

Cissell

Hydraulic Booster

Maintenance Instructions Trouble-Shooting

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THIS MANUAL MUST BE GIVEN TO THE EQUIPMENT OWNER.

TROUBLE SHOOTING LIST OF THE HYDRAULIC BOOSTER

(see also “example of assembling” Fig. 1 to 8)

- What to do if:
1. Press opens too slowly.
 2. Booster gives no pressure.
 3. Press loses pressure during cycle.
 4. Loss of oil / Loss of pressure.

When disassembling the Booster, all Packings and O-Rings have to be replaced preferably. This is less expensive than disassembling resp. reassembling of Booster every time.

At least once a year the Hydraulic Oil in the Booster has to be replaced, because the Oil reduces its viscosity and could be penetrated with dust or dirt.

1. Press opens too slowly

- a) BOOSTER NUT 893 (see Fig. 8) has been driven in, hindering back flow of oil. If the Booster Nut is slightly driven in, it might be sufficient to adjust Booster Valve 10306 somewhat higher (see Fig. 7). Otherwise a new Booster Nut has to be mounted.
- b) AIR BOOSTER SPRING 50092 is broken (see Fig. 8) or has not sufficient tension anymore. Requires replacement.

2. Booster gives no pressure

Check whether Operating Valve in resting position allows air to pass to booster, so that this valve is already worked out before operated.

3. Press loses pressure during cycle

- a) Check if air supply line is leaky.
- b) It may occur that there is a leakage between Check Valve Stem 30595 and Seat (see Fig. 1). If necessary, replace Valve and adjust Seat. Former presses have been equipped with a metallic Valve instead of a plastic one. Such metallic Valve has to be tightened by means of an O-Ring. Old parts can simply be replaced by 30595.
- c) BACK-UP RING 30025 and O-RING 30029 (see Fig. 2) require replacement. Damages on Back-Up Ring can be hardly located, because of small cracks. Check also O-Ring 30032; after longer use this O-Ring can be damaged.

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d) Check if seat between Plunger 10520 and Booster Valve 10306 is damaged (see Fig. 7) (always to be replaced at the same time).

e) Check O-Ring 30081 (damages do not occur very often) (see Fig. 8).

f) Check O-Ring 30083 (see Fig. 5).

4. Loss of oil and eventual loss of pressure

a) CHECK VALVE STEM 30595 does not work, causing that oil cannot flow back. Oil will then accumulate in the top of the Booster at PISTON ROD GUIDE 894 (see Fig. 1 and 4).

b) BACK-UP RING 30084 and O-RING 30082 let oil pass through, so that it can enter into the air part. In most cases to be located by a greasy oil vapour, which blows out of the Exhaust Valve during release of air part.
(The Exhaust Valve is mounted in front of air inlet of Booster.) Check also, if PISTON ROD 1884 has been damaged. Sometimes this Rod can be repaired by rubbing with very fine sandpaper in longitudinal direction (only slight damages) (see Fig. 7 and 8).

5. Press slows down badly at closing

a. Refill oil on Booster (use only oil with Pantex No. 80022).

b. In case of loss of oil, see point 4.

Please note, when mounting the Booster between the shafts, that upper and lower fastening points must be lined out absolutely vertically.

EXAMPLE OF ASSEMBLING HYDRAULIC BOOSTERS

This example of assembling is meant of those who have some technical insight in the process of working of the above mentioned cylinders, like service technicians and similar persons.

The numbers indicated in this example of assembling may not be used for ordering spare parts.

For this purpose you have to use the spare parts catalogue, which is delivered with every machine.

Disassembling takes place in reversed order of succession.

The used auxiliary tools can be ordered as per the following list:

Auxiliary tools:

A. "O" Ring mounting tool	19 946	
C. Chain tong	19 949	
D. Auxiliary tool	19 943	
E. "O" Ring mounting tool	19 945	
F. Mounting Rod	19 941	
H. "O" Ring mounting tool	19 944	
J. "O" Ring adjusting tool	19 947	
K. Special screw driver	19 950	
M. Shaft clamp	19 948	
N. Protection plate (2x)	19 942	
Booster Revision Tools (complete set as described above)		117 847

For prices of these auxiliary tools, please see price list.

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PRELIMINARY ASSEMBLING OF CYLINDER HEAD

(Figure 1)

Pinch tool “L” in a bench screw and fix to it CYLINDER HEAD 297 by means of PIVOT CLAMP 128 and the fastening bolts.

Fix O-RING 30036 after greasing by means of special tool “A” round the CHECK VALVE CAP 20033.

Check whether there is a sharp edging at point “B” in the CYLINDER HEAD 297; if there is, remove it. This prevents damage to the valve.

Fix successively CHECK VALVE STEM 30595, CHECK VALVE CAP SPRING 50018, and the already preliminary assembled CHECK VALVE.

Instead of a plastic CHECK VALVE STEM a metal one is used in older executions, on which an extra O-RING 30036 has been mounted.

Both old parts CHECK VALVE STEM and O-RING can be replaced by the new CHECK VALVE STEM 30595.

