

# Removal and Installation of Sub-Frame or Front Axle Support

Job-No.

33 — 1

The sub-frame is made up of the front axle support including the front axle halves, the springs and shock-absorbers, the front wheels, the torsion bar, the steering, the steering relay arm, the steering shock-absorber, the center and outer tie-rods and also the front and rear engine suspension.

## Removal:

1. Disconnect the battery at the negative terminal of the battery.
2. Unscrew and remove the upper clamping screw (6) of the steering coupling (see Fig. 33 — 1/1).

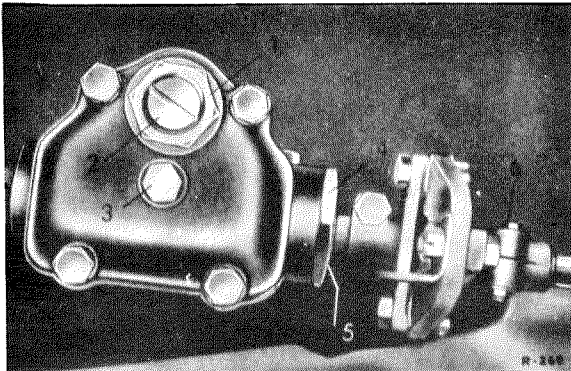


Fig. 33 — 1/1

- |                  |                        |
|------------------|------------------------|
| 1 Hexagon nut    | 4 Hexagon screw        |
| 2 Pressure screw | 4 Adjusting ring       |
| 3 Screw plug     | 6 Upper clamping screw |

3. Disconnect the cables for the flash direction signals and for the horn at the cable connector at the wheel arch assembly.
4. Unscrew the grub screw in the steering column jacket (Fig. 33 — 1/2). Set the steering lock to the position "Garage", pull the steering tube out of the steering coupling and pull the cable harness out of the steering assembly.
5. Unscrew the 4 hexagon screws (4), with lock washers for fixing the two torsion bar rubber mountings, from the chassis base panel assembly (Fig. 33 — 1/3).

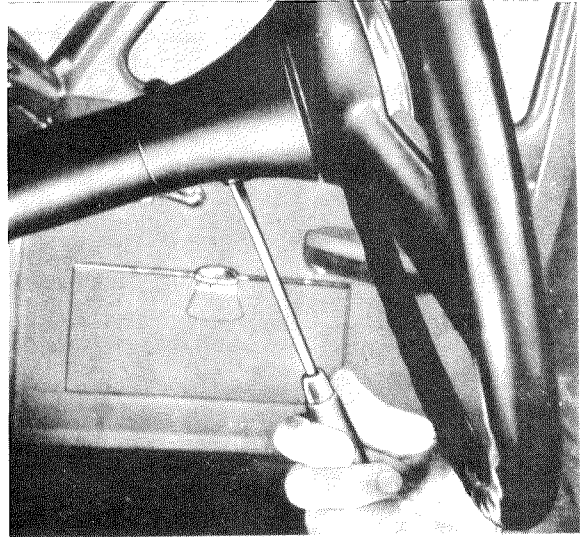


Fig. 33 — 1/2

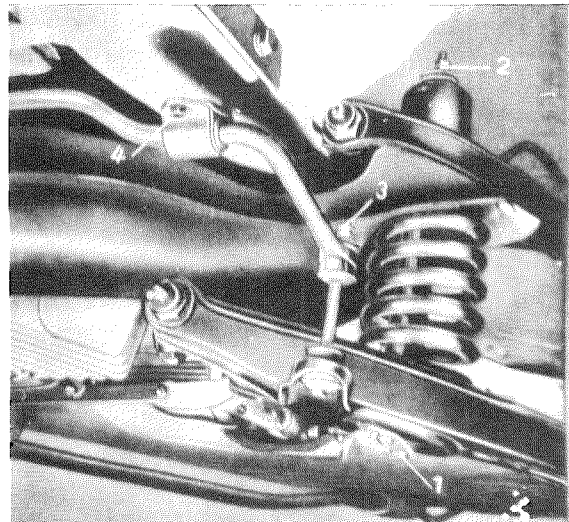


Fig. 33 — 1/3

- |  |
|--|
| 1 Shock-absorber mounting at lower control arm                           |
| 2 Upper shock-absorber mounting above the dome of the front axle support |
| 3 Hexagon nut  |
| 4 Hexagon screw  |

6. Back out the sleeve nut (5) of the brake line (6), at the left and at the right wheel arch assembly (1), from the brake hose (2), 2—3 turns (see Fig. 33—1/4). Then unscrew the brake hose from the brake line at the left and right at the brake anchor plate.

