

Removal and Installation of Rear Axle

Type 220a

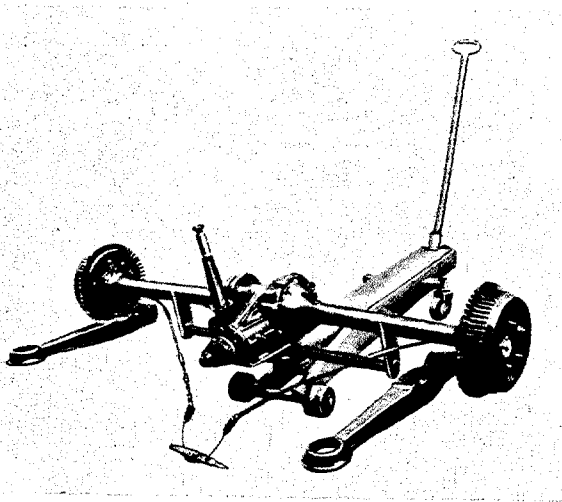


Fig. H 1a/01

Special Tools:

Spring clamp for rear springs	120 589 05 31
Gauge for rear axle suspension	180 589 04 23
Gauge for rear axle	180 589 03 23

Equipment:

Rear axle receiver	BE 11295
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Procedure:

1. Jack up rear end of car.
2. Remove the wheels.
3. Separate propeller shaft from rear axle and push it back. Loosen tightening nut on right and left-hand brake cable bracket.
4. Detach brake cable from hand brake lever as well as return spring and hand brake equalizer in propeller shaft tunnel. Remove brake cable from brake equalizer.
5. Unscrew rear exhaust silencer suspension and remove silencer. Loosen clamp at middle muffler and take rear exhaust system off (Fig. H 1a/5).
6. For removing the shock absorber, support rear axle tube at supporting tube (between brake anchorage plate and torque arm). Be careful that the car does not lift off the supports. Detach shock absorbers from torque arm and chassis and take them out.

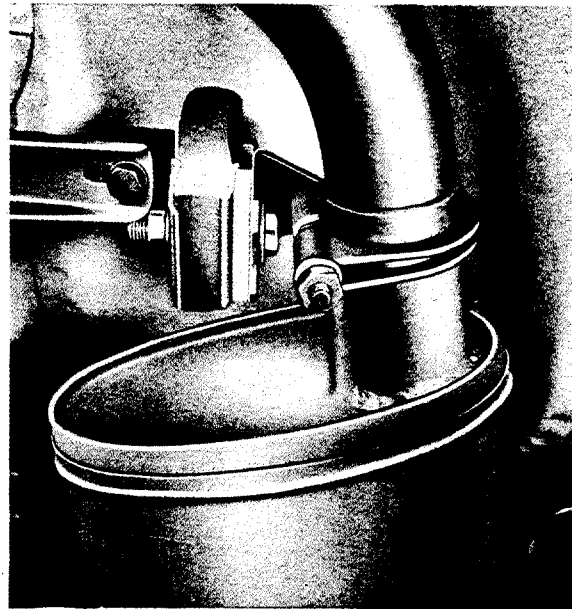


Fig. H 1a/5

7. Install spring clamp, compress spring, lower rear axle tube and take spring out.

Note: The spring and shock absorber on the other side are removed in the same way.

8. Disconnect brake hoses on right and left-hand rear axle tube (Fig. H 1a/8).

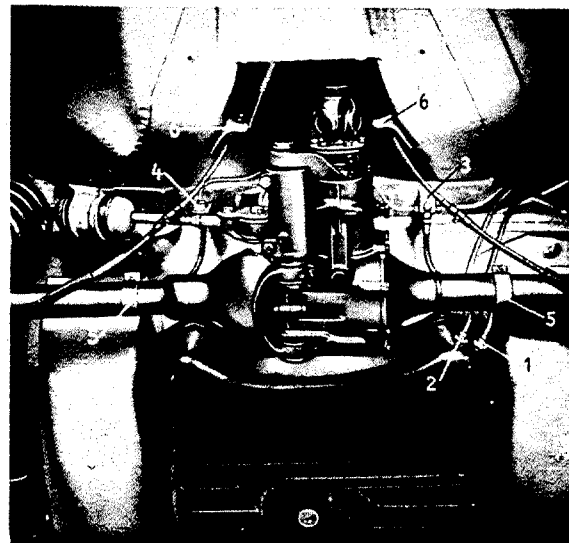


Fig. H 1a/8

- | | |
|------------------------------------|-------------------------------|
| 1 Normal fuel line | 4 Brake hose retaining spring |
| 2 Reserve fuel line | 5 Brake line clamp |
| 3 Distributor piece for brake line | 6 Brake cable bracket |

