

Data

Caliper	Teves S 2-57	Bendix (Bx) FD 57	Teves SS 2-60	Bendix (Bx) FE 60
Housing dia.	56.99 57.04		59.99 60.04	
Piston dia.	56.97 56.94		59.97 59.94	
Shaft width for brake shoe	77 + 0.15		90 + 0.15	

Lubricant

ATE-brake cylinder paste

Special Tools

Impact puller	115 589 14 33 00
Pulling device	116 589 04 33 00
Piston resetting pliers	111 589 07 37 00
Holding device for piston	self-made according to Fig. 5
Clamping device for piston	self-made according to Fig. 7
Piston gauge	001 589 30 21 00
Piston rotating pliers	000 589 36 37 00
Installation tool for dust cap Teves	self-made according to Fig. 15
Installation tool for heat shield Teves	000 589 49 63 00
Plate for installation device for heat shield Bendix (Bx)	self-made according to Fig. 17

Conventional Tools

Open double-box wrench SW 9 x 11	e.g. made by Hazet, order No. 612
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Note

Do not separate the two halves of the caliper from each other, since the fastening bolts are tightened to a definite torque by the manufacturer.

Removal

- 1 Remove brake shoes (42.0-160).
- 2 Force dust cap (9) from housing with screwdriver (Fig. 1 and 2).



Fig. 1
Teves-version
2 Piston
9 Dust cap

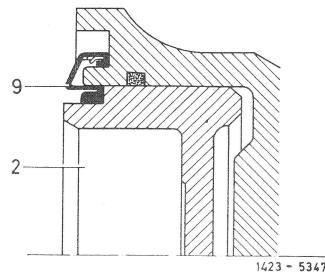
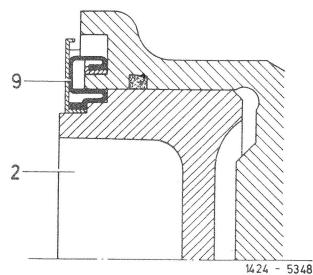


Fig. 2
Bendix (Bx)-version
2 Piston
9 Dust cap



3 Hold one piston (2) in caliper with piston resetting pliers (018). Then force out opposite piston with compressed air of approx. 0.5 bar overpressure (0.5 atü) (Fig. 3).

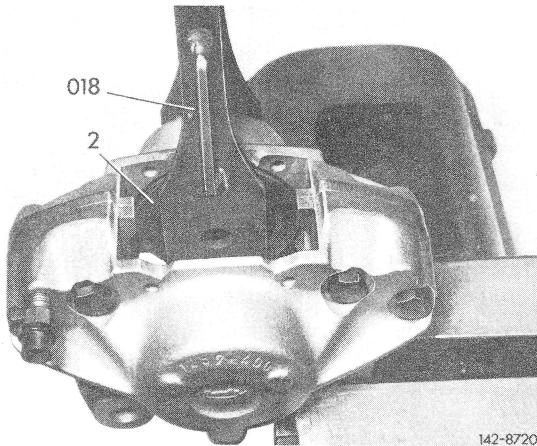


Fig. 3
2 Piston with heat shield
018 Piston resetting pliers

4 A piston rusted to the caliper bore cannot be forced out with compressed air, since the pressure required to release the piston would have to be very high. Proceed by holding the piston which is still moving with holding device (23) in caliper (Fig. 4). Remove both heat shields from pistons first. Then release stuck piston (2) by means of master cylinder and force out of bore.

Note: The holding device (23) is self-made according to dimensions in Fig. 5.

