Rolla

press brake tooling

SM Tech

2018

MAKING THE IMPOSSIBLE, POSSIBLE...

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Welcome to Rolla-V

the home of Press Brake Tooling...

We are Rolla-V, the leading designers and manufacturers of specialist Press Brake Tools in the world.

Our state-of-the-art facilities reflect the tradition of generations of engineering in the industrial heart of the United Kingdom.

Based in the West Midlands, at the hub of the motorway network, it's easy to visit for a demonstration or to view your tools in action prior to delivery.
With over 80 years of experience, Rolla-V supplies the most comprehensive range of Press Brake Tools available today.

We are also the home of the revolutionary patented Rolla-V.

We supply Press Brake Tools, from stock, for every make of Press Brake in the world including Adira, Amada, Baykal, Bystronic, Durma, LVD, Safan and Trumpf.

Most of our products are available for immediate dispatch, enabling you to tackle any project, of any size with complete confidence.

We have full CNC Press Brake testing facilities and also supply guillotine blades and a comprehensive range of auxiliary equipment.

Rolla V press brake tooling

Rolla-V Press Brake Tools supplied from stock for the following makes of Press Brakes:

adira · AMADA · Baykal Machine Tools · DURMA · Bystronic · LVD · SAFAN DARLEY · Prima Power · TRUMPF

With continued investment and an unrivalled reputation for quality and service, Rolla-V is the global centre of excellence for Press Brake Tools and bending technology.

We designed and patented the revolutionary Rolla-V over fifteen years ago.

Since then, Rolla-V has become a favourite of every Press Brake manufacturer in the world, and won Innovative Product of the Year. Rolla-V is now sold by all major press brake tooling companies.

Rolla-V provides the definitive answer if you need to:

- **Bend stainless steel, aluminium (or any aesthetic materials) with little or no marking**
- **Bend small flanges**
- **Bend near to a hole or slot without distortion**
- **Avoid tool contamination**
- **Prevent secondary expensive and unnecessary rework.**

Technical Specification

Non-Standard Lengths Are Available To Order On All Models

The Rolla-V range of tools

Rolla-V dies are available to suit any manufacturers machine.

Several fixed sizes are offered as well as adjustable models which are ideal for heavy plate or large radius work. Appropriate insert materials are used to suit the typical applications for each size of Rolla-V tool, although custom materials may be available on request.

Custom sizes and widths are also available for specific applications please call us to find out more

Application

RVP (models 1, 2 and 3) are; 60mm clamping widths
Suitable for Amada, Atlantic, Adira, Bystronic Euro, Beyeler Euro-B, CR Electronic, Durmazlar, Ermaskan, Gasparini, Guifil, Haco, Promecam

RVS (models 1, 2) are 14mm tang
Suitable for Amada style single V holder

RVT (models 1, 2 and 3) are 12.7mm/13.0mm tang
Suitable for Bystronic, Hammerle, Beyeler, Edwards, Safan, SMD, Trumpf

RVT90 (models 1, 2 and 3) are 12.8mm offset tang
Suitable for LVD with offset tang

RVM (models 2.5, 3 and 4)
Universal clamping width base or tang – all styles are available – suitable for any machine brand

If you cannot see your machine type listed here we can provide advice and make custom fittings to your specification – please call us

Rolla-V Materials

Inserts	Models 1, 2 and 2.5	through hardened 54 - 56
	Model 3	through hardened 54 - 56
	Model RVM90-4	hardened to HRc44 + surface hardened to HRc55
Body	All models	42CrMo4 tensile strength 1100-1200M/mm^2 surface hardened to HRc55

Non-standard insert materials and HRc values are available for specific applications – please call us

Rolla-V Advantages

- ▼ Highly precision ground
- ▼ Modular
- ▼ Avoid traditional bending marks
- ▼ Minimal marking
- ▼ Extremely short flanges possible
- ▼ No tool material cross contamination
- ▼ Bend close to holes and cut-outs with no deformation
- ▼ Fewer tool changes
- ▼ Bends laser cut sheets with no tool damage
- ▼ Ideal for radius bending
- ▼ Exact inside radius
- ▼ Ideal for tapered or feathered edges
- ▼ Bends up to 30mm thick material (subject to model selected)

Application and Technical Data

	maximum load capacity (t/m)	material thickness (mm)	minimum bend angle (degrees)	A tonnage required (t)	B minimum outside flange(mm)	C max outside radius
Model 1 fixed style Max recommended thickness 1.5 mm (2.0 mm thickness may be possible)	100	0.7	40.0	5.0	4.2	3.0
	100	1.1	35.0	13.0	4.2	2.6
	100	1.5	35.0	27.0	4.2	2.2
Model 2 fixed style Max recommended thickness 3.0 mm (4.0 mm thickness may be possible)	150	2.0	59.0	21.0	9.3	6.0
	150	3.0	47.0	55.0	9.3	5.0
	150	3.2	47.0	65.0	9.3	4.8
Model 2.5 fixed style Max recommended thickness 6.3 mm	250	2.0	46.0	10.0	18.6	13.2
	250	4.0	46.0	47.0	18.6	12.0
	250	6.0	55.0	127.0	18.6	9.8
Model 3 fixed style Max recommended thickness 6.3 mm (8.0 mm thickness may be possible)	250	2.0	68.0	7.0	22.5	13.9
	250	4.0	47.0	34.0	22.5	11.9
	250	6.0	50.0	90.0	22.5	9.9
Model 4 fixed style Max recommended thickness 16.0 mm	300	6.0	78.0	26.0	56.6	36.4
	300	8.0	76.0	50.0	56.6	36.4
	300	12.0	73.0	129.0	56.6	36.4

Adjustable models
RVHD2.5 28mm - 69mm 350
RVHD3 39mm - 118mm 350
RVHD4 70mm - 220mm 350
Adjustable Joggle

Adjustables usually used for bending thick materials or for bending large radii - because specific material specs vary we do not provide detailed bend data. Flaring or hole distortion is much reduced, but is influenced by material specification.
Radius work is greatly effected by spring-back of the specific material being bent.
Minimum flange sizes are greatly effected by the squareness of the component edge.

