Air Filter Element, Replacing and Cleaning Housing

Note

♦ Only use silicone-free lubricant for assembling the intake hoses.
♦ Secure all hose connections with hose clamps that match current standard production. Refer to the Parts Catalog.

→ Chapter „Air Filter Housing, Cleaning“.
→ Chapter „6-Cylinder Gasoline Engine 3.0L TFSI“.
→ Chapter „6-Cylinder Diesel Engine 3.0L TDI“.

6-Cylinder Gasoline Engine 3.0L TFSI

Special tools and workshop equipment required

♦ Torque Screwdriver -VAS6494-, measuring range: 1.5 to 3 Nm
♦ Or: Torque Screwdriver -VAG1624-, measuring range 1 to 5 Nm

Tightening Specification Table for Installation:

<table>
<thead>
<tr>
<th>Component / Fastening Element:</th>
<th>[Nm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air filter element screw</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Step 1 - Air Filter Element, Removing:

– Open the clamp -arrow B-.
– Remove the air filter upper section -1- from the retaining pin -arrow A- and remove.
– Remove the bolt -1-.
– Remove the air filter element on the retainer -2- from the catches in the direction of the -arrow-.

**Step 2 - Air Filter Element, Installing**

– Check the housing and water drains for dirt and clean them if necessary. Refer to → Chapter „Air Filter Housing, Cleaning“.

– Align the new air filter element -13- to the air filter lower section catches -17- and push in the catches.

– Install the bolt -14- in the air filter element and tighten to the tightening specification (Tightening Specification
Table for Installation, Refer to → Anchor.

Additional installation procedures occur in reverse order. Make sure that the air filter upper section seals tightly with the air filter lower section.

6-Cylinder Diesel Engine 3.0L TDI

Special tools and workshop equipment required

♦ Torque Screwdriver - VAS6494-, measuring range: 1.5 to 3 Nm
♦ Or: Torque Screwdriver - VAG1624-, measuring range 1 to 5 Nm

Tightening Specification

Table for Installation:

<table>
<thead>
<tr>
<th>Component / Fastening Element:</th>
<th>[Nm]</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

Step 1 - Air Filter Element, Removing:

– Open the clamp -arrow B-.
– Remove the air filter upper section -1- from the retaining pin -arrow A- and remove.
– Remove the bolt -1-.

– Remove the air filter element on the retainer -2- from the catches in the direction of the -arrow-.

**Step 2 - Air Filter Element, Installing**

– Check the housing and water drains for dirt and clean them if necessary. Refer to → Chapter „Air Filter Housing, Cleaning“.

– Align the new air filter element -10- to the air filter lower section catches -14- and push in the catches.

– Install the bolt -11- in the air filter element and tighten to the tightening specification (Tightening Specification
Table for Installation. Refer to → Anchor.

Additional installation procedures occur in reverse order. Make sure that the air filter upper section seals tightly with the air filter lower section.

**Air Filter Housing, Cleaning**

Procedure:

- Remove any loose dirt residue and leaves from the air filter housing (upper and lower sections).
- Check the water drain hose in the air filter lower section for dirt and adhesives, and clean if necessary.

**Note**

♦ When cleaning the air filter housing with compressed air, observe the following: cover the Mass Airflow Sensor with a clean cloth.

♦ In countries with cold climates, the snow screen must also be cleaned in the intake line. Observe the specification in the → Fluid Capacity Tables; Rep. Gr.03.
Engine Oil Filter, Replacing

→ Chapter „6-Cylinder Gasoline Engine 3.0L TFSI“.
→ Chapter „6-Cylinder Diesel Engine 3.0L TDI“.

