

Revision: Revised and power steering pump VT 49 added.

A. Vickers Pump VT 27

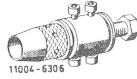

Data

End play of drive shaft	on new pumps	max. 0.7
	on used pumps	max. 1.0

Tightening Torques

	Nm	(kpm)
Hex. bolts on pump housing	35–40	(3.5–4.0)
Hollow screw for attaching supply tank	35–40	(3.5–4.0)

Special Tools

Puller for radial sealing ring (basic tool)		116 589 24 33 00
Punch 33 mm dia. for VT 27		116 589 14 15 00

Drive Shaft and Sealing Ring

1 Place both shell halves (10) on drive shaft (11), then press drive shaft into housing cover (15) (Fig. 1).

Note: The shell halves determine the end play of the drive shaft and are contained in repair kit „drive shaft“.

2 Press bearing bushing (12) into housing cover (15) with installation tool (20) (Fig. 2).

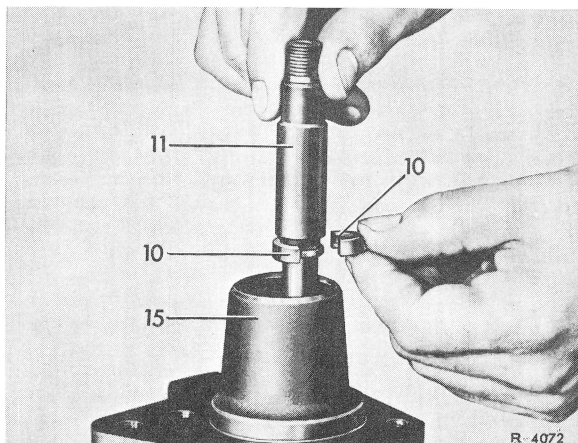


Fig. 1

10 Shell half
11 Drive shaft
15 Housing cover

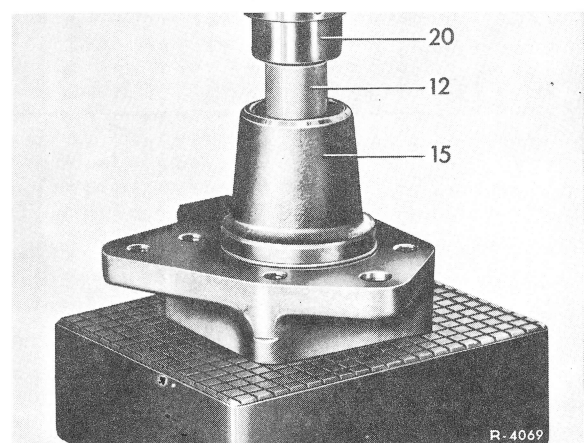


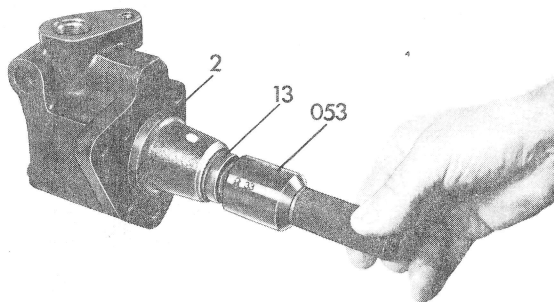
Fig. 2

12 Bearing bushing
15 Housing cover
20 Installation tool

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Note: The installation tool can be self-made acc. to dimensions shown in Fig. 4.

3 Screw guide sleeve on drive shaft and press sealing ring (13) into housing cover (2) by means of punch (053) (Fig. 3).



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Fig. 3

2 Housing cover
13 Radial sealing ring
053 Punch 33 mm dia.

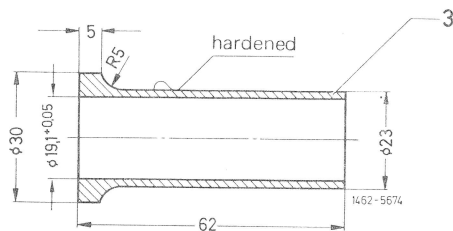


Fig. 4

Installation tool for bearing bushing

Rotor and Cam Ring

4 Coat all parts with transmission oil.

5 Place cam ring (6) on fitted pins (20) in such a manner that the respective markings (21) on housing cover (15) and on cam ring are in alignment (Fig. 5).

