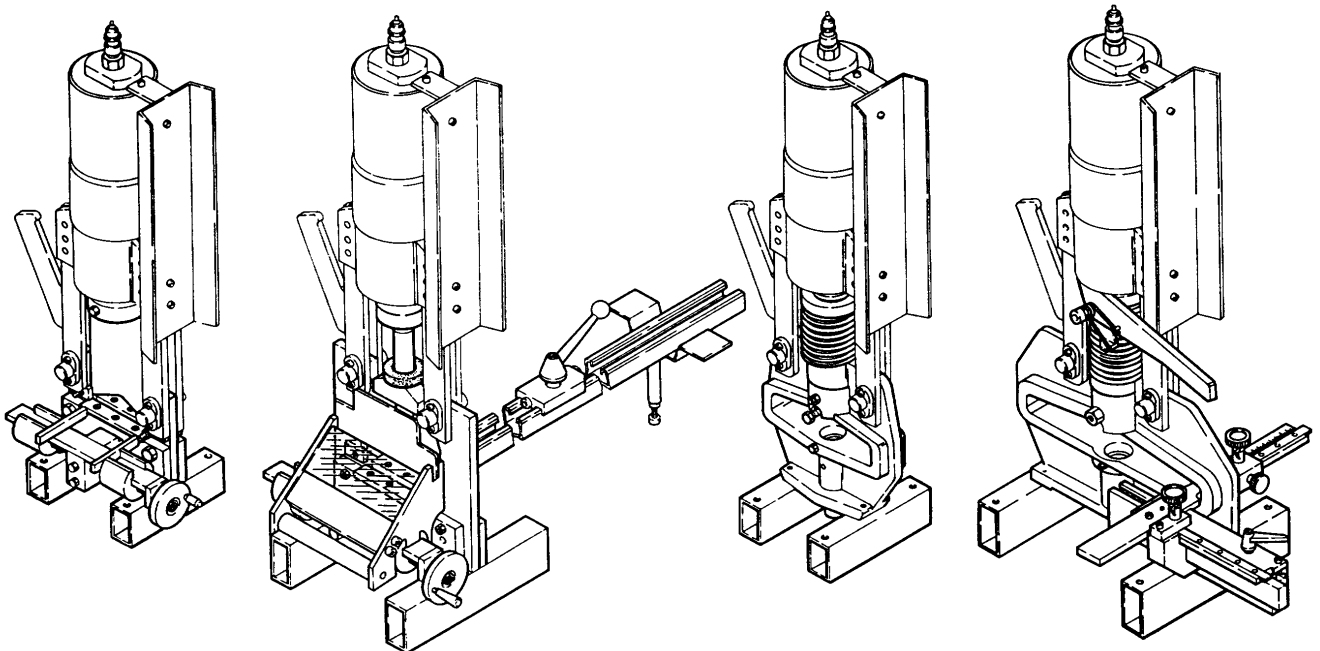
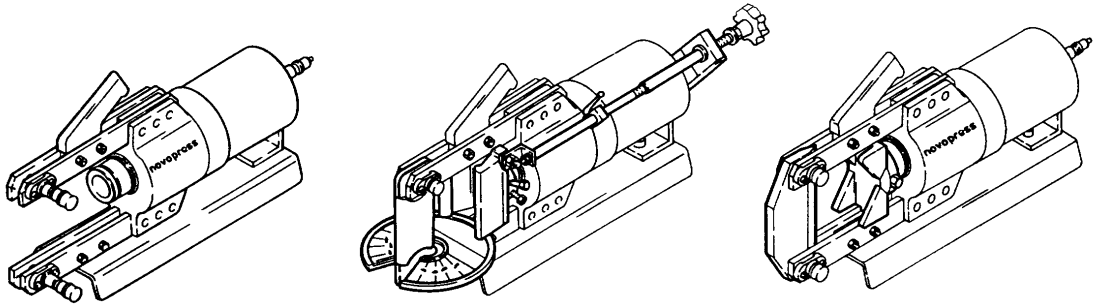


Repair instruction
and
Spare Parts List
for

NOVOpress

System Tools

HSBL



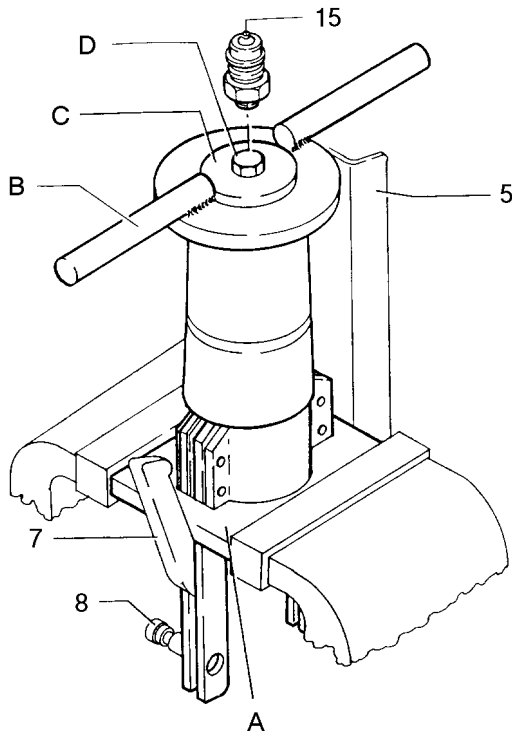
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**WARNING! BEFORE CARRYING OUT MAINTENANCE
WORK AND BEFORE CHANGING THE TOOLS
DECOUPLE THE HYDRAULIC UNIT OR
DISCONNECT THE HYDRAULIC UNIT
FROM THE MAINS.**

HSBL-Cylinder 2420

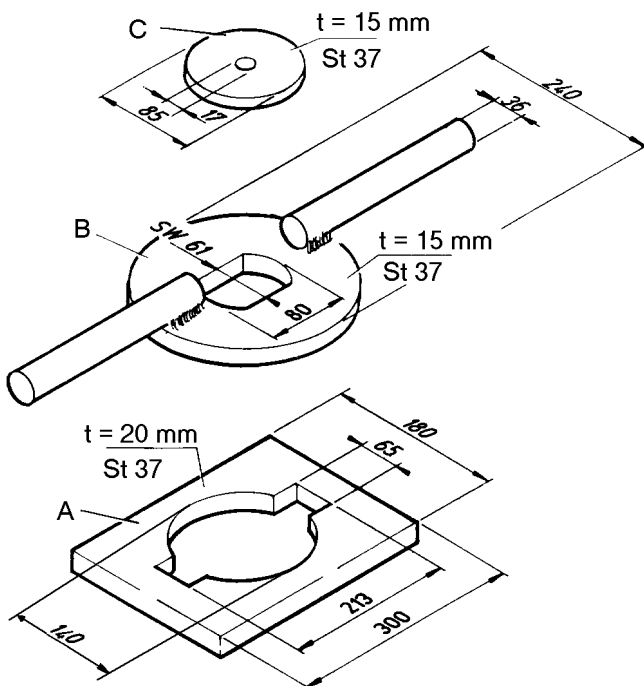
Dismantling/assembly



1. Unscrew the coupling plug (15) and pour the oil into a clean vessel (approx. 0.6l).

After the repairs have been carried out fill the oil back into the cylinder.

2. Remove the holding bolt (8), handle (7) and stand (5) from the HSBL- Cylinder.
3. Clamp the receiving plate (A), Order No. 7751, into a fixed vice.
4. Place the HSBL-Cylinder into the receiving plate (A). The cylinder piston rests on the vice.
5. Place the clamping tool (B), Order No. 7752, on to the cylinder and place the disc (C), Order No. 7753, on it. Secure all parts with an R 3/8" x 33 mm bolt (D).



6. Unscrew the cylinder pot with the clamping tool (B). Turn anti-clockwise. By using tubes on the clamping tool's arms (B) they can be extended to any length. The cylinder pot jumps a little at the end of the screwing process. (tension spring relief)

7. Change damaged or worn parts.

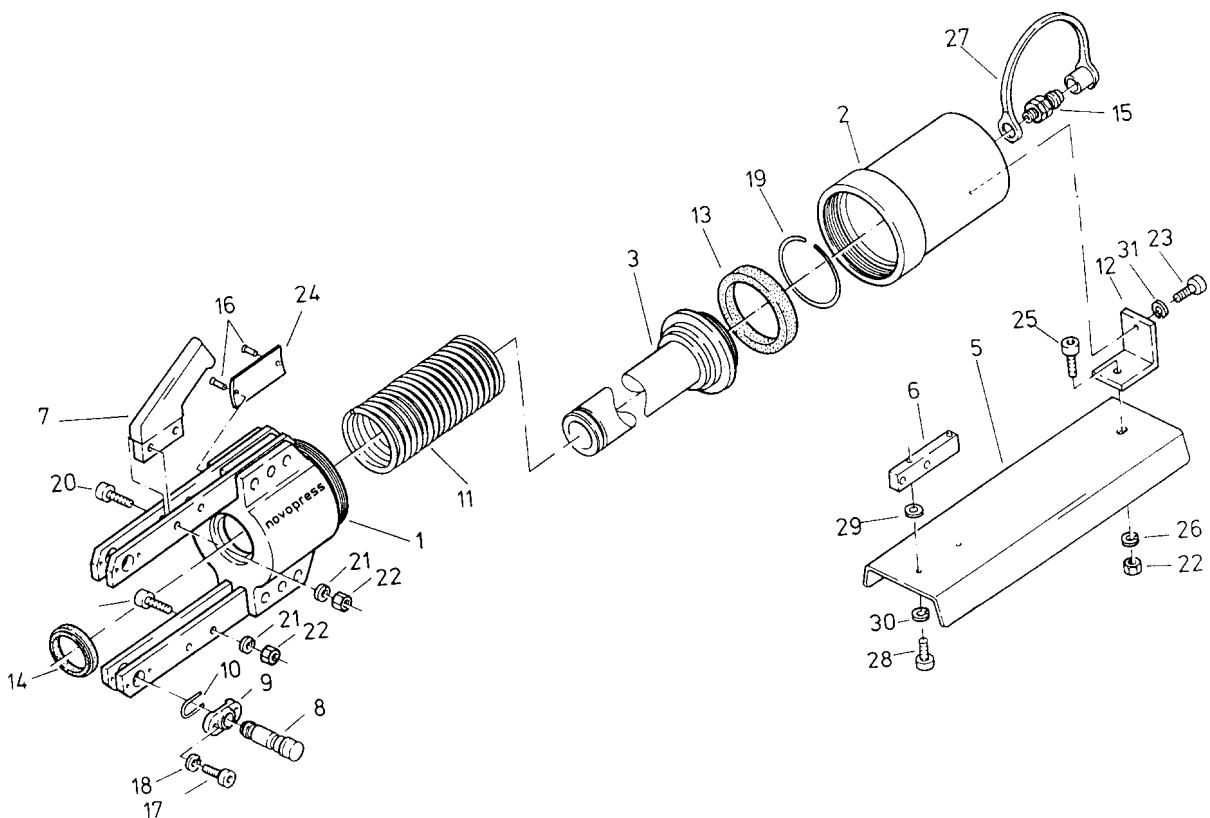
8. Replace the cylinder pot, press it down and turn it until the thread grips. Tighten the cylinder pot.

Warning!

No dirt should be allowed to get into the cylinder when reassembling.

