

NT 01013

VKMA 01140 - VKMA 01940 -
VKMA 01142 - VKMA/C 01942 -
VKMA 01143 - VKMA/C 01943

Audi / Seat / Skoda / Volkswagen /
Ford

VKMA 01940



VKMA 01942



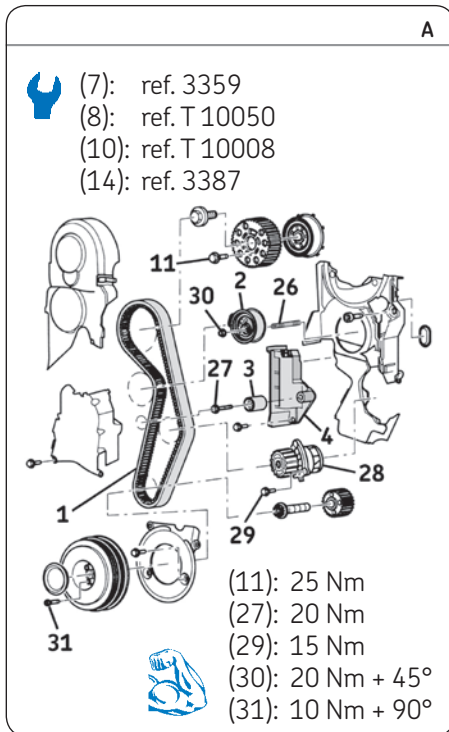
VKMC 01942



VKMA 01943



VKMC 01943



REMOVAL

- 1) Disconnect 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 (clockwise) to TDC, by aligning the marks on the camshaft sprocket and the rear timing casing (Fig. B).
– All types (except engines: ANY and AJM): mark (5) "4Z",
– Engines ANY and AJM: mark (6) "3Z".
- 4) Lock the camshaft sprockets using pin (7) and the crankshaft sprocket using pin (8) (Fig. B).

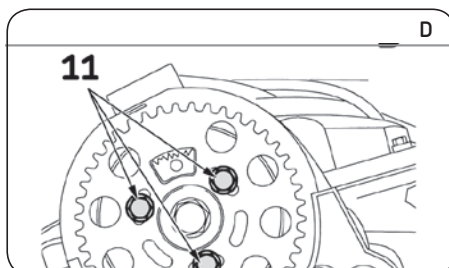
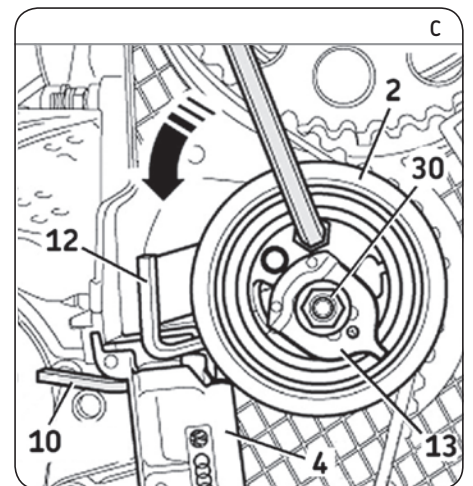
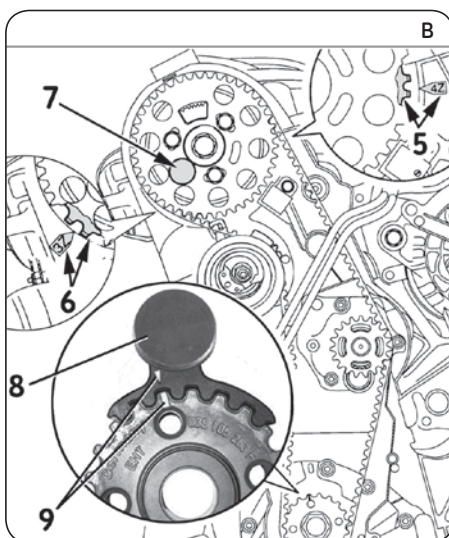
Note: the marks (9) on the crankshaft sprocket and on the tool (8) must be aligned (Fig. B)

