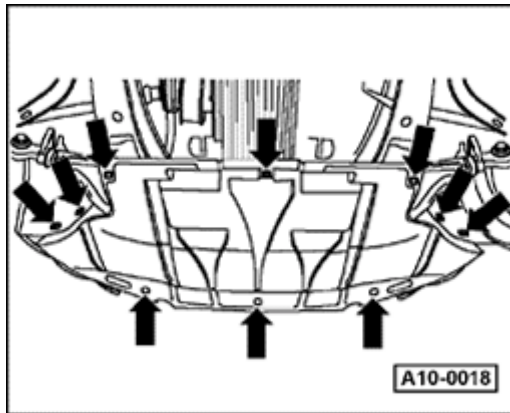


Engine, disassembly and assembly

Ribbed belt, removing and installing

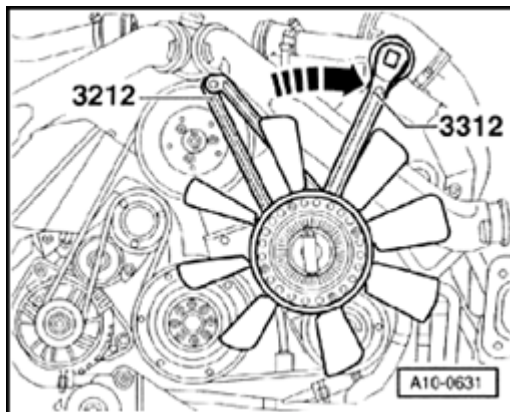
Removing

**A**

- Remove noise insulation -arrows-.
- Remove bumper

⇒ [Repair Manual, Body Exterior, Repair Group 63](#)

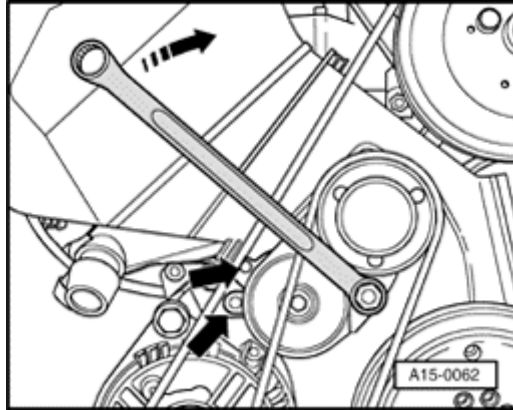
- Move lock carrier to service position

**A**

- Remove viscous fan (counter-hold with pin wrench 3212).

Note:

Viscous fan has left-hand thread: turn in direction indicated.



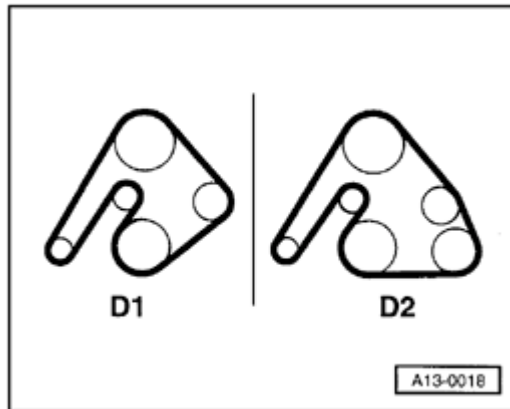
A

- Mark direction of rotation of ribbed belt.
- To slacken ribbed belt, turn to the right using a 17 mm ring spanner until the two holes are aligned with each other -arrow- and hold in position with mandrel 3204.

Note:

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

- Take off ribbed belt.

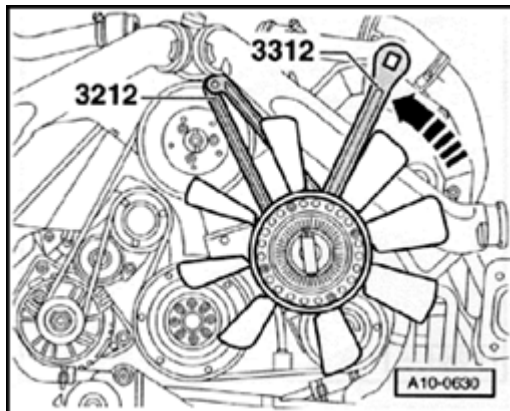


Installing

- A**
- Install ribbed belt onto crankshaft pulley and idler wheel first, and push belt onto tensioning roller last.

