make the thread pattern more pronounced, a soft rubber pad of approx. 3 mm thickness is placed between the wood and the emery cloth. The lathe should be run at a speed of approx. 150 r. p. m.

Before turning the thread pattern, the shaft must be thoroughly cleaned of all traces of oil. The thread pattern must be made with smart, vigorous movements (approx. 80 file-strokes per minute). The surface-finish, or depth, of the thread pattern is 0.003 to 0.006 mm.

The grooves must run parallel and must not be interrupted by any transverse lines.

6. Check the seat of the annular grooved bearing on the rear axle shaft. If the diameter is smaller than the specified diameter (see Table on Page 35 — 5/2), the rear axle shaft must be replaced.

Note: The annular grooved bearing should be mounted on the rear axle shaft with an oversize of 0.01—0.015 mm.

7. If the wheel studs were pressed out, press new wheel studs in and stake.

   Caution: The wheel studs must make an absolutely tight fit.

D. Axle Tubes

1. Thoroughly clean the axle tube at the flange for fixing the brake anchor plate and also the ball bearing seat.

2. Fix the axle tube in a vise and use a suitable internal micrometer to measure the diameter of the annular grooved bearing seat for the rear axle shaft.

   The diameter must be 79.985—80.004 mm.

3. Check the depth of the annular grooved bearing seat in the axle tube, using a depth gage or a micrometer depth gage.

   The dimension should be 20.00 + 0.1 mm.

   When the outer race of the annular grooved bearing is installed, there must be no axial play between the bearing seat in the axle tube and the seal retainer.

   In order to check, place the seal (3) and the annular grooved bearing (2) on the seal retainer and use a depth gage or a micrometer depth gage to measure the distance between the outer race of the annular grooved bearing and the separating surface of the seal retainer (Fig. 35 — 5/7).

   If this distance is smaller than the dimension obtained above, the seal retainer must be re-turned at the separating surface (4). If the distance is greater, the seal retainer must be re-turned at the shoulder (5) for the annular grooved bearing.

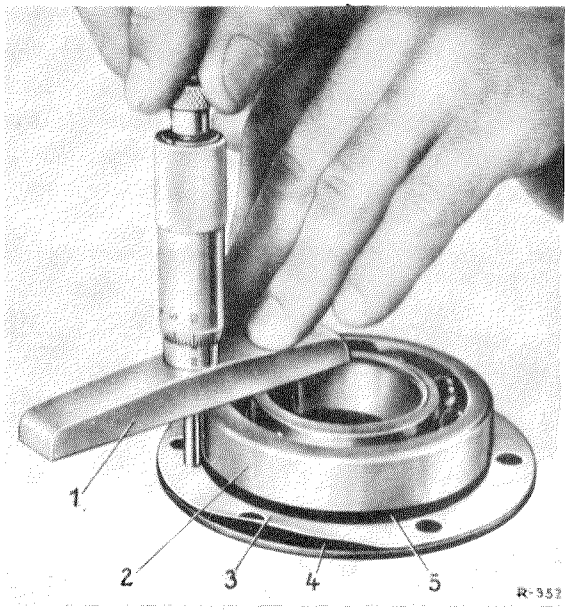


Fig. 35 — 5/7

1 Micrometer depth gage
2 Annular grooved bearing
3 Seal
4 Separating surface of seal retainer
5 Shoulder for annular grooved bearing

4. Check the parallelity of the axis of the axle tube and the center line of the supporting tube. To do this, insert the measuring spindle (2) of Axle Tube Checking Device 180 589 09 21 for Single-jointed Swing Axle in the bearing bore of the axle tube. The gage arm (1) of the checking device must slide onto the measuring spindle (2) and the supporting tube (4) without forcing (Fig. 35 — 5/8).

If the gage arm cannot be slid on or can only be slid on by forcing, the supporting tube must be replaced (see Para. 14).

