

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.

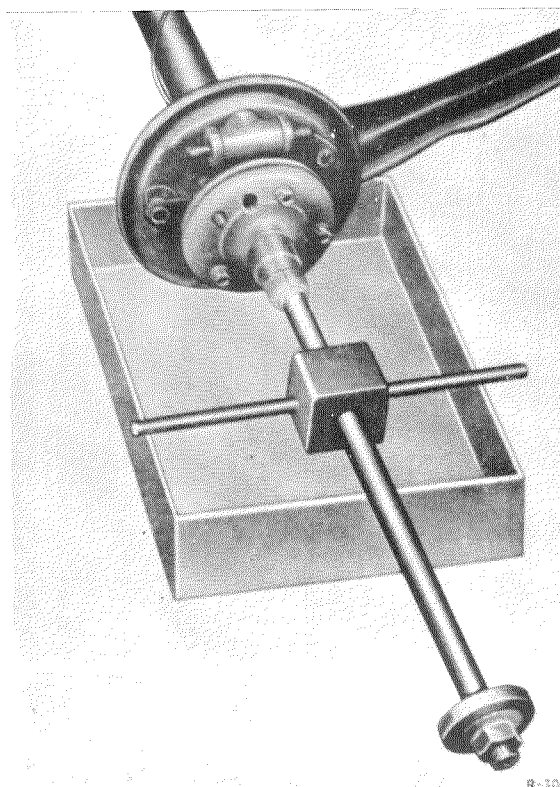


Fig. 35—4/1

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).

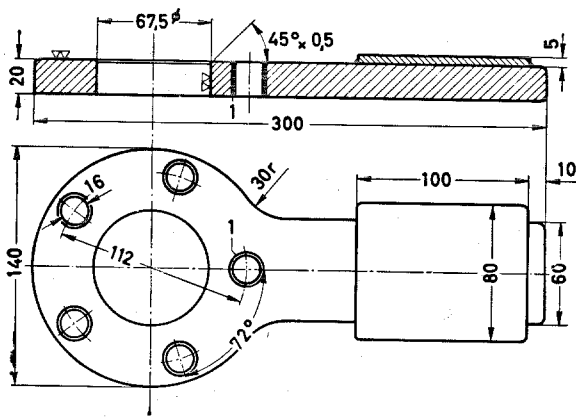


Fig. 35 — 4/2

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).

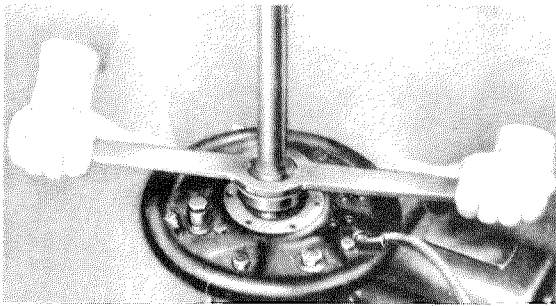


Fig. 35 — 4/3

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

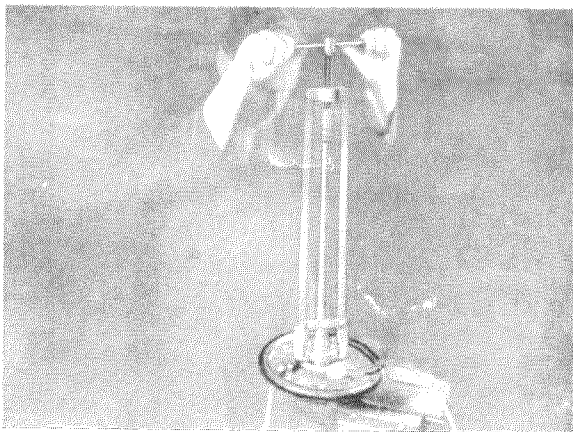


Fig. 35 — 4/4

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).

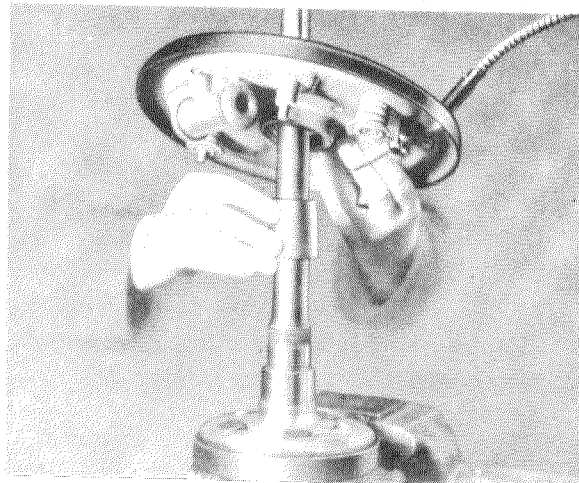


Fig. 35 — 4/5

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).

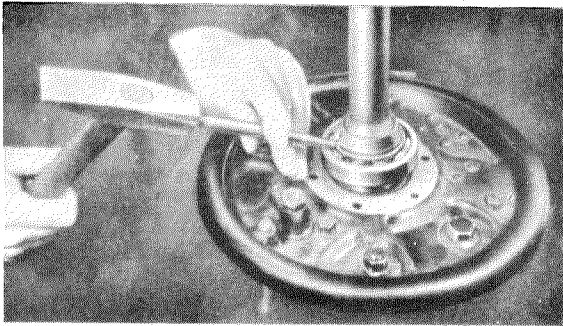


Fig. 35 — 4/6

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).

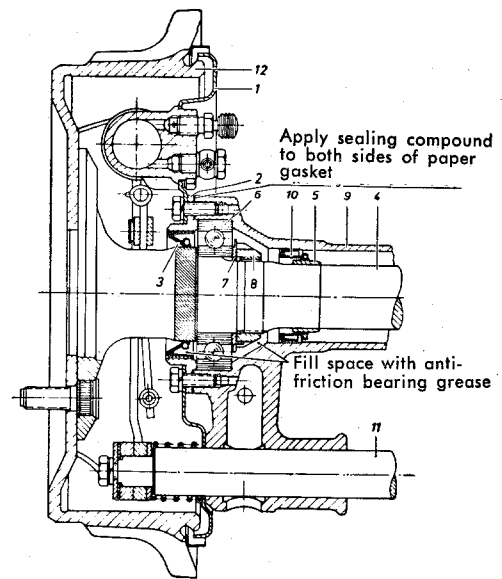


Fig. 35 — 4/7

- | | |
|---------------------------|--------------------|
| 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.

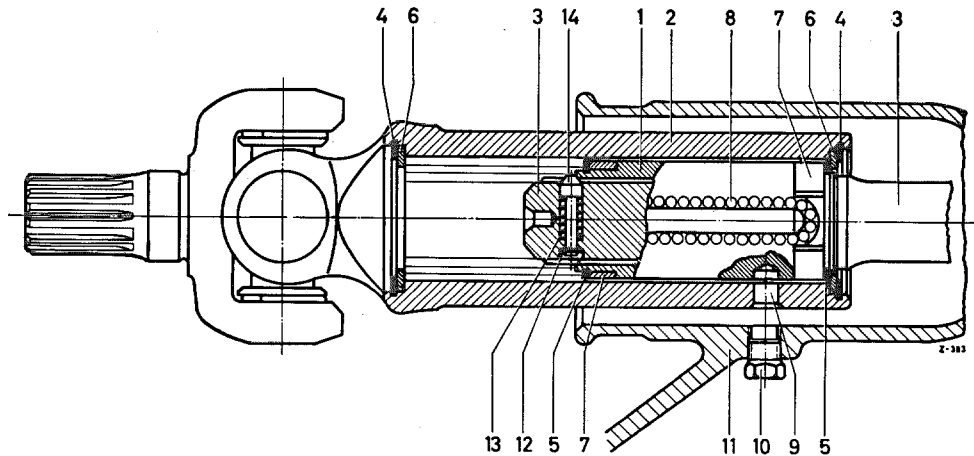


Fig 35 — 4/7 a

- | | |
|---------------------|--------------------------------|
| 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

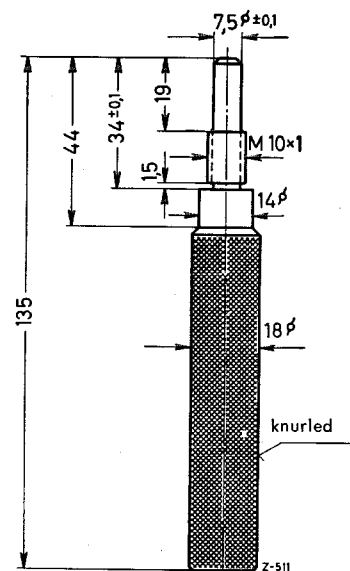


Fig. 35 — 4/7 b

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.

B. Removal and Installation of Left or Right Torque Arm at Axle Tube and Replacement of Rubber Mounting

Removal:

29. Tap up the locking plate (37) and unscrew the hexagon screw (38) Fig. 35 — 4/8).

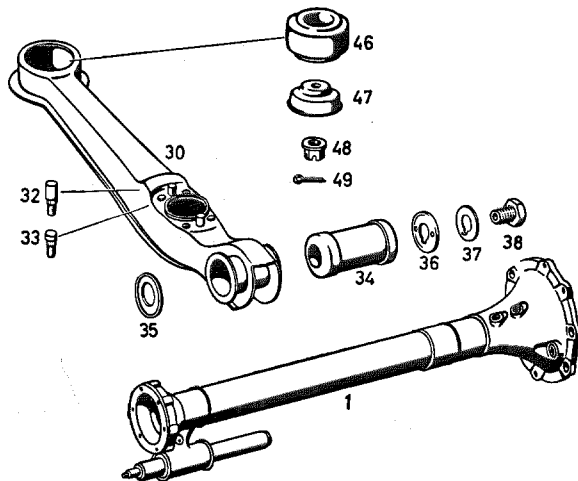


Fig. 35 — 4/8

- | | |
|-----------------------------------|-----------------------------------|
| 1 Axle tube | 36 Tightening washer (screw side) |
| 2 Supporting tube | 37 Locking plate |
| 30 Left torque arm | 38 Hexagon screw |
| 32 Cheese-head screw | 46 Rubber mounting (front) |
| 33 Cheese-head screw | 47 Cup |
| 34 Rubber mounting (rear) | 48 Castle nut |
| 35 Tightening washer (wheel side) | 49 Cotter pin 3×25 |

30. Use Puller 120 589 05 33 to pull off the torque arm (Fig. 35 — 4/9) and take off the tightening washers (36) and (35) (Fig. 35 — 4/8).

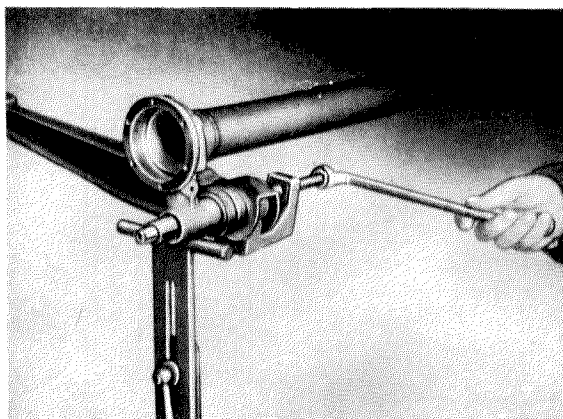


Fig. 35 — 4/9

Checking:

31. Check the torque arm for cracks. If cracks are discovered on a torque arm, it must be replaced.

Replacement of Rubber Mounting:

32. Apply talc around the circumference of the rubber mounting (34) and press it out with the aid of a drift.
33. Apply talc around the circumference of the new rubber mounting (34) and also to the bore in the torque arm (30) and press the mounting into the torque arm (30).

Installation:

34. Slide the tightening washer (35) (wheel side) onto the supporting tube (2). Then press the torque arm (30) onto the supporting tube (2) of the axle tube (1) in such a way that the front edge of the torque arm is approximately on a level with the center line of the joint flange (Fig. 35 — 4/10).

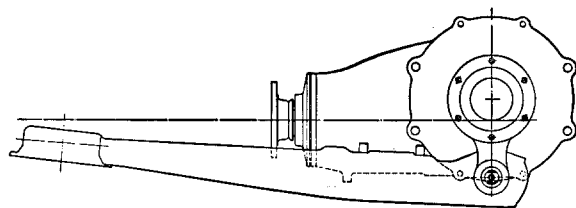


Fig. 35 — 4/10

35. Push the tension disk (36) and a new locking plate (37) onto the supporting tube (2), screw in the hexagon screw (38), tighten it up and lock it by tapping over the locking plate (37) (see Fig. 35 — 4/8).

