

NT 03012

VKMA/C 03140 –
VKMA/C 03141 –
VKMA/C 03259 –
VKMA/C 03316

Citroën / Ford / Peugeot /
Mazda / Suzuki / Volvo

VKMA 03140

VKMC 03140

VKMA 03141

VKMC 03141

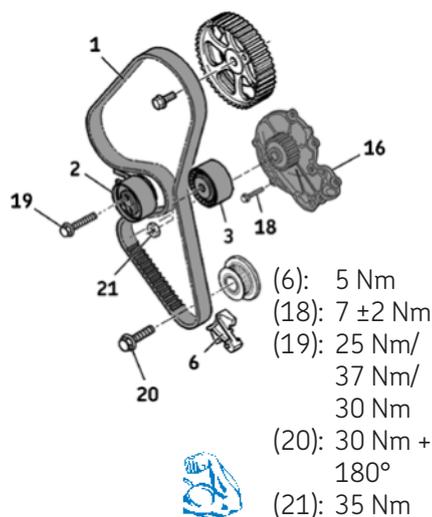


VKMA 03259

VKMC 03259



-  (4): PEU No. 0194C/Ford
ref No. 303-734
- (8) PEU No. 0194B/Ford
ref No. 303-735
- (9), (10): PEU No. 0194A/Ford
ref No. 303-732



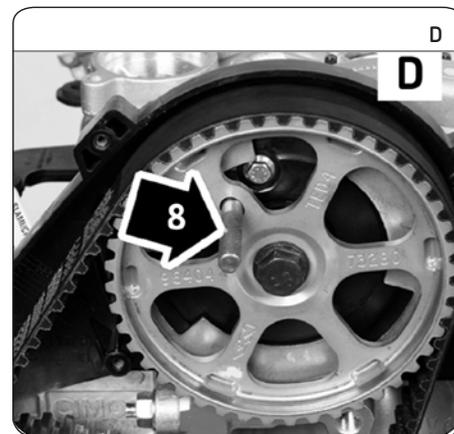
- (6): 5 Nm
- (18): 7 ± 2 Nm
- (19): 25 Nm/
37 Nm/
30 Nm
- (20): 30 Nm +
180°
- (21): 35 Nm

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 engine until you can insert the flywheel pin (4) into the slot under the engine on the gearbox side (Fig. B).
- 4) Remove the crankshaft pulley and remove the upper and lower timing covers.
- 5) Remove the engine speed sensor (5) and the belt guide (6) (Fig. C).

Caution: the surface of the crankshaft pin's magnetic track (7) (Fig. C) must not be damaged. If it is, you must replace the crankshaft pin.

- 6) Refit the crankshaft pulley fastening bolt (20) (Fig. A). Remove the flywheel pin (4) (Fig. B).
- 7) Turn the crankshaft clockwise until you can insert the camshaft pin (8) (Fig. D) and the crankshaft pin (9) (Fig. E).
- 8) Loosen the tensioner roller fastening bolt (19) to slacken the timing belt (1) (Fig. A). Remove the belt.
- 9) Remove the tensioner (2) and idler roller (3) (Fig. A).
- 10) **Removing the water pump (16)** (for VKMC 03140/03259): firstly, bleed the cooling circuit, check it is clean, and clean if required; secondly, fully loosen the water pump fastening bolts (18) and remove the pump (16) (Fig. A).

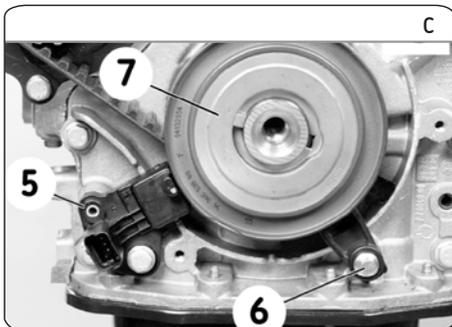
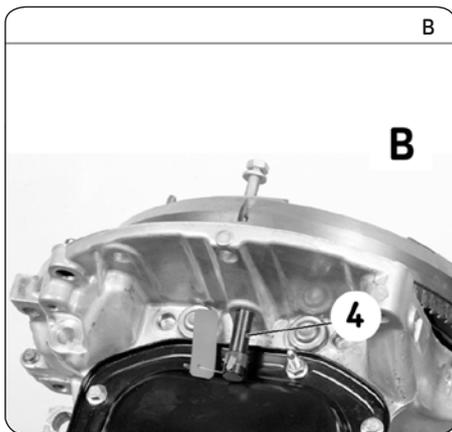


Refitting

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

- 11) **Refitting the water pump:** Firstly, fit the new water pump (16), tighten the waterpump bolts (18) to the torque 7 ± 2 Nm, then check that the water pump pulley runs properly, and has no hard or locking spots.
- 12) Fit the new idler roller (3) (Fig. A). Tighten the fastening nut (21) to 35 Nm.

