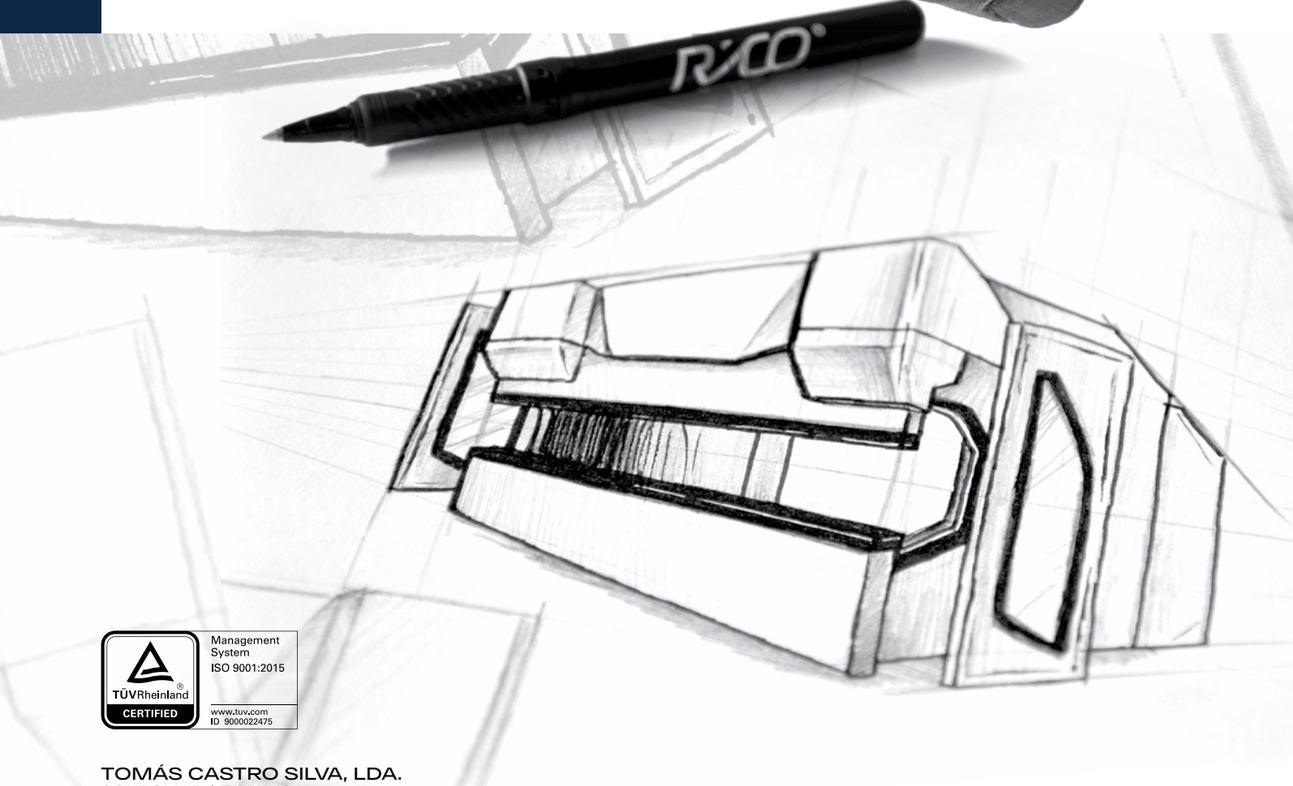
RICO®
PRECISION IDEAS

Partners *for Life*

More than a machine.
An advanced wide range for sheet metal processing.

RICO®
PRECISION IDEAS



We make it Work

Management System ISO 9001:2015
TÜVRheinland CERTIFIED
www.tuv.com ID 9000022475

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RICO.PT

KNOW-HOW

A path of **50 years** in the machines manufacture, press brakes and shears, ensures the necessary experience to offer the best solutions for the greatest challenges. High quality standards require a professional and specialized team.

PREDICTING FUTURE

Day-to-day operations are important, but long-term business strategy will determine the ongoing and further success. Building a reliable board of principles will help to **ensure that our vision for the future will be carried forward.**

RELIABILITY + DURABILITY

Our products are the result of a continuous focus on improving processes and supported by high quality levels, which result in recognition of RICO machines as state-of-the-art equipment.

SUSTAINABLE GROWTH

We value sustainability respecting people and the environment.

More than 50 years of *Know-How*

We believe in specialization because it gives us more advanced knowledge of technology and processes.

With a growing dynamic over time, the experience gained over the years is increasingly fundamental to mastering technology.

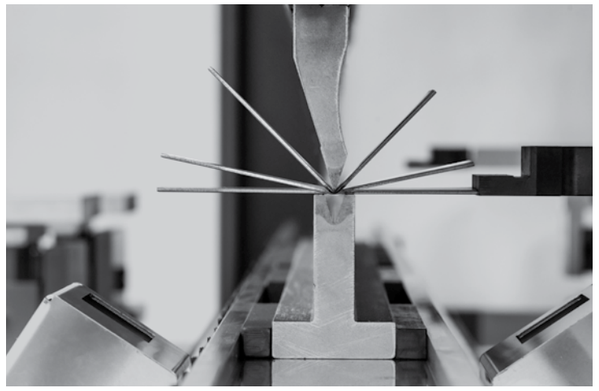
Specialization.

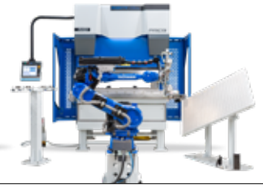
What we do

Product Range.

We offer a wide range of fully configurable machines.