6 Place rotor (7) on drive shaft (11) in such a manner that the countersunk end of the splined bore faces the housing cover (Fig. 6 and 9).

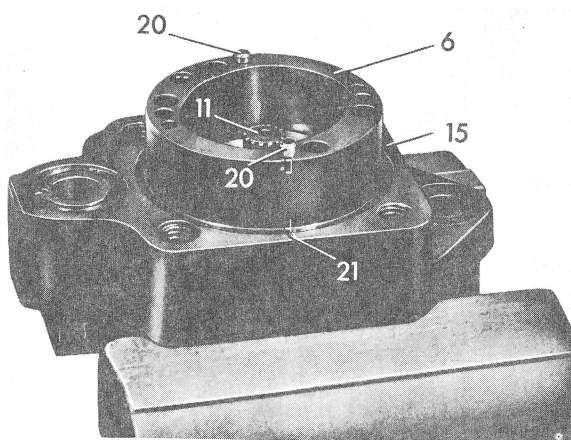


Fig. 5

6 Cam ring
11 Drive shaft
15 Housing cover
20 Fitted pin
21 Marking line

Note: When a new cam ring is installed, position in such a manner **that the pressure oil holes (b) are accurately above the recesses (d) in housing cover** (Fig. 5 and 7).

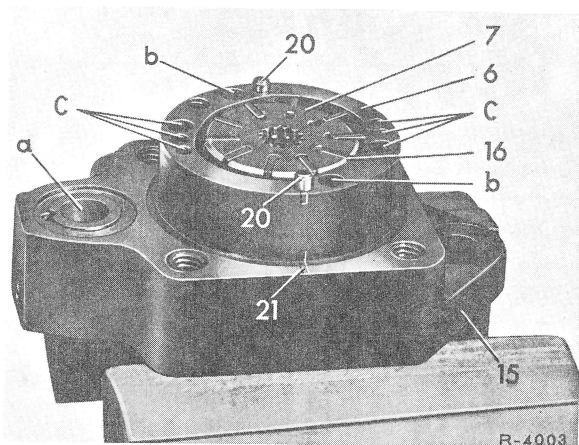


Fig. 6

a Oil inflow from supply tank
b Pressure oil outflow out of cam ring
c Intake holes
6 Cam ring
7 Rotor
15 Housing cover
16 Pump vane
20 Fitted pin
21 Marking line

7 Insert pump vanes (16) into grooves of rotor (7) in such a manner that the rounded-off ends are facing outwards in direction of cam ring (6) (Fig. 7).

8 Place pressure plate (3) on cam ring (6) and position fitted pins, while observing the pertinent markings (Fig. 7 and 8).

Note: The outlet holes for the pressure oil should be above the pressure oil holes of the cam ring (Fig. 7).

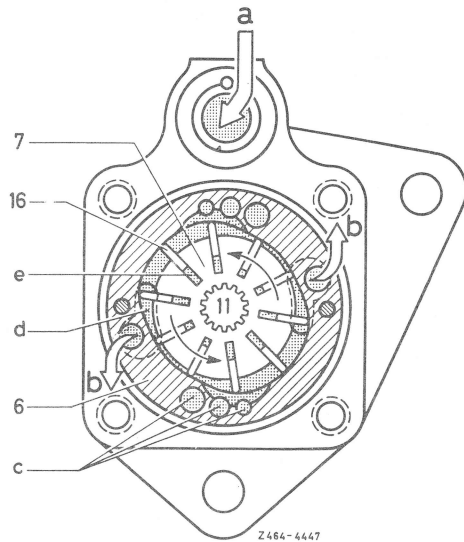


Fig. 7

- | | |
|---|----------------|
| a Oil inflow from supply tank | 6 Cam ring |
| b Pressure oil outflow from cam ring | 7 Rotor |
| c Intake holes | 11 Drive shaft |
| d Recess in housing for inflow of pressure oil into pressure oil hole | 16 Pump vane |
| e Pressure oil under pump vane | |

