

Disassembly, Checking and Assembly of Injection Timing Device

Job No.

07-28

Repairs on the injection timing device will rarely be necessary before the overhauling of the engine, because the parts are not subjected to wear and need no maintenance care.

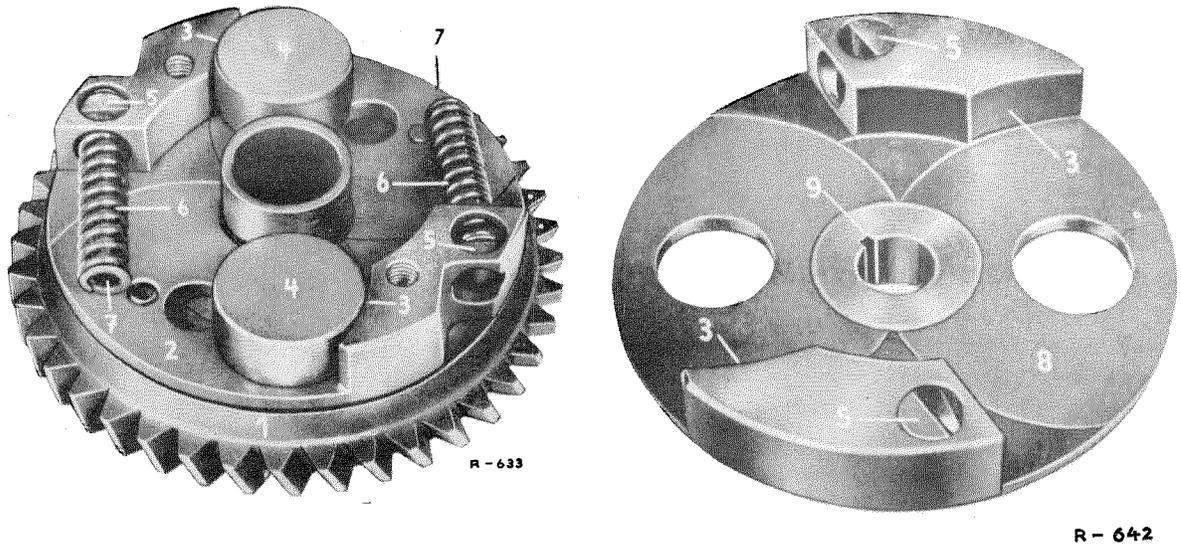


Figure 07-28/1

- 1 Drive gear for injection pump
- 2 Segment plate
- 3 Contact surfaces for the centrifugal weights on the segment plate and the segment flange
- 4 Centrifugal weights
- 5 Spring seat bolts

- 6 Tension spring
- 7 Stop bolt in the tension spring for limiting of adjusting
- 8 Segment flange
- 9 Groove for Woodruff key

Disassembly of the Injection Timing Device:

1. Unscrew the drive gear (1) from the segment plate (2) (see Figure 07-28/1).
2. Remove the segment flange (8) by clockwise turning and simultaneous removal of one spring (6) from the segment plate (2). Take off the tension springs (6), the stop bolts (7), the centrifugal weights (4) and the bolts (5) (see Figure 07-28/1).

surface (3) and the curved guide surfaces of the segment plate (2) and the segment flange (8) for the centrifugal weights (4) should not be scored or grooved, they should be smooth (see Figure 07-28/1). If there are **only light** dents, they must only be levelled off, meaning: **there should be no changing of contour** of the sliding surfaces (3). The guide surfaces should also be levelled not more than to smoothen possible dents.

Checking the individual Parts:

With the exception of the bush (7) (see Figure 07-4/19) and the respective bore in the hub of the drive gear (1) and also the tension springs and the stop bolts a visual inspection will be sufficient. The sliding

3. Check the outer diameter and length of the bush (7) and the bore of the drive gear (1) (see Figure 07-4/19). The two parts should be within the following tolerances (see Job No.07-0). Because of the slight movement of these parts, wear is in general next to nothing.

The correct length of the bush and the drive gear hub assures the specified axial play of 0.1 mm to 0.3 mm between the drive gear and the thrust washer (3) and/or segment flange (6) (see Figure 07-4/19 and Job No. 07-0).

4. Check tension springs (6) Figure 07-28/1 and Job No. 07-0).

The course of the characteristic curve of the injection timing device is determined by the properties of the tension springs. The springs can be tested on a spring tester if the adjusting of feed beginning is inaccurate (in addition to other tests). Springs close to the upper tolerance limit can be installed together with springs close to the lower limit, so that the characteristic curve of the spring will be within the tolerance range. The spring tension will then correspond to the combined tension of two average springs.

5. The stop bolts (7) limiting the max. feed beginning must be checked for length and replaced if necessary.

Length = 39 ± 0.1 mm installed from engine No. 636.930 85 06267 on.

Outer diameter of the stop bolts = 6 mm.

Stop bolts with a length of 37 ± 0.1 mm were installed in engines previous to the above engine No. During repair work on the injection timing device these springs must be replaced by 39 mm long springs Part No. 621 075 0174. If the stop bolts (7) have worked themselves into the spring seat bolts (5), replace the latter by the bolts (5) (Part No. 621 075 0274) (see Figure 07-28/1).

Assembly of Injection Timing Device

6. Screw the segment plate (2) onto the drive gear (1), so that one of the bolts (5) is located next to the marked teeth (Figure 07-28/1). Only original screws M 8×12 DIN 933—8G with the correct length should be used for securing, so that they do not protrude at the sliding surface for the centrifugal weights on the segment

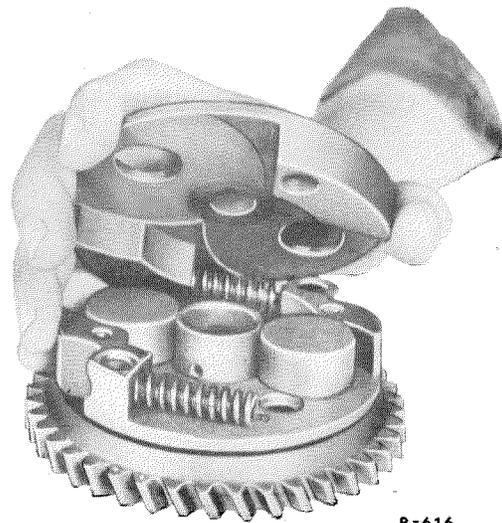


Figure 07-28/2

plate (2). The centrifugal weights and the sliding surfaces must be well lubricated with graphited oil or molycote before assembly of injection timing device.

7. Lay the centrifugal weights (4) on the sliding surfaces of the segment plate (2), so that they touch the contact surfaces (3). Insert the bolts (5) in such a way that the milled part is on top and faces the tension springs (6). Insert the tension springs (6) in the segment plate (2) and put the stop bolts (7) into the tension springs (6) (Figure 07-28/1).
8. Put the segment flange (8) on one of the springs, so that the groove (9) for the Woodruff key will be located on the same side as the marked teeth of the drive gear (1) (Figures 07-28/1 and 07-28/2).

Then tilt the segment flange downwards, so that the second spring can be installed. Press the flange downwards and turn it clockwise at the same time (Figure 07-28/2).

9. Install the bush (7) in the drive gear (1) after oiling and checking operating ease (see Figure 07-4/19).

Note: With the help of a fixed injection pump drive shaft, on which the injection timing device will be mounted, the operational ease of the timing device can be checked by manually turning the drive gear (1) (see Figure 07-4/19).