

Repair Instructions

and

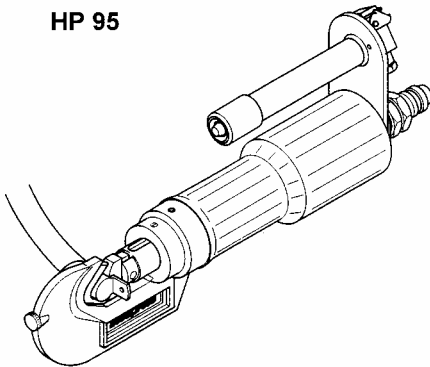
Spare Parts Lists

for

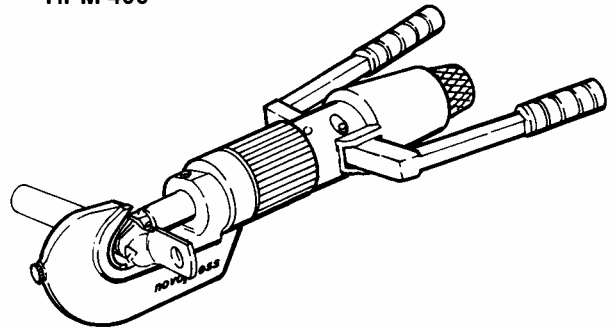
NOVOpress

PRESSING CYLINDERS

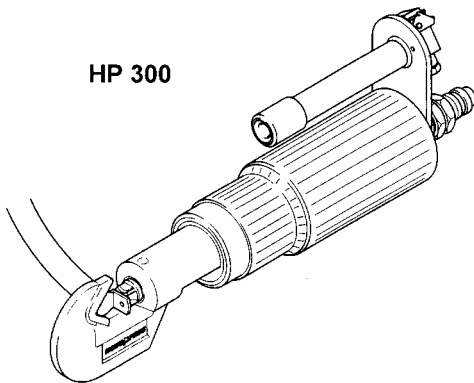
HP 95



HPM 400



HP 300



HP 450

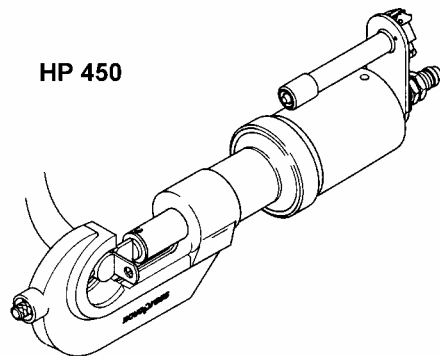


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GENERAL SAFETY REGULATIONS

Read all safety regulations and instructions!

1. Keep the place of work clean.
Disorderly work-places and work-benches invite accidents.
Ensure that lighting is good.
2. Keep children away.
Do not allow unauthorised persons to touch the device or the cable.
Keep unauthorised persons away from your place of work.
3. Wear suitable working clothing.
Do not wear any wide clothes nor jewellery - they may get caught up in moving parts.
When working in the open it is recommended that you wear rubber gloves and non-slip footwear. Wear a hair- net if you have long hair.
4. Always be alert.
Only use a device after having been instructed in its operation.
Concentrate on your work. Proceed sensibly.
Do not use the device when you are distracted.
5. Do not lean too far forward. Avoid abnormal stance.
Make sure that you have a secure standing position, and maintain balance at all times.
6. Leave safety devices where they belong.
7. Hand tools may not be installed as fixtures.
8. Repair and maintenance.
Have repairs and maintenance work carried out in an authorised NOVOPRESS specialist workshop.
Only use original and identical NOVOPRESS spare parts.
We reject all responsibility and liability for work carried out by third- party personnel.

SAFETY INSTRUCTIONS FOR HYDRAULIC EQUIPMENT

1. Please read the operating instructions.
Acquaint yourself with the hydraulic equipment.
2. Provide the equipment with the necessary care.
Always keep the equipment in operational condition.
Cleanness is an essential requirement for good and safe working.
3. Switch off the electric power supply to the hydraulic equipment,
 - when the equipment is not in use
 - when maintenance work is to be carried out.
4. Avoid unintentional switching - on.
Keep hands and feet away from the switch when the equipment is not being used.
5. Do not use the equipment in a manner in contravention of the instructions.
Never carry the equipment by the pipe or pull on the pipe.
Protect the piping from heat, oil, sharp edges and high levels of weight strain.
6. Use only piping, fittings and accessories which have been designed for the operating pressure of the hydraulic unit.
BURSTING PRESSURE OR TEST PRESSURE IS NOT OPERATING PRESSURE!
Avoid squashing or bending of the piping.
Piping must not be painted over.
7. Replace the hydraulic piping
 - when cracks, squashed or bent points are to be seen
 - when blistering is established
 - when hydraulic fluid escapes
 - when pipe fittings are damaged
 - when discolouration is established on the outer layer, e.g. due to the influence of solvents.
8. The hydraulic fluid used in the system is kerosene-based.
This requires particular care and attention.
 - Avoid continuous contact with the skin
 - ensure that the hydraulic fluid does not get into the eyes or mouth.Hydraulic pipes have to be replaced after 5 years of usage, despite of the circumstance that no damages should be remarkable.
9. The equipment must not be operated, if it has leaks and there is a danger of hydraulic fluid coming into contact with persons, open fire, heating equipment, electric cabling, ground water, foods and other substances which are intended for human consumption.
10. Hydraulic units with petrol engines
 - must not be operated in closed rooms, due to the **DANGER OF INTOXICATION!**
 - do not pour in petrol while the motor is running or in the vicinity of open fire. **DANGER OF EXPLOSION!**

General Notes

The Instructions for assembling and dismantling the pressing cylinder refer in all cases to the individual drawing of the corresponding part of the tool.

(23) refers to item 23 of corresponding pressing cylinder.

(3/31830) refers to item 3 of the parts list 31830.

NOTE!

(3/31830) refers to
item 3 of Spare Parts List 31830

Item 3

Spare Parts List 31830

in this case lock nut

in this case hand switch HP 95 and HP 300

Pressing Cylinder HP 95

For spare parts list and drawing of the part, see pages 6 and 7

1 DISMANTLING

- 1.1 Cut open the shrink-on sleeve (23) and remove it.
- 1.2 For devices as of serial no.: 2350:
Undo the grub screw (10)
- 1.3 Grip the HP 95 by its head (1) in a vice.
- 1.4 Undo the screw connector (21).
- 1.5 For HP's with hand switch only:
 - Undo the screw (17/31830).
 - Unscrew the lock nut (3/31830).
 - Pull off the cup washer (6/31830), hand switch (27) and shims (5/31830).
 - Unscrew the adapter (4/31830)
- 1.6 Draw the control bar (9) out of the threaded hole for the screw connector and pour out the oil.
- 1.7 Using a screwdriver inserted through the threaded hole, apply pressure to the hole of the valve (6). This releases the remaining oil.

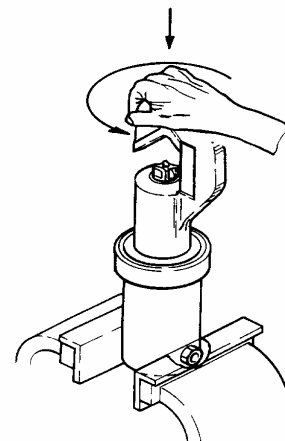
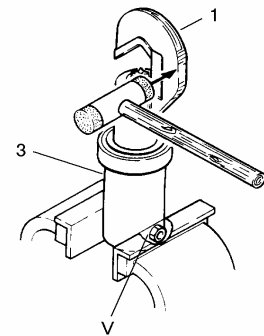
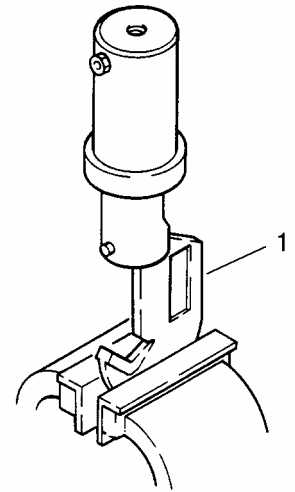
NOTE! Collect the oil with due regard to the environment and dispose of it in a suitable container.

- 1.8 Grip the HP 95 by the piston (3) in a vice.

NOTE! Grip the piston (3) at the inlet pressure valve (V) (See drawing)
- 1.9 Strike the head (1) with a hammer to undo the thread.

- 1.10 Unscrew the head (1)

WARNING! The head (1) is under pressure from the spring.
With one hand, push the head (1) against the spring pressure as you unscrew it.



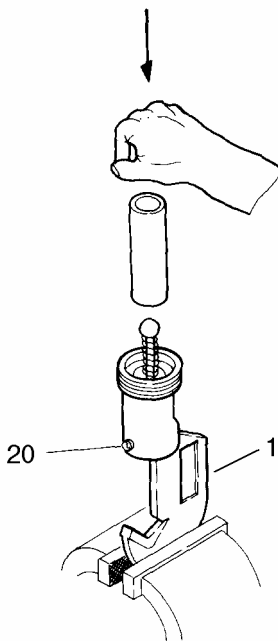
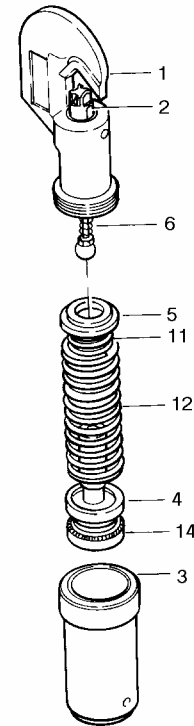
Pressing Cylinder HP 95

- 1.11 Remove the head (1) with the piston (2) and the valve (6) from the piston (3).

- 1.12 Up to serial no.: 2349:
Remove the piston (4) with the locating washer (14), the springs (11) and (12) and the supporting washer (5) from the cylinder (3).

As of serial no.: 2350:

- Remove the piston (4) with the Glyd ring (14), the springs (11) and (12) and the supporting washer (5) from the cylinder (3).
- Detach the supporting washer from the piston (4).
- Remove the O-ring (22) from the supporting washer (5).
- Detach the Turcon stepseal (16) from the supporting washer (5).



- 1.13 As of serial no.: 2350:
Detach the Glyd ring (14) from the piston (4).
- 1.14 Grip the head (1) in a vice as shown.
- 1.15 Using a tube, press the piston (2) down about 3 mm and hold it.
- 1.16 Unscrew the grub screw (20).
Then slowly release the pressure on the tube until the spring (11) is released.

- 1.17 Up to serial no.: 2349:
Remove the piston (2) with the control valve (6) and the parts (11), (15) and (16) from the crimping head (1).

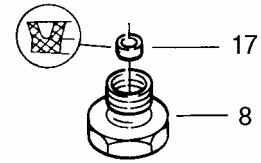
As of serial no.: 2350:

- Remove the piston (2) with the control valve (6) and the parts (11) and (15) from the crimping head (1).
- Detach the Turcon stepseal (15) from the piston (2).

WARNING! Any scoring of the contact faces of the cylinder or of the head (1) must be polished or ground out. If scoring is very severe, replace the cylinder.

Pressing Cylinder HP 95

- 1.18 Undo the cap screw (8) and push the locating washer (17) out with a piece of wire.
- 1.19 Remove the washer (18), spring (13) and conical pin (7).

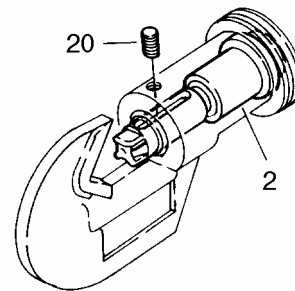


2 ASSEMBLY

WARNING! Please note the position of all locating washers.

- 2.1 The faces of the cylinder must be perfectly clean. Before assembly, carefully rinse with a cleaning medium (e.g. white spirit).
- 2.2 Grip the head (1) in a vice. (See drawing under 1.12)
- 2.3 Up to serial no.: 2349:
Place the new locating washer (15) onto the piston (2).
As of serial no.: 2350:
Correctly fit the new Turcon stepseal (15) onto the piston (2).
- 2.4 Fit the spring (11) and the piston (2) with locating washer (15) into the head (1).

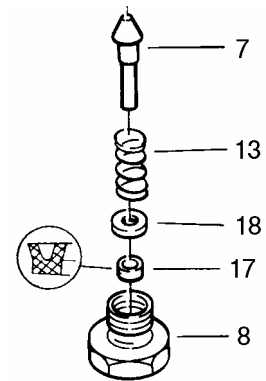
- 2.5 Rotate the piston (2) so that the grub screw (20) and the groove on the piston are in line.
- 2.6 Press the piston down using a tube until the groove at the bottom is visible.



