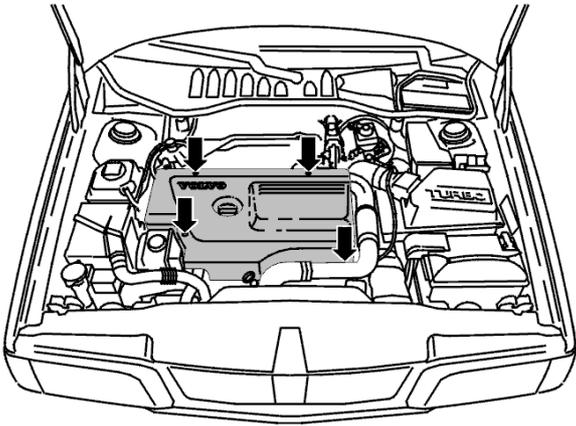


## Timing belt, replace

### Removing the timing belt

Remove the engine cover.

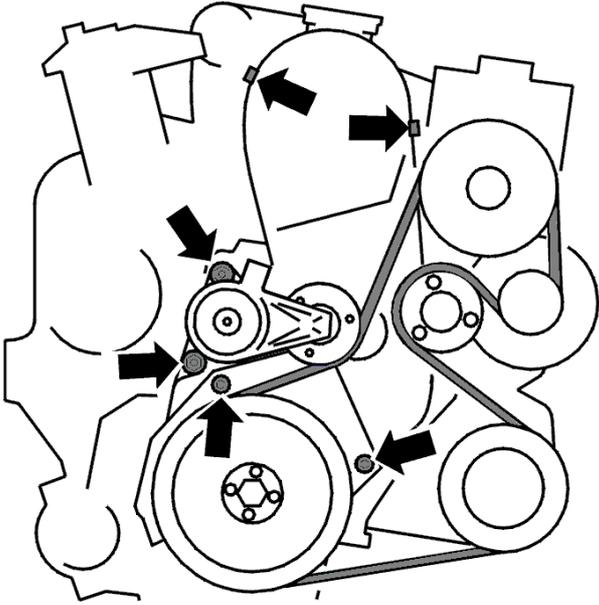
**Note!** The belt tension must be adjusted with the engine at room temperature (max 30°C).



### Remove

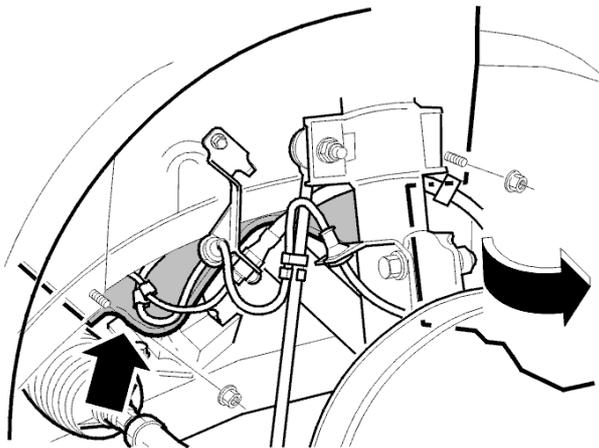
- the belt for the auxiliary equipment.
- the belt tensioner for auxiliary equipment.
- the timing belt cover.
- the lower plate under the timing belt cover, (2 screws).

Raise the car to a good working height and remove the splash guard under the engine.

