



HM MACHINERY

Industrivej 3-9
DK-9460 Brovst
Denmark
Tel.: +45 9823 6088
Fax: +45 9823 6144

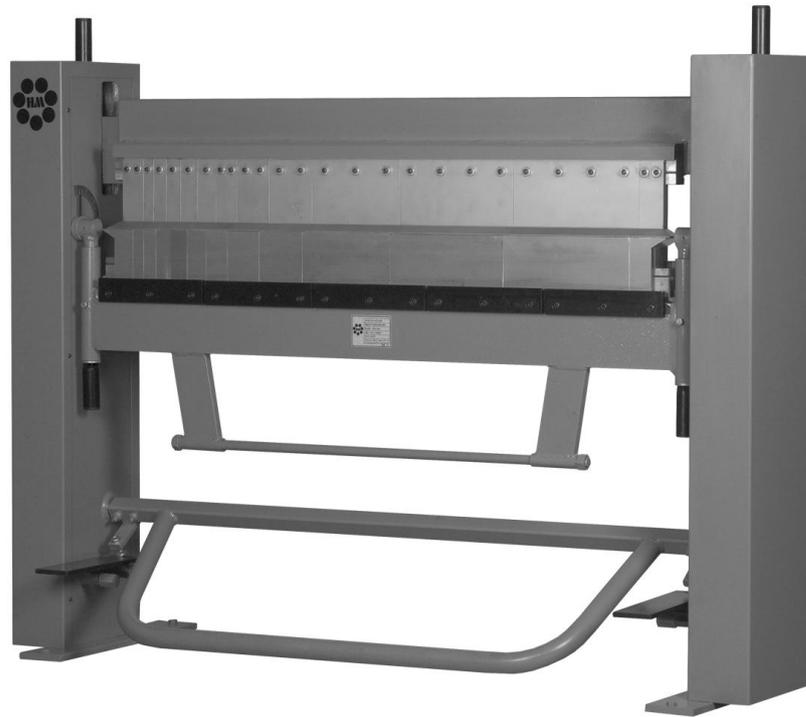
Manual for:

13.03.12

Bending Machines

HS-2A-3SH SUPERFLEX

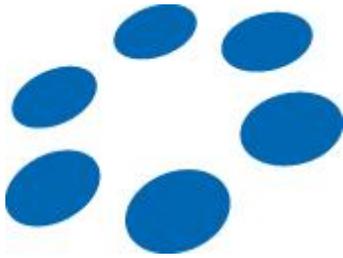
HS-3-3SH SUPERFLEX



CE



EC Declaration of Conformity



HM MACHINERY A/S

Industrivej 3-9

9460 Brovst

Denmark

www.scantool-group.com

Tlf: +45 98 23 60 88

Fax.: +45 98 23 61 44

hereby declares that

HM HS-2A-3SH Superflex Bending Machine are manufactured in accordance with the provisions of the COUNCIL DIRECTIVE of 17. May 2006 (2006/42/EC) – The Machinery Directive (order no. 561 of 25 June 1994 with subsequent amendments)

Also on accordance with:

The council directive of 19 February 1973 (73/23/EEC) – The Low Voltage Directive – with later amendments (order no. 797 of 30 August 1994)

The council directive of 3 May 1989 (89/336/EEC) – The EMC Directive – with later amendments (order no. 796 of 5 December 1991 with subsequent amendments)

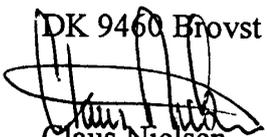
DK 9460 Brovst

Claus Nielsen,
Producent



Table of contents

1. SET UP	4
1.1 INSTALLATION	4
1.2 LOOSENING THE BENDING STOP	4
1.3 ADJUSTING THE LOWER BEAM	4
2. OPERATING INSTRUCTIONS	5
2.1 SETTING THE ANGLE	5
2.2 BENDING	5
2.3 MAINTENANCE	5
2.4 CLEANING	5
2.5 OPERATION IN PICTURES	6
2.6 MAINTENANCE IN PICTURES	7
3. SAFETY RULES FOR STATIONARY POWER TOOLS.	7
3. SPARE PARTS	10
3.1 EXPLODED DRAWING	10
3.2 SPARE PART LIST	10
3.3 EXTRA ACCESSORIES	11
3.4 SPARE PARTS BACK GAUGE	11
3.5 SPARE PARTS SEGMENTS	12
3.6 PRESS PIECE HM F/QUICK-CHANGE	13
4. TECHNICAL DATA	13
4.1 EXTERIOR DIMENSIONS	13
4.2 MACHINE SPECIFICATIONS	14
4.3 WARRANTY	14

