

# Removal and Installation of Left or Right Front Axle Half

Job-No.

33 — 2

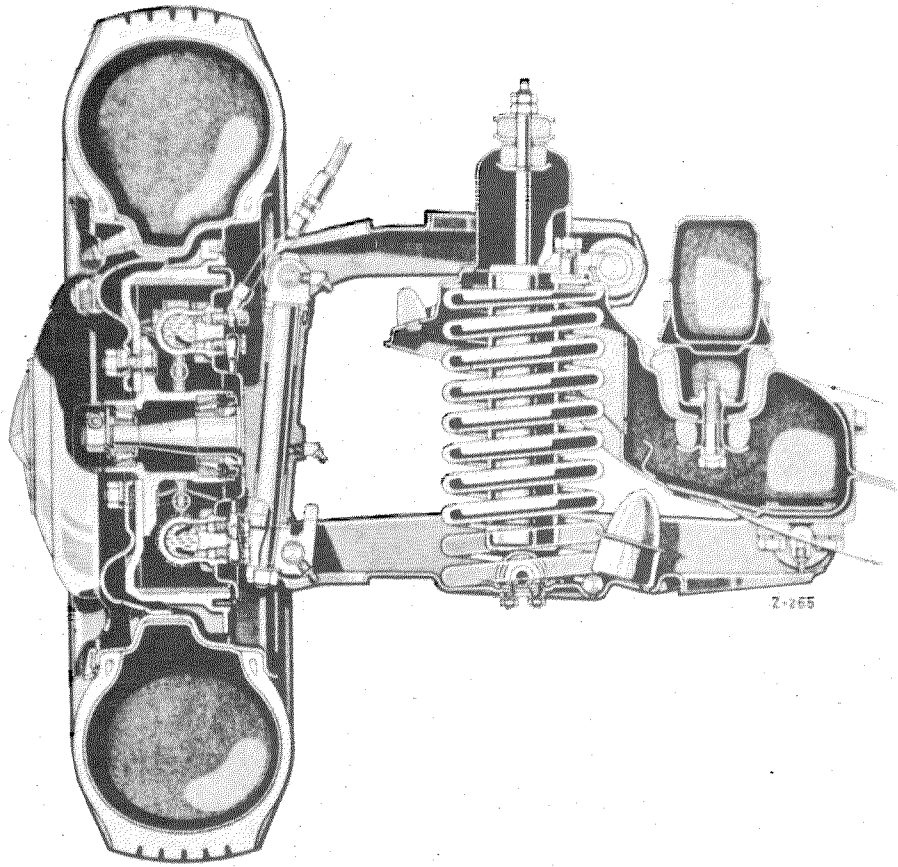


Fig. 33 — 2/1

## Removal:

1. Remove the hub cap and unscrew the wheel nuts. Then jack up the car and remove the road wheel.
2. Unscrew the lower shock-absorber mounting on the control arm (1) and on the top (2) of the dome of the front axle support and pull out the shock-absorber downward (Fig. 33 — 2/2).
3. Unscrew the two hexagon nuts (3) from the torsion bar hexagon fixing screw. Then pull out the hexagon screw; in doing this, do not lose the cup washers, the rubber buffers, and the spacer sleeve (Fig. 33 — 2/2).

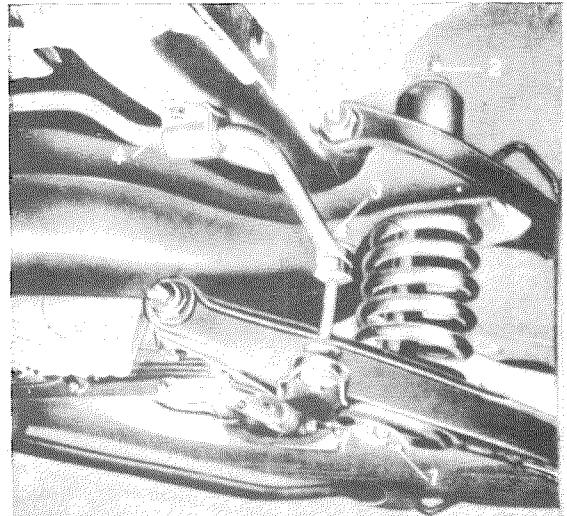


Fig. 33 — 2/2

- 1 Shock-absorber mounting on the lower control arm
- 2 Shock-absorber mounting on the top of dome of the front axle support
- 3 Hexagon nut
- 4 Hexagon screw

4. Insert Spring Tensioner 120 589 01 31 from underneath through the control arm, the spring and the dome of the front axle support (see Fig. 33 — 2/4).

Then screw a nut onto the spindle of the spring tensioner and lock it in position with the lock nut.

5. Use the spring tensioner to compress the spring until the upper control arm is lifted off the upper rubber buffer (see Fig. 33 — 2/1).
6. Then unscrew two of the screws which fix the lower control arm pivot pin (one screw at the front on the inside, and one screw at the rear on the outside, or vice versa) and screw in in their place the two Guides 120 589 01 31 (see Fig. 33 — 2/3).

