



**KD459.70 /06-2022**

The 1.2 PureTech turbo engine is still causing lots of trouble for its owners. At issue is premature degradation of the engine oil, which leads to timing belt wear – a problem already discussed in connection with the naturally aspirated version.

But in the turbo version, when the timing belt disintegrates, the residue gradually contaminates the engine oil and can potentially plug the vacuum pump, the variable valve timing solenoids, or the (filter) screen of the oil pump.

There are several adverse impacts: if the vacuum pump plugs up, the power brake system fails, which is no small problem, as you can imagine. Braking then requires tremendous force on the brake pedal. These engines have also experienced lubrication issues (loss of oil pressure) or camshaft and valve fouling.

As a result, a safety recall has been issued.

The recalled vehicles include all Peugeot (recall code JZR), Citroën and DS (recall code HFC) models equipped with the 1.2 Puretech 110 hp or 130 hp engine and manufactured between March 2013 and April 2017.

The source of the problem relates to the rapid degradation of engine oil, primarily in vehicles operated relatively infrequently (less than 15,000 km per year) and where the vast majority of that usage involves city driving. Under these usage conditions, the 1.2 PureTech is susceptible to oil dilution, whereby fine droplets of unburnt fuel slide down the cylinder walls and mix with the oil in the pan below. The resulting mixture turns out to be abrasive for the belt – and this explains the wear. In the absence of a technical solution that prevents this condition, the only way to protect the belt on these infrequently used cars is to change their engine oil annually. Which explains why the manufacturer recommends verifying the condition of the belt via the oil fill port during every routine maintenance. Basically, when topping up the oil, you pour it into a hole situated over the timing belt. Through that same hole, you can see part of the belt and this lets you determine its condition.



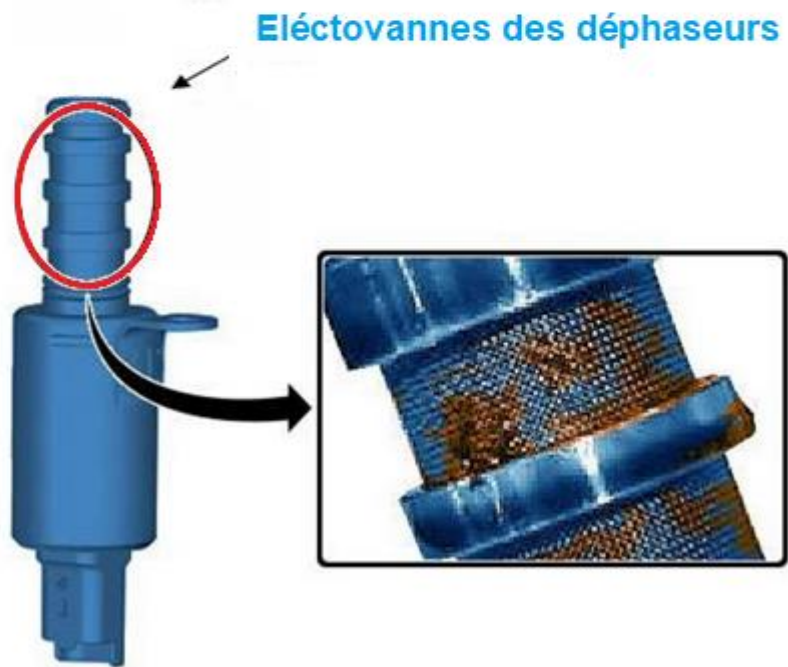
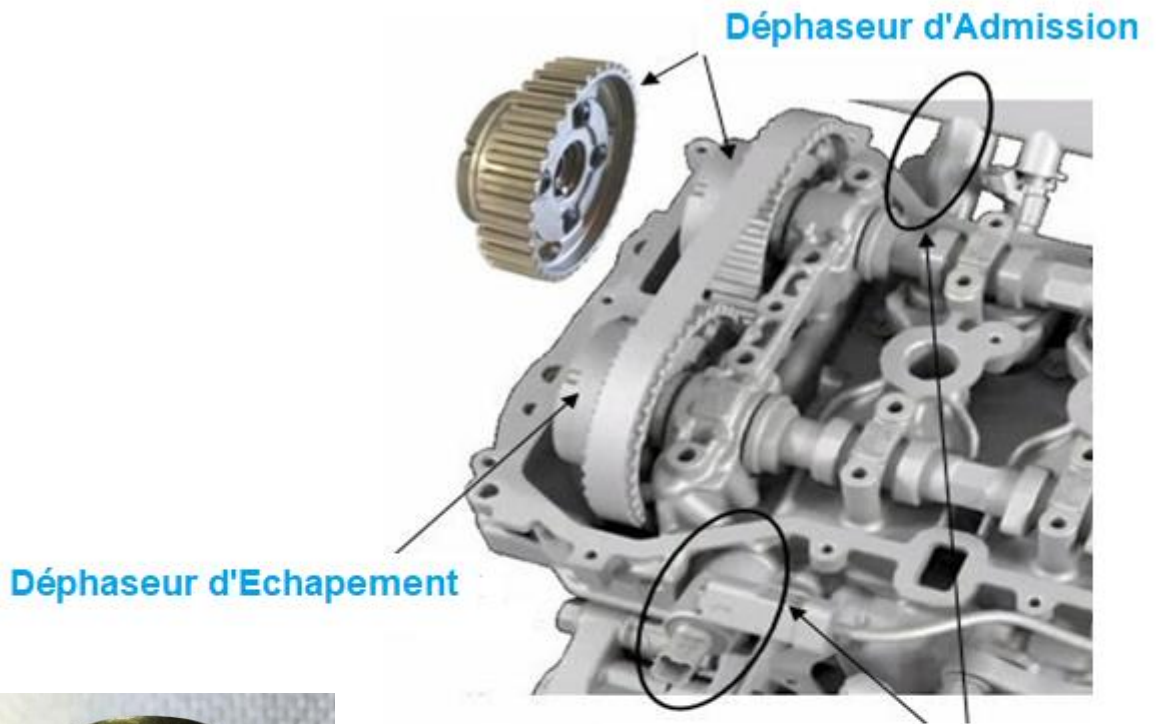
The belt should be inspected (belt width check) using a timing belt checking gauge at three different points (crankshaft rotator`



Timing belt checking gauge  
OE (G-0109-6)

**NOTE:** The replacement interval for the timing belt is now 100,000 km or 6 years.





And in all cases, the engine control unit must be reprogrammed to – as the recall notice states – "update the engine control unit for the purposes of improving the power brake system diagnostics and to eliminate any risk of reduction or loss of braking function." In other words, the car will illuminate the oil pressure loss indicator on the instrument panel earlier to show that there's a problem.