- 5) Loosen the tensioner roller fastening nut (30) and turn the roller **anti-clockwise** with a 6 mm hexagonal key until the locking tool (10) can be inserted in the piston (4) (Fig. C).
- 6) Remove the tensioner roller (2), its stud (26) and the timing belt (1).
- 7) Remove the idler roller (3) (Fig. A).
- 8) For VKMA/C 01942, VKMA/VKMC 01943
– Remove the piston (4) and the locking tool (10) (Fig. C).
- 9) **Removing the water pump (VKMC 01942 / 01943):** firstly bleed the cooling circuit, check it is clean, and clean if required; secondly fully loosen the water pump fastening bolts (29) and remove the pump (28) (Fig. A).

REFITTING

Caution! Clean the bearing surfaces of the rollers.

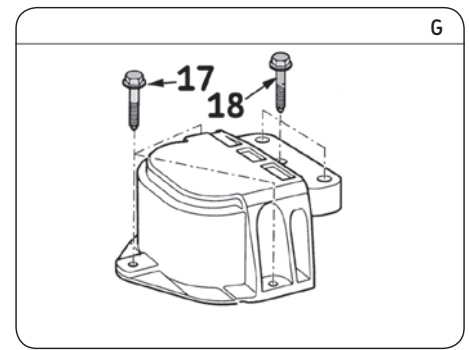
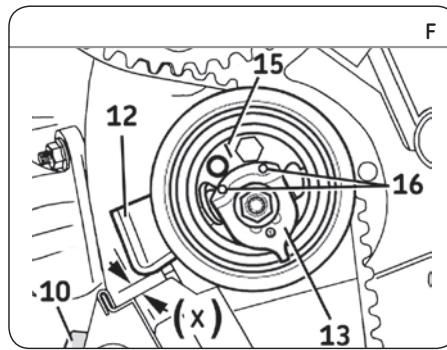
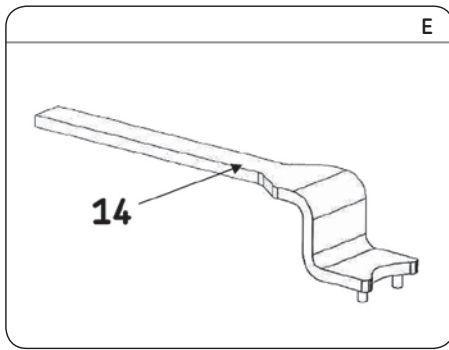
- 10) **Refitting the water pump:** firstly fit the new water pump (28), apply the torque **15 Nm** to the waterpump bolts (29); then check that the water pump pulley runs properly, and has no hard or locking spots.
- 11) Undo the camshaft sprocket bolts (11), and center the oblong holes of the camshaft sprocket relative to the bolts (11), then tighten slightly (Fig. D).
- 12) For VKMA/C 01942, VKMA/VKMC 01943
– Fit the new piston (4) with the locking tool (10) (Fig. C).
- 13) Fit the new idler roller (3) and its new bolt (27). Tighten the fastening Bolt (27) to **20 Nm**.



Install Confidence

VKN 1000





- 14) Fit the new stud (26), the tensioner roller (2) and its new NUT (30). **Apply torques to manufacturers recommendation.** Using an Allen wrench, turn the tensioner roller (2) **anticlockwise** until its back plate (12) bears against the piston (4) (Fig. C).
- 15) Fit the new belt (1) in the following order: camshaft sprocket, tensioner roller, idler roller, crankshaft sprocket and water pump.
- 16) Tighten the timing belt (1): Turn the adjustment dial (13) of the tensioner roller (2) **anti-clockwise** with the key (14) (Fig. E) until the mark (15) has an equal distance from both holes (16) (Fig. F). Lightly tighten the tensioner roller fastening nut (30). Remove the locking tool (10) and allow the piston (4) to act then measure the distance "X" between the back plate (12) and the upper edge of the timing device (Fig. F) using a rod of the following diameter:
- All engines (except ANY engine): 4 mm.
 - ANY engine: 7 mm.
- 17) Tighten the fastening nut (30) of tensioner roller, without altering its position, to a torque of 30 Nm.
- 18) Tighten the fastening bolts (11) of the camshaft sprocket to 25 Nm (Fig. D).
- 19) Remove tools (7) and (8) (Fig. B), then rotate the crankshaft 2 turns in the engine rotation direction to TDC (marks (5) and (6) aligned (Fig. B)).
- 20) Refit tools (7) and (8) (Fig. B) and check the distance "X" (Fig. F).

