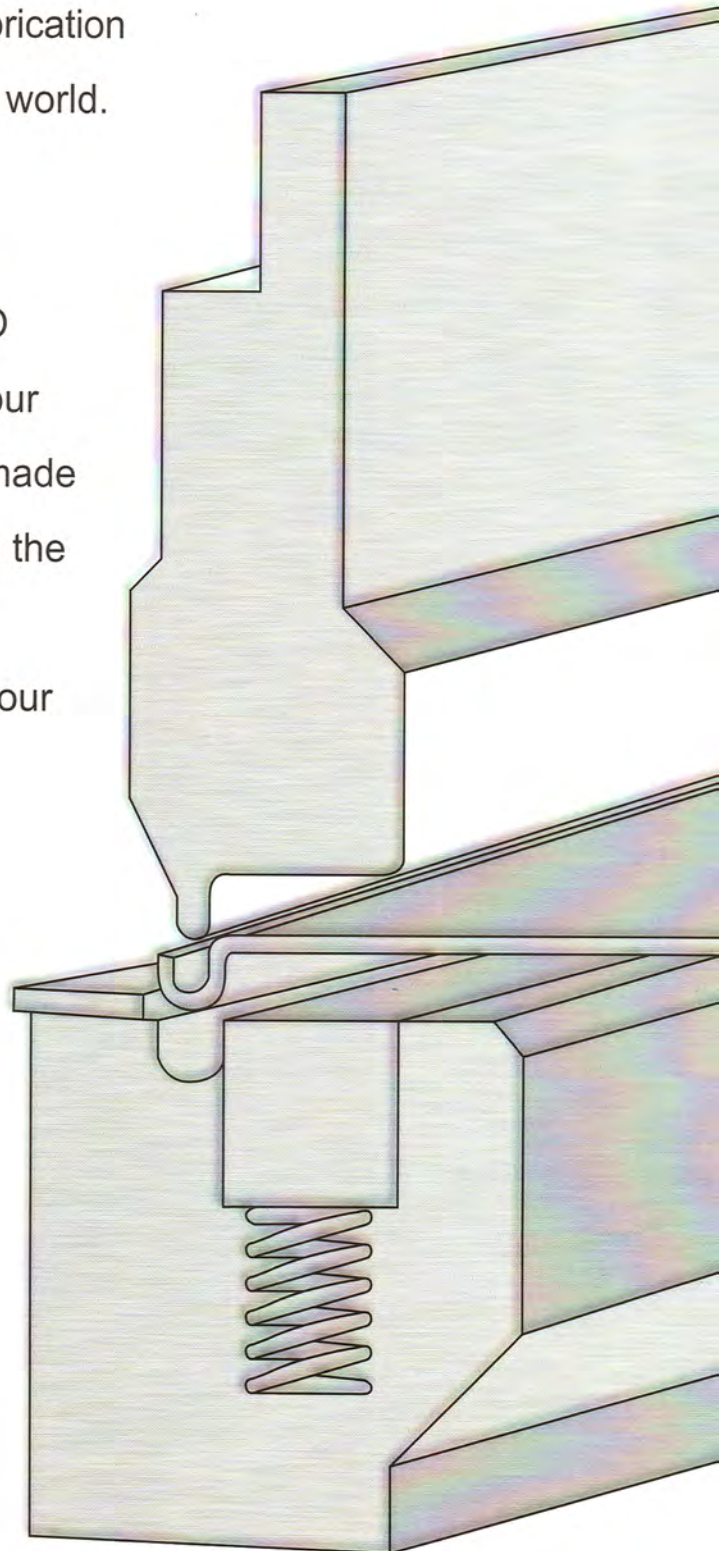


Introduction of KYOKKO

For over 50 years, KYOKKO has delivered the finest PRESSSS BRAKE TOOLINGS to our customers. These toolings are manufactured under strict quality control based upon years of studies and accumulated knowledge of the customers' needs. Due to this, KYOKKO stands high in the sheet metal fabrication field of not only Japan, but also all over the world.

In addition to our full line of American and European style standard toolings, KYOKKO nabyfactures special toolings specified by our customers. These special toolings can be made up to 3,100mm (122 inches) in length using the integrated process. This, along with the advanced equipments, enables us to meet our customers' needs quickly.

KYOKKO is second to none in the technical field, and is always seeking new possibilites and challenges; thus, enabling KYOKKO to develop and deliver revolutionary products, such as DANSAR and li'l Bender.





General information of bending tools

In this catalog, we introduce mainly Amada Promecam type tooling. The reason we introduce mainly Amada Promecam type is that in recent years, this type is highly taking up the market. The users tend to select this type because they can enjoy the benefit of interchangeability of the tooling.

Also, Kyokko produce quality toolings of other leading machine makers such as TRUMPF, LVD, BYSTRONIC in short lead time.

In terms of bending pattern, there are various shapes of products such as V bending, R bending, Z bending. Among those products, only a few products can be formed by the standard products. When there is a demand of forming which any standard tooling cannot do, there is a necessity of tooling which can do the forming. We name those special tooling.

In summary, good tooling consists of a punch and die which provide ease of handling, a long service life, accuracy, and interchangeability.

- * High accuracy of finishing.
- * Completely heat-treated for greater strength and longer wear resistance.
- * The length should enable easy installation and removal.
- * Interchangeable regardless of the equipment

When selecting bending a tooling, comprehensive judgement is indispensable.

When selecting bending dies, comprehensive judgement is necessary. "Comprehensive judgement" means to follow the right procedure and do not make the wrong selection.

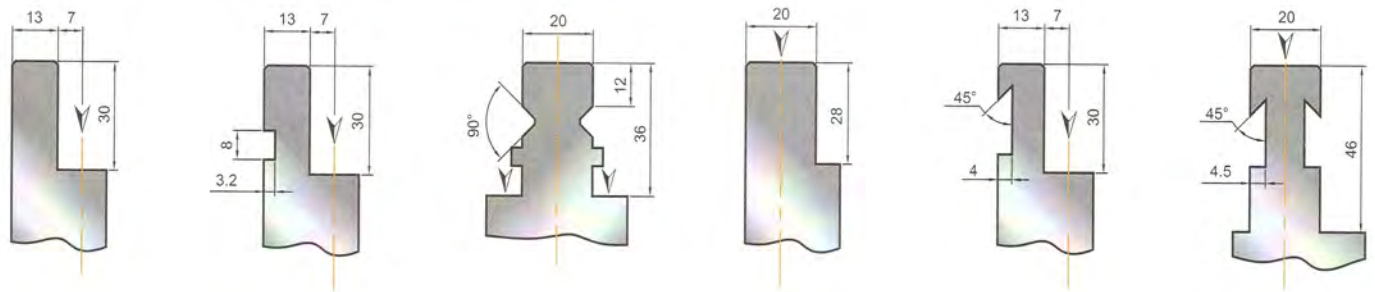
Many of the trouble in operation are caused by the wrong judgement with insufficient knowledge.

The procedure of selecting bending dies should be made by the determination of V width, combination of punch and die, specification of the machine, bending order and return bend, and allowance.

