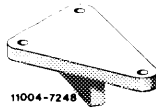


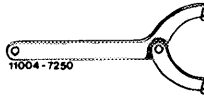
Special tools

Assembly device for steering



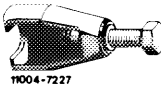
116 589 01 59 00

Pin spanner for round nut

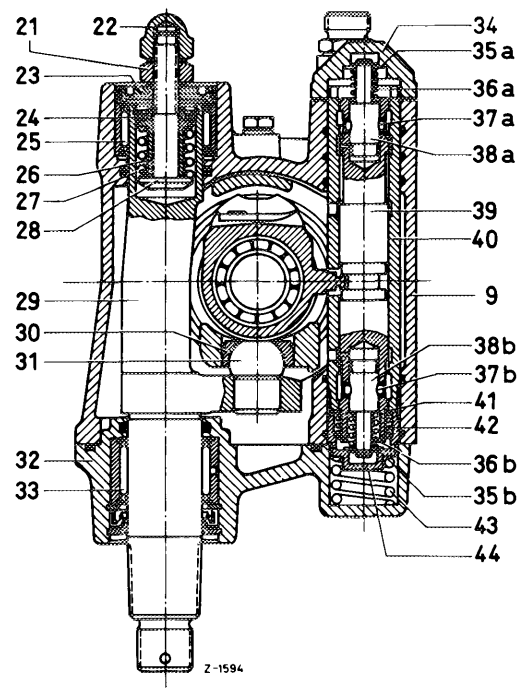
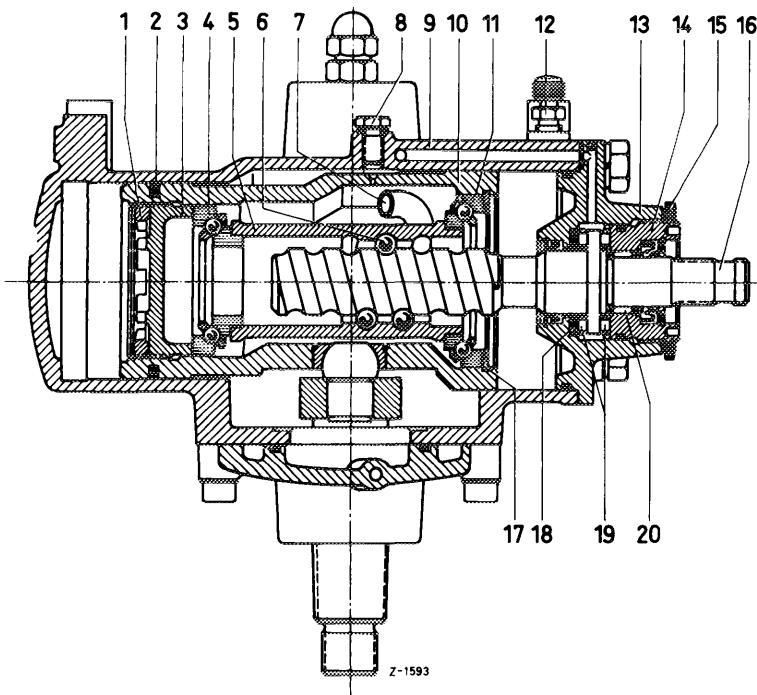