## Vehicles

Peugeot	208 I	EB2 DT (HNZ)	1.2 L THP 110 hp
	208 II	EB2 ADTD	1.2 L THP 100 hp
		EB2 DTS (HNY)	1.2 L THP 130 hp
	2008	EB2 DT (HNZ)	1.2 L THP 110 hp
		EB2 DTS (HNY)	1.2 L THP 130 hp
	2008 II	EB2 ADTD	1.2 L THP 100 hp
		EB2 DTS (HNY)	1.2 L THP 130 hp
		EB2 ADTX	1.2 L THP 155 hp
	308 II	EB2 DT (HNZ)	1.2 L THP 110 hp
		EB2 DTS (HNY)	1.2 L THP 130 hp
	Partner	EB2 DT (HNZ)	1.2 L THP 110 hp
	Rifter	EB2 DT (HNZ)	1.2 L THP 110 hp
		EB2 DTS (HNY)	1.2 L THP 130 hp
	3008 I	EB2 DTS (HNY)	1.2 L THP 130 hp
3008 II	EB2 DTS (HNY)	1.2 L THP 130 hp	
5008	EB2 DTS (HNY)	1.2 L THP 130 hp	
5008 II	EB2 DTS (HNY)	1.2 L THP 130 hp	
Citroën	C4 SpaceTourer	EB2 DTS (HNY)	1.2 L THP 130 hp
	C3 II	EB2 DT (HNZ)	1.2 L THP 110 hp
	C3 III	EB2 DT (HNZ)	1.2 L THP 110 hp
	C4 II	EB2 DT (HNZ)	1.2 L THP 110 hp
		EB2 DTS (HNY)	1.2 L THP 130 hp
	C4 Cactus	EB2 DT (HNZ)	1.2 L THP 110 hp
		EB2 DTS (HNY)	1.2 L THP 130 hp
	C4 Picasso II	EB2 DT (HNZ)	1.2 L THP 110 hp
		EB2 DTS (HNY)	1.2 L THP 130 hp
	C3 Picasso	EB2 DT (HNZ)	1.2 L THP 110 hp
	C3 Aircross	EB2 DT (HNZ)	1.2 L THP 110 hp
		EB2 DTS (HNY)	1.2 L THP 130 hp
	Berlingo II	EB2 DT (HNZ)	1.2 L THP 110 hp
	Berlingo III	EB2 DT (HNZ)	1.2 L THP 110 hp
		EB2 DTS (HNY)	1.2 L THP 130 hp
	DS4	EB2 DTS (HNY)	1.2 L THP 130 hp
	DS3	EB2 DT (HNZ)	1.2 L THP 110 hp
EB2 DTS (HNY)		1.2 L THP 130 hp	
DS3 Crossback	EB2 ADTD	1.2 L THP 100 hp	
	EB2 DTS (HNY)	1.2 L THP 130 hp	
	EB2 ADTX	1.2 L THP 155 hp	
Toyota	ProAce City	EB2 DT (HNZ)	1.2 L THP 110 hp
		EB2 DTS (HNY)	1.2 L THP 130 hp
		EB2 DTS (HNY)	1.2 L THP 130 hp
Opel	Crossland X	EB2 DT (HNZ)	1.2 L THP 110 hp
		EB2 DTS (HNY)	1.2 L THP 130 hp
	Corsa VI	EB2 ADTD	1.2 L THP 100 hp
		EB2 DTS (HNY)	1.2 L THP 130 hp
	Mokka II	EB2 ADTD	1.2 L THP 100 hp
		EB2 DTS (HNY)	1.2 L THP 130 hp
		EB2 ADTX	1.2 L THP 155 hp
Grandland X	EB2 DT (HNZ)	1.2 L THP 110 hp	
	EB2 DTS (HNY)	1.2 L THP 130 hp	



# KD459.70



## Recommendations

Turn the engine only by rotating the crankshaft pulley in the direction of operation.  
Do not rotate the crankshaft or the camshafts while the timing belt has been removed.  
Make timing belt adjustments only while the engine is cold.  
It is recommended not to reuse accessory belts after removal: always replace them instead.

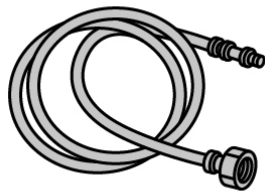
## Systematic replacement of parts

Name	Quantity
Seal, crankshaft	1
Seal, oil separator	1
Seal, vacuum pump	1
Seal, crankcase, timing belt cover	1
Belt, water pump	1
Bolt, crankshaft pulley	1
Bolts, dephaser pulleys	2

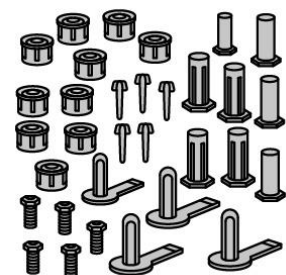


## Required tools

SNR préconise les outillages Clas OM 3747, OM 4141 et OM 4058



Tuyau de purge  
OE (4192-T)



Bouchon de fermeture  
OE (0189-Q)



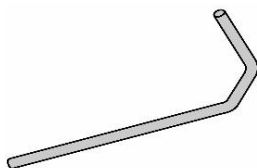
Outil de blocage de l'arbre à  
cames d'admission  
OE (0109-2C)



Outil de blocage  
de l'arbre à cames  
d'échappement  
OE (0109-2D)



Outil de blocage du  
volant moteur  
OE (0197-N)



Goupille de blocage  
du galet tendeur  
OE (0188-Q1)



Outil de montage  
courroie d'accessoires  
OE (0109-1B)



Gabarit de courroie de  
distribution  
OE (G-0109-6)

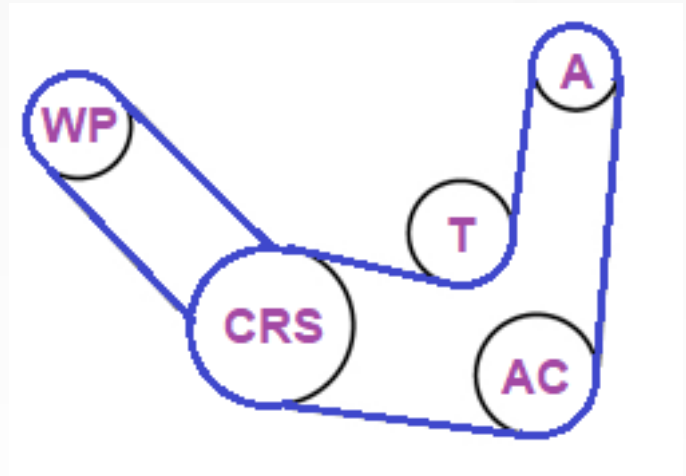
## Tightening torques

Name	Figures	Recommendations	Tightening torque
Vacuum pump bolts (3)	(see Figure 6)	Use a new seal.	8 Nm
Timing belt cover bolt (1)	(see Figure 12) (see Figure 21)		
Crankshaft pulley bolt (3)	(see Figure 25)	Use new bolt.	Step 01 20 Nm Step 02 25 Nm Step 03 45°
Tensioner roller bolt <b>GT359.41</b> (1)	(see Figure 24)		20 Nm
Idler roller bolt <b>GE359.32</b> (3)	(see Figure 23)		20 Nm
Crankshaft gear bolt (6)	(see Figure 23)	Use a new bolt.	Step 01 50 Nm Step 02 180°
Camshaft dephaser bolts (2)	(see Figure 19)	Use new bolts	Step 01 20 Nm Step 02 120°
Oil separator bolts (1) - (16)	(see Figure 28)	Tighten in recommended order. Use a new seal.	10 Nm



## Accessory belt routing

Abb r.	Name
A	Alternator
AC	Air conditioner compressor
CRS	Crankshaft
T	Tensioner roller
WP	Water pump



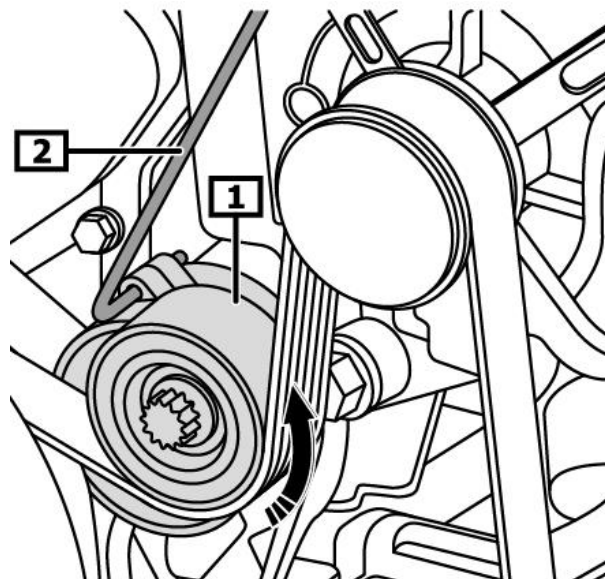
## Removal

- Place the vehicle on a lifting platform.
- Remove the engine cover.
- Raise the vehicle.
- Remove the right front wheel.
- Remove the right front wheel arch liner.
- Disconnect the battery.
- Compress the tensioning device by rotating it anticlockwise with a suitable tool. (1)
- Insert the blocking tool to fix the tensioner roller in place. (2)