1. Preparations

1.1 Installation

The machine is delivered on a pallet and packed in protective wrapping. When the machine is delivered it has been pre-treated with an anti corrosive. Use an ordinary detergent when cleaning. Do not use thinner. The machine must be placed on a firm and level ground. Bolt it to the floor using the anchoring holes.

It is important that this machine is bolted to the floor.

Before the machine is bolted to the floor the machine it is necessary to level out the machine. It might be necessary to make adjustment with distance pieces underneath the machine if the floor is not in level. The adjustment is necessary to avoid the machine for twisting and then pull uneven.

1.2 Loosening the bending stop

Before usage you will need to loosen the bending stop (Fig. 2.1 no. 7). The camber is from the factory adjusted to 1mm sheets, if another setting is needed to e.g. Bending of a thicker sheet, you will need to adjust this using the handle (Fig2.1 no. 8) to the thickness of the sheet + 25% so the sheet can be bend without ruining the segments. The camber is adjusted using handles (Fig. 2.1 no 6) until you can lock the foot pedal.

1.3 Adjusting the lower beam

If the bend is not satisfactory in the middle of the sheet, it can be caused by the bending beam not having an adequate bombarding (crowning). This can be solved by tightening the two nuts (Fig 2.1 no. 5), giving the bending beam a bigger bombarding. This should normally only be needed after the machine has been in use for a while.

2. Operating Instructions

The machine consists of the following mechanisms:

1. Foot clamp with locking mechanism
2. Lower beam segments
3. Upper beam segments
4. Bending beam segments
5. Adjustment nut for bombarding of the bending beam
6. Handle for adjustment of the upper beam
7. Bending stop
8. Adjustment handle for adjusting the bending beam to the sheet thickness

