

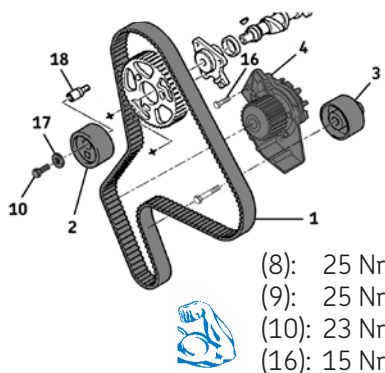
VKMA 03244

VKMC 03244

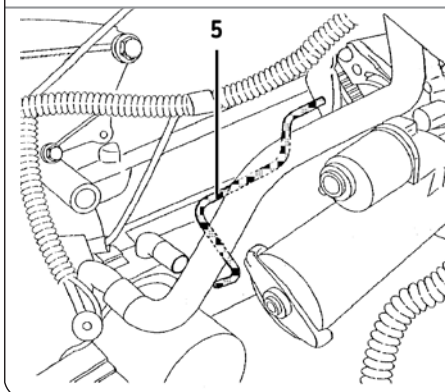


A

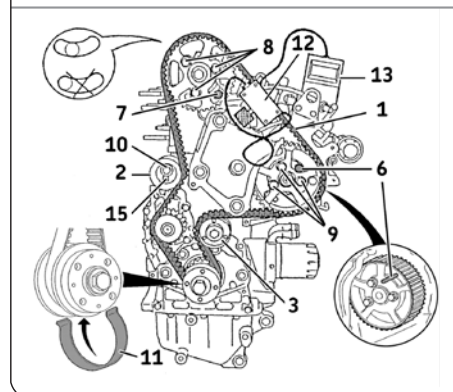
- (5): CIT. 7014-TJ / PEU. 0153N
- (6): CIT. / PEU. 0188H (Ø 6 mm)
- (7): CIT. / PEU. 0188E (M8x80x125)
- (11): CIT. / PEU. 0188K
- (13): CIT. CTG 105.5 M 4122-T / PEU. SEEM C.Tronic type 1055
- (14): CIT. / PEU. 0188J



B



C



Removal

- 1) Disconnecting the battery according to the vehicle manufacturing guidelines.
- 2) Prepare the vehicle for the timing replacement according to the vehicle manufacturing guidelines.
- 3) Turn the crankshaft in the engine rotation direction until the timing pin (5) can be inserted in the flywheel (Fig. B).
- 4) Insert pin (6) in the injection pump hub and pin (7) in the camshaft hub (Fig. C).
- 5) Loosen the camshaft and injection pump sprocket fastening bolts (8) and (9) (Fig. C).
- 6) Loosen the tensioner roller (2) fastening bolt (10) (Fig. C).
- 7) Remove timing belt (1), tensioner roller (2) and idler roller (3).
- 8) **Removing the water pump (4) (for VKMC 03244):** firstly, bleed the cooling circuit, check it is clean, and clean if required; secondly, fully loosen the water pump fastening bolts (16) and remove the pump (4) (Fig. A).

Refitting

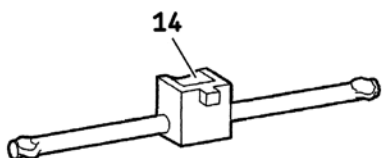
Caution! First thoroughly clean the bearing surfaces of the rollers.

- 9) **Refitting the water pump:** Firstly, fit the new water pump (4), tighten the waterpump bolts (16) to the torque **15 Nm**, then check that the water pump pulley runs properly, and has no hard or locking spots.
- 10) Fit the new tensioner roller (2), and tighten its new bolt (10) with its new washer (17) by hand (Fig. A). Fit the new idler roller (3).

Note: Take care to get the surface of the tensioner roller (2) aligned with the top of the mounting pin (18) (Fig. E).

- 11) Slightly tighten the camshaft and injection pump sprocket fastening bolts (8) and (9) (Fig. C).
- 12) Move the camshaft and injection pump sprockets to the end of the oblong holes by turning them in the engine rotation direction.
- 13) Place the new timing belt (1) on the crankshaft sprocket and immobilize with tool (11) (Fig. C).