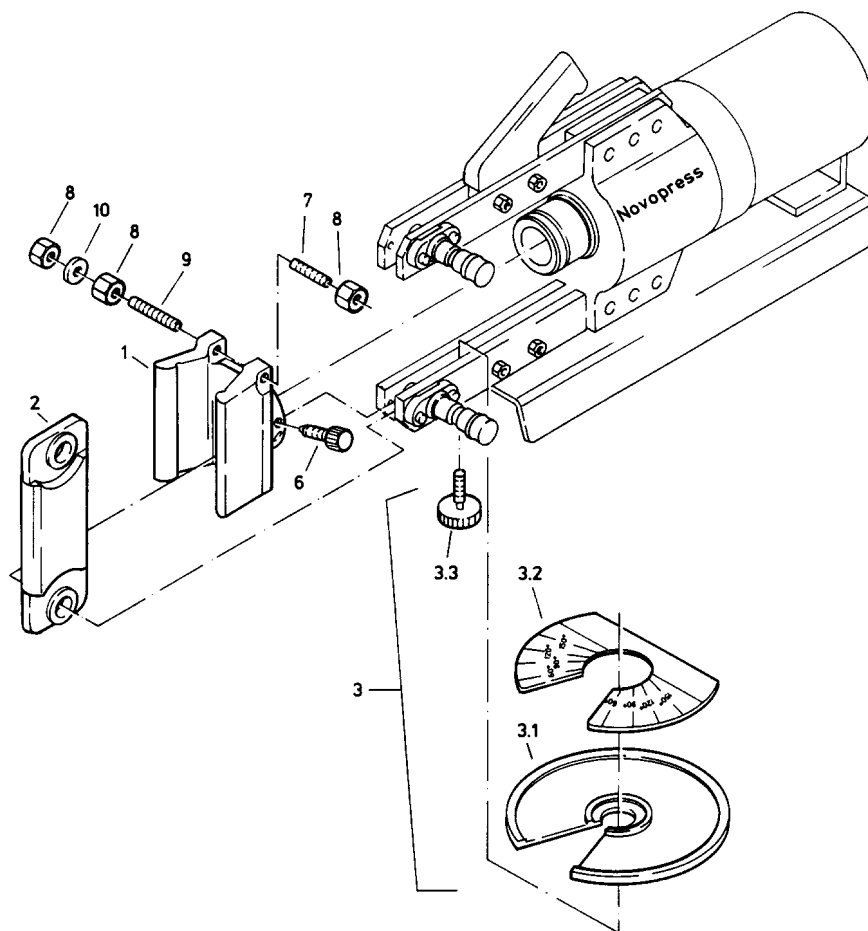
2420 Hydraulic Cylinder HSBL

No.	Item	Order No.	Quantity
1	Complete cylinder head	6923	1
2	Cylinder	2394	1
3	Piston	2395	1
5	Stand	5418	1
6	Distance piece	1088	1
7	Handle	1176	1
8	Bolt	1094	2
9	Bolt guide	1093	2
10	Clamp	1096	2
11	Pressure spring	2399	1
12	Angle	5419	1
13	Grooved ring 115x95x15	11164	1
14	Scraper AS 60x70x7/10	11237	1
15	Coupling plug R3/8" (device plug)	3718	1
16	Notched nail 2x6	11120	2
17	Cylinder screw M 5x20	11010	4
18	Spring washer A 5	11038	4
19	Snap ring	11234	1
20	Cylinder screw M 8x45	11233	4
21	Spring washer A 8	11235	4
22	Hexagonal nut M 8	11367	5
23	Cylinder screw M 6x25	11082	1
24	Type plate	11236	1
25	Cylinder screw M 8x20	11094	1
26	Washer \varnothing 8,4	11230	1
27	Dust cap for plug end	1514	1
28	Cylinder screw M 6x20	11009	1
29	Washer 6,4	11273	2
30	Spring washer	11652	2
31	Washer \varnothing 6,4	11203	1

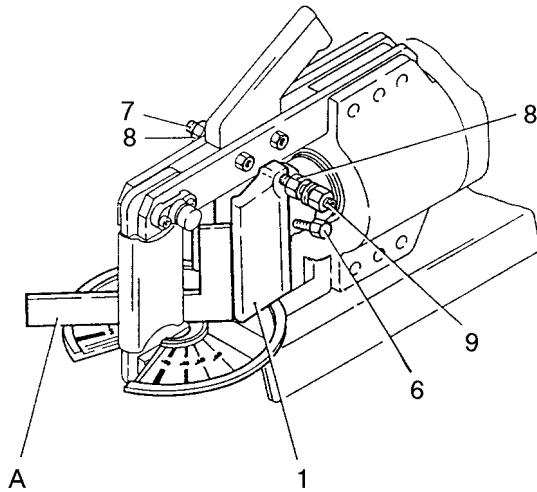


1179 HSBL Bending Tool with Angle Indicator

No.	Item	Order No.	Quantity
1	Bottom part of bending tool	1166	1
2	Top part of bending tool	1165	1
3	Complete angle-measuring system	6958	1
6	Knurled screw	31457	2
7	Spindle pin	11426	1
8	Hexagonal nut	11429	3
9	Threaded pin	11427	1
10	Washer	11251	1

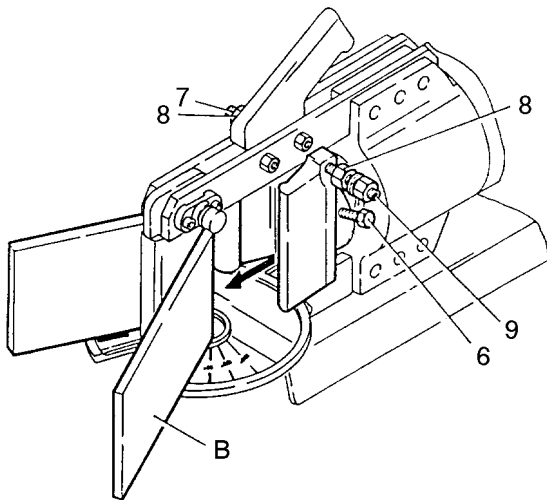


Aligning the bottom die



- A) At right angles to the angle indicator.
- Set the U-shaped bottom die (1) at right angles to the angle indicator by using a square (A).
- Screw the set screws (7) and (9) towards the cylinder bars so that they slide along the cylinder bars without play for the whole stroke. Check by moving the piston forwards and backwards.
- Counter the set screws (7) and (9) with the nut (8).
- Tighten the screws (6).

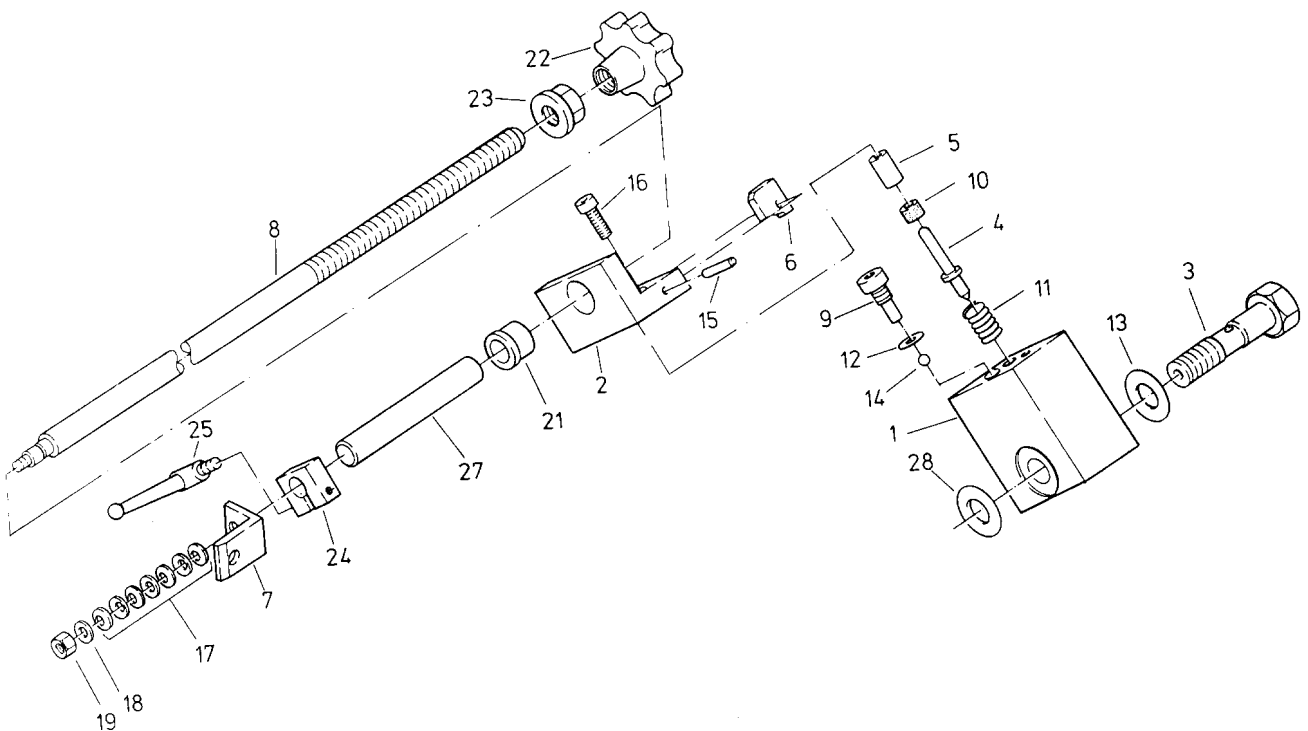
- B) By closing the tools with an inserted conductor rail 120 x 10.



1. Loosen the nuts (8) on the set screws (7) and (9) by approx. 3 turns.
2. Unscrew the set screws (7) and (9) so that they clear the cylinder bars by at least 2 mm.
3. Place a piece of conductor rail (B), e.g. 120 x 10-200 in the bending iron.
4. Bend until the safety valve in the basic unit switches off. Keep the foot switch pressed and tighten the bolts (6). Now switch off and allow the piston to return.
5. Tighten the set screws (7) and (9) so that they slide along the cylinder bars for the whole stroke length without any play. Move the piston forwards and backwards for this. Then counter the set screws (7) and (9) with the nuts (8).

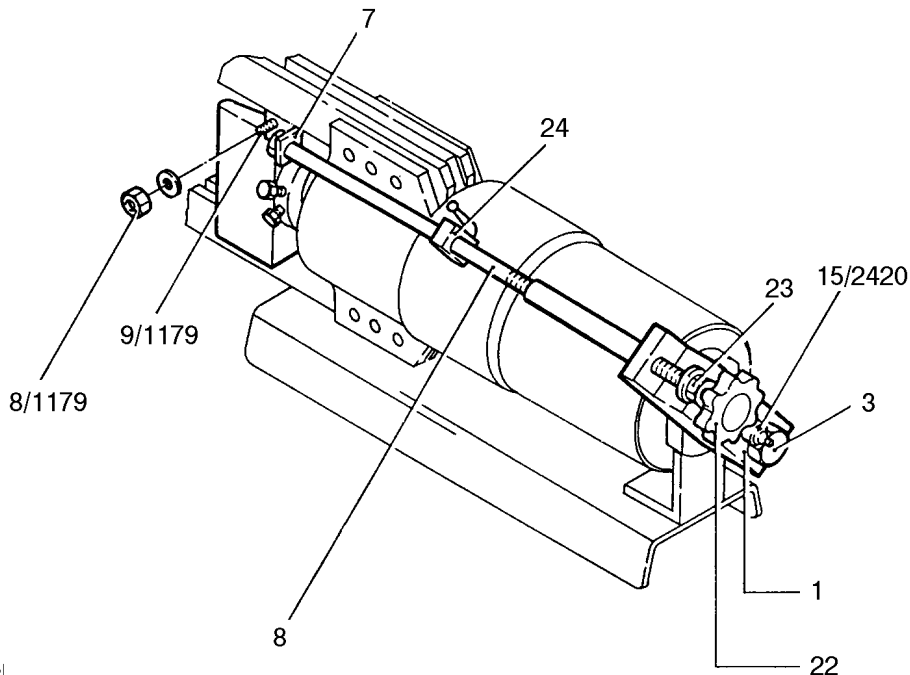
1627 HAV-2 Hydraulic Stop for the Bending Tool

No.	Item	Order No.	Quantity
1	Valve body	1628	1
2	Guide piece	1629	1
3	Hollow screw	1630	1
4	Valve cone	1631	1
5	Bush	1633	1
6	Switch lever	1634	1
7	Attaching angle	1636	1
8	Shifter rail	1637	1
9	Spring guide screw	2103	1
10	Grooved ring	11420	1
11	Pressure spring	11263	1
12	Usit-ring	11013	1
13	Usit-ring	11423	1
14	Sphere	11051	1
15	Cylinder pin	11436	1
16	Cylinder screw	11094	2
17	Cup ring	11300	9
18	Washer	11273	1
19	Hexagonal nut	11383	1
21	Headed drill bush	11434	1
22	Star grip	11433	1
23	Hexagon nut with collar	11432	1
24	Control cam	1635	1
25	Clamping lever	11191	1
27	Stop tube	4171	1
28	Usit-ring	11333	1



Mounting the 1627 Hydraulic Stop.

