

# Removal and Installation of Brake Master Cylinder

Job No.

42 — 3

The cylinder of the brake master cylinder has a diameter of  $1'' = 25.4$  mm. If an ATE power brake T 50 is installed a modified brake master cylinder with a cylinder diameter of  $1\frac{1}{16}'' = 26.98$  mm is required.

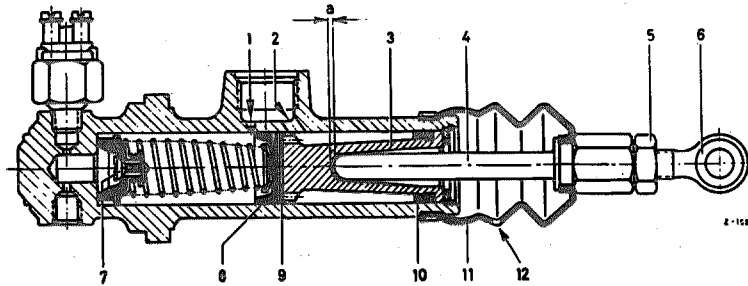


Fig. 42 — 3/1

a = 1 mm

- 1 Compensating port
- 2 Connecting port
- 3 Piston
- 4 Piston push rod
- 5 Hexagon nut
- 6 Piston push rod end

- 7 Check valve
- 8 Primary cup
- 9 Piston cup washer
- 10 Secondary cup
- 11 Boot
- 12 Vent hole

## Removal

1. Remove the bleed screw rubber cap at one of the brake wheel cylinders, fit the bleeder hose over the bleed screw and immerse the free end in a container.  
Turn out the bleed screw by about one turn and pump the brake pedal until the fluid reservoir is completely empty.
2. Unscrew the brake line from the fluid reservoir at the threaded union of the master brake cylinder.
3. Disconnect the two cables at the stop light switch.
4. Unscrew the stop light switch and the brake line from the brake master cylinder.
5. Remove the cotter pin from the collar pin (21); then pull the collar pin out of the brake pedal and the piston push rod end (see Fig. 42 — 4/1).
6. Unscrew the hexagon nuts (17) from the two fixing bolts (15) of the brake master cylinder

at the chassis base panel bracket and remove the brake master cylinder (see Fig. 42 — 4/1).

## Installation

7. Install the brake master cylinder in the chassis base panel bracket and fasten by means of the two hexagon screws, lock washers and nuts.
8. Attach the piston push rod end to the brake pedal by means of the collar pin. Do not forget washer and lock washer.  
Cotter the collar pin.
9. Attach the brake lines to the brake master cylinder.
10. Screw in the stop light switch and attach the two cables.

## Note:

- a) The stop light switch has a conical thread. The switch should never screw in completely,

since the conical thread must have a sealing effect. Do not use sealing compound. **Never install stop light switches not specifically approved by our organization.**

- b) At first screw in the stop light switch loosely and pump the brake pedal until brake fluid emerges at the switch thread. Then tighten the stop light switch. This procedure is necessary in order to remove any air bubbles below the switch.
- c) On cars provided with an ATE power brake T 50 the stop light switch bore must be plugged up if the power brake itself has a bore for the stop light switch (see also Job No. 42 — 15, paragraph 14).

**The previous plug AM 10 × 1 DIN 7604 and sealing ring A 10 × 14 DIN 7603 have been superseded by a modified plug, Part No. 000 428 01 32.**

- 11. Connect the fluid reservoir brake line to the threaded union.

#### **Adjustment of Brake Pedal Free Play:**

- 12. Loosen the hexagon nut (5) on the piston push rod end (6) (see Fig. 42 — 3/1).

Use wrench SW 19 to turn the push rod (4) either to the right or to the left until there is a brake pedal free play of 6—8 mm. This corresponds to a clearance between push

rod (4) and piston (3) of  $a \approx$  approx. 1 mm (see Fig. 42 — 3/1).

**Note:** When turning the push rod (4) make sure that the boot (11) remains stationary because the vent hole (12) in the boot (11) must face downward.

- 13. Tighten the hexagon nut (5) on the push rod end (6), holding the push rod (4) steady with wrench SW 19.

**Note:** Accurate adjustment of this clearance is of the utmost importance for the efficiency of the brake system; if the clearance is not correct, the primary cup (8) will cover the compensating port (1) in the brake master cylinder even if the cylinder is in the released position. When the compensating port is covered, the brake fluid which under the influence of heat increases in volume cannot flow back into the fluid reservoir. The result will be a constant dragging of the brake shoes.

- 14. Top up the brake fluid in the fluid reservoir and bleed the whole brake system (see Job No. 42 — 1).

**Note:** Make sure that the air vent in the filler plug of the fluid reservoir is not plugged.

- 15. Check the brake system to ensure that it is in good working condition and free from leaks.