

Water Pump: Service and Repair

Coolant Pump Drive Shaft Seal

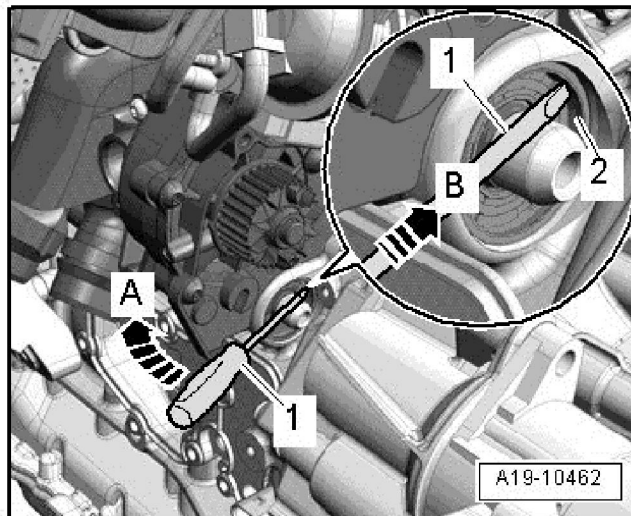
Coolant Pump Drive Shaft Seal

Special tools, testers and auxiliary items required

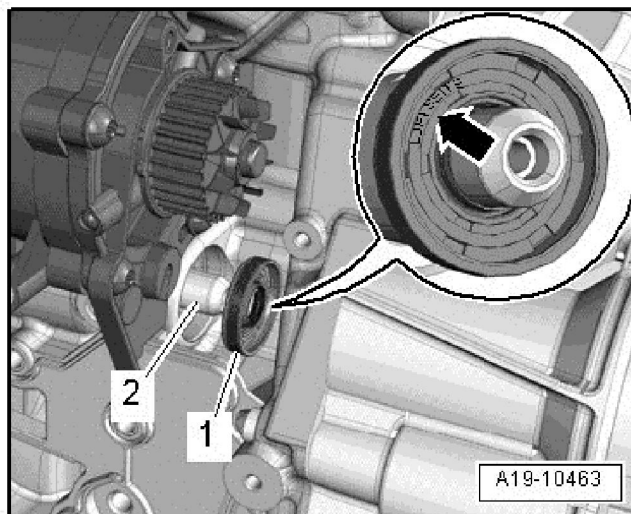
- ◁ Thrust Piece (T10353)

Procedure

- Remove the coolant pump toothed belt. Refer to => [Coolant Pump Toothed Belt] See: Coolant Pump Toothed Belt.
- Firmly press a screwdriver - **1** - on the seal surface - **2** - - **arrow B** -.



- Pry out the seal - **arrow A** -.
- Clean the running and sealing surface.
- Lubricate the sealing surface of the balance shaft - **2** - with transmission fluid.



- Push the seal - **1** - onto the balance shaft.

