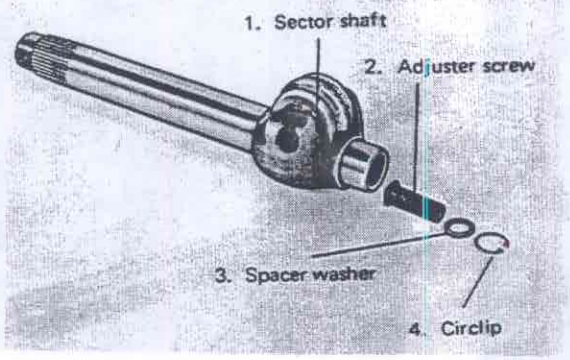

Fig. 64–16. Sector shaft

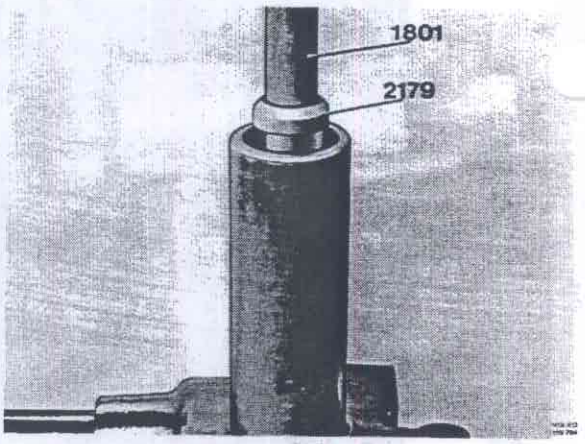

Fig. 64–18. Fitting the bushing

Checking, replacing parts

1. Clean all parts thoroughly.
2. Check the sector shaft. The roller in the sector shaft may not be scored, scratched or severely worn on the contact surfaces and it may not be loose on its shaft. If worn or loose, replace the sector shaft.
3. Check the axial clearance on the adjuster screw. It may not exceed 0.05 mm (0.002"). If this is the case, adjust the axial clearance with the spacer washer (3) according to Fig. 64–16. Spacer washers are available in thicknesses 2.10–2.50 mm (0.083–0.098") in steps of 0.05 mm (0.002"). The adjuster screw is released by removing the circlip (4, Fig. 64–16). The clearance should be as small as possible. However, it is important that the adjuster screw can be turned easily after adjustment.
4. Check the sector shaft bushings (2, 4 and the one in the upper cover), see Fig. 64–1. If loose, replace the bushings. Knock out the bushings (2 and 4) with drift 2337 in their own direction, see Fig. 64–17. The bushing in the upper cover cannot be replaced, and for this reason the cover must be replaced complete. The bushings are pressed in each from their own direction with drift 2179 and standard handle 1801, see Fig. 64–18.
5. Check the contact surfaces of the worm against the roller and the inner races for the ball bearings (7 and 14). If there are scratches, scoring or severe wear, replace the worm and shaft. Check the balls of the bearings and outer rings. If scored or damaged in any other way, replace the bearing parts. The upper bearing outer ring is pulled out with the help of a Kukko standard jackknife No. 21–6 kit 24B, see Fig. 64–19. Tap the ring in

