

# Reconditioning of Steering Column Gear Shift

Type 220

Operation No.
G 15

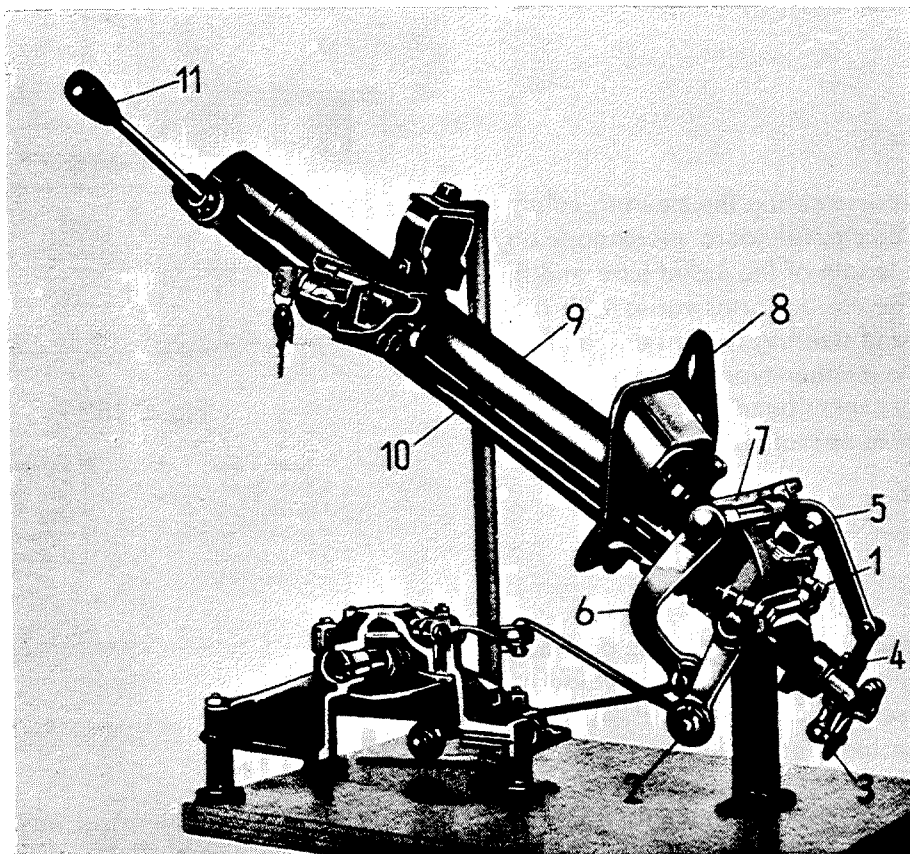


Fig. G 15/01

1 Selector lever with dog	4 Connecting piece	7 Bearing body	10 Shift tube
2 Selector lever	5 Intermediate arm	8 Jacket tube support	11 Gear shift lever
3 Arm	6 Intermediate shaft with arm	9 Jacket tube	

## Special Tools:

Special wrench for nut on shift tube and gear shift lever

187 589 01 01

## Procedure:

### I. Disassembly:

1. Turn screw plug out of bearing body (7) and take pressure spring and stop sleeve out (see Fig. G 15/21).
2. Remove arm (3) from shift tube.
3. Loosen clamping screw at selector lever (1) and pull selector lever (2) with shaft out of bearing body.
4. Unscrew bearing body from jacket tube.
5. Remove intermediate arm (5) from bearing body, take washer off and pull out intermediate shaft with arm (6). Take out sealing rings, lock rings and needle bearings.
6. Loosen cap nut with screw 187 589 01 01, take off rubber ring, lock plate and second rubber ring (see Fig. G 15/11).
7. Dismount jacket tube support (8). Take out shift tube (10) and slip steering column lock off the jacket tube after the locking screw has been loosened.

8. Unscrew locking cap for hand gear shift lever on shift tube with wrench 187 589 01 01 and take off hand gear shift lever with rubber cushion.
9. Take pilot journal with pressure piece and spring out of the shift tube.

## II. Assembly:

**Note:** When reassembling the steering column gear shift be careful not to interchange any parts. The length of the jacket tube and the crank of the various arms varies with right and left-hand steering systems and also differs from our other types of cars. The differences are mentioned in connection with the respective operations.

