

2 Servicing secondary air system

2.1 Principle and function

Because of the over-enrichment of the mixture in the cold start phase, the proportion of unburned hydrocarbons in the exhaust gas is higher. The secondary air system improves the afterburning (oxidation) process in the catalytic converter, and thus reduces toxic emissions. The heat generated by oxidation accelerates the "light off" of the catalytic converter and significantly improves exhaust gas quality during warm-up.

- ◆ In the warm-up phase, the engine control unit activates the secondary air pump via the secondary air pump relay. Air is routed to the secondary air combination valves.
- ◆ In parallel to this, the secondary air inlet valve is activated and allows vacuum to pass to the secondary air combination valves. In this way, the combination valve opens a passage for the secondary air system to supply air to the exhaust ports in the cylinder head.

2.2 Secondary air system - exploded view

1 - Air hose

- To engine

2 - 9 Nm

3 - Bracket

4 - Retaining bracket

5 - 9 Nm

6 - Air hose

- Between secondary air pump motor - V101- and combination valves for secondary air system

7 - Combination valve for secondary air system

- Fitting location: front right of engine compartment
- Checking ⇒ [page 243](#)
- Removing and installing ⇒ [page 244](#)

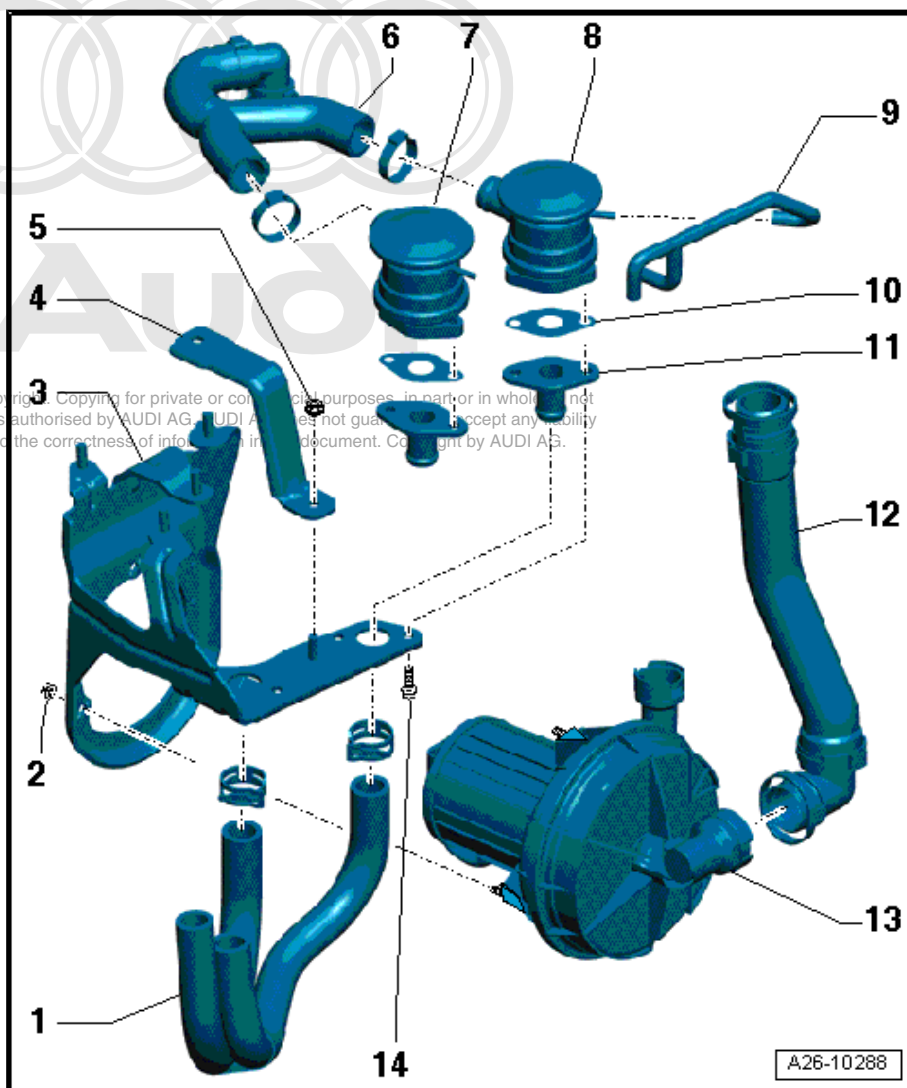
8 - Combination valve for secondary air system