### Special tools required

Tensioner roller blocking tool (2) **OE (0188-Q1)**

**Figure 1**

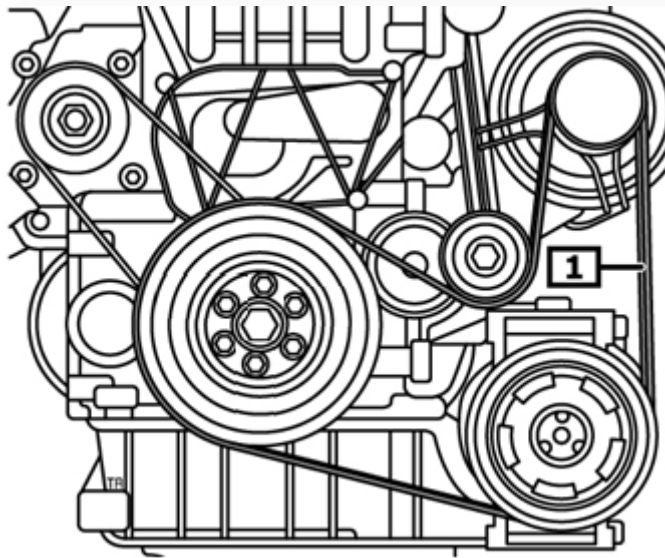


- 1 Accessory belt tensioning system
- 2 Tensioner roller blocking tool



Remove the accessory belt from the alternator and air conditioner compressor. (1)

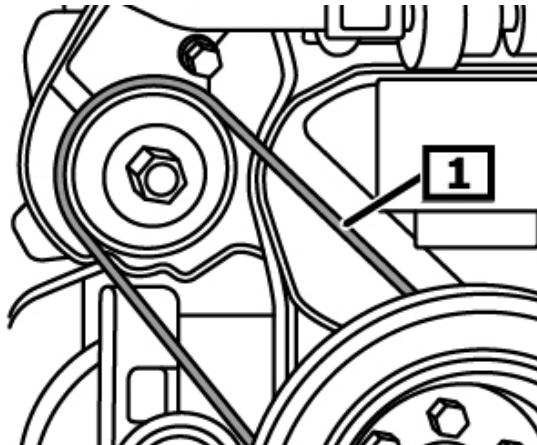
Figure 2



1 Accessory belt – alternator / air conditioner compressor

Cut the accessory belt from the water pump and remove it. (1)

Figure 3



1 Accessory belt – water pump

Attach purge line to the purge screw. (1)

Lower the fuel pressure.

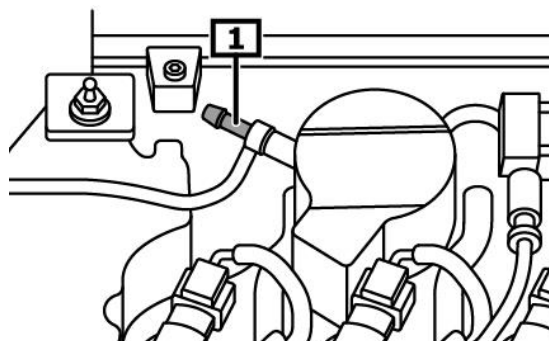
Remove the vent hose.

Special tools required

Purge hose **OE (4192-T)**

**NOTE:** Collect any leaking fuel.

Figure 4



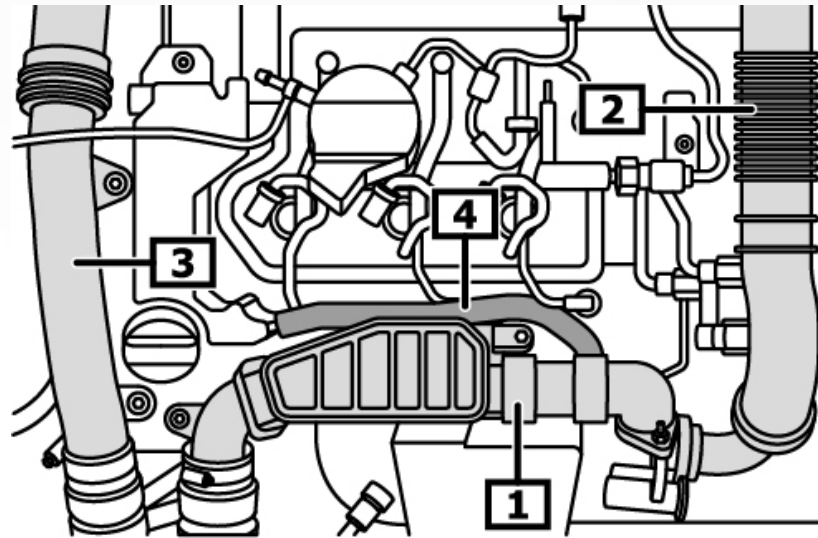
1 PCV valve





Remove the ignition coils.  
 Unscrew the air filter housing.  
 Remove the charge-air hose between the cooler and the turbocharger. (1)  
 Remove the air intake hose between the turbocharger and the air filter housing. (2)  
 Remove the charge-air ducts. (3)  
 Remove the hose from the vent housing on the engine block. (4)

**Figure 5**

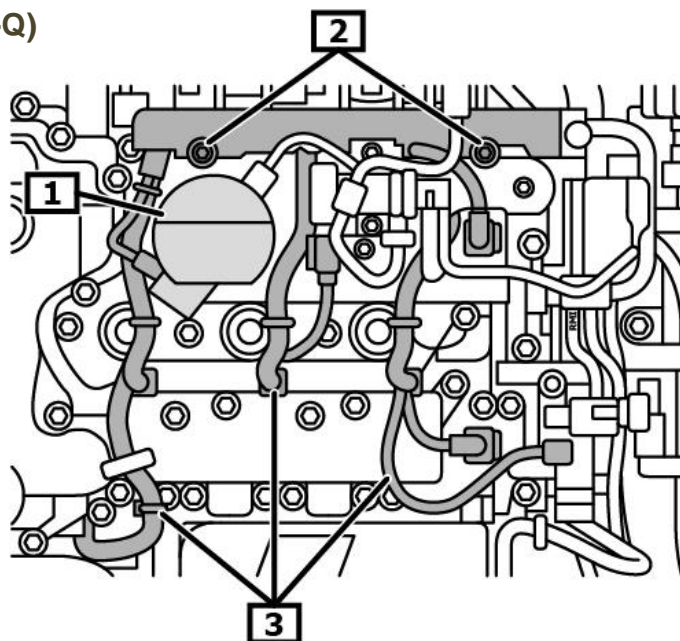


- |                   |                       |
|-------------------|-----------------------|
| 1 Charge-air duct | 2 Inlet air duct      |
| 3 Charge-air duct | 4 Crankcase vent hose |