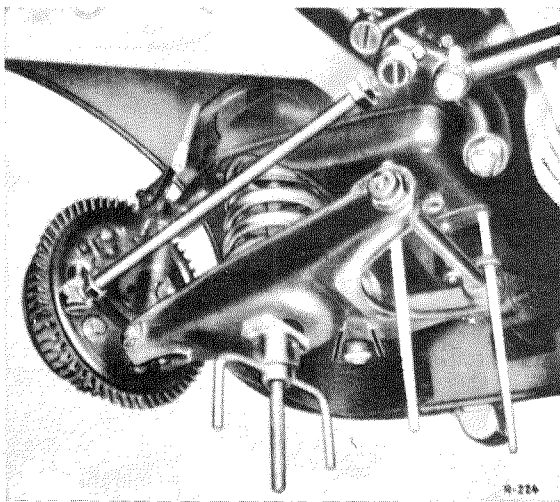


Fig. 33 — 2/3

7. Now unscrew the other two pivot pin fixing screws for the lower control arm and slowly relax the spring by turning back the spring tensioner.

**Note:** Before the spring tensioner is turned back, the nut must definitely be locked with a lock nut in order to prevent accidental loosening of the nut and sudden relaxation of the compressed spring.

8. When the spring is completely relaxed remove the spring tensioner and the spring.

9. Pull out the cotter-pin of the castle nut of the tie-rod ball-head from the steering gear arm or steering relay arm and unscrew the castle nut. Then use Bell-shaped Puller 186 589 10 33 to remove the ball-head.

10. Back out the sleeve nut (5) of the brake line (6) at the left or the right on the wheel arch assembly (1) two or three turns from the brake hose (2) (Fig. 33 — 2/4).

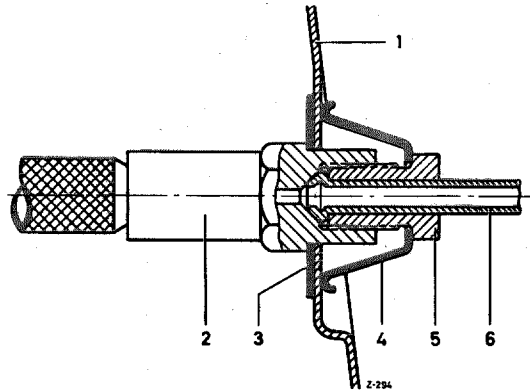


Fig. 33 — 2/4

- |                       |                               |
|-----------------------|-------------------------------|
| 1 Wheel arch assembly | 4 Brake hose retaining spring |
| 2 Brake hose          | 5 Sleeve nut                  |
| 3 Washer              | 6 Brake line                  |

11. Then unscrew the brake hose at the left or the right of the brake line at the brake anchor plate (Fig. 33 — 2/5).

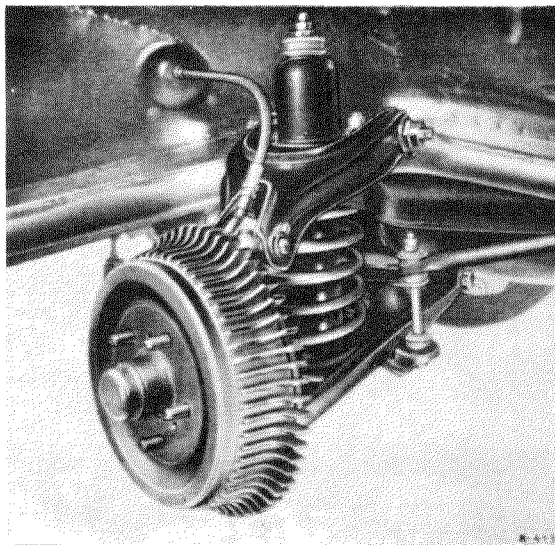


Fig. 33 — 2/5

12. Unscrew the hexagon nuts from the two upper control arm pivot pin fixing screws and remove the front axle half from the front axle support.
13. The other front axle half is then removed in the same way.

**Installation:**

14. Place the upper control arm in position on the front axle support and slide the control arm pivot pin into the two fixing screws. Put on the lock washers, screw on and tighten up the hexagon nuts.
15. Round off any sharp edges on the ends of the spring.
16. Rub the washer (rubber ring) with talc.
17. Place the washer (rubber ring) on the faced end of the spring and insert the spring into the dome of the front axle support so that the washer points upward. Then press up the lower control arm and whilst doing this slide the control arm pivot pins into the two guides which were screwed into the front axle support (see Fig. 33—2/3).
18. Insert Spring Tensioner 120 589 0131 from underneath through the control arm, the spring and the dome of the front axle support (see Fig. 33—2/3). Then install a nut on the spindle of the spring tensioner and lock it in position with the lock nut.

