NT 01026
VKMA 01271
VKMC 01271

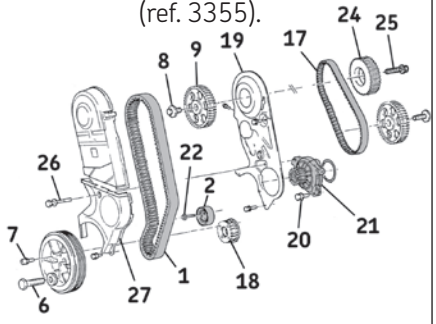
Volkswagen

VKMA 01271

VKMC 01271

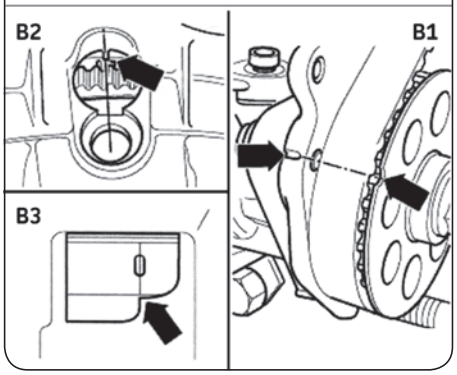
A

(3): Camshaft sprocket tool (ref. 3036).
(4): Camshaft timing tool (ref. 2065A).
(5): Crankshaft pulley tool (ref. T10025).
(12): Tensioner roller tool (ref. 3355).

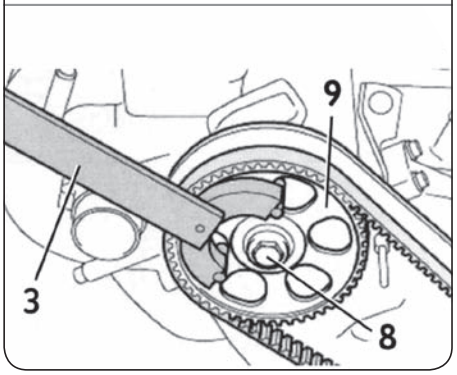


(6):	160 Nm + 180°
(7):	20 Nm +90°
(8):	"8.8": 85 Nm; "10.9": 100 Nm
(22):	20 Nm
(20), (26):	20 Nm
(25):	100 Nm

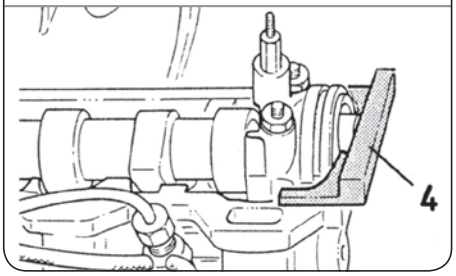
B



C



D



Removal

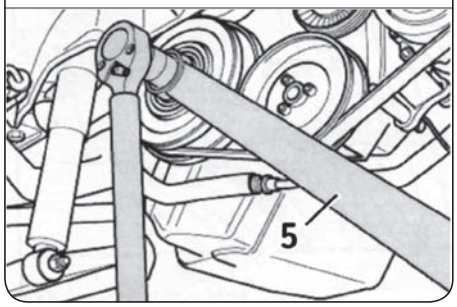
1) Disconnect the battery according to the vehicle manufacturing guidelines.
2) Prepare the vehicle for the timing replacement according to the vehicle manufacturing guidelines.
3) Turn the crankshaft in the engine rotation direction to TDC of cylinder No. 1. Check the alignment of the marks on the injection pump sprocket (**Fig. B1**), the flywheel (**Fig. B2**) or the drive disk (**Fig. B3**).

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

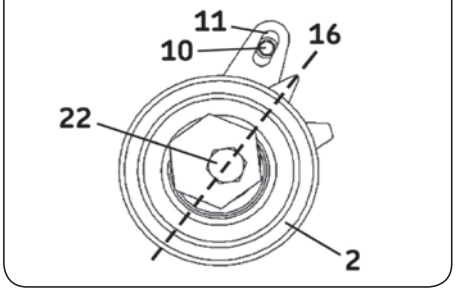
4) Remove the injection pump belt (**17**) and the camshaft rear sprocket using the tool (**3**) (**Fig. C**).
5) Remove the cylinder head cover.
6) Lock the camshaft with the tool (**4**) (**Fig. D**).
7) Using the tool (**5**) (**Fig. E**), loosen and remove the central fastening bolt (**6**) of the crankshaft pulley (**Fig. A**). Remove the bolts (**7**) securing the crankshaft pulley on the pignon (**18**) (**Fig. A**). Remove the crankshaft pulley.
8) Remove the lower timing belt casing (**27**) (**Fig. A**). Then loosen the bolt (**22**) fastening the tensioner roller (**2**) (**Fig. A**).
9) Remove the tensioner roller (**2**) (**Fig. A**).
10) Remove the timing belt (**1**) (**Fig. A**)
11) Remove the inner timing casing (**19**) (**Fig. A**).
12) **Removing the water pump** (**VKMC 01271**):
- Bleed the cooling circuit, check it is clean, and clean if required;
- Using tool (**3**), loosen the bolt (**8**) fastening the camshaft front sprocket (**9**) (**Fig. C**) then remove the bolt (**8**) and the camshaft front sprocket (**9**);
- Remove the timing belt rear casing (**19**) (**Fig. A**);
- Fully loosen the 2 water pump fastening bolts (**20**) and remove the pump (**21**) (**Fig. A**).