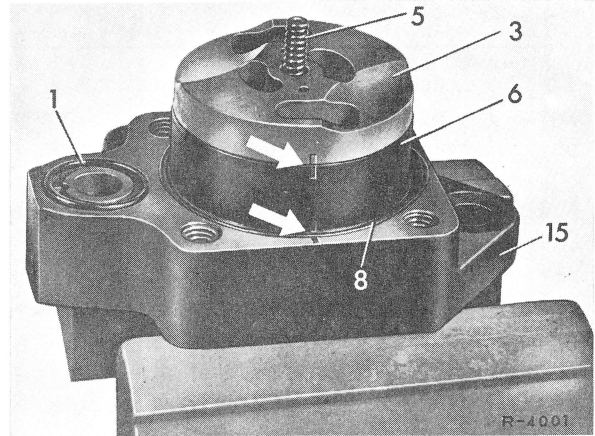


Fig. 8

- | | |
|----------------------|------------------|
| 1 O-ring | 6 Cam ring |
| 3 Pressure plate | 8 O-ring |
| 5 Compression spring | 15 Housing cover |

10 Insert compression spring (5) into bore of pressure plate (3). If the oil guide plate (4) pressed into pump housing (2) has been removed, place into housing with the recess for the compression spring facing the pump housing (Fig. 9).

11 Place pump housing (2) on housing cover (15). Screw-in the four hex. bolts and tighten to a torque of 35 to 40 Nm (3.5 to 4 kpm) (Fig. 9).

9 Place both O-rings (1 and 8) on housing cover (15) (Fig. 8).

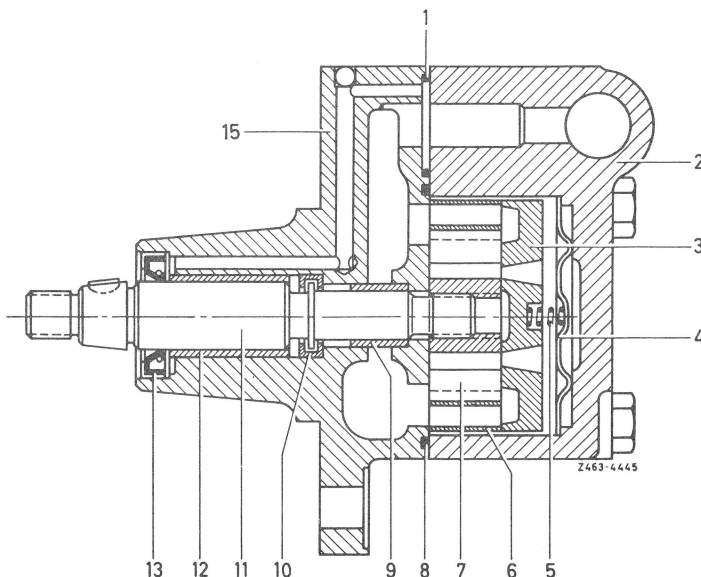


Fig. 9

- | | |
|------------------------|--------------------|
| 1 O-ring | 8 O-ring |
| 2 Pump housing | 9 Bearing bushing |
| 3 Pressure plate | 10 Shell half |
| 4 Oil guide plate | 11 Drive shaft |
| 5 Compression spring | 12 Bearing bushing |
| 6 Cam ring | 13 Sealing ring |
| 7 Rotor with pump vane | 15 Housing cover |

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Volume Control Valve

12 Clean volume control valve prior to assembly, immerse in transmission oil and introduce into housing bore. The valve should slide easily in housing bore.

Note: When installing a new volume control valve, observe the following:

The pressure relief valve in volume control valve of repair kit 000 586 00 46 opens at 60 bar gauge pressure (60 atü). The pressure relief valve in repair kit 000 586 42 46 opens at 82 bar gauge pressure (82 atü).

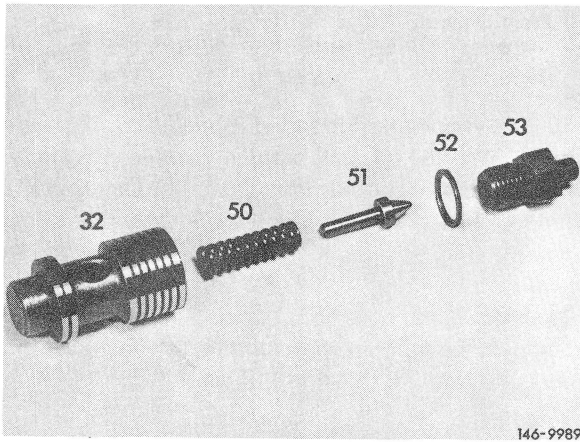


Fig. 10

- | | |
|-------------------------|-------------------|
| 32 Volume control valve | 52 Spacing washer |
| 50 Compression spring | 53 Valve screw |
| 51 Valve cone | |

13 Install pressure relief valve into volume control valve. First insert compression spring (50), then valve cone (51). Then insert spacing washers (52) into valve screw (53) for adjusting opening pressure (Fig. 10).