- 2.7 Advance the grub screw (20) fully home and then retire it by one full turn. The grub screw must not make contact with the bottom of the groove.
- 2.8 Arrest the grub screw (20) with a centre punch mark.
- 2.9 Grip the head (1) horizontally in a vice.
- 2.10 Up to serial no.: 2349:
Insert the locating washer (16) into the crimping head (1).
As of serial no.: 2350:
Correctly fit the Turcon stepseal (16) into the slot in the supporting washer (16).
- 2.11 Fit the supporting washer (5) into the head.
- 2.12 As of serial no.: 2350:
Fit the O-ring (22) onto the supporting washer (5).
- 2.13 Up to serial no.: 2349:
Insert the locating washer (14) into the cylinder (3).
As of serial no.: 2350:
Correctly fit the Glyd ring (14) onto the piston (4).
- 2.14 Insert the piston (4) into the cylinder (3) fully home.
- 2.15 Fit the springs (11) and (12) into the cylinder (3).
- 2.16 Fit the supporting washer (5) onto the piston (4)
- 2.17 Fit the cylinder (3) with the piston and springs on to the head (1), press it down and screw it into place.
- 2.18 Use a monkey wrench when tightening the cylinder (3).

Pressing Cylinder HP 95

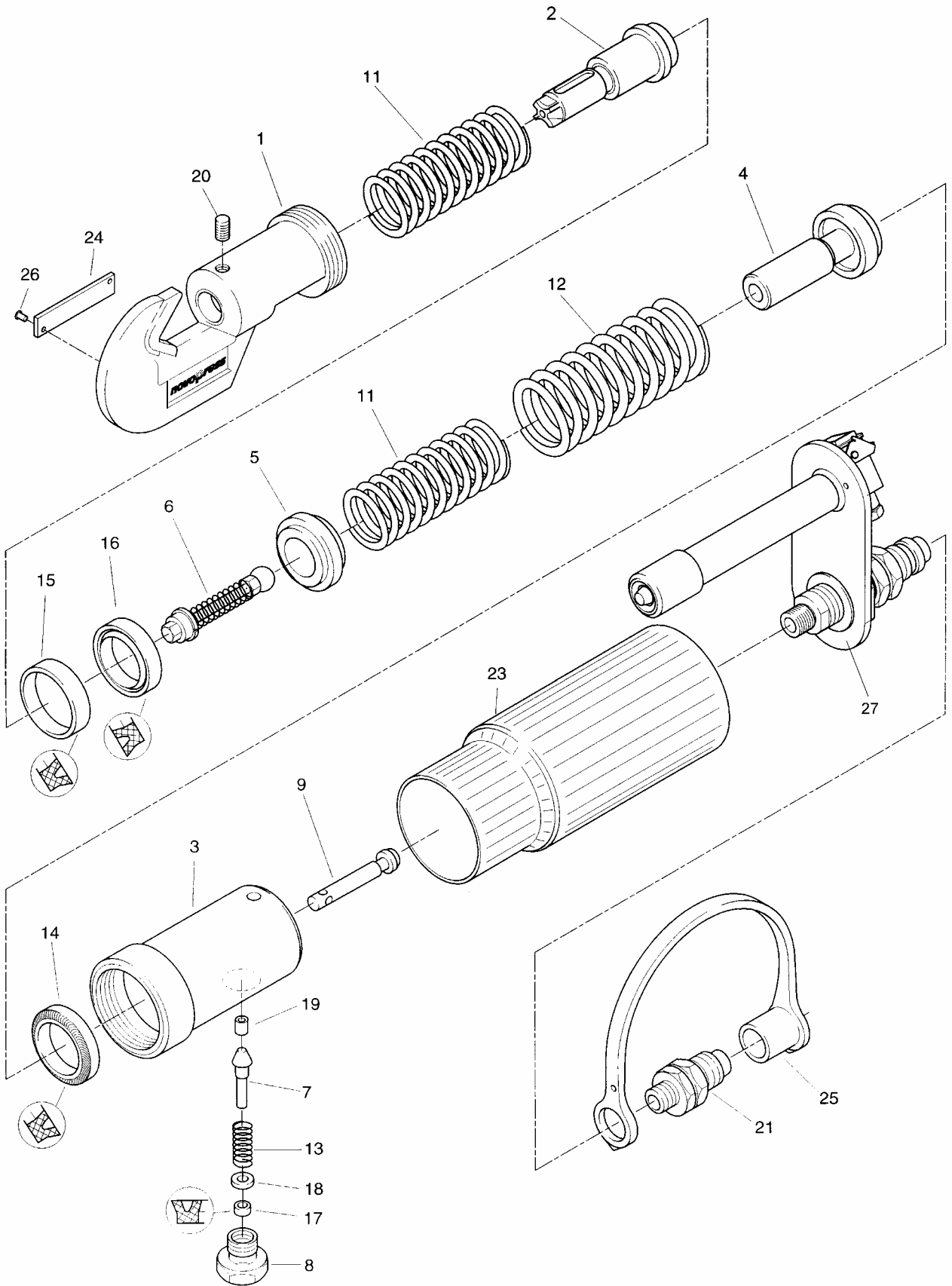
- 2.19 Insert and fully seat the locating washer (17) into the cap screw (8).
- 2.20 Place the washer (18) and the spring (13) on to the cap screw (8).
- 2.21 Insert the cone of the pin (7) into the locating washer.
- 2.22 Screw the assembled inlet pressure valve into the cylinder (3).
- 2.23 Fit the thrust pin (9).



- 2.24 Only for HP's with hand switch:
- Screw the adapter (4/31830) into the cylinder (2) and place the shims (5/31830) on to the adapter (4/31830).
 - Fit hand switch (27) on adapter (4/31830).
 - Fit cup washer (6/31830) on adapter (4/31830).
 - Tighten hand switch with lock nut (3/31830). The groove in the nut (see enlargement) must point towards the hollow side of the cup washer.
 - Arrest the lock nut (3/31830) by tightening grub screw (17/31830).
- 2.25 Insert plug connector and tighten it.

3000 Pressing Cylinder HP 95 up to serial no.: 2349

Item	Description	Order No.	Qty.
1	Head	3001	1
2	Piston	3002	1
3	Low-pressure cylinder	3003	1
4	Low-pressure piston	2352	1
5	Supporting washer	3005	1
6	Valve	3007	1
7	Conical pin	1497	1
8	Cap screw	1498	1
9	Thrust pin	1499	1
11	Spring	1215	2
12	Spring	1216	1
13	Spring	1613	1
14	Locating washer 50x35x10	11061	1
15	Locating washer 37x30x8/4	11059	1
16	Locating washer 38x26x8/5	11060	1
17	Locating washer 3x7x3	11056	1
18	Washer	4241	1
19	Bushing	11062	1
20	Grub screw AM 8x16	11052	1
21	Plug connector R3/8"	3718	1
23	Shrink sleeve	16728	1
24	Tool label	5693	1
25	Dust cap for plug end	1514	1
26	Ribbed nail	11120	2
27	Hand switch	31830	1

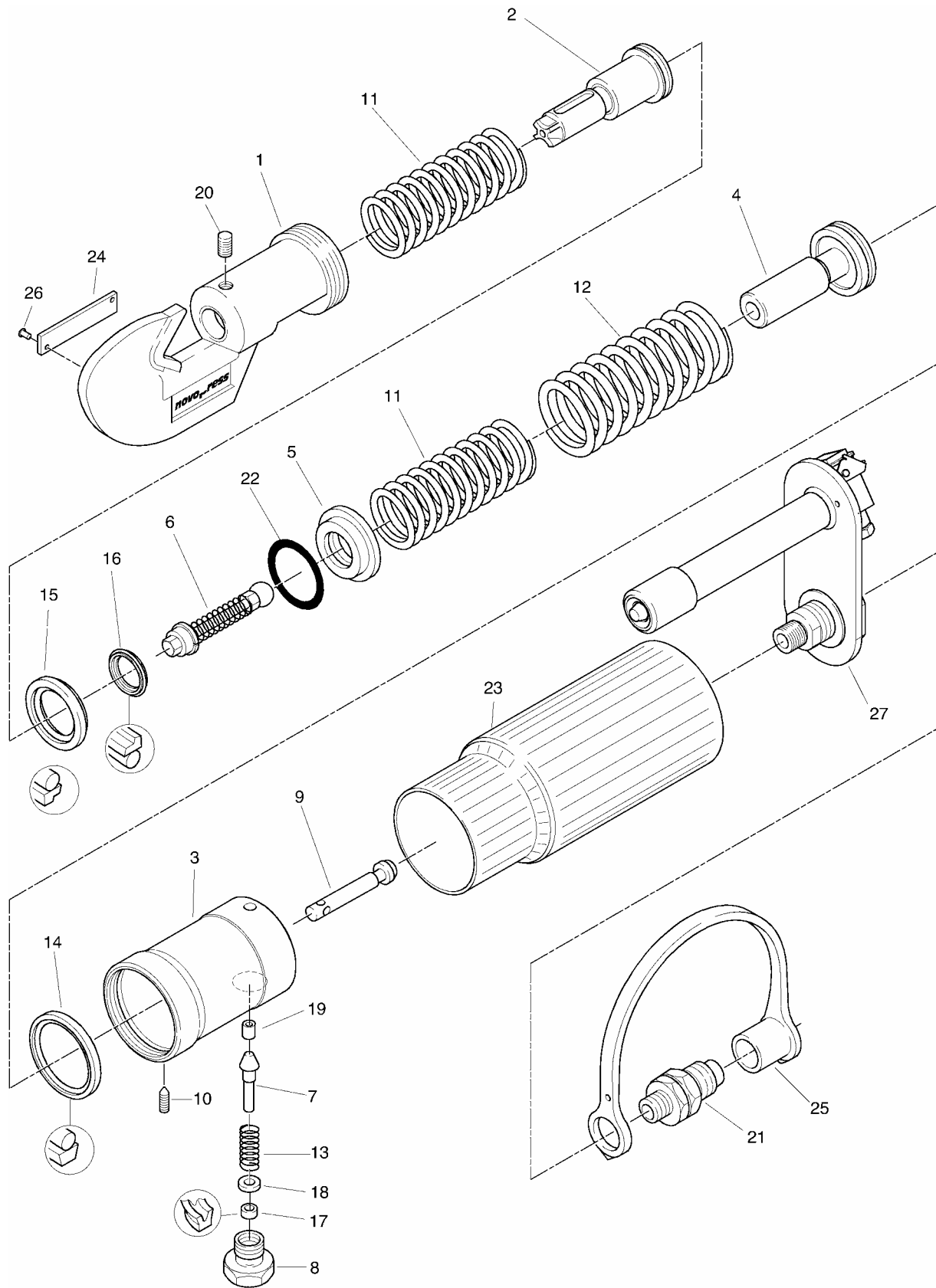
3000 Pressing Cylinder HP 95 up to serial no.: 2349

3000 Pressing Cylinder HP 95 as of serial no.: 2350

Item	Description	Order No.	Qty.
1	Head	39092	1
2	Piston	39093	1
3	Low-pressure cylinder	39094	1
4	Low-pressure piston	39095	1
5	Supporting washer	39096	1
6	Valve	3007	1
7	Conical pin	1497	1
8	Cap screw	1498	1
9	Thrust pin	1499	1
10	Grub screw M 4x6	11758	1
11	Spring	1215	2
12	Spring	1216	1
13	Spring	1613	1
14	Glyd ring $\varnothing 50 \times \varnothing 39,3 \times 4,2$	16247	1
15	Turcon-Stepseal $\varnothing 37 \times \varnothing 29,7 \times 3,2$	16248	1
16	Turcon-Stepseal $\varnothing 26 \times \varnothing 36,7 \times 4,2$	16249	1
17	Locating washer 3x7x3	11056	1
18	Washer	4241	1
19	Bushing	11062	1
20	Grub screw AM 8x16	11052	1
21	Plug connector R3/8"	3718	1
22	O-ring 40.2x3	16246	1
23	Shrink sleeve	16728	1
24	Tool label	5693	1
25	Dust cap for plug end	1514	1
26	Ribbed nail	11120	2
27	Hand switch	31830	1
501	Rod gauge	4103	1
502	Sealing kit	40655	1

Sealing kit 40655 comprises item 14, 15, 16, 17 and 22.

