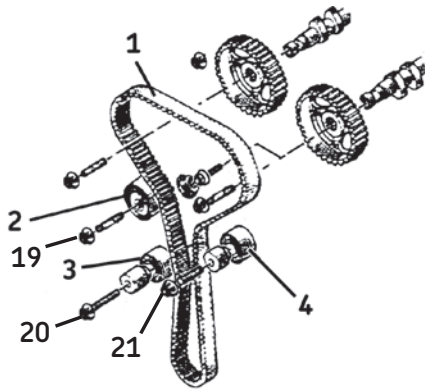




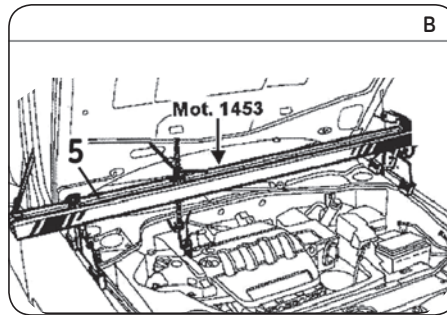
- (5): Engine securing tool (Renault Eng. 1453).  
(6): Crankshaft timing pin (Renault Eng. 1054).  
(9): Camshaft timing gauge (Renault. Eng. 1496).



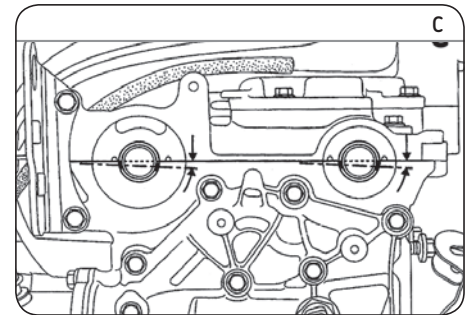
- (19): 7 Nm / 28 Nm  
(20)/(21): 45 Nm

A

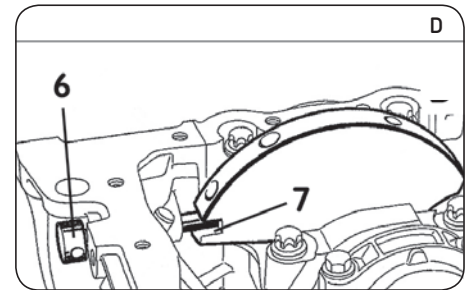
B



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) Remove the seal plugs/caps on the end of the camshafts.
- 4) Rotate the engine **clockwise** to position the grooves on the camshafts so that they are virtually horizontal and offset downwards (Fig. C).
- 5) Fit the crankshaft timing pin (6) and rotate the engine slowly and without jerking until the pin can be inserted in the crankshaft groove (7) (Fig. D).

**Note:** Be careful not to insert the pin into a balancing Hole

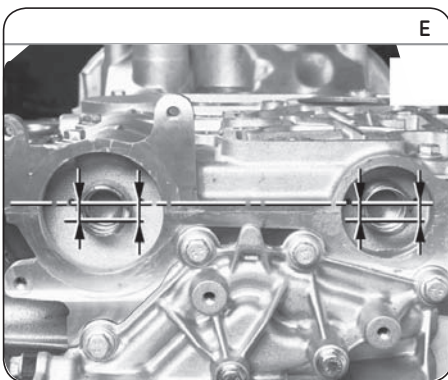
- 6) Check that the grooves on the camshafts are offset downwards and parallel to the cylinder head gasket surface (Fig. E).
- 7) Lock the flywheel using a screwdriver and remove the crankshaft pulley (8) (Fig. F).
- 8) Remove the upper and lower timing casings.
- 9) Loosen the tensioner roller (2) fastening nut (19) to slacken the timing belt (1) (Fig. F).
- 10) Remove the tensioner rollers (2) and idler roller (3) and (4) (Fig. F).
- 11) Remove the timing belt and crankshaft sprocket.