Attention! Be sure to use the same washers as before (Fig. 10).

14 Clamp volume control valve (32) at its unground end into vise, screw-in valve screw (53) and tighten (Fig. 10).

15 Insert compression spring (16) into bore of pump housing (18). Rinse volume control valve once again, immerse in transmission oil and introduce into housing bore with the pressure relief valve facing inwards (Fig. 11).

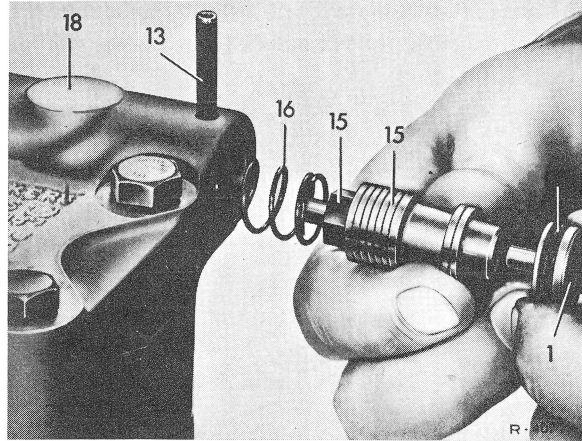


Fig. 11

- | | |
|-------------------------|-----------------------|
| 1 Closing cover | 15a Valve screw |
| 13 Locking pin | 16 Compression spring |
| 14 O-ring | 18 Pump housing |
| 15 Volume control valve | |

16 Fit new O-ring (14) on closing cover (1). Force closing cover with bolt inwards into housing bore and secure by knocking-in locking pin (13) (Fig. 11).

Supply Tank

17 Place O-rings (9 and 11) on pump housing (10) (Fig. 12).

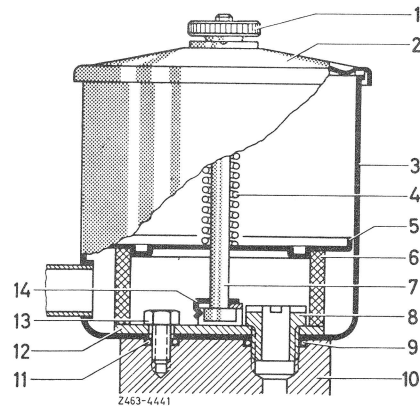


Fig. 12

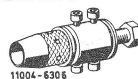
- | | |
|----------------------|----------------------|
| 1 Knurled nut | 8 Hollow screw |
| 2 Closing cover | 9 O-ring |
| 3 Supply tank | 10 Pump housing |
| 4 Compression spring | 11 O-ring |
| 5 Damping plate | 12 Reinforcing plate |
| 6 Filter ring | 13 Hex. bolt |
| 7 Bolt | 14 Lock |

18 Insert reinforcing plate (12) into supply tank. Screw-in hollow screw (8) and hex. bolt (13). Insert filter ring (6), damping plate (5) and compression spring (4). Place cover (2) with paper gasket on supply tank, screw-on knurled nut.

B. Vickers Pump VT 49

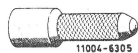
Special Tools

Puller for radial sealing ring (basic tool)



116 589 24 33 00

Punch 30 mm dia.