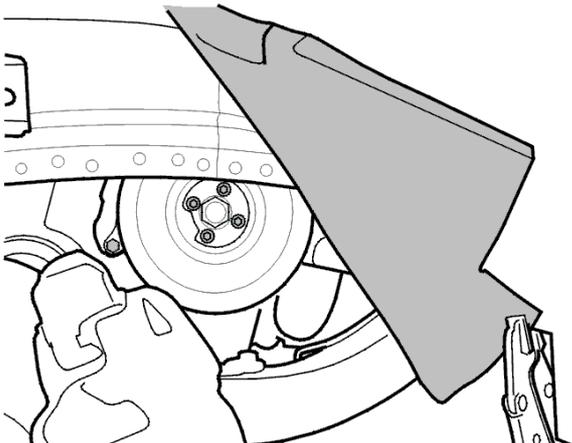


### Remove

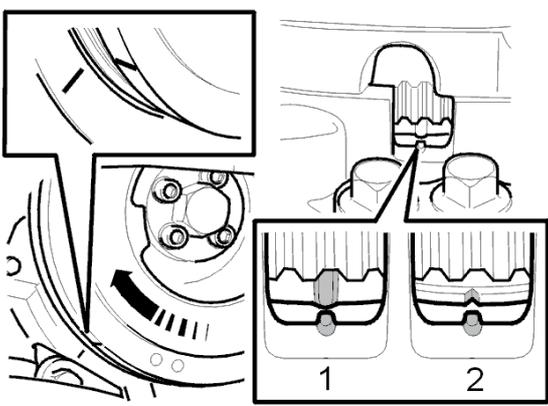
- the right front wheel.
- the screw and nut for sound proofing.  
Move the soundproofing to one side, push part of the fender liner to one side and secure it in the open position.



Remove the lower screws and the lower plate.



Turn the crankshaft at least two revolutions to top dead centre (TDC) by turning the crankshaft in the direction of



rotation (clockwise) so that the marking for top dead centre (TDC) on the outside of the vibration damper is slightly in front of the mark on the panel (left illustration).

**Caution! Adjust only in the direction of rotation!**

Use a screwdriver against the gear collar to make fine adjustments to the top dead centre (TDC) using the marking on the flywheel. The marking on the flywheel which can be checked through the hatch in the bottom edge of the gearbox cover (right-hand illustration).

**Caution! The crankshaft must not be turned against the direction of rotation (anti-clockwise)!**

Lower the car to a good working height.

#### Remove

- the intake manifold between the air cleaner and the front panel.
- the charge air pipe between the charge air cooler (CAC) and the intake pipe.
- the pump belt protection.

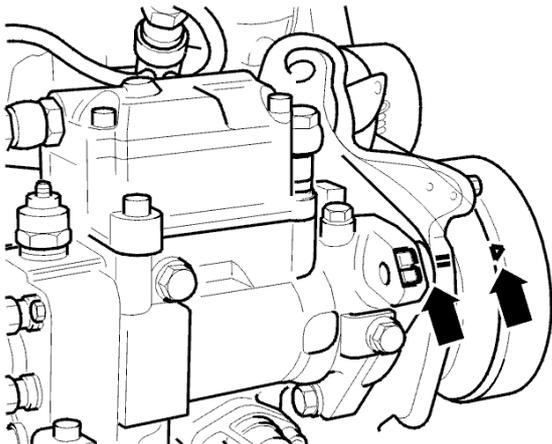


#### Carry out the following operations in the engine compartment:

Check that the markings on the pump pulley and pump bracket are centred with each other.

Turn the crankshaft one more revolution if the markings do not match.

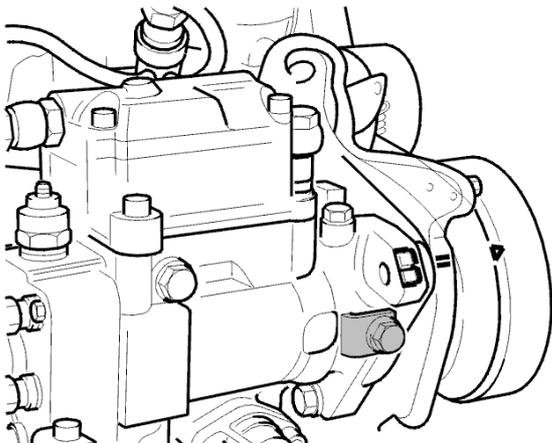
The pump markings are only aligned every second revolution of the crankshaft.



Lock the pump by removing the locking screw and removing the spacer.