9. Turn out the two screws on strap for side strut and loosen strap a little.
10. Unscrew right and left-hand torque arm from chassis frame floor.
Lower rear axle tube carefully to avoid any damage.
11. Place a jack under the rear axle. After loosening the safety unscrew nut fastening the rear axle in frame floor position, lower rear axle and remove towards the rear.

Note: When removing, installing or transporting the rear axle be careful that the two rear axle tubes are horizontal; if this is not the case, the tubes will be damaged. (Use device No. BE 11295!)

When installing the rear axle note the following:

12. Provide the two rubber rings of the rear axle suspension with talcum and install them. Move rear axle under the car, lift axle and screw it to the chassis floor (install safety beforehand). Do not yet tighten the nut (Fig. 1a/12).

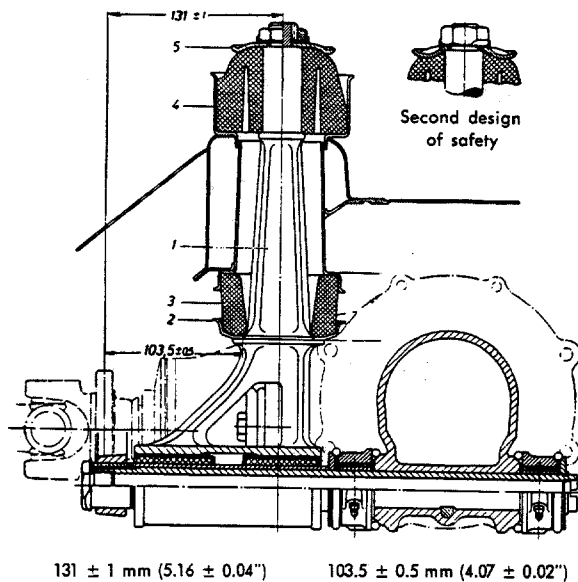


Fig. H 1a/12

- | | |
|---------------------|---------------------|
| 1 Support | 4 Upper rubber ring |
| 2 Cup | 5 Tightening washer |
| 3 Lower rubber ring | |

Note: Before installing the rear axle make sure that the distance between front end of universal joint flange and center of support for rear axle suspension is $131 \pm 1 \text{ mm}$ ($5.16 \pm$

0.04 inches). In actual practice the distance to the collar ($103.5 \pm 0.5 \text{ mm} = 4.07 \pm 0.02$ inches) is checked with gauge 180 589 04 23.

Deviations from these specifications can be corrected by displacing the support on the silent block or by exchanging the outer adjusting washers (see also Operation No. H 3a/74).

13. Lower jack and allow rear axle to swing out so the upper rubber will be seated properly. Lift rear axle again.

Fasten torque arms to backrest and provide them with cotter pins. Tighten fastening nuts to approx. 7.5 to 8 mkg (54–58 ft.lb.). The contact surfaces of the backrest and cup must fit snugly. Any possible dent in the cup must now be vanished.

Tighten fastening nut of suspension bolt until tightening washer abuts against the support, then secure the nut (see Fig. H 1a/12).

After the rear axle has been installed, use gauge 180 589 03 23 to check the wheel base from the check hole in the frame floor. The measurements to the right and left must be identical. Correct any deviations by readjusting the side struts.

Note: Before tightening the nuts on the backrest make the following checks: The cup must not be worn (thickness of the sheet metal $2.5 \text{ mm} = 0.098$ inches, permissible undersize $2.25 \text{ mm} = 0.088$ inches) and must show no cracks at the rim. **Contact surface and thread of nut must be in perfect condition.**

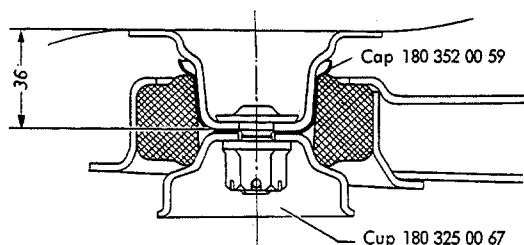
If the thread of the fastening nut on the backrest is damaged, a new backrest with **welded-in** screw is to be installed. Remove the backrest with great care to save the sheet metal of the beam.