Notes:
It is **NOT POSSIBLE** to maintain values A and B and C simultaneously.
These values are for **guideline only** and assume a tensile strength 420N/mm^2. If these values are very close to your requirement a test bend may be appropriate. Practical testing may give more favourable results than shown in columns A, B and C. Please call to discuss specific applications. All specifications are subject to change without notice.

Model 1 Generation 8

Fixed Rolla-V Range

Non-Standard Lengths Are Available To Order On All Models

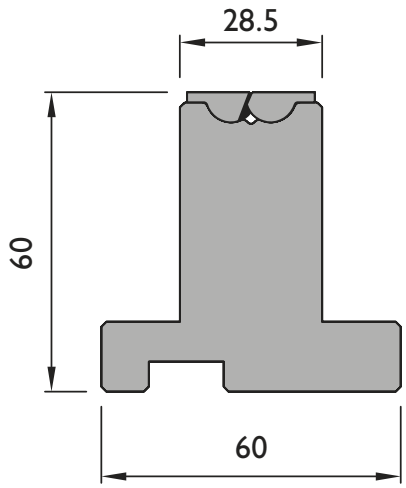
Model 1

- Castellated inserts to give more contact area
- Standard lengths 500mm, 100mm and 440mm segmented
- Segmented 440mm lengths includes 200mm, 100mm, 50mm, 30mm, 25mm, 20mm, 15mm

	maximum load capacity (t/m)	material thickness (mm)	minimum bend angle (degrees)	tonnage required (t)	minimum outside flange(mm)	max outside radius
Model 1	100	0.7	40.0	5.0	4.2	3.0
	100	1.1	35.0	13.0	4.2	2.6
	100	1.5	35.0	27.0	4.2	2.2

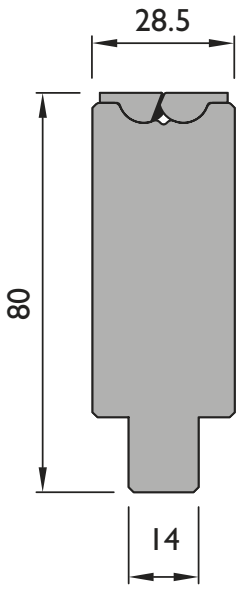
Max recommended thickness 1.5 mm (2.0 mm thickness may be possible)

RVP60-1



500mm	6.9kg
440mm Segmented	6.1kg
100mm	1.4kg

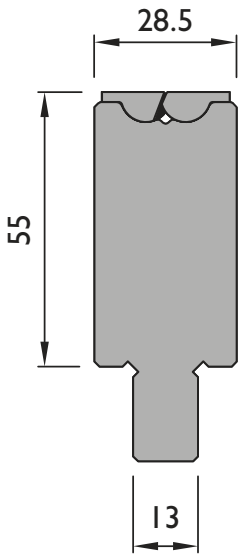
RVS80-1



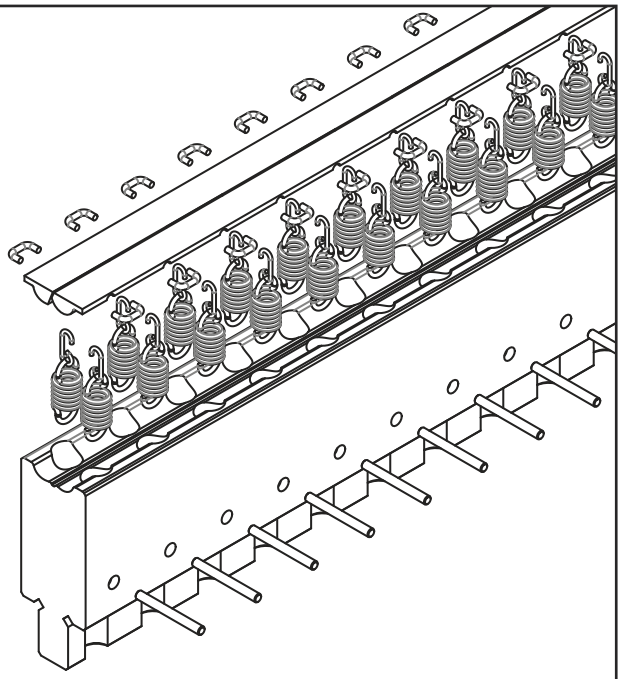
500mm	6.3kg
440mm Segmented	5.8kg
100mm	1.3kg

Model 1 Generation 8

RVT55-1

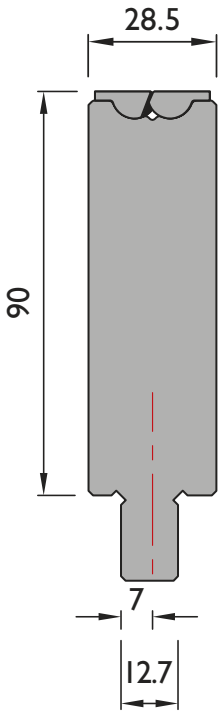


500mm	5.5kg
440mm Segmented	5kg
100mm	1.1kg



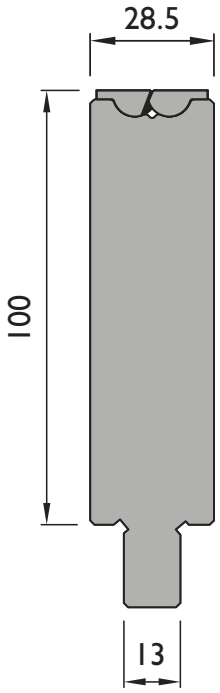
Typical construction for
Models 1, 2, 2.5 and 3

RVT90-1



500mm	8.5kg
440mm Segmented	7.8kg
100mm	1.7kg

RVT100-1



500mm	9.4kg
440mm Segmented	8.6kg
100mm	1.8kg

Model 2 Generation 2

Fixed Rolla-V Range

Non-Standard Lengths Are Available To Order On All Models

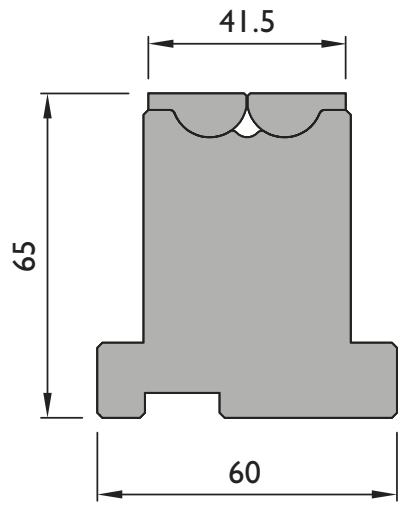
Model 2

- Standard lengths 500mm, 100mm and 450mm segmented
- Segmented 450mm lengths includes 200mm, 100mm, 40mm, 35mm, 30mm, 25mm, 20mm
- Segmented 'Upgrade Kit' available – segments at 25mm, 45mm and 50mm

	maximum load capacity (t/m)	material thickness (mm)	minimum bend angle (degrees)	tonnage required (t)	minimum outside flange(mm)	max outside radius
Model 2 fixed style	150	2.0	59.0	21.0	9.3	6.0
	150	3.0	47.0	55.0	9.3	5.0
	150	3.2	47.0	65.0	9.3	4.8