- 1 Unscrew the coupling plug (15/2420) from the HSBL-Cylinder (see page 2). For this the cylinder must be standing upright with the coupling plug (15/2420) pointing upwards.
- 2 Fasten the valve body (1) to the cylinder with the hollow screw (3).
- 3 Screw the coupling plug (15/2420) into the valve body (1).
- 4 Unscrew a nut (8/1179) from the set screw (9/1179) on the bottom part of the iron. Place the attaching angle (7) on to the set screw (9/1179) and fasten with the nut just removed.
- 5 Loosen the hollow screw (3) a little. Adjust the valve body (1) so that the holes for the shifter rail (8) and those in the valve body (1) are aligned; tighten the hollow screw (3).



Setting t.....

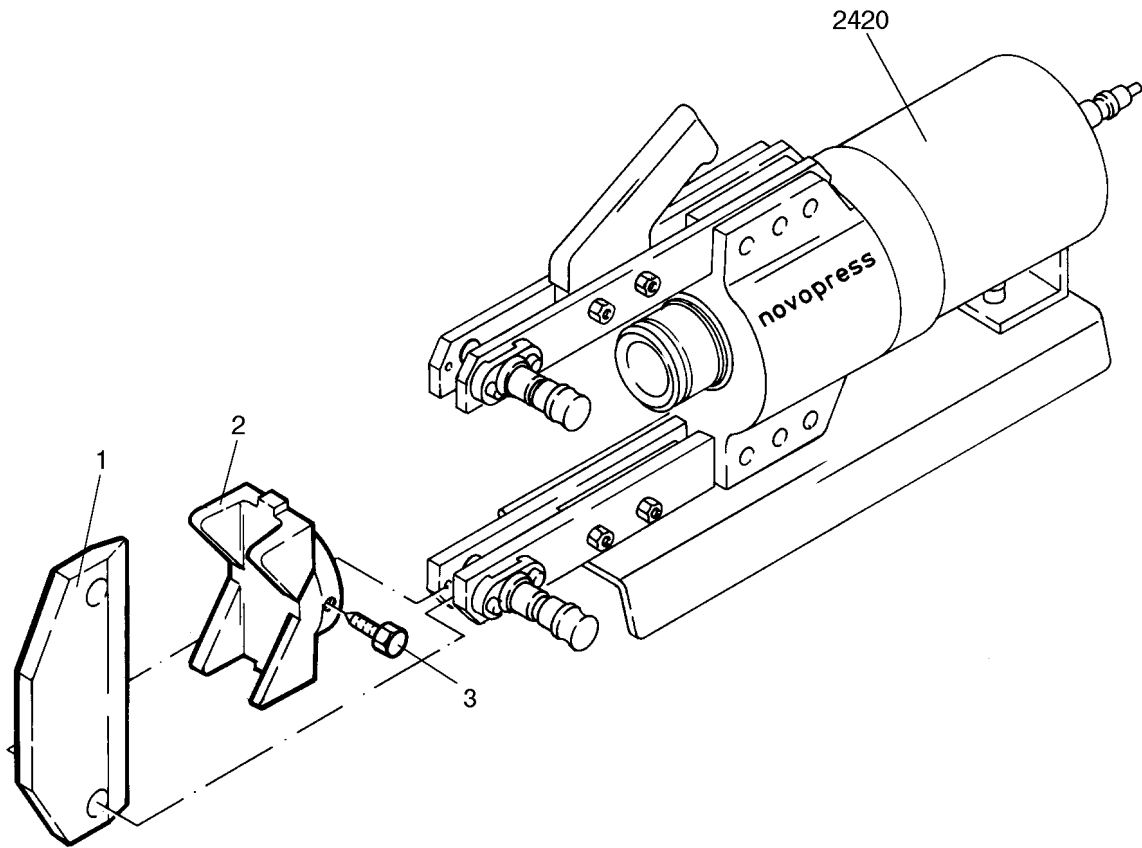
- 1 Place the conductor rail straight on the angle indicator and hold.
- 2 Screw the adjusting nut (23) towards the switching off valve so that it is approx. 20 mm from it, activate the foot switch and hold until the HAV-2 switches off.
- 3 Turn the adjusting nut (23) back a little and activate the foot switch again and hold until the HAV-2 switches off. Then measure the angle that has just been bent. Repeat this procedure until the required angle has been reached. Then counter the adjusting nut (23) with the star grip (22).

Setting the back stroke limit.

The back stroke is set by sliding and clamping the control cam (24). The back stroke should be limited in such a manner that the bent conductor rail can be easily removed.

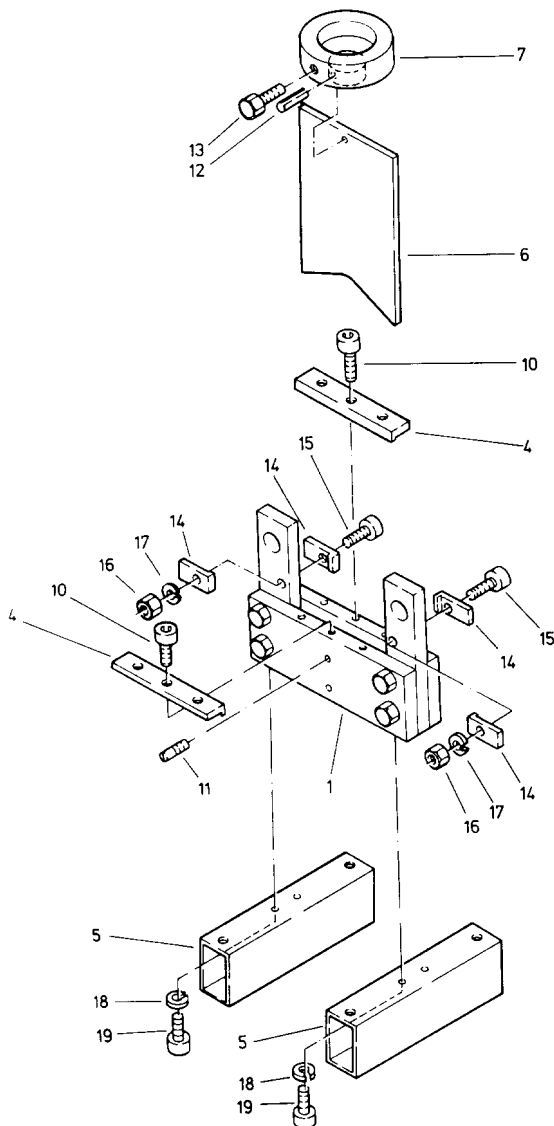
1081 Cable cutters

No.	Item	Order No.	Quantity
1	Knife	1097	1
2	Pressure plate	1098	1
3	Hexagonal screw	11393	1



2350 HSBL 120 Cutting Tool (up to unit number 1392)

No.	Item	Order No.	Quantity
1	Stand	5408	1
4	Cutting strip	1985	2
5	Stand	1201	2
6	Knife / serie / to 10 mm	1982	1
7	Base plate	2335	1
10	Cylinder screw M 6x10	13512	6
11	Set screw M8 x16	12450	1
12	Clamping sleeve 6x32	11394	1
13	Hexagonal screw BM 10x20	11393	1
14	Cutting edge guide	2259	4
15	Cylinder screw M 8x40	11280	2
16	Hexagonal nut M 8	11367	2
17	Spring washer A 8	11235	2
18	Spring washer A 6	11652	4
19	Cylinder screw M 6x10	11270	4
501	Protection devices (Conversion kit)	31394	1
601	Knife / special / on inquiry	7197	1



Changing the knife

1. Pull the base plate (7) with knife (6) out of the frame.
2. Knock out the clamping sleeve (12) with a drift with a diameter of 5 mm.
3. Change the knife (6).

Changing the cutting strips

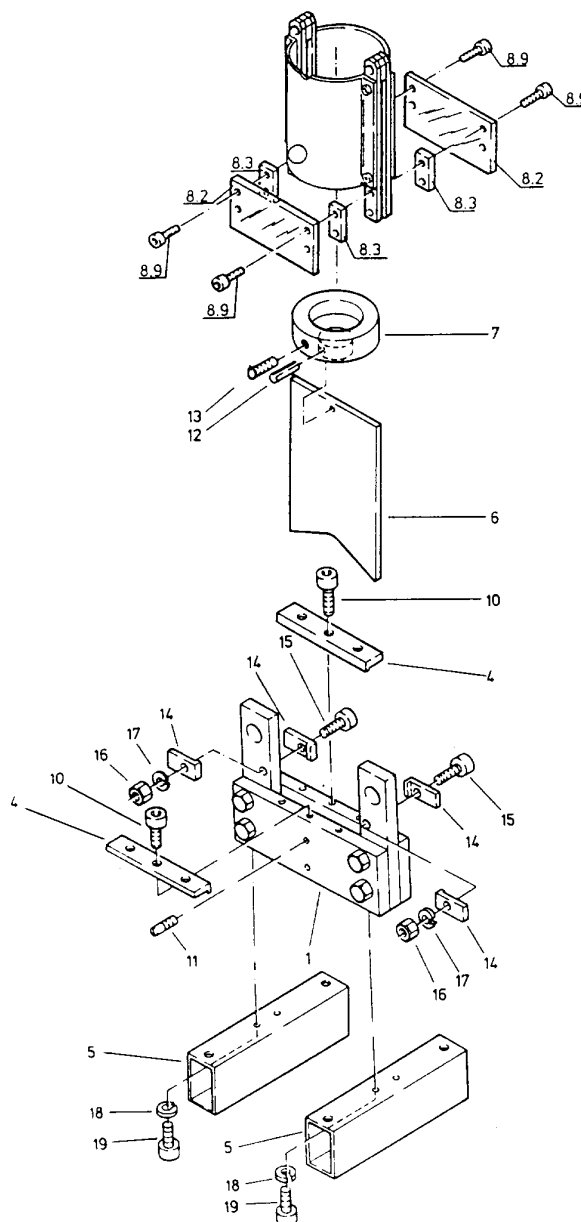
1. Remove the cutting edge guides (14).
2. Unscrew the bolts (10) and change the cutting strips.

2350 HSBL 120 Cutting Tool (unit number 1393 up to unit number 1460)

No.	Item	Order No.	Quantity
1	Stand	5408	1
4	Cutting strip	1985	2
5	Stand	1201	2
6	Knife / serie / to 10 mm	1982	1
7	Base plate	2335	1
8	Protection devices (Conversion kit)	30108	1
10	Cylinder screw M 6x10	13512	6
11	Set screw M8 x16	12450	1
12	Clamping sleeve 6x32	11394	1
13	Threaded pin M 10x12	13535	1
14	Cutting edge guide	2259	4
15	Cylinder screw M 8x40	11280	2
16	Hexagonal nut M 8	11367	2
17	Spring washer A 8	11235	2
18	Spring washer	11652	4
19	Cylinder screw M 6x10	11270	4
601	Knife / special / on inquiry	7197	1

Changing the knife

1. Pull the knife (6) together with the base plate (7) and the protection device (8) out of the stand (1)
2. Unscrew the screws (8.9) from the protective device (8) and remove items (8.2) and (8.3).
3. Pull the base plate (7) together with the knife (6) out of the protection device (8).
4. Knock out clamping sleeve (12) with a mandrel with a diameter of 5 mm.
5. Change the knife (6).
6. Assemble the base plate (7) and the new knife (6).
7. Slip the protective device (8) over the base plate (7) until it is in contact with the cutter blade (6).
8. Use the screws (8.9) to attach items (8.2) and (8.3) to the protective device (8).

