

VKMA 01105



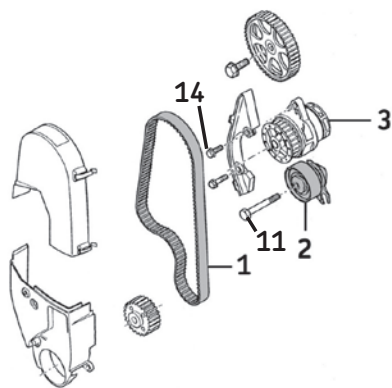
VKMC 01108



A

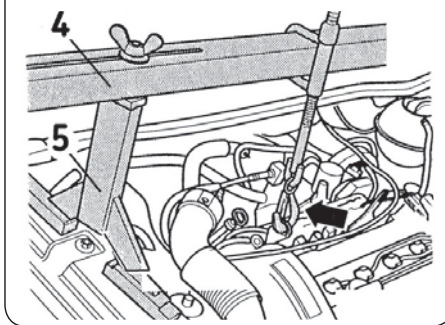


- (4): Engine securing tool
(Ref. 10-222A).
(5): Stand (ref. 10-222A/1).

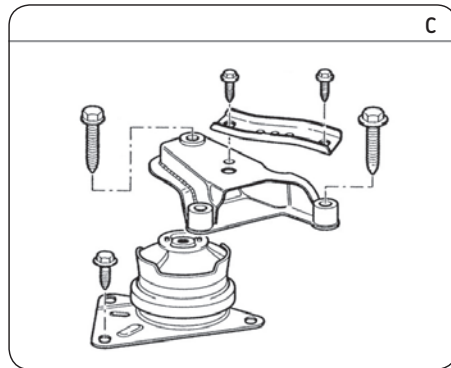


- (11) = 20 Nm
(14) = 10 Nm

B



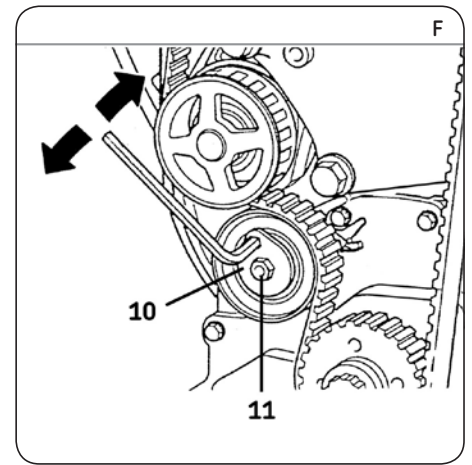
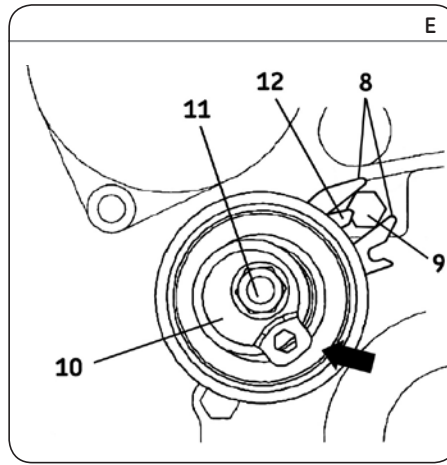
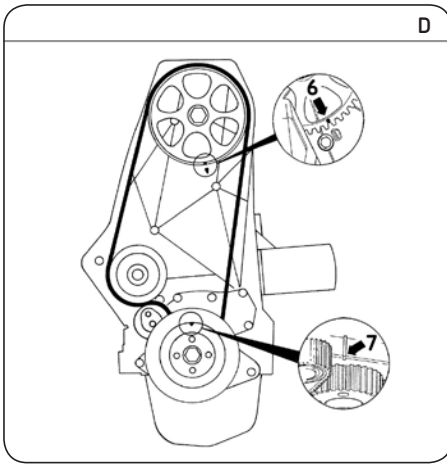
C



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) Put in place tool (4) with brackets (5) (Fig. B).
- 4) Turn the crankshaft up to TDC on cylinder Nr1.
Check:
 - The alignment of the tooth with the chamfer on the crankshaft sprocket with mark (7) on the lower timing casing (Fig. D).
 - The alignment of the mark on the camshaft sprocket with the one on the rear timing casing (6) (Fig. D).
- 5) Remove the timing belt (1) and tensioner roller (2) (Fig. A).
- 6) **Removing the water pump (VKMC 01108):**
Firstly bleed the cooling circuit, check it is clean, and clean if required; secondly fully loosen the water pump (3) fastening bolts and remove the pump (Fig. A).

Install Confidence

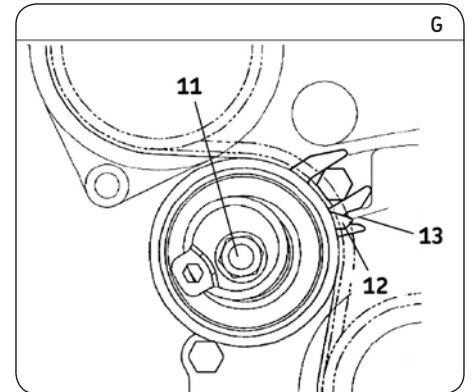


Refitting

Caution! Clean the bearing surfaces of the rollers.

- 7) **Refitting the water pump:** Firstly fit the new water pump (3), and tighten the waterpump bolts (14) at **10 Nm**; then check that the water pump pulley runs properly, and has no hard or locking spots.
- 8) Refit the new tension roller (2). Set the slot located between the fingers (8) on the centring nut (9) (Fig. E). Turn the setting plate (10) by turning the Allen wrench until it reaches the "5 o'clock" position (see black arrow in fig. E) then tighten slightly by hand the securing bolt (11) on the tensioner roller.
- 9) Refit the new timing belt (1).
- 10) Tighten the timing belt (1): turn the setting plate (10) on the tensioner roller (2) **clockwise** using an Allen wrench, while holding the fastening bolt (11) of the roller in position using a hex nut wrench (Fig. F). Continue turning the setting plate until the mobile index (12) is aligned with the notch (13) (Fig. G). Then tighten the fastening bolt (11) (Fig. G) at **20 Nm**.
- 11) Rotate the crankshaft by two turns in the engine's direction of rotation until the timing point is reached (check marks (6) and (7) Fig. D).
- 12) Check the setting of the moving pointer (12) (Fig. G) (it must be aligned with the notch (13)).

- 13) If the marks on the tensioner roller are not aligned, proceed as follows: hold the tensioner roller (2) in position with the Allen wrench while slightly loosening the fastening bolt (11) (Fig. F). Then turn the setting plate (10) (Fig. F) **counter-clockwise** to set the moving pointer in the initial position (12) (Fig. E) (position before refitting the roller on the engine), then remove the timing belt. Then restart the tension setting operation at step (11).
- 14) Refit the timing casings and the crankshaft pulley while tightening it at **20 Nm**.
- 15) Remove the tool (4) and the brackets (5) (Fig. B).
- 16) Refit the removed elements in reverse order to removal.
- 17) Fill the cooling circuit with the permanent fluid recommended.
- 18) 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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