000 589 00 05 00

Puller for pitman arm



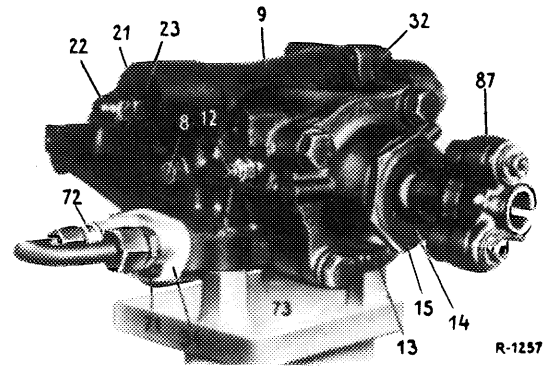
100 589 04 33 00



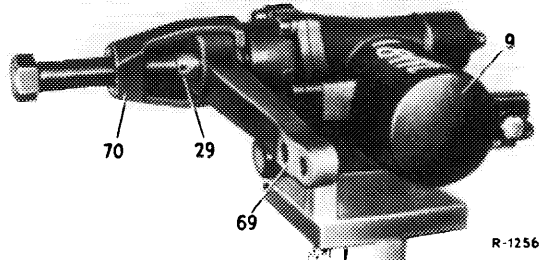
- |                               |                         |                                |                           |
|-------------------------------|-------------------------|--------------------------------|---------------------------|
| 1 Threaded ring               | 13 Bearing cap          | 25 Needle bearing              | 36a Compression spring    |
| 2 Teflon sealing ring         | 14 Bearing insert       | 26 Pressure sleeve             | 36b Compression spring    |
| 3 Screw cover                 | 15 Hex nut              | 27 Compression spring          | 37a Set pin               |
| 4 Axial-tapered ball bearing  | 16 Steering worm        | 28 Adjusting screw             | 37b Set pin               |
| 5 Steering nut                | 17 Locking ring         | 29 Pitman shaft                | 38a Upper reaction piston |
| 6 Ball                        | 18 Thrust washer        | 30 Ball socket in power piston | 38b Lower reaction piston |
| 7 Ball guide tube             | 19 Longitudinal bearing | 31 Ball pin                    | 39 Control disc           |
| 8 Closing plug                | 20 Needle bearing       | 32 Housing cover               | 40 Bushing                |
| 9 Steering housing            | 21 Hex nut              | 33 Needle bearing cover        | 41 Thrust washer          |
| 10 Power piston               | 22 Cap nut              | 34 Upper housing cover         | 42 Centering spring       |
| 11 Axial-tapered ball bearing | 23 Round nut            | 35a Thrust washer              | 43 Compression spring     |
| 12 Bleed screw                | 24 Thrust washer        | 35b Thrust washer              | 44 Closing cover          |

1 Attach powersteering to assembly plate.

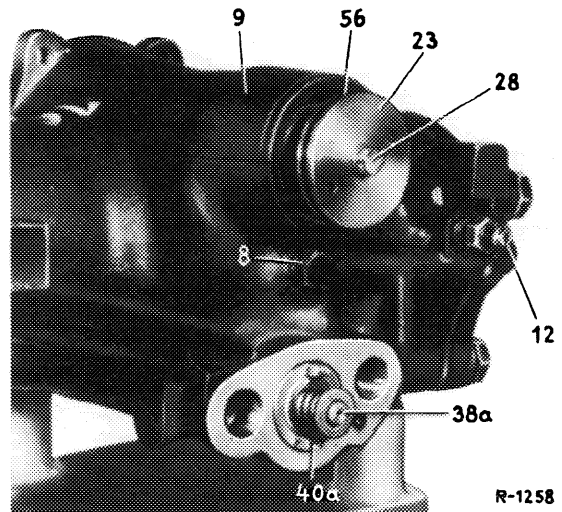
2 Unscrew cap nut (22) and hex nut (21) while applying counterhold to adjusting screw. Remove sealing rings.



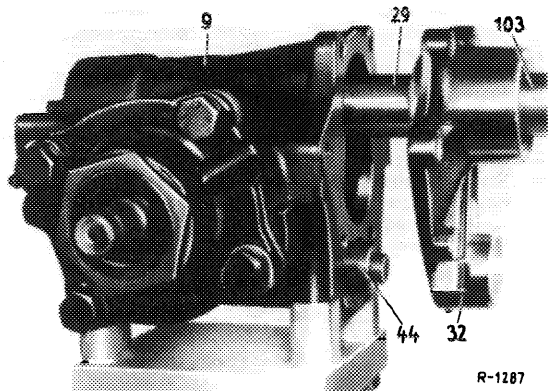
3 Uncotter castle nut and unscrew, pull off pitman arm by means of puller (70).



