

NT 05003

VKMA 05150 – VKMC 05150-1/-2/-3
 VKMA 05152 – VKMC 05152-1/-2
 VKMA 05156 – VKMC 05156-1/-2/-3

Chevrolet / Daewoo / Opel /
 Vauxhall

VKMA 05150



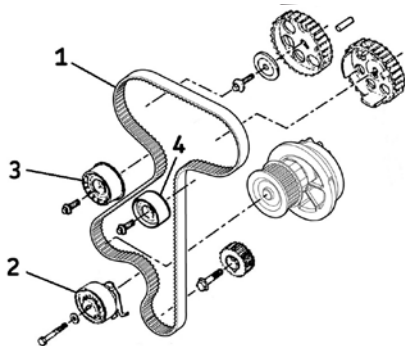
VKMA 05152



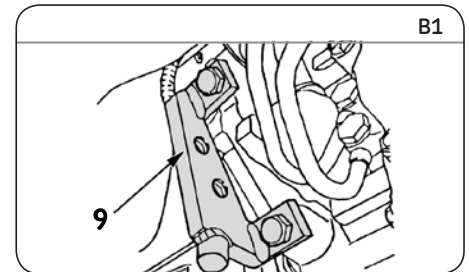
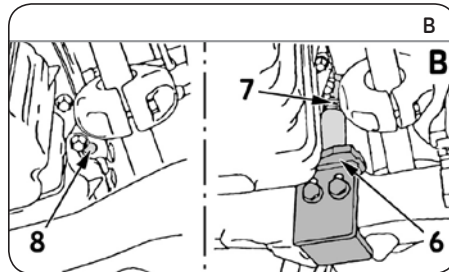
VKMA 05156



- (6): Ref. KM-6173 (Astra G/Zafira A)
- (9): Ref. KM-6169-3 (Corsa)
- (10): Ref. KM-6001-A (Astra G/Zafira A)
- (10): Ref. KM-6169 (Corsa)
- (19): Ref. KM-852
- (27): T40 Torx wrench.
- (28): Allen wrench 6 mm. – Flywheel locking tool (ref. KM-911).

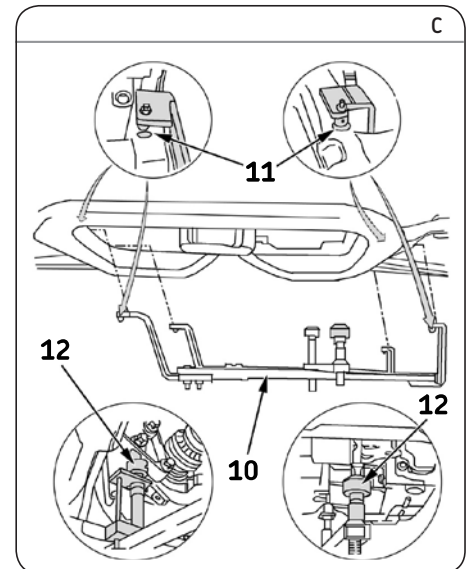


- (3)/(4): Idler: 25 Nm
- (25): Tensioner bolt: 20 Nm
- (31): Waterpump bolts: 10 Nm



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) Lock the flywheel using holding tool KM-911 then loosen and remove the crankshaft pulley.
- 4) Remove the lower timing cover and remove the flywheel locking tool.
- 5) Reassemble the crankshaft pulley bolt.
- 6) Remove camshaft sensor (13) (fig. D).
- 7) Bring cylinder n° 1 to Top Dead Center (TDC), in this position the marks (15) on the camshafts are aligned with the cylinder head sealing surface (Fig. E). The mark on the crankshaft pinion (16) is opposite to the lower mark of the timing cover (17) (Fig. E).
- 8) Lock the camshaft sprockets (18) using locking tool (19) (Fig. E).
- 9) Loosen the fitting bolt of the tensioner roller (2). Using the Allen wrench (28), turn the adjustment dial (20) of the tensioner roller counter-clockwise (Fig. F). Loosen and remove the belt.
- 10) Remove tensioner roller (2) and idler rollers (3) and (4) (Fig. E).

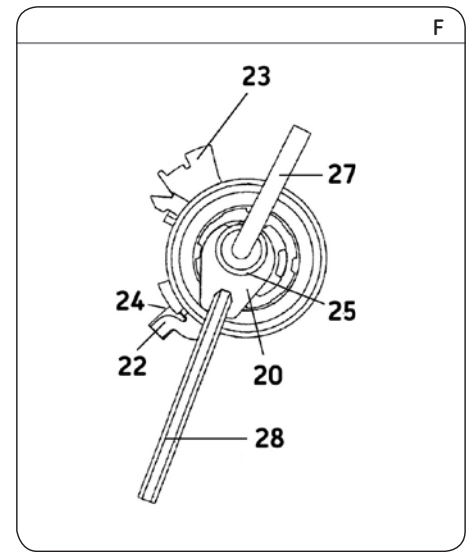
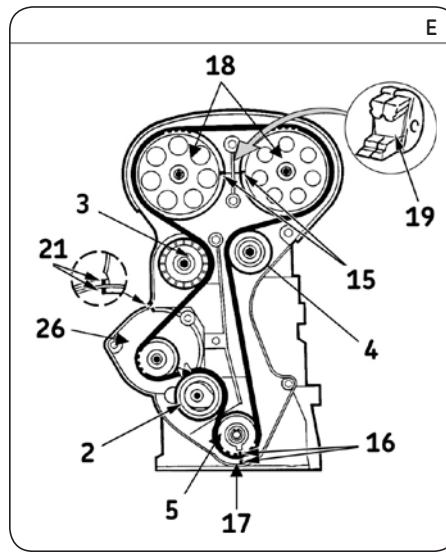
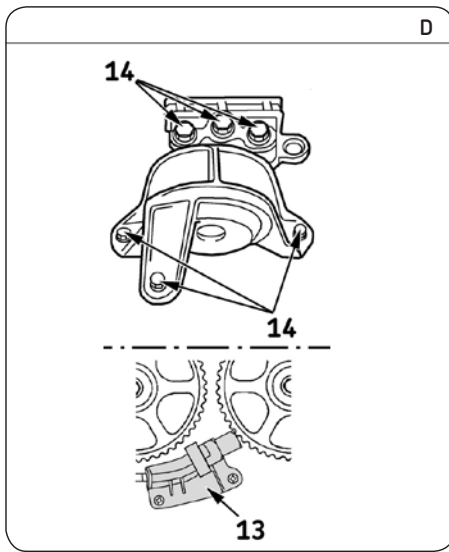