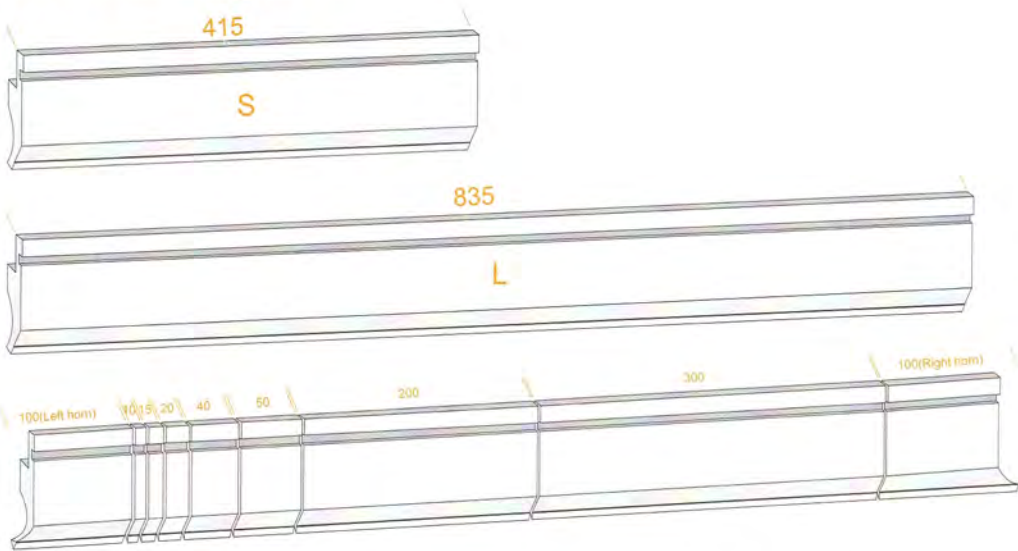


Punch Clamp

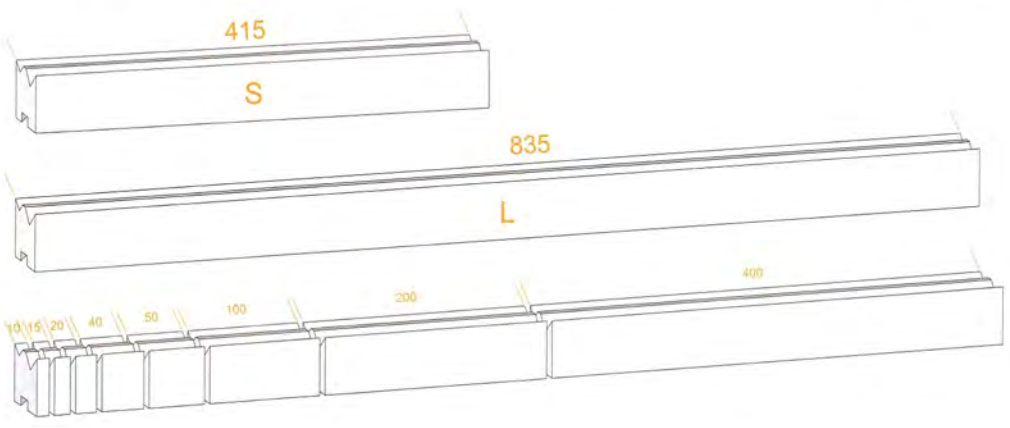
As for clamping type of punches, there are several type depending on machine makers. KYOKKO can produce any type. some examples are shown below.



Tool Length



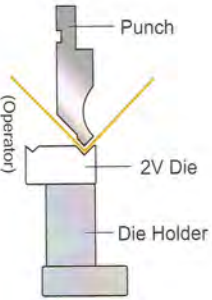
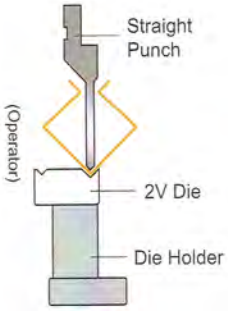
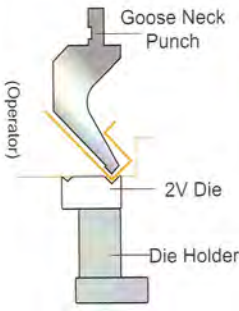
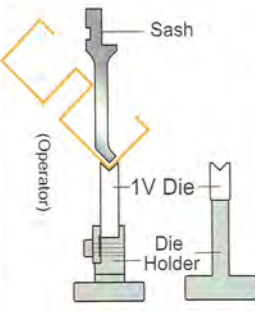
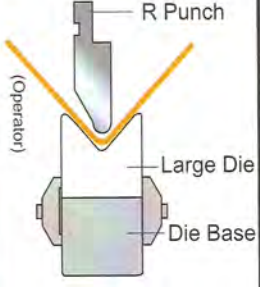
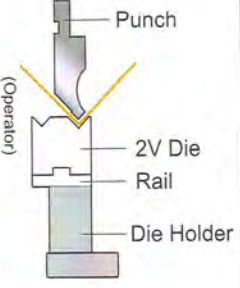
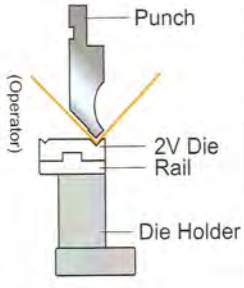
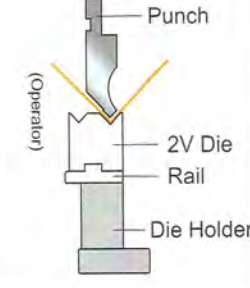
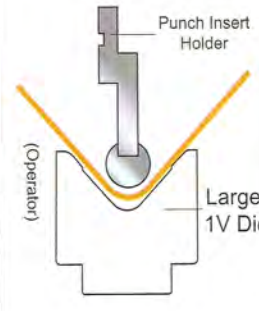
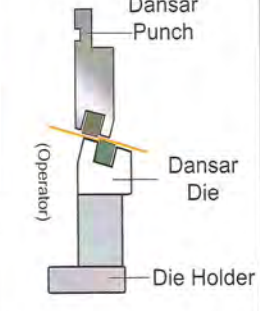
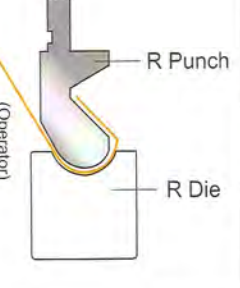
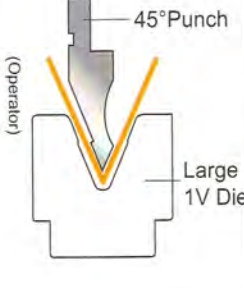
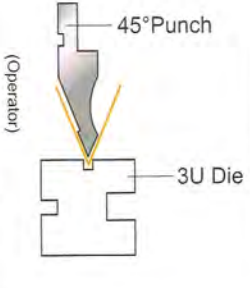
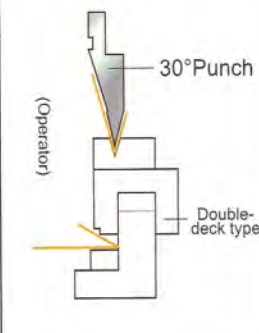
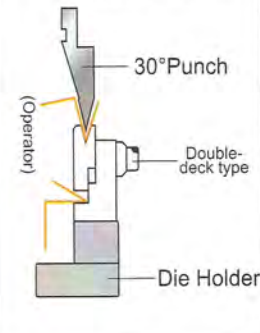
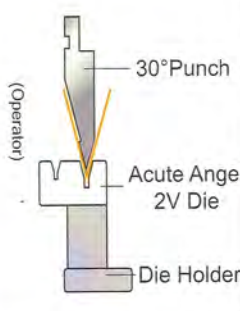
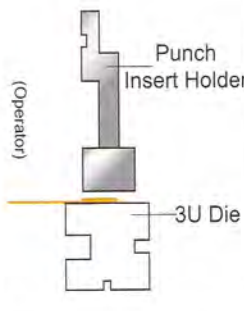
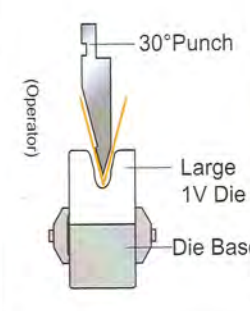
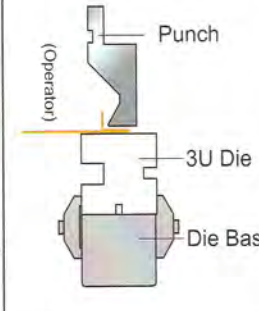
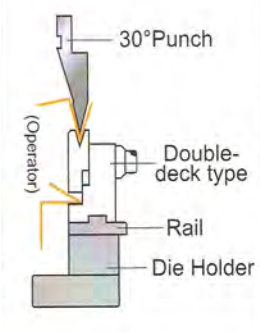
Punch: 100(Left horn),10,15,20,40,50,200,300,100(Right horn)=835mm



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

※Other than above standard length, we manufacture any length upon customer's request.