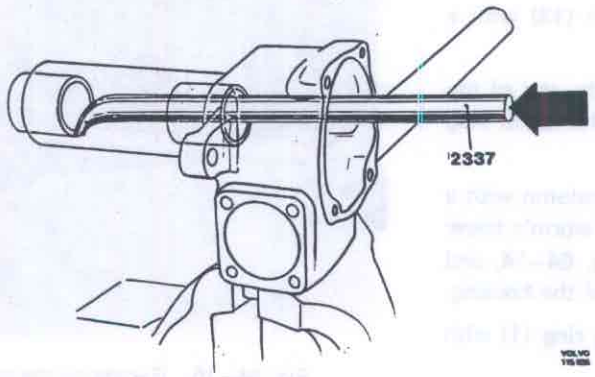

Fig. 64–17. Removing the bushing

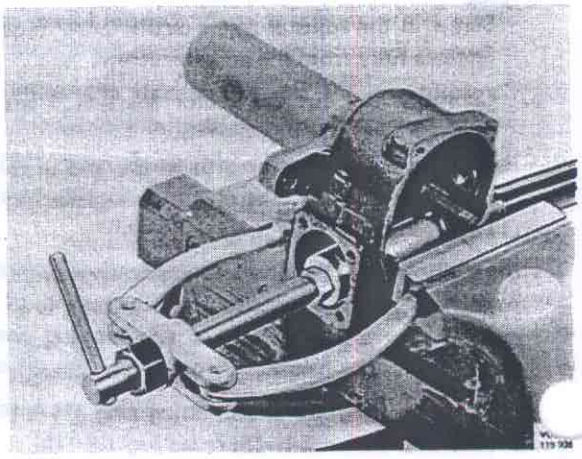

Fig. 64–19. Removing the upper bearing adjuster ring

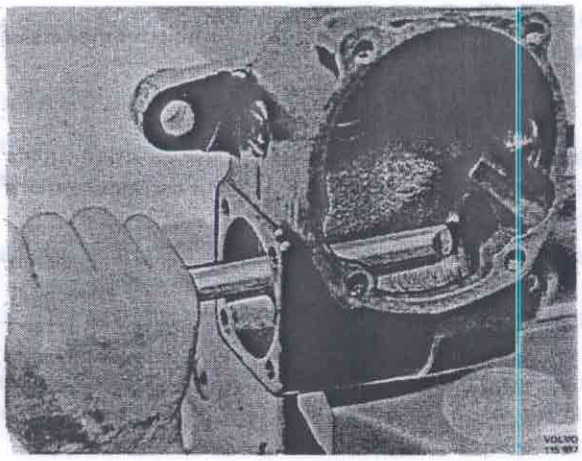

Fig. 64–20. Fitting the upper bearing outer ring

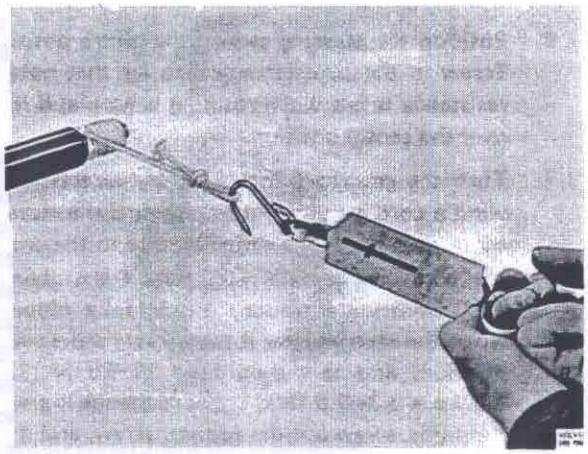

Fig. 64–22. Checking the pre-load

with a brass drift, see Fig. 64–20. Tap with light taps round the bearing race so that the key does not stick.

6. Check the bearing at the top of the steering column jacket. To replace the bearing, knock it out with a screwdriver, see Fig. 64–21. Knock in the new bearing with a plastic mallet.

Assembling the steering gear

1. Place the upper bearing on the steering column and place the steering column in position. Fit the lower bearing and its bearing race, the spacer ring and shims. Fit the same number of shims which were removed.
2. Fit the lower cover and tighten up the bolts while checking that the steering column can be rotated without any notable resistance.
3. Wind a cord a couple of times round the steering column and attach a spring balance to the end of the cord, see Fig. 64–22. Rotate the steering column and read off the force on the bearings, which should be between 2.5–5.5 kp (5.5–12 lbf). With excessive pre-load, add shims, and with too little pre-load, remove some.
4. Oil the sector shaft bushings and place the sector shaft in position in the housing. Coat the cover contact surface against the housing with sealing glue and screw the cover on the adjuster screw. Screw out the adjuster screw so far that the sector shaft is not clamped when the cover attaching bolts are tightened up.
5. Knock in the sealing ring for the sector shaft with sleeve 6119, see Fig. 64–23.

