NT 01025
VKMA 01258 – VKMC 01258-1/-2 – VKMA/C 01270

Volvo / Volkswagen

VKMA 01258

VKMC 01258-1

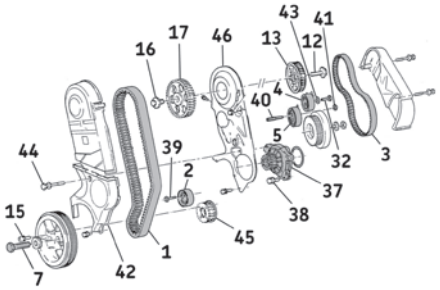
VKMC 01258-2

VKMA 01270

VKMC 01270

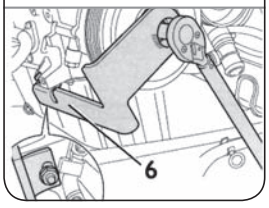
A

(6): ref. 3419
(11): ref. 3036
(14): ref. 2065A
(20): ref. 3355

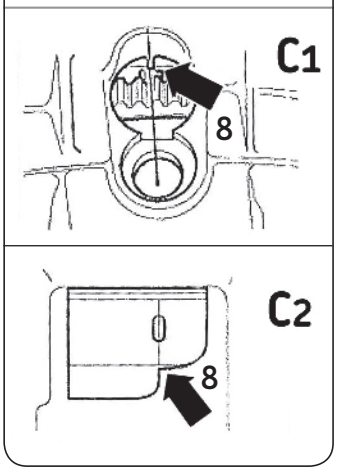


(7): 160 Nm + 180°
(12): 160 Nm
(15): 20 Nm
(16): "8.8": 85 Nm;
"10.9": 100 Nm
(32): 15 Nm
(38): 20 Nm
(39): 20 Nm
(41): 20 Nm
(44): 20 Nm

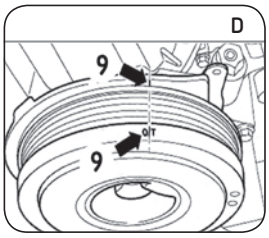
B



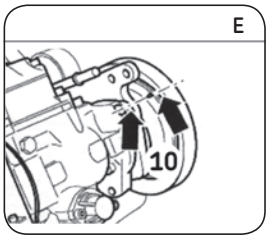
C



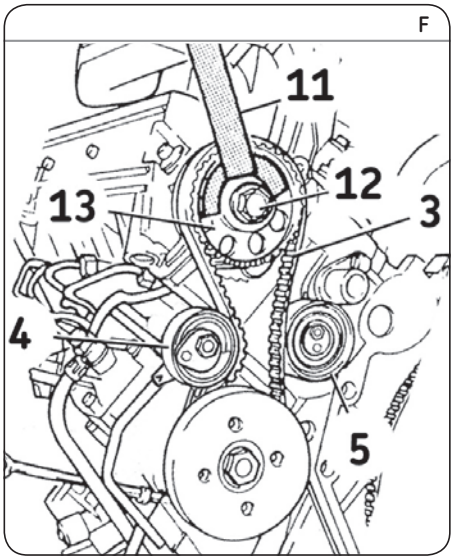
D



E



F



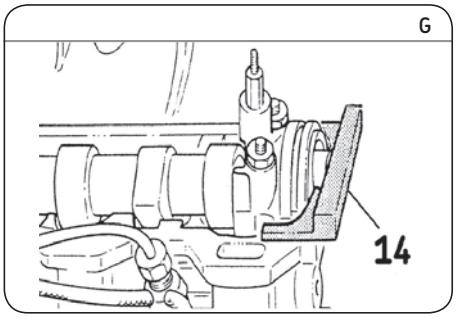
Removal

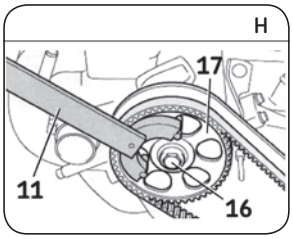
1) Disconnect the battery according to the vehicle manufacturing guidelines.
2) Prepare the vehicle for the timing replacement according to the vehicle manufacturing guidelines.
3) Turn the crankshaft in the engine rotation direction to TDC of cylinder No. 1. Check the alignment of the mark (**8**) on the flywheel (**Fig. C1** for manual gearbox, **Fig. C2** for automatic gearbox), the marks (**9**) on the crankshaft pulley (**Fig. D**) and the marks (**10**) on the injection pump pulley (**Fig. E**).