Combination of Punches & Dies

<p>90° Bending Thickness 0.4~3.2mm</p>  <p>Punch 2V Die Die Holder (Operator)</p>	<p>90° Bending Thickness 0.4~2.0mm</p>  <p>Straight Punch 2V Die Die Holder (Operator)</p>	<p>90° Bending (Goose Neck) Thickness 0.4~5.0mm</p>  <p>Goose Neck Punch 2V Die Die Holder (Operator)</p>	<p>90° Bending (Sash) Thickness 0.4~2.3mm</p>  <p>Sash 1V Die Die Holder (Operator)</p>	<p>90° Bending Thickness 4~10mm</p>  <p>R Punch Large Die Die Base (Operator)</p>
<p>90° Bending (Quick Change 2V Die) Thickness 0.4~3.2mm</p>  <p>Punch 2V Die Rail Die Holder (Operator)</p>	<p>90° Bending (Quick Change thin 2V Die) Thickness 0.4~3.2mm</p>  <p>Punch 2V Die Rail Die Holder (Operator)</p>	<p>90° Bending (Reversible 2V Die) Thickness 0.4~3.2mm</p>  <p>Punch 2V Die Rail Die Holder (Operator)</p>	<p>90° Bending Thickness 7~15mm</p>  <p>Punch Insert Holder Large 1V Die (Operator)</p>	<p>Step Bending Thickness 0.6~2.3mm</p>  <p>Dansar Punch Dansar Die Die Holder (Operator)</p>
<p>Radius Bending Thickness 1.2~1.5</p>  <p>R Punch R Die (Operator)</p>	<p>Acute-angle Bending Thickness 4~5mm</p>  <p>45° Punch Large 1V Die (Operator)</p>	<p>Acute-angle Bending Thickness 0.4~3.0mm</p>  <p>45° Punch 3U Die (Operator)</p>	<p>Hemming 2 Stage Thickness 0.4~1.6mm</p>  <p>30° Punch Double-deck type (Operator)</p>	<p>Hemming 2 Stage (Feather hemming) Thickness 0.4~1.6mm</p>  <p>30° Punch Double-deck type Die Holder (Operator)</p>
<p>Hemming (First Stage) Thickness 0.4~2.0mm</p>  <p>30° Punch Acute Angel 2V Die Die Holder (Operator)</p>	<p>Hemming (Second Stage) Thickness 0.4~2.0mm</p>  <p>Punch Insert Holder 3U Die (Operator)</p>	<p>Hemming (First Stage) Thickness 2.3~3.2mm</p>  <p>30° Punch Large 1V Die Die Base (Operator)</p>	<p>Hemming (Second Stage) Thickness 0.4~3.2mm</p>  <p>Punch 3U Die Die Base (Operator)</p>	<p>Hemming 2 Stage Thickness 0.4~2.3mm</p>  <p>30° Punch Double-deck type Rail Die Holder (Operator)</p>

Punches(88°90°)

Material 42CrMo

Tool #	Cross Section	R	Return Bends
<p>004 D = 88° 016 D = 90°</p> <p>Overall hardening HRC47 ± 3 (Max Ton) 100/Meter</p>	<p>H=67</p> <p>H85 is available</p>	<p>0.2R 0.6R 0.8R 1.5R 3.0R</p>	
<p>004 016 Sectionalized</p> <p>Overall hardening HRC47 ± 3 (Max Ton) 45/Meter</p>	<p>H=67</p> <p>H85 is available</p>	<p>0.2R 0.6R 0.8R 1.5R 3.0R</p>	
<p>117 D = 88° 116 D = 90°</p> <p>Overall hardening HRC47 ± 3 (Max Ton) 20/Meter</p>	<p>H=67</p>	<p>0.2R 0.6R</p>	
<p>117 116 Sectionalized</p> <p>Overall hardening HRC47 ± 3 (Max Ton) 20/Meter</p>	<p>H=67</p> <p>(nom)</p>	<p>0.2R 0.6R</p>	
<p>047 D = 88° 048 D = 90°</p> <p>Big Gooseneck</p> <p>Overall hardening HRC47 ± 3 (Max Ton) 50/Meter</p>	<p>H=120</p>	<p>0.2R 0.6R 0.8R 1.5R 3.0R</p>	
<p>047 048 Sectionalized</p> <p>Overall hardening HRC47 ± 3 (Max Ton) 45/Meter</p>	<p>H=120</p>	<p>0.2R 0.6R 0.8R 1.5R 3.0R</p>	

※ The height of the Punch changes depending on the radius of the Tip

Punches(88°90°)

Material 42CrMo

Tool #	Cross Section	R	Return Bends
<p>452 D = 88° 462 D = 90° Small Gooseneck Overall hardening HRC47 ± 3 (Max Ton) 70/Meter</p>	<p>H=90</p>	<p>0.2R 0.6R 0.8R 1.5R 3.0R</p>	
<p>452 462 Sectionalized Overall hardening HRC47 ± 3 (Max Ton) 45/Meter</p>	<p>H=90</p>	<p>0.2R 0.6R 0.8R 1.5R 3.0R</p>	
<p>453 D = 88° 463 D = 90° Thin Tip Small Gooseneck Overall hardening HRC47 ± 3 (Max Ton) 50/Meter</p>	<p>H=90</p>	<p>0.2R 0.6R 0.8R 1.5R 3.0R</p>	
<p>453 463 Sectionalized Overall hardening HRC47 ± 3 (Max Ton) 30/Meter</p>	<p>H=90</p>	<p>0.2R 0.6R 0.8R 1.5R 3.0R</p>	
<p>045 D = 88° 046 D = 90° Middle Goose neck Overall hardening HRC47 ± 3 (Max Ton) 50/Meter</p>	<p>H=105</p>	<p>0.2R 0.6R 0.8R 1.5R 3.0R</p>	
<p>045 046 Sectionalized Overall hardening HRC47 ± 3 (Max Ton) 45/Meter</p>	<p>H=105</p>	<p>0.2R 0.6R 0.8R 1.5R 3.0R</p>	

※ The height of the Punch changes depending on the radius of the Tip

Punches(88°90°)