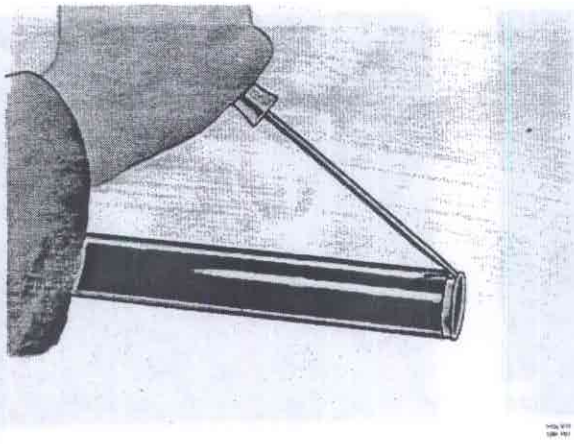

Fig. 64–21. Removing the upper steering shaft bearing

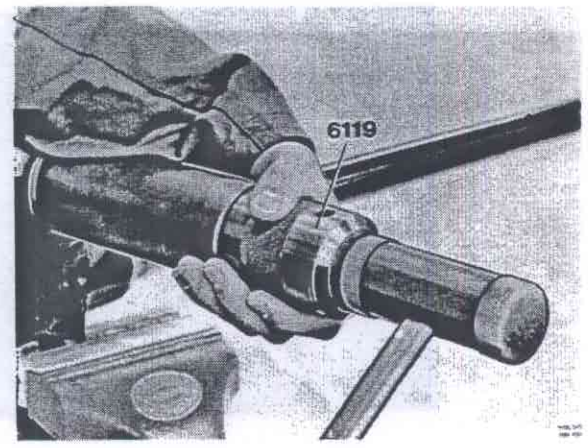

Fig. 64–23. Fitting the sealing ring

6. Position the steering gear in the centre position. Screw in the adjuster screw so far that notable resistance is felt when rotating it back and forth over the centre position.
7. Turn the gear to full lock in one direction and wind a cord a couple of times round the steering column and attach a spring balance to the end of the cord, see Fig. 64–22. Rotate the steering shaft. Maximum resistance should be obtained when the steering gear is turned across the centre position, and this should be 15–25 N (1.5–2.5 kp = 3.3–5.5 lbf). If the resistance is greater than this, screw out the adjuster screw, and if the resistance is too small, screw in the adjuster screw. When the correct value has been obtained, tighten up the lock nut. Re-check the value after having tightened up the lock nut.
8. Fill with 0.5 litre (1 pint) MP 80 oil.

Installing the steering gear

1. Position the steering gear with the attachment round the steering shaft pipe.
2. Screw the attachment tight to the frame with the three attaching bolts.
3. Screw tight the steering wheel bracket to the dashboard.
4. Tighten up the clamp bolt round the sector shaft pipe.
5. Screw tight the pitman arm according to the marking, see Fig. 64–24, and lock the nut with the lock washer.
6. Screw tight the stay between the bumper and frame.
7. Route the horn cable through the steering column jacket.
8. Put back and screw tight the floor cover.
9. Screw tight the bracket for the direction indicator lever and connect up the cables under the dashboard.
10. Place the spring in the steering column jacket and fit the steering wheel according to the marking, if the old steering shaft is still fitted. If the steering shaft has been replaced, point the wheels straight forwards and fit the steering wheel straight, that is, with one of the spokes pointing straight downwards.
11. Tighten the steering wheel nut to a torque of 35–45 Nm (3.5–4.5 kpm = 25–33 lbftf).
12. Connect up the electric cable to the horn button and push the button securely into position.

AUXILIARY STEERING ARM

Replacing the bushings for the auxiliary steering arm

Special tools:
999 2370 Puller
999 1821 Impact tool
999 2337 Drift
999 2413 Drift

Disassembling

1. Remove the nuts for both the steering rods attached to the auxiliary steering arm.
2. Pull off the steering rods from the auxiliary steering arm with puller 2370, see Fig. 64–25.

