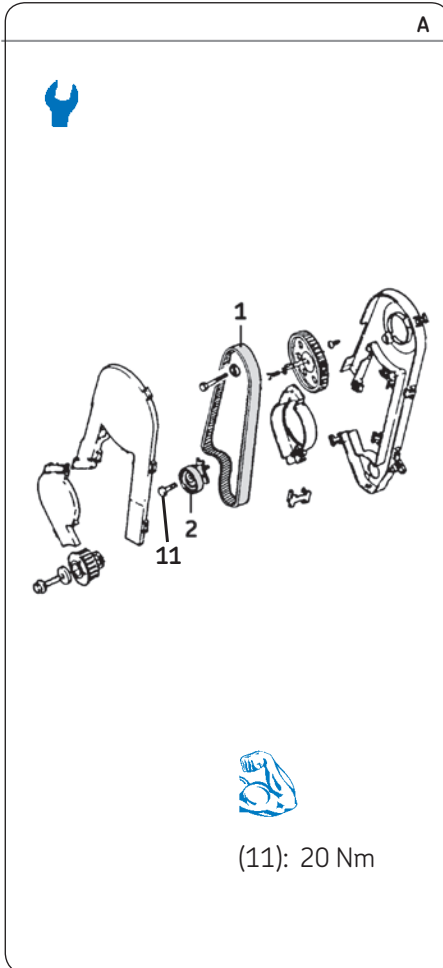


VKMA 05402



VKMC 05402



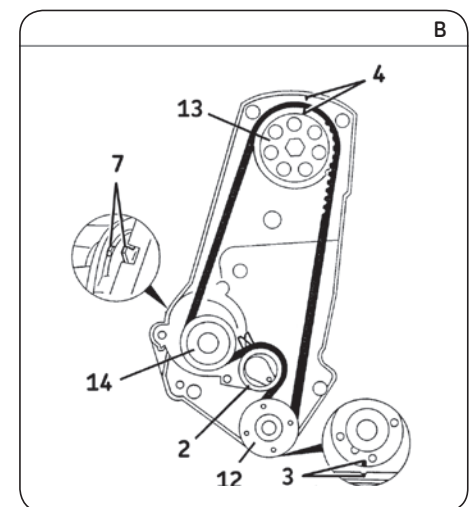
#### Removal

- 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) According to the vehicle (Astra, Calibra, Frontera, Kadett, Omega and Vectra) and engine being repaired (1.6l or 1.8l or 2.0l), carry out the following operations, if required: disconnect the wiring loom from the air flowmeter or upper timing casing, remove the air filter box with the intake house, the right engine mount, the lower torque rod, the fan viscous coupling and the pulley.
- 4) Remove the crankshaft pulley and timing casings.
- 5) Turn the crankshaft clockwise until the mark (3) on the crankshaft sprocket is aligned with the mark located on the cylinder block. Piston n° 1 is then at TDC (Fig. B).
- 6) The mark (4) on the camshaft sprocket must be aligned with the mark on the inner timing casing (Fig. B).
- 7) Loosen the bolt (11) securing the tensioner roller (2). Using the Allen key (5), turn the setting plate (6) of the tensioner roller **anticlockwise** (Fig. C). Slacken and remove the belt (1).
- 8) Remove the tensioner roller (2) (Fig. A).
- 9) **Removing the water pump (VKMC 05402):** firstly bleed the cooling circuit, check it is clean, and clean if required; secondly fully loosen the water pump (14) fastening bolts and remove the pump (Fig. B).