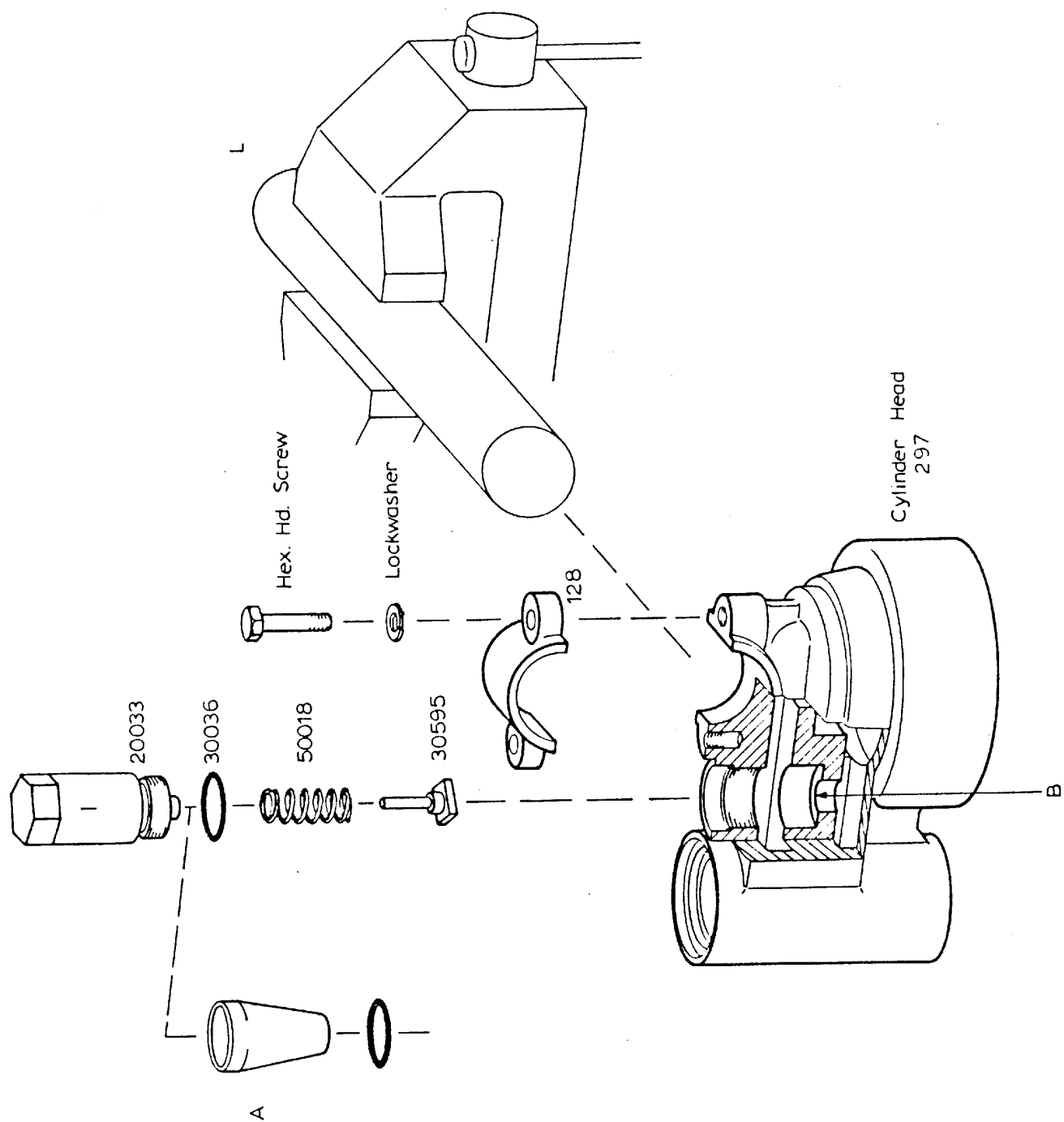


Figure 1

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PRELIMINARY ASSEMBLING OF PISTON ROD

HYDRAULIC PART

(Figure 2)

Mount NEEDLE BEARING 80011 into ROD HEAD 114 and screw this on to PISTON ROD 10087.

Assemble successively on the PISTON ROD;

CHECK SPRING _____ 50 016

CHECKING RING _____ 10 088

HYDRAULIC PISTON _____ 20 697

BACK-UP RING _____ 30 025

O-RING _____ 30 029

PISTON PACKING RING _____ 10 094 (check if it is damaged)

SPRING _____ 50 019

PISTON ROD NUT _____ 10 095

After tightening the PISTON ROD NUT 10095 the hole at the bottom of PISTON ROD 10087 may be deformed somewhat. Please note, that this will not cause any difficulties when assembling CHECKING DISC ASSY 110029 (see Figure 3).

This only appears on replacing the PISTON ROD 10087 and not on disassembling and assembling in the normal way.

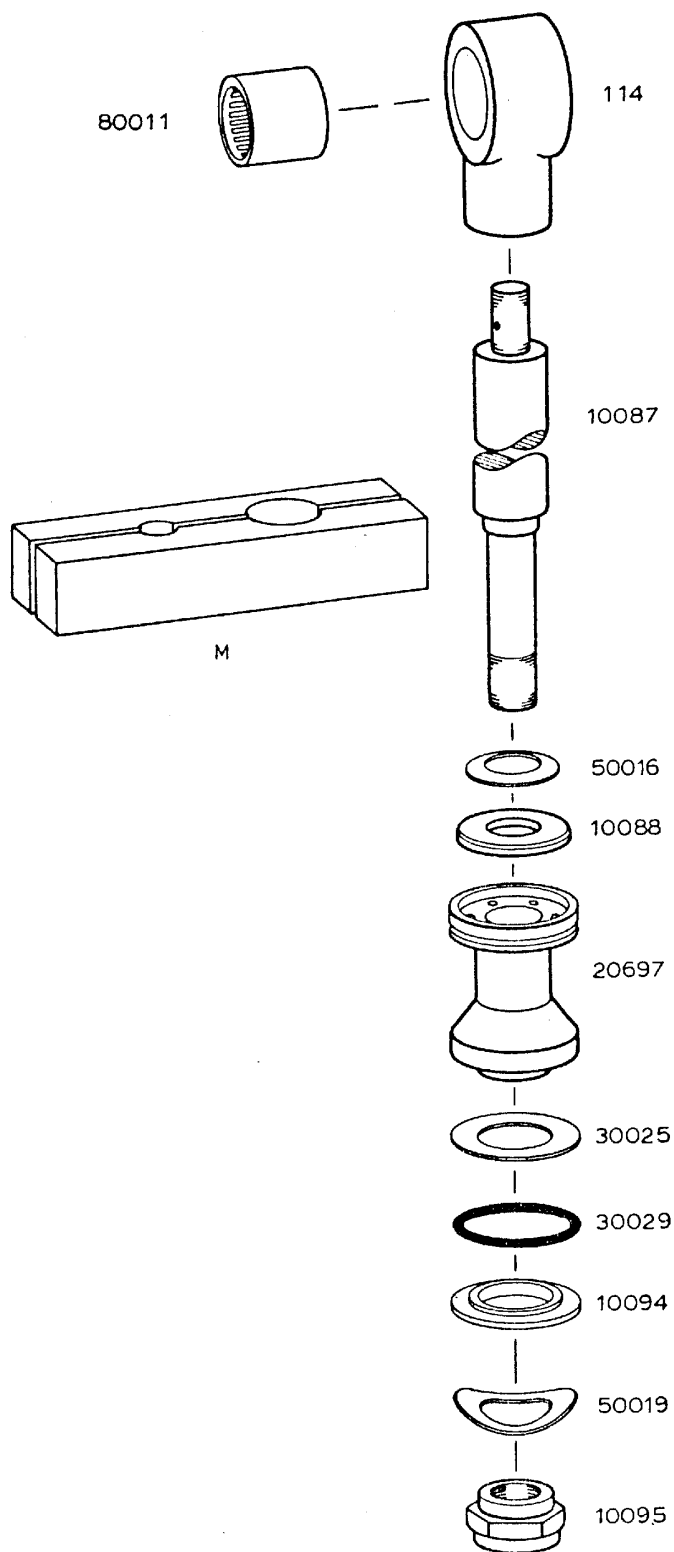


Figure 2

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ASSEMBLING OF IN AND OUTSIDE CYLINDERS

HYDRAULIC PART

(Figure 3)

Mount O-RING 30035 in the CYLINDER HEAD.

