

## A. Removal and Installation of Left or Right Rear Axle Shaft, Axle Sealing and if necessary, Replacement of Annular Grooved Bearing

### Removal:

1. Fix the rear axle on an assembly stand and drain the oil. The stand developed at the works (Drawing BE 10 494) and the two Assembly Plates BE 10 243 and BE 11 181 can be ordered as workshop equipment using the drawing numbers as order numbers or they can be made in the workshop with the drawing as a guide.

**Note:** The removal and installation of the rear axle shaft can be carried out with the rear axle still installed in the vehicle. If this is done, the car should be jacked up at the rear and the wheel removed instead of carrying out the procedure described in Paragraph 1.

2. Press off the left or right brake drum as the case may be, using Puller Screws 191 589 00 35.
3. Remove the brake shoes and detach the hand brake cable (see Job No. 42—9, Paras. 2—6).
4. Unscrew the brake cable pulley from the axle tube and from the brake anchor plate and take out toward the rear (see Job. 42—19, Section B).
5. Unscrew the brake line from the brake wheel cylinder.
6. Unscrew the fixing screws of the brake anchor plate, using Socket Wrench 136 589 07 09 and use Puller 136 589 18 33 to force out the rear axle shaft together with the brake anchor plate with seal retainer (Fig. 35—4/1).

**Note:** Place a vessel underneath the stand to catch the oil.

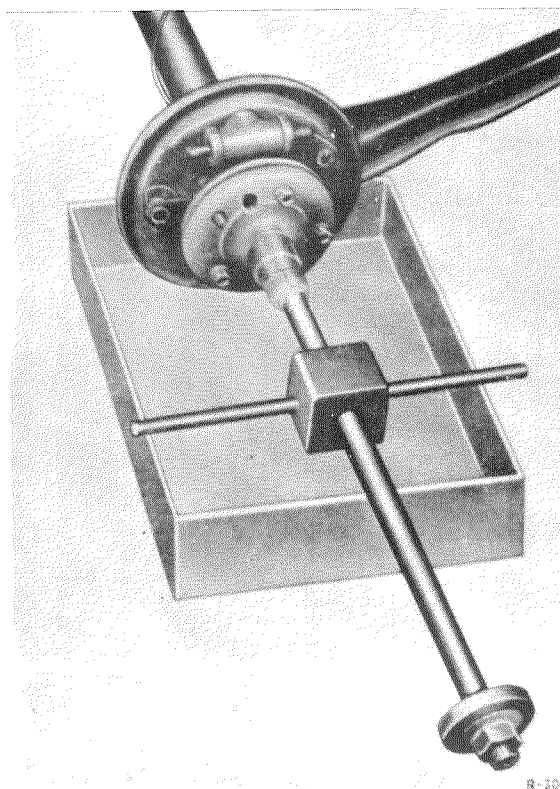


Fig. 35—4/1

### Disassembly:

**Note:** In order to avoid damage to the threads of the wheel-studs when setting up the rear axle shaft, Mounting Plate 136 589 05 31 should be used for the rear axle shaft. This plate can be made in accordance with the sketch below (Fig. 35—4/2).

The bores for the 5 fixing bolts should be fitted with brass bushings.

7. Set up the mounting plate in the vise, stand the rear axle shaft in the mounting plate and fix it in position with two wheel nuts (Fig. 35—4/5).

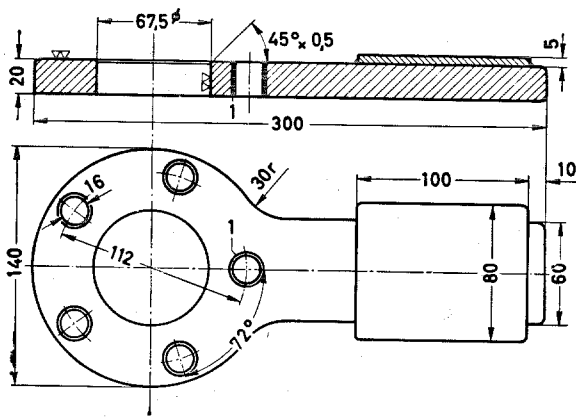


Fig. 35 — 4/2

8. Tap up the locking plate and unscrew the grooved nut on the rear axle shaft with Nose-type Wrench 136 589 09 07 (Fig. 35 — 4/3).

