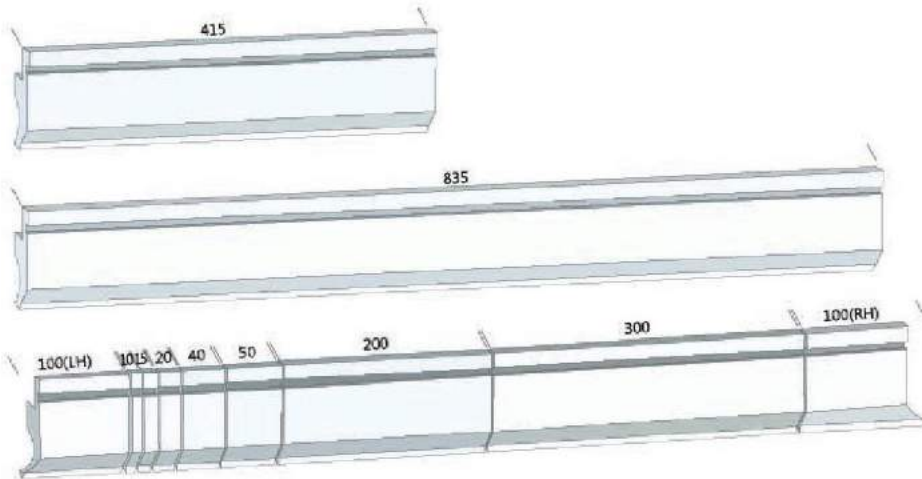


# Press Brake Tooling

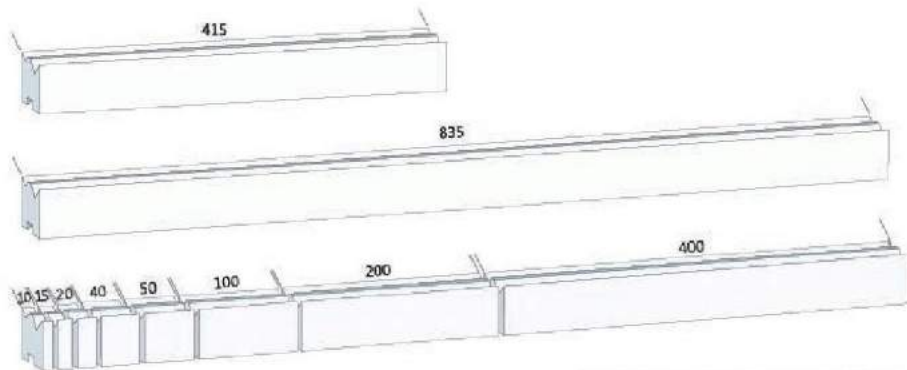
**A.** Standard length of press brake tooling is L835 and S415. According to the length of worktable of press brake combined use.

Standard segments:

