

Subsequent Installation of Trailer Attachment

(Optional, SA 10021)

Job No.

52—2

The trailer attachment approved by us has been developed for a maximum towing load of 1200 kg (total weight = weight of trailer + load) and it has been tested and licensed (vehicle group tests) in accordance with the German licensing regulations (STVZO — Department of Motor Vehicles, Registration Regulations). The vertical load of the draw bar on the ball of the trailer attachment should not exceed 50—80 kg.

According to the German licensing regulations (STVZO — Department of Motor Vehicles, Registration Regulations), it is permissible for Model 190 to tow a trailer of up to 630 kg **total weight** without the trailer having separate brakes; if a trailer with a higher total weight than 630 kg is used, the trailer must be equipped with a separate braking system. In this case, we recommend that the trailer be equipped with a hydraulic overrun braking system.

After a trailer attachment has been installed, the attachment must be inspected and passed by the Technical Control Board and must be entered in the Registration Book of the car.

Climbing ability of car with trailer of 1200 kg total weight, 26.5 % in 1st gear, "get-away" factor (inertia) approx. 12.5 %.

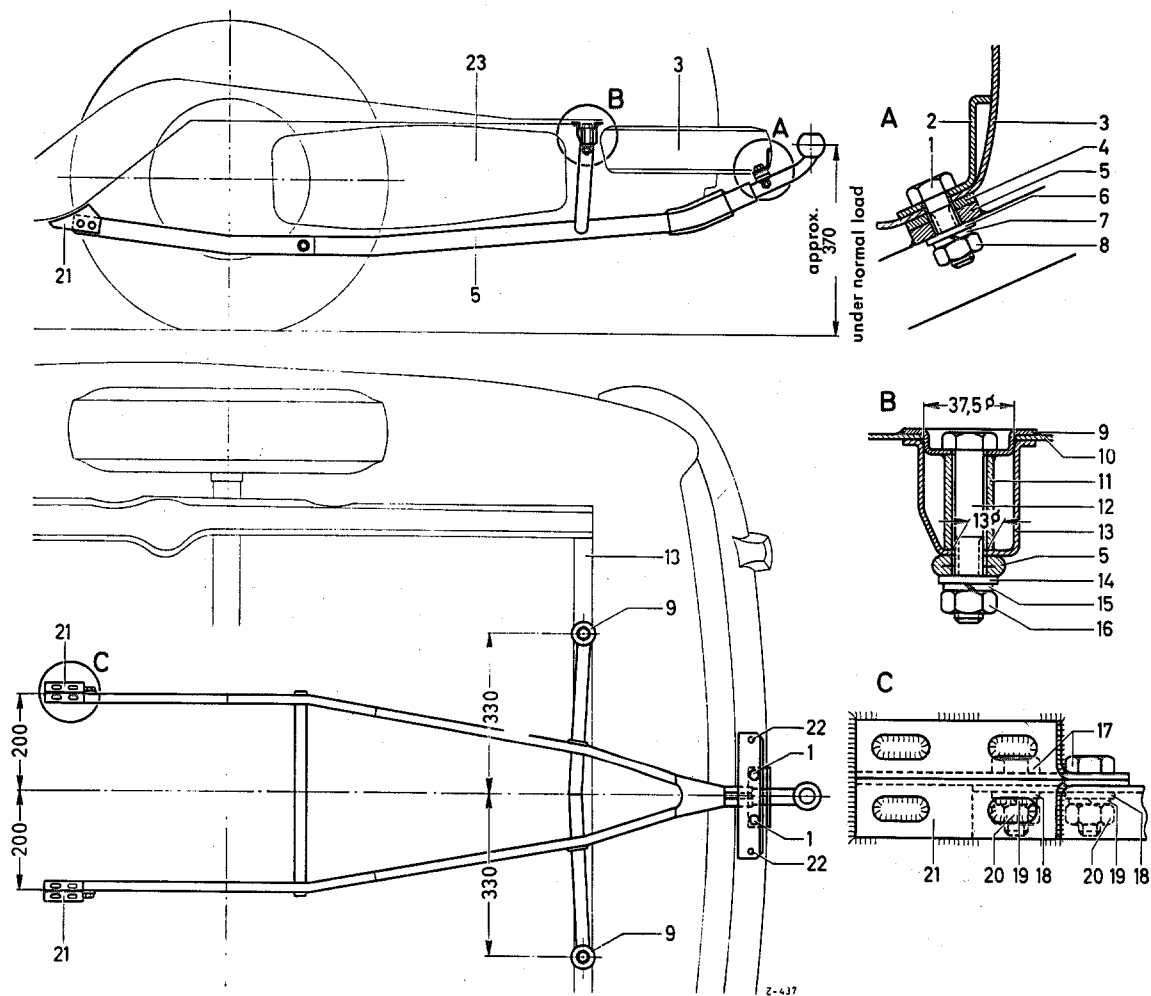


Fig. 52—2/1

A Rear mounting at bumper
 B Center mounting at end cross member
 C Front mounting at chassis base assembly

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|---------------------------|-------------------------------|----------------------------|---------------------------|
| 1 Hexagon screw M 10 · 80 | 7 Lock washer | 13 End cross member | 19 Lock washer |
| 2 Fixing bracket | 8 Hexagon nut | 14 Backing washer | 20 Hexagon nut |
| 3 Bumper | 9 Fixing cup | 15 Lock washer | 21 Draw-bar link plate |
| 4 Shim | 10 Floor of trunk compartment | 16 Hexagon nut | 22 Hexagon screw M 8 · 15 |
| 5 Trailer attachment | 11 Spacer sleeve | 17 Hexagon screw M 10 · 25 | 23 Fuel tank |
| 6 Backing washer | 12 Hexagon screw M 12 · 70 | 18 Backing washer | |

1. Open the trunk compartment and take out the rubber mat on the floor of the trunk compartment.
 2. Mark the center of the end cross member (13) on the lower face.
Mark out one of the two bores for fixing the trailer attachment, by measuring 330 mm from the center point. Punch the mark (see Fig. 52 — 2/1).
 3. Then drill vertically through the end cross member (13) and through the floor panel of the trunk compartment, with a 12.5 mm diameter drill.
 4. Screw the two draw-bar link plates (21) onto the trailer attachment (5), using two hexagon screws (17) M 10 × 25 with backing washers (18), lock washers (19) and hexagon nuts (20) for each plate (see Fig. 52 — 2/1).
 5. Screw the trailer attachment (5) to the end cross member (13), with a hexagon screw (12) M 12 × 70 with backing washer (14), lock washer (15) and hexagon nut (16). Tighten up the screw provisionally (see Fig. 52 — 2/1).