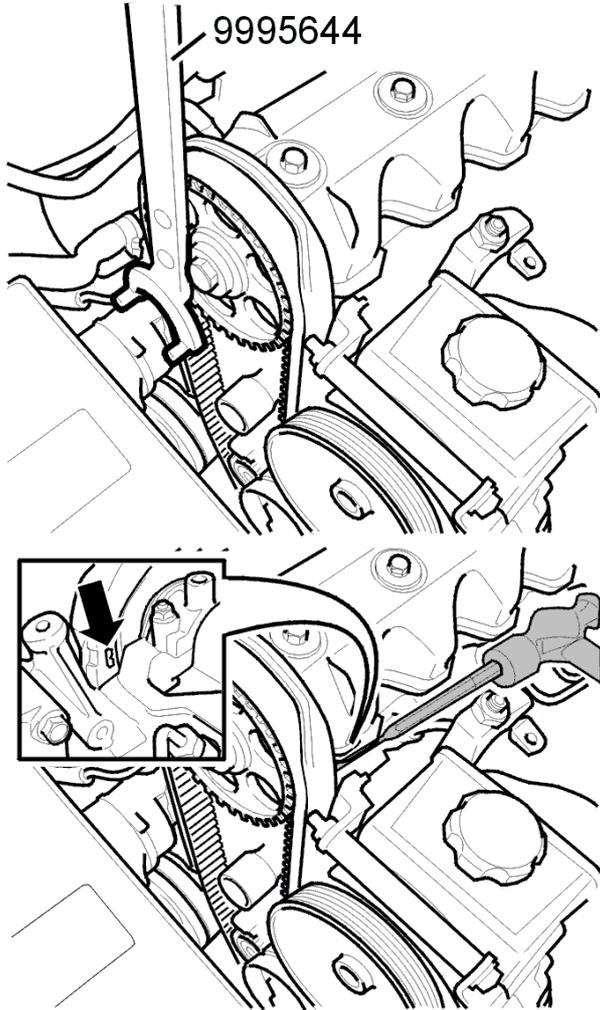
**Note! The spacer is open and comes off easily.**

Tighten the screw to 30 Nm so that the pump is locked.

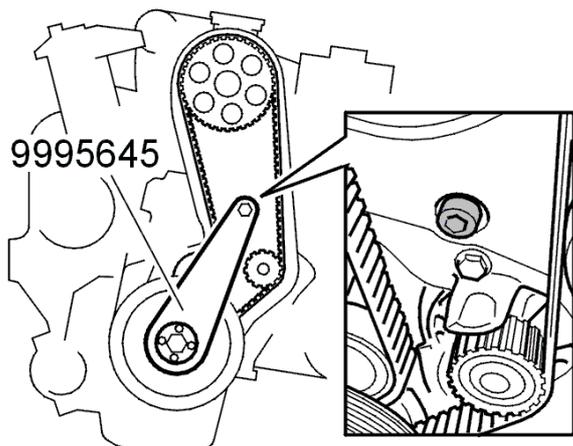


Slacken off the centre screw on the camshaft timing gear pulley (1 turn).

Use counterhold [999 5644](#).



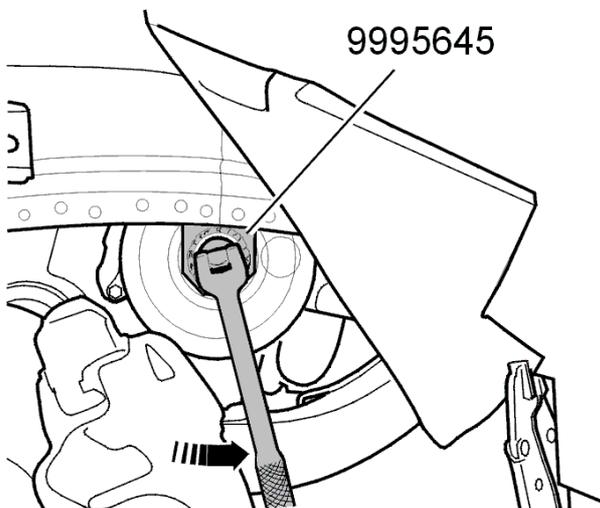
Tap the pulley with a drift and a hammer so that it comes loose.



Install counterhold [999 5645](#) .

Lower the car.

Secure the counterhold by replacing the screw with the screw belonging to the tool.