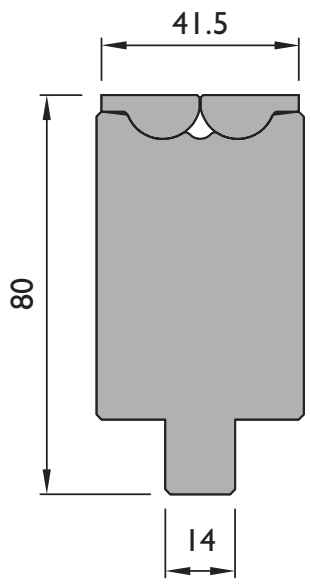
Max recommended thickness 3.0 mm (4.0 mm thickness may be possible)

RVP65-2



500mm	7.9kg
450mm Segmented	7.4kg
100mm	1.6kg

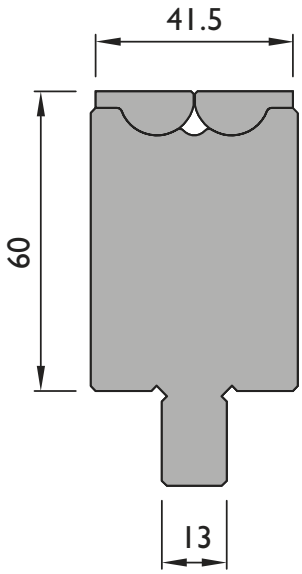
RVS80-2



500mm	8.3kg
450mm Segmented	7.8kg
100mm	1.7kg

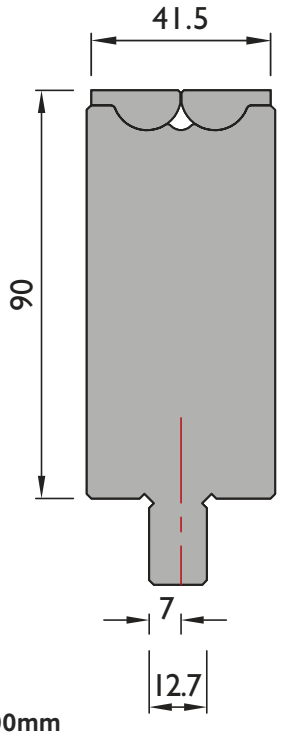
Model 2 Generation 2

RVT60-2



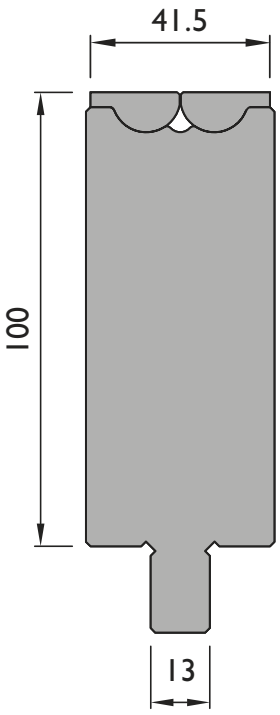
500mm	7.9kg
450mm Segmented	7.4kg
100mm	1.6kg