C. Removal and Installation of Right Axle Tube

Removal:

36. Remove the right rear axle shaft (see Paras. 1 — 6).

Note: The right axle tube can only be removed or installed with the rear axle removed from the vehicle.

If the right axle tube is only being removed in order to replace the rubber cuff, the rear axle shaft does not need to be removed.

The left axle tube is at the same time the cover for the rear axle housing. Consequently, the outer race of the left taper roller bearing for the differential housing, together with threaded ring for adjustment of the bearing, is fitted at the inner side of the axle tube. Removal of the left axle tube is described in Section "D. Disassembly and Reassembly of Rear Axle Housing".

37. Remove the hexagon nut (16) from the splined bolt (14) (see Fig. 35 — 4/12) and tap out the splined bolt (Fig. 35 — 4/11).

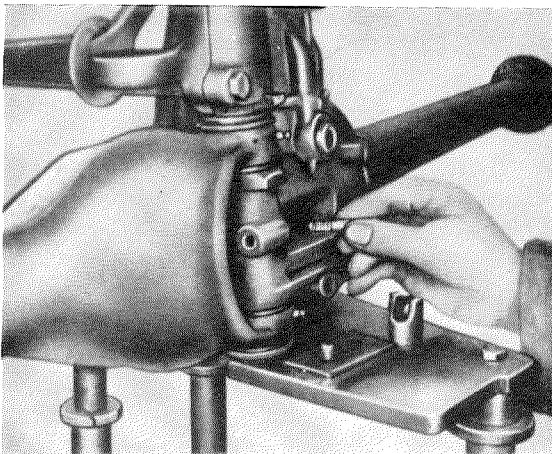


Fig. 35 — 4/11

38. After removing the hose strap and the hose clamp, release the rubber cuff at the rear axle housing and pull it off the rear axle housing.
39. After bending up the locking plate (2), remove the hexagon screw (1) of the connect-

ing pin (7). Now screw Assembly Arbor 180 589 08 39 into the connecting pin and drive out the connecting pin toward the rear. Then remove the connecting pin from the assembly arbor. Pull the assembly arbor out toward the front again, at the same time removing the support (6), paying attention to the washer 10a, the backing washer 8a and the rubber ring 9a (Fig. 35 — 4/12).

Take the right axle tube off the rear axle housing, paying attention to compensating washers 13a and 13b and rubber rings 9b and 9c.

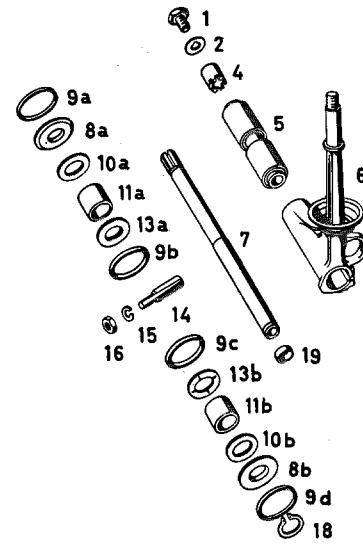


Fig. 35 — 4/12

- | | |
|-----------------------------|-------------------------------|
| 1 Hexagon screw | 10a, 10b Washers |
| 2 Locking plate | 11a, 11b Sleeves |
| 4 Spacer sleeve | 13a, 13b Compensating washers |
| 5 Buffer block | 14 Splined bolt |
| 6 Support | 15 Lock washer |
| 7 Connecting pin | 16 Hexagon nut |
| 8a, 8b Backing washers | 18 Circlip |
| 9a, 9b, 9c, 9d Rubber rings | 19 End plug |

40. Press the seal (2) out of the axle tube (1) with a screwdriver (Fig. 35 — 4/13).
41. After slackening the hose clamp, take off the rubber cuff.
42. Check and, if necessary, repair the axle tube, the connecting pin, and the support for the rear axle (see Job No. 35 — 5).

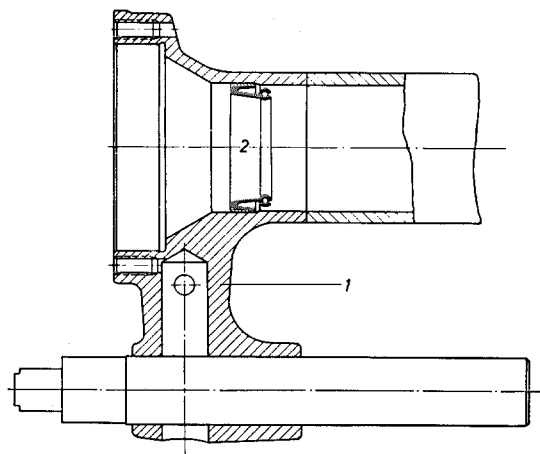


Fig. 35 — 4/13

1 Axle tube
2 Seal

Installation:

43. Press or drive a new seal into the axle tube as far as the shoulder, using Installing Arbor (Fig. 35 — 4/14 and Fig. 4/14 a).
44. Push the rubber cuff onto the axle tube. The large bead of the eccentric cuff must be at the top (see Fig. 35 — 4/15).
45. Push the two rubber rings (9 b) and (9 c) onto the eyes of the axle tube (Fig. 35 — 4/14 and Fig. 35 — 4/14 a).
46. Fit the axle tube onto the rear axle housing. To do this, hold the axle tube against the rear axle housing and immobilize it with Assembly Arbor 180 589 08 39. When the assembly arbor is pushed in, the compensating washers (13 a) and (13 b) between the yoke of the axle tube and the rear axle housing must be inserted at the same time (Fig. 35 — 4/14 a).

Caution: Do not use ordinary steel washers but only the specified compensating washers made of special bronze ("Kuprodur") with

lubricating grooves. The lubricating grooves of the two compensating washers must point toward the axle tube eyes.

47. Measure the end play between the axle tube and the rear axle housing.

The play must not exceed 0.1 mm.

For adjusting the play, compensating washers 13 a and 13 b are available in a range of 1.9—2.5 mm, in steps of 0.1 mm. If possible, compensating washers of the same thickness should be used on both sides (Fig. 35 — 4/14 a).

The play must be strictly maintained. If there is not enough play there is a tendency for the compensating washers to bind and / or to score.

The axle tubes must be easy to move. If, for instance, as a result of scoring or binding compensating washers, they are difficult to move, rumbling noises may be caused in the rear axle.

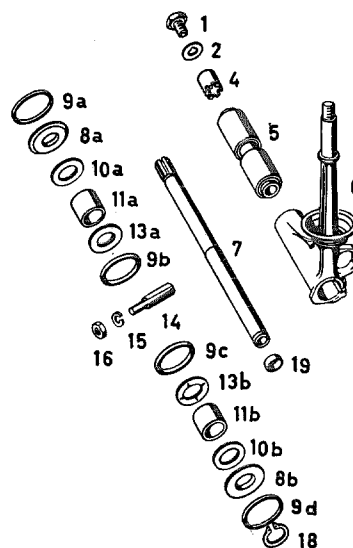


Fig. 35 — 4/14

- | | |
|-----------------------------|-------------------------------|
| 1 Hexagon screw | 10a, 10b Washers |
| 2 Locking plate | 11a, 11b Sleeves |
| 4 Spacer sleeve | 13a, 13b Compensating washers |
| 5 Buffer block | 14 Splined bolt |
| 6 Support | 15 Lock washer |
| 7 Connecting pin | 16 Hexagon nut |
| 8a, 8b Backing washers | 18 Circlip |
| 9a, 9b, 9c, 9d Rubber rings | 19 End plug |

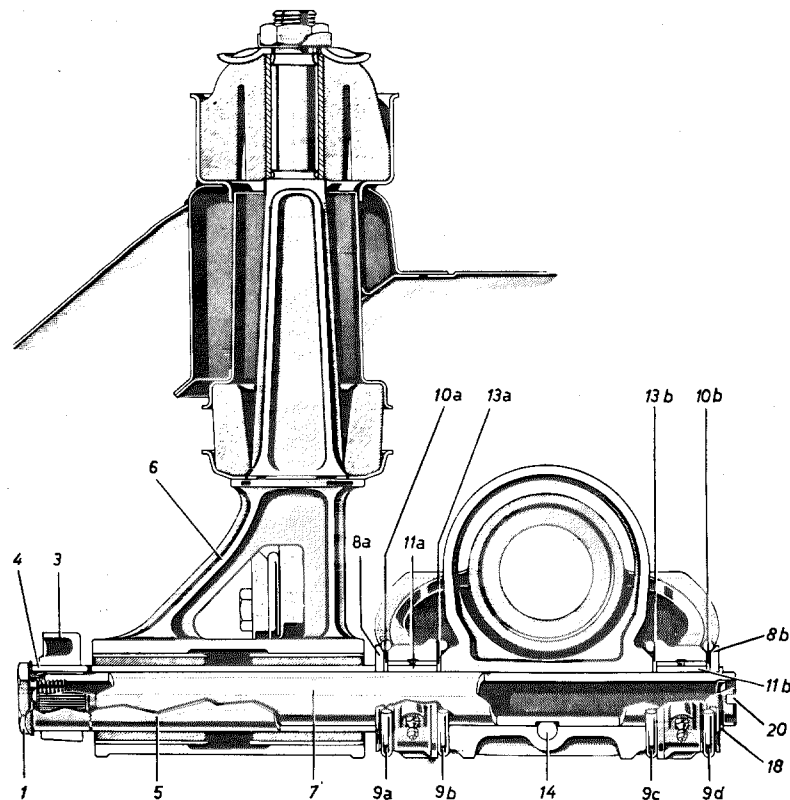


Fig. 35—4/14 a

- | | | |
|-----------------|-----------------------------|-------------------------------|
| 1 Hexagon screw | 7 Connecting pin | 11a, 11b Sleeves |
| 3 Cover | 8a, 8b Backing washers | 13a, 13b Compensating washers |
| 4 Spacer sleeve | 9a, 9b, 9c, 9d Rubber rings | 14 Splined bolt |
| 5 Buffer block | 10a, 10b Washers | 18 Circlip |
| 6 Support | | 20 Groove |

48. Press or drive the sleeve (11 b) onto the connecting pin (7). Push the washer (10 b) and the backing washer (8 b) onto the connecting pin in such a way that the beveled face points away from the circlip groove.

Then put in the circlip (18) (see Fig. 35—4/14).

49. Grease the connecting pin and push it through from the rear in such a way that the face for the splined bolt points downward.

Press out the assembly bolt with the connecting pin and push in the two rubber rings 9 b and 9 c over the shoulder of the axle tube eyes.

50. Push the sleeve, the washer (1), the rubber ring (2) and the backing washer (3) onto the connecting pin (see Fig. 35—4/15).

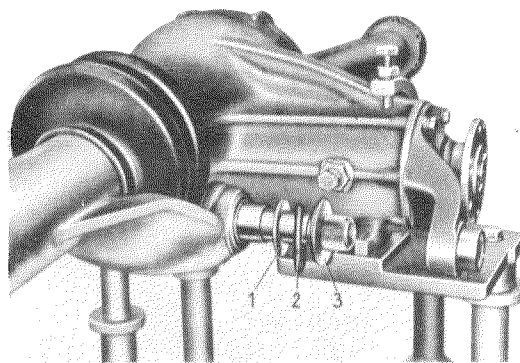


Fig. 35—4/15

- | | | |
|------------------|-------|--------------------|
| 1 Washer | (10a) | } in Fig. 35—4/14a |
| 2 Rubber ring | (9a) | |
| 3 Backing washer | (8a) | |

Caution:•The beveled face of the backing washer (3) must point toward the rear in the direction of the axle tube.

51. Push the rubber cuff onto the rear axle housing and connect it to the rear axle housing and the axle tube with the hose strap and the hose clamp.
52. Slide the support for the rear axle suspension, together with the fitted — but not yet tightened — buffer block, into position and drive through the connecting pin toward the front.

When the buffer block is being **installed** in the support, care must be taken to ensure that the end of the sleeve which projects 6 mm, points toward the rear (Fig. 35 — 4/16).

