

Figure 07-25/3

**Note:** Before the installation, the length of the sleeve (19) must be checked. The length of the sleeve has been changed from 29-0.1 mm to 28.8-0.1 mm. Only sleeves with a length of 28.8-0.1 mm must be installed to reduce the axial play of the centrifugal roller weights (16). As a make-shift, the old sleeves can be machined to the specified length (see Figure 07-27/4).

6. Install the Woodruff key (24) in the driving shaft (9) (see Figure 07-27/4).
7. Clean and oil the injection timing device and put it on the driving shaft, so that the marked teeth (1) are engaged (see Figure 07-25/1).
8. Slip the washer (23) and the lock washer (21) on the driving shaft and secure the injection timing device with the hex nut (22) (see Figure 07-27/4).

**Note:** While the engine is stopped the proper functioning of the injection timing device can be determined as follows: Unscrew the 2 hex nuts at the pump shaft end opposite to the driving end. Then turn the shaft with spanner in the direction of rotation. If the shaft returns to its former position after it is released, then the springs of the injection timing device

function properly. If this is not the case, the injection timing device must be replaced or it has to be checked whether the centrifugal weights return to their former position after having been pressed towards the center.

9. Check with a feeler gauge the gear backlash between the pump drive gear and the idler at several places. Checking by touching is generally also sufficient. **The backlash should be 0.05 to 0.07 mm.**

If necessary, the pump drive gear must be exchanged for a different size (see Job 05-31).

10. Install the protecting cover (20) with the paper gasket (15); use washers and lock washers (see Figure 07-27/4).
11. Install the fuel main filter with 20 mm thick spacer between the filter and the timing housing cover.

## B. OM 621

### Removal:

1. Unscrew the six Fill. hd. screws (20) from the locking cover (18) and remove the cover. Unscrew the hex. nut (6) on the intermediate gear shaft (10) and remove the lock washer (5) with washer (4) (see Figure 07-25/4).
2. Unscrew the two hex. hd. screws on the cylinder head cover and remove the cylinder head cover.
3. Unscrew the hex. hd. screw (14) and remove the holder (15) with the inner guide rail (16) from the outer guide rail (12) and from the cylinder head (see Figure 07-11/6).
4. Unscrew the hex. hd. screw (2), mounting screw for the camshaft sprocket (see Figure 07-11/6).