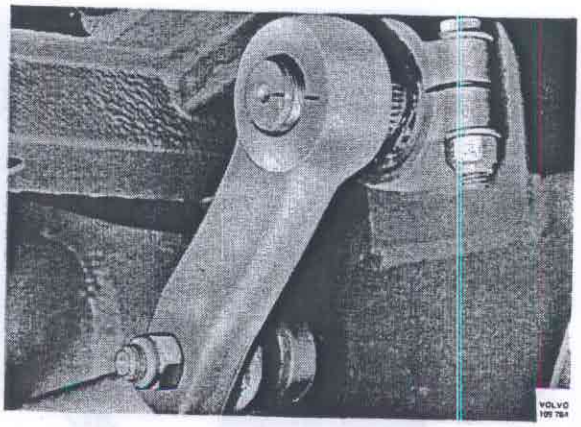

Fig. 64–24. Marking up pitman arm – sector shaft

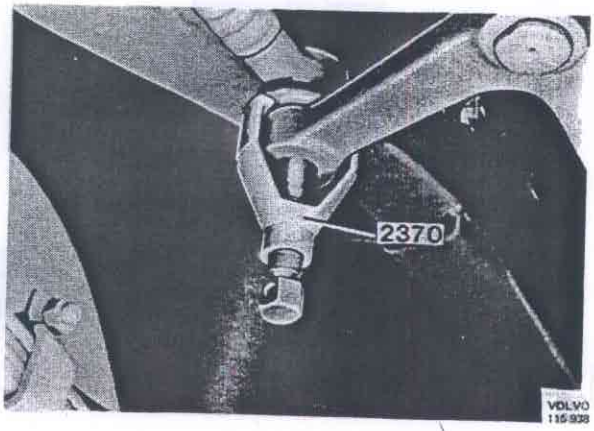

Fig. 64–25. Removing the steering rod

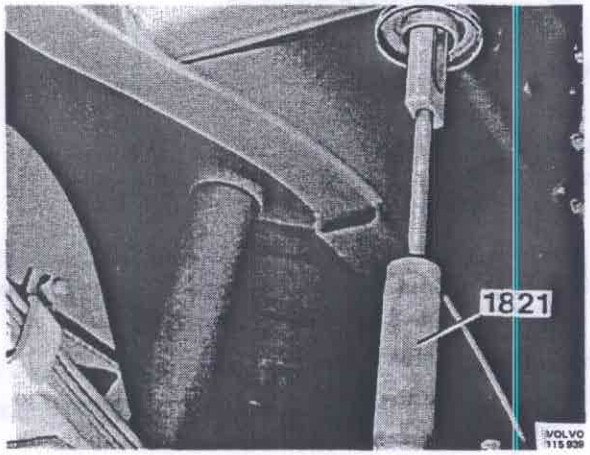

Fig. 64–26. Removing the lower bushing

3. Remove the cover (1, Fig. 64–28) at the top of the shaft.
4. Remove the split pin (11) and unscrew the nut (10).
5. Take down the auxiliary steering arm and take care of the washer (9) and shims (8).
6. Knock out the lower bushing (5) with impact tool 1821, see Fig. 64–26.
7. Knock out the upper bushing (7) with drift 2337, see Fig. 64–27.

Checking, replacing parts

1. Replace the sealing ring (4, Fig. 64–28). Check the contact surface of the sealing ring against the protector ring, and if necessary replace the ring. The ring is tapped securely in position with a plastic mallet.
2. Check the slide surfaces on the auxiliary steering arm. If they are damaged, replace the arm.

