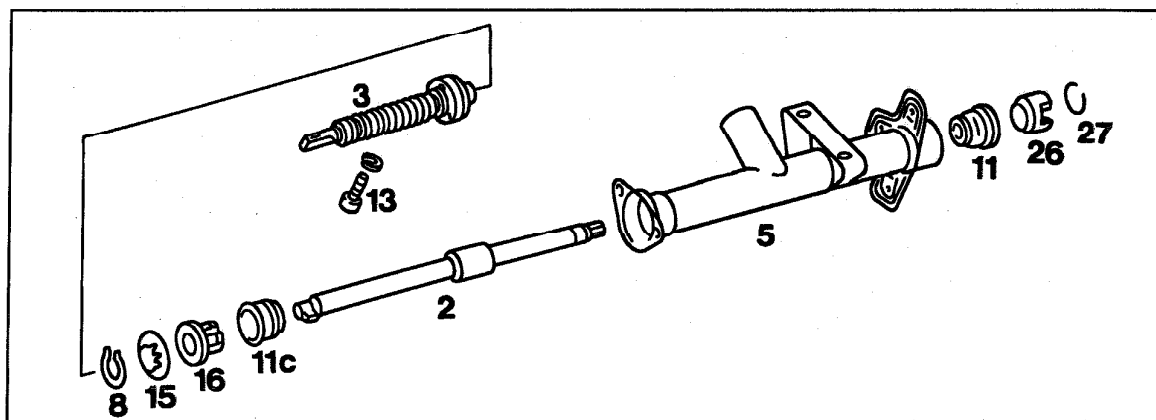


46-625 Steering column disassembly/assembly

Preliminary work:

Steering column removed (46-620).

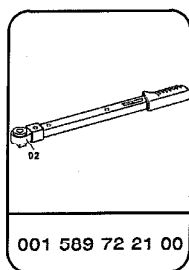
A. Rigid version



P46-5047-53

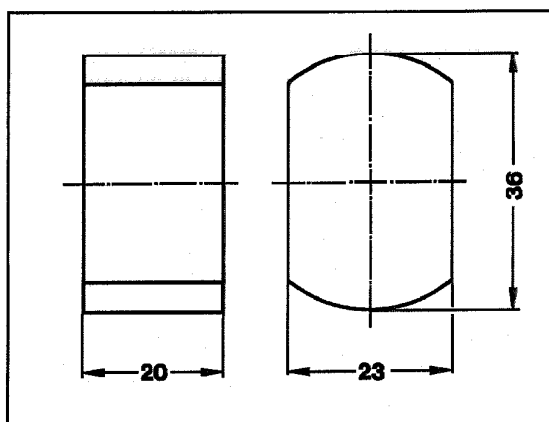
Screw (13)	screw out, screw in, 25 Nm (steps 1, 13).
Bottom steering spindle (3)	remove, install. Length 414.5 ± 0.5 mm, maximum runout deviation 2 mm (steps 1, 13).
Snap ring (8), disk spring (15), support ring (16) and ball bearing (11c)	remove, install. Completely pretension snap ring (8) with open side toward disk spring (15) with installation punch (steps 2, 11, 12).
Snap ring (27), support ring (26) and ball bearing (11)	remove from upper steering spindle (2), install. Observe installation position of support ring (26) (steps 3, 4, 9, 10).
Ball bearings (11, 11c)	knock out outer races in outer jacket tube (5) with thrust piece, press in. Check ball bearings (11, 11c) and replace, if required (steps 5, 7, 8).
Steering spindle (2)	⚠ WARNING! Do not remove snap rings for repeating lock. remove from jacket tube (step 6).

Special tool



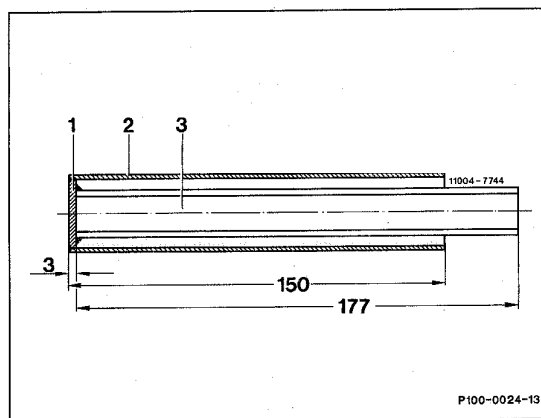
Shop-made tool

Thrust piece (050)



P100-0022-13

Installation punch



P100-0024-13

P100-0024-13

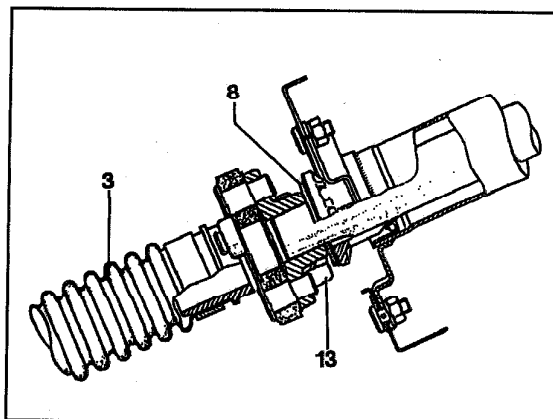
46-625 Steering column disassembly/assembly

Note

Do not replace bottom steering spindle with jacket tube installed. Otherwise the upper steering spindle can be displaced in the jacket tube resulting in radial play between the steering spindle and jacket tube.

