

Removal and Installation of Rear Brake Shoes

Job No.

42—9

Removal:

1. Remove the hub cap and loosen the wheel nuts.

Jack up the rear axle, remove the wheel, and pull off the brake drum by means of the three puller screws 191 589 00 35.

2. Detach the return spring (3) for the brake shoes and return spring (13) for the brake lever (see Fig. 42—9/5).

Note: Put a suitable pad under brake spring pliers 000 589 01 37 to prevent damage to the brake lining.

3. Remove the cotter pin (3) from the guide pin (14) of the automatic adjustment at the back of the brake anchor plate.

Then pull out the guide pin (14) together with the lock washer (13) and the washer (12) at both brake shoes (Fig. 42—9/1).

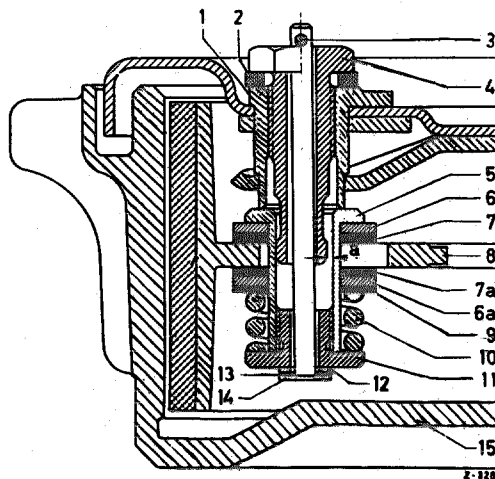


Fig. 42—9/1

- | | |
|--------------------------------|---------------------|
| 1 Collar bushing | 8 Brake shoe |
| 2 Lock washer | 9 Washer |
| 3 Cotter pin 3 x 15 | 10 Pressure spring |
| 4 Bolt | 11 Tensioning screw |
| 5 Adjusting sleeve | 12 Washer |
| 6 and 6a Thrust washer (steel) | 13 Lock washer |
| 7 and 7a Friction washer | 14 Guide pin |
| | 15 Brake drum |

4. Unscrew the bolt (4) of the automatic adjustment at the back of the brake anchor plate from both brake shoes and remove, together with lock washer (2).

5. Unscrew the hexagon screw (9) for the brake shoe attachment from the anchor pin of the supporting tube (1) and remove, together with lock washer (10), washer (8), and brass washer (7) (Fig. 42—9/2).

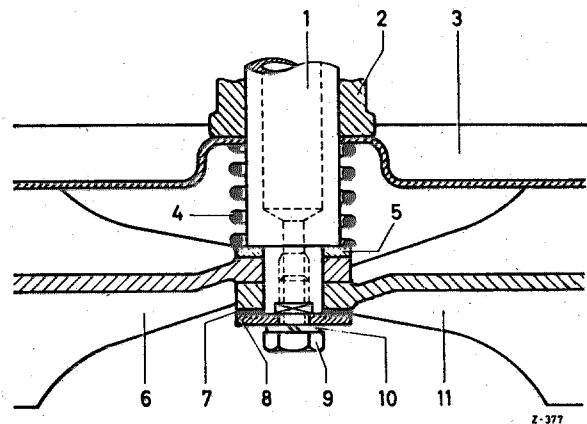


Fig. 42—9/2

Brake shoe suspension rear left

- | | |
|---|--------------------|
| 1 Supporting tube with anchor pin for the brake shoes | 6 Brake shoe front |
| 2 Bearer tube | 7 Brass washer |
| 3 Brake anchor plate | 8 Washer |
| 4 Pressure spring | 9 Hexagon screw |
| 5 Washer | 10 Lock washer |
| | 11 Brake shoe rear |

6. Detach the two brake shoes from the anchor pin and the rear brake cable (10) from the brake lever (12) (see Fig. 42—9/5).

Then remove the washer (5) and the pressure spring (4) from the anchor pin (see Fig. 42—9/2).