Remove the high-pressure pump cover. (1)  
 Loosen the fuel line from the high-pressure pump.  
 Close the openings.  
 Unscrew the screws of the cable channel. (2)  
 Disconnect the engine wire harness connector.  
 Detach the engine lines from the body and set them aside. (3)

Special tools required  
 Caps **OE (0189-Q)**

**Figure 6**

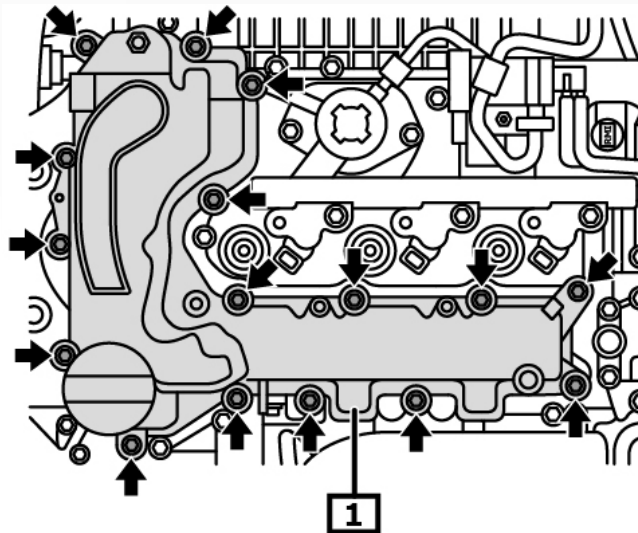


- |                            |                      |
|----------------------------|----------------------|
| 1 High-pressure pump cover | 2 Cable channel bolt |
| 3 Engine wire harness      |                      |



Using the crankshaft pulley bolt, turn the crankshaft until the camshaft pulley reaches the ignition timing position. Unscrew the oil separator bolts. (arrows)  
 Remove the oil separator. (1)

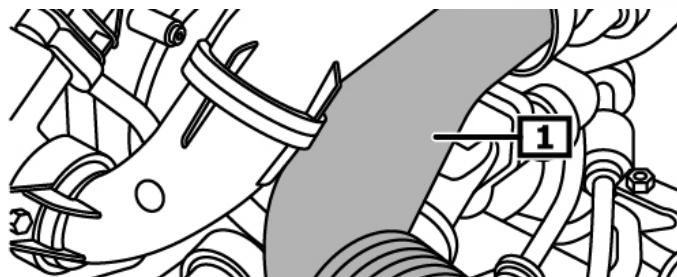
**Figure 7**



1 Oil separator

Remove the air intake duct. (1)

**Figure 8**



1 Air intake duct

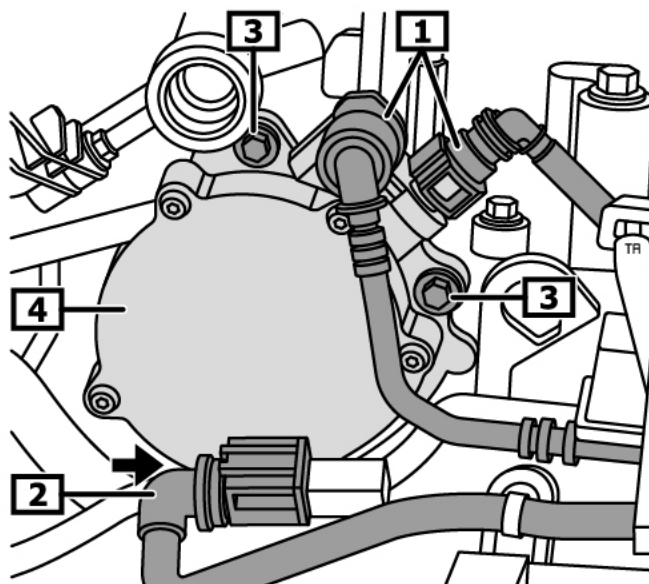
Disconnect the vacuum lines from the vacuum pump. (1)

Disconnect the electrical connector(s). (2)

Unscrew the vacuum pump bolts. (3) (arrow)

Remove the vacuum pump. (4)

**Figure 9**

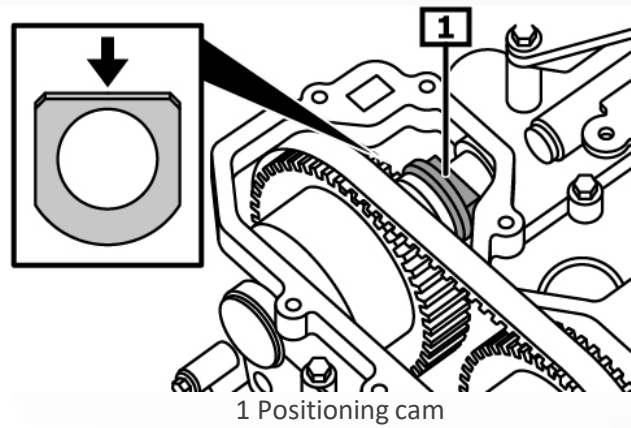


1 Vacuum line    2 Electrical connector  
 3 Vacuum pump bolts    4 Vacuum pump



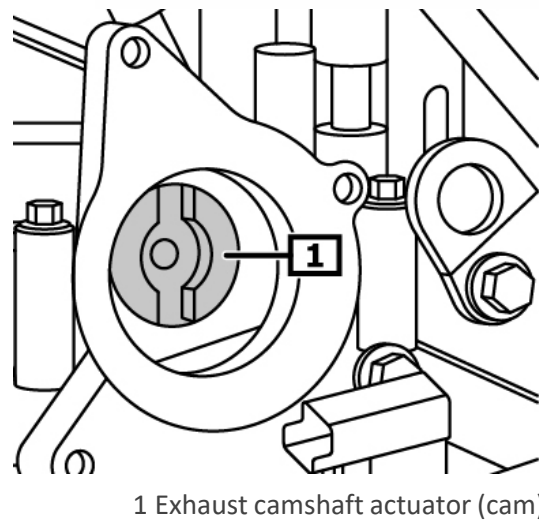
Turn the crankshaft in the direction of operation till the flat side of the positioning cam faces upward. (1) (arrow)

**Figure 10**



The notch of the exhaust camshaft should be in the vertical position. (1)

**Figure 11**



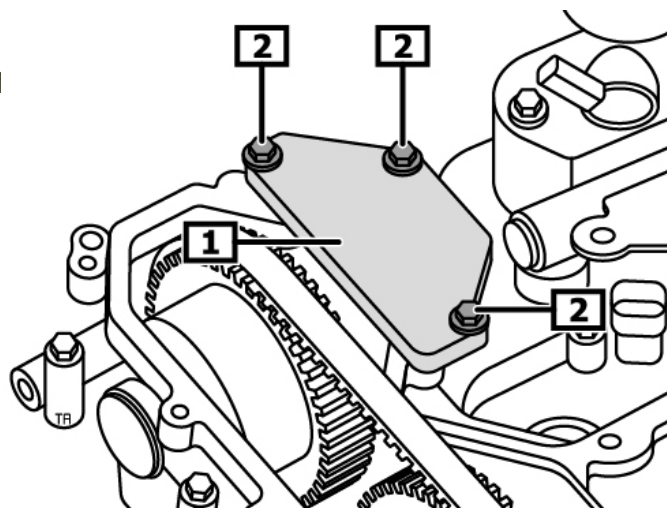
Install the intake camshaft locking tool. (1)

Tighten the bolts securely. (2)