116 589 13 15 00

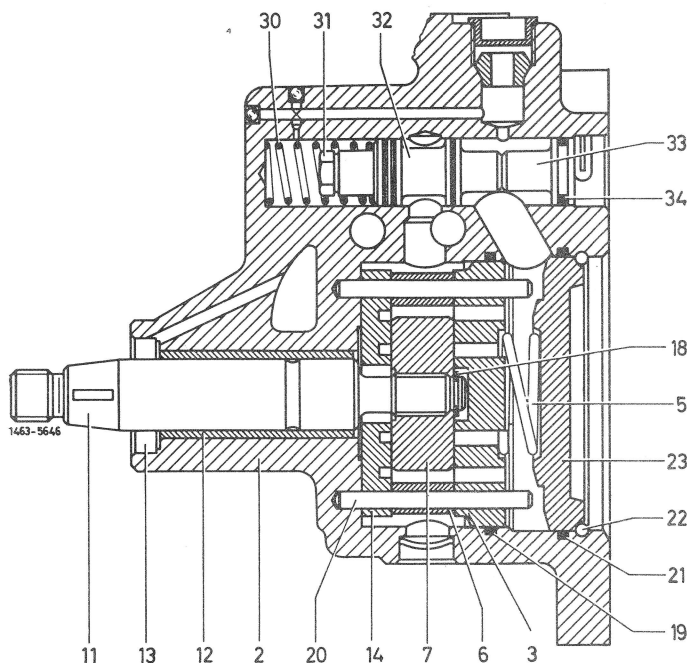


Fig. 1

- | | |
|------------------------|-------------------------|
| 2 Pump housing | 19 O-ring |
| 3 Pressure plate | 20 Cyl. pin |
| 5 Compression spring | 21 O-ring |
| 6 Cam ring | 22 Circlip |
| 7 Rotor with vane | 23 Cover |
| 11 Drive shaft | 30 Compression spring |
| 12 Bearing bushing | 31 Valve screw |
| 13 Radial sealing ring | 32 Volume control valve |
| 14 Wear plate | 33 Closing plug |
| 18 Locking ring | 34 O-ring |

Note

Prior to assembly, coat all parts with transmission oil.

1 Place wear plate (14) with recesses (refer to arrow) facing splining on drive shaft (11) (Fig. 2).

2 Place rotor (7) on splining of drive shaft (11) and insert locking ring (18) (Fig. 2).

3 Insert both cyl. pins (20) into pump housing, then insert preassembled drive shaft into housing (Fig. 1 and 3).

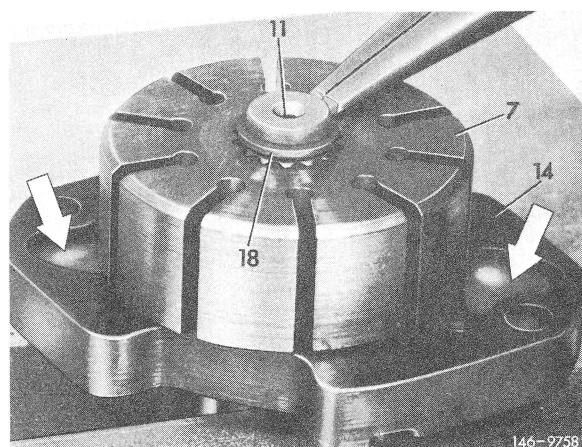


Fig. 2

- | | |
|----------------|-----------------|
| 7 Rotor | 14 Wear plate |
| 11 Drive shaft | 18 Locking ring |

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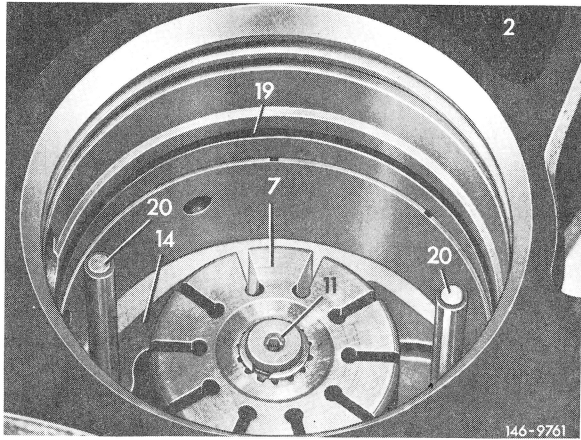