7. Remove the two retaining pins from the brake wheel cylinder.

Note: In order to prevent the pistons and cups from dropping out of the brake wheel cylinder it is advisable to fit a Piston Clamp 000 589 02 37 (see Fig. 42—7/3).

8. Clean brake shoes and brake anchor plate thoroughly with compressed air.

Checking:

9. Check the brake linings. If the linings are less than approx. 1.5 mm thick replace the brake shoes.

Note:

- a) The brake linings are bonded to the brake shoes. As a replacement part the complete brake shoe together with bonded lining is supplied by way of exchange.

If outside Germany difficulties are experienced in getting these replacement assemblies, new linings can be supplied for riveting to the brake shoes (see Job No. 44—11).

- b) Oily or greasy brake linings, should be thoroughly cleaned with gasoline; if oil or grease-soaked they should be replaced.

If this is the case it is necessary to put new seals on the rear axle shaft (see Job No. 35—4, paragraphs 3—28).

10. If necessary, disassemble the automatic adjustment (see Job No. 42—10).
11. Check the pistons of the brake wheel cylinders for freedom of movement. When pressed in with the thumb, the pistons should move easily; if not, they must be removed and freed up.
12. Check the anchor pin for the brake shoe in the brake anchor plate.

The pin must be perpendicular to the brake anchor plate and the rear axle shaft flange. The maximum deviation of the brake shoe is $a = 0.5$ mm (see Fig. 42—9/3).

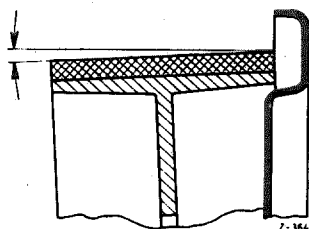


Fig. 42—9/3

Dimensions and Tolerances of Anchor Pin and Brake Shoe Suspension Bore

Anchor pin ϕ in mm	Bore ϕ in mm	Clearance between anchor pin and bore in mm
$\frac{15.968}{15.941}$	$\frac{16.000}{16.027}$	0.032—0.086

Installation:

13. Remove the piston clamp at the brake wheel cylinder and install the protective rubber caps and the retaining pins in the brake wheel cylinder.
14. Coat the anchor pin for the brake shoes with high-viscosity grease. Then install the pressure spring (4) and the washer (5) on the anchor pin (see Fig. 42—9/2) and compress the spring by means of a Spring Clamp 180 589 02 31 (Fig. 42—9/4).

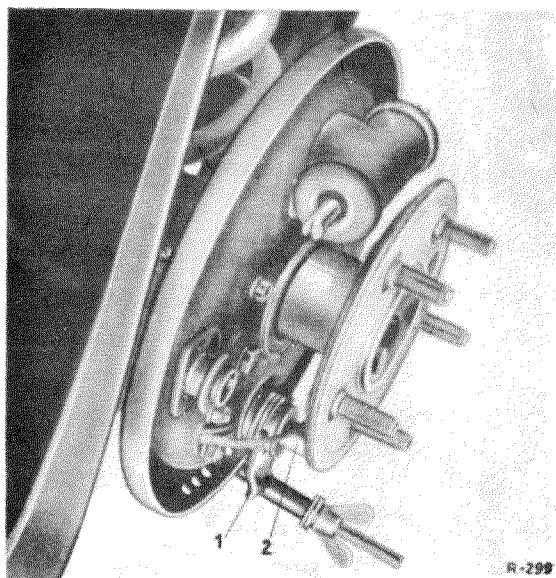


Fig. 42—9/4

1 Spring clamp 180 589 02 31
2 Brake shoe anchor pin

15. Attach the brake cable (10) to the brake lever (12) and then install the brake shoes on the anchor pin. Make sure that the strut (6) of the brake lever correctly engages the bolt (4) of the rear brake shoe (5) (Fig. 42—9/5).

Make sure that the retaining pins (2) of the brake wheel cylinder (1) are properly seated in the brake shoes.

