



for impressive
performances

TOOLING CATALOGUE



Bending table

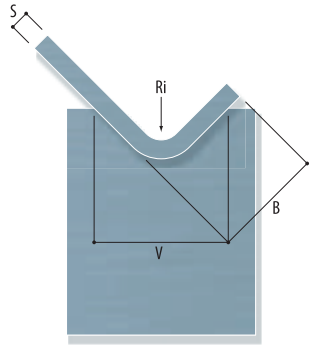


FIGURE 01

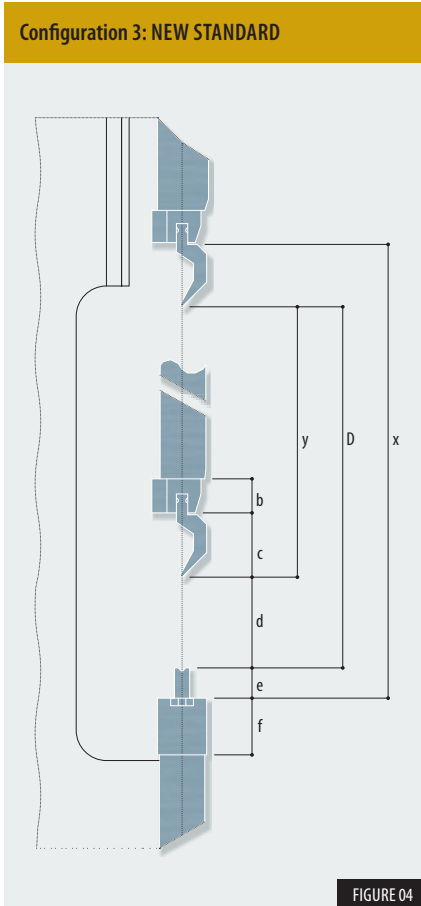
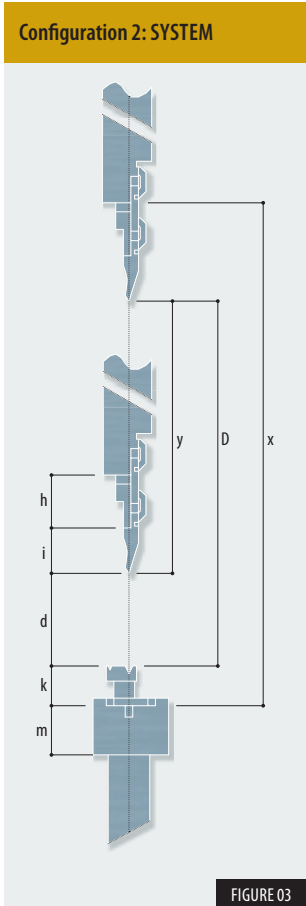
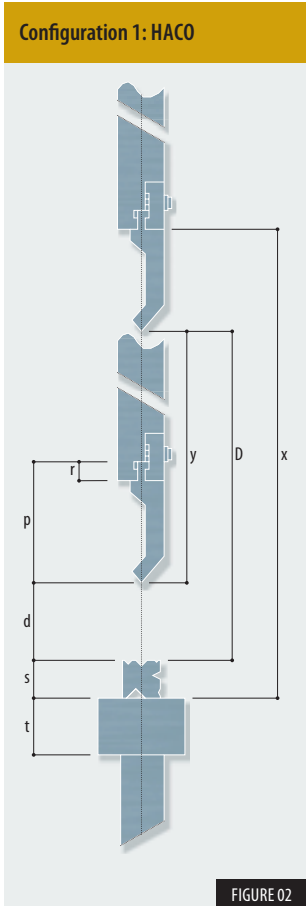
- V = die-opening
- B = minimum length of the leg for a bending angle $\alpha = 90^\circ$
- Ri = internal radius of the bend
- F = required bending force in tonnage per meter bending length
- S = plate thickness in mm

Remark: this table is only suitable for mild steel with $R_m = 450 \text{ N/mm}^2$ and $E = 210000 \text{ N/mm}^2$ and only applicable to air bending!

V	F (T/m)	4	5	6	7	8	10	12	14	16	18	20	25	32	40	50	63	80	100	125	160	200	250				
B	F (T/m)	2,8	3,5	4,2	4,9	5,7	7	8,5	10	11	13	14	18	23	28	35	45	57	71	88	113	141	177				
Ri		0,6	0,8	1	1,1	1,3	1,6	1,9	2,2	2,6	2,9	3,2	4	5	6,5	8	10	13	16	20	25	32	40				
S																											
0,5		4	3																								
0,6		6	5	4	3	3																					
0,8		7	8	7	6	5	4																				
1		9	13	11	9	8	6	5																			
1,2				15	13	12	9	8	7																		
1,4					18	16	13	10	9	8																	
1,6						20	16	14	12	10	9																
2							26	51	18	16	14	13															
2,3								28	24	21	19	17	14														
2,6									31	27	24	22	17	13													
3										36	32	29	23	18													
3,2											36	33	26	20	16												
3,5												39	31	24	20	16											
4													51	41	32	26	20										
4,5														52	40	32	26										
5															50	40	32	25									
6																58	46	37	29								
7																	78	63	50	39	31						
8																		82	65	51	41						
9																			82	65	52	41					
10																				80	64	51	40				
12																					115	92	74	58	46		
16																						164	131	102	82	65	
19																							185	144	115	92	
22																								193	155	124	
25																									250	200	160
30																										288	230

CONFIGURATIONS

Different tool-systems are offered to fulfill the specific needs of the customers.



legend

- b = height modifix manual/hydraulic clamping
- c = height equidur tooling
- D = remaining opening - ram in top dead centre
- d = remaining opening - ram in bottom dead centre
- e = height OZU – Single-V die
- f = height (anti-deflection-) table for OZU – Single-V die
- h = height intermediate part System tooling
- i = height punch System tooling
- k = height die System tooling
- m = height (anti-deflection-) table for System tooling
- p = total height punch Haco type
- r = height clamping Haco type punch
- s = height Haco type Multi-V die
- t = height (anti-deflection-) table for Haco Multi-V die
- x = total daylight-opening
- y = stroke

Remaining opening 'D' when ram is in top dead centre?

- $D = X - P + R - S$ when using configuration 1
- $D = X - H - I - K$ when using configuration 2
- $D = X - C - E$ when using configuration 3

'D' must be at least = plate thickness + desired daylight-opening (so positif).

Remaining opening 'd' when ram is in bottom dead centre?

- $d = X - P + R - S - Y$ when using configuration 1
- $d = X - H - I - K - Y$ when using configuration 2
- $d = X - C - E - Y$ when using configuration 3

'd' always needs to be a negative value.

'd' always needs to be at least half the V-opening to be able to bend down to 90° (e.g. V-opening = 12 mm => 'd' needs to be ≤ -6 mm).



for impressive performances

SYSTEM TOOLING

FIGURE 05



System tooling is available in a wide range of different bottom and top tools, to adapt the machine to almost any specific job. System tooling is manufactured within the smallest tolerances in standard lengths of 835 and 415 mm so they can be put together to achieve larger lengths. System bottom tooling in combination with an anti-deflection table results in a machine with the highest degree of accuracy.

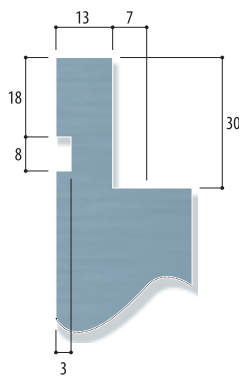
System tooling has the following characteristics:

- Material C 50
- Dies have hardened and ground shoulder radii 52 à 58 HRC
- Punches have a hardened and ground tip 52 à 58 HRC
- Punches and dies are available in following lengths 835 mm - 415 mm - 835 mm, sectionalised

Items marked with are available ex stock, others according to actual delivery time.

Dimensions standard clamping CE-tooling.

FIGURE 06



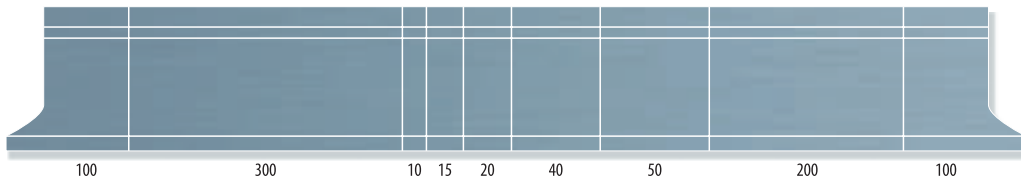
System tooling is only hardened and ground on the indicated places.

FIGURE 07



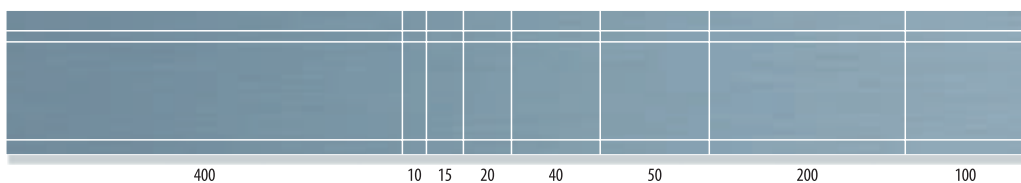
Standard sectionalised system punches.

FIGURE 08



Standard sectionalised system dies.

FIGURE 09



SYSTEM TOOLING

Tooling composition for pressbrakes with different working lengths.

pressbrake - bending length:

- 1600 mm = (2 x 835 mm)
- 2000 mm = (2 x 835 mm) + (1 x 415 mm)
- 2500 mm = (3 x 835 mm)
- 3000 mm = (4 x 835 mm)
- 3600 mm = (4 x 835 mm) + (1 x 415 mm)
- 4000 mm = (5 x 835 mm)
- 4300 mm = (5 x 835 mm) + (1 x 415 mm)
- 5000 mm = (6 x 835 mm)
- 6000 mm = (7 x 835 mm) + (1 x 415 mm)

It is possible to equip a pressbrake, machined to take Haco type uppertooling, with System tooling when a special, optional, intermediate clamp is used. The height of this intermediate clamp (see figures 10 and 11) depends on:

- daylight opening of the pressbrake;
- tooling being used.

Prices and specifications are available on request. Please give dimensions A to D (or tonnage and bending length of the pressbrake), daylight opening and the tooling being used. The height of the intermediate clamp (dimension E) can thus be determined by us.

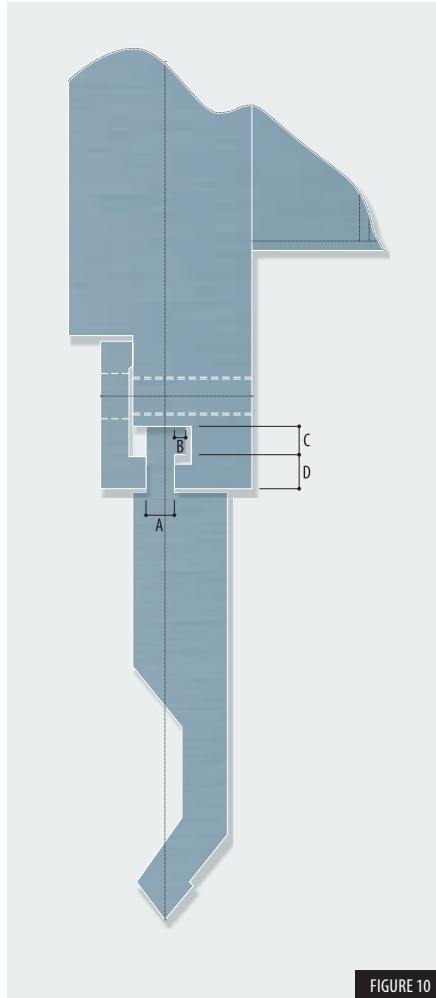


FIGURE 10

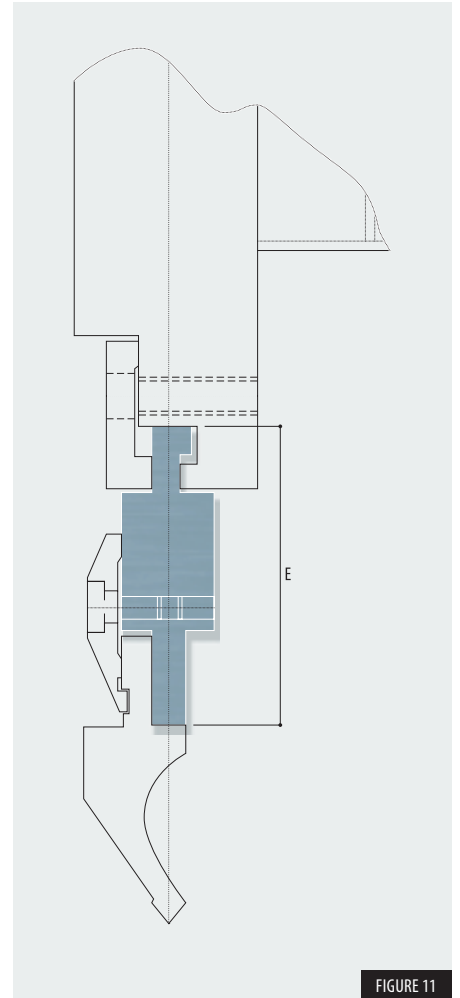


FIGURE 11

Height of the intermediate clamps to take System tooling (see figure 12) are as follows:

- capacity ≤ 1500 kN H = 100 mm
- 1500 kN < capacity ≤ 2250 kN H = 150 mm
- capacity > 2250 kN Haco tooling

Upper tools can be turned when using special bolts (on request).

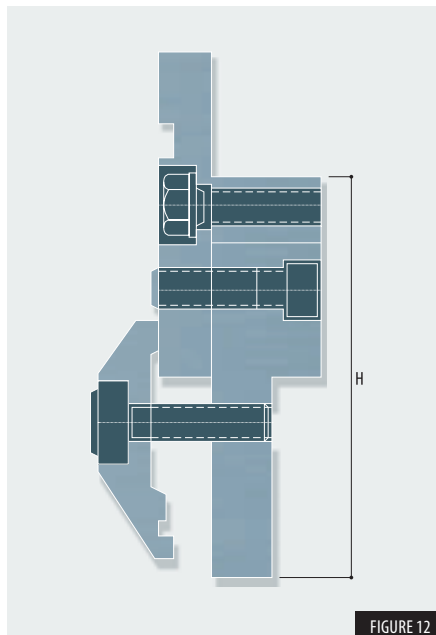


FIGURE 12

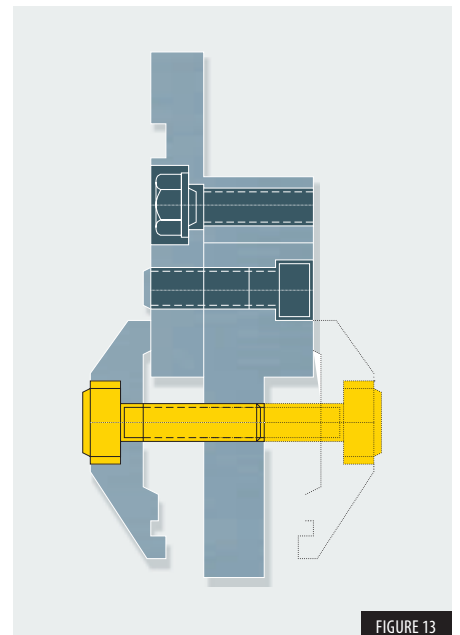
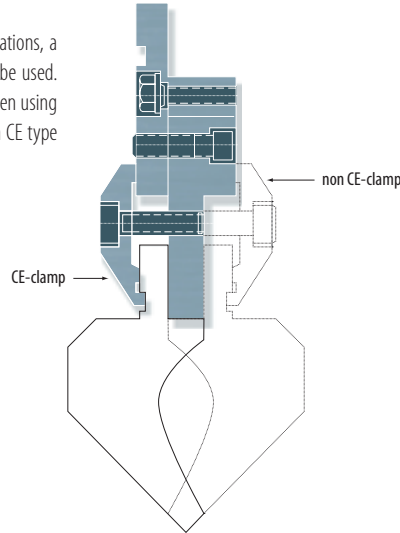


FIGURE 13

SYSTEM TOOLING

When using System tooling there is, in accordance with the current CE regulations, a groove in the length of the bending punch. An adapted securityclamp must be used. When using this securityclamp, it only is possible to clamp CE type tooling. When using a special clamp (non CE) both CE type tooling (with security-groove) and non CE type tooling (no security-groove) can be clamped.