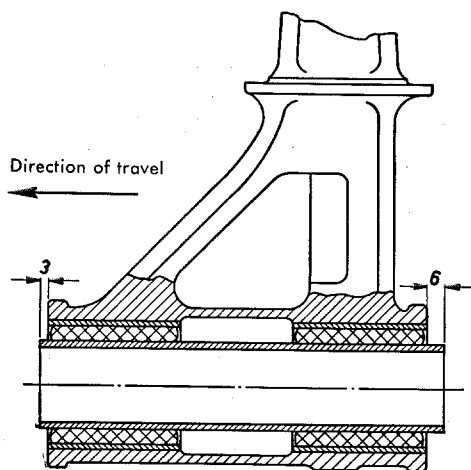


Fig. 35 — 4/16

53. Turn the connecting pin to the point where the groove (20) is exactly horizontal (see Fig. 35 — 4/14 a).

Note: This is necessary in order to allow the splined bolt to be installed properly (Fig. 35 — 4/17).

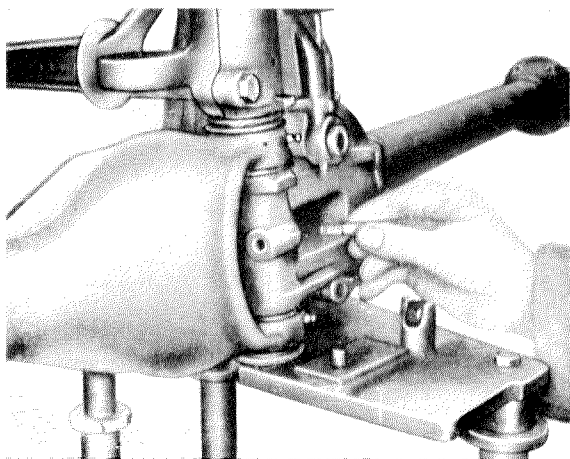


Fig. 35 — 4/17

54. Drive the splined spacer sleeve (4) toward the rear onto the connecting pin and into the cover (3) and put on the locking plate. Screw on the hexagon screw (1) and tighten up with a tightening torque of 10—12 mkg and then slacken it again (see Fig. 35 — 4/14 a).
55. Drive in the splined bolt (14), put on the hexagon nut (16) with lock washer (15) and tighten up (see Fig. 35 — 4/14). Put on the rear rubber ring (9 d) between the backing washer (8 b) and the axle tube eye (see Fig. 35 — 4/14 a).
56. Re-tighten the hexagon screw (1) with a torque of 10—12 mkg. Then lock the hexagon screw by tapping the locking plate over (see Fig. 35 — 4/14 a).
57. Adjust the distance between the face of the joint flange and the front edge of the cup (1) which is welded to the support for the rear axle suspension, using Adjusting and Checking Device 180 589 04 23 (Fig. 35 — 4/19).

Note: The distance between the face of the joint flange and the axis of the support for the rear axle suspension should be 131 ± 1 mm (Fig. 35 — 4/18).

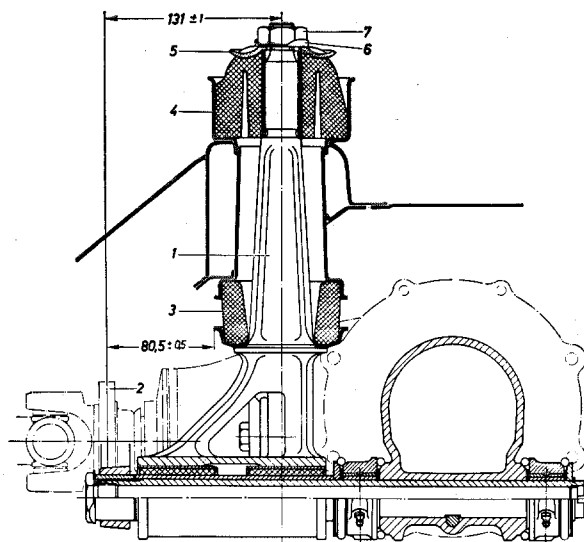


Fig. 35 — 4/18

- | | |
|---------------------|---------------------|
| 1 Support | 5 Tightening washer |
| 2 Joint flange | 6 Locking plate |
| 3 Lower rubber ring | 7 Hexagon nut |
| 4 Upper rubber ring | |

Since this distance is difficult to measure in practice, the adjusting and checking device is held against the joint flange (2) and the front edge of the cup (1) (Fig. 35 — 4/19).

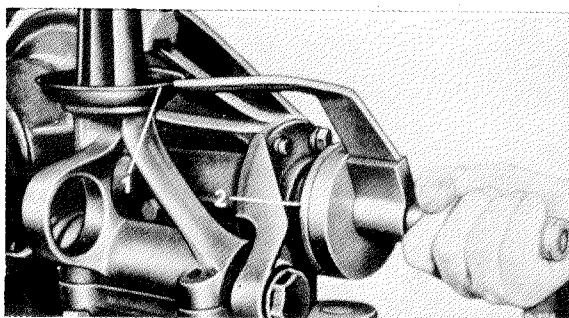


Fig. 35 — 4/19

1 Cup
2 Joint flange

This distance should be 80.5 ± 0.5 mm. The more recent version of the adjusting and checking device has been altered to this dimension. The older versions are 23 mm longer because on the earlier rear axle suspension the cup (1) was not welded on and therefore measurements could be taken

with the adjusting and checking device as far as the mounting of the cup on the support. This dimension is 103.5 ± 0.5 mm. If the older version of the adjusting and checking device is still used, it must be shortened by 23 mm to the measuring dimension of 80.5 mm.

This distance can be corrected by moving the support on the buffer block, after loosening the two clamping screws of the support.

58. Check the angle between the support and the left axle tube. The support for the rear axle suspension must form a right angle with the left axle tube, seen in the direction of travel.

If this is not the case, the support should be turned into the correct position after slackening the two clamping screws (see Fig. 35 — 1/7). When this is done, the support must not be displaced in the axial direction.

Then tighten up the two clamping screws of the support.

59. Install the right rear axle shaft (see Paras. 19 to 27).

D. Removal, Installation and Adjustment of Gear Train

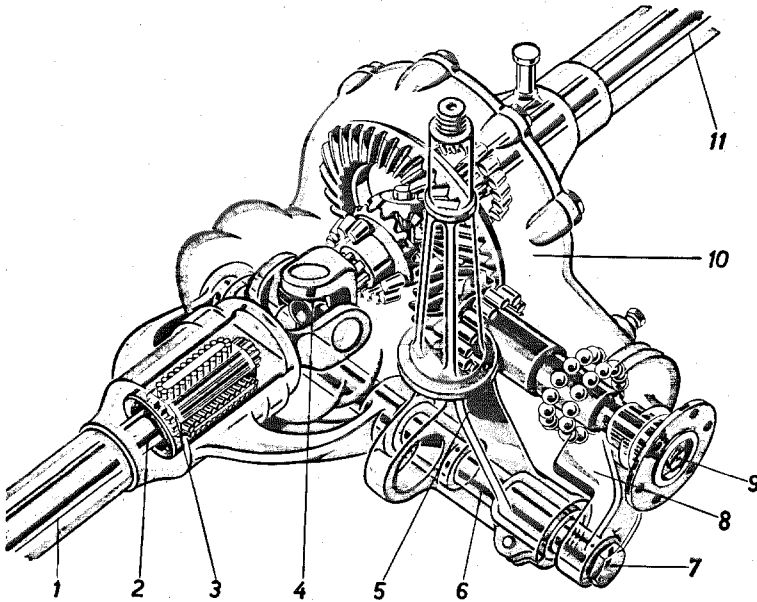


Fig. 35 — 4/20

- 1 Right axle tube
- 2 Right rear axle shaft
- 3 Sliding sleeve
- 4 Slip coupling with universal joint spider
- 5 Support for rear axle suspension
- 6 Connecting pin
- 7 Hexagon screw for connecting pin
- 8 Cover with eye for connecting pin
- 9 Drive pinion shaft
- 10 Rear axle housing
- 11 Left axle tube

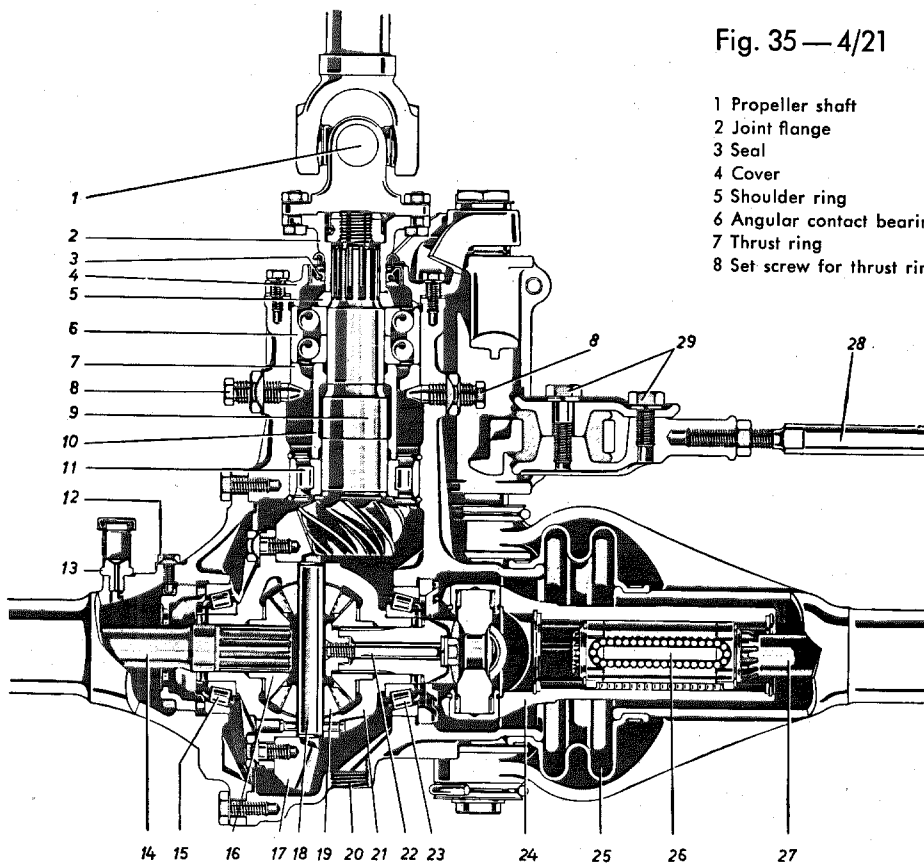


Fig. 35 — 4/21

- 1 Propeller shaft
- 2 Joint flange
- 3 Seal
- 4 Cover
- 5 Shoulder ring
- 6 Angular contact bearing
- 7 Thrust ring
- 8 Set screw for thrust ring

- 9 Drive pinion shaft
- 10 Spacer sleeve
- 11 Cylindrical roller bearing
- 12 Lock screw for threaded ring
- 13 Bleed screw for left axle tube
- 14 Left rear axle shaft
- 15 Taper roller bearing

- 16 Differential side gear, left
- 17 Ring gear
- 18 Differential pinion shaft
- 19 Differential pinion gear
- 20 Oil filler plug
- 21 Differential housing
- 22 Clamping screw

- 23 Taper roller bearing
- 24 Slip coupling
- 25 Rubber cuff
- 26 Sliding sleeve
- 27 Right rear axle shaft
- 28 Cross strut with link
- 29 Fixing screw for cross strut

Disassembly:

60. Remove the right rear axle shaft (see Paras. 1—6).
61. Remove the right axle tube (see Paras. 35—42).
62. Hold the left rear axle shaft and the flange of the drive pinion shaft, in order to loosen the clamping screw (22). Then unscrew the clamping screw (22) which fixes the slip coupling (24) to the right differential side gear and take out the slip coupling with compensating washer (Figs. 35—4/21 and 35—4/22).

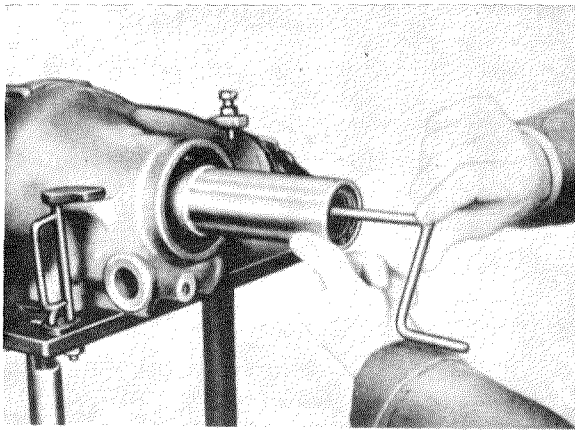


Fig. 35—4/22

63. Remove the left rear axle shaft (see Paras. 1—6). Then unscrew the left axle tube from the rear axle housing and take out the differential housing with ring gear.
64. Press the seal (2) out of the left axle tube with a screwdriver (Fig. 35—4/23).