Provide point / / of BOOSTER CYLINDER TUBE 113996 with liquid packing and screw it f.e. by means of a chain tong “C” into the CYLINDER HEAD.

Insert between these two parts any available SPACER RINGS. These SPACER RINGS are necessary to fix the BOOSTER CYLINDER TUBE in the right position.

Mount O-RING 30032 after greasing round the HYDRAULIC CYLINDER (INNER) 10096.

Put the CHECKING DISC ASSY 110029 into the recess of 10096 and press the whole thing with the aid of tool “D” into the CYLINDER HEAD.

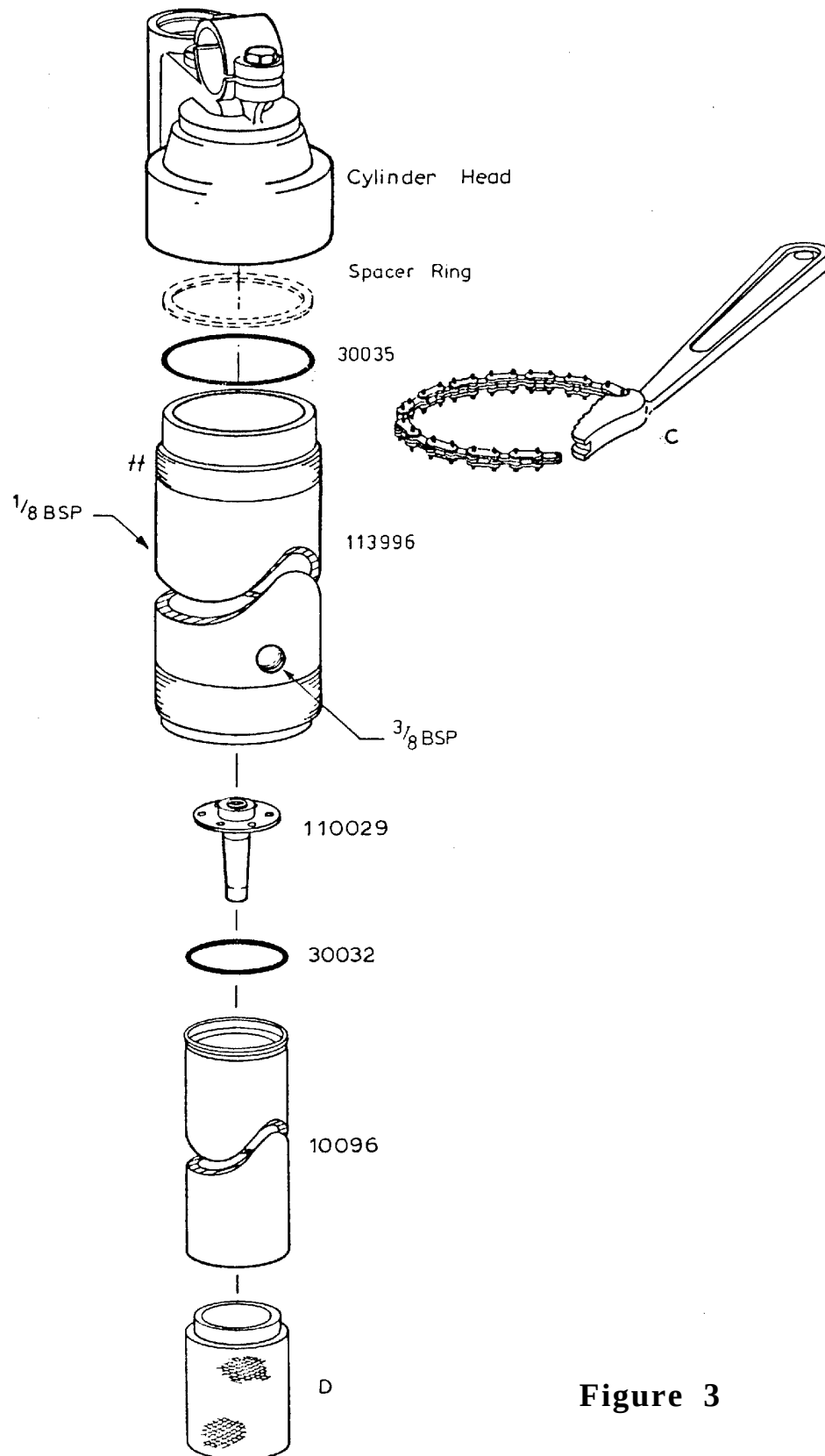


Figure 3

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ASSEMBLING OF IN PISTON ROD

HYDRAULIC PART

(Figure 4)

Screw ROD HEAD 114 from the PISTON ROD 10087.

Fix HYDRAULIC PISTON SPRING 50015 round the already preliminary assembled piston rod and push round it auxiliary tool “D”, so that 50015 cannot jump away.

Press the piston part into HYDRAULIC CYLINDER (INNER) 10096 and remove auxiliary tool “D”.

Fit O-RING 30034 round PISTON ROD GUIDE 894, after the first has been greased. Then also mount SCRAPER RING 30783 into Piston Rod Guide.

Mount successively into the cylinder:

PISTON ROD GUIDE _____ 894 (incl. O-Ring and Scraper Ring)

