

Complete Removal and Installation of Rear Axle Shaft **35.1**

Rear Axle Installed

Oil Types and Filling Capacities

Rear axle without positive traction differential	E.P. Hypoid Gear Oil SAE 90 refer to Operative Materials page No. 235
Rear axle with positive traction differential (identification plate on rear axle housing)	Special E.P. Hypoid Gear Oil refer to Operative Materials page No. 235.3
Filling capacities	
Large center housing ¹⁾	1.3 lits.
Small center housing ¹⁾	1.15 lits.
1) Refer to installation survey rear axle center housing 35.1—R 500	

Spacer Ring between Inner Constant Velocity Joint and Differential Housing

Assembly instructions for correct selection of spacer ring	There should be no perceptible end play between the inner constant velocity joint and the differential housing. Turning the locking ring in the groove should still be possible	
Spacer Ring	Thickness	from 2.90 to 3.40 mm
	Steps	from 0.1 to 0.1

Tightening Torques	Nm	(kpm)
Hex. bolt for attaching rear axle shaft to rear axle shaft flange	95	(9,5)
Hex. bolts for attaching end cover to rear axle housing	45	(4,5)
Hexagon socket bolt for attaching rear rubber mount to frame floor	25	(2,5)

Special Tools

Assembly fixture for rear axle shaft		115 589 09 61 00
	Large center housing ¹⁾	116 589 02 63 00
Vehicle jack top	Small center housing ¹⁾	115 589 35 63 00



35.1 Complete Removal and Installation of Rear Axle Shaft

Removal

1 Drain oil from rear axle.

2 Unscrew brake caliper on respective side and suspend on hook (Fig. 1).

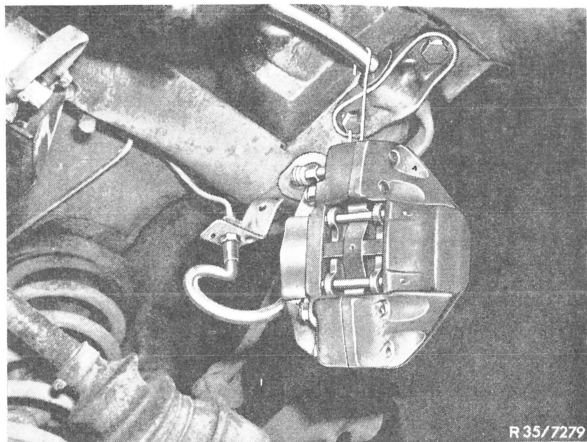


Fig. 1

3 Unscrew hex. bolt for attaching rear axle shaft to rear axle shaft flange (Fig. 2).

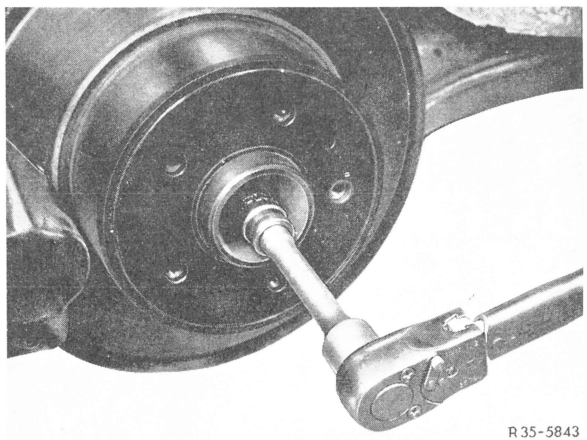


Fig. 2

4 Force rear axle shaft out of rear axle shaft flange by means of fixture (Fig. 3).

Note: If required, loosen shock absorber on upper suspension and lower semi-trailing arm down to deflection stop.

