



[Timing belt, replacing](#)
[Camshaft seal/variable valve timing \(VVT\) unit, replacing](#)
[Variable valve timing solenoid, replacing](#)
[Auxiliaries belt / belt tensioner, replacing](#)

Timing belt, replacing

[999 5433](#)

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.

Remove components



Caution!

Remove the ignition key.

Remove:

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

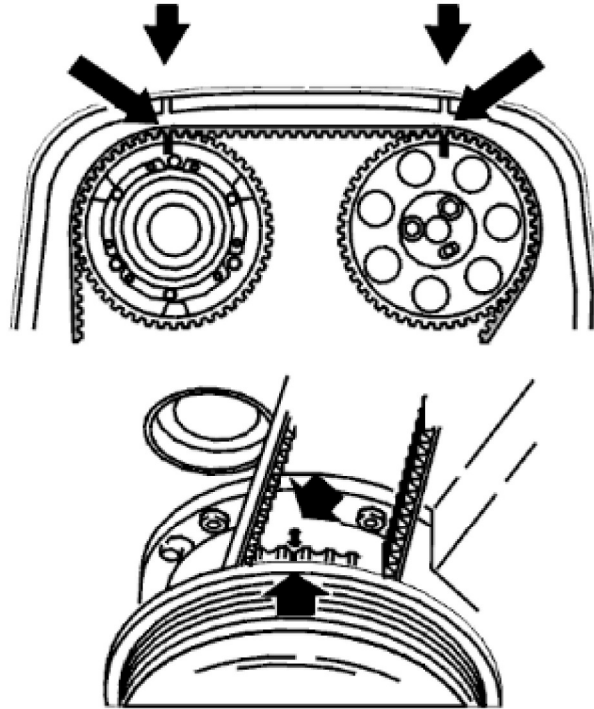
Warning!

Ensure that no power steering fluid is spilled. Extremely flammable.

- the auxiliaries belt
- the front timing belt cover.



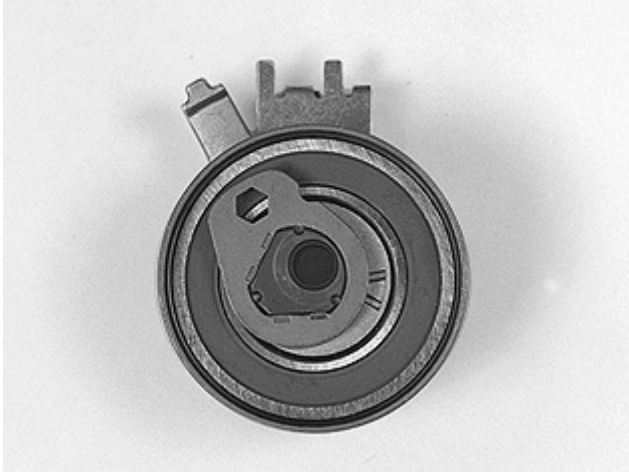
Position the engine according to the marking



- Remove the right front wheel
- Remove the nut from the cover in the wing liner
- Install the upper timing belt cover
- Turn the crankshaft clockwise until the markings on the crankshaft and camshaft pulley correspond
- Turn the crankshaft a further 1/4 turn clockwise and then back again until the markings correspond. The markings are illustrated
- Remove the upper timing belt cover.



Removing the timing belt



Slacken off the belt tensioner.

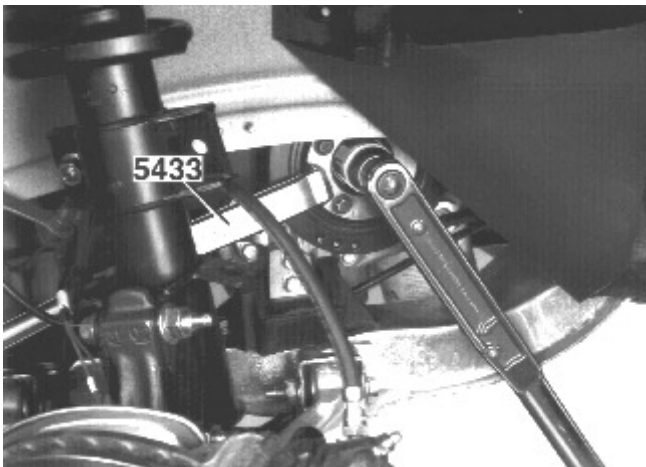
Slacken off the centre screw for the belt tensioner slightly.