up punch: 100(left horn), 10,15,20,40,50,200,300,100(right horn)=835mm

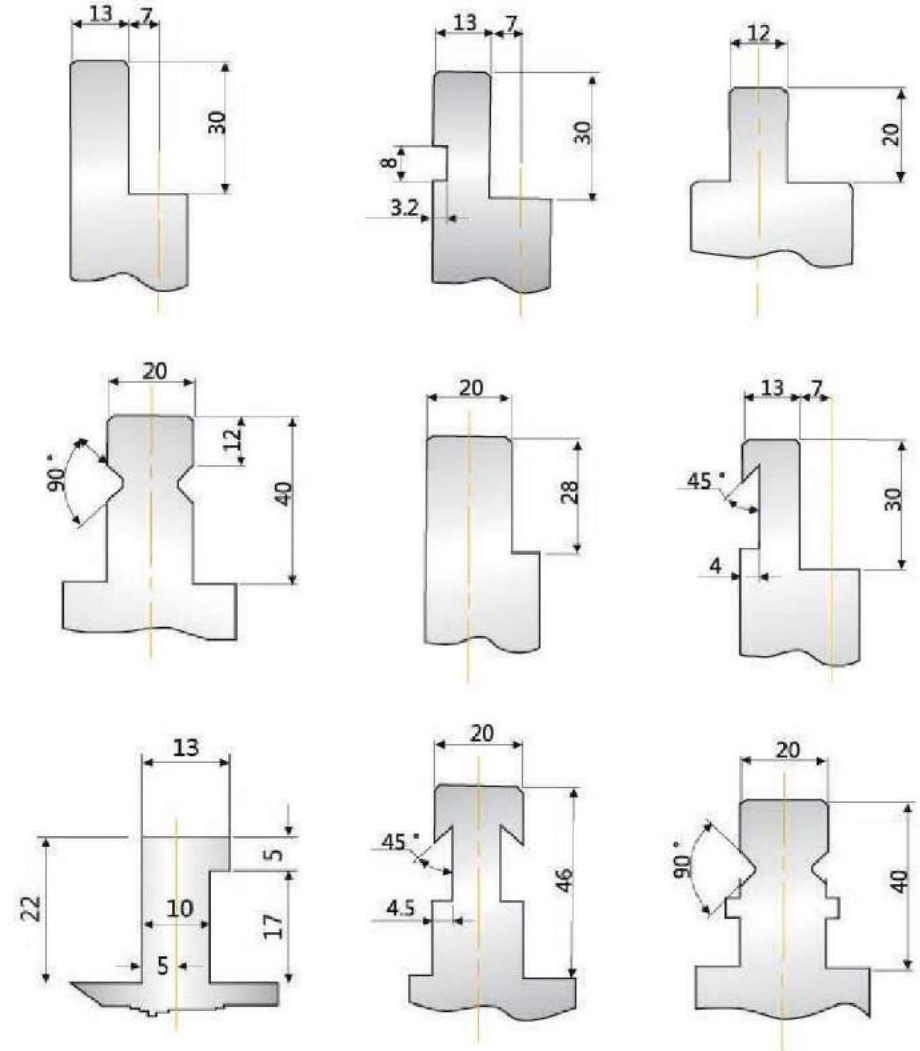


lower die: 10,15,20,40,50,100,200,400=835mm

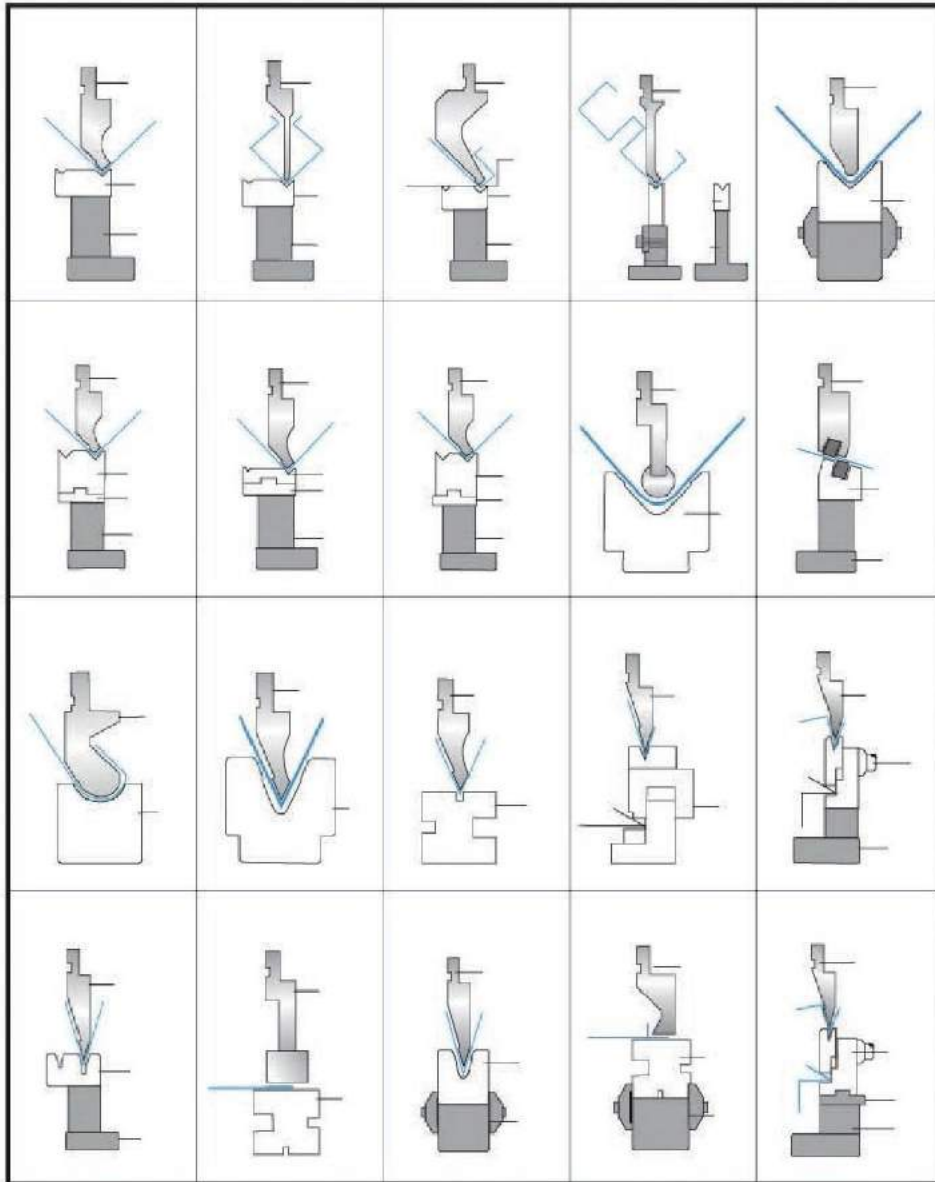


Please specify if you need to customize special length

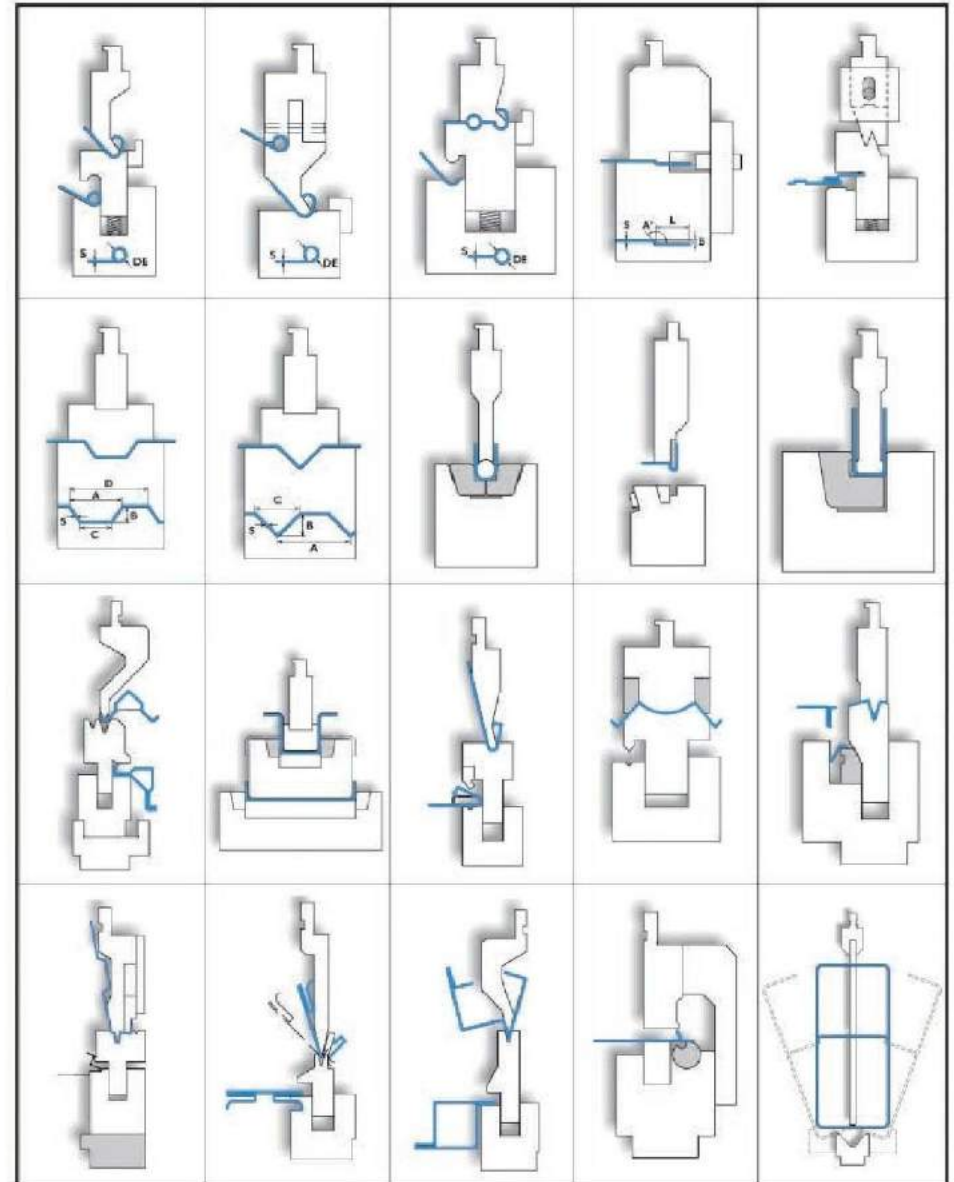
## B. Pocket for the punch head



**Reference For Die Combination**



**Reference For Forming Die Combination**



### Standard Up Punch(88° 90°)

Material: 42CrMo L=835mm S=415mm Segments: 100(left horn) , 10,15,20,40,50,200,300,100(right horn)(Total835mm)

ITEM NO.	DIMENSION	TIP R	BENDING INDICATION
G004 D=88° G016 D=90°  HRC47±3 100/METER	H=67 	0.2R 0.6R 0.8R 1.5R 3.0R	
G004 G016  HRC47±3 45/METER	H=67 	0.2R 0.6R 0.8R 1.5R 3.0R	
G117 D=88° G116 D=90°  HRC47±3 20/METER	H=67 	0.2R 0.6R	
G117 G116  HRC47±3 20/METER	H=67 	0.2R 0.6R	
G047 D=88° G048 D=90°  HRC47±3 50/METER	H=120 	0.2R 0.6R 0.8R 1.5R 3.0R	
G047 G048  HRC47±3 45/METER	H=120 	0.2R 0.6R 0.8R 1.5R 3.0R	

### Standard Up Punch(88° 90°)

Material: 42CrMo L=835mm S=415mm Segments: 100(left horn) , 10,15,20,40,50,200,300,100(right horn)(Total835mm)