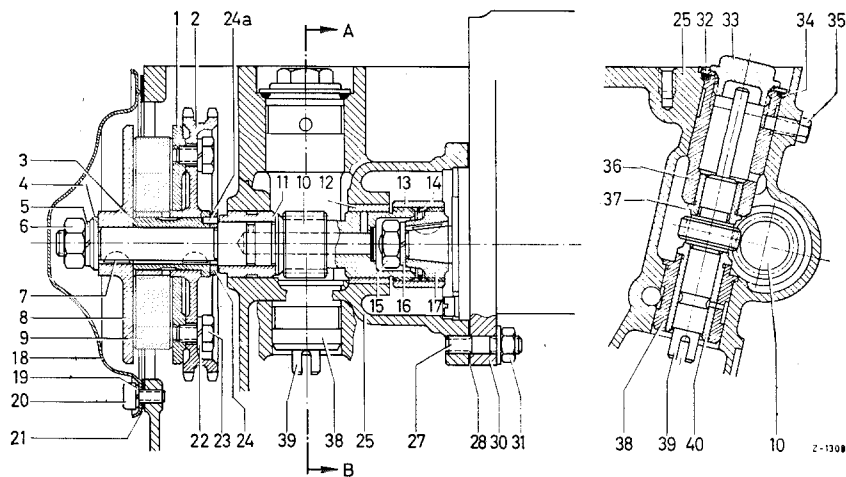


Figure 07-25/4

- |   |   |                                |   |
|---|---|--------------------------------|---|
| 1 Segment plate of the injection timing device        | 10 Intermediate gear shaft (drive shaft for injection pump and for helical gear 39 or for oil pump) | 19 Lock washer                 | 32 Washer   |
| 2 Intermediate sprocket                               | 11 Bearing bushing, front   | 20 Fill. hd. screw             | 33 Screw plug   |
| 3 Bushing   | 12 Bearing bushing, rear  | 21 Gasket                      | 34 Rubber ring  |
| 4 Washer  | 13 Coupling sleeve  | 22 Lock washer                 | 35 Hex. hd. screw   |
| 5 Lock washer   | 14 Snap ring  | 23 Hex. hd. screw              | 36 Pressure piece   |
| 6 Hex. nut  | 15 Hex. nut   | 24 Butting ring (steel washer) | 37 Bearing bushing  |
| 7 Woodruff key  | 16 Lock washer  | 24a Grooved pin                | 38 Bearing body   |
| 8 Segment flange of inj. timing device                | 17 Follower   | 25 Cylinder crankcase          | 39 Helical gear (drive for oil pump and revolution counter) |
| 9 Centrifugal weight roller of the inj. timing device | 18 Cover  | 27 Stud bolt                   | 40 Bearing bushing  |
|   |   | 28 Gasket                      |   |
|   |   | 30 Injection pump              |   |
|   |   | 31 Hex. nut with washer        |   |

5. Turn the crankshaft in **direction of rotation** until the **45 deg BTDC** reading of the gradation on the counterweight (9) coincides with the adjusting pointer (10) (see Figure 07-11/6). (Then the piston of cylinder 1 should be in compression stroke position.)
6. Mark the meshing of the chain with the injection timing device or the intermediate sprocket on chain and intermediate sprocket with paint dots.  
  
Further, mark the meshing of the chain with the camshaft sprocket on chain and camshaft sprocket with paint dots as well as the position of the line mark on the spacer washer of the camshaft on the first camshaft bearing by using a scribe (see Figure 05-27/1).  
  
Further, it is to be recommended to mark the front side of the intermediate sprocket shaft (10), and the groove of the injection timing device with respect to the intermediate sprocket shaft (see Figure 07-25/4).
7. Dismount the chain tightener (see Job No. 05-21).
8. Pull the camshaft sprocket leaving the chain on the camshaft sprocket and place it into the chain box. (When pulling the camshaft sprocket, see to the spacer washer between camshaft and camshaft sprocket.)
9. Unscrew the locking screw (12) for the chain drive and pull the upper pivot pin of the guide rail (13) using puller part No. 1871890733 (see Figure 07-25/5).
10. A sheet metal strip or carton with the dimensions of approx. 200×70 mm, bent according to the shape of the intermediate sprocket should be slid from left to right between the intermediate sprocket (11) and the chain, so that the chain is lifted out of the sprockets of the intermediate sprocket wheel (11) (see Figure 07-25/5).
11. Pull the injection timing device using the puller part No. 3195891233 (see Figure 07-25/3) and remove the sheet metal or carton strip.

**Caution!** After removing the injection timing device, do not turn the engine or crankshaft and camshaft.

12. Remove the bushing (3) for the injection timing device and for the intermediate sprocket as well as the butting ring (24) from the intermediate sprocket shaft (10) (see Figure 07-25/4).

**Note:** Up to engine No. 621.910-10-05749 and from engine No. 621.910-10-007 280 to -008 090, the bushing (3) for the injection timing device and for the intermediate sprocket features an 8 mm wide collar. As from engine No. 621.910-10-005750 up to -007 279 and from engine No. 621.910-10-008 091, the bushing features a collar which is only 4.7 mm thick and is additionally provided with the butting ring (24). Recently, the butting ring (24) is connected with the bushing (3) through the grooved pin (24a) (see Figure 07-25/4).

#### **Installation:**

13. Apply oil to the butting ring (24) and the bushing (3) and slide them on the intermediate sprocket shaft (10), observing the correct seat of the two Woodruff keys (7) of the intermediate sprocket shaft (10) (see Figure 07-24/4).

**Note:** If an injection timing device must be replaced, then place the old device on the new one, so that the keyways of both injection timing devices coincide. The paint mark on the old device and/or the intermediate sprocket must then be transferred to the new device.

14. Use a sheet metal or carton strip to lift the chain (see item 10) and keep it with the help of a screw driver. Now, slide the cleaned and oiled injection timing device including intermediate sprocket (2) onto the drive shaft (10). To do this, it is of importance that during the sliding procedure, the groove of the injection timing device points to the mark on the front side of the intermediate sprocket shaft (see item 6 and Figure 07-25/4).