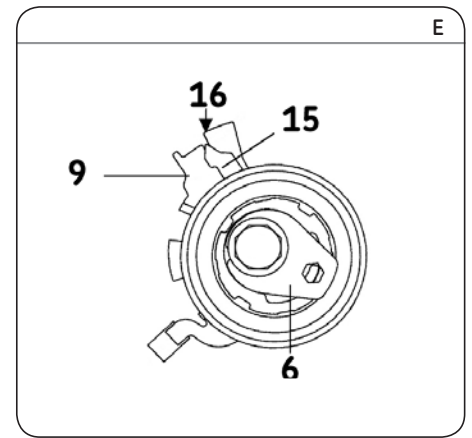
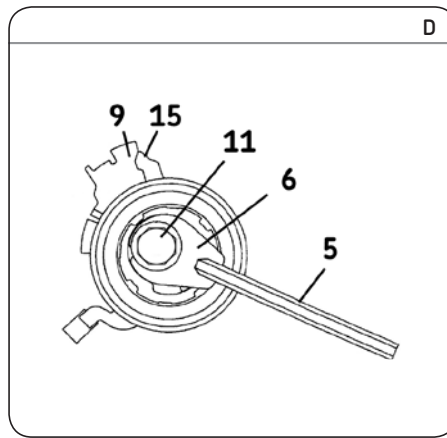
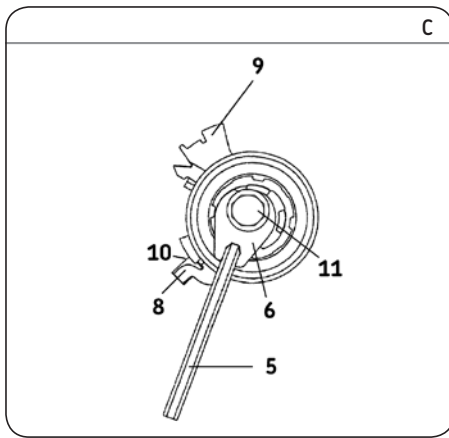
#### Refitting

**Caution:** Clean the bearing surfaces of the rollers.

- 10) **Refitting the water pump:** Firstly fit the new water pump (14), and tighten the waterpump bolts with **torque to manufacturer recommendations**; then check that the water pump pulley runs properly, and has no hard or locking spots.
- 11) Check that the timing marks on the crankshaft sprocket camshaft sprocket (3) and (4) are aligned (Fig. B).
- 12) Check that the water pump (14) is correctly directed, i.e. the mark (7) on the pump body must be aligned with the mark on the cylinder block (Fig. B).



Install Confidence



13) Fit the new tensioner roller (2) (Fig. A).

**Note:** When refitting the new tensioner roller (2), check that the positioning stud on the roller plate (8) is correctly engaged in the slot (10) of the engine block (Fig. C).

- 14) Using the Allen key (5), set the setting plate (6) of the tensioner roller to the "7 o'clock" position (Fig. C). Using an open-ended spanner, loosen the fastening bolt (11) slightly.
- 15) Fit the belt in the following order: crankshaft sprocket (12), camshaft sprocket (13), water pump (14) and finish with the tensioner roller (2) (Fig. B).
- 16) Lock the fastening bolt (11) using an open-ended spanner. Rotate the setting plate (6) on the tensioner roller in an **anti-clockwise** direction using the Allen key (5) until it reaches the maximum tension position. The moving pointer (15) is then aligned with the right edge of the plate (9) (Fig. D)

**Note:** The moving pointer must not go past the right edge of the plate.

- 17) Lock the tensioner roller in this position by tightening the fastening bolt (11) to **20 Nm**.
- 18) Rotate the crankshaft two turns in the engine rotation direction up to the timing point. Check that the various marks are aligned (3) and (4) (Fig. B).
- 19) Place the Allen key (5) in the tensioner roller setting plate (6) and loosen the fastening bolt (11) using an open-ended spanner (Fig. C).
- 20) Rotate the setting plate (6) **clockwise** to align the moving pointer (15) with the notch (16) in the tensioner roller plate (9) (Fig. E).
- 21) Tighten the tensioner roller fastening bolt (11) to **20 Nm** by locking the setting plate (6) with the Allen key.
- 22) Rotate the crankshaft two turns in the engine rotation direction up to TDC. Check that the various marks are aligned (3) and (4) (Fig. B).

- 23) Check the tensioner roller setting: the moving pointer (15) must be aligned with the notch (16) on the tensioner roller plate (9) (Fig. E).
- 24) If the marks are not aligned, remove the new timing belt and adjust the belt tension again, by returning to step 15).
- 25) Refit the removed elements in reverse order to removal
- 26) Fill the cooling circuit with the permanent fluid recommended.
- 27) 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.