RVT90-2

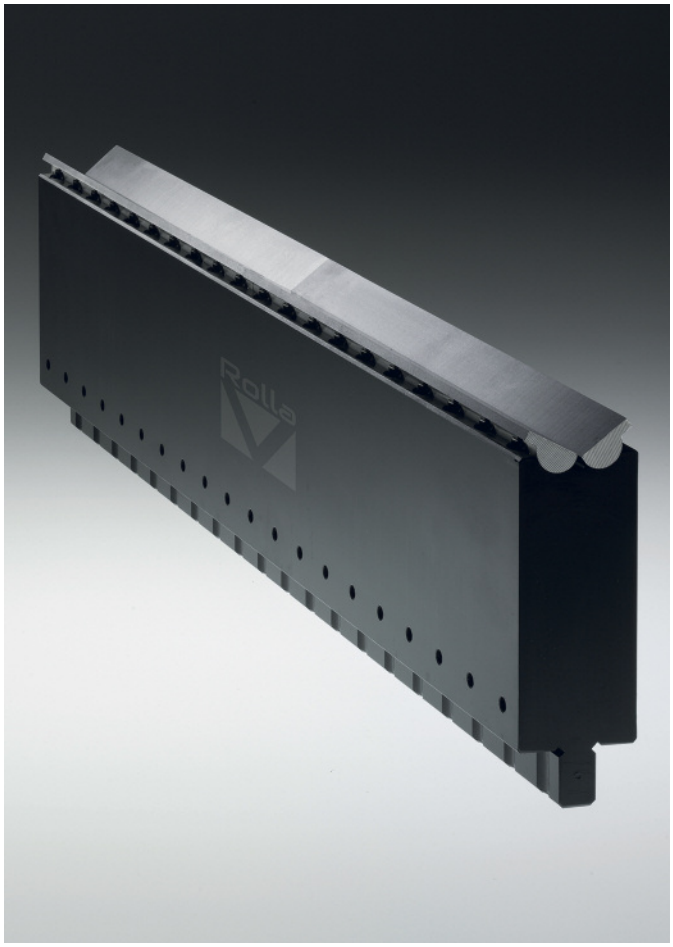


500mm	11.3kg
450mm Segmented	10.6kg
100mm	2.2kg

RVT100-2



500mm	12.4kg
450mm Segmented	11.7kg
100mm	2.5kg



Model 2.5 Generation 1

Fixed Rolla-V Range

Non-Standard Lengths Are Available To Order On All Models

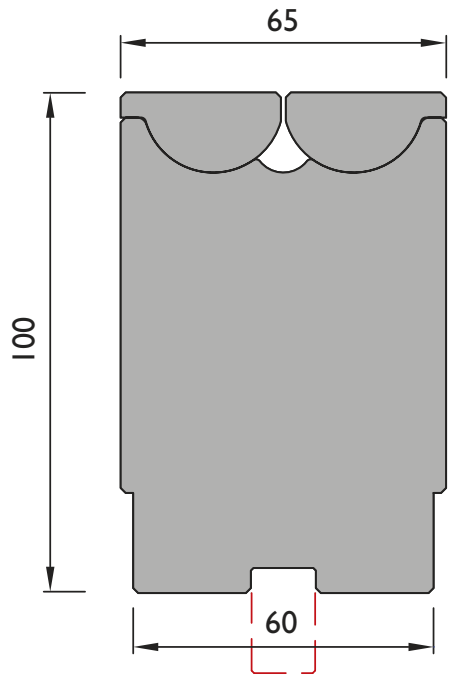
Model 2

- Standard lengths 500mm, 100mm and 470mm segmented
- Segmented 470mm lengths include 200mm, 100mm, 50mm, 45mm, 40mm, 35mm
- Segmented 'Upgrade Kit' available – segments at 25mm, 25mm and 30mm

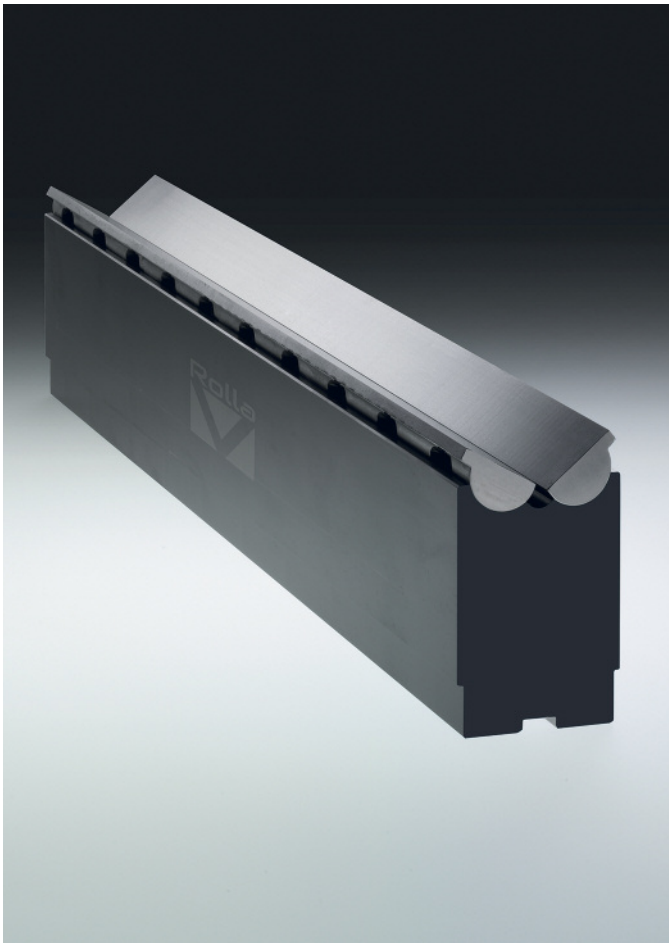
	maximum load capacity (t/m)	material thickness (mm)	minimum bend angle (degrees)	tonnage required (t)	minimum outside flange(mm)	max outside radius
Model 2.5 fixed style	250	2.0	46.0	10.0	18.6	13.2
	250	4.0	46.0	47.0	18.6	12.0
	250	6.0	55.0	127.0	18.6	9.8

Max recommended thickness 5 mm (6.0 mm may be possible)

RVM-2.5 Available with any base or tang fitting



500mm	**22.0kg**
470mm Segmented	**21.0kg**
100mm	**4.4kg**



On-site demonstrations

We are proud to demonstrate our products, so please let us know if you want to see them in action.

We will visit you at your earliest convenience to demonstrate our comprehensive tooling range in person.

You will be able to test our tools on site and find out exactly how our range can work for you.

To arrange a personalised on-site demonstration for your business, please call us today

Rolla V press brake tooling

Model 3 Generation 3

Fixed Rolla-V Range

Non-Standard Lengths Are Available To Order On All Models

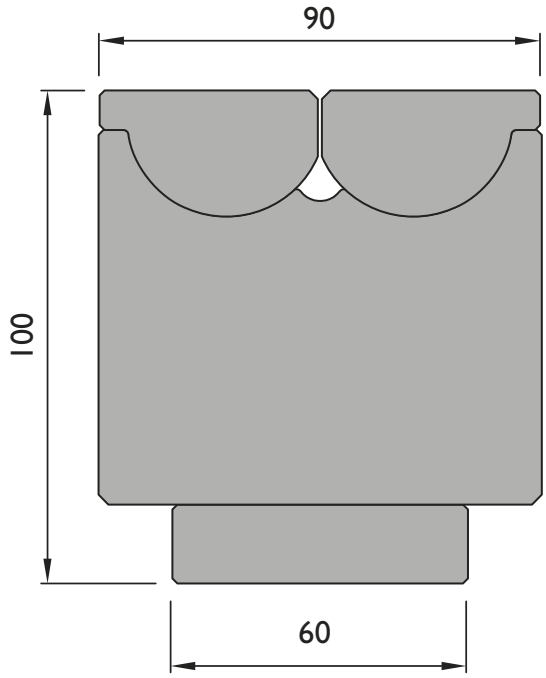
Model 3

- Standard lengths 500mm, 100mm and 455mm segmented
- Segmented 455mm lengths includes 200mm, 100mm, 60mm, 50mm, 45mm
- RVM70-3 Tang sizes 60mm, 13mm, 12.7mm, 12.7mm offset

	maximum load capacity (t/m)	material thickness (mm)	minimum bend angle (degrees)	tonnage required (t)	minimum outside flange(mm)	max outside radius
Model 3 fixed style	250	2.0	68.0	7.0	22.5	13.9
	250	4.0	47.0	34.0	22.5	11.9
	250	6.0	50.0	90.0	22.5	9.9