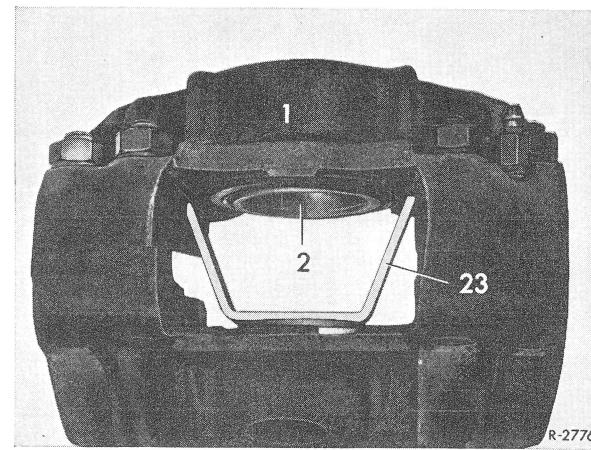


Fig. 4
1 Caliper 2 Piston 23 Holding device

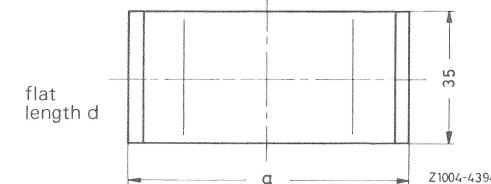
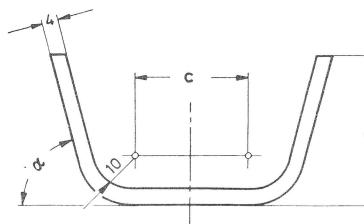


Fig. 5
Holding device
a = 75 c = 32 $\alpha = 78^\circ$
b = 46 d = 136

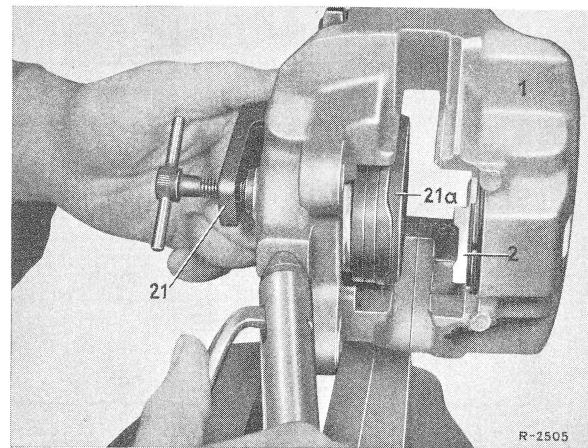


Fig. 6
1 Caliper
2 Piston with heat shield
21 Clamping device
21a Rubber plate

5 Position clamping device (21) in caliper (1) in such a manner that the rubber plate seals the bore. Then press second piston out of caliper (Fig. 6).

Note: Holding device (21) is self-made according to dimensions in Fig. 7.

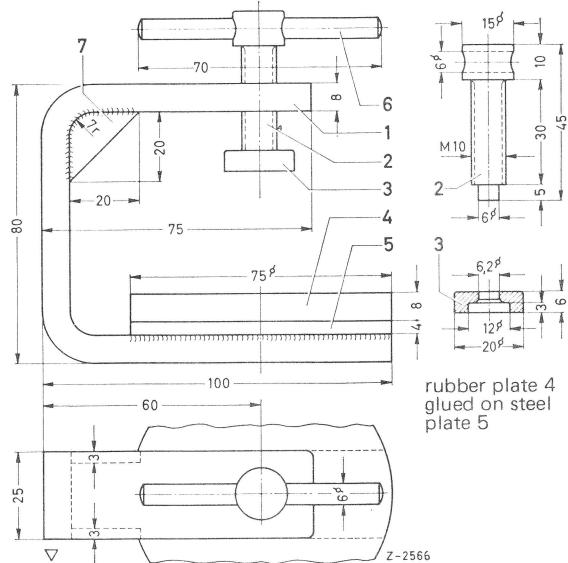


Fig. 7
Clamping device

6 Remove piston seal (3) from grooves of cylinder bores (Fig. 8).

Inspection and Repair

7 Remove heat shield (7) from piston (Fig. 8).

Remove deposits on piston with a soft brass wire brush or a rough cleaning cloth. **Do not** work on piston with polishing or emery cloth, since this might damage the chrome-plated surface. Replace piston if chrome surface is damaged.

8 Check cylinder bores of caliper for wear. Replace complete caliper if bores are scored or rusted. Remove small, minor rust spots in bore with polishing cloth, heavier rust spots in front of piston seal groove with fine emery paper (380 to 500 grain).