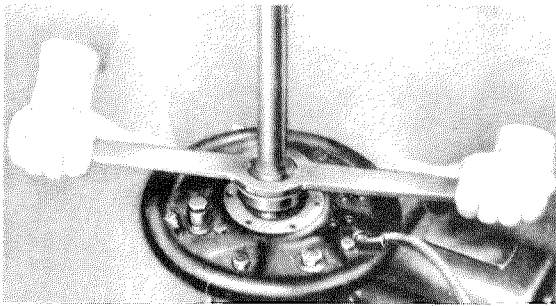


Fig. 35 — 4/3

9. Use Puller Clamp 136 589 20 33 to pull off the annular grooved bearing (Fig. 35—4/4).

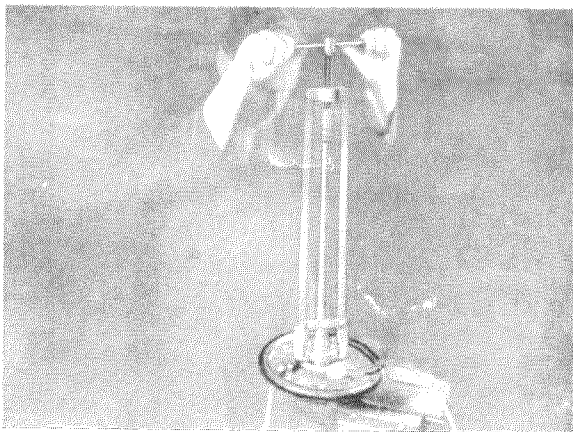


Fig. 35 — 4/4

10. Remove the seal retainer and the brake anchor plate.

11. Press the seal out of the seal retainer.
12. Carefully remove the old gasket from the seal retainer or from the axle tube.
13. Check and if necessary, re-condition the rear axle shaft and the annular grooved bearing (see Job No. 35 — 5)

**Note:** If the rear axle is still installed in the vehicle, check the seal (10) in the axle tube (see Fig. 45 — 4/7).

If the seal is damaged, take it out of the axle tube and press a new seal into the axle tube, using Installing Arbor 180 589 03 39.

14. Press a new seal (3) into the seal retainer (2), using Installing Arbor 120 589 05 39 (see Fig. 35 — 4/7).

15. Slide Installing Sleeve 120 589 00 61 onto the rear axle shaft in order to avoid damage to the seal.

Then push the brake anchor plate and the seal retainer onto the rear axle shaft (Fig. 35 — 4/5).

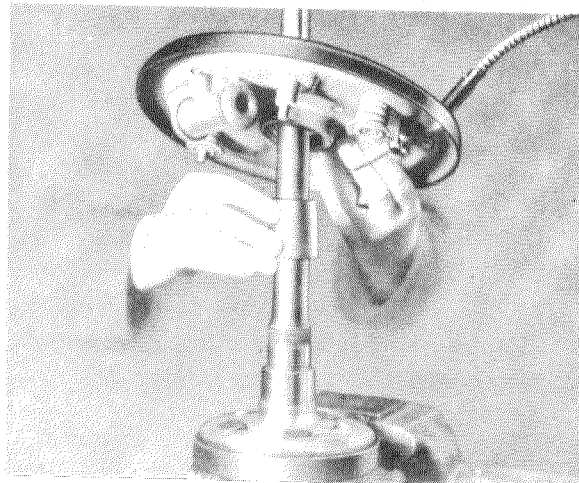


Fig. 35 — 4/5

16. Press the annular grooved bearing onto the rear axle shaft or carefully tap it on. Only tap on the inner race.

17. Put on a new locking plate with the shoulder against the inner race of the bearing, making sure that the locking plate fits snugly

against the collar of the shaft. Then tighten up the grooved nut hard, using Nose-type Wrench 136 589 09 07 (see Fig. 35 — 4/3).