Material 42CrMo

Tool #	Cross Section	R	Return Bends
<p>200 D = 88°</p> <p>201 D = 90°</p> <p>Sash Punch</p> <p>Overall hardening</p> <p>HRC47 ± 3</p> <p>(Max Ton)</p> <p>30/Meter</p>	<p>H=70</p>	<p>0.2R</p> <p>0.6R</p>	
<p>200</p> <p>201 Sectionalized</p> <p>Overall hardening</p> <p>HRC47 ± 3</p> <p>(Max Ton)</p> <p>15/Meter</p>	<p>H=70</p>	<p>0.2R</p> <p>0.6R</p>	
<p>202 D = 88°</p> <p>203 D = 90°</p> <p>Sash Punch</p> <p>Overall hardening</p> <p>HRC47 ± 3</p> <p>(Max Ton)</p> <p>30/Meter</p>	<p>H=100</p> <p>H120 is Available</p>	<p>0.2R</p> <p>0.6R</p>	
<p>202</p> <p>203 Sectionalized</p> <p>Overall hardening</p> <p>HRC47 ± 3</p> <p>(Max Ton)</p> <p>15/Meter</p>	<p>H=100</p> <p>H120 is Available</p>	<p>0.2R</p> <p>0.6R</p>	
<p>109 D = 88°</p> <p>108 D = 90°</p> <p>Straight Punch</p> <p>Overall hardening</p> <p>HRC47 ± 3</p> <p>(Max Ton)</p> <p>50/Meter</p>	<p>H=95</p> <p>H120 is Available</p>	<p>0.2R</p> <p>0.6R</p>	
<p>109</p> <p>108 Sectionalized</p> <p>Overall hardening</p> <p>HRC47 ± 3</p> <p>(Max Ton)</p> <p>12/Meter</p>	<p>H=95</p> <p>H120 is Available (nom)</p>	<p>0.2R</p> <p>0.6R</p>	

※ The height of the Punch changes depending on the radius of the Tip

Acute Angle Punches(30°60°45°)

Material 42CrMo



Tool #	Cross Section	R	Return Bends
<p>10870 30° Straight Punch Overall hardening HRC47 ± 3 (Max Ton) 50/Meter</p>	<p>H=90</p>	0.2R	
<p>10870 Sectionalized Overall hardening HRC47 ± 3 (Max Ton) 11/Meter</p>	<p>H=90</p>	0.2R	
<p>003 60° Punch Overall hardening HRC47 ± 3 (Max Ton) 100/Meter</p>	<p>H=65</p>	6.0R	
<p>003 Sectionalized Overall hardening HRC47 ± 3 (Max Ton) 100/Meter</p>	<p>H=65</p>	6.0R	
<p>008 45° Punch Overall hardening HRC47 ± 3 (Max Ton) 60/Meter</p>	<p>H=67</p>	0.37R	
<p>008 Sectionalized Overall hardening HRC47 ± 3 (Max Ton) 30/Meter</p>	<p>H=67</p>	0.37R	

※ The height of the Punch changes depending on the radius of the Tip

Acute Angle Punches(30°)

Material 42CrMo

Tool #	Cross Section	R	Return Bends
103 30°Punch Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=67 	0.52R	
103 Sectionalized Overall hardening HRC47 ± 3 (Max Ton) 30/Meter	H=67 	0.52R	
210 30°Punch Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=104 	0.65R	
210 Sectionalized Overall hardening HRC47 ± 3 (Max Ton) 20/Meter	H=104 	0.65R	
211 30°Punch Overall hardening HRC47 ± 3 (Max Ton) 50/Meter	H=90 	0.65R	
211 Sectionalized Overall hardening HRC47 ± 3 (Max Ton) 30/Meter	H=90 	0.65R	

※ The height of the Punch changes depending on the radius of the Tip

Thin Tip Punches(88°90°)

Material 42CrMo



Tool #	Cross Section	R	Return Bends
<p>No.1Thin Tip Punch</p> <p>004 D = 88°</p> <p>016 D = 90°</p> <p>Overall hardening HRC47 ± 3 (Max Ton) 40/Meter</p>	<p>H=67</p>	<p>0.2R</p> <p>0.6R</p>	
<p>No.1Thin Tip Punch</p> <p>004</p> <p>016Sectionalized</p> <p>Overall hardening HRC47 ± 3 (Max Ton) 20/Meter</p>	<p>H=67</p>	<p>0.2R</p> <p>0.6R</p>	
<p>No.2Thin Tip Punch</p> <p>004 D = 88°</p> <p>016 D = 90°</p> <p>Overall hardening HRC47 ± 3 (Max Ton) 80/Meter</p>	<p>H=67</p>	<p>0.2R</p> <p>0.6R</p>	
<p>No.2Thin Tip Punch</p> <p>004</p> <p>016Sectionalized</p> <p>Overall hardening HRC47 ± 3 (Max Ton) 40/Meter</p>	<p>H=67</p>	<p>0.2R</p> <p>0.6R</p>	
<p>Thin Tip Punch Example</p>			

※ The height of the Punch changes depending on the radius of the Tip



Radius Punches

Material S45C

Tool #	Cross Section
015 punch Insert Holder Bonified HRC25 ± 3	H=67
017 Radius Ruler R10	 V width: $(R+thickness) \times (2 \sim 2.5)$
017 Radius Ruler R15	 V width: $(R+thickness) \times (2 \sim 2.5)$
017 Radius Ruler R17.5	 V width: $(R+thickness) \times (2 \sim 2.5)$
017 Radius Ruler R20	 V width: $(R+thickness) \times (2 \sim 2.5)$
017 Radius Ruler R25	 V width: $(R+thickness) \times (2 \sim 2.5)$
017 Radius Ruler R30	 V width: $(R+thickness) \times (2 \sim 2.5)$

R Punch + #350 Die

Material S45C

Tool #	Cross Section
230 Bonified HRC25 ± 3 (Max Ton) 100/Meter	H=65
230 Sectionalized Bonified HRC25 ± 3 (Max Ton) 100/Meter	H=65

Flatting Punches

Material S45C 42CrMo

Tool #	Cross Section
020 Flatting Punch Bonified HRC25 ± 3	H=28 Use #015
220 Flatting Punch Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=65
221 Flatting Punch Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=70

※ The height of the Punch changes depending on the radius of the Tip

2V Dies Reversible type(90°88°)

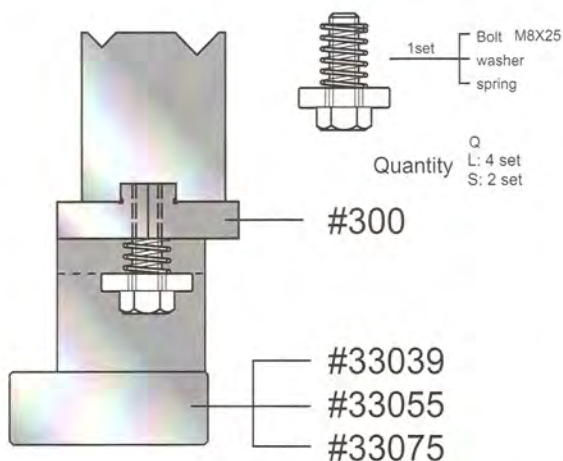
Material 42CrMo



Tool #	Cross Section
5019 (90° V4-V7) Overall hardening HRC47 ± 3 (Max Ton) 60/Meter	H=46
5079 (90° V5-V9) Overall hardening HRC47 ± 3 (Max Ton) 70/Meter	H=46
5029 (90° V6-V10) Overall hardening HRC47 ± 3 (Max Ton) 70/Meter	H=46
5039 (90° V8-V12) Overall hardening HRC47 ± 3 (Max Ton) 70/Meter	H=46

Tool #	Cross Section
50196 (88° V4-V7) Overall hardening HRC47 ± 3 (Max Ton) 60/Meter	H=45.5
50796 (88° V5-V9) Overall hardening HRC47 ± 3 (Max Ton) 70/Meter	H=45.5
50296 (88° V6-V10) Overall hardening HRC47 ± 3 (Max Ton) 70/Meter	H=45.5
50396 (88° V8-V12) Overall hardening HRC47 ± 3 (Max Ton) 70/Meter	H=45.5
50490 (88° V14-V18) Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=46
50590 (88° V12-V20) Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=46
50690 (88° V16-V25) Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=46