ITEM NO.	DIMENSION	TIP R	BENDING INDICATION
G452 D=88° G462 D=90°  HRC47±3 70/METER	H=90 	0.2R 0.6R 0.8R 1.5R 3.0R	
G452 G462  HRC47±3 45/METER	H=90 	0.2R 0.6R 0.8R 1.5R 3.0R	
G453 D=88° G463 D=90°  HRC47±3 50/METER	H=90 	0.2R 0.6R 0.8R 1.5R 3.0R	
G453 G463  HRC47±3 30/METER	H=90 	0.2R 0.6R 0.8R 1.5R 3.0R	
G045 D=88° G046 D=90°  HRC47±3 50/METER	H=105 	0.2R 0.6R 0.8R 1.5R 3.0R	
G045 G046  HRC47±3 45/METER	H=105 	0.2R 0.6R 0.8R 1.5R 3.0R	

## Standard Up Punch(88° 90°)

L=835mm S=415mm

Material: 42CrMo

Segments: 100(left horn) , 10,15,20,40,50,200,300,100(right horn)(Total835mm)

ITEM NO.	DIMENSION	TIP R	BENDING INDICATION
G200 D=88° G201 D=90°	H=70 	0.2R 0.6R	
HRC47±3 30/METER			
G200 G201	H=70 	0.2R 0.6R	
HRC47±3 15/METER			
G202 D=88° G203 D=90°	H=100 	0.2R 0.6R	
HRC47±3 30/METER	H=120		
G202 G203	H=100 	0.2R 0.6R	
HRC47±3 15/METER	H=120		
G109 D=88° G108 D=90°	H=95 	0.2R 0.6R	
HRC47±3 50/METER	H=120		
G109 G108	H=95 	0.2R 0.6R	
HRC47±3 12/METER	H=120		

## Standard Up Punch(30°)

L=835mm S=415mm

Material: 42CrMo

Segments: 100(left horn) , 10,15,20,40,50,200,300,100(right horn)(Total835mm)

ITEM NO.	DIMENSION	TIP R	BENDING INDICATION
G10870 30°	H=90 	0.2R	
HRC47±3 40/METER			
G10870	H=90 	0.2R	
HRC47±3 40/METER			
G003	H=65 	6.0R	
HRC47±3 100/METER			
G003	H=65 	6.0R	
HRC47±3 100/METER			
G008 45°	H=67 	0.37R	
HRC47±3 60/METER			
G008	H=67 	0.37R	
HRC47±3 30/METER			

## Standard Up Punch(30°)

Material: 42CrMo L=835mm S=415mm Segments: 100(left horn) , 10,15,20,40,50,200,300,100(right horn)(Total835mm)

ITEM NO.	DIMENSION	TIP R	BENDING INDICATION
G103 30°  HRC47±3 100/METER	H=67 	0.52R	
G103  HRC47±3 30/METER	H=67 	0.52R	
G210 30°  HRC47±3 100/METER	H=104 	0.65R	
G210  HRC47±3 20/METER	H=104 	0.65R	
G211 30°  HRC47±3 50/METER	H=90 	0.65R	
G211  HRC47±3 30/METER	H=90 	0.65R	

## Standard Up Punch(88° 90°)

Material: 42CrMo L=835mm S=415mm Segments: 100(left horn) , 10,15,20,40,50,200,300,100(right horn)(Total835mm)

ITEM NO.	DIMENSION	TIP R	BENDING INDICATION	
No.1 G004 D=88° G016 D=90°  HRC47±3 40/METER	H=67 	0.2R  0.6R		
No.1 G004 G016  HRC47±3 20/METER	H=67 	0.2R  0.6R		
No.2 G004 D=88° G016 D=90°  HRC47±3 80/METER	H=67 	0.2R  0.6R		
No.2 G004 G016  HRC47±3 40/METER	H=67 	0.2R  0.6R		

### Round Punch

Material : S45C L=835mm S=415mm

ITEM NO.	PROFILE
G015 HRC25±3	H=67 
G017 R10	 V(R+thickness)x(2~2.5)
G017 R15	 V(R+thickness)x(2~2.5)
G017 R17.5	 V(R+thickness)x(2~2.5)
G017 R20	 V(R+thickness)x(2~2.5)
G017 R25	 V(R+thickness)x(2~2.5)
G017 R30	 V(R+thickness)x(2~2.5)

### R-Arc Punch

Material : S45C L=835mm S=415mm

ITEM NO.	PROFILE
G230 HRC25±3 100/METER	H=65 
G230 HRC25±3 100/METER	H=65 

### Flattening Die

Material : S45C 45CrMo L=835mm S=415mm

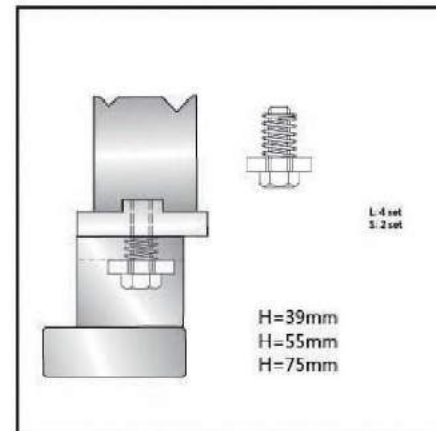
ITEM NO.	PROFILE
G020 HRC25±3	H=28 
G220 HRC47±3 100/METER	H=65 
G221 HRC47±3	H=70 