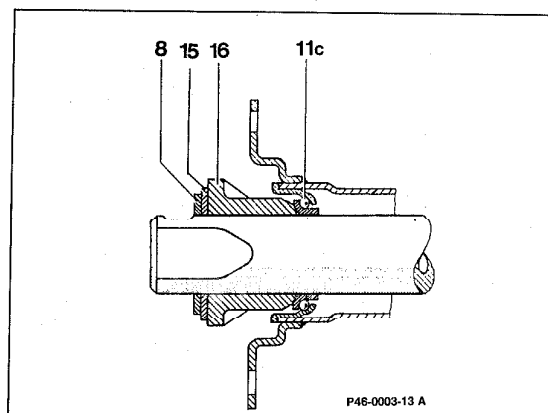
Disassembly

1 Screw out screw (13) and remove bottom steering spindle (3). Check length of steering spindle = 414.5 ± 0.5 mm and runout (max. lateral runout 2 mm).



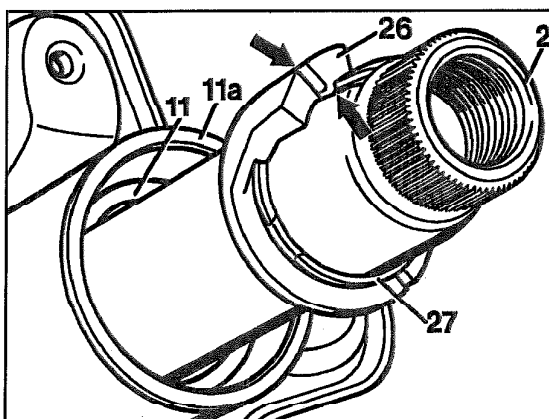
P46-0002-13A

2 Remove snap ring (8), disk spring (15), support ring (16) and ball bearing (11c) from upper steering spindle. Use snap ring pliers.



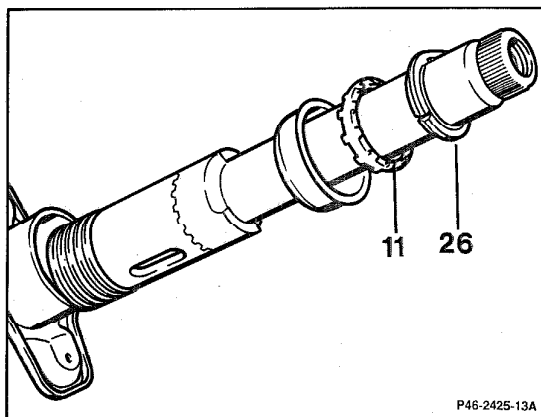
P46-0003-13A

3 Push upper steering spindle (2) slightly upward. Press support ring (26) downward in groove (arrow) in upper steering spindle and remove snap ring (27).



P46-2423-13A

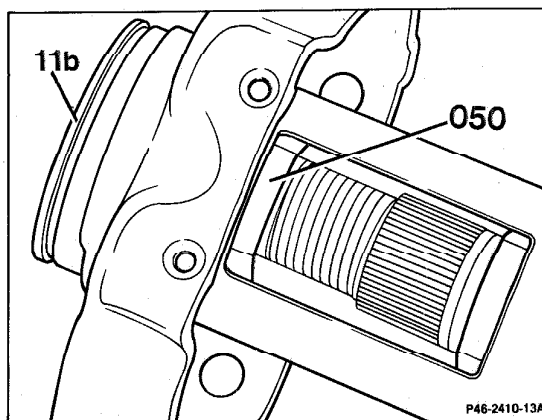
4 Remove support ring (26) and ball bearing (11) from upper steering spindle.



P46-2425-13A

P46-2425-13A

5 Insert thrust piece (050) into jacket tube and first knock the outer race (11b) for upper ball bearing out of jacket tube with upper steering spindle. Then knock the outer race for the bottom ball bearing out of the jacket tube with the thrust piece.



P46-2410-13A

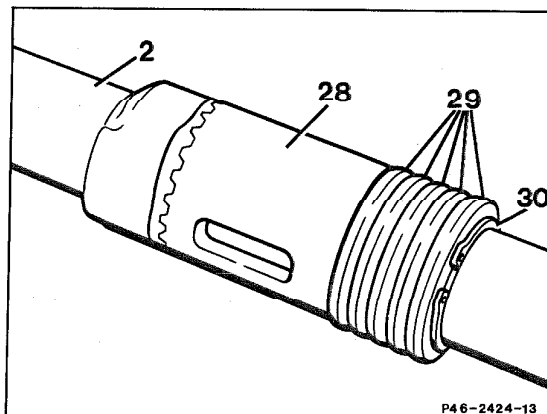
P46-2410-13A

46-625 Steering column disassembly/assembly

WARNING!

Do not remove snap ring (30) for repeating lock (28), because the disk springs (29) are installed with extremely high initial tension.

- 6 Remove steering spindle (2) from jacket tube.

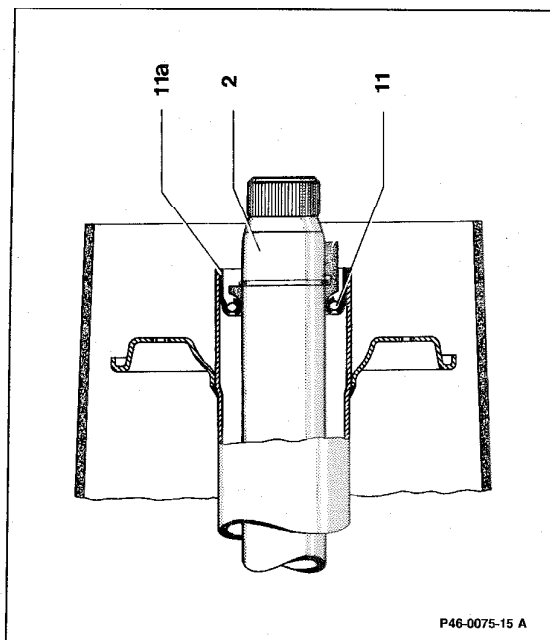


P46-2424-13

Assembly

- 7 Check both ball bearings for wear and impressions before installing.