SPLASH RING _____ 94 154

CYLINDER HEAD RING _____ 126

ROD HEAD _____ 114

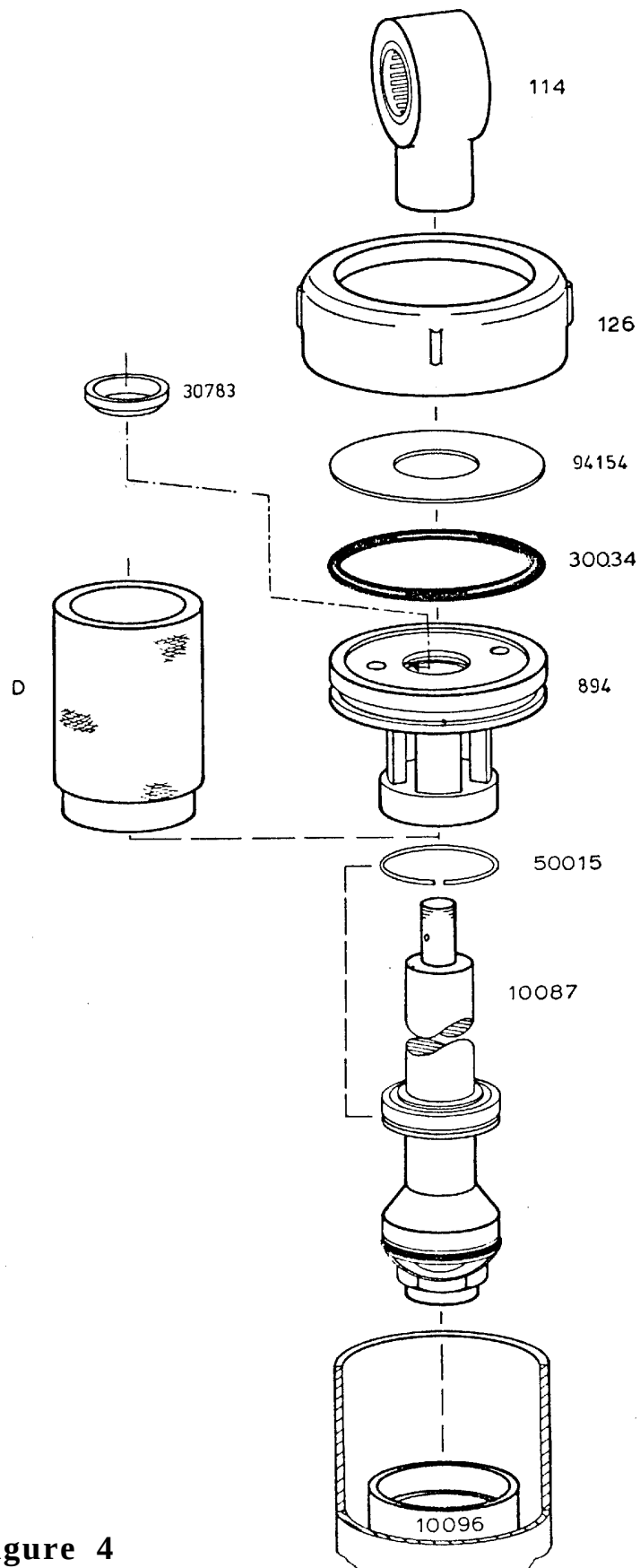


Figure 4

Information subject to change without notice.

PRELIMINARY ASSEMBLING OF AIR CYLINDER PISTON

(Figure 5)

Tighten PISTON ROD 18847 into a bench screw, whereby you MUST make use of tool “N” (aluminum sheets or another similar material), so that damages of the PISTON ROD in any way are prevented.

Provide O-RINGS 30026 and 30080 with grease and push the latters round the PISTON ROD with the aid of tools “E” and “H”.

Check whether the O-RING groove of BOOSTER PISTON 296 is free from damages, slight damages may sometimes be corrected with the aid of very fine emery-cloth. (Rub in longitudinal direction)

Fix successively BOOSTER PISTON 296, PLAINWASHER and SECURITY NUT.

Provide O-RING 30083 with grease and mount it round the BOOSTER PISTON.

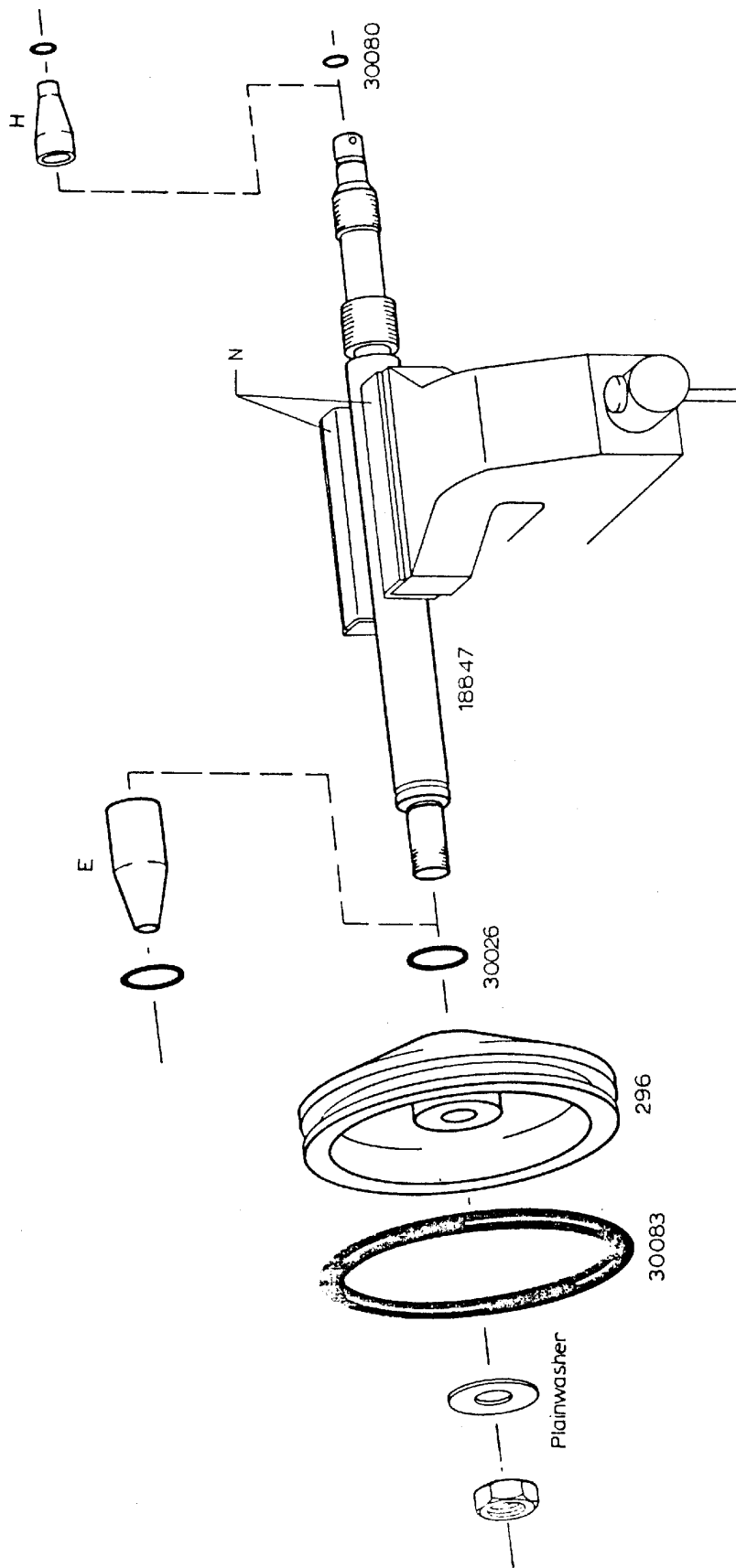


Figure 5

Information subject to change without notice.