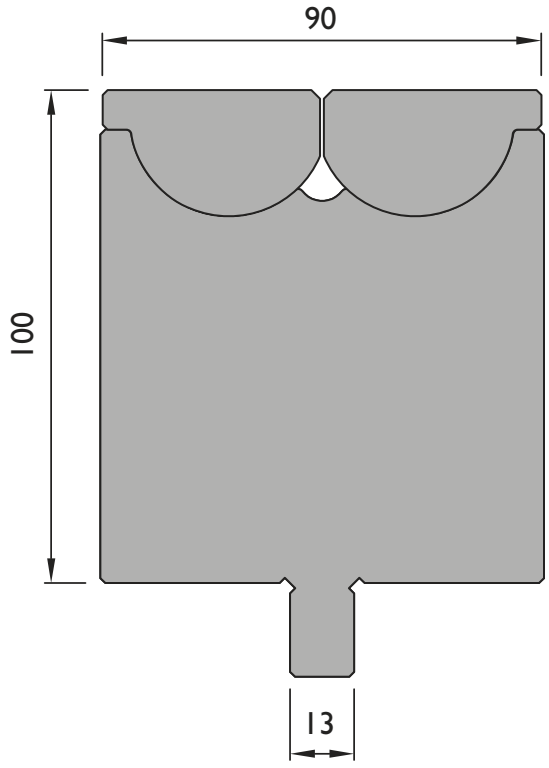
Max recommended thickness 6.0 mm (8.0 mm thickness may be possible)

RVP100-3



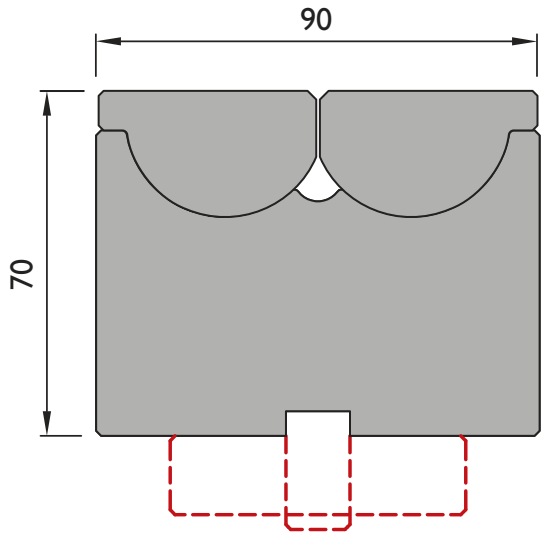
500mm	28.8kg
455mm Segmented	26.2kg
100mm	5.8kg