- Fitting location: front right of engine compartment
- Checking ⇒ [page 243](#)
- Removing and installing ⇒ [page 244](#)

9 - Vacuum hoses

10 - Gasket

- Renew



A26-10288

11 - Connection**12 - Air hose**

- From air cleaner

13 - Secondary air pump motor - V101-

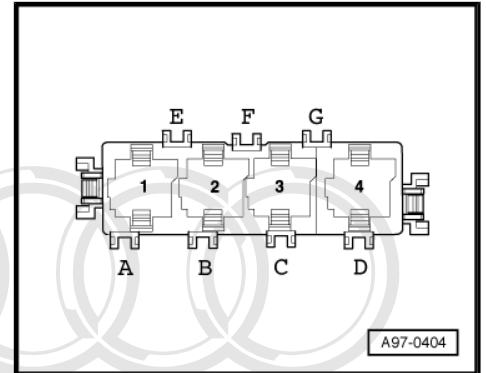
- Fitting location: At front right in engine compartment below longitudinal member
- Removing and installing ⇒ [page 245](#)
- Checking in "Guided Fault Finding" mode ⇒ Vehicle diagnostic tester

14 - 9 Nm**Fitting location of secondary air pump relay - J299- and secondary air pump fuse - S130-**

- ◆ In electronics box (plenum chamber, passenger's side).

1 - Secondary air pump relay - J299-

B - Secondary air pump fuse - S130- (50 amp)

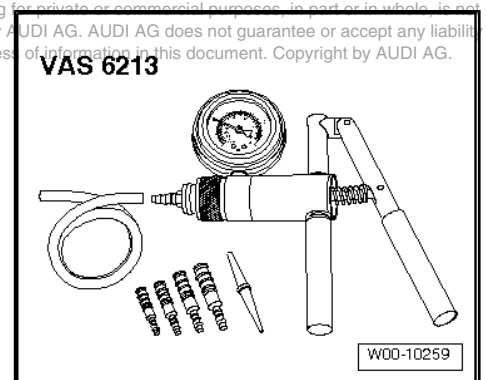


2.3 Checking combination valves for secondary air system for correct operation and leakage

Special tools and workshop equipment required

- ◆ Hand vacuum pump - VAS 6213-

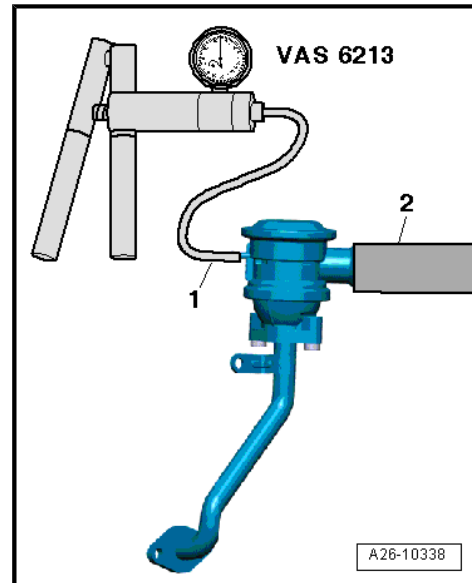
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Procedure

- No leaks in hose connections.
- Remove relevant combination valve for secondary air
⇒ [page 244](#) .
- Connect hand vacuum pump - VAS 6213- to vacuum connection -1- of combination valve for secondary air.
- Connect suitable test hose -2- to combination valve for secondary air.
- Blow lightly into test hose -2- with your mouth (do not use compressed air).
- The combination valve for secondary air system should be closed; it should not be possible to blow through the hose.
- Operate hand vacuum pump.
- The combination valve for secondary air system should open; it should now be possible to blow through the hose.



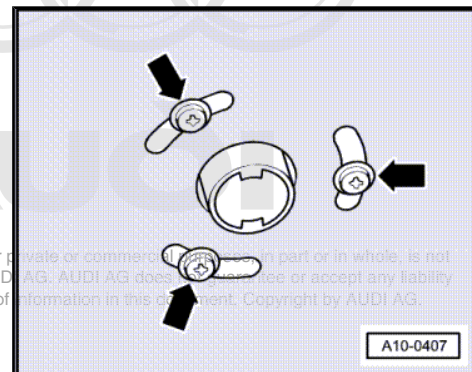
If combination valve for secondary air does not open:

- Renew relevant secondary air combination valve
⇒ [page 244](#) .