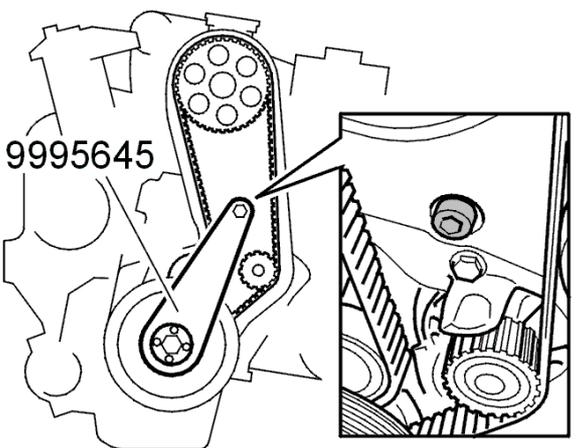
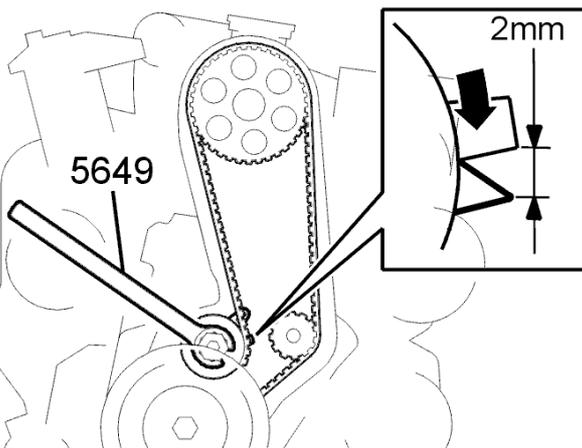
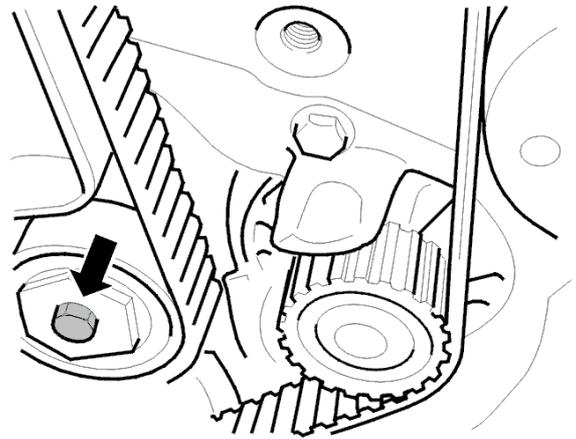
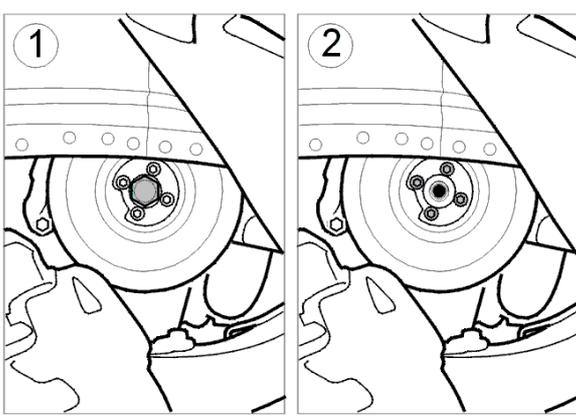
Raise the car.

Slacken off the crankshaft centre screw.

Slacken off the four screws retaining the vibration damper.

Remove counterhold 999 5645 and the vibration damper.

**Caution! The position of the crankshaft must not be changed.**



Slacken off the tension pulley screw so that the belt is unloaded.

#### Remove

- the timing belt.
- the tension pulley.

#### Installing the timing belt

**Note!** the belt tension must be adjusted with the engine at room temperature (max 30°C).

#### Install

- a new belt tensioner.
- a new timing belt.

Tension the belt until the needles have passed the fixed marker by 2 mm. Use tool [999 5649](#) .

Tighten the screw for the belt tensioner to **20 Nm**.

**Note!** Use a mirror with a lamp to see the indicator directly from the front.

**Note!** If the needle has gone beyond more than 2 mm past the marker the tensioner must be turned back completely. Then the belt should be tensioned clockwise from the starting point again. Adjustment by turning backwards is not permitted.

Tighten the screw for the belt tensioner to **20 Nm**.

Raise the car.

Install the vibration damper (4 new screws).

**Note!** The screws must not be lubricated. Clean the vibration damper and crankshaft.

The vibration damper can only be positioned in one way. Check that it is in the right position.

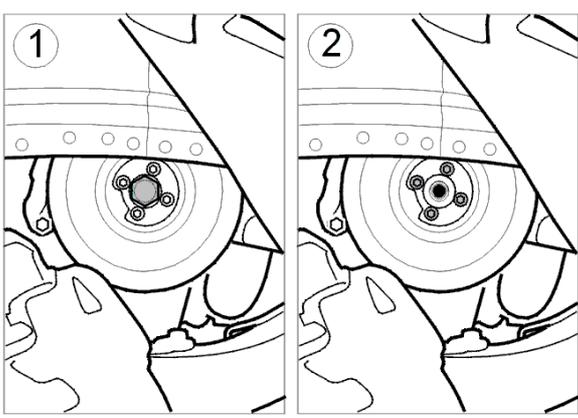
Tighten the screws by hand.