6-Cylinder Gasoline Engine 3.0L TFSI

Special tools and workshop equipment required

♦ Torque Wrench 1331 5-50Nm -VAG1331-, measuring range: 6 to 50 Nm
♦ Or: Electronic Torque Wrench 3-60Nm -VAS6583-, measuring range 3 to 60 Nm
♦ Socket -36 mm-

Tightening Specification Table for Installation:

<table>
<thead>
<tr>
<th>Component / Fastening Element</th>
<th>[Nm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cap</td>
<td>25</td>
</tr>
</tbody>
</table>

Procedure:

– Loosen the cap -arrow- on the oil filter with the Socket -36 mm-. Doing this opens the valve.

– Wait a short while so that the engine oil can flow out of the filter housing and into the crankcase.

– Remove the cap completely. Make sure that no engine oil drips onto the engine.

– Remove the oil filter element -2- and the seal -3- from the cap -4-.

– Clean the sealing surfaces on the cap -4-.

– Lubricate the new seal -3- with engine oil and insert.

– Insert the new oil filter element -2- into the cap.

– Install the cap -4- in the oil filter housing -1- and tighten
with the Socket -36 mm- to the tightening specification. Refer to → Anchor. (tightening specification table for installation).

6-Cylinder Diesel Engine 3.0L TDI

Special tools and workshop equipment required
- Torque Wrench 1331 5-50Nm -VAG1331-, measuring range: 6 to 50 Nm
- Or: Electronic Torque Wrench 3-60Nm -VAS6583-, measuring range 3 to 60 Nm
- Socket -36 mm-

Tightening Specification Table for Installation:

<table>
<thead>
<tr>
<th>Component / Fastening Element</th>
<th>[Nm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cap</td>
<td>35</td>
</tr>
</tbody>
</table>

Removal Procedures:
- Remove the air filter housing. Refer to →Rep. Gr.23.

Procedure:
- Loosen the cap -arrow- on the oil filter with the Socket -36 mm-. Doing this opens the valve.
- Wait a short while so that the engine oil can flow out of the filter housing and into the crankcase.
- Remove the cap completely. Make sure that no engine oil drips onto the engine.
- Remove the oil filter element -5- and seal -6- from the cap -7-. 
- Clean the sealing surfaces on the cap -7-. 
- Lubricate the new seal -6- with engine oil and insert. 
- Insert the new oil filter element -5- into the cap. 
- Install the cap -7- in the oil filter housing -2- and tighten with the Socket -36 mm- to the tightening specification. Refer to → Anchor (tightening specification table for installation).

Additional installation procedures occur in reverse order.
Engine Oil, Extracting

→ Chapter „All Expect 6-Cylinder Diesel Engine 3.0L TDI“.

→ Chapter „6-Cylinder Diesel Engine 3.0L TDI“.

All Expect 6-Cylinder Diesel Engine 3.0L TDI

Special tools and workshop equipment required

- Used Oil Collection and Extraction Unit - SMN372500-

Procedure:
- Pull the oil dipstick or plug out of the guide tube.
- Guide the oil extraction device extraction probe into the guide tube. Use a flexible extraction probe with the largest possible diameter and guide it in without using great force. Otherwise, the tip can get deflected at the bottom of the oil pan, causing a large amount of used engine oil to remain in the engine.
- Extract all of the engine oil. Observe the operating instructions for the extraction device.
- Then install the oil dipstick or plug.

Note

- Perform the oil change at operating temperature.
- Follow all disposal regulations.
- Pay attention to cleanliness.

6-Cylinder Diesel Engine 3.0L TDI

Special tools and workshop equipment required

- Used Oil Collection and Extraction Unit - SMN372500-

Removal Procedures:
- Remove the air filter housing. Refer to →Rep. Gr.23.

Procedure:
- Pull the oil dipstick or plug out of the guide tube.
- Guide the oil extraction device extraction probe into the guide tube. Use a flexible extraction probe with the largest possible diameter and guide it in without using great force. Otherwise, the tip can get deflected at the bottom of the oil pan, causing a large amount of used engine oil to remain in the engine.
- Extract all of the engine oil. Observe the operating instructions for the extraction device.
– Then install the oil dipstick or plug.

