

## Water Pump: Service and Repair

### Coolant Pump

#### Special tools, testers and auxiliary items required

- ◇ Torque wrench (5-50 Nm) (VAG 1331)
- ◇ Torque wrench (40-200 Nm) (VAG 1332)
- ◇ Engine and transmission jack (VAG 1383A)
- ◇ Spring type clip pliers (VAS 5024A) or hose clip pliers (VAS 6340)
- ◇ Step ladder (VAS 5085)
- ◇ Engine holder bracket (T03000)
- ◇ Hose clamps up to 25 mm dia. (3094)
- ◇ Old oil collecting and extracting device (VAG 1782)
- ◇ Adapter set for engine and transmission support (VW 540/1 A)
- ◇ M8 x 100 bolt
- ◇ Cable tie
- ◇ To perform this procedure, the ground cable must be disconnected from the battery. Check whether a coded radio is installed. If so, obtain the anti-theft code beforehand.
- ◇ The engine is removed downward together with the transmission.
- ◇ All cable ties which are opened or cut off when removing the engine, must be replaced in the same position when installing the engine.

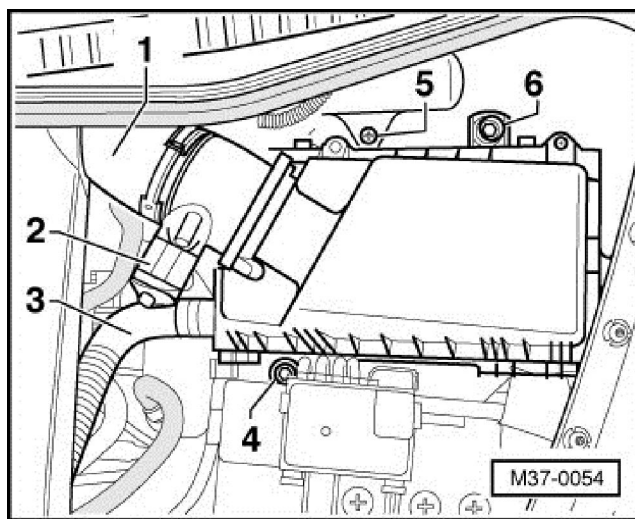
#### CAUTION!

**When doing any repair work, especially in the engine compartment, pay attention to the following due to clearance issues:**

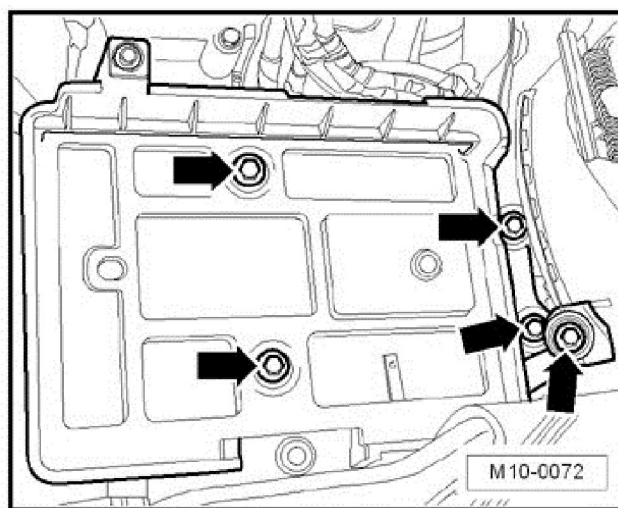
- ◇ **Route lines of all types (for example, fuel, hydraulic, Evaporative Emission (EVAP), coolant, refrigerant, brake fluid and vacuum) and electrical wiring so that the original path is followed.**
- ◇ **To prevent damage to the lines, make sure there is sufficient clearance to all moving or hot components.**