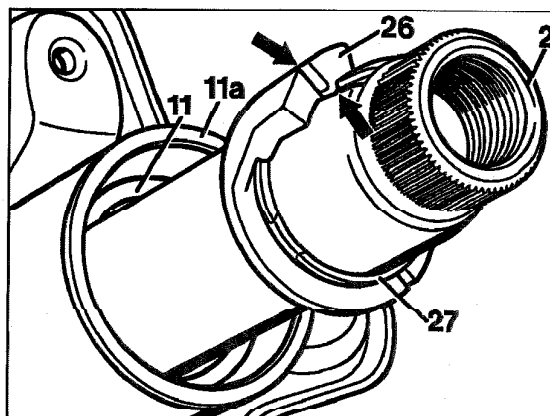
- 8 Press outer race (11a) for upper ball bearing (11) into jacket tube with suitable punch. Insert upper steering spindle (2) into jacket tube from bottom and press in bottom outer race.



P46-0075-15A

- 9 Install ball bearing (11) on upper steering spindle (2).

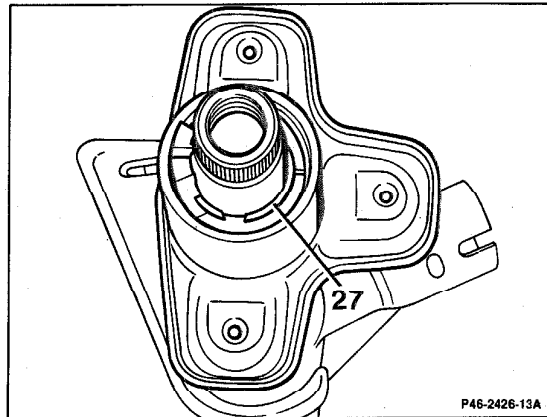
- 10 Install support ring (26) together with snap ring (27) on upper steering spindle. The tab on the support ring should engage in the groove in the upper steering spindle (arrows).



P46-2423-13A

Note

The snap ring (27) must engage correctly in the groove in the upper steering spindle.

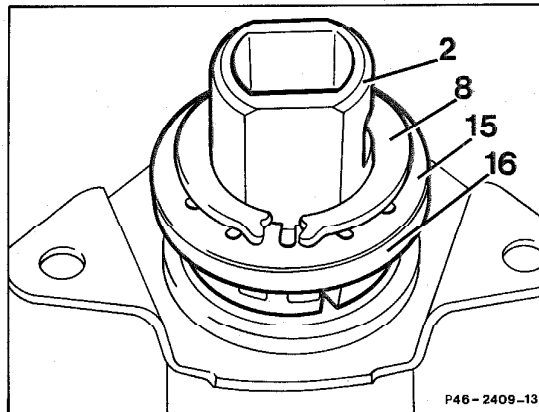


P46-2426-13A

P46-2426-13A

11 Install ball bearing, support ring (16) and disk spring (15) on upper steering spindle (2).

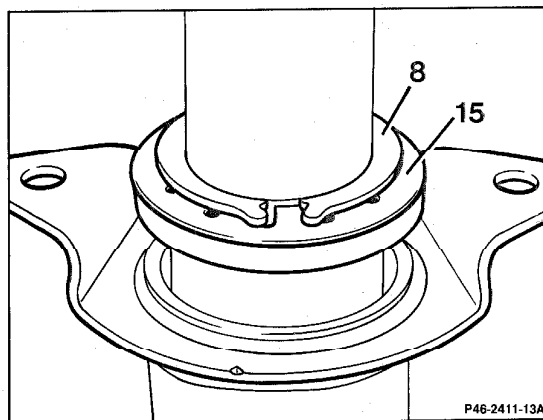
Install snap ring (8) on upper steering spindle with open side pointing toward disk spring.



P46-2409-13

P46-2409-13

12 Press snap ring (8) onto upper steering spindle with installation punch until disk spring (15) is completely tensioned.



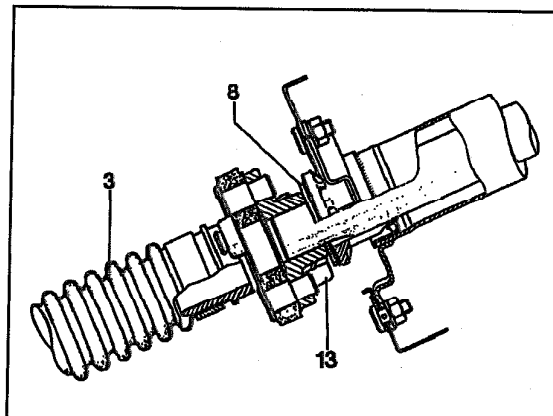
P46-2411-13A

P46-2411-13A

46-625 Steering column disassembly/assembly

13 Slide bottom steering spindle (3) on up to snap ring (8) on upper steering spindle. Screw in bolt (13) and tighten to 25 Nm.

The snap ring (8) maintains the initial bearing tension only during installation. When the steering spindle is fastened the initial bearing tension is maintained by the adjacent steering coupling for the steering spindle.