5 Support rear axle housing with pitlift or vehicle jack and pertinent top (Fig. 4).

6 Unscrew rear rubber mount on frame floor and lower center housing (Fig. 5).

7 Clean rear axle housing. Unscrew hex. bolts for attaching cover to rear axle housing and remove cover.

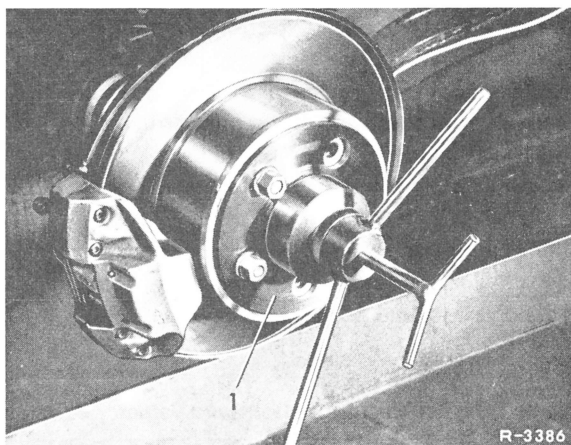


Fig. 3

1 Assembly fixture

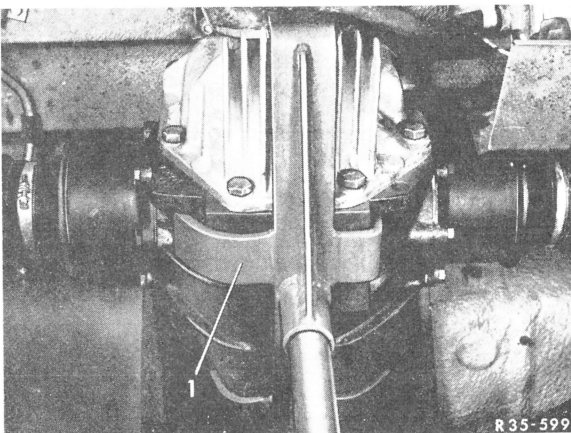


Fig. 4

1 Vehicle jack top

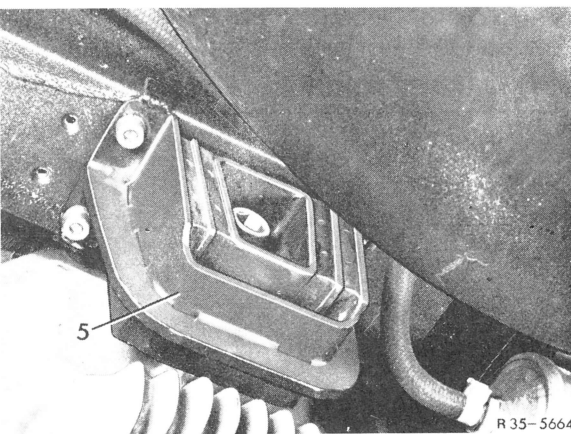


Fig. 5

5 Rubber mounting

Note: The rear axle shaft is mounted floatingly and axially sliding in the two constant velocity joints and can be telescoped in its operating position by approx. 15–20 mm; with the semitrailing arms fully extended approx. 30 mm.

8 Pull locking ring between the inner constant velocity joint and the side gear with pliers or a hook and remove from housing (Fig. 6).

9 Pull rear axle shaft from side gear and remove together with spacer ring.

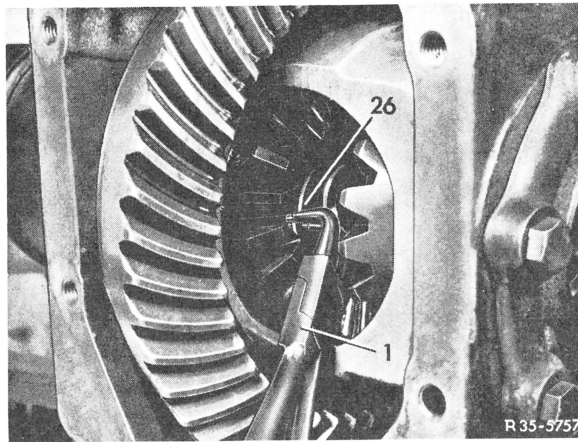


Fig. 6

1 Offset pliers

26 Locking ring

Installation

Caution! Due to the oil return flow spiral on inner universal spider make sure that the correct and complete rear axle shaft is mounted on the respective end of the rear axle center housing.

For identification, the face of the universal spider carries a punched-in "R" (right) or "L" (left) (Fig. 7).

10 If a new rear axle shaft is installed, place the previously removed spacer ring (11) on inner constant velocity joint (Fig. 8).