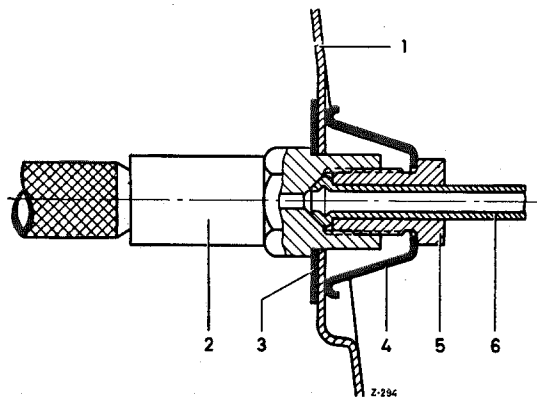


Fig. 33—1/4

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

7. Fix a suitable supporting bracket to the chassis base assembly, to support the transmission, using two M 10 × 35 hexagon screws.

**Note:** The supporting bracket can easily be made in the workshop (Fig. 33—1/5).

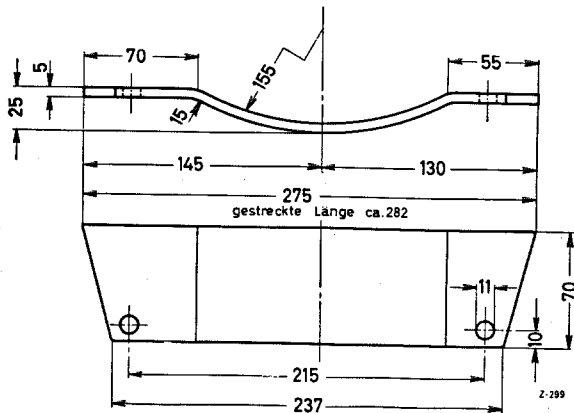


Fig. 33—1/5

8. Place Engine Holding Bridge BE 10 988 with its pillars supported on the left and right wheel arch assemblies and suspend the engine at the water pump by means of the

lifting strap of the holding bridge (Fig. 33—1/6).

Then slightly raise the engine at the front with the aid of the lifting strap.

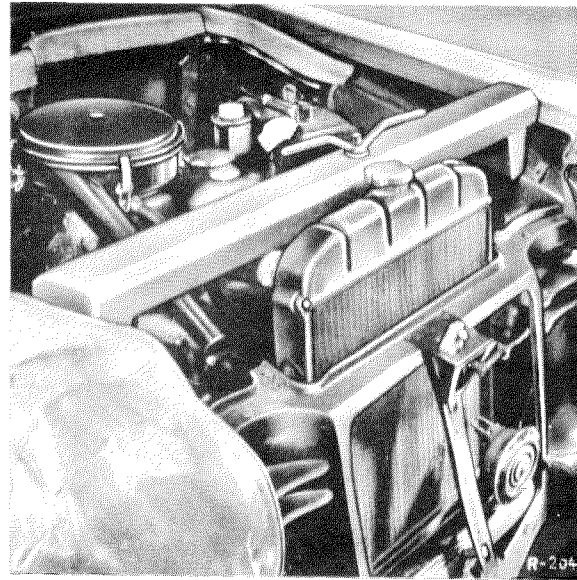


Fig. 33—1/6

9. Unscrew the left and right fixing screws at the front and rear engine suspension.
10. Insert the hooks of Lifting Rig BE 10 989, for raising the body of the car, in the front jack supports and slightly raise the car.
11. Unscrew the three fixing screws for the front axle support suspension from the chassis base panel assembly (see Fig. 33—1/8 and Fig. 33—1/9).
12. Raise the car and roll out the sub-frame toward the front (Fig. 33—1/7).
13. Lower the car and place stands under the front of it at the chassis base panel assembly.

#### Installation:

14. Rub talc on the rubber buffers and place the upper rubber buffers in the front axle support.

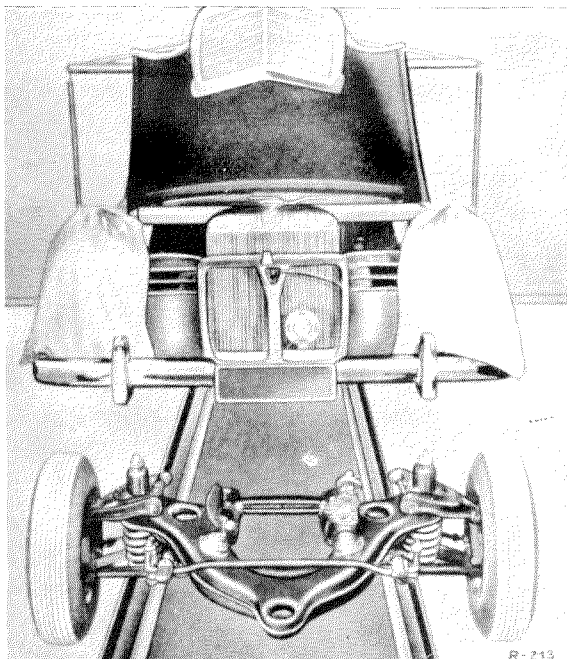


Fig. 33 — 1/7

Specified hardness:

Upper rubber buffers = 45° Shore

Lower rubber buffers = 45° Shore

15. Roll the sub-frame into position; make sure that the upper rubber buffers between the front axle support and the chassis base panel assembly are properly positioned.