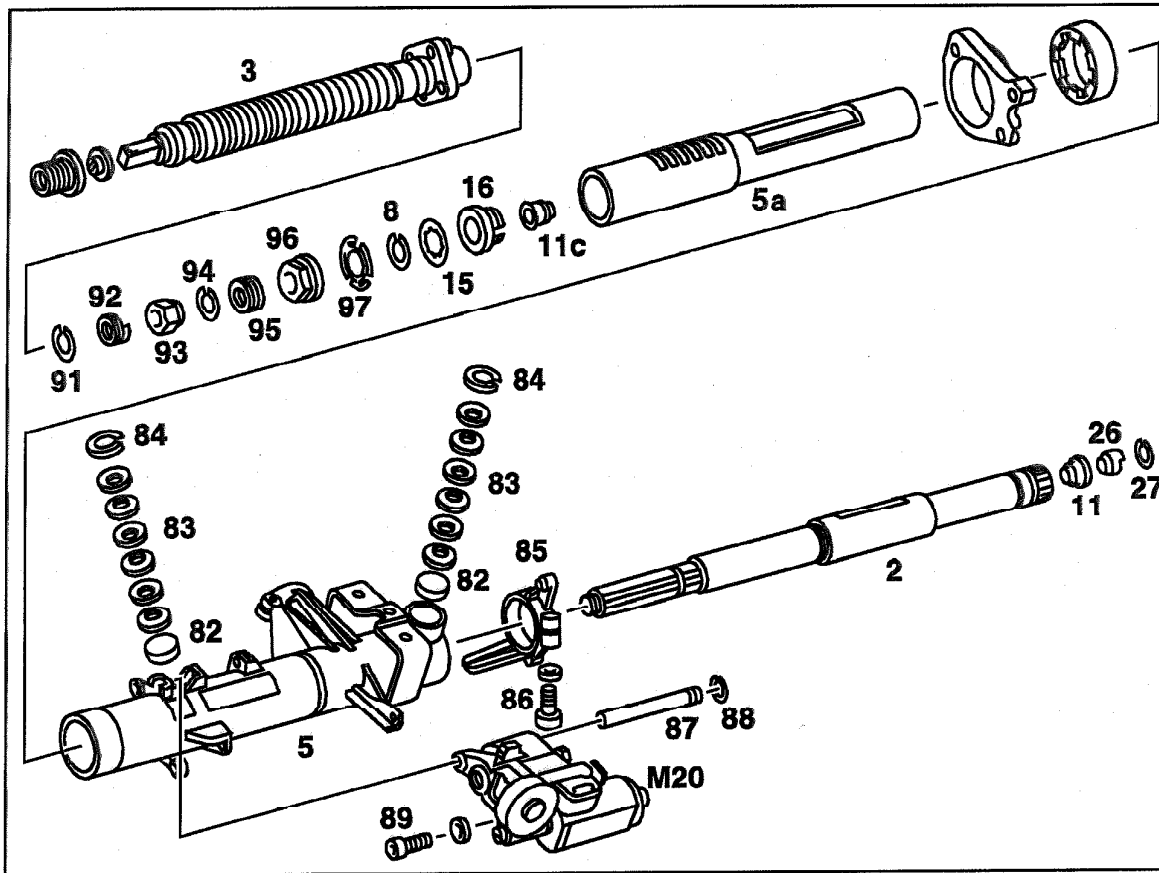


P46-0002-13A

B. Electrically adjustable steering column

Preliminary work:

Steering column removed (46-620).



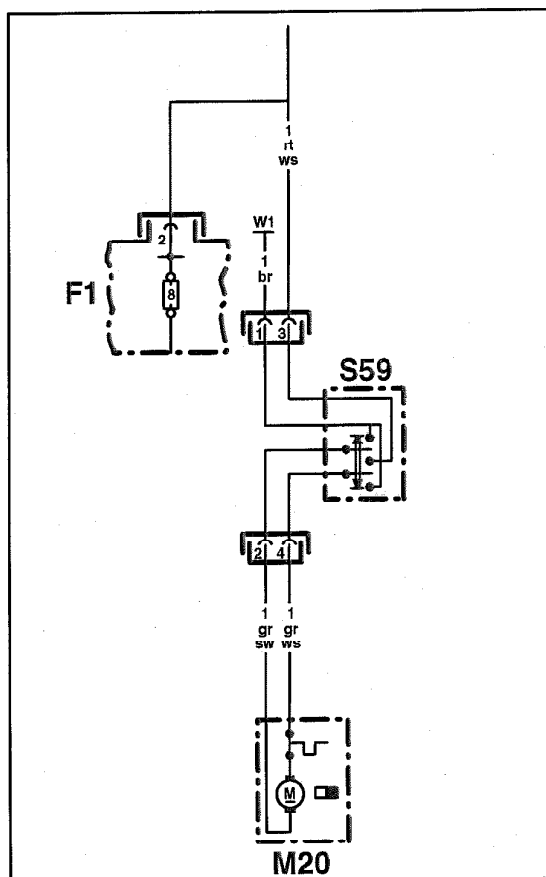
P46-5048-57

- | | |
|---------------------------|--|
| Snap ring (91) | remove from upper steering spindle (2), install and remove bottom steering spindle (3), install. Replace snap ring. Observe installation position (steps 1-2). |
| Tensioning nut (93) | screw off, screw on and press off torsion spring (92), install. Distance between top of flange and tensioning nut 2.8 ± 1 mm (step 3). |

46-625 Steering column disassembly/assembly

Allen screws (89)	screw out, screw in, 20 Nm (step 4).
Motor for steering column adjustment (M20)	tip. Remove snap ring (88) on bolt (87), install. Remove motor. Adjust jacket tube play to 0.25-0.3 mm by turning motor (step 5).
Disk springs (83)	remove snap rings (84) and thrust pieces (82), install. Insert thrust pieces with Molykote Longterm 2 Plus. Install disk springs stacked alternately. Replace snap rings (84) (step 6).
Screw (86)	loosen, tighten. Remove mount (85), install. Adjust dimension "a" = 21 mm (step 7).
Inner jacket tube (5a)	screw out head screw, screw in, 10 Nm and pull inner jacket tube (5a) out of outer jacket tube (5), reinstall. Before reinstalling inner jacket tube coat with Molykote Longterm 2 Plus. Observe guide groove in inner jacket tube (5a) (step 8).
Snap ring (94), tensioning nut (96), threaded ring (95) and snap ring (97)	remove from upper steering spindle (2). Screw threaded ring into tensioning nut flush (step 9).
Snap ring (8), disk spring (15) and support ring (16)	remove from upper steering spindle (2), install. Replace snap ring and disk spring. Completely tension disk spring (step 10).
  CAUTION! The upper steering spindle should not have any axial play in the inner jacket tube and should turn without sticking.	
Snap ring (27) and support ring (26)	remove, install (step 11).
Ball bearings (11, 11c)	remove, install, check and replace, if required. Use thrust piece. Press in lower ball bearing (11c) first (step 12).