 6. Use a car jack to press the draw-bar link plates (21) for fixing the trailer attachment (5) lightly against the chassis base panel.
 7. Line up the trailer attachment (5) in position and if necessary, adjust it to fit.
The ball of the trailer attachment must be at the center line of the body. If the distance between the bumper and the end cross member is too great or too small for the trailer attachment, the trailer attachment must be adjusted accordingly at the cross strut.
 8. Use a 12.5 mm diameter drill to drill the second bore for the hexagon screw (2) for fixing the trailer attachment. The bore must be vertically drilled through the end cross member (13) and through the floor panel of the trunk compartment.
 9. Take off the trailer attachment again.
 10. Drill out the holes which are now visible in the floor of the trunk compartment (10) concentrically to 37.5 mm diameter, using a drill or a milling cutter and deburr the bores at the upper face.
 11. Insert the two fixing cups (9) from above into the apertures in the floor of the trunk compartment (10). The spacer sleeves (11) which are welded to the fixing cups (9) must butt against the end cross member (13) at the bottom.
 12. Electrically weld the lips of the two fixing cups (9) to the floor of the trunk compartment (10).
 13. Drill out the bores at the bottom of the end cross member (13) to 13 mm diameter.
 14. Screw the trailer attachment (5) with the two hexagon screws (12) M 12 × 70 with backing washers (14), lock washers (15) and hexagon nuts (16) onto the end cross member (13) and tighten up provisionally (see Fig. 52 — 2/1).
 15. Check that the trailer attachment (5) is properly positioned and align it perfectly.
 16. Then mark out the two bores for the hexagon screws (1) at the bumper (3), drill them 11.0 mm diameter and deburr them (see Fig. 52 — 2/1).
 17. Put the fixing bracket (2) at the inner side of the bumper (3) and also the shim (4) between the bumper (3) and the trailer attachment (5). Then insert the two hexagon screws (1) M 10 × 80 and screw on and tighten the hexagon nut (8) with backing washer (6) and lock washer (7).
- Note:** The thickness of the shim (4) is dependent upon the space between the bumper (3) and the trailer attachment (5). If necessary, a further shim should be made.
18. Mark the two outer bores for the screws (22), drill them 8.5 mm diameter and deburr them (see Fig. 52 — 2/1). Install the two hexagon screws (22) M 8 × 15 with backing washers, lock washers and nuts.
 19. If necessary, adjust the draw-bar link plates (21) to fit the chassis base panel. Then use a car jack to press them lightly against the chassis base panel and electrically weld them on (see Fig. 52 — 2 1).
- Note:** Care must be exercised when welding owing to the danger of fire!

