

# NT 05000

## VKMA 05121 – VKMC 05121 /-2


Daewoo / Vauxhall / Renault / Opel

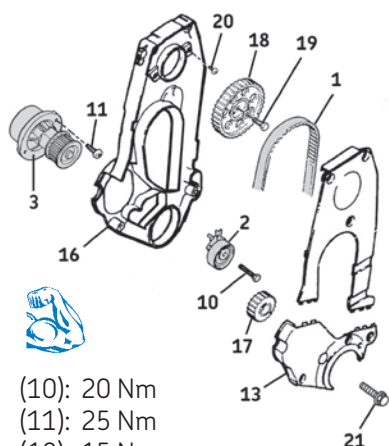
VKMA 05121

VKMC 05121

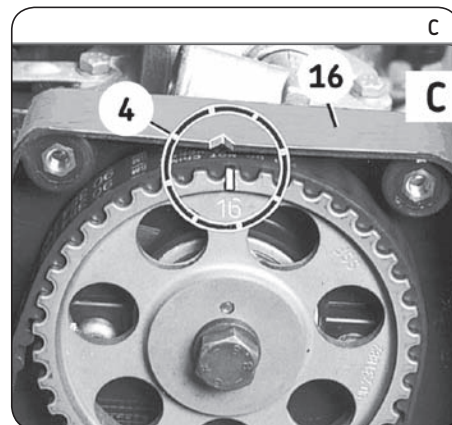
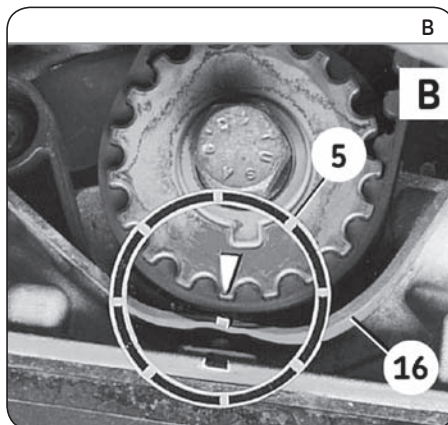
VKMC 05121-2



-  – KM-6347 + KM-956-1
- (5): KM-911 (1.6 X16 SZR)  
KM-517-B (1.6 X16-SZR)
- (6): Ref.0188X / Ref.0188Y /  
Ref. 0188D



- (10): 20 Nm
- (11): 25 Nm
- (19): 15 Nm
- (20): 12 Nm
- (21): M10x23 : 55 Nm  
M10x30 : 55 Nm + 45-60°  
M12 : 95 Nm + 30° + 15°



### Removal

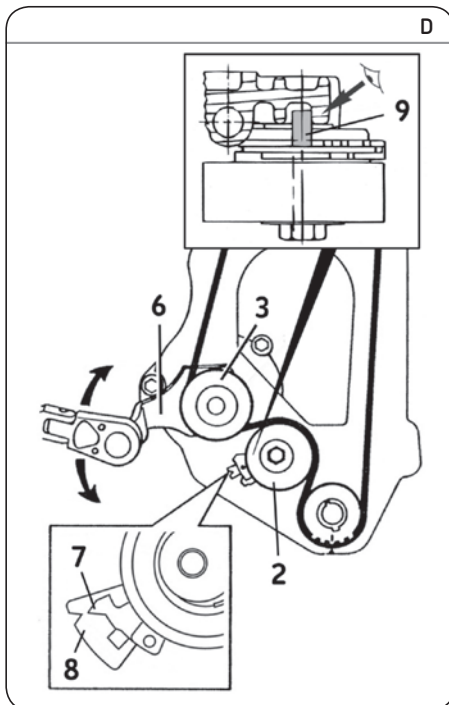
- 1) Disconnect the battery according to the vehicle manufacturing guidelines.
- 2) Prepare the vehicle for the timing replacement according to the manufacturing guidelines.
- 3) Lock the flywheel using tool KM-911 (1.6 X16 SZR engine) or KM-517-B (except 1.6 X16 SZR engine) and remove the crankshaft bolt (21) (Fig. A) and the pulley.
- 4) Fit the crankshaft pulley bolt (21).
- 5) Remove the flywheel locking tool and timing belt lower cover (13). Turn the crankshaft in the engine rotation direction to align mark (5) on the crank sprocket with that on the rear timing cover (16) (Fig. B).
- 6) In this position, the mark on the camshaft gear (4) must align with the notch on the rear timing cover (16) (Fig. C).
- 7) Turn the movable part of the tensioner (2) until the hole (12) of the index (7) can be aligned with the hole (14) of the base plate (8) (Fig. F). Insert suitable pin (15) to hold the tensioner (2) (Fig. E).
- 8) Remove the timing belt (1) and the tensioner roller (2).
- 9) **Removing the water pump** (for VKMC 05121/VKMC 05121-2):  
– Bleed the cooling circuit, check it is clean, and clean if required.

- Remove the camshaft sprocket (18) using KM-6347 and KM-956-1 tools to loose the bolt (19) (Fig. A).
- Remove the bolt (21) and the crankshaft sprocket (17) (Fig. A).
- Remove the rear timing cover (16) (Fig. A).
- Fully loosen the water pump fastening bolts (11) and remove the pump (3) (Fig. A).