Circuit diagram, electrical steering column adjustment



P46-5055-17

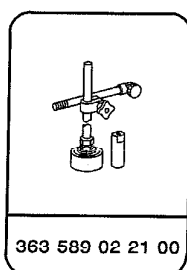
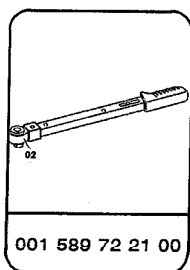
Molykote Longterm 2 Plus

Refer to factory approved service products list ¹⁾

1) Supplied with owner's literature or available through your local authorized Mercedes-Benz Dealer.

46-625 Steering column disassembly/assembly

Special tools



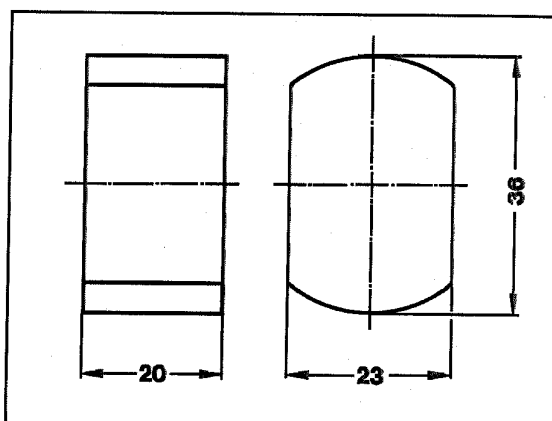
Commercially available tool

Dial gauge A1 DIN 878

e.g. Mahr,
D-7300 Esslingen
Order no. 810

Shop-made tools

Thrust piece (070).

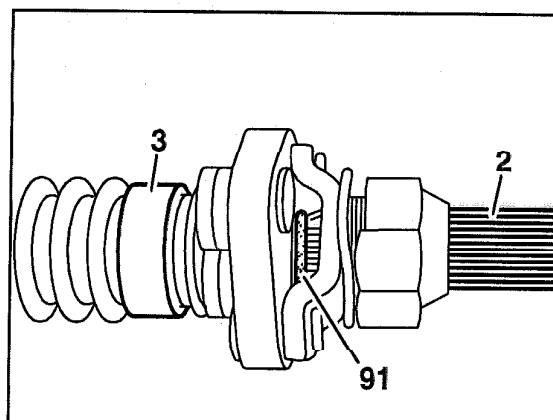


P100-0022-13

Disassembly and assembly

1 Pull bottom steering spindle (3) off of spline on upper steering spindle (2) to stop on snap ring (91).

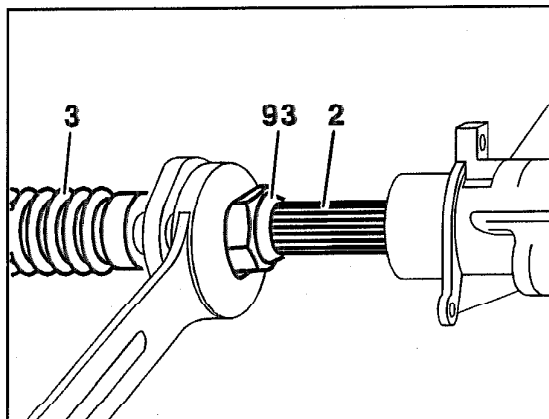
2 Remove snap ring (91) from upper steering spindle (2). Pull bottom steering spindle (3) off of upper steering spindle (2).



P46-2078-13A

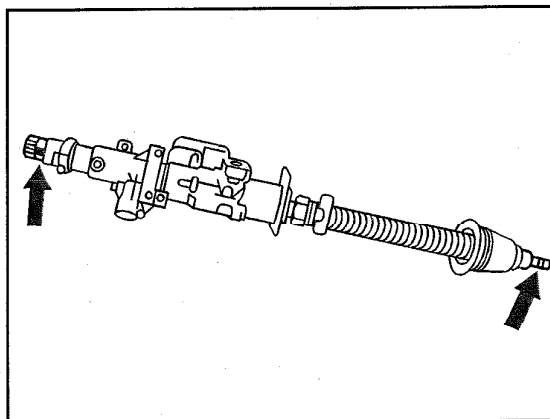
Installation note

Connect bottom steering spindle (3) with upper steering spindle (2); for this purpose turn tensioning nut (93) to left against spring force of torsion spring until upper steering spindle (2) can be pushed on.



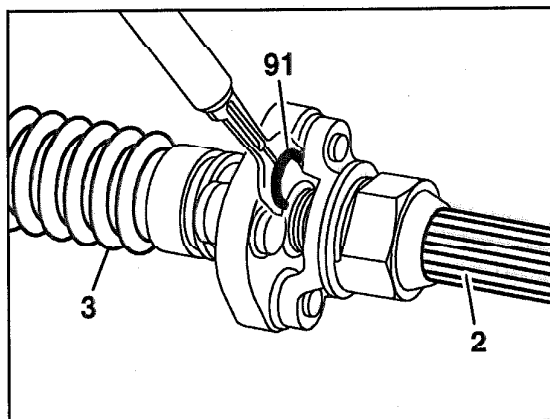
P46-2075-13A

The lug (arrow) on the upper support ring (rosot cam for combination switch) and the notch (arrow) for the mounting screw for the steering coupling on the bottom steering spindle should be in line.