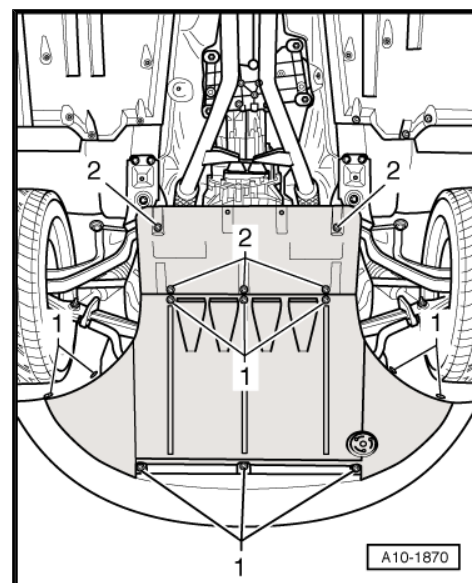
2.4 Removing and installing combination valves for secondary air system

Removing

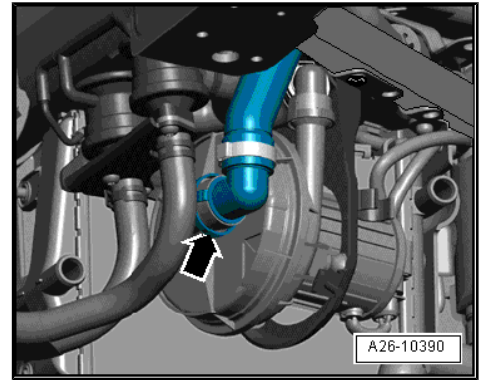
- Vehicles with auxiliary heater: remove bolts -arrows- securing exhaust pipe for auxiliary/additional heater to noise insulation.



- Open quick-release fasteners -1- and remove noise insulation (front).



- Disconnect air hose -arrow- at secondary air pump.



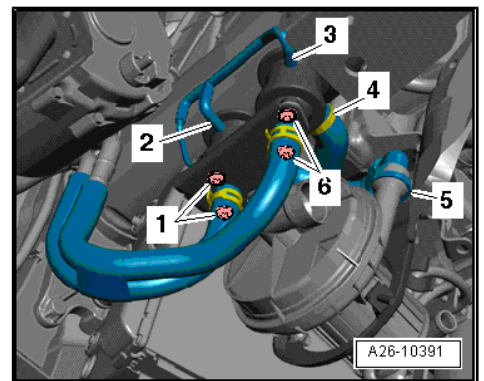
- Disconnect vacuum hoses -2- and -3-.
- Unscrew bolts -1- and -6- and remove hose connections.
- Disconnect air hoses -4- and -5-.
- Detach relevant combination valve for secondary air.

Installing

Installation is carried out in the reverse order; note the following:



Renew seals and gaskets.



Tightening torques

- ◆ ⇒ [“2.2 Secondary air system - exploded view”, page 242](#)

2.5 Removing and installing secondary air pump

Removing

- Remove combination valves for secondary air ⇒ [page 244](#) .
- Unplug electrical connector -1-.
- Unscrew nuts -arrows- and remove secondary air pump.

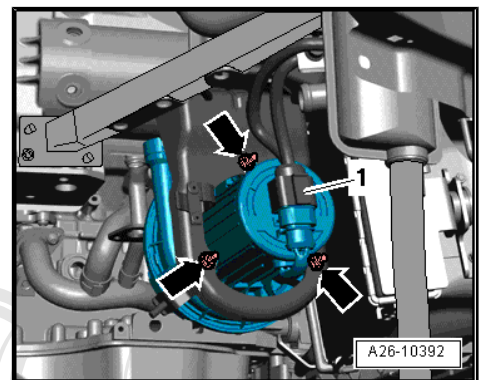
Installing

Installation is carried out in the reverse order; note the following:

- Install combination valves for secondary air ⇒ [page 244](#) .

Tightening torques

- ◆ ⇒ [“2.2 Secondary air system - exploded view”, page 242](#)




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