Oil pan (upper part), removing and installing

Special tools and equipment

^ 10-222A Engine support bridge
^ 2024A Engine Sling
^ 3094 Hose clamps
^ 3220 Hinged socket
^ VAG1306 Drip tray for VAG1202A
^ Catch reservoir
Removing

^ Lock carrier in service position.

**WARNING:** Observe safety precautions when disconnecting the battery.

- With ignition switched off, disconnect Battery Ground (GND) cable.
- Remove ribbed belt.
- Remove air filter housing (arrows).
- Remove bolts -1- and -3-.
- Disconnect hose -4- from line of secondary air injection.
- Pull out guide tube for oil dipstick -2- from oil pan (upper part) toward top and swing it forward for removal.
- Remove hood seal at bolted fender flanges.
- To avoid damaging bolted fender flanges with Engine Support Bridge -10-222A-, insert pad for front fender -T40045- on both sides between bolted fender flanges and web plate beneath.

- Position 10-222A engine support bridge on bolted flanges of fenders.
- Remove eyelet for 2024A engine sling.
- Insert bolt -1- in center hole of 2024A Engine sling and secure with a cotter pin.
- Attach bolt for 2024A Engine sling at 10-222A Engine support bridge spindle.
- Attach 2024A Engine sling to sling clamps at front and rear of engine.

**WARNING:** Take-up hooks and pins at engine sling must be secured using securing pins (arrows) as shown in illustration.

- Slightly pre-tension engine using engine support bridge spindle.
- Place engine oil drip tray beneath engine.
- Drain engine oil.

- Loosen oil filter (arrow) using tension strap; e.g. Hazet 2171-1.
- Place VAG1306 Drip tray beneath engine.
- Clamp coolant hoses -2- and -3- using 3094 hose clamps.
- Disconnect coolant hoses from oil cooler -1-.
- Remove oil cooler.

- Disconnect electrical harness connector -2- at Secondary Air Injection (AIR) pump motor -V101-, -1-.
- Remove Secondary Air Injection (AIR) pump at longmember.

**WARNING:** Do not open refrigerant circuit for A/C system.
- Remove bolts -1- and -2-.
- Unclip refrigerant lines (arrows).
- Allow catch reservoir -3- with connected refrigerant lines to remain hanging in installed position.

Vehicles with automatic transmission

- Remove bracket for ATF lines, to do so remove nuts -1- and -2-.

Note: Union nuts -3- of ATF lines must not be disconnected.
- Unbolt bracket for refrigerant line at oil pan (arrow).

Note: Depicted in the illustration for a vehicle with manual transmission.

- Disconnect harness connector -1- of electrical wire to A/C compressor clutch.
- Unbolt A/C compressor from bracket (arrows).
- Hang A/C compressor (arrow) with connected refrigerant lines to stabilizer using wire.

- Mark installed positions for threaded assemblies -1- and positioning sleeves -2-.

**Note:** Different mounting holes are available depending upon the installed engine.

- Remove lower nuts -1- on left and right engine mounts.
- If installed, unclip operating rod for vehicle level sensor at lower lateral control arm (arrow).

- Cut cable ties (arrows), open bracket for starter wiring and remove electrical wiring.
- Remove front bolts -2- and -3- from left and right sides of subframe. Then remove bolt -1-.

**Note:** Only loosen or lower subframe at front side to avoid having to perform a wheel alignment.

- Lower front subframe.

- Disconnect electrical harness connector at oil pressure switch (arrow).
- If installed, unscrew bolts -1- and remove after-run coolant pump -2- at oil pan (upper part).

**Note:** Coolant hose to cylinder block can remain connected.

- Disconnect electrical lines from generator.

- Remove bolts (arrows) and remove generator.
- If necessary, remove heat shield for right drive axle -1-.

- Remove electrical wires -1- and -2- from starter.

**Note:** Ground (GND) wire -3- remains connected.
- Remove heat shield -1- from solenoid.
- Remove bolts -2- and -3- and remove starter.

- Disconnect electrical harness connector at Oil level thermal sensor (arrow) and move wiring clear.
- Place engine oil drip tray beneath engine, since oil will escape again.
- Unbolt oil pan (lower part) -1- and carefully remove.
- Remove oil pump.

- Using 10-222A engine support bridge spindle, lift engine slightly.

Note: Make sure rear air guide at intake manifold is not damaged when lifting engine.
- Remove quick-release screws -2- and -3- and remove rear sound insulation, if present.

- Remove bracket for sound insulation (arrows).
- Remove bottom engine/transmission connecting bolts in area of oil pan (upper part).
- Check whether a **10 mm** wrench socket, e.g. 3220 hinged socket, can be slid in through assembly hole (arrows). If necessary rework assembly hole.

- Remove bolts -1- and -2- for oil pan (upper part).
- Press oil pan (upper part) off of cylinder block roll pins.
- Using rotating plastic brush, remove remaining sealant from oil pan (upper part) and at cylinder block.

**WARNING:** Wear protective glasses.

- Clean sealing surfaces so they are completely free of any oil or grease.

**Installing**
Installation is reverse of removal, noting the following:

**Note:** Replace gaskets and O-rings.

- Cut tube nozzle at front marking (jet diameter **approximately 1 mm**).
- Apply silicon sealant bead to clean sealing surfaces of oil pan (upper part) as shown in illustration. Thickness of sealant bead (arrows): **approximately 1.5 mm**

**Note:**

^ The oil pan (upper part) must be installed within **5 minutes** after application of silicon sealant.

^ Sealant bead must not be thicker than specified, otherwise sealant could get into oil pan and clog the oil pump strainer.

^ Apply sealant bead in area of hole (arrow) in cylinder block with special care.

- Install oil pan (upper part) and pre-tighten all bolts for oil pan (upper part)/cylinder block in diagonal sequence to **5 Nm**.
- Tighten bolts of oil pan (upper part)/transmission to **45 Nm**.
- Tighten diagonally bolts -1- to **16 Nm** and bolts -2- to **22 Nm**.
- Install oil pump.
- Install oil pan (lower part).
- Replace O-ring at guide tube for oil dipstick and insert guide tube into hole in oil pan (upper part).
- Install starter.
- Install generator.
- Install subframe:
- Install ribbed belt.
- Install radiator support.
- Add engine oil and check oil level.
- See Caution for connecting Telematics battery
  
  Observe safety precautions after connecting the battery:
  - Top up with coolant.

**Note:**

^ Only reuse drained coolant if cylinder head or engine block were not replaced.
^ Dirty coolant cannot be reused.

**Tightening torques**
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