RVT100-3

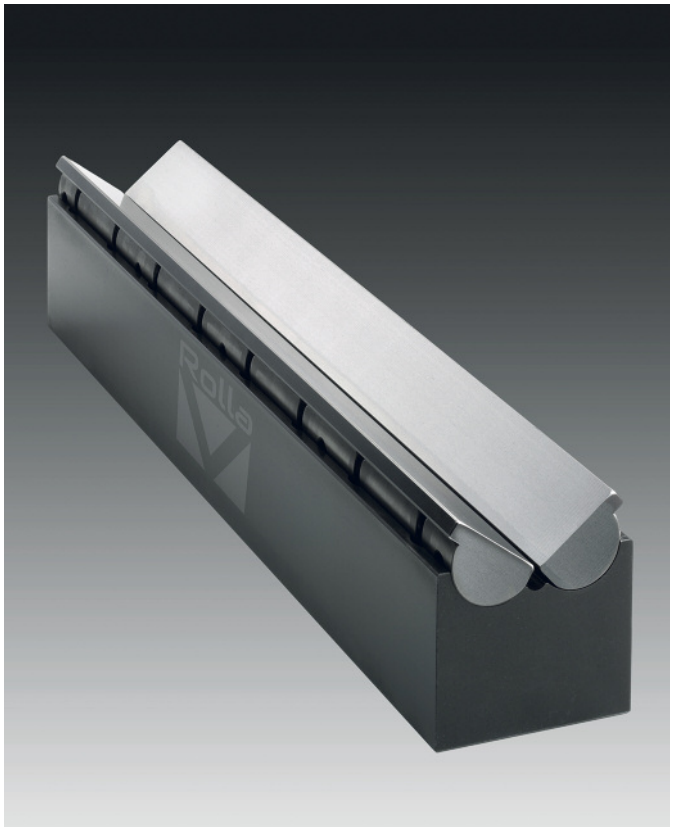


500mm	30.9kg
455mm Segmented	28.5kg
100mm	6.2kg

RVM70-3 Available with any base or tang fitting



500mm	20.6kg
455mm Segmented	18.7kg
100mm	4.2kg



Model 4 Generation 2

Fixed Rolla-V Range

Non-Standard Lengths Are Available To Order On All Models

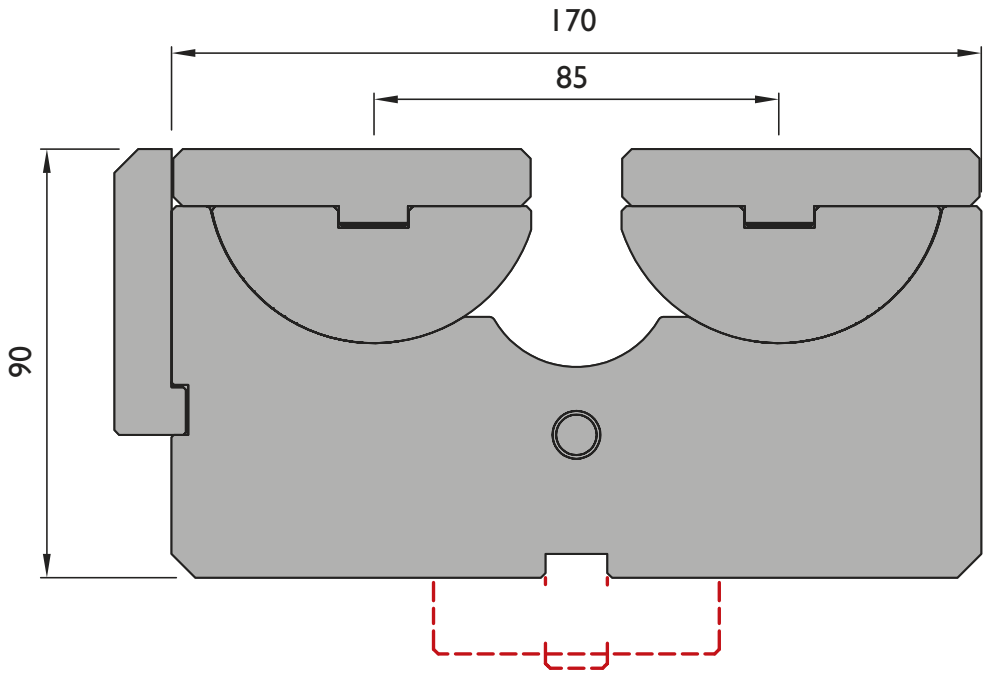
Model 4

- Tang fittings available to suit all manufacturers machines
- Standard lengths 500mm and 200mm
- Tang sizes 60mm, 13mm, 12.7mm, 12.7mm offset

	maximum load capacity (t/m)	material thickness (mm)	minimum bend angle (degrees)	tonnage required (t)	minimum outside flange(mm)	max outside radius
Model 4 fixed style	300	6.0	78.0	26.0	56.6	36.4
	300	8.0	76.0	50.0	56.6	36.4
	300	12.0	73.0	129.0	56.6	36.4

Max recommended thickness 16.0 mm

RVM90-4 Available with any base or tang fitting



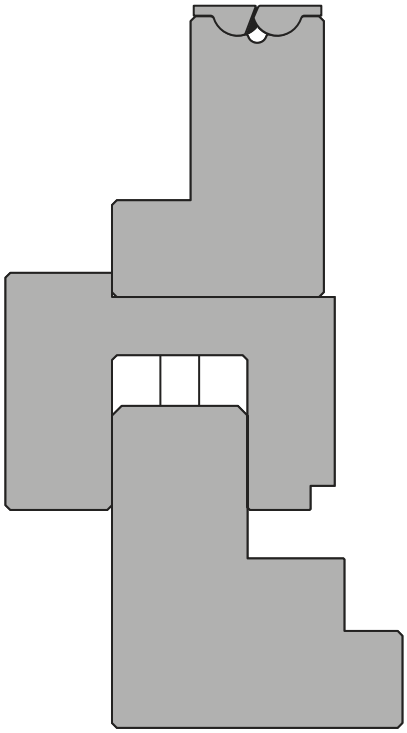
500mm	56.6kg
200mm	22.7kg

Rolla-V applications

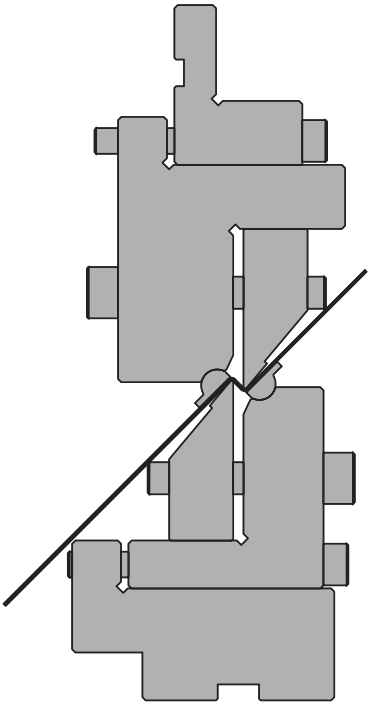
Rolla-V applications

- Minimise safety edge marking using the Rolla-V Hemming Tool
- Minimise Joggle Form marking
- Contact us if you have special applications

Hemming Tool



Adjustable Joggle



Recommended thickness 3.0 mm x 17 mm joggle
(4mm thickness may be possible)

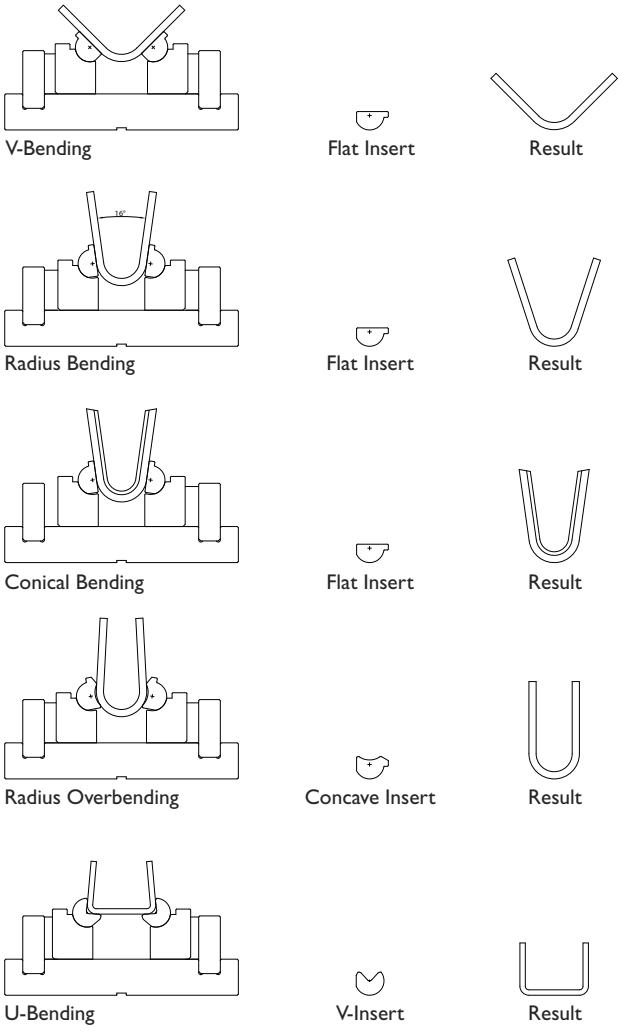
Adjustable Rolla-V range

Non-Standard Lengths Are Available To Order On All Models

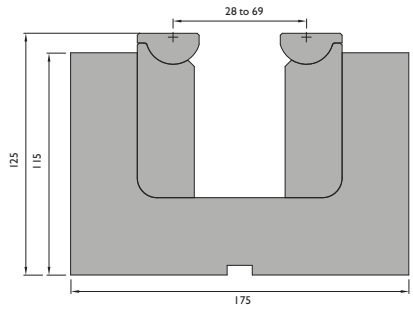
Adjustable Rolla-V range

- Insert with through hardened plate or nitride hardened surface
- Standard lengths 500mm and 200mm
- Non-standard lengths available to order
- These tools are usually used for bending thicker materials or making large radius components
- Specific material specifications vary greatly so it is not feasible to provide detailed data
- eg, minimum flange sizes are greatly affected by squareness of component edge
- eg, flaring or hole distortion is much reduced with these tools, but is influenced by specific material type
- eg, radius work is greatly affected by springback of specific material and flange sizes
- Please call us to discuss specific applications