PRELIMINARY ASSEMBLING OF AIR CYLINDER PART

(Figure 6)

Screw PISTON ROD GUIDE 10522 into the preliminary assembled CYLINDER HEAD 297.

Screw AIR VALVE INLET 20747 onto the PISTON ROD GUIDE ASSY (groove downwards) after the first has been provided with liquid packing on both sides. Use tool “F” for this purpose.

Angle “□” is about 15° for normal presses.

Fix BOOSTER AIR CYLINDER 205 f.e. by means of a chain tong “G”.

Pinch this tong around the bottom side / of the cylinder in order to prevent impressing.

Screw now the complete assembled part again out of the CYLINDER HEAD to assemble the inner work.

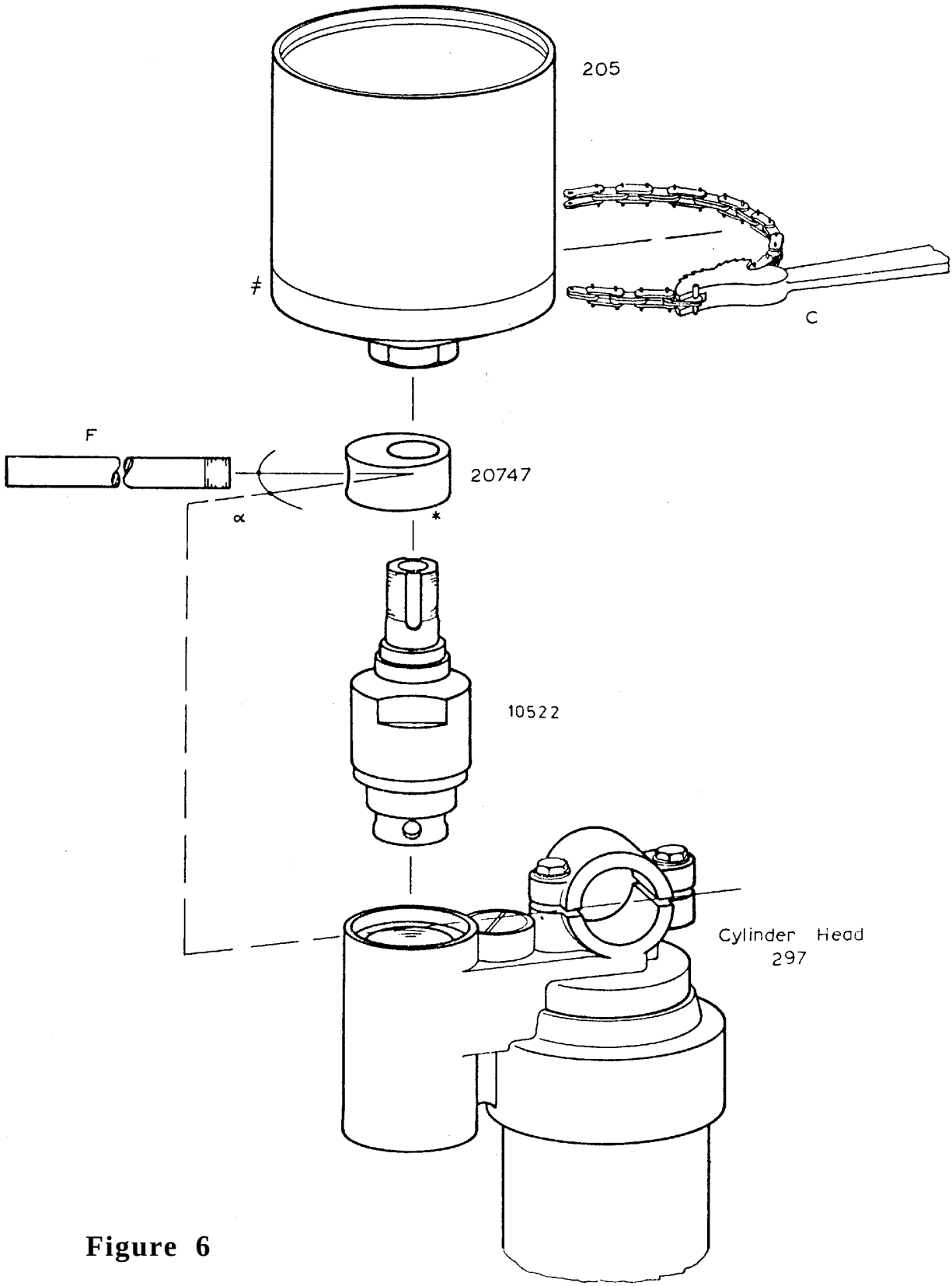


Figure 6

Information subject to change without notice.

ASSEMBLING OF THE PACKING BETWEEN HYDRAULIC AND AIR CYLINDER PART

(Figure 7)

Fix BACK-UP RING 30084 on the seat at the bottom of the preliminary assembled cylinder part; the flat side has to be directed downward and press this with the aid of tool “J”.

Then fix O-RING 30082 and now mount the next BACK-UP RING 30084 directed with the hollow side to the O-Ring, after which all parts can be locked away by means of RING 18846. Use tool “K” for this purpose.

Put some oil on the preliminary assembled PISTON ROD 18847 and on the inner side of the BOOSTER AIR CYLINDER 205.

Now press the piston rod through the back-up rings upwards.

Mount successively Spring Holder 199882, Spring 50209, Plunger 10520, Booster Valve 10306, and guard the latter by means of a cotter pin.

The lower side of the hole in PISTON ROD 18847 and the lower side of the groove in PLUNGER 10306 must be in line with each other (see point A).

ASSEMBLING OF AIR CYLINDER AND PLUNGER PART IN THE CYLINDER HEAD

(Figure 8)

Mount after greasing successively BACK-UP RING 30085 (flat side downward, see picture), O-RING 30081 and O-RING 30031 in the CYLINDER HEAD 297.

Mount the preliminary assembled plunger and air cylinder part in the CYLINDER HEAD, after having put some oil on the plunger / /. Use f.e. a chain tong “C” (bottom side cylinder /).