**Changing the cutting strips**

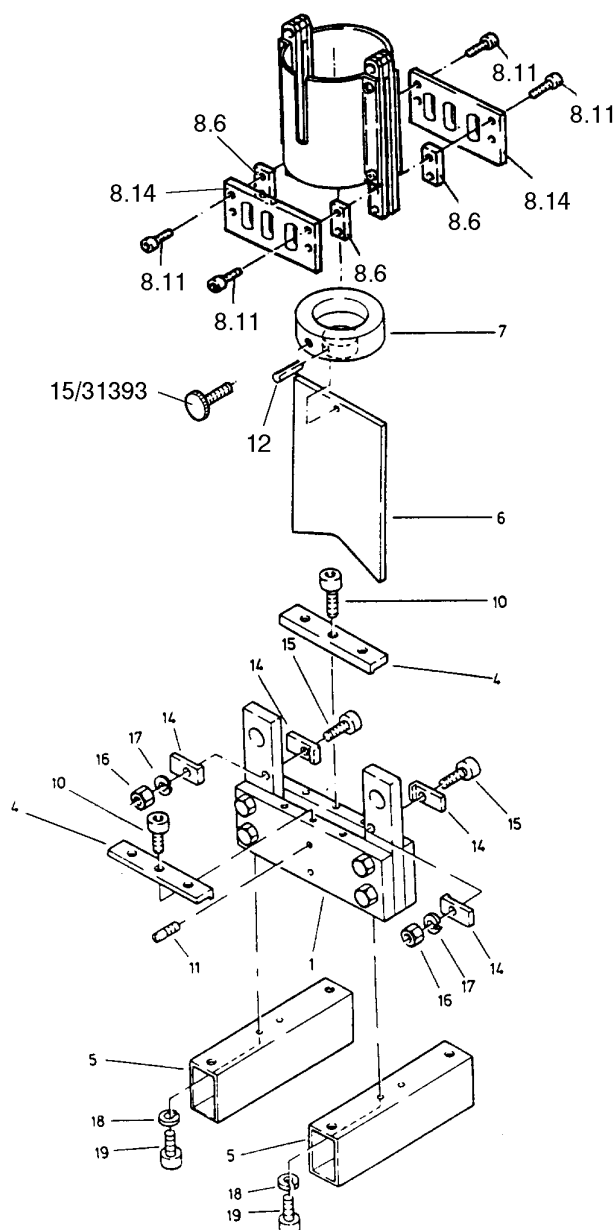
See page 9

2350 HSBL 120 Cutting Tool (from unit number 1461)

No.	Item	Order No.	Quantity
1	Stand	5408	1
4	Cutting strip	1985	2
5	Stand	1201	2
6	Knife / serie / to 10 mm	1982	1
7	Base plate	2335	1
8	Protection devices (Conversion kit)	31393	1
10	Cylinder screw M 6x10	13512	6
11	Set screw M8 x16	12450	1
12	Clamping sleeve 6x32	11394	1
14	Cutting edge guide	2259	4
15	Cylinder screw M 8x40	11280	2
16	Hexagonal nut M 8	11367	2
17	Spring washer A 8	11235	2
18	Spring washer	11652	4
19	Cylinder screw M 6x10	11270	4
601	Knife / special / on inquiry	7197	1

Changing the knife

1. Pull the knife (6) together with the base plate (7) and the protection device (8) out of the stand (1).
2. Unscrew knurled screws (15/31393).
3. Unscrew the screws (8.11) from the protective device (8) and remove items (8.6) and (8.14).
4. Pull the base plate (7) together with the knife (6) out of the protection device (8).
5. Knock out clamping sleeve (12) with a mandrel with a diameter of 5 mm.
6. Change the knife (6).
7. Assemble the base plate (7) and the new knife (6).
8. Slip the protective device (8) over the base plate (7) until it is in contact with the cutter blade (6).
9. Use the screws (8.11) to attach items (8.6) and (8.14) to the protective device (8).
10. Screw in knurled screws (15/31393).

**Changing the cutting strips**

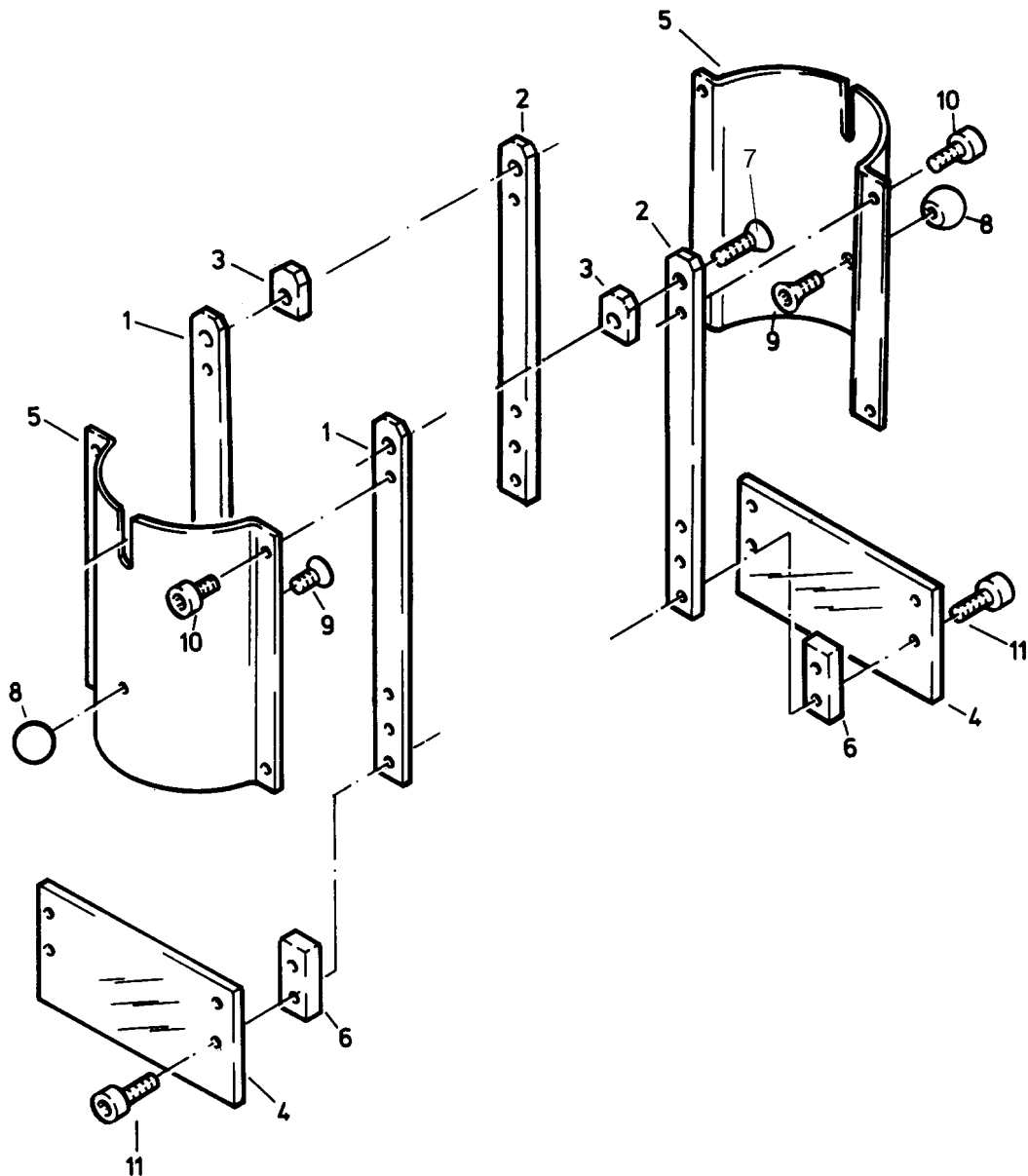
See page 9

30108 Protection devices up to unit number 1460

No.	Item	Order No.	Quantity
1	Strip	4048	2
2	Bow	4049	2
3	Distance plate	4050	2
4	Washer	4051	2
5	Protective cover	30023 *	2
6	Distance plate	30022	4
7	Countersunk bolt M6x20	12609	2
8	Ball button	11243 x1	2
9	Countersunk bolt	11197 x1	2
10	Cylinder screw M5x8	12185	8
11	Cylinder screw M5x20	11010	8

