

The operating procedure is essentially similar for all generators, actually described below is the generator LJ/GEG 160/12-2500 R 9 and R 10.

## Disassembly:

1. Unscrew and remove the cover band (6) at the commutator end (Figure 15-13/1).
2. Lift the pressure springs of the carbon brushes, pull the two carbon brushes half-way up and support them with the springs.
3. Unscrew the through-bolts (10) (armature housing bolts) of the bearing brackets.
4. The drive bearing (1) with the armature (7) must now be taken out of the armature housing (2) (Figure 15-13/1).

**Note:** A nose, a groove, and a bore serve to fix the drive end bracket in the armature housing.

5. Unscrew the fixing screw (5) of the exciter coil at the brush holder.

6. Remove the commutator bearing bracket (4).
7. Use special jaws to fix the armature in a vise or a clamping fixture. Unscrew the hex nut in front of the belt pulley. Then remove pulley together with lock washer and take out the Woodruff key.
8. If the ball-bearings must be replaced, press the armature out of the drive end of the drive bearing bracket (1); use an arbor press and a suitable means of support.
9. Unscrew the two fillister head screws (9) and remove the model plate (see Figure 15-13/1).

**Note:** Watch out for the sealing plates!

10. Remove the bearing at the commutator end from the armature shaft with a suitable extractor.

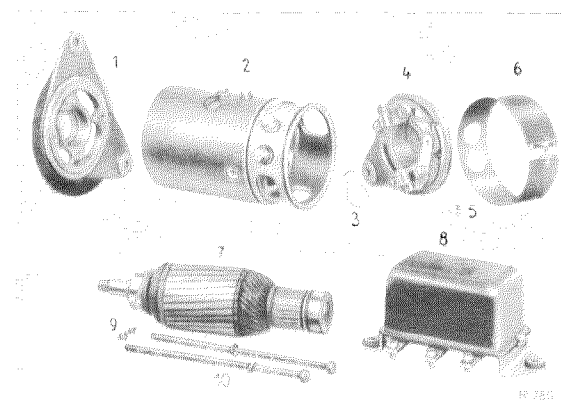


Figure 15-13/1

- |                              |                           |
|------------------------------|---------------------------|
| 1 Drive bearing bracket      | 6 Cover band              |
| 2 Armature housing           | 7 Armature                |
| 3 Sealing plate              | 8 Regulator cutout        |
| 4 Commutator bearing bracket | 9 Fillister head screws   |
| 5 Fixing screw               | 10 Armature housing bolts |

**Note:** In the generator LJ/GEH 90/12-2300 R 15 the rubber plug must be pulled out of the commutator bearing bracket, so that the fixing screw of the exciter coil can be unscrewed at the brush holder.

## Testing:

11. Check commutator. The surface should be uniformly smooth, grey-black in color, and free of dust, oil, and grease. Clean fouled segments with a clean rag moistened with gasoline and dry well.

**Note:** There should be no charred spots on the commutator.

12. Test the commutator for eccentricity. Eccentric or scored commutators have to be precision-machined on a lathe. Under no circumstances use emery cloth or file. When machining the commutator remove only as much material as necessary to obtain proper and smooth surface. After machining the plates on a lathe, use a commutator saw (e.g. Bosch EFAW 10) to cut to a depth of approx. 0.5 to 0.8 mm.

A special fixture can also be used for this purpose (Figure 15-13/2). After this machine the commutator again with a fine smooth cut (0.1 mm). Do not use the same cutting tool for rough-turning and finishing and use only carbide-tipped tools. The smallest permissible diameter and the max. permissible run-out of the commutator (see Job No. 15-0).

Check the bindings of the armature coil. The diameters of the coil ends should not be larger than the diameter of the armature; the bindings must be in perfect condition.