3000 Pressing Cylinder HP 95 as of serial no.: 2350



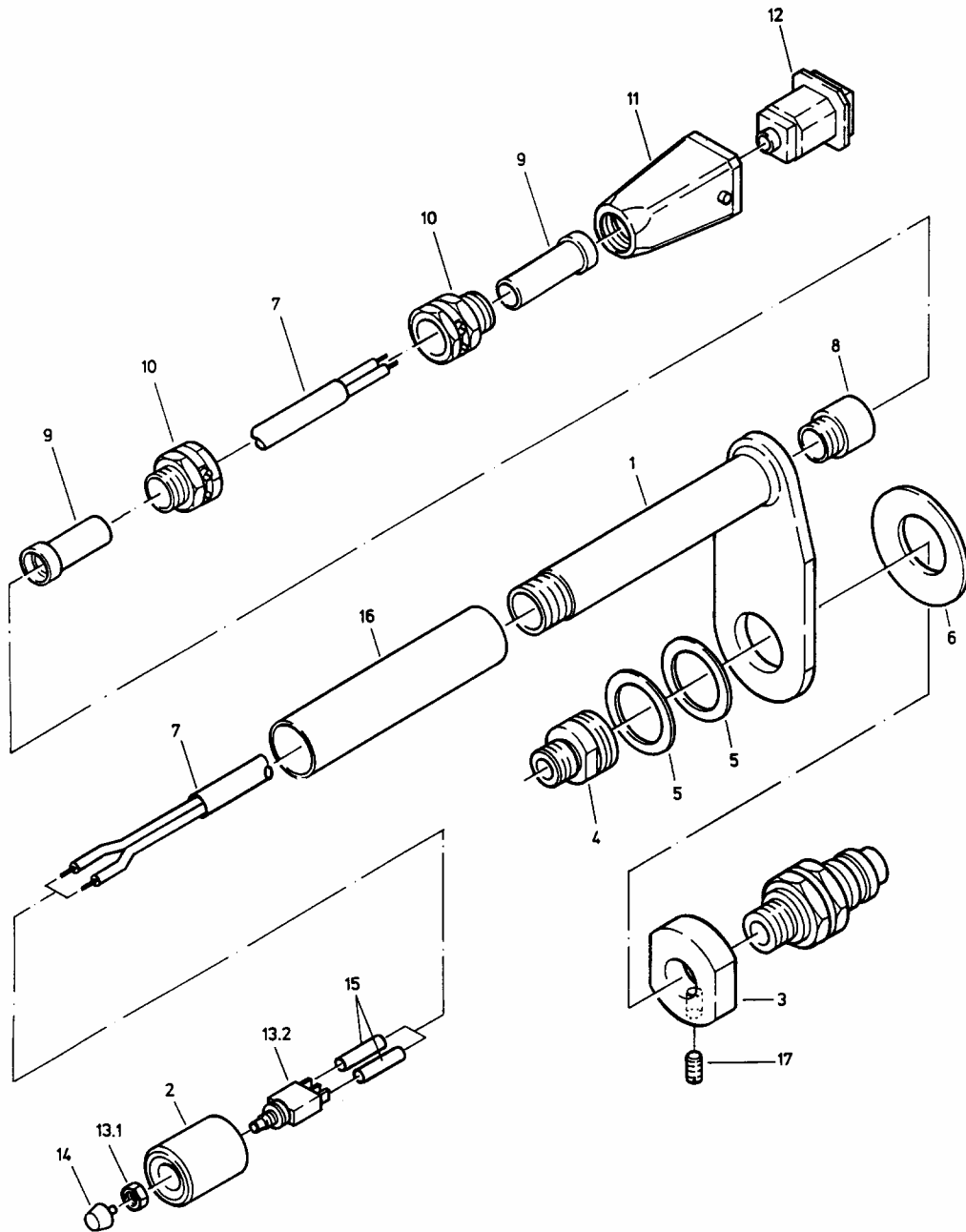
31830 Hand switch HP 95 and HP 300 (old)

Item	Description	Order No.	Qty.
1	Handle	31823	1
2	Switch socket	31824	1
3	Lock nut	31827	1
4	Adapter	31826	1
5	Shim	11025	2
6	Cup washer	14231	1
7	Cable	14235	1
8	Extension	14242	1
9	Protective sleeve	14271	2
10	Cable grip	14270	2
11	Sleeve casing	14219	1
12	Insert plug	14218	1
13	Push switch	14186	1
14	Push button	14187	1
15	Shrink sleeve	14237	2
16	Shrink sleeve	14245	1
17	Grub screw M5x10	11078	1

Note:

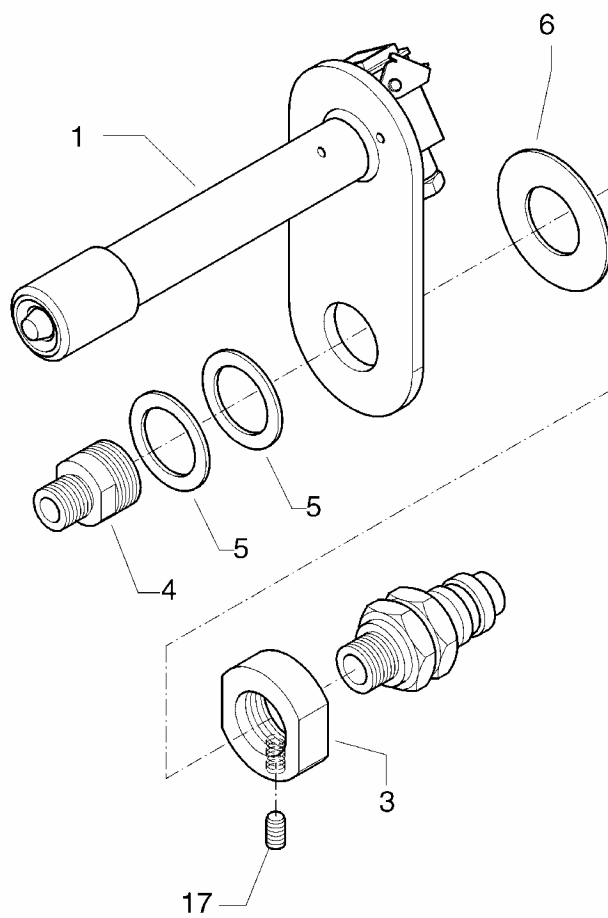
The new hand switch (see page 12) must be fitted if handle 31823 is defective.

31830 Hand switches HP 95 and HP 300 (old)



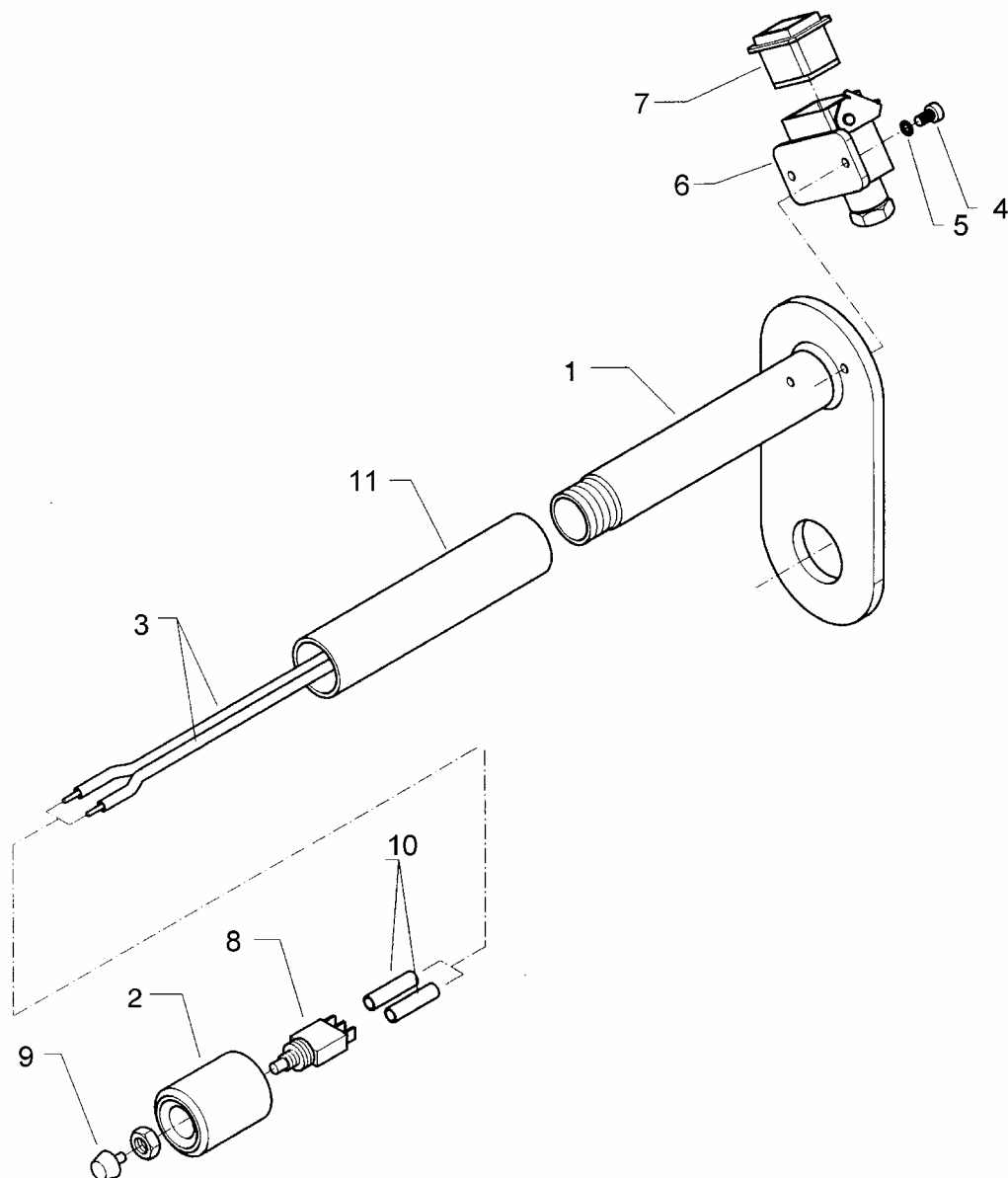
31830 Hand switch HP 95 and HP 300 (new)

Item	Description	Order No.	Qty.
1	Handle	36960	1
3	Lock nut	31827	1
4	Adapter	31826	1
5	Shim	11025	2
6	Cup washer	14231	1
17	Grub screw M5x10	11078	1



36960 Hand switch HP 95 and HP 300

Item	Description	Order No.	Qty.
1	Handle	31823	1
2	Switch socket	31824	1
3	Wire	14834	2
4	Pan head screw M3 x 8	13127	2
5	Serrated lock washer A3,2	14215	2
6	Housing	14243	1
7	Insert plug	14218	1
8	Push switch	14186	1
9	Push button	14187	1
10	Shrink sleeve	14237	2
11	Shrink sleeve	14245	1



Pressing Cylinder HP 300

For spare parts list and component drawing, see pages 20 to 23

3 DISMANTLING

3.1 Slit and remove the shrink-on sleeve (21).

3.2 For devices as of serial no.: 3401
Undo the grub screw (8)

3.3 Grip the HP 300 by the head (1) in a vice.

3.4 Unscrew the plug connector (20).

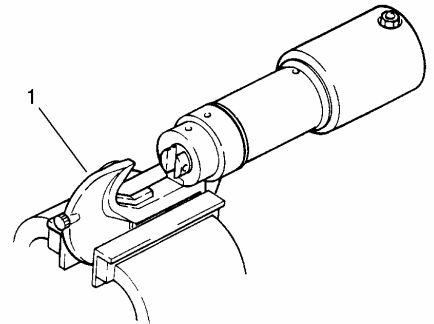
3.5 For HP's with hand switch only:

- Undo screw (17/31830).
- Unscrew and remove lock nut (3/31830).
- Pull off cup washer (6/31830), hand switch (36) and shims (5/31830).
- Unscrew and remove the adapter (4/31830).

3.6 Take the thrust pin (28) out of the tapped hole for the plug connector and tip out the oil.

3.7 Press against the cone of the valve (30) with a screw driver inserted through the tapped hole. The remaining oil will run out.

NOTE! Collect the oil with due regard to the environment and dispose of it in a suitable container .

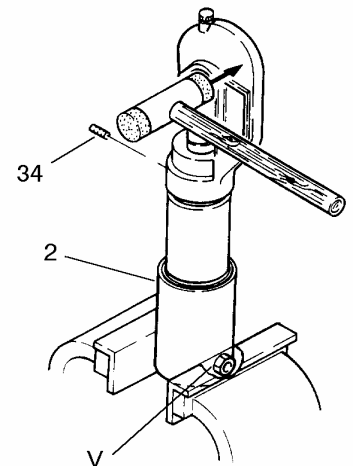


3.8 Grip the HP 300 in a vice as illustrated.

NOTE! Grip the cylinder (2) at the inlet pressure valve (V).
(See drawing)

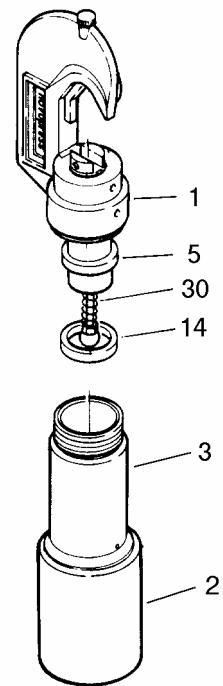
3.9 Remove the grub screw (34).