Fig. 3

2 Pump housing
7 Rotor
14 Wear plate
19 O-ring
20 Cyl. pins

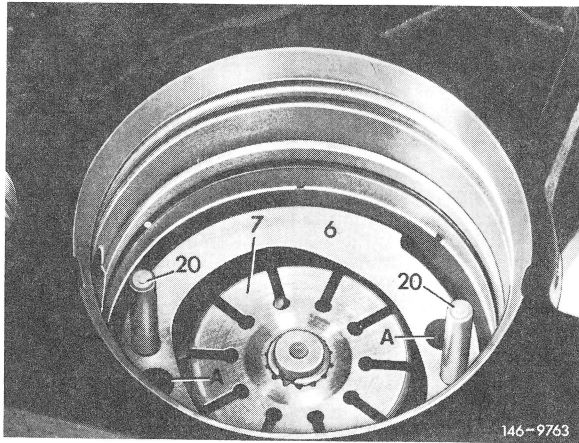


Fig. 4

A Pressure oil hole
6 Cam ring
7 Rotor
20 Cyl. pins

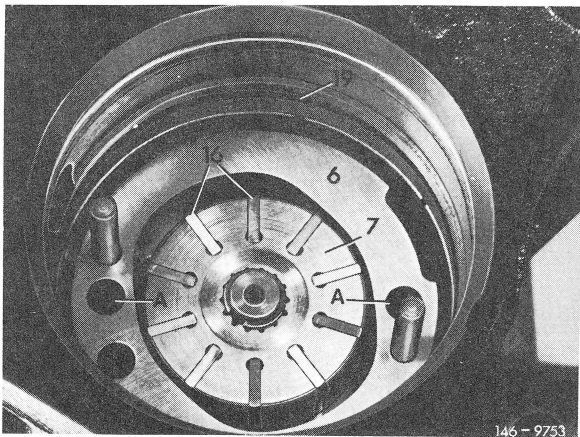


Fig. 5

A Pressure oil bore
6 Cam ring
7 Rotor
16 Blade
19 O-ring

4 Place cam ring (6) with cast-in directional arrow upwards on cyl. pins (20). Watch-out for correct position of cam ring (Fig. 4).

5 Insert vane (16) (10 each) with rounded sides toward cam ring (6) into rotor (7) (Fig. 5 and 9).

6 Insert O-ring (19) (Fig. 1 and 5), then thrust plate (3) into housing (2) (Fig. 1 and 6).

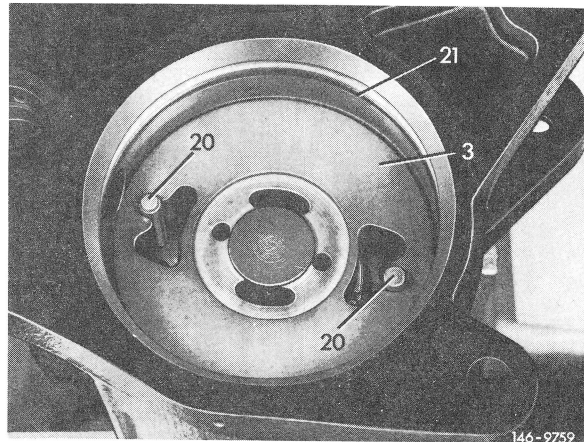


Fig. 6

3 Thrust plate
20 Cyl. pins
21 O-ring

7 Insert O-ring (21) into housing. Place pressure spring (5) on pressure plate (3) (Fig. 1 and 7).

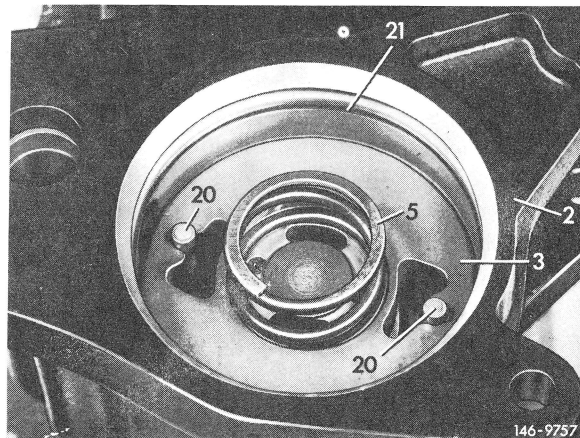


Fig. 7

2 Pump housing
3 Pressure plate
5 Pressure spring
20 Cyl. pins
21 O-ring

Note: O-rings (19) and (21) are of different diameter. The O-ring (19) with the small diameter seals the pressure plate (3), the larger O-ring (21) seals the cover (23) for housing (Fig. 1).