Routing of ribbed belt

- ◆ D1 - vehicles without air conditioner
- ◆ D2 - vehicles with air conditioner
- Take out mandrel 3204.



- A**
- Counter-hold belt pulley for viscous fan using spanner wrench 3212 and tighten viscous fan using open end spanner 3312 and torque wrench 1331 (left hand thread).

Note:

Viscous fan has left-hand thread: turn against direction indicated.

- Install lock carrier.

⇒ [Repair Manual, Body Exterior, Repair Group 50](#)

- Install bumper.

⇒ [Repair Manual, Body Exterior, Repair Group 63](#)

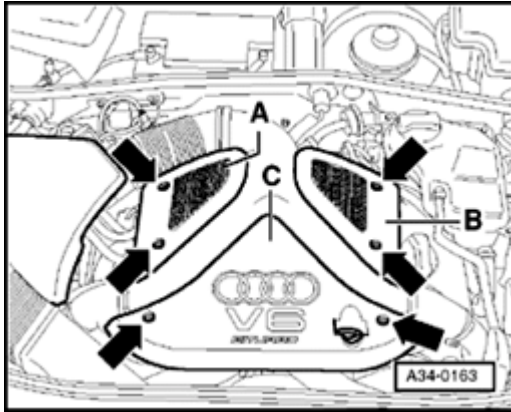
- Install noise insulation.

Toothed belt, removing and installing

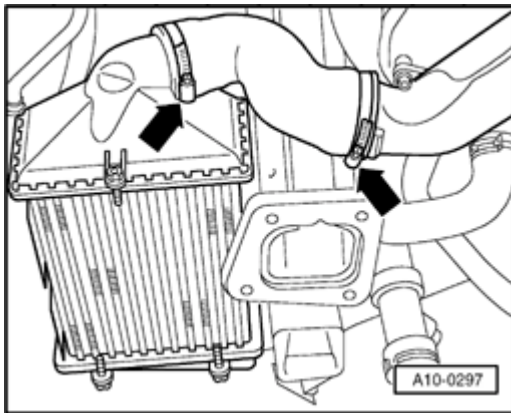
Removing

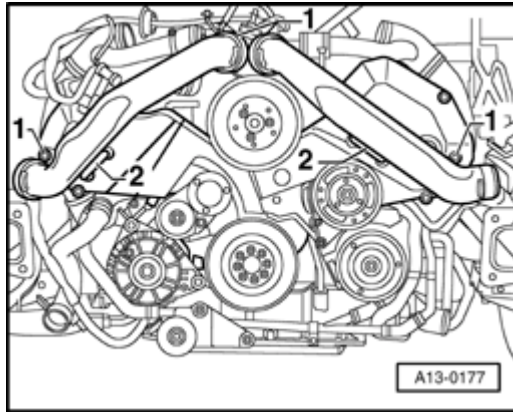
- Remove ribbed belt ⇒ [Page 13-1](#) .

A - Remove bolts -arrows- and remove engine cover panel -C-.



A - Remove pressure hoses -arrows- between charge air coolers and pressure pipes (left and right sides).

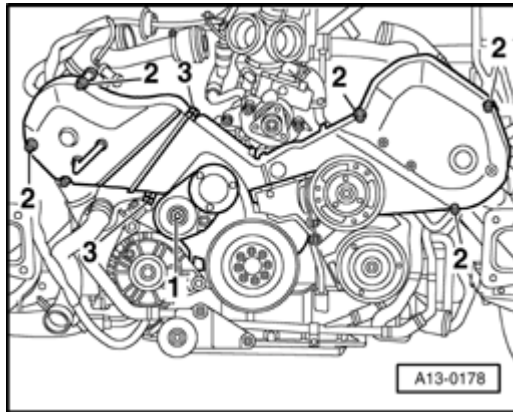


**A**

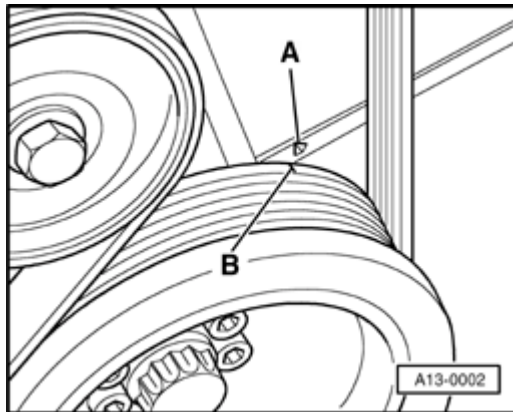
- Remove pressure pipes -1-.