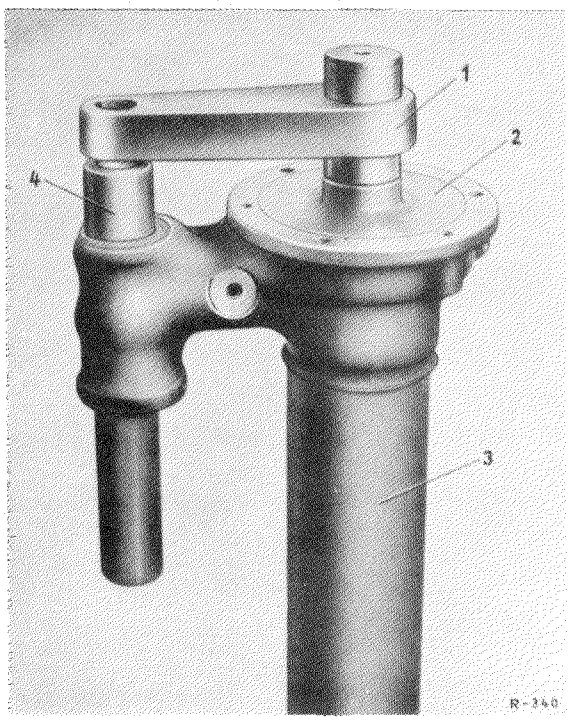


Fig. 35 — 5/8

1 Gage arm
2 Measuring spindle
3 Axle tube
4 Supporting tube

Note: The Axle Tube Checking Device 180 589 09 21 for Single-jointed Swing Axle consists of the following parts:

The holding fixture,
the gage arm,
the measuring spindle,
the dial gage holder, and
the measuring bolt.

5. Fix the left axle tube in a vise and use a suitable internal micrometer to measure the diameter of the differential taper roller bearing mounting.

   The diameter must be 79.985—79.999 mm.

Checking Axle Tubes for Distortion:

6. Set up the left axle tube on the holding fixture (1) of Axle Tube Checking Device 180 589 09 21 and mount the dial gage holder (2) with dial gage on the checking device. Run the feeler of the dial gage around the bolt hole circle of the flange and in this way test the parallelity of the two flanges (Fig. 35 — 5/9).

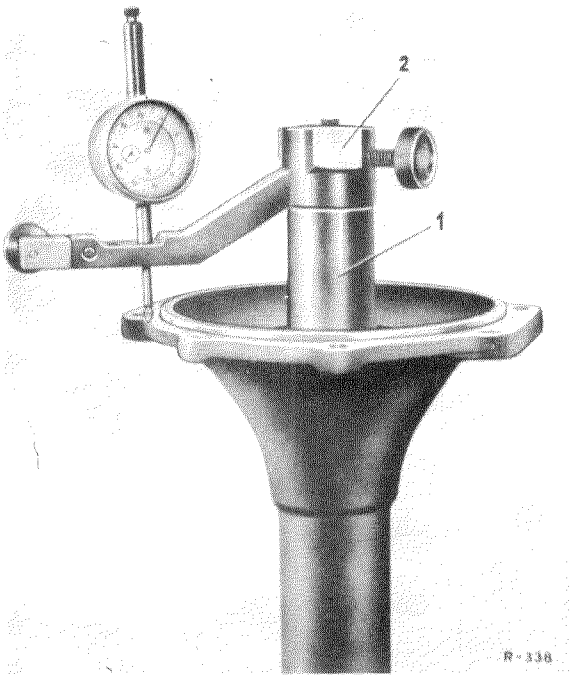


Fig. 35 — 5/9

1 Holding fixture
2 Dial gage holder

Note: The left axle tube can also be set up in a lathe with the aid of two turning arbors and the two flanges can be checked for true run (Fig. 35 — 5/9 a).

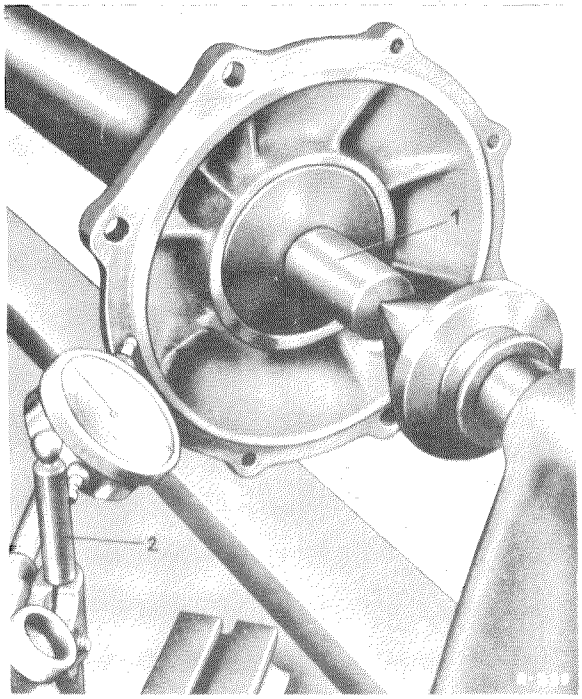


Fig. 35 — 5/9 a

1 Turning arbor
2 Holder with dial gage

A departure from parallelity of up to 0.1 mm is permissible.