Hold the centre screw still. Turn the tensioner eccentric clockwise using a 6 mm Allen key to 10 o'clock.

Remove the timing belt from the tension pulley, camshaft pulley and water pump.

Note!

The component can be reused unless it has been subjected to abnormal mechanical stress, damage or oil contamination.



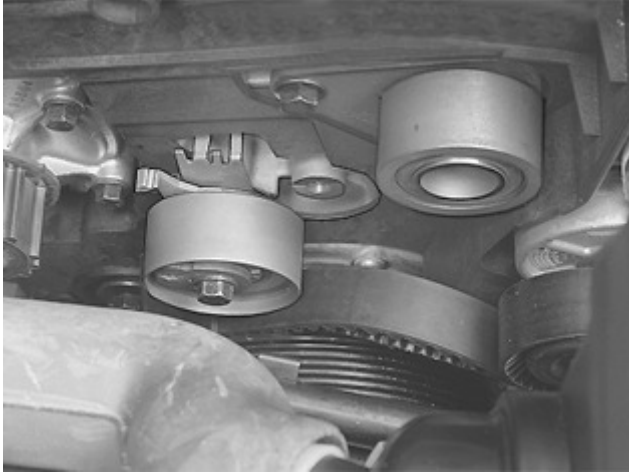
Remove the vibration damper.

Remove the oscillation damper. Use counterhold Special Tool: [999 5433](#) . Work the oscillation damper loose.

Remove the timing belt



Checking the tensioner pulley and idler pulley



Check bearing wear:

- spin the idler pulley and listen for noise.
If replacing with a new idler pulley, tighten to **24 Nm** .
- spin the tension pulley and listen for noise.
When replacing, screw the tension pulley into place using the centre screw.

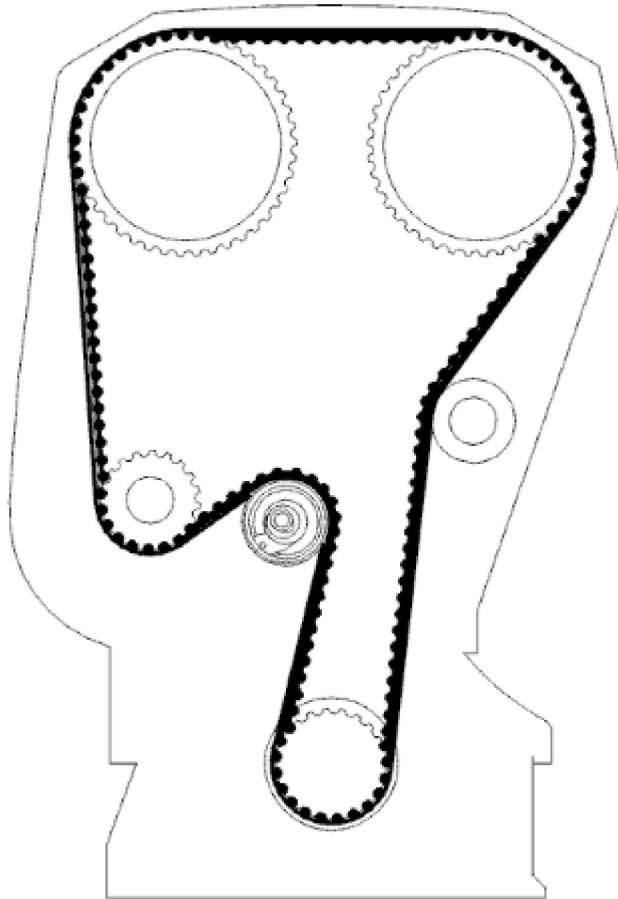
Screw in the centre screw by hand.

Ensure that the tensioner fork is centred over the cylinder block rib.

Ensure that the Allen hole on the eccentric is at "10 o'clock".



Installing the timing belt



Note!

The component can be reused unless it has been subjected to abnormal mechanical stress, damage or oil contamination.

Install the timing belt over the pulley on the crankshaft.

Install the oscillation damper. Tighten the center nut to **180 Nm** . Use counterhold Special Tool: [999 5433](#) .