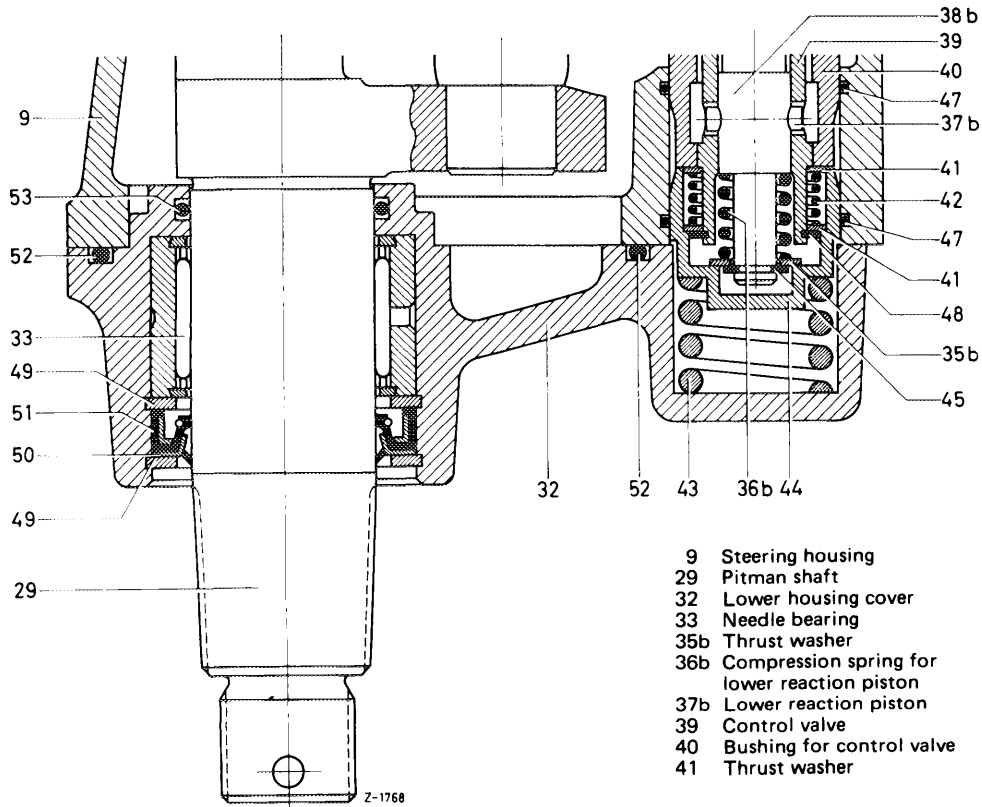
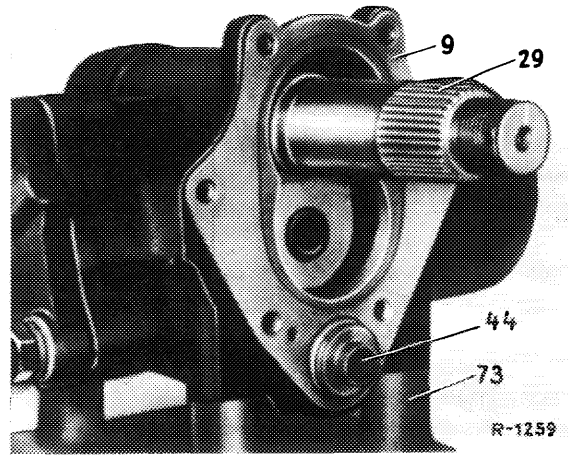
4 Unscrew round nut (23) with pin spanner from adjusting screw (28). Remove O-ring (56) from round nut.