#### Removing

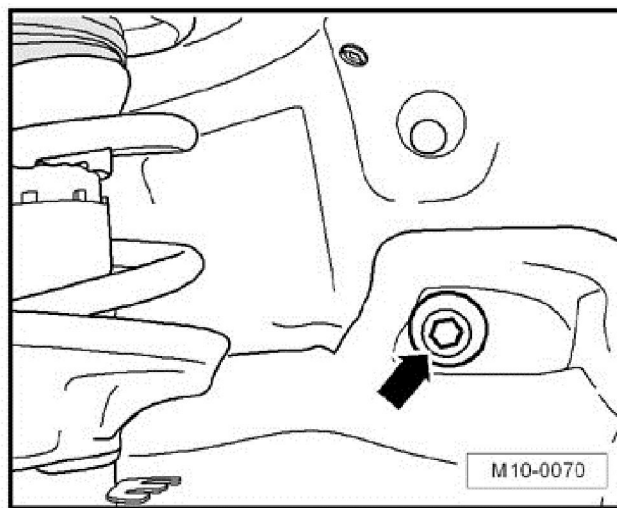
- Remove the engine cover.
- Remove the intake hose - **1** - and connector - **2** - from the Mass Air Flow (MAF) sensor.



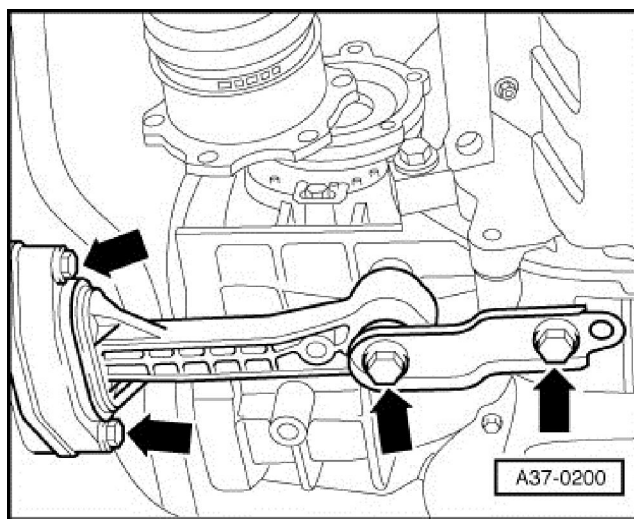
- Disconnect the hose - **3** - from the air filter housing.
- Remove the bolts - **4 and 6** - and remove the air filter housing.
- Remove the battery.
- Remove the battery holder bolts - **arrows** - and holder.



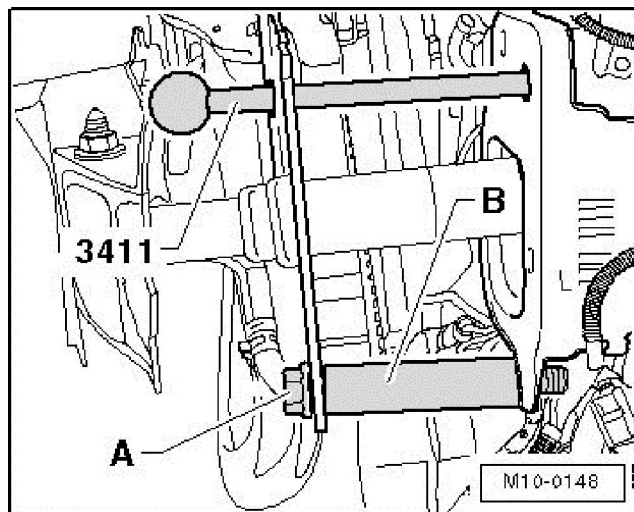
- Remove the ribbed belt. Refer to => [ Ribbed Belt ] See: Drive Belts, Mounts, Brackets and Accessories/Drive Belt/Service and Repair/Removal and Replacement/Ribbed Belt.
- Remove the rear bolt - **arrow** - for the engine mount through the wheel housing.



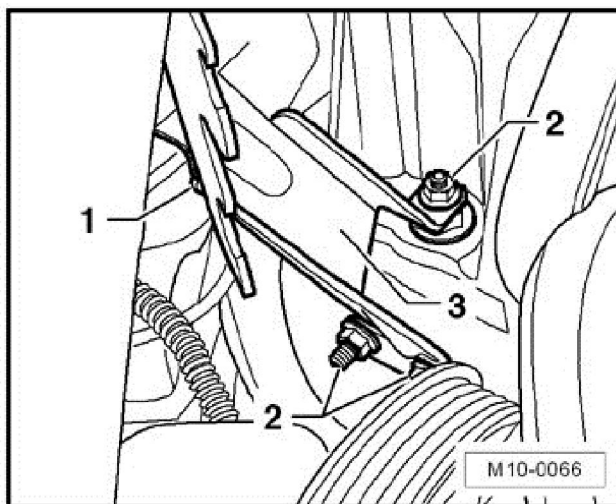
- Remove the pendulum support bolts - **arrows** -.



