

E. Checking Adjustment of Camshaft to Crankshaft

Job No.

00-7

A. OM 636

The camshaft gear wheel and the crankshaft timing gear are furnished with markings for checking the adjustment of the camshaft in relation to the crankshaft (see Figure 00-7/1).

However, these markings can only be seen if the timing housing cover has been removed.

In order to allow a checking of the adjustment between camshaft and crankshaft even while the timing housing cover is installed, the drive gear wheels of the injection pump have been furnished with additional markings (see Figure 00-7/3).

The driving gear of the injection pump drive on the camshaft is mounted together with the camshaft gear on the camshaft by a pin and secured by a hexagon screw. Therefore, the position of the driving gear on the camshaft corresponds exactly to the position of the camshaft gear wheel.

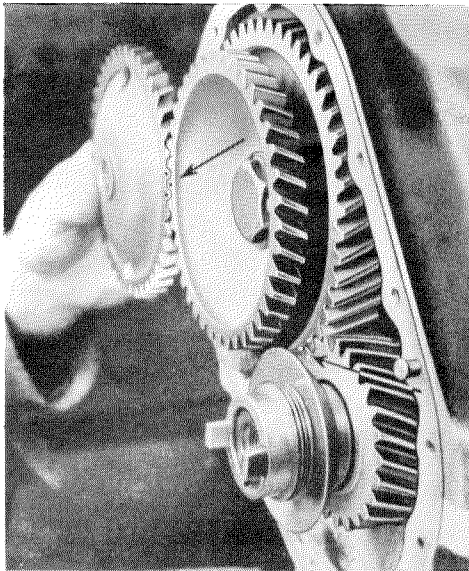


Figure 00-7/1

1. Set piston of 1st cylinder to approx. ignition dead center (see Job No. 00-3, Paragraph 3).
2. Then turn the crankshaft in such a way that the OT-marking (top dead center) on the pulley coincides exactly with the timing needle (see Figure 00-7/2) or the OT-marking on the flywheel is situated exactly in the center of the inspection hole in the clutch housing (see Figure 00-6/4 and 00-6/5) or on removed engines the timing needle points directly to the OT-marking on the flywheel (see Figure 00-6/6)

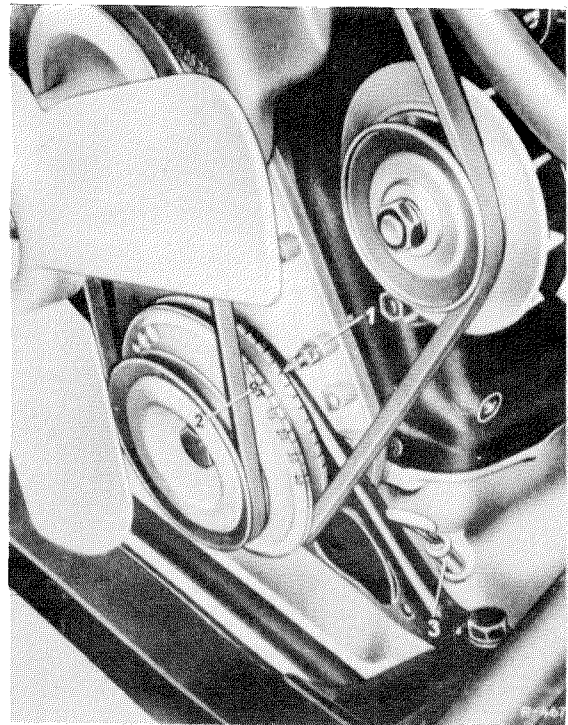


Figure 00-7/2

- 1 Timing needle for OT and FB (TDC and feed beginning)
- 2 OT-marking (TDC)
- 3 Oil dipstick

or the hexagon screw is located exactly between the two lines marked with |OT| (see Figure 00-6/7).

- 3 a. Remove protecting lid, if timing housing cover is installed (see Figure 00-7/3).