Unscrew the bleed screw (13) and the lock screw (12) for the threaded ring (see Fig. 35—4/21).

Use Pin Wrench 180 589 02 07 on the threaded ring to press out the outer race of the taper roller bearing (15) (see Fig. 35—4/21).

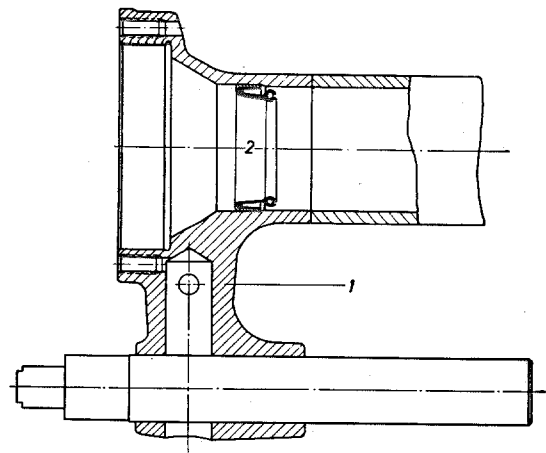


Fig. 35—4/23

1 Axle tube
2 Seal

65. Set up the rear axle housing on the assembly stand for the rear axle:

Note: The assembly stand for rear axle housings (according to Drawing BE 9891 a) with Assembly Plate BE 11 175 a, can be made in the workshop with the drawing as a guide. If necessary, the rear axle housing can also be disassembled on a shop bench.

66. Unlock the two set screws (8) for the thrust ring of the angular contact bearing and back out the two screws.

Unscrew the hexagon screws at the cover (4) of the rear axle housing. Then pull out the drive pinion shaft (9), together with the joint flange (2), the cover (4), the seal (3), the angular contact bearing (6), the spacer sleeve (10) and the cylindrical roller bearing (11) (see Fig. 35—4/21).

67. After tapping up the locking plate (4), unscrew the two hexagon screws for the lock (3) of the threaded ring in the rear axle housing and screw out the threaded ring (2) (Fig. 35—4/24). Use Pin Wrench 180 589 00 07 for the threaded ring. Then press out the outer race of the taper roller bearing toward the inside (Fig. 35—4/24).
68. Remove the two snap rings (15) for the outer race of the cylindrical roller bearing (2) and drive out the race with Assembly Arbor 120 589 00 39 (see Fig. 35—4/26).

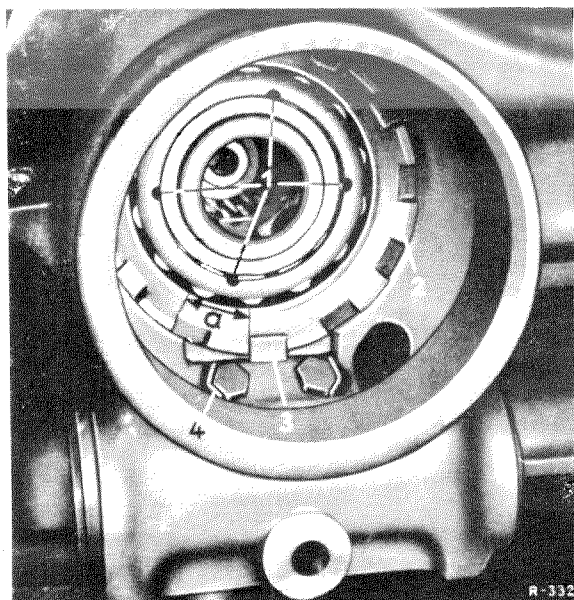


Fig. 35 — 4/24

- 1 The 4 recesses in the roller cage for Special Pin Wrench 180 589 14 07
- 2 Threaded ring
- 3 Lock
- 4 Locking plate
- a = one notch

Reassembly:

69. Insert the snap ring (2) in the rear axle housing. Make sure that it is properly positioned in the annular groove!

The hook of the snap ring must rest in the cast groove in the housing (Fig. 35 — 4/25).

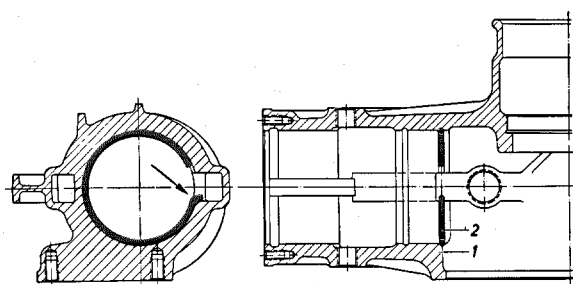


Fig. 35 — 4/25

- 1 Rear axle housing
- 2 Snap ring

70. Press in the outer race of the cylindrical roller bearing (2) with Assembly Arbor 120 589 00 39 and insert the front snap ring (15). Make sure it is properly positioned in the annular groove! (Fig. 35 — 4/26).

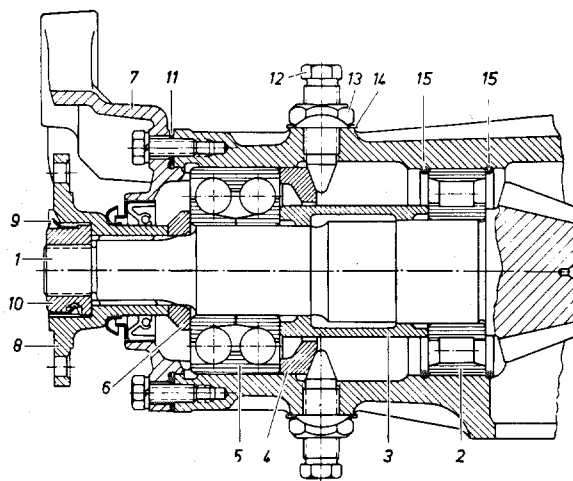


Fig. 35 — 4/26

- 1 Drive pinion shaft
- 2 Cylindrical roller bearing
- 3 Spacer sleeve
- 4 Thrust ring
- 5 Angular contact bearing
- 6 Shoulder ring
- 7 Cover with pressed-in seal
- 8 Joint flange
- 9 Lock
- 10 Grooved nut
- 11 Shim
- 12 Set screw for thrust ring
- 13 Hexagon nut
- 14 Locking plate
- 15 Snap ring

71. Screw the two set screws (12) about half-way in so that when the fitted drive pinion shaft is slid into the rear axle housing, the thrust ring (4) butts against the set screws (12).

72. Place a shim (11) (no specified thickness) on the cover (7) of the rear axle housing and slide the drive pinion shaft, which is fitted ready for installation, into the rear axle housing.

Screw up the cover (7). Screw in the two set screws (12), a few turns at a time at each screw, until they lie firmly against the thrust ring (4) (Fig. 35 — 4/26).

The tightening torque for the two set screws is 2.5 mkg.

73. Screw the right threaded ring three threads into the rear axle housing. Then use Assembly Arbor 180 589 00 39 to press in the outer race of the taper roller bearing (23) until it lies against the threaded ring (see Fig. 35 — 4/21).

Adjustment of Pinion Drive:

74. When a new gear train is being installed in the rear axle housing, the specified distances between the individual gears and the

specified amount of backlash must be obtained by adjustment. The installation dimensions are stamped on the rear face of the ring gear, the first figures indicating the clearances between the gears and the second figures indicating the amount of backlash required (Fig. 35 — 4/27).

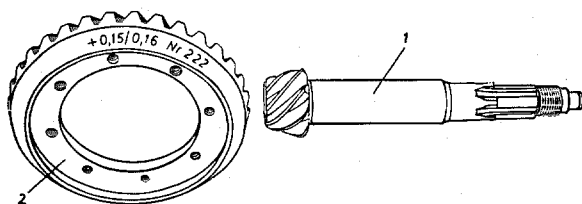


Fig. 35 — 4/27

1 Drive pinion shaft
2 Ring gear

Clearance dimension	= +0.15 mm
Backlash	= 0.16 mm
Gear train	No. 122

The two dimensions given ensure optimum meshing and operation of the gear train.

75. In order to set the front edge of the drive pinion and the center line of the ring gear to the exact clearance, place the measuring disk (4) (108.00 mm diameter) on Adjusting Device (1) 180 589 01 23 and set it to zero. To do this, screw the adjusting screw (3) of the device either in or out, to the point where the measuring disk (4) can just be turned to and fro with ease. Then lock the adjusting screw with the lock nut (2). No light gap must be visible between the two surfaces (Fig. 35 — 4/28).

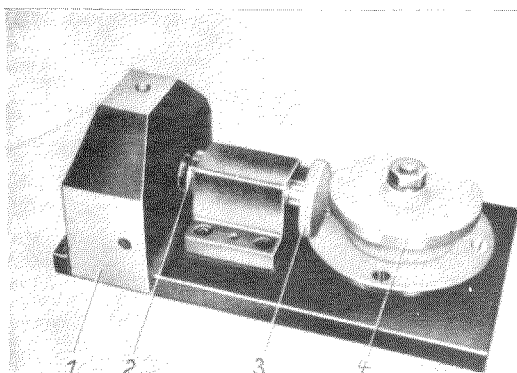


Fig. 35 — 4/28

1 Adjusting Device 180 589 01 23	3 Adjusting screw
2 Lock nut	4 Measuring disk

76. Now replace the measuring disk by the strap (5) with Dial Gage Holder 180 589 00 23 and a Dial Gage 000 589 14 21 and place in Adjusting Device 180 589 01 23. Clamp the dial gage in position under an initial tension of 1 mm. By turning the dial gage holder to and fro, establish the highest point of the face of the adjusting screw and set the dial gage to zero by moving the scale (Fig. 35 — 4/29).

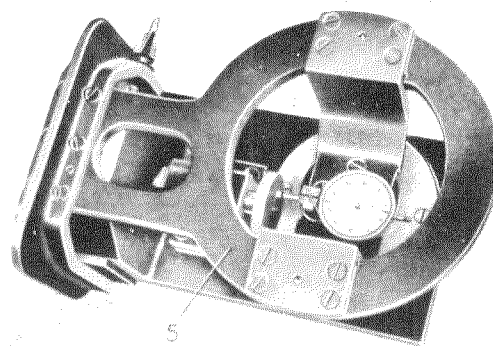


Fig. 35 — 4/29

Strap 180 589 00 23

77. Put the strap with dial gage holder and the dial gage in the rear axle housing (Fig. 35 — 4/30).

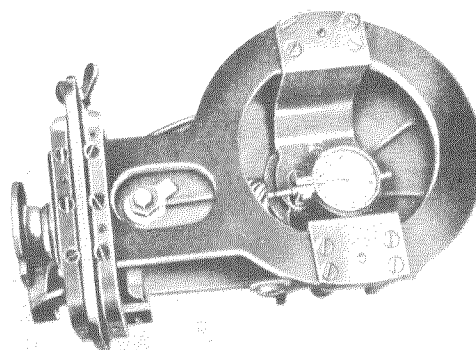


Fig. 35 — 4/30

Note: Recently the adjusting tools described in Paras. 75 — 77, i. e. the

Adjusting Device	180 589 01 23
with Measuring Disk	108 mm diameter
and Strap with Dial Gage Holder	180 589 00 23

have been replaced by the following adjusting tools:

Adjusting Device	136 589 02 23
Strap	180 589 05 23
and Measuring disk	108 mm diameter
	180 589 06 23.

If Adjusting Device 136 589 02 23 for adjusting the twin-jointed rear axle is already available, it does not need to be re-ordered (Fig. 35 — 4/28 a).

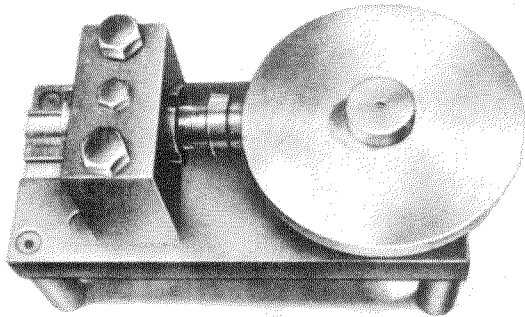


Fig. 35 — 4/28 a

Adjusting Device 136 589 02 23
Measuring Disk 180 589 06 23 108 mm diameter

Adjustment with these tools is done in the same way as described above but with the difference that when the dial gage is adjusted, the strap does not need to be bolted to Adjusting Device 136 589 02 23 (Fig. 35 — 4/29 a).