Water Pump: Service and Repair

Coolant Pump Toothed Belt

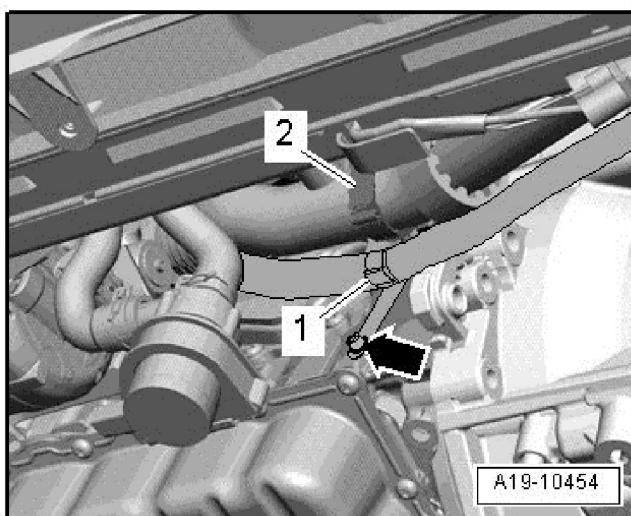
Coolant Pump Toothed Belt

Special tools, testers and auxiliary items required

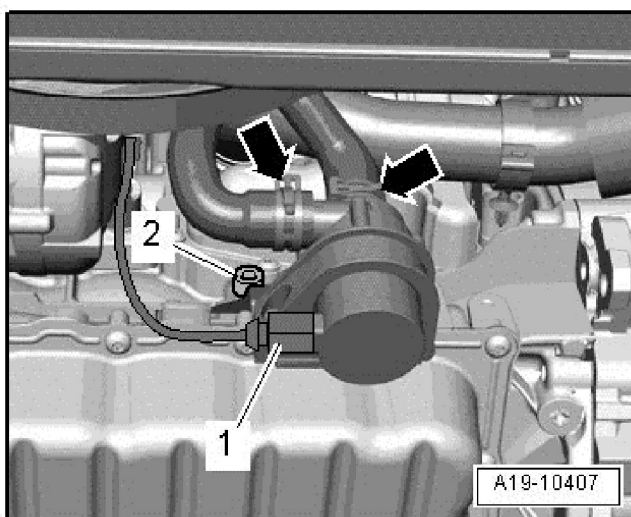
- ◇ Insert Tool 12 mm (T10360)
- ◇ Torque Wrench (5-50 Nm) (V.A.G 1331)

Removing

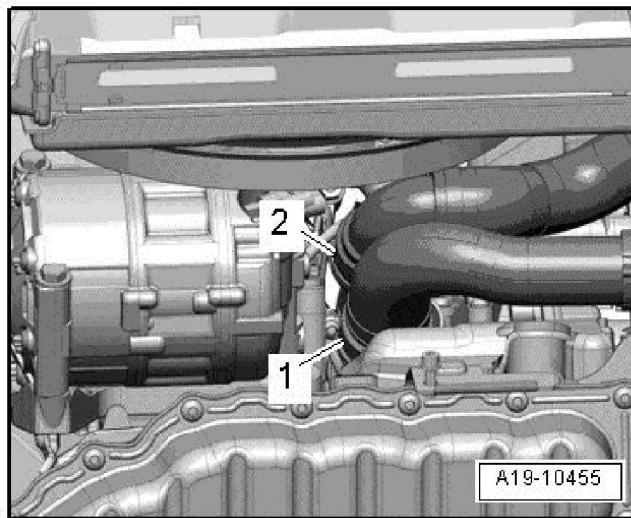
- Remove the small coolant pipe. Refer to => [Small Coolant Pipe] See: Cooling System/Coolant Line/Hose/Service and Repair/Small Coolant Pipe.
- Lay aside the coolant hose - **2** - and electrical wiring harness - **1** -.



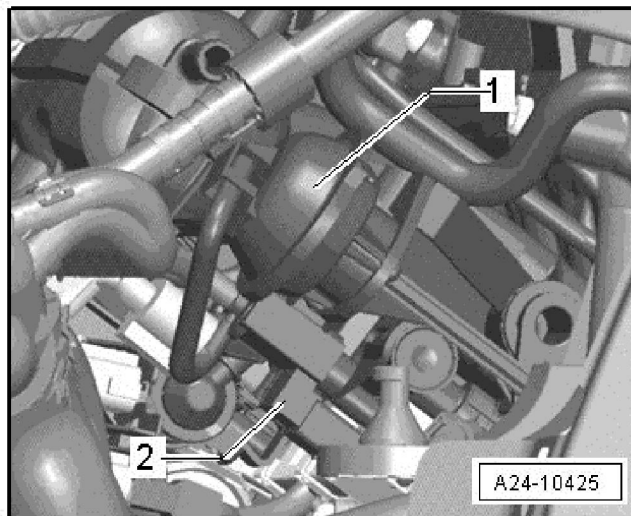
- Remove the bolt - **arrow** - and remove the bracket.
- Remove the after-run coolant pump bracket bolt - **2** -.



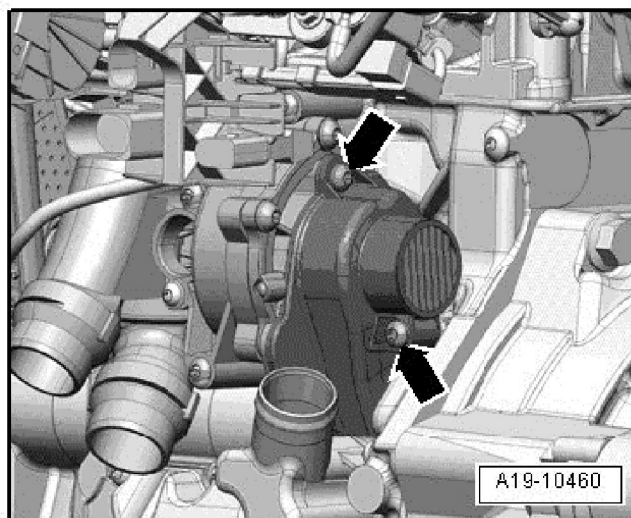
- Remove the coolant hoses - **1 and 2** - and lay them aside.