15. Pull the chain upwards or lift the camshaft sprocket incl. chain, observing that the

mark on the chain coincides with the mark on the injection timing device and/or on the intermediate sprocket, then pull out the metal strip. If the marks are offset with respect to one another, the sheet metal strip should be inserted again and the chain be relocated on the intermediate sprocket in accordance with the off-set.

16. With the chain placed on, slide the camshaft sprocket onto the camshaft, observing that the mark on the chain coincides with the mark on the camshaft sprocket. Also the line mark on the spacer washer of the camshaft must coincide with the mark on the first camshaft bearing (see Figure 07-21/1).

**Note:** Check again whether all marks coincide as before the removal, including the **45 deg** adjustment on the counterweight.

17. Install and bleed the chain tightener (see Job No. 05-21).

18. Insert the upper pivot pin of the guide rail (13) into the cylinder crankcase and into the guide rail (13). To do this, do not fail to coat the pivot pin end with sealing compound.

Manufacture a hook out of 5 mm thick round material, which should be bent at approx. 15 mm from the front end.

**Insert this hook between intermediate sprocket and chain, counterholding the guide rail when knocking the pivot pin into the cylinder crankcase** (see Figure 07-25/5).

19. Insert the inner guide rail (16) with holder (15) into the bore of the outer guide rail and firmly tighten on the cylinder head with the hex. hd. screw (14) (see Figure 07-11/7).

20. Screw in the locking screw (12) for the chain drive and tighten (see Figure 07-25/5).

**Note:** Check the injection timing device for proper function:

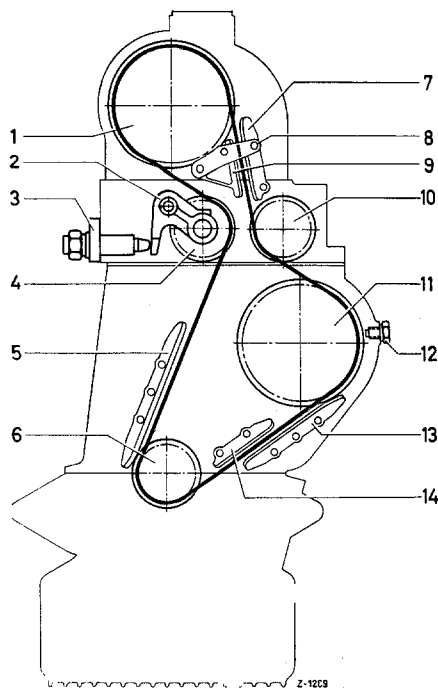


Figure 07-25/5

- 1 Camshaft sprocket
- 2 Idler sprocket support with idler sprocket
- 3 Chain tightener
- 4 Idler sprocket
- 5 Guide rail, outer
- 6 Crankshaft sprocket
- 7 Guide rail, outer
- 8 Holder for guide rail, inner
- 9 Guide rail, inner
- 10 Guide sprocket
- 11 Intermediate sprocket
- 12 Locking screw
- 13 Guide rail, outer
- 14 Guide rail, inner

Use a fork wrench to turn the hex. nut (6) in direction of rotation (see Figure 07-25/4). If after releasing, the intermediate sprocket shaft returns to its original position, the springs of the injection timing device are in order. In the negative, replace the injection timing device or check whether the centrifugal weights return to the original position by trying to press the centrifugal weights to the centre with your finger. To do this, the injection timing device should be dismantled again.

21. Place the washer (4), the lock washer (5) on the intermediate sprocket shaft, screw on the hex. nut (6) and tighten with a torque of 7 mkg. (see Figure 07-25/4). Check the axial clearance of the intermediate sprocket shaft (10) (0.05 to 0.12 mm).
22. Check feed begin (see Job No. 00-6, section B).
23. Screw the cover (18) incl. gasket (21) with the cylinder head bolts (20) to the cylinder crankcase. To do this, check the gasket, replace, if necessary.
24. Fit the cylinder head cover and tighten with the two hex. hd. screws.

See to correct seat of the rubber gasket. Also check the wire cable (18) for free movement in the slot of the stop angle on the angular lever (24) when accelerating (see Figure 07-9/1).