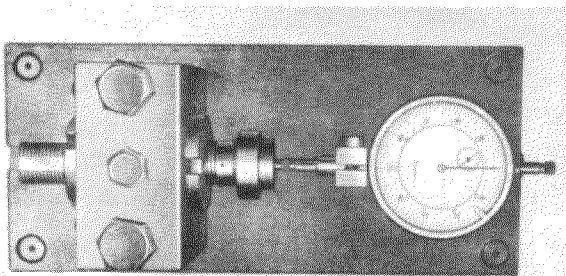


Fig. 35 — 4/29 a

Adjusting Device 136 589 02 23
and dial gage

After the dial gage has been adjusted, the dial gage is placed in the Strap 180 589 05 23 and then the strap, together with the dial gage, is put into the rear axle housing.

78. Adjust to the specified clearance between drive pinion shaft and ring gear (the clearance specified by the works and stamped on the ring gear) by selecting an appropriate compensating washer (11) for insertion between the rear axle housing and the cover (7) (see Fig. 35 — 4/26).

When the dial gage is read off, the original initial tension of 1 mm must be taken into account!

Example 1:

Clearance stamped on ring gear: +0.15 mm (see Fig. 35 — 4/27).

In accordance with the initial tension of 1 mm, the dial gage must show 1.15 mm after the adjustment. (For the + measurement, the pointer of the dial turns in a clockwise direction.)

Example 2:

Clearance stamped on ring gear: —0.15 mm.

In accordance with the initial tension of 1 mm, the dial gage must show 0.85 mm after the adjustment. (For the measurement, the pointer of the dial turns in an anti-clockwise direction).

For setting to the clearance required, compensating washers are available in a range from 1.0 to 2.0 mm, in steps of 0.1 mm. Compensating washers 2.05 mm thick are also available.

If necessary, a compensating washer should be ground to the appropriate thickness.

The tolerance for this setting is 0 to 0.02 mm.

79. Screw the threaded ring right home into the left axle tube (see Fig. 35 — 4/31). Then press in the outer race of the taper roller bearing, using Assembly Arbor 180 589 04 39.
80. Put the differential housing (21) into the rear axle housing and screw the left axle tube to the rear axle housing (see Fig. 35 — 4/21).
81. Use Pin Wrench 180 589 02 07 to tighten the threaded ring in the left axle tube to the point where there is no further play between the drive pinion and the ring gear. Then turn the threaded ring back 2—3 notches.

Note: The notches (1) of the threaded ring are visible through the bore for the locking screw (Fig. 35 — 4/31).

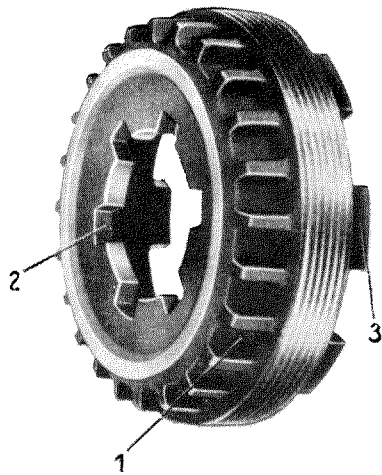


Fig. 35 — 4/31

- 1 Notches for the locking screw
- 2 Spaces for Pin Wrench 180 589 02 07
- 3 Contact surface for outer race of bearing

Pin Wrench 180 589 02 07 can only be inserted in the axle tube **before** the seal has been put in the axle tube.

82. Use a torque wrench and Pin Wrench 180 589 00 07 to tighten the right threaded ring in the rear axle housing to 4.0 mkg.
 83. Mount Measuring Gage 180 589 01 21 for measuring the backlash (Fig. 35 — 4/32).
 84. Fix the stop bracket (1) to the rear axle housing.
 85. Insert the holder (2) with dial gage in the bore of the differential housing and clamp it in position.
 86. Adjust the holder in such a way that the feeler of the dial gage points to the diameter of 176 mm marked on the stop bracket (1).
- Note:** This is necessary because the backlash reading is in respect of a diameter of 176 mm.
87. Clamp the drive pinion shaft to the joint flange with a screw (3) (see Fig. 35 — 4/32).

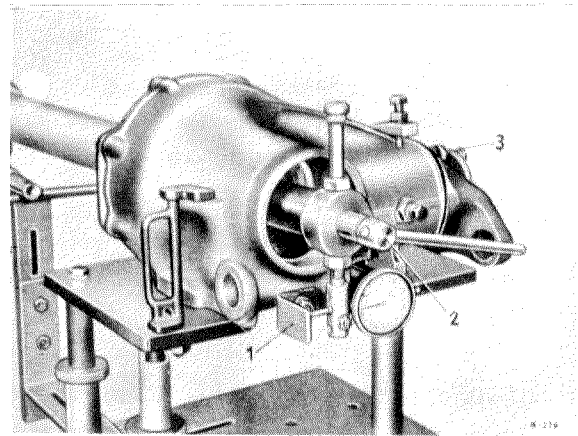


Fig. 35 — 4/32

- 1 Stop bracket
- 2 Holder with dial gage
- 3 Screw

88. Now make the adjustment by screwing the two threaded rings in or out as required until the backlash indicated on the ring gear is obtained. For the left threaded ring, use Pin Wrench 180 589 02 07, and for the right threaded ring, Pin Wrench 180 589 00 07.

Measurements should be taken at four points on the circumference of the ring gear. The true measurement is the one obtained where the play is smallest.

89. Remove the measuring gage after the adjustment of the backlash has been made.
90. **In order to check the accuracy of the adjustment, it is absolutely necessary to take a wear pattern impression on the flanks of the teeth.**

Note: If the adjusting device for the gear train is not available, the adjustment must be made by means of the wear pattern impression alone. But adjusting by means of the wear pattern impression requires considerable expert knowledge and great experience.

91. In order to take the wear pattern impression, remove the left axle tube again and take out the differential housing.
92. Apply a layer of oil-diluted blue dye to both sides of about 5 of the ring gear teeth. Put the differential housing in position once more and screw on the left axle tube again.

93. Use a crank to turn the joint flange and when turning, brake the ring gear at the same time. Once more remove the differential housing, check the wear pattern impression and if necessary, correct the adjustment.

The following diagrams show the wear pattern impressions for correct and incorrect meshing.

Wear Pattern Impressions on Ring Gear under Load

(Ring gear braked)

Correct meshing

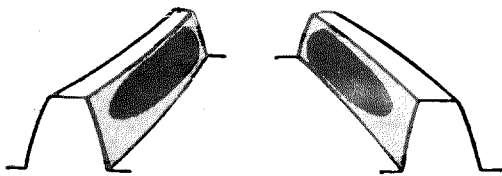


Fig. 35 — 4/33

As a rule, such an ideal wear pattern impression will not be obtained in practice. It is, however, important to ensure that the outer edge of the tooth flank is not touched at any point.

Contact at addendum (incorrect)

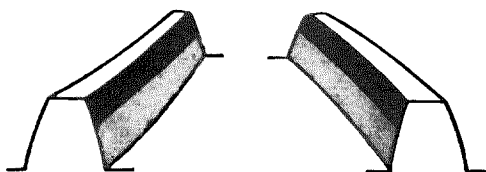


Fig. 35 — 4/34

Remedy:

Decrease the fitting clearance of the drive pinion and at the same time increase the fitting clearance of the ring gear in order to obtain the correct amount of backlash.

Contact at dedendum (incorrect)

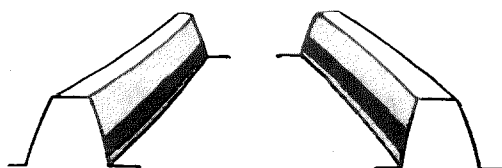


Fig. 35 — 4/35

Remedy:

Increase the fitting clearance of the drive pinion and at the same time decrease the fitting clearance of the ring gear in order to obtain the correct amount of backlash.

If in spite of the gear train being correctly adjusted, it is impossible to obtain a satisfactory wear pattern impression, the fault must lie in the rear axle housing or in the left axle tube.

In this case, the parts in question must be replaced.

94. After adjusting the pinion drive, loosen the drive pinion shaft (1), pull the drive pinion shaft out a little, apply sealing compound to the compensating washer (11) and slide the drive pinion shaft (1) finally into the rear axle housing and tighten up the cover (7) (Fig. 35 — 4/36).

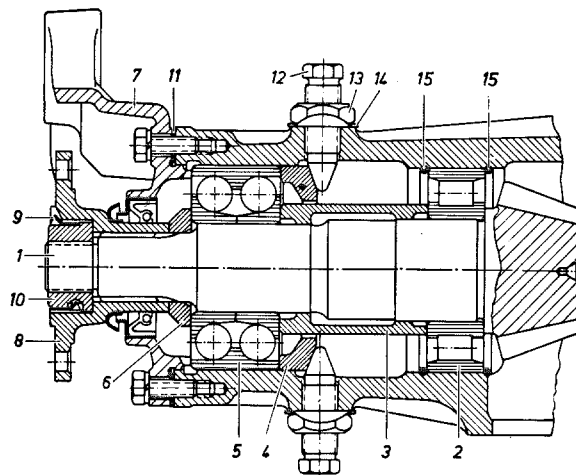


Fig. 35 — 4/36

- | | |
|------------------------------|------------------------------|
| 1 Drive pinion shaft | 8 Joint flange |
| 2 Cylindrical roller bearing | 9 Lock |
| 3 Spacer sleeve | 10 Grooved nut |
| 4 Thrust ring | 11 Compensating shim |
| 5 Angular contact bearing | 12 Set screw for thrust ring |
| 6 Shoulder ring | 13 Hexagon nut |
| 7 Cover with pressed-in seal | 14 Locking plate |
| | 15 Snap ring |

95. Remove the set screws (12) once more and coat them with sealing compound. Push on new locking plates and again screw in the set screws, a few turns at a time on each one, and tighten to a torque of 2.5 mkg.

Lock the set screws (12) with the hexagon nuts (13) and tap over the locking plates (Fig. 34 — 4/36).

96. Remove the left axle tube once more and coat the sealing surface of the flange with sealing compound. Re-install the axle tube and tighten up.
97. In order to adjust the taper roller bearing properly, insert Special Pin Wrench 180 589 14 07 in the four recesses (1) in the roller cage of the right taper roller bearing (Fig. 35 — 4/37 and Fig. 35 — 4/38).

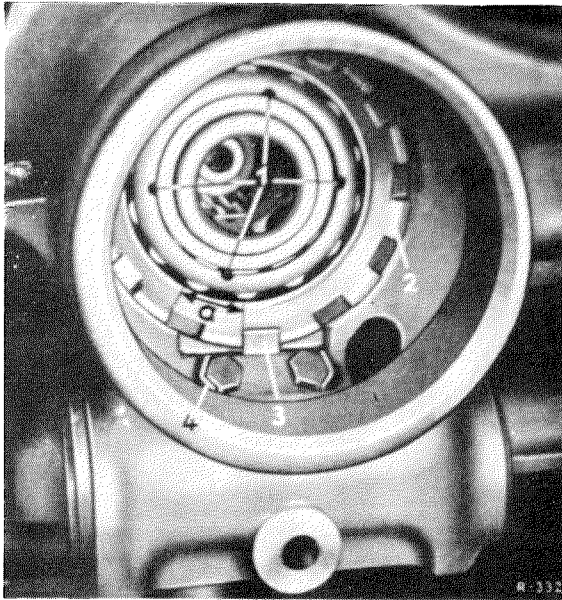


Fig. 35 — 4/37

- 1 The four recesses in the roller cage for Special Pin Wrench 180 589 14 07
- 2 Threaded ring
- 3 Lock
- 4 Locking plate
- a = one notch

Then, with the aid of Special Pin Wrench ([1] in Fig. 35 — 4/38) 180 589 14 07, screw the threaded ring in or out as required until the roller cage can be turned with a torque of 50—80 cmkg.

98. For measuring this torque, put a torque wrench with a range of 0—160 cmkg on Special Pin Wrench 180 589 14 07 (Fig. 35 — 4/38).

Note: It is important that the drive pinion should be continuously turned while the adjustment is taking place and that the inner race should be given a tap or two so that the taper rollers can settle into place properly without any of them being tilted.