Before the welding operation is begun, remove the rear seat of the car, lift the electric cables (tail light wiring harness) off the body base panel and cover the parts likely to be affected by heat with moist asbestos. Furthermore the fuel tank and its unions and the fuel line must be shielded against flying sparks.

The accident prevention regulations of the appropriate trade association must also be observed.

20. Check all screws for tightness.
21. Give the welds a coat of paint.

Installation of an electric socket connection:

22. Unscrew the lower and upper fixing screws of the braking light and tail light casing at the left and at the right.
23. Remove the casings together with the transparent pane and the base plate (2) on which the lamp holder is mounted (Fig. 52 — 2/2).

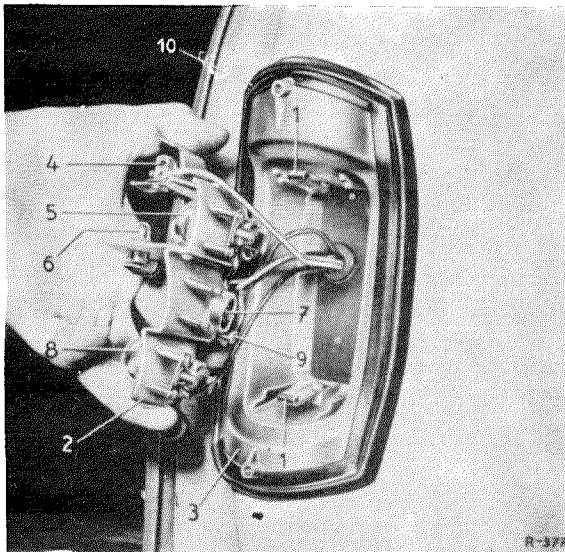


Fig. 52 — 2/2

- | | |
|---------------|-----------------------------------|
| 1 Spring | 6 Parking light |
| 2 Base plate | 7 Reversing light (not connected) |
| 3 Housing | 8 Flash signal |
| 4 Tail light | 9 Ground connection |
| 5 Brake light | 10 Seal |

24. Connect an additional grey/black cable, 1.5 mm² in section and 1300 mm long, to the tail light (4) of the left brake light and tail light (see Fig. 52 — 2/2).

25. Connect an additional grey/black cable, 1.5 mm² in section and 1300 mm long, to the tail light (4) of the right brake light and tail light (see Fig. 52 — 2/2) and an additional black/red cable, 1.5 mm² in section and 1300 mm long, to the brake light (5).

Note: When the additional electrical cables are being fitted, it is advisable to disconnect the complete cable sheaves at the left and at the right and to pull them into the trunk compartment.

Then, after the new cables have been added to the sheaves, the two cable sheaves, left and right, should once more be pulled through and reconnected.

When connecting up the electric cables, pay attention to the color coding (see Job No. 82 — 13).

26. Reinstall the casings of the brake and stop lights at the left and at the right.
27. Drill a 14 mm diameter hole in the floor of the trunk compartment at the extreme rear on the center line of the car and put in a rubber grommet 000 997 18 81.
28. Push an insulation sleeve B 4 × 5 sw DIN 40621 over the cables which have been added to the harness and pull them through the rubber grommet. Then fix the cables in the corner of the trunk compartment floor at the rear, with one or two pipe clips.
29. Push an insulation sleeve B 6 × 7 sw DIN 40621 over the cables which are now hanging from the floor of the trunk compartment and fix them with a pipe clip to the center panelling underneath. When this is done, make sure that the cables do not lie against the exhaust expansion chamber.