Note:

Watch position of retaining strips -2-.

**A**

- Remove tensioner -1- for ribbed belt.
- Remove left and right toothed belt guards -2-.
- Remove center toothed belt guard -3-.



- A**
- Turn crankshaft to TDC by hand. Marks -A- and -B- must be aligned.

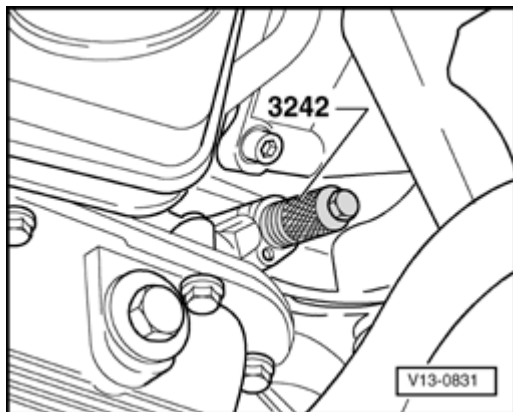
Note:

Turn over the engine at the central bolt on the crankshaft.

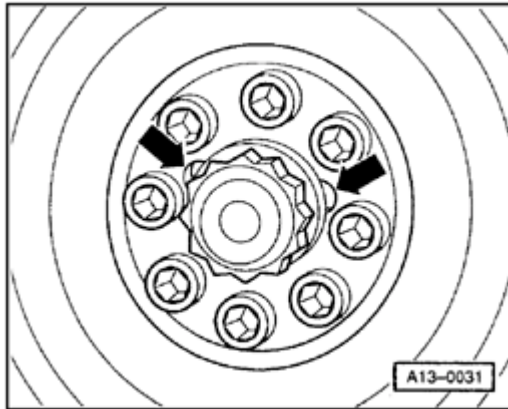
- Check position of camshafts: larger holes in securing plates on camshaft sprockets must align opposite one another on inside. If not, turn crankshaft one revolution further.
- Remove sealing plug from cylinder block, left.
- The TDC drilling in the crankshaft must be visible (or able to be felt) in line with the sealing plug hole.

CAUTION!

Injury risk - do not turn engine while feeling for TDC drilling.



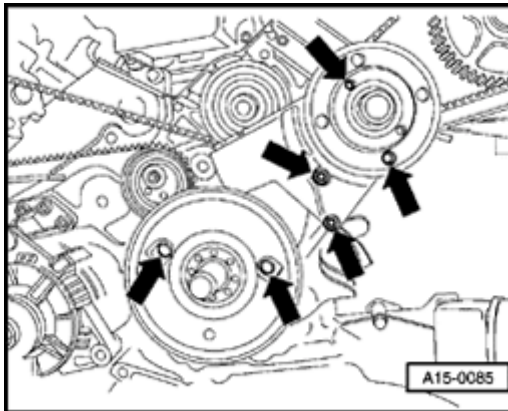
- A**
- Screw clamping bolt 3242 for crankshaft into sealing plug hole and tighten.



- A** - Remove vibration damper on crankshaft.

Note:

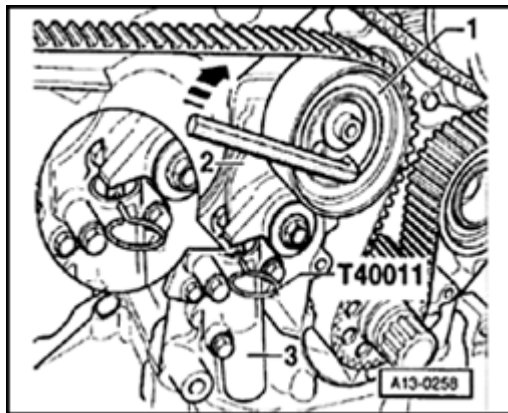
The central bolt does not have to be loosened to remove the vibration damper.