In cars provided with the formerly used backrests having a height of $36 \text{ mm} = 1.417$ inches (first design), it may happen that the torque arm hits against the frame floor when the rear wheels springs are compressed all the way. In this case cap 180 352 00 59 must be installed subsequently (see Fig. H 1a/13).

Furthermore the cup 120 352 05 67 must be exchanged for a cup 180 352 00 67 (Fig. H 1a/13). By installing this cap the distance between torque arm and frame floor is increased.

In cars which are supplied with such a cap installed, the cap must of course be reinstalled.

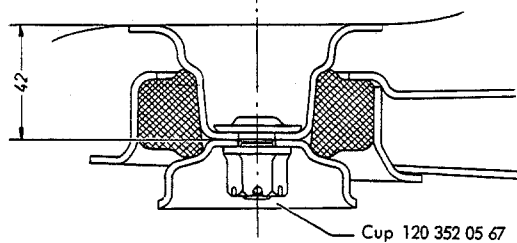
The backrests of the second design are 42 mm (1.65") high. (See Fig. H 1a/13a).



36 mm (1.42")

Fig. H 1a/13

First design with cap 180 352 00 59



42 mm (1.65")

Fig. H 1a/13a

Second design

14. Fasten strap of side strut again to the rear axle (Fig. H 1a/14).

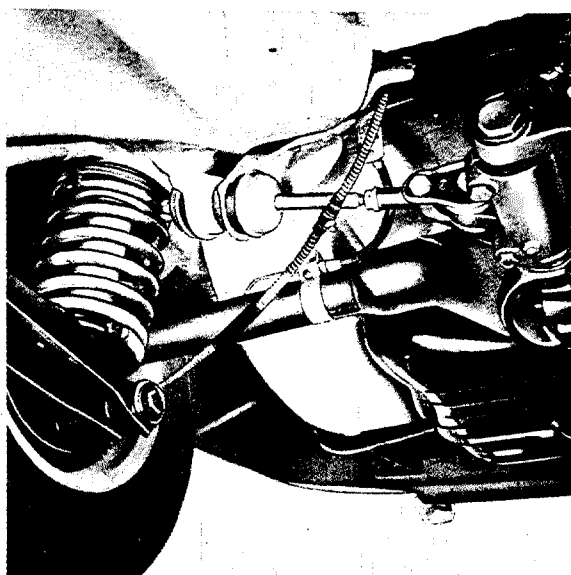


Fig. H 1a/14

15. Install compressed spring on right and left side (watch out for correct position of lower spring retainer), press rear axle tube up at support tube of torque tube, take out spring clamp and release spring slowly. **Leave the supports under the rear axle tubes until the shock absorbers have been installed**, as these act as catch bands for the rear axle tube.
16. Install both shock absorbers; fasten them first at top (in the trunk compartment), then at bottom (torque arm).

Note: In order to compress the suspension rubbers properly, tighten the upper shock absorber fastening nuts as follows:

If two 8 mm (0.32") high nuts are installed, the upper nut must project about 2 mm (0.08") beyond the thread of the suspension bolt.

If one 8 mm (0.32") and one 6 mm (0.24") high nut are provided, then the upper check nut of 6 mm (0.32") height is flush with the suspension bolt thread.

In the case of shock absorbers of the present design the suspension bolt is provided with a recess just below the thread so that the nut can only be tightened to this point.

17. Place hand brake cable guide on either side into the brackets and tighten with the nut. Attach hand brake equalizer return spring.
18. Install clamp on center exhaust support again. Coat connecting piece with graphite paste and install main muffler (see Fig. H 1a/5).
- Install rear exhaust system.
19. Fasten propeller shaft to rear axle and secure it.
20. Connect brake lines and vent the entire brake system. Adjust the hand brake.
21. Mount the wheels and let car down.
22. Check the camber and wheel base.