2V Die Reversible type fixing details



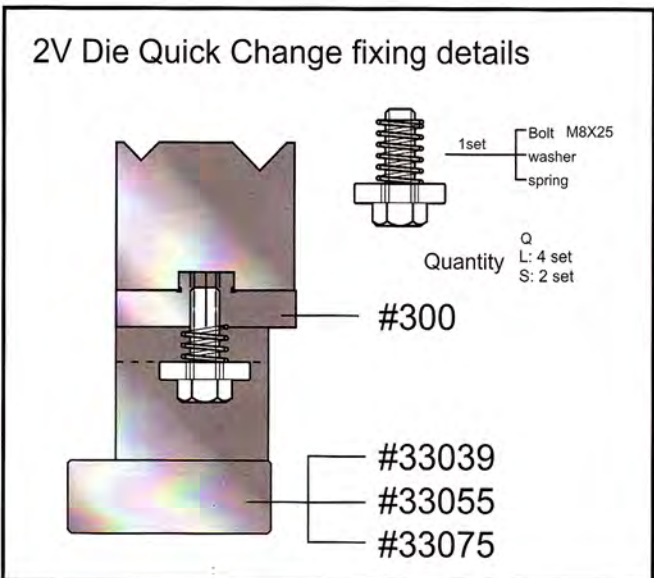


2V Dies Quick change(90°88°)

Material 42CrMo

Tool #	Cross Section
30148 (90° V4-V7) Overall hardening HRC47 ± 3 (Max Ton) 60/Meter	H=46 H16 is Available
30748 (90° V5-V9) Overall hardening HRC47 ± 3 (Max Ton) 65/Meter	H=46 H16 is Available
30248 (90° V6-V10) Overall hardening HRC47 ± 3 (Max Ton) 70/Meter	H=46 H16 is Available
30348 (90° V8-V12) Overall hardening HRC47 ± 3 (Max Ton) 70/Meter	H=46 H16 is Available

Tool #	Cross Section
30147 (88° V4-V7) Overall hardening HRC47 ± 3 (Max Ton) 60/Meter	H=45.5 H15.5 is Available
30747 (88° V5-V9) Overall hardening HRC47 ± 3 (Max Ton) 65/Meter	H=45.5 H15.5 is Available
30247 (88° V6-V10) Overall hardening HRC47 ± 3 (Max Ton) 70/Meter	H=45.5 H15.5 is Available
30347 (88° V8-V12) Overall hardening HRC47 ± 3 (Max Ton) 70/Meter	H=45.5 H15.5 is Available
30448 (88° V14-V18) Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=46
30548 (88° V12-V20) Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=46
30648 (88° V16-V25) Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=46



2V Dies Bolt type(90°88°)

Material 42CrMo

Tool #	Cross Section
121 (90° V4-V7) Overall hardening HRC47 ± 3 (Max Ton) 60/Meter	H=26
122 (90° V5-V9) Overall hardening HRC47 ± 3 (Max Ton) 65/Meter	H=26
123 (90° V6-V10) Overall hardening HRC47 ± 3 (Max Ton) 70/Meter	H=26
124 (90° V8-V12) Overall hardening HRC47 ± 3 (Max Ton) 80/Meter	H=26

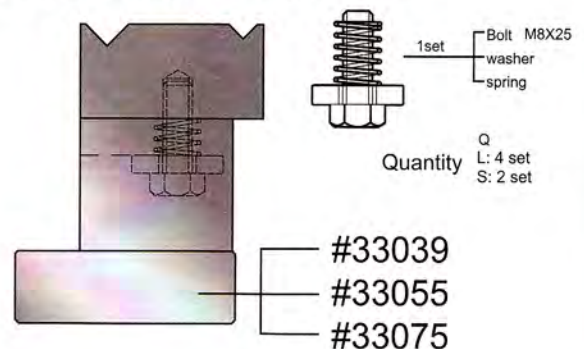
2V Die(90°88°86°84°) For Stainless Aluminum

Tool #	Cross Section
311 (90° V6-V10) Overall hardening HRC47 ± 3 (Max Ton) 80/Meter	H=26
31106 (V6-V10) Overall hardening HRC47 ± 3 (Max Ton) 80/Meter	H=25.5
31400 (V12-V20) Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=26
128 (V16-V25) Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=35

※ The Dies for Stainless and Aluminum bending feature large shoulder R

Tool #	Cross Section
12106 (88° V4-V7) Overall hardening HRC47 ± 3 (Max Ton) 60/Meter	H=25.5
12206 (88° V5-V9) Overall hardening HRC47 ± 3 (Max Ton) 65/Meter	H=25.5
12306 (88° V6-V10) Overall hardening HRC47 ± 3 (Max Ton) 70/Meter	H=25.5
12406 (88° V8-V12) Overall hardening HRC47 ± 3 (Max Ton) 80/Meter	H=25.5
125 (88° V14-V18) Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=26
126 (88° V12-V20) Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=26
127 (88° V16-V25) Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=26

2V Dies bolt type Fixing details



※ There is not sectionalized set for 2V Die blot Type



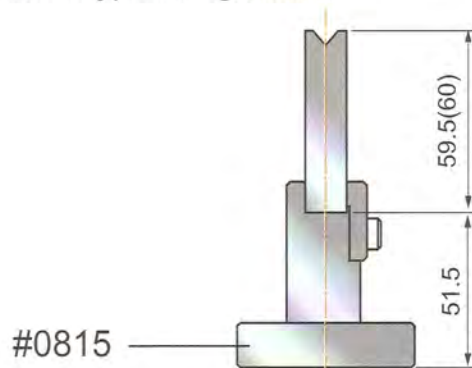
1V Die Insert type(88°)

Material 42CrMo

Tool #	Cross Section
08306 (88° V3) Overall hardening HRC47 ± 3 (Max Ton) 40/Meter	H=60
08406 (88° V4) Overall hardening HRC47 ± 3 (Max Ton) 40/Meter	H=60
08506 (88° V5) Overall hardening HRC47 ± 3 (Max Ton) 50/Meter	H=60
07008 (88° V6) Overall hardening HRC47 ± 3 (Max Ton) 95/Meter	H=60
07108 (88° V8) Overall hardening HRC47 ± 3 (Max Ton) 95/Meter	H=60
07200 (88° V10) Overall hardening HRC47 ± 3 (Max Ton) 95/Meter	H=60
07400 (88° V12) Overall hardening HRC47 ± 3 (Max Ton) 95/Meter	H=60

Tool #	Cross Section
07600 (88° V14) Overall hardening HRC47 ± 3 (Max Ton) 95/Meter	H=60
07700 (88° V16) Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=60
07800 (88° V18) Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=60
07900 (88° V20) Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=60
08200 (88° V25) Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=60

1V Die Insert type fixing details



1V Dies Insert Type(90°)

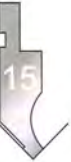
Material 42CrMo

Tool #	Cross Section
08300 (90° V3) Overall hardening HRC47 ± 3 (Max Ton) 40/Meter	H=60
08400 (90° V4) Overall hardening HRC47 ± 3 (Max Ton) 40/Meter	H=60
08500 (90° V5) Overall hardening HRC47 ± 3 (Max Ton) 50/Meter	H=60
070 (90° V6) Overall hardening HRC47 ± 3 (Max Ton) 95/Meter	H=60
071 (90° V8) Overall hardening HRC47 ± 3 (Max Ton) 95/Meter	H=60
073 (90° V10) Overall hardening HRC47 ± 3 (Max Ton) 95/Meter	H=60
075 (90° V12) Overall hardening HRC47 ± 3 (Max Ton) 95/Meter	H=60