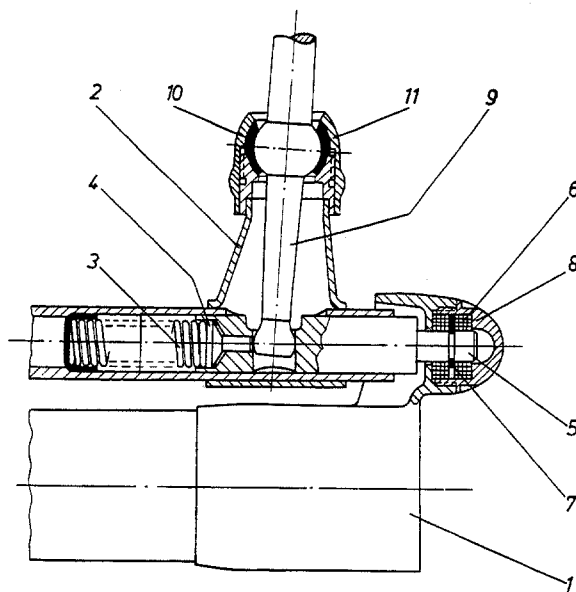


Fig. G 15/11

- |                  |                    |
|------------------|--------------------|
| 1 Jacket tube    | 7 Lock plate       |
| 2 Shift tube     | 8 Cap nut          |
| 3 Spring         | 9 Gear shift lever |
| 4 Cup-shaped pin | 10 Rubber cushion  |
| 5 Pilot journal  | 11 Locking cap     |
| 6 Rubber ring    |                    |

### Shift Tube

10. Grease pressure spring liberally and push into the shift tube. Fill bore in pilot journal with grease and insert journal with cup-shaped pin installed so into the shift tube that the countersunk portion of the bore is on the side where the opening for the hand gear shift lever is provided (see Fig. G 15/11).

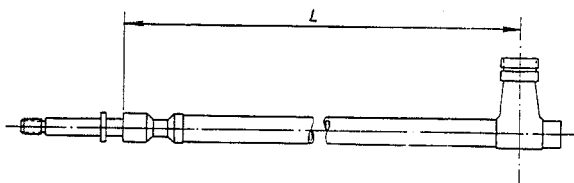


Fig. G 15/10

Length of shift tube

- |                            |                                 |
|----------------------------|---------------------------------|
| Left-hand steering system  | $L = 824.5 \text{ mm (32.46")}$ |
| Right-hand steering system | $L = 815.5 \text{ mm (32.11")}$ |

11. Rub inner and outer side of rubber cushion with talcum and insert cushion into shift tube. Push locking cap on gear shift lever and insert gear shift lever into shift tube and pilot journal. Screw on locking cap and tighten with wrench 187 589 01 01 (Fig. G 15/11). It must be possible to move the gear shift lever up and down without play.

### Jacket Tube

12. Push steering column lock on jacket tube and turn locking screw in. The screw must project into the smaller slot in the jacket tube. Before you push the lock on the tube, place a strip of sheet metal of suitable thickness in the gap of the lock to rule out any damage to the jacket tube finish (Fig. G 15/12).

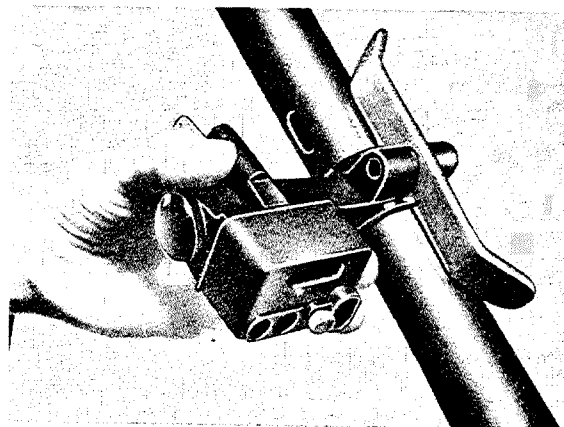


Fig. G 15/12

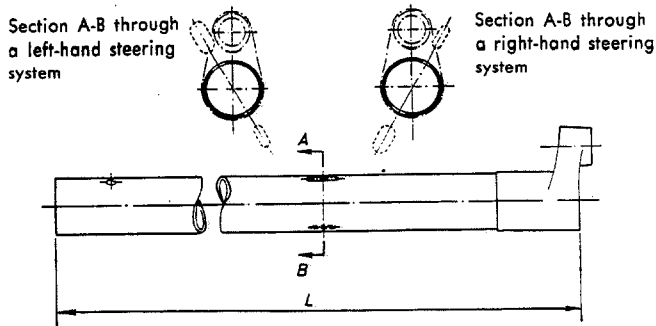


Fig. G 15/12a

Length of jacket tube

Left-hand steering system	L = 850 mm (33.46")
Right-hand steering system	L = 840 mm (33.07")