Fit successively in the BOOSTER AIR CYLINDER 205:

AIR BOOSTER SPRING _____ 50 092

SPRING SEAT _____ 376

CYLINDER DISC _____ 12 208 and guard the latter by

REATINING SPRING _____ 50 040

Mount after having applied liquid packing next parts:

SPACER _____ 12 207

BOOSTER NUT _____ 893

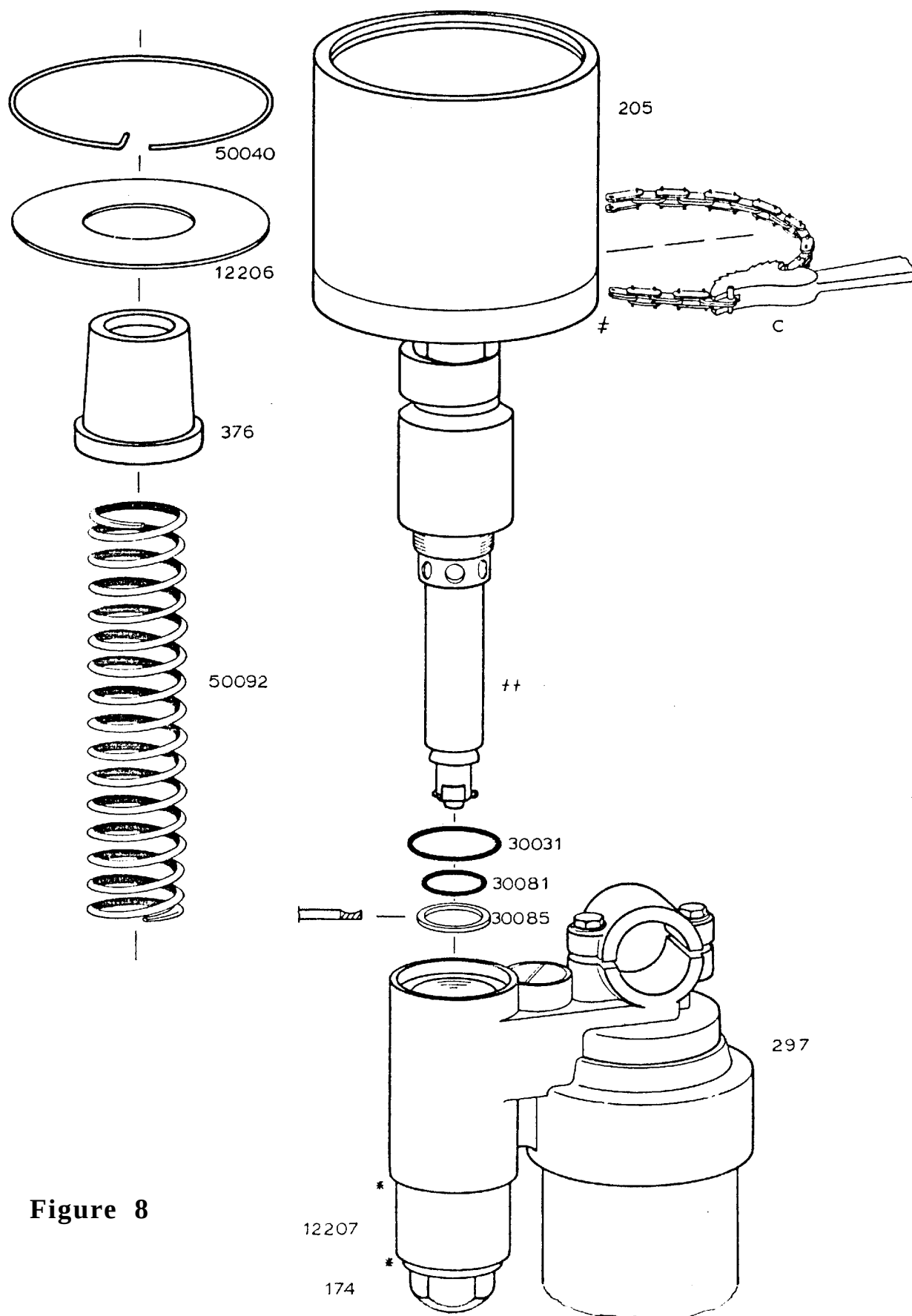


Figure 8

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FINISH

(Figure 9)

Mount STRAIGHT ADAPTER 45128 into BOOSTER NUT 893 and fix ELBOW ADAPTER 45125 in CYLINDER TUBE 113 996.

(Seal with liquid packing).

Fit a nylon tube 0.5 mm between these two points.

Screw ELBOW 40647 into CYLINDER TUBE 113 996.

(Seal with liquid packing).

Refill the Booster with oil through the filling orifice.

Tighten the filling orifice with COPPER WASHER 40649 and BLANKING PLUG 40 648.