Special tools required

**Figure 12**

Intake camshaft



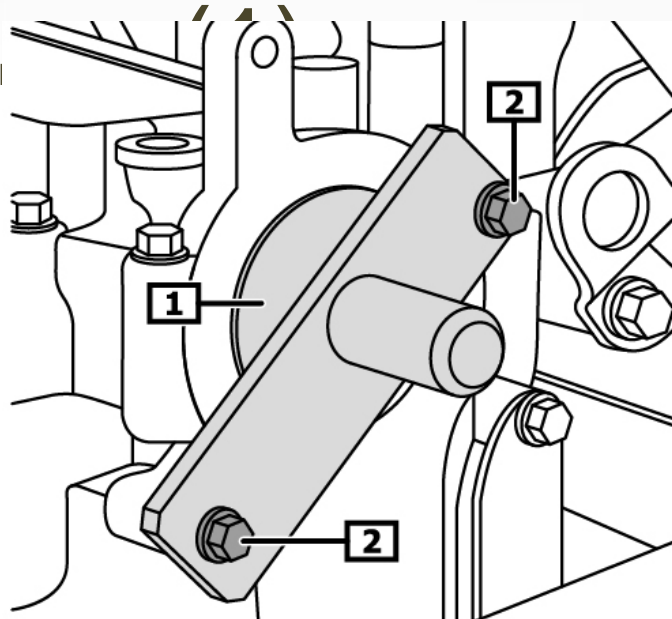
1 Intake camshaft locking tool 2 Bolts



Install the exhaust camshaft locking tool. (1)  
Tighten the bolts securely. (2)

Special tools required

**Figure 13**  
Exhaust camshaft l



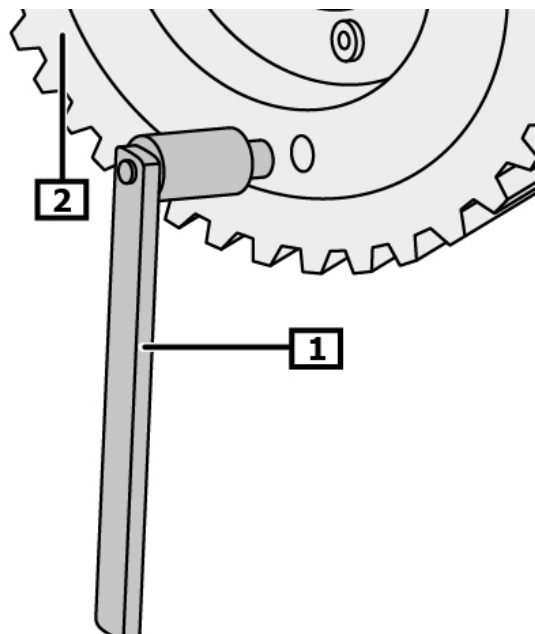
1 Exhaust camshaft locking tool

2 Bolts

Turn the crankshaft in the direction of rotation till the locating pin can be inserted into the borehole of the flywheel through the engine block. (1)(2)

Check to see that the engine is correctly locked by turning the crankshaft gently in the opposite direction.

**Figure 14**  
Special tools require  
Flywheel locking too



1 Flywheel locking tool

2 Flywheel



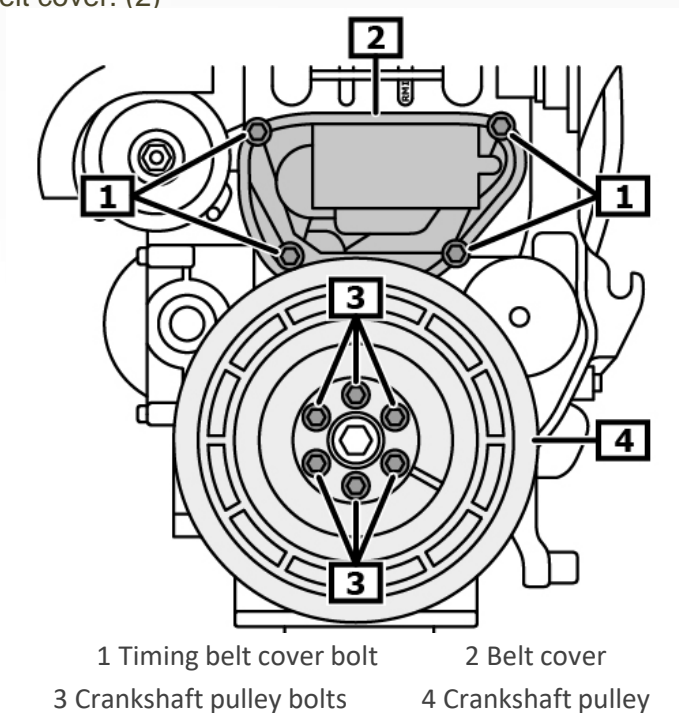
NTN

SNR

Brands of  
NTN corporation

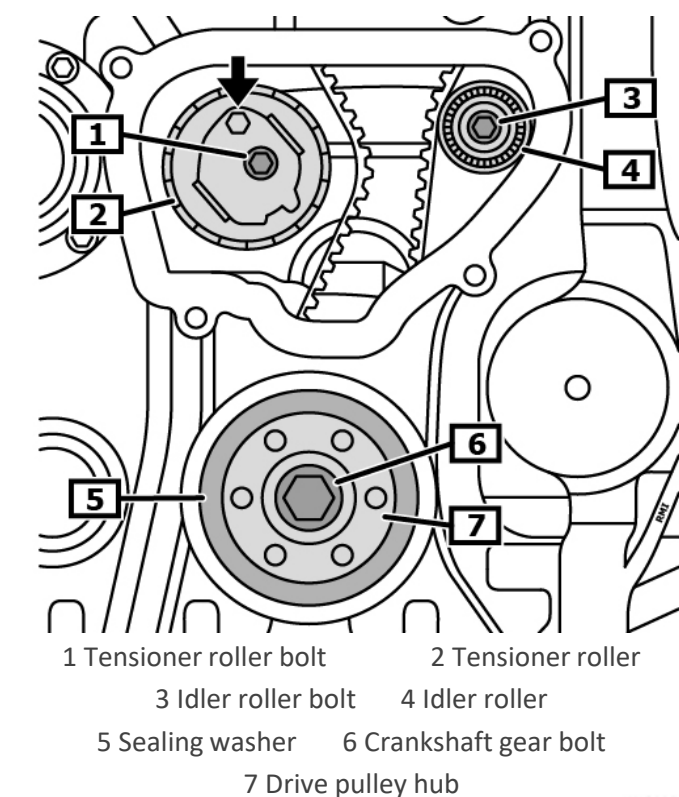
- Unscrew the crankshaft pulley bolts. (3)
- Remove the crankshaft pulley. (4)
- Unscrew the timing belt cover screws. (1)
- Remove the timing belt cover. (2)

**Figure 15**



- Unscrew the tensioner roller bolt. (1)
- Remove the tensioner roller. (2)
- Remove the idler roller bolt. (3)
- Remove the idler roller. (4)
- Remove the seal. (5)
- Unscrew the crankshaft gear bolt. (6)
- Remove the drive pulley hub. (7)