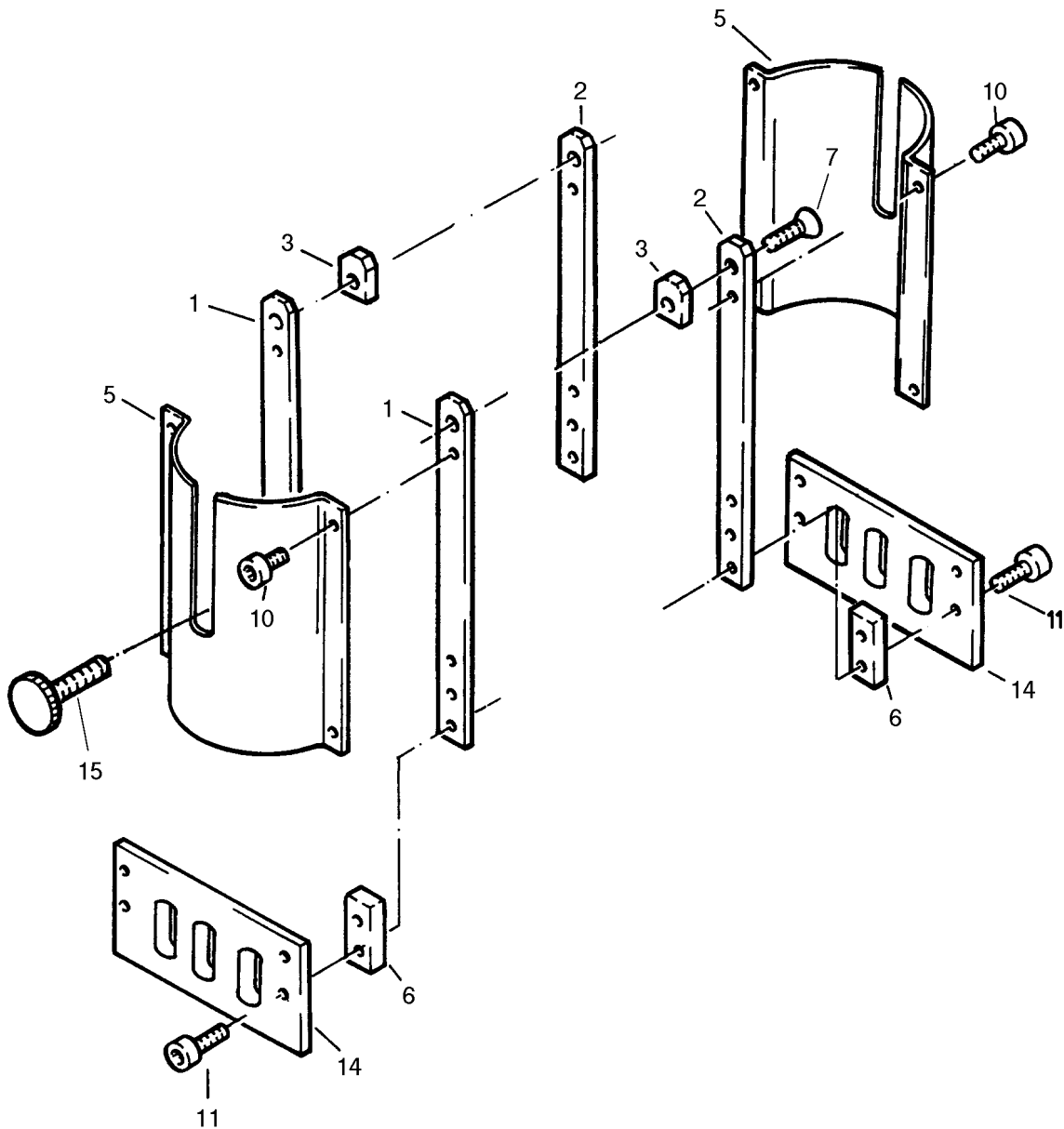
* replaced by 31333

x1 item cancelled



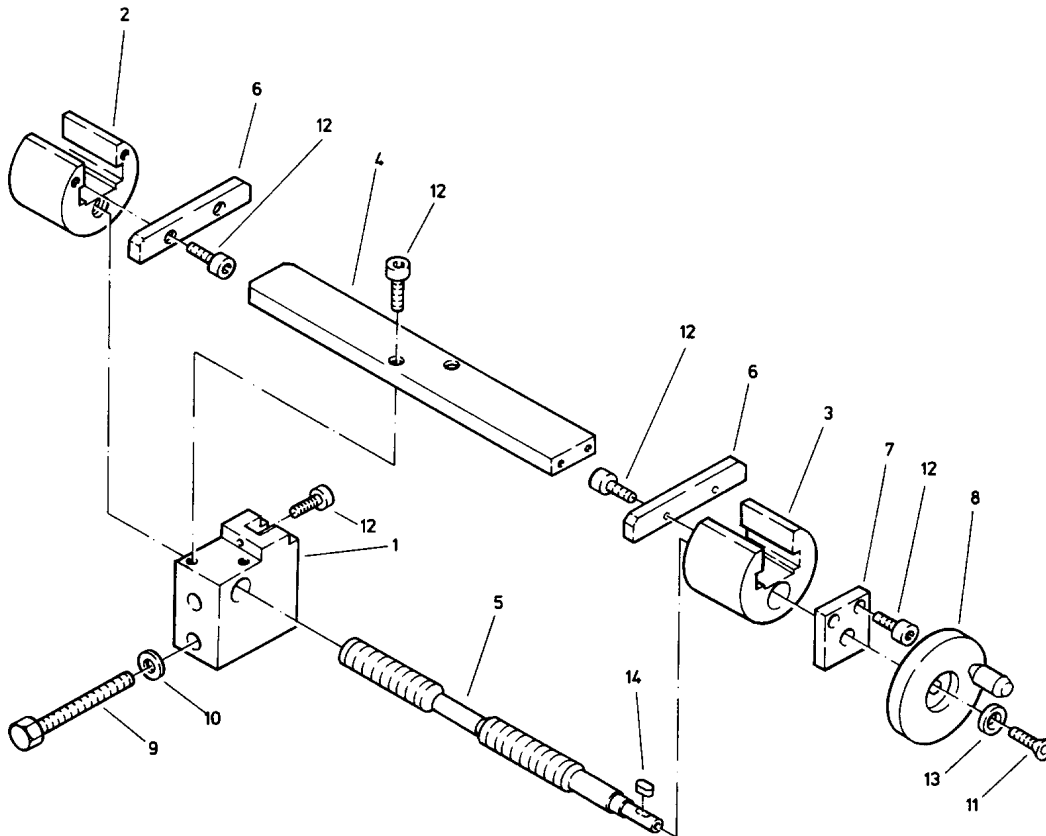
31393 Protection devices from unit number 1461

No.	Item	Order No.	Quantity
1	Strip	4048	2
2	Bow	4049	2
3	Distance plate	4050	2
5	Protective cover	31333	2
6	Distance plate	30022	4
7	Countersunk bolt M6x20	12609	2
10	Cylinder screw M5x8	12185	8
11	Cylinder screw M5x16	11096	8
14	Protective fence	31330	2
15	Knurled screw	31331	2



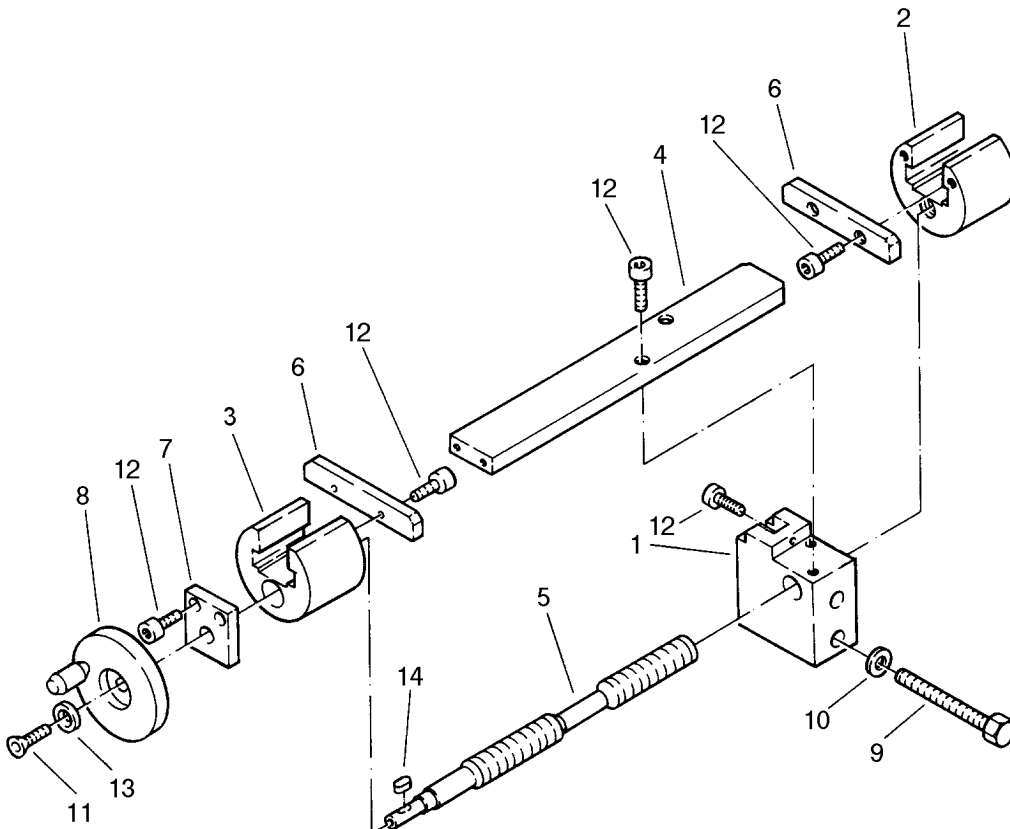
6950 Vice for the 120 Cutting Tool

No.	Item	Order No.	Quantity
1	Support guide	6981	1
2	Right jaw holders	6982	1
3	Left jaw holders	6983	1
4	Guide bead	6984	1
5	Spindle	6985	1
6	Clamping jaw	6986	2
7	Distance plate	6987	1
8	Disc handwheel	12440	1
9	Hexagonal screw M 8x90	11384	2
10	Washer \varnothing 8,4	11174	2
11	Countersunk screw M 4x10	11070	1
12	Cylinder screw M 6x20	11009	9
13	Washer	12441	1
14	Feather key A 3x3x10	12238	1



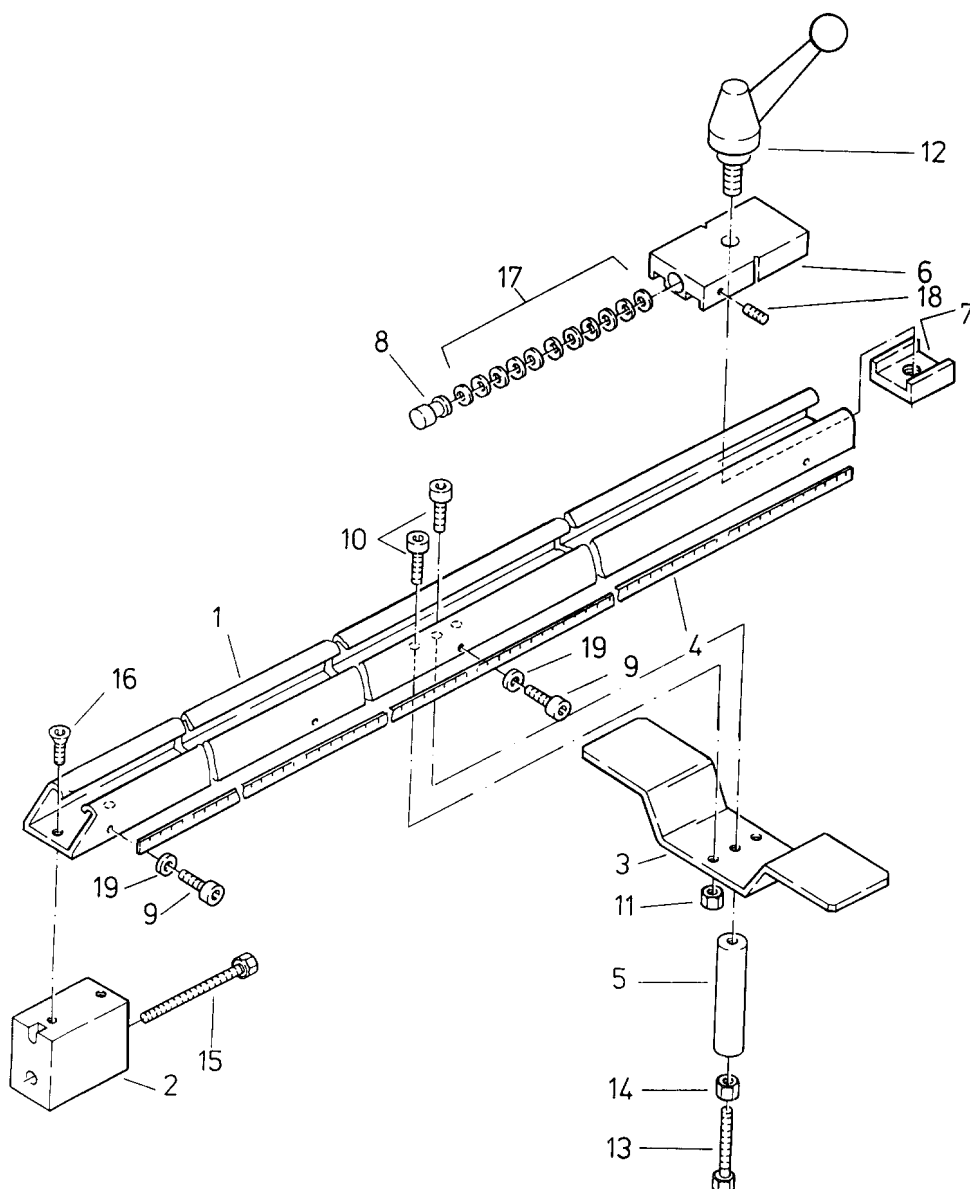
33402 Vice right for the 120 Cutting Tool

No.	Item	Order No.	Quantity
1	Support guide	6981	1
2	Right jaw holders	6982	1
3	Left jaw holders	6983	1
4	Guide bead	6984	1
5	Spindle	6985	1
6	Clamping jaw	8911	2
7	Distance plate	6987	1
8	Disc handwheel	12440	1
9	Hexagonal screw M 8x90	11384	2
10	Washer \varnothing 8,4	11174	2
11	Countersunk screw M 4x10	11070	1
12	Cylinder screw M 6x20	11009	9
13	Washer	12441	1
14	Feather key A 3x3x10	12238	1