18. Peen the locking plate into the grooves of the grooved nut (Fig. 35 — 4/6).

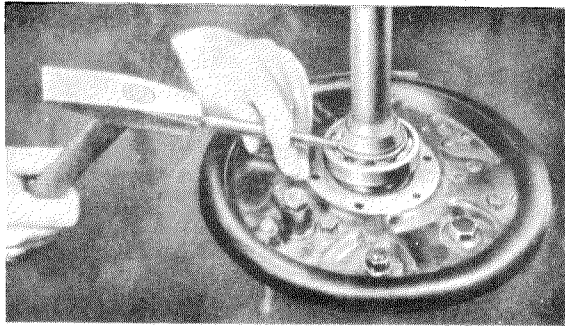


Fig. 35 — 4/6

#### Installation:

19. Apply sealing compound to both sides of the new gasket and place it in position on the seal retainer at the axle tube side (Fig. 35 — 4/7).
  20. Fill the space between the seal (10) and the mounting of the annular grooved bearing in the axle tube with anti-friction bearing grease (Fig. 35 — 4/7).
  21. Press or tap the annular grooved bearing and the rear axle shaft into the axle tube.
- Note:** The rear axle shafts are of different lengths. The longer of the two is for the left axle tube and the shorter one for the right axle tube.
22. Attach the brake anchor plate with the seal retainer to the axle tube, using the 6 hexagon screws and lock washers.
  23. Attach the brake cable pulley to the brake anchor plate and to the axle tube (see Job No. 42 — 19, Section B).

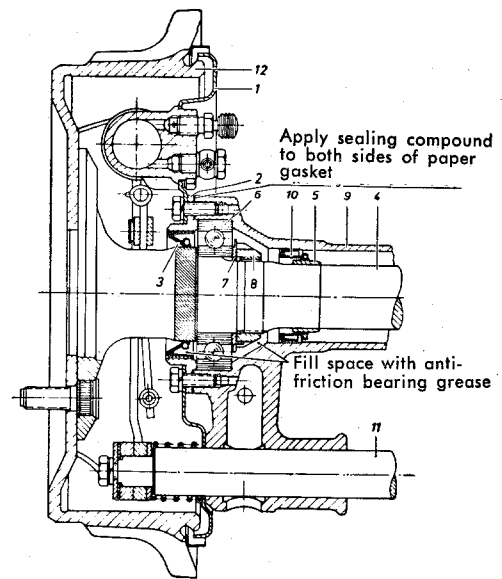


Fig. 35 — 4/7

- |                           |                    |
|---------------------------|--------------------|
| 1 Brake anchor plate      | 7 Locking plate    |
| 2 Seal retainer           | 8 Grooved nut      |
| 3 Seal                    | 9 Axle tube        |
| 4 Rear axle shaft         | 10 Seal            |
| 5 Ring                    | 11 Supporting tube |
| 6 Annular grooved bearing | 12 Brake drum      |

24. Connect the brake line, using new copper sealing rings.
  25. Attach the hand brake cable and install the brake shoes (see Job No. 42 — 9).
  26. Top up the rear axle with hypoid oil SAE 90 and check the oil level.
  28. Bleed the brake system with the rear axle installed (see Job No. 42 — 1).
- Remove the wheel nut, put on the wheel, install and tighten with the 5 wheel nuts and lower the car off the jack.
- Then depress the brake pedal hard several times so that the brake shoes overcome the friction of the automatic brake shoe adjustment and lie against the brake drums. (For further details see Job No. 42 — 9.)

## AA. Right Rear Axle Shaft with Lock for Sliding Sleeve

On recent models, a lock has been fitted to the right rear axle shaft in order to prevent any axial movement of the sliding sleeve. The lock consists of a lock pin (14) with pressure spring (13) (Fig. 35 — 4/7 a), fitted in the rear axle shaft. The lock pin fits behind the sliding sleeve which is thus prevented from being axially displaced.