Additional installation procedures occur in reverse order.

**Note**

♦ *Perform the oil change at operating temperature.*
♦ *Follow all disposal regulations.*
♦ *Pay attention to cleanliness.*
Noise Insulation, Removing and Installing, Front

Removing
- Remove the bolts -1, 2, 4-.
- Remove the front noise insulation -3-.

Installing
Install in reverse order of removal and note the following:

Vehicles with Parking Heater:

- The rubber grommet -A- must be without tension in the noise insulation -B- and the exhaust pipe must be flush with the rubber grommet -A- or hang slightly out of the rubber grommet -A-.
- The mouth of the exhaust pipe -C- must be installed when passing through in the sound enclosure -B- installed grommet -A- right-angled to the sound enclosure -B-.
- The exhaust pipe opening -C- must not point in the direction of travel -arrow- (or else the driving wind from a moving vehicle could cause an increased counter pressure in the exhaust system).

Tightening Specifications
- Refer to → Chapter „Overview - Noise Insulation“
Overview - Noise Insulation

1 - Bolt
   - 6 Nm
   - Quantity: 3

2 - Front Noise Insulation
   - There are different versions. Refer to the Parts Catalog.
   - Removing and Installing. Refer to → Chapter „Noise Insulation, Removing and Installing, Front“.

3 - Bolt
   - 2.5 Nm
   - Quantity: 13

4 - Rear Noise Insulation
   - There are different versions. Refer to the Parts Catalog.
   - Removing and Installing. Refer to → Chapter „Noise Insulation, Removing and Installing, Rear“.

5 - Expanding Rivet

6 - Left Noise Insulation
   - Removing and Installing. Refer to → Chapter „Noise Insulation, Removing and Installing, Left“.

7 - Nut
   - 2.5 Nm
   - Quantity: 2

8 - Bolt
   - 2.5 Nm
   - Quantity: 12

9 - Bolt
   - 2.5 Nm
   - Quantity: 4
Overview - Oil Pan/Oil Pump

Note

- If large quantities of metal shavings or abraded material are detected during engine repairs, it may mean the crankshaft or connecting rod bearings are damaged. To prevent damage, perform the following steps after completing the repair: carefully clean the oil channels and replace the oil spray jets, the oil cooler and the oil filter.
- Oil capacities, oil specifications and viscosity classes. Refer to Fluid Capacity Tables; Rep. Gr.03
- Oil spray jet for piston cooling. Refer to Fig. “Oil Spray Jet for Piston Cooling”.

1 - Oil Level Thermal Sensor -G266-
- Removing and installing. Refer to Chapter „Oil Level Thermal Sensor -G266-, Removing and Installing“.

2 - Gasket
- Replace after removing

3 - Bolt
- Replace after removing
- Tightening specification and sequence. Refer to Fig. „Oil Pan Lower Section - Tightening Specification and Sequence“.

4 - Oil Pan Lower Section
- Removing and installing. Refer to Chapter „Oil Pan Lower Section, Removing and Installing“.

5 - Bolt
- 9 Nm

6 - Lower Oil Baffle

7 - Bolt
- Replace after removing
- Tightening specification and sequence. Refer to Fig. „Oil Pan Upper Section - Tightening Specifications and Sequence“.

8 - Oil Pan Upper Section
- Removing and installing. Refer to Chapter „Oil Pan Upper Section, Removing and Installing“.
9 - Alignment Sleeve
   - Quantity: 2

10 - Upper Oil Baffle

11 - Bolt
   - 3 Nm +90°
   - Replace after removing
   - Install with locking compound. Refer to the Parts Catalog for the locking compound.