5 Unscrew hex socket screws for attaching lower housing cover, turn steering into center position and knock pitman shaft (29) including housing cover (32) out of steering housing by means of light hammer blows (plastic hammer) against adjusting screw. Remove housing cover from pitman shaft.



6 Remove closing cover (44) and pitman shaft (29) from steering housing.

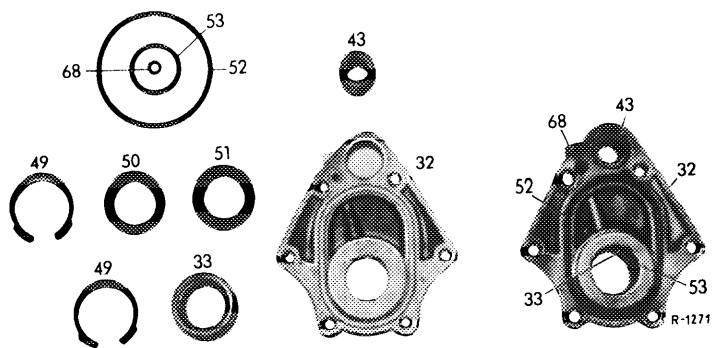


- |  |                                       |
|--|---------------------------------------|
| 9 Steering housing                               | 42 Centering spring for control valve |
| 29 Pitman shaft                                  | 43 Compression spring                 |
| 32 Lower housing cover                           | 44 Closing cover                      |
| 33 Needle bearing                                | 45 Locking ring                       |
| 35b Thrust washer                                | 47 O-ring                             |
| 36b Compression spring for lower reaction piston | 49 Locking ring                       |
| 37b Lower reaction piston                        | 50 Supporting ring with dust lip      |
| 39 Control valve                                 | 51 Sealing ring                       |
| 40 Bushing for control valve                     | 52 O-ring                             |
| 41 Thrust washer                                 | 53 O-ring                             |

7 Remove O-rings (52), (53) and (68), compression spring (43) from lower housing cover (32).

Remove locking ring (49) from housing cover (32), remove supporting ring (50) and knock out sealing ring (51).

- |                          |
|--------------------------|
| 32 Lower housing cover   |
| 33 Needle bearing        |
| 43 Compression spring    |
| 49 Locking ring          |
| 50 Support with dust lip |
| 51 Sealing ring          |
| 52 O-ring                |
| 53 O-ring                |
| 68 O-ring                |



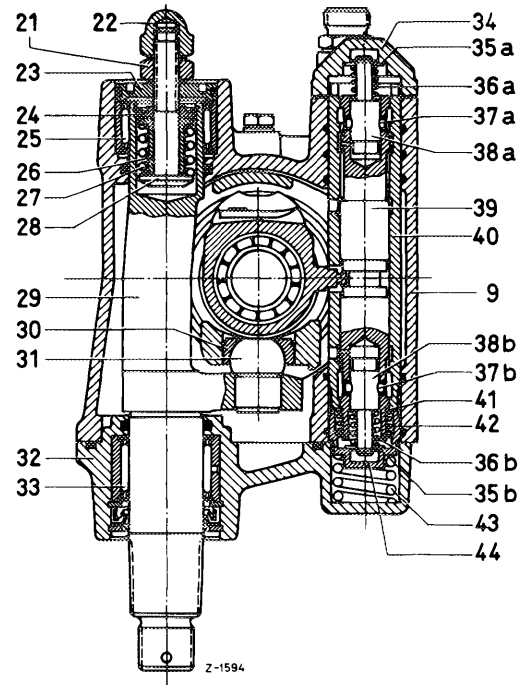
8 Unscrew pressure connection and return flow connection and remove upper housing cover (34).

9 Unscrew hex screws on bearing cap, turn steering completely to the right, so that the power piston supported at bottom of steering case will force the bearing cap out of the steering case.