P46-2276-13

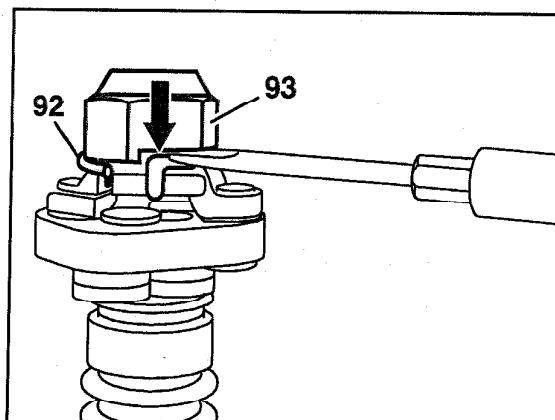
Replace snap ring (91) and push bottom steering spindle (3) onto spline on upper steering spindle (2) until the snap ring (91) can be installed in the groove in the upper steering spindle (2) between the flange on the steering coupling and the flexible joint. Assure that snap ring is properly seated.



P46-2079-13A

46-625 Steering column disassembly/assembly

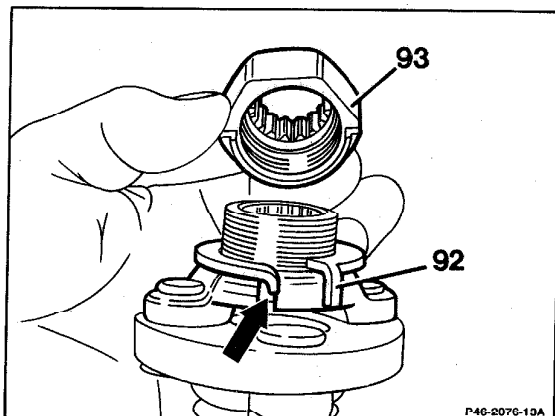
- 3 Screw tensioning nut (93) off of steering coupling flange while pressing the leg (arrow) of the torsion spring (92) away from the tensioning nut with a screwdriver.



P46-2077-13A

Installation note

Install torsion spring (92) with offset ends of coil in flange (arrow). Screw tensioning nut (93) onto flange until distance of 2.8 ± 1 mm is present between the upper edge of the flange and the tensioning nut.



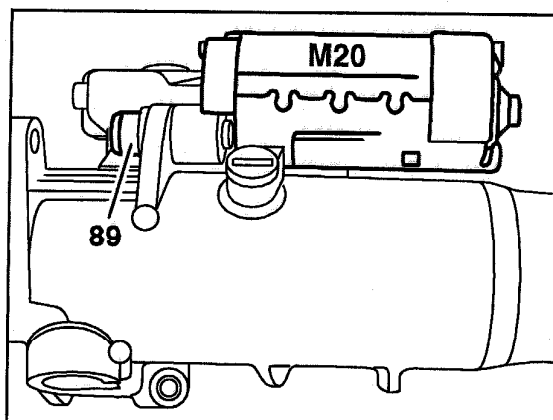
P46-2076-13A

P46-2076-13A

- 4 Screw out Allen screw (89), tip motor for steering column adjustment (M20) upward.

Installation note

Install motor for steering column adjustment (M20) on jacket tube spline and install screw (89). Adjust inner jacket tube play to 0.25–0.30 mm by moving screw (89) in oblong hole. Then tighten screw to 20 Nm.

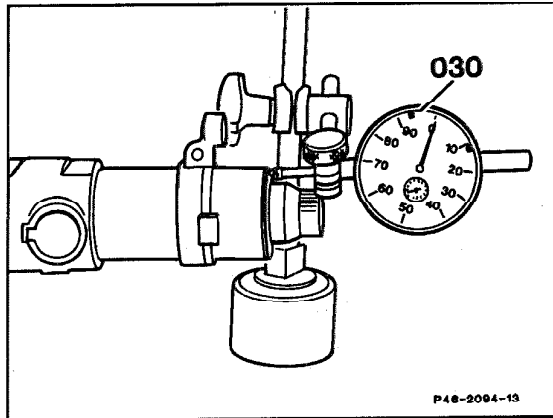


P46-2480-13A

46-625 Steering column disassembly/assembly

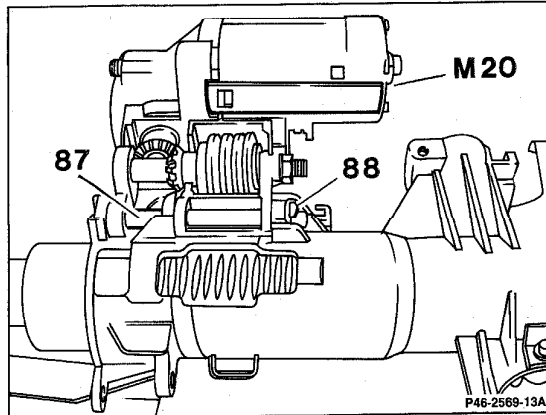
Note

Use dial gauge (030) with dial gauge holder 363 589 02 21 00 to measure jacket tube play.



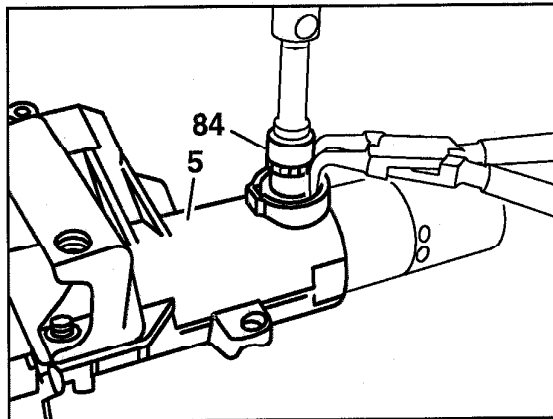
P46-2094-13

- 5 Remove snap ring (88) from bolt (87).
Remove bolt (87) from jacket tube and remove motor for steering column adjustment (M20).



P46-2569-13A

- 6 Press disk springs in outer jacket tube (5) together slightly with hand press. Remove snap ring (84), disk springs and thrust piece.