- 11) Removing the water pump (VKMC 05150-1/2/3, VKMC 05152-1/2, VKMC 05156-1/2/3): Firstly bleed the cooling circuit, check it is clean, and clean if required; secondly fully loosen the water pump fastening bolts (31) and remove the pump (26) (Fig. A).

Install Confidence

VKN 1003





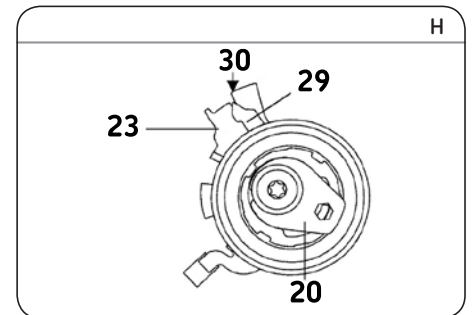
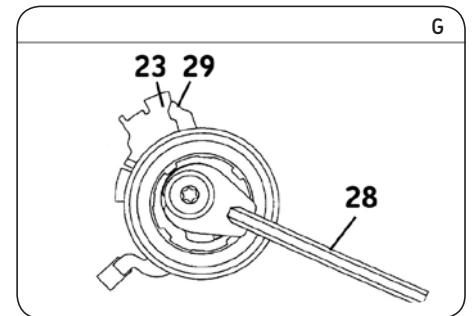
Refitting

Caution! First clean the bearing surfaces of the rollers.

- 12) **Refitting the water pump:** Firstly, fit the new water pump (26), apply the torque **10 Nm** to the waterpump bolts (31); then check that the water pump pulley runs properly, and has no hard or locking spots.
 - 13) Check the alignment of the locking marks of the camshaft sprockets and crankshaft pinion (15), (16) and (17) (Fig. E).
 - 14) Check that the water pump is correctly oriented; to this end, marker (21) on the pump body must be aligned with that of the cylinder block (fig. E).
 - 15) Fit the new idlers (3) and (4) at **25 Nm** (Fig. E).
 - 16) Fit the new tension roller (2) and its new bolt (25) (Fig. E).
- Note:** When reassembling the new tensioner roller (2), check the positioning pin (22) on the roller plate (23) is engaged properly in the slot (24) of the engine block (Fig. F).
- 17) Using the Allen wrench (28), turn the adjustment dial (20) of the tensioner roller to the "7 o'clock" position (Fig. F). Using the Torx wrench (27), slightly tighten the fastening bolt (25).
 - 18) Fit the new belt (1) in the following order: crankshaft pinion (5), idler roller (4), camshaft sprockets (18), idler roller (3), water pump (26), and finish with the tensioner roller (2) (Fig. E).
 - 19) Turn the adjustment dial (20) of the tensioner roller **counter-clockwise** using the Allen wrench (28) until you reach the maximum tension position. The moving index (29) is then aligned with the right-hand edge of the plate (23) (Fig. G)

Note: The moving index must not extend beyond the right-hand edge of the plate.

- 20) Lock the rotation of the securing bolt (25) using the Torx wrench (27) (Fig. F).
- 21) Remove the locking tool (19) of the camshaft sprockets (18) (Fig. E).
- 22) Turn the engine regularly by **two turns clockwise** up to TDC.
- 23) Lock the camshaft sprockets using the locking tool (19) (Fig. E).
- 24) Fit the Allen wrench (28) in the adjustment dial (20) of the tensioner roller and loosen the fastening bolt (25) using the Torx wrench (27) (Fig. F).
- 25) Turn the adjustment dial (20) **clockwise** to align the moving index (29) into the notch (30) on the plate (23) of the tensioner roller (Fig. H).
- 26) Tighten the securing bolt (25) of tension roller (2) to **20 Nm**.
- 27) Remove locking tool (19) of the camshaft sprockets (Fig. E).
- 28) Turn the crankshaft by **two turns clockwise** up to the TDC.
- 29) Check the adjustment of the tensioner roller: the moving index (29) must be aligned with the notch (30) on the plate (23) of the tensioner roller (Fig. H). Check the marks (15), (16), and (17) for timing lock (Fig. E).
- 30) If the markers are not in line, remove the new timing belt and repeat the tension setting operation from step 20).
- 31) Refit the elements removed in reverse order to removal.
- 32) Fill the cooling circuit with the permanent fluid recommended.
- 33) 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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