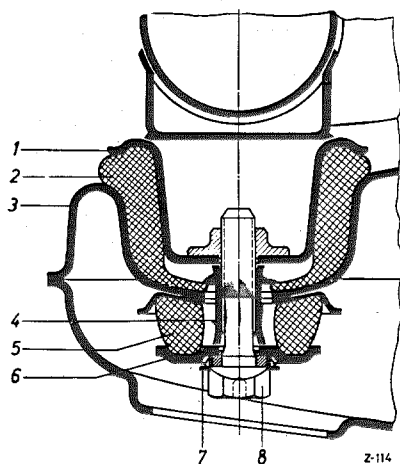


Fig. 33 — 1/8

Front suspension

- |                       |                       |
|-----------------------|-----------------------|
| 1 Step bearing        | 5 Lower rubber buffer |
| 2 Upper rubber buffer | 6 Cup washer          |
| 3 Front axle support  | 7 Locking plate       |
| 4 Spacer sleeve       | 8 Hexagon screw       |

16. Place the locking plate (7), the cup washer (6), the spacer sleeve (4) and the lower buffer (5) on the fixing screw (8). Install the screw, tighten with a torque of 4 mkg and lock by tapping over the locking plate (7) (Fig. 33 — 1/8 and Fig. 33 — 1/9).

**Note: The spacer sleeve (4) must not be deformed by tightening the screw (8) too much!**

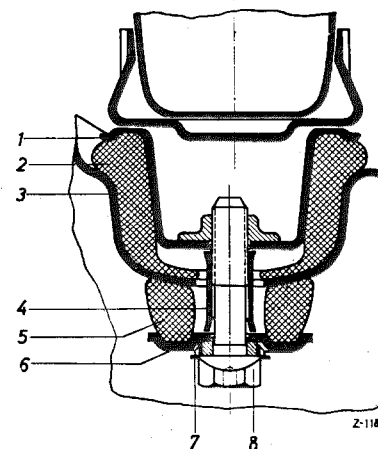


Fig. 33 — 1/9

Rear suspension

- |                       |                       |
|-----------------------|-----------------------|
| 1 Step bearing        | 5 Lower rubber buffer |
| 2 Upper rubber buffer | 6 Cup washer          |
| 3 Front axle support  | 7 Locking plate       |
| 4 Spacer sleeve       | 8 Hexagon screw       |

17. Screw in the fixing screws for the front and rear engine suspension.

**Make sure that the rear fixing screws are properly installed. The upward travel of the rear rubber mountings must be limited to 5 mm (see Job No. 01 — 1, Removal and Installation of Engine, Paras. 21 — 25).**

Take off the lifting strap and the bridge.

18. Screw on the rubber mountings for fixing the torsion bar, each with 2 hexagon screws with lock washers (see Fig. 33 — 1/3).

19. Pull the cable harness of the steering tube through the cable conduit of the steering.

Then line up the front wheels straight fore and aft and, with the steering wheel in the center position and the steering also in the center position, slide the steering tube into the steering coupling.

**Note:** Use Center Check Screw 186 589 00 23 for the steering.

If the center position of the steering and the straight fore and aft position of the front wheels do not correspond, the front wheels should be brought to the correct position by adjusting the tie-rods.

(For further details see Job No. 40 — 3).

20. Install the upper clamping screw (6) of the steering and tighten up with the hexagon nut and the lock washer (see Fig. 33 — 1/1).

**Note:** If necessary, replace clamping screw, nut and lock washer. Only the specified clamping screws must be used for fixing the steering coupling to the steering tube.

**These screws should be so tightened that the steering coupling is seated firmly on the steering worm and steering tube. The screws should not, however, be tightened up too much since this will stretch the screws and might cause them to break off later.**

21. Connect the cable harness to the cable connector for the steering at the front left wheel arch assembly. Pay attention to the color coding when connecting the individual cables. The individual cables should be so

connected that the color coding of the cables of the steering tube cable harness corresponds with the color coding of the cables of the main wiring harness.

(See Job No. 54 — 1, Section A, Circuit Diagram of Main Wiring Harness, Cable Sheaf **28**.)

22. Screw the grub screw into the steering column jacket and tighten it (see Fig. 33 — 1/2). The grub screw should on no account be forgotten since it is there to prevent any axial displacement of the annular grooved bearing and/or the steering tube.
23. Screw the brake hose (2) into the brake line at the brake anchor plate at the left and the right. Then tighten up the sleeve nut (5) of the brake line (6) at the wheel arch assembly (1) (see Fig. 33 — 1/4). When this is done, make sure that the brake hose retaining spring (4) is correctly positioned.
24. Bleed the brake system (see Job No. 42 — 1).
25. Check and if necessary, correct the toe-in, caster and camber of the wheels (see Job No. 40 — 3).
26. Connect the battery cable.
27. Check the functioning of the horn and the flash direction signals.
28. Adjust the headlights (see Job No. 82 — 2).