All machines can be customized according to a specific need.



SHEARS	PRESS BREAKS				
HGR	PRCN	PRCB	PRCE	PR CELL	
					SMALL
					MEDIUM
					LARGE

DIMENTIONS

All necessary configurations that are not included in this catalog can be offered separately.

Choose *Better*

Several options, the same *brand*

The best choice for industry.

RICO, Tomás Castro Silva Lda, values its services for quality and proximity to the customer. Competence and experience as a manufacturer are key factors in the solutions and results that we present.

To be a RICO customer is to have a guarantee of an excellent service and permanent pre and post-sale advice. We understand that technical support is vital for a higher performance of our equipments and that is why, in 2007, **we decided to offer free and lifetime training to all our customers.**

We guarantee immediate intervention for any emergency, either in terms of possible breakdowns, either in training or clarifying doubts. We have highly qualified and experienced technicians who can give you best advices.

RICO® PRECISION IDEAS

Know our Products

PRCN

Competing for **Excellence**

PRCN is a high-performance model that emphasizes robustness, precision and repeatability.

Low flexion and differentiating systems makes **PRCN** a unique model in the market.

PRCN

Get to know

PRCN

Versatility *accuracy*

Advantages.

PRCN is the ideal machine for jobs with high repeatability and precision, as it has a unique construction system aimed to achieve low structural deflection.

The structural concept is unique, as is the bending result, better quality in less time. It thus offers an important differentiation in competitive terms.

UNIQUE STRUCTURE

FAST BENDING

EXCELLENT SIZE

CUSTOMIZABLE

HIGH PRECISION + REPEATABILITY

2 YEARS GUARANTEE

.01 PRCN Range

.PRCN ILine | CLine

	CAPACITY	LENGTH (mm) 2100	2600	3100	3600	4100
I-LINE	70 Ton	●	●	●		
	100 Ton		●	●	●	●
	135 Ton			●	●	●
	160 Ton			●	●	●
	200 Ton			●	●	●
C-LINE	250 Ton			●	●	●
	300 Ton			●	●	●
	400 Ton				●	●
	450 Ton				●	●
	500 Ton				●	●

- All models allow its integration in robotic cells.
- All models may be used in Tandem or Tridem system.
- All customized models are C-Line design.

.02 Differentiating Systems

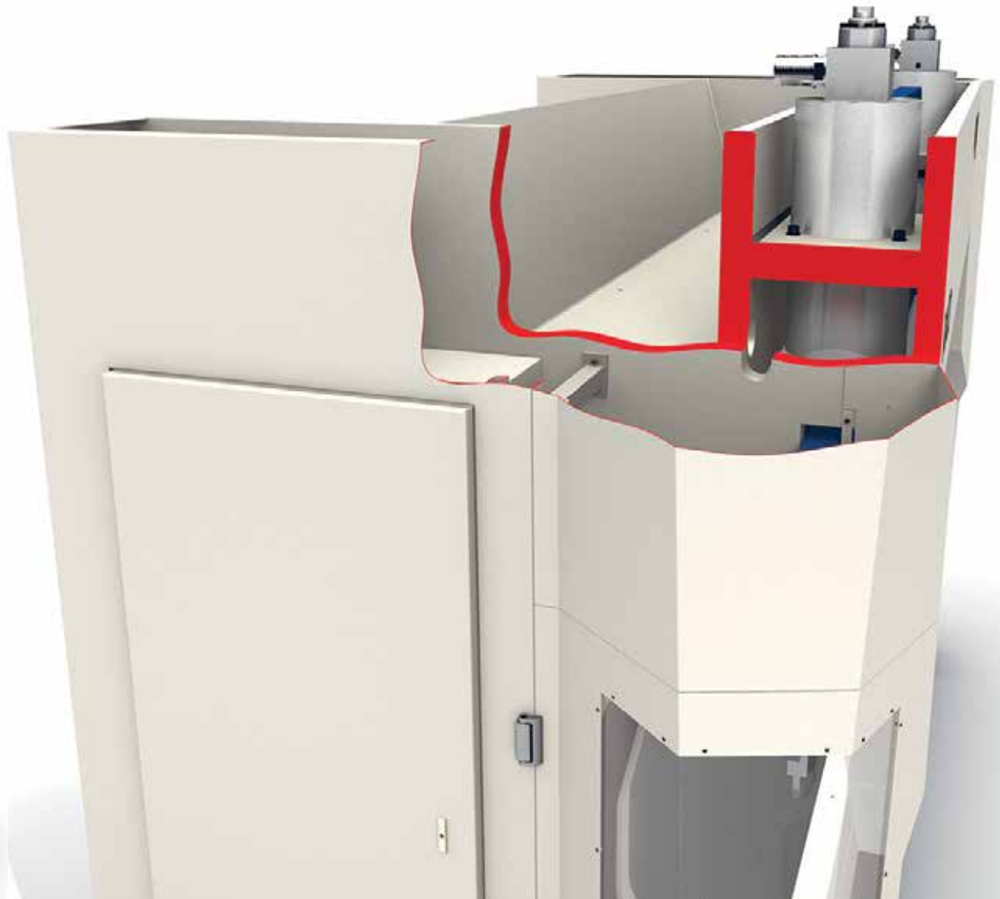
. H-box Frame

PLUS Precision

. The position of the cylinders with a smaller distance between them, inside an H-shaped monobloc welded structure, allows a 60% reduction in the structural deflection. In this way, it ensures greater homogeneity in the distribution and reduction of stresses when under load.