**Note:** Do not turn steering worm too far to the right, since this may cause the balls to fall out of ball circuit.

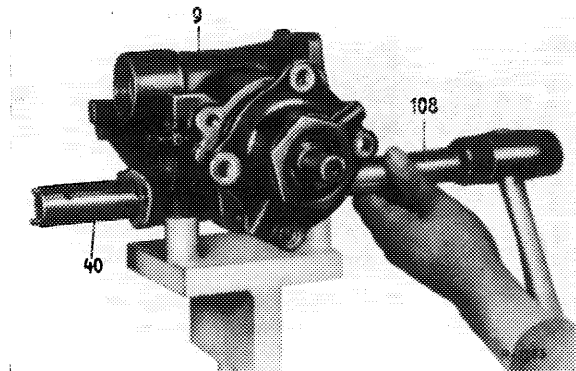
10 Pull power piston out of steering housing, until the straightedge on steering nut no longer enters the recess of bushing (40) and of control valve (39).

11 Remove control valve (39) from bushing (40).

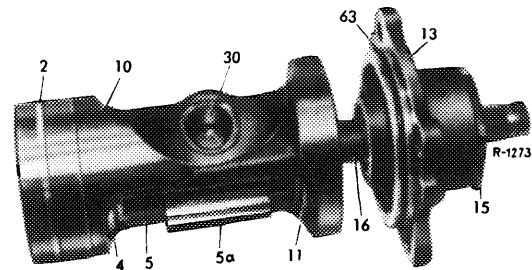


12 Knock bushing (40) of control valve out of steering housing by means of a light metal mandrel (108).

13 Remove bearing cap (13) with steering worm (16) and power piston (10) out of steering housing.

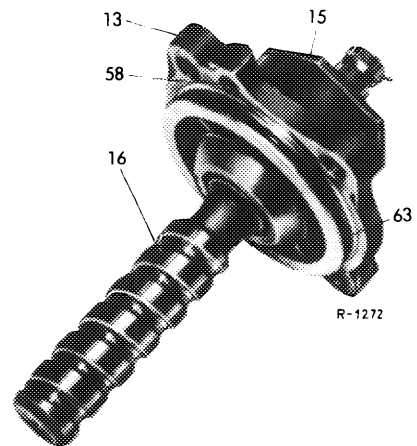


14 Turn steering worm (16) out of steering nut (5) until the balls are falling out of ball circuit. Make sure that no balls are lost.

