

# MCK0900

## VALVE TIMING PROCEDURE

Car brands: **Audi, Volkswagen**

Models: **Audi A3, Volkswagen EOS, Golf V, Golf Plus, Jetta III, Passat VI, Touran**

Engine code: **BAG, BLF, BLG, BLP, BMY**

Power: **1.4 FSI, 1.4 TSI, 1.6 FSI (115, 140, 170 CV)**

Pignon: **Z=18/23; OE: 03C105209AF/AG**

### General precautions

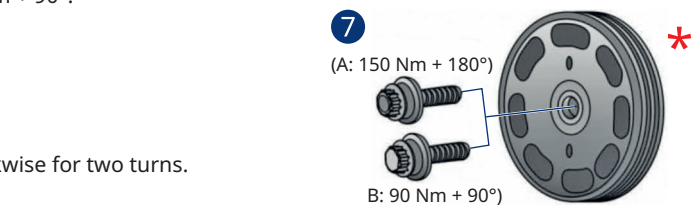
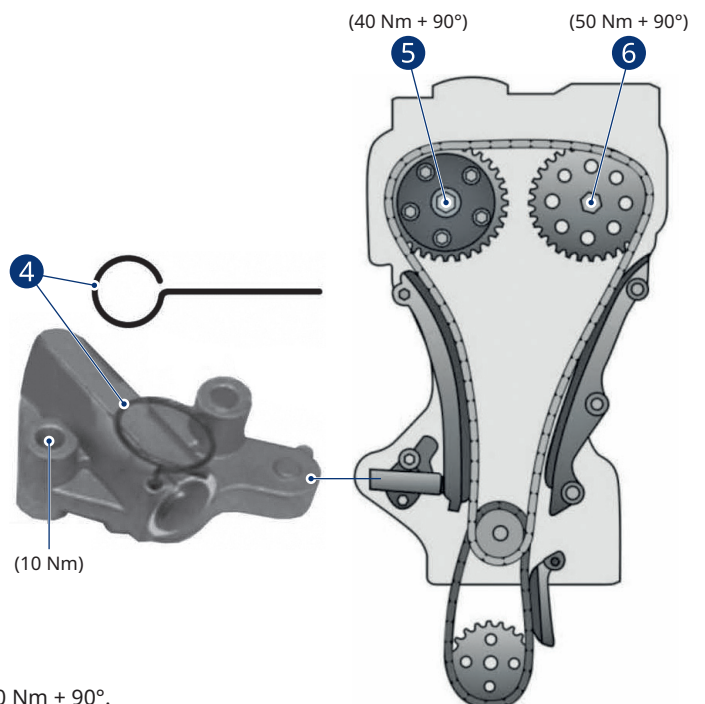
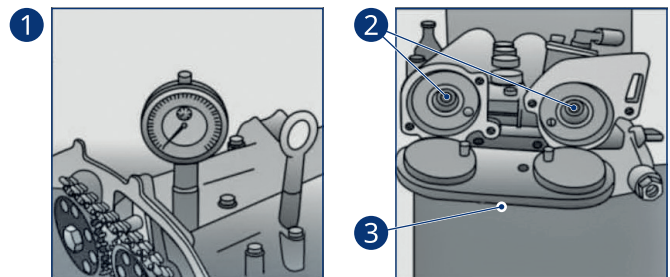
- Always disconnect the ground cable from the battery.
- Remove the spark plugs in order to allow the engine to turn more freely.
- Always turn the engine in the normal direction of rotation (unless specifically instructed otherwise).
- Observe tightening torques.
- If fitted: note the position of the engine shaft position sensor before dismantling.
- **DO NOT** turn the engine shaft by turning the camshaft or other pinions.
- **DO NOT** turn the engine shaft or camshaft with the timing chain removed.

### Valve timing procedure

- To dismantle/fit the timing chain it is necessary:
  - To remove the timing cover.
  - To remove the cup.
- ! *Mark the direction of rotation on the chains.*
- Fit the gauge and its support into the spark plug hole for cylinder n. 1. Make sure that the engine is at the TDC of cylinder n. 1 **1**.
- Make sure that the timing marks on the camshaft are aligned as shown **2**. Otherwise, turn the engine shaft 360°.
- Fit the camshaft alignment tool **3**.
- ! *If the camshaft alignment tool cannot be inserted, valve timing is not correct.*
- Press the chain tensioner and block it with the blocking pin **4**.
- Dismantle the camshaft pinion and the chain.
- Align the camshafts. Use the special tool **3**.
- Fit the camshaft pinion and the timing chain.
  - **Engines with variable valve timing:**  
Fit a new bolt. Tighten the bolt for the intake camshaft adjustment device **5**. Tightening torque: 40 Nm + 90°.
  - ! *The intake camshaft pinion bolt is reverse threaded.*
  - **Engines without variable valve timing:**  
Tighten the intake camshaft pinion bolt **6**. Tightening torque: 50 Nm + 90°.
- Tighten the exhaust camshaft pinion bolt. Tightening torque: 50 Nm + 90°.
- Tighten the engine shaft pulley bolt. Tightening torque **7**:
  - A = 150 Nm + 180°
  - B = 90Nm + 90°.
- ! *The engine shaft pulley bolt and all camshaft pinion bolts MUST be used once only.*
- Dismantle the camshaft alignment tool. Turn the engine shaft clockwise for two turns.
- Check valve timing **3**.

### Special equipment

- Display gauge – n. VAS 6079.
- Display gauge support – n. T10170.
- Camshaft alignment tool – n. T10171
- Camshaft pinion-oil pump blocking tool – n. T10172.
- Engine shaft blocking tool – n. T10340.
- Engine shaft pulley blocking tool – n. 3415.
- Chain tensioner blocking pin – n. T40011.



! The chain tensioner contained in this kit is spring-loaded and may cause damage if not handled correctly. **DO NOT** remove the pin until it is completely installed, and always ensure that the piston is pointing away from you or anyone else within a range of 20 metres.

## \* CLARIFICATION ON SCREW TIGHTENING TORQUE

On the Technical bulletin is showed the following information:

- Tighten the engine shaft pulley bolt.

Tightening torque **7**:

- A = 150 Nm + 180°
- B = 90Nm + 90°.

**7**

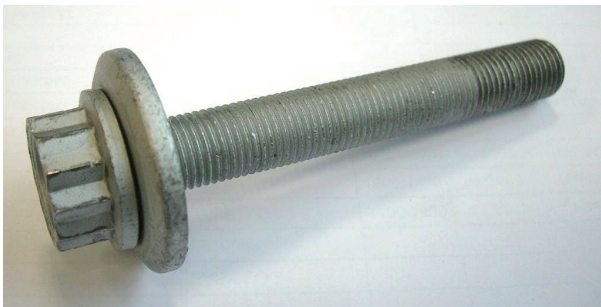
(A: 150 Nm + 180°)

B: 90 Nm + 90°)

### Two tightening torques for a single screw. Which one?

**A**

If on the vehicle is installed a **combined dodecahedron screw**, with bore headed, resistance/category 10.9, dimensions M14x1,5x100, OE n.: N91048601 like the one showed here below:



Maximum tightening torque must be fixed to: **150 Nm + 180°** (Case A)

**B**

If on the vehicle is installed a different screw **“without screw head”**, maximum tightening torque must be fixed to **90 Nm + 90°** (Case B)