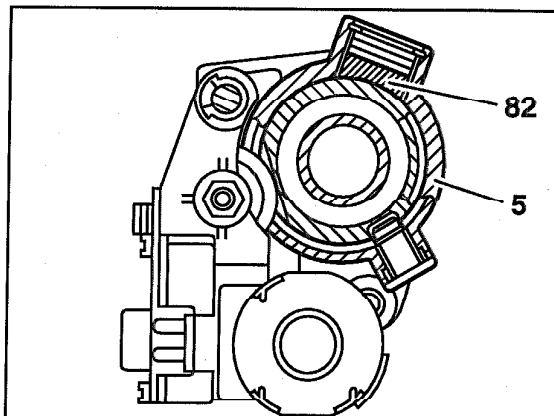


P46-2278-13A

46-625 Steering column disassembly/assembly

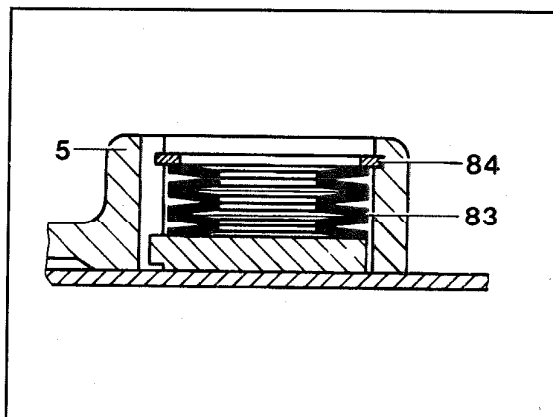
Installation note

- Insert thrust pieces (82) into outer jacket tube (5) with Molykote Longterm 2 Plus.
- The outer jacket tube (5) is equipped with 2 spring sets.



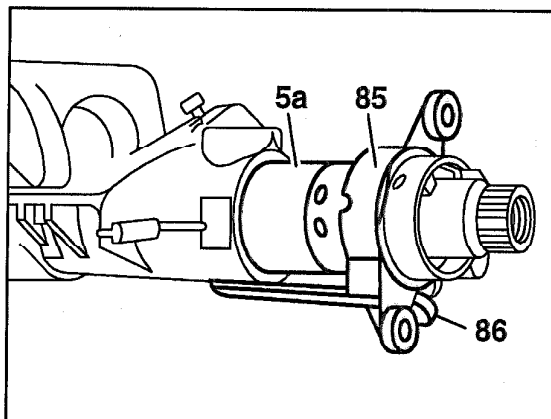
P46-0015-13A

- Install disk springs (83) (2 x 6 springs) in outer jacket tube (5) stacked alternately. Replace snap rings (84) and install after tensioning disk springs (83).



P46-0014-13A

- 7 Loosen screw (86) and remove mount (85) from inner jacket tube (5a).

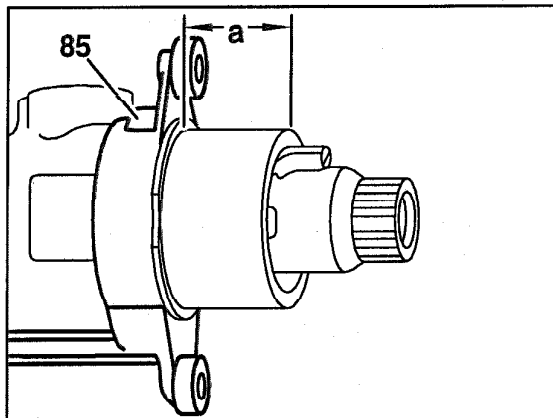


P46-2279-13A

Installation note

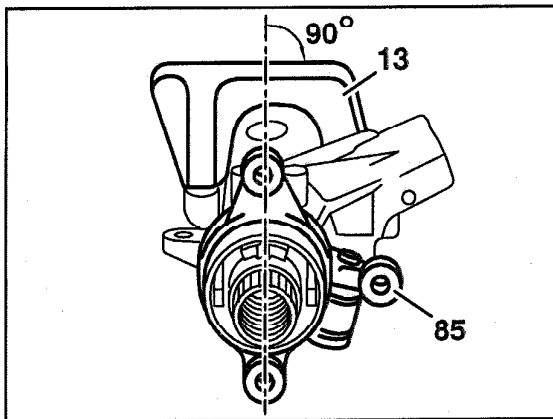
Assure that mount (85) is installed in correct position. Tightening torque 5 Nm.

a) Distance "a" = 21 ± 0.5 mm.



P46-2280-13

b) Turn mount (85) so that the two mounting holes are at an angle of 90° to the sheet metal bracket (13).



P46-2281-13

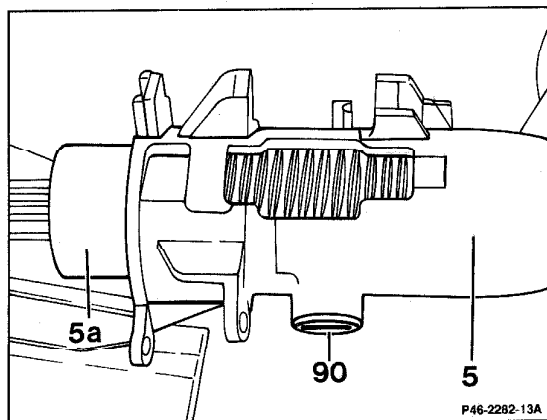
8 Screw out head screw (90) and pull inner jacket tube (5a) downward out of outer jacket tube (5).

Installation note

Coat inner jacket tube (5a) with "Molykote Longterm 2 Plus" and install in outer jacket tube (5) from below.

Tightening torque for head screw (90) 10 Nm.

Pay attention to guide groove in inner jacket tube (5a).