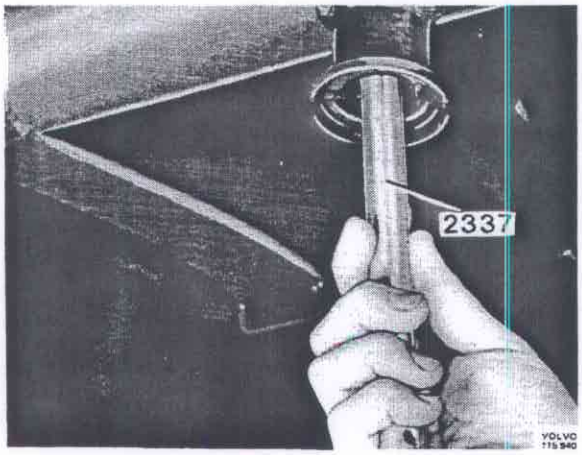

Fig. 64–27. Removing the upper bushing

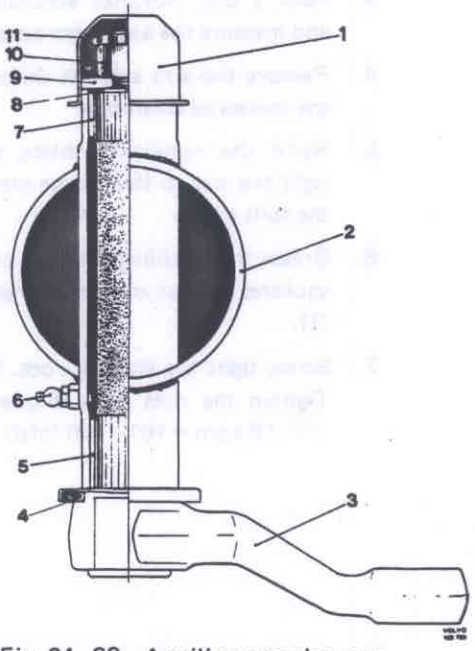

Fig. 64–28. Auxiliary steering arm

1. Cover
2. Tubular member
3. Auxiliary steering arm
4. Sealing ring
5. Lower bushing
6. Lubricator
7. Upper bushing
8. Shims
9. Washer
10. Nut
11. Split pin

Assembling

1. Knock in the bushings with drift 2413, Fig. 64–29. NOTE! Make sure that the bevel on the inside points downwards.
2. Ream the bushings so that the auxiliary steering arm can be fitted. Use an adjustable reamer approx. Ø 30 mm (1 3/16") and ream as little as possible. It is important that both bushings are reamed at the same time. Fit the auxiliary steering arm in position. Place shims of the same thickness at those that were removed plus about 0.5 mm (0.02"). Fit the washer (9, Fig. 64–3) and tighten up the nut to a torque of 80–100 Nm (8–10 kpm = 57–72 lbftf).

Fig. 64–29. Fitting the bushings

3. Place a dial indicator according to Fig. 64–30 and measure the axial clearance on the arm.
4. Remove the arm and the shims corresponding to the measured clearance.
5. Re-fit the remaining shims, washer and screw tight the nut to the torque mentioned above. Fit the split pin.
6. Grease the auxiliary steering arm until the grease squeezes out at one of the ends. Fit the cover (1).
7. Screw tight the steering rods. Use new lock nuts. Tighten the nuts to a torque of 140–180 Nm (14–18 kpm = 101–130 lbftf).

STEERING JOINTS

Replacing

Special tools:

999 2370 Puller
999 2148 Puller

1. Unscrew the nut.
2. Pull loose the steering joint with puller 2370, see Fig. 64–31. Pull off the steering joint at the sector arm with puller 2148.
3. Release the clamp bolts and screw out the joint.
4. Screw on the new joint and tighten up the clamp bolts.
5. Screw tight the steering joint to the torque given in the specifications.
6. Check the toe-in.

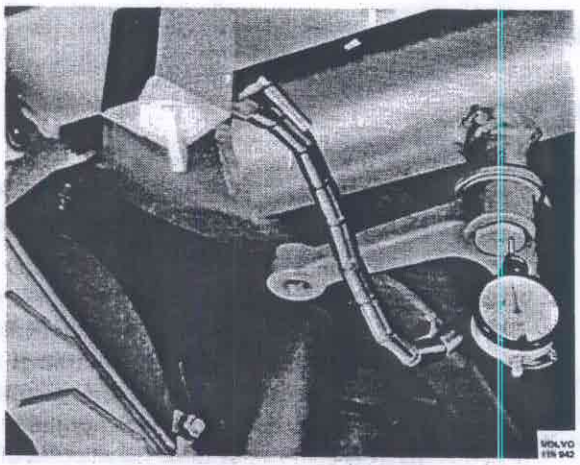

Fig. 64–30. Placing the dial indicator

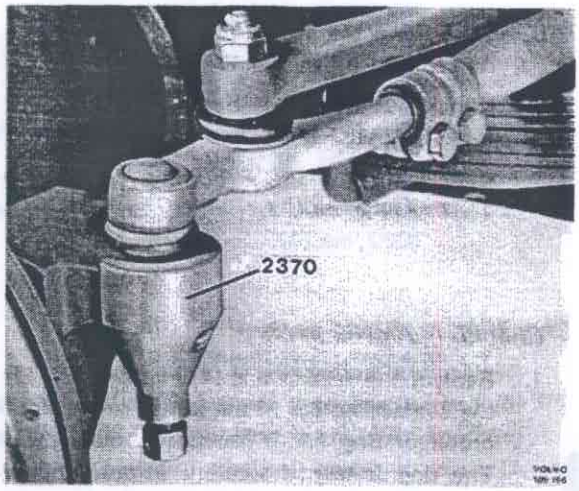

Fig. 64–31. Removing the steering joint