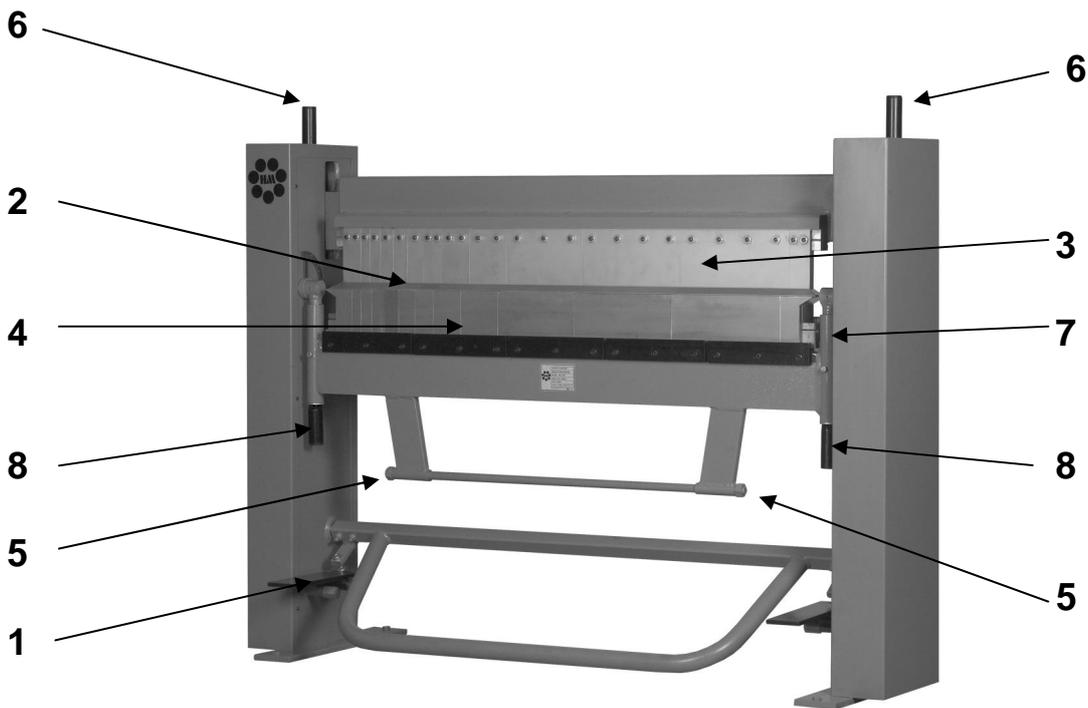


Fig. 2.1 The machine

2.1 Setting the angle

The bending stop (nr 7) is set to the wanted angle using the degree measure on the side of the machine. A test bend is performed and the bending stop adjusted if needed.

2.2 Bending

The bending beam is lowered to a minimum of the sheet thickness e.g. the sheet is 2 mm thick, then the bending beam needs to be lowered by 2 mm. If the bend is over 90 degrees the distance needs to be bigger.

2.3 Maintenance

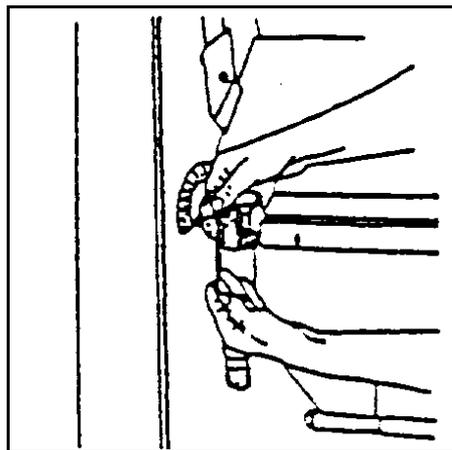
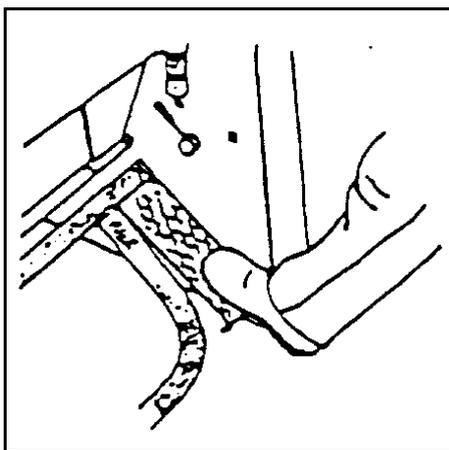
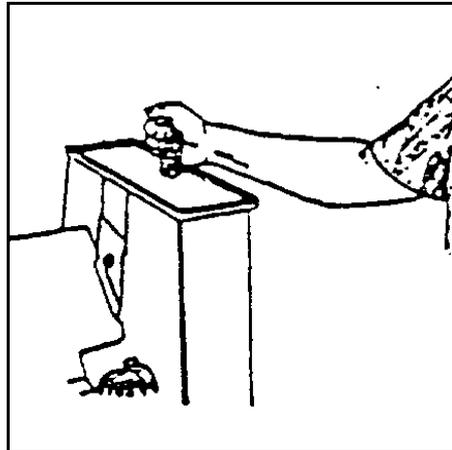
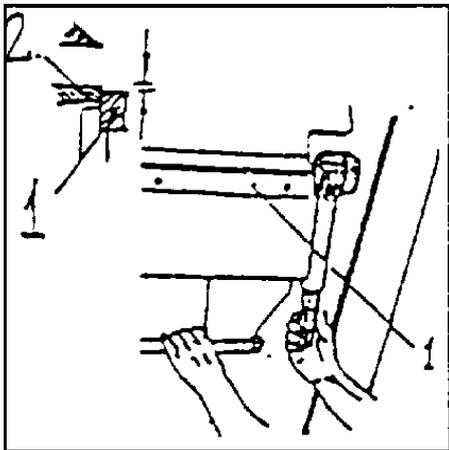
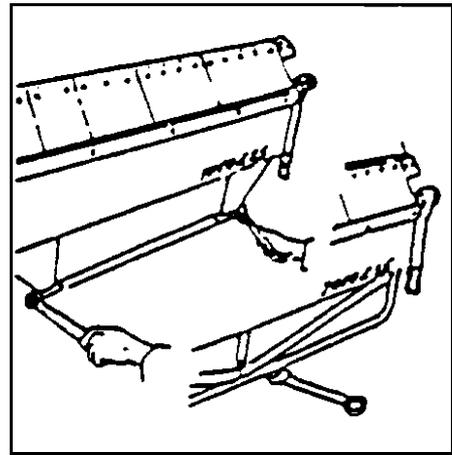
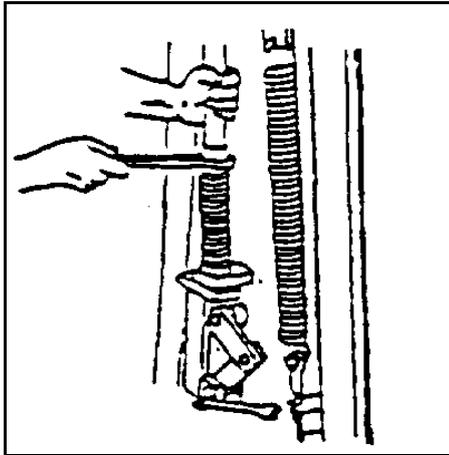
Normal cleaning and lubrication of movable parts should be done for every 100 working hours.