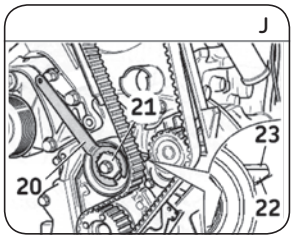
Note: If the timing marks are not aligned, rotate the crankshaft one more turn.

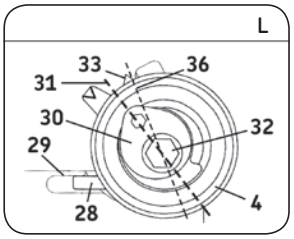
4) Loosen the fasteners attaching the tensioner rollers (**4**) and (**5**) of the injection pump belt (**3**) (**Fig. F**).
5) Using the tool (**11**), loosen the fastening bolt (**12**) of the camshaft rear sprocket (**13**) (**Fig. F**).
6) Remove the tensioner roller (**4**), remove the tensioner roller (**5**) and it's stud (**40**) (**Fig. A**).
7) Remove the injection pump belt (3) and the camshaft rear sprocket (**13**) (**Fig. F**).
8) Lock the camshaft with the tool (**14**) (**Fig. G**).
9) Using the tool (**6**) (**Fig. B**), loosen and remove the central fastening bolt (**7**) of the crankshaft pulley (**Fig. A**). Remove the bolts (**15**) securing the crankshaft pulley on the pignon (**45**) (**Fig. A**). Remove the crankshaft pulley.
10) Remove the bolt (**44**) and the lower timing belt casing (**42**) (**Fig. A**).
11) Loosen the bolt (**39**) fastening the tensioner roller (**2**) (**Fig. A**). Remove the tensioner roller (**2**).
12) Remove the timing belt (**1**) (**Fig. A**).
13) **Removing the water pump** (**VKMC 01258-1/-2-VKMC 01270**):
– Bleed the cooling circuit, check it is clean, and clean if required;
– Using tool (**11**), loosen the bolt (**16**) fastening the camshaft front sprocket (**17**) then remove the bolt (**16**) and the camshaft front sprocket (**17**);
– Remove the timing belt rear casing (**46**) (**Fig.A**)
– Fully loosen the 2 water pump fastening bolts (**38**) and remove the pump (**37**) (**Fig. A**).

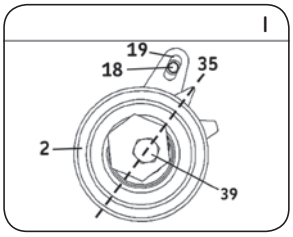
Install Confidence

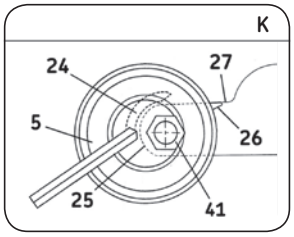


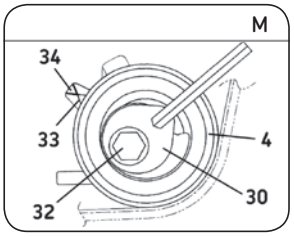












Refitting
Caution! Clean the bearing surfaces of the rollers.

14) Refitting the water pump:
- Fit the new water pump (**37**), apply the torque **20 Nm** to the 2 waterpump bolts (**38**) (**Fig. A**);
- Check that the water pump pulley runs properly, and has no hard or locking spots;
- Refit the timing belt rear casing (**46**) (**Fig. A**);
- Refit the camshaft front sprocket (**17**) and the bolt (**16**), checking the sprocket (**17**) can be be able to turn freely;

15) If the water pump was not removed (VKMA 01258 /01270): using the tool (**11**), slightly loosen the bolt (**16**) fastening the camshaft front sprocket (**17**) (**Fig. H**). Separate the camshaft sprocket from the hub.

Note: The camshaft sprocket (**17**) must be able to turn freely.

16) Check that the engine is at TDC: timing marks (**8**) and (**10**) are aligned (**Fig. C1/C2** and **Fig. E**).

Timing system
17) Fit the new tensioner roller (**2**) and its new bolt (**39**) (**Fig. A**): correctly position the engine block pin (**18**) in the slot (**19**) on the rear tensioner roller plate (**Fig. I**). Lightly tighten the tensioner roller fastening bolt (**39**).
18) Fit the new timing belt (**1**) in the following order: water pump sprocket, camshaft sprocket, tensioner roller (**2**), and crankshaft sprocket.
19) Tighten the timing belt (**1**): using the tool (**20**), turn the adjustment dial (**21**) **clockwise**, while holding the roller fastening bolt (**39**) in place, until the tip of the moving pointer (**22**) is aligned with the tip of the fixed indicator (**23**) (**Fig. J**).
20) Tighten the bolt (**39**) fastening the tensioner roller (**2**) to **20 Nm**.
21) Check that the engine is at TDC: timing marks (**8**) and (**10**) are aligned (**Fig. C1/C2** and **Fig. E**).