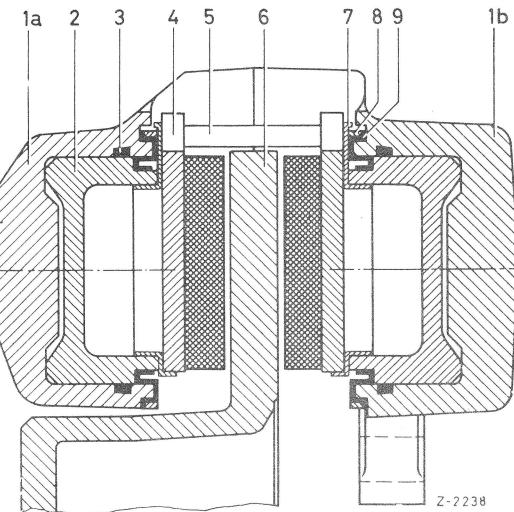


Fig. 8

1a Outer caliper half	5 Holding pin
1b Inner caliper half	6 Brake disc
2 Piston	7 Heat shield
3 Piston seal	8 Clamping ring
4 Brake shoe	9 Dust cap

Installation

9 Coat new piston seal (3) lightly with ATE-brake cylinder paste and insert into groove of cylinder bores (Fig. 8 and 9).

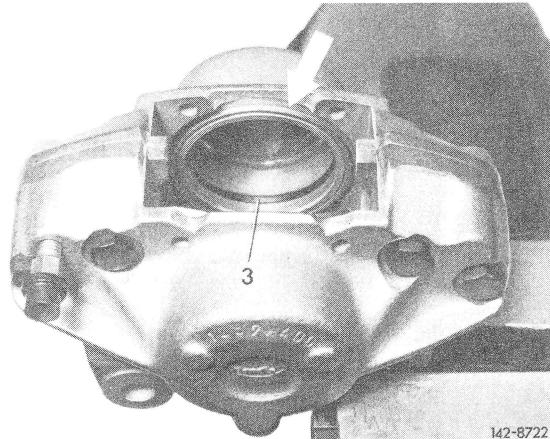


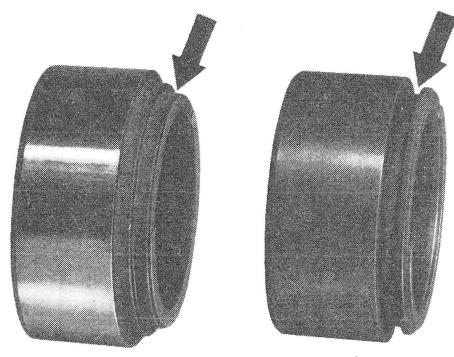
Fig. 9

3 Piston seal

Note: When repairing Bendix (Bx)-caliper, watch out for rigid and perfect seat of pressed-on ring (refer to arrow Fig. 9).

10 Insert piston (2) into bores of caliper. Then check position of piston in caliper with piston gauge (019) (Fig. 11).





Note: When installing pistons, watch out for different piston versions (Fig. 10).

11 Move piston (2) into correct position with piston rotating pliers (020), if required (Fig. 12).

Caution! To prevent tendency toward squealing, the caliper piston is provided with an elevation. While braking, this elevation will result in one-sided contact of brake shoes. The position of the caliper piston depends whether calipers are mounted before or behind wheel center (Fig. 13).