**Note:** The spring must be positioned so that a distance of 5 mm remains between the groove in the lower control arm and the end of the spring coil.

19. Use the spring tensioner to compress the spring until the lower control arm pivot pin rests against the front axle support. Then screw in and tighten up two of the four fixing screws with lock washers.

20. Unscrew the two guides and screw in in their place the other two fixing screws and tighten up.

Do not omit the lock washers.

**Note:** Tighten the fixing screws firmly. Check value for tightening torque 10—12 mkg.

Check the screws for tightness, and if necessary tighten up after the car has been driven 4000 km, 8000 km and every subsequent 16 000 km when servicing the car.

21. Place the torsion bar hexagon fixing screw with cup washers, rubber buffers, and spacer sleeve in position in the control arm and the torsion bar. Then screw on and tighten up the two hexagon nuts.
22. Relax and then remove the spring tensioner.
23. Rub the upper and lower rubber ring of the shock-absorber mounting with talc. Then press the lower rubber ring (3) over the shock-absorber mounting bolt and pull the shock-absorber piston rod (2) out completely (see Fig. 33—2/6).

Pass the shock-absorber through the lower control arm, the spring and the dome of the front axle support.

Press the upper rubber ring (5) and the cup washer (4) over the mounting bolt and screw on the two hexagon nuts (6) (see Fig. 33—2/6).

**Note:** To obtain the correct initial stress of the rubber rings, screw the lower of the two hexagon nuts (6) up to the end of the mounting bolt thread and then lock it in position with the upper hexagon nut (6).

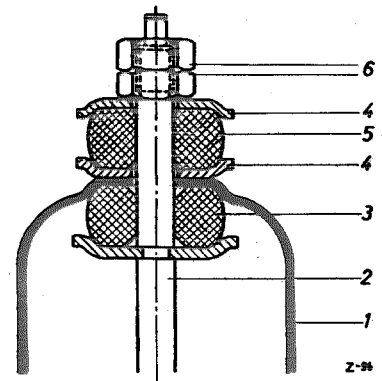


Fig. 33—2/6

- |                                  |                     |
|----------------------------------|---------------------|
| 1 Dome of the front axle support | 4 Cup washer        |
| 2 Piston rod                     | 5 Upper rubber ring |
| 3 Lower rubber ring              | 6 Hexagon nut       |

Approximately two threads of the upper hexagon nut must protrude.

Only nuts with a thickness of 8 mm may be used!

24. Fix the shock-absorber to the lower control arm with four M 7 DIN 934 — 5 S Hexagon Nuts and four B 7 DIN 127 Lock Washers.

25. Screw the brake hose into the brake line at the brake anchor plate.

Then tighten up the brake line sleeve nut (5) at the wheel arch assembly (see Fig. 33 — 2/4).

When this is done, care must be taken to ensure that the brake hose retaining spring (4) is correctly seated.

26. Bleed the brake system (see Job No. 42 — 1).

27. Put the cover plate and the rubber cap on the tie-rod ball stud. Then press the ball stud into the steering arm, screw in, tighten up and cotter the castle nut.

28. Turn the steering hard over to the left and the right. In doing this, check whether the steering knuckle arm rests against the steering knuckle assembly (Fig. 33 — 2/7).

**The lock must be limited by the steering knuckle assembly.**

If this is not the case, the cause may be an incorrectly installed steering-gear arm or toe-in maladjusted on one side.

For this reason it is important to adjust the toe-in with the steering wheel in dead center position, so that the toe-in on the left and the right wheel is equally distributed.

**Note: The steering shaft must not strike against the safety stop faces in the housing (see Fig. 46 — 1/5). The sole purpose of these stop faces is to exclude all possibility of fouling or pressure of the steering nut on the taper-roller bearings.**

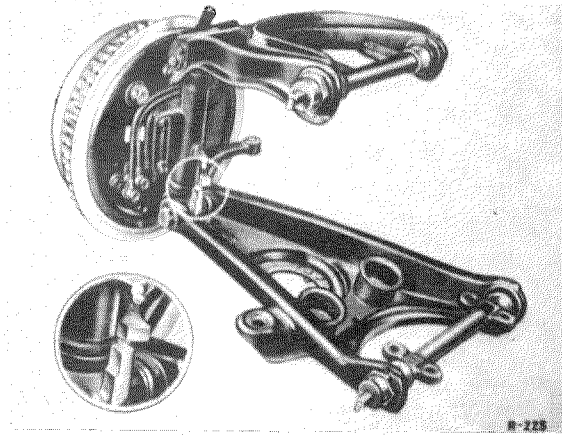


Fig. 33 — 2/7

29. Fit the road wheel, lower the car, tighten up the wheel nuts and press on hub cap.

30. Check and adjust toe-in, camber and caster (see Job No. 40 — 3).

31. Check and adjust the headlights (see Job No. 82 — 2).