-60%
Structural deflection

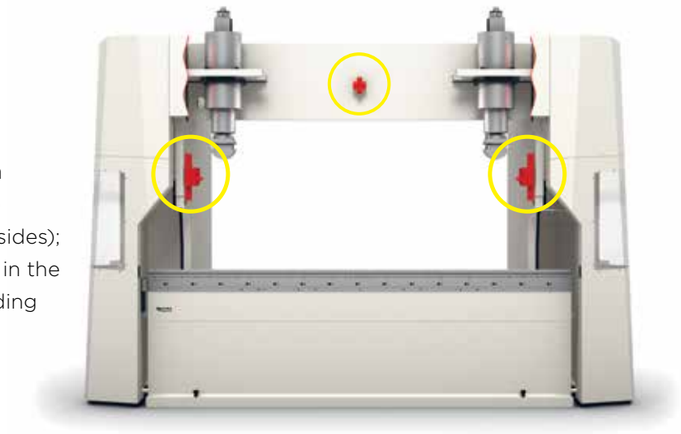
RICO has a strict policy in choosing components based on the experience acquired over time.



. Triple guide

Dynamic Stability

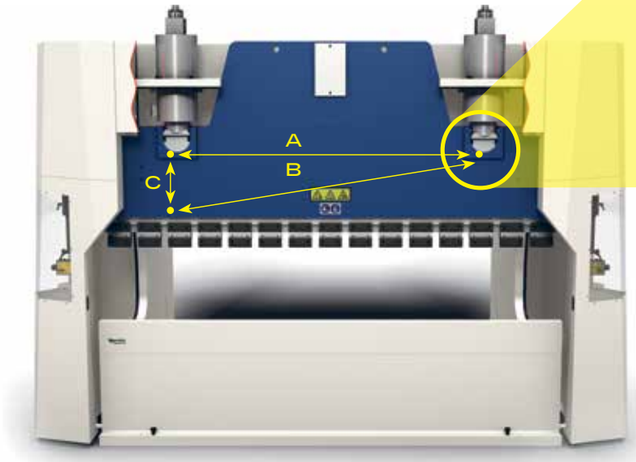
. **The upper beam adjustment system operates by means of a triple guide system** (one central and two on the sides);
. Reduces the deformation of the ram in the transversal direction during the bending operation.

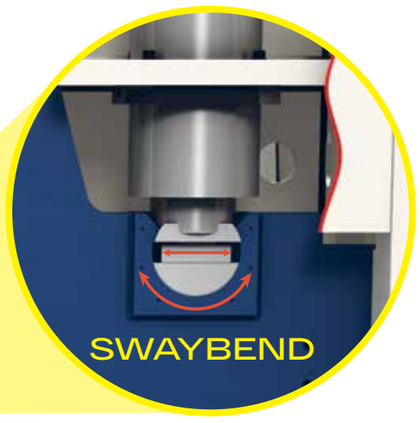


. Swaybend

Additional Versatility

. This system **allows the upper beam** (attached to the cylinder rods by special ball joints) **remarkable inclination levels**;
. Enables conical bending with significant angle differences between the ends of the parts, +/-25mm;
. Reduces the stress on cylinder's axial load.





EXAMPLE

A) 2000mm - Distance between cylinders on the same position;
C) 100mm - Distance between the cylinders position;
B) 2002.5mm- Distance between the cylinders on different positions.

PRCN is a high-performance model of press brake machines for all types of production with high precision and productivity.

The structural performance during the bending process is one of the most important factors for the quality of bending.

PRCN
Competing for ***Excellence***

.03 Equipment

. Standard and Optionals

Type	Item	I-LINE	C-LINE
Special systems	H-Box frame	●	●
	Swaybend system	●	●
	Triple-guide	●	●
	Standby function	●	●
Control panel	Delem DA-66T control	●	●
Automatic axes	4 automatic axes: Y1+Y2+X+R	●	●
Back gauge	BGR	●	●
Front safety	Laser AKAS II-F	●	●
Rear safety	Safety barriers (Level IV)	●	●
Frontal supports	Sliding SFS	●	●
Top clamping	Promecam Manual clamping	●	●
Bottom clamping	Promecam Manual clamping	●	●
Offline Software	Profile TL	●	●
Others	Hanging swivel control	-	●
	Mobile vehicle control	●	○
	ERFLEX Hanging swivel control	○	○
	Machine LED status	●	●
	Hour counter	●	●
	Hex key set	●	●
Design		●	-
	Design C-line	○	●

● Standard ○ Optional

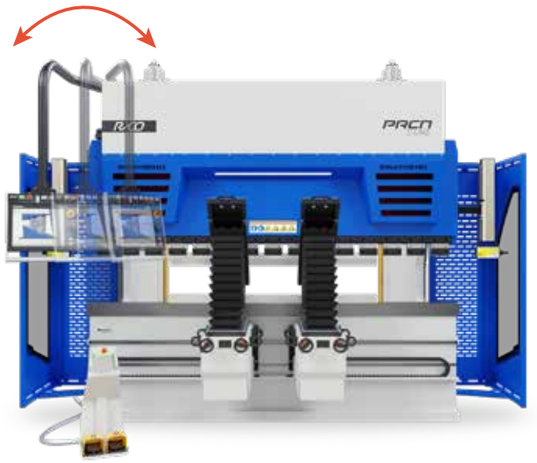
Machine LED status Ⓢ

.1
- Motor OFF
- Reset OK

.2
- Motor ON
- Reset OK

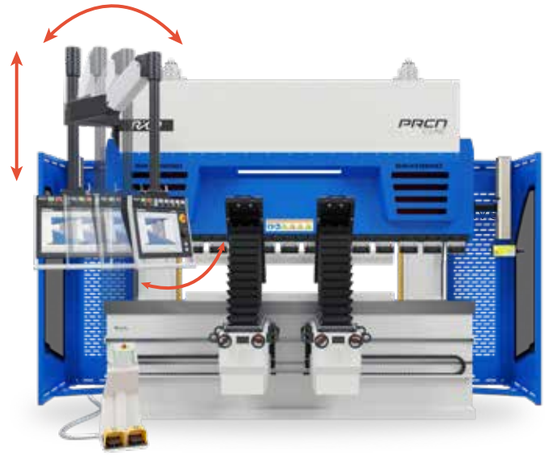
.3
- Motor ON
- Reset OK
- DNC OK
- Intermittent