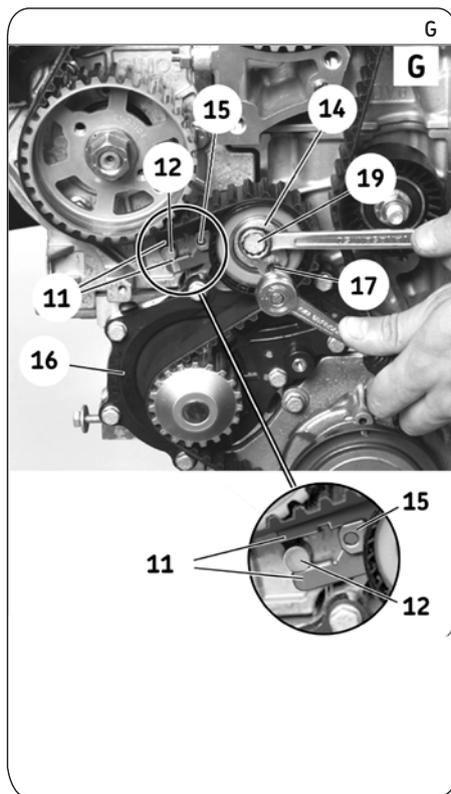
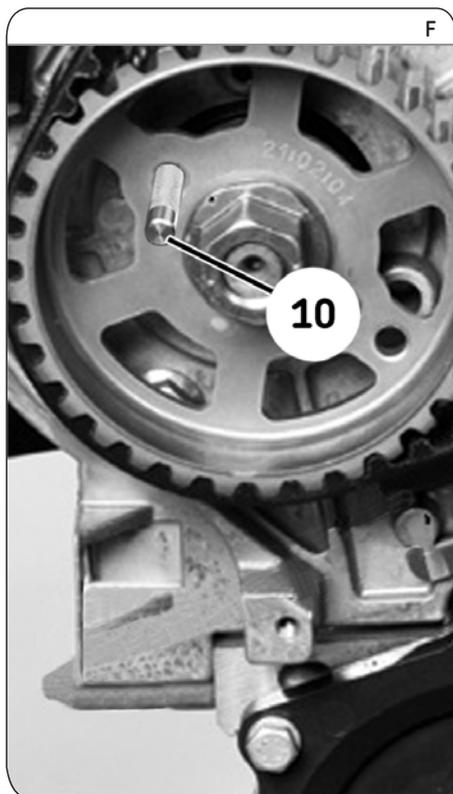
Note: When refitting the new tensioner roller (2), adjust the slot (11) of the rear plate of the roller on the pin (12) located on the engine block (Fig. G).



Install Confidence

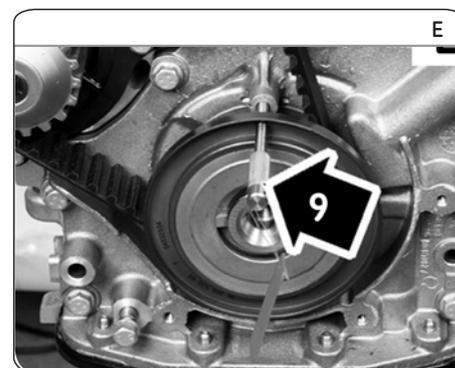
VKN 1005





- 13) Fit the new tensioner roller (2). Remove the pin (13) from the tensioner roller (Fig. H), tighten the bolt (19) by hand (Fig. A).
- 14) Fit the timing belt (1) in the following order: crankshaft pulley, idler roller (3), camshaft sprocket, high pressure pump sprocket, water pump (16) sprocket and tensioner roller (2).
- 15) Tighten the timing belt (1): using an Allen key (17), turn the adjustment dial (14) **anticlockwise** until the moving pointer (15) is in the center of the slot (11) on the rear plate of the tensioner roller (Fig. G).
- 16) Tighten the fastening bolt (19) of the tensioner roller (Fig. G) to a torque of **25 Nm (37 Nm for the 1.4 HDI 16v (DV4TED4) engine and 30 Nm for the 1.6 HDI/TDCI/DI/D engines fitted with the Bosch injection system)**.
- 17) Remove the pins (8) (Fig. D) and (9) (Fig. E). Remove the high pressure pump pin (10) (Fig. F) if it has been fitted.
- 18) Turn the crankshaft 10 times in the engine rotation direction until you can insert the camshaft pin (8) (Fig. D) and the crankshaft pin (9) (Fig. E). **For the 1.6 HDI/TDCI/DI/D engines with BOSCH injection system and the 1.4 HDI/TDCI 16v (DV4TED4) engines:** insert the high pressure pump pin (10) (Fig. F).
- 19) If the timing pins cannot be inserted, remove the timing belt then restart the tension and timing adjustment operations from step 14).
- 20) Check the tensioner roller (2) setting: the moving pointer (15) must be in the centre of

- the slot (11) on the rear plate of the tensioner roller (Fig. G).
- 21) If the marks are not aligned, remove the new timing belt and adjust the belt tension again, by returning to step 14).
- 22) Remove all the pins which have been inserted before.
- 23) Refit the engine speed sensor (5) and the belt guide (Fig. C). Tighten the belt guide fastening bolt (6) to 5 Nm.
- 24) Refit the timing belt covers.
- 25) Insert the flywheel pin (4) (Fig. B).
- 26) Refit the crankshaft pulley and tighten its fastening bolt (20) to a torque of **30 Nm + 180° angular tightening**.
- 27) Remove the flywheel pin (4) (Fig. B).
- 28) Refit the engine brackets.
- 29) Refit the removed elements in reverse order to removal.
- 30) Fill the cooling circuit with the permanent fluid recommended.
- 31) 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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