

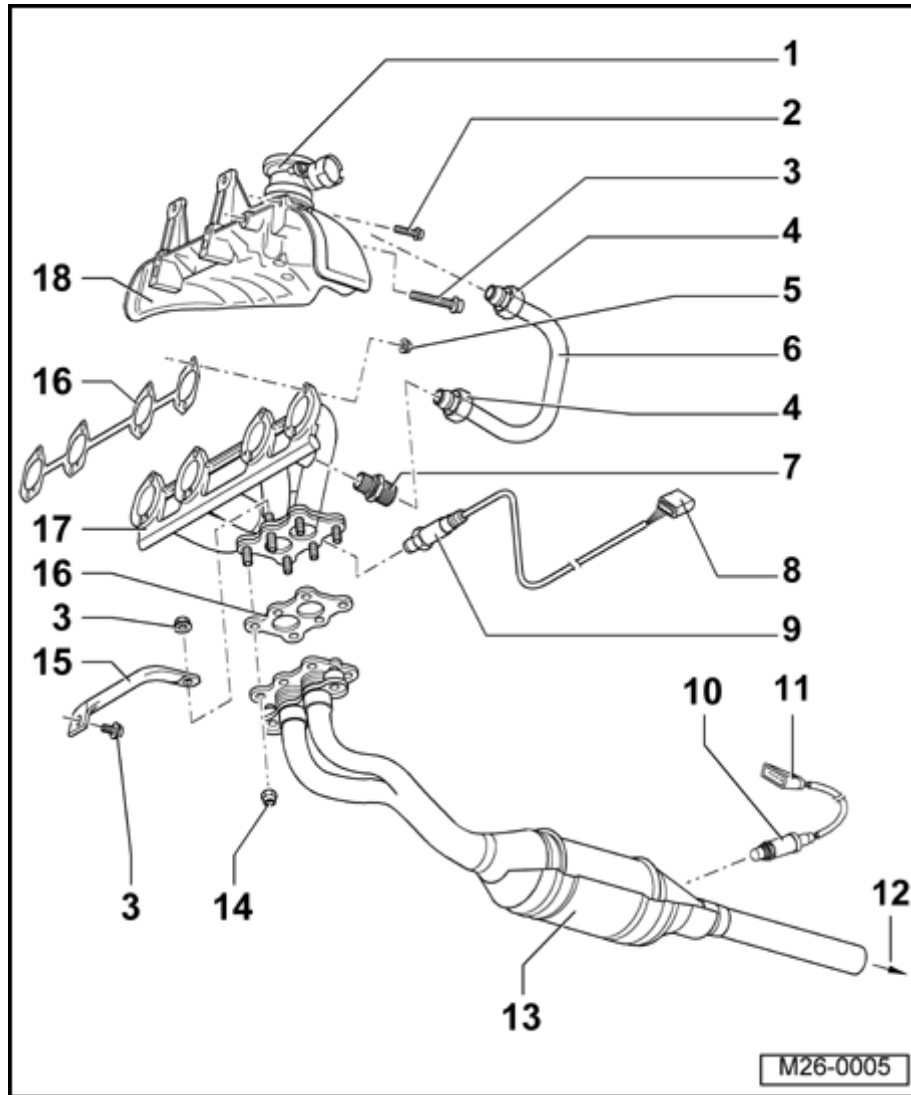


Exhaust system components, removing and installing

Note:

- ◆ *After performing repairs on the exhaust system, ensure that the system is not under stress, and that it has sufficient clearance from the body. If necessary, loosen the double clamps and align the muffler and exhaust pipe so sufficient clearance is maintained to the body while the support rings are evenly loaded.*
- ◆ *When performing repairs, always replace self-locking nuts.*

Catalyst, checking ⇒ [Page 26-18](#)



Exhaust manifold, front exhaust pipe and catalyst with attachments

Engine code AEG

1 - Combi-valve

◆ Checking ⇒ [Page 26-28](#)

◆ Removing and installing: ⇒ [Page 26-39](#)

2 - 10 Nm (7 ft lb)

3 - 25 Nm (18 ft lb)

4 - 30 Nm (22 ft lb)

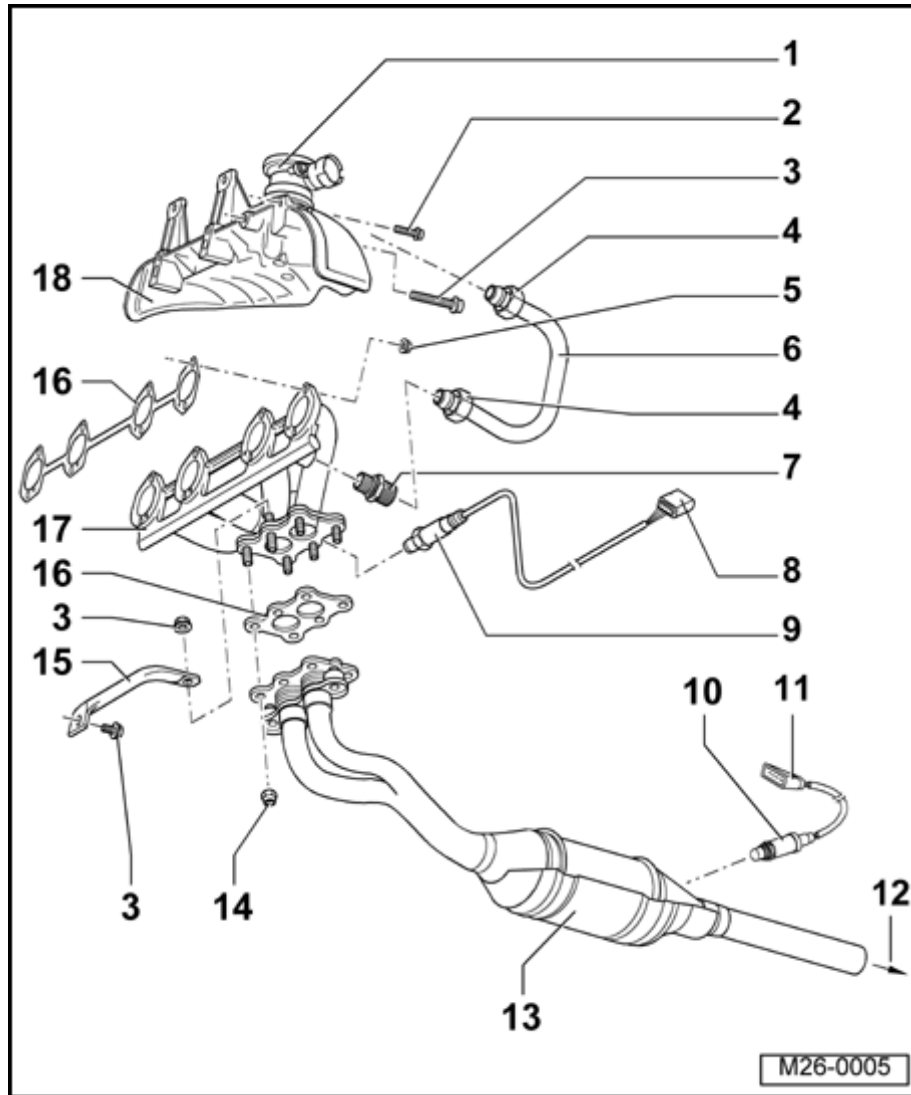
5 - 25 Nm (18 ft lb)