Note: the timing belt tension is correct when the distance "X" is reached.

- 21) If the distance "X" is not achieved, loosen the tensioner roller (2) then re-tighten it when the value is obtained. If tool (8) is in place and pin (7) cannot be inserted (Fig. B), loosen the camshaft sprocket and move the hub slightly until the pin (7) can be inserted. Retighten the camshaft sprocket then turn the crankshaft through two turns and re-check that the timing system is properly adjusted.

- 22) Refit the lower timing casing, the crankshaft pulley to a torque of 10 Nm + 90° and the intermediate timing casing.
- 23) Refit the elements removed in reverse order to removal.

Note: the engine brackets and anti-torque rods must be refitted using new bolts.

- 24) Apply the following tightening torques:
- Audi A2 and VW Lupo / Polo and Seat Arosa (Fig. G):**

- Right-hand engine bracket:
- New bolts (17): 2 daNm + 90°.
- New bolts (18): 4 daNm + 90°.

Anti-torque rod:

- New bolts on chassis: 9 daNm + 90°.
- New bolts on engine: 4 daNm + 90°.

Skoda Octavia, Seat Leon / Toledo and VW Golf / Bora (Fig. H):

- New bolts (19): 4 daNm + 90°.
- New bolts (20): 2.5 daNm.
- New bolts (21): 6 daNm + 90°.

Ford Galaxy, Seat Alhambra and VW Sharan:

Intermediate bracket on cylinder block (Fig. I):

- Bolts (22): 3 daNm.
- Bolts (23): 4.5 daNm.

Right-hand engine bracket and intermediate support on the side rail (Fig. J) :

- Bolts (24): 6 daNm.
- Bolts (25): 5.5 daNm.

Skoda Fabia:

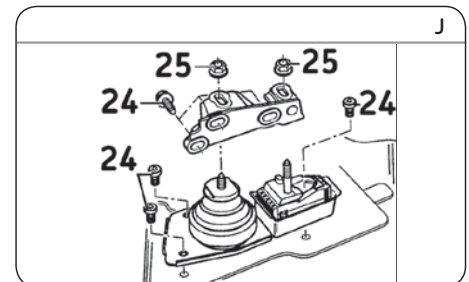
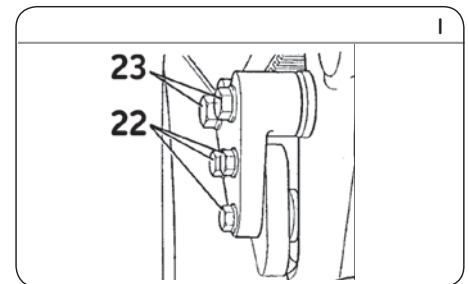
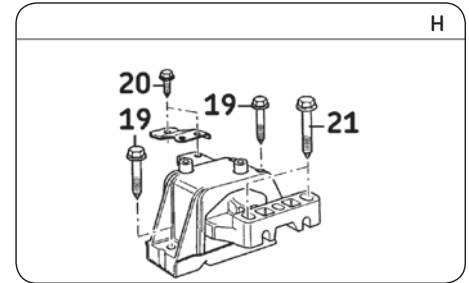
Right-hand engine bracket:

- New bolt on body: 2 daNm + 90°.
- New bolts on engine: 3 daNm + 90°.

Anti-torque rod:

- New bolt on body: 4 daNm + 90°.
- New bolts on engine: 3 daNm + 90°.

- 25) Fill the cooling circuit with the permanent fluid recommended.
- 26) 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).



Notice: Always follow the vehicle manufacturer instructions when working on the engine. The SKF KITS are designed for the automotive repair professional and must be fitted using tooling used by these professionals. These instructions are to be used as a guideline only. This document is the exclusive property of SKF. Any representation, partial or full reproduction, is forbidden without prior written consent from SKF.