

# Disassembly and Reassembly of Brake Master Cylinder

Job No.

42 — 4

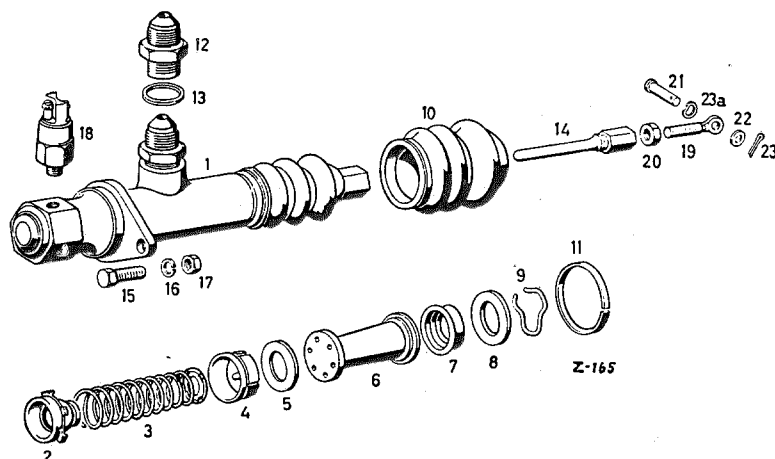


Fig. 42 — 4/1

- |                                |   |
|--------------------------------|---|
| 1 Brake master cylinder        | 13 Sealing ring A 22 × 27 Din 76 603 copper |
| 2 Check valve                  | 14 Push rod                                 |
| 3 Pressure spring and retainer | 15 Hexagon screw M 8 × 22                   |
| 4 Primary cup                  | 16 Lock washer                              |
| 5 Piston cup washer            | 17 Nut                                      |
| 6 Piston                       | 18 Stop light switch                        |
| 7 Secondary cup                | 19 Push rod end                             |
| 8 Piston stop washer           | 20 Nut M 10                                 |
| 9 Piston stop ring             | 21 Collar pin                               |
| 10 Boot                        | 22 Washer 10.5                              |
| 11 Strap                       | 23 Cotter pin                               |
| 12 Threaded union              | 23a Lock washer                             |

## Disassembly:

1. Remove the strap (11) from the rubber boot (10) and then pull off the rubber boot (10) and the push rod (14).
2. Use a screw driver to pry out the piston stop ring from the groove in the brake master cylinder and remove the piston stop washer.
3. Pull out the piston (6) together with the secondary cup (7). Then remove the piston cup washer (5), the primary cup (4), the pressure spring (3) with spring retainer and the check valve (2).
4. Unscrew the threaded union (12).

**Note:** If the brake master cylinder is provided with a bleed screw, remove this screw.

5. Thoroughly clean all parts with alcohol or brake fluid.

## Checking:

6. Check the bore in the brake master cylinder. The bore must be free from scoring or rust.  
The permissible diameter of the bore is 25.400 — 25.502 mm in the case of the 1" brake master cylinder, and 26.980 — 27.082 mm in the case of the 1 1/16" brake master cylinder.  
The maximum permissible conicity of the brake master cylinder is 0.03 mm.
7. Check the face of the cylinder bore for the check valve.
8. Check the compensating port (1) and the connecting port (2) for free passage (see Fig. 42 — 3/1). Do not bore out the com-

compensating port but clean it with Cleaning Tool 136 589 25 61 or with an approx. 0.5 mm diameter steel wire with a well-rounded end.

9. Check the piston for scoring and wear.  
The permissible diameter of the piston is 25.252 — 25.335 mm in the case of the 1" brake master cylinder and 26.832 — 26.915 mm in the case of the 1 1/16" brake master cylinder.

**Note:** The permissible clearance between piston and bore is 0.065 — 0.25 mm.

10. Check the connecting ports in the piston for free passage.
11. Check the pressure spring.

Spring length in mm

| Unloaded  | Installed under a load of 3.2 kg |
|---|----------------------------------|
| 73  | 57                               |
| for pressure spring Part No. 000 431 31 93 of the 1" brake master cylinder      |                                  |
| 72.5  | 56.5                             |
| for pressure spring Part No. 000 431 41 93 of the 1 1/16" brake master cylinder |                                  |

#### Reassembly:

12. The bore in the brake master cylinder, the piston, and all new cups should be oiled with brake fluid or given a light coat of ATE blue brake paste. Apply the paste sparingly to prevent plugging of the bores.

**Note:** On reassembling the brake master cylinder always use new cups and a new check valve.

13. Install a new check valve on the bottom coil of the pressure spring (see Fig. 42 — 3/1).

Check valve and spring must be at right angles.

14. Install the pressure spring together with the check valve in the cylinder.
15. Install a new primary cup in the cylinder, making sure that the rubber cone of the cup is fully seated in the bore of the spring retainer. Then install the piston cup washer (5) (see Fig. 42 — 4/1).
16. Install a new secondary cup in the piston and slide the piston into the bore of the brake master cylinder.

**Note:** Only secondary cups with three sealing lips should be used (Part No. 000 431 34 61). Under no circumstances must the lip of the secondary cup be pressed in by means of a sharp object such as an electrician's screw driver, since the lip would be damaged in the process.

In order to facilitate installation, it is advisable to use a steel wire of approx. 1 mm  $\phi$  with a well-rounded end. Apply the steel wire to the cylinder bore at an angle and move it back and forth a number of times around the circumference. The pressure exerted on the piston should only be slight.

17. Install the piston stop washer (8) and the piston stop ring (9).
18. Slide the push rod (14) into the piston, slide on the rubber boot (10), and install the strap (11) (see Fig. 42 — 4/1).

**Note:** The vent hole of the rubber boot must point downward.

Reinstall the bleed screw if previously removed.

19. After reassembly check the compensating port for free passage by means of Cleaning Tool 136 589 25 61 or an 0.5 mm  $\phi$  steel wire with a well-rounded end.