Audi > C5 Platform > 1998 - 2005
4.2 Liter V8 5V Engine Mechanical, Engine Code(s): ART, AWN, BBD
13 - Engine - Crankshaft, Cylinder block

Toothed belt, removing and installing

**Special tools and equipment**

- Spring pin from 2024 A
- Pin wrench 3212
- Open end wrench 3312
- Wrench 3078 (22 mm)
- Clamping bolt 3242
- Camshaft bar T40005
- Puller T40001
- Torque wrench VAG 1410
- Socket attachment VAS 5122
- Tensioning roller key T40009
- Pin T40011

**Removing**

- Remove engine cover -arrows-.
- Remove cylinder head cover -1- and -2-.
- Disengage spring clips at toothed belt cover.
- Remove toothed belt cover.

- Remove sound insulation -arrows-.
- Remove ribbed belt => Page 13-1.
- Remove ribbed belt pulley for viscous fan.

- Turn crankshaft to TDC by hand. Markings -A- and -B- must be aligned.
Check position of camshafts: larger holes -arrow- in securing plates on camshaft sprockets must be in line with each other and facing inward. If not, turn crankshaft one revolution.

Remove sealing plug -arrow- from left side of cylinder block. TDC drilling in crankshaft must be behind sealing plug hole (feel to check).

Screw clamping bolt 3242 for crankshaft into sealing plug hole and tighten.

Remove tensioner for ribbed belt.
- Remove vibration damper.

- Remove torque support -arrows-.

**Note:**

- Mark the direction of rotation of the toothed belt with chalk or felt pen before removing. A used belt can break if it rotates in the wrong direction when reinstalled.

- The toothed belt tensioning element is oil-damped. To compress tensioning element apply constant pressure (compresses slowly).

- Using 8 mm Allen key, turn toothed belt tensioning lever -1- in direction of arrow until tensioning element -2- is compressed far enough to insert pin T40011 in the drilling and in plunger.
Install camshaft bar T40005 onto securing plates of the two camshafts.

Loosen two camshaft bolts and unscrew approximately 5 turns.

Remove camshaft bar T40005.

Pull off both camshaft sprockets using puller T40001.

Loosen toothed belt tensioning roller (arrow).

Remove toothed belt together with camshaft sprocket for cylinder bank 1-4.
Installing

- Install toothed belt on crankshaft sprocket, idler wheel for tensioner, tensioning roller, camshaft sprocket for cylinder bank 5-8, coolant pump and damper wheel.

- Take camshaft sprocket for cylinder bank 1-4, install toothed belt and bolt sprocket onto camshaft.

- Lightly secure both camshaft sprockets with securing plates by tightening hand-tight.

**Note:**

*The camshaft sprockets must be tight enough on the camshaft tapers to be turned but not to be moveable axially.*

- Attach camshaft bar T40005.

- Insert a 5 mm drill bit between tensioner and hydraulic piston -arrow-. 
- Tension toothed belt initially to 4 Nm using tensioning key T40009 and torque wrench VAG 1410 with socket attachment VAS 5122 by turning in direction of arrow. Then tighten eccentric wheel to 22 Nm.

- Remove 5 mm drill bit.

- Using 8 mm Allen key, turn toothed belt tensioning lever -1- in direction of arrow until T40011 can be removed.

- Using 8 mm Allen key, turn toothed belt tensioning lever in direction of arrow until 7 mm drill bit can be inserted between toothed belt tensioning lever and hydraulic tensioning element.
- Tighten bolts on camshaft sprockets.

**Note:**

*Use camshaft bar T40005 to prevent camshafts from turning.*

- Remove camshaft bar T40005.
- Remove 7 mm drill bit.
- Remove crankshaft clamping bolt 3242 and install sealing plug in hole.
- Turn crankshaft 2 revolutions.

- Measure dimension -a- between toothed belt tensioning lever and hydraulic tensioning element.
  
  - Dimension a = 5 mm.
  
  - If distance is not correct, re-adjust tensioning roller to 5 mm.

- Check dimension -a- of belt guard with feeler gauge.
  
  - Dimension -a- = 1 mm (0.0393 in.)
Right cover, adjusting

- Turn crankshaft until all bolts -arrows- are exposed.
- Loosen all bolts -arrows- of cover.
- Adjust dimension -a- using feeler gauge to 1mm (0.0393 in.).

![Diagram](A13-0257)

- Check dimension -a- of belt guard with feeler gauge.
  - Dimension -a- = 1 mm (0.0393 in.)

Left cover, adjusting

- Turn crankshaft until all bolts -arrows- are exposed.
- Loosen all bolts -arrows- of cover.
- Adjust dimension -a- using feeler gauge to 1 mm (0.0393 in.).

<table>
<thead>
<tr>
<th>Tightening torques</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Toothed belt sprocket to camshaft</td>
<td>55 Nm</td>
</tr>
<tr>
<td>Idler wheel</td>
<td>45 Nm</td>
</tr>
<tr>
<td>Toothed belt tensioning roller</td>
<td>20 Nm</td>
</tr>
<tr>
<td>Pulley to crankshaft</td>
<td>20 Nm</td>
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<tr>
<td>Toothed belt tensioner</td>
<td>10 Nm</td>
</tr>
<tr>
<td>Eccentric wheel</td>
<td>22 Nm</td>
</tr>
<tr>
<td>Center bolt to crankshaft 1)</td>
<td>200 Nm plus turn (180 ° ) 2</td>
</tr>
<tr>
<td>Cover to cylinder head</td>
<td>10 Nm</td>
</tr>
</tbody>
</table>

1) Always replace center bolt.
2) Turning in two stages of 90 ° is also permissible.