REPLACING TIMING BELT

Remove components

Caution! Remove the ignition key.

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

Warning! Ensure that no power steering fluid is spilled. It is extremely flammable!

- the auxiliaries belt
- the front timing cover
Position engine according to marking
Raise the car.
- Remove right front wheel.
- Remove nut from fender liner cover.
- Place upper camshaft belt cover.
- Turn 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 upper camshaft belt cover.

Removing timing belt
Slacken off belt tensioner
- Slacken off belt tensioner center screw slightly.
- Hold the center screw still and turn the tensioner eccentric clockwise with a 6 mm (0.24 in) allen key to "10 o'clock".
- Remove the camshaft belt from the belt tensioner, camshaft pulley and idler pulley and the water pump.

Remove vibration damper
- Remove vibration damper. Use counterhold 999 5433. Work the vibration damper loose.
- Remove camshaft belt
Checking the belt tensioner and idler pulley
- Spin the idler pulley and listen for noise. When replacing with a new idler pulley, tighten to 24 Nm (17.7 lb ft)
- Spin the tension pulley and listen for noise. When replacing with a new tension pulley, screw the tension pulley into place with the center screw.
- Screw in the center screw by hand.
- Ensure that the tensioner fork is centered over the cylinder block rib.
- Ensure that the Allen hole on the eccentric is at "10 o'clock".

Installing timing belt

Note: For additional information regarding Variable Valve Timing see: Variable Valve Timing Actuator, Adjustments  See: Variable Valve Timing Actuator > Adjustments
Installing camshaft belt
- Install new camshaft belt over crankshaft pulley wheel.
- Install vibration damper. Tighten the center nut to **180 Nm (132.8 lb ft)** Use counterhold 999 5433. Remove counterhold and install new screws. Tighten the screws to **25 Nm (18.44 lb ft)** and angle tighten 30 degrees

Then install the new belt in the following order:
- crankshaft.
- idler pulley.
- intake camshaft pulley.
- exhaust camshaft pulley.
- water pump.
- belt tensioner.

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**Tighten timing belt**

This adjustment is always carried out on a cold engine.

**Suitable temperature is approximately 20°C/68°F.**

At higher temperatures, for example with engine at operating temperature or at higher ambient temperature, the needle is further to the right.

The illustration shows the needle position when adjusting the camshaft belt tensioner at different engine temperatures.

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**Tighten the timing belt as follows:**
- Turn crankshaft clockwise carefully until the camshaft belt is tensioned.
- The belt should be tight between intake camshaft pulley, idler pulley and crankshaft.
- Hold the belt tensioner center screw secure and turn the belt tensioner excenter counter clockwise until the tensioner needle passes past the mark.
- Then turn the eccentric back so that the needle reaches the marked position corresponding to the relevant temperature.
- At 20°C (68°F) the needle must be centered in the window.
- See figure above.
- Secure the eccentric and tighten the center screw to 20 Nm (14.75 lb ft)

**Check that the needle is in the correct position.**
If this is not the case a new alignment must be carried out.

**Check**

Checking markings:
- Press the belt to see that the indicator on the tensioner moves easily.
- Install the upper timing belt cover.
- Turn crankshaft 2 turns and 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
- Front camshaft belt cover. Tighten to 12 Nm (8.85 lb ft)
- Upper camshaft belt cover. Tighten to 8 Nm (5.9 lb ft)
- Auxiliaries belt.
- Servo reservoir.
- Expansion tank.

Note! Ensure that hoses are correctly positioned.

- The cross member. Tighten the screw at the suspension turrets to 50 Nm (36.9 ft lb) and the screw for the engine bracket to 80 Nm (59.0 ft lb)
  Wipe clean and check engine compartment.
- Cover in fender liner.
- Front wheel.

Checking work
Function test:
- Test drive engine.

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