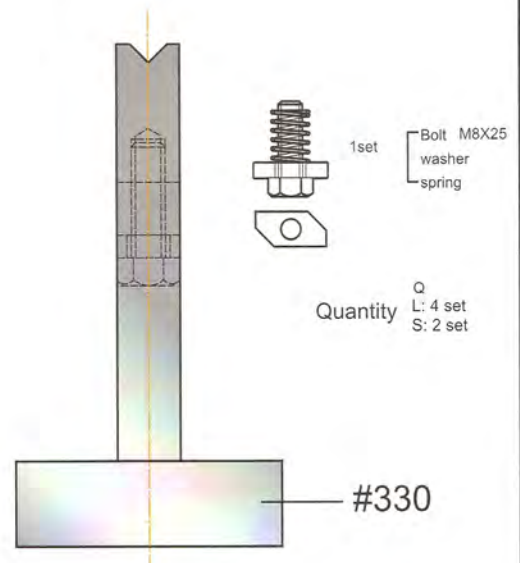
1V Dies Bolt Type(90°)

Material 42CrMo

Tool #	Cross Section
320 (90° V6) Overall hardening HRC47 ± 3 (Max Ton) 95/Meter	H=30
321 (90° V8) Overall hardening HRC47 ± 3 (Max Ton) 95/Meter	H=30
323 (90° V10) Overall hardening HRC47 ± 3 (Max Ton) 95/Meter	H=30
326 (90° V12) Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=30



1V Dies Bolt type fixing details





1V Dies Bolt type(88°)

Material 42CrMo

Tool #	Cross Section
32006 (88° V6) Overall hardening HRC47 ± 3 (Max Ton) 95/Meter	H=29.5 Available 84°
32106 (88° V8) Overall hardening HRC47 ± 3 (Max Ton) 95/Meter	H=29.5 Available 84°
32200 (88° V10) Overall hardening HRC47 ± 3 (Max Ton) 95/Meter	H=30 Available 84°
324 (88° V12) Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=30 Available 84°
325 (88° V14) Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=30 Available 84°

Large 1V Dies(85° 80°)

Material S45C

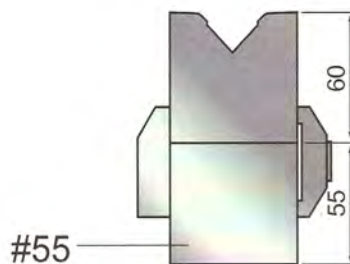
Tool #	Cross Section
35 (85° V32) Local hardening V Groove HRC50~55 (Max Ton) 100/Meter	H=60
36 (85° V40) Local hardening V Groove HRC50~55 (Max Ton) 100/Meter	H=60
37 (85° V50) Local hardening V Groove HRC50~55 (Max Ton) 100/Meter	H=60
38 (85° V63) Local hardening V Groove HRC50~55 (Max Ton) 100/Meter	H=75
13 (85° V80) Local hardening V Groove HRC50~55 (Max Ton) 100/Meter	H=95
18 (85° V100) Local hardening V Groove HRC50~55 (Max Ton) 100/Meter	H=110(95) (90) Available
39 (80° V125) Local hardening V Groove HRC50~55 (Max Ton) 100/Meter	H=123(103) (120) Available
14 (80° V160) Local hardening V Groove HRC50~55 (Max Ton) 100/Meter	H=140

Large 1V Dies(30°45°)

Material S45C

Tool #	Cross Section
340 (30° V18) Local hardening V Groove HRC50~55 (Max Ton) 80/Meter	H=60
341 (30° V25) Local hardening V Groove HRC50~55 (Max Ton) 60/Meter	H=65
342 (45° V32) Local hardening V Groove HRC50~55 (Max Ton) 40/Meter	H=60
343 (45° V40) Local hardening V Groove HRC50~55 (Max Ton) 70/Meter	H=80
350 R die + #230 punch Bonified HRC25 ± 3	H=60

Large 1V Dies fixing details



※ without #39, #14

Acute Angle Dies(30°)

Material S45C 42CrMo

Tool #	Cross Section
337 (30° V8-V12) Overall hardening HRC50~55 (Max Ton) 30/Meter	H=38
33706 (30° V6-V10) Overall hardening HRC47 ± 3 (Max Ton) 26/Meter	H=46
339 (30° V8-V12) Overall hardening HRC47 ± 3 (Max Ton) 40/Meter	H=38
08403 (30° V4) Overall hardening HRC47 ± 3 (Max Ton) 20/Meter	H=60
08503 (30° V5) Overall hardening HRC47 ± 3 (Max Ton) 20/Meter	H=60

Polyurethane & Holders

Material S45C

Tool #	Cross Section
60(1) Die Holder for polyurethane-25X25 Bonified HRC25 ± 3	H=60
61(1) Polyurethane-25X25	<p>Red80° Blue90° Yellow95°(White99°)</p>
60(2) Die Holder for polyurethane-30X25 Bonified HRC25 ± 3	H=43
61(2) Polyurethane-30X25	<p>Red80° Blue90° Yellow95°(White99°)</p>
60(3) Die Holder for polyurethane-50X50 Bonified HRC25 ± 3	H=100
61(3) Polyurethane-50X50	<p>Red80° Blue90° Yellow95°(White99°)</p>
60(4) Die Holder for polyurethane-80X30 Bonified HRC25 ± 3	H=83
61(4) Polyurethane-80X30	<p>Red80° Blue90° Yellow95°(White99°)</p>
60(5) Die Holder for polyurethane-110X45 Bonified HRC25 ± 3	H=108
61(5) Polyurethane-110X45	<p>Red80° Blue90° Yellow95°(White99°)</p>

3U,4V Dies

Material 42CrMo

Tool #	Cross Section
12 (3U Die) Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=60
129 (4V Die) Overall hardening HRC47 ± 3 (Max Ton) 100/Meter	H=60

Die Holders

Material S45C

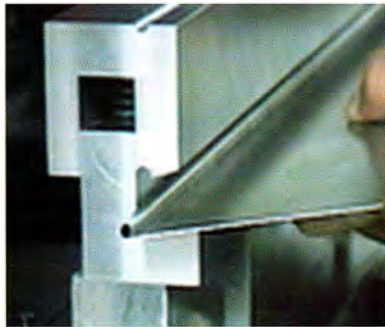
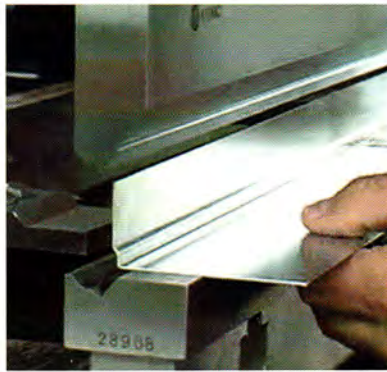
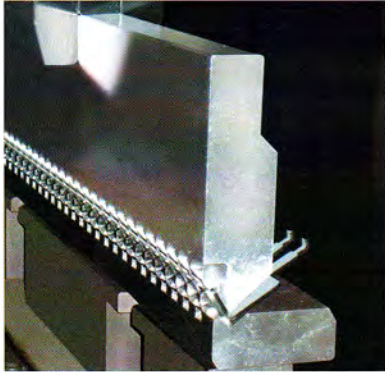
Tool #	Cross Section
<p>330 (1V Die Holder Bolt type) Bonified L=830 S=412</p>	<p>H=81.5</p>
<p>0815 (1V Insert Die Holder) Bonified L=840 S=420</p>	<p>H=61.5</p>
<p>300 (Die Rail for 2V Die) Bonified HRC25 ± 3</p>	<p>H=10</p>
<p>55 (Die Base) Bonified HRC25 ± 3</p>	<p>H=55</p>
<p>33039 (Die Holder for 2V Die) Bonified HRC25 ± 3</p>	<p>H=39</p>
<p>33055 (Die Holder for 2V Die) Bonified HRC25 ± 3</p>	<p>H=55</p>
<p>33075 (Die Holder for 2V Die) Bonified HRC25 ± 3</p>	<p>H=75</p>