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Fig. 10

Left: Bendix (Bx)
piston version

Right: Teves-
piston version

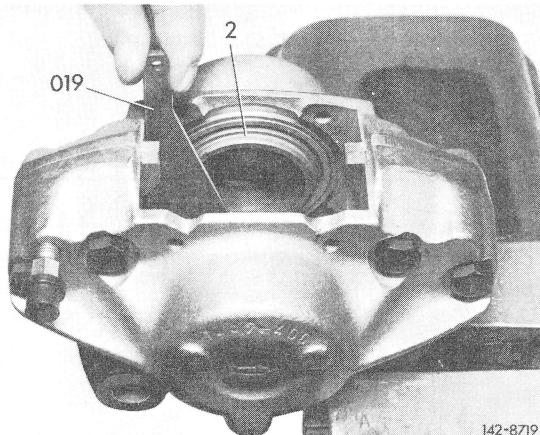


Fig. 11

2 Piston

019 Piston gauge

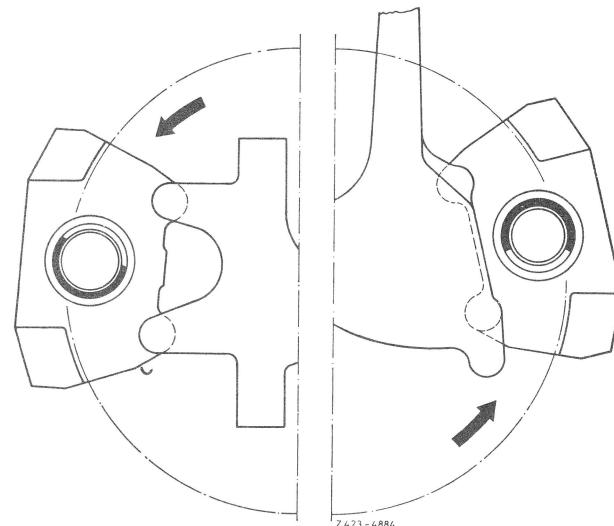


Fig. 13

Left: Caliper located
in front of the wheel
center

Right: Caliper located
behind wheel center

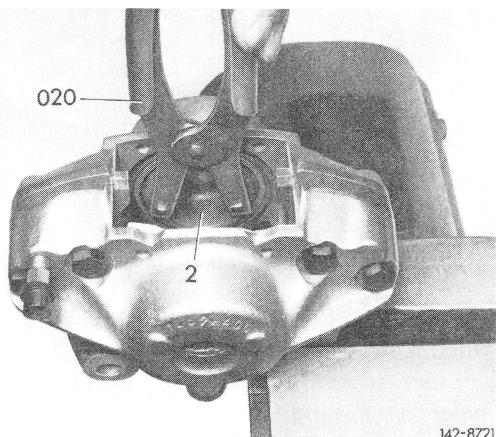


Fig. 12

2 Piston

020 Piston rotating pliers

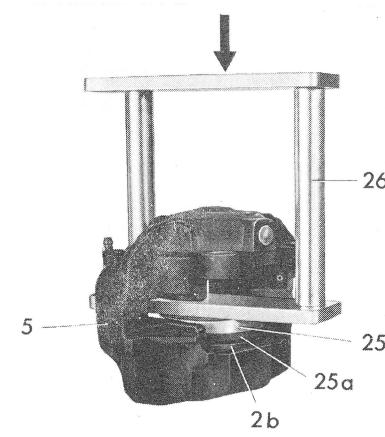


Fig. 14

2b Dust cap

5 Caliper

25 Pressure plate

25a Rubber plate

26 Installation tool

12 On Teves-caliper, position dust cap (9) against flange of caliper (Fig. 1).

13 Place pressure plate (25) on dust cap (2b) and press dust cap on flange of caliper at a pressure of approx. 300 Nm (30 kpm) using installation tool (26) as well as a hand press (Fig. 14).

Note: The installation tool is self-made according to dimensions shown in Fig. 15.

