



Vehicle	Mercedes-Benz E-Class 210 2,2 E220D / 2,2 / 70 // 1995 - 1998 / 604.912
Country of manufacture	-
Cubic capacity/Power	2,2 / 70 kW
Motor tag	604.912
RB key	MB 2201 (MER03063)

Special tools

- Camshaft locking pin - No.111589031500.
- Crankshaft pulley/hub puller - No.103589003300.
- Flywheel locking tool - No.601589024000.
- Flywheel locking tool bolts - M6 x 90 mm.
- Injection pump locking tool (pump A) - No.601589052100.
- Injection pump locking tool (pump B) - No.604589002100.
- Injection pump splined tool (pump A) - No.601589000800.
- Injection pump sprocket centering tool (pump A) - No.601589051400.
- Timing chain link kit - No.602589024000.
- Timing chain link separator (item 1) - No.602589023300.
- Timing chain link separator (item 2) - No.602589046300.
- Timing chain link separator (item 3) - No.602589046301.
- Timing chain link installer - No.602589003900.
- Timing chain link installer die kit 1 - No.602589026300.
- Timing chain link installer die kit 2 - No.602589036300.
- Timing chain to camshaft sprocket holder - No.604589004000.
- Tool case - No.602589009800.
- Pulley holding tool - No.603589004000.

General precautions

- Disconnect battery earth lead.
- Remove glow plugs to ease turning engine.
- Turn engine in normal direction of rotation (unless otherwise stated).
- Observe tightening torques.
- If fitted: Mark position of crankshaft position (CKP) sensor before removal.
- Do NOT turn crankshaft via camshaft or other sprockets.
- Do NOT turn crankshaft or camshaft with timing chain removed.
- Check diesel injection pump timing after resetting valve timing.

Valve timing procedures

NOTE: Timing chain can be changed without dismantling engine. Using the tools listed above, the new chain can be linked to the old, passed round the sprockets and then joined.

- Engine at TDC on No.1 cylinder [1] .
- Insert locking pin into inlet camshaft [2] .
- Ensure 1,5 mm holes in camshaft sprockets aligned [3] .

NOTE: Bolts for camshaft sprocket MUST only be used once [4] .

- Remove tensioner assembly before carrying out engine repairs [5] .
- During removal/installation of injection pump: Crankshaft position set at $14 \pm 0,5^\circ$ ATDC on No.1 cylinder [6] .

NOTE: Injection pump sprocket bolt/nut has LH thread [7] .

- Injection pump A: Install injection pump sprocket centering tool before removing bolt [7] . Tool No.601589051400.
- After removal of injection pump, install locking tool [8] .
- Fill chain tensioner with oil before installation:
 - Submerge tensioner vertically in engine oil with plunger pointing downwards.
 - Compress plunger 7-10 times.
 - After filling, ensure tensioner plunger can be compressed slowly and evenly with considerable effort.
- Install tensioner after repairs.