Control - available positions



C-LINE Ⓢ
Hanging swivel control

I-LINE Ⓢ
Mobile vehicle control



ERFLEX Hanging swivel control.
Optional

We make it Work

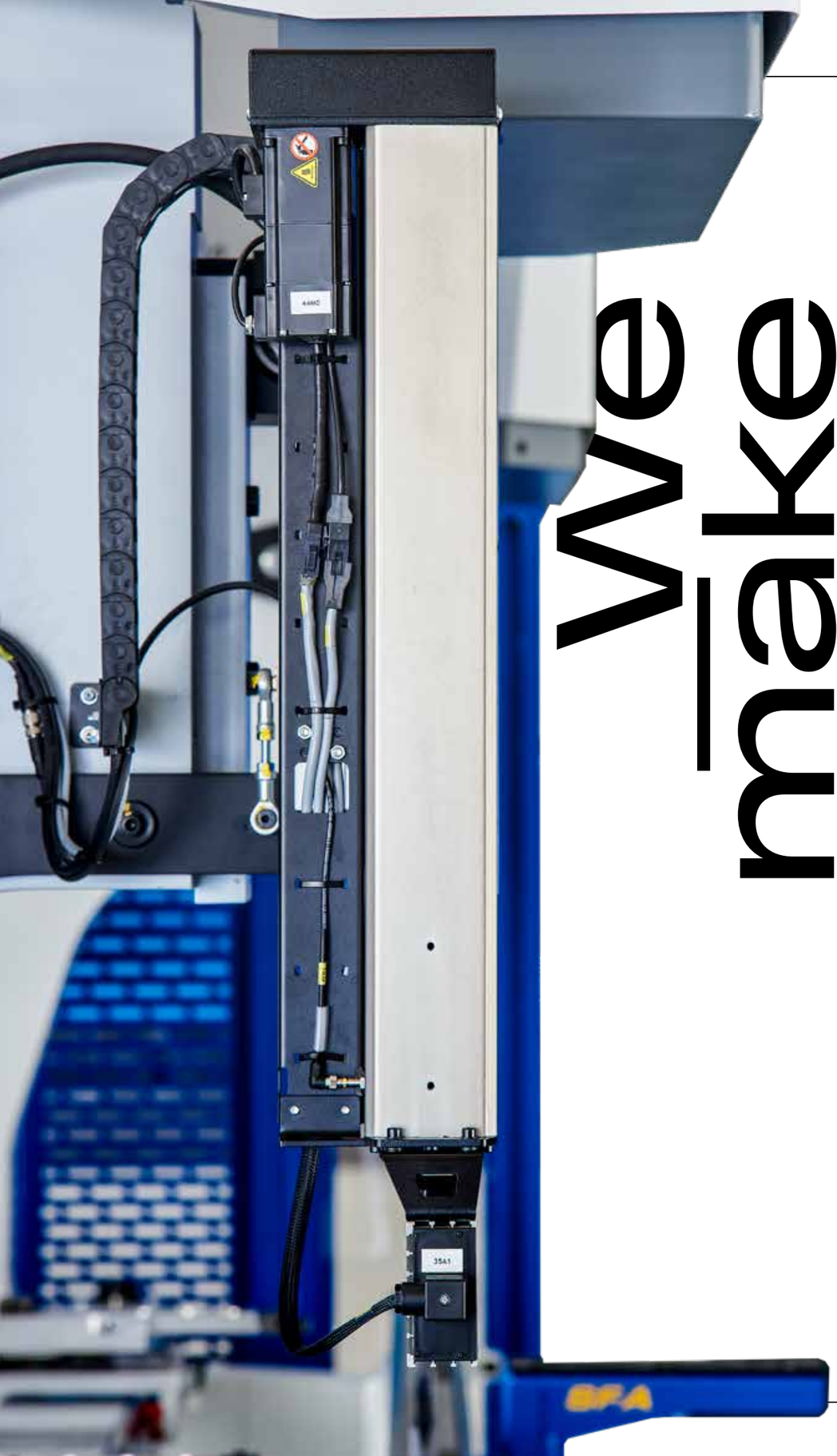
PRCB

Competing for **Production**

PRCB is a highly flexible model prepared for all types of requirements.

Available capacity between 30 Ton and 1500 Ton and fully customizable, **PRCB** always has a solution.

Get to know



We take it Work

.01 PRCB Range

. PRCB

CAPACITY	LENGTH (mm) 1600	2100	2600	3100	3600	4100	6100
30 Ton	●	●					
70 Ton		●	●	●			
100 Ton		●	●	●	●	●	●
135 Ton				●	●	●	●
160 Ton				●	●	●	●
200 Ton				●	●	●	●
250 Ton				●	●	●	●
300 Ton				●	●	●	●
400 Ton					●	●	●
450 Ton					●	●	●
500 Ton					●	●	●
600 Ton						●	●

- All models allow its integration in robotic cells.
- All models may be used in Tandem or Tridem system.
- Capacity with more than 600 Ton available under request.