#### Refitting

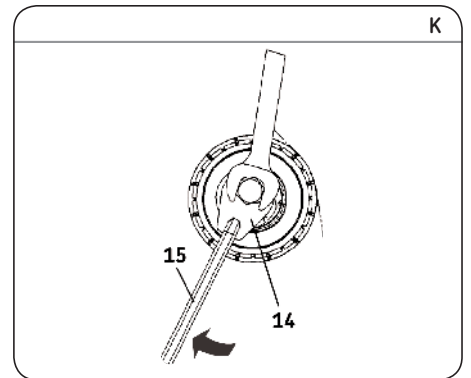
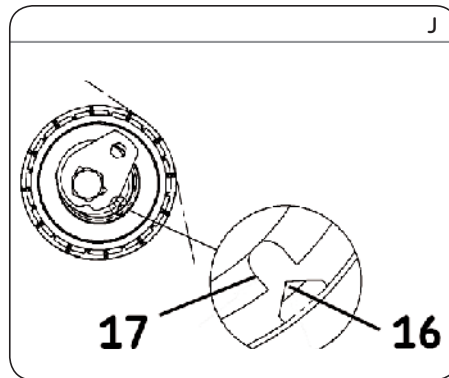
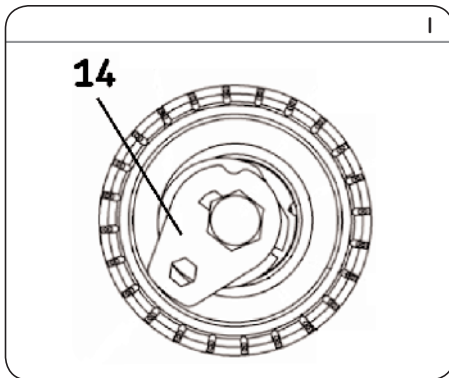
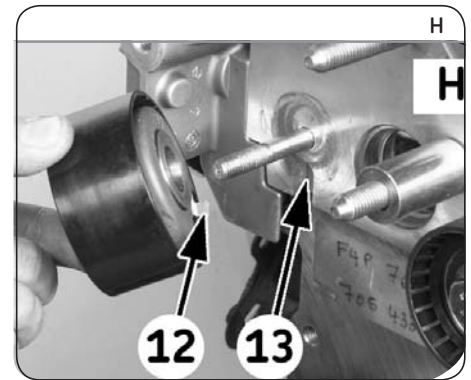
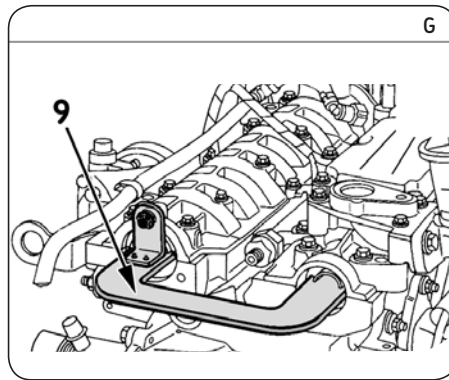
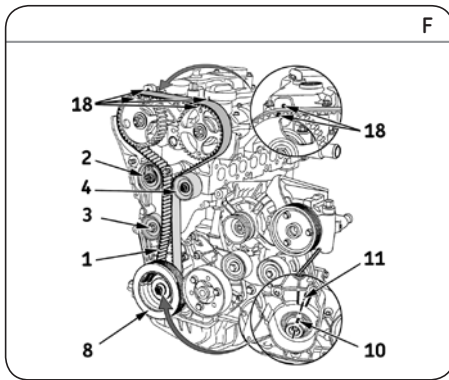
**Caution!** first clean the bearing surfaces of the rollers.

- 12) Check that the engine is at TDC: position of the grooves (Fig. E) and pin (6) (Fig. D).
- 13) Fit the camshaft locking tool (9) (Fig. G).
- 14) Check that the groove (10) on the crankshaft is located towards the top and in the middle of the two ribs (11) on the engine casing (Fig. F)
- 15) Refit the new idler roller (3) and (4). Tighten the fastening bolt (20) and (21) to **45 Nm**.
- 16) Refit the new tensioner roller (2): fit the positioning pin (12) in slot (13) on the engine block (Fig. H). Turn the adjusting plate (14) until it reaches the "7 o'clock" position (Fig. I) and then slightly tighten the tensioner roller fastening nut manually.
- 17) Refit the crankshaft sprocket.

E



Install Confidence



**Note:** Degrease the end of the crankshaft (timing side) and the bore and sprocket (crankshaft) rear face before refitting.

- 18) Refit the timing belt (1) in the following order: crankshaft sprocket, idler roller (4), camshaft sprockets, idler roller (3) and the tensioner roller (2) (Fig. F).
- 19) Tighten the timing belt (1): turn the adjusting dial (14) on the tensioner roller (2) **clockwise** using the Allen key (15), while holding the roller's fastening stud in position using a hex spanner (Fig. J). Continue turning the adjusting dial until the moving pointer (16) is aligned with the notch (17) (Fig. K). Then tighten the fastening nut (19) to **7 Nm**.
- 20) Draw marks (18) on the camshaft sprockets opposite the marks on the rear casing (Fig. F).
- 21) Remove the timing pins (6) (Fig. D), and (9) (Fig. G).
- 22) Refit the crankshaft pulley.
- 23) Turn the crankshaft through two revolutions in the engine rotation direction. Before the two revolutions are completed, fit the timing pin (6) and continue to rotate the engine slowly and without jerking until the pin can be inserted in the crankshaft groove (7) (Fig. D).

- 24) Check that the marks (18) on the camshaft sprockets are aligned with the rear casing (Fig. F).
- 25) Check the tensioner roller setting: the moving pointer (16) must be aligned with the notch (17) on the tensioner roller (Fig. K).
- 26) If the marks are not aligned, remove the new timing belt and adjust the belt tension again, by returning to step 22.
- 27) Tighten the tensioner roller fastening nut (19) to **28 Nm**.
- 28) Check that the timing system is correctly adjusted:
  - Refit the camshaft locking tool (9) without forcing (Fig. G). The grooves on the camshafts must be offset downwards and parallel to the cylinder head gasket surface (Fig. E).

**Note:** The timing system is set correctly when the camshaft locking tool can be easily engaged in the grooves.

- 29) If the camshaft timing gauge does not engage easily, remove the timing belt and repeat the operation to set the belt tension and timing system from step 22.

- 30) Remove the crankshaft timing pin (6) (Fig. D) and the camshaft locking tool (9) (Fig. G).
- 31) Fit the new sealing plugs/caps at the end of the camshafts.
- 32) Refit the remainder of the removed elements in the reverse order to removal.

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