If the departure from parallelity is between 0.1 mm and 1.0 mm, the axle tube must be straightened in a press.

If the departure from parallelity is greater than 1 mm, the axle tube must be replaced.

7. Press out the two bushings in the right axle tube (Fig. 35 — 5/10).

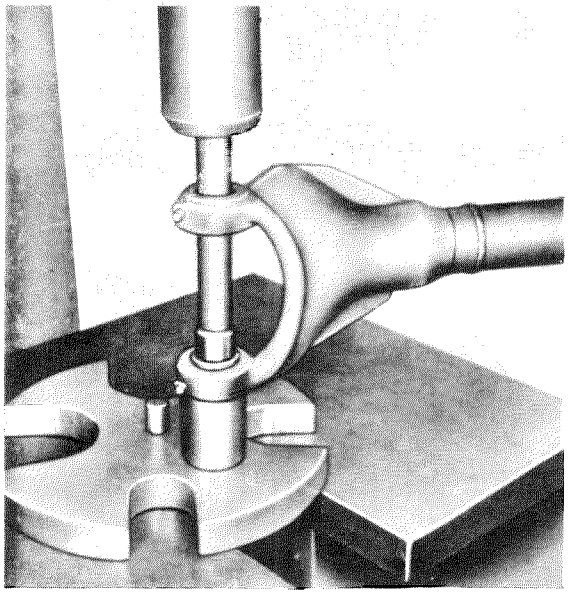


Fig. 35 — 5/10

8. Set up the right axle tube in the holding fixture (1) of Checking Device 180 589 09 21 (Fig. 35 — 5/11).

9. Push the measuring bolt (3) of the checking device through the base bores of the two eyes of the axle tube. Put the dial gage holder (2) on the holding fixture and ascertain the difference between the dimensions at the left and at the right.

Note: A difference of 0.2 mm is permissible. If the difference is up to 1 mm, the axle tube must be straightened in a press.

If the difference is greater than 1 mm, the axle tube must be replaced.

10. Press in new bushings, making sure that the bore in the bearing bushing and the bore for the pinion rim grease fitting correspond.

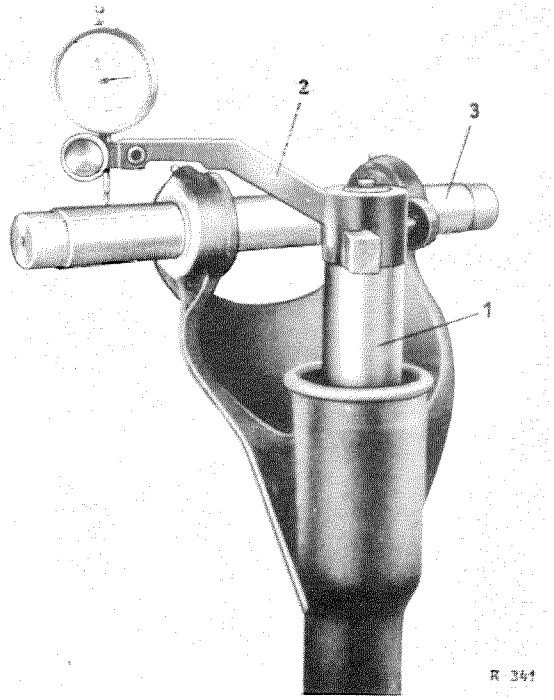


Fig. 35 — 5/11

1 Holding fixture
2 Dial gage holder
3 Measuring bolt

11. After pressing in the bushings, ream out to finished size if necessary, using Reamer 000 589 06 53.

Always center the reamer with a tapered sleeve on the opposite side (Fig. 35 — 5/12).

