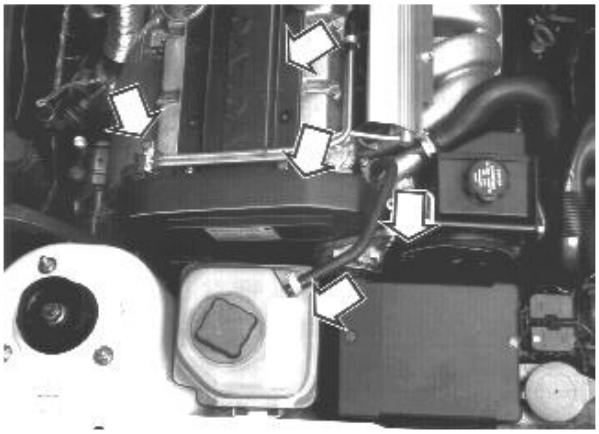
Replacing timing belt

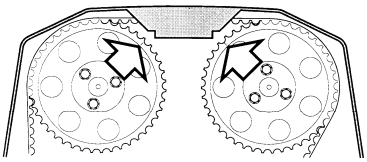
Special tools: 998 8500 , 999 5456

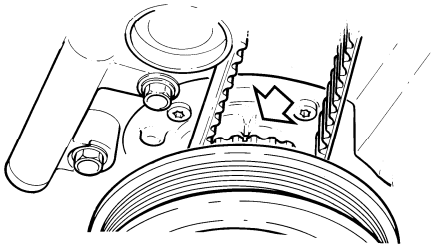


Remove:

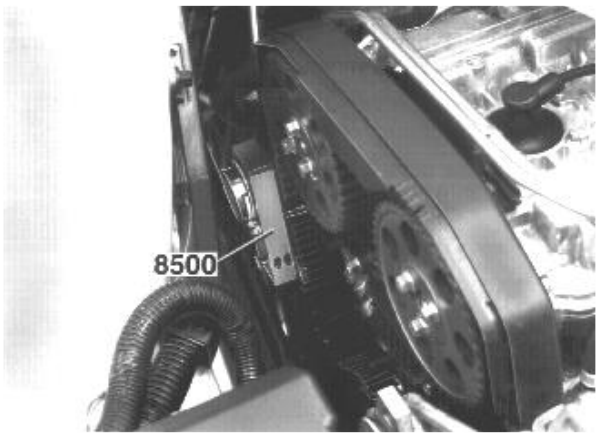
- spark plugs cover
- two fuel lines clamps
- lift up expansion tank and place over engine to one side
- front timing cover
- auxiliaries belt

Position camshafts/crankshaft according to marking





Remove right front wheel and slacken off fender liner slightly.
Remove vibration damper heat shield.
The camshaft pulleys should rotate until all the markings correspond.



Check measure the belt tension

Wait **5 minutes** after aligning the timing belt.
Position measuring instrument 998 8500 between the exhaust camshaft pulley and the coolant pump.
Read the value using a mirror. The measuring instrument must **not** be removed before the reading is made.
For the 21 mm belt, the tension must be within the range of **3.5 - 4.6** units.

For the 23 mm Belt the following applies:	
B 5204/5254/5234	**2.5-4.0** units
B5252	**2.7-4.2** units

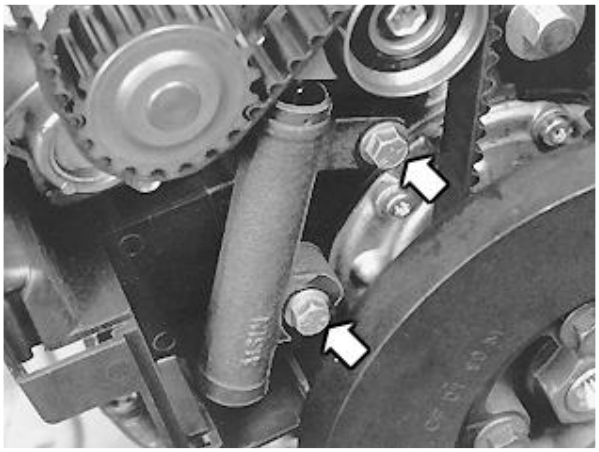
If the above values are **not** obtained the tensioner damping unit **must** be replaced.

Removing timing belt

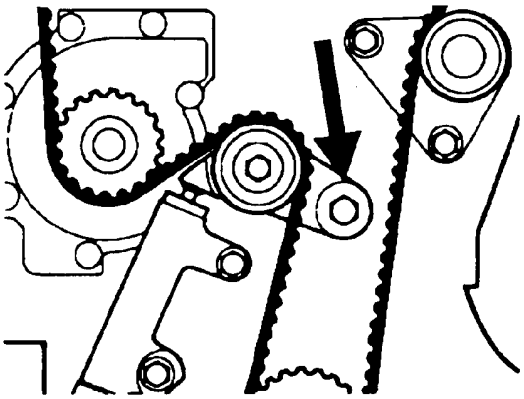
Hold tensioner damping unit upper screw.
Slacken off the lower screw.
Turn the tensioner damping unit so that the pulley comes free.