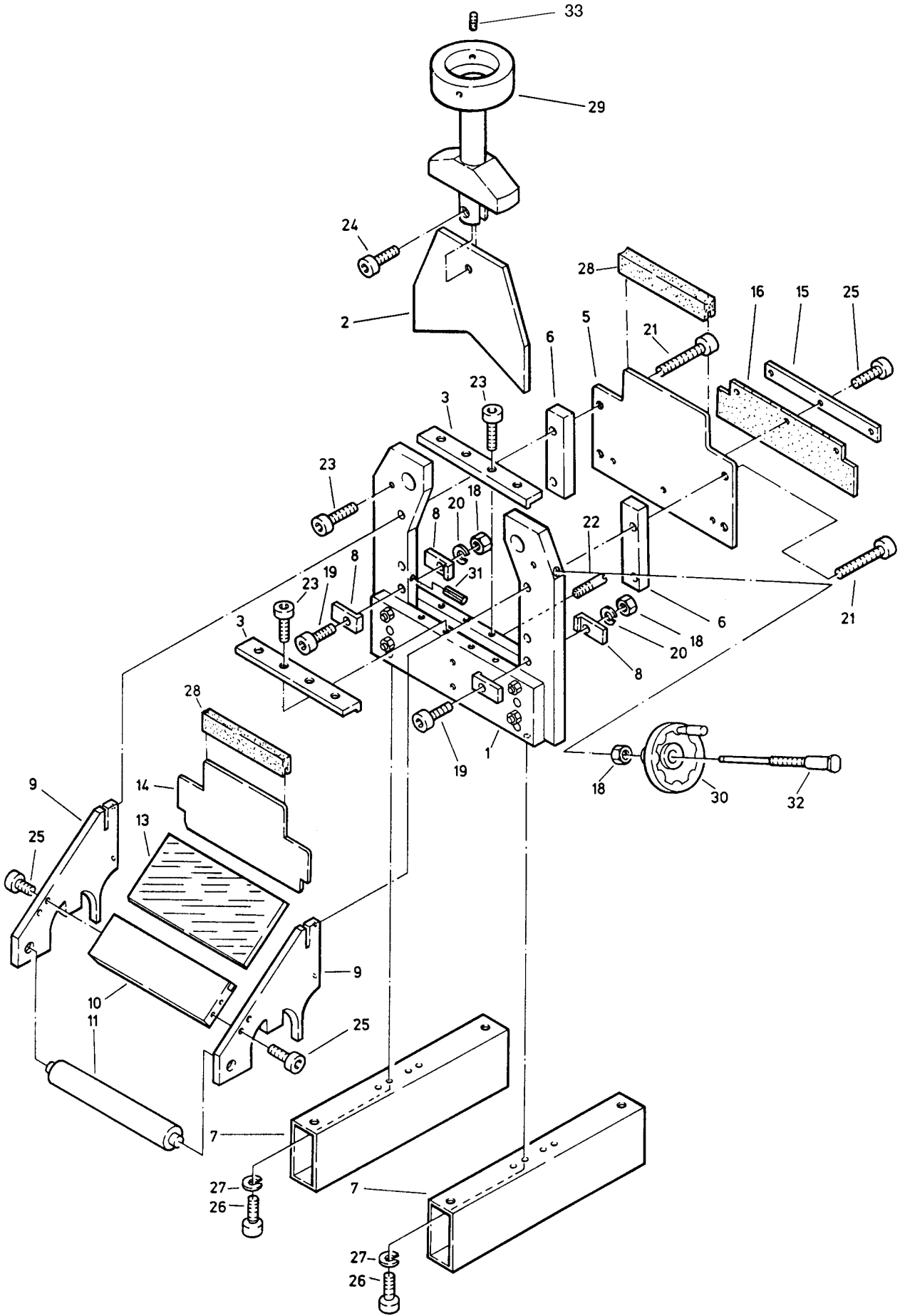


6990 Stop for the HSBL 120 and 160 Cutting Tool

No.	Item	Order No.	Quantity
1	Stop rail	6988	1
2	Stop holder	6989	1
3	Support plate	6991	1
4	Tape rule	6992	1
5	Support	6993	1
6	Guide	6994	1
7	Clamping plate	6995	1
8	Piston	7097	1
9	Cylinder screw M 4x6	11268	5
10	Cylinder screw M 6x16	12241	3
11	Hexagonal nut M 6	11383	4
12	Clamping lever	12465	1
13	Hexagonal screw M 8x45	12468	1
14	Hexagonal nut M8	11367	2
15	Hexagonal screw M 8x90	11384	1
16	Countersunk screw M 6x10	11044	2
17	Cup spring 16x8,2x0,6	11300	20
18	Threaded pin M 5x16	11253	1
19	Washer A 4,3	12311	5



18



7020 HSBL 160 Cutting Tool

7020 HSBL 160 Cutting Tool

No.	Item	Order No.	Quantity
1	Stand	7037	1
2	Cutting edge 160 mm	7031	1
3	Cutting strip	7032	2
5	Protective cover	7034	1
6	Distance rail for 7020	7042	2
7	Foot	7123	2
8	cutting edge guide	2259	4
9	Protective plate	7261	2
10	Strip	7262	1
11	Roller	7263	1
13	Protective window	7265	1
14	Protective cover	7266	1
15	Clamping rail	7267	1
16	Rubber plate	7268	1
18	Hexagonal nut M8	11367	3
19	Cylinder screw M 8x40	11280	2
20	Spring washer	11235	2
21	Cylinder screw M 8x45	11233	4
22	Set screw M 8x16	12450	1
23	Cylinder screw M 6x10	11339	10
24	Cylinder screw M 8x25	11252	1
25	Cylinder screw M 6x16	11095	10
26	Cylinder screw M 6x10	11270	4
27	Spring washer	11652	4
28	Rubber guard	12639	2
29	Cutting edge holder	8783	1
30	Disk handwheel	12440	1
31	Clamping sleeve	11107	1
32	Threaded bolt	8837	1
33	Threaded pin M8x16	11180	2

Changing the cutting edges/changing the cutting strips

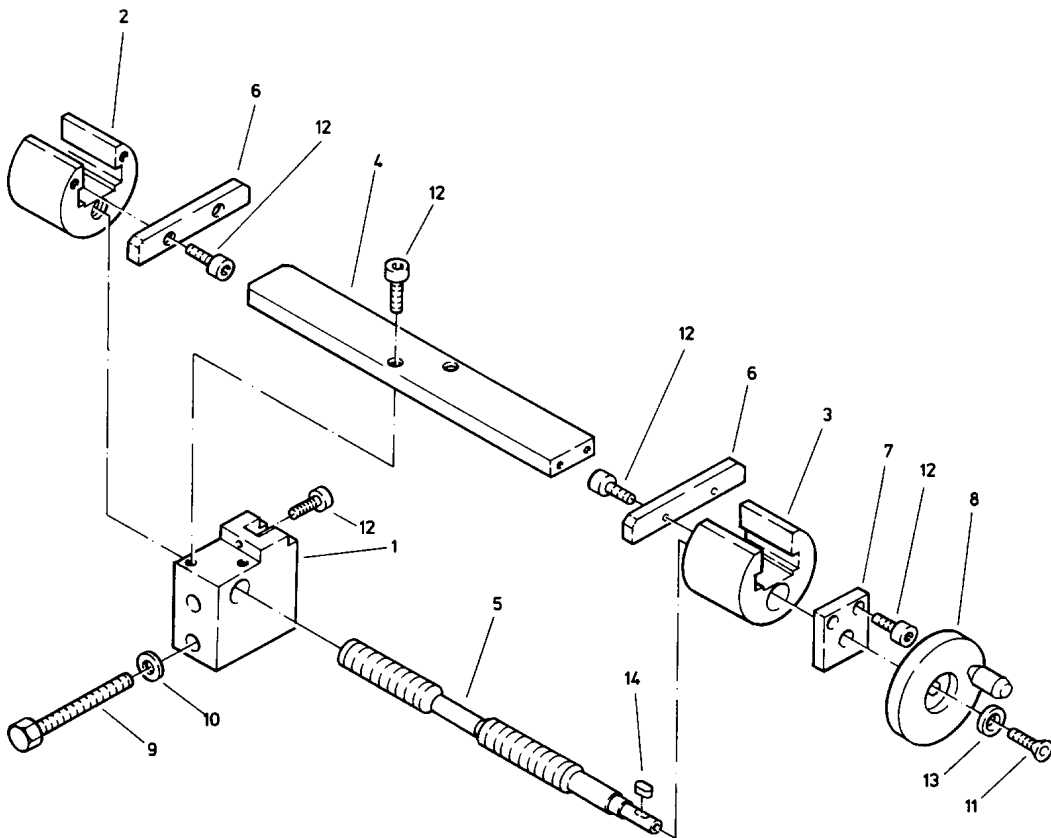
1. Unscrew the four bolts (21).
2. Remove (5) and (6) and the complete protective device.
3. Pull the cutting edge holders with the cutting edges up and tip out of the frame.
4. Unscrew bolt (24) and change the cutting edge.
5. Remove the cutting edge guides (8).
6. Unscrew bolts (23) and change the cutting strips (3).

Changing the protective window

1. Unscrew the (21) bolts.
2. Remove (5) and (6) and the complete protective device.
3. Remove the protective cover (14) from the protective device.
4. Loosen the (25) bolts on one side.
5. Change the protective window.

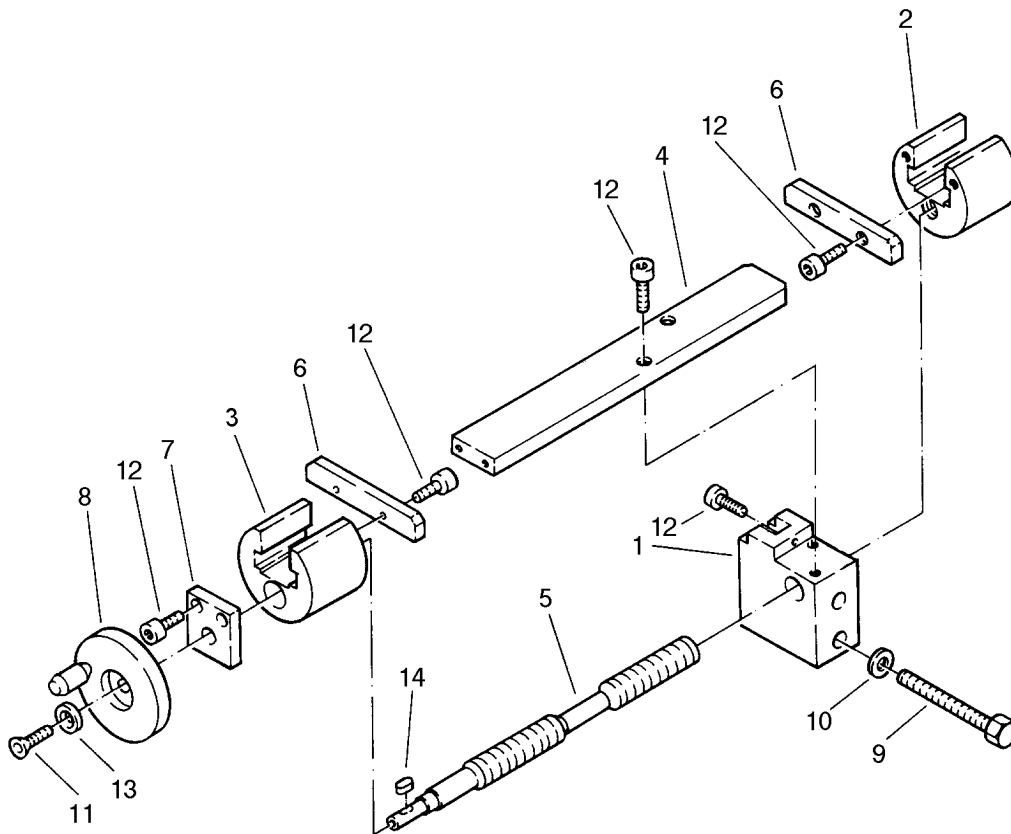
7030 Vice for the 160 Cutting Tool

No.	Item	Order No.	Quantity
1	Support guide	6981	1
2	Right jaw holders	6982	1
3	Left jaw holders	6983	1
4	Guide bead	7039	1
5	Spindle	7038	1
6	Clamping jaw	8911	2
7	Distance plate	6987	1
8	Disc handwheel	12440	1
9	Hexagonal screw M 8x90	11384	2
10	Washer \varnothing 8,4	11174	2
11	Countersunk bolt M 4x10	11070	1
12	Cylinder screw M 6x20	11009	9
13	Washer	12441	1
14	Feather key A 3x3x10	12238	1