### 2V Die(Guide Rail Type)(90°88°)

Material: 42CrMo

L=835mm S=415mm  
Segments: 100(left horn) , 70,15,20,40,50,200,300,100(right horn)(Total835mm)



ITEM NO.	PROFILE
G50196 (88°V4-V7) HRC47±3 60/METER	H=46 
G50796 (88°V5-V9) HRC47±3 70/METER	H=46 
G50296 (88°V6-V10) HRC47±3 70/METER	H=46 
G50396 (88°V8-V12) HRC47±3 70/METER	H=46 
G50490 (88°V14-V18) HRC47±3 100/METER	H=46 
G50590 (88°V12-V20) HRC47±3 100/METER	H=46 
G50690 (88°V16-V25) HRC47±3 100/METER	H=46 

## 2V Die(Screw Type)(90°88°)

Material: 42CrMo

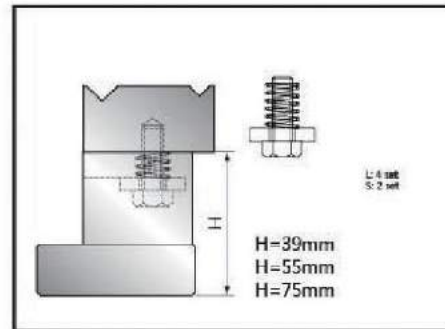
ITEM NO.	PROFILE
<b>G121</b> (90°V4-V7)  HRC47±3 60/METER	H=26 
<b>G122</b> (90°V5-V9)  HRC47±3 65/METER	H=26 
<b>G123</b> (90°V6-V10)  HRC47±3 70/METER	H=26 
<b>G124</b> (90°V8-V12)  HRC47±3 80/METER	H=26 

## 2V Die (90°88°86°84°)

ITEM NO.	PROFILE
<b>G311</b> (90°V6-V10)  HRC47±3 80/METER	H=26 
<b>G31106</b> (V6-V10)  HRC47±3 80/METER	H=25.5 
<b>G31400</b> (V12-V20)  HRC47±3 100/METER	H=26 
<b>G128</b> (V16-V25)  HRC47±3 100/METER	H=35 

L=835mm S=415mm

ITEM NO.	PROFILE
<b>G12106</b> (88°V4-V7)  HRC47±3 60/METER	H=26 
<b>G12206</b> (88°V5-V9)  HRC47±3 65/METER	H=26 
<b>G12306</b> (88°V6-V10)  HRC47±3 70/METER	H=26 
<b>G12406</b> (88°V8-V12)  HRC47±3 80/METER	H=26 
<b>G125</b> (88°V14-V18)  HRC47±3 100/METER	H=26 
<b>G126</b> (88°V12-V20)  HRC47±3 100/METER	H=26 
<b>G127</b> (88°V16-V25)  HRC47±3 100/METER	H=26 



## 1V Slot Type Lower Die(88°)

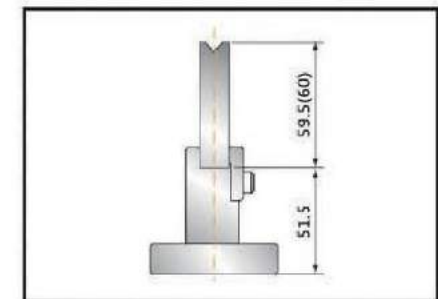
Material: 42CrMo

ITEM NO.	PROFILE
<b>G08306</b> (88°V3)  HRC47±3 40/METER	H=60 
<b>G08406</b> (88°V4)  HRC47±3 40/METER	H=60 
<b>G08506</b> (88°V5)  HRC47±3 50/METER	H=60 
<b>G07008</b> (88°V6)  HRC47±3 95/METER	H=60 
<b>G07108</b> (88°V8)  HRC47±3 95/METER	H=60 
<b>G07200</b> (88°V10)  HRC47±3 95/METER	H=60 
<b>G07400</b> (88°V12)  HRC47±3 95/METER	H=60 

L=835mm S=415mm

Segments:100(left horn),10,15,20,40,50,200,300,100(right horn)(Total:835mm)

ITEM NO.	PROFILE
<b>G07600</b> (88°V14)  HRC47±3 60/METER	H=60 
<b>G07700</b> (88°V16)  HRC47±3 65/METER	H=60 
<b>G07800</b> (88°V18)  HRC47±3 70/METER	H=60 
<b>G07900</b> (88°V20)  HRC47±3 70/METER	H=60 
<b>G08200</b> (88°V25)  HRC47±3 100/METER	H=60 