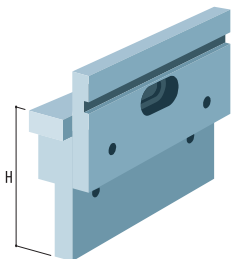
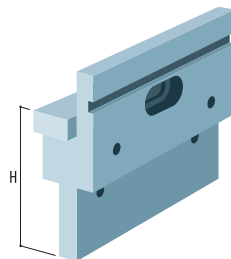
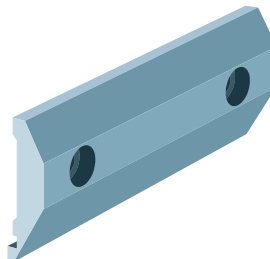
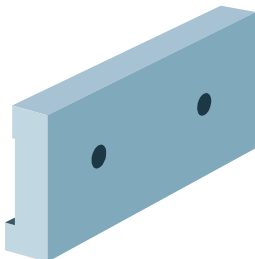
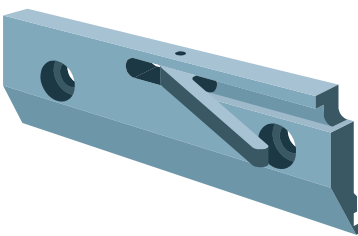
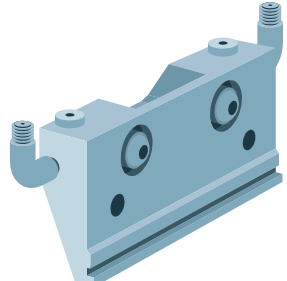
FIGURE 14



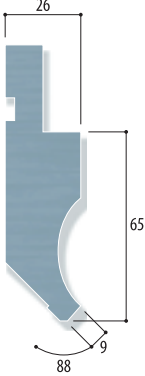


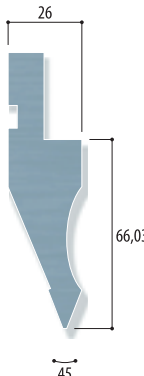
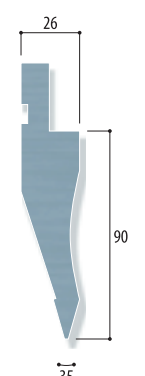
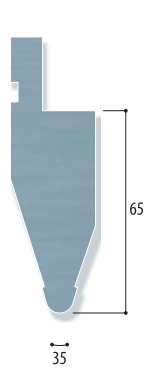
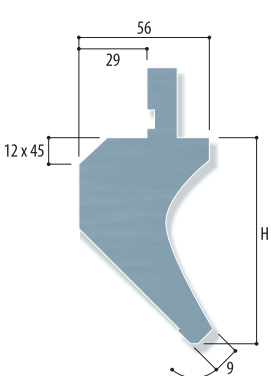
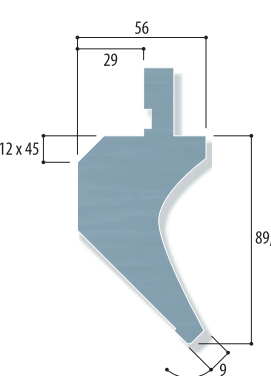
Clamps for system tooling.

Remark: when ordering the above mentioned intermediate parts, security clamps are not yet included.

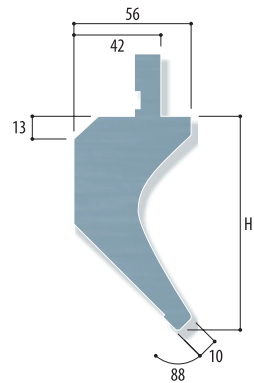
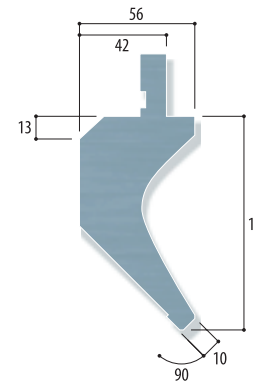
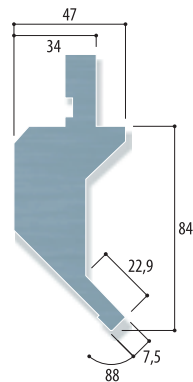
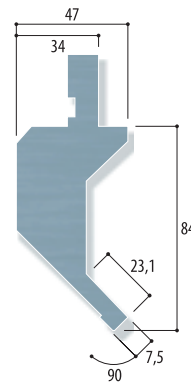
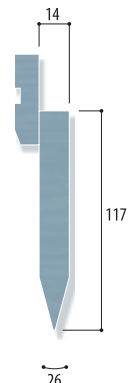
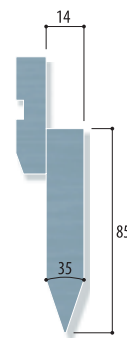
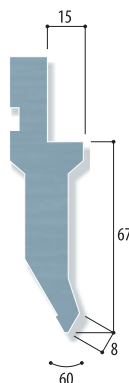
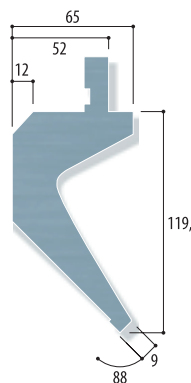
Remark: the intermediate parts are delivered with anti-deflection wedge.

<p>FIGURE 15</p> <p>max. 100 T/m H = 100</p> <p>order number STSG100</p>	<p>Intermediate part for System tooling</p> 	<p>FIGURE 16</p> <p>max. 100 T/m H = 150</p> <p>order number STSG150</p>	<p>Intermediate part for System tooling</p> 
<p>FIGURE 17</p> <p>100 T/m</p> <p>order number SKLG1</p>	<p>Security clamp for System tooling with groove</p> 	<p>FIGURE 18</p> <p>70 T/m</p> <p>order number STSG100</p>	<p>Clamp for System tooling without groove</p> 
<p>FIGURE 19</p> <p>50 T/m</p> <p>order number S4003BRG</p>	<p>Security clamp for System tooling with groove – fast manual clamping</p> 	<p>FIGURE 20</p> <p>100 T/m</p> <p>order number PHCUT</p>	<p>Security clamp for System tooling with groove – hydraulic clamping</p> 

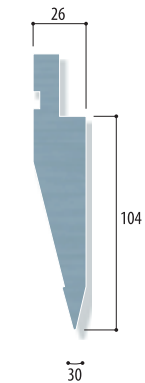
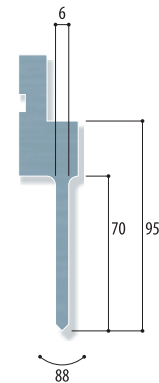
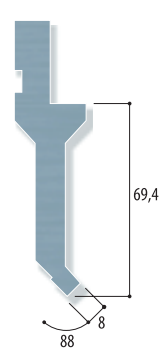
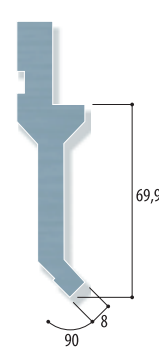
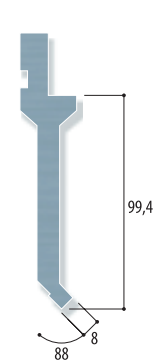
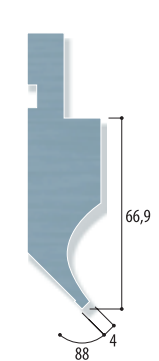
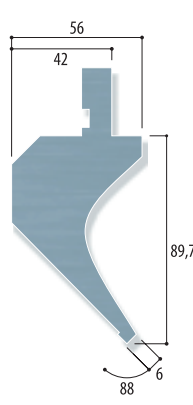
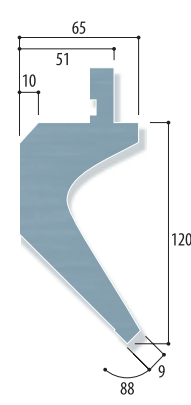
SYSTEM TOOLING

<table border="1"> <tr><td>100 T/m</td><td>☐</td></tr> <tr><td>X = 2,9</td><td></td></tr> <tr><td>SG1010881</td><td>835</td></tr> <tr><td>SG1010882</td><td>415</td></tr> <tr><td>SG1010883</td><td>SCT</td></tr> </table> 	100 T/m	☐	X = 2,9		SG1010881	835	SG1010882	415	SG1010883	SCT		<table border="1"> <tr><td>100 T/m</td><td>☐</td></tr> <tr><td>X = 0,8</td><td></td></tr> <tr><td>SG1010884</td><td>835</td></tr> <tr><td>SG1010885</td><td>415</td></tr> <tr><td>SG1010886</td><td>SCT</td></tr> </table> 	100 T/m	☐	X = 0,8		SG1010884	835	SG1010885	415	SG1010886	SCT													
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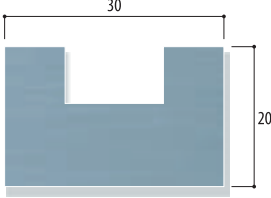
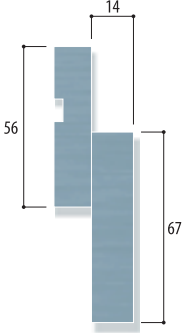
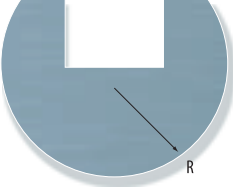
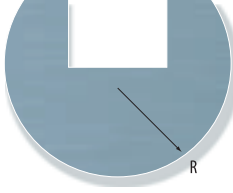
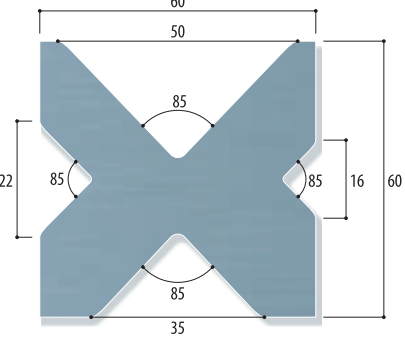
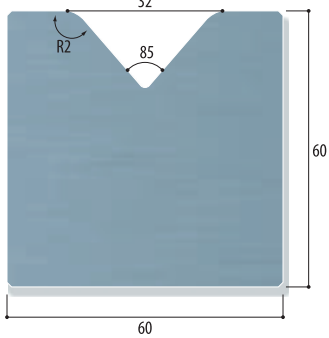
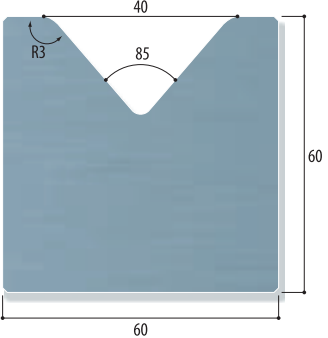
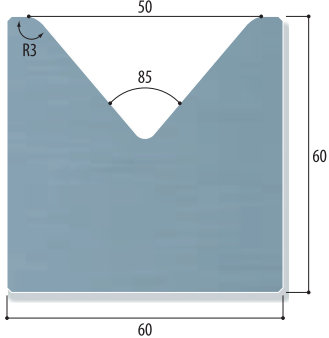
SYSTEM TOOLING

<p>50 T/m</p> <p>X = 3,0 H = 103,45</p> <table border="1"> <tr><td>SG1015881</td><td>835</td></tr> <tr><td>SG1015882</td><td>415</td></tr> <tr><td>SG1015883</td><td>SCT</td></tr> </table> <p>X = 1,0 H = 104,48</p> <table border="1"> <tr><td>SG1015884</td><td>835</td></tr> <tr><td>SG1015885</td><td>415</td></tr> <tr><td>SG1015886</td><td>SCT</td></tr> </table>	SG1015881	835	SG1015882	415	SG1015883	SCT	SG1015884	835	SG1015885	415	SG1015886	SCT	 <p>Dimensions: 56, 42, 13, 88, 10, H</p>	<p>50 T/m</p> <p>X = 1,0</p> <table border="1"> <tr><td>SG1015901</td><td>835</td></tr> <tr><td>SG1015902</td><td>415</td></tr> <tr><td>SG1015903</td><td>SCT</td></tr> </table>	SG1015901	835	SG1015902	415	SG1015903	SCT	 <p>Dimensions: 56, 42, 13, 90, 104,48</p>
SG1015881	835																				
SG1015882	415																				
SG1015883	SCT																				
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SG1015885	415																				
SG1015886	SCT																				
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SG1015903	SCT																				
<p>15 T/m</p> <p>X = 0,8</p> <table border="1"> <tr><td>SG1016881</td><td>835</td></tr> <tr><td>SG1016882</td><td>415</td></tr> <tr><td>SG1016883</td><td>SCT</td></tr> </table>	SG1016881	835	SG1016882	415	SG1016883	SCT	 <p>Dimensions: 47, 34, 84, 22,9, 7,5, 88</p>	<p>15 T/m</p> <p>X = 0,6</p> <table border="1"> <tr><td>SG1016901</td><td>835</td></tr> <tr><td>SG1016902</td><td>415</td></tr> <tr><td>SG1016903</td><td>SCT</td></tr> </table>	SG1016901	835	SG1016902	415	SG1016903	SCT	 <p>Dimensions: 47, 34, 84, 23,1, 7,5, 90</p>						
SG1016881	835																				
SG1016882	415																				
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<p>50 T/m</p> <p>X = 0,8</p> <table border="1"> <tr><td>SG1017261</td><td>835</td></tr> <tr><td>SG1017262</td><td>415</td></tr> </table>	SG1017261	835	SG1017262	415	 <p>Dimensions: 14, 117, 26</p>	<p>50 T/m</p> <p>X = 0,8</p> <table border="1"> <tr><td>SG1017351</td><td>835</td></tr> <tr><td>SG1017352</td><td>415</td></tr> </table>	SG1017351	835	SG1017352	415	 <p>Dimensions: 14, 85, 35</p>										
SG1017261	835																				
SG1017262	415																				
SG1017351	835																				
SG1017352	415																				
<p>50 T/m</p> <p>X = 0,8</p> <table border="1"> <tr><td>SG1018601</td><td>835</td></tr> <tr><td>SG1018602</td><td>415</td></tr> <tr><td>SG1018603</td><td>SCT</td></tr> </table>	SG1018601	835	SG1018602	415	SG1018603	SCT	 <p>Dimensions: 15, 67, 8, 60</p>	<p>50 T/m</p> <p>R = 0,2</p> <table border="1"> <tr><td>SG1020881</td><td>835</td></tr> <tr><td>SG1020882</td><td>415</td></tr> <tr><td>SG1020883</td><td>SCT</td></tr> </table>	SG1020881	835	SG1020882	415	SG1020883	SCT	 <p>Dimensions: 65, 52, 12, 119,9, 88, 9</p>						
SG1018601	835																				
SG1018602	415																				
SG1018603	SCT																				
SG1020881	835																				
SG1020882	415																				
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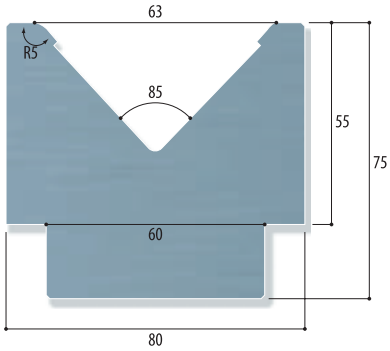
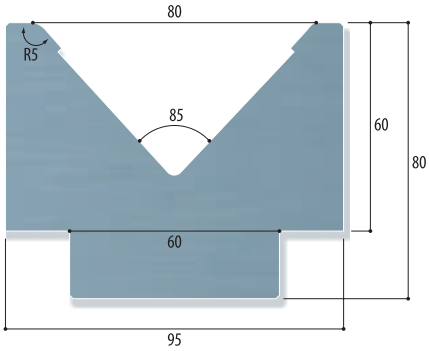
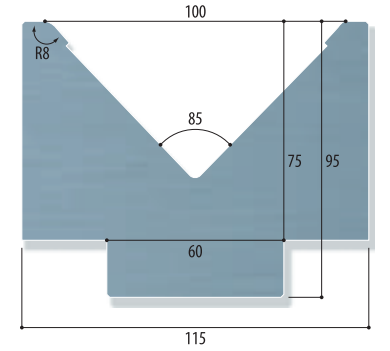
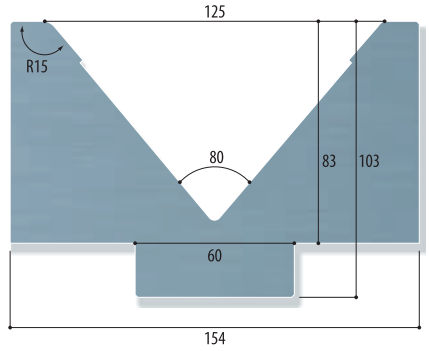
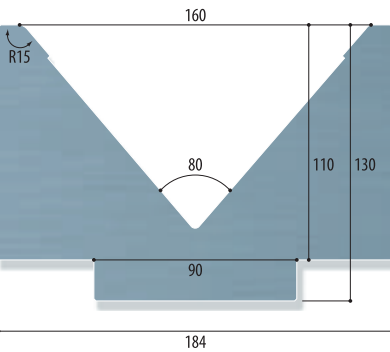
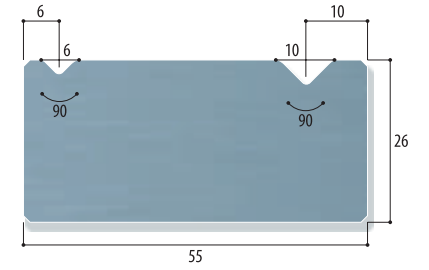
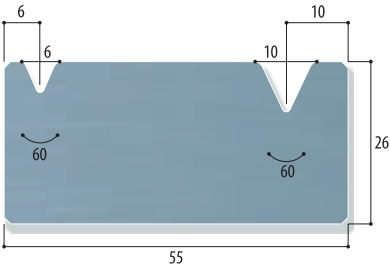
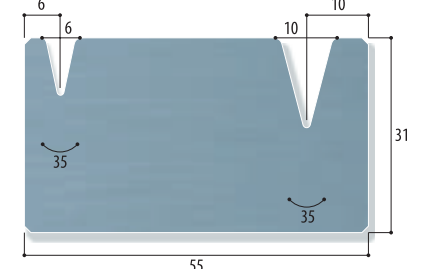
SYSTEM TOOLING