3.10 Strike the head (1) with a plastic hammer to undo the thread.

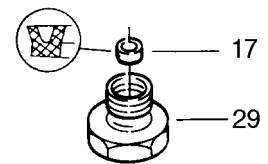


Pressing Cylinder HP 300

- 3.11 Screw off the head (1) and remove it together with the piston (5), the valve (30) and the locating washer (14) from the HP 300.
- 3.12 Up to serial no.: 3400
Remove the locating washer (14) from the piston (5).
As of serial no.: 3401
Remove the Turcon stepseal (14) from the piston (5).

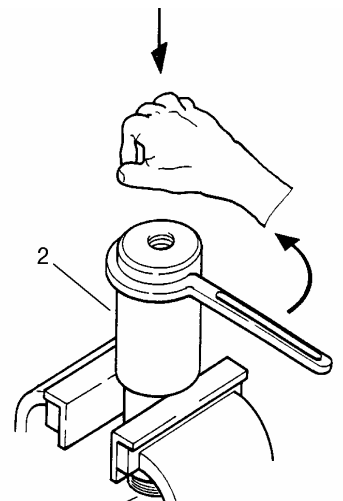


- 3.13 Undo the cap screw (29) and press the locating washer (17) out with a piece of wire.
- 3.14 Remove washer (31), spring (25) and conical pin (26).



- 3.15 Grip the HP 300 in a vice as illustrated.
- 3.16 Unscrew the cylinder (2) from the cylinder (3).
To unscrew the cylinder, use a monkey wrench for a diameter of "D" = 68-75mm.

WARNING! The cylinder is under pressure.
Push the cylinder against the spring pressure with one hand to unscrew it.



- 3.17 Up to serial no.: 3400
Take the spiral spring (19), the piston (4) and the locating washer (16) out of the cylinder (2).
As of serial no.: 3401
Take the spiral spring (19) and the piston (4) out of the cylinder (2).
Detach the Glyd ring (16) from the piston.

Pressing Cylinder HP 300

- 3.18 Up to serial no.: 3400
 Push the locating washer (15) out of the cylinder (3). (e.g. using a screwdriver)
From serial no.: 3401
 Take the Turcon stepseal (15) out of the cylinder (3).

WARNING!

Any scoring of the contact faces of the cylinders must be polished or ground out. If scoring is very severe, replace the cylinder.

4 ASSEMBLY

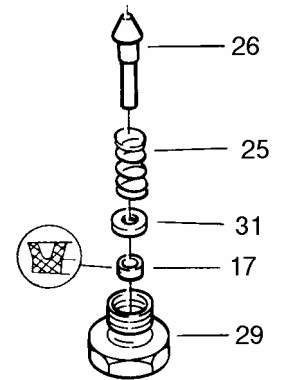
WARNING! Always comply with the installation location of all locating washers or Turcon stepseals.

- 4.1 The faces of the cylinder must be perfectly clean.
 Before assembly, carefully rinse with a cleaning medium (e.g. white spirit).
- 4.2 Up to serial no.: 3400
 Insert the locating washer (16) into the cylinder (2).
- WARNING!** The sealing rim of the locating washer must not be damaged by the thread of the cylinder. Push the locating washer down to the base of the cylinder.
- As of serial no.: 3401
 Fit the Glyd ring (16) onto the piston (4).
- 4.3 Fit the piston (4) into the cylinder (2) and push it down to the base of the cylinder.
As of serial no.: 3401
WARNING!
 The Turcon stepseal must not be damaged by the cylinder thread.
- 4.4 Up to serial no.: 3400
 Insert the locating washer (15) into the cylinder (3) and push down to the base of the cylinder.
As of serial no.: 3401:
 Insert Turcon stepseal (15) into the slot in the cylinder (3).
- 4.5 Fit the spring (19) on to the piston (4).
- 4.6 Fit the cylinder (2) together with the piston (4) and spring (19) to the cylinder (3). Press it down against the spring pressure and screw it on by hand.
 Note:
 Please do not damage Turcon stepseal (15).
- 4.7 Up to serial no.: 3400
 Push locating washer (15) down to the base of the cylinder (3).
- 4.8 Grip the head (1) horizontally in a vice.
- 4.9 Up to serial no.: 3400:
 Slide the locating washer (14) onto the piston (5).
As of serial no.: 3401
 Correctly fit Turcon stepseal (14) onto the piston (5).
- 4.10 Screw the cylinder (3) and the head (1) together.
- 4.11 Tighten the head (1), and the cylinders (2) and (3) with a monkey wrench.

Pressing Cylinder HP 300

4.12 As of serial no.: 3401

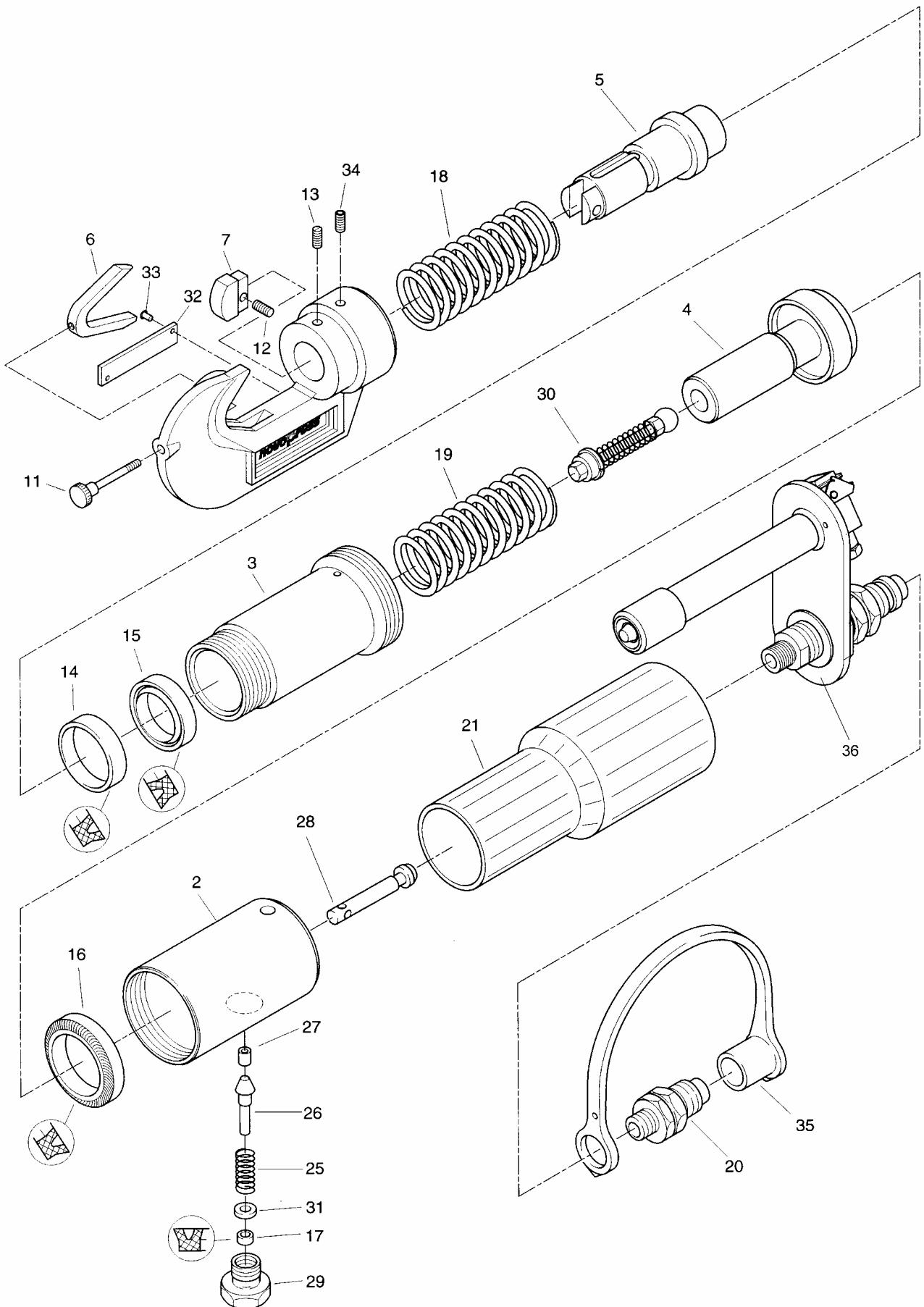
- Insert and tighten the grub screw (8).
- 4.13 Insert and tighten the grub screw (34) and arrest it with a centre punch mark.
- 4.14 Fit the locating washer (17) into the cap screw (29).
- 4.15 Place the washer (31) and the spring (25) on the cap screw (29).
- 4.16 Insert the conical pin (26) into the locating washer (17).
- 4.17 Screw the assembled inlet pressure valve into the cylinder (2).
- 4.18 Insert the thrust pin (28).
- 4.19 For HP's with hand switch only:
- Screw the adapter (4/31830) into the cylinder (2) and push the shims (5/31830) on to the adapter (4/31830).
 - Push the hand switch (36) on to the adapter (4/31830).
 - Push the cup washer (6) on to the adapter (4/31830).
 - Tighten the hand switch with the lock nut (3/31830). The groove in the nut (see enlargement) must point towards the hollow side of the cup washer.
 - Arrest the lock nut (3/31830) by tightening the grub screw (17/31830).
- 4.20 Insert and fully tighten the plug connector (20).



1000 Pressing Cylinder HP 300 up to serial no.: 3400

Item	Description	Order No.	Qty.
1	Head	1014	1
2	Low-pressure cylinder	1002	1
3	High-pressure cylinder	1003	1
4	Low-pressure piston	2351	1
5	High-pressure piston	1005	1
6	Punch Cu + Al for HP 300	1008	1
7	Die for Cu for HP 300	1009	1
11	Retaining screw complete	1694	1
12	Grub screw M 5x10	11078	1
13	Screw	4541	1
14	Locating washer 45x35x10	11053	1
15	Locating washer 45x32x10	11054	1
16	Locating washer 65x50x10	11055	1
17	Locating washer 3x7x3	11056	1
18	Spring	4593	1
19	Spring 4.5x46x135	2487	1
20	Plug connector R3/8" (Tool plug)	3718	1
21	Shrink sleeve	16669	1
25	Spring	1612	1
26	Conical pin	1497	1
27	Bushing A 2.5x9	11058	1
28	Thrust pin	1500	1
29	Cap screw	1498	1
30	Valve	3408	1
31	Washer	4241	1
32	Tool label	4846	1
33	Ribbed nail 2x6	11120	2
34	Grub screw M5 x 8 - 45H	11669	1
35	Dust cap for plug end	1514	1
36	Hand switch	31830	1
501	Rod gauge HP 300	4104	1
502	Insulation	5212	1
510	Set of seals for HP 300	11536	1
511	Inlet pressure valve HP 300	11679	1
520	Replacement blade I for HP 300	1010	1
521	Replacement pressure block I for HP 300	1245	1