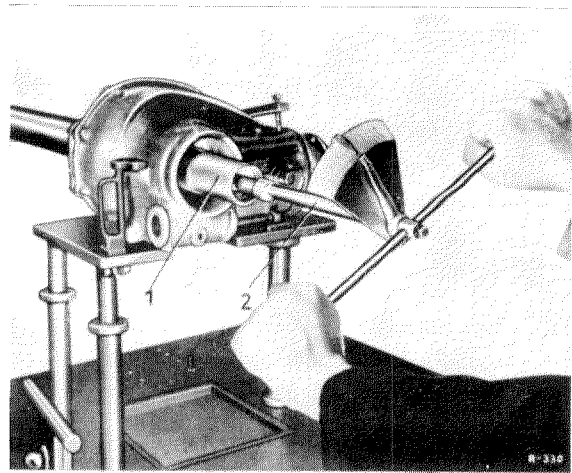


Fig. 35 — 4/38

- 1 Special Pin Wrench 180 589 14 07
- 2 Torque wrench 0—160 cmkg with $\frac{1}{4}$ " square drive

The Special Pin Wrench 180 589 14 07 is made in the form of a combination wrench so that the threaded ring can be moved and the torque necessary to move the roller cage can be measured at the same time.

99. After the specified torque value has been obtained, tighten the threaded ring $\frac{3}{4}$ to 1 notch (see Fig. 35 — 4/37).

Note: It should be noted that turning the threaded ring one notch corresponds to the lower torque value mentioned above. i. e., at a torque of 50 cmkg = 0.5 mkg the threaded ring must be turned one notch and at a torque of 80 cmkg = 0.8 mkg, it must be turned $\frac{3}{4}$ of a notch.

This degree of tightening corresponds to an axial movement of the threaded ring of 0.09 to 0.12 mm, the thread dimensions being M 90 \times 1.5.

100. If a taper roller bearing with the four recesses in the cage is not available or if Special Pin Wrench 180 589 14 07 is not available, tighten the right threaded ring to a torque of 4.0 mkg, using Pin Wrench 180 589 00 07.

Note: This new method of adjusting the taper roller bearing must be applied with the utmost care in order to ensure the long life of the taper roller bearings.

This method of adjustment by tightening the right threaded ring to a torque of 4.0 mkg must only be used in emergencies.

101. Lock the right threaded ring with a lock wedge. Five types of this lock wedge are available, the offset of the nose being different in each.

Fix the lock wedge, together with a locking plate, with two hexagon screws and lock the hexagon screws by bending over the locking plate (4) (see Fig. 35 — 4/37).

102. Lock the left threaded ring by screwing in the lock screw (12) into the axle tube and tap over the locking plate (see Fig. 35 — 4/21).

103. Check the backlash again. A departure from the specified backlash of ± 0.02 mm is permissible. **If the backlash has to be corrected, the taper roller bearing must again be adjusted in accordance with paras. 97 to 102.**

Attach the slip coupling (24) with the clamping screw (22) to the right differential (21) (see Fig. 35 — 4/21 and Fig. 35 — 4/39).

104. When tightening up the clamping screw, put in the left rear axle shaft and hold the rear axle shaft and the joint flange steady.

Caution! Make sure that the correct compensating shim is used (see Job No. 35—4, Paras. 122—123).

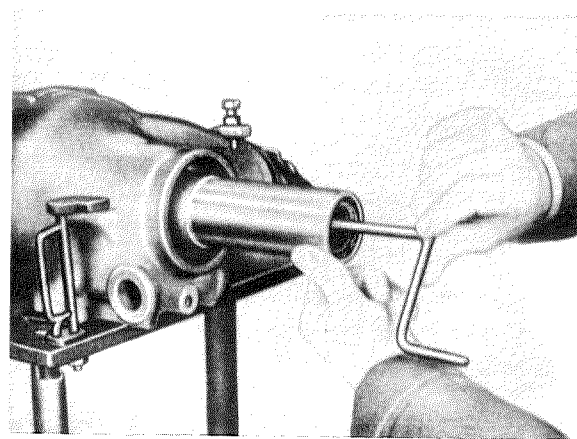


Fig. 35 — 4/39

105. Install the bleed screw (13) in the left axle tube (see Fig. 35 — 4/21). Use Installing Arbor 180 589 03 39 to press or drive a new seal into the axle tube as far as the collar (see Fig. 35 — 4/23).

106. Install the right axle tube (see Paras. 43—59).

107. Install the left and right rear axle shafts (see Paras. 19—26).

108. Put 2.25 liters of Hypoid Oil SAE 90 into the rear axle.

E. Disassembly and Reassembly of Gear Train

Disassembly:

109. Remove the gear train (see Paras. 60—68).

Differential:

110. Pull the two taper roller bearings off the differential housing with Puller 180 589 01 33 (Fig. 35 — 4/40).

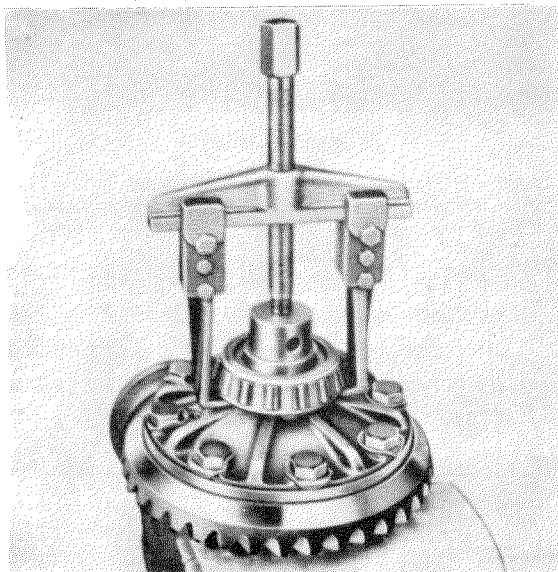


Fig. 35 — 4/40

111. If the ring gear or the differential housing has to be replaced, unlock the hexagon screws and unscrew them. Then press off the ring gear.

112. Counterbore the peened side of the locking pin for the differential pinion shaft with an 8 mm drill and drive out the locking pin (Fig. 35 — 4/41). Then press out the differential pinion shaft and take out the differential pinion gears, the differential side gears, the thrust washers and the dished washers.

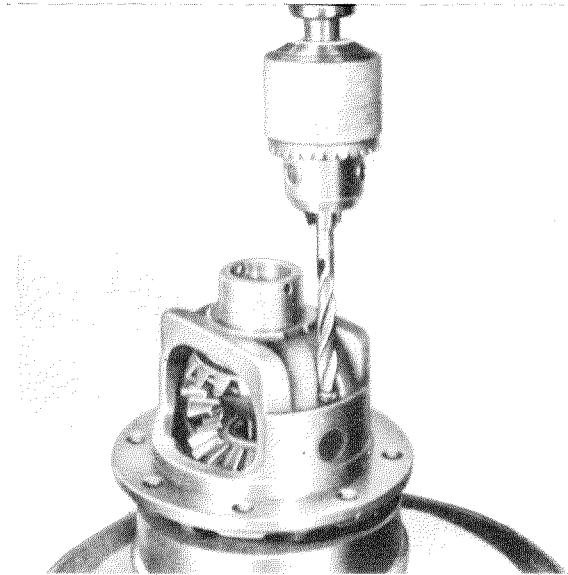


Fig. 35 — 4/41

Drive Pinion Shaft:

113. Fix Retaining Wrench 180 589 09 07 in the vise and put the drive pinion shaft with the joint flange on the retaining wrench (Fig. 35 — 4/42).

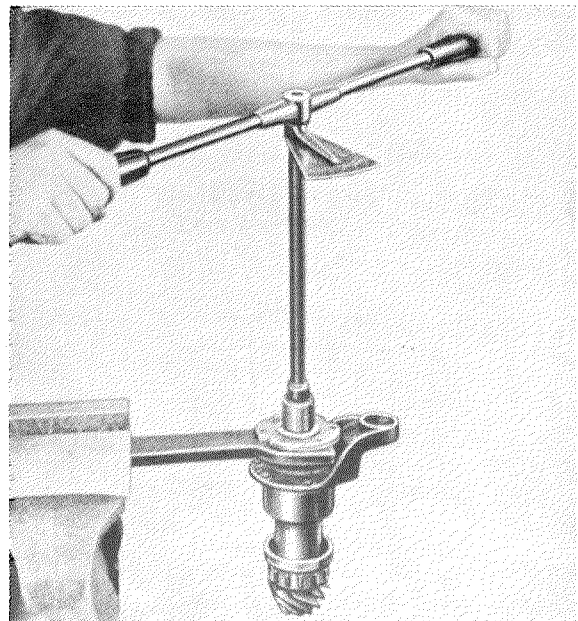


Fig. 35 — 4/42

114. Bend up the lock wedge and unscrew the grooved nut (8) for the joint flange (10), using Pin Wrench 120 589 01 07. Pull off the

joint flange, take off the cover (1) and the shoulder ring (2) (Fig. 35 — 4/43 and Fig. 35 — 4/42).

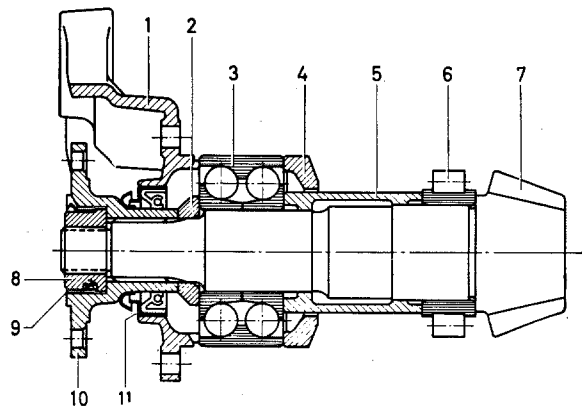


Fig. 35 — 4/43

- | | |
|------------------------------|----------------------|
| 1 Cover | 7 Drive pinion shaft |
| 2 Shoulder ring | 8 Grooved nut |
| 3 Angular contact bearing | 9 Lock |
| 4 Thrust ring | 10 Joint flange |
| 5 Spacer sleeve | 11 Seal |
| 6 Cylindrical roller bearing | |

115. Press the seal (11) out of the cover (1) (see Fig. 35 — 4/43).

116. Make in the workshop a jig in the form of a split-ring and a sleeve for pressing off the cylindrical roller bearing (Fig. 35 — 4/44).

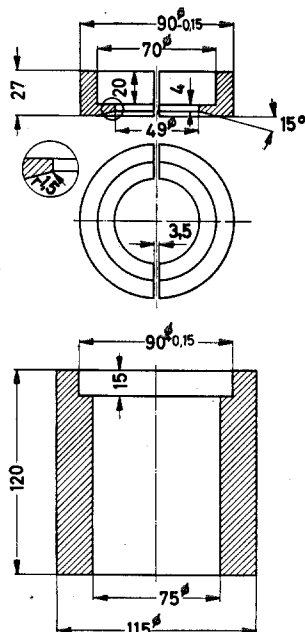


Fig. 35 — 4/44

Then mount the split-ring in such a way that the inner race of the cylindrical roller bearing is gripped and push the sleeve over the split-ring.

Use a suitable press to press the drive pinion shaft off the cylindrical roller bearing and at the same time off the angular contact bearing (Fig. 35 — 4/45).

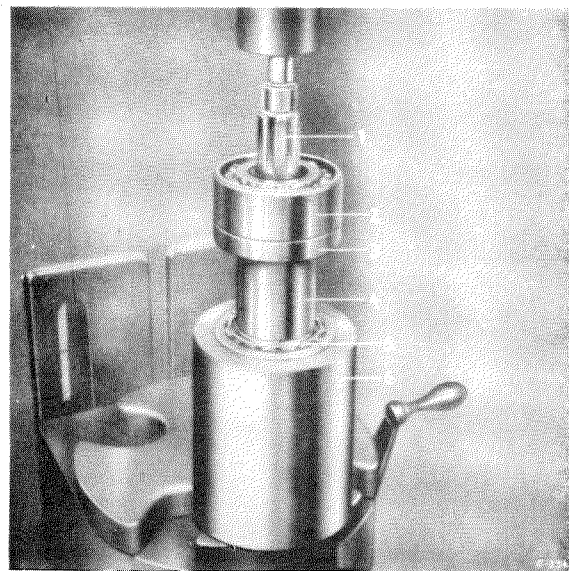


Fig. 35 — 4/45

- | | |
|---------------------------|------------------------------|
| 1 Drive pinion shaft | 4 Spacer sleeve |
| 2 Angular contact bearing | 5 Cylindrical roller bearing |
| 3 Thrust ring | 6 Auxiliary sleeve fixture |

Caution! The angular contact bearing (2) must not be pressed or pulled off by itself since the bearing will not be gripped at the inner race and might be damaged as a result (see Fig. 35 — 4/45).

