

# Checking and Repair of Rear Axle

Job-No.

35 — 5

## A. General Information on Rear Axle

Gearing	Number of teeth drive pinion : ring gear	Gear ratio	Oil capacity	Length of axle tube		Length of rear axle shaft	
				left mm	right mm	left mm	right mm
Gleason Hypoid	10 : 41	1 : 4.10	2.25	599.5 ± 1.0 (see Fig. 35—5/17)	670.5 ± 1.0 to center line of bushing (see Fig. 35—5/17)	693.0	676.0 687.0*

\* Rear axle shafts with lock for slip coupling slide unit.

## B. Bearings

The following points must be taken into account when judging the serviceability of the bearings:

As a rule, a bearing can still be regarded as serviceable, if the raceways or contact surfaces and the balls or rollers show no visible signs of wear or damage. In order to form a really sound judgement, the bearing must previously be cleaned in gasoline or trichloroethylene until all traces of dirt have been rinsed out of the bearing. A bearing can be considered free from all traces of dirt if there are no binding spots when it is rotated by hand.

A few drops of engine oil or gear oil should be put on the cleaned bearing so that it can be tested for silent running. When this test is made, it should be remembered that even bearings which have only been in operation for a short period of time are appreciably noisier than new bearings but this does not necessarily mean that they are unserviceable.

In order to avoid unnecessary rejection of bearings which are still serviceable, assessment of bearing serviceability should only be done by an expert who is experienced in this work.

Under normal running conditions, the radial play of a bearing should only show a slight increase during its lifetime.

When repairs are being carried out on a vehicle which has covered 100,000 km, the bearings should automatically be rejected even if examination shows that they are still serviceable. This is because their further period of serviceability is an unknown factor. But the decision must depend on whether replacement of the bearings is easy, i. e., on whether it can be done without any considerable disassembly and reassembly work or whether replacement involves considerable preparation.

## Dimensions and Tolerances of Bearings

in mm

Function	Designation	Internal diameter	External diameter	Radial play	End play
Annular grooved bearing for rear axle shaft	180 981 00 25 Special purpose bearing 6208 C 4 DIN 625	$\frac{39.988}{40.000}$	$\frac{80.000}{79.987}$	0.032—0.050	approx. 0.32—0.50
Angular contact bearing* with split inner race for drive pinion	000 981 04 27 000 981 07 27 (optional)	$\frac{34.988}{35.000}$	$\frac{80.000}{79.987}$	—	approx. 0.01—0.035
Cylindrical roller bearing for drive pinion	000 981 16 01	$\frac{39.988}{40.000}$	$\frac{80.000}{79.987}$	0.018—0.031	—
Taper roller bearing for differential	30208 DIN 720	$\frac{39.988}{40.000}$	$\frac{80.000}{79.987}$	adjustable	adjustable

\* A number of rear axles were fitted with angular contact bearing 3307 DIN 628 with one-piece inner race.

**Note:** When new, the annular grooved bearing of the rear axle shaft has up to 0.50 mm end play, as indicated above.

When a bearing of this type is being examined for serviceability, the above fact must be taken into account to avoid any unnecessary replacement. In order to ensure that the bearing lies properly against the shoulder of the rear axle shaft, only bearings which have an edge-to-edge dimension of  $2 + 0.7$  mm must be used (Fig. 35 — 5/1). For this reason, only Special Bearings, Part No. 180 981 00 25, must be used.

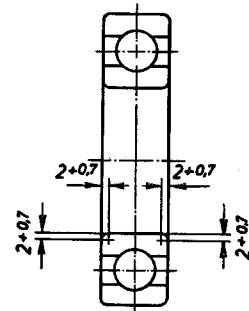


Fig. 35 — 5/1

### C. Rear Axle Shafts

in mm

Rear axle shaft diameter for seal retainer	Seal retainer, internal diameter	Oversize	Rear axle shaft diameter		
			At sealing surface 1	At sealing surface 2	At seat of annular grooved bearing
$\frac{34.059}{34.043}$	$\frac{34.000}{34.025}$	$+ 0.018$ to $+ 0.059$	$\frac{50.000}{49.840}$	$\frac{37.700}{37.540}$	$\frac{40.013}{40.002}$