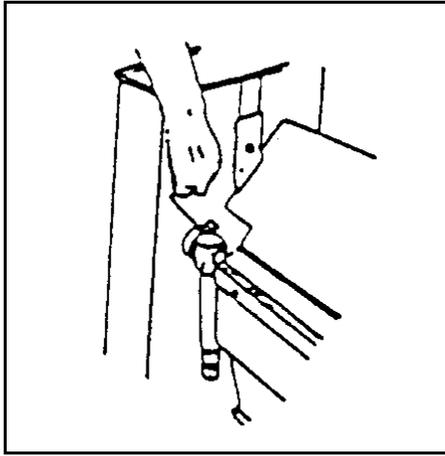
2.4 Cleaning

Machine anticorrosive parts should only be cleaned with kerosene in a rapid workflow.

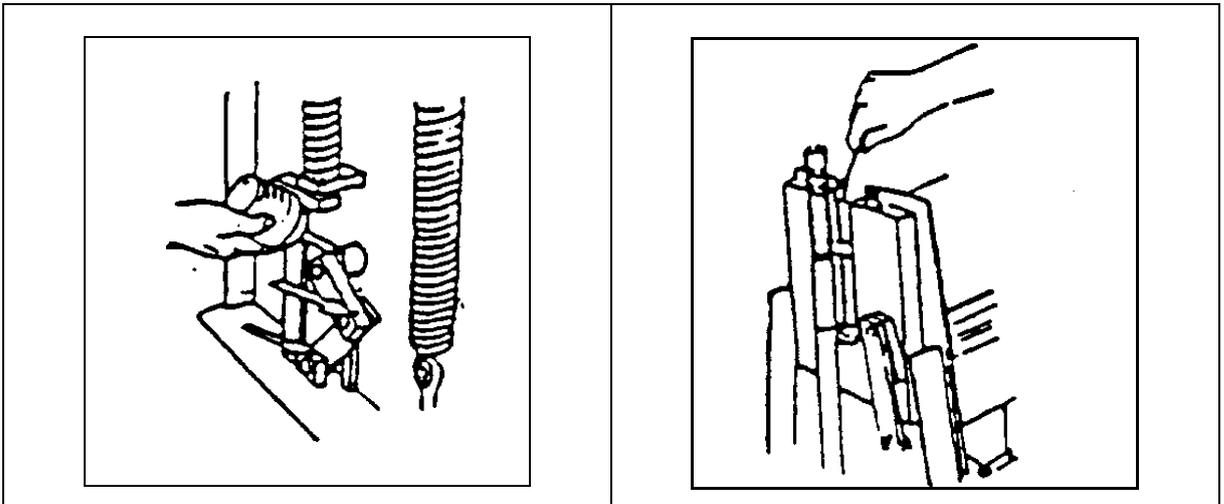
2.5 Operation in pictures

The machine is operated as shown below





2.6 Maintenance in pictures

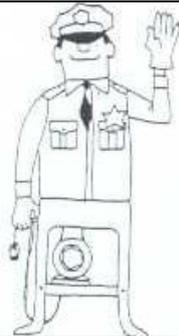


3. Safety rules for stationary power tools.

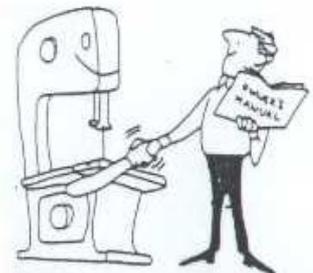
Follow them to achieve best results and full benefit from your new machine.