Accessories

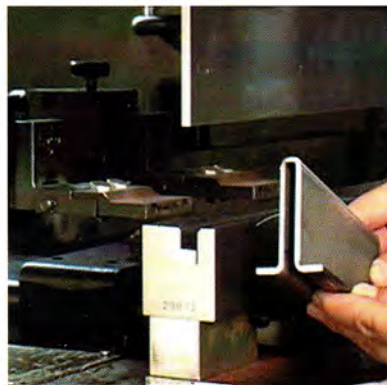
Tool #	
<p>Protective sheet</p>	<p>Width: 100mm Length: 5m and 10m</p>
<p>Side gauge</p> <p>Maximum 61mm Minimum 13mm</p>	
<p>Stoper (For 2V Sectionalized Die)</p>	
<p>Cupboards</p>	

Special order Tools

Examples

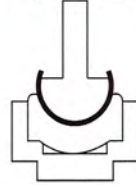


Curling Die

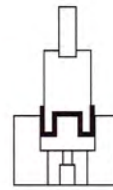


U channel die

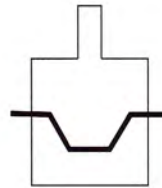
Radius bending urethane dies



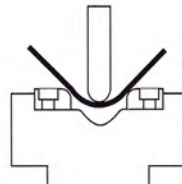
U channel dies



Open hat Channels dies



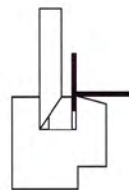
Special 1V dies



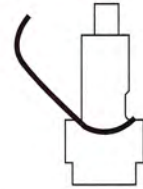
Curling dies



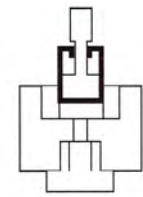
Slide hemming dies



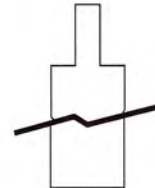
Radius forming dies



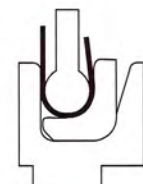
U channel dies



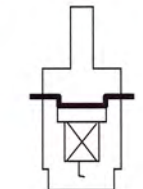
Step bending dies



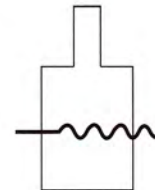
Combination dies



Hat Channels dies



Corrugating dies



DANSAR - STEP BENDING DIE

It is easy to make the same step height as the thickness of the shim.

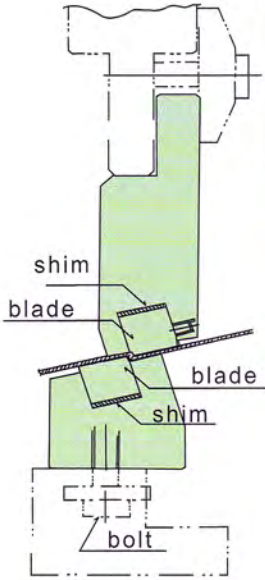
DANSAR can easily be set for the same step difference as the shim that is inserted between the body and the blade. It is a revolutionary die whose innovative design and user-friendly setting reach far beyond your expectations.

9 different kinds of DANSARS are available. Select the most suitable model for your bending job.

- DANSAR - S
- DANSAR - L
- DANSAR - LL
- DANSAR - 7
- DANSAR - 7 a
- DANSAR - 8
- DANSAR - 8 a

MODEL	DETAIL
DANSAR - S	Punch, Die, Blade - Solid 415 mm (15.34 inches)
DANSAR - L	Punch, Die, Blade - Solid 835 mm (32.87 inches)
DANSAR - LL	Punch, Die, Blade - Solid 1250 mm (49.22 inches)
DANSAR - 7	Punch - Sectionalized 435 mm(17.13 inches)/7, Die body & Blade - Solid 415 mm (15.34 inches)
DANSAR - 7a	Punch - Sectionalized 435 mm(17.13 inches)/7, Die body - Solid 415 mm (15.34 inches), Blade - Sectionalized 435 mm (17.13 inches)/7
DANSAR - 77	Punch - Sectionalized 435 mm(17.13 inches)/7, Die - Sectionalized 435 mm (17.13 inches) (Rail type)
DANSAR - 8	Punch - Sectionalized 835 mm (32.87 inches)/8, Die body & Blade - Solid 835 mm (32.87
DANSAR - 8a	Punch - Sectionalized 835 mm (32.87 inches)/8, Die body - Solid 835 mm (32.87 inches), Blade - Sectionalized 835 mm (32.87 inches)/8
DANSAR - 88	Punch - Sectionalized 835 mm (32.87 inches)/8, Die body - Sectionalized 835 mm (32 inches)/8 (Rail type)

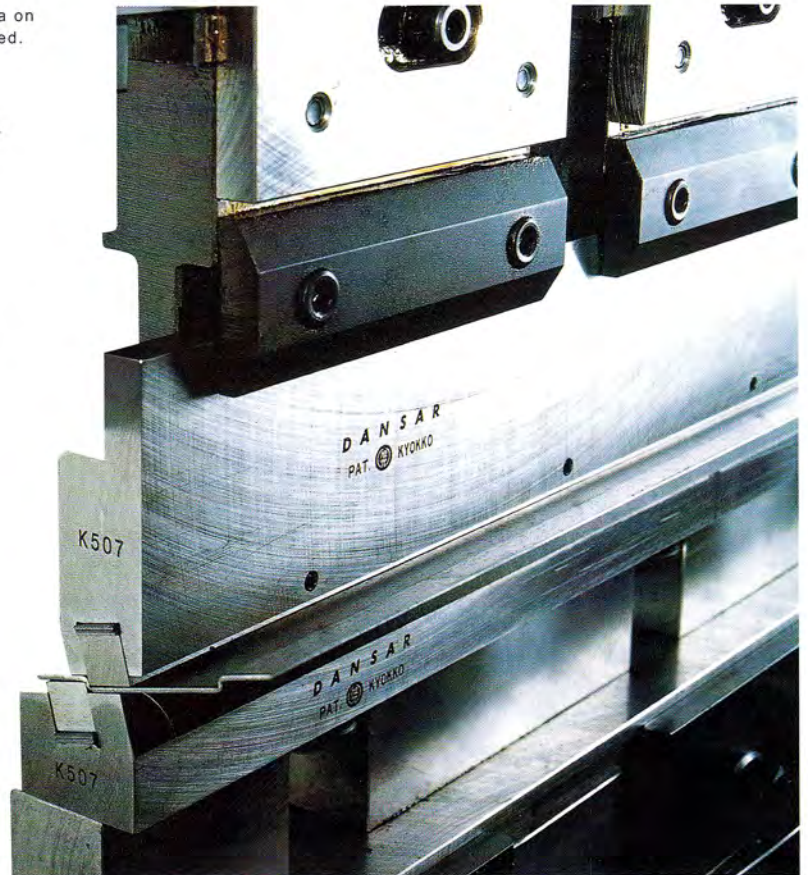
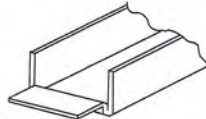
The shim must be cut into a width of 14 mm (0.55 inches) and place into the upper and lower parts of the DANSAR.



If there is no interference area on the bending, Dansar-S, L, LL is used.



IF both ends stand up, Dansar-7, 7a, 8, 8a. is used.