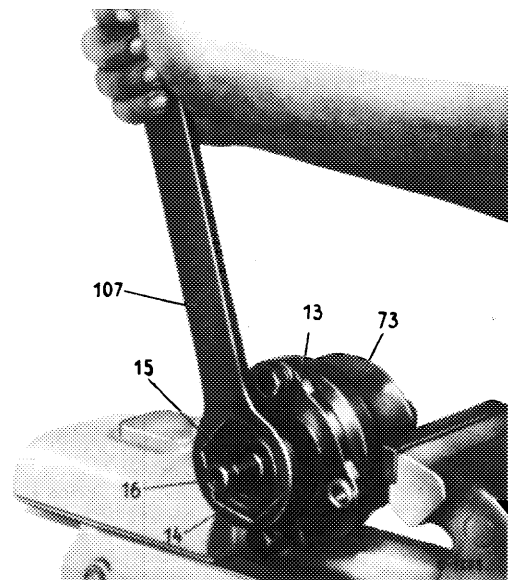


15 Attach bearing cap (13) with steering worm (16) to a fixture.

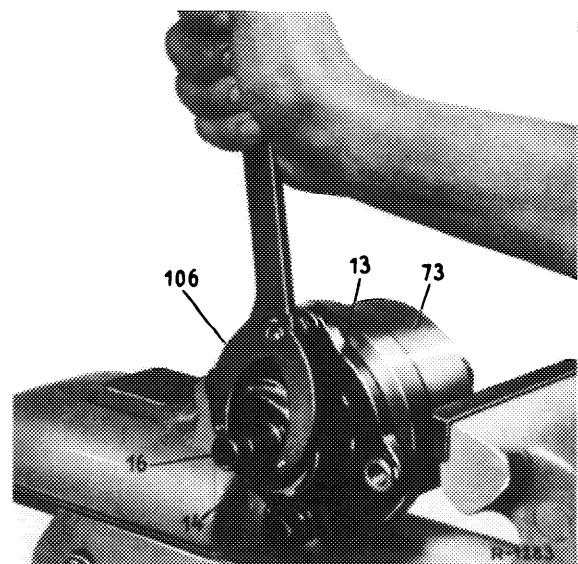
**Note:** If no fixture is available, the bearing cap can also be attached with the steering worm to the steering housing.



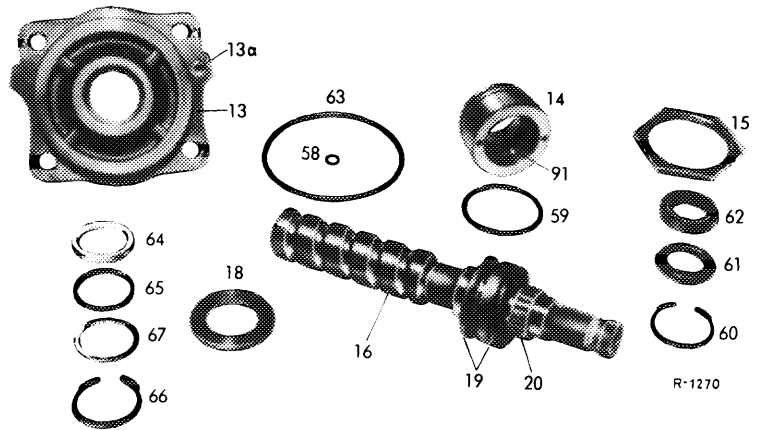
16 Unscrew hex nut (15) from bearing insert (14) with box wrench or open end wrench (107).



17 Unscrew bearing insert (14) from bearing cap (13) by means of pin spanner (106).



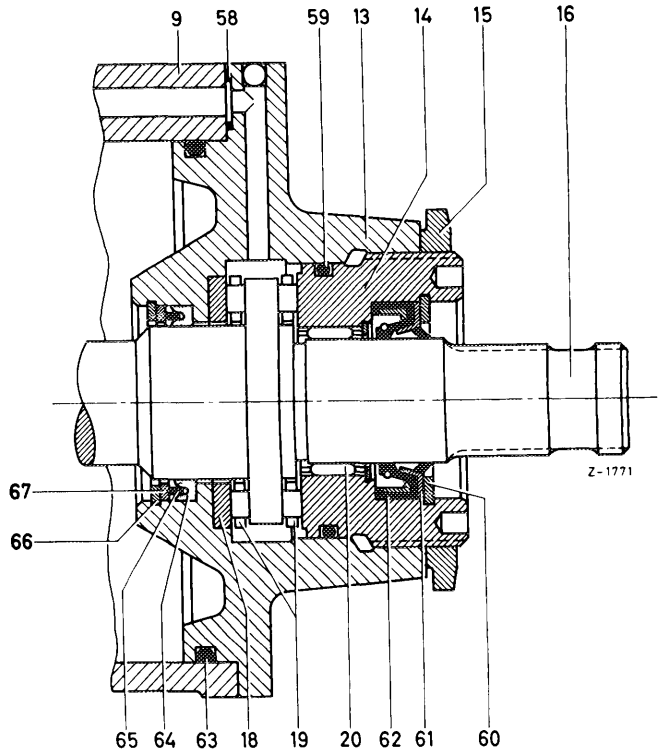
- 13 Bearing cap
- 13a Oil duct
- 14 Bearing insert
- 15 Hex nut
- 15 Steering worm
- 18 Thrust washer
- 19 Longitudinal bearing
- 20 Needle bearing
- 58 O-ring
- 59 O-ring
- 60 Locking ring
- 61 Supporting ring with dust lip
- 62 Sealing ring
- 63 O-ring
- 64 Teflon-inner sealing ring
- 65 Supporting ring
- 66 Locking ring
- 67 Steel washer
- 91 Washer



18 Remove O-ring (59), locking ring (60), supporting ring with dust lip (61) and sealing ring (62) from bearing insert (14).