The good craftsman respects the tools with which he works. He knows they represent years of constantly improved design. He also knows that they are dangerous if misused.

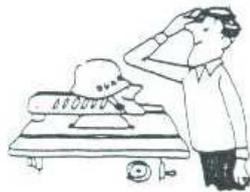
The safety rules are based on approved practices in industrial and home shops.



1. Know your power tool. Read the owner's manual carefully. Learn its applications and limitations, as well as the specific potential hazards peculiar to this tool.



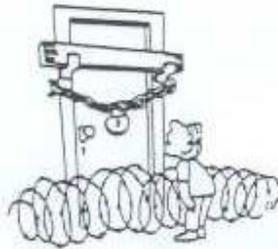
2. Keep guard in place and in working order.



3. Ground all tools. If tool is equipped with three-prong plug, it should be plugged into a three-hole electrical receptacle. If an adapter is used to accommodate a two-prong receptacle, the adapter wire must be attached to a known ground. Never remove the third prong.



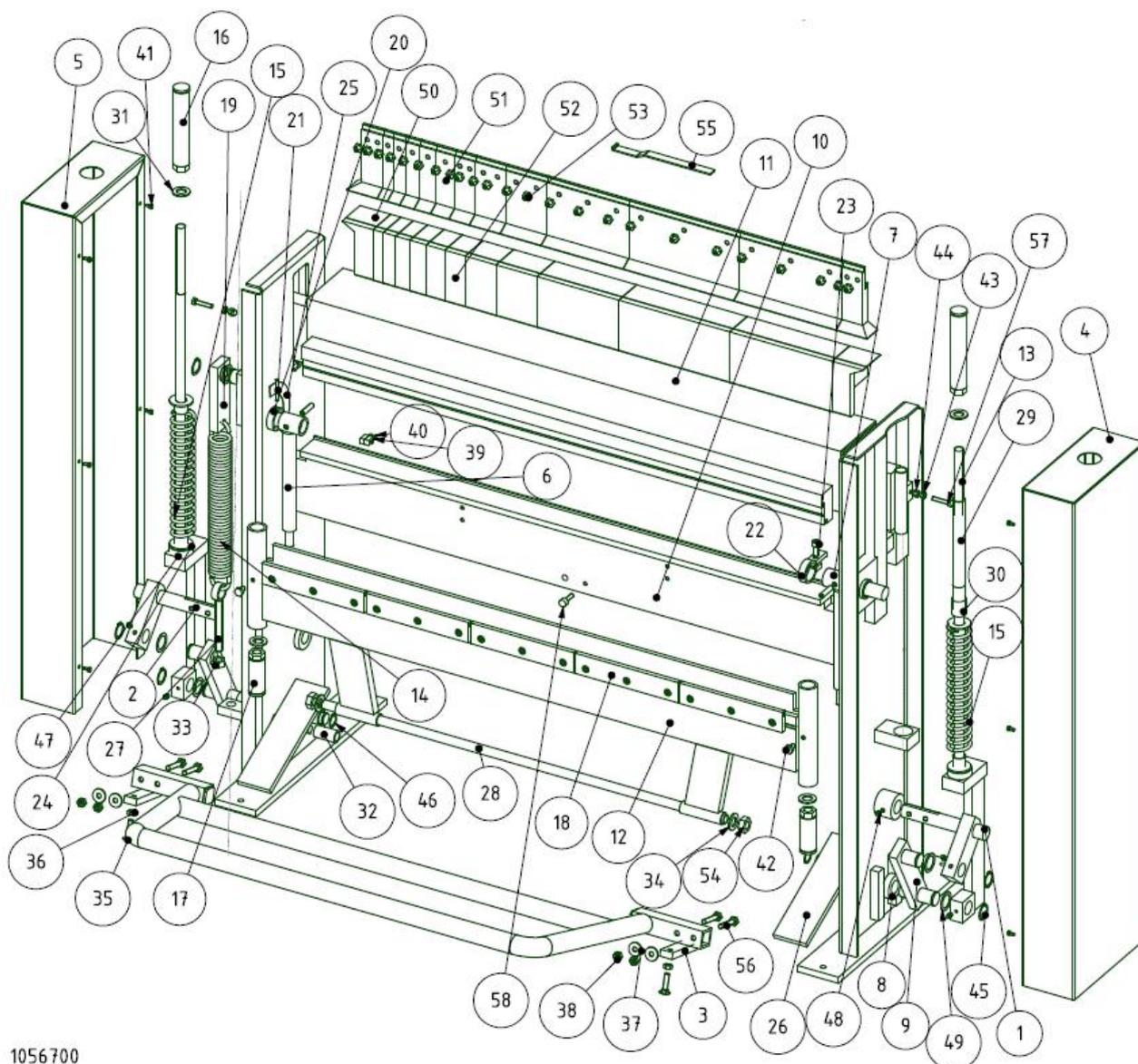
<p>4. Remove adjusting keys and wrenches. Form habit of checking to see that keys and adjusting wrenches is removed before turning it on.</p>	<p>5. Cluttered areas and benches invite accidents.</p>
<p>6. Avoid dangerous environment. Don't use power tools in damp or wet locations or expose them to rain. Keep your work area well lighted.</p>	<p>6. Keep children away. All visitors should be kept in a safe distance from work area.</p>
<p>8. Make workshop kidproof with padlocks, master switches, or by removing starter keys.</p>	<p>9. Don't force tool. It will do the job better and be safer at the rate for which it was designed.</p>
<p>10. Use right tool. Don't force tool or attachment to do a job it was not designed for.</p>	<p>11. Wear proper apparel. Wear no loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.</p>
<p>12. Always use safety glasses. Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses only have impact resistant lenses. They are NOT safety glasses.</p>	<p>13. Secure works. Use clamps or vise to hold works, when practical. It's safer than using your hands and it frees both hands to operate tool.</p>