<p>100 T/m</p> <p>R = 0,8</p> <table border="1"> <tr><td>SG1021301</td><td>835</td></tr> <tr><td>SG1021302</td><td>415</td></tr> <tr><td>SG1021303</td><td>SCT</td></tr> </table>	SG1021301	835	SG1021302	415	SG1021303	SCT	 <p>26</p> <p>104</p> <p>30</p>	<p>50 T/m</p> <p>R = 0,2</p> <table border="1"> <tr><td>SG1022881</td><td>835</td></tr> <tr><td>SG1022882</td><td>415</td></tr> <tr><td>SG1022883</td><td>SCT</td></tr> </table>	SG1022881	835	SG1022882	415	SG1022883	SCT	 <p>6</p> <p>95</p> <p>70</p> <p>88</p>
SG1021301	835														
SG1021302	415														
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SG1022881	835														
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<p>30 T/m</p> <p>R = 0,2</p> <table border="1"> <tr><td>SG1023881</td><td>835</td></tr> <tr><td>SG1023882</td><td>415</td></tr> <tr><td>SG1023883</td><td>SCT</td></tr> </table>	SG1023881	835	SG1023882	415	SG1023883	SCT	 <p>69,4</p> <p>8</p> <p>88</p>	<p>30 T/m</p> <p>R = 0,2</p> <table border="1"> <tr><td>SG1023901</td><td>835</td></tr> <tr><td>SG1023902</td><td>415</td></tr> <tr><td>SG1023903</td><td>SCT</td></tr> </table>	SG1023901	835	SG1023902	415	SG1023903	SCT	 <p>69,9</p> <p>8</p> <p>90</p>
SG1023881	835														
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<p>30 T/m</p> <p>R = 0,2</p> <table border="1"> <tr><td>SG1024881</td><td>835</td></tr> <tr><td>SG1024882</td><td>415</td></tr> <tr><td>SG1024883</td><td>SCT</td></tr> </table>	SG1024881	835	SG1024882	415	SG1024883	SCT	 <p>99,4</p> <p>8</p> <p>88</p>	<p>20 T/m</p> <p>R = 0,2</p> <table border="1"> <tr><td>SG1026881</td><td>835</td></tr> <tr><td>SG1026882</td><td>415</td></tr> <tr><td>SG1026883</td><td>SCT</td></tr> </table>	SG1026881	835	SG1026882	415	SG1026883	SCT	 <p>66,9</p> <p>4</p> <p>88</p>
SG1024881	835														
SG1024882	415														
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SG1026881	835														
SG1026882	415														
SG1026883	SCT														
<p>50 T/m</p> <p>R = 0,2</p> <table border="1"> <tr><td>SG1046881</td><td>835</td></tr> <tr><td>SG1046882</td><td>415</td></tr> <tr><td>SG1046883</td><td>SCT</td></tr> </table>	SG1046881	835	SG1046882	415	SG1046883	SCT	 <p>56</p> <p>42</p> <p>89,7</p> <p>6</p> <p>88</p>	<p>50 T/m</p> <p>R = 0,2</p> <table border="1"> <tr><td>SG1047881</td><td>835</td></tr> <tr><td>SG1047882</td><td>415</td></tr> <tr><td>SG1047883</td><td>SCT</td></tr> </table>	SG1047881	835	SG1047882	415	SG1047883	SCT	 <p>65</p> <p>51</p> <p>10</p> <p>120</p> <p>9</p> <p>88</p>
SG1046881	835														
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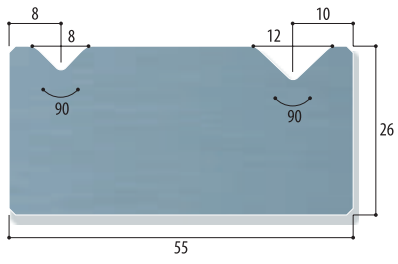
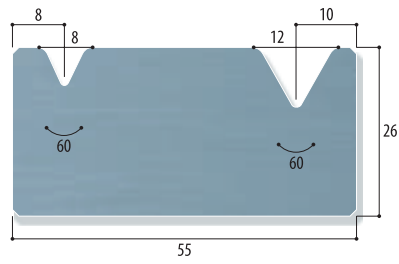
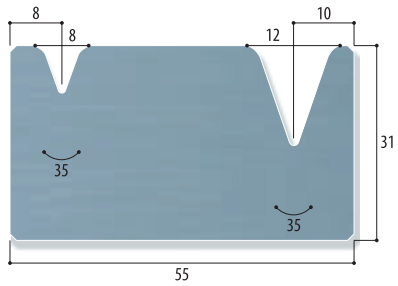
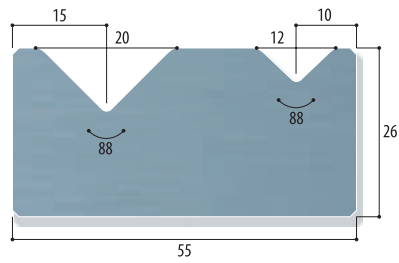
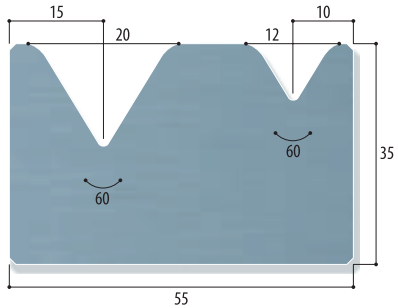
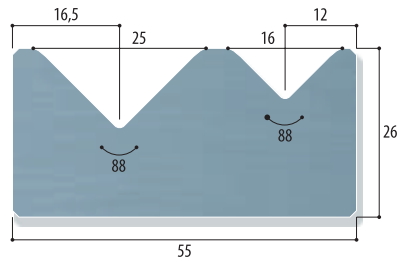
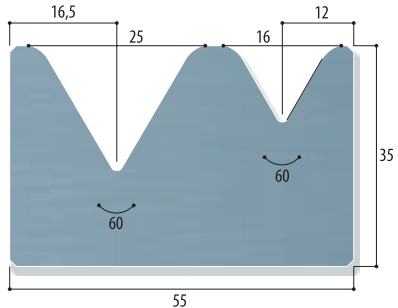
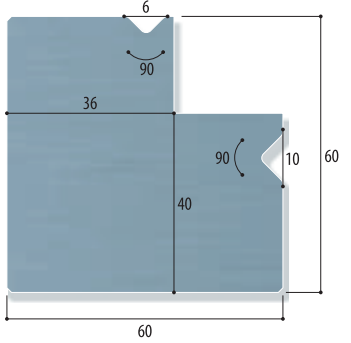
SYSTEM TOOLING

<table border="1"> <thead> <tr><th colspan="2">100 T/m</th></tr> </thead> <tbody> <tr><td>SG40021</td><td>835</td></tr> <tr><td>SG40022</td><td>415</td></tr> <tr><td>-</td><td>SCT</td></tr> </tbody> </table>	100 T/m		SG40021	835	SG40022	415	-	SCT		<table border="1"> <thead> <tr><th colspan="2">100 T/m</th></tr> </thead> <tbody> <tr><td>SG40051</td><td>835</td></tr> <tr><td>SG40052</td><td>415</td></tr> <tr><td>-</td><td>SCT</td></tr> </tbody> </table>	100 T/m		SG40051	835	SG40052	415	-	SCT																													
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SYSTEM TOOLING

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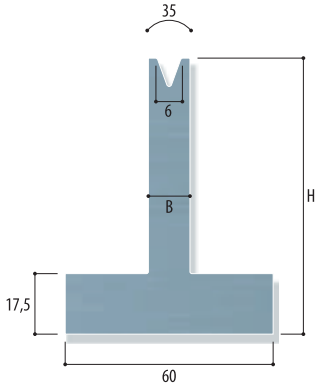
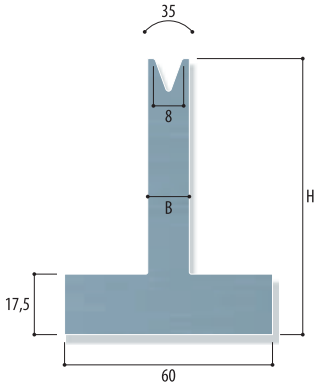
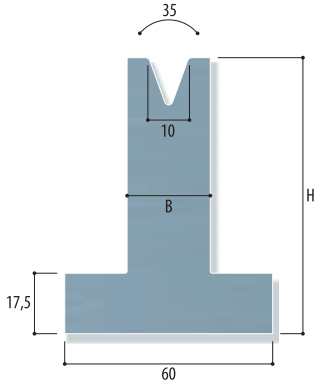
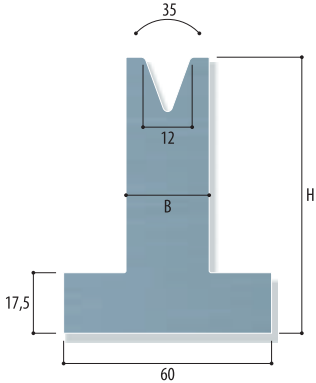
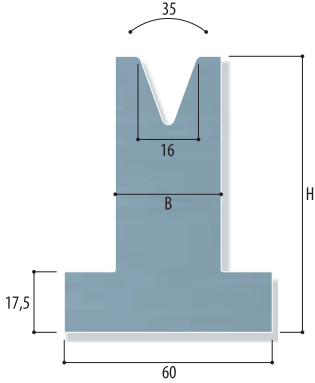
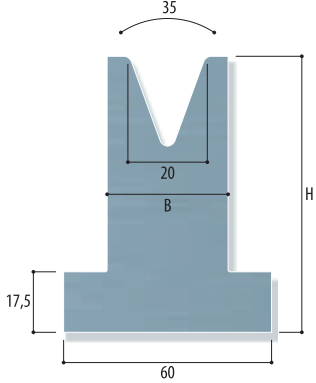
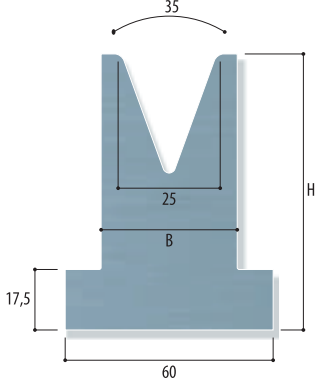
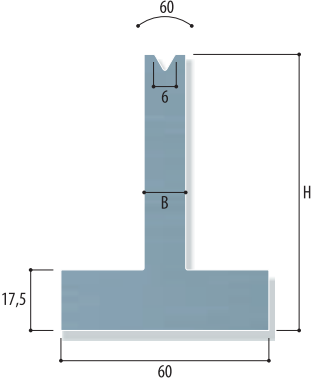
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for impressive performances