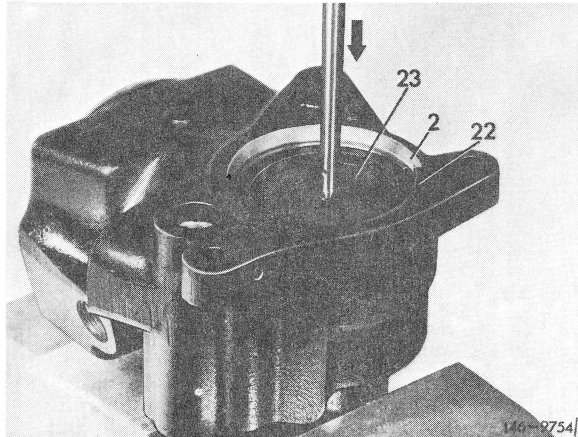


Fig. 8

2 Pump housing
22 Circlip
23 Cover

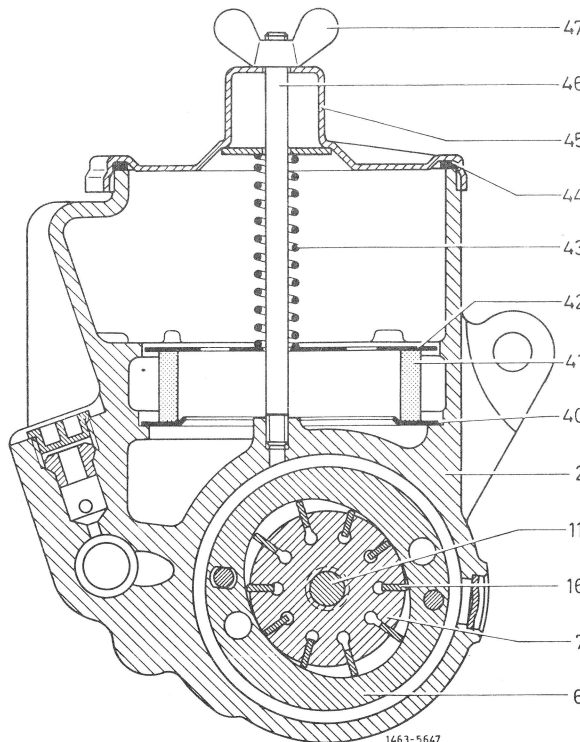


Fig. 9

2 Pump housing
6 Cam ring
7 Rotor
11 Drive shaft
16 Vane
40 Lower damping plate
41 Filter ring
42 Upper damping plate
43 Pressure spring
44 Gasket
45 Closing cover
46 Stud
47 Wing nut

8 Mount cover (23) and press slightly into housing by means of a hand press. Insert circlip (22) into groove of housing, watching out for correct location of ring (Fig. 8).

9 Insert lower damping plate (40), filter ring (41), upper damping plate (42) and pressure spring (43) into housing (Fig. 9 and 10).

10 Place washer (48) on stud (46), attach closing cover (45) and paper gasket (44) with wing nut (47) (Fig. 9 and 10).

Note: Washer (48) applies only to first version of pump. On 2nd version, the washer is attached to cover.