1000 Pressing Cylinder HP 300 up to serial no.: 3400

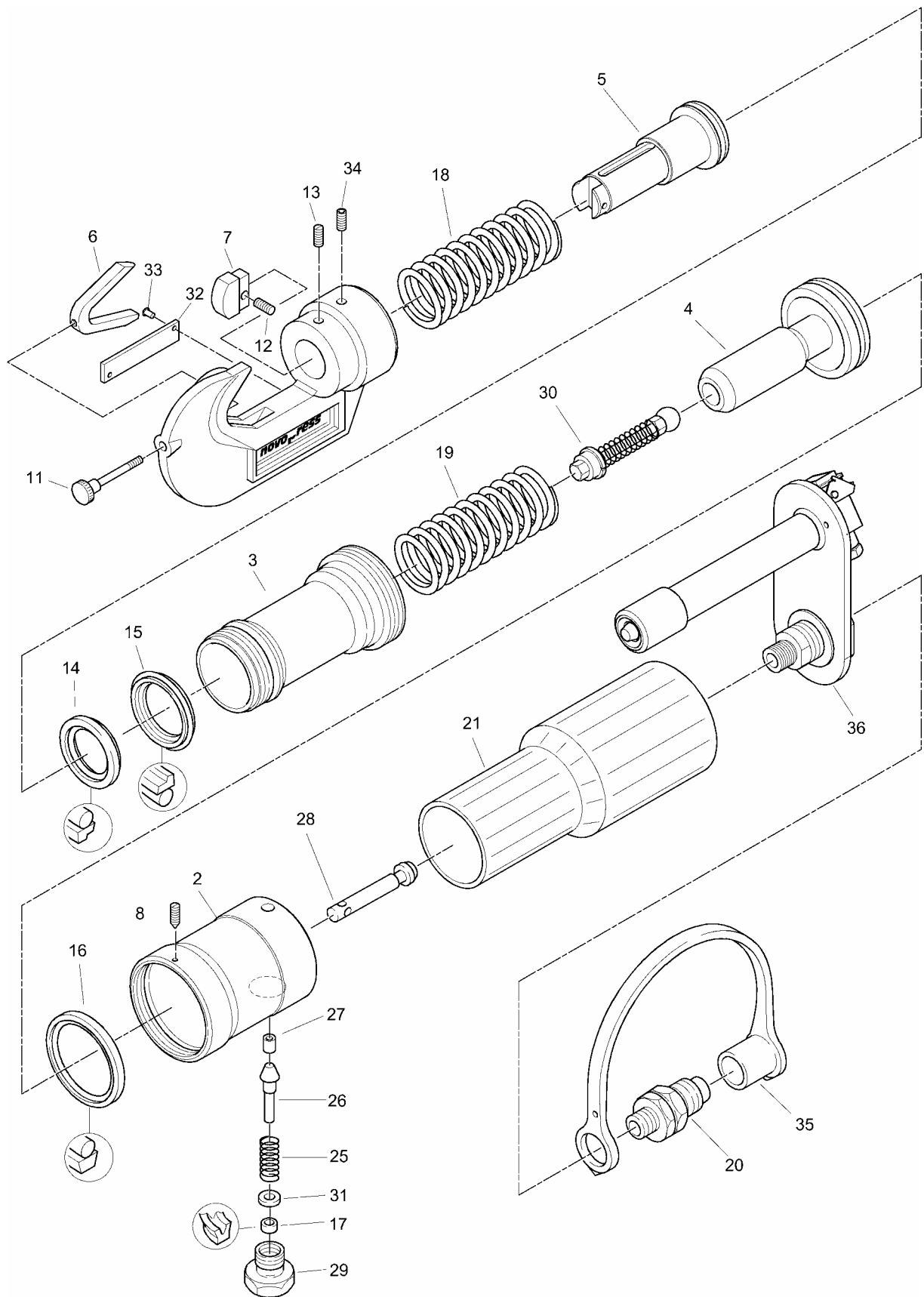


1000 Pressing Cylinder HP 300 as of serial no.: 3401

Item		Description	Order No.	Qty.
1		Head	1014	1
2		Low-pressure cylinder	39088	1
3		High-pressure cylinder	39089	1
4		Low-pressure piston	39090	1
5		High-pressure piston	39091	1
6		Punch Cu + Al for HP 300	1008	1
7		Die for Cu for HP 300	1009	1
8		Grub screw M 4x6	11758	1
11		Retaining screw complete	1694	1
12		Grub screw M 5x10	11078	1
13		Screw	4541	1
14		Turcon Stepseal $\varnothing 45 \times \varnothing 34,3 \times 4,2$	16241	1
15		Turcon Stepseal $\varnothing 32 \times \varnothing 42,7 \times 4,2$	16238	1
16		Glyd ring $\varnothing 65 \times \varnothing 54 \times 4,2$	16242	1
17		Locating washer 3x7x3	11056	1
18		Spring	4593	1
19		Spring 4.5x46x135	2487	1
20		Plug connector R3/8" (Tool plug)	3718	1
21		Shrink sleeve	16669	1
25		Spring	1612	1
26		Conical pin	1497	1
27		Bushing A 2.5x9	11058	1
28		Thrust pin	1500	1
29		Cap screw	1498	1
30		Valve	3408	1
31		Washer	4241	1
32		Tool label	4846	1
32	20	Tool label Abiko	12277	1
33		Ribbed nail 2x6	11120	2
34		Grub screw M5 x 8 - 45H	11669	1
35		Dust cap for plug end	1514	1
36		Hand switch	31830	1
501		Rod gauge HP 300	4104	1
520		Replacement blade I for HP 300	1010	1
521		Replacement pressure block I for HP 300	1245	1
523		Sealing kit	40747	1

Sealing kit 40747 comprises item 14, 15, 16 and 17.

1000 Pressing Cylinder HP 300 as of serial no.: 3401

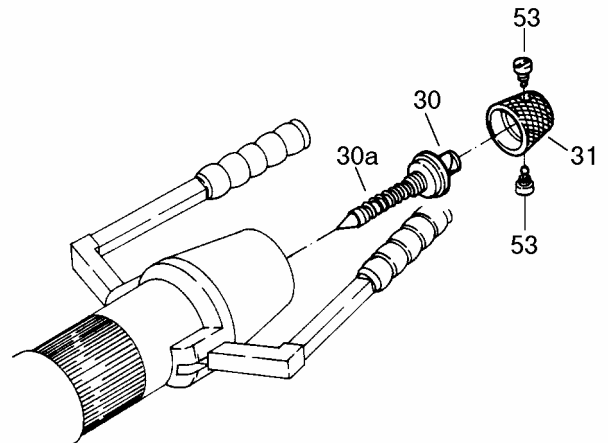


Pressing Cylinder HPM 400

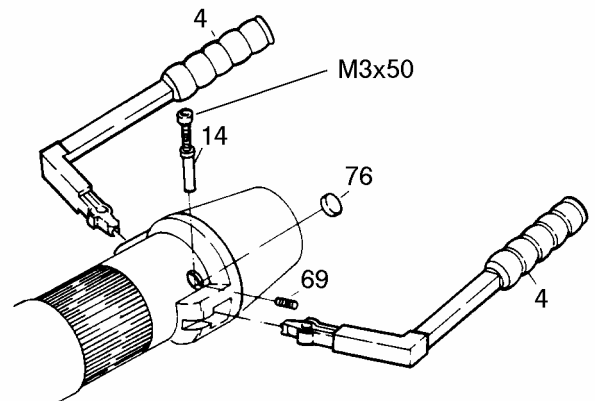
For spare parts list and drawing of the part, see pages 27 to 29

5 DISMANTLING

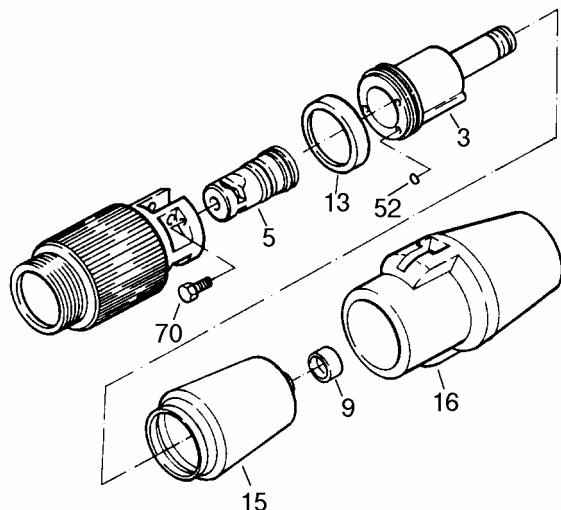
- 5.1 Undo and remove the two screws (53).
- 5.2 Pull off the rotating head (31).
- 5.3 Undo the cap screw (30) and take out the complete pressure relief valve (30a).



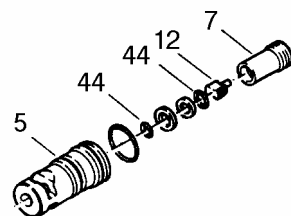
- 5.4 Tip out the oil.
WARNING! Collect the oil with due regard to the environment and dispose of it in a suitable container.
- 5.5 Remove the two plugs (76).
- 5.6 Undo the two grub screws (69).
- 5.7 Withdraw the two bolts (14). (Use an M 3x50 mm screw)
- 5.8 Remove the levers (4).



- 5.9 Take off the protective cover (16).
- 5.10 Undo the two screws (70).
- 5.11 Take off the suction cup (15) with the pump housing (3). (Do not lose the O-ring (52)). Take off the rings (9) and (13) and remove the suction cup from the pump housing.

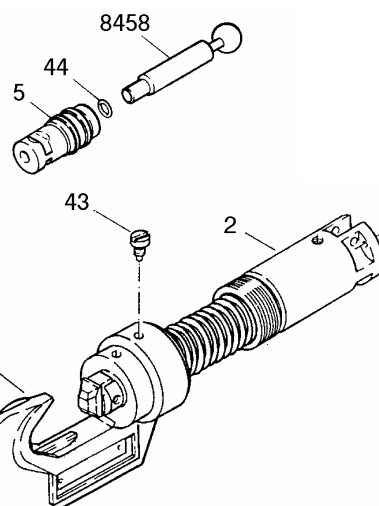


- 5.12 Take off the piston (5) with the fittings.
- 5.13 Undo the sealing screw (7) (box spanner 8mm). Undo the valve screw (12), use the special spanner Order No. 8485.



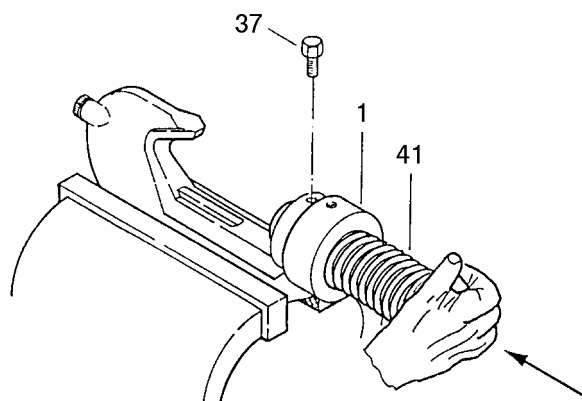
Pressing Cylinder HPM 400

- 5.14 Replace the seals (44) and (49) in the piston (5) and in the sealing screw (7). Insert the O-ring (44) into the piston (5) with the tool No. 8458 (special accessory).

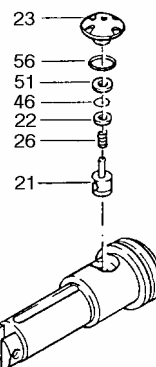


- 5.15 Undo the screw (43).
5.16 Unscrew the cylinder (2) from the head (1).

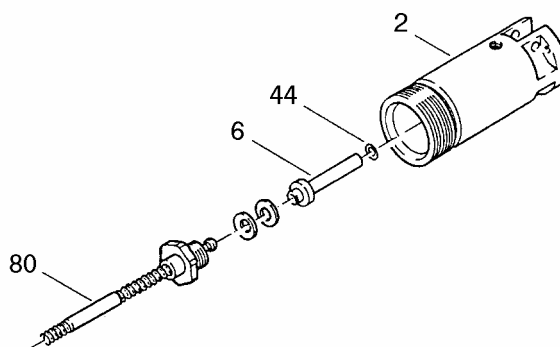
- 5.17 Grip the head (1) horizontally in a vice.
5.18 Push the piston and hold it down against the spring pressure.
5.19 Undo the screw (37).
5.20 Release the pressure on the piston slowly until the spring (41) is released. Remove the piston.



- 5.21 Undo the cap screw (23) and remove it from the piston. (With the special spanner Order No. 8134)
5.22 Remove the spring (26) and washer (22).
5.23 Replace seals (46), (51) and (56).



- 5.24 Remove the thrust pin (80) from the cylinder (2). (Box spanner 27mm)
5.25 Push the piston (6) out of the cylinder (2).
5.26 Extract O-ring (44) from the cylinder.
5.27 Insert a new O-ring into the cylinder (2) using the tool No. 8458 (special accessory). (See drawing under 5.14)

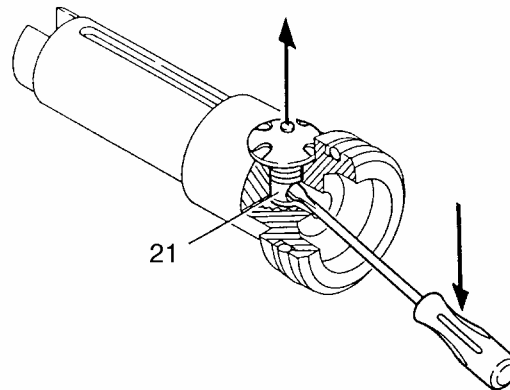


Pressing Cylinder HPM 400

6 ASSEMBLY

- 6.1 Fit the seals (51) and (46), the valve piston (21) and the parts (22) and (26) in to the cap screw (23).
- 6.2 Insert the O-Ring (56) into the piston (17). Screw the cap screw together with the parts listed under 6.1 into the piston and tighten with 50 Nm of torque.

