Change TIMING BELT (aka CAMBELT) and WATER PUMP (2.0 TDI) *

(Audi A6 2005-2011)

*Caution! This instructions are created by random users and must be used as a reference only! Please, take all safety precautions, and if you're not sure - don't act! Administration will not accept any responsibility for damage to you or your vehicle after following these instructions bellow.

Tools we need:

Variety of spanners, sockets and screwdrivers (T30, T25), 6mm hex-allen key, 19mm twelve sided socket, support bolts for bumper, crankshaft locking tool, locking pins for camshafts, torque-wrench.. New cambelt kit, water pump and coolant.

Posted by: waway

This is how we do it:

STEP ONE
Get access to cambelt (timing belt):
- jack up the car, put it on stands (never use jack on its own)
- remove plastic underbelly cover T30 bolts (car on the video missing it)
- open bonnet (hood)
- remove engine cover
- take 2x13mm bolts out - for the air filter intake
- remove air filter cover and intake (from the bumper)
- take of the plastic cover above the grill - just clips
- take out 3x13mm bolts on the top of the grill
- remove front cover from inside wheel arches T25’s
- remove 10mm nuts that hold bumper from inside - access from under wheel arch
- tap bumper cover towards front and take it off the clips
- remove bumper cover - don't forget to disconnect fog lights
- remove headlight, each headlight is held on 3 bolts, can be done by 10mm socket or T30 screwdriver
  * Note: to disconnect connectors - push them on first and the push little liver in
- remove rubber trim in the top of the bumper (just front will do)
- use 13mm socket on long extension to remove 4 bolts on each side of the bumper + 10mm nut on each side
- undo T30 bolts (one on each side) that hold brackets (also one on each side) to the bumper underneath the car
- insert bumper supporting bolts (one on each side) where 4x13mm used to be
- remove T30 bolts on the top of the bumper - 2 on each side
- slide bumper with radiators and all stuff on it forward and leave hanging on support bolts (if you don't have support bolts put bumper on something else, but be careful - don’t damage anything - better find those bolts - so convenient ;-))
- remove cambelt cover (3 clips)
- remove auxiliary belt - turn 16mm bolt on tensioner wheel clockwise, to release tension
  * Note: if you fit the same belt, it's recommended to fit it the way so it moves same direction - either mark the direction or (as I do) if you can see any writings on it remember where they facing
- remove rubber boot from inside crankshaft pulley
- remove 4x6mm hex-allen bolts and remove the pulley
- remove 2 little covers at the bottom of the cambelt (5x10mm bolts top cover overlaps bottom)
Now with the cambelt exposed you can do...

**STEP TWO**
Change cambelt, pulleys (come with the kit) also, once you get there it's recommended to change water pump as well.

- Lock crankshaft with locking tool (see image below, or video)
  * Note: there are two types of crankshaft locking tools, find mark on your crankshaft gear, and use the one that match that mark
- Turn crankshaft clockwise with 19mm twelve-sided socket. For each two rotations of crankshaft there is only one of camshaft. Lock crankshaft in the way, so holes with teeth on camshafts are on the top
- Now you need to lock (and adjust if necessary) camshafts into opposite side holes.
Put camshaft pins in (they need to go all the way in). If they don't undo 13mm bolts (3 on each camshaft pulley) and adjust camshafts.
- With both pins and crank locking tool in - undo tensioner wheel bolt (13mm or 15mm), with decreased tension remove cambelt.
- Remove tensioner wheel and two pulleys (all of it new comes with the kit(see video below))
- To remove water pump - undo 3x10mm bolts amd work it out - (!) don't forget to put some tray underneath, because coolant will come out.
  * Note: once coolant stopped leaking remove tray, so you don't drop anything there
- Fit new water pump with new O-ring, it's good to lubricate O-ring a little bit, so it goes in smooth
- Put new pulleys and studs (pulleys go with sticking out bit towards the engine)
- With the pin in, put the tensioner wheel on the stud from the engine. If tensioner doesn't have pin in, rotate middle bit anti-clockwise and put it in. When you put tensioner, make sure that sticking out rectangular bit gets into rectangular hole in engines block
- With the pin in, turn tensioner clockwise with 6mm hex-allen all the way till it stops and put a bit of tension on the middle nut, not a lot, just enough to hold it
- With 13mm bolts loose on camshaft pulleys fit new cambelt, so adjusting bolts
(13mm) stay in the middle of their pro-longated holes.
* Note: If new belt has arrow of direction fit it accordingly to that.
- loosen nut on the tensioner wheel, so belt gets tension and take the pin out of the tensioner, take nut off and put a little bit of thread-lock on it
- put nut back on, take 6mm hex-allen tool, turn clockwise till metal triangular arrow behind tensioner wheel gets inside the gap on little metal plate (see video, if necessary), then tighten the nut slightly, so it stays there
- with the torque wrench tighten tensioner nut up to 20Nm and after that turn the nut for another 45 degrees
- tighten up 13mm bolts on camshafts
- remove crankshaft locking tool and locking pins. If pins are too tight, put a bit of pressure on crankshaft to move it slightly
- to check alignment, turn crankshaft with 19mm twelve-sided socket fro two rotations, put crankshaft locker, check with pins on camshafts, if it out of the way (don't fit) align it again.

!NOTE! When locking crankshaft, make sure you turn it CLOCKWISE before you lock it, so tension stays correct way - it's important for alignment.

Once you are happy with the result,

STEP THREE
- put everything back together in a reverse sequence
* Notes:
(!) Fitting crank pulley, make sure, you fit fifth hole with matching pin
(!) See image bellow for auxiliary belt diagram, because it can be easy to get it wrong
(!) Fitting headlights, don't mess with adjusting (holes with threads that hold clusters), or re-adjust them if you like ;)
- fill up coolant (with correct mixture for your car)
- start the engine with heating on, so coolant goes everywhere where it can go, keep checking coolant level for the near future, just in case if any bubbles come out and level drops

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Here's the video:

https://www.youtube.com/watch?v=oGwDYXFPKK4

Any comments welcome! :)

Crankshaft locking tools
Use the one where marks match

Tool and Crankshaft Pulley with Aligned Timing Mark

12 O'clock Positions

Round

Pulley Position Mark
Routing of poly V-belt

1. Vibration damper
2. Poly V-belt tensioner
3. Poly V-belt
   - For alternator, power steering pump and air conditioner compressor
4. Alternator
5. Power steering pump
6. Idler roller
7. Air conditioner compressor