Examples of use

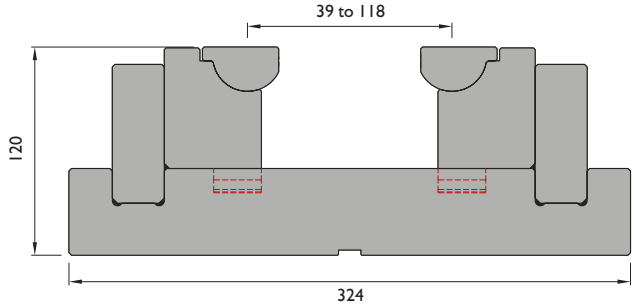


RVHD2.5



500mm	**67.5kg**
200mm	**27kg**

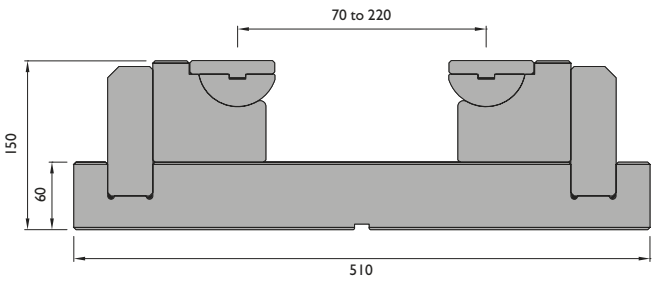
RVHD3



500mm	**98kg**
200mm	**39kg**

Max recommended thickness 20.0 mm

RVHD4

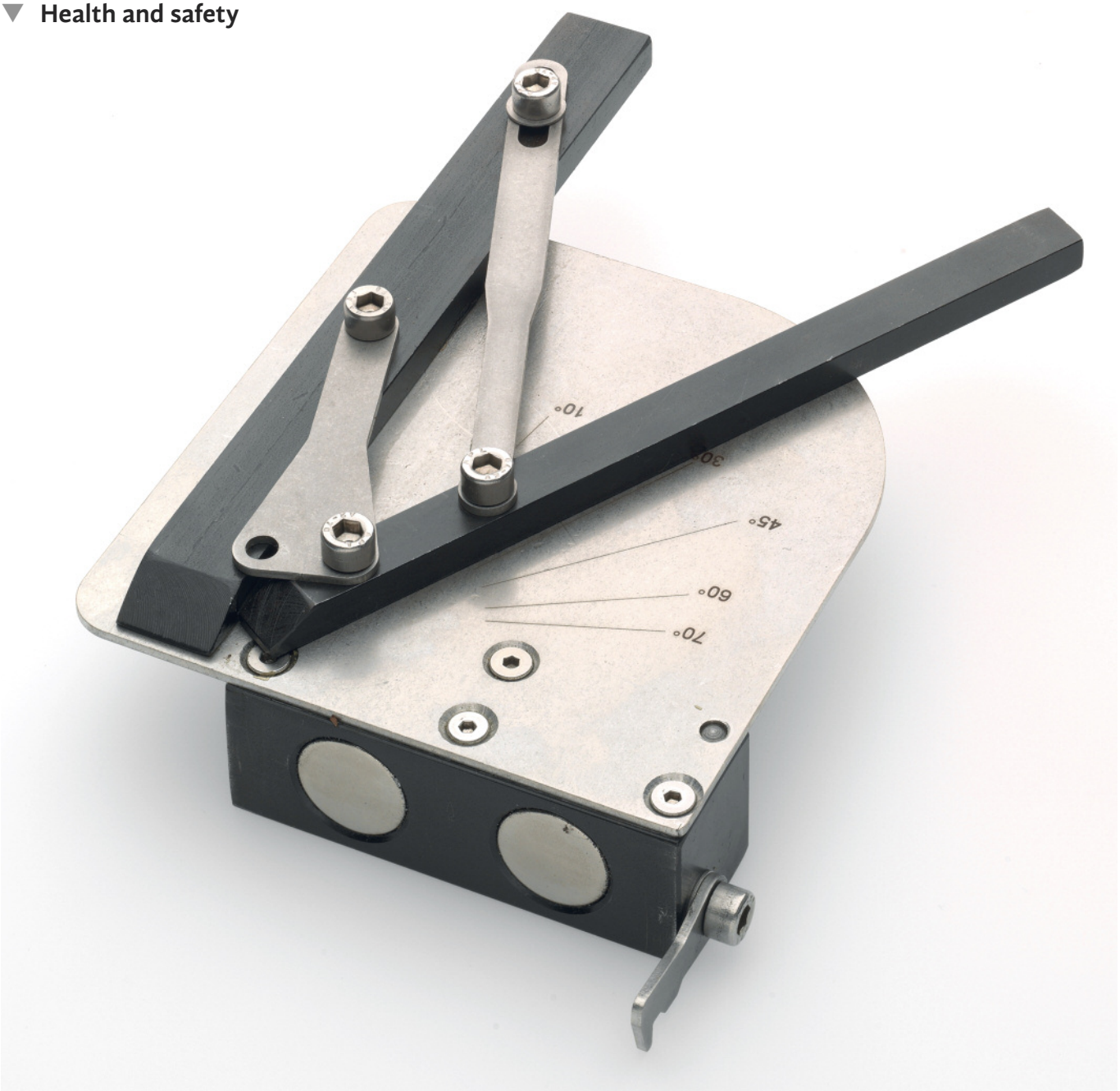


500mm	**200kg**
200mm	**80kg**

Max recommended thickness 30.0 mm

Magnetic Squaring Arm

- Easy and fast positioning anywhere on the bottom dies
- Precise and flexible adjustability
- Adjustable angle stop/adjustment
- Mountable on all dies
- Ideal for long and thin sheet metals
- No obtrusive clamps
- Powerful magnets
- Laser marked angles
- Health and safety



Calculations

These formulae are for guideline purposes only – they will provide a good indicator of what tonnage or flange size or maximum outside radius is possible for a specific bend

Our experience shows that whilst these calculations provide theoretical values, in practice it is usually possible to obtain a more favourable result.

