

# Removal and Installation of Steering Relay Arm and Pivot Bearing

Models 219, 220a, 220S

Job No.

L 11

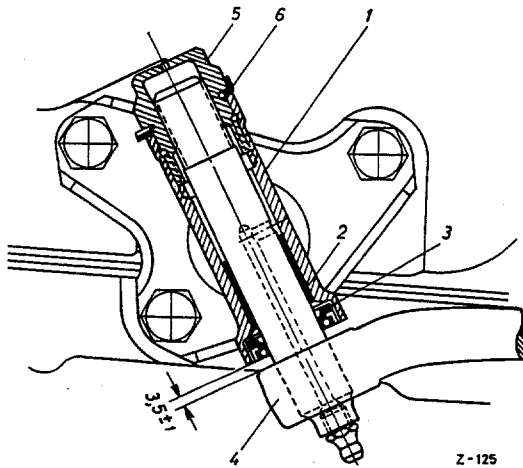


Fig. L 11/1

- |                 |                      |
|-----------------|----------------------|
| 1 Pivot bearing | 4 Steering relay arm |
| 2 Bushing       | 5 Cover plate        |
| 3 Grease seal   | 6 Locking plate      |

## Removal:

1. Pull out the castle nut cotters at the ball-heads of the steering relay arm and unscrew the castle nuts.

Then use Bell-shaped Puller 186 589 10 33 to press out the ball-heads of the tie-rod assembly from the steering relay arm.

2. Unscrew the three hexagon screws and lock washers from the pivot bearing and take the pivot bearing with the steering relay arm off the front axle support (Fig. L 11/1).
3. Tap up the locking plate (6) of the cover plate (5) and screw out the cover plate.
4. Then pull the steering relay arm (4) out of the pivot bearing (1).

## Checking and Repairing

5. Check the bearing pivot of the steering relay arm for wear and chafed spots. If the pivot is worn, replace the steering relay arm (4).
6. Check the bearing bushing (2) in the pivot bearing (1) for wear and chafed spots. Replace the bearing bushing if necessary. To do this, tap out the bearing bushing (2) including the grease seal (3) and press in a new bushing.

The newly installed bushing should be reamed out to the prescribed final dimension.

## Dimensions and Tolerances

in mm

Pivot bearing	Bearing bushing			Steering relay arm
	External diameter	Internal diameter rough-turned dimension	Internal diameter final dimension	
Base bore diameter				Bearing diameter
$\frac{22.000}{22.021}$	$\frac{22.048}{22.035}$	$\frac{17.7}{17.8}$	$\frac{18.006}{18.024}$	$\frac{17.984}{17.966}$
Permissible radial play of the steering relay arm: 0.022—0.058				
Oversize fit of the bearing bushing: 0.014—0.048				

**Installation:**

7. Install a new grease seal, with the sealing lip toward the outside.

**Note:** It is important for the sealing lip of the grease seal to point to the outside so that the pressure developed during lubrication and also any superfluous grease can escape between the sealing lip and the steering relay arm.

If the grease seal is incorrectly installed it might be pressed out by the pressure created.

8. Smear the pin of the steering relay arm and the bearing bushing with grease (e. g. roller bearing grease).
9. Insert the steering relay arm (4) in the pivot bearing (1) and screw on the cover plate (5) (use a new locking plate), so that in the straight-ahead position a distance of  $3.5 \pm 1$  mm remains between the steering relay arm and the pivot bearing (Fig. L 11/1).

**Note:** The distance between the steering relay arm and the pivot bearing can be adjusted from 0—12 mm. This is made possible by the fact that the internal thread of the cover plate has a pitch of 2 mm whereas the external thread has a pitch of 1 mm.

This range of adjustment permits the height of the steering relay arm to be corrected.

In the straight-ahead position, the difference in height between the steering gear

arm and the steering relay arm should not exceed a maximum of 2 mm.

The distance from the steering relay arm to the pivot bearing must not be adjusted to less than 2.5 mm because the steering relay arm might then foul the pivot bearing when locked hard over.

10. Use the three hexagon screws and lock washers to fix the pivot bearing to the front axle support.

11. Once again check the height adjustment of the steering relay arm. When the adjustment is correct, tighten up the cover plate (5) and tap over the locking plate (6) (see Fig. L 11/1).

12. Place a sealing cover and a rubber cuff on each of the ball-heads.

Press the ball-heads of the tie-rod assembly into the steering relay arm.

The contact faces of the ball-heads must be free of oil and grease.

13. Screw on, tighten up and cotter the two castle nuts.

14. Check the toe-in.