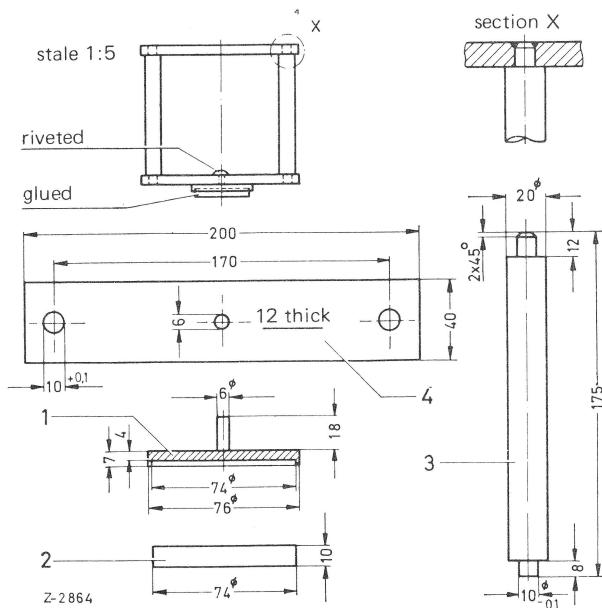


Fig. 15

1 Pressure plate 3 Connecting bolt
2 Rubber plate 4 Clamp

14 On Bendix (Bx)-caliper, attach dust cap to flange of caliper (Fig. 16).

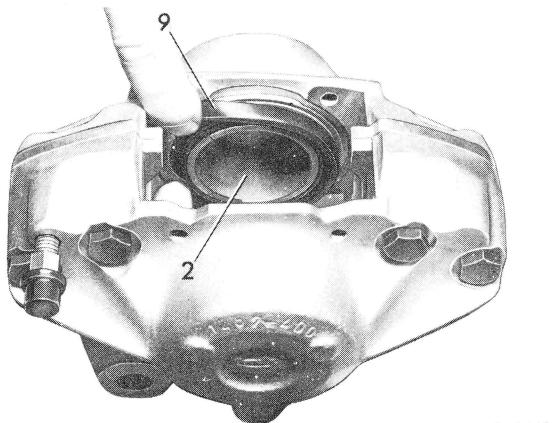


Fig. 16

2 Piston 9 Dust cap

15 Insert heat shield (7) into piston in such a manner that recess in shield fits accurately into elevation on piston (Fig. 18).

16 On Teves-caliper, insert device (17) into caliper and press heat shield into piston (Fig. 18).

17 On Bendix (Bx)-caliper, place plate (018) on piston, then insert device (017) into caliper and press heat shield (7) into piston (2) (Fig. 19).

Note: Plate is self-made according to dimensions shown in Fig. 17.

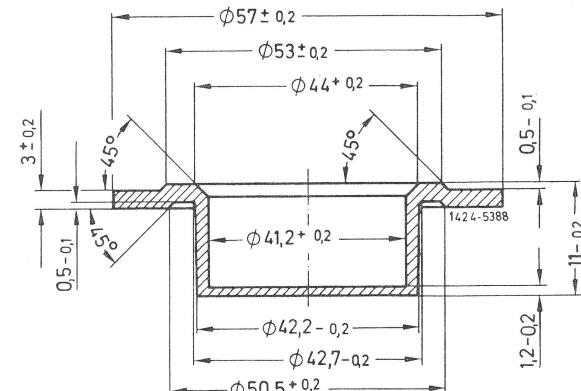


Fig. 17

Caution! Elevation on piston should project at least 0.1 mm above heat shield. Heat shields for inner and outer piston are different.

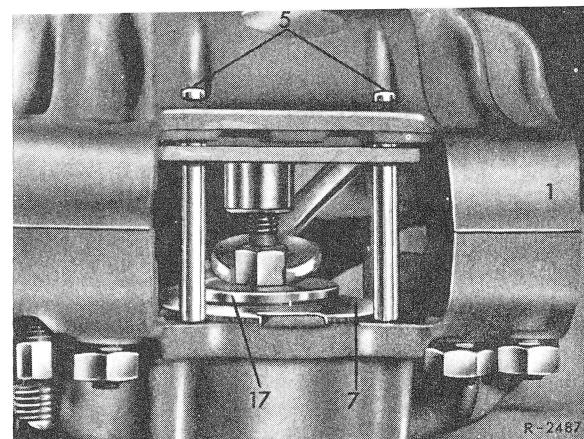
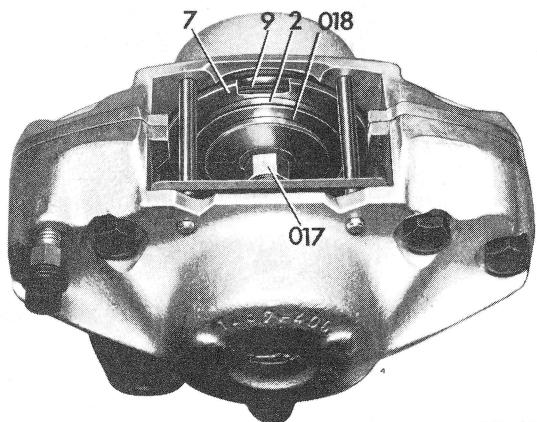


Fig. 18

1 Caliper 7 Heat shield
5 Holding pins 17 Device



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Fig. 19

2 Piston	017 Device
7 Heat shield	018 Plate
9 Dust cap	

18 Install brake shoes into brake caliper (42.0–160).