- Remove the intake manifold runner control valve (N316) - **2** - and lay it to the side.

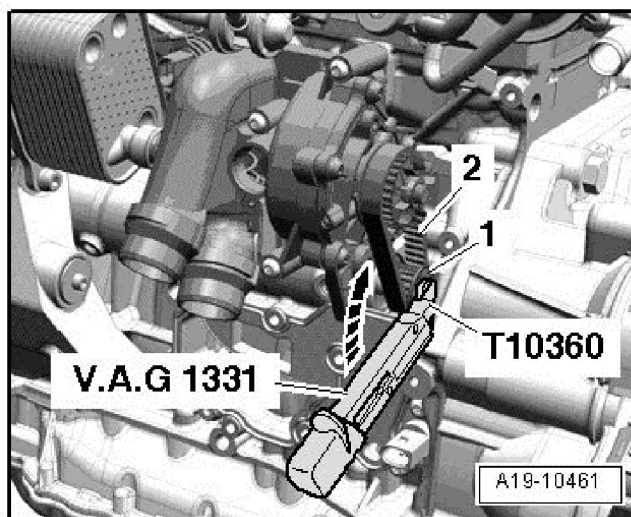


- Free up the wiring harness, pull it upward and secure it with cable ties.
- Remove the bolts - **arrows** - and remove the toothed belt guard.



The drive gear bolt has a left thread.

- Loosen the bolt - **1** - on the coolant pump drive gear clockwise using the torque wrench (5-50 Nm) (V.A.G 1331) and insert tool 12 mm (T10360). Counter hold the vibration damper with a 24 mm socket when doing this.



- Remove the bolt. Remove the drive gear - **1** - and toothed belt - **2** -.

Installing

Install in reverse order of removal. Note the following:

- Replace the drive gear bolt.
- Replace the seals and O-rings.

Drive gear installed position: The collar on the drive gear faces the transmission.

Tightening specifications, refer to => [Coolant Pump and Thermostat Overview] See: Cooling System/Thermostat/Service and Repair/Coolant Pump and Thermostat Overview.

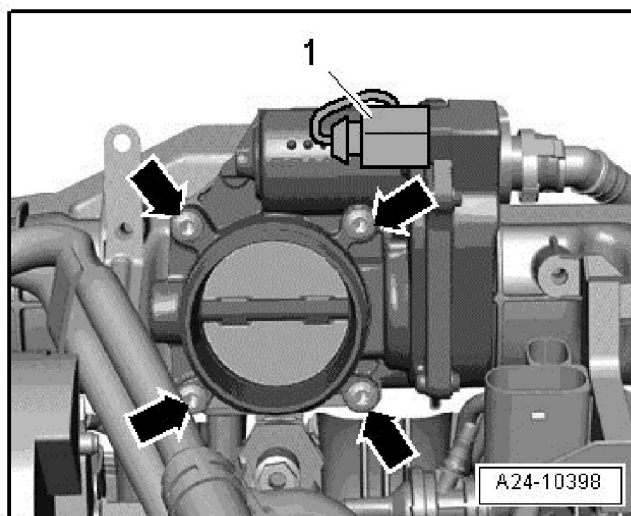
Water Pump: Service and Repair

Coolant Pump

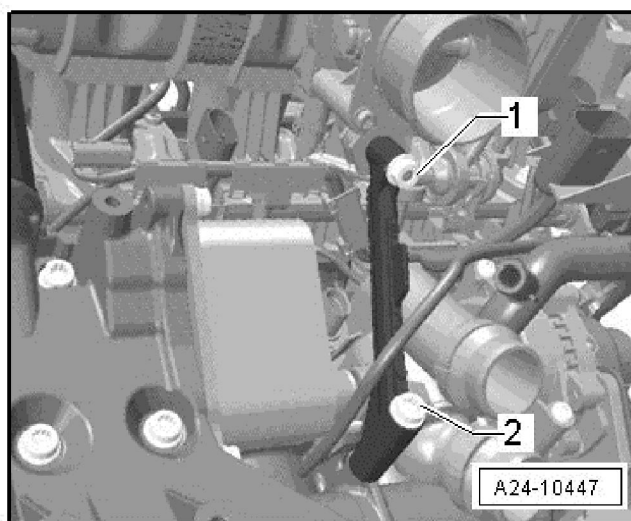
Coolant Pump

Removing

- Remove the small coolant pipe. Refer to => [Small Coolant Pipe] See: Cooling System/Coolant Line/Hose/Service and Repair/Small Coolant Pipe.
- Disconnect the electrical connector - **1** - from the throttle valve control module (J338).