Remove:

- the lower screw
- tensioner damping unit



- upper timing cover
- timing belt



Greasing the bushing

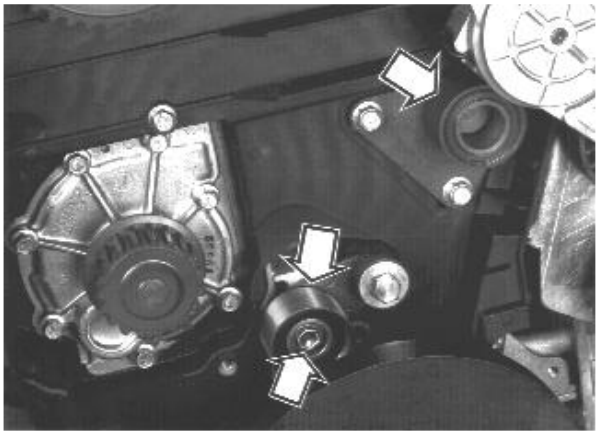
Engines with automatic timing belt tensioners should have the lever bushing greased every time the belt is changed or the tension pulley removed. The lever arm must be greased so that the bearing does not stick and give the wrong tension.

Remove:
- Tension pulley lever screw
- Tension pulley
- Sleeve behind screw

Grease the surfaces on the lever bushing, the screw and the sleeve with grease P/N. 11 61 246-2 (50g) or 11 61 247-0 (500g).

Install:
- Sleeve
- Tension pulley
- Tension pulley lever screw

Tighten the screw to **39 ±5 Nm**.



Check tensioner and idler pulleys

Spin the pulleys and listen for noise in the bearings. Check that the tensioner pulley actuator arm has not seized in its bearing. Check the idler pulley and tensioner pulley are tightened correctly.

Pulley tighten to:	(1992–93)	**40 Nm**
	(1994-)	**30 Nm**
Idler pulley, tighten to:		**24 Nm**

Adjusting the mechanical belt tensioner

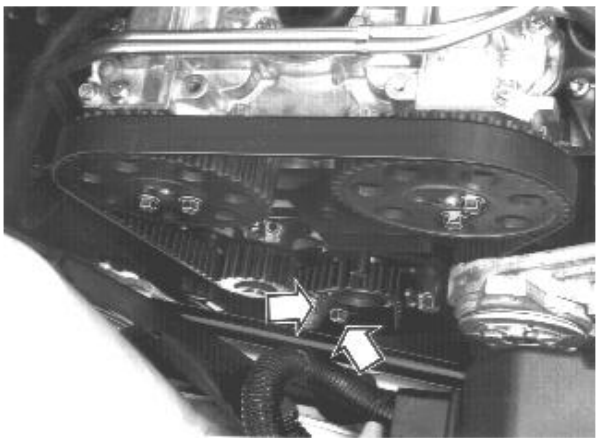
If a mechanical belt tensioner is being used, adjust according to Adjusting the mechanical belt tensioner .

Lock tensioner damping unit

Check that there is no visible leakage.
Compress the tensioner damping unit with tool 999 5456 . Position tensioner damping unit in the tool and screw tool center nut to the bottom. Wait until compression is complete and install a **2 mm** lock pin in

the piston.

Note! If there is leakage or no resistance when pushed in or if it cannot be pushed in the tensioner damping unit must be replaced.

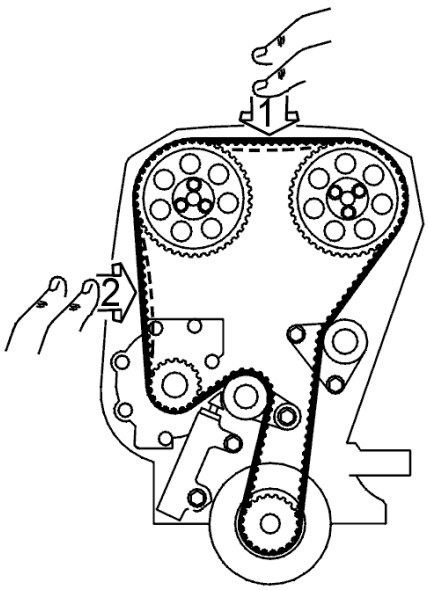


Install the new timing belt

Install the tensioner damping unit, torque tighten to **25 Nm**.
Place belt around crankshaft and right idler pulley.
Place belt over camshaft pulley.
Position belt around coolant pump and press the belt over the tensioner pulley.