Install counterhold [999 5645](#) .

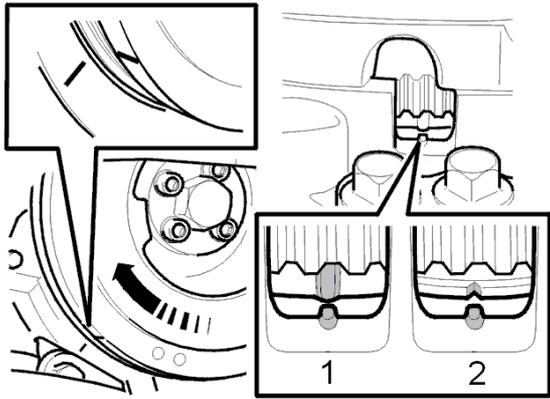
Use a new centre screw.

**Note!** The screw must not be lubricated.

Tighten the centre screw to **160 Nm**. Then angle tighten to 180°. This can be carried out in stages, but it is



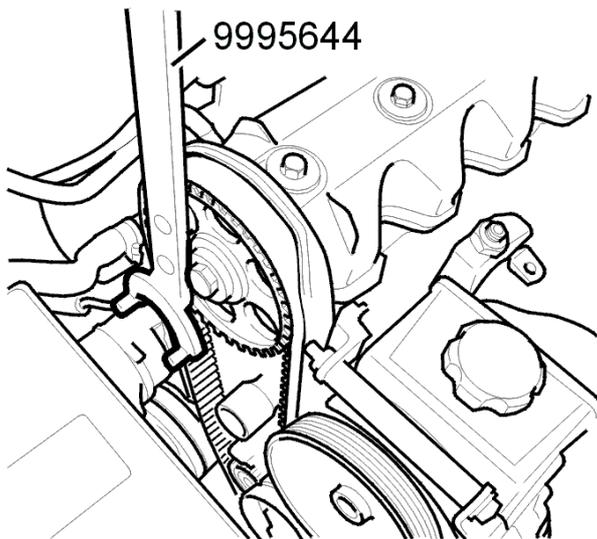
important that it is tightened to 180°. Then tighten the four screws alternately to **20 Nm**. Then angle-tighten to 90°. Remove the tool 999 5645 and install the original screw. Tighten to **25 Nm**.



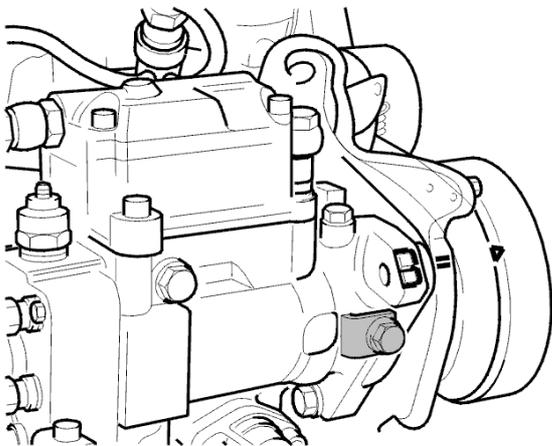
Check that the piston in cylinder 1 is still at top dead centre (TDC).

If not, adjust to top dead centre (TDC).