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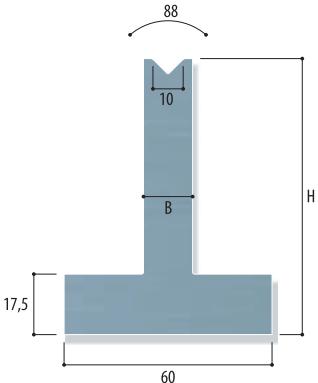
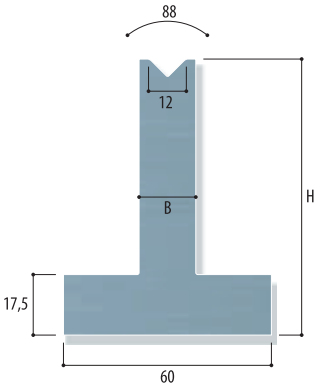
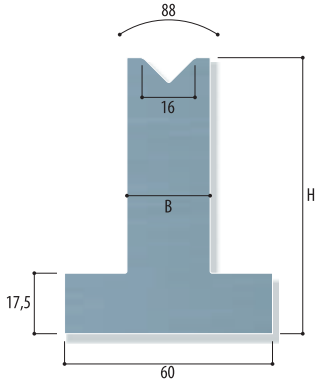
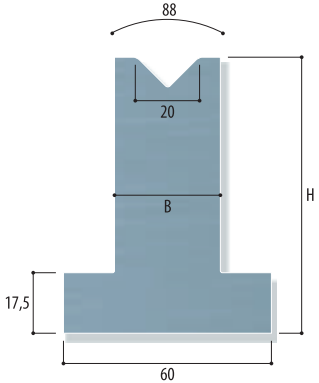
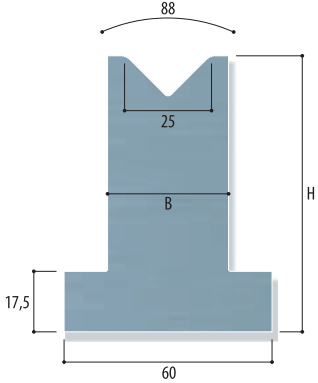
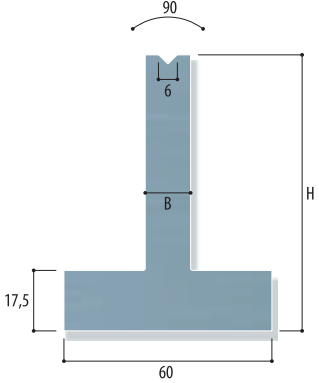
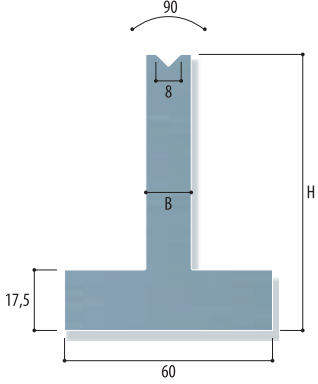
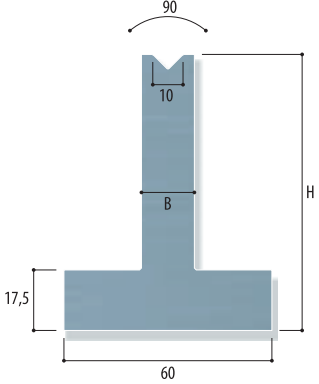
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<p>60 T/m</p> <p>H = 80 B = 16</p> <table border="1"> <tr><td>S2060121L</td><td>835</td></tr> <tr><td>S2060122L</td><td>415</td></tr> <tr><td>S2060123L</td><td>SCT</td></tr> </table> <p>H = 120 B = 18</p> <table border="1"> <tr><td>S2060121H</td><td>835</td></tr> <tr><td>S2060122H</td><td>415</td></tr> <tr><td>S2060123H</td><td>SCT</td></tr> </table>	S2060121L	835	S2060122L	415	S2060123L	SCT	S2060121H	835	S2060122H	415	S2060123H	SCT		<p>60 T/m</p> <p>H = 80 B = 24</p> <table border="1"> <tr><td>S2060161L</td><td>835</td></tr> <tr><td>S2060162L</td><td>415</td></tr> <tr><td>S2060163L</td><td>SCT</td></tr> </table> <p>H = 120 B = 24</p> <table border="1"> <tr><td>S2060161H</td><td>835</td></tr> <tr><td>S2060162H</td><td>415</td></tr> <tr><td>S2060163H</td><td>SCT</td></tr> </table>	S2060161L	835	S2060162L	415	S2060163L	SCT	S2060161H	835	S2060162H	415	S2060163H	SCT	
S2060121L	835																										
S2060122L	415																										
S2060123L	SCT																										
S2060121H	835																										
S2060122H	415																										
S2060123H	SCT																										
S2060161L	835																										
S2060162L	415																										
S2060163L	SCT																										
S2060161H	835																										
S2060162H	415																										
S2060163H	SCT																										
<p>60 T/m</p> <p>H = 80 B = 30</p> <table border="1"> <tr><td>S2060201L</td><td>835</td></tr> <tr><td>S2060202L</td><td>415</td></tr> <tr><td>S2060203L</td><td>SCT</td></tr> </table> <p>H = 120 B = 30</p> <table border="1"> <tr><td>S2060201H</td><td>835</td></tr> <tr><td>S2060202H</td><td>415</td></tr> <tr><td>S2060203H</td><td>SCT</td></tr> </table>	S2060201L	835	S2060202L	415	S2060203L	SCT	S2060201H	835	S2060202H	415	S2060203H	SCT		<p>60 T/m</p> <p>H = 80 B = 35</p> <table border="1"> <tr><td>S2060251L</td><td>835</td></tr> <tr><td>S2060252L</td><td>415</td></tr> <tr><td>S2060253L</td><td>SCT</td></tr> </table> <p>H = 120 B = 35</p> <table border="1"> <tr><td>S2060251H</td><td>835</td></tr> <tr><td>S2060252H</td><td>415</td></tr> <tr><td>S2060253H</td><td>SCT</td></tr> </table>	S2060251L	835	S2060252L	415	S2060253L	SCT	S2060251H	835	S2060252H	415	S2060253H	SCT	
S2060201L	835																										
S2060202L	415																										
S2060203L	SCT																										
S2060201H	835																										
S2060202H	415																										
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S2060251H	835																										
S2060252H	415																										
S2060253H	SCT																										
<p>100 T/m</p> <p>H = 80 B = 12</p> <table border="1"> <tr><td>S208861L</td><td>835</td></tr> <tr><td>S208862L</td><td>415</td></tr> <tr><td>S208863L</td><td>SCT</td></tr> </table> <p>H = 120 B = 14</p> <table border="1"> <tr><td>S208861H</td><td>835</td></tr> <tr><td>S208862H</td><td>415</td></tr> <tr><td>S208863H</td><td>SCT</td></tr> </table>	S208861L	835	S208862L	415	S208863L	SCT	S208861H	835	S208862H	415	S208863H	SCT		<p>100 T/m</p> <p>H = 80 B = 12</p> <table border="1"> <tr><td>S208881L</td><td>835</td></tr> <tr><td>S208882L</td><td>415</td></tr> <tr><td>S208883L</td><td>SCT</td></tr> </table> <p>H = 120 B = 18</p> <table border="1"> <tr><td>S208881H</td><td>835</td></tr> <tr><td>S208882H</td><td>415</td></tr> <tr><td>S208883H</td><td>SCT</td></tr> </table>	S208881L	835	S208882L	415	S208883L	SCT	S208881H	835	S208882H	415	S208883H	SCT	
S208861L	835																										
S208862L	415																										
S208863L	SCT																										
S208861H	835																										
S208862H	415																										
S208863H	SCT																										
S208881L	835																										
S208882L	415																										
S208883L	SCT																										
S208881H	835																										
S208882H	415																										
S208883H	SCT																										

SYSTEM TOOLING

<p>100 T/m</p> <p>H = 80 B = 14</p> <table border="1"> <tr><td>S2088101L</td><td>835</td></tr> <tr><td>S2088102L</td><td>415</td></tr> <tr><td>S2088103L</td><td>SCT</td></tr> </table> <p>H = 120 B = 18</p> <table border="1"> <tr><td>S2088101H</td><td>835</td></tr> <tr><td>S2088102H</td><td>415</td></tr> <tr><td>S2088103H</td><td>SCT</td></tr> </table>	S2088101L	835	S2088102L	415	S2088103L	SCT	S2088101H	835	S2088102H	415	S2088103H	SCT	 <p>Diagram showing a T-shaped tooling profile with a top width of 88, a base width of 60, and a height of H. The top width is divided into a 10-unit wide central section and a 17.5-unit wide base section. The top section has a V-shaped notch with a width of 10.</p>	<p>100 T/m</p> <p>H = 80 B = 16</p> <table border="1"> <tr><td>S2088121L</td><td>835</td></tr> <tr><td>S2088122L</td><td>415</td></tr> <tr><td>S2088123L</td><td>SCT</td></tr> </table> <p>H = 120 B = 18</p> <table border="1"> <tr><td>S2088121H</td><td>835</td></tr> <tr><td>S2088122H</td><td>415</td></tr> <tr><td>S2088123H</td><td>SCT</td></tr> </table>	S2088121L	835	S2088122L	415	S2088123L	SCT	S2088121H	835	S2088122H	415	S2088123H	SCT	 <p>Diagram showing a T-shaped tooling profile with a top width of 88, a base width of 60, and a height of H. The top width is divided into a 12-unit wide central section and a 17.5-unit wide base section. The top section has a V-shaped notch with a width of 12.</p>
S2088101L	835																										
S2088102L	415																										
S2088103L	SCT																										
S2088101H	835																										
S2088102H	415																										
S2088103H	SCT																										
S2088121L	835																										
S2088122L	415																										
S2088123L	SCT																										
S2088121H	835																										
S2088122H	415																										
S2088123H	SCT																										
<p>100 T/m</p> <p>H = 80 B = 24</p> <table border="1"> <tr><td>S2088161L</td><td>835</td></tr> <tr><td>S2088162L</td><td>415</td></tr> <tr><td>S2088163L</td><td>SCT</td></tr> </table> <p>H = 120 B = 24</p> <table border="1"> <tr><td>S2088161H</td><td>835</td></tr> <tr><td>S2088162H</td><td>415</td></tr> <tr><td>S2088163H</td><td>SCT</td></tr> </table>	S2088161L	835	S2088162L	415	S2088163L	SCT	S2088161H	835	S2088162H	415	S2088163H	SCT	 <p>Diagram showing a T-shaped tooling profile with a top width of 88, a base width of 60, and a height of H. The top width is divided into a 16-unit wide central section and a 17.5-unit wide base section. The top section has a V-shaped notch with a width of 16.</p>	<p>100 T/m</p> <p>H = 80 B = 30</p> <table border="1"> <tr><td>S2088201L</td><td>835</td></tr> <tr><td>S2088202L</td><td>415</td></tr> <tr><td>S2088203L</td><td>SCT</td></tr> </table> <p>H = 120 B = 30</p> <table border="1"> <tr><td>S2088201H</td><td>835</td></tr> <tr><td>S2088202H</td><td>415</td></tr> <tr><td>S2088203H</td><td>SCT</td></tr> </table>	S2088201L	835	S2088202L	415	S2088203L	SCT	S2088201H	835	S2088202H	415	S2088203H	SCT	 <p>Diagram showing a T-shaped tooling profile with a top width of 88, a base width of 60, and a height of H. The top width is divided into a 20-unit wide central section and a 17.5-unit wide base section. The top section has a V-shaped notch with a width of 20.</p>
S2088161L	835																										
S2088162L	415																										
S2088163L	SCT																										
S2088161H	835																										
S2088162H	415																										
S2088163H	SCT																										
S2088201L	835																										
S2088202L	415																										
S2088203L	SCT																										
S2088201H	835																										
S2088202H	415																										
S2088203H	SCT																										
<p>100 T/m</p> <p>H = 80 B = 35</p> <table border="1"> <tr><td>S2088251L</td><td>835</td></tr> <tr><td>S2088252L</td><td>415</td></tr> <tr><td>S2088253L</td><td>SCT</td></tr> </table> <p>H = 120 B = 35</p> <table border="1"> <tr><td>S2088251H</td><td>835</td></tr> <tr><td>S2088252H</td><td>415</td></tr> <tr><td>S2088253H</td><td>SCT</td></tr> </table>	S2088251L	835	S2088252L	415	S2088253L	SCT	S2088251H	835	S2088252H	415	S2088253H	SCT	 <p>Diagram showing a T-shaped tooling profile with a top width of 88, a base width of 60, and a height of H. The top width is divided into a 25-unit wide central section and a 17.5-unit wide base section. The top section has a V-shaped notch with a width of 25.</p>	<p>100 T/m</p> <p>H = 80 B = 12</p> <table border="1"> <tr><td>S209061L</td><td>835</td></tr> <tr><td>S209062L</td><td>415</td></tr> <tr><td>S209063L</td><td>SCT</td></tr> </table> <p>H = 120 B = 14</p> <table border="1"> <tr><td>S209061H</td><td>835</td></tr> <tr><td>S209062H</td><td>415</td></tr> <tr><td>S209063H</td><td>SCT</td></tr> </table>	S209061L	835	S209062L	415	S209063L	SCT	S209061H	835	S209062H	415	S209063H	SCT	 <p>Diagram showing a T-shaped tooling profile with a top width of 90, a base width of 60, and a height of H. The top width is divided into a 6-unit wide central section and a 17.5-unit wide base section. The top section has a V-shaped notch with a width of 6.</p>
S2088251L	835																										
S2088252L	415																										
S2088253L	SCT																										
S2088251H	835																										
S2088252H	415																										
S2088253H	SCT																										
S209061L	835																										
S209062L	415																										
S209063L	SCT																										
S209061H	835																										
S209062H	415																										
S209063H	SCT																										
<p>100 T/m</p> <p>H = 80 B = 12</p> <table border="1"> <tr><td>S209081L</td><td>835</td></tr> <tr><td>S209082L</td><td>415</td></tr> <tr><td>S209083L</td><td>SCT</td></tr> </table> <p>H = 120 B = 14</p> <table border="1"> <tr><td>S209081H</td><td>835</td></tr> <tr><td>S209082H</td><td>415</td></tr> <tr><td>S209083H</td><td>SCT</td></tr> </table>	S209081L	835	S209082L	415	S209083L	SCT	S209081H	835	S209082H	415	S209083H	SCT	 <p>Diagram showing a T-shaped tooling profile with a top width of 90, a base width of 60, and a height of H. The top width is divided into an 8-unit wide central section and a 17.5-unit wide base section. The top section has a V-shaped notch with a width of 8.</p>	<p>100 T/m</p> <p>H = 80 B = 14</p> <table border="1"> <tr><td>S2090101L</td><td>835</td></tr> <tr><td>S2090102L</td><td>415</td></tr> <tr><td>S2090103L</td><td>SCT</td></tr> </table> <p>H = 120 B = 18</p> <table border="1"> <tr><td>S2090101H</td><td>835</td></tr> <tr><td>S2090102H</td><td>415</td></tr> <tr><td>S2090103H</td><td>SCT</td></tr> </table>	S2090101L	835	S2090102L	415	S2090103L	SCT	S2090101H	835	S2090102H	415	S2090103H	SCT	 <p>Diagram showing a T-shaped tooling profile with a top width of 90, a base width of 60, and a height of H. The top width is divided into a 10-unit wide central section and a 17.5-unit wide base section. The top section has a V-shaped notch with a width of 10.</p>
S209081L	835																										
S209082L	415																										
S209083L	SCT																										
S209081H	835																										
S209082H	415																										
S209083H	SCT																										
S2090101L	835																										
S2090102L	415																										
S2090103L	SCT																										
S2090101H	835																										
S2090102H	415																										
S2090103H	SCT																										



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<p>100 T/m</p> <p>H = 80 B = 16</p> <p>S2090121L 835 S2090122L 415 S2090123L SCT</p> <p>H = 120 B = 24</p> <p>S2090121H 835 S2090122H 415 S2090123H SCT</p>		<p>100 T/m</p> <p>H = 80 B = 24</p> <p>S2090161L 835 S2090162L 415 S2090163L SCT</p> <p>H = 120 B = 24</p> <p>S2090161H 835 S2090162H 415 S2090163H SCT</p>	
<p>100 T/m</p> <p>H = 80 B = 30</p> <p>S2090201L 835 S2090202L 415 S2090203L SCT</p> <p>H = 120 B = 30</p> <p>S2090201H 835 S2090202H 415 S2090203H SCT</p>		<p>100 T/m</p> <p>H = 80 B = 24</p> <p>S2090251L 835 S2090252L 415 S2090253L SCT</p> <p>H = 120 B = 24</p> <p>S2090251H 835 S2090252H 415 S2090253H SCT</p>	

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FIGURE 21



A budget friendly tool system specifically designed for each machine capacity. The multi V-die combines flexibility by having different V-openings into 1 die and easy tool turning. The top bending tool is available in different versions: flexible gooseneck tool 86°, straight tools of 86, 30, 60 or 180°, in full length or sectionalised.

Haco tooling has the following characteristics:

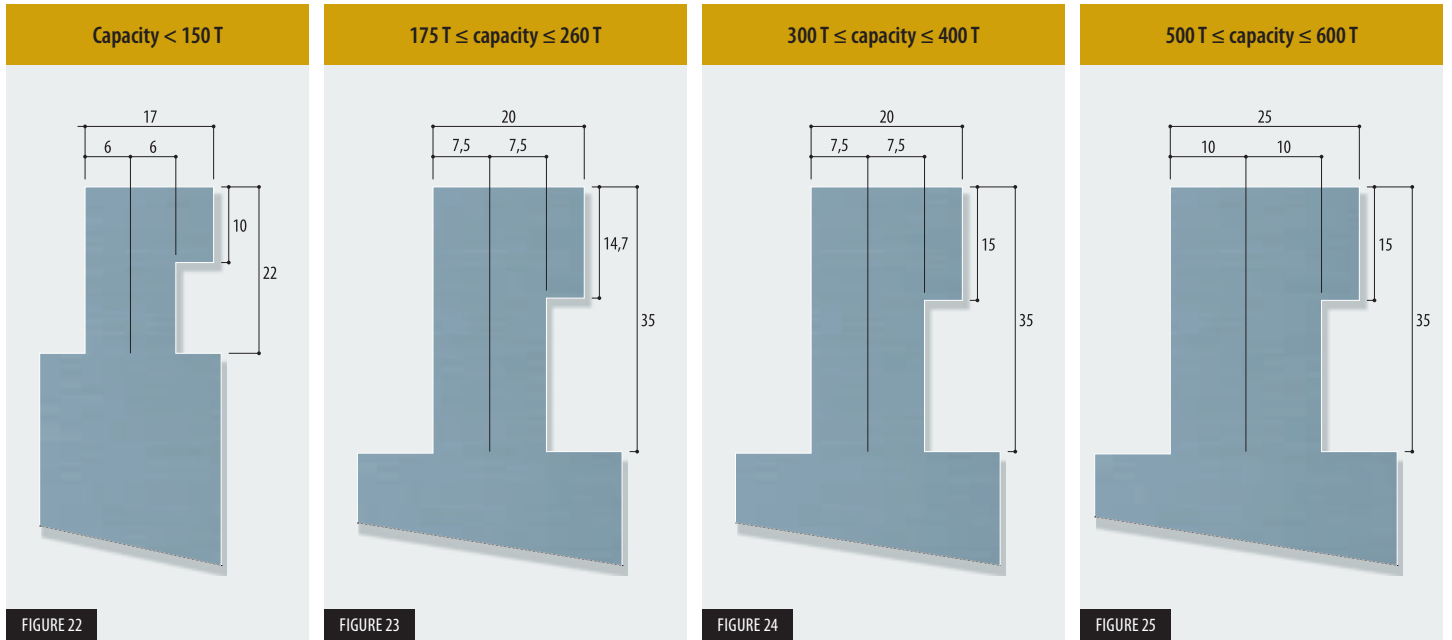
- Tensile strength, Rm 1000 - 1100 N/mm²
- Dies have fine-planed shoulder-radii, are not hardened and not ground.
- Punches have a fine-planed tip, are not hardened and not ground.
- Punches and dies are not interchangeable.
- Punches and dies are available in accordance with the machine bending length, that is:
1600 mm, 2100 mm, 2600 mm, 3100 mm, 3600 mm, 4100 mm, 4300 mm, 5000 mm, 6000 mm, 7000 mm and 8000 mm.