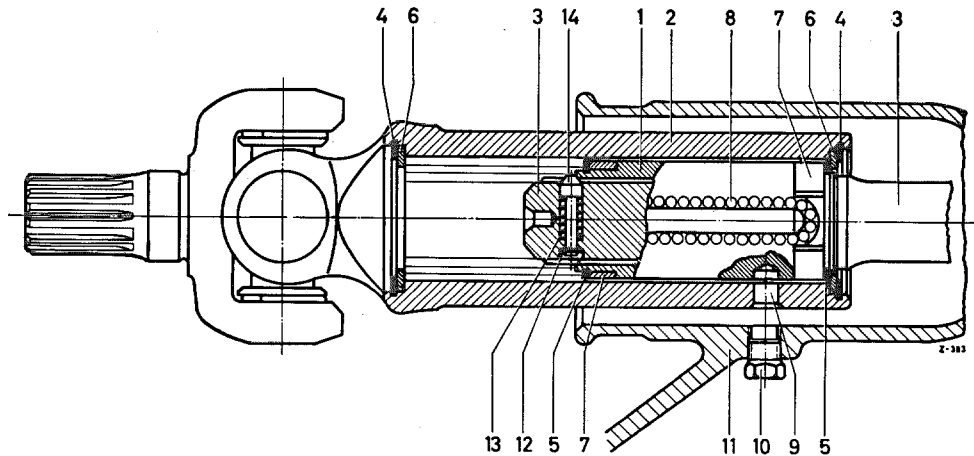


Fig 35 — 4/7 a

- |                     |                                |
|---------------------|--------------------------------|
| 1 Sliding sleeve    | 8 Cylindrical rollers          |
| 2 Outer yoke        | 9 Bore for assembly screw      |
| 3 Rear axle shaft   | 10 Conical plug AS M 10×1 N 87 |
| 4 Circlip           | 11 Right axle tube             |
| 5 Circlip           | 12 Circlip                     |
| 6 Washer            | 13 Pressure spring             |
| 7 Roller guide ring | 14 Lock pin                    |

When removing and installing this version of the rear axle shaft, the following points should be taken into account in addition to the procedures described in Section A:

### Removal:

- a) Unscrew the conical plug (10).

**Note:** This version of the rear axle can be recognized immediately by the conical plug (10).

- b) Bring the right axle tube to the stop and screw in Assembly Bolt 121 589 02 63 in place of the conical plug (10) (Fig. 35 — 4/7 b).

**Note:** The assembly bolt can be made in the workshop according to the dimensions given in Fig. 35 — 4/7 b.

With the axle tube against the stop, the threaded bore in the axle tube, the bore (9) in the slip coupling and the blind bore in the sliding sleeve correspond exactly so that

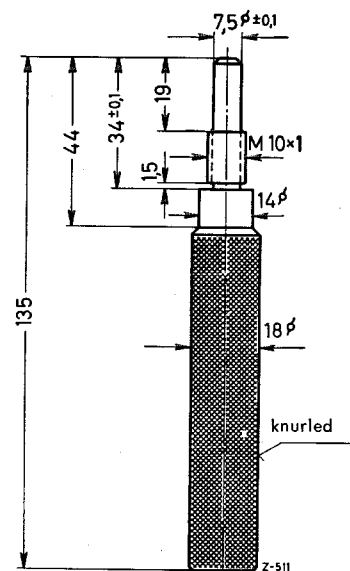


Fig. 35 — 4/7 b

Assembly Bolt 121 589 02 63

the sliding sleeve can be immobilized by the assembly bolt.

**Installation:**

- c) Slide in the rear axle shaft as described in Section A.

**Note:** The sliding sleeve must definitely be immobilized by the assembly bolt as otherwise when the rear axle shaft is installed the sliding sleeve will be pushed inward by the lock pin.

In this case, when the car is being driven and the axle tube depresses the springs

through the whole of their travel, the sliding sleeve would strike against the inner washer (6), the circlip (4) might be destroyed and as a result, the cylindrical rollers (8) might fall out of the slip coupling.

- d) Remove the assembly bolt and install the conical plug (10).

**Note:** Do not use a sealing ring when screwing in the conical plug (10).

**Rear axle shafts with lock pins cannot be subsequently installed in a rear axle of the earlier version.**