1V Slot Type Lower Die(88° ) 1V Lower Die (85° 80° )

Material: 42CrMo L=835mm S=415mm

ITEM NO.	PROFILE
G32006 (88°V6)	H=30 84° 
HRC47±3 95/METER	
G32106 (88°V8)	H=30 
HRC47±3 95/METER	H=16
G32200 (88°V10)	H=30 
HRC47±3 95/METER	84°
G324 (88°V12)	H=30 
HRC47±3 100/METER	84°
G325 (88°V14)	H=30 
HRC47±3 100/METER	84°

Material: S45C L=835mm S=415mm

ITEM NO.	PROFILE
G35 (85°V32)	H=60 
HRC50-55 100/METER	
G36 (85°V40)	H=60 
HRC50-55 100/METER	
G37 (85°V50)	H=60 
HRC50-55 100/METER	
G38 (85°V63)	H=75 
HRC50-55 100/METER	
G13 (85°V80)	H=95 
HRC50-55 100/METER	
G18 (85°V100)	H=110 (95) 
HRC50-55 100/METER	
G39 (80°V125)	H=123 (103) 
HRC50-55 100/METER	
G14 (80°V160)	H=140 
HRC50-55 100/METER	



1V Lower Die (30° 45° )

Material: S45C L=835mm S=415mm

ITEM NO.	PROFILE
G340 (30°V18)	H=60 
HRC50-55 80/METER	
G341 (30°V25)	H=65 
HRC50-55 60/METER	
G342 (45°V32)	H=60 
HRC50-55 40/METER	
G343 (45°V40)	H=80 
HRC50-55 70/METER	
G350	H=60 
HRC25±3	

When the Max opening of the bending machine minus the height of upper and lower dies, is larger than the stroke of the bending machine, cannot bend, so the height of the lower die need to be increased.

Lower Die (30° )

Material: S45C 42CrMo L=835mm S=415mm

ITEM NO.	PROFILE
G337 (30°V8-V12)	H=46 
HRC50-55 30/METER	
G33706 (30°V6-V10)	H=46 
HRC47±3 26/METER	
G339 (30°V8-V12)	H=46 
HRC47±3 40/METER	
G08403 (30°V4)	H=60 
HRC47±3 20/METER	
G08503 (30°V5)	H=60 
HRC47±3 20/METER	



### Rubber Spring Lower Die

Material: S45C L=835mm S=415mm

ITEM NO.	PROFILE
G60 ( 1 ) HRC25±3	H=60 
G61 ( 1 )	
G60 ( 2 ) HRC25±3	H=43 
G61 ( 2 )	
G60 ( 3 ) HRC25±3	H=100 
G61 ( 3 )	
G60 ( 4 ) HRC25±3	H=83 
G61 ( 4 )	
G60 ( 5 ) HRC25±3	H=108 
G61 ( 5 )	

### 3U,4V Lower Die

Material: S45C L=835mm S=415mm

ITEM NO.	PROFILE
G12 HRC47±3 100/METER	H=60 
G460 HRC47±3 100/METER	H=60 
G490 HRC47±3 100/METER	



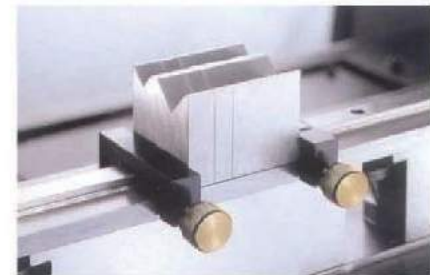
### Die Holder

Material: S45C

ITEM NO.	PROFILE
G330 L=830 S=412	H=81.5 
G0815 L=840 S=420	H=61.5 
G300 HRC25±3	H=10 
G55 HRC25±3	H=55 
G33039 HRC25±3	H=39 
G33055 HRC25±3	H=55 
G33075 HRC25±3	H=75 

### Option

ITEM NO.	PROFILE
Anti creasing cloth	 Width:100mm Length:5m and 10m
Side positioner Clamp Width Max.61mm Min.:13mm	
Dowel pin	
Storage cabinets	



### LVD Series Dies

Material: 42CrMo S45C

ITEM NO.	PROFILE
<p><b>GC10</b> C10-180-78-R1 C10-180-78-R2</p> <p>HRC47±3 ( Max Ton ) 70/METER</p>	
<p><b>GD10</b> D10-180-78-R1 D10-180-78-R2</p> <p>HRC47±3 ( Max Ton ) 50/METER</p>	
<p><b>GE10</b> E10-180-78-R1 E10-180-78-R2</p> <p>HRC47±3 ( Max Ton ) 50/METER</p>	
<p><b>GF10</b> F10-180-26-R1 F10-180-26-R2</p> <p>HRC47±3 ( Max Ton ) 50/METER</p>	