117. Check and repair the parts (see Job No. 35 — 5).

Reassembly:

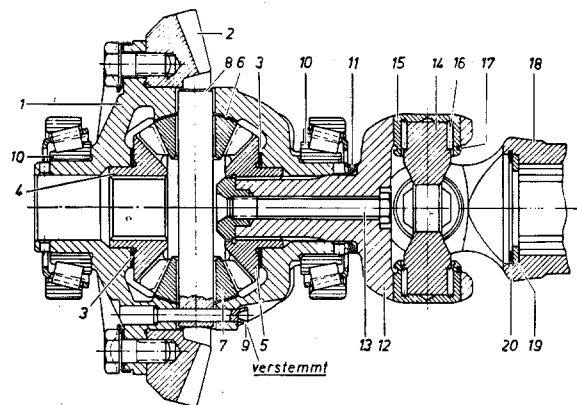


Fig. 35 — 4/46

- | | |
|--------------------------------|---------------------------|
| 1 Differential housing | 11 Compensating washer |
| 2 Ring gear | 12 Inner yoke |
| 3 Thrust washer | 13 Clamping screw |
| 4 Left differential side gear | 14 Joint spider |
| 5 Right differential side gear | 15 Needle bearing bushing |
| 6 Dished washer | 16 Needles |
| 7 Differential pinion | 17 Snap ring |
| 8 Differential pinion shaft | 18 Outer yoke |
| 9 Locking pin | 19 Washer |
| 10 Taper roller bearing | 20 Lock washer |

Differential:

118. Put the differential side gears (4) and (5) with the thrust washers (3) into the differential housing (Fig. 35 — 4/46).

Note: The differential side gear fitted with the slip coupling fixing nut is on the right side, seen in the direction of travel (Fig. 35 — 4/46).

119. Use Assembly Arbor 136 589 13 61 in place of the differential pinion shaft (8), to slide in the differential pinion gears (7) with the dished washers (6) (Fig. 35 — 4/47 and Fig. 35 — 4/48).

120. Check whether the differential side gears turn stiffly and without play. If this is not the case, install thicker thrust washers (3).

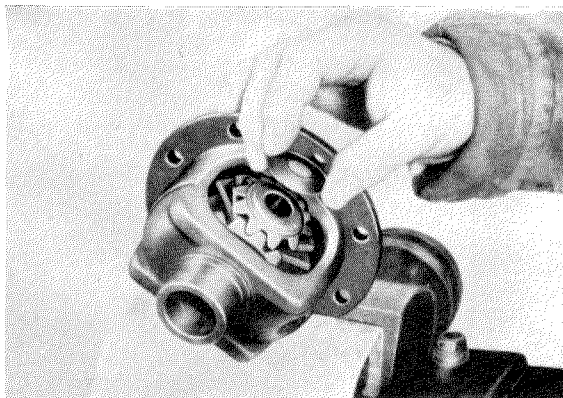


Fig. 35 — 4/47

The thrust washers are available in thicknesses ranging from 1.3 to 1.7 mm in steps of 0.1 mm.

Slide in the differential pinion shaft (8), install a new locking pin (9) andpeen well with a punch at the drilled end (see Fig. 35 — 4/46).

121. Press the inner races of the taper roller bearings (10) onto the differential housing, using Assembly Arbor 180 589 01 39 (see Fig. 35 — 4/46).
122. Place a compensating washer (11) on the inner yoke (12) of the slip coupling — the beveled face toward the outer yoke (18) — and fix the yoke to the right differential side gear (5) by means of the clamping screw (13) (Fig. 35 — 46).

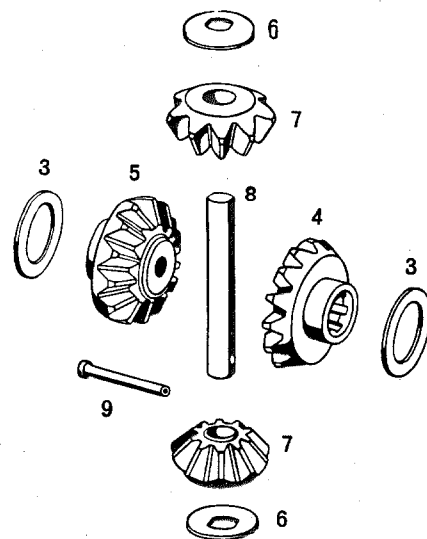


Fig. 35 — 4/48

- | | |
|--------------------------------|-----------------------------|
| 3 Thrust washer | 7 Differential pinion gear |
| 4 Left differential side gear | 8 Differential pinion shaft |
| 5 Right differential side gear | 9 Locking pin |
| 6 Dished washer | |

123. Measure the play between the compensating washer and the differential housing. The play should be 0.05 to 0.10 mm. The correct play is obtained by selecting the appropriate thickness of compensating washer. Compensating washers are available ranging from 1 to 2 mm, in steps of 0.1 mm. After taking the measurement and selecting the correct compensating washer, unscrew the yoke (12) again.

124. If a new ring gear is to be fitted on the differential housing, the bore of the ring gear and the seat on the differential housing must be carefully cleaned.

Then heat the ring gear to approx. 60—70° C. and put it on the differential housing, using the two guide bolts (1) and (2) (Fig. 35 — 4/49).

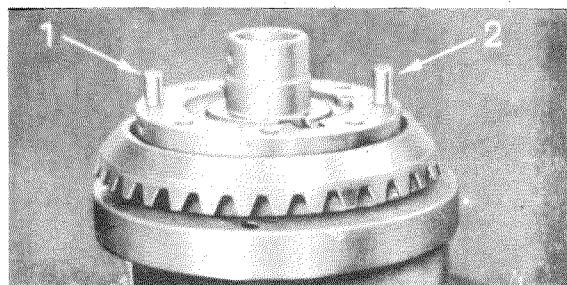


Fig. 35 — 4/49

Note: If the ring gear does not fall onto the differential housing of its own accord, it should be lightly tapped with a rubber hammer. Care must be taken to avoid chipping when this is done.

125. Tighten the fixing screws for the ring gear in the normal way and then give them a final tightening with a torque of 7—8 mkg (Fig. 35 — 4/50).

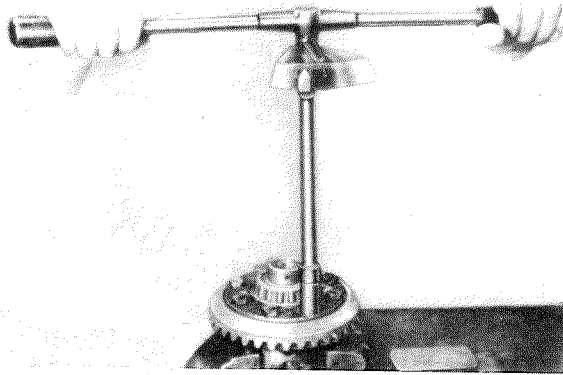


Fig. 35 — 4/50

Drive Pinion shaft:

126. Press the inner race of the cylindrical roller bearing (2) onto the drive pinion shaft (1), using a suitable sleeve. Then put on the spacer sleeve (4) and the thrust ring (3) and press on the angular contact bearing (5) (Fig. 35 — 4/51).

Only exert pressure on the inner race.

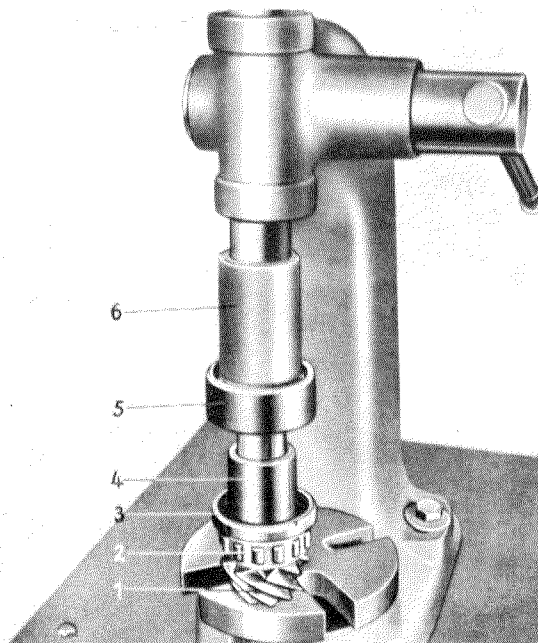


Fig. 35 — 4/51

- | | |
|------------------------------|---------------------------|
| 1 Drive pinion | 4 Spacer sleeve |
| 2 Cylindrical roller bearing | 5 Angular contact bearing |
| 3 Thrust ring | 6 Forcing sleeve |

127. Press the seal into the cover (1) of the rear axle housing, having previously coated the sealing lip with grease. Push the shoulder ring (2) and the cover (1) onto the drive pinion shaft (7), having previously coated the splineway of the shaft with anti-friction bearing grease. Then press on the joint flange (10) (see Fig. 35 — 4/43).

128. Screw on the grooved nut together with the lock, using Pin Wrench 120 589 01 07. Place the fitted drive pinion shaft with the joint flange on Retaining Wrench 180 589 09 07 which is clamped in the vise and use Crowfoot Wrench Attachment 120 589 08 07 to tighten the grooved nut to a torque of 14—16 mkg (Fig. 35 — 4/52).

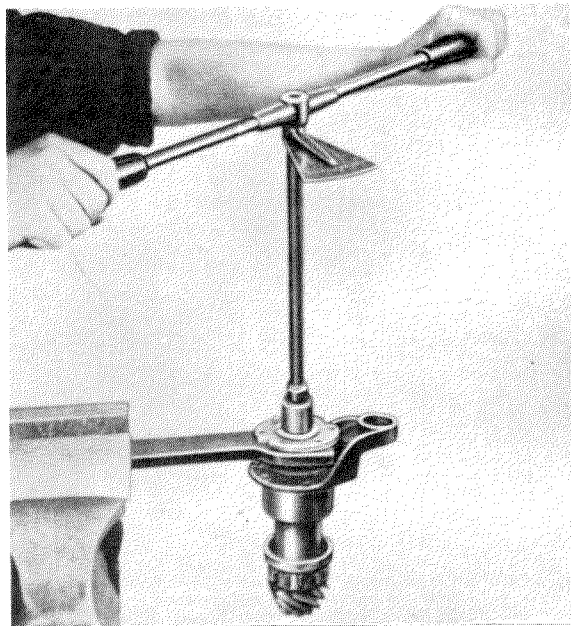


Fig. 35 — 4/52

129. Check the joint flange for lateral deflection. The run-out must not be more than 0.02 mm at the outer diameter.

Note: If the run-out is in excess of this, reposition the joint flange on the serrations and check again.

If no improvement is obtained, the joint flange must be re-turned (see Job No. 35—5, Section F, Para. 3).

130. Peen the locking plate in the groove of the joint flange and of the grooved nut.

131. Install the gear train (see Paras. 69—108).

F. Disassembly and Reassembly of Slip Coupling

Disassembly:

132. Remove the right axle tube together with the rear axle shaft (see Paras. 36 — 42).
133. Hold steady the left rear axle shaft and the flange of the pinion shaft to allow the clamping screw (13) to be loosened.
134. Then remove the clamping screw (13), which fixes the slip coupling to the right rear tube and take out the slip coupling with the compensating washer (Fig. 35 — 4/46 and Fig. 35 — 4/53).

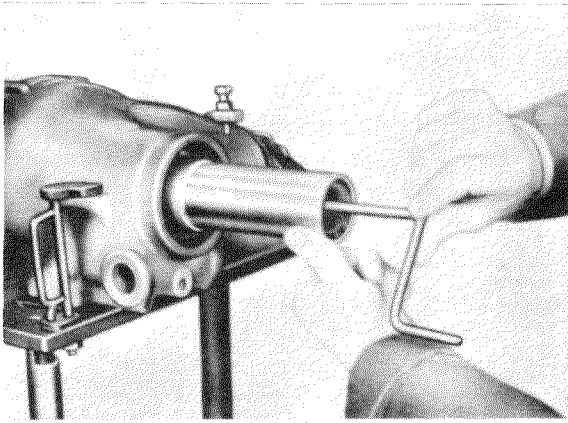


Fig. 35 — 4/53

135. Take the outer circlip (4) and the washer (6) off the outer yoke and carefully pull out the sliding sleeve (1). When this is done, pay attention to the cylindrical rollers (132 in number) (Fig. 35 — 4/54). If necessary, take off the inner circlip and the washer (6).