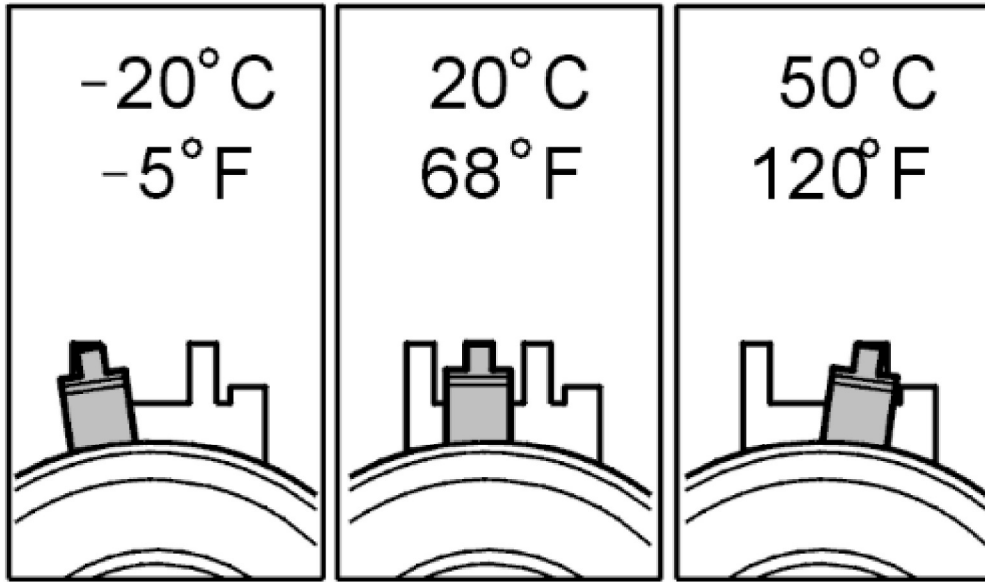
Remove the counterhold and install new screws. Tighten the screws to **25 Nm** . Angle-tighten **30°**

Install the new belt in the following order:

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



Tighten the timing belt



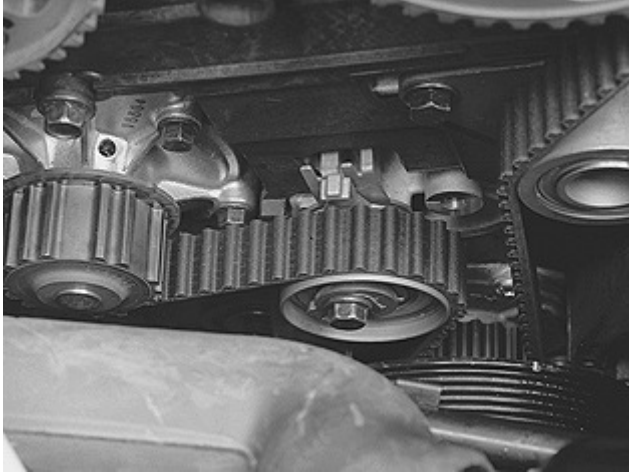
This adjustment is carried out on a cold engine. A suitable temperature is approximately 20°C/68°F.

At higher temperatures, for example with the engine at operating temperature or at 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.



For engine serial no. up to 3188688



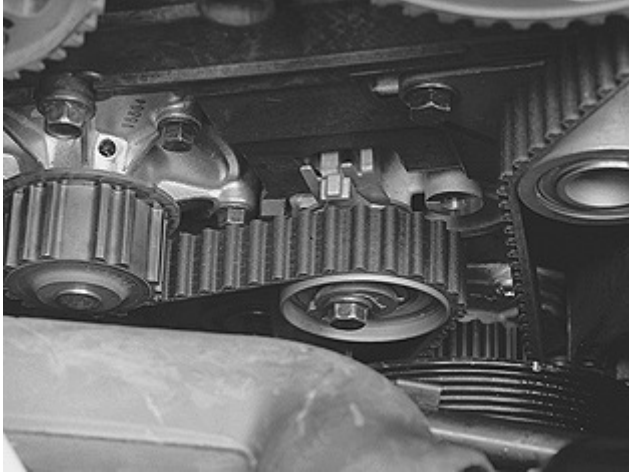
Tension the timing belt as follows:

- turn the crankshaft clockwise carefully until the timing belt is tensioned. The belt must be tensioned between the intake camshaft pulley, the idler pulley and the crankshaft
- hold the centre screw on the belt tensioner fixed. Turn the belt tensioner eccentric **counter-clockwise** until the tensioner indicator passes the marked position.
Then turn the eccentric back so that the indicator reaches the marked position in the centre of the window
- Secure the eccentric and tighten the center screw to **20 Nm** .