- 6.3 The valve piston (21) must not seize. (Move the piston (21) with a screwdriver or similar implement.)



- 6.4 Grip the head (1) horizontally in a vice.
- 6.5 Fit the spring (41) and the piston (17) into the head.
- 6.6 Press the piston (17) down by hand until the groove on the piston is visible at the bottom, and then tighten the screw (37).

WARNING! The end of the screw (37) must engage the piston groove.

- 6.7 Fit the piston (6) into the cylinder (2).
- 6.8 Using a screwdriver, place the cup springs (66) on to the piston (6).
- 6.9 Fit the thrust pin (80) into the cylinder (2).
- 6.10 Place the spring (27) on the valve sleeve.
- 6.11 Assemble the cylinder and head.

WARNING! Screw the piston fully home into the head. The hole in the cylinder must be visible through the tapped hole for the screw (43).

If the hole is not visible, the cylinder must be screwed back until the hole can be seen.

After the screw (43) has been tightened, the head must rotate through 90°.

- 6.12 If the head will not rotate through 90°, remove the screw (43) and screw back the cylinder until the next hole is visible (one half-turn).
- 6.13 Push the piston (5) complete with the fittings on to the piston (6). The holes in the piston must line up with the holes for the pump lever in the piston.

Pressing Cylinder HPM 400

- 6.14 Place the suction cup (15) on to the pump housing and fit the rings (9) and (13). The rim of the suction cup must not slip in the groove in the pump housing.
- 6.15 Fit the pump housing on to the cylinder (5) without the pressure relief valve.
- WARNING!** The small O-ring (52) must be in the pump housing and the holes (oil passage) in the cylinder and in the pump housing must be in line.
- 6.16 Tighten the pump housing with the screws (70).
- 6.17 Insert the pump lever (4) and the bolts (14) into the HPM 400.
- 6.18 Fill the tool with oil and move the pump lever slowly in order to allow any air to escape. Repeat this action until the suction cup is full and no more air escapes.
- 6.19 Fit the pressure relief valve.
- 6.20 Move the pump lever until pressure in the HPM 400 switches it off.
- 6.21 Move the pump lever a few times, until the suction cup is contracted.
- 6.22 Remove the pump lever.
- 6.23 Dust the protective cover (16) from the inside with talcum powder and then fit it on to the HPM 400. The hole in the protective cover should be positioned over the screw (68).
- 6.24 Using an implement, open (lift) the pressure relief valve until the piston is retracted.
- 6.25 Fit the pump lever. Insert the bolt (14) and tighten the grub screws (69).
- 6.26 Insert the plug (76) into the protective cover.
- 6.27 Remove the pressure relief valve, fit the ring (36) to the protective cover and replace the pressure relief valve.
- 6.28 Fit the rotary knob (31) and secure it with the screws (53).
- 6.29 Replace the O-ring (55).
- a Remove the die (39).
 - b Remove the punch (38) and fully unscrew the retaining screw (40).
 - c Insert a long screwdriver through the hole of the retaining screw (40).
 - d Undo the set screw (24).
 - e Replace the O-ring (55).
 - f Screw the set screw fully home and then retire it by three full turns.
- 6.30 Make a trial press, (test rod Order No. 4104) and adjust the press travel if necessary.
- Increase travel - turn set screw anti-clockwise
- Decrease travel - turn set screw clockwise

ONE FULL TURN OF THE SET SCREW = 0.5 MM TRAVEL

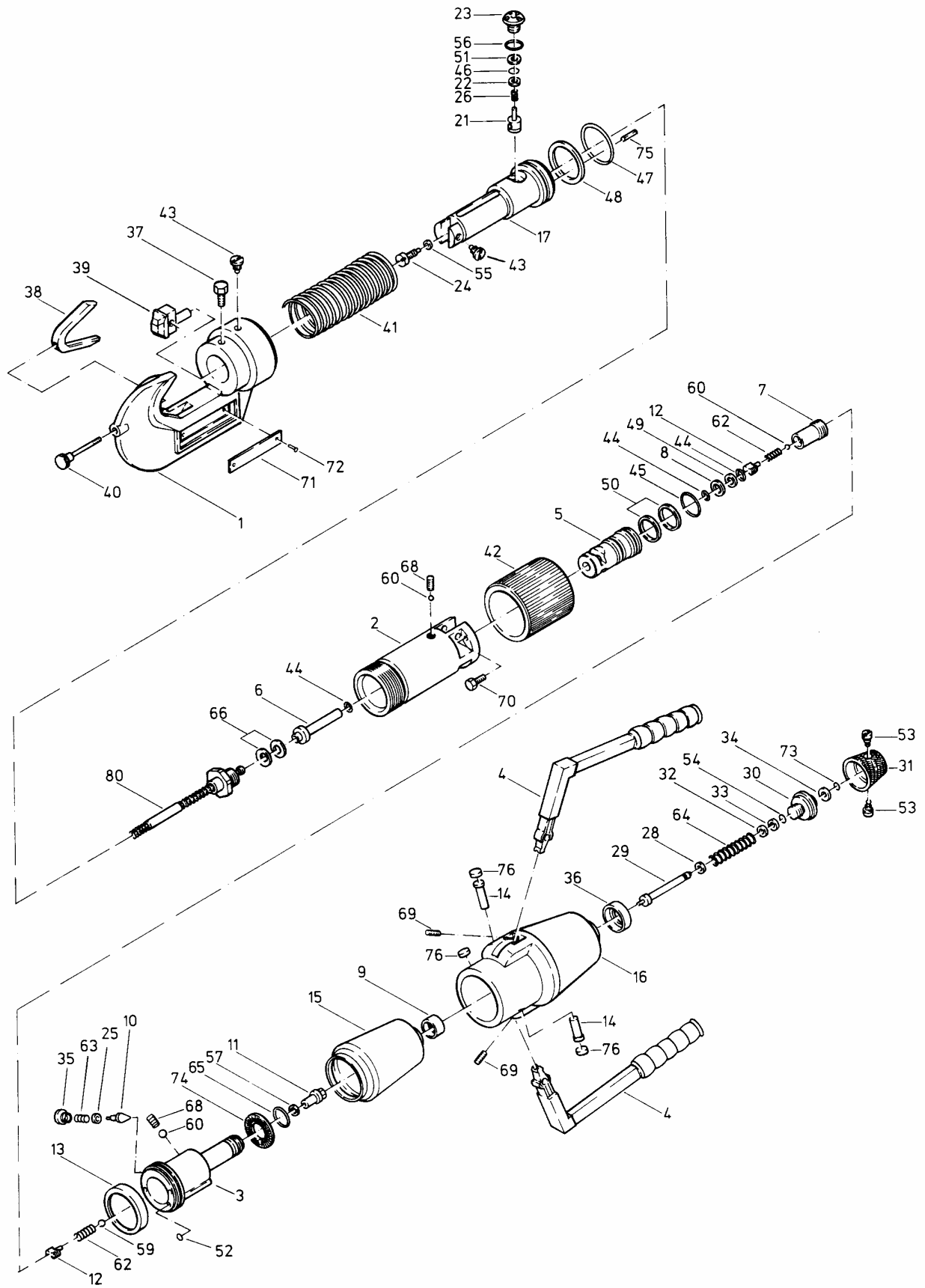
5200 Pressing Cylinder HPM 400

Item	Description	Order No.	Qty.
1	Head HP 300	1014	1
2	Cylinder	5493	1
3	Pump housing	5533	1
4	Pump lever	5590	2
5	Low-pressure piston	5435	1
6	High-pressure piston	5436	1
7	Seal screw	5584	1
8	Spacer	5585	1
9	Ring	5788	1
10	Conical pin	6627	1
11	Valve seat	5442	1
12	Valve screw	5446	2
13	Ring	5586	1
14	Bolt	5449	2
15	Suction cup	5581	1
16	Protective cover	5582	1
17	Piston	5621	1
21	Valve piston	5476	1
22	Washer	5477	1
23	Cap screw	5474	1
24	Set screw	5473	1
25	Valve washer	6628	1
26	Spring	5806	1
28	Valve washer	5635	1
29	Conical pin	5642	1
30	Cap screw	5643	1
31	Rotary knob	5644	1
32	Shim	5646	2
33	Shim	5647	3
34	Ring	5645	1
35	Valve screw	6629	1
36	Protective sleeve	5709	1
37	Screw	4541	1
38	Punch	4520	1
39	Die	7129	1
40	Retaining screw, complete	1694	1
41	Spring	4593	1
42	Protective rubber sleeve	5648	1
43	Trunnion screw	5494	2

5200 Pressing Cylinder HPM 400

Item	Description	Order No.	Qty.
44	O-ring	11945	3
45	O-ring	11946	1
46	O-ring	11947	1
47	O-ring	11703	1
48	Support washer	11702	1
49	Support washer	11948	1
50	Support washer	11949	2
51	Support washer	11950	1
52	O-ring	11951	1
53	Pivot bolt	5725	2
54	O-ring	11953	1
55	O-ring	11714	1
56	O-ring	11955	1
57	Usit-ring	11369	1
59	Ball Ø 5	11340	1
60	Ball Ø 5	11116	3
62	Spring	11957	2
63	Spring	6631	1
64	Spring	11960	1
65	Circlip	11961	1
66	Cup spring	11962	2
68	Grub screw	11963	2
69	Grub screw	11964	2
70	Hex. head bolt	11965	2
71	Tool label	5649	1
72	Ribbed nail	11120	2
73	Circlip	11968	1
74	Filter disk	11969	1
75	Split taper pin	11146	1
76	Plug	5813	3
77	Case for HP + HPM	5809	1
80	Thrust pin complete	5847	1
501	Set of seals HPM 40	11954	1
502	Low-pressure valve	6808	1

5200 Pressing Cylinder HPM 400



Pressing Cylinder HP 450

For spare parts list and drawing of the parts, see pages 34 to 35

7. DISMANTLING

7.1 Slit the shrink-on sleeve (38) and remove it.

7.2 Grip the HP 450 by the head (1) in a vice.

7.3 Unscrew the plug connector (36).

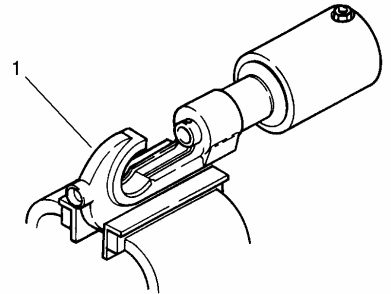
7.4 For HP's with hand switch only:

- undo the screw (17/31831).
- unscrew the lock nut (3/31831).
- take off the cup washer (6/31831), hand switch (44) and shims (5/31831).
- unscrew the adapter (4/31831)

7.5 Extract the thrust pin (10) for the plug connector through the threaded hole and tip out the oil.

7.6 Press against the ball of the valve (43) with a screwdriver inserted through the threaded hole. The remaining oil will run out.

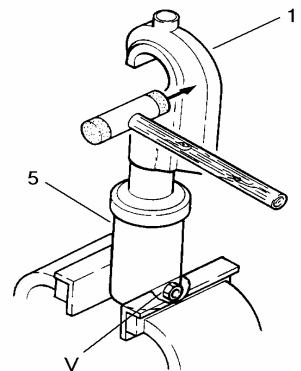
NOTE! Collect the oil with due regard to the environment and dispose of it in a suitable container .



7.7 Grip the HP 450 in a vice as illustrated.

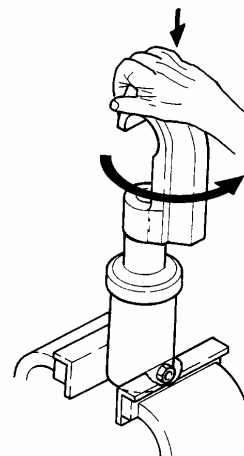
NOTE! Grip the cylinder at the inlet pressure valve (See illustration)

7.8 Strike the head (1) with a plastic hammer to undo the thread (head/cylinder).



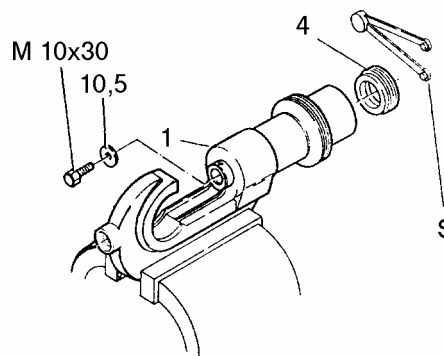
7.9 Unscrew the head (1).

WARNING! The head (1) is under spring pressure. When unscrewing the head (1), press it down against the spring pressure with one hand.