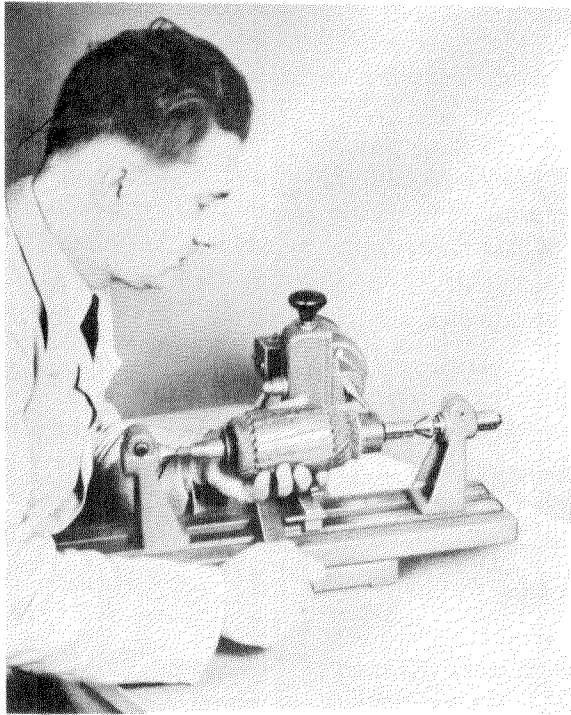


Figure 15-13/2

13. Test armature and exciter coil for short in windings and ground short (see Job No. 15-5).

**Note:** The test is conducted in a similar way as in the case of the starter.

14. Remove dirt and oil from the carbon brushes with a clean rag. Badly worn carbon brushes must be replaced. Put the carbon brushes into the brush holders and check easy running of brushes.

15. Check the pressure springs of the carbon brushes and replace the springs if neces-

sary. This check can be done with the Bosch Spring Tester EF 1244. Brush pressure (see Job No. 15-0).

#### Assembly:

16. The assembly is conducted in the reverse order; grease the ball-bearings with Bosch Grease Ft v 22 (blue).

**Note:** The armature should not touch the pole shoes and the exciter coil.

17. After assembly, test the generator with the respective regulator on the test stand (see Job No. 15-16).

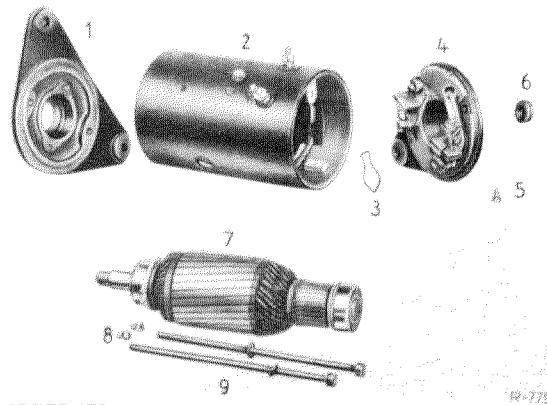


Figure 15-13/3

Disassembled generator LJ/GEH 90/12-2300 R 15

- |                              |                          |
|------------------------------|--------------------------|
| 1 Drive bearing bracket      | 6 Rubber plug            |
| 2 Armature housing           | 7 Armature               |
| 3 Sealing plate              | 8 Fillister head screws  |
| 4 Commutator bearing bracket | 9 Armature housing bolts |
| 5 Fixing screw               |                          |

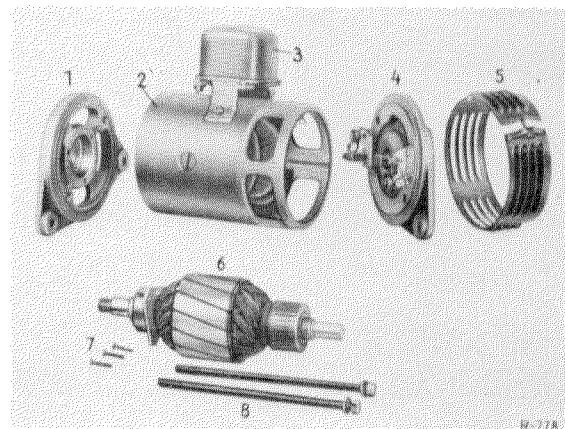


Figure 15-13/4

Disassembled generator LJ/RJH 150/12-2100 BR 1

- |                              |                          |
|------------------------------|--------------------------|
| 1 Drive bearing bracket      | 5 Cover band             |
| 2 Armature housing           | 6 Armature               |
| 3 Regulator cutout           | 7 Countersunk screws     |
| 4 Commutator bearing bracket | 8 Armature housing bolts |