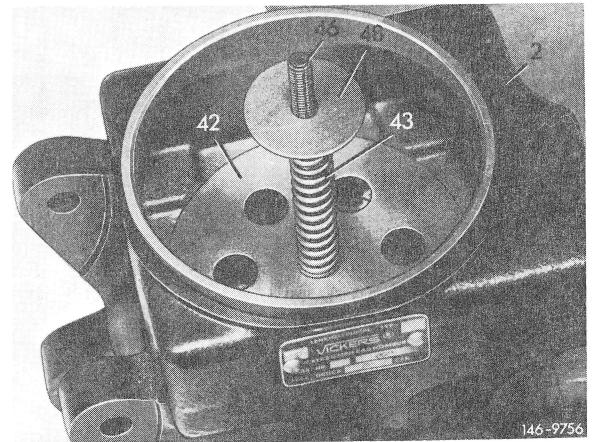


Fig. 10

42 Upper damping plate
43 Pressure spring
46 Stud
48 Washer

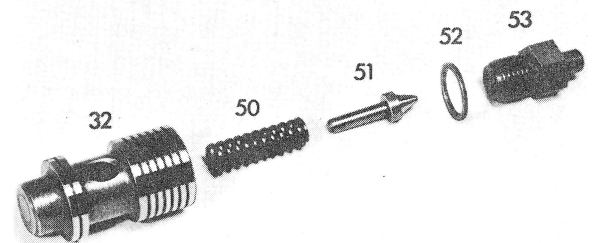


Fig. 11

32 Volume control valve
50 Pressure spring
51 Valve cone
52 Spacing washer
53 Valve screw

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11 Clean volume control valve prior to assembly, immerse in transmission oil and introduce into housing bore. Valve should slide easily in bore.

12 Install pressure relief valve from repair kit 000 586 51 46 (opens at 82 bar gauge pressure) into volume control valve. Insert pressure spring (50) first, then valve cone (51). Then insert spacing washers (52) for adjusting opening pressure into valve screw (53).

Attention! Always use the same washers which were installed before (Fig. 11).

13 Clamp volume control valve (32) with its un-ground end into vise, screw-in valve screw (53) and tighten (Fig. 11).

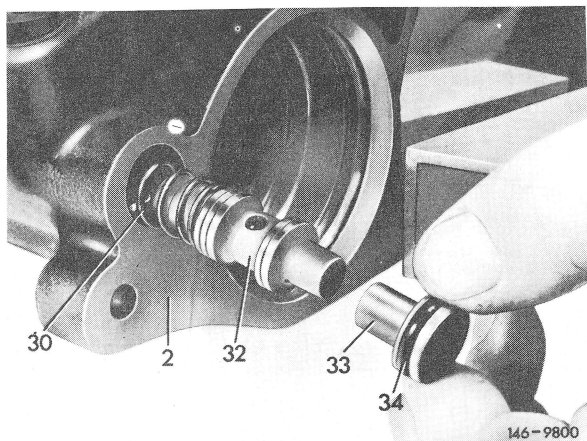


Fig. 12

2 Pump housing
30 Pressure spring
32 Volume control valve
33 Closing plug
34 O-ring

14 Insert pressure spring (30) into bore of pump housing (2). Rinse volume control valve once again, immerse in transmission oil and introduce in housing bore in such a manner that the valve screw is pointing inwards (Fig. 1 and 12).

15 Fit new O-ring (34) to closing plug (33). Push closing cover with bolt in inward direction into housing bore and secure by knocking-in locking pin (Fig. 1 and 12).

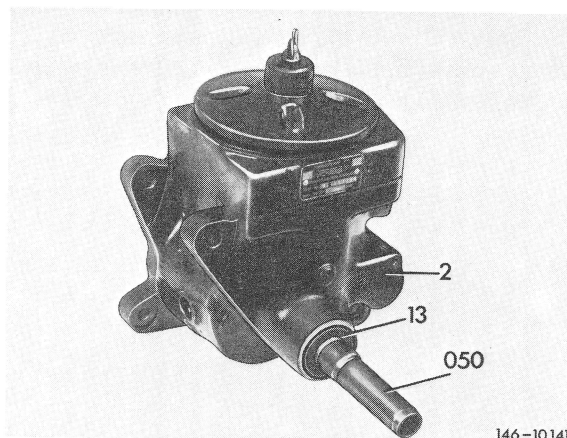


Fig. 13

2 Pump housing
13 Radial sealing ring
050 Guide sleeve

16 Screw guide sleeve (050) onto drive shaft and press radial sealing ring (13) with punch (053) into housing (Fig. 13 and 14).

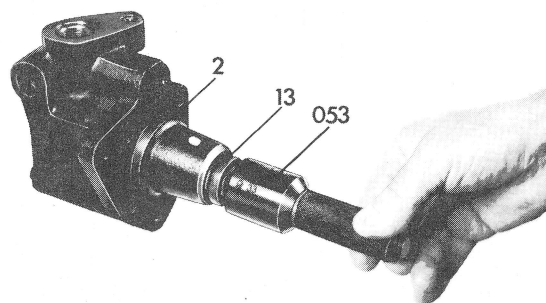


Fig. 14

2 Pump housing
13 Radial sealing ring
053 Punch 30 mm dia.

17 Insert woodruff key into groove of drive shaft.