### Bearing Body

13. Grease the two needle bearings and push them into the bearing body. Place lock ring in front of the bearings and put the sealing ring on. Install intermediate shaft with arm (6), put washer on and clamp intermediate arm (5) on the shaft (see Fig. G 15/01). Watch out for the position of the two arms in relation to each other. When eyelet of arm (6) is in center of bearing body bore, the intermediate arm (5) must point slightly outward (Fig. G 15/13).

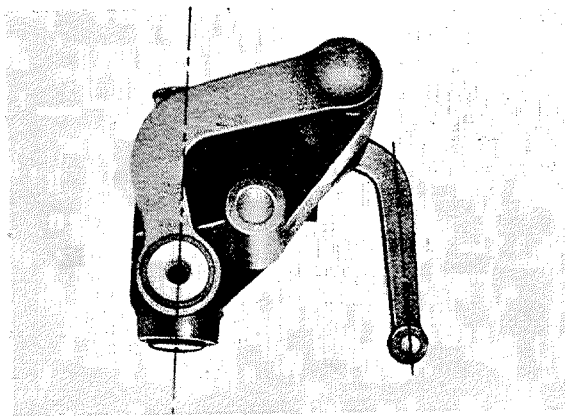


Fig. G 15/13

### III. Assembly of Steering Column Gear Shift:

14. Push jacket tube support on jacket tube, install shift tube and grease its end liberally.

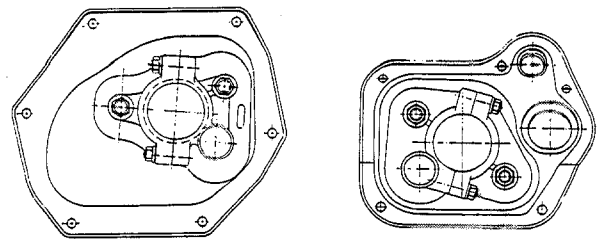


Fig. G 15/14

Jacket tube support  
Right-hand steering system      Left-hand steering system  
(as seen opposite the direction of travel)

16. Slip rubber boot on bearing body and fasten body on jacket tube. The bearing body is fixed on the tube by means of a pin.

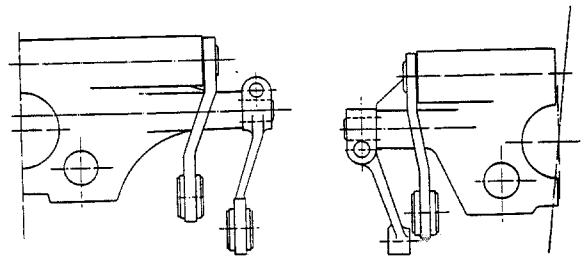


Fig. G 15/15

Bearing body  
Left-hand steering system      Right-hand steering system

**Note:** Note the difference of the arms!

16. Turn jacket tube support (8) so that bore for shift tube (10) is in the center, then screw it in place. The distance between bearing body (7) and jacket tube support (8) must be 33 mm = 1.30" (see Fig. G 15/16).

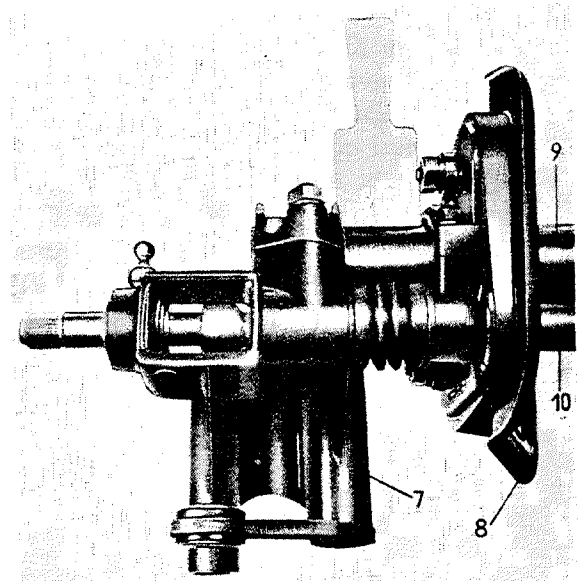


Fig. G 15/16

17. Push rubber ring on pilot journal in shift tube, put on lock plate and install second rubber ring. Screw on cap nut and tighten with wrench 187 589 01 01 (see Fig. G 15/11).

