

VKMA 04213



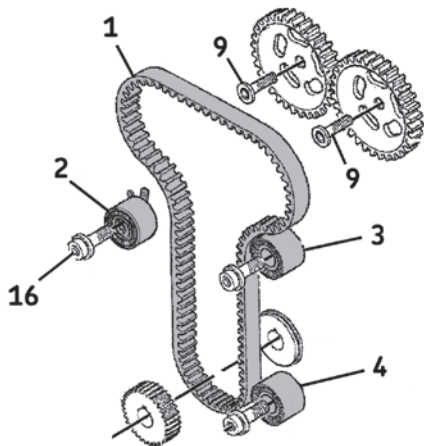
VKMA 04214



A



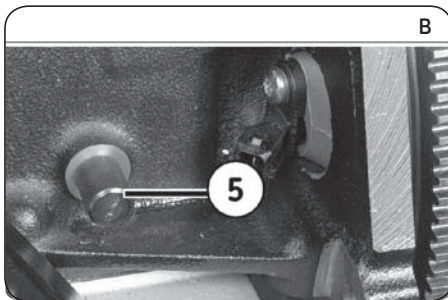
- (5): TDC timing gauge FORD 21-263.
- (7): Camshaft timing tool FORD 21-162B.
- (8): Sprocket locking tool FORD 15-030A.



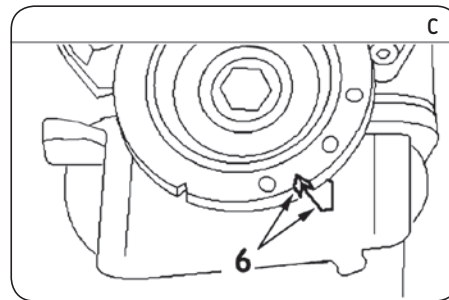
- (9): Camshaft centering bolt: 65 Nm
- (16): Tensioner roller bolt: 25 Nm



B



C



#### Removal

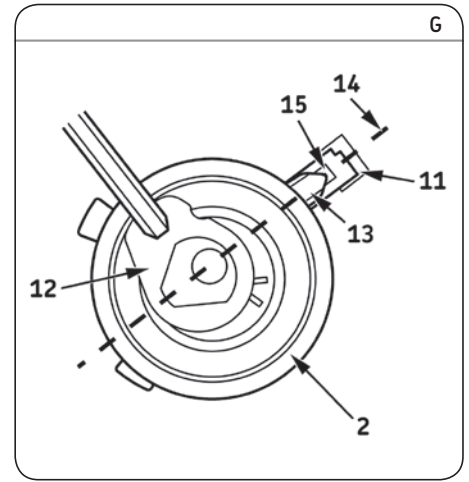
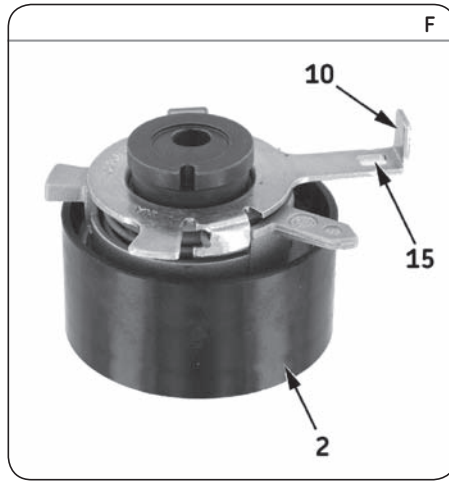
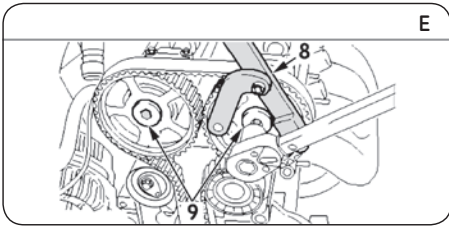
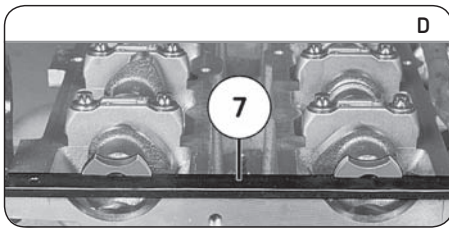
- 1) Disconnect the battery according to the vehicle manufacturing guidelines.
- 2) Prepare the vehicle for the timing replacement according to the vehicle manufacturing guidelines.
- 3) Remove the water pump pulley and the auxiliary belt tensioner roller.
- 4) Remove the TDC plug (located on the front left part of the cylinder block) and insert the TDC gauge (5) (Fig. B) instead of it.
- 5) Rotate the crankshaft in the engine rotation direction until it presses against the gauge (5) (Fig. B).
- 6) Check the alignment of the marks (6) (Fig. C) on the crankshaft pulley and the lower casing.