- A**
- Remove idler wheel for ribbed belt -arrows-.
 - Remove toothed belt guard behind vibration damper -arrows-.

Note:

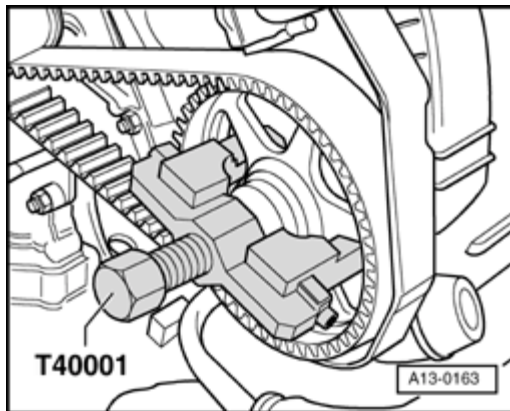
- ◆ *Mark the direction of rotation of the toothed belt with chalk or felt pen before removing. A used belt can break if it rotates in the wrong direction when reinstalled.*
- ◆ *The toothed belt tensioning element is oil-damped and can therefore only be compressed slowly by applying constant pressure.*

**A**

- Using a hex key, turn toothed belt tensioning roller -1- clockwise 8 mm in direction of arrow until tensioning lever -2- compresses tensioning element -3- sufficiently to enable special tool T 400 11 to be fitted in drilling and in plunger.
- Insert special tool T 400 11, release toothed belt tensioning roller.
- Take off toothed belt.

Installing

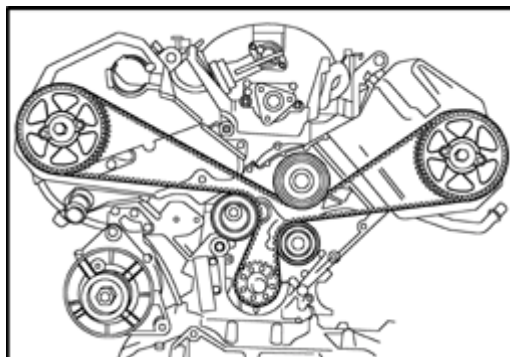
- Insert camshaft clamp 3391 in securing plates of two camshafts.
- Slacken both camshaft bolts and remove approx. 5 turns.
- Take out camshaft clamp 3391.



- A** - Pull off both camshaft sprockets with special tool T40001.
- Reinstall both camshaft sprockets with securing plates and tighten hand-tight again.

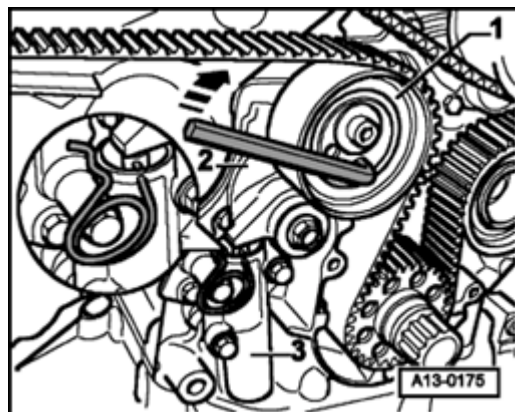
Note:

The camshaft sprockets should be just tight enough on the camshaft tapers so that they can still be turned but do not move axially.

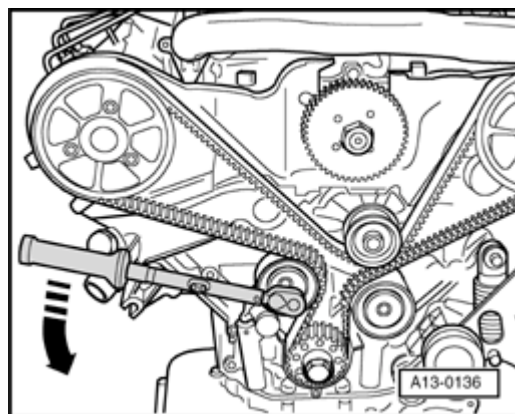


- A** - Install toothed belt on all sprockets as illustrated.
- Install camshaft clamp 3391.