Installing camshaft pulley and timing belt

Caution! The timing belt must be installed correctly to obtain the correct timing. Before tightening the screws between the camshaft and camshaft pulley press hard (or hit with a plastic mallet) twice on the belt between the camshafts and then twice on the belt between the exhaust camshaft and the engine coolant pump. Do this to ensure that the gears mesh with the timing gear pulleys.



Secure drive belt

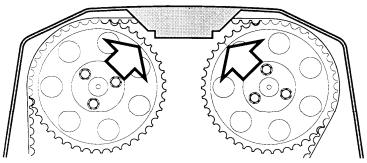
Press hard or knock the belt twice in the direction of arrow (1) and twice in the direction of arrow (2) using a rubber mallet.

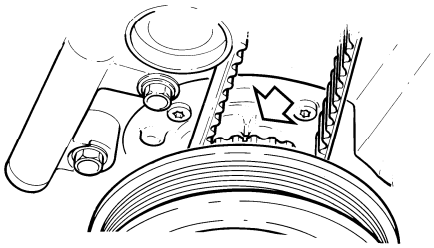
Secure camshaft pulleys

Tighten the camshaft screws (2 x 3) to 20 Nm.

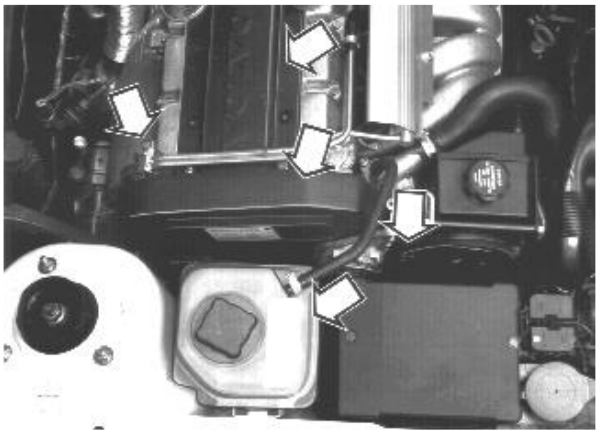
Turn the engine crankshaft two turns

Pull the lock pin out of the tensioner/damping unit.
Position the upper timing cover.
Turn crankshaft two revolutions and check that the markings on the crankshaft and camshaft timing gear





pulley align.



Install:

- two fuel lines clamps
- front timing cover
- auxiliaries belt
- spark plugs cover
- expansion tank
- vibration damper protective panel
- fender liner, wheel

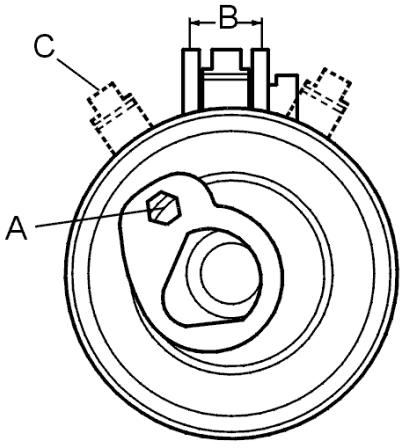
Test function

Test drive engine.

Adjusting the mechanical belt tensioner

Note! As the illustrations in the information are used for different model years and / or models, certain variations may occur. However, the essential information in the illustrations is always correct.

Adjusting the camshaft belt tensioner and camshaft belt



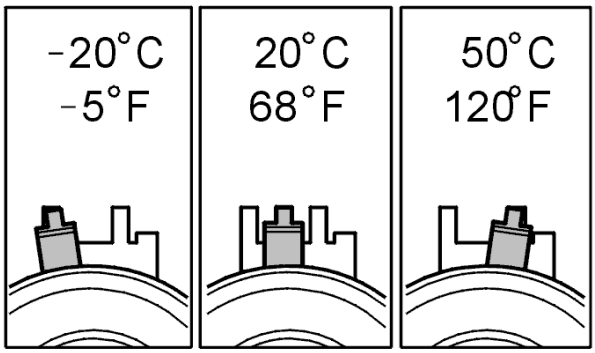
Install the camshaft belt.
Tighten the centre screw to **5 Nm** (4 ft.lb).
Turn the camshaft belt tensioner eccentric (A) with a 6 mm (15/64”) Allen key counter-clockwise until the tensioner indicator (C) moves to the right of the adjustment window (B) and reaches its limit position. Secure the centre screw at the same time.
Turn the eccentric (A) clockwise until the needle (C) is in the centre of the adjustment window (B). Secure the centre screw at the same time.

Note! If the needle (C) leaves the adjustment window (B) the eccentric must be readjusted so that the indicator reaches the adjustment window from the right.
This is to ensure the correct belt tension.

Secure the eccentric and tighten the centre screw to **20 Nm** (15 ft.lb).
Press the camshaft belt and check that the camshaft belt tensioner needle moves freely.

The position of the needle at different temperatures

This adjustment is to be made with 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 position of the indicator when aligning the camshaft belt tensioner at different temperatures is shown in the illustration.