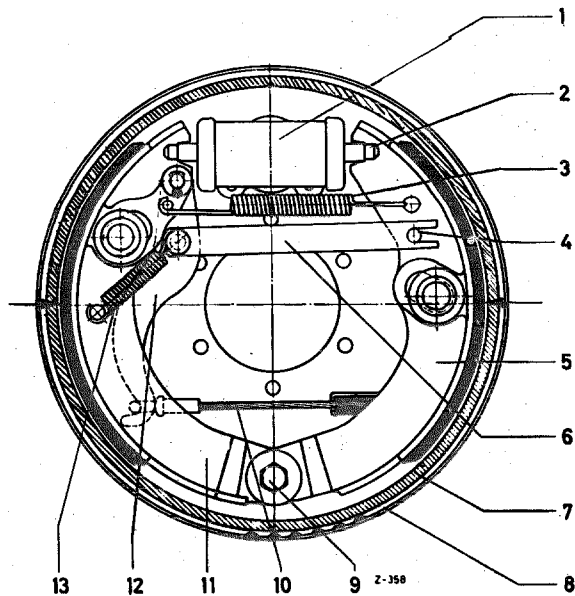


Fig. 42—9/5

- | | |
|---|------------------------------|
| 1 Brake wheel cylinder | 7 Brake drum |
| 2 Retaining pin | 8 Brake anchor plate |
| 3 Return spring for rear wheel brake shoe | 9 Hexagon screw |
| 4 Bolt for strut | 10 Brake cable |
| 5 Brake shoe | 11 Brake shoe |
| 6 Strut | 12 Brake lever |
| | 13 Brake lever return spring |

16. Install the hexagon screw (9) together with lock washer (10) and the washers (7) and (8) in the anchor pin of the supporting tube and tighten (see Fig. 42—9/2).

Note: The brass washer (7) must rest against the brake shoe eye.

17. Install the bolt (4) of the automatic adjustment at the two brake shoes from the back into the brake anchor plate and tighten. Do not forget the lock washer (2) (see Fig. 42—9/5).

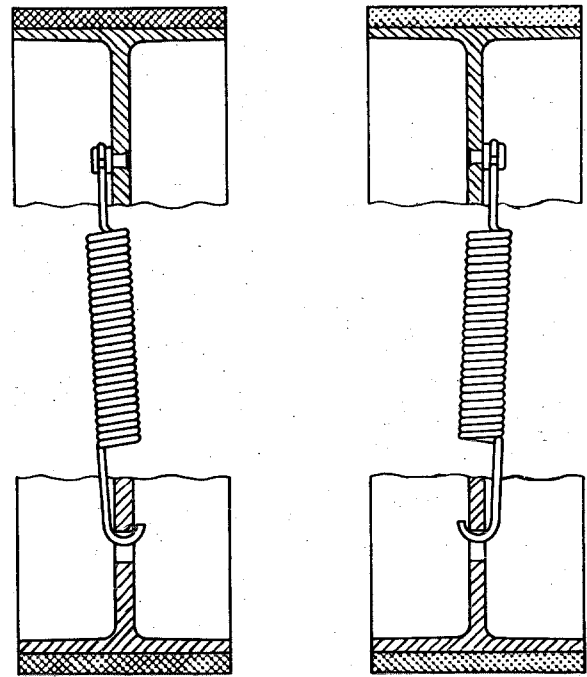
18. Push the guide pin (14) together with the lock washer (13) and the washer (12) from the front through the bolt (4) and cotter at the back with cotter pin (3) (see Fig. 42—9/1).

19. Attach the return spring (3) for the brake shoes and the return spring (13) for the brake lever by means of the brake spring pliers (see Fig. 42—9/5).

Note:

- a) Put a suitable pad under the brake spring pliers to prevent damage to the brake lining.