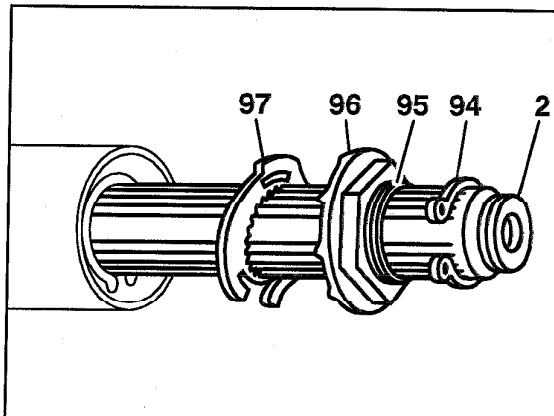
P46-2282-13A

46-625 Steering column disassembly/assembly

9 Remove snap ring (94), tensioning nut (96), threaded ring (95) and snap ring (97) from upper steering spindle (2).

Installation note

Position snap ring (97), slide tensioning nut (96) onto upper steering spindle (2) together with threaded ring (95). Install snap ring (94). The threaded ring (95) should be screwed into the tensioning nut (96) flush.

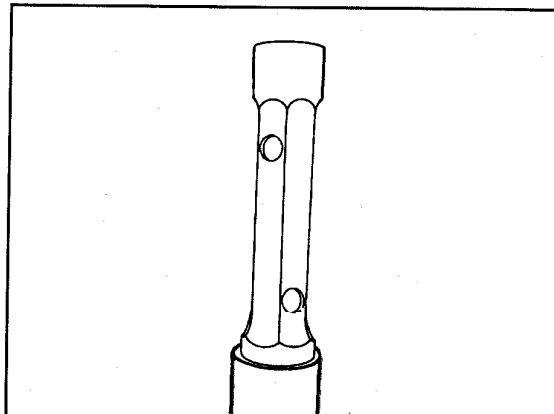


P46-2081-13A

Tighten tensioning nut by hand with socket wrench.

Note

The tensioning nut prevents the snap ring from moving in the axial direction.



P46-2083-13A

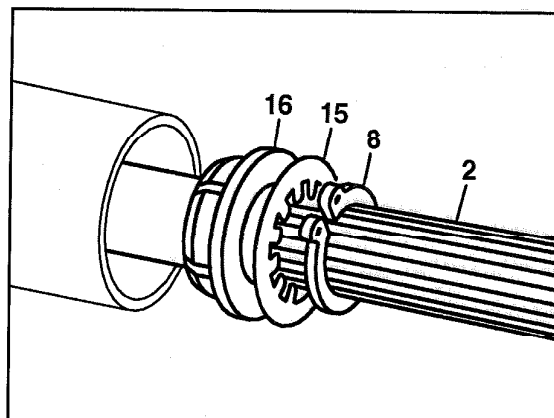
10 Loosen snap ring (8) with snap ring pliers, then remove disk spring (15) and support ring (16) from upper steering spindle (2).

⚠ CAUTION!

The upper steering spindle should not have any axial play in the inner jacket tube and should turn without sticking.

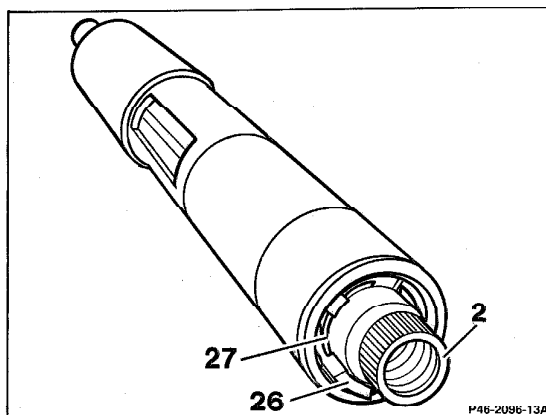
Installation note

Replace snap ring (8) and disk spring (15). Install support ring (16) and disk spring (15) on upper steering spindle (2). Press snap ring (8) onto upper steering spindle with bezel pointing toward disk spring until disk spring is completely tensioned.



P46-2082-13A

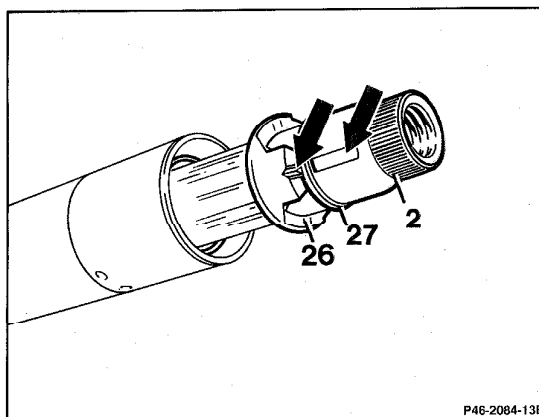
11 Slide upper steering spindle (2) up and separate support ring (26) from snap ring (27). Remove snap ring (27) and support ring (26) one after another.



P46-2096-13A

Installation note

Install support ring (26) on upper steering spindle (2) and then install snap ring (27). Assure that lug on support ring (26) engages in groove (arrows) in upper steering spindle (2) and that snap ring (27) is properly seated in groove.

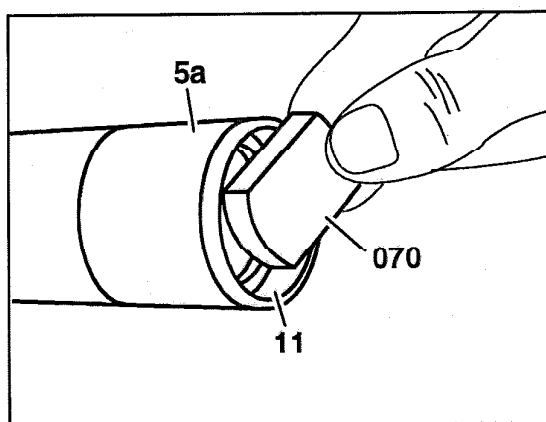


P46-2084-13B

12 Insert shop-made thrust piece (070) into inner jacket tube (5a) and knock upper ball bearing (11) out of jacket tube first. Then knock lower ball bearing out of jacket tube with thrust piece.

Installation note

Check ball bearings for reusability. Press bottom ball bearing into inner jacket tube first, then install steering spindle and press in upper ball bearing.



P46-2080-13A