### Refitting

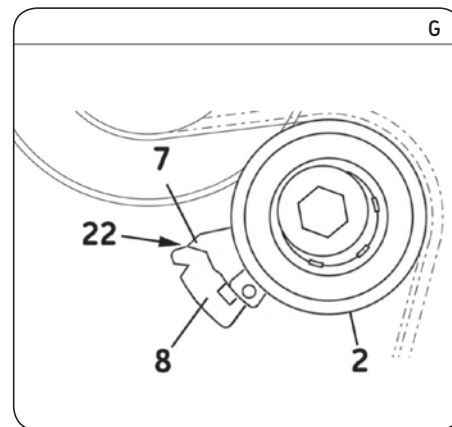
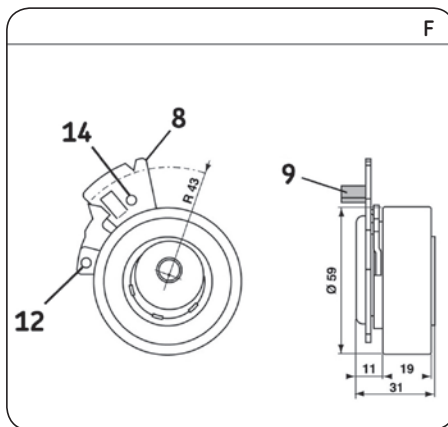
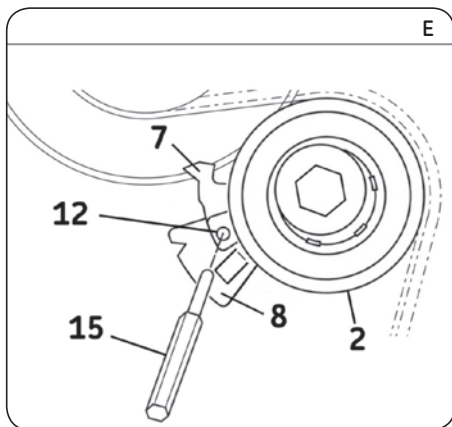
**Caution!** Carefully clean the bearing surfaces of the tensioner roller.

- 10) Refitting the water pump:
  - Fit the new water pump (3), tighten the water pump bolts (11) slightly by hand.
  - Check that the water pump pulley runs properly, and has no hard or locking spots.
  - Refit the rear timing cover (16) and tighten its bolts (20) to 12 Nm (Fig. A).
  - Refit the crankshaft sprocket (17) then refit and tighten by hand the bolt (21).
  - Refit the camshaft sprocket (18) using KM-6347 and KM-956-1 tools to tighten the bolt (19) to 45 Nm (Fig. A).
- 11) Ensure timing marks (4) and (5) are aligned. (Fig. B and Fig. C).



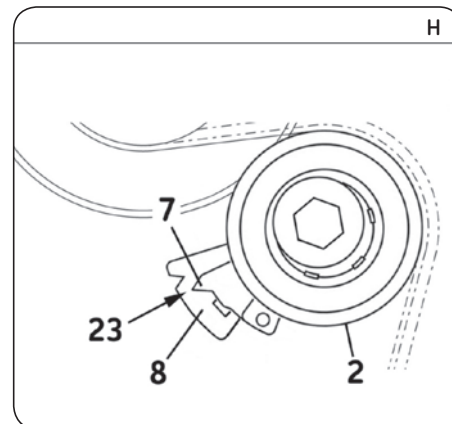
**Install Confidence**





- 12) Fit the new tensioner roller (2): the positioning pin (9) on the roller (Fig. F) must be inserted in the slot located on the engine and must be against the stop of this slot (Fig. D).
- 13) Tighten the new bolt (10) of the tensioner roller to 20 Nm (Fig. A).
- 14) Fit the timing belt (1).
- 15) Remove the pin (15) from the tensioner (2) (Fig. E).
- 16) Loosen the waterpump bolts (11), and turn the waterpump **clockwise** by using the tool KM-421-A (6) to tension the belt (1) (Fig. D) until the index (7) is:
  - In position (22): except X16 SZR engine (Fig. G);
  - In stop position (23): X16 SZR engine (Fig. H).
- 17) Turn slowly the crankshaft by 2 revolutions in the engine rotation direction, until timing marks (4) and (5) are aligned (Fig. B and Fig. C) (check that the water pump position does not change during the crankshaft's rotation).
- 18) Turn the water pump **anti-clockwise** using tool Opel KM-421-A (6) until the index (7) on the tensioner roller is aligned with the notch on the base plate (8) of the tensioner roller (Fig. D).
- 19) Tighten the water pump bolts (11) at 8 Nm (Fig. A).
- 20) Turn slowly the crankshaft by 2 revolutions in the engine rotation direction, until timing

- marks (4) and (5) are aligned (Fig. B and Fig. C).
- 21) Check the adjustment of the tensioner roller (index (7) must be aligned with the notch in the base plate (8)) (Fig. D).
- 22) If the markers are not in line, remove the new timing belt and repeat the tension setting operation from step 14).
- 23) Fit the flywheel locking tool KM-911.
- 24) Remove the crankshaft pulley bolt (21).
- 25) Fit the timing belt lower cover (13) (Fig. A) then the crankshaft pulley and tighten its bolt (21):
  - M10 x 23 mm: 55 Nm.
  - M10 x 30 mm: 55 Nm + 45-60°.
  - M12: 95 Nm + 30° + 15°.
- 26) Refit the elements removed in reverse order to removal.
- 27) Fill the cooling circuit with the permanent fluid recommended.
- 28) 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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