pressure Test:

- ◀ – With outlet hose -1- of VAG 1687 connected to air pressure adapter.
- Attach shop air supply line to previously installed male fitting (see page 1).



- ◀ – Open valve -3- between regulator valve and gauge.
- Adjust test pressure up to 0.5 bar (see CAUTION below) by turning the regulator valve -2-.

### **CAUTION!**

**DO NOT pressurize system above 0.5bar!  
Doing so may force oil into the intake  
system which can damage the engine.**

- Slowly open outlet valve -4- (after gauge) to test hose connections.
- Observe pressure gauge for a drop in pressure.

### **Note:**

*Some pressure will be lost past the throttle plate.*

- Readjust test pressure to 0.5 bar (see CAUTION above) by turning the regulator valve -2-.
- Listen for any very large intake leaks.



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If smoke generator was used to fill the system with smoke:

- Inspect intake system connections for smoke at leaks.

**Note:**

*An Ultrasonic detector may also be used to detect extremely small leaks where smoke may not be visible.*

- Repair any leaks found.
- Remove tester.
- Remove plug from crankcase ventilation hose.
- Remove air pressure adapter.

With 5051 diagnostic tool connected:

- Erase DTC memory.

If smoke generator was not used to fill the system with smoke:

- Apply soapy water solution or equivalent to intake system connections.

**Note:**

*An Ultrasonic detector may also be used to detect extremely small leaks.*

- Inspect intake system connections for leaks.
- Repair any leaks found.
- Remove tester.
- Remove plug from crankcase ventilation hose.
- Remove air pressure adapter.

With 5051 diagnostic tool connected:

- Erase DTC memory.