- Remove the bolts - **arrows** - and remove the throttle valve control module.
- Remove the coolant pump toothed belt. Refer to => [Coolant Pump Toothed Belt] See: Coolant Pump Toothed Belt.
- Remove the nut - **1** -, bolt - **2** - and intake manifold support.

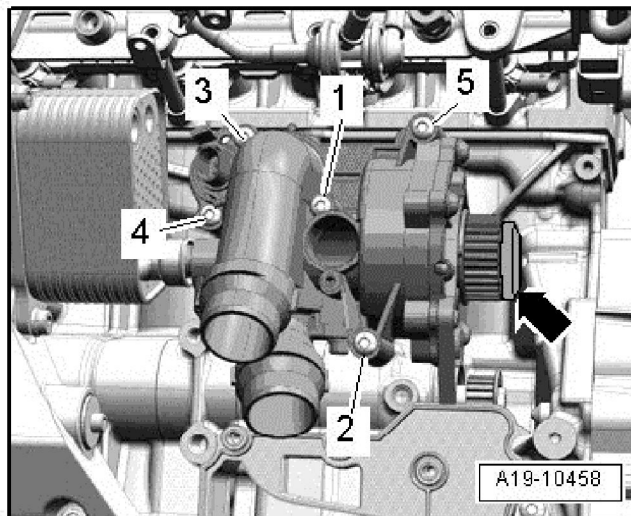


- Remove the bonded rubber bushing for the intake manifold support on the intake manifold.
- Remove the engine coolant temperature sensor (G62).

Inserted version, refer to => [Engine Coolant Temperature (ECT) Sensor with Clip] See: Cooling System/Engine - Coolant Temperature Sensor/Switch/Service and Repair.

Threaded version, refer to => [ECT Sensor with a Retaining Plate] See: Cooling System/Engine - Coolant Temperature Sensor/Switch/Service and Repair.

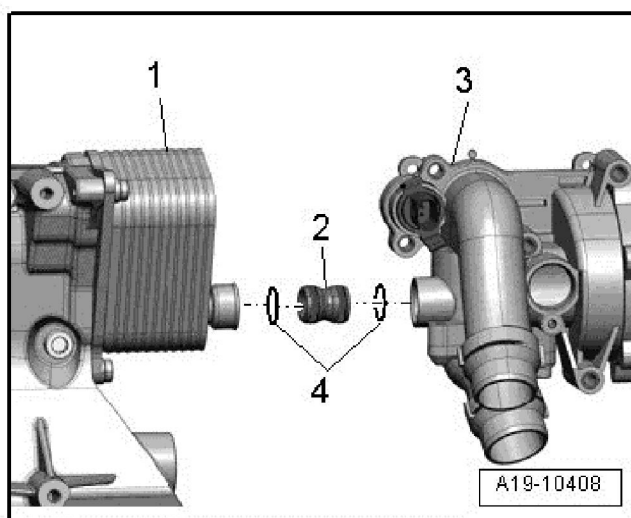
- Remove the bolts - **1** through **5** -.



- Remove the coolant pump from the centering pin and remove the engine oil cooler.

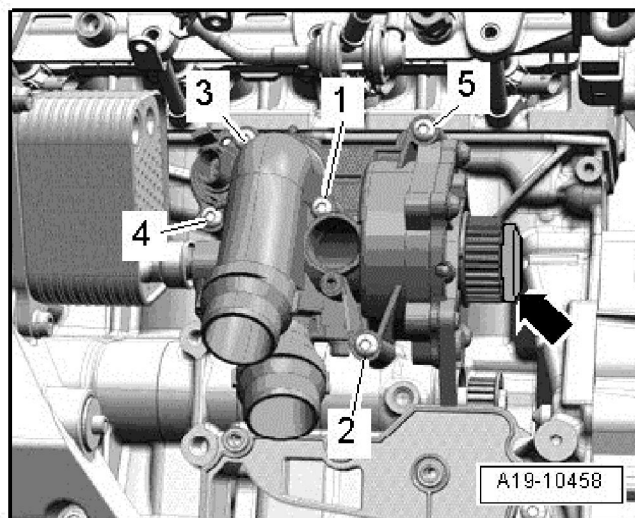
Installing

- ↻ Replace the gaskets and O-rings.
- Lubricate the O-rings - **4** - with coolant.



