



[Oil pump / crankshaft seal, front, replacing](#)
[Piston cooling valves, replacing](#)

Oil pump / crankshaft seal, front, replacing

[999 5433](#)

[998 6187](#)

[999 5919](#)

[999 5455](#)

[951 2050](#)

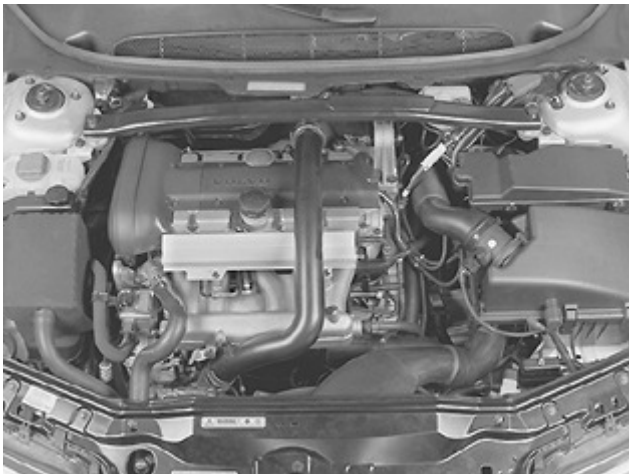
Note!

Since the illustrations in this service information are used for different model years and/or models, some variation may occur. However, the essential information is always correct.

Note!

If the oil pressure is low or if there is possibly a fault with the oil pump, measure the oil pressure according to: Service information, Section: 2 (21).

Remove engine components



Caution!

Remove the ignition key.

Remove

- the cross stay between the suspension turrets
- the upper timing belt cover
- the servo reservoir and expansion tank. Lift up and place on top of the engine.

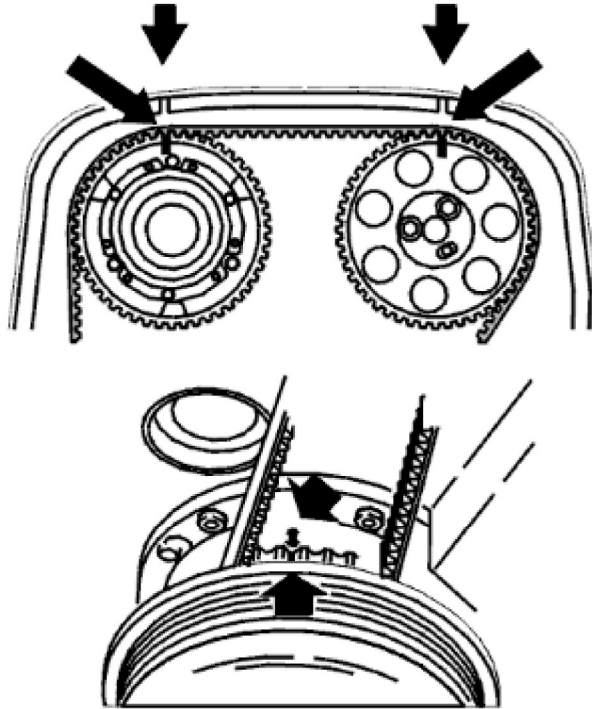
Warning!

Make sure that no power steering fluid is spilled. Extremely flammable.

- the auxiliaries belt
- the front timing belt cover.



Position the engine according to the marking

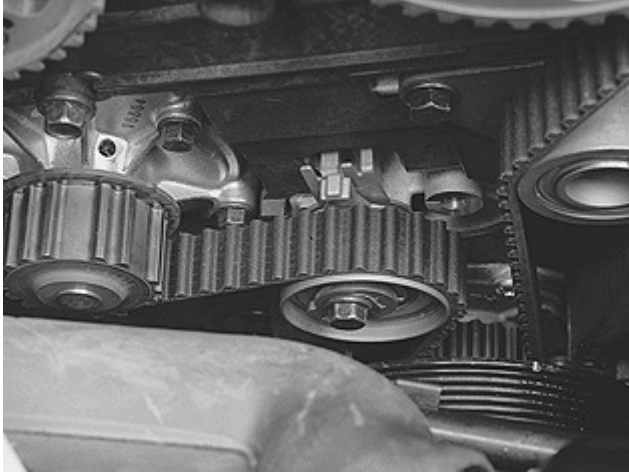


Raise the car

- Remove the right front wheel
- Install the upper timing belt cover
- Turn the crankshaft clockwise until the markings on the crankshaft and camshaft pulley correspond
- Turn a further 1/4 turn clockwise and then back counter-clockwise until the markings correspond
- Remove the upper camshaft cover.



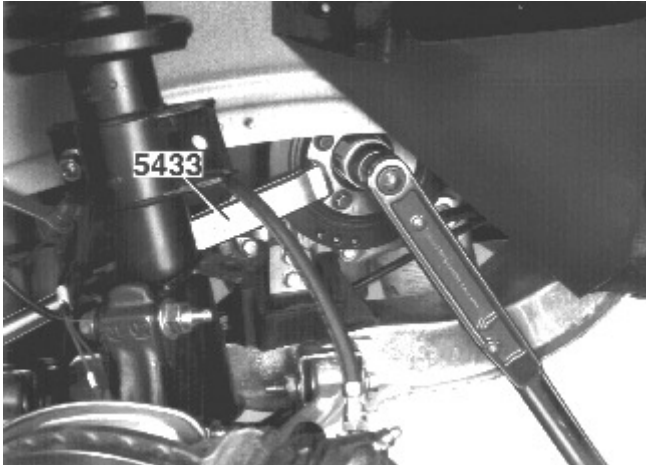
Remove the timing belt



- Slacken off the centre screw for the belt tensioner slightly
 - Hold the centre screw still. Turn the tensioner eccentric clockwise to 10 o'clock using a 6 mm Allen key.
 - Remove the timing belt.
-



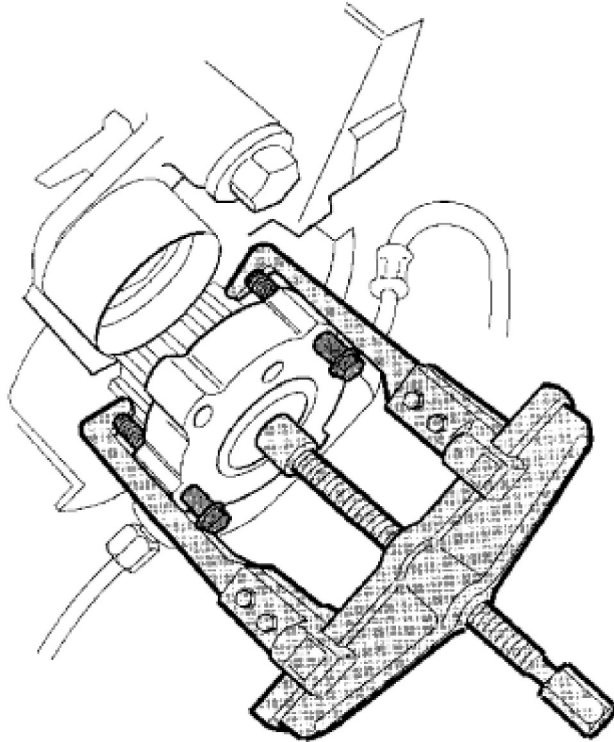
Remove the vibration damper



- Install counterhold Special Tool: [999 5433](#) .
- Counterhold and remove the crankshaft centre nut
- Work the vibration damper loose and remove by hand
- Remove the camshaft belt.



Remove the crankshaft timing gear pulley



- Use a universal puller Special Tool: [998 6187](#) and two of the vibration damper's screws.
- Tighten both the screws by hand to stop in the pulley.
- Install the puller so that the claws engage in the screws, not in the camshaft pulley.

Note!

Make sure that the tool claws do not damage the gear's teeth.



When only replacing the front crankshaft seal

- Remove the old seal using a screwdriver or: Special Tool: [999 5919](#) .
- Clean the mating surface
- Grease and install a new seal.
Use tool Special Tool: [999 5455](#) .
- Press in the seal using a drift and the crankshaft centre nut. As illustrated.

Note!

Make sure that the crankshaft does not rotate when pressing in the crankshaft seal.

Remove the oil pump

- Remove the four oil pump screws
 - Remove the oil pump.
Use a screwdriver and pry **carefully** at the stop lugs.
 - Clean the gasket face and the mating surfaces.
-



Install the oil pump



Install new oil pump

- Install a new gasket
- Carefully insert the oil pump over the end of the crankshaft.

Note!

Make sure that the seal ring in the oil pump is not damaged during installation

- Install 4 new screws as guides
- Pull in the oil pump with drift Special Tool: [999 5455](#) and the crankshaft centre nut.

Note!

Make sure that the crankshaft does not rotate when pulling in the pump.

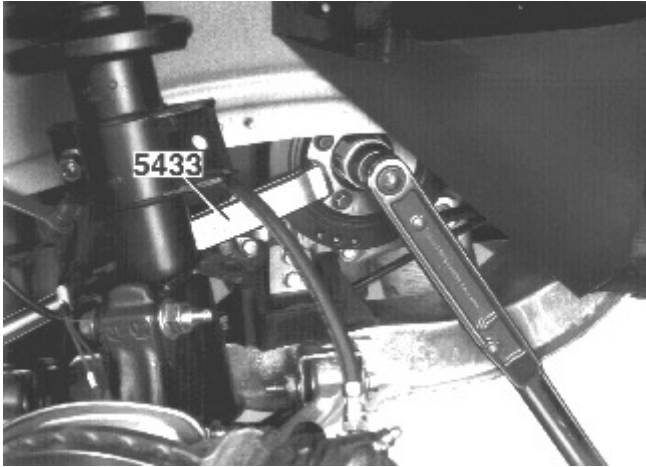
- Tighten the screws crosswise. Tighten to **10 Nm**
- Install the crankshaft timing gear pulley.
Carefully tap alternately around the pulley until end position is reached.

Note!

The timing gear pulley only fits in one position on the crankshaft's splines.



Install the vibration damper



Install the vibration damper.

Tighten the centre nut to **180 Nm** .

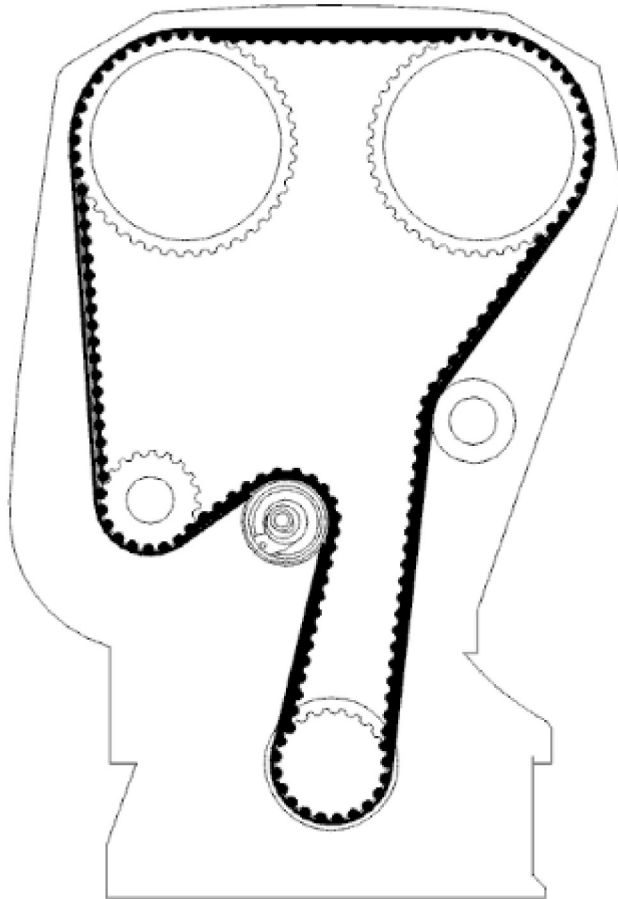
Use counterhold Special Tool: [999 5433](#) .

Remove the counterhold. Tighten the screws. Tighten to **25 Nm** .

Angle-tighten **30°** . Use bevel protractor Special Tool: [951 2050](#) .



Install the timing belt



Install the upper timing belt cover.

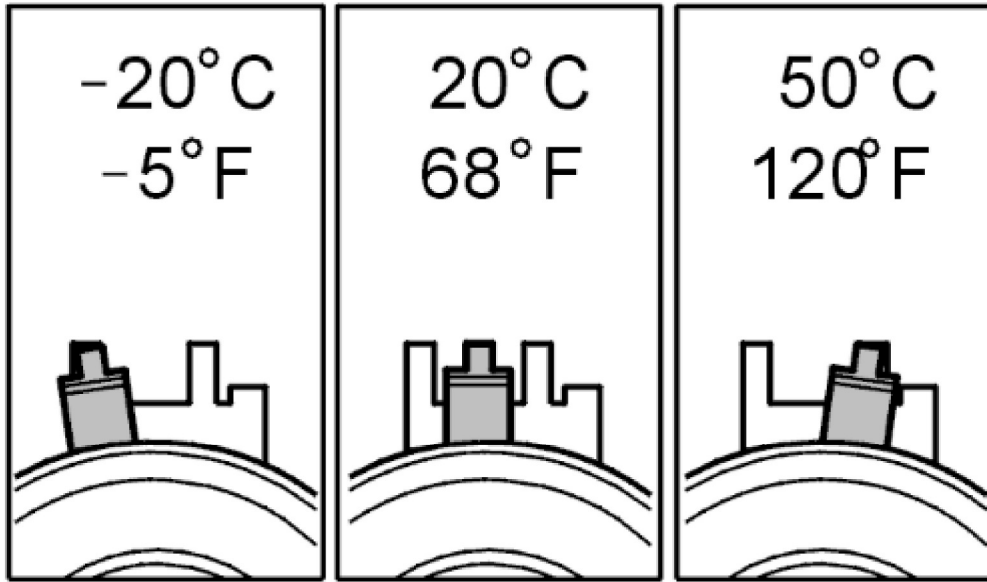
Check that the markings on the crankshaft and camshaft timing gear pulley correspond.

Install the belt in the following order:

- crankshaft
- the idler pulley
- intake camshaft
- exhaust camshaft
- water pump
- belt tensioner.

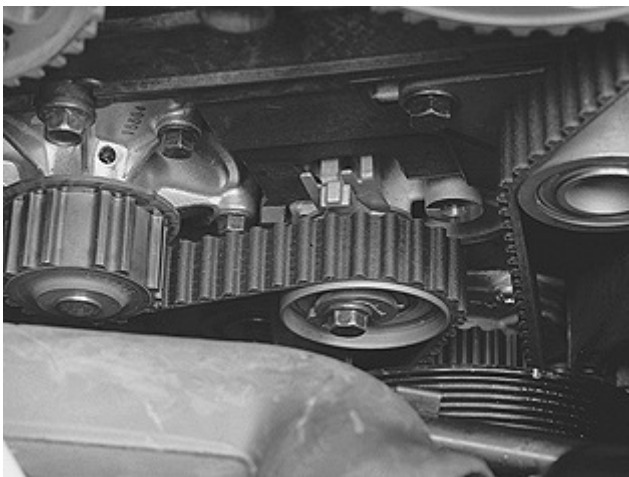


Tighten the timing belt



This adjustment is carried out on a cold engine. A suitable temperature is approximately 20°C/68°F.

At a higher temperature, for example with a warm engine or a higher ambient temperature, the needle is further to the right. The illustration shows the position of the indicator when aligning the timing belt tensioner at different temperatures.





Finishing



Install:

- front timing belt cover.
Tighten to **12 Nm** .
- the upper timing belt cover
- the auxiliaries belt
- the expansion tank and servo reservoir.

Note!

Make sure that the hoses are positioned correctly.

- the cross member. Tighten the screws at the suspension turret to **50 Nm** and the screw for the engine bracket to **80 Nm** .

Carry out a function test

- Check the oil level and top up if required.
- Start the engine.
- Check that there is no oil leakage.
Stop the engine and give the oil time to run down into the oil trough.
Then check the oil level.
Top up if necessary.
Wipe the engine compartment clean.
Make sure that the steering wheel and gear lever are clean.