30. Drill a 14 mm diameter hole in the bracket for the socket and insert a Rubber Grommet 000 997 18 81.

31. Weld the bracket for the socket to the left side of the trailer attachment, approx. 110 mm from the end or screw it to the trailer attachment with two screws M 6 × 20 with lock washers and nuts in such a way that the dust cover of the socket can be opened and closed without fouling the bumper.

32. Connect the electric cables to the socket connection. When making the connection, pay attention to the color coding. Connect as follows:

The grey cable and the grey/black cable (coming from the tail light) to the two terminals 58,

the black/red cable (coming from the brake light) to terminal 54 and

a black cable (ground cable), 1.5 mm² in

section and approx. 100 mm long, to terminal 31.

33. Screw the socket to the bracket with 3 oval-head countersunk screws BM 5 × 30 with lock washers and nuts. At the same time, connect the ground cable by clamping it under one of the fixing screws.

34. Check the functioning of the trailer electrical system.

List of Parts:

| Designation | No. on diagram (see Fig. 52—2/1) | Number | Part No. or DIN (German Engineering Standard) No. |
|-----------------------------|-------------------------------------|--------|---|
| Trailer attachment | 5 | 1 | 180 310 00 04 |
| Fixing bracket | 2 | 1 | 120 310 00 57 |
| Shim | 4 | 1 | 120 315 06 84 |
| Hexagon screw | 1 | 2 | M 10 × 85 DIN 931—8 G |
| Washer | 6 | 2 | 11.5 DIN 126 |
| Lock washer | 7 | 2 | B 10 DIN 127 |
| Hexagon nut | 8 | 2 | M 10 DIN 934—5 S |
| Fixing cup | 9 | 2 | 120 310 00 61 |
| Hexagon screw | 12 | 2 | M 12 × 70 DIN 931—8 G |
| Washer | 14 | 2 | 14 DIN 126 |
| Lock washer | 15 | 2 | B 12 DIN 127 |
| Hexagon nut | 16 | 2 | M 12 DIN 934—5 S |
| Draw-bar link plate | 21 | 2 | 120 310 02 60 |
| Hexagon screw | 17 | 4 | M 10 × 25 DIN 933—8 G |
| Washer | 18 | 4 | 11.5 DIN 126 |
| Lock washer | 19 | 4 | B 10 DIN 127 |
| Hexagon nut | 20 | 4 | M 10 DIN 934—5 S |
| Hexagon screw | 22 | 2 | M 8 × 15 DIN 933—8 G |
| Washer | | 4 | 9.5 DIN 126 |
| Lock washer | | 2 | B 8 DIN 127 |
| Hexagon nut | | 2 | M 8 DIN 934—5 S |
| Bracket for lighting socket | | 1 | 120 540 00 40 |

The complete kit of parts for the trailer attachment can be ordered from the works under Order No. 180 31000 99

For fitting the socket, the following additional parts are required:

| | | |
|-----------------------------|---|----------------------------------|
| Socket | 1 | 000 545 09 26 |
| Oval-head countersunk screw | 3 | BM 5 × 30 |
| Lock washer | 3 | B 5 DIN 127 |
| Hexagon nut | 3 | M 5 DIN 934—5 S |
| Hexagon screw | 2 | M 6 × 20 DIN 933—8 G |
| Lock washer | 2 | B 6 DIN 127 |
| Hexagon nut | 2 | M 6 DIN 934—5 S |
| Rubber grommet | 2 | 000 997 18 81 |
| Electric cable (grey) | 1 | A 1.5 DIN 72 551; 1300 long |
| Electric cable (grey/black) | 1 | A 1.5 DIN 72 551; 1300 long |
| Electric cable (black/red) | 1 | A 1.5 DIN 72 551; 1300 long |
| Electric cable (black) | 1 | A 1.5 DIN 72 551; 100 long |
| Insulation sleeve | 1 | B 4 × 5 sw DIN 40 621; 1500 long |
| Insulation sleeve | 1 | B 6 × 7 sw DIN 40 621; 500 long |