18. Clamp selector lever (2) on shaft and insert liberally greased shaft into bearing body pushing on selector lever (1). The dogs must project into the recess in the shift tube. The front end of selector lever (2) must point towards the front edge of the bearing body (see arrow in Fig. G 15/18), when hand gear shift lever (11) is in home position (neutral).

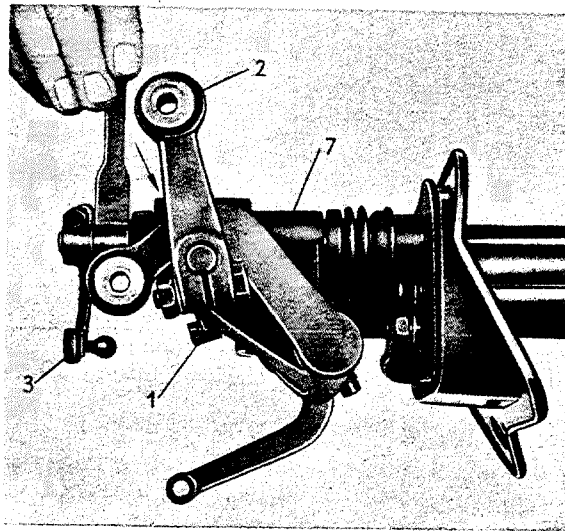


Fig. G 15/18

19. Fasten arm (3) to shift tube. When hand gear shift lever (11) abuts against the left-hand stop (as seen in direction of travel), arm (3) must be fastened one or two teeth to the left of the right-hand edge of the bearing body (see arrow in Fig. G 15/19). The distance between arm (3) and bearing body (7) is 16 mm (0.63"). See Fig. G 15/18. When shifting into reverse speed the arm (3) must clear the bearing body.

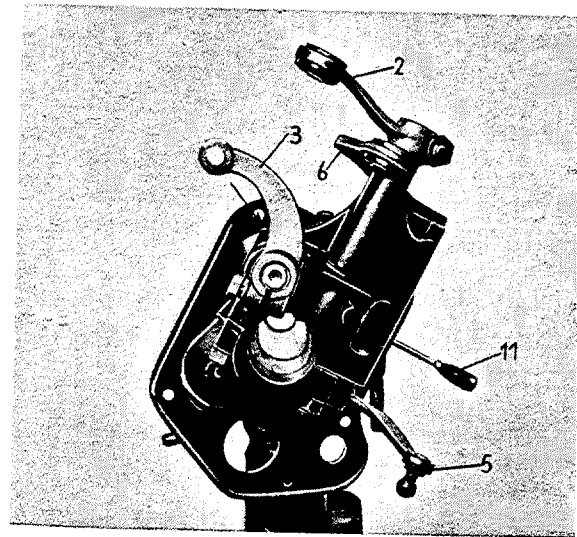


Fig. G 15/19

20. Secure connecting piece (4) to arm (3) and intermediate arm (5).

21. Install stop sleeve with greased pressure spring into the bearing body and screw in place with the screw plug (Fig. G 15/21).

22. Check whether all gears can be shifted lurch-free.

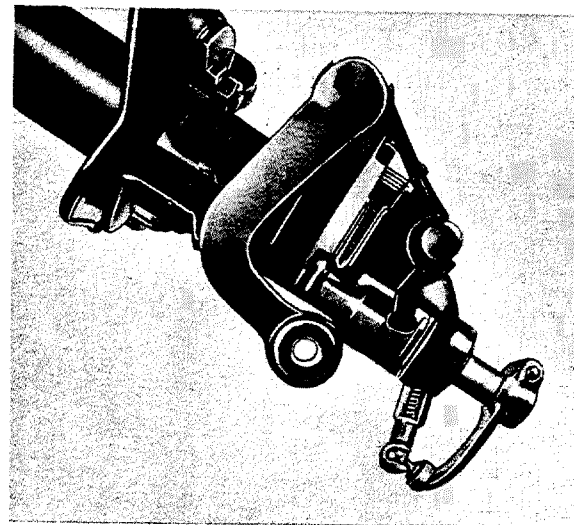


Fig. G 15/21