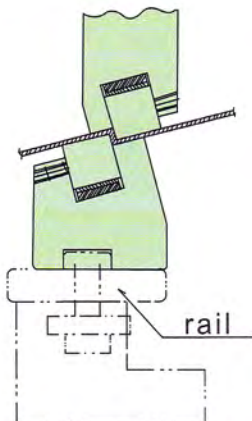
CLEARANCE ADJUSTMENT

Ten (10) kinds of pin gauge (two each) come as standard accessories. First, place the pin gauges, that are 60 -70 % of the thickness of the material, between the blades. Then, press the lower blade against the upper die and tighten the bolt.

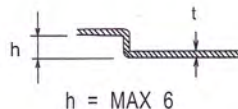
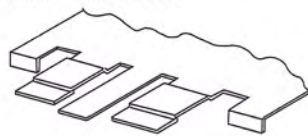
Attached Pin Gauges

- mm 0.4, 0.5, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0
- inch 0.016, 0.020, 0.024, 0.031, 0.039, 0.047, 0.055, 0.063, 0.071, 0.079

- DANSAR - 77
- DANSAR - 88



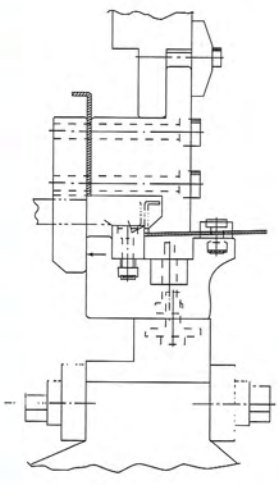
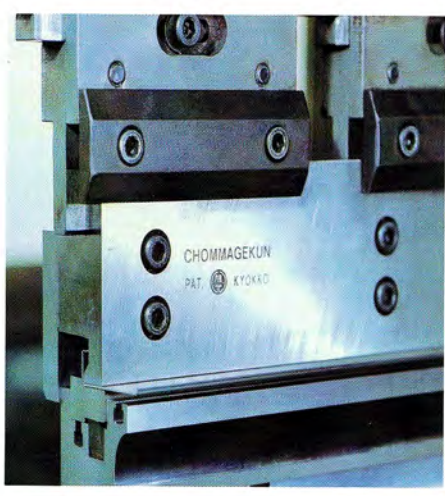
If the step bending is worked without the interference part, Dansar- 77, 88 is used.



THE BENDING FORCE(Tonnage - SPC per 1m)

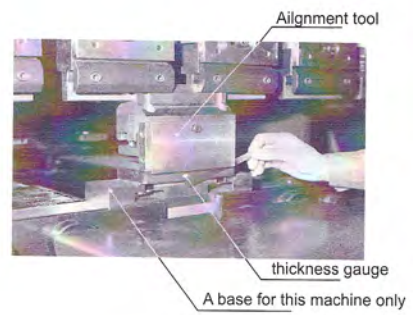
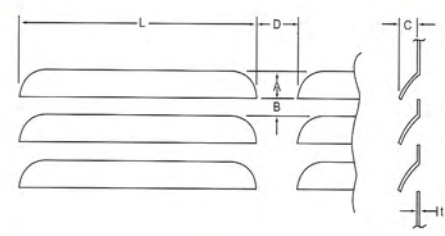
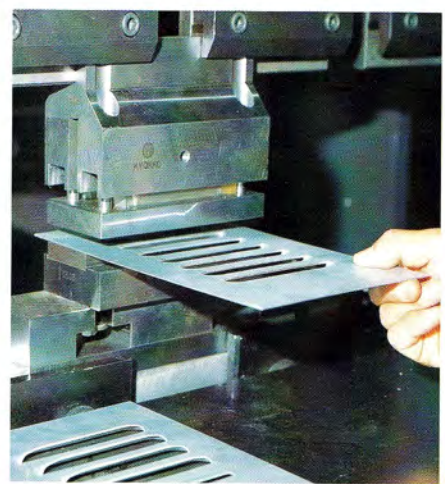
Material Thickness		t	t x 2	t x 3	t x 4
mm	inch				
0.60	0.024	8	10	15	18
0.80	0.031	13	17	20	23
1.00	0.039	18	22	27	30
1.20	0.047	25	30	35	38
1.60	0.063	43	47	53	58
2.00	0.079	64	68	77	
2.30	0.091	84	90		

LI'L BENDER

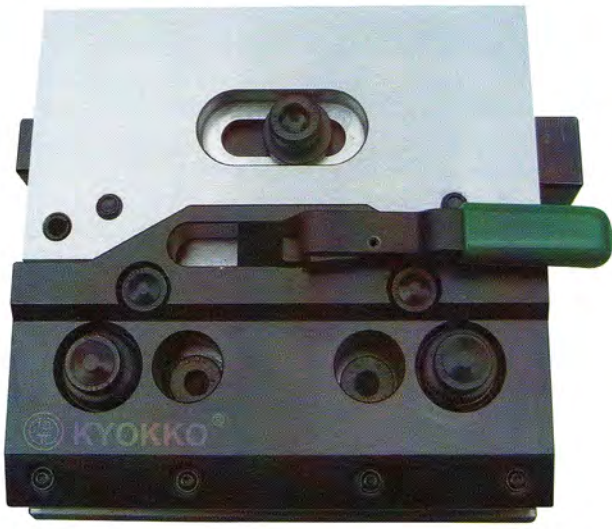


Only 1.5 times thicker than material thickness can be bent

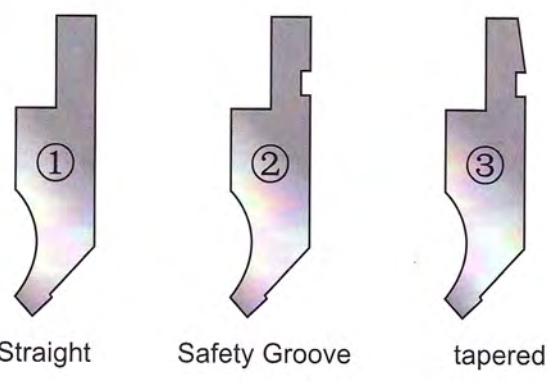
LOUVER DIE



Eco Clamp



Eco Clamp enables all types of toolings to be Clamped





KYOKKO Tooling Quotation Request

Company: _____

Date: _____

Contact Person: _____

Tel: _____

Fax: _____

E-mail: _____

Press Brake Machine Specifications

Machine Maker		Machine Model	
Table Length / Table width		Bending Force	
Open Height / Ram Height			

Material Information

Material	
Thickness / Length	
Tensile Strength	

Notes and Sketches

Pressure Table

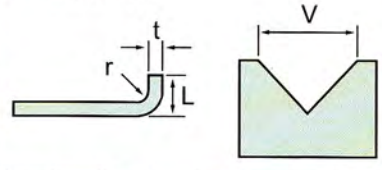
Unit of pressure is Ton in pressure table. Conversion of Ton into kN : $kN=9.8 \times \text{Ton}$

Air Bending Force Chat

Pressure/meter (Ton) to bend steel plate (SPCC 45kg/mm²)

Die width	Bending radius	Minimum leg length	Thickness	T					V																		
				0.5~2.6	3.0~8	9~10	12~	0.5~2.6	3.0~8	9~10	12~																
V	r	L	t	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	
4	0.7	2.8	4	6																							
6	1	4	3	4	7	11																					
7	1.1	5		3	6	10	14																				
8	1.3	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	160				
250	42	175																				95	128	165	238		

V=V width
r = Bending radius
L= Minimum leg length
t = Thickness



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

Hemming Pressure Table

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

Bending form	Open hemming 		Crush hemming 	
	Thickness (mm)	Pressure (/METER)	a(mm)	2t(mm)
	0.6	17	1.5	1.2
	0.8	21	2	1.6
	1.0	26	2.5	2
	1.2	30	3	2.4
	1.6	38	4	3.2
	2.0	43	5	4
	2.3	50	5.8	4.6
	3.2	60	8	6.4