.02 Equipment

. Standard Equipment

Type	Item
Control panel	Delem DA-58T control
Automatic axes	4 automatic axes: Y1+Y2+X+R
Back gauge	BGA
Front safety	Laser AKAS II-F
Rear safety	Safety barriers (Level IV)
Special systems	Standby function
Frontal supports	Sliding SFS
Top clamping	Promecam manual clamping
Bottom clamping	Promecam manual clamping
Offline software	Profile TL
Others	Hanging swivel control
	Machine LED status
	Hour counter
	Hex key set

Making the *Dif-ference*

The right choice is...

Heavy Duty

THE SOLUTION IS HEAVY DUTY

RICO has an extensive experience in manufacturing heavy-duty press brakes. With capacity up to 8 mts and 1500 Ton in a single machine.
All structures are calculated to obtain the lowest possible deformation by reducing stress points.
Only high quality steels are used to achieve minimal structural deflection, even at full machine capacity.

PRCE
Competing for **Performance**

PRCE press brake is a performance winner.

It has an extremely short cycle time, which provides high levels of competitiveness. Fully servo-electric and highly efficient.

PRCE

Get to know

Advantages.

The synchronized electric-servo system offers the best performance, with a very short cycle time. Combined with the Direct-Drive motor, we also benefit from greater precision and comfort.

This RICO system includes two special ball screws, specially developed for this purpose, driven by two servo motors and planetary gearbox. The transmission components are high quality and suitable for high loads. Thus, they guarantee high performance and durability.

Versatility *accuracy*

50%
Effective savings

. PERFORMANCE

PRECISION

The beam synchronism is ensured by the **control of two independent servo-electric axes.** The reading positioning is obtained by high precision optical linear encoders.

SHORT CICLE TIME

The servo-electric system **provides an effective reduction of transition time** compared to hydraulic systems. In addition, with the components used in the PRCE model, the speeds are higher when compared to other electric press brakes.

. SAVINGS

UP TO
-40%
Energy consumption

LOWER ENERGY CONSUMPTION

The importance of energy consumption in business competitiveness is increasingly a decisive factor. Energy is one of the main pillars of sustainable development and a major strategic segment for the global industry. The **development of eco-design products** enables a **significant reduction of environmental impacts of energy savings**, which results in cost savings at the same time. The PRCE model aims to optimize environmental performance, and ensures the same technical results.

LOW MAINTENANCE

Being an electric model, it doesn't require regular maintenance. The automatic lubrication system is standard equipment on the PRCE.

. CONFORT

UP TO
-70%
Noise

LOW NOISE

PRCE allows a reduction up to 70% of noise than other machines. In Europe it is estimated that more than a third of workers are exposed to potentially harmful noise levels for at least a quarter of their working time. The reduction of the noise level is therefore a great benefit for workers and the environment impact.

SHORT CYCLE TIME | LOW ENERGY CONSUMPTION | LOW MAINTENANCE | LOW NOISE | 2 YEARS GUARANTEE

.01 PRCE Range

. PRCE

CAPACITY	LENGTH (mm) 1100	1600	2100	2600	3100
40 Ton	●	●	●		
80 Ton			●	●	●

PRCE press brake is a machine designed to increase productivity with lower operating costs.

Cycle time is substantially reduced since there is no time loss in speed transitions as in hydraulic machines. In addition, the PRCE model has extremely fast accelerations, thus eliminating any time lost for the operator in the transition between bends. **Operating costs are much lower compared to a hydraulic press brake as it does not require regular maintenance and consumption is much lower.**

Mechanical Quality.

The components used in the mechanical transmission ensure great durability while maintaining precision over time.

.02 Differentiating Systems

PLANETARY GEAR
SP+ High Speed
(Only in 40 Ton models)

BALLS SCREWS
- High performance
- Low noise
- Grease retention

. BALL SCREWS

HIGH PERFORMANCE

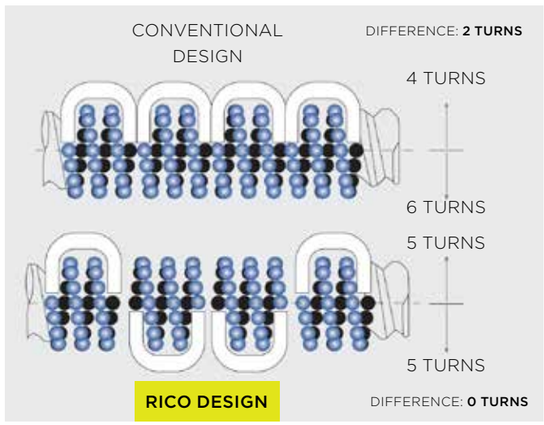
The high capacity ball screws has larger balls diameters in higher quantity. The balls recirculation tubes are positioned at 180° ensuring a better load distribution.

LOW NOISE

By absorbing the movement of the balls in the direction of the tangent to the spindle axis, the impact of the collision with other components is strongly reduced. Compared with the conventional spindle type, **the noise is reduced more than 6dB.**

GREASE RETENTION

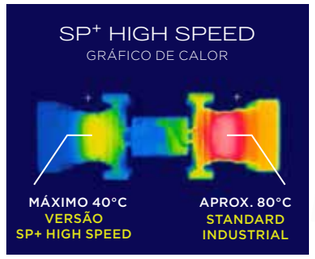
Thanks to the special profile of the spherical screw cavity together with the A1 grease retention seal the grease retention characteristics have been greatly improved compared to conventional plastic seals.