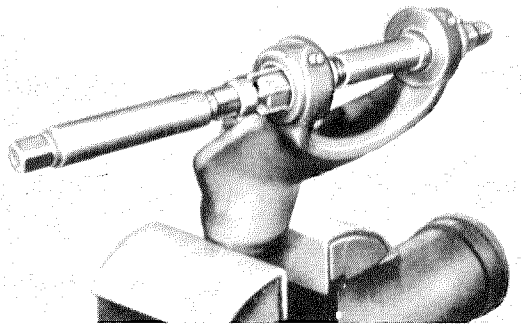


Fig. 35 — 5/12

Dimensions and Tolerances in mm

Base bore in fork diameter	Bushing in fork		Oversize
	External diameter	Internal diameter	
38.000 / 38.025	38.059 / 38.043	33.000 / 33.025	+ 0.018 to + 0.050

Note: The tolerances must be strictly maintained. The dimensions and tolerances of the connecting pin and the sleeve between the connecting pin and the bushing in the fork are indicated in Section "H. Connecting Pin".

12. If necessary, the inner surfaces of the eyes at the fork should be reconditioned, using End Milling Cutter 180 589 01 51 and the Cutting Arbor 180 589 00 66 which belongs to it (Fig. 35 — 5/13).

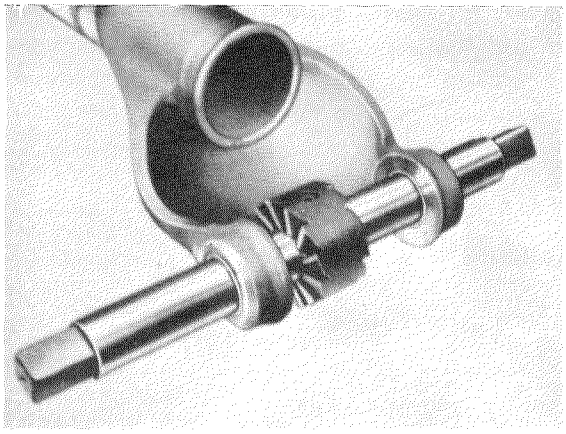
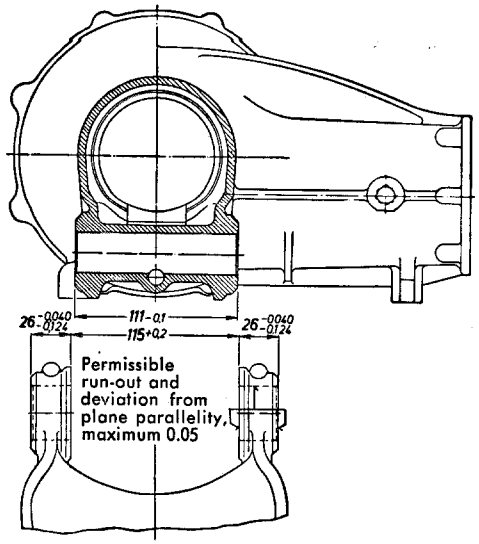


Fig. 35 — 5/13

The stock reduction at the inner surface must not be more than 0.3 mm at one side. For dimensions when new, see Fig. 35 — 5/14.

The surfaces must be accurately milled. The maximum permissible run-out and deviation from plane parallelity is 0.05 mm.



13. For checking the parallelity of the two surfaces and the angular accuracy of the surfaces in relation to the bores, Testing Plug Gage with Level Ring 180 589 04 21 should be used. Apply a little oil-diluted blue dye to the level ring so that any unevenness of the surface can be easily seen (Fig. 35 — 5/15).

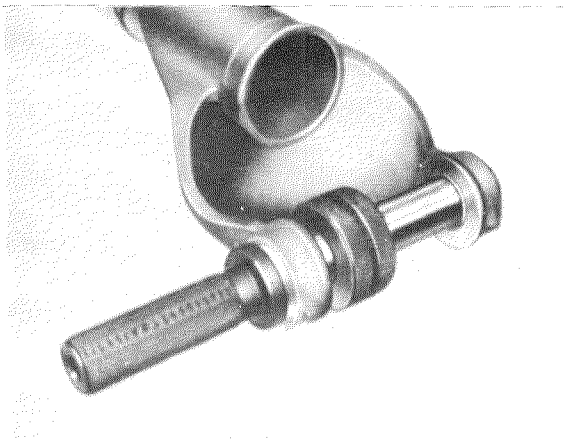


Fig. 35 — 5/15

14. Press the supporting tube out of the axle tube (Fig. 35 — 5/16).

Note: This procedure is only necessary if the supporting tube is damaged.