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The dimensions for the clamping of Haco tools depend on the tonnage of the pressbrake.
Following dimensions are valid:

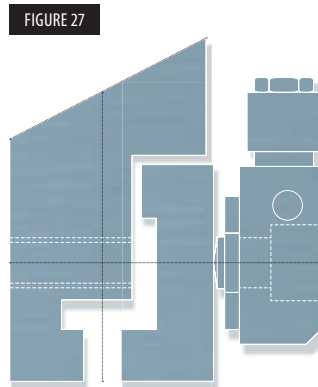
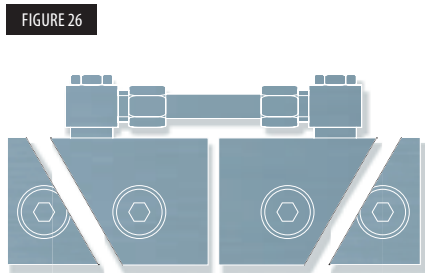


Tooling for pressbrakes with a capacity over 600 tons are available on request. In addition to the standard tooling shown in this catalogue, tooling can be supplied to suit the customers specific requirements, details are available on request.

Haco punches are available with standard cutting, starting with a minimum bending length of 2100 mm.

reference	constituing lengths	total length
PCUT 32	35 + 40 + 45 + 50 + 55 + 60 + 70 + 100 + 200 + 400 + 800 + rest	1855 + rest
PCUT 40	35 + 40 + 45 + 50 + 55 + 60 + 70 + 100 + 200 + 400 + 800 + 1000 + 1000 + rest	3855 + rest

On request, Haco-punches can be subdivided in different lengths according to the wishes of the customer. For each cut you need to calculate a loss of about 5 mm.



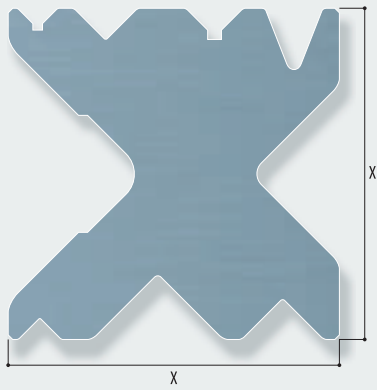
HACO TOOLING



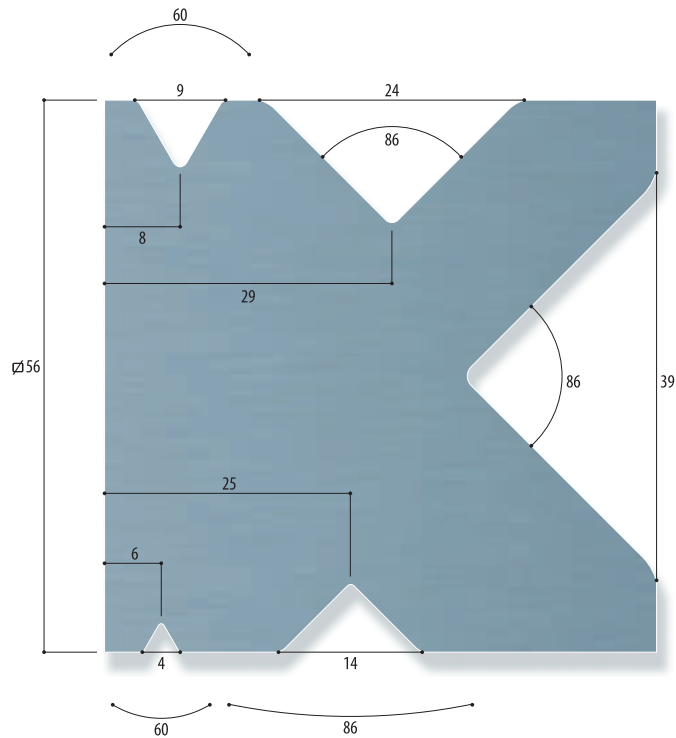
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SERIE	V-OPENING (mm)																			X (mm)								
	4	9	9,5	10	12	13	14	15	16	19	20	22	24	25	32	35	38	39	40	50	52	55	60	76	80	120	160	(figure 26)
400 kN										56
600 - 750 kN													70
1100 - 1500 kN										90
1750 - 2600 kN			100
3000 - 4000 kN										125
5000 - 6000 kN				160
7000 - 10000 kN																			200

FIGURE 28



DIE	
40 T	
order number	length
PV5615	1600
PV5620	2100
PV5625	2600

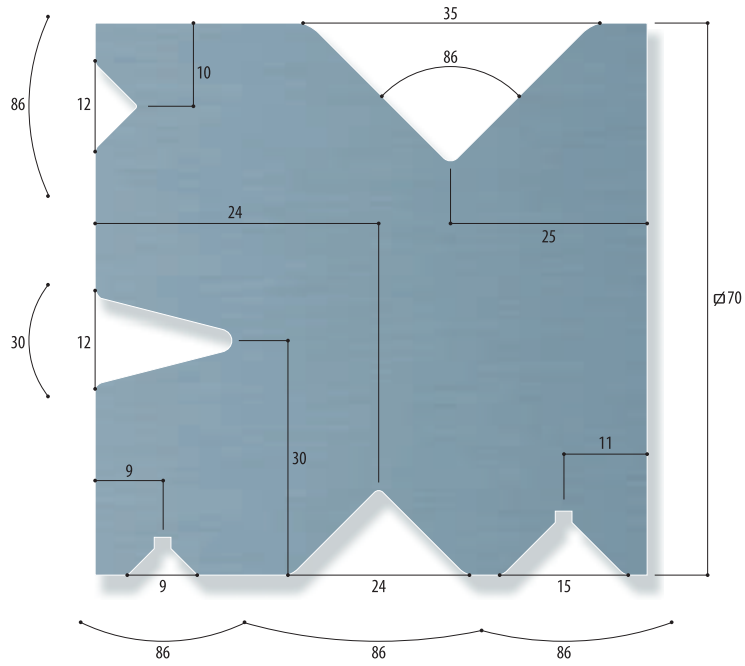


HACO TOOLING

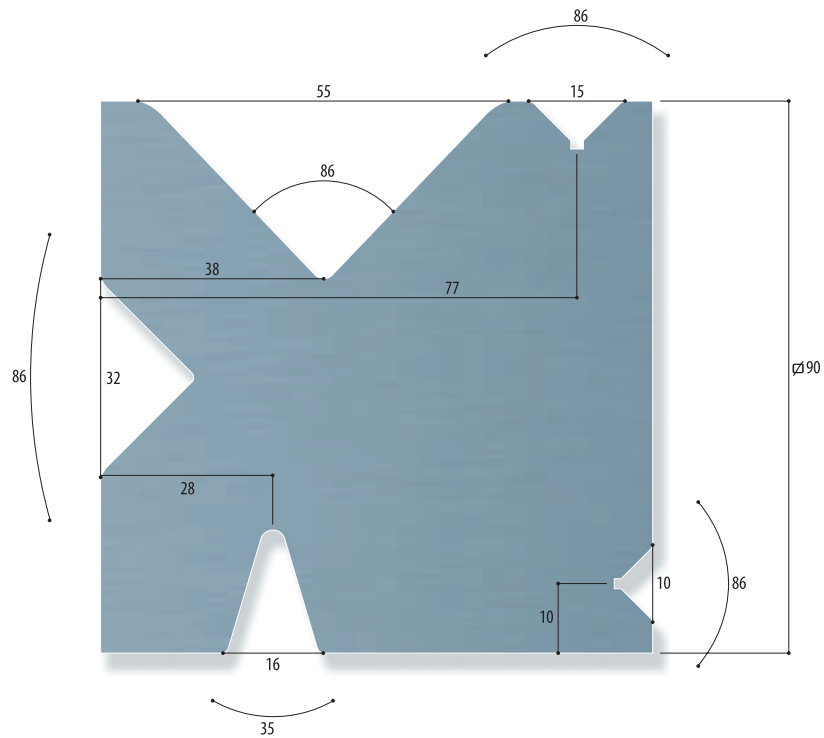


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DIE	
60 - 75 T	☐
order number	length
PV7020	2100
PV7025	2600
PV7030	3100

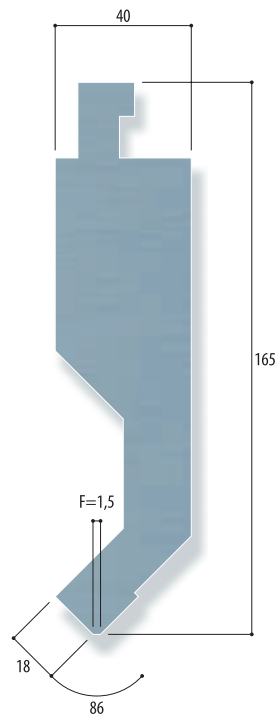


DIE	
100 - 150 T	☐
order number	length
PV9020	2100
PV9025	2600
PV9030	3100
PV9035	3600
PV9040	4100
PV9043	4300

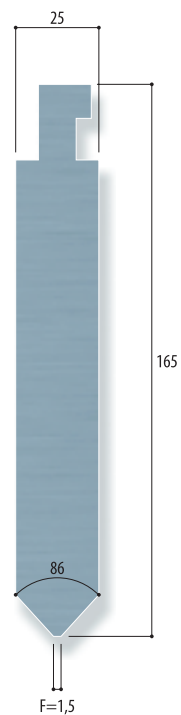


HACO TOOLING

PUNCH	
60 - 150 T <input type="checkbox"/>	
order number	length
P110C 20	2100
P110C 25	2600
P110C 30	3100
P110C 35	3600
P110C 40	4100
P110C 43	4300



PUNCH	
60 - 150 T <input type="checkbox"/>	
order number	length
P11090 20	2100
P11090 25	2600
P11090 30	3100
P11090 35	3600
P11090 40	4100
P11090 43	4300

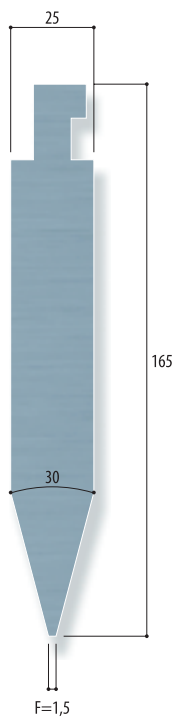




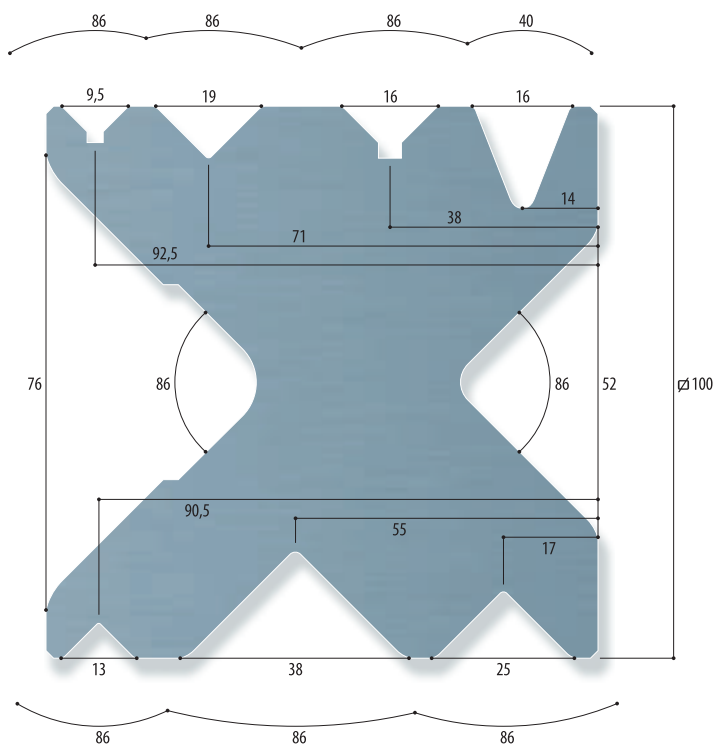
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HACO TOOLING

PUNCH	
60 - 150 T <input type="checkbox"/>	
order number	length
P11030 20	2100
P11030 25	2600
P11030 30	3100
P11030 35	3600
P11030 40	4100
P11030 43	4300

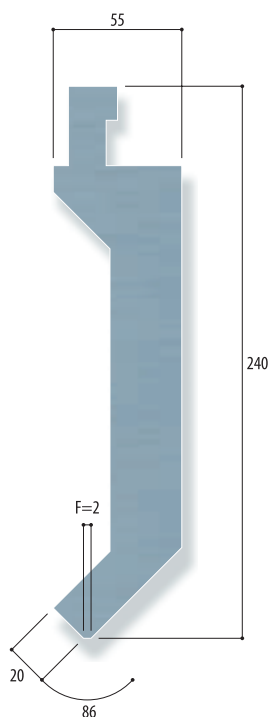


DIE	
175 - 260 T <input type="checkbox"/>	
order number	length
PV100 25	2600
PV100 30	3100
PV100 35	3600
PV100 40	4100
PV100 43	4300
PV100 50	5000
PV100 60	6000

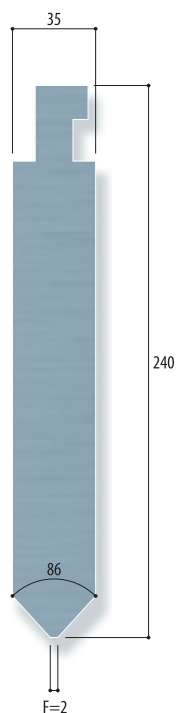


HACO TOOLING

PUNCH	
175 - 260 T <input type="checkbox"/>	
order number	length
P200C 25	2600
P200C 30	3100
P200C 35	3600
P200C 40	4100
P200C 43	4300
P200C 50	5000
P200C 60	6000



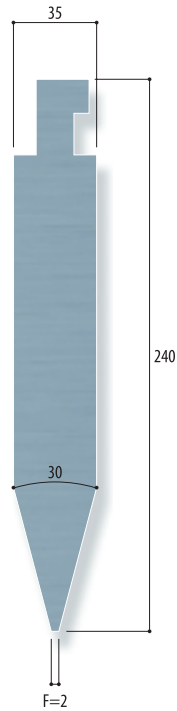
PUNCH	
175 - 260 T <input type="checkbox"/>	
order number	length
P20090 25	2600
P20090 30	3100
P20090 35	3600
P20090 40	4100
P20090 43	4300
P20090 50	5000
P20090 60	6000



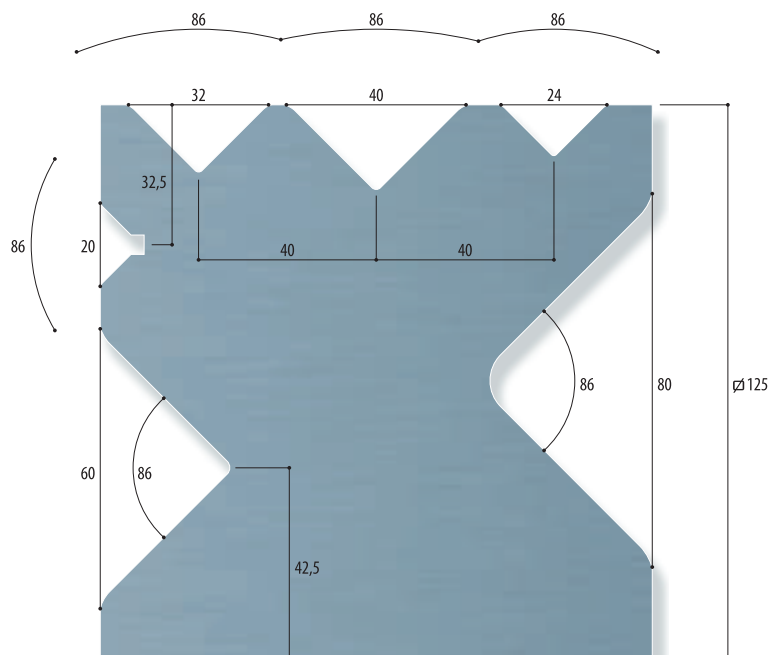


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PUNCH	
175 - 260 T <input type="checkbox"/>	
order number	length
P20030 25	2600
P20030 30	3100
P20030 35	3600
P20030 40	4100
P20030 43	4300
P20030 50	5000
P20030 60	6000