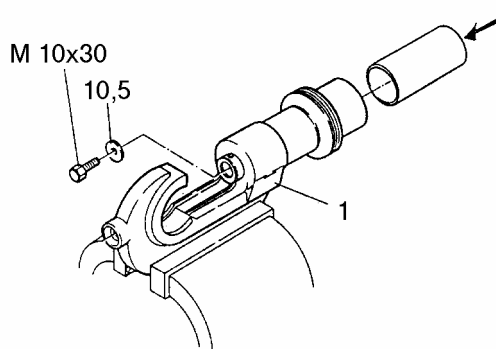
Pressing Cylinder HP 450

- 7.10 Remove the retaining ring (3/30655).
- 7.11 Remove the lock pin (1/30655) and spring (2/30655).
- 7.12 Remove the retaining ring (34).
- 7.13 Push the guide pin (32) up and remove it.
- 7.14 Grip the head (1) with fittings in a vice.
- 7.15 To secure the piston (2), insert a screw M 10 x 30 mm with washer $\varnothing 10.5$ into the piston.
- 7.16 Unscrew the nut (4) with a box spanner (S).



- 7.17 Remove the seal (25) and the washer (8).

- 7.18 Using a tube, press and hold the piston (2) down by hand, overcoming the spring pressure.
- 7.19 Undo the screw M 10 x 30 and remove it together with the washer $\varnothing 10.5$.
- 7.20 Slowly reduce the pressure until the spring (16) is fully released.



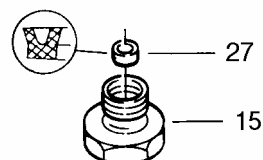
- 7.21 Remove the piston (2) with valve (43) and seal (26) from the head (1).

- 7.22 Unscrew the cap screw (15) and the locating washer (27) and push out with a length of wire.

WARNING!

Any scoring of the contact faces of the cylinder (5) or of the head (1) must be polished or ground out. If scoring is very severe, replace the cylinder.

- 7.23 Remove washer (31), spring (20) and conical pin (14).

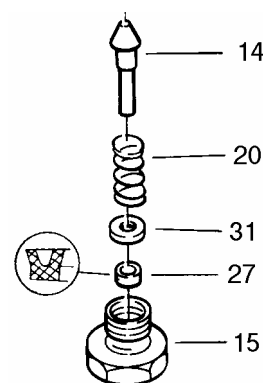
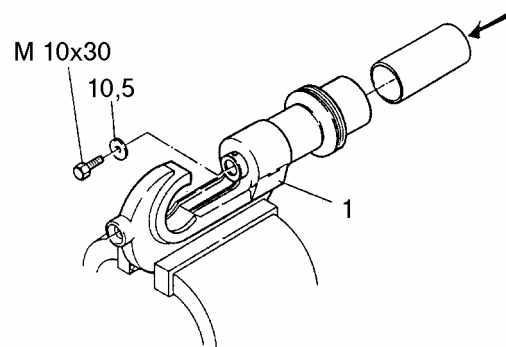


Pressing Cylinder HP 450

8 ASSEMBLY

WARNING! It is essential that all locating washers are returned to their original position.

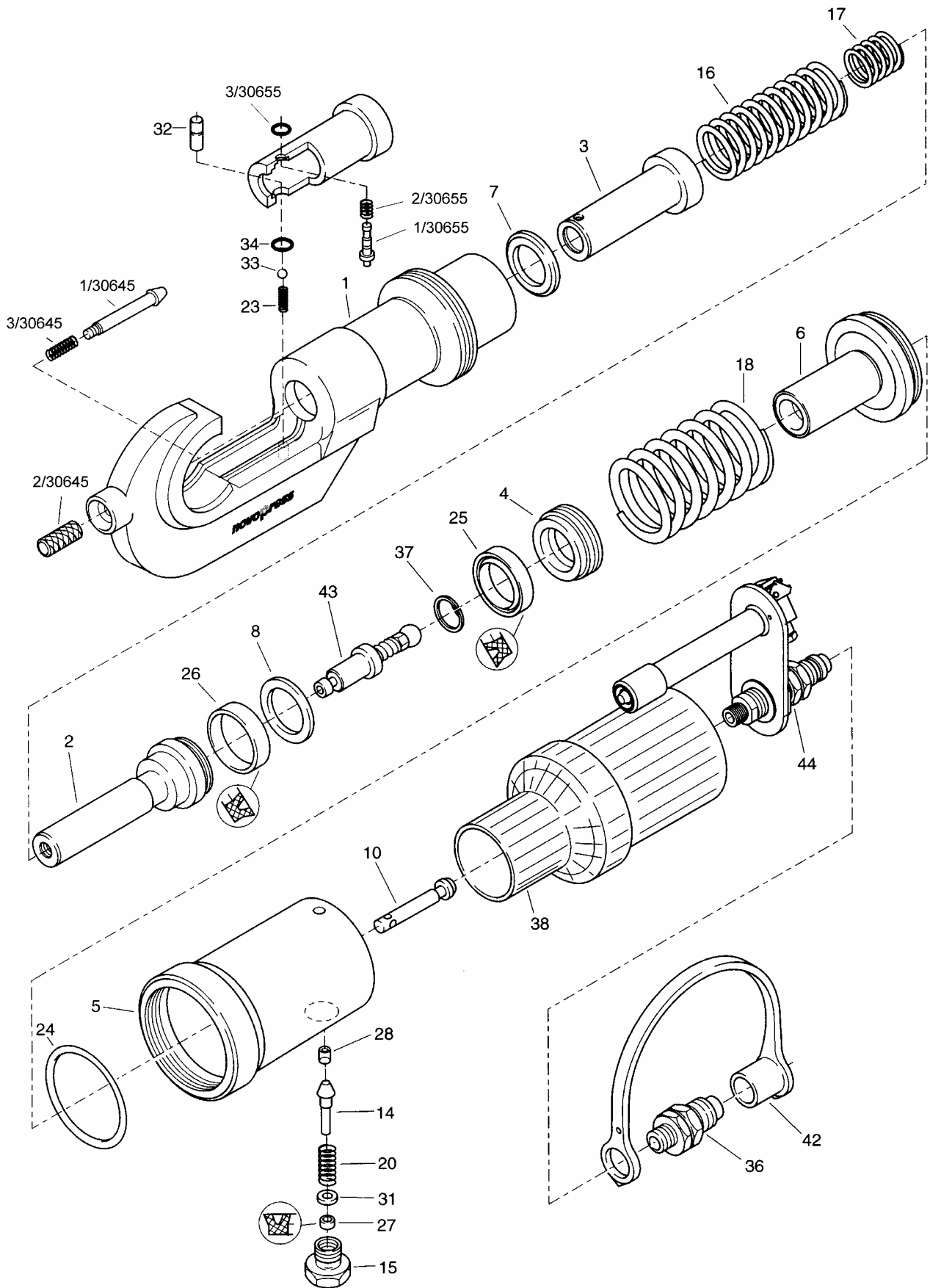
- 8.1 Grip the head (1) horizontally in a vice.
- 8.2 Insert the spacer (7) and the spring (16) into the head.
- 8.3 Fit the piston (2) with a new seal (26), the spring (17) and the slide (3) into the head (1).
- 8.4 Using a tube, press and hold down the piston (2) manually. (See illustration)
- 8.5 To secure the piston (2), fit the screw M 10 x 30 mm with washer $\varnothing 10.5$. (See illustration)
- 8.6 Fit the washer (8) and the seal (25) into the head (1).
- 8.7 Fit and tighten the nut (4).
- 8.8 Undo the screw M 10 x 30 mm and remove it with the washer $\varnothing 10.5$.
- 8.9 Fit the guide pin (32) in the slide (3).
- 8.10 Fit the retaining ring (34) to the guide pin (32).
- 8.11 Push the spring (2/30655) on to the lock pin (1/30655).
- 8.12 Insert the spring/lock pin assembly into the hole of the slide and secure it with the retaining ring (3/30655).
- 8.13 Insert the piston (6) with the new O-ring (24) into the cylinder (5).
- 8.14 Insert the spring (18) into the cylinder (5).
- 8.15 Offer the cylinder (5) with its fittings up to the head (1), press it against the spring pressure and screw on to the head.
- 8.16 Tighten the cylinder (5) with a monkey wrench.
- 8.17 Fit the locating washer (27) into the cap screw (15) and press it fully home.
- 8.18 Place the washer (31) and the spring (20) on the cap screw (15).
- 8.19 Insert the conical pin (14) into the locating washer (27).
- 8.20 Screw the assembled inlet pressure valve into the cylinder (5).
- 8.21 Fit the thrust pin (10).
- 8.22 For HP's with hand switch only:
 - Screw adapter (4/31831) into the piston (2) and push the shims (5/31831) on to the adapter (4/31831).
 - Push the hand switch (44) on to the adapter (4/31831).
 - Push the cup washer (6/31831) on to the adapter (4/31831).
 - Tighten the hand switch with lock nut (3/31831). The machined side of the nut (see enlargement) must be towards the cup washer.
 - Secure the lock nut with the grub screw (17/31831).
- 8.23 Screw in the plug connector (36) and tighten it.



3850 Pressing Cylinder HP 450

Item	Description	Order No.	Qty.
1	Head	3918	1
2	High-pressure piston	3935	1
3	Slide	3934	1
4	Nut	3835	1
5	Low-pressure cylinder	3836	1
6	Low-pressure piston	3837	1
7	Spacer	3838	1
8	Washer	3839	1
10	Thrust pin	3845	1
11	Punch stop	30645	1
12	Die stop	30655	1
14	Conical pin	1497	1
15	Cap screw	1498	1
16	Spring high-pressure	3957	1
17	Spring SH	3851	1
18	Spring low-pressure	3852	1
20	Spring	1612	1
23	Spring	11808	1
24	O-ring	11689	1
25	Locating washer 35 x 50 x 10	12089	1
26	Locating washer 50 x 42 x 8	11691	1
27	Locating washer 3 x 7 x 3	11056	1
28	Bushing	11058	1
31	Washer	4241	1
32	Guide pin	3940	1
33	Ball	11340	1
34	Retaining washer	11813	1
36	Plug connector	3718	1
37	Retaining ring	11815	1
38	Shrink sleeve	12008	1
39	Split taper pin	11816	1
40	Punch HP 450 for CU +AL	3950	1
41	Die HP 450 for CU +AL	3955	1
42	Dust cap for plug end	1514	1
43	Valve HP 450, complete	7375	1
44	Hand switch	31831	1

3850 Pressing Cylinder HP 450



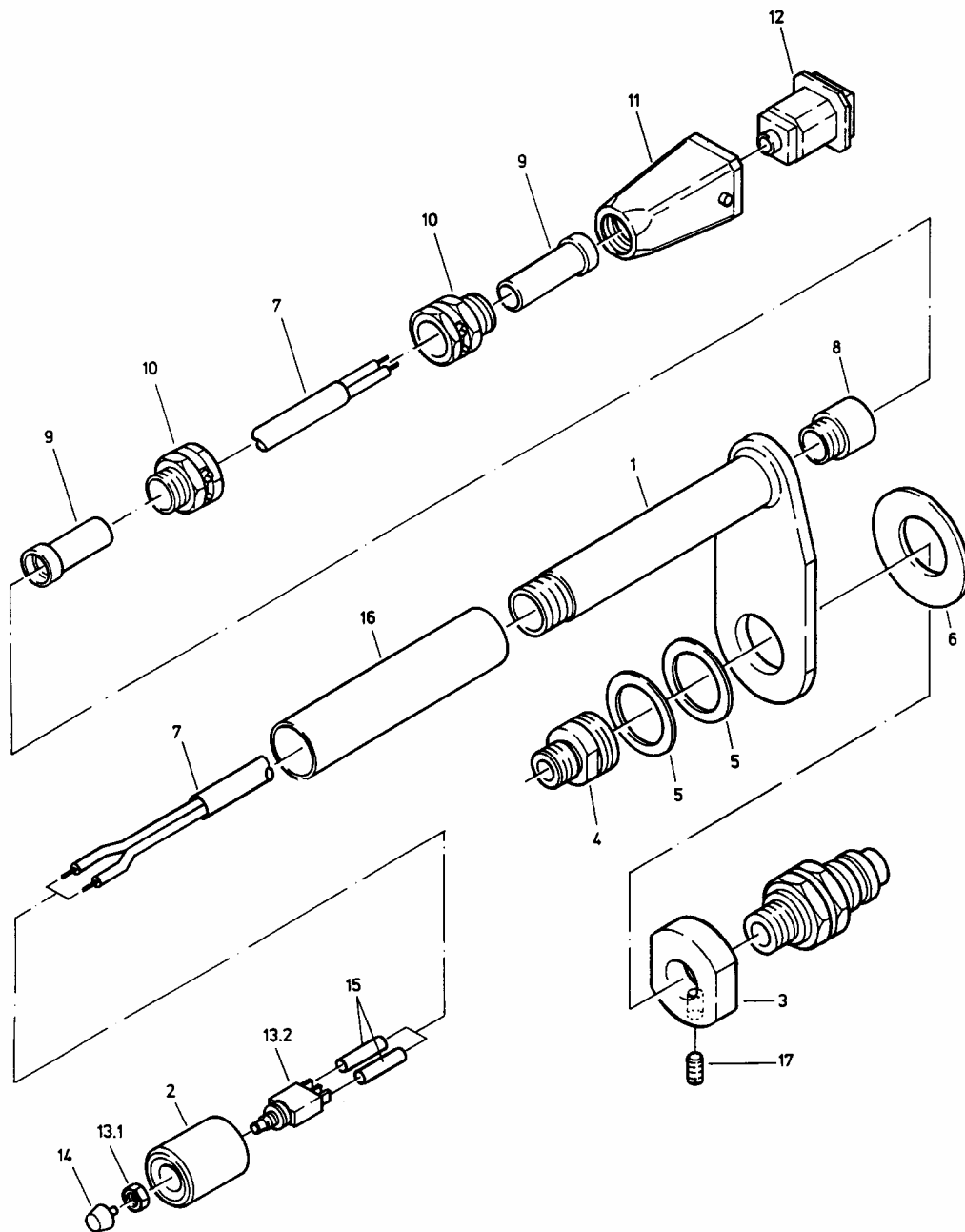
31831 Hand Switch HP 450 (old)