15. Measure the external diameter of the supporting tube and the bore in the axle tube.

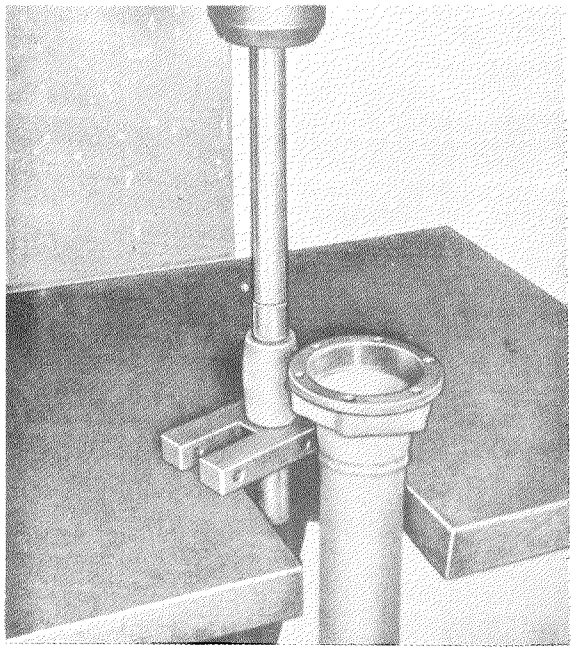
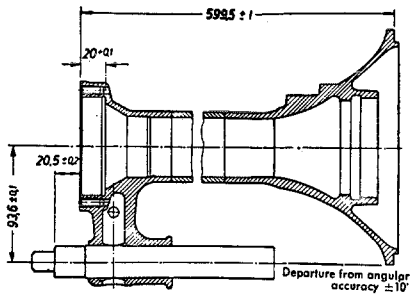


Fig. 35 — 5/16

Bore in axle tube diameter mm	Supporting tube external diameter mm	Oversize mm
26.000 / 26.021	26.048 / 26.035	+ 0.014 to + 0.048

16. Rub tallow on the new supporting tube and press the supporting tube in. When pressing in, care must be taken to ensure that the end of the bolt is not damaged (Figs. 35 — 5/16 and 35 — 5/17).

Left axle tube



Right axle tube

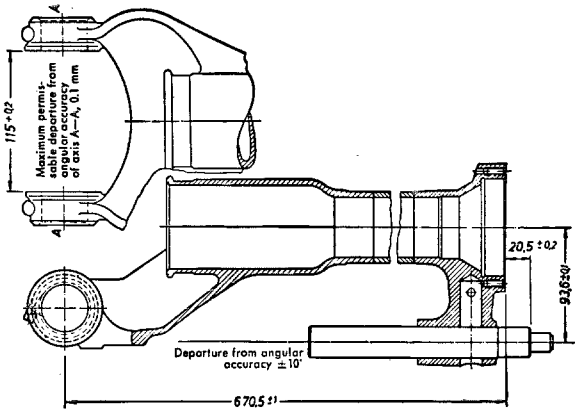


Fig. 35 — 5/17

17. Use Checking Device 180 589 09 21 to check the parallelity of the axis of the axle tube and the supporting tube which has been pressed in (see Section D. Axle Tubes, Para. 4).

E. Rear Axle Housing

Dimensions and tolerances of rear axle housing

in mm

Function	Designation	Outer race of bearing diameter	Bearing seat in housing diameter	Force-fit dimension (+) or clearance (—)
Angular contact bearing with split inner race for drive pinion	000 981 04 27 000 981 07 27 (optional)	80.000 / 79.987	79.994 / 80.013	— 0.026 to + 0.006
Cylindrical roller bearing for drive pinion	000 981 16 01	80.000 / 79.987	79.985 / 80.004	— 0.017 to + 0.015
Taper roller bearing for differential	30208 DIN 720	80.000 / 79.987	79.985 / 79.999	— 0.012 to + 0.015