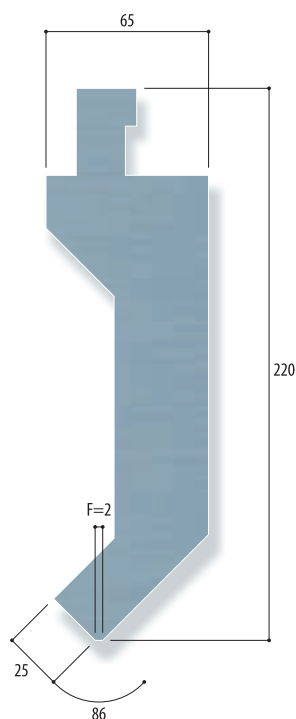


DIE	
300 - 400 T <input type="checkbox"/>	
order number	length
PV125 30	3100
PV125 35	3600
PV125 40	4100
PV125 43	4300
PV125 50	5000
PV125 60	6000
PV125 70	7000
PV125 80	8000

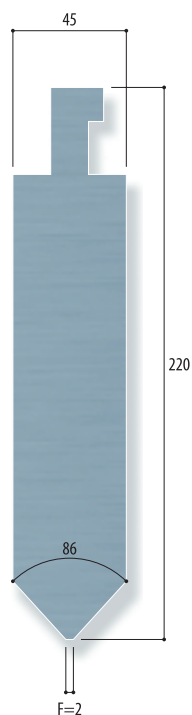


HACO TOOLING

PUNCH	
300 - 400 T <input type="checkbox"/>	
order number	length
P400C 30	3100
P400C 35	3600
P400C 40	4100
P400C 43	4300
P400C 50	5000
P400C 60	6000
P400C 70	7000
P400C 80	8000

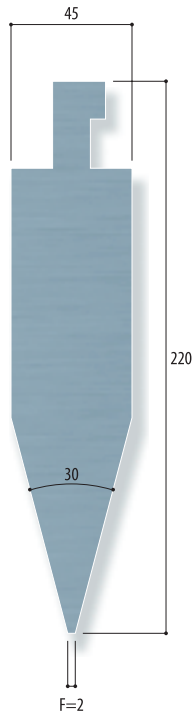


PUNCH	
300 - 400 T <input type="checkbox"/>	
order number	length
P40090 30	3100
P40090 35	3600
P40090 40	4100
P40090 43	4300
P40090 50	5000
P40090 60	6000
P40090 70	7000
P40090 80	8000

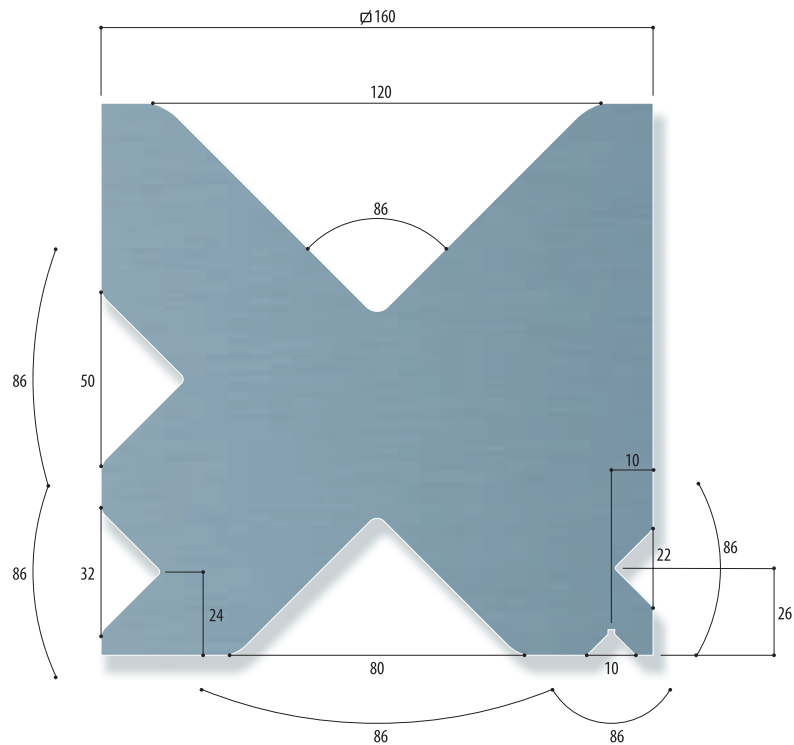


HACO TOOLING

PUNCH	
300 - 400 T <input type="checkbox"/>	
order number	length
P40030 30	3100
P40030 35	3600
P40030 40	4100
P40030 43	4300
P40030 50	5000
P40030 60	6000
P40030 70	7000
P40030 80	8000

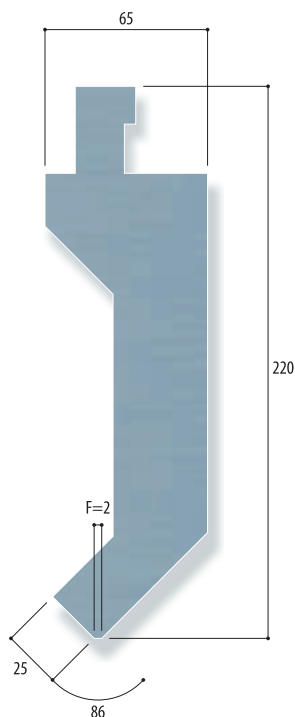


DIE	
500 - 600 T <input type="checkbox"/>	
order number	length
PV160 30	3100
PV160 40	4100
PV160 50	5000
PV160 60	6000
PV160 70	7000
PV160 80	8000

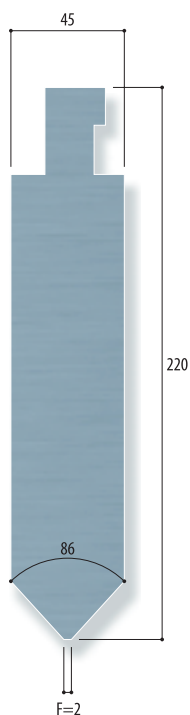


HACO TOOLING

PUNCH	
500 - 600 T	
order number	length
P600C 30	3100
P600C 40	4100
P600C 50	5000
P600C 60	6000
P600C 70	7000
P600C 80	8000

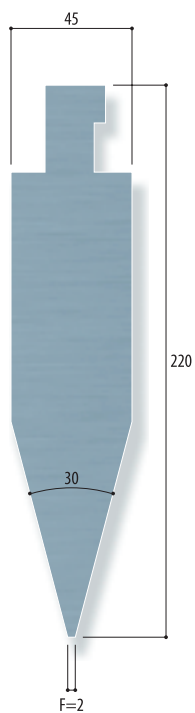


PUNCH	
500 - 600 T	
order number	length
P60090 30	3100
P60090 40	4100
P60090 50	5000
P60090 60	6000
P60090 70	7000
P60090 80	8000

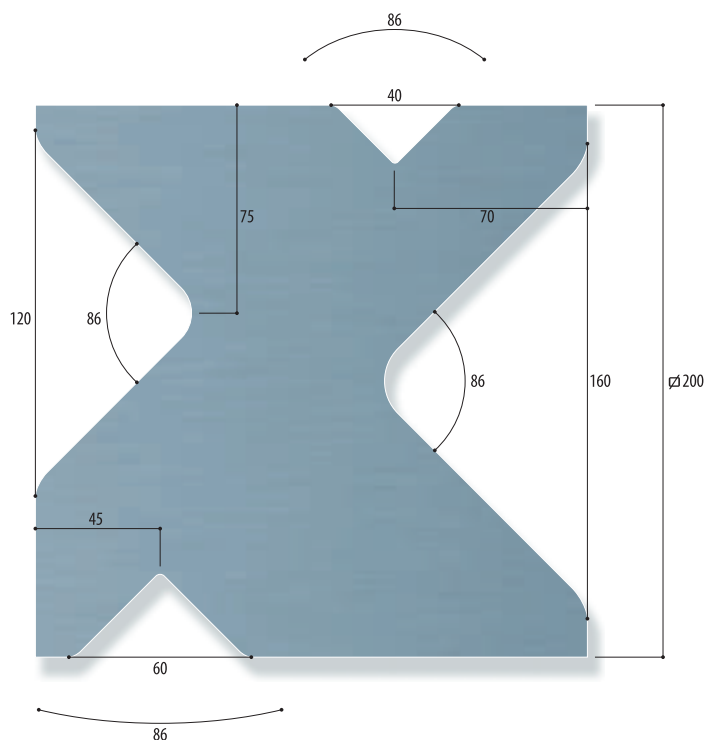


HACO TOOLING

PUNCH	
500 - 600 T	
order number	length
P60030 30	3100
P60030 40	4100
P60030 50	5000
P60030 60	6000
P60030 70	7000
P60030 80	8000



DIE	
700 - 1000 T	
order number	length
PV200 40	4100
PV200 50	5000
PV200 60	6000
PV200 70	7000
PV200 80	8000



SINGLE-V DIES

FIGURE 29



Single V-dies are available in a large variety of angles and V-openings. The small width/height ratio allows an improved access for the workpiece around the die. Single V-die clamping is using a groove in either a Haco or a System tool table. By using the groove as a self alignment system, the tool change can be reduced to very little time.

Single V-dies have the following characteristics:

- Material C 50
- Shoulder radii are hardened and ground 52 à 58 HRC
- Single-V dies are available in lengths of 500, 1000 and 1100 mm and can be delivered according to the pressbrake bending-length:
 - 1600 mm = (1 x 1100 mm) + (1 x 500 mm)
 - 2100 mm = (1 x 1100 mm) + (1 x 1000 mm)
 - 2600 mm = (1 x 1100 mm) + (1 x 1000 mm) + (1 x 500 mm)
 - 3100 mm = (1 x 1100 mm) + (2 x 1000 mm)
 - 3600 mm = (1 x 1100 mm) + (2 x 1000 mm) + (1 x 500 mm)
 - 4100 mm = (1 x 1100 mm) + (3 x 1000 mm)
 - 4300 mm = (3 x 1100 mm) + (1 x 1000 mm)
 - 5000 mm = (5 x 1000 mm)
 - 6000 mm = (6 x 1000 mm)
- In order to clamp Single-V dies, the table must be equipped with a groove.
- When there is no groove available or when using a table suitable for Haco tooling, an optional fillerblock for Single V-dies (figure 18) can be used. When using this fillerblock, one has to keep in mind that the daylight-opening decreases by 30 mm.
- The dies can be divided into different groups according to the range of the V-opening. Within a certain group, the V-opening can be chosen between a minimum and a maximum value. Each tool is made with a V-opening according to the customers requirement. So, when ordering Single-V dies, do not forget to mention the opening required.
- Certain dies can be delivered with an angle of 86° or 88°. Please indicate the required angle when ordering.
- Single-V dies can be sectionalised when necessary – information is available on request.

Fillerblock for single-v dies.

The fillerblock can be used when a groove for Single-V dies is not present on the pressbrake-table. The fillerblock is manufactured in one full length and needs to be centered by means of positioning screws.

FIGURE 30

- FB16 1600
- FB20 2100
- FB25 2600
- FB30 3100
- FB36 3600
- FB40 4100
- FB43 4300
- FB50 5000
- FB60 6000

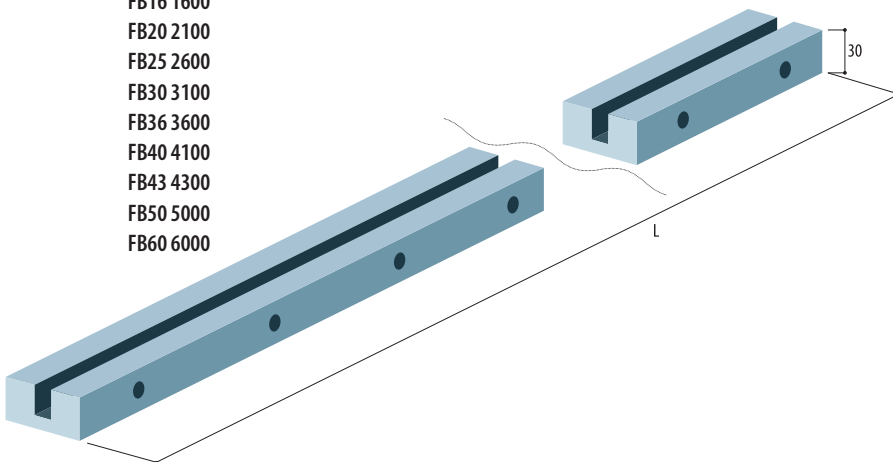
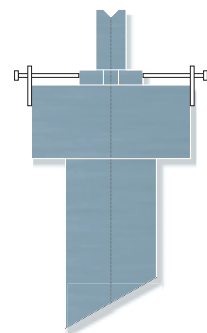


FIGURE 31

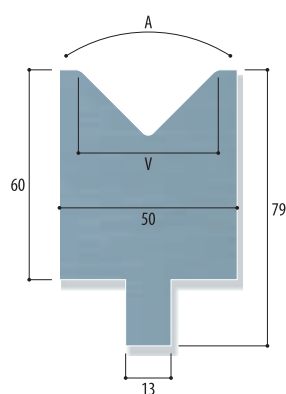
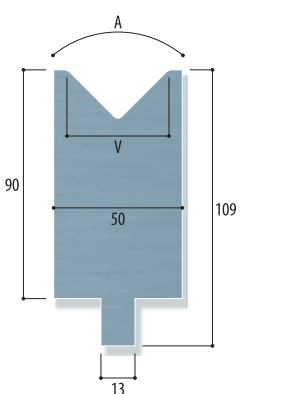
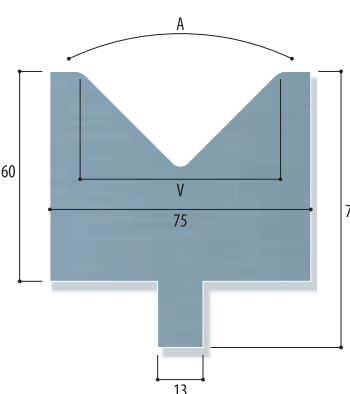
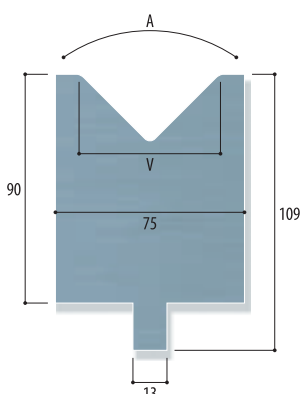
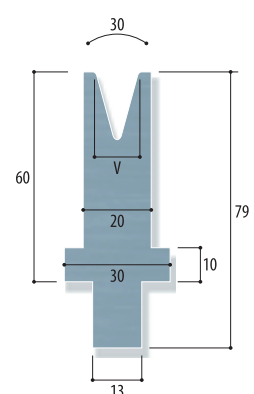
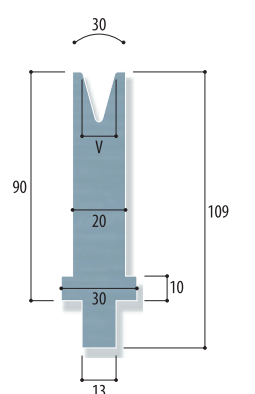
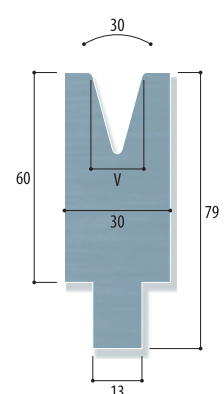
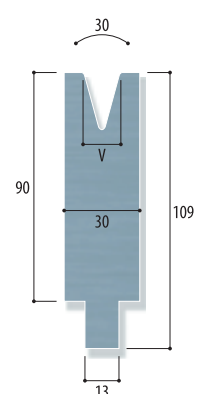


Remark: positioning screws are not included.