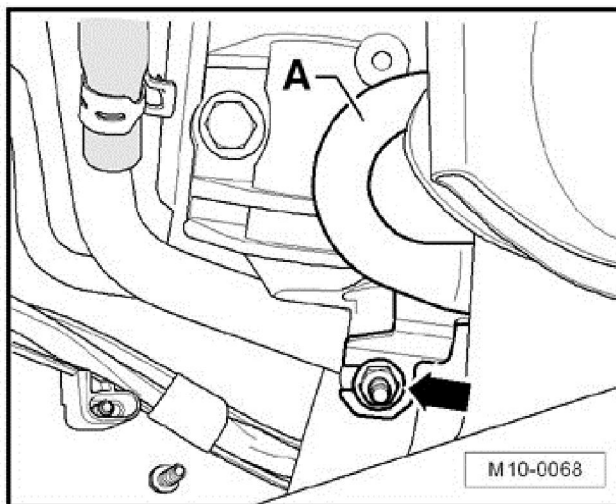
- Drain the coolant. Refer to => [ Draining and Filling ] See: Cooling System/Service and Repair/Procedures/Draining and Filling.
- Bring the lock carrier into service position. See: Body and Frame/Radiator Support
- Support the lock carrier using a sleeve - **B** -, 80 millimeters (mm) in length, for example, from (VW 540/1 A) and a M8 x 100 bolt - **A** -.



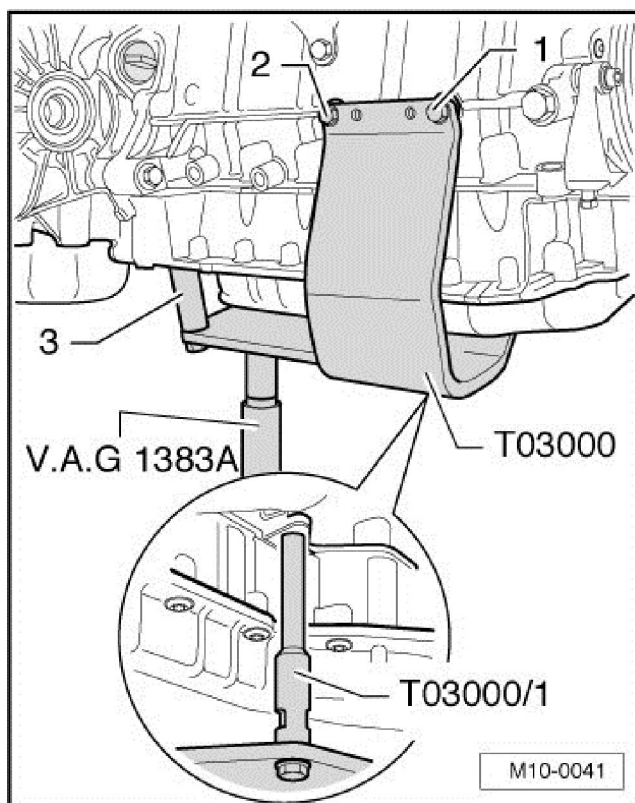
- Empty the power steering reservoir using (VAG 1782) and remove it.
- Remove the bracket nuts - **2** - for the power steering reservoir.



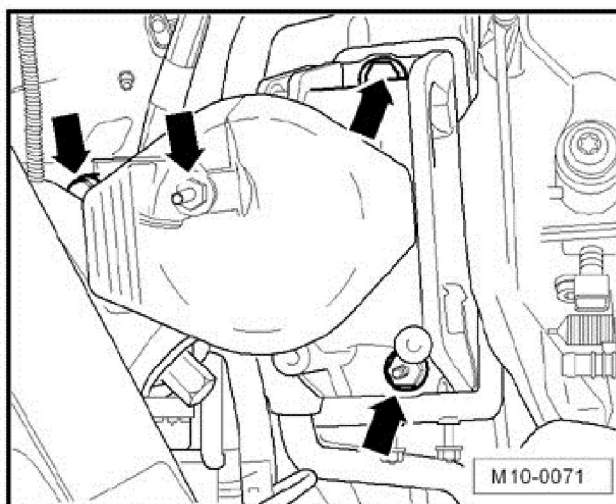
- Remove the nut - **1** - from the bracket. To do so, remove the right main head lamp.
- Disconnect the intake line from the power steering pump. Seal the pump and line with clean plugs.
- Remove the nut - **arrow** - for the intake line - **A** - at the engine mount. Remove the intake line.