12 - Seal
   - Insert into guide frame
   - Replace after removing

13 - Oil Pump Input Shaft

14 - O-Ring
   - Replace after removing

15 - Sleeve
   - Quantity: 2

16 - Mounting Bracket

17 - Bolt
   - 9 Nm

18 - Chain Sprocket for Oil Pump
   - Can only be placed onto drive axle in one position

19 - Bolt
   - 3 Nm +90°
   - Replace after removing

20 - O-Ring
   - Replace after removing

21 - Seal
   - Replace after removing

22 - Oil Pump
   - Do not disassemble
   - Removing and installing. Refer to Chapter „Oil Pump, Removing and Installing“.

23 - Bolt
   - 20 Nm

24 - O-Ring
   - Replace after removing

25 - Bolt
   - 9 Nm

26 - Intake Tube
   - For the oil pump
27 - Gasket
- Replace after removing

28 - Oil Drain Plug
- 30 Nm

29 - Nut
- 9 Nm

Oil Pan Lower Section - Tightening Specification and Sequence

**Note**
Replace the bolts that were tightened with an additional turn after removing them.

- Tighten the bolts in stages as follows:

<table>
<thead>
<tr>
<th>Step</th>
<th>Tightening Specification/Additional Turn</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>8 Nm diagonally</td>
</tr>
<tr>
<td>2.</td>
<td>in a diagonal sequence, turn an additional 90°</td>
</tr>
</tbody>
</table>

Oil Pan Upper Section - Tightening Specifications and Sequence

- Then tighten the bolts -1 through 6- in a diagonal sequence in stages to 20 Nm:
Caution

Pressing the accelerator pedal too soon after the oil change damages the engine.

- Run the engine in idle as long as the indicator lamp for engine oil pressure in the instrument cluster is turned on.
- Only increase the RPM when the indicator lamp goes out.

Special tools and workshop equipment required

- Filling Aid for Engine Oil -VAS6842-

Refer to the Fluid Capacity Tables; Rep. Gr.03 for engine-specific oil capacities and standards.

Procedure:

- Fill the engine oil using the -VAS6842-.
- Then check the oil level and correct if necessary. Refer to Chapter „Engine Oil Level, Checking and Correcting if Necessary“.
Engine Oil Level, Checking and Correcting if Necessary

Oil Level, Checking using Oil Level Display in MMI. Refer to → Chapter „Oil Level, Checking using Oil Level Display in MMI“.

**Caution**

*Risk of damaging the catalytic converter when the engine oil level is too high!*

*Drain the engine oil until the specified level is reached.*

Test Conditions for all Engines except for V6 Diesel Engines

- Engine oil temperature must be at least 60 °C (140 °F).
- After switching off the engine, wait a few minutes so that the oil can flow back into the oil pan.
- Vehicle must be at a level position.

Test Conditions for V6 Diesel Engines:

- Warm engine oil temperature at 90 °C (194 °F).
- After stopping the engine, wait a few minutes to allow oil to flow back into oil pan.
- Vehicle must be at a level position.

**Oil Level, Checking using Oil Level Display in MMI**

**Procedure:**

- If necessary, close the hood.
- Turn on the ignition and activate the MMI.
- Select the [MENU] function button.
- Select »vehicle«.
- Select the left control button and follow the following menu structure.
  - Service & Checking
  - Oil Level
- Read and determine the oil level in the display.
- If necessary, adjust the oil level:
Oil Level Evaluation / Action

<table>
<thead>
<tr>
<th>Oil Level</th>
<th>Evaluation / Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>at “max”</td>
<td>Drain the oil until the optimal oil level is reached.</td>
</tr>
<tr>
<td>near “max”</td>
<td>Oil level is optimal.</td>
</tr>
<tr>
<td>clearly under “max”</td>
<td>Add engine oil until the optimal oil level is reached. While doing so, close the hood to update the oil level display.</td>
</tr>
</tbody>
</table>

**Note**

- If the hood is open, the oil level display will not be updated in the MMI.
- If underfilled, a warning lamp is displayed in the driver information system.
These Two Bolts Are Torx And Have To Be Unscrewed

The Bolts Around The Sides Are Quarter Turn