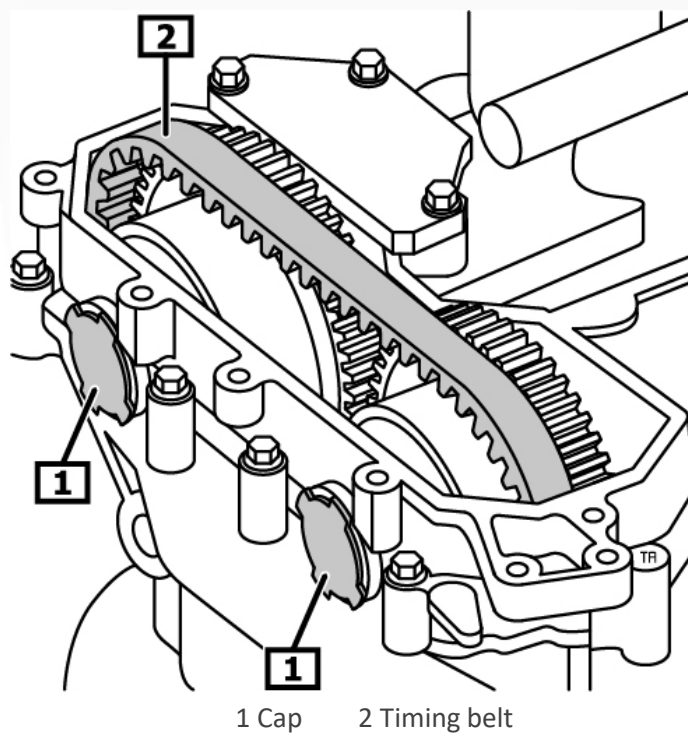
**Figure 16**



Remove the caps. (1)

Remove the timing belt from the camshaft gears. (2)

**Figure 17**



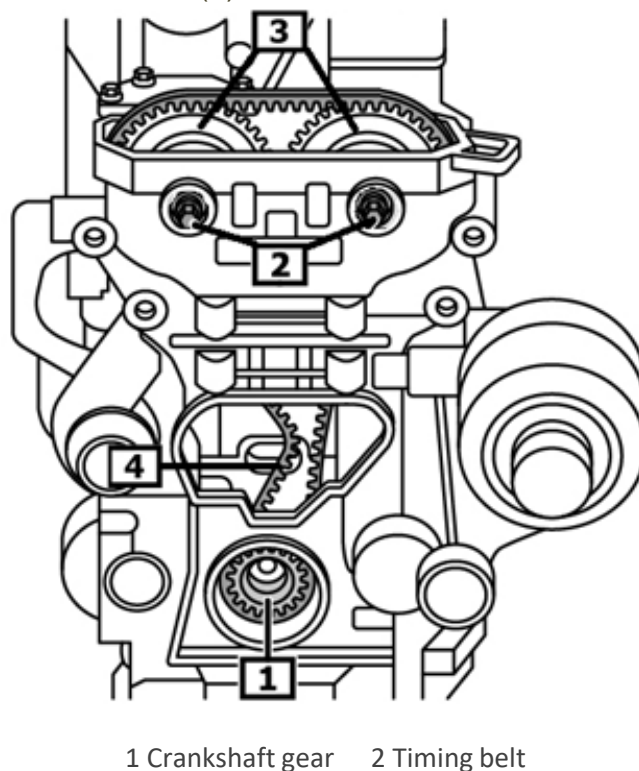
Remove the crankshaft gear. (1)

Unscrew the camshaft gear bolts. (2)

Remove the camshaft dephasers. (3)

Extract the timing belt from above. (4)

**Figure 18**



## Installation

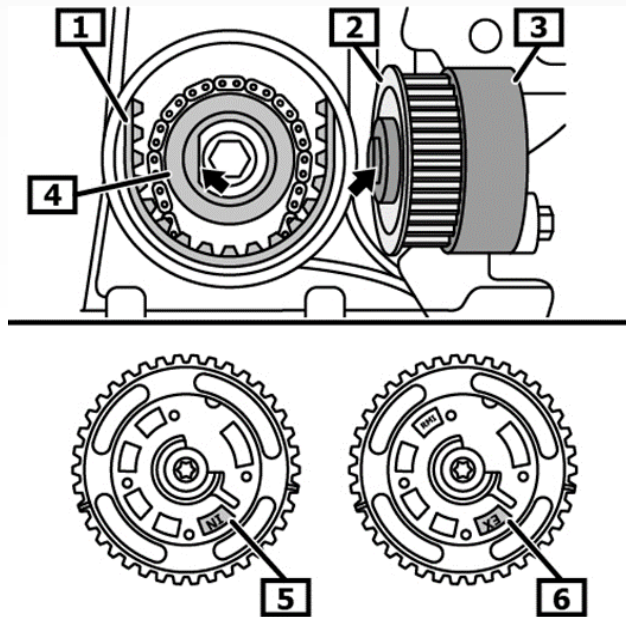
Install the timing belt **CD41228**. (1)

Install the pulley hub with the crankshaft gear. (2)(3)

Take note of the flat on the crankshaft and the recess of the hub! (3)(4) (arrows)

Check the camshaft gear markings. (5)(6)

Figure 19



- |                                |                                 |
|--------------------------------|---------------------------------|
| 1 Timing belt                  | 2 Crankshaft gear               |
| 3 Drive pulley hub             | 4 Crankshaft                    |
| 5 Intake camshaft gear marking | 6 Exhaust camshaft gear marking |

Install the exhaust camshaft gear. (1)

Take care to position it correctly. (2)(3)

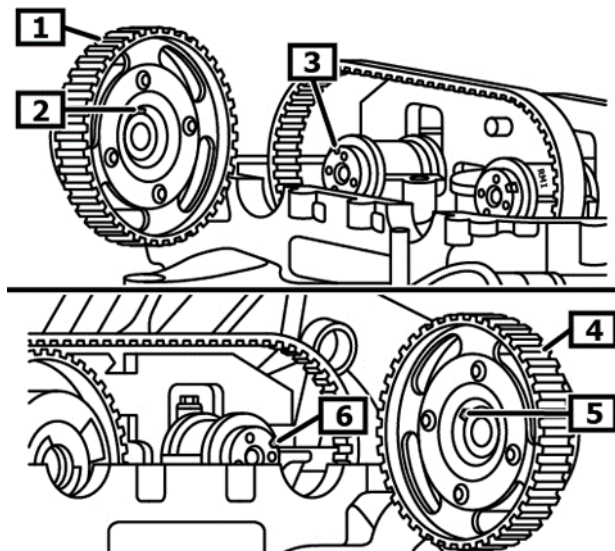
Tighten the exhaust camshaft gear bolt. (2)

Install the intake camshaft gear.

Take care to position it correctly. (5)(6)

Tighten the intake camshaft gear bolt. (2)

Figure 20

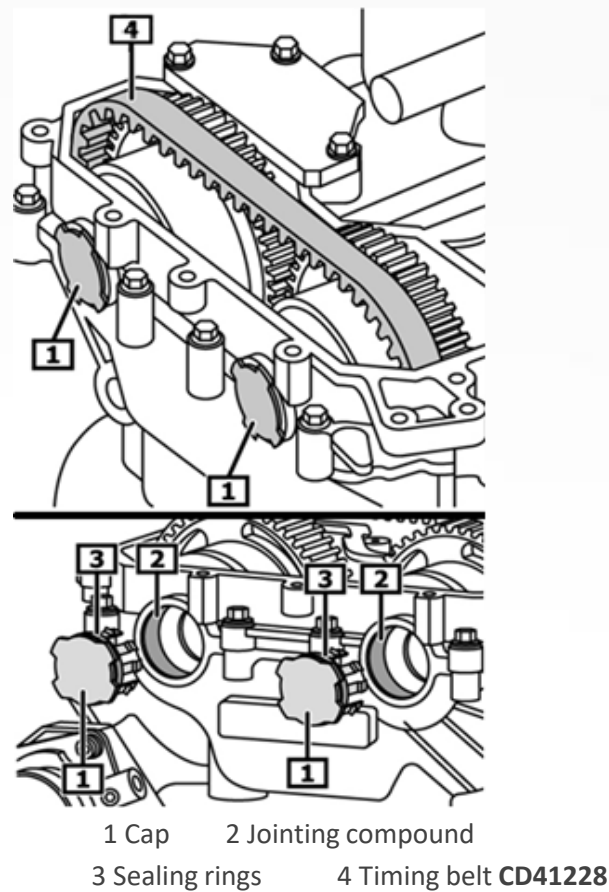


- |                         |                        |
|-------------------------|------------------------|
| 1 Exhaust camshaft gear | 2 Key                  |
| 3 Camshaft keyway       | 4 Intake camshaft gear |
| 5 Key                   |                        |