**Note:** Lock the flywheel with a suitable tool.

- 7) Remove the crankshaft pulley.
- 8) Remove the lower timing cover.

- 9) Support the engine using a suitable tool and then remove the right-hand engine mount.
- 10) Remove the middle and upper timing system casings.
- 11) Remove the cylinder head cover and the spark plugs.
- 12) Insert the timing tool (7) in the groves on the camshafts (Fig. D).
- 13) Loosen the tensioner roller bolt (16) (Fig. A). Turn the adjustment dial (12) on the tensioner roller (2) **clockwise** using an Allen key (Fig. G) to slacken the timing belt (1) and remove it.
- 14) Remove the tensioner roller (2).
- 15) Remove the idler roller (3) (Fig. A).
- 16) **If you are fitting the VKMA 04213**, remove the idler roller (4) (Fig. A).

Install Confidence



### Refitting

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

- 17) Lock the camshaft sprockets using the tool (8) and loosen their centering bolts (9) (Fig. E).
- 18) Check that the camshaft sprockets can turn freely on their shafts.
- 19) Check that the engine is at TDC: the crankshaft is pressed against the gauge (5) (Fig. B) and the tool (7) is fitted (Fig. D).
- 20) Fit the new idler roller (3) (Fig. A).
- 21) **If you are fitting the VKMA 04213**, fit the new idler roller (4) (Fig. A).
- 22) Fit the new tensioner roller (2): fit the positioning pin (10) (Fig. F) in the slot (11) on the engine block (Fig. G).
- 23) Fit the timing belt (1) in the following order: crankshaft sprocket, idler roller (4) (if fitted), idler roller (3), camshaft sprockets and the tensioner roller (2) (Fig. A).
- 24) Tighten the timing belt (1): Turn the adjustment dial (12) on the tensioner roller **anti-clockwise** using an Allen key until the moving pointer (13) is in position (14): the

moving pointer (13) must be aligned with the square hole (15) on the rear plate of the plate tensioner roller (Fig. G).

- 25) Tighten the tensioner roller bolt (16) to **25 Nm**.
- 26) Lock the camshaft sprockets using the tool (8) and tighten their centering bolts (9) to **65 Nm** (Fig. E).

**Note:** Lock the flywheel with a suitable tool.

- 27) Refit the lower timing casing.
- 28) Refit the crankshaft pulley.
- 29) Remove the gauge (5) (Fig. B) and the tool (7) (Fig. D).
- 30) Turn the crankshaft clockwise through two rotations until it presses against the gauge (5) (Fig. B). Fit the tool (7) (Fig. D).

**Note:** The timing is correct if the crankshaft is pressing against the gauge (5) (Fig. B) and the tool (7) can easily be inserted in the camshaft grooves (Fig. D).

- 31) If the tool (7) (Fig. D) cannot be inserted, lock the camshaft sprockets with the tool (8) and then loosen their centering bolts (9) (Fig. E). Then correct the position of the camshafts until the tool (7) (Fig. D) can be inserted and retighten the centering bolts (9) to **65 Nm**.
- 32) Remove the gauge (5) (Fig. B) and the tool (7) (Fig. D).
- 33) Check the tensioner roller setting: The moving pointer (13) must be in position (14) (Fig. G).
- 34) If the marks are not aligned, remove the new timing belt and adjust the belt tension again, by returning to step 23).
- 35) Refit the TDC plug.
- 36) Refit the elements removed in reverse order to removal
- 37) Fill the cooling circuit with the permanent fluid recommended.
- 38) 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.