- Make sure both centering pins are installed in the cylinder block.
- Install the connecting piece - **2** - into the engine oil cooler - **1** -.
- First slide the coolant pump - **3** - onto the connecting piece and then onto the centering pins in the cylinder block.

- Using a mirror, check if the coolant pump is seated correctly on the centering pins.
- Tighten the bolts in sequence - **1 through 5** -.



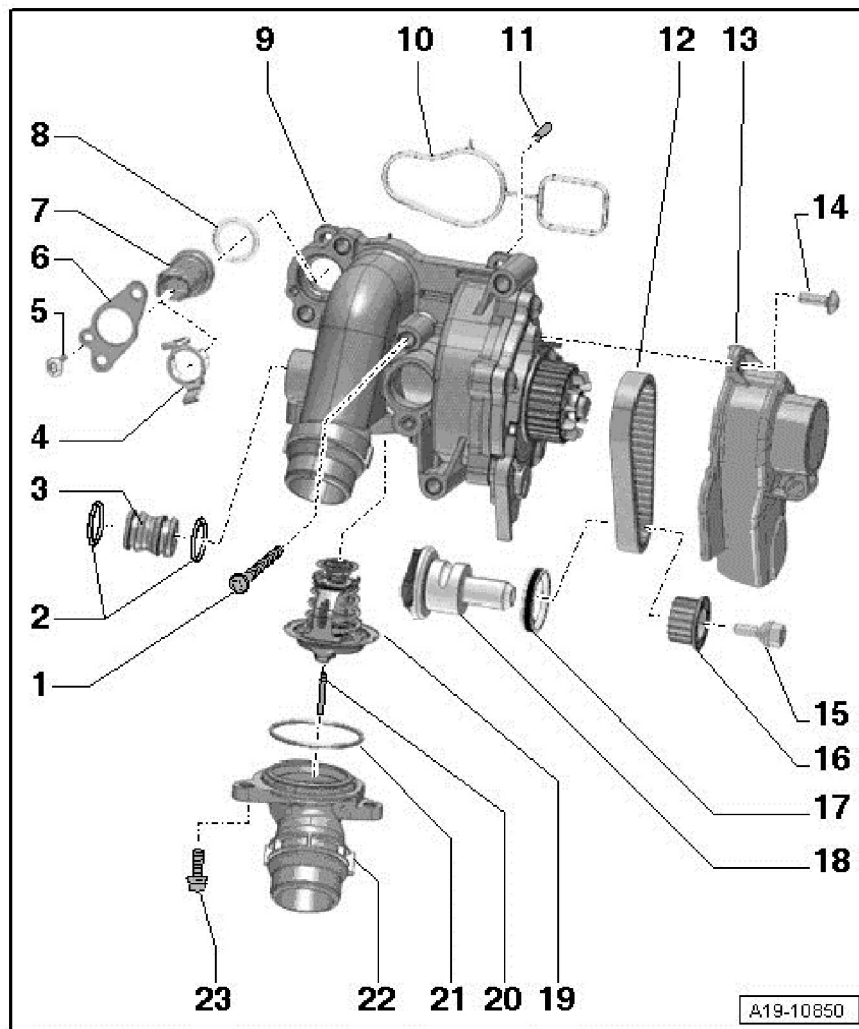
- ◇ If a new coolant pump was installed, then the protective cap - **arrow** - must be removed.

The rest of the installation follows the reverse of the removal procedures.

Water Pump: Service and Repair

Coolant Pump and Thermostat Overview

Coolant Pump and Thermostat Overview



1 Bolt

- ◇ 9 Nm
- ◇ Tightening sequence, refer to => [Coolant Pump Bolt Tightening Sequence].

2 O-rings

- ◇ Always replace.

3 Connection

4 Retaining Clip

- ◇ Only with the inserted version.
- ◇ Make sure it is tight.

5 Bolt

- ◇ 4 Nm

- ◇ Only with the threaded version.

6 Retaining Plate

- ◇ Only with the threaded version.

7 Engine Coolant Temperature Sensor (G62)

- ◇ Removing and installing, refer to => [Engine Coolant Temperature Sensor (G62)] See: Cooling System/Engine - Coolant Temperature Sensor/Switch/Service and Repair.

8 O-ring

- ◇ Always replace.

9 Coolant Pump

- ◇ Removing and installing, refer to => [Coolant Pump] See: Coolant Pump.
- ◇ With a new coolant pump, remove the protective cap.

10 Gasket

- ◇ Always replace.

11 Centering Pin

- ◇ Quantity: 2

12 Toothed Belt

- ◇ For the coolant pump.
- ◇ Removing and installing, refer to => [Coolant Pump Toothed Belt] See: Coolant Pump Toothed Belt.

13 Toothed Belt Guard

14 Bolt

- ◇ 9 Nm

15 Bolt

- ◇ 10 Nm + 90° (1/4) additional turn.
- ◇ Always replace.
- ◇ Has left hand threads.

16 Drive Gear for the Toothed Belt

- ◇ Installed position: The collar on the drive gear faces the transmission.

17 Shaft Seal

- ◇ Removing and installing, refer to => [Coolant Pump Drive Shaft Seal] See: Coolant Pump Drive Shaft Seal.

18 Balance Shaft

19 Coolant Thermostat

- ◇ The coolant thermostat can be changed in "Guided Fault Finding" under "Function and Component Selection".

◇ Removing and installing, refer to => [Coolant Thermostat] See: Cooling System/Thermostat/Service and Repair/Coolant Thermostat.

20 Centering Pin

21 O-ring

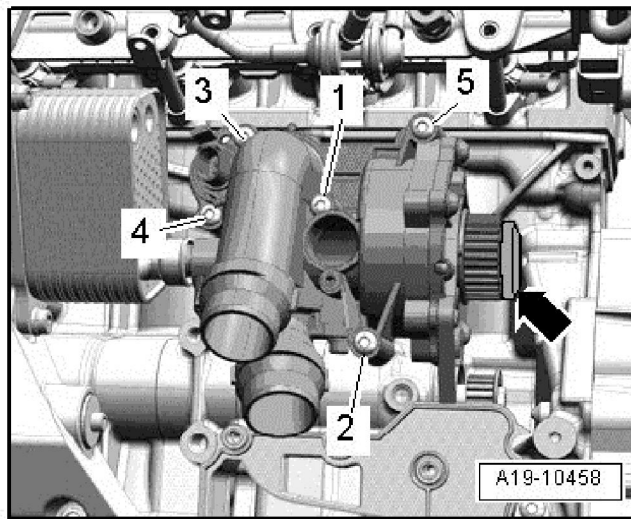
◇ Always replace.

22 Connecting Piece

23 Bolt

◇ 9 Nm

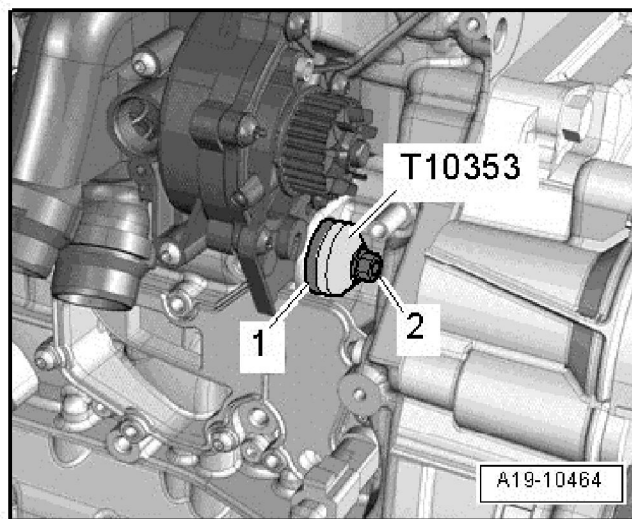
Coolant Pump Bolt Tightening Sequence



- Tighten the bolts in sequence - **1 through 5** - to 9 Nm.

↯ "Luftseite" or ("Outside") - **arrow** - must be readable from the outside.

- Mount the thrust piece (T10353) on the seal - **1** - and press it into the cylinder block all the way with the bolt - **2** -; when doing this, do not bend the seal.



- Install the coolant pump toothed belt. Refer to => [Coolant Pump Toothed Belt] See: Coolant Pump Toothed Belt.

The rest of the installation follows the reverse of the removal procedure.