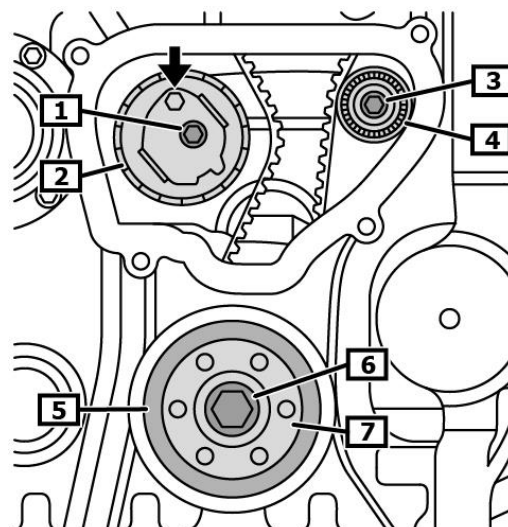
- Position belt **CD41228** on the camshaft gears. (4)
- Do not remove any excess jointing compound. (2)
- Do not grease the seals. (3)
- Install the caps. (1)

**Figure 21**



- Tighten the bolt (6) of the crankshaft gear (7) to the specified torque.
- Install the idler roller **GE359.32** (4)
- Remove the idler roller bolt. (3)
- Install the idler roller **GT359.41** (2)
- Screw in the tensioner roller bolt. (1)

**Figure 22**



- 1 Tensioner roller bolt
- 2 Tensioner roller **GT359.41**
- 3 Idler roller bolt
- 4 Idler roller **GE359.32**
- 5 Seal
- 6 Crankshaft gear bolt
- 7 Crankshaft gear hub



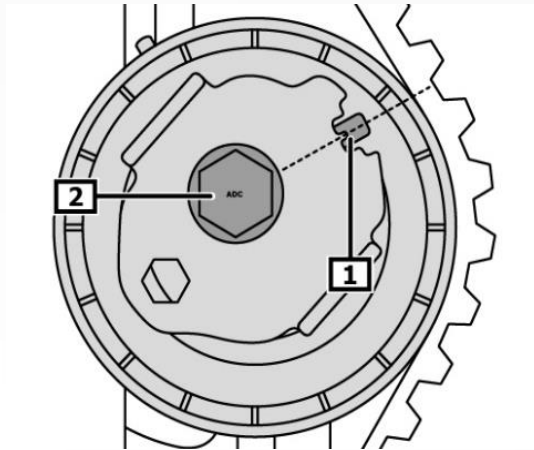


Tension the timing belt.

Turn the eccentric anticlockwise with an Allen wrench till the mark lines up with the reference mark. (1)

Tighten the tensioner roller bolt to the specified torque. (2)

**Figure 23**

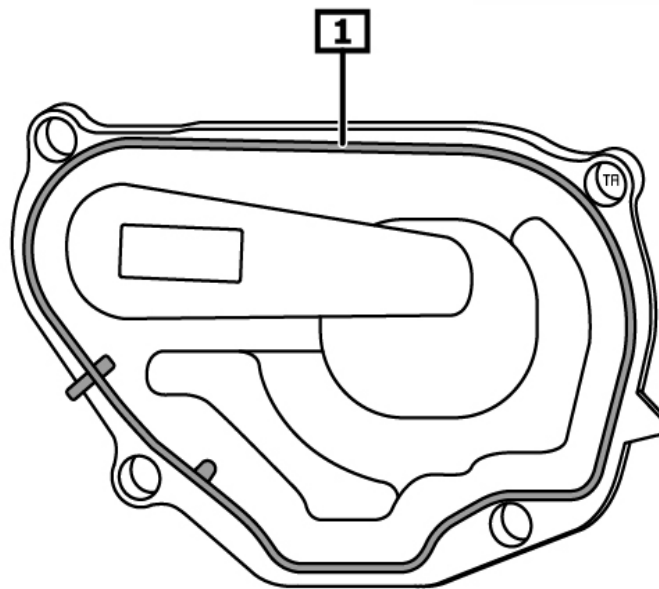


1 Reference mark

2 Tensioner roller bolt

Replace the rubber seal of the timing belt cover. (1)

**Figure 24**



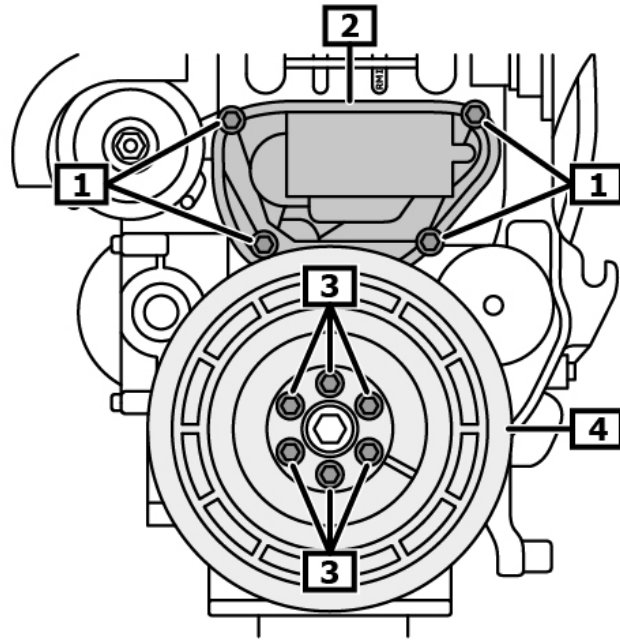
1 Seal



Install the timing belt cover (2) with a new seal.  
Tighten the lower timing belt cover screws. (1)  
Install the crankshaft pulley. (4)  
Use new bolts. (3)  
Tighten the crankshaft pulley bolts. (3)

**NOTE:** Follow all tightening torque specifications.

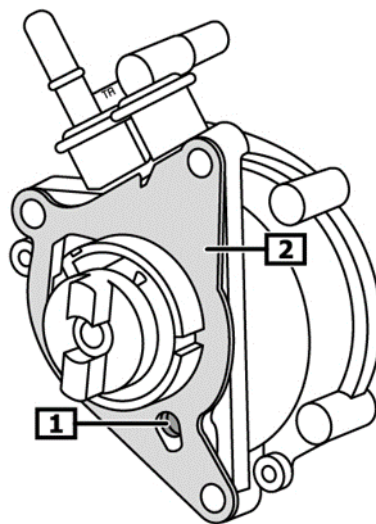
**Figure 25**



- |                           |                     |
|---------------------------|---------------------|
| 1 Timing belt cover bolts | 2 Timing belt cover |
| 3 Crankshaft pulley bolts | 4 Crankshaft pulley |

Check to see that the filter is installed on the vacuum pump. (1)  
Clean the sealing surfaces.  
Replace the gasket. (2)