Install Confidence

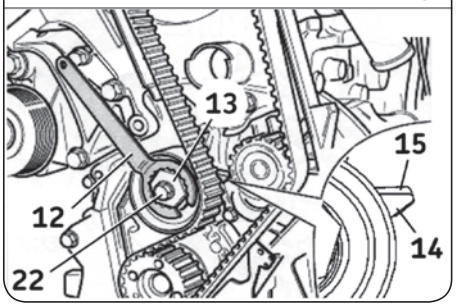
E



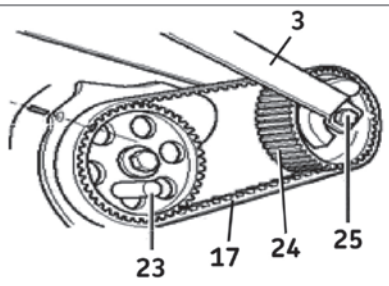
F



G



H



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

13) **Refitting the water pump**:
- Fit the new water pump (**21**), apply the torque **20 Nm** to the 2 waterpump bolts (**20**) (**Fig. A**);
- Check that the water pump pulley runs properly, and has no hard or locking spots;
- Refit the timing belt rear casing (**19**) (**Fig. A**);
- Refit the camshaft front sprocket (**9**) and the bolt (**8**) (**Fig. A**), checking the sprocket (**9**) can rotate without tilting.

14) Check that the engine is at TDC: the timing marks must be aligned (**Fig. B2** and **B3**).

15) Refit the new tensioner roller (**2**) (**Fig. A**): Be sure to correctly position the pin (**10**) of the engine block in the slot (**11**) in the tensioner roller rear plate (**Fig. F**). Lightly tighten the tensioner roller fastening bolt (**22**).

16) Fit the new timing belt (**1**) in the following order: crankshaft sprocket, water pump sprocket, camshaft sprocket and tensioner roller (**2**).

17) Tighten the timing belt (**1**): using the tool (**12**), turn the adjustment dial (**13**) **clockwise**, while holding the roller fastening bolt in place, until the tip of the moving pointer (**14**) is aligned with the tip of the fixed indicator mark (**15**) (**Fig. G**).

Caution: The tip of the moving pointer (**14**) must not pass beyond the fixed indicator mark (**15**) (**Fig. F**).

18) Tighten the bolt (**22**) fastening the tensioner roller (**2**) to **20 Nm**.

19) Check that the engine is at TDC: the timing marks must be aligned (**Fig. B2** and **B3**).

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

20) Check the grade of steel indicated on the head of the bolt fastening the camshaft front sprocket (**9**) (**Fig. C**): "8.8" or "10.9". Using the tool (**3**), tighten the fastening bolt of the cam shaft front sprocket (8) (**Fig. C**) to a torque of:
- Steel grade "8.8": **85 Nm**.
- Steel grade "10.9": **100 Nm**.

21) Remove the tool (**4**) (**Fig. D**).

22) Refit the lower timing belt casing (**1**), then refit the crankshaft pulley using tool (**5**) (**Fig. E**).Tighten the crankshaft pulley fastening bolts to the following torques (**Fig. A**).
- Bolt (**6**): **160 Nm + angular tightening of 180°**.
- Bolts (**7**): **20 Nm + angular tightening of 90°**.

23) Refit the injection pump belt and the camshaft rear sprocket using the tool (**3**) (**Fig. C**).

24) Rotate the crankshaft two turns in the engine rotation direction up to TDC: the timing marks must be aligned (**Fig. B1**, **B2** and **Fig. B3**).

25) Check the adjustment of the tensioner roller (**2**): the tip of the moving pointer (**14**) must be aligned with the tip of fixed indicator (**15**) (**Fig. G**).

26) If the marks are not aligned, loosen the fastening bolt (**22**) of the tensioner roller (**2**) and turn the adjustment hub (**13**) **anti-clockwise** with the tool (**12**) (**Fig. G**) until the tensioner roller is in its initial position (**16**) (**Fig. F**). Restart the tension setting operation from step **18**).

27) Refit the elements removed in reverse order to removal.

28) Fill the cooling circuit with the permanent fluid recommended.

29) 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.

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