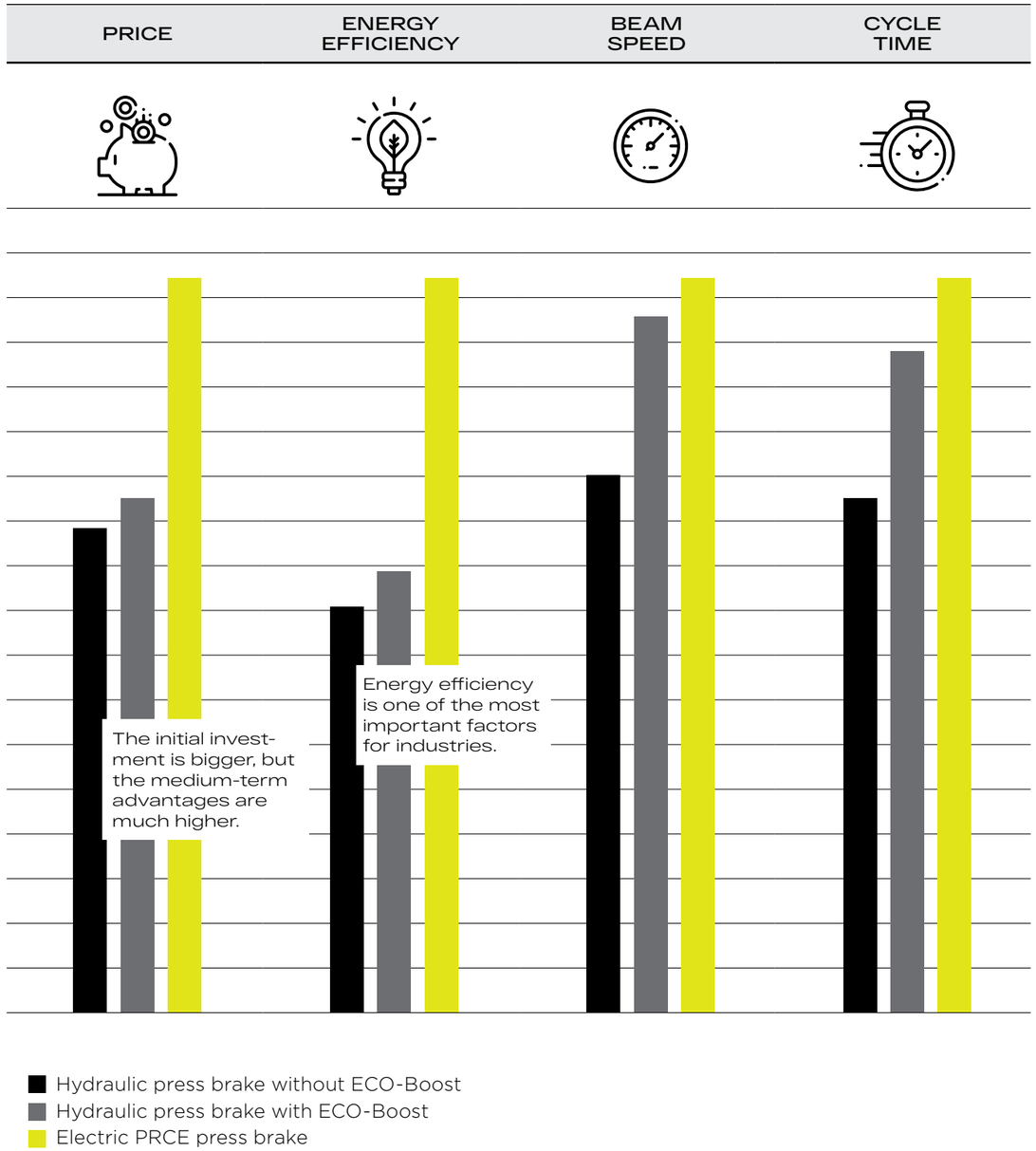
. PLANETARY GEAR - SP+ HIGH SPEED

The High Speed version is suitable for high accuracy positioning and highly dynamic cyclic operation. The **SP+ HIGH SPEED** gearbox is particularly effective for applications with maximum speeds during continuous operation.
The gearbox doesn't requires maintenance because it has lifetime lubrication.

(Only on 40 Ton machines).