33401 Vice right for the 160 Cutting Tool

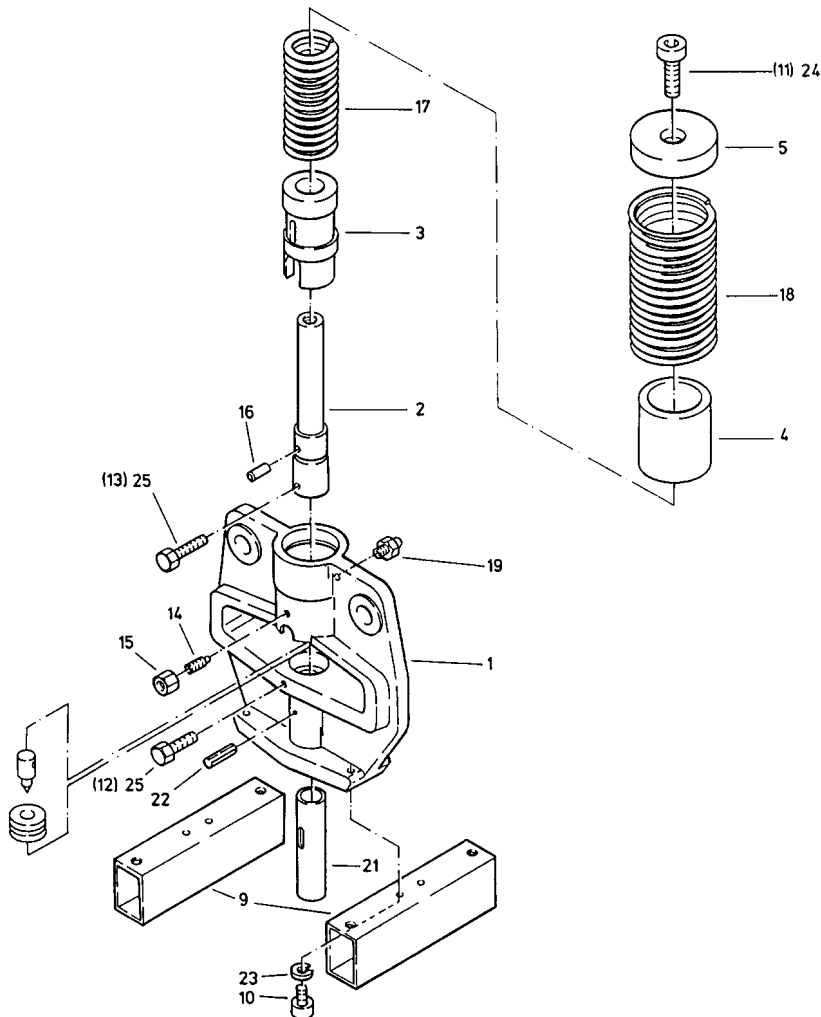
No.	Item	Order No.	Quantity
1	Support guide	6981	1
2	Right jaw holders	6982	1
3	Left jaw holders	6983	1
4	Guide bead	7039	1
5	Spindle	7038	1
6	Clamping jaw	8911	2
7	Distance plate	6987	1
8	Disc handwheel	12440	1
9	Hexagonal screw M 8x90	11384	2
10	Washer \varnothing 8,4	11174	2
11	Countersunk bolt M 4x10	11070	1
12	Cylinder screw M 6x20	11009	9
13	Washer	12441	1
14	Feather key A 3x3x10	12238	1



1118 HSBL 120 Punch up to unit number 1604

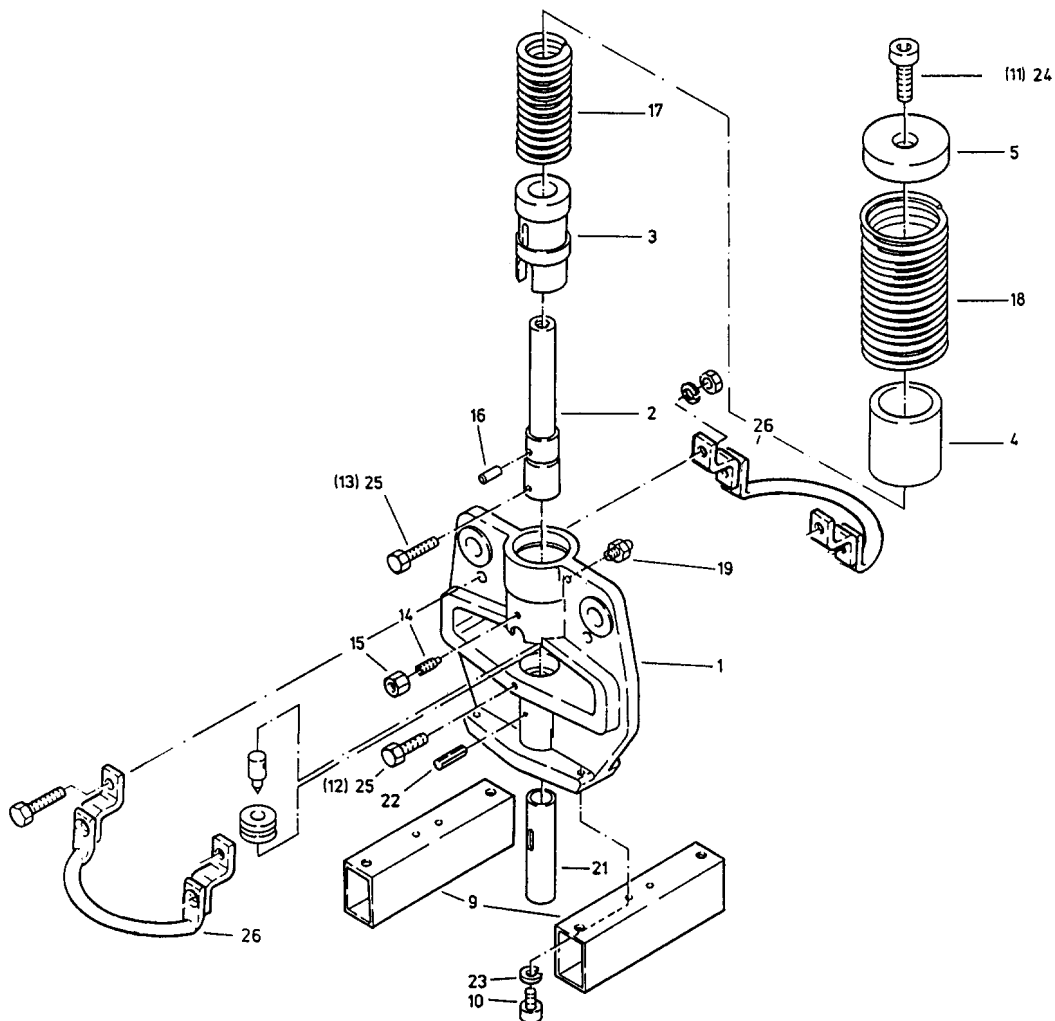
No.	Item	Order No.	Quantity
1	Punch casing	1119	1
2	Column	1225	1
3	Scraper	1226	1
4	Distance tubing	1227	1
5	Cover	1228	1
9	Stand	1201	2
10	Cylinder screw	11095	4
11	Cylinder screw	1230	* 1
12	Hexagonal screw	6412	* 1
13	Hexagonal screw	6411	* 1
14	Threaded pin	2568	1
15	Hexagonal screw	11367	1
16	Cylinder pin	11374	1
17	Pressure spring	1236	1
18	Pressure spring	1235	1
19	Lubricating nipple	11242	1
21	Ejector	4025	1
22	Clamping sleeve	11375	1
23	Spring washer	11652	4
24	Cylinder screw	7125	* 2
25	Centering screw	7124	* 2
501	Protection bow (conversion kit)	30036	1

* 1 up to unit number 1133
 * 2 from unit number 1133



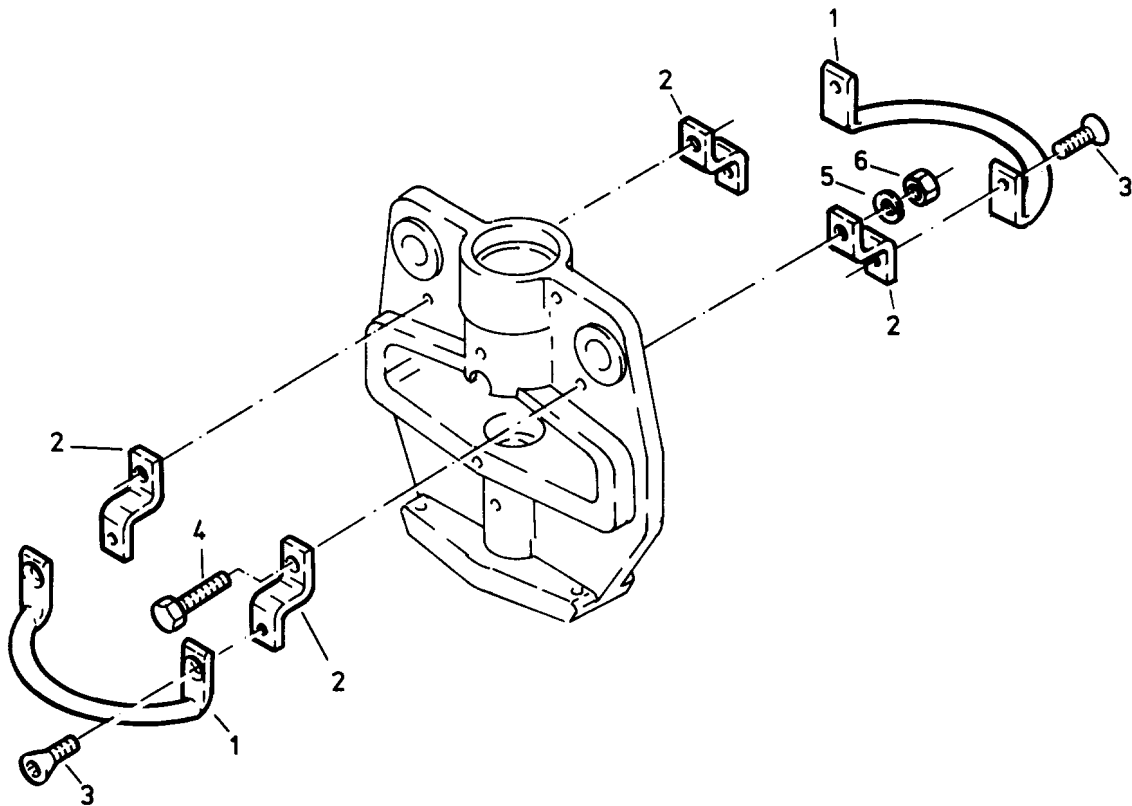
1118 HSBL 120 Punch from unit number 1605