**Note! Adjust only in the direction of rotation.**

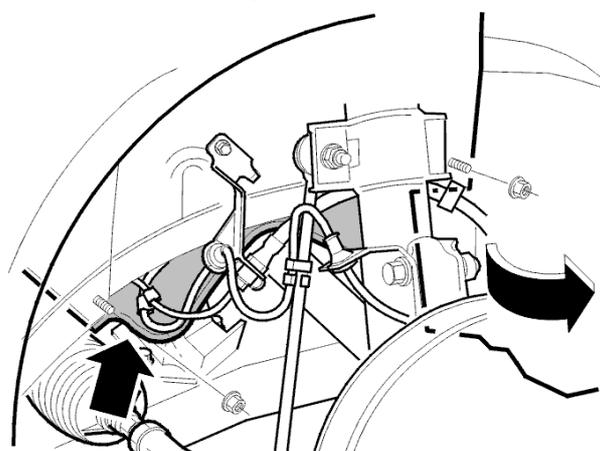
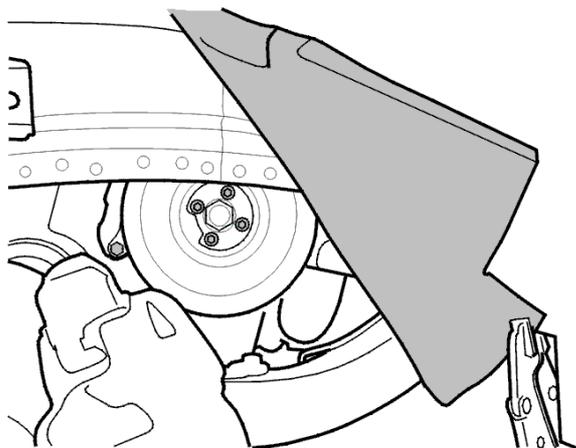
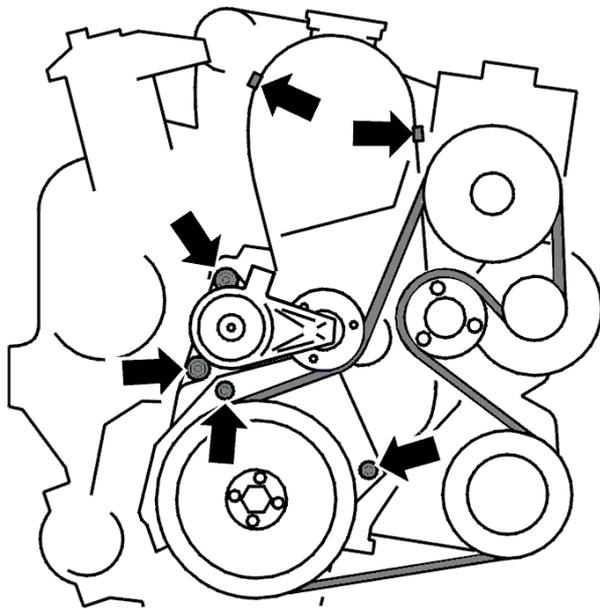
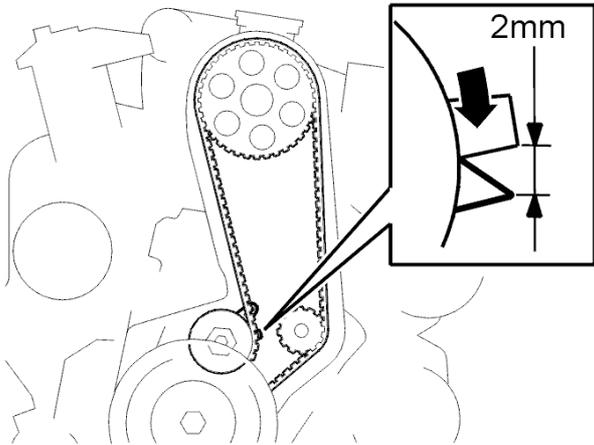


Tighten the timing belt pulley centre screw to **100 Nm**. Use counterhold **999 5644**.



Remove the pump locking screw. Install the spacer on the fuel pump (FP) and tighten the screw to **12.5 Nm**.

Turn the crankshaft at least two revolutions. Check that the belt tension is correct. If not, adjust according to the earlier section.



### Install

- the lower plate under the timing belt cover, (2 screws).

Tighten to **8 Nm**.

- the tensioner for the auxiliaries pulley.

**Hint:** The short screw uppermost. Tighten to **40 Nm**.

- the timing belt cover.

**Note!** Check that the cover is in the correct position.

- the auxiliaries belt. See [Auxiliaries belt / belt tensioner, replacing](#).

Raise the car to a comfortable working height.

Install the lower screw on the lower plate. Tighten to **10 Nm**.

Install the noise deflector and splash guard under the engine.

Bend the fender liner back into place and secure it with the nut.

Install the front wheel according to [Installing wheels](#).

Carry out a dynamic test using VIDA to check the pump setting.

### Install

- the pump belt protection.
- the charge air pipe.
- the intake manifold between the air cleaner and the front panel.
- the engine cover.

Fill in the mileage and date on label 5927377.  
Paste the label onto the engine cover.