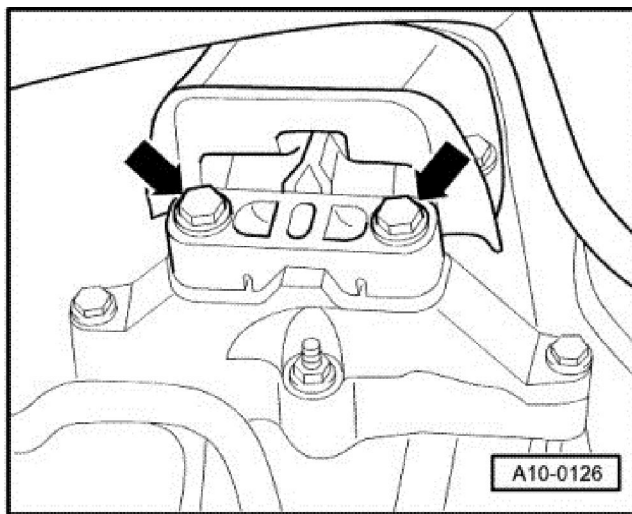
- Only slightly loosen the bolts for the engine and transmission mounts at the subframe (less than 1 rotation).
- Install the (T03000) as follows:



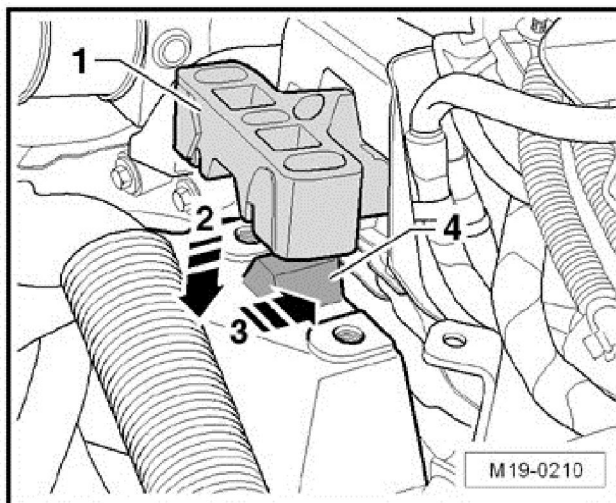
- ◇ Remove pin (T03000/1) from (T03000).
- ◇ Install the (T03000) to the cylinder block with pin - **3** - and tighten the bolts - **1 and 2** - hand tight.
- ◇ Then install pin (T03000/1) and tighten to 20 Nm.
- ◇ Then tighten bolts - **1 and 2** - to 25 Nm.
- Place the (T03000) on the (VAG 1383A) and lift the engine/transmission assembly slightly.
- Remove the engine mount bolts - **arrows** - from above and remove.



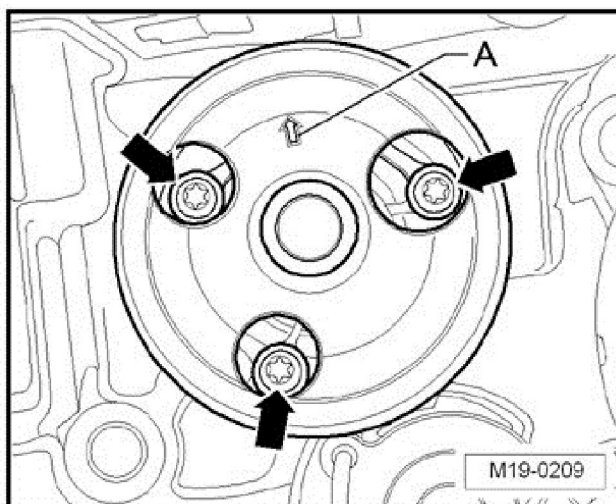
- ◇ Use (VAS 5085) to remove the bolts.
- Remove both front bolts from the holding fixture.
- Remove the transmission mount bolts - **arrows** - from above.