Check that the indicator is in the correct position.



For engine serial no. from 3188689



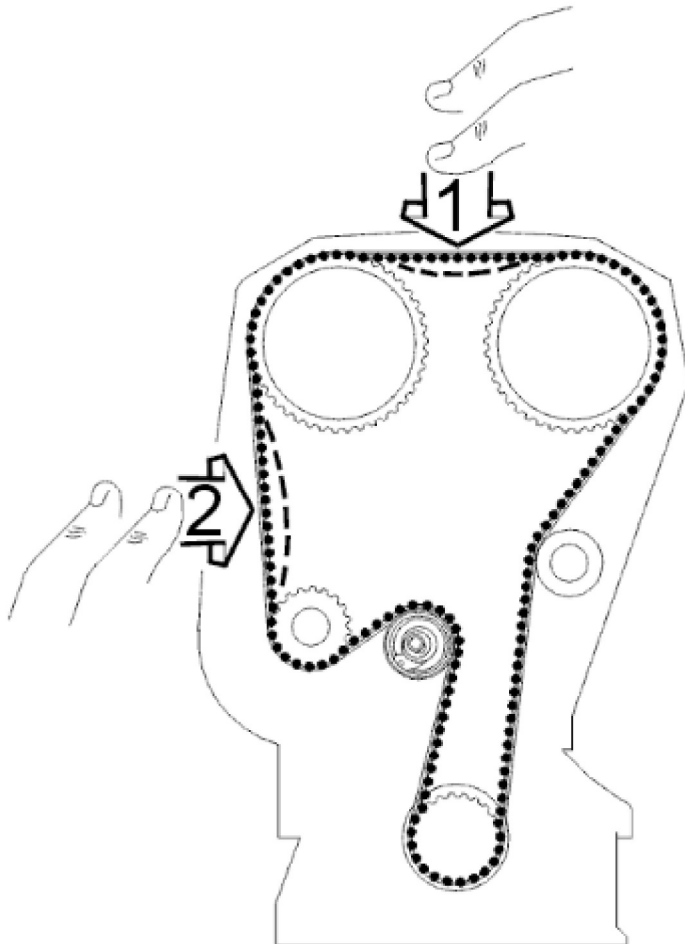
Tension the timing belt as follows:

- turn the crankshaft clockwise carefully until the timing belt is tensioned. The belt must be tensioned between the intake camshaft pulley, the idler pulley and the crankshaft
- hold the centre screw on the belt tensioner fixed. Turn the belt tensioner eccentric **clockwise** until the tensioner indicator passes the marked position.
Then turn the eccentric back so that the indicator reaches the marked position in the centre of the window
- Secure the eccentric and tighten the center screw to **20 Nm** .

Check that the indicator is in the correct position.



Check

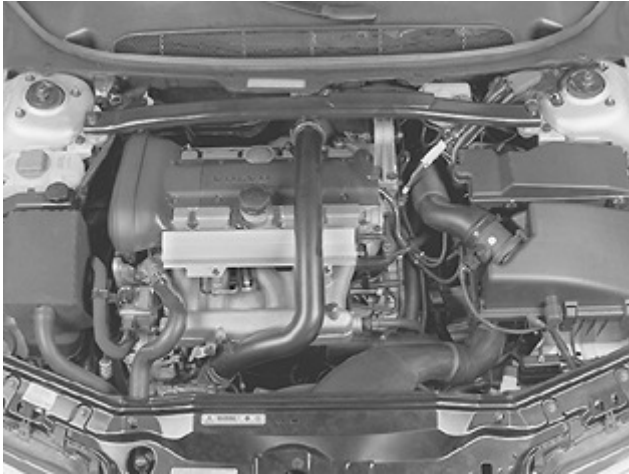


Checking markings:

- press the belt to check that the indicator on the tensioner moves easily
- install the upper timing belt cover
- turn the crankshaft 2 turns. Check that the markings on the crankshaft and camshaft pulley correspond
- check that the indicator on the belt tensioner is within the marked area.



Reinstall



Reinstall the removed components:

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

Note!

Ensure 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** .
Wipe clean and check the engine compartment
- the cover in the wing liner
- the front wheel according to [Installing wheels](#) .

Checking work

Function test:

- Test drive the engine.
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