- b) Make sure that the return springs are installed correctly; the right and left return spring are shaped differently (Fig. 42—9/6).



left

right

Fig. 42—9/6

20. Use a sturdy screw driver to press the brake shoes outward and inward several times (see Fig. 42—9/7).

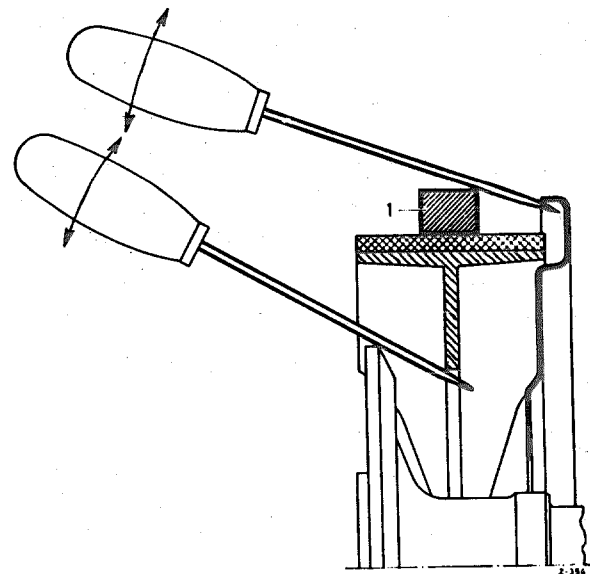


Fig. 42—9/7

1 Support for screw driver

The brake shoes must remain stationary in any position, even when they are forced outward as far as they will go. To check, lightly tap the side of the brake shoes.

On no account must the return spring overcome the frictional resistance of the automatic adjustment and pull the brake shoe inward.

If this is the case the automatic adjustment must be disassembled (see Job No. 42—10).

21. Check the clearance "a" between the adjusting sleeve (5) and the pin (4) (see Fig. 42—9/1).

As a rule it is sufficient to make this check with a large screw driver. Use the screw driver to slightly press the brake shoe toward the outside — just overcoming the force of the return spring — and release. You should be able to hear the click produced by the bolt (4) striking against the adjusting sleeve (5) (see Fig. 42—9/1).

An accurate check requires a measurement of the clearance — preferably by means of a dial gage — at the points of the brake lining indicated by arrows (see Fig. 42—9/5). At the point indicated by the arrow the clearance must be at least 0.8 mm for each brake shoe.

Note: A clearance of 1 mm exists only in the longitudinal direction of the slot because the brake shoe pivots on the anchor pin. See the broken-line arrow indicating the actual measuring point (see Fig. 42—8/7).

To simplify measurement we measure the clearance at the point marked with an arrow, perpendicular to the brake lining, and therefore the clearance at this point is only $b = 0.8$ mm (see Fig. 42—8/7).

If the clearance is too small the reason will probably be that the bolt (4) of the automatic adjustment is bent (see Fig. 42—9/1). As a result the bolt is in an eccentric position

to the adjusting sleeve which as a consequence makes premature contact (Fig. 42—9/8).

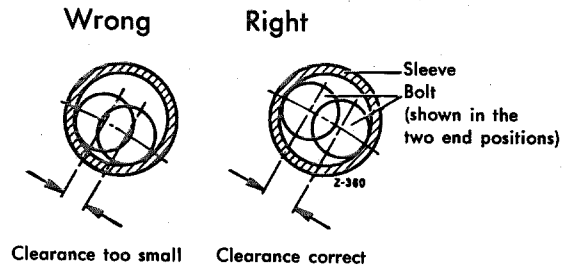


Fig. 42—9/8

Bent bolts should be replaced.

Note: It is imperative that the clearance should be absolutely accurate, since otherwise the brake may not release if heated beyond a certain point.

22. **Press the brake shoes right home.** Check again to see that the retaining pins are properly seated.
23. Install the brake drum. If necessary back off the wing nut of the hand brake adjustment. Then install the wheel and jack the car down.
24. Before starting the car depress the brake pedal several times to make sure that the brake shoes adjust themselves and contact the brake drums.

Note: Never omit this procedure; there can be no brake action unless the brake shoes have adjusted themselves.

If during removal and installation the piston of the brake wheel cylinder has been pressed out of its bore the brake system must be bled (see Job No. 42—1).

25. Adjust the hand brake in such a way that brake action begins at the 3rd or 4th notch of the ratchet.