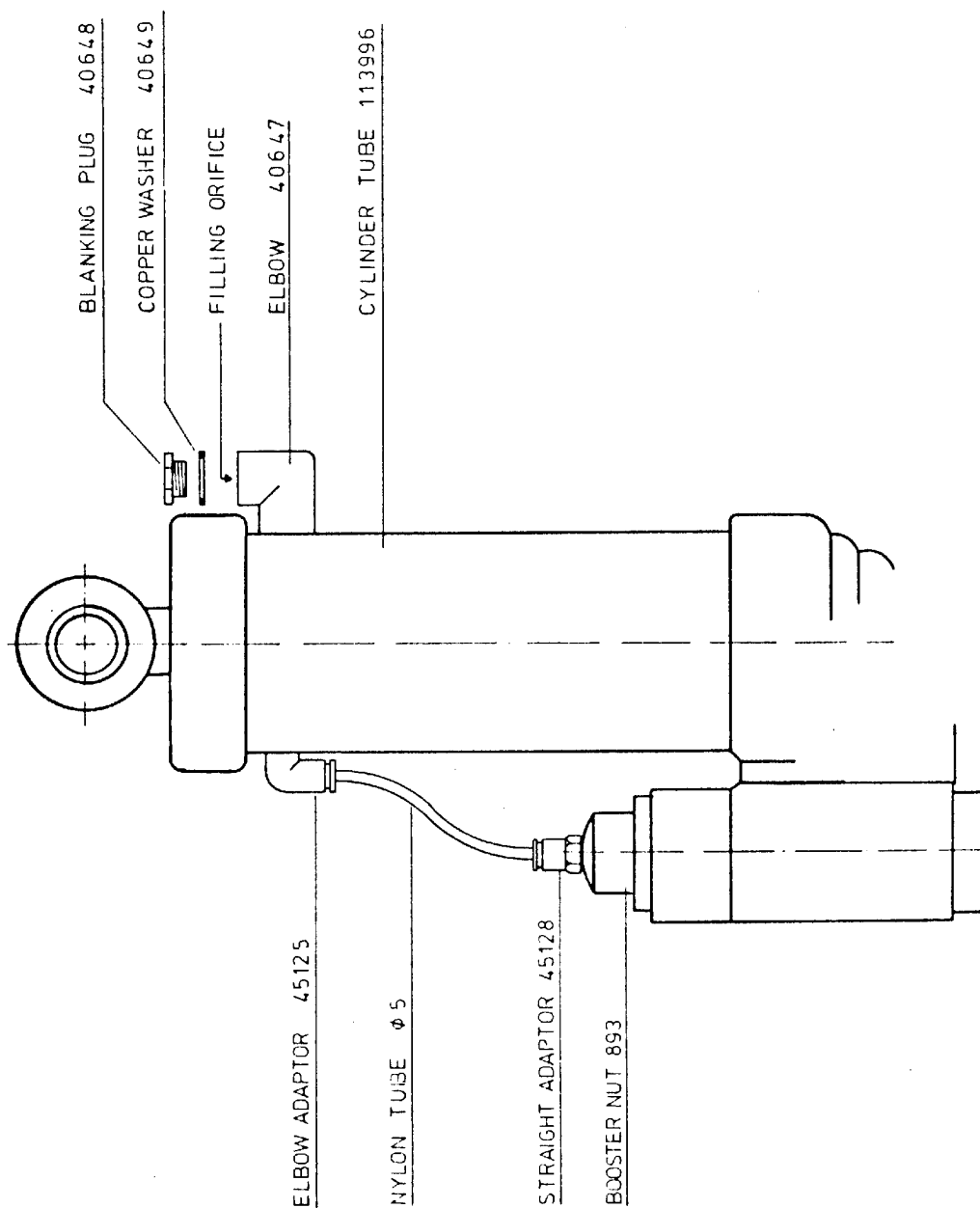
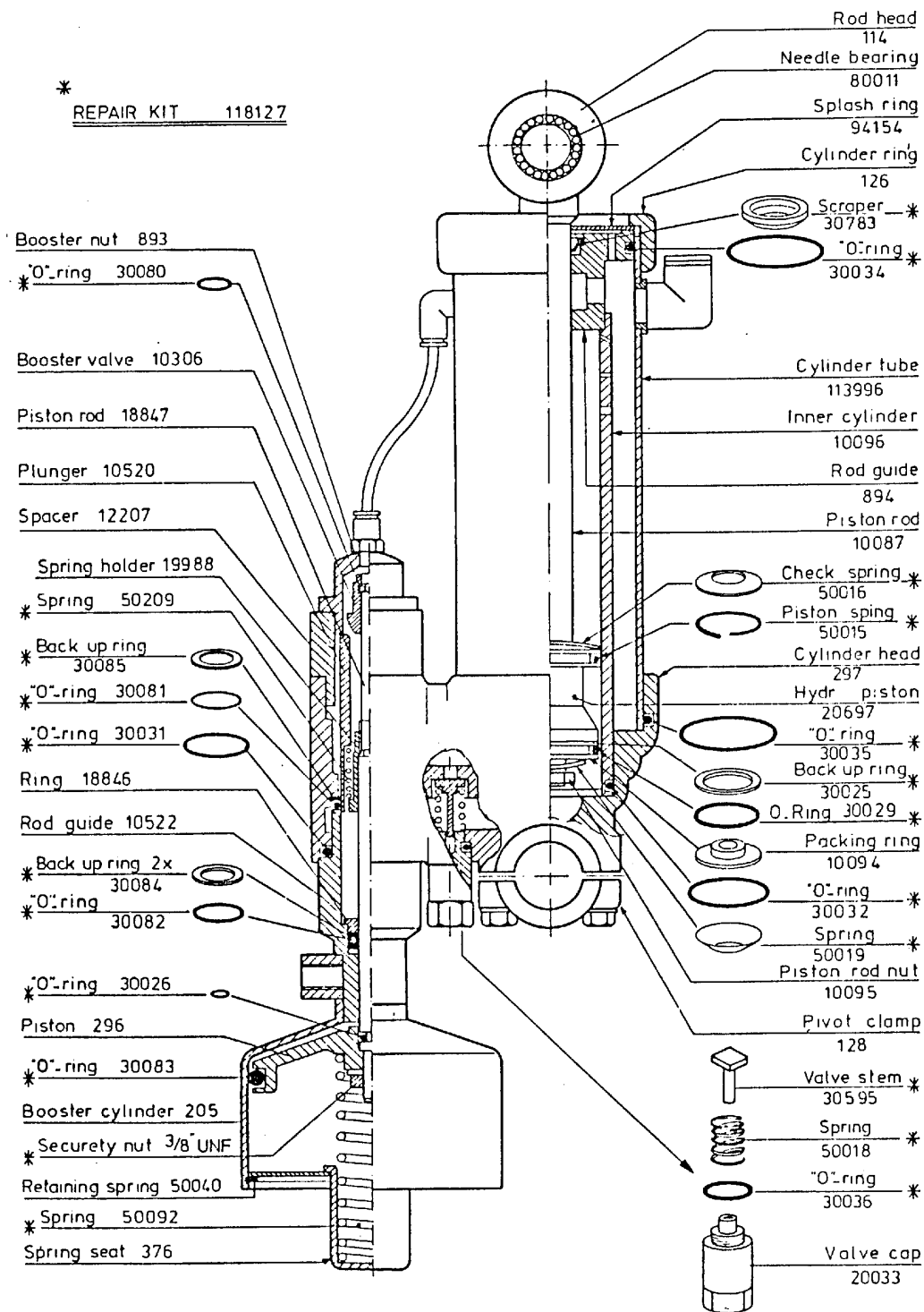


Figure 8

Information subject to change without notice.

NOTE: THE INSTRUCTIONS IN THIS MANUAL ARE THE SAME FOR ALL BOOSTERS.
TO ORDER REPLACEMENT PARTS, REFER TO THE CORRECT BOOSTER ASSEMBLY
DRAWING THAT MATCHES YOUR PARTICULAR MACHINE