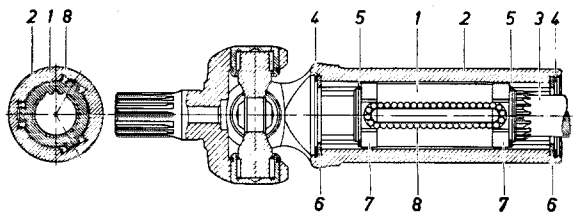


Fig. 35 — 4/54

- | | |
|-------------------|-----------------------|
| 1 Sliding sleeve | 5 Circlip |
| 2 Outer yoke | 6 Washer |
| 3 Rear axle shaft | 7 Guide ring |
| 4 Circlip | 8 Cylindrical rollers |

136. Take off the cylindrical rollers (8). Then take off the circlips (5) and pull off the two guide rings (7) by hand (see Fig. 35 — 4/54 and 35 — 4/57).

137. Take the snap rings off the joint spider (Fig. 35 — 4/55).

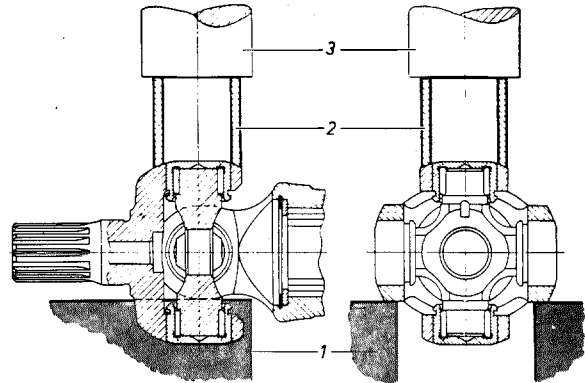


Fig. 35 — 4/55

- | |
|----------|
| 1 Cradle |
| 2 Sleeve |
| 3 Press |

138. Use a suitable sleeve (2) to press the yoke downward to the point where the needle bearing bushings can be taken off (Fig. 35 — 4/55 and Fig. 35 — 4/56).

Note: Make sure that the work is properly set up on a cradle in order to avoid any damage to the yokes.

(Pay attention to the needles; there are 100 needles in a complete set.)

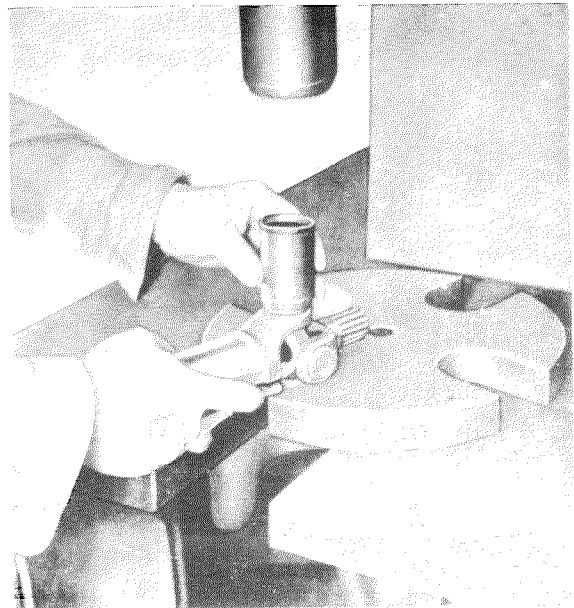


Fig. 35 — 4/56

139. Check the slip coupling, yoke, joint spider, and the needle bearing bushings (see Job No. 35 — 5, Section G).

Reassembly:

140. Place the guide rings (7) on the sliding sleeve (1) and lock by means of the circlips (5) (see Fig. 35 — 4/54).

Caution: Put in the circlips in such a way that the two eyes are opposite a splineway (see arrow in Fig. 35 — 4/57) since otherwise the sliding sleeve cannot be introduced into the yoke.

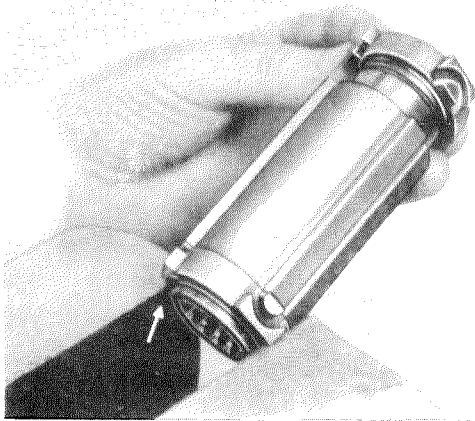


Fig. 35 — 4/57

141. Coat the cylindrical rollers (132 in number, 44 rollers per splineway) with vaseline, place them in position on the sliding sleeve and cover them with Installing Plates 180 589 03 63 (Fig. 35 — 4/58 and Fig. 35 — 4/59).

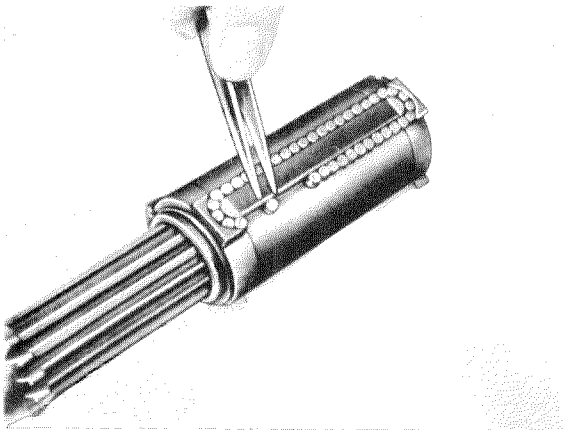


Fig. 35 — 4/58

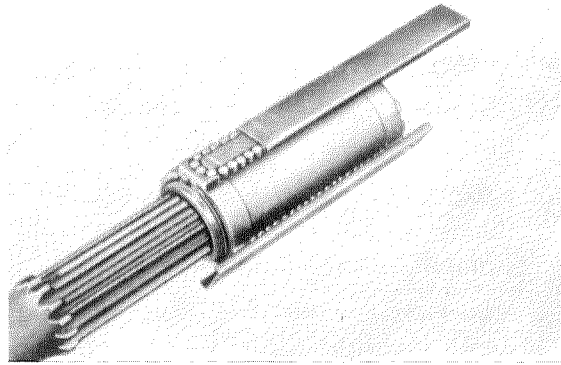


Fig. 35 — 4/59

142. Put the circlip (4) and the washer (5) in the yoke end side of the outer yoke (2) (see Fig. 35 — 4/54).
143. Slide the sliding sleeve into the yoke (Fig. 35 — 4/60); the beveled face of the installing plates must point to the yoke.

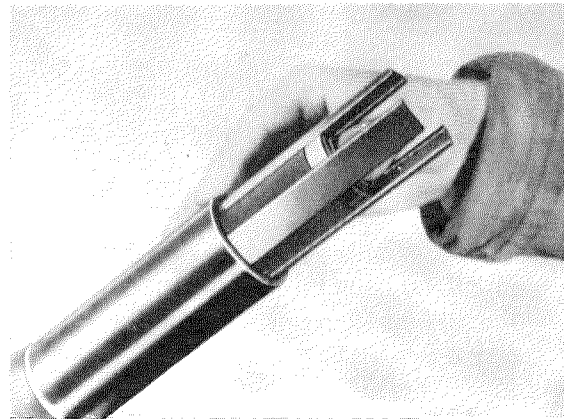


Fig. 35 — 4/60

144. Insert the outer washer (6) and the circlip (4) (see Fig. 35 — 4/54).
145. Coat the needle bearing bushings (2) with vaseline and then insert the needles (3) (there are a 100 in a complete set, 25 per needle bearing bushing) in the needle bearing bushings. Do not use too much grease (see Fig. 35 — 4/62).

Put in the joint spider and very carefully press the needle bearing bushings into the yoke. Make sure that the work is properly set up (Fig. 35 — 4/61 and Fig. 35 — 4/62).

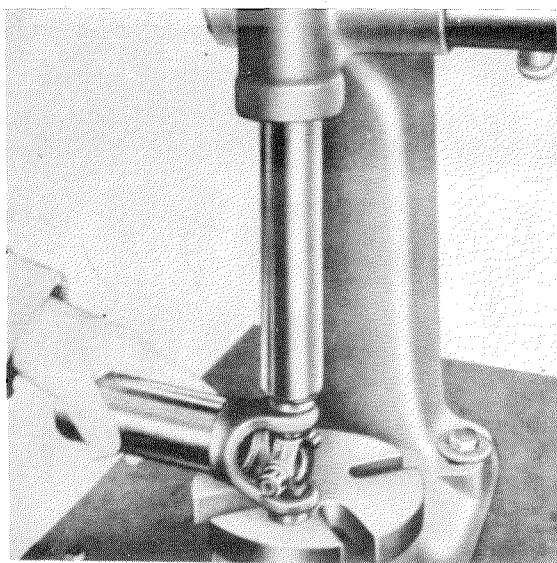


Fig. 35 — 4/61

146. Insert the snap rings (5) (Fig. 35 — 4/62). The snap rings (5) must be so selected that there is no end play.

The snap rings are available in thicknesses of 2.25 mm, 2.35 mm, 2.40 mm, 2.45 mm, and 2.55 mm.

147. Push the compensating washer (11) onto the inner yoke of the slip coupling (see Fig. 35 — 4/46).

Note: For the selection of the compensating washers see Para. 123.

148. Screw the slip coupling by means of the clamping screw to the right differential side gear in the differential (Fig. 35—4/63).

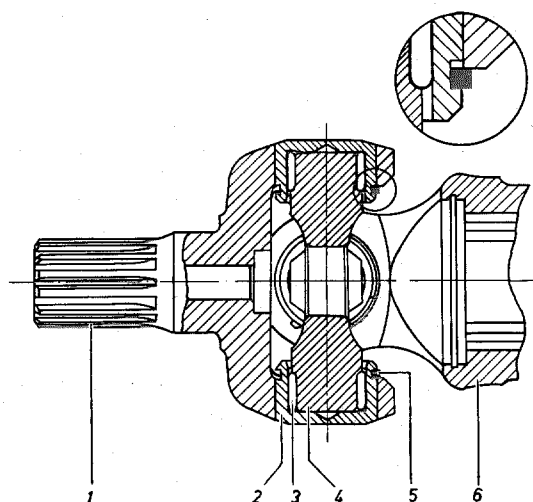


Fig. 35 — 4/62

- | | |
|--------------------------|----------------|
| 1 Inner yoke | 4 Joint spider |
| 2 Needle bearing bushing | 5 Snap ring |
| 3 Needle | 6 Outer yoke |

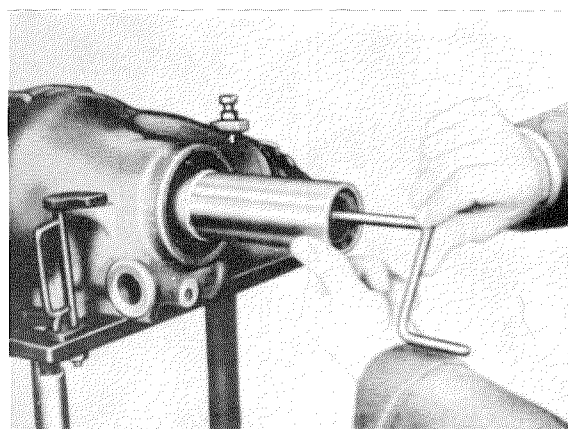


Fig. 35 — 4/63

149. Install the right axle tube together with the rear axle shaft (see Paras. 44—59).

Dished Washers in Differential

The dished washers (6) in the differential (see Fig. 35 — 4/48) are made of polyamide plastic on recent models. When repairs are being carried out on the differential, only this type of polyamide plastic dished washer (Part No. 180 353 00 24) must be installed. When dished washers of this type are used, the thrust washers (3) (see Fig. 35 — 4/48) must be carefully selected so as to ensure that the differential side gears (4) and (5) turn easily, but at the same time are firmly held.