Item	Description	Order No.	Qty.
1	Handle	31821	1
2	Switch socket	31824	1
3	Lock nut	31827	1
4	Adapter	31826	1
5	Shim	11025	2
6	Cup spring	14231	1
7	Cable	14236	1
8	Extension	14242	1
9	Protective sleeve	14271	2
10	Cable grip	14270	2
11	Sleeve casing	14219	1
12	Insert plug	14218	1
13	Push switch	14186	1
14	Pushbutton	14187	1
15	Shrink sleeve	14237	2
16	Shrink sleeve	14244	1
17	Grub screw M5x10	11078	1

Note:

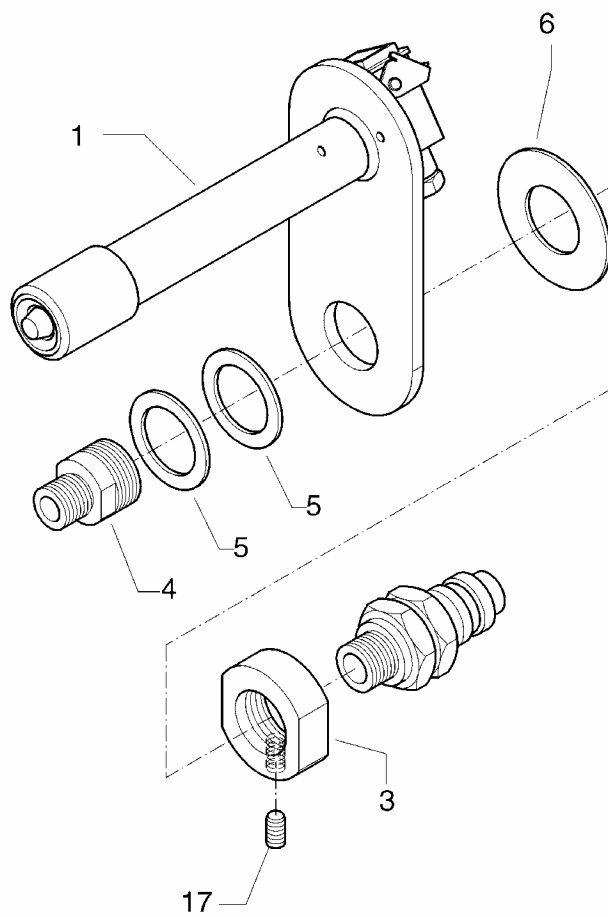
The new hand switch (see page 38) must be fitted if handle 31821 is defective.

31831 Hand Switch HP 450 (old)



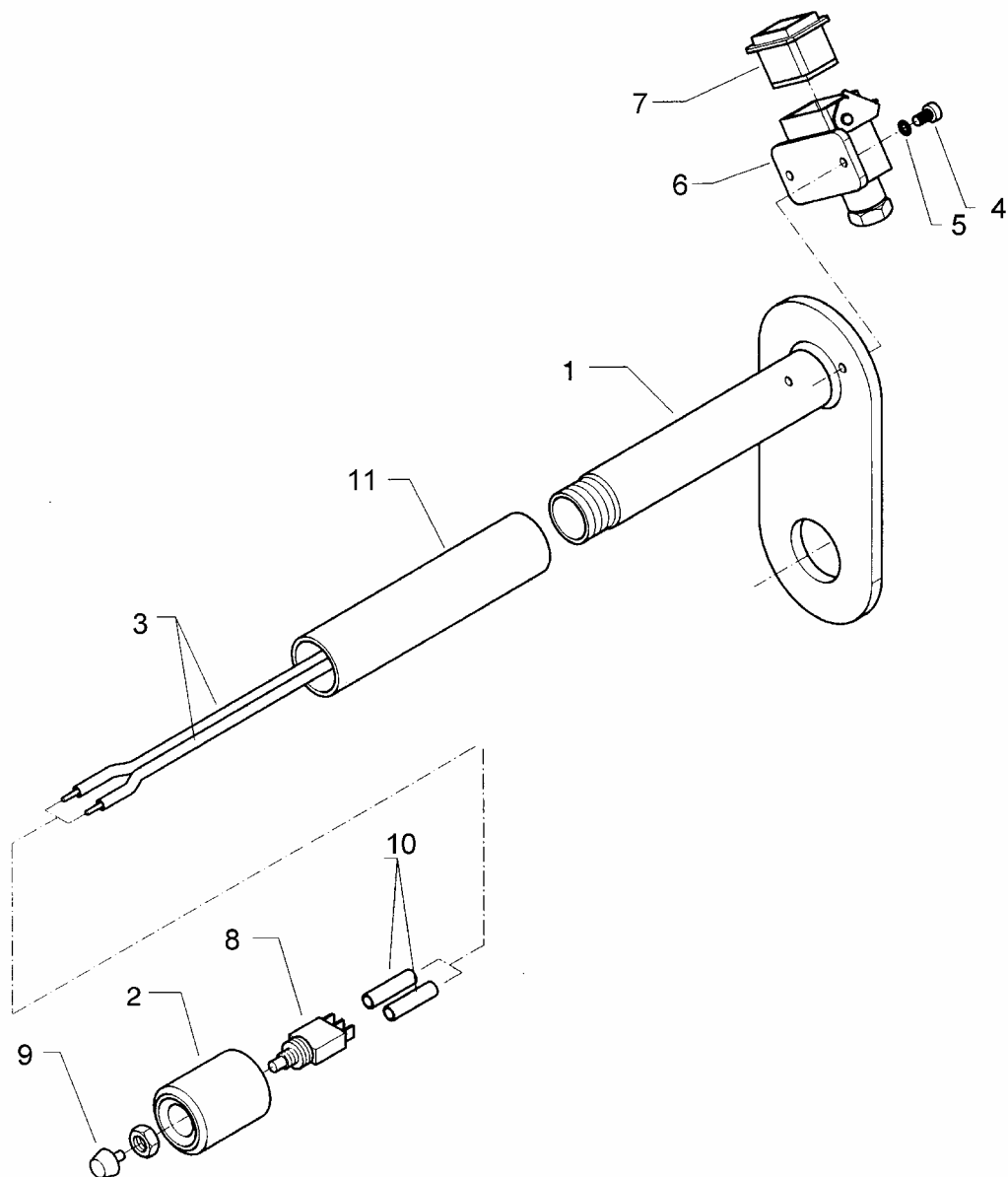
31831 Hand Switch HP 450 (new)

Item	Description	Order No.	Qty.
1	Handle	36961	1
3	Lock nut	31827	1
4	Adapter	31826	1
5	Shim	11025	2
6	Cup spring	14231	1
17	Grub screw M5x10	11078	1



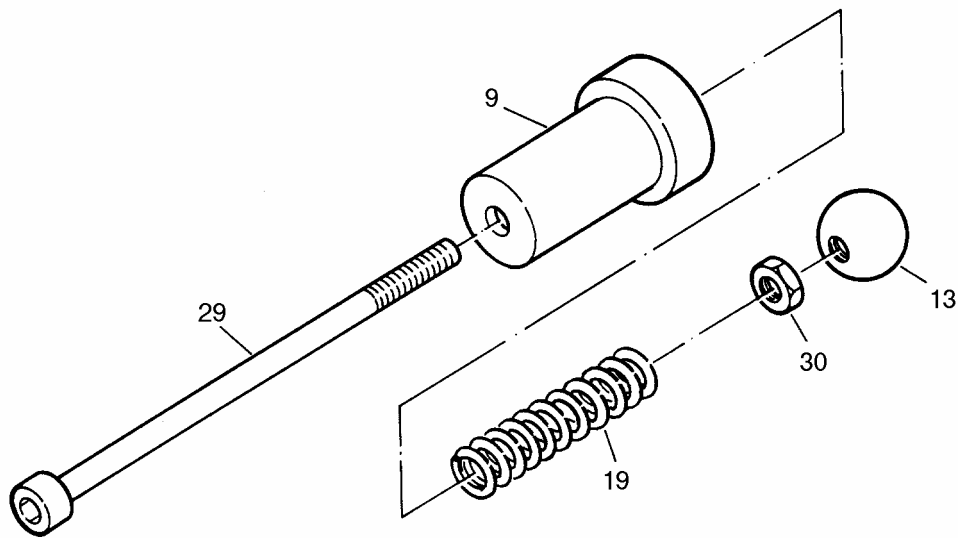
36961 Hand Switch HP 450

Item	Description	Order No.	Qty.
1	Handle	31821	1
2	Switch socket	31824	1
3	Wire	14834	2
4	Pan head screw M3 x 8	13127	2
5	Serrated lock washer A3,2	14215	2
6	Housing	14243	1
7	Insert plug	14218	1
8	Push switch	14186	1
9	Pushbutton	14187	1
10	Shrink sleeve	14237	2
11	Shrink sleeve	14244	1



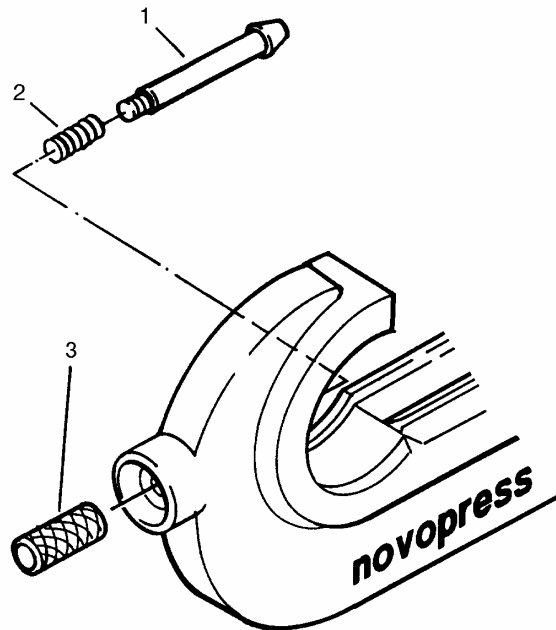
7375 Valve HP 450 complete

Item	Description	Order No.	Qty.
9	Spring sleeve	3936	1
13	Ball	1541	1
19	Spring	1218	1
29	Socket head bolt M 5x90	11068	1
30	Hex. nut M5	11065	1



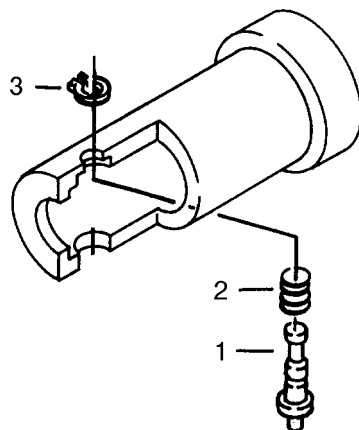
30645 Punch Stop

Item	Description	Order No.	Qty.
1	Lock pin	30646	1
2	Knurled nut	30647	1
3	Spring	13812	1



30655 Die stop

Item	Description	Order No.	Qty.
1	Lock pin	3939	1
2	Spring	3854	1
3	Retaining ring	11814	1



Repair / Service

novopress

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