SINGLE-V DIES

<p>90 T/m</p> <p>V = 6-15 A = 86° / 88°</p> <table border="1"> <tr><td>OZVA16/V/A/L</td><td>1600</td></tr> <tr><td>OZVA20/V/A/L</td><td>2100</td></tr> <tr><td>OZVA25/V/A/L</td><td>2600</td></tr> <tr><td>OZVA30/V/A/L</td><td>3100</td></tr> <tr><td>OZVA35/V/A/L</td><td>3600</td></tr> <tr><td>OZVA40/V/A/L</td><td>4100</td></tr> <tr><td>OZVA43/V/A/L</td><td>4300</td></tr> <tr><td>OZVA50/V/A/L</td><td>5000</td></tr> <tr><td>OZVA60/V/A/L</td><td>6000</td></tr> </table>	OZVA16/V/A/L	1600	OZVA20/V/A/L	2100	OZVA25/V/A/L	2600	OZVA30/V/A/L	3100	OZVA35/V/A/L	3600	OZVA40/V/A/L	4100	OZVA43/V/A/L	4300	OZVA50/V/A/L	5000	OZVA60/V/A/L	6000		<p>90 T/m</p> <p>V = 6-15 A = 86° / 88°</p> <table border="1"> <tr><td>OZVA16/V/A/H</td><td>1600</td></tr> <tr><td>OZVA20/V/A/H</td><td>2100</td></tr> <tr><td>OZVA25/V/A/H</td><td>2600</td></tr> <tr><td>OZVA30/V/A/H</td><td>3100</td></tr> <tr><td>OZVA35/V/A/H</td><td>3600</td></tr> <tr><td>OZVA40/V/A/H</td><td>4100</td></tr> <tr><td>OZVA43/V/A/H</td><td>4300</td></tr> <tr><td>OZVA50/V/A/H</td><td>5000</td></tr> <tr><td>OZVA60/V/A/H</td><td>6000</td></tr> </table>	OZVA16/V/A/H	1600	OZVA20/V/A/H	2100	OZVA25/V/A/H	2600	OZVA30/V/A/H	3100	OZVA35/V/A/H	3600	OZVA40/V/A/H	4100	OZVA43/V/A/H	4300	OZVA50/V/A/H	5000	OZVA60/V/A/H	6000	
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OZVA60/V/A/H	6000																																						
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OZVA60/V/A/H	6000																																						
<p>90 T/m</p> <p>V = 24-29 A = 86° / 88°</p> <table border="1"> <tr><td>OZVA16/V/A/L</td><td>1600</td></tr> <tr><td>OZVA20/V/A/L</td><td>2100</td></tr> <tr><td>OZVA25/V/A/L</td><td>2600</td></tr> <tr><td>OZVA30/V/A/L</td><td>3100</td></tr> <tr><td>OZVA35/V/A/L</td><td>3600</td></tr> <tr><td>OZVA40/V/A/L</td><td>4100</td></tr> <tr><td>OZVA43/V/A/L</td><td>4300</td></tr> <tr><td>OZVA50/V/A/L</td><td>5000</td></tr> <tr><td>OZVA60/V/A/L</td><td>6000</td></tr> </table>	OZVA16/V/A/L	1600	OZVA20/V/A/L	2100	OZVA25/V/A/L	2600	OZVA30/V/A/L	3100	OZVA35/V/A/L	3600	OZVA40/V/A/L	4100	OZVA43/V/A/L	4300	OZVA50/V/A/L	5000	OZVA60/V/A/L	6000		<p>90 T/m</p> <p>V = 24-29 A = 86° / 88°</p> <table border="1"> <tr><td>OZVA16/V/A/H</td><td>1600</td></tr> <tr><td>OZVA20/V/A/H</td><td>2100</td></tr> <tr><td>OZVA25/V/A/H</td><td>2600</td></tr> <tr><td>OZVA30/V/A/H</td><td>3100</td></tr> <tr><td>OZVA35/V/A/H</td><td>3600</td></tr> <tr><td>OZVA40/V/A/H</td><td>4100</td></tr> <tr><td>OZVA43/V/A/H</td><td>4300</td></tr> <tr><td>OZVA50/V/A/H</td><td>5000</td></tr> <tr><td>OZVA60/V/A/H</td><td>6000</td></tr> </table>	OZVA16/V/A/H	1600	OZVA20/V/A/H	2100	OZVA25/V/A/H	2600	OZVA30/V/A/H	3100	OZVA35/V/A/H	3600	OZVA40/V/A/H	4100	OZVA43/V/A/H	4300	OZVA50/V/A/H	5000	OZVA60/V/A/H	6000	
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<p>90 T/m</p> <p>V = 30-34 A = 86° / 88°</p> <table border="1"> <tr><td>OZVA16/V/A/L</td><td>1600</td></tr> <tr><td>OZVA20/V/A/L</td><td>2100</td></tr> <tr><td>OZVA25/V/A/L</td><td>2600</td></tr> <tr><td>OZVA30/V/A/L</td><td>3100</td></tr> <tr><td>OZVA35/V/A/L</td><td>3600</td></tr> <tr><td>OZVA40/V/A/L</td><td>4100</td></tr> <tr><td>OZVA43/V/A/L</td><td>4300</td></tr> <tr><td>OZVA50/V/A/L</td><td>5000</td></tr> <tr><td>OZVA60/V/A/L</td><td>6000</td></tr> </table>	OZVA16/V/A/L	1600	OZVA20/V/A/L	2100	OZVA25/V/A/L	2600	OZVA30/V/A/L	3100	OZVA35/V/A/L	3600	OZVA40/V/A/L	4100	OZVA43/V/A/L	4300	OZVA50/V/A/L	5000	OZVA60/V/A/L	6000		<p>90 T/m</p> <p>V = 30-34 A = 86° / 88°</p> <table border="1"> <tr><td>OZVA16/V/A/H</td><td>1600</td></tr> <tr><td>OZVA20/V/A/H</td><td>2100</td></tr> <tr><td>OZVA25/V/A/H</td><td>2600</td></tr> <tr><td>OZVA30/V/A/H</td><td>3100</td></tr> <tr><td>OZVA35/V/A/H</td><td>3600</td></tr> <tr><td>OZVA40/V/A/H</td><td>4100</td></tr> <tr><td>OZVA43/V/A/H</td><td>4300</td></tr> <tr><td>OZVA50/V/A/H</td><td>5000</td></tr> <tr><td>OZVA60/V/A/H</td><td>6000</td></tr> </table>	OZVA16/V/A/H	1600	OZVA20/V/A/H	2100	OZVA25/V/A/H	2600	OZVA30/V/A/H	3100	OZVA35/V/A/H	3600	OZVA40/V/A/H	4100	OZVA43/V/A/H	4300	OZVA50/V/A/H	5000	OZVA60/V/A/H	6000	
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SINGLE-V DIES

<p>90 T/m</p> <p>V = 35-44 A = 86° / 88°</p> <table border="1"> <tr><td>OZVA16/V/A/L</td><td>1600</td></tr> <tr><td>OZVA20/V/A/L</td><td>2100</td></tr> <tr><td>OZVA25/V/A/L</td><td>2600</td></tr> <tr><td>OZVA30/V/A/L</td><td>3100</td></tr> <tr><td>OZVA35/V/A/L</td><td>3600</td></tr> <tr><td>OZVA40/V/A/L</td><td>4100</td></tr> <tr><td>OZVA43/V/A/L</td><td>4300</td></tr> <tr><td>OZVA50/V/A/L</td><td>5000</td></tr> <tr><td>OZVA60/V/A/L</td><td>6000</td></tr> </table>	OZVA16/V/A/L	1600	OZVA20/V/A/L	2100	OZVA25/V/A/L	2600	OZVA30/V/A/L	3100	OZVA35/V/A/L	3600	OZVA40/V/A/L	4100	OZVA43/V/A/L	4300	OZVA50/V/A/L	5000	OZVA60/V/A/L	6000		<p>90 T/m</p> <p>V = 35-44 A = 86° / 88°</p> <table border="1"> <tr><td>OZVA16/V/A/H</td><td>1600</td></tr> <tr><td>OZVA20/V/A/H</td><td>2100</td></tr> <tr><td>OZVA25/V/A/H</td><td>2600</td></tr> <tr><td>OZVA30/V/A/H</td><td>3100</td></tr> <tr><td>OZVA35/V/A/H</td><td>3600</td></tr> <tr><td>OZVA40/V/A/H</td><td>4100</td></tr> <tr><td>OZVA43/V/A/H</td><td>4300</td></tr> <tr><td>OZVA50/V/A/H</td><td>5000</td></tr> <tr><td>OZVA60/V/A/H</td><td>6000</td></tr> </table>	OZVA16/V/A/H	1600	OZVA20/V/A/H	2100	OZVA25/V/A/H	2600	OZVA30/V/A/H	3100	OZVA35/V/A/H	3600	OZVA40/V/A/H	4100	OZVA43/V/A/H	4300	OZVA50/V/A/H	5000	OZVA60/V/A/H	6000	
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for impressive performances

SINGLE-V DIES

70 T/m			70 T/m		
V = 19-24 A = 30°			V = 19-24 A = 30°		
OZVA16/V/A/L	1600		OZVA16/N/A/H	1600	
OZVA20/V/A/L	2100		OZVA20/N/A/H	2100	
OZVA25/V/A/L	2600		OZVA25/N/A/H	2600	
OZVA30/V/A/L	3100		OZVA30/N/A/H	3100	
OZVA35/V/A/L	3600		OZVA35/N/A/H	3600	
OZVA40/V/A/L	4100		OZVA40/N/A/H	4100	
OZVA43/V/A/L	4300		OZVA43/N/A/H	4300	
OZVA50/V/A/L	5000		OZVA50/N/A/H	5000	
OZVA60/V/A/L	6000		OZVA60/N/A/H	6000	

NEW STANDARD TOOLING

This system offers a high degree of accuracy, tool changing speed and flexibility. All 'New Standard' top and bottom tools are available in a wide range of heights and shapes. They all are manufactured to the smallest possible tolerances resulting in an optimal final bending accuracy. The top tools can be exchanged quickly and safely, vertically as well as horizontally. The self alignment of the dies by using the groove, avoids additional press strokes, so it is possible to start bending operations immediately after tool-change.

New Standard tooling has the following characteristics:

- Material special Cr-Mo
- Tensile strength, Rm 1000 - 1100 N/mm²
- Dies have hardened and ground shoulder-radii 55 à 60 HRC
- Punches have a hardened and ground tip 55 à 60 HRC
- Punches and dies are available in following lengths:
 - 515 mm xxx - xxx/1
 - 550 mm, sectionalised xxx - xxx/2
 - 200 mm, sectionalised xxx - xxx/3
- The BIU-type punches can only be clamped by means of the New Standard – manual or hydraulic – clamping system.
- The BIU-type punches with a weight under 12,5 kg are supplied with the safety quick-change system safety-click. From 12,5 kg and upwards, tooling is provided with a fixed security-pin.
- The OZU-type dies can be clamped on pressbrakes equipped with a groove for Single-V dies and all machines provided with a moducrown – manual or hydraulic – clamping system (table).
- When no groove is present or when using a table suited to take Haco dies, an optional filler block can be used. When using this fillerblock (figure 18, page 6), one has to keep in mind that the daylight-opening decreases by 30 mm.

NEW STANDARD TOOLING

FIGURE 32

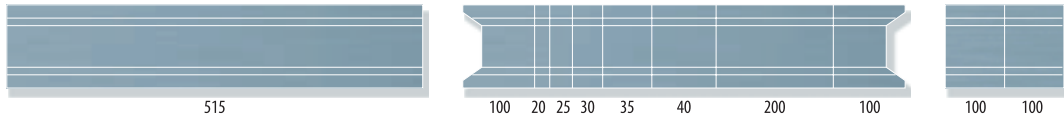
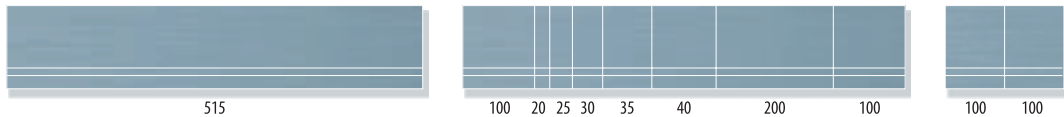


FIGURE 33



New Standard upper-clamping.

By means of the New Standard system it is possible to clamp all New Standard BIU-type tools. The New Standard upper-clamping exists in both manual and hydraulic execution. With the manual version, the tooling can be centered and clamped by means of socket set screws. When using the hydraulic system, all tools will be lined up, clamped and centered by one single hit on a button. All units are available in accordance with the bending length and tonnage of the machine. Prices and extensive information is available on request. When more information is needed, never forget to mention the following:

- bending length of the pressbrake;
- tonnage;
- manual or hydraulic clamping.

FIGURE 34 New Standard system with manual clamping

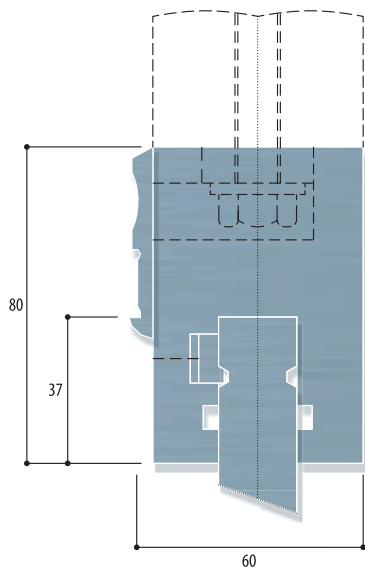
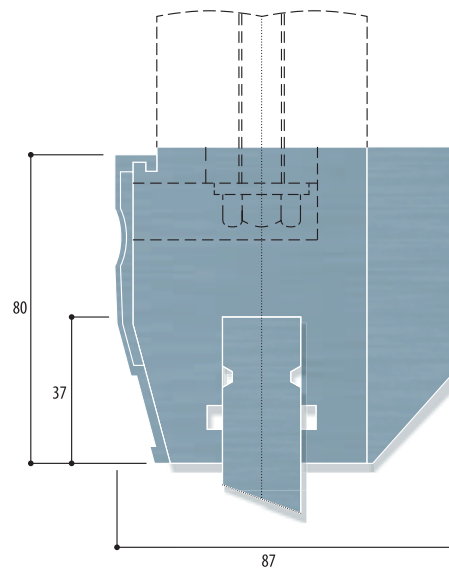


FIGURE 35 New Standard system with hydraulic clamping



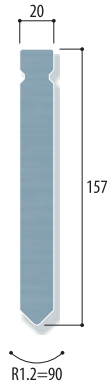
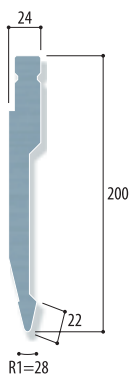


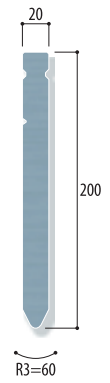
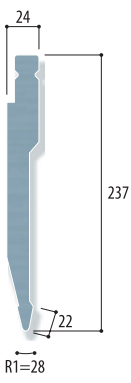

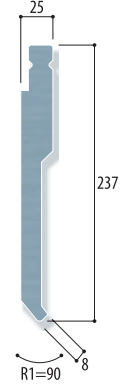


for impressive performances

NEW STANDARD TOOLING

<table border="1"> <thead> <tr> <th colspan="2">100 T/m</th> </tr> </thead> <tbody> <tr> <td>BIU-001/1</td> <td>515</td> </tr> <tr> <td>BIU-001/2</td> <td>550</td> </tr> <tr> <td>BIU-001/3</td> <td>200</td> </tr> </tbody> </table>	100 T/m		BIU-001/1	515	BIU-001/2	550	BIU-001/3	200		<table border="1"> <thead> <tr> <th colspan="2">100 T/m</th> </tr> </thead> <tbody> <tr> <td>BIU-002/1</td> <td>515</td> </tr> <tr> <td>BIU-002/2</td> <td>550</td> </tr> <tr> <td>BIU-002/3</td> <td>200</td> </tr> </tbody> </table>	100 T/m		BIU-002/1	515	BIU-002/2	550	BIU-002/3	200	
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NEW STANDARD TOOLING