Note: SKF recommends reattaching the camshaft sprocket with a new fastening bolt.

22) Check the grade of steel indicated on the head of the bolt fastening the camshaft front sprocket (**17**) (**Fig. H**): "8.8" or "10.9". Using the tool (**11**), tighten the fastening bolt (**16**) of the camshaft front sprocket (**17**) (**Fig. H**) to a torque of:
- Steel grade "8.8": **85 Nm**.
- Steel grade "10.9": **100 Nm**.

23) Remove the tool (**14**) (**Fig. G**).
24) Refit the lower timing belt casing (**42**), then refit the crankshaft pulley using tool (**6**) (**Fig. B**). Tighten the crankshaft pulley fastening bolts to the following torques (**Fig. A**).
- Bolt (**7**): **160 Nm + angular tightening of 180°.**
- Bolts (**15**): **20 Nm**.

Injection pump
25) Check that timing marks (**8**) and (**10**) are aligned (**Fig. C1/C2** and **Fig. E**).
26) Fit and tighten the new stud (**40**) for tensioner (**5**) (**Fig. A**).
27) Fit the new tensioner roller (**5**) and its new bolt (**41**) (**Fig. A**): position the tab (**24**) on the cylinder head boss (**25**) then turn the tensioner roller (**5**) **clockwise** with an Allen key until the pointer (**26**) is aligned with the edge (**27**) of the cylinder head (**Fig. K**). Lightly tighten the tensioner roller fastening nut (41) (**Fig. K**).
28) Fit the new tensioner roller (**4**), its new washer (**43**) **and its new bolt** (32) (**Fig. A**): place the leg (**28**) in the slot (**29**) on the engine block (**Fig. L**). Using the Allen key set the adjustment dial (**30**) of the tensioner roller to the "10 o'clock" position (**31**) (**Fig. L**). Lightly tighten the tensioner roller fastening bolt (**32**) (**Fig. L**).
29) Fit the new injection pump belt (**3**) and the camshaft rear sprocket (**13**) (**Fig. F**). Lightly tighten the fastening bolt (**12**) of the camshaft rear sprocket (**13**).
30) Tighten the fastening nut (**41**) of the tensioner roller (**5**) to **20 Nm** (**Fig. K**).
31) Tighten the injection pump belt (**1**): turn the adjustment dial (**30**) on the tensioner roller (**4**) **anti-clockwise** using an Allen wrench, while holding the roller fastening bolt (**32**) in position with a hex nut wrench (**Fig. M**). Continue turning the adjustment dial until the moving pointer (**33**) is aligned with the fixed indicator (**34**) (**Fig. M**).
32) Tighten the fastening bolt (**32**) (**Fig. M**) of the tensioner roller (**4**), to a torque of **15 Nm**.
33) Using the tool (**11**), tighten the fastening bolt (**12**) of the camshaft rear sprocket (**13**) (**Fig. F**) to a torque of **160 Nm**.
34) Rotate the crankshaft 2 turns in the engine rotation direction up to TDC: timing marks (**8**), (**9**) and (**10**) are aligned (**Fig. C1/C2, Fig. D** and **Fig. E**).

Tension checks
35) Check the adjustment of the tensioner roller (**2**): the tip of the moving pointer (**22**) must be aligned with the tip of the fixed indicator (**23**) (**Fig. J**).
36) If the marks are not aligned, loosen the fastening bolt (**39**) of the tensioner roller (**2**) and turn the adjustment dial (**21**) **anticlockwise** with the tool (**20**) (**Fig. J**) until the tensioner roller is in its initial position (**35**) (**Fig. I**). Restart the tension setting operation from step **20**).
37) Check the adjustment of the tensioner roller (**4**): the moving index (**33**) must be aligned with the fixed indicator (**34**) (**Fig. M**).
38) If the marks on the tensioner roller are not aligned, proceed as follows: hold the tensioner roller (**4**) in position with an Allen wrench while slightly loosening the fastening bolt (**32**) (**Fig. L**). Turn the plate (**30**) **anticlockwise** until the moving pointer (**33**) is in the initial position (**36**) (**Fig. L**). Restart the tension setting operation from step **32**).
39) Refit the elements removed in reverse order to removal. Tighten the bolt (**44**) who secure both the lower timing belt casing (**42**), the timing belt rear casing (**46**) and the water pump (**37**) to **20 Nm** (**Fig. A**).
40) Fill the cooling circuit with the permanent fluid recommended.
41) 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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