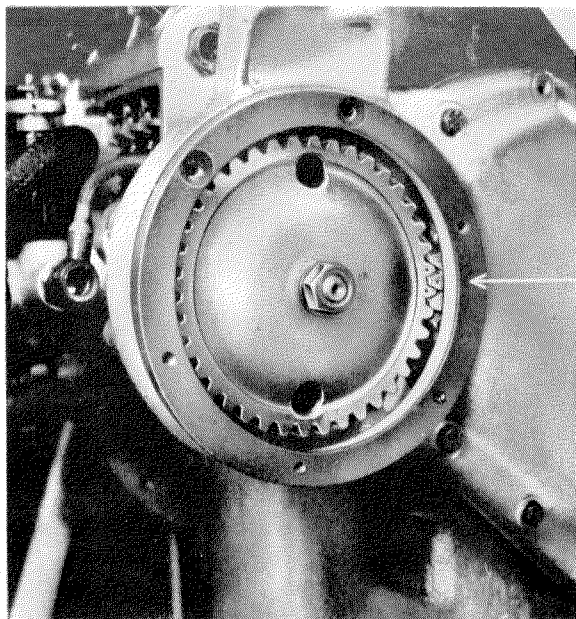


Figure 00-7/3

If the camshaft gear wheel is mounted correctly, the marked tooth of the driving gear on the camshaft must be located

between the two marked teeth of the driving gear on the drive shaft of the injection pump (see Figure 00-7/3).

- 3 b. If the timing housing cover has been removed, the camshaft gear wheel is mounted correctly if the marked tooth of the crankshaft timing gear is located between the two marked teeth of the camshaft gear wheel (see Figure 00-7/1).
4. If a correction becomes necessary remove the timing housing cover (see Job No. 01-15). Remove the crankshaft timing gear so that the crankshaft timing gear with crankshaft can be turned without the camshaft. Turn crankshaft until the marked tooth of the crankshaft timing gear is situated between the two marked teeth of the camshaft gear wheel. In this position press crankshaft timing gear back onto its seat. Remount timing housing cover (see Job No. 01-15).

B. OM 621

The adjustment check of the camshaft with respect to the crankshaft of Model OM 621 with overhead camshaft, driven by a double roller chain, is made possible through one mark each on the first camshaft bearing and the spacer washer of the camshaft (see Figure 00-7/4).

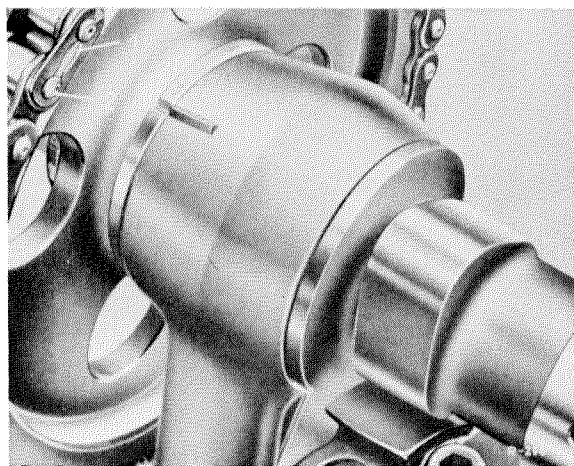


Figure 00-7/4

1. Use a socket, size 22 and a ratchet spanner to turn the crankshaft on the collar screw at its front side in **direction of rotation of the engine** until the adjusting pointer (2) points to the OT (TDC) mark of the

graduation on the counterweight (1) (see Figure 00-6/17).

Note: In the figure the pointer points to 26 deg BTDC (feed begin).

Turn the crankshaft only in the direction of rotation of the engine to ensure that the left side of the chain is tensioned.

2. Now, the marks on the spacer washer of the camshaft and on the first camshaft bearing must coincide (see Figure 00-7/4).

In this position, position 1 and 4 are in TDC. Thereby the piston of the 1st cylinder is in compression stroke position.

3. If a correction is necessary, displace the double roller chain. (Displacement of the chain by one sprocket on the camshaft sprocket wheel corresponds to 18 deg. on the crankshaft, also refer to the checking of timing (Job No. 00-8 and Job No. 05-36).