No.	Item	Order No.	Quantity
1	Punch casing	1119	1
2	Column	1225	1
3	Scraper	1226	1
4	Distance tubing	1227	1
5	Cover	1228	1
9	Stand	1201	2
10	Cylinder screw	11095	4
14	Threaded pin	2568	1
15	Hexagonal screw	11367	1
16	Cylinder pin	11374	1
17	Pressure spring	1236	1
18	Pressure spring	1235	1
19	Lubricating nipple	11242	1
21	Ejector	4025	1
22	Clamping sleeve	11375	1
23	Spring washer	11652	4
24	Cylinder screw	7125	1
25	Centering screw	7124	1
26	Protection devices (Conversion kit)	30036	1
27	Centering screw	8734	1



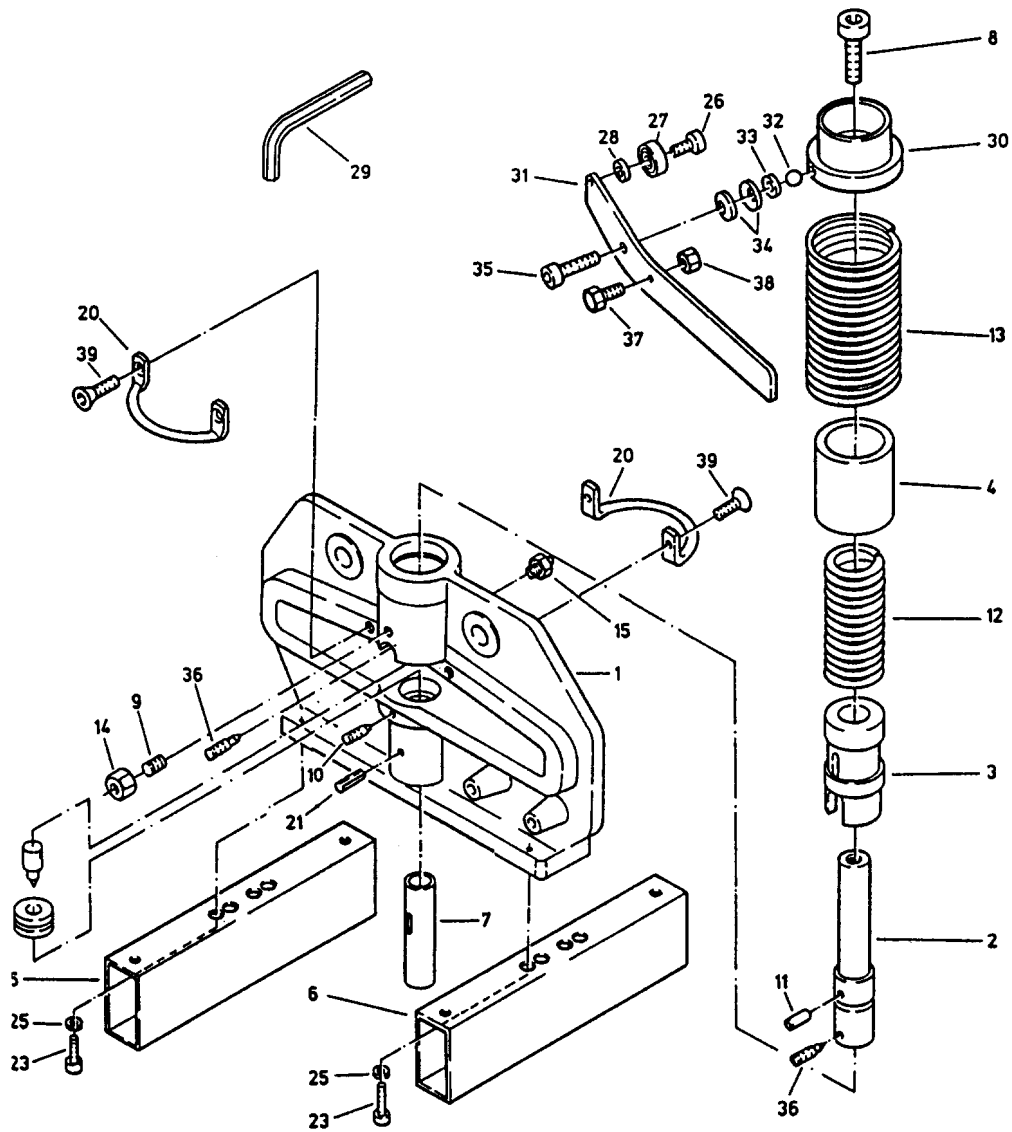
30036 Protection bow for HSBL 120 Punch

No.	Item	Order No.	Quantity
1	Protection bow	9016	1
2	Support	30037	4
3	Countersunk bolt M6x12	11647	4
4	Hexagonal screw M6x30	11315	2
5	Spring washer	11383	2
6	Hexagonal nut M6	11383	2

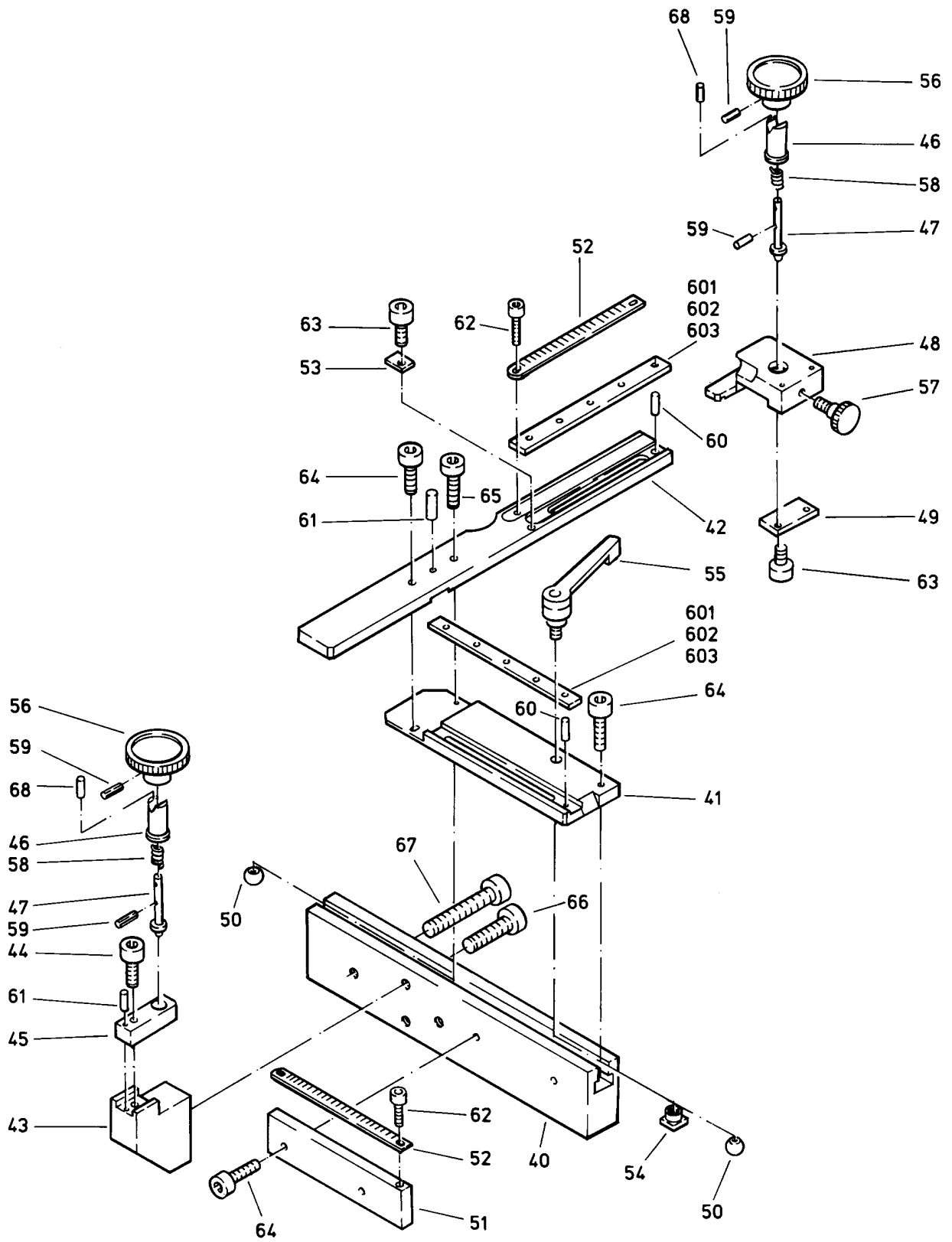


7050 HSBL 160 Punch

No.	Item	Order No.	Quantity
1	Stand	7036	1
2	Column	1225	1
3	Scraper	1226	1
4	Distance tubing	1227	1
6	Foot	7123	2
7	Ejector	4025	1
8	Cylinder screw	7125	1
9	Threaded pin	2568	1
10	Centering screw M 8x16	7124	1
11	Cylinder pin 6m6x16	11374	1
12	Pressure spring	1236	1
13	Pressure spring	1235	1
14	Hexagonal nut M8	11367	1
15	Lubricating nipple, shape A, M 6,1	11242	1
20	Protection bow	9016	2
21	Clamping sleeve 4x12	11977	1
23	Cylinder screw M 6x16	11095	4
25	Spring washer A6	11652	4
26	Cylinder screw M 5x16	11264	1
27	Ball bearing	12714	1
28	Washer	11350	2
29	Wrench for socket head screws	11769	1
30	Cover	8607	1
31	Lever	8606	1
32	Sphere \varnothing 8	11210	1
33	Fitting washer 10x16x0.5	11018	
34	Cup ring 23x10.2x0.9	11127	2
35	Cylinder screw M 10x30	11320	1
36	Centering screw M 8x12	8734	1
37	Hexagonal screw M 5x30	13195	1
38	Hexagonal nut M 5	11065	1
39	Countersunk bolt M 6x12	11647	4



7050 HSBL 160 Punch



7190 Metric Stop for 7050 Punch

7190 Metric Stop for 7050 Punch

No.	Item	Order No.	Quantity
40	Guide	7170	1
41	Plate	7171	1
42	Ruler	7172	1
43	Bracket	7173	1
44	Cylinder screw M 8x25	11252	1
45	Locking device	7175	1
46	Catch casing	7176	2
47	Catch	7177	2
48	Slide	7178	1
49	Flat steel	7179	1
50	Guide	7180	2
51	Rule fixing	7181	1
52	Tape measure 13x0,5x150	7182	2
53	Lamina	7188	1
54	T-nut M 10x12	12446	1
55	Clamping lever	12447	1
56	Disc handle	7618	2
57	Knurled screw M 8x20	12448	1
58	Pressure spring 1,25x10 x29,5	12449	2
59	Clamping sleeve 3,5 x 16	12195	4
60	Cylinder pin 6m6x10	11305	2
61	Cylinder pin 4m6x16	12173	2
62	Cylinder screw M 4x6	11268	2
63	Cylinder screw M 5x12	12158	3
64	Cylinder screw M 6x20	11009	4
65	Cylinder screw M 6x25	11082	1
66	Cylinder screw M 8x45	11233	2
67	Cylinder screw M 8x70	11008	2
68	Clamping sleeve 2,5 x 10	12091	2
69	Covering type plate	12564	2
70	Blank template for "X" axis	7681	1
71	Blank template for "Y" axis	7682	1
72	Template for "Y" axis 40 - 160	31369	1
73	Template for "X" axis 40/80/160	31371	1
74	Template for "X" axis 50/100	31372	1
75	Template for "X" axis 60/120	31373	1

7090 Stop Measuring Inches for 7050 Punch**All items as for 7190 except item 52**

No.	Item	Order No.	Quantity
52	Tape measure 13x0,5x150	7183	2

Repairs / Service

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