D



Install Confidence

VKN 1009

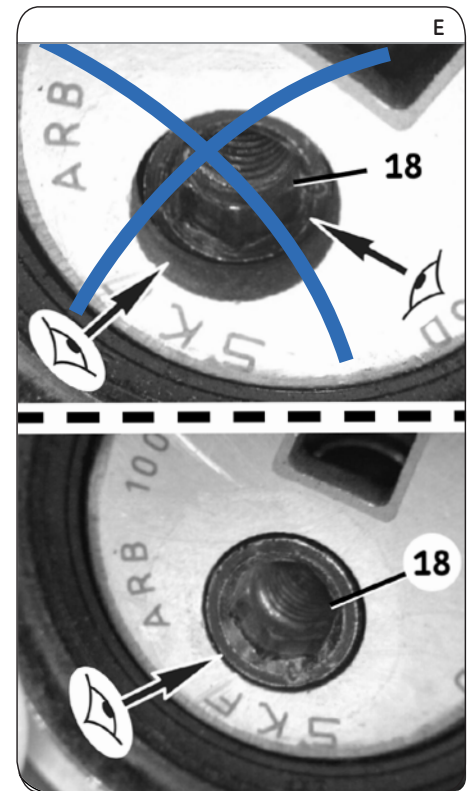


- 14) Continue fitting the timing belt (1) in the following order: idler roller (3), injection pump sprocket, camshaft sprocket, water pump sprocket and tensioner roller (2).

Note: To help place the belt on the camshaft and injection pump sprockets, turn the sprockets slightly in an anti-clockwise direction. The angular displacement of the sprockets relative to the belt must not exceed one half tooth.

- 15) Place the sensor (12) of the tension gauge (13) on the belt (1) between the camshaft and injection pump sprockets (Fig. C).
- 16) Tighten the timing belt: Insert the tool (14) (Fig. D) in the hole (15) and turn the tensioner roller (2) anti-clockwise until a reading of 106 SEEM units is displayed on the tension gauge (13) (Fig. C).
- 17) Check that the camshaft and injection pump sprockets are not touching the ends of the oblong holes.
- 18) Tighten the fastening bolt (10) of the tensioner roller (2) to 23 Nm. Tighten the sprocket fastening bolts (8) and (9) to 25 Nm (Fig. C).
- 19) Remove the sensor (12) (Fig. C).
- 20) Remove the tool (11) (Fig. C) and all the pins.
- 21) Turn the crankshaft through 8 revolutions in the engine rotation direction until pins (5), (6) and (7) can be inserted (Fig. B & Fig. C).
- 22) Loosen the camshaft and injection pump sprocket fastening bolts (8) and (9) as well as that of the tensioner roller (2) (Fig. C).

- 23) Slightly retighten fastening bolts (8) and (9) (Fig. C).
- 24) Place the sensor (12) on the belt (1) (Fig. C).
- 25) Insert the tool (14) (Fig. D) in the hole (15) and turn the tensioner roller (2) anti-clockwise until a reading of 42 SEEM units is displayed on the tension gauge (13) (Fig. C).
- 26) Repeat the step 18).
- 27) Remove the sensor (12), check the tension, then refit the sensor (12) and check that the tension reading is between 38 and 46 SEEM units (Fig. C).
- 28) If the tension reading is not between 38 and 46 SEEM units, re-start the tension adjustment operation from step 15).
- 29) Remove the sensor (12) (Fig. C).
- 30) Remove the timing pins (5), (6), and (7) (Fig. B et Fig. C).
- 31) Turn the crankshaft through 2 revolutions in the engine rotation direction until pins (5), (6) and (7) can be inserted (Fig. B and Fig. C).
- 32) Remove the timing pins (5), (6) and (7).
- 33) Refit the removed elements in reverse order to removal.
- 34) Fill the cooling circuit with the permanent fluid recommended.
- 35) Check the circuit's leak-tightness when the engine reaches its running temperature and secure the level of coolant when the engine is at ambient temperature (20 °C).



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