<p>14. Don't overreach. Keep proper footing and balance at all times.</p> 	<p>15. Maintain tools with care. Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.</p> 
<p>16. Disconnect tools before servicing and when changing accessories such as grinding wheels, polishing mops, grinding belts, blades, bits, cutters, etc. Never leave a running machine, wait till the Machine has stopped. If parts of the machine are out of order the Machine should not be used before it has been repaired.</p> 	<p>17. Reduce the risk of unintentional starting. Make sure switch is in off position before plugging in.</p> 
<p>18. Use recommended accessories. Consult owner's manual for recommended accessories. Use of improper accessories may cause risk of injury to persons.</p>	<p>19. Never work in a way that can hurt you. Do not stand in a bent position. Stand straight. Alcohol and other drugs are not to be taken while working with the machine.</p>

3. Spare parts

3.1 Exploded drawing



1056700

3.2 Spare part list

00313350 HM HS-3-3SH Superflex - 1270x2,00mm 00312650 HM HS-2A-3SH Superflex - 1020x2,50mm		Order number	
Pos.	Description	1270	1020
1	Arm trykbom højre	1056783	=
2	Arm trykbom venstre	1056780	=
3	Trykbom komplet	1056771	1056772
4	Skærm komplet højre	1056703	=
5	Skærm komplet venstre	1056704	=
6	Aksel + kødben V.	1056843	=
7	Aksel + kødben H.	1056844	=
8	Glidring	1056795	=
9	Vippearm Komplet	1056802	=
10	Grundstel	1056770	1056769
11	Overvange komplet	1056748	1056745