**Figure 26**

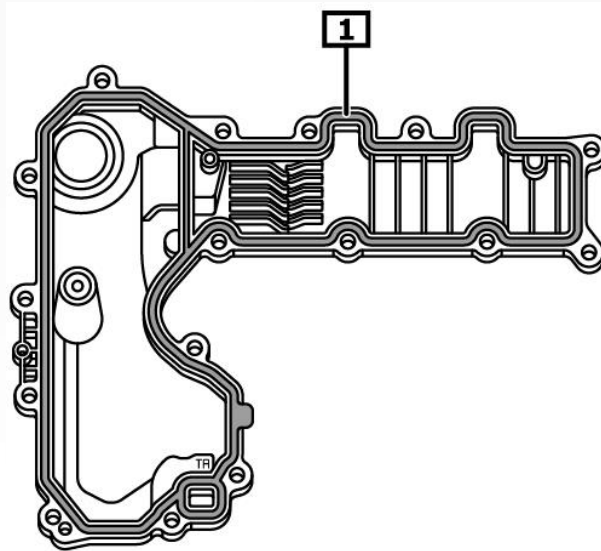


- |          |          |
|----------|----------|
| 1 Filter | 2 Gasket |
|----------|----------|



Replace the seal on the oil separator. (1)

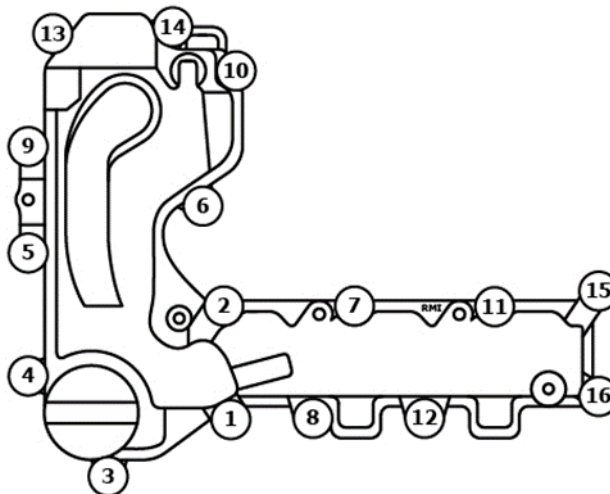
**Figure 27**



1 Seal

Tighten the oil separator bolts in the order shown, from 1 to 16. (1) - (16)

**Figure 28**



1 - 16 Oil separator bolts

Install the ignition coils.



Re-install the accessory belt for the water pump (coolant pump).

Install the accessory belt installation tool. (1)

Position the accessory belt on the hook of the installation tool. (1) - (3)

Turn the crankshaft about 1 to 2 turns in the direction of operation.

Force the accessory belt onto the water pump pulley. (2)(4)

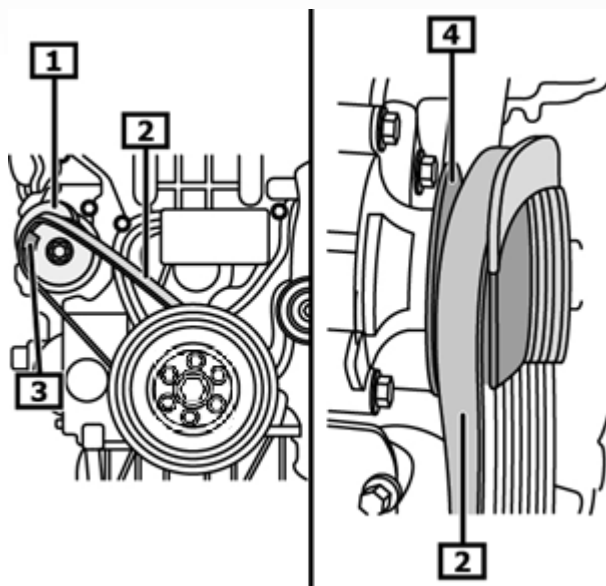
Turn the engine in the direction of operation until the accessory belt is fully seated in the grooves of the pulley. (2)

Pay attention to the correct positioning of the accessory belt. (2)

If the water pump belt is not correctly positioned, the installation procedure must be repeated with a new belt. (2) Special tools required

Installation tool (1) **OE (0109-1B)**

**Figure 29**

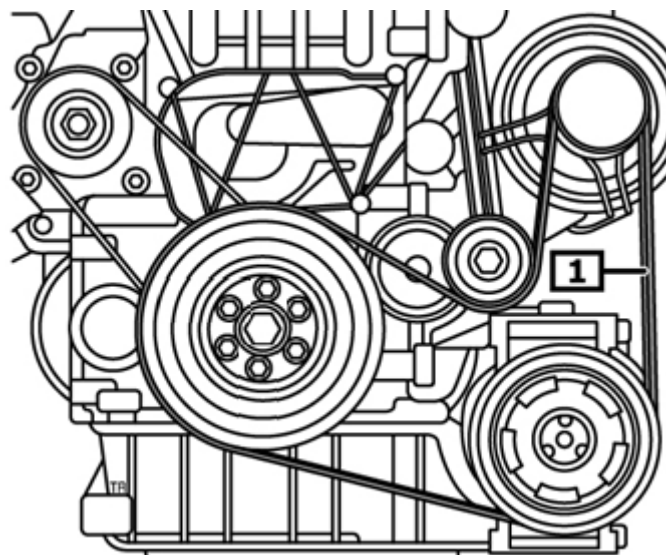


- |                     |                              |
|---------------------|------------------------------|
| 1 Installation tool | 2 Accessory belt, water pump |
| 3 Hook              | 4 Water pump belt pulley     |

Install the accessory belt of the air-conditioner and alternator. (1)

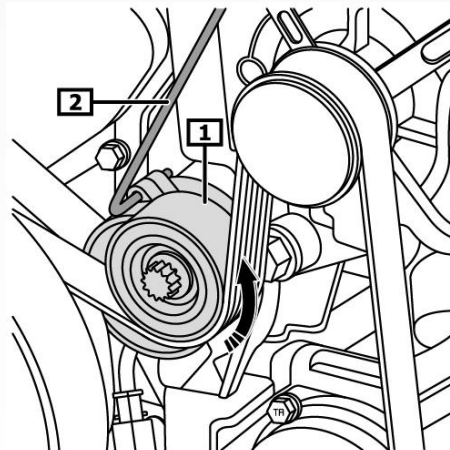
Pay attention to the correct positioning of the accessory belt.

**Figure 30**



Rotate the tensioning device anticlockwise with a suitable tool. (1)  
 Remove the tensioner roller blocking tool. (2)  
 Loosen the accessory belt tensioning device. (1)

**Figure 31**

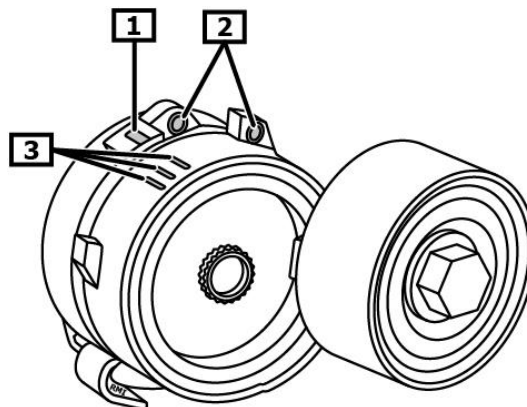


1 Accessory belt tensioner

2 Tensioner roller blocking tool

Turn the engine through two rotations of the crankshaft in the direction of operation.  
 Pay attention to the correct positioning of the accessory belt.  
 Re-check the tension of the accessory belt. (1)(3)  
 The mark must correspond to the reference mark. (1)(3)

**Figure 32**



1 Reference mark

2 Mounting hole

3 Wear mark

Connect the battery.  
 Start the engine.  
 Check to see that the belt tracks smoothly/correctly.  
 Take a test drive.  
 Document the timing belt replacement

**NOTE:** Using a diagnostic tool, read out the fault history.