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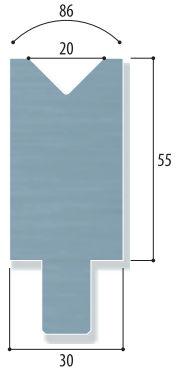
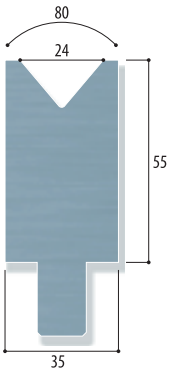
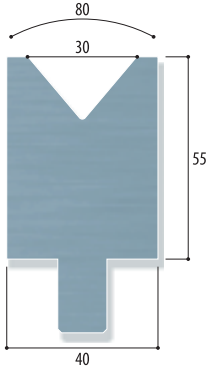

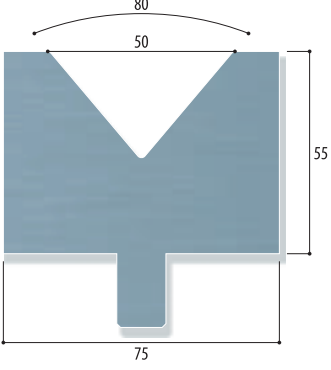
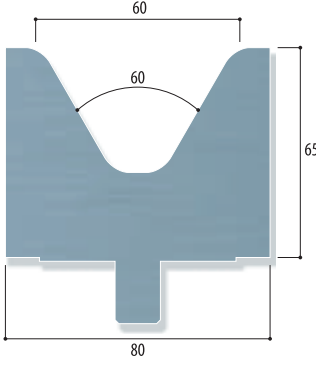
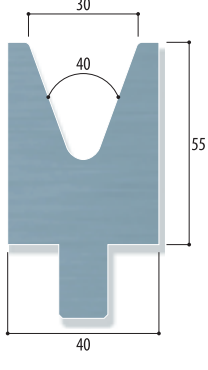
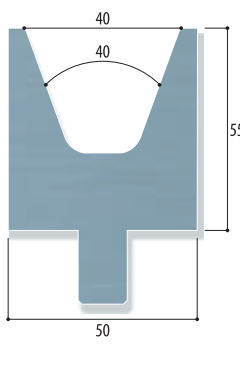


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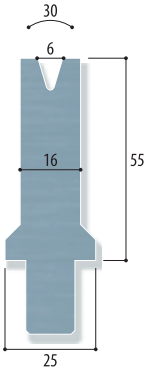
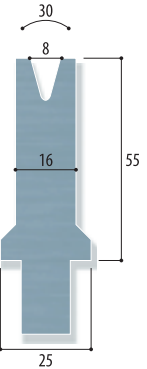
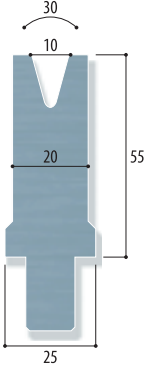
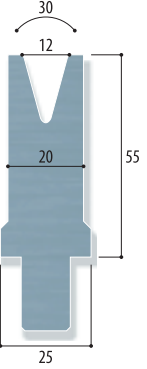



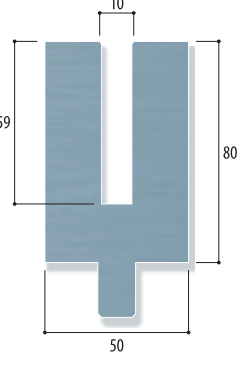
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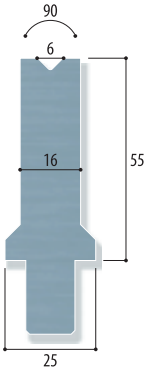
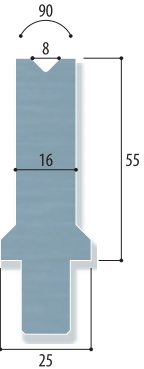
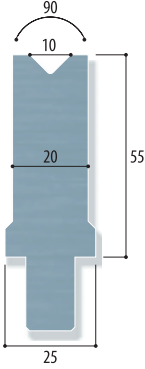
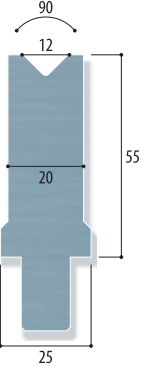

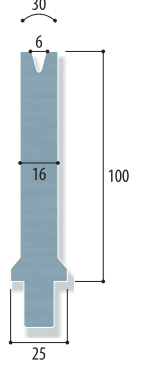
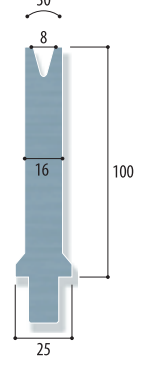
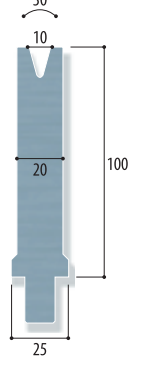
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NEW STANDARD TOOLING

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NEW STANDARD TOOLING

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ADJUSTABLE DIES

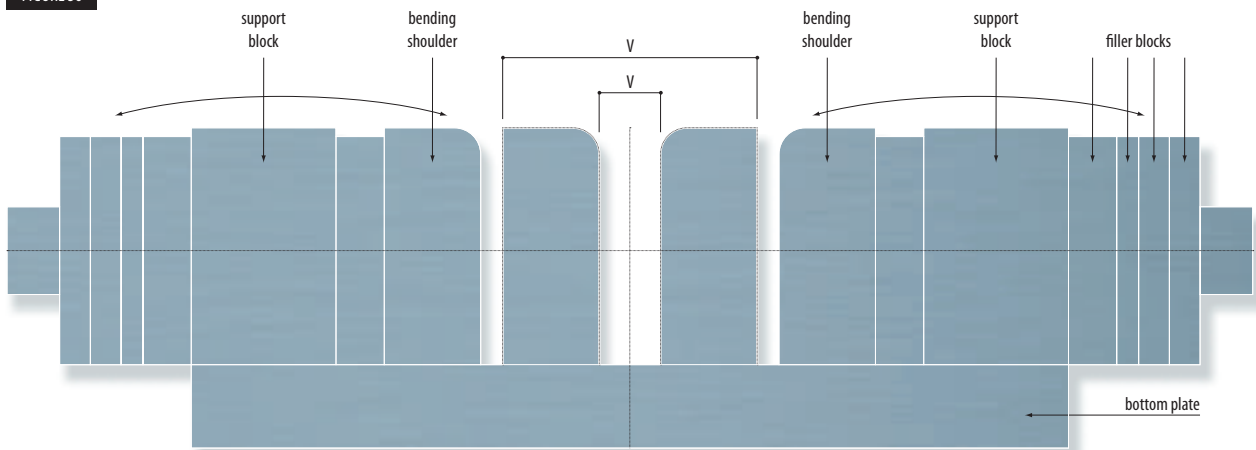
- When using the adjustable die type RS, it is possible to change the V-opening of the die in accordance with the sheet thickness to be bent, thus reducing time-consuming setup-requirements to an absolute minimum. The adjustable die type RS, is supplied with:

- a bottom plate with support blocks;
- filler blocks.
- bending shoulders.

- In order to obtain the required V-opening, filler gauges need to be placed between the bending shoulders and the support blocks. The filler blocks need to be added/removed manually. The bending shoulders are hardened so wear is minimised. Furthermore, the bending shoulders can be supplied with the most ideal radius and can be delivered for retro-fitting if required.

RS 008	range of V-opening: 12 - 80 mm
RS 007	range of V-opening: 60 - 200 mm
RS 007	range of V-opening: 200 - 350 mm

FIGURE 36

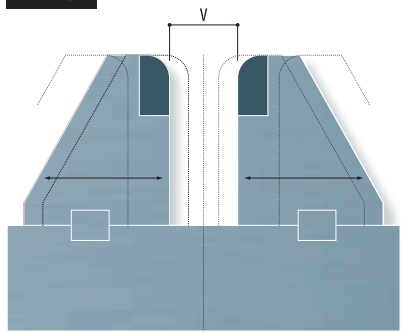


When using MVM type adjustable dies, it is possible to adjust the V-opening within the range of the system. The adjustment can either be manually or CNC-controlled. Timeconsuming setups are almost non-existent – especially advantageous when using big-sized and long tooling. The tooling always keeps the same position, moving the tooling is not needed at all.

- The bending shoulders are hardened and ground and can be supplied with 2 different shoulder radii, so the most ideal radius can be used every time. Changing the shoulder radius only requires turning the bending shoulder one way or the other. MVM adjustable dies are available in following executions:

MVM I 8-32	range: 8 - 32 mm, stepless, manual or CNC-controlled adjustment
MVM I 13-50	range: 13 - 50 mm, stepless, manual or CNC-controlled adjustment
MVM II 40-120	range: 40 - 120 mm, in 10 mm steps, manual or CNC-controlled adjustment
MVM II 40-350	range: 40 - 380 mm, in 20 mm steps, manual or CNC-controlled adjustment

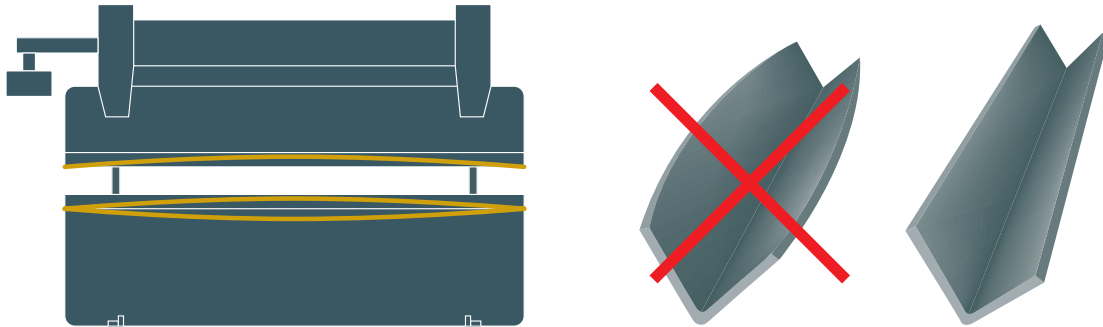
FIGURE 37



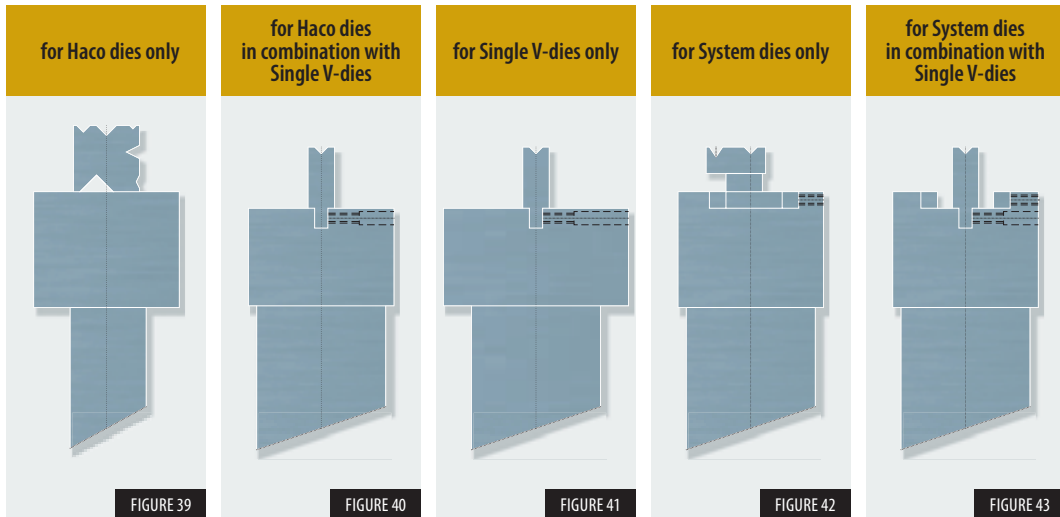
ANTI DEFLECTION TABLES

Angular variations caused by beam and machine deformation can be compensated for by the anti deflection table fitted directly on the lower beam. It works by means of a system of wedges moving progressively over each other, giving the table the desired form in order to compensate for beam and bed deflection. This results in a constant angular profile of the workpiece over the full working length of the machine. The anti deflection table can be set independently from machine type or execution and is available for standard Haco tooling, system-tooling, Single V-dies and New Standard Tools.

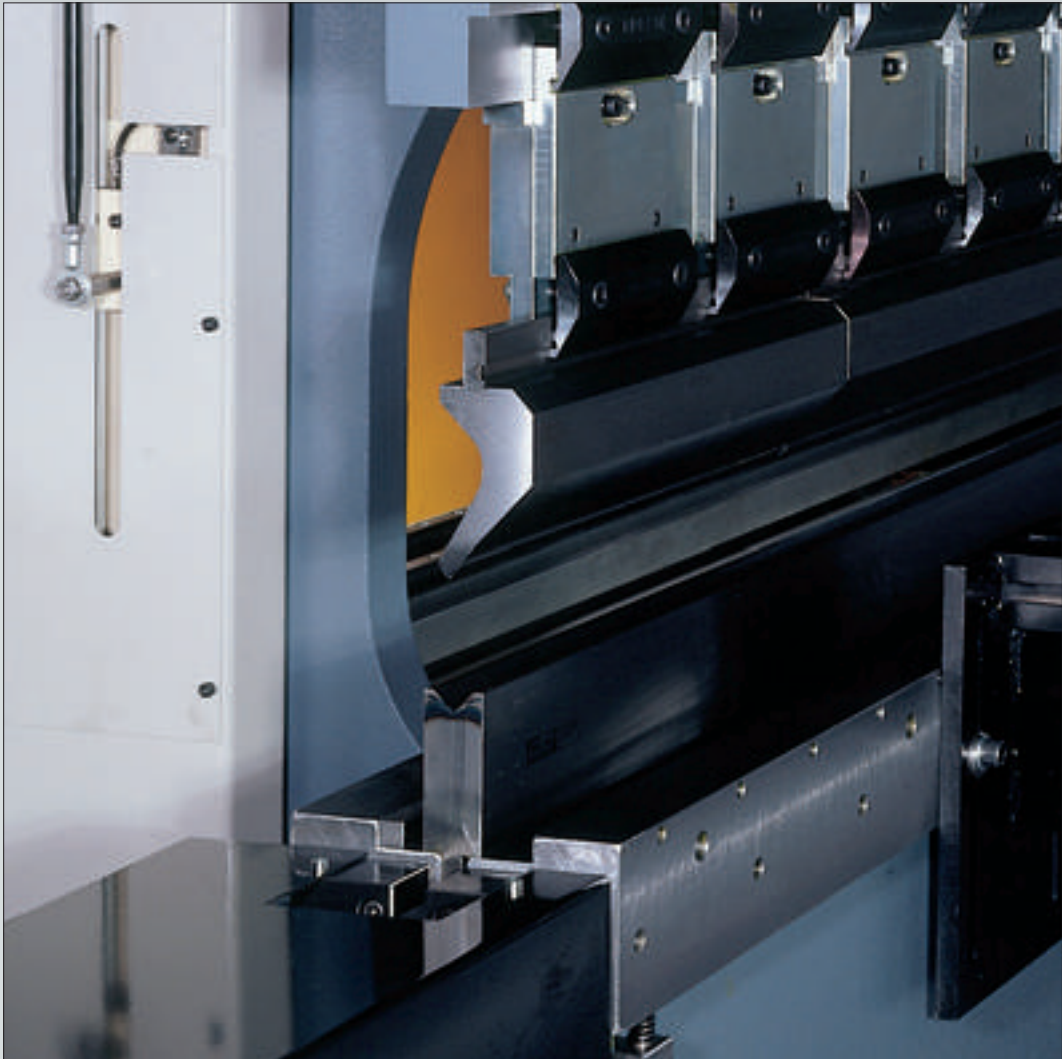
FIGURE 38



The anti deflection table delivered standard with the machines up to 4,3 m 3000 kN is manually controlled by hand wheel. In option, it can be motorised driven, controlled directly by the CNC control. On Euromasters 5/6 m 3000 kN and 3/4 m 4000 kN, the anti deflection table is hydraulic driven and CNC controlled as standard.



It can be retrofitted on existing Haco or non-Haco machines. Prices and information available on request.





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