12	Bukkevange komplet	1056756	1056757
13	Trækstang kpl	1056820	=
14	Trækfjeder 8x49,5xtæt vx405 indv. i øjet	9014362	=
15	Trykfjeder 7x53,5x295x18,5 V TES	9014358	=
16	Håndtag Lang Møtrik	1056830	=
17	Håndtag Kort Møtrik	1056833	=
18	Press Piece HM f/quick-change	Se nedenfor	=
19	Holder for fjeder	1056836	=
20	Ring for grademåler	1056865	=
21	Pinolskrue M6x50	0105027	=
22	Stop for bukkevinkel	1056867	=
23	Unbracobolt M10x25	5431215	=
24	Mellemlæg for fjeder	1056870	=
25	Vinkelmåler digital	10436151	=
26	Fodpedal komplet	1056875	=
27	Fjederholder	1056880	=
28	Bolt for forspænd	1056885	1056884
29	Juster for trykfjeder indre	1056888	=
30	Muffe sort 3/4" V V S	1056889	=
31	Polyamidskive ø21	0101697	=
32	Støddæmper v/fodpedal	1056892	=
33	Møtrik M16, højre	0928641	=
34	Facetskive ø21	0231337	=
35	Brædebolt M10x35	5490098	=
36	Møtrik M10	5438761	=
37	Skærmskive A2 ø10,5x30x2,5	2323212	=
38	Låsemøtrik M10	1943643	=
39	Segmentstøtte undervange	1056894	=
40	Unbracobolt M5x16	0120626	=
41	Maskinskrue M5x10 m/cyl. hoved og kær	0120630	=
42	Stålsætbolt M10x16	0300133	=
43	Møtrik M8	0231350	=
44	Topmøtrik M8, messing	0232304	=
45	Låsering Ø30 udv.	0111330	=
46	Låsering Ø25 udv.	0111325	=
47	Støddæmperring pur skive	0100072	=
48	Smørenippel M8	2005976	=
49	Stålafstandsskive ø42ø30x0,5	0101698	=
50	Segmentsæt kpl UV	10312665	10313365
51	Segmentsæt kpl OV	10312663	10313363
52	Segmentsæt kpl BV	10312667	10313367
53	Bolt m/kugle og fjeder inkl. møtrik.	10310055	=
54	Møtrik M20, sort	0928645	=
55	Værktøj til skift af segment	10311062	=
56	Stålsætbolt M10x55	0110107	=
57	Stålsætbolt M8x40 FZB	0207969	=

3.3 Extra accessories

- You can get a Back gauge for the Superflex bending machine. Order number: 10311005.
- It can be an advantage to get an extra set of the right and left segments also called Corner Segments. When you have the extra segments you have more possibilities to bend special bents.

3.4 Spare parts Back gauge

Benævnelse	1270 og 1020
Kibgreb M8x20	0105134
Svingarm f/anslag	46010007

Skinne f/anslag	46010106
C-profil f/anslag	46010005
Klods f/anslag t/superflex	46010010
Unbracobolt M8x55	0350014
Møtrik f/anslag	10306067
Unbracobolt M8x10 Buttonhead	0120500

3.5 Spare parts segments

Segments can be purchased either as a complete set or as individual parts. In this section lists the various items. Abbreviations: OV = Clamping beam, BV = bending beam, UV = Lower beam.

Benævnelse	1270	1020
Segment set kpl UV (stykliste)	10313365	10312665
Segment set kpl UV (vare)	10313369	10312669
Segment set kpl OV (stykliste)	10312671	10312670
Segment set kpl OV (vare)	10313363	10312663
Segment set kpl BV (stykliste)	10313367	10312667
Segment set kpl BV (vare)	10313368	10312668
Segment set Right/Left UV	10312659	=
Segment set Right/Left OV	10312661	=
Segment set Right/Left BV	10312660	=
Lower Beam segments		
Segment 25 mm UV	10312730	=
Segment 30 mm UV	10312731	=
Segment 35 mm UV	10312732	=
Segment 40 mm UV	10312733	=
Segment 45 mm UV	10312734	=
Segment 50 mm UV	10312735	=
Segment 75 mm UV	10312736	
Segment 100 mm UV	10312737	=
Segment 200 mm UV	10312738	=
Segment 250 mm UV	10312739	
Segment 270 mm UV	10312740	=
Cornersegment Left UV	10311065	=
Cornersegment Right UV	10311066	=
Clamping beam segments		
Segment 25 mm OV	10312687	=
Segment 30 mm OV	10312688	=
Segment 35 mm OV	10312689	=
Segment 40 mm OV	10312690	=
Segment 45 mm OV	10312691	=
Segment 50 mm OV	10312692	=
Segment 75 mm OV	10312695	=
Segment 100 mm OV	10312696	=
Segment 200 mm OV	10312697	=
Segment 250 mm OV *)	10312698	
Segment 270 mm OV	10312699	=
Corner segment v OV	10312662	=
Corner segment h OV	10312664	=
Bending beam segments		
Segment 25 mm BV	10312705	=
Segment 30 mm BV	10312706	=
Segment 35 mm BV	10312707	=
Segment 40 mm BV	10312708	=

Segment 45 mm BV	10312709	=
Segment 50 mm BV	10312710	=
Segment 75 mm BV	10312711	=
Segment 100 mm BV	10312712	=
Segment 200 mm BV	10312713	=
Segment 250 mm BV *)	10312714	
Segment 270 mm BV	10312715	=
Corner segment v BV	10311068	=
Corner segment h BV	10311069	=

Note: *) Segments of width 250 mm, only the HS-3-3SH is 250 mm wider than the HS-2A-3SH

3.6 Press Piece HM f/quick-change

The Press Piece HM f / quick change segment mentioned in the parts list consists of the following parts:

- 1) 1 unit Pressure Piece / Hose Iron No.: 1056886
- 2) 1 piece O-ring cords f / quick change No.: 10312685
- 3) 3 pieces Unbracobolt M8x25 No.: 0105052

4. Technical Data

4.1 Exterior Dimensions

The machine's exterior dimensions in mm:

Type	A	B	C	D	E	F
HS-2A-3SH	305	1335	550	730	1240	1450
HS-3-3SH	305	1335	550	730	1240	1700

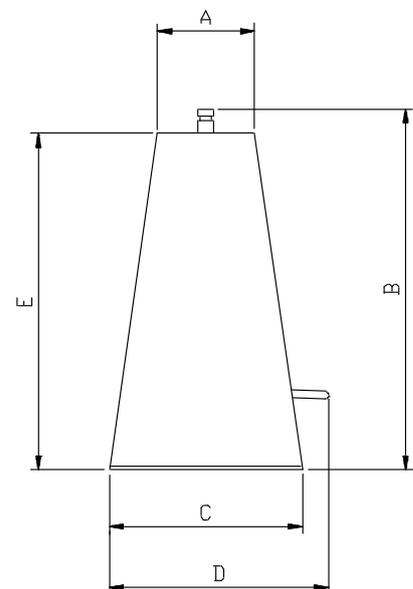
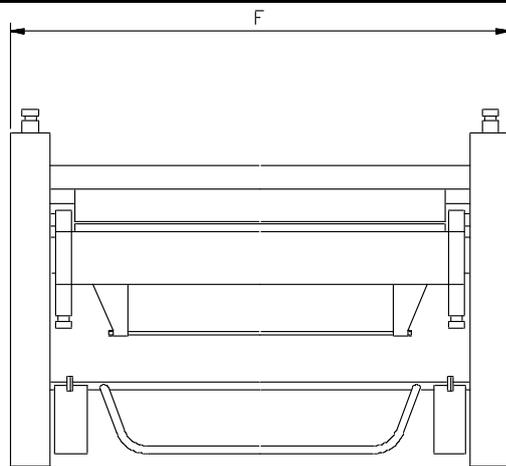


Fig.: 5.1 Exterior dimensions

4.2 Machine specifications

The technical specifications are given for bending ordinary steel St37.

Type	Work length [mm]	Plate thickness [mm]	Max. Lifting height [mm]	Bending angle [grader]	Weight [kg]
HS-2A-3SH	1020	2,50	50	135°	430
HS-3-3SH	1270	2,00	50	135°	477

4.3 Warranty

Guarantee

If within 2 year of purchase this machine supplied by Scantool A/S becomes defective due to faulty materials or workmanship we guarantee to repair or replace the machine or defective part or parts free of charge provided that:

1. The product is returned complete to one of our Service Branches or Official Service Agents.
2. The product has not been misused or carelessly handled and in particular has not been used in a manner contrary to the operating instructions.
3. Repairs have not been made or attempted by other than our own Service Staff or the staff of our Official Service Agents.
4. The invoice copy attached, when sent for repair.
5. Wear parts are not covered by the warranty