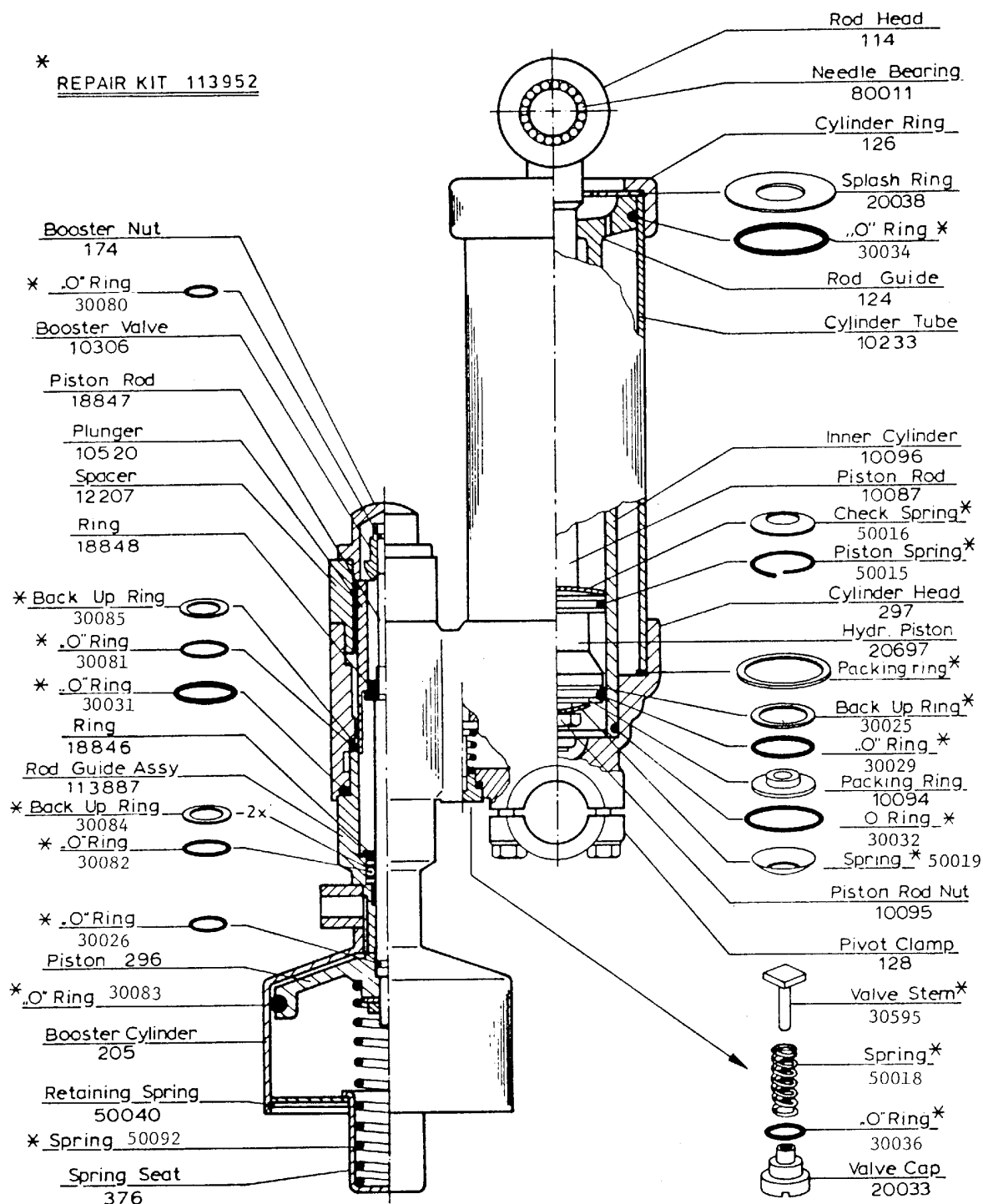
HYDRAULIC BOOSTER ASSY 118108



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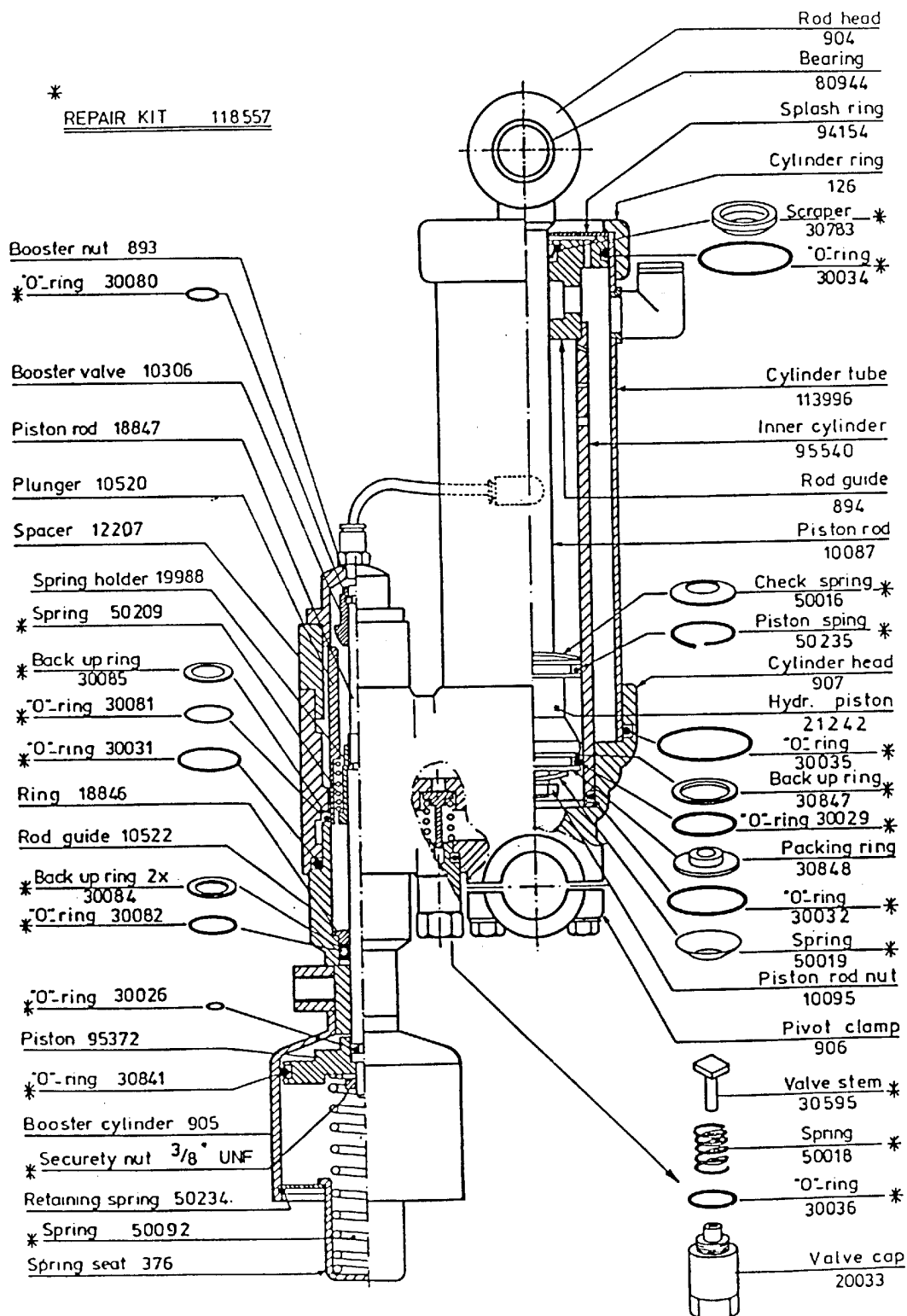
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