ITEM NO.	PROFILE
<p><b>GR10</b> R10-180-78-R1 R10-180-78-R2</p> <p>HRC47±3 ( Max Ton ) 100/METER</p>	
<p><b>A</b></p>	<p><b>B</b></p>
<p><b>C</b></p>	<p><b>D</b></p>



### TRUMPF/WILA Series Dies

Material: 42CrMo S45C

ITEM NO.	PROFILE
<p><b>GT45</b> T45-256-78-R1 T45-256-78-R2</p> <p>HRC47±3 ( Max Ton ) 50/METER</p>	
<p><b>GT117</b> T117-256-86-R1 T117-256-86-R2</p> <p>HRC47±3 ( Max Ton ) 50/METER</p>	
<p><b>GT453</b> T453-157-86-R1 T453-157-86-R2</p> <p>HRC47±3 ( Max Ton ) 50/METER</p>	
<p><b>GT004</b> T004-157-86-R1 T004-157-86-R2</p> <p>HRC47±3 ( Max Ton ) 70/METER</p>	

Material: 42CrMo S45C

ITEM NO.	PROFILE
<p><b>GT109</b> T109-256-60-R1 T109-256-60-R2</p> <p>HRC47±3 ( Max Ton ) 100/METER</p>	
<p><b>GT003</b> T003-157-60-R1 T003-157-60-R2</p> <p>HRC47±3 ( Max Ton ) 100/METER</p>	
<p><b>GT211</b> T211-256-28-R1 T211-256-28-R2</p> <p>HRC47±3 ( Max Ton ) 50/METER</p>	
<p><b>GT210</b> T210-157-28-R1 T210-157-28-R2</p> <p>HRC47±3 ( Max Ton ) 50/METER</p>	





## Machine Parts

Material: 42CrMo S45C

Name	hydraulic clamping system	Adjustable lower die
hydraulic clamping system Adjustable lower die		
Clamping		
Blade		

## Manual Crowning Table



Manual crowning table LG-H		B <mm>	H <mm>	L <mm>	$\Delta$ HMAX	Adjustment mode
		90	95	2500	3200	4000
2.5						
2.0						
180	95	2500	3200	4000	2.5	
					2.0	
					2.5	
200	95	2500	3200	4000	2.0	
					2.5	
					2.5	
220	95	2500	3200	4000	2.0	
					2.5	
					3.5	
240	95	3200	4000	6000	2.0	
					2.5	
					3.5	

### Mechanical Compensation Worktable



Mechanical compensation worktable		B	H	L	$\Delta H_{MAX}$	Adjustment mode			
		<mm>	<mm>	<mm>					
LG-K		90	95	2500	2.0	Mechanical			
				3200					
				4000	2.5				
		180	95	2500	2.0		Mechanical		
				3200					
				4000	2.5				
		200	95	2500	2.0			Mechanical	
				3200					
				4000	2.5				
		220	95	2500	2.0				Mechanical
				3200	2.5				
				4000	3.5				
240	95	3200	2.0	Mechanical					
		4000	2.5						
		6000	3.5						

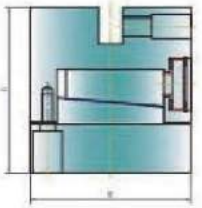
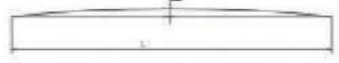
### Two Ways Compensation Worktable



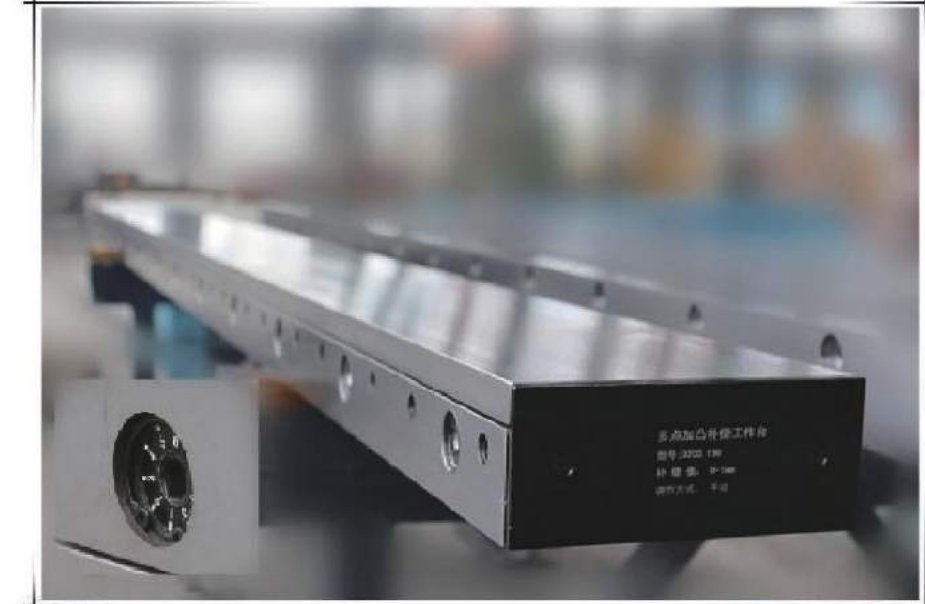
Two ways compensation worktable		B	H	L	$\Delta H_1$	$\Delta H_2$	Adjustment mode			
		<mm>	<mm>	<mm>	MAX	MAX				
LG-HK		180	120	2500	2.0	1.0	Mechanical or Manual			
				3200						
				4000	2.5	1.0				
		200	120	2500	2.0	1.0		Mechanical or Manual		
				3200						
				4000	2.5	1.0				
		220	120	2500	2.0	1.0			Mechanical or Manual	
				3200						
				4000	2.5	1.0				
		240	120	3200	2.0	1.0				Mechanical or Manual
				4000	2.5	1.0				
				6000	3.5	1.0				
280	120	3200	2.0	1.0	Mechanical or Manual					
		4000	2.5	1.0						
		6000	3.5	1.0						