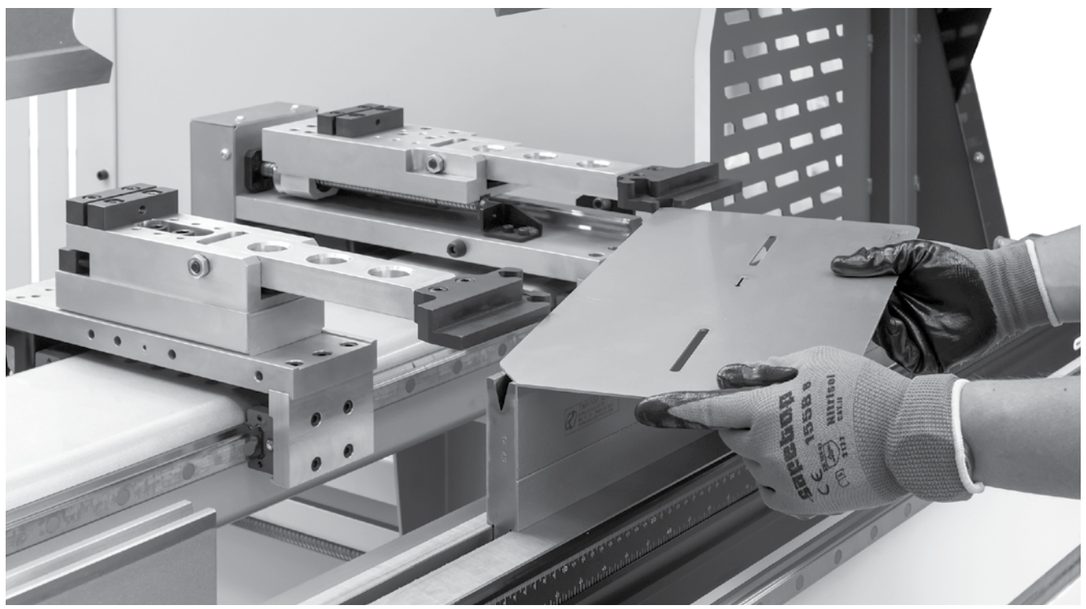


. COMPARISON



. Standard Equipment

Type	Item
Control panel	Delem DA-58T control
Automatic axes	4 automatic axes: Y1+Y2+X+R
Back gauge	BGR
Front safety	Laser AKAS II-M
Rear safety	Safety barriers (Level IV)
Frontal supports	Sliding SFS
Top clamping	Promecam manual clamping
Bottom clamping	Promecam manual clamping
Offline software	Profile TL
Others	Hanging swivel control
	Machine LED status
	Hour counter
	Hex key set
	Automatic lubrification



. Front table S1E

On PRCE 1040 and PRCE 1540 versions it is possible to integrate the **S1E table with RICO ergonomic bench**. This solution increases operator comfort and allows the same operating rate.

A tailor made machine according to costumer needs. Productivity also depends on it.

The goal is to have maximum return on investment in each option. For this, it is important to assess the potential of each option taking into account the job to be carried out in the future.

OPCIONAIS

Choose it

. Controls

Delem

esa AUTOMOTION The Powerful CNC Intelligence

CYBELEC

	DA-58T BE	DA-66T N	DA-69T	DA-66S	DA-69S
Axes	4	> 8	> 8	> 8	> 8
Screen	15”	17”	17”	24”	24”
2D graphic/programming	●	●	●	●	●
3D graphic view	-	○	●	○	●
3D programming	-	-	●	-	●
Auto tooling selection	-	●	●	●	●
2D DXF import	-	○	●	○	●
3D IGES/STEP import	-	-	● (profile-T3D)	-	● (profile-S3D)
Export DXF 2D FP	-	○ (profile-T2D)	● (profile-T3D)	○ (profile-S2D)	● (profile-T3D)
2D Aut. bend. sequence	●	●	●	●	●
3D Aut. bend. sequence	-	-	●	-	●
Angle control (eyeV)	-	●	●	●	●
Barcode reading	-	○	○	○	○
Production monitor 4.0	-	○	○	○	○
Remote assist. (network)	○	●	●	●	●
LedBar	-	○	○	○	○
Offline software	Profile-TL	Profile-TL	Profile-T3D	Profile-SL	Profile-S3D

	VIS 650 BE	VIS 860 W N	VIS 875 W	CYBTOUCH 15PS B	VISITOUCH PAC MX
	8	> 8	> 8	6	> 8
	15”	18”	21”	15”	19”
	●	●	●	●	●
	-	○	●	-	●
	-	○	○	-	●
	-	-	●	-	●
	-	○	●	-	●
	-	○	●	-	○
	-	○	○	-	○
	●	●	●	●	●
	-	○	●	-	○
	-	●	●	-	●
	-	●	●	-	○
	○	○	○	○	○
	●	●	●	○	●
	○	○	○	-	○
	ESA 2D	ESA 2D	ESABEND 3D	○	○

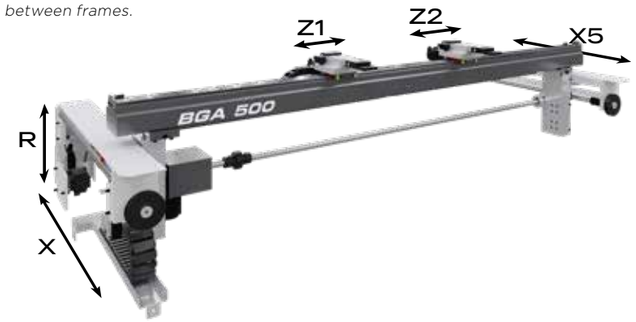
STD	
PRCN N	● Standard ○ Optional
PRCB B	
PRCE B	

Extraordinary *Bending*

. Back Gauges

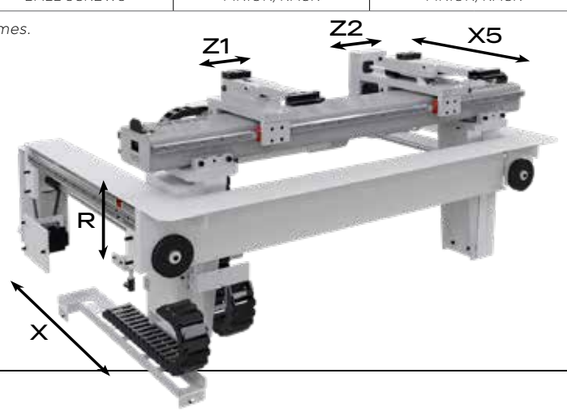
BGA	Ton.	X	R	Z1 Z2	X5
Stroke (mm) [max. position x]	30 Ton	500 [785]	200	*	200
	70 a 100 Ton	600 [885]			
	≥ 135 Ton	750 [1035]			
Speed (mm/s)		500	170	1500	200
Accuracy (mm)		0,05	0,1	0,5	0,05
Motor type		BRUSHLESS	BRUSHLESS	BRUSHLESS	BRUSHLESS
Mechanical system		BALL SCREWS	PINION/RACK	BELT	BALL SCREWS