We would recommend that if your requirement is close to the calculated value, a test bend using your material and tooling may be advisable to confirm what result is actually possible.

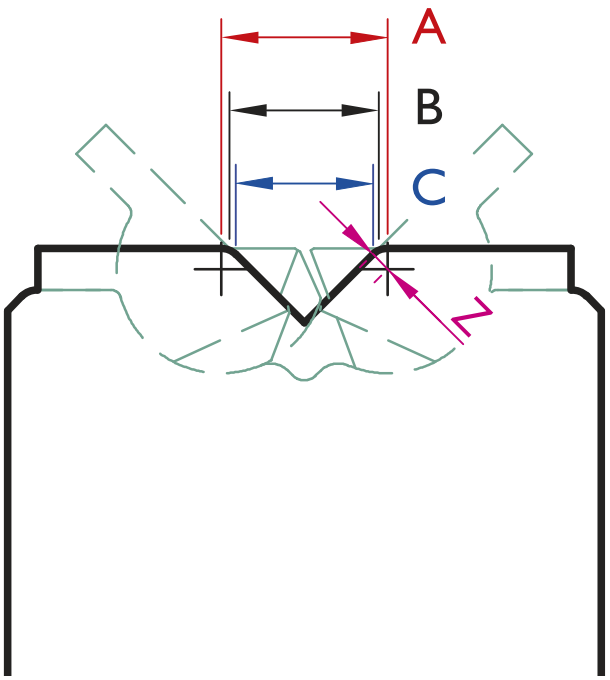
Key

Dimension A Rotor centre distance (Equivalent V when flat)

Dimension B Equivalent V-width for calculating flange sizes

Dimension C Equivalent V-width for calculating tonnages

Dimension Z Equivalent V-width for calculating tonnages



	A (mm)	B (mm)	C (mm)	Z (mm)
Model 1	8.00	7.17	6.59	1.00
Model 2	15.00	13.92	13.16	1.30
Model 2.5	28.00	26.34	25.17	2.00
Model 3	38.00	33.44	30.22	5.50
Model 4	85.00	80.03	76.51	6.00

We suggest using Rm values as indicated here

Aluminium Rm 200 - 300 N/mm²

Mild Steel Rm 370 - 450 N/mm²

Stainless Rm 650 - 700 N/mm²

Calculations

Force (tonnage) calculation

$$\text{Force (Kn/m)} = \frac{Rm \times T^2}{C} \times \left(1+\frac{4 \times T}{C}\right)$$

Aluminium: Rm = 200-300 N/mm²
Mild Steel: Rm = 370-450 N/mm²
Stainless: Rm = 650-700 N/mm²

Example:
Bend force calculation example:
2mm Aluminium in a Model 2

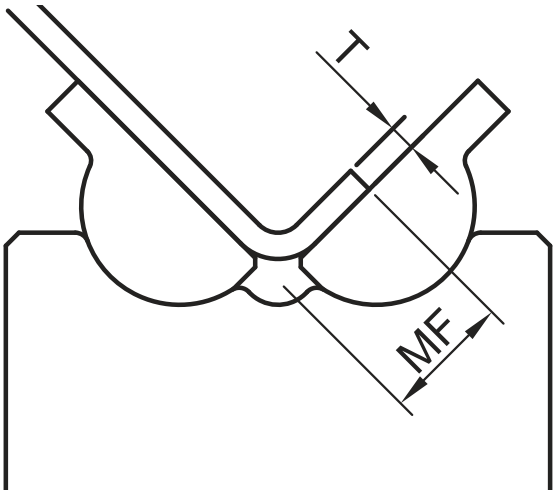
$$\text{Force (Kn/m)} = \frac{300 \times 2^2}{13.16} \times \left(1+\frac{4 \times 2}{13.16}\right)$$

91.185 x 1.6079 = 146.62Kn/m
Bending force = **146.62Kn/m**

Min flange calculation

$$\text{Min flange (MF)} = \sqrt{(B^2/2)}$$

Example:
Min flange calculation example:
Model 1
$\text{Min flange (MF)} = \sqrt{(7.17^2/2)}$
$\sqrt{25.704} = 5.07$
Min flange = **5.07mm**



Max outside radius calculation

Rule 1) Max ER = $\sqrt{(C^2/2)} - (T + Z)$

Rule 2) IF ER IS > B/2.2, ER = B/2.2
Note: Whichever value is the greater is the maximum outside radius possible.

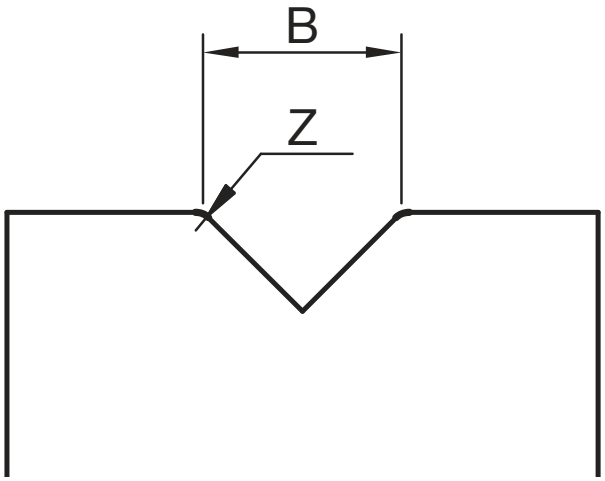
Example:
3mm Material in Model 2.5

Rule 1 ER = $\sqrt{(25.17^2/2)} - (3 + 2)$
17.8 - 5 = 12.8

Rule 2 = 26.34 / 2.2 = 11.97
12.8 (Rule 1) is greater than 11.97 (Rule 2)
therefore Max ER = R11.97mm

General input on machine

Equivalent V construction for graphical machine controllers



To simulate the Rolla-V on a machine graphical input, use a v-width of **B** and v-corner radius of **Z**.

Rolla

press brake tooling

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