◆ Always replace

6 - Connecting pipe

7 - Union

◆ 35 Nm (26 ft lb)



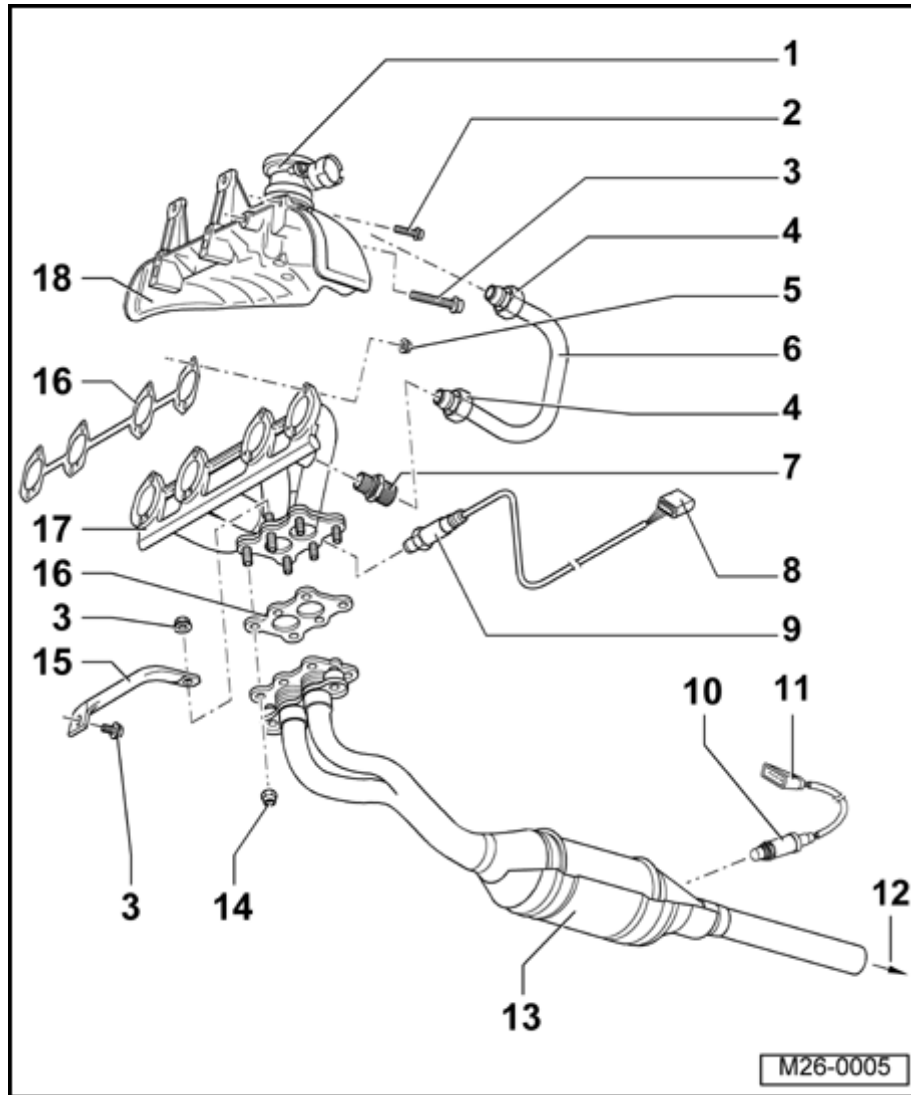
8 - 4-pin harness connector

- ◆ Black
- ◆ for Oxygen sensor 1 G39 and Oxygen sensor heating
- ◆ Terminals 3 and 4 gold plated

9 - Oxygen sensor 1 -G39- (in front of catalyst)

- ◆ 50 Nm (37 ft lb)
- ◆ Only coat threads using anti-seize compound not containing silicone and marked "safe for oxygen sensors"; do not allow compound to enter slots on sensor body
- ◆ Remove and install using 3337
- ◆ Checking:

⇒ [Repair Manual, 2.0 Liter 4-Cyl. 2V Fuel Injection & Ignition, Engine Code\(s\): AEG, Repair Group 24](#)



10 - Oxygen sensor 2 -G130- (behind catalyst)

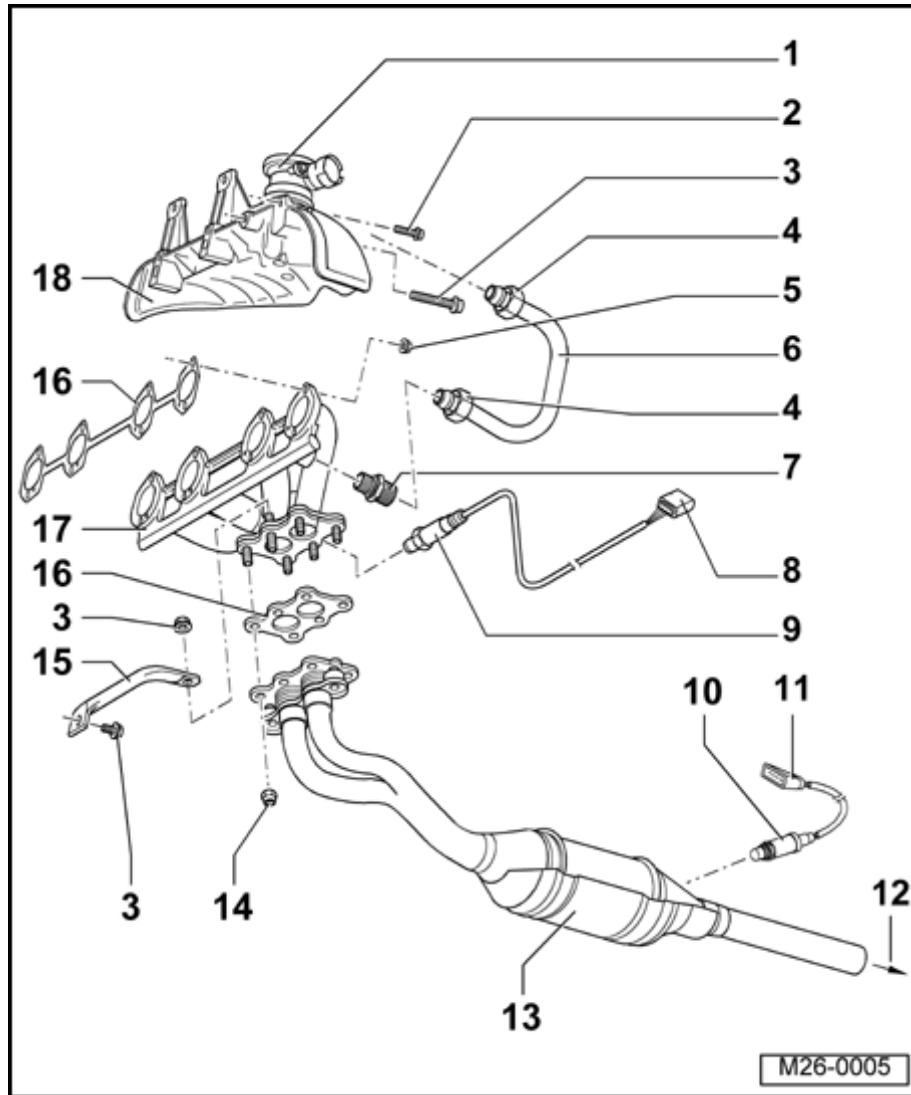
- ◆ 50 Nm (37 ft lb)
- ◆ Only coat threads using anti-seize compound not containing silicone and marked "safe for oxygen sensors"; do not allow compound to enter slots on sensor body
- ◆ Remove and install with 3337
- ◆ Checking:

⇒ [Repair Manual, 2.0 Liter 4-Cyl. 2V Fuel Injection & Ignition, Engine Code\(s\): AEG, Repair Group 24](#)

11 - 4-pin harness connector

- ◆ Brown
- ◆ Terminals 3 and 4 gold
- ◆ for Oxygen sensor 2 G130 and Oxygen sensor heater

12 - To center muffler



13 - Front exhaust pipe with catalyst

14 - 40 Nm (30 ft lb)

◆ Always replace

15 - Support

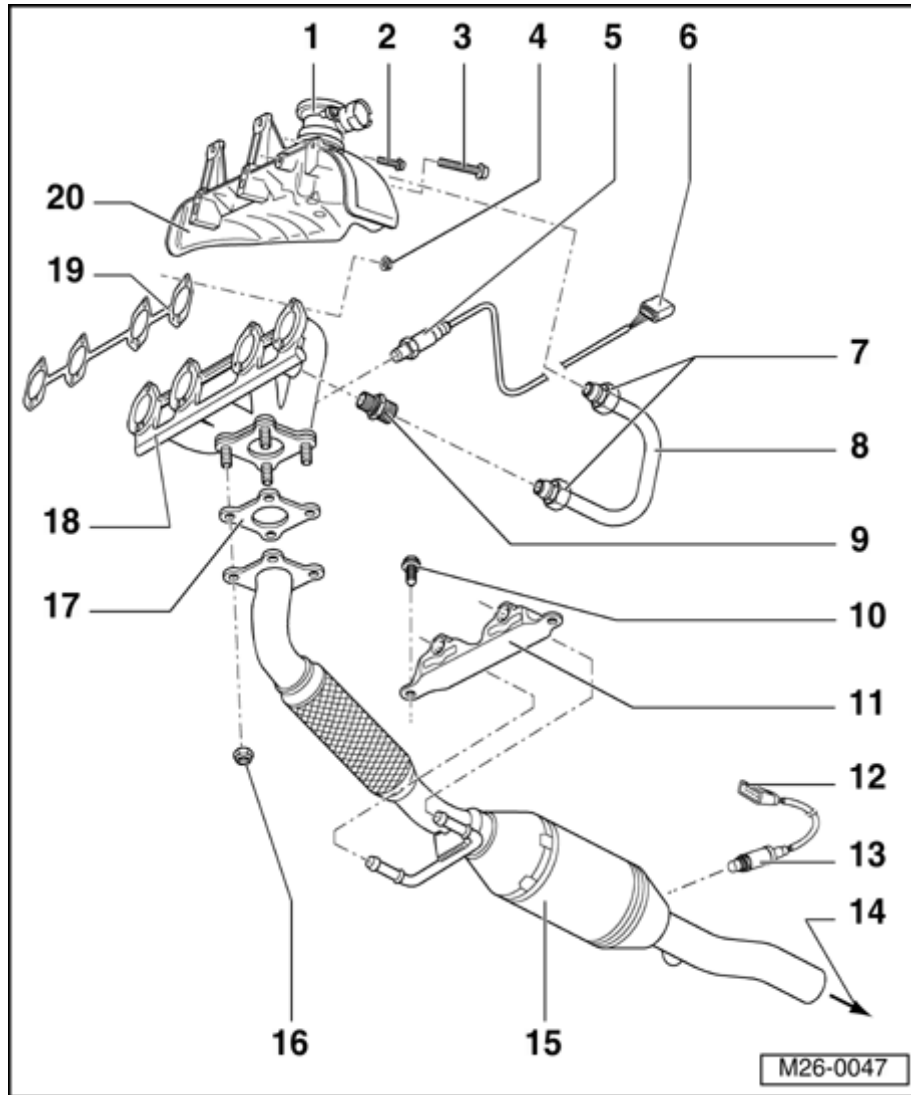
16 - Gasket

◆ Always replace

17 - Exhaust manifold

◆ Removing and installing: ⇒ [Page 26-15](#)

18 - Warm air collector plate



Engine codes AVH, AZG

1 - Combi-valve

◆ Removing and installing: ⇒ [Page 26-39](#)

2 - 10 Nm (7 ft lb)

3 - 25 Nm (18 ft lb)

4 - 25 Nm (18 ft lb)

◆ Always replace

5 - Oxygen sensor 1 -G39- (in front of catalyst)

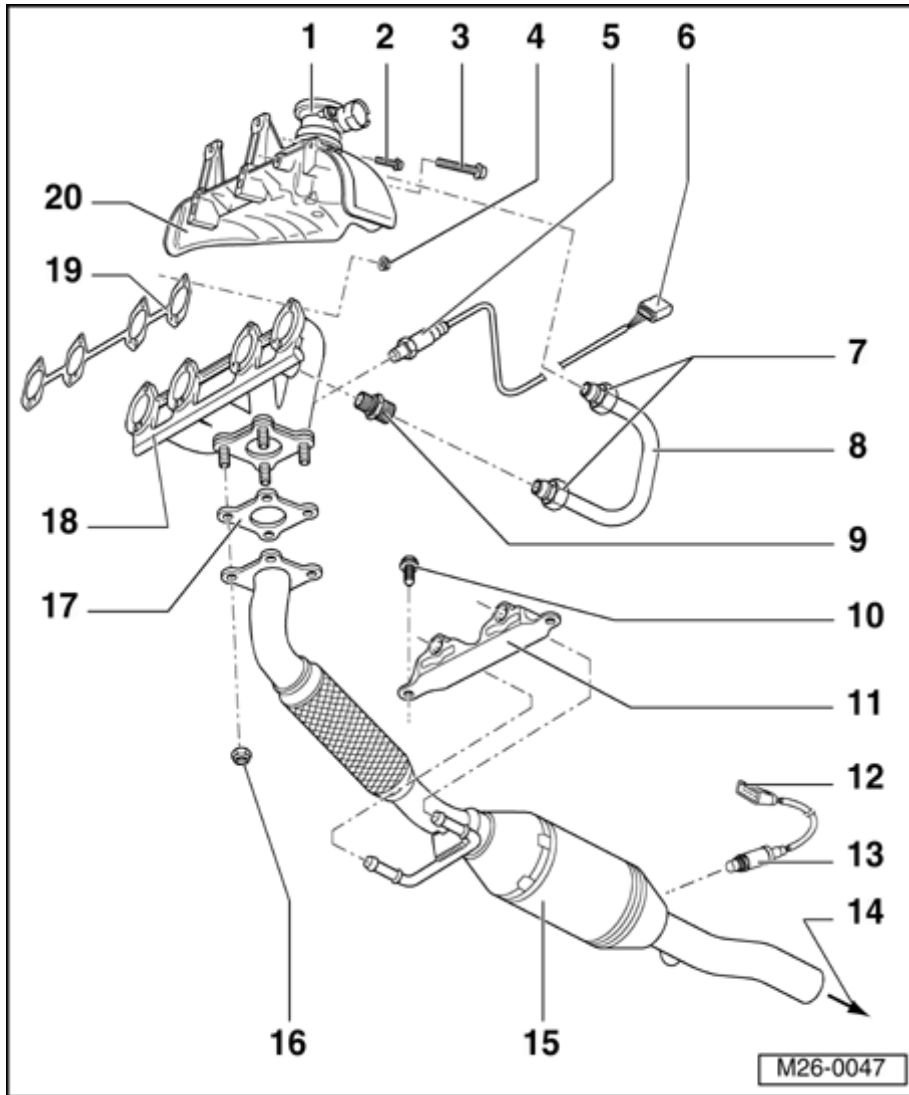
◆ 50 Nm (37 ft lb)

◆ Only coat threads using anti-seize compound not containing silicone and marked "safe for oxygen sensors"; do not allow compound to enter slots on sensor body

◆ Remove and install using 3337

◆ Checking:

⇒ *Repair Manual, 2.0 Liter 4-Cyl. 2V Fuel Injection & Ignition, Engine Code(s): AVH, Repair Group 24*



6 - 4-pin harness connector

- ◆ Black
- ◆ for Oxygen sensor 1 G39 and Oxygen sensor heating
- ◆ Terminals 3 and 4 gold plated

7 - 30 Nm (22 ft lb)

8 - Connecting pipe

9 - Union

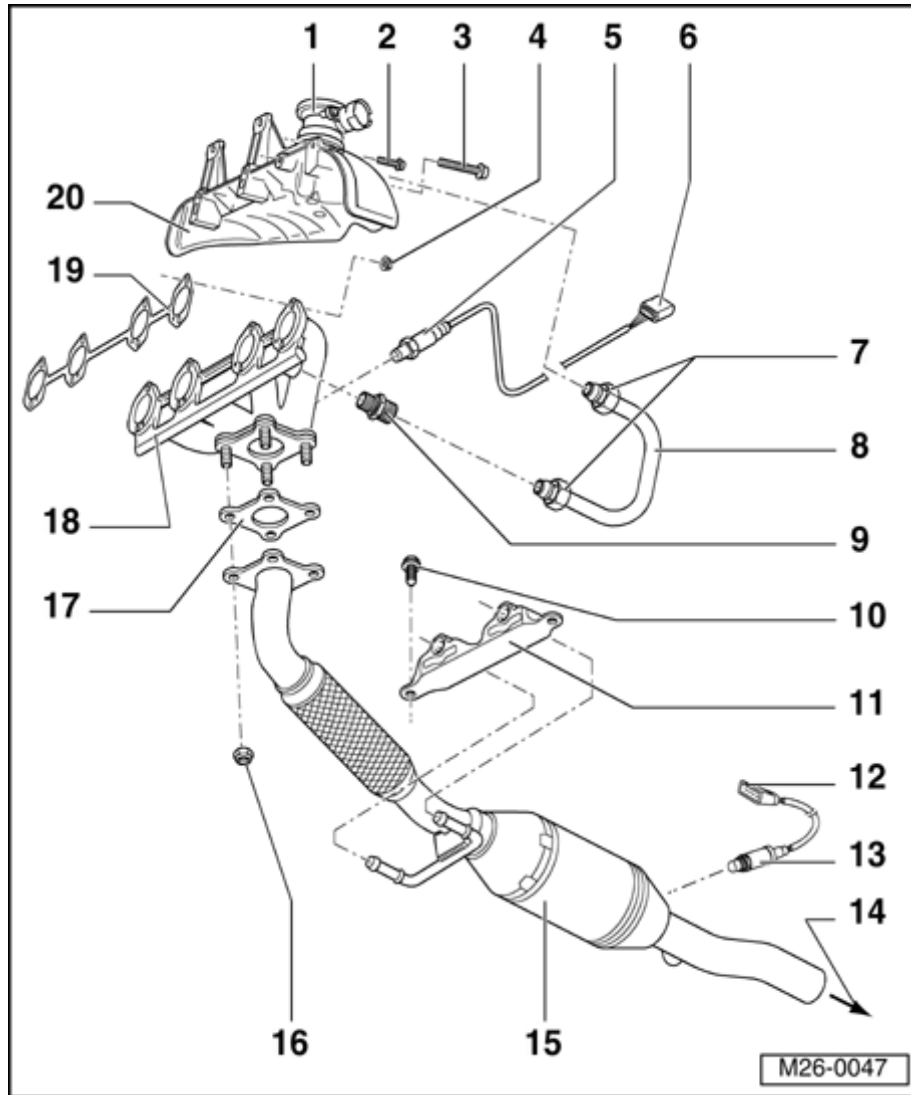
- ◆ 35 Nm (26 ft lb)

10 - 25 Nm (18 ft lb)

11 - Mounting

12 - 4-pin harness connector

- ◆ Brown
- ◆ Terminals 3 and 4 gold
- ◆ for Oxygen sensor 2 -G130- and Oxygen sensor heater



13 - Oxygen sensor 2 -G130- (behind catalyst)

- ◆ 50 Nm (37 ft lb)
- ◆ Only coat threads using anti-seize compound not containing silicone and marked "safe for oxygen sensors"; do not allow compound to enter slots on sensor body
- ◆ Remove and install with 3337
- ◆ Checking:

⇒ *Repair Manual, 2.0 Liter 4-Cyl. 2V Fuel Injection & Ignition, Engine Code(s): AVH, Repair Group 24*

14 - To center muffler

15 - Front exhaust pipe with catalyst

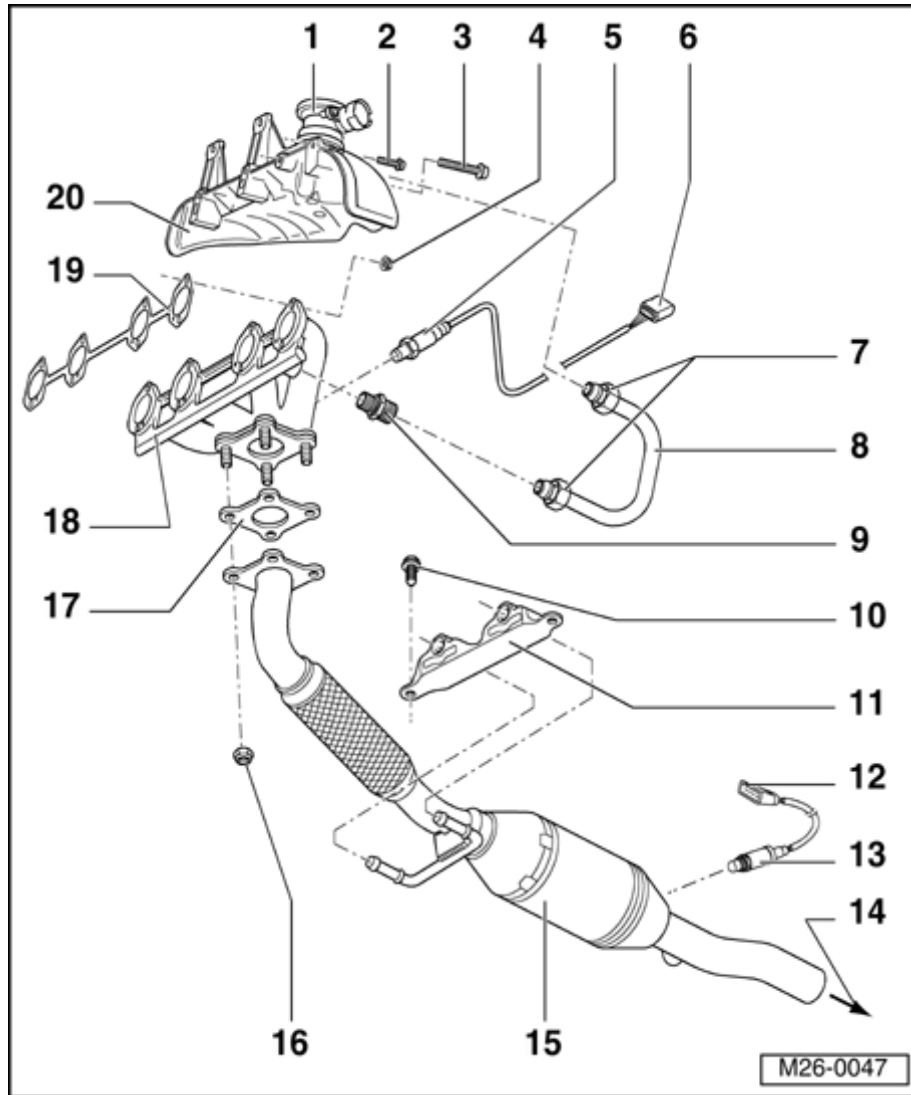
16 - 40 Nm (30 ft lb)

- ◆ Always replace

17 - Gasket

- ◆ Always replace

M26-0047



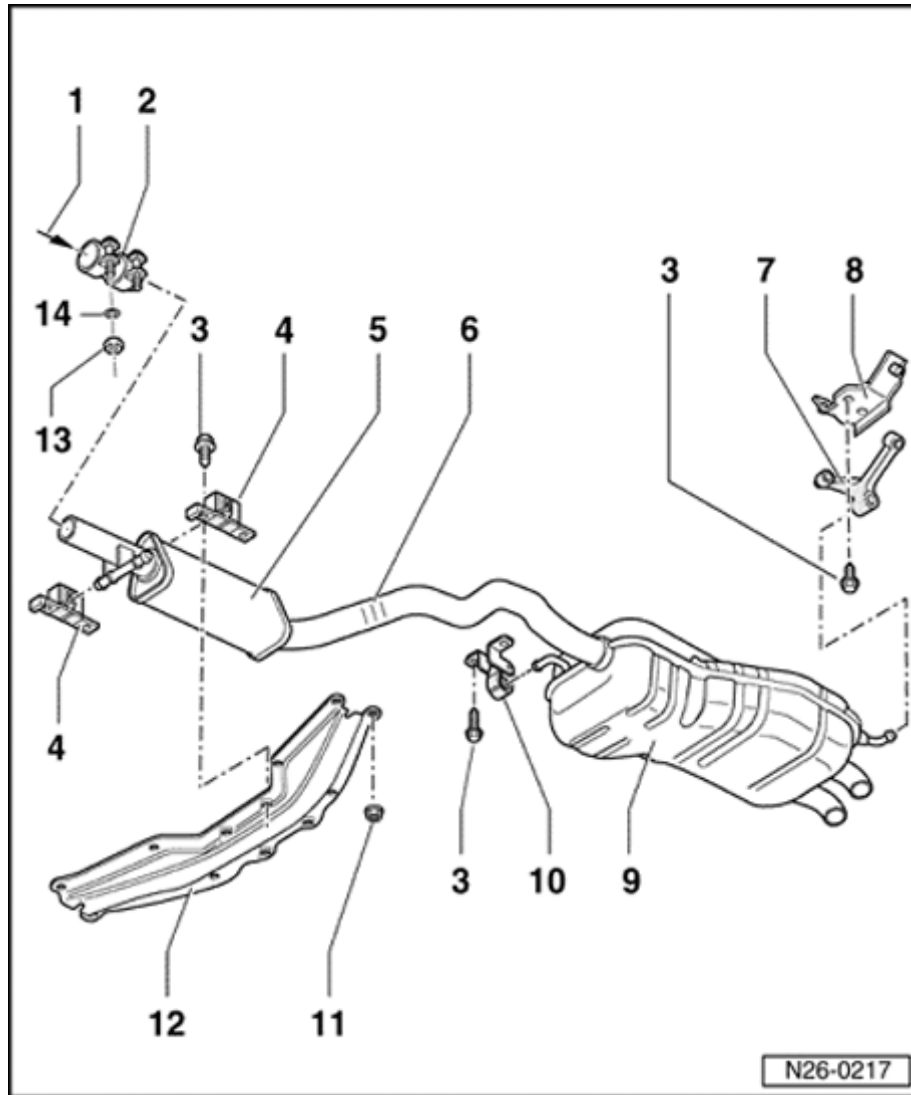
18 - Exhaust manifold

◆ Removing and installing: ⇒ [Page 26-15](#)

19 - Gasket

◆ Always replace

20 - Warm air collector plate



Muffler system with mountings, component overview

1 - from Catalyst

2 - Double clamp

◆ Note installation position ⇒ Fig. ⇒ [1](#)

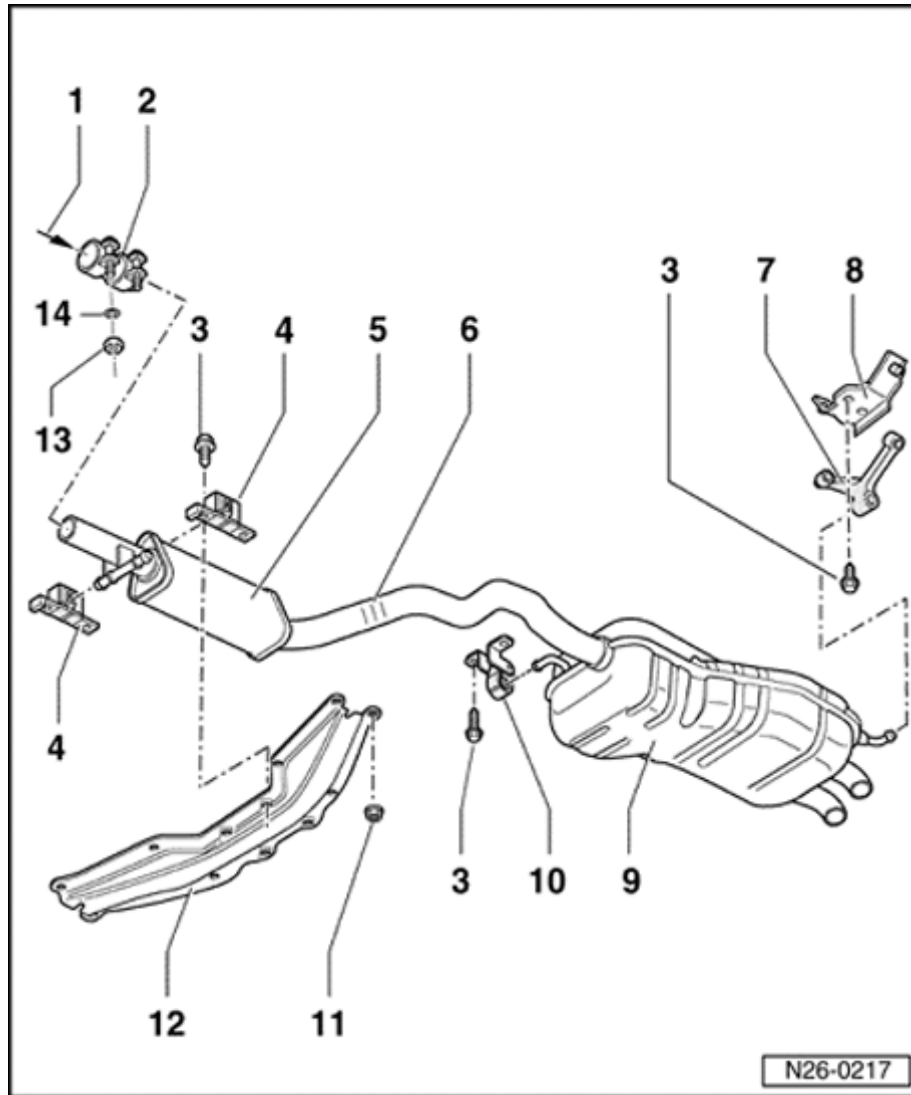
3 - 25 Nm (18 ft lb)

4 - Mounting

◆ Note installation position ⇒ Fig. ⇒ [2](#)

5 - Center muffler

◆ Aligning ⇒ Fig. ⇒ [4](#)



6 - Separation point

- ◆ For repairing
- ◆ Exhaust pipe is marked with three indentations around circumference
- ◆ Center and rear mufflers are installed as a single welded component in production. Center and rear mufflers can be obtained individually with double clamp as spare parts.
- ◆ Saw through connecting pipe (at right angles) at separating point using body saw ⇒ Fig. ⇒ [3](#)

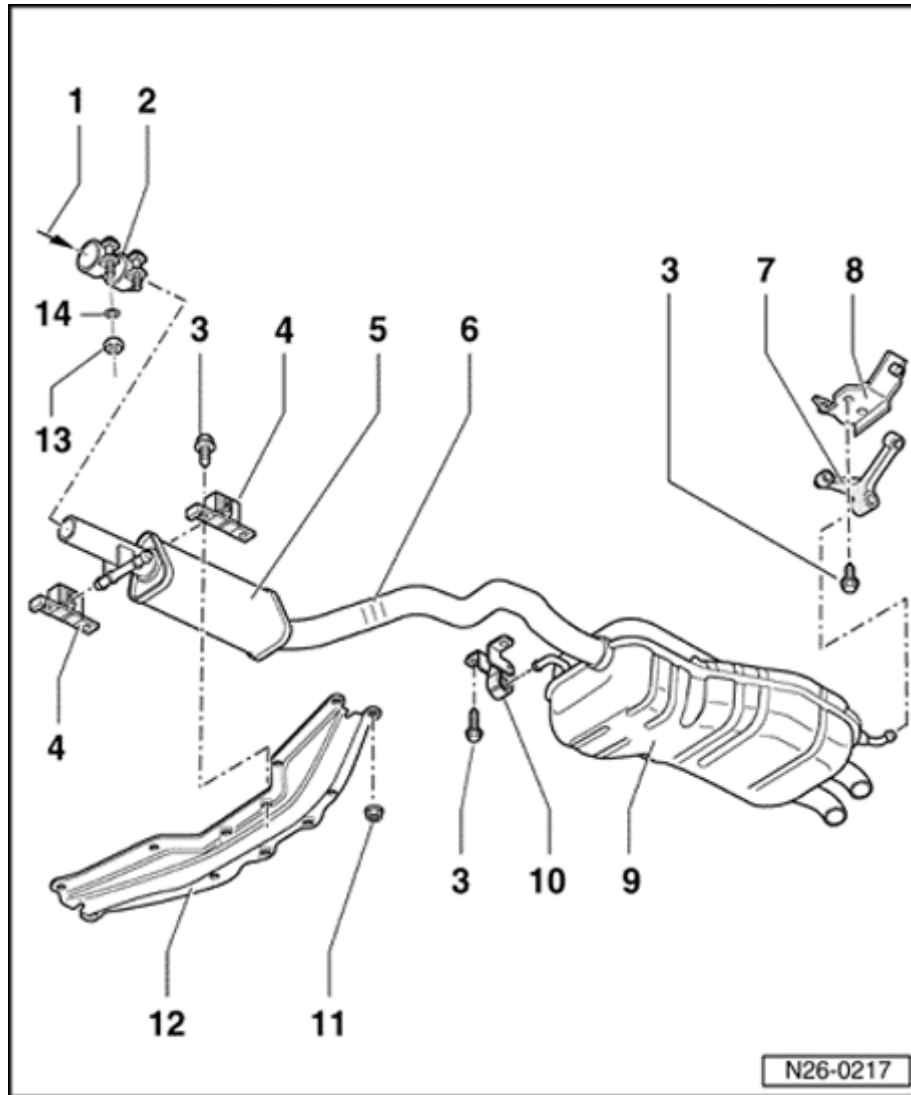
7 - Mounting

8 - Bracket

9 - Rear muffler

10 - Mounting

- ◆ With retaining ring

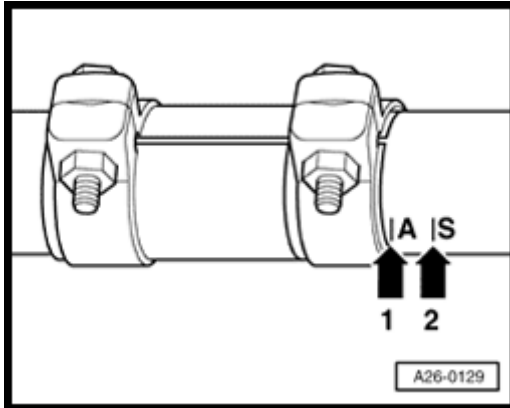


11 - 20 Nm (15 ft lb)

12 - Tunnel bridge

13 - 40 Nm (30 ft lb)

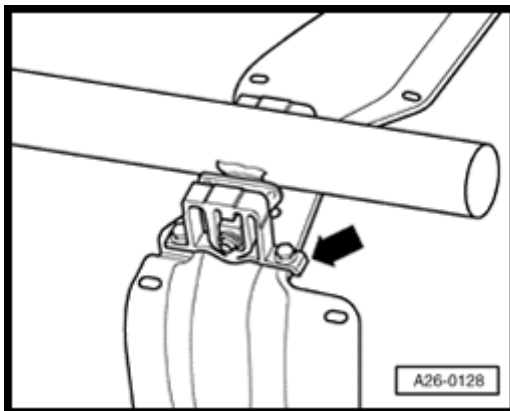
14 - Washer



A

Fig. 1 Double clamp installing position, checking

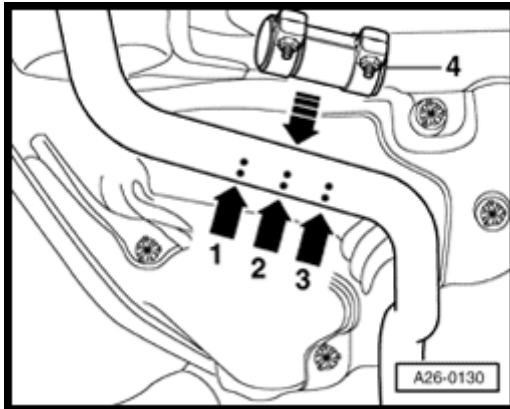
- Position dual clamp with 5 mm distance for mark A (arrow 1).
- ◆ Mark A (arrow 1) for vehicles with automatic transmission
- ◆ Mark S (arrow 2) for vehicles with manual transmission



A

Fig. 2 Installed position of mount

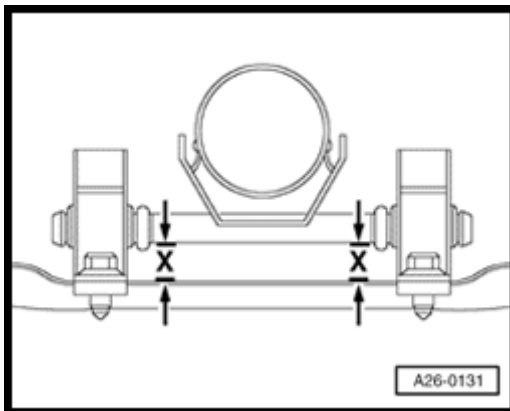
- Angled side on foot of mount (arrow) points forward.



A

Fig. 3 Separation point on exhaust pipe

- Separate exhaust pipe (at right angles) at separation point (arrow 2).
 - Position dual clamp -4- at installation (arrows 1 and 3).
- Tightening torque: 40 Nm (30 ft lb)



A

Fig. 4 Aligning center muffler tension free

- Mount for center muffler must be parallel to tunnel bridge (dimension -x- left and right is identical)



Exhaust manifold, removing and installing

Special tools

- ◆ V.A.G 1331 Torque wrench 5 to 50 Nm (3.7 to 37 ft lb), or equivalent

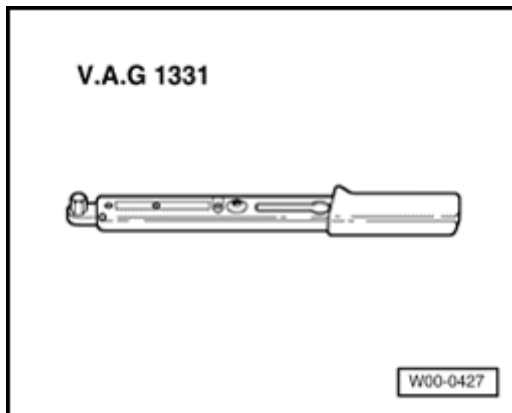
Removing

- Remove engine cover.
- Remove intake hose:

⇒ [Repair Manual, 2.0 Liter 4-Cyl. 2V Fuel Injection & Ignition, Engine Code\(s\): AEG, Repair Group 24](#)

⇒ *Repair Manual, 2.0 Liter 4-Cyl. 2V Fuel Injection & Ignition, Engine Code(s): AVH, Repair Group 24*

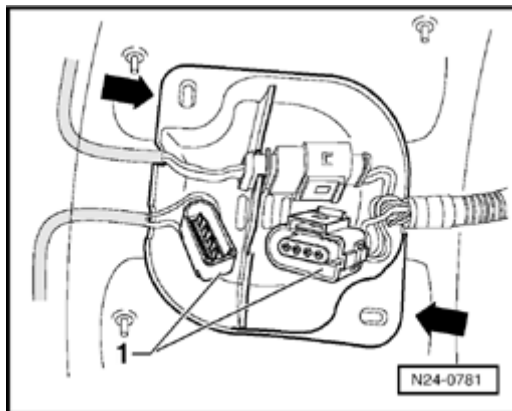
- Remove pressure and vacuum hoses from combi-valve.
- Remove connector pipe from combi-valve and exhaust manifold.
- Remove warm air collector plate.
- Remove right hand inner CV joint protective cover.





- Disconnect right drive shaft from transmission:

⇒ [Repair Manual, Suspension, Wheels, Steering, Repair Group 40](#)



A

- Remove protective cover (arrows) and disconnect 4-pin connector (black) -1- for oxygen sensor 1 -G39-.
- Remove oxygen sensor 1 -G39- wiring retainers.
- Remove front exhaust pipe with catalyst and bracket.
- Remove exhaust manifold by removing lower nuts from below and upper nuts from above.

Installing

Installation is the reverse of removal. Note the following:

- ◆ Always replace all seals and self-locking nuts
- ◆ Tightening torques ⇒ [Page 26-2](#) .
- ◆ Drive shaft to transmission: 40 Nm (30 ft lb)
- Check Diagnostic Trouble Code (DTC) memory:

⇒ [Repair Manual, 2.0 Liter 4-Cyl. 2V Fuel Injection & Ignition, Engine Code\(s\): AEG, Repair Group 01](#)

⇒ *Repair Manual, 2.0 Liter 4-Cyl. 2V Fuel Injection & Ignition, Engine Code(s):
AVH, Repair Group 01*



- Display Readiness code:

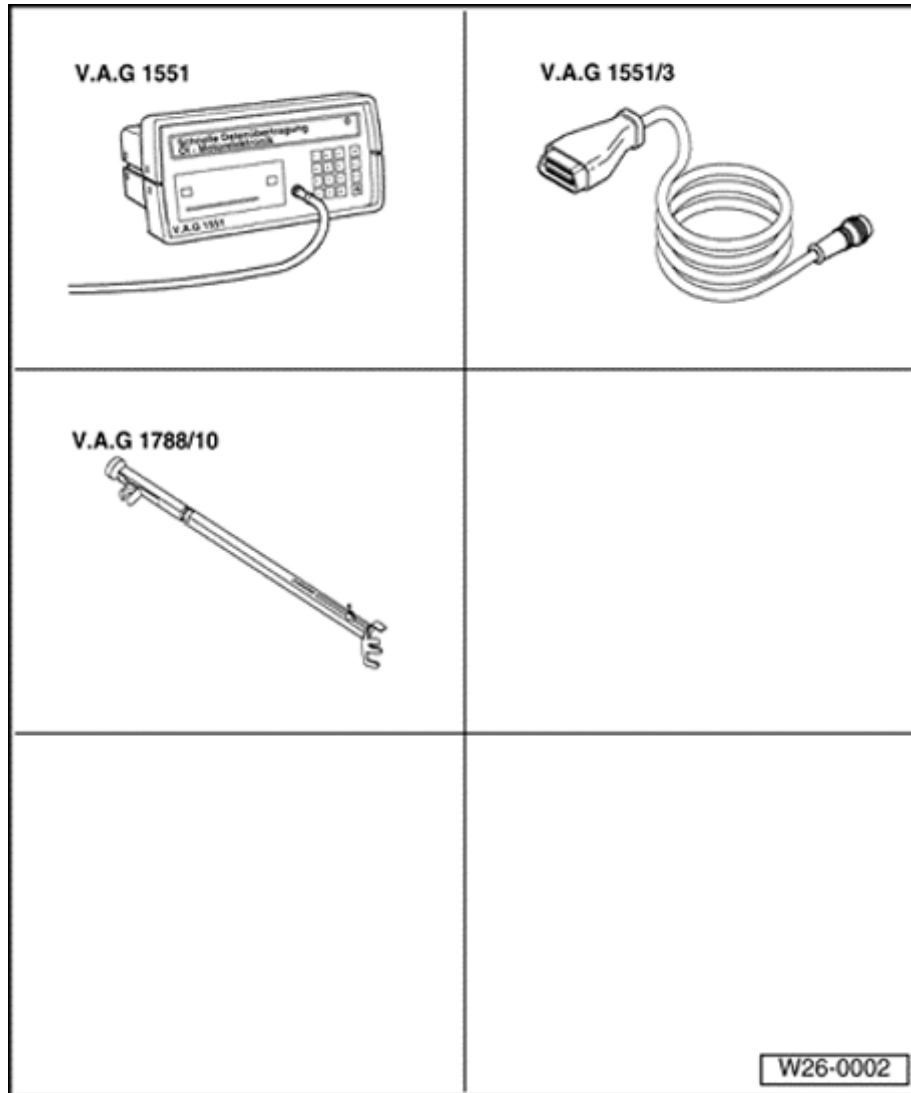
⇒ [*Repair Manual, 2.0 Liter 4-Cyl. 2V Fuel Injection & Ignition, Engine Code\(s\): AEG, Repair Group 01*](#)

⇒ *Repair Manual, 2.0 Liter 4-Cyl. 2V Fuel Injection & Ignition, Engine Code(s): AVH, Repair Group 01*

- Readiness code must be reset if ECM is subject to low voltage with ignition ON or if DTC memory is erased.

⇒ [*Repair Manual, 2.0 Liter 4-Cyl. 2V Fuel Injection & Ignition, Engine Code\(s\): AEG, Repair Group 01*](#)

⇒ *Repair Manual, 2.0 Liter 4-Cyl. 2V Fuel Injection & Ignition, Engine Code(s): AVH, Repair Group 01*



Three Way Catalyst, checking

Special tools

- ◆ V.A.G 1551 Scan Tool

Note:

V.A.G 1552 Scan Tool can be used instead of the V.A.G 1551; however, the V.A.G 1552 has no printer.

- ◆ V.A.G 1551/3 Adapter cable
- ◆ V.A.G 1788/10 RPM adjuster (only with engine code AEG)



Test sequence

- Connect V.A.G 1551/1552) Scan Tool:

⇒ [Repair Manual, 2.0 Liter 4-Cyl. 2V Fuel Injection & Ignition, Engine Code\(s\): AEG, Repair Group 01](#)

⇒ *Repair Manual, 2.0 Liter 4-Cyl. 2V Fuel Injection & Ignition, Engine Code(s): AVH, Repair Group 01*

- Start engine and let idle.
- Press 0 and 1 buttons to select Address Word 01: "engine electronics".

Rapid data transfer
Select function XX

HELP



Display will appear as shown

- Press 0 and 4 buttons to select Function 04: "Basic setting".
- Press Q button to enter input.

Introduce basic setting

HELP



Display will appear as shown

Input display group number XXX

- Press 0, 4 and 6 buttons to select "Display group 46".
- Press Q button to enter input.

Basic setting 46



1 2 3 4



Display will appear as shown (1 to 4 = Display zones)

Engine code AEG

- Set engine speed with V.A.G 1788/10 speed adjuster between 2800 and 3200 rpm.



- Maintain engine speed between 2800 and 3200 rpm.
 - Value in display zone 4 changes from "Test OFF" to "Test ON".
 - Value in display zone 2 minimum 352.0 ° C.
- Continue maintaining engine speed between 2800 and 3200 rpm.
 - Display zone 4 changes to "Cat. B1 OK".

Note:

Catalyst diagnostic lasts about 100 seconds. If test does not complete after 150 seconds, adjust engine speed within range of 2800 to 3200 rpm.

- Remove V.A.G 1788/10 engine speed adjuster from throttle pedal.

If "Cat. B1 not OK" appears in display zone 4:

- Check Diagnostic Trouble Code (DTC) memory:

⇒ [Repair Manual, 2.0 Liter 4-Cyl. 2V Fuel Injection & Ignition, Engine Code\(s\): AEG, Repair Group 01](#)

- Display Readiness code:

⇒ [Repair Manual, 2.0 Liter 4-Cyl. 2V Fuel Injection & Ignition, Engine Code\(s\): AEG, Repair Group 01](#)

- Readiness code must be reset if ECM is subject to low voltage with ignition ON or if DTC memory is erased.

⇒ [Repair Manual, 2.0 Liter 4-Cyl. 2V Fuel Injection & Ignition, Engine Code\(s\): AEG, Repair Group 01](#)



Rapid data transfer
Select function XX

HELP



If specification "Cat B1 OK" obtained:

- Press → button.

Display will appear as shown

- Press 0 and 6 buttons to select Function 06: "End transfer".

- Press Q button to enter input.

Engine codes AVH, AZG

- Press brake pedal down and hold.

- Push accelerator down to WOT tip-in. Engine control module turns engine speed down to 2300 rpm.

- Let engine run with increased engine speed.

- Value in display zone 2 minimum 540 ° C.

- Value in display zone 4 changes from "Test OFF" to "Test ON".

- Let engine run with increased engine speed.

- Display zone 4 changes to "Cat. B1 OK".

Note:

This process may require several minutes time.

If "Cat. B1 not OK" appears in display zone 4:



- Check Diagnostic Trouble Code (DTC) memory:

⇒ *Repair Manual, 2.0 Liter 4-Cyl. 2V Fuel Injection & Ignition, Engine Code(s): AVH, Repair Group 01*

- Display Readiness code:

⇒ *Repair Manual, 2.0 Liter 4-Cyl. 2V Fuel Injection & Ignition, Engine Code(s): AVH, Repair Group 01*

- Readiness code must be reset if ECM is subject to low voltage with ignition ON or if DTC memory is erased.

⇒ *Repair Manual, 2.0 Liter 4-Cyl. 2V Fuel Injection & Ignition, Engine Code(s): AVH, Repair Group 01*

If specification "Cat B1 OK" obtained:

Rapid data transfer

HELP

Select function XX

- Press → button.



Display will appear as shown

- Press 0 and 6 buttons to select Function 06: "End transfer".

- Press Q button to enter input.