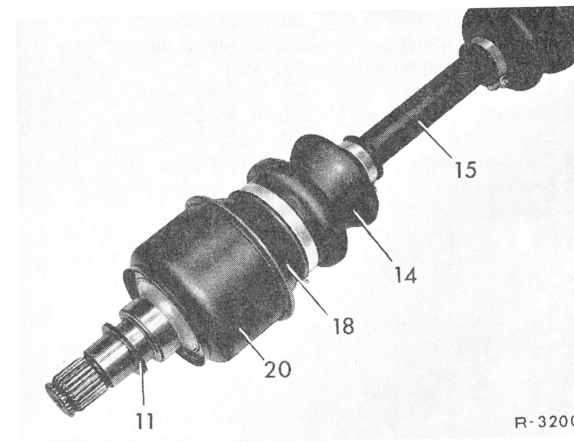
11 Introduce complete rear axle shaft into side gear and fit new locking ring into groove of inner constant velocity joint (Fig. 9).

Caution! The outer constant velocity joint should not drop down and should not be bent too much, since this might damage the constant velocity housing and cause leaks.



R-3594

Fig. 7



R-3200

Fig. 8

11 Spacer ring
14 Rubber sleeve
15 Rear axle shaft

18 Stop sleeve
20 Protective sleeve

12 Check end play between inner universal spider and differential housing (Fig. 9).

There should be no perceptible end play; turning of the locking ring in the groove should still be possible. If required, install pertinently thicker or thinner spacer ring.

13 Completely telescope rear axle shaft and install in rear axle shaft flange by means of fixture (Fig. 10).

14 Screw in hex. bolt for attaching rear axle shaft to rear axle shaft flange and tighten to 95 Nm (9.5 kpm) (Fig. 12).

15 Mount end cover with sealing compound and tighten hex. bolts to 45 Nm (4.5 kpm).

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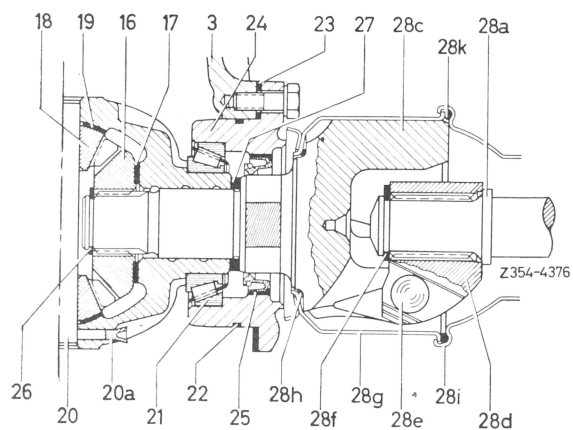


Fig. 9

- | | |
|---------------------------|----------------------------|
| 3 Rear axle housing | 26 Locking ring |
| 16 Side gear | 27 Spacer ring |
| 17 Thrust washer | 28a Rear axle shaft |
| 18 Differential pinion | 28c Inner universal spider |
| 19 Spherical washer | 28d Universal spider hub |
| 20 Compensating pin | 28e Ball |
| 20a Clamping sleeve | 28f Locking ring |
| 21 Tapered roller bearing | 28g Protective sleeve |
| 22 Sealing ring | 28h Sealing ring |
| 23 Compensating washer | 28i Stop sleeve |
| 24 Bearing cap | 28k Sealing ring |
| 25 Sealing ring | |

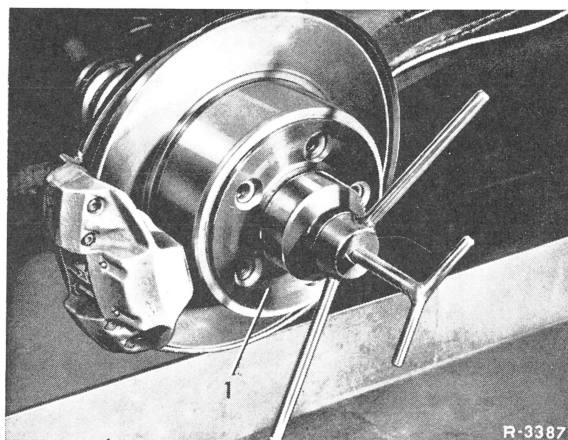


Fig. 10

- 1 Assembly fixture

16 Lift rear axle housing and screw rubber mount to frame floor and tighten to 25 Nm (2.5 kpm) (Fig. 5).

17 Lower vehicle jack or pitlift and remove top.

18 Mount brake caliper with new lock washer.

19 Fill rear axle housing with oil up to level of filler hole.