19 Remove bearing cap (13) from fixture, take steering worm (16) with longitudinal bearings (19) and needle bearing (20) out of bearing cap, remove bearing from pitman shaft.

- 9 Steering case
- 13 Bearing cap
- 14 Bearing insert
- 15 Hex nut
- 16 Steering worm
- 18 Thrust washer
- 19 Longitudinal bearing
- 20 Needle bearing
- 59 O-ring
- 60 Locking ring
- 61 Supporting ring with dust lip
- 62 Sealing ring
- 63 O-ring
- 64 Teflon-inner sealing ring
- 65 Supporting ring
- 66 Locking ring
- 67 Steel washer



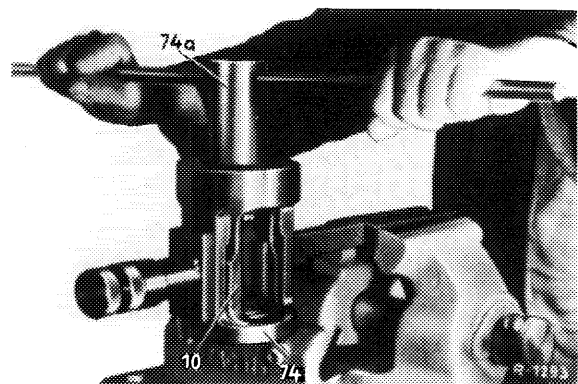
20 Remove locking ring (66), steel disc (67), supporting ring (65), teflon-inner sealing ring (64) from bearing cap.

21 Remove thrust washer (18) and O-rings (58) and (63) from bearing cap (13).

22 Clamp power piston (10) and unscrew threaded ring.

23 Unscrew screw cover from power piston.

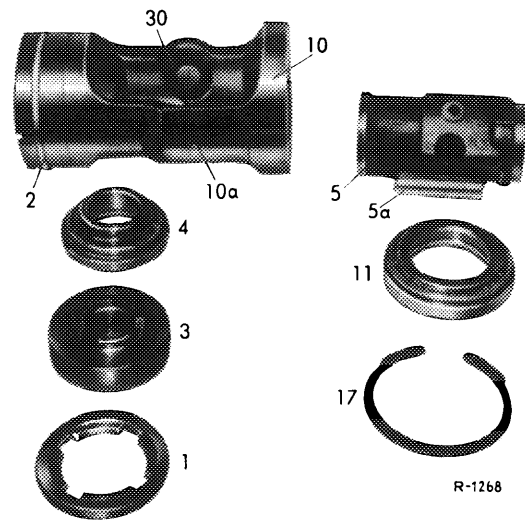
24 Unclamp power piston and remove lower axial-tapered ball bearing from power piston.



25 Knock outer race of upper tapered ball bearing (11) slightly in downward direction. Remove locking ring (17), outer race and ball cage.

26 Remove steering nut (5) from power piston (10).

- 1 Threaded ring
- 2 Teflon ring
- 3 Screw cover
- 4 Axial-tapered ball bearing
- 5 Steering nut
- 5a Straightedge on steering nut
- 10 Power piston
- 10a Center for center position-check screw
- 11 Axial-tapered ball bearing
- 17 Locking ring
- 30 Ball socket



27 Remove all O-rings from steering case.

28 Clean all parts except the O-rings thoroughly in benzine.