** Variable with the distance between frames.*



BGR	Ton.	X	R	Z1 Z2	X5
Stroke (mm) [max. position x]	30 a 40 Ton	500 [870]	200	*	200
	70 a 100 Ton	600 [970]			
	≥ 135 Ton	750 [1120],[1200]**	200, 250**	*	200, 250**
Speed (mm/s)		500, 350**	200, 120**	2000, 1500**	300, 250**
Accuracy (mm)		0,02	0,1	0,1	0,02
Motor type		BRUSHLESS	BRUSHLESS	BRUSHLESS	BRUSHLESS
Mechanical system		BALL SCREWS	PINION/RACK	PINION/RACK	BALL SCREWS

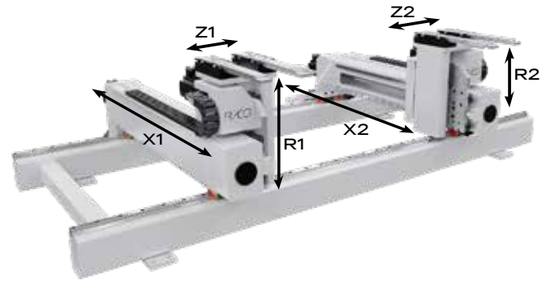
** Variable with the distance between frames.*
*** Heavy duty version.*



	STD
PRCN	N
PRCB	E
PRCE	E

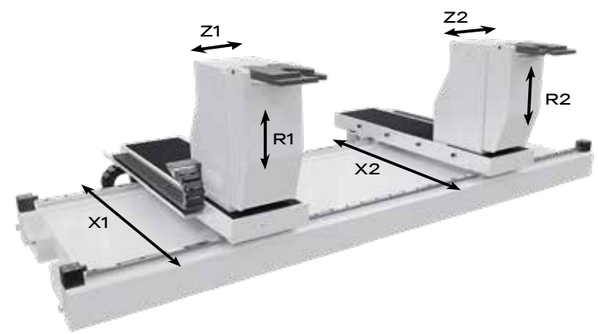
BTM	X1 X2	R1 R2	Z1 Z2
Stroke (mm)	700	230	*
Speed (mm/s)	500	200	1250
Accuracy (mm)	0,05	0,05	0,1
Motor type	BRUSHLESS	BRUSHLESS	BRUSHLESS
Mechanical system	BALL SCREWS	PINION/RACK	PINION/RACK

** Variable with the distance between frames.*



BTL	X1 X2	R1 R2	Z1 Z2
Stroke (mm)	800	200	*
Speed (mm/s)	500	200	600
Accuracy (mm)	0,05	0,05	0,1
Motor type	BRUSHLESS	BRUSHLESS	BRUSHLESS
Mechanical system	PINION/RACK	PINION/RACK	PINION/RACK

** Variable with the distance between frames.*



Sheet metal supports are auxiliary bending systems. They must be chosen according to the dimensions and weight of the bended pieces.
Front supports: Supports the sheet in the front feed.
Rear supports: Supports the sheet as it approaches to the back gauge.
Follower supports: Supports the movement of the plate during bending.

+ Supports

. Frontal supports

SFS

. Supported on any position of the clamps;
. Manual height regulation;
. Device for approaching to the die.

LOAD CAPACITY
< 200 Ton: 75 kg per support
≥ 200 Ton: 150 kg per support.

SFA

. Supported on sliding guides;
. Can be placed at any point along the length;
. Manual height regulation;
. Millimetric scale;
. Ball transfer units to facilitate handling parts;
. Adjustable plate stop;
. Device for approaching to the die;
. Removable supports.

LOAD CAPACITY
≤ 200 Ton: 100 kg per support.
≥ 250 Ton: 150 kg per support.

SFH

. Supported on sliding guides;
. Continuous manual height regulation;
. Millimetric scale;
. Ball transfer units to facilitate handling parts;
. Adjustable plate stop.

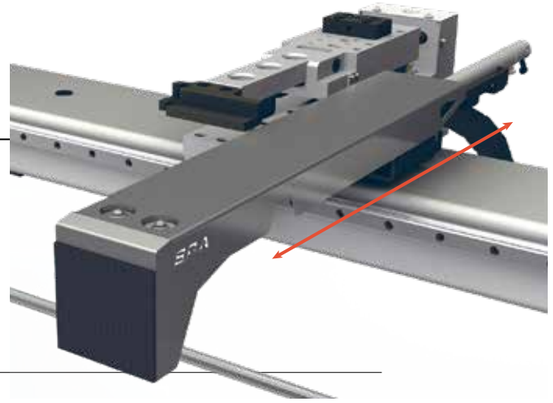
LOAD CAPACITY
1000 kg per support.

. Rear supports

SPA

SPA supports are installed in the fingers of the back gauge. They can be activated in pre-defined bending and enable the plate to slide until it lies adjacent to the back gauge.

LOAD CAPACITY
30 kg per support.



. Follower Supports

ACFL

. Automatic servo-motorized bending follower supports;
. Controlled by the CNC;
. Recommended for thin sheets;
. Extendable table;
. Supportaded on longitudinal sliding rails;
. Manual adjustment of X and Y position.

LOAD CAPACITY
75 kg per support.

ACