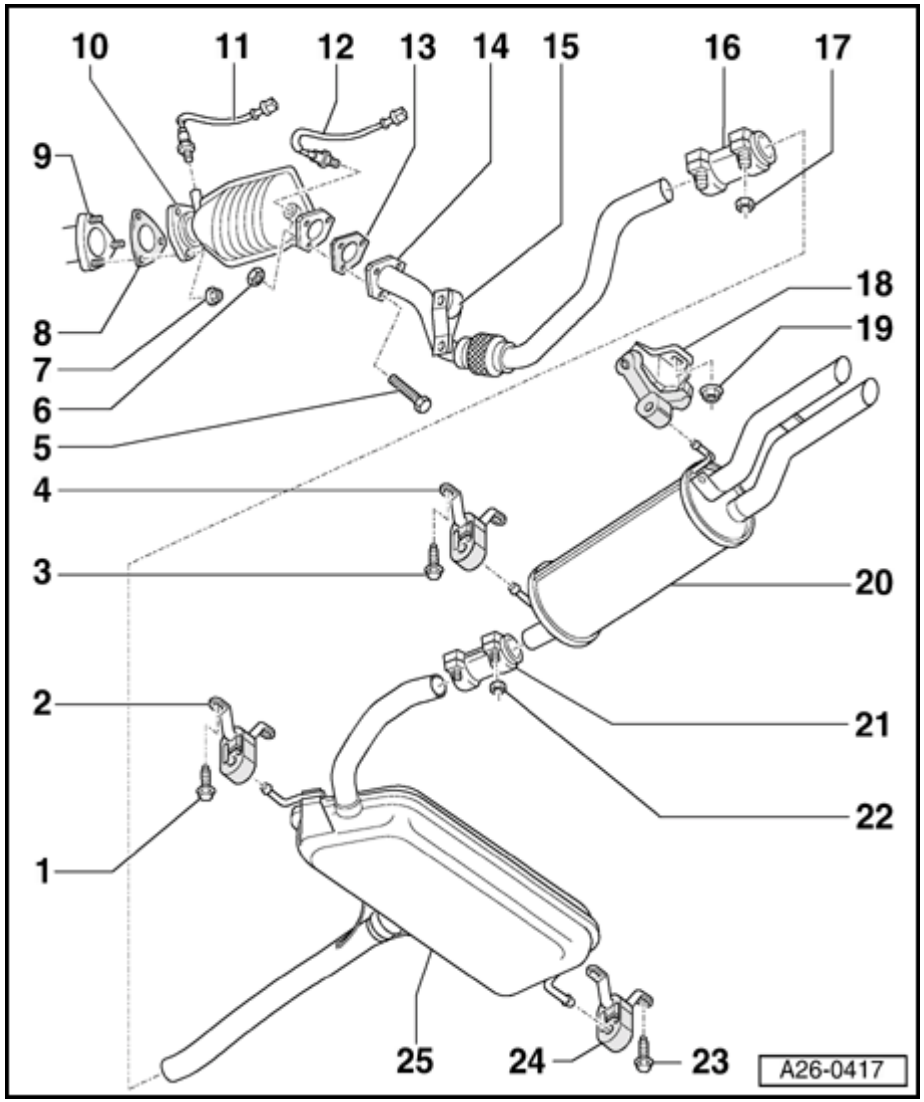
26-1

Exhaust system components, removing and installing

Note:

- *Always replace seals, gaskets and self-locking nuts.*
- *After working on the exhaust system ensure that the system is not under stress, and that it has sufficient clearance from the bodywork. If necessary, loosen clamps and align mufflers and exhaust pipes so that sufficient clearance is maintained to the bodywork at all points and the mountings are evenly loaded.*
- *The flexible connection in the front exhaust pipe must not be deflected more than 10° or it may be damaged..*

26-2



Vehicles with front-wheel drive

1 - 25 Nm

2 - Mounting

3 - 25 Nm

4 - Mounting

5 - 25 Nm

6 - 25 Nm

- ♦ Replace

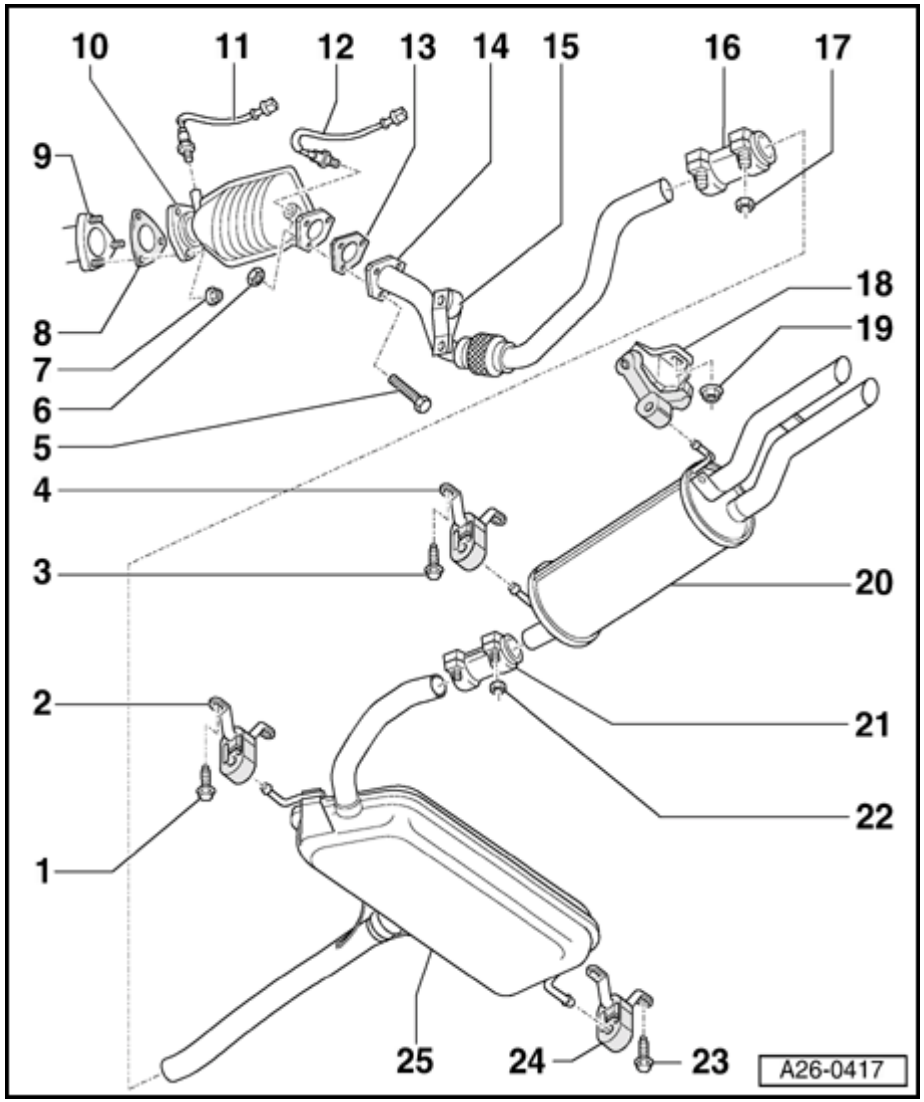
7 - 30 Nm

- ♦ Always replace

8 - Gasket

- ♦ Always replace

26-3



9 - Turbocharger

- Removing and installing ⇒ Page 21-51

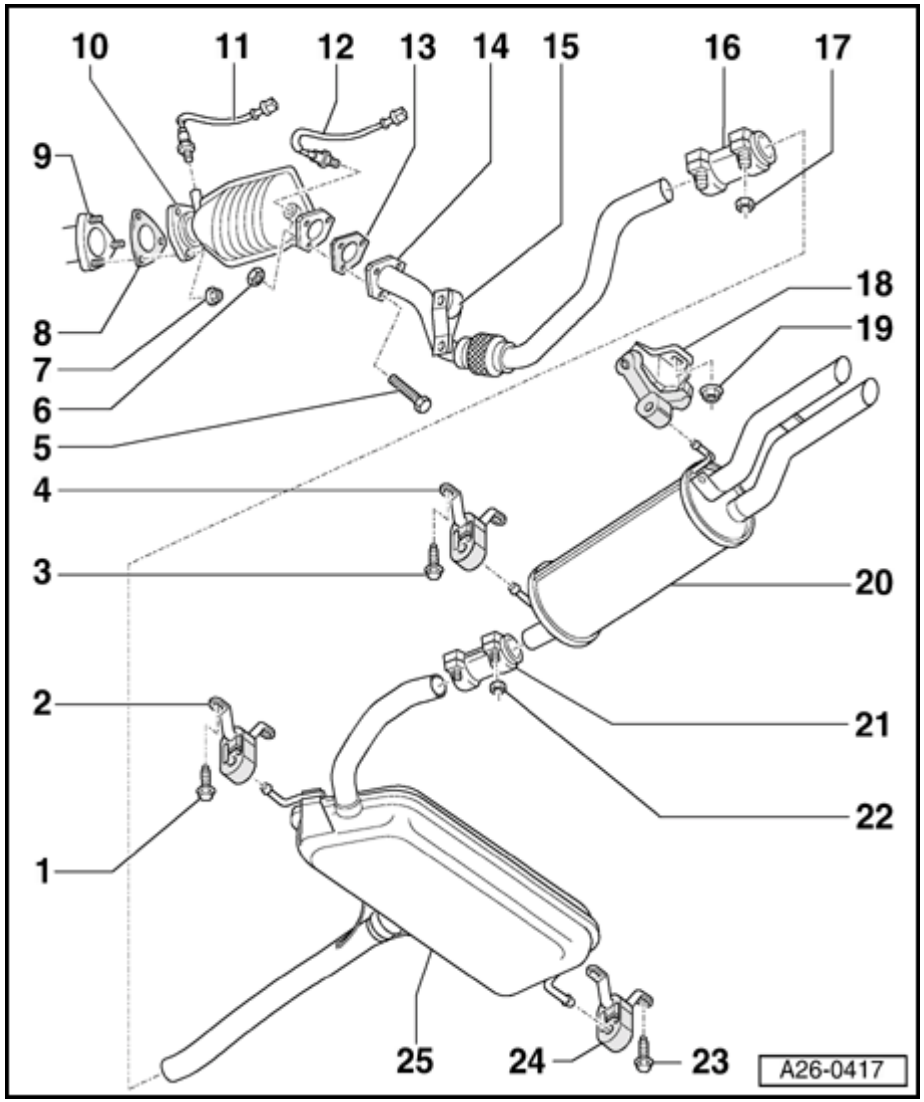
10 - Catalytic converter

- Protect from damage by impact
- Removing and installing ⇒ Page 26-27

11 - Oxygen sensor - 55 Nm

- Upstream of catalytic converter
- Grease only the threads with high-temperature lubricant G 052 112 A3. The lubricant must not get into the slots on the sensor body.
- Checking:

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Engine Code(s): AWM, Repair Group 24*



12 - Oxygen sensor - 55 Nm

- Downstream of catalytic converter
- Grease only the threads with high-temperature lubricant G 052 112 A3. The lubricant must not get into the slots on the sensor body.
- Checking:

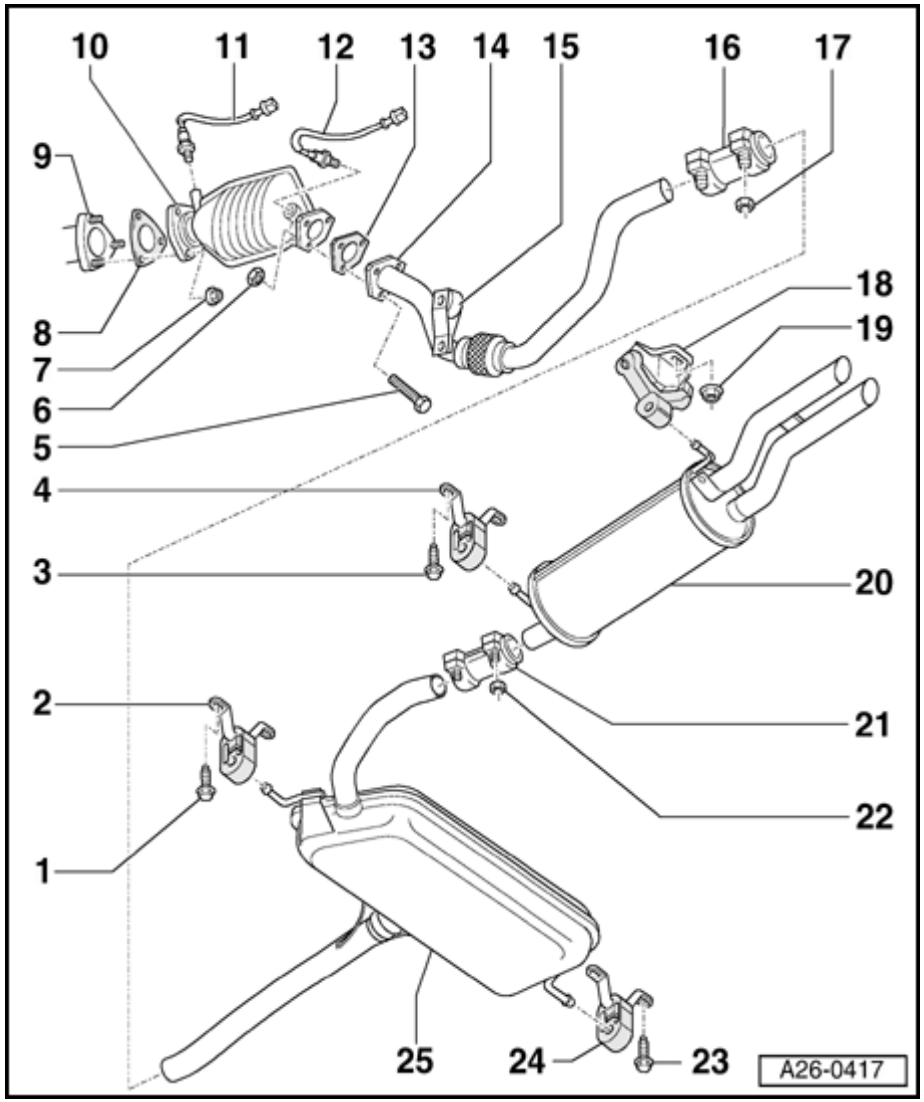
⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Engine Code(s): AWM, Repair Group 24*

13 - Gasket

- Always replace

14 - Front exhaust pipe

- With flexible connection (de coupling element)
- Do not bend flexible connection more than 10° - otherwise it can be damaged.
- Removing and installing ⇒ Page 26-32
- Align exhaust system so it is free of stress before tightening clamp ⇒ Page 26-34



15 - Mounting

- Individual parts of mounting for manual transmission⇒Fig. ⇒ 3 , ⇒ Page 26-16
- Individual parts of mounting for automatic 5 speed transmission ⇒Fig. ⇒ 4 , ⇒ Page 26-17

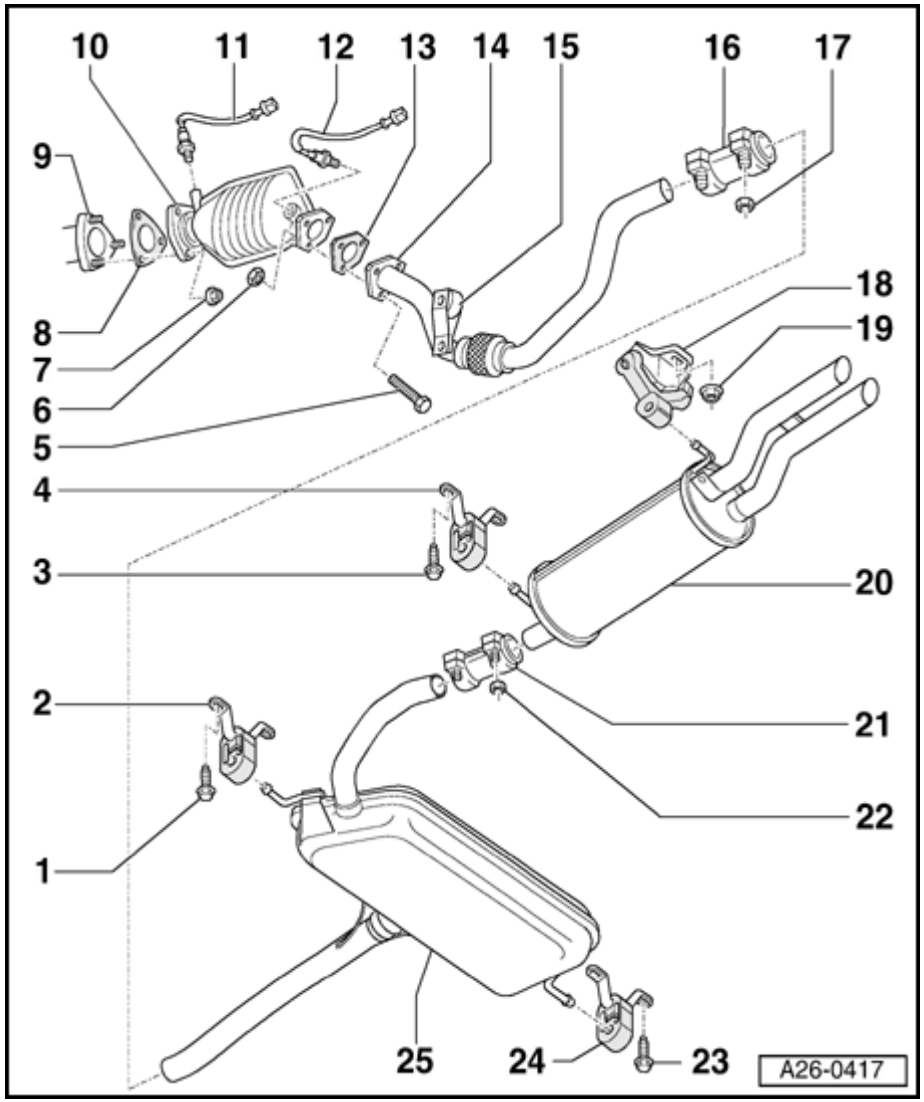
16 - Front clamp

- Align exhaust system so it is free of stress before tightening clamp ⇒ Page 26-34
- Installation position ⇒Fig. ⇒ 1 , ⇒ Page 26-8
- Tighten bolted connections evenly.

17 - 40 Nm

18 - Mounting

19 - 25 Nm

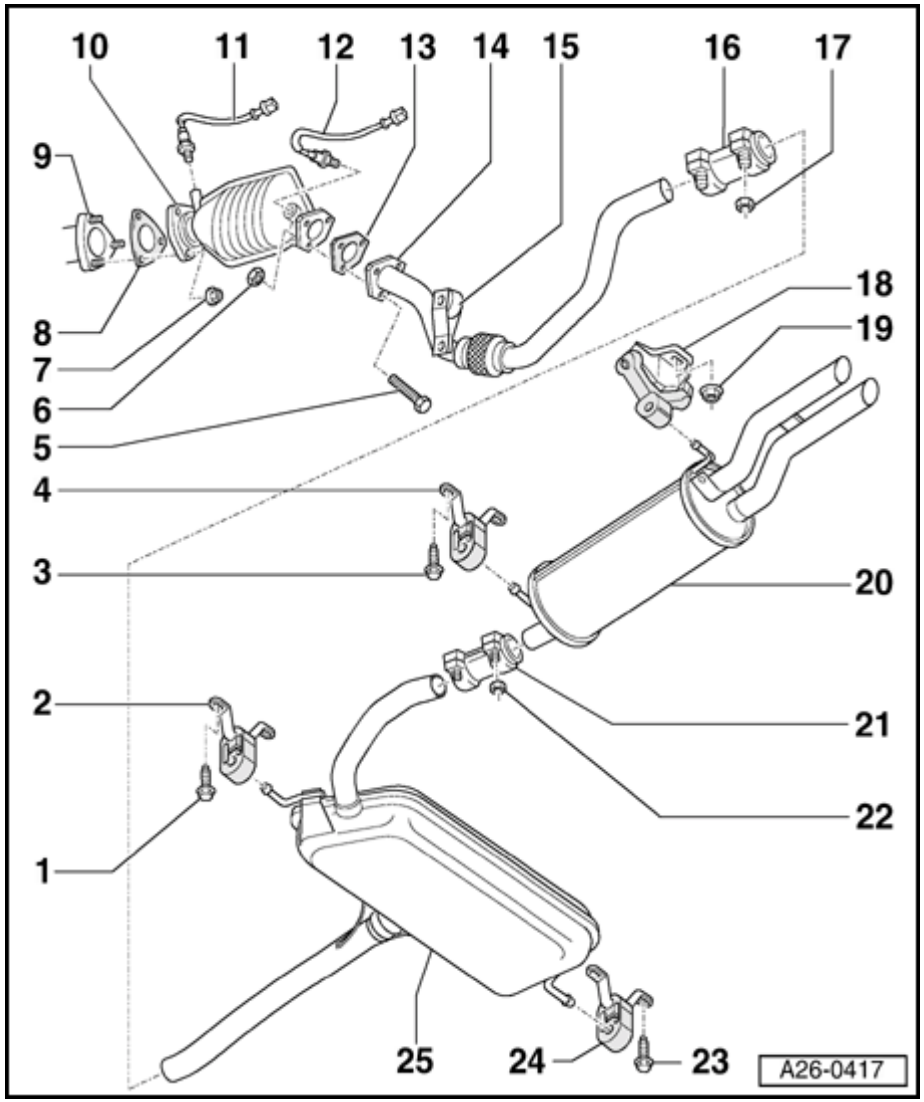


20 - Rear muffler

- Rear and center mufflers are one unit as original equipment. In cases of repair replace individually
- Cutting point ⇒ Page 26-19
- Align exhaust system so it is free of stress before tightening clamp ⇒ Page 26-34

21 - Rear clamp

- For separate replacement of center and rear mufflers
- Align exhaust system so it is free of stress before tightening clamp ⇒ Page 26-34
- Installation position ⇒Fig. ⇒ 2 , ⇒ Page 26-8
- Tighten bolted connections evenly.



22 - 40 Nm

23 - 25 Nm

24 - Mounting

25 - Center muffler

- Center and rear mufflers are one unit as original equipment. In cases of repair replace individually
- Cutting point ⇒ Page 26-19
- Align exhaust system so it is free of stress before tightening clamp ⇒ Page 26-34

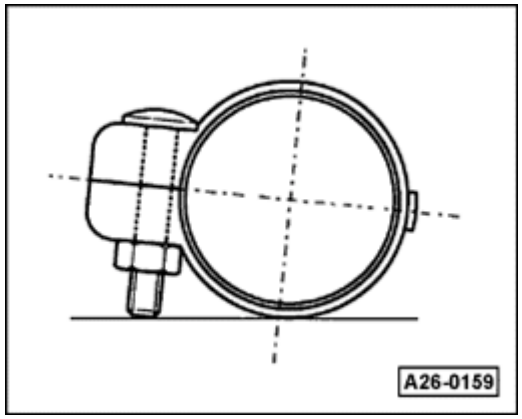


Fig. 1 Installation position of front clamp

- Align clamps so that ends of bolts do not protrude over lower edge of clamp.
  - ♦ Bolted connection facing to the left

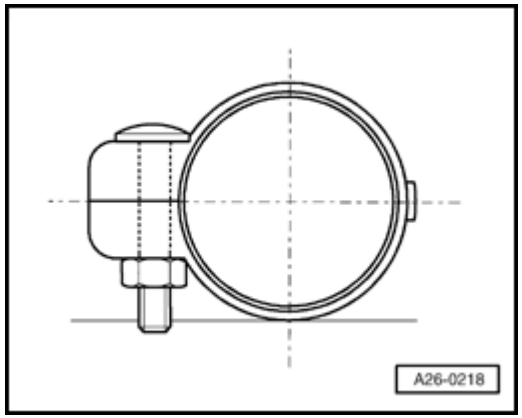
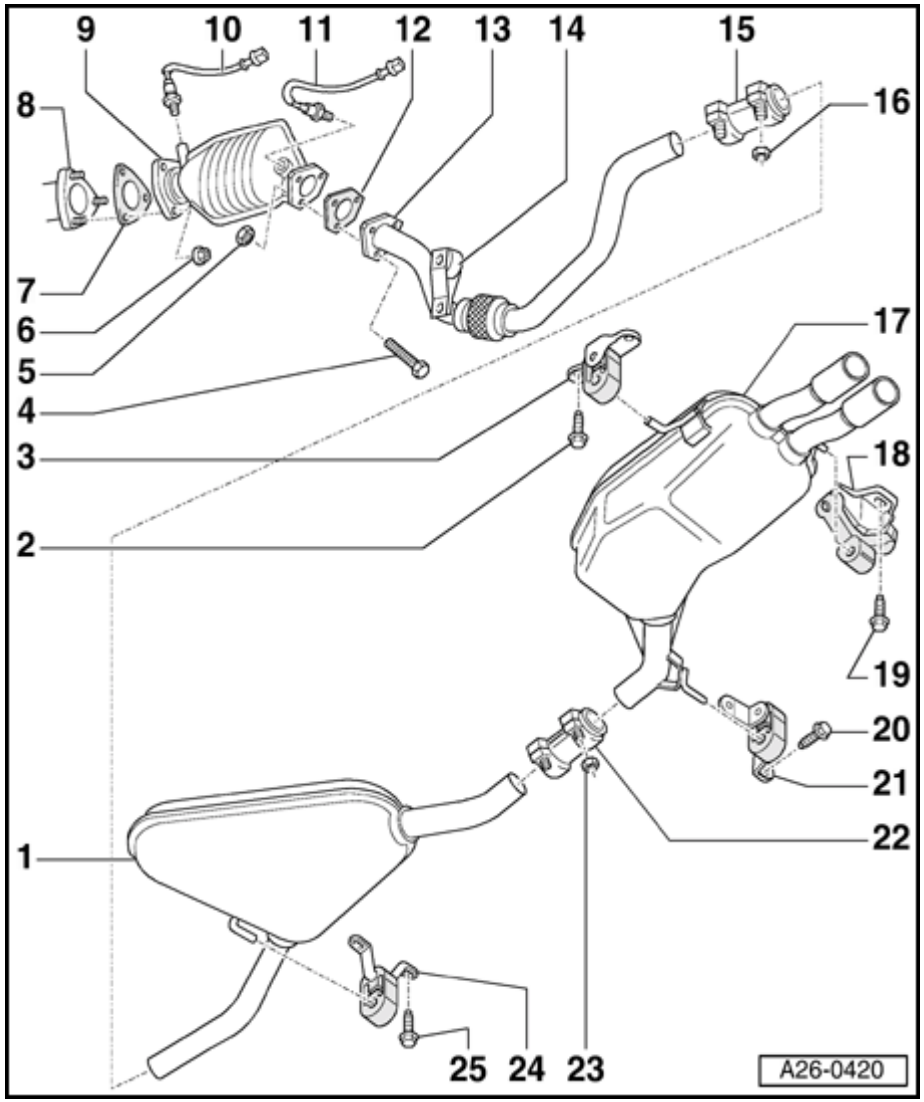


Fig. 2 Installation position of rear clamp

- Install clamp in horizontal position.
  - ♦ Bolted connection facing to the left



Vehicles with all-wheel drive

1 - Center muffler

- Center and rear mufflers are one unit as original equipment. In cases of repair replace individually
- Cutting point ⇒ Page 26-20
- Align exhaust system so it is free of stress before tightening clamp ⇒ Page 26-37

2 - 25 Nm

3 - Mounting

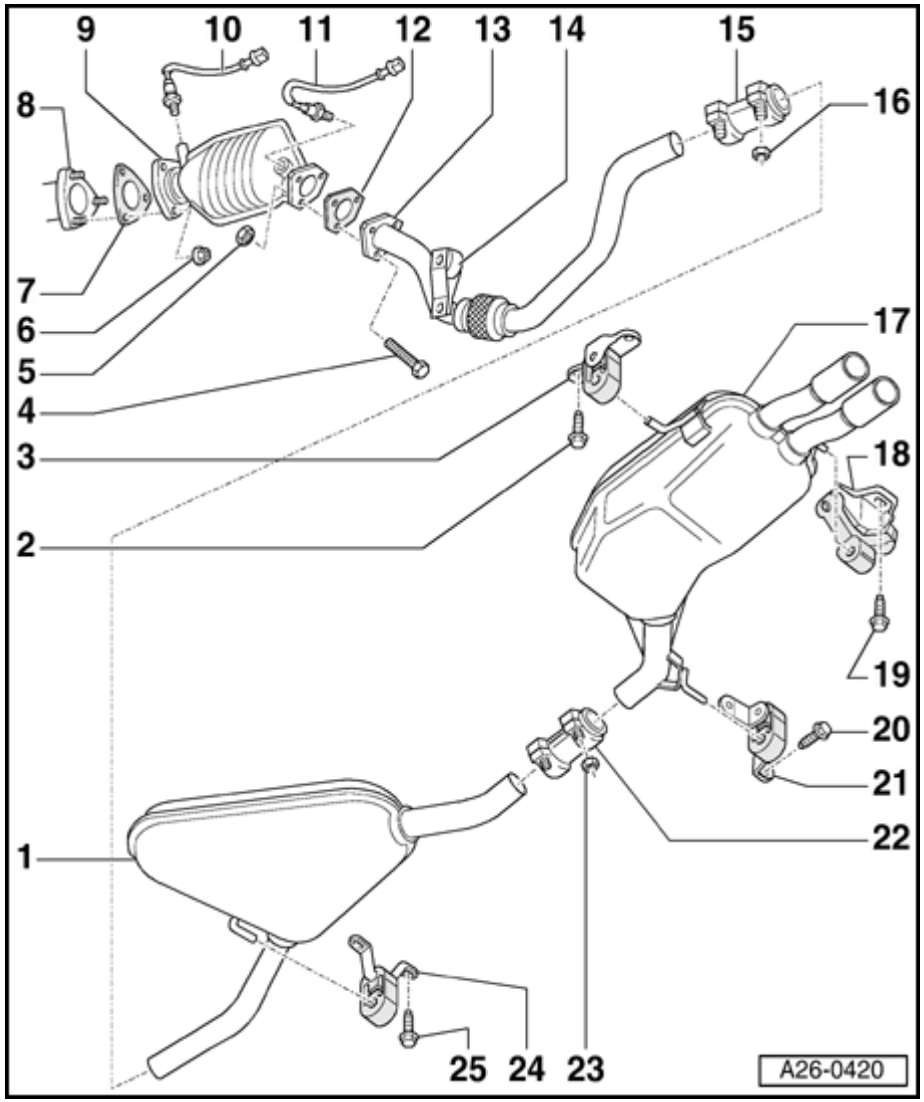
4 - 25 Nm

5 - 25 Nm

- Always replace

6 - 30 Nm

- Always replace



7 - Gasket

- Always replace

8 - Turbocharger

- Removing and installing ⇒ Page 21-51

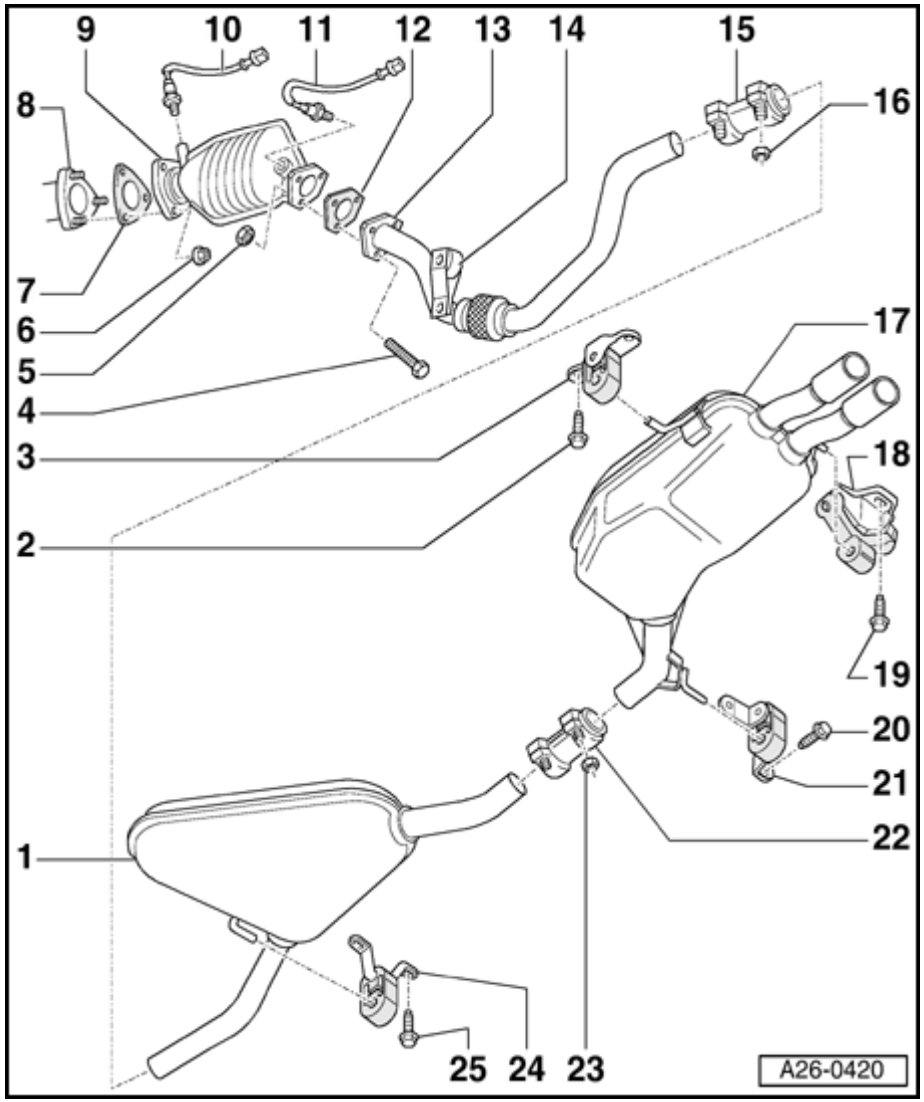
9 - Catalytic converter

- Protect from damage by impact
- Removing and installing ⇒ Page 26-27

10 - Oxygen sensor - 55 Nm

- Upstream of catalytic converter
- Grease only the threads with high-temperature lubricant G 052 112 A3. The lubricant must not get into the slots on the sensor body.
- Checking:

⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Engine Code(s): AWM, Repair Group 24*



11 - Oxygen sensor - 55 Nm

- Downstream of catalytic converter
- Grease only the threads with high-temperature lubricant G 052 112 A3. The lubricant must not get into the slots on the sensor body.
- Checking:

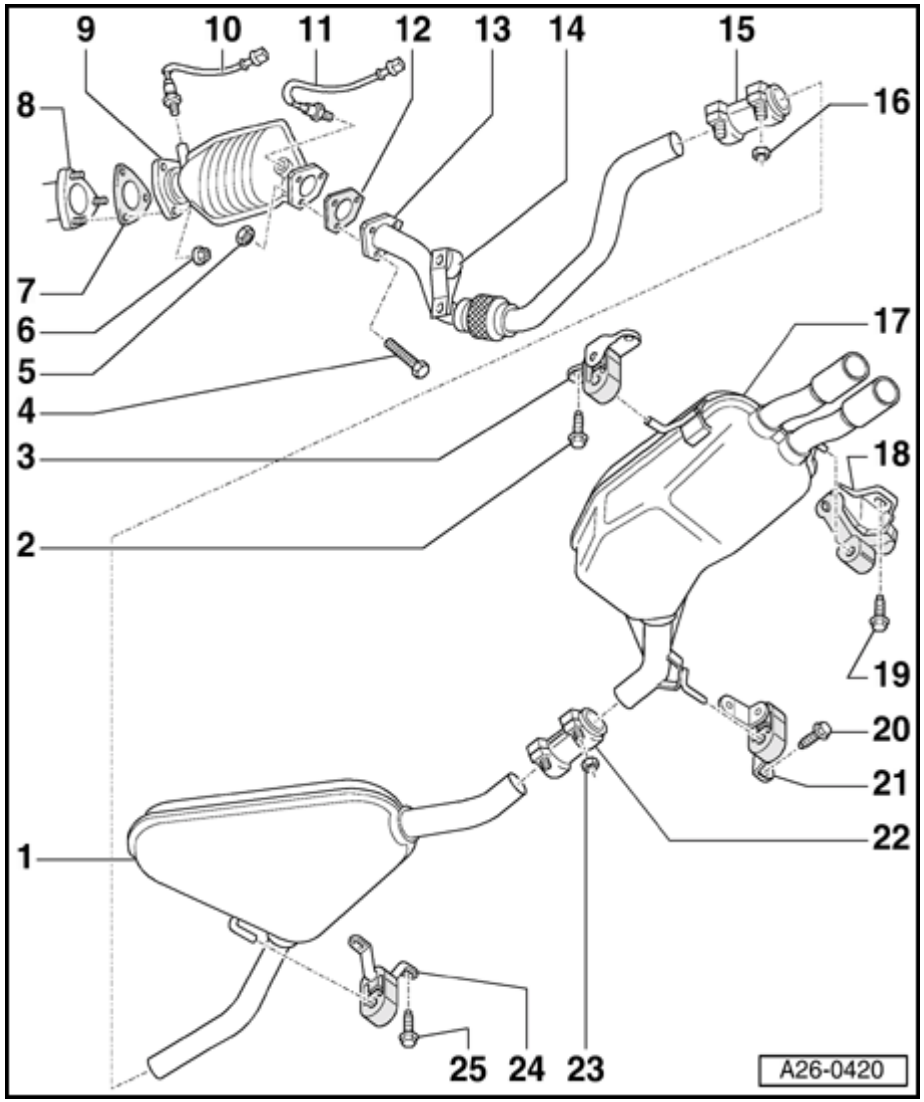
⇒ *Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Engine Code(s): AWM, Repair Group 24*

12 - Gasket

- Always replace

13 - Front exhaust pipe

- With flexible connection (de coupling element)
- Do not bend flexible connection more than 10° - otherwise it can be damaged.
- Removing and installing ⇒ Page 26-32
- Align exhaust system so it is free of stress before tightening clamp ⇒ Page 26-37



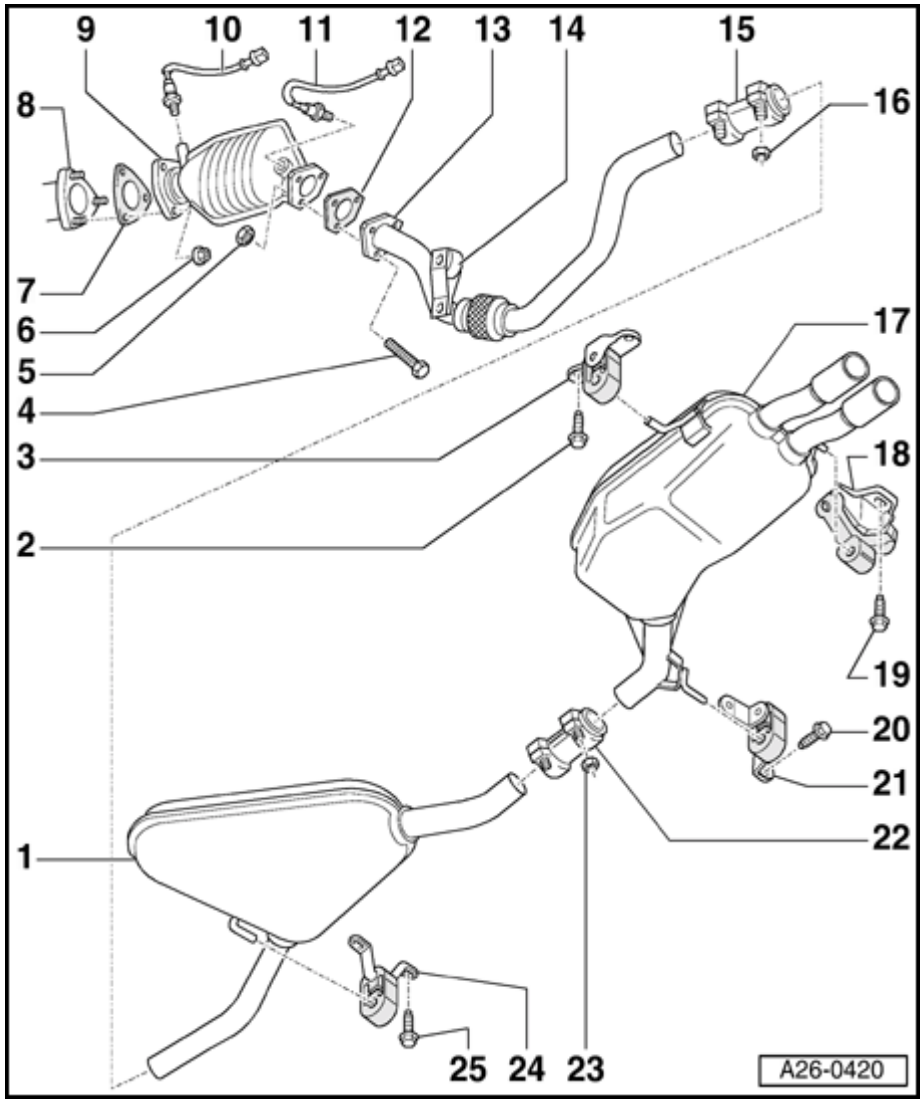
14 - Mounting

- Individual parts of mounting for manual transmission⇒Fig. ⇒ 3 , ⇒ Page 26-16
- Individual parts of mounting for automatic transmission ⇒Fig. ⇒ 4 , ⇒ Page 26-17

15 - Front clamp

- Align exhaust system so it is free of stress before tightening clamp ⇒ Page 26-37
- Installation position ⇒Fig. ⇒ 1 , ⇒ Page 26-15
- Tighten bolted connections evenly

16 - 40 Nm



17 - Rear muffler

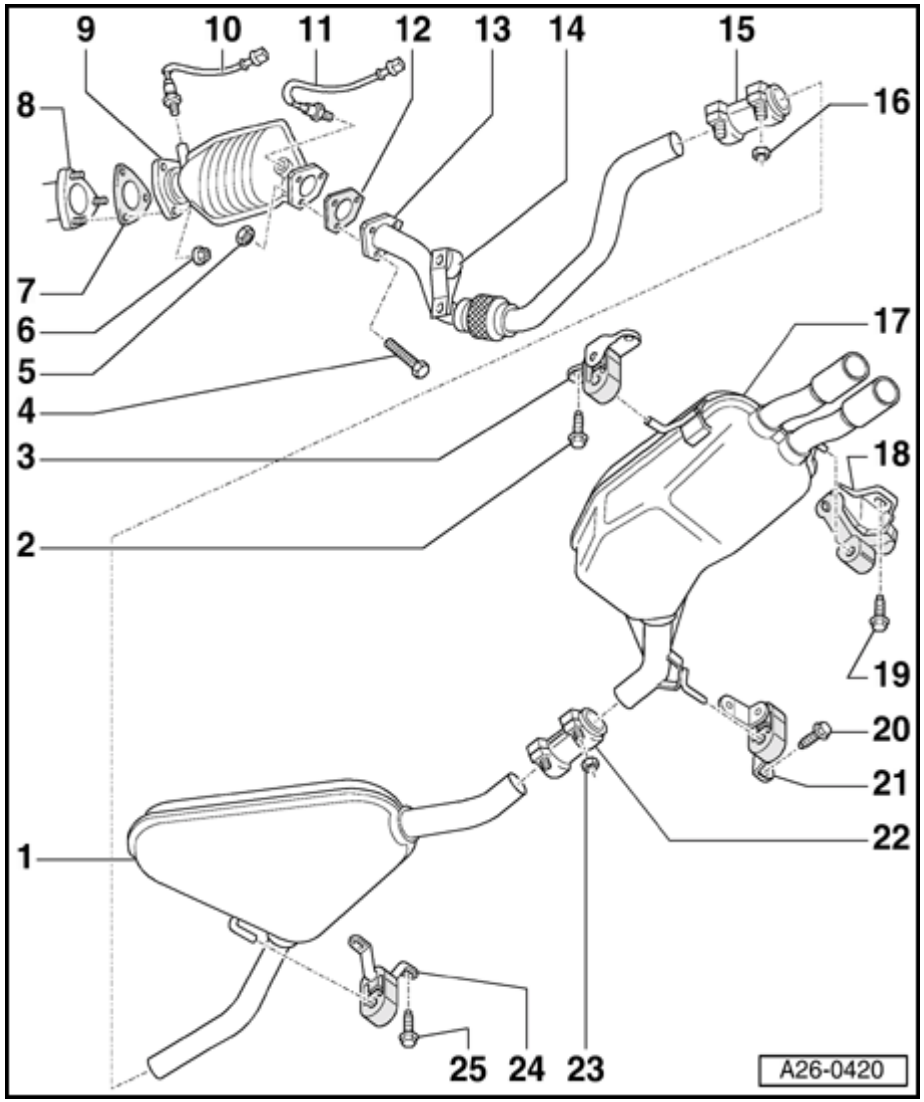
- Rear and center mufflers are one unit as original equipment. In cases of repair replace individually
- Cutting point ⇒ Page 26-20
- Align exhaust system so it is free of stress before tightening clamp ⇒ Page 26-37

18 - Mounting

19 - 25 Nm

20 - 25 Nm

21 - Mounting



22 - Rear clamp

- For separate replacement of center and rear mufflers
- Align exhaust system so it is free of stress before tightening clamp ⇒ Page 26-37
- Installation position ⇒Fig. ⇒ 2 , ⇒ Page 26-15
- Tighten bolted connections evenly

23 - 40 Nm

24 - Mounting

25 - 25 Nm

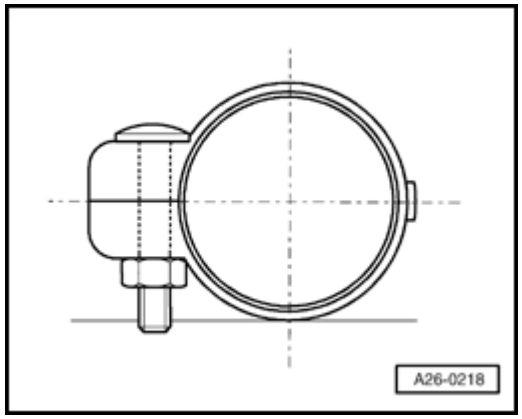


Fig. 1 Installation position of front clamp

- Install clamp in horizontal position.
  - ♦ Bolted connection facing to the left

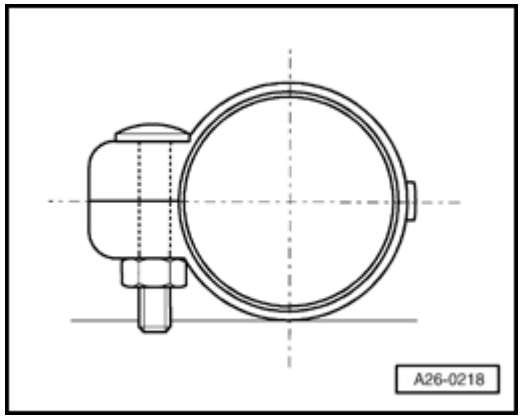


Fig. 2 Installation position of rear clamp

- Install clamp in horizontal position.
  - ♦ Bolted connection facing to the left

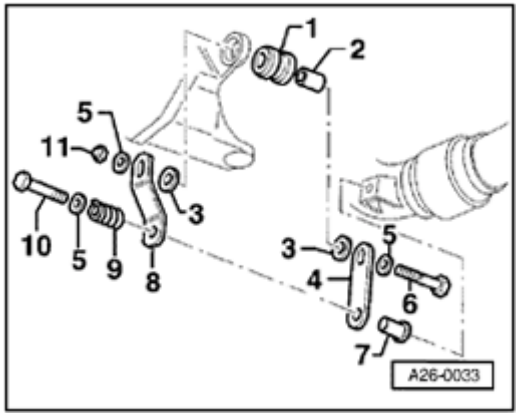


Fig. 3 Individual parts of mounting for vehicles with manual transmission

1 - Buffer

2 - Spacer pipe

3 - Washer

4 - Lug, right

5 - Disc

6 - Bolt - 25 Nm

7 - Spacer

8 - Lug, left

9 - Compression spring

10 - Bolt - 25 Nm

11 - Nut, self-locking - 25 Nm

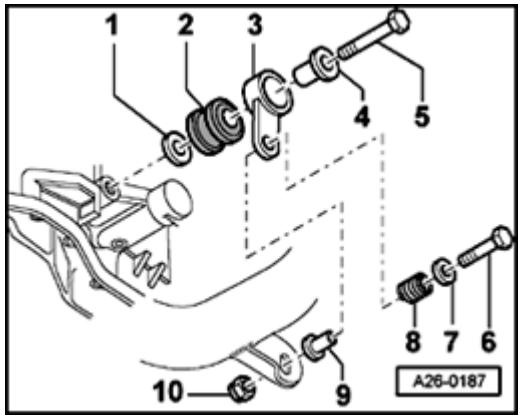


Fig. 4 Individual parts of mounting for vehicles with automatic transmission

1 - Disc

2 - Buffer

3 - Link

4 - Spacer

5 - Bolt - 25 Nm

6 - Bolt

7 - Disc

8 - Compression spring

9 - Spacer

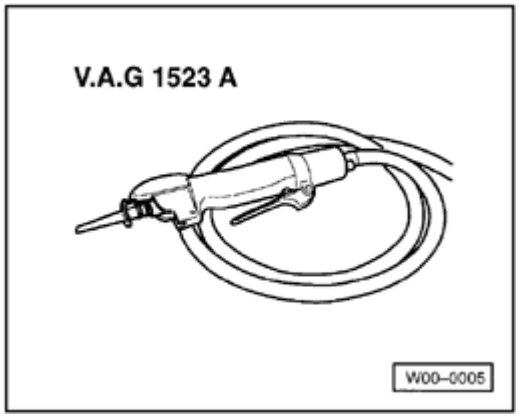
10 - Nut, self-locking - 25 Nm

Center and rear mufflers, separating

For individual replacement of the center or rear muffler, a cutting point is marked on the connecting pipe.

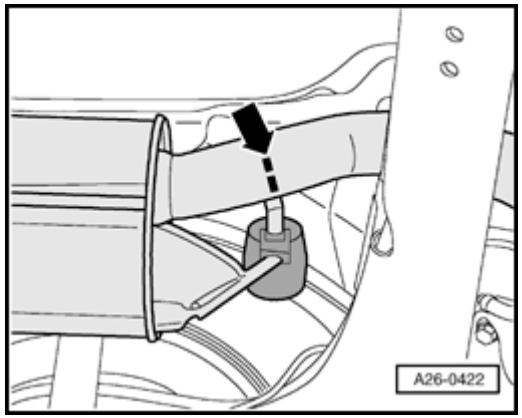
The cutting point is marked with an indentation on the outside of the exhaust pipe.

Special tools and equipment



- Body saw VAG 1523 A
- Protective goggles

Vehicles with front wheel drive:

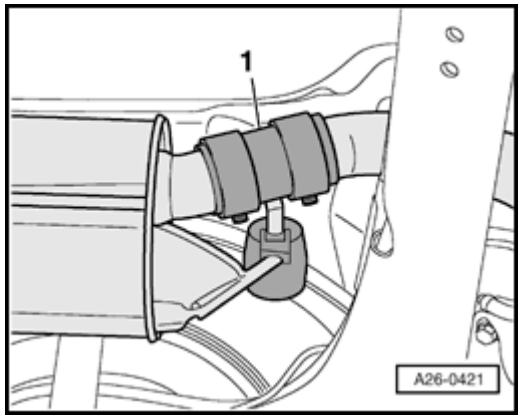


- Cut exhaust pipe at right angles using body saw, e.g. VAG 1523 A, at position marked -arrow-.

WARNING!

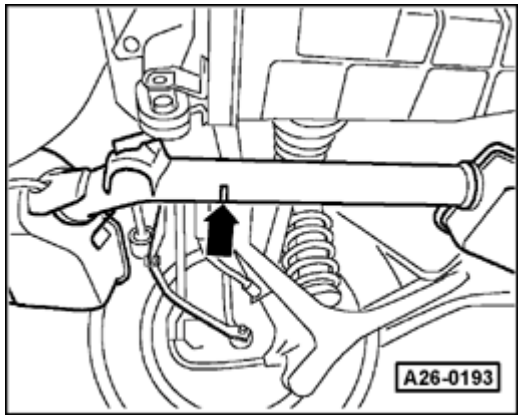
Wear protective goggles.

- When installing, position clamp centrally over saw cut.



- ♦ Installation position of clamp -1-: Horizontally, bolted connections face rear left wheel ⇒ Fig. ⇒ 2 , ⇒ Page 26-8
- Ensure exhaust system is aligned stress-free ⇒ Page 26-34 .
- Tighten bolted connections on clamp evenly to 40 Nm.

Vehicles with all-wheel drive:

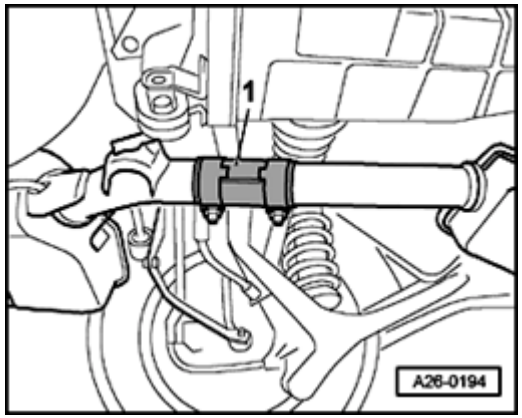


- Cut exhaust pipe at right angles using body saw, e.g. VAG 1523 A, at position marked -arrow-.

WARNING!

Wear protective goggles.

- When installing, position clamp centrally over saw cut.



- ♦ Installation position of clamp -1-: Horizontally, bolted connections face rear left wheel ⇒ Fig. ⇒ 2 , ⇒ Page 26-15
- Ensure exhaust system is aligned stress-free ⇒ Page 26-37 .
- Tighten bolted connections on clamp evenly to 40 Nm.

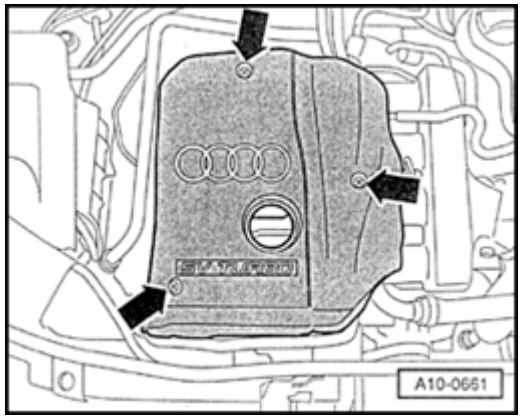
26-21

Exhaust manifold, removing and installing

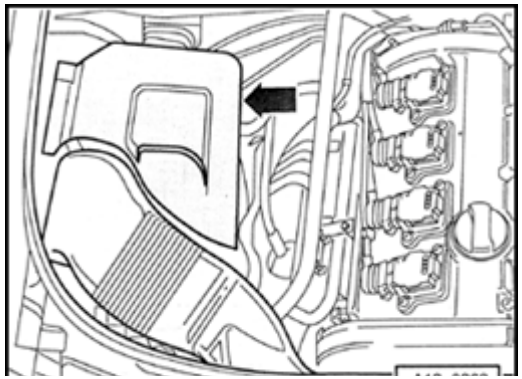
Removing

Note:

The flexible connection in the front exhaust pipe must not be deflected more than 10° or it may be damaged.

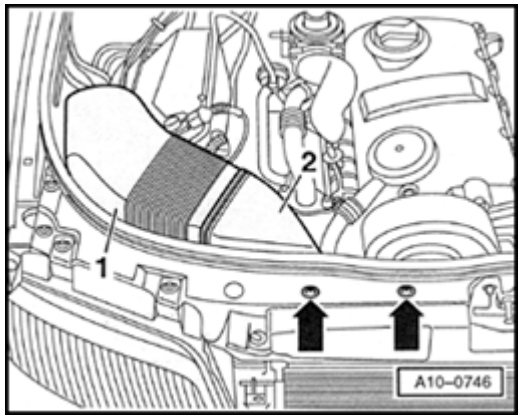


- Remove engine cover panel -arrows-.

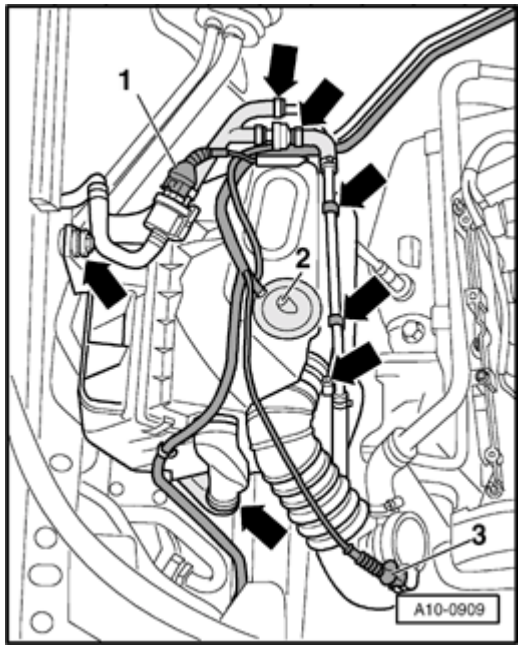


- Remove air filter cover -arrow-.

26-22



- Remove bolts -arrows-.
- Remove air duct -1- and -2-.



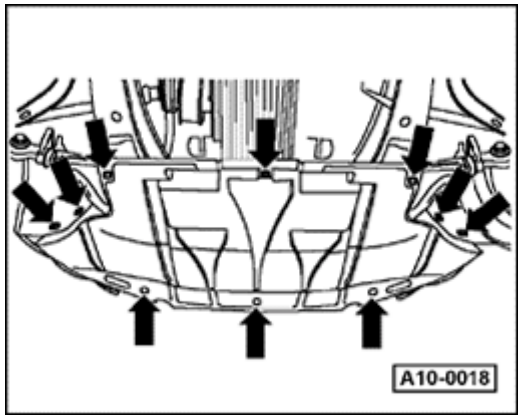
- Disconnect wiring connectors as follows:

1 - on ACF valve (in addition, remove ACF valve from air filter housing)

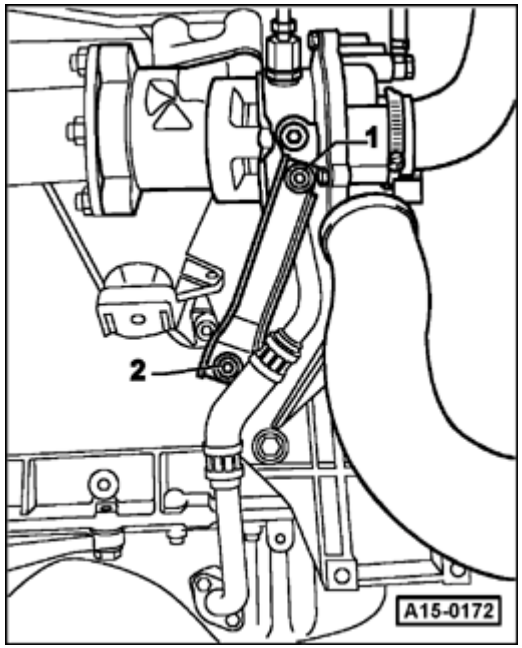
2 - on mass air flow sensor

3 - on Wastegate Bypass Regulator valve -N75-

- Remove hose connections, move wiring aside and remove air filter housing -arrows-.

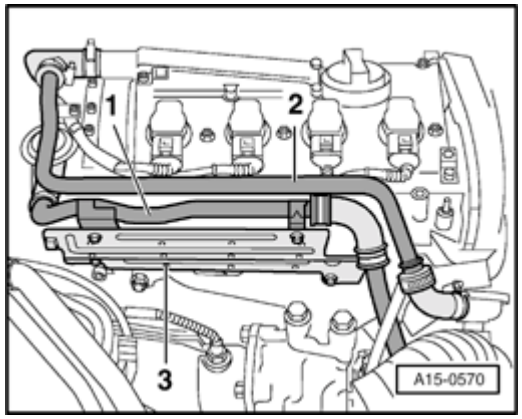


- Remove sound insulation -arrows-.

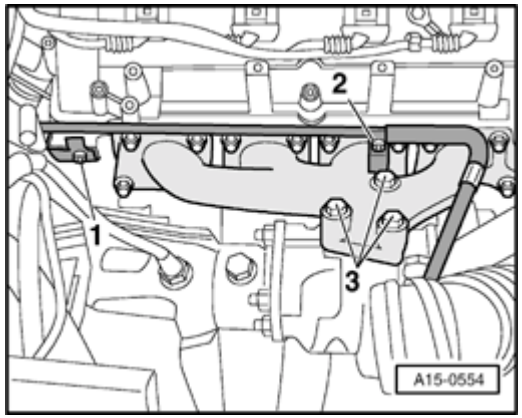


- Loosen bolts -1- and -2- by several turns.

26-24

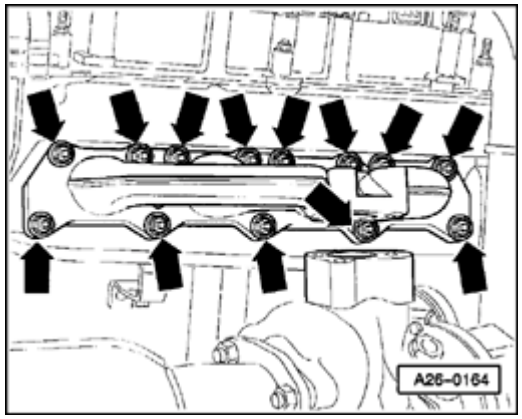


- Remove front hose from line of crankcase vent -2-.
- Disconnect front hose from line -1- of secondary air inlet.
- Remove heat shield -3-.



- Remove bolts -1- and -2- of oil feed line.
- Remove bolts -3- for exhaust turbocharger.
- Remove seal between exhaust turbocharger and exhaust manifold.
- Plug opening in suction duct of turbocharger with a clean cloth.

26-25



- Remove all nuts -arrows- on exhaust manifold.
- Remove washers and exhaust manifold.

Installing

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

Note:

Always replace seals, gaskets and self-locking nuts.

- Adhere to the following sequence:
  - Exhaust manifold to cylinder head
  - Exhaust turbocharger on exhaust manifold
  - Turbocharger bracket to cylinder block
  - Turbocharger bracket to turbocharger

Tightening torques

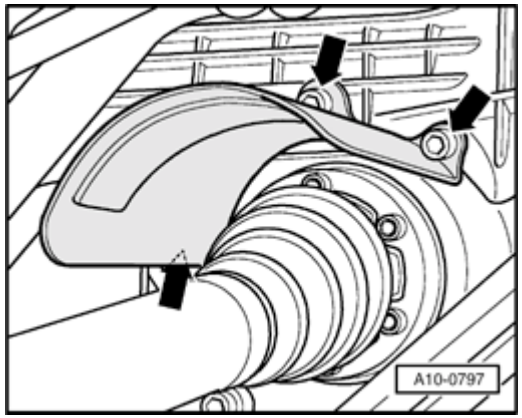
Component	Nm
Exhaust manifold to cylinder head	30
Turbocharger to exhaust manifold	35 1) 2)
Turbocharger bracket to cylinder block	25
Turbocharger bracket to turbocharger	30
Oil feed line to cylinder head	23
Line of crankcase vent to cylinder head	10
Hose clamps for air duct hoses	3.5

1) Replace bolts

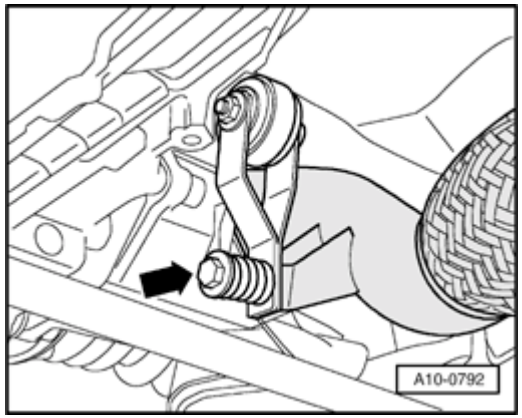
2) Coat thread and head attachment area with high temperature lubricant "G 052 112 A3"

Catalytic converter, removing and installing

Removing



- Remove heat shield -arrows- above right-hand drive shaft.
- Loosen bolted connection front exhaust pipe/catalytic converter accessible from below.

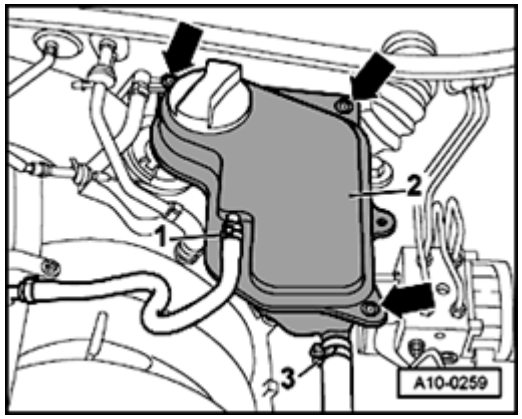


- Remove bolt for transmission bracket to exhaust system -arrow-.

Note:

The flexible connection in the front exhaust pipe must not be deflected more than 10° to avoid damage.

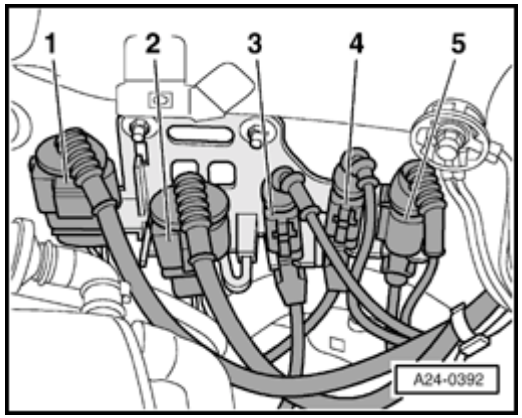
26-28



- Unbolt coolant expansion tank -2-, -arrows-.
- Disconnect wire to Engine Coolant level (ECL) Warning switch -F66- and move coolant expansion tank to one side.

Note:

Coolant hoses -1- and -3- do not have to be disconnected.

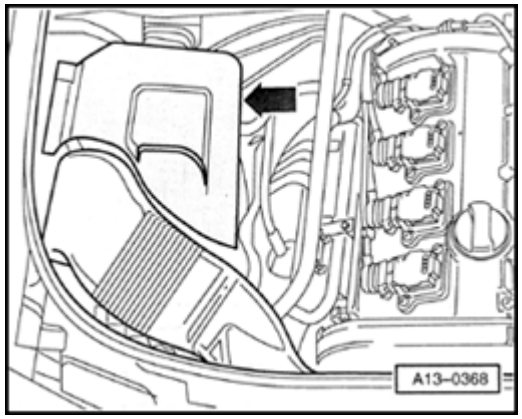


- Disconnect wiring connector for oxygen sensors and move wiring aside.

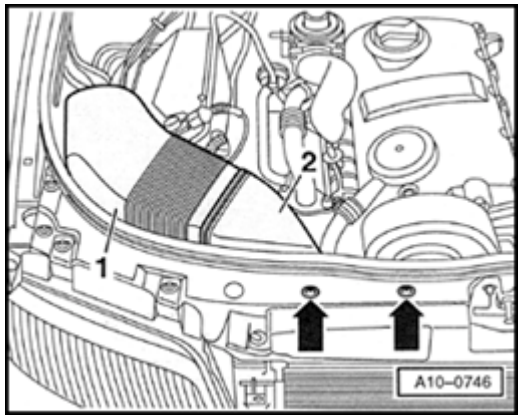
1 - (brown) to oxygen sensor downstream of catalytic converter -G130-

2 - (black) to oxygen sensor upstream of catalytic converter -G39-

26-29

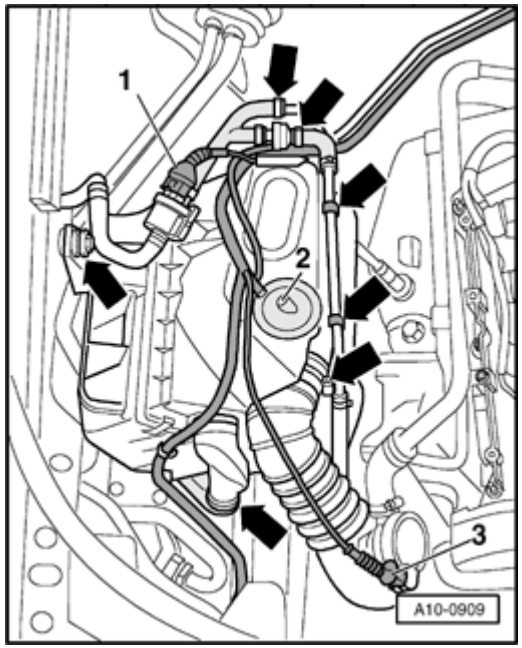


- Remove air filter cover -arrow-.



- Remove bolts -arrows-.
- Remove air duct -1- and -2-.

26-30



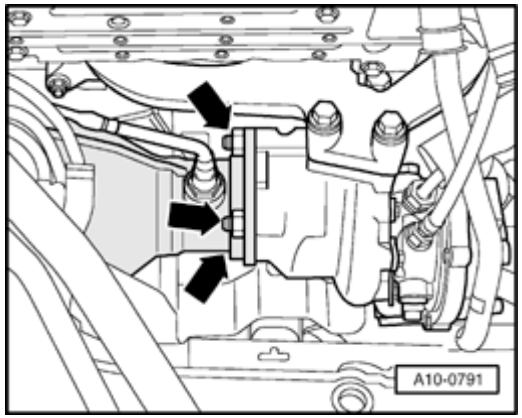
- Disconnect wiring connectors as follows:

1 - on ACF valve (in addition, remove ACF valve from air filter housing)

2 - on mass air flow sensor

3 - on Wastegate Bypass Regulator valve -N75-

- Disconnect hose connections, move wiring aside and remove air filter housing -arrows-.
- Loosen bolted connection of front exhaust pipe/catalytic converter accessible from above.



- Undo bolts -arrows- of exhaust turbocharger/catalytic converter.
- Remove catalytic converter upward.

Installing

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

Note:

Always replace seals, gaskets and self-locking nuts.

- Grease threads of oxygen sensors with high temperature lubricant G 052 112 A3. Apply lubricant only to threads of sensors; the lubricant must not get into the slots on the sensor body.

- Align exhaust system stress-free ⇒ Page 26-34 or ⇒ Page 26-37 .

Tightening torques

Components	Nm
Oxygen sensor to catalytic converter	55
Catalytic converter to exhaust turbocharger	30
Front exhaust pipe to catalytic converter	25
Front exhaust pipe to mountings on transmission	25
Heat shield to transmission	23
Hose clamps for air duct hoses	

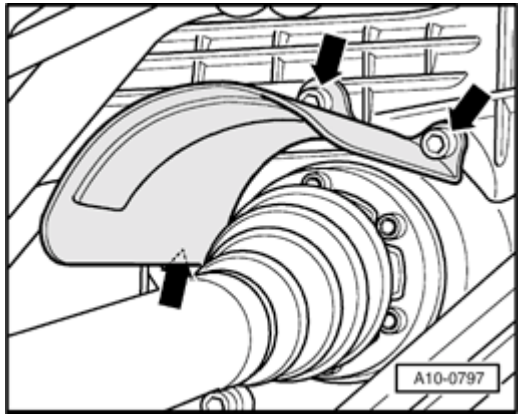
	3.5

26-32

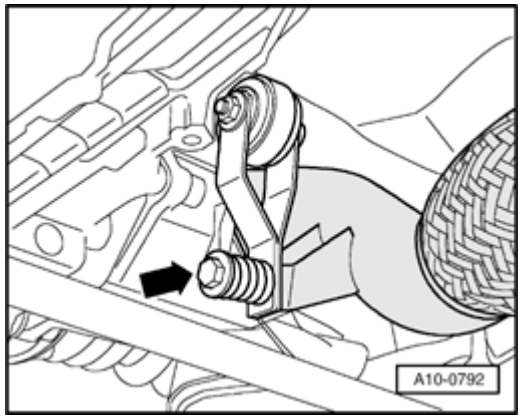
Front exhaust pipe, removing and installing

Removing

- Loosen bolted connection of front exhaust pipe/catalytic converter accessible from above.

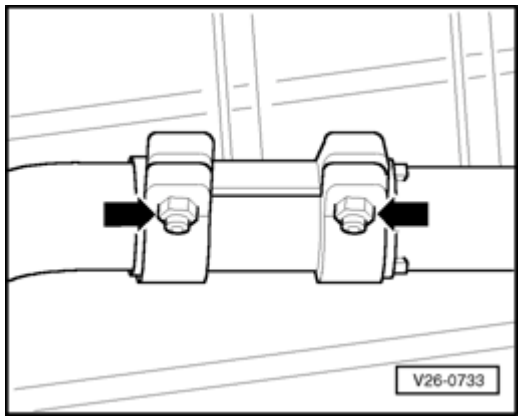


- Remove heat shield -arrows- above right-hand drive shaft.
- Remove crosspiece for underfloor.



- Unbolt transmission bracket for exhaust system -arrow-.

26-33



Note:

The flexible connection in the front exhaust pipe must not be deflected more than 10° or it may be damaged.

- Separate exhaust system at clamp -arrows-.
- Loosen bolted connection of front exhaust pipe/catalytic converter accessible from below.
- Remove front exhaust pipe.

Installing

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

Note:

Always replace seals, gaskets and self-locking nuts.

- Align exhaust system stress-free ⇒ Page 26-34 or ⇒ Page 26-37 .

Tightening torques

Components	Nm
Front exhaust pipe to catalytic converter	25
Crosspiece for underbody to body	20
Heat shield to transmission	23

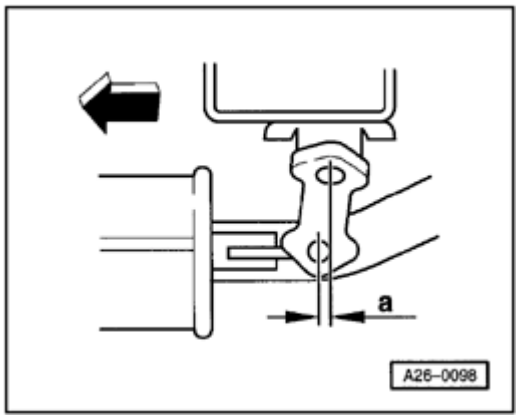
26-34

Stress-free alignment of the exhaust system - Vehicles with front wheel drive

Vehicles without clamp between center muffler and rear muffler

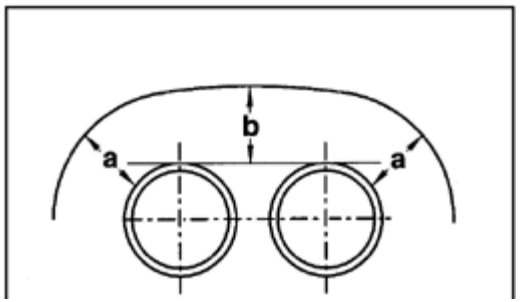
- The exhaust system must be aligned when cold.

- Loosen bolted connections on front clamp -Item 16 -, ⇒ Page 26-5 .



- Push exhaust system toward front of vehicle -arrow- so that rear mounting of rear muffler is pre-loaded by amount -a- = 9 to 11 mm.
- Tighten bolted connections on clamp evenly to 40 Nm.

Aligning tailpipes



Align tailpipes so that the distance -a- is the same on both sides.

At the same time, distance -b- must be obtained between the bumper cut-out and the tailpipe:

- Dimension b = min. 24 mm

26-35

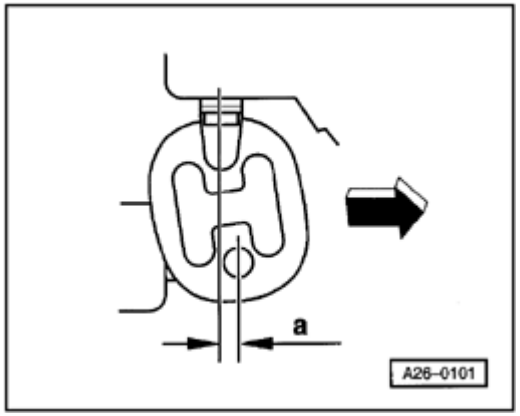
Vehicles with clamp between center muffler and rear muffler

- The exhaust system must be aligned when cold.

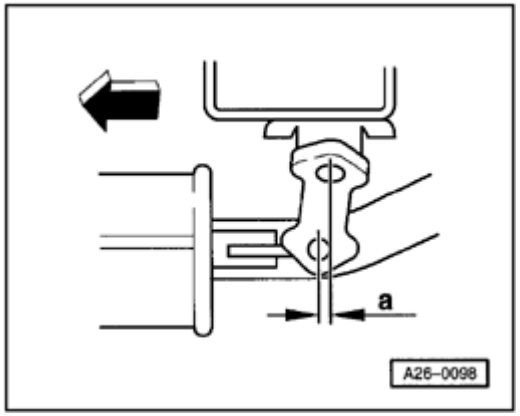
Note:

It is only necessary to additionally align the center muffler on vehicles with a clamp installed between the center and rear mufflers.

- Loosen bolted connections on front -Item 16 -, ⇒ Page 26-5 and rear clamps -Item 21 -, ⇒ Page 26-6 .

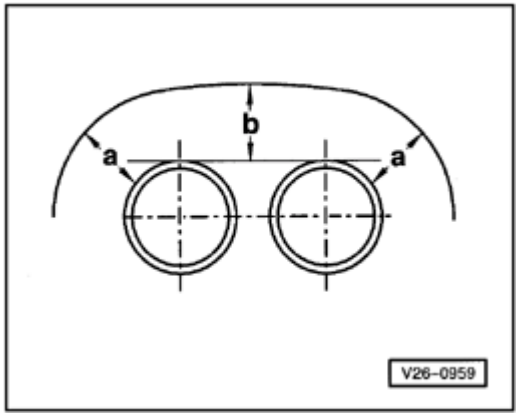


- Push front section of exhaust system toward front of vehicle -arrow- until preloading at right-hand mounting of center muffler is -a- = 7 to 9 mm.
- Tighten bolts on front clamp -Item 16 -, ⇒ Page 26-5 evenly to 40 Nm.



- Push rear part of exhaust system towardsfront of vehicle -arrow- so that rear mounting on rear muffler is preloaded by -a- = 9 to 11 mm.
- Tighten bolts on rear clamp -Item 21 -, ⇒ Page 26-6 evenly to 40 Nm.

Aligning tailpipes



Align tailpipes so that distance -a- is the same on both sides.

At the same time, distance -b- must be obtained between the bumper cut-out and the tailpipe:

- Dimension b = min. 24 mm

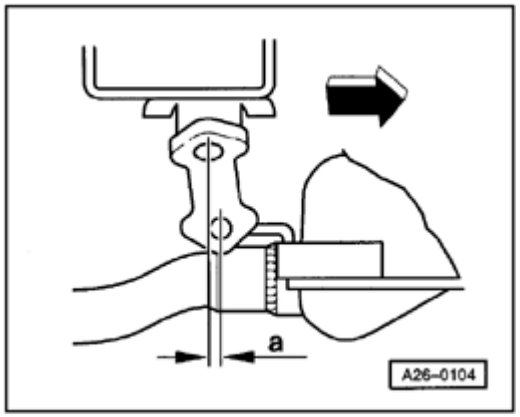
26-37

Stress-free alignment of exhaust system - Vehicles with all-wheel drive

- Vehicles without clamp between centre silencer and rear silencer

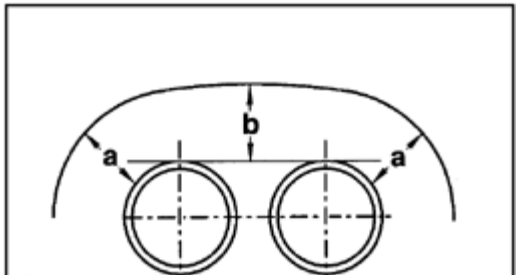
- The exhaust system must be aligned when cold.

- Loosen bolted connections on clamp -Item 15 -, ⇒ Page 26-12



- Push rear silencer towards front of vehicle -arrow- so that rear right mounting on rear silencer is preloaded by a = 9...11 mm.
- Tighten bolted connections on clamp evenly to 40 Nm.

Aligning tailpipes



- Align tailpipes so that distance -a- is the same on both sides.
- At the same time, distance -b- must be obtained between bumper cut-out and tailpipe:
  - Dimension b = min. 24 mm

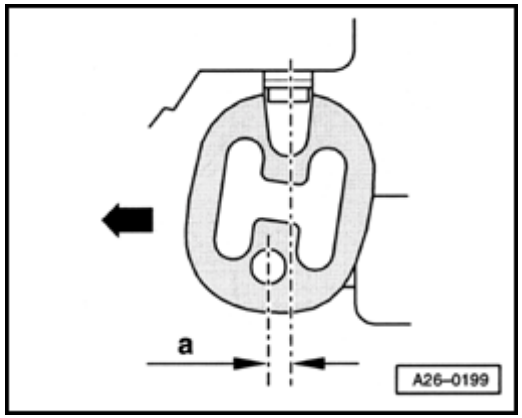
- Vehicles with clamp between centre silencer and rear silencer

- The exhaust system must be aligned when cold.

Note:

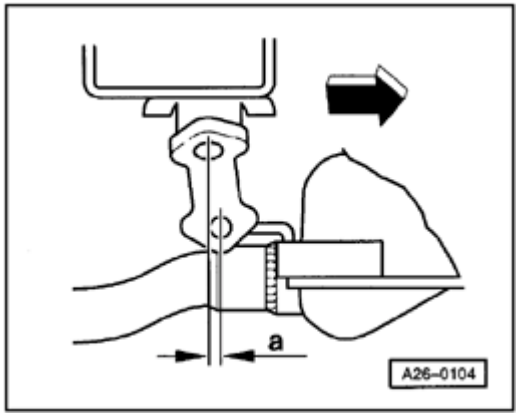
It is only necessary to additionally align the centre silencer on vehicles with clamp fitted between centre silencer and rear silencer.

- Slacken bolted connections on clamp -Item 15 -, ⇒ Page 26-12 and -Item 22 -, ⇒ Page 26-14 .



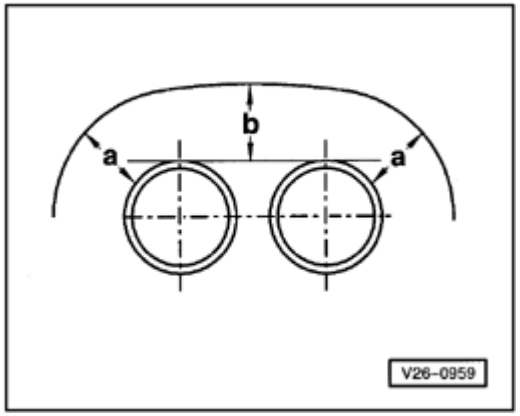
- Push exhaust system towards front of vehicle -arrow- so that rear right mounting on centre silencer is preloaded by a = 7...9 mm.
- Tighten bolts on front clamp -Item 15 -, ⇒ Page 26-12 evenly to 40 Nm.

26-39



- Push rear silencer towards front of vehicle -arrow- so that rear right retainer on rear silencer is preloaded by a = 9...11 mm.
- Tighten bolts on rear clamp -Item 22 -, ⇒ Page 26-14 evenly to 40 Nm.

Aligning tailpipes



- Align tailpipes so that distance -a- is the same on both sides.
- At the same time, distance -b- must be obtained between bumper cut-out and tailpipe:
  - Dimension b = min. 24 mm

Checking exhaust system for leaks

- Start engine and run at idling speed.
- Plug tailpipes with cloths or stoppers, etc. until leakage check is completed.
- Listen for noise at the connection points (cylinder head/manifold, manifold/turbocharger, turbocharger/catalytic converter, etc.) to locate any leaks.
- Repair any leaks that are found.