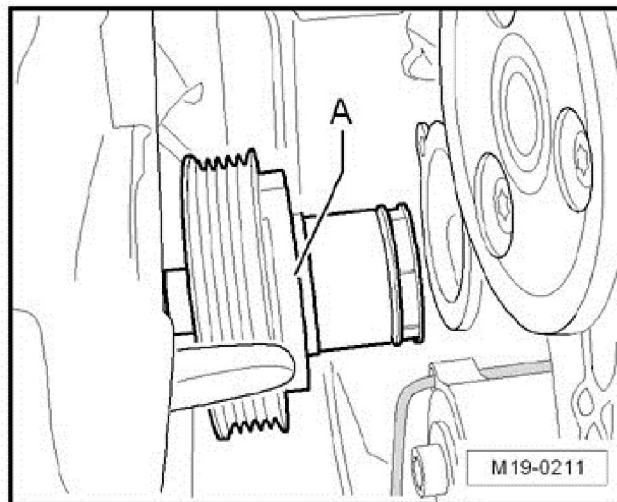
- Carefully lower the engine with transmission only as far downward - **arrow 2** - until pin - **4** - of transmission mount bracket can be slid toward the left - **arrow 3** - out from under the transmission mount.



- Slide the engine/transmission assembly until it stops at left longitudinal member.
- Rotate the pulley so that arrow - **A** - (relative to engine axis) points upward vertically.



- Remove the coolant pump bolts - **arrows** -.
- Pull the coolant pump - **A** - out of the cylinder block.



- Guide the coolant pump - A - through between the longitudinal member and cylinder block and remove it.

### Installing

Installation is performed in the reverse order of removal. When doing this note the following:

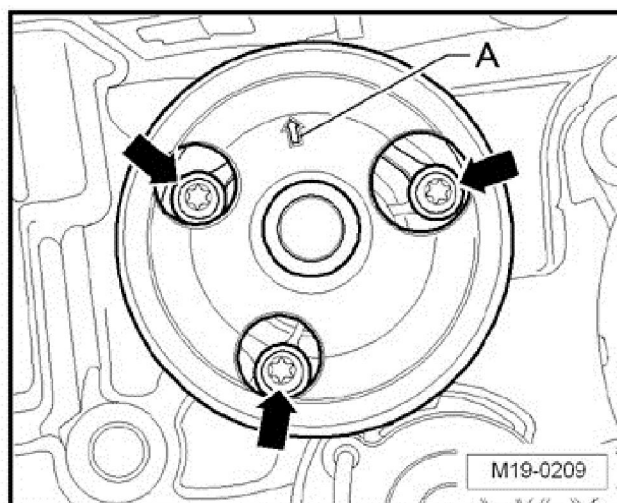
#### CAUTION!

**When doing any repair work, especially in the engine compartment, pay attention to the following due to clearance issues:**

- ◇ Route lines of all types (for example, fuel, hydraulic, Evaporative Emission (EVAP), coolant, refrigerant, brake fluid and vacuum) and electrical wiring so that the original path is followed.
- ◇ To prevent damage to the lines, make sure there is sufficient clearance to all moving or hot components.

Note the installed position of coolant pump before installing.

- Rotate the pulley so that the arrow - A - (relative to engine axis) points upward vertically. Holes in the pulley must align opposite the bolts - arrows -.



- First, firmly bolt the engine mount to the engine, then align the engine/transmission assembly free of tension via a shaking motion and tighten the bolts to the subframe.
- ◇ Tightening specifications for the engine and transmission mounts. Refer to => [ Fastener Tightening Specifications ] See: Specifications/Engine Assembly - Fastener Tightening Specifications.
- Install the lock carrier.

- Install the bracket for the reservoir and power steering line.
- Install the ribbed belt. Refer to => [ Ribbed Belt ] See: Drive Belts, Mounts, Brackets and Accessories/Drive Belt/Service and Repair/Removal and Replacement/Ribbed Belt.
- Install the battery.
- Fill with coolant. Refer to => [ Draining and Filling ] See: Cooling System/Service and Repair/Procedures/Draining and Filling.
- Install noise insulation.
- Fill the power steering system with hydraulic oil.
- Install the battery.

### Tightening Specifications

Component	Nm
Engine and transmission mount	Refer to => [ Fastener Tightening Specifications ].
Coolant pump to cylinder block	10