13-10

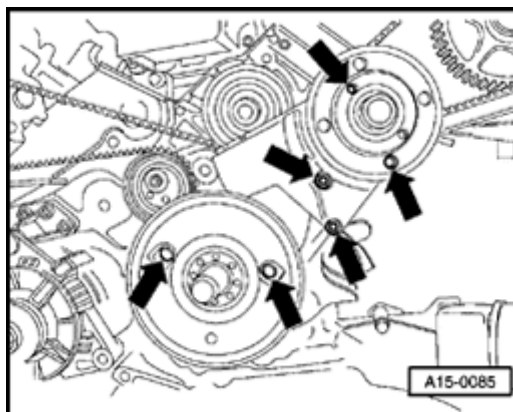


- A
- Using a hex key, turn toothed belt tensioning roller -1- clockwise 8 mm in direction of arrow until special tool T 400 11 can be removed.

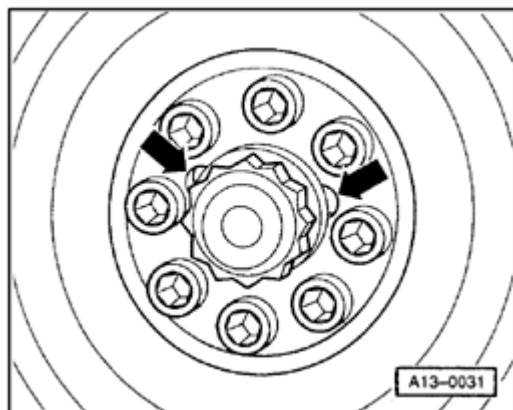


- A
- Pre-tension toothed belt by a turning in direction of arrow with a torque of 15 Nm using a torque wrench.
 - Tighten bolts on camshaft sprockets.

13-11



- A
- Install idler wheel for ribbed belt -arrows-.
 - Install toothed belt guard behind vibration damper -arrows-.



- A
- Install vibration damper. Note positions of locating lugs -arrows- on belt sprocket.

- Install toothed belt guard.
- Install ribbed belt ⇒ [Page 13-3](#) .

Tightening torques	
Toothed belt sprocket to camshaft	55 Nm
Idler wheel	45 Nm
Toothed belt tensioning roller	20 Nm
Pulley to crankshaft	20 Nm
Toothed belt tensioning element	10 Nm
Central bolt ¹⁾ to crankshaft	200 Nm + 180 ◦ 2)

1) The central bolt must always be replaced.

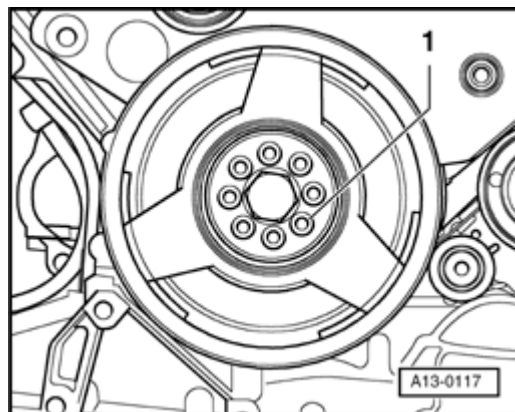
2) Turning in two stages of 90 ° is also permissible.

Vibration damper, removing and installing

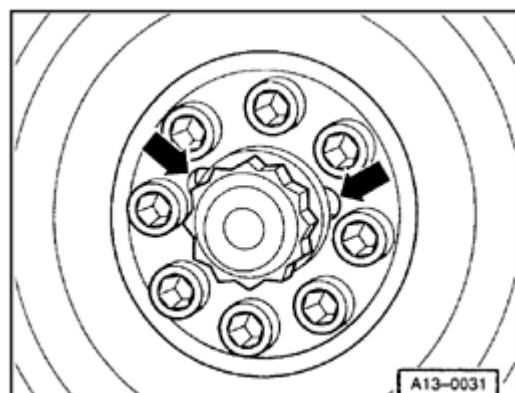
- Remove ribbed belt ⇒ [Page 13-1](#) .

Note:

The central bolt does not have to be loosened to remove the vibration damper.



- A** - Remove vibration damper.



- A** - When installing, ensure that notches -arrows- in vibration damper are aligned with locating lugs on toothed belt sprocket.
Tightening torque: 25 Nm