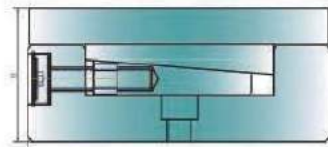
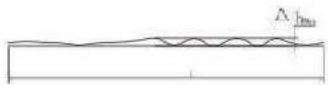
## Two Ways Compensation Worktable



Two ways compensation worktable		B	H	L	$\Delta H_1$	$\Delta H_2$	Adjustment mode
		<mm>	<mm>	<mm>	MAX	MAX	
ZLG-HK		90	95	2500	2.0	0.8	Mechanical or Manual
				3200	2.0		
				4000	2.0		

## Manual Multi-Point Compensation Worktable



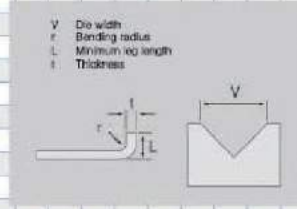
Manual Multi-point Compensation Worktable		B	H	L	$\Delta H$	Adjustment mode
		<mm>	<mm>	<mm>	MAX	
ST-H		180	80	2500	1.0	Bolt trimming
				3200		
				4000		
		200	80	2500	1.0	Bolt trimming
				3200		
				4000		
		220	80	2500	1.0	Bolt trimming
				3200		
				4000		
		240	85	3200	1.3	Bolt trimming
				4000		
				6000		
280	90	3200	1.0	Bolt trimming		
		4000				
		6000				

Unit of pressure is Ton in pressure table. Conversion of Ton into KN: KN=9.8XTon

Pressure/meter(Ton) to bend steel plate (SPCC 45kg/mm<sup>2</sup>)

## Air Bending Table

Die width	Bending radius	Minimum leg length	Thickness																									
			0.5	0.6	0.8	1.0	1.2	1.4	1.6	2.0	2.3	2.6	3.0	3.2	3.6	4.5	5.0	6	9	12	16	19	22	25	30			
V	r	L	t0.5	0.6	0.8	1.0	1.2	1.4	1.6	2.0	2.3	2.6	3.0	3.2	3.6	4.5	5.0	6	9	12	16	19	22	25	30			
4	0.7	2.8	4	5																								
6	1	4	3	4	7	11																						
7	1.1	5		3	6	10	14																					
8	1.2	5.5		3	5	8	12	15																				
10	1.5	7		4	7	10	13	17																				
12	2	8.5			6	8	11	14	22																			
14	2.3	10				7	10	13	19	25																		
16	2.5	11				6	9	11	17	22	28																	
18	3	13.5					8	10	15	19	25	37																
20	3.3	14						9	13	17	22	30	37															
25	4	18							11	14	18	24	27	37														
32	5.5	23								11	14	19	21	27	44													
40	6.5	28									11	15	17	21	34	42												
50	8	35										14	17	27	33	48												
63	10	45											14	21	26	38												
80	13.5	57												21	30	66												
100	16	71													24	54	96											
125	20	89														43	76	139										
160	26	113															60	106	150									
200	35	140																85	119	180								
250	42	175																	95	128	165	238						



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## Sharp Comer Bending Pressure Table

Pressure (Ton) to bend steel plate (SPCC) 1000mm in length

Thickness(mm)	1.0	1.6	2.0	2.3
V Width(mm)	6	8	10	12
Pressure(Ton)	40	70	100	120
Outside bending radius	1.7	2.6	3.2	3.7

## Hamming Pressure Table

Pressure (Ton) to bend steel (SPCC) 1000mm in length

Bending form	Open hemming		Crush hemming	
	Thickness (mm)	Pressure (/METER)	a(mm)	Pressure (/METER) 2t(mm)
	0.6	17	1.5	25
	0.8	21	2	32
	1.0	26	2.5	40
	1.2	30	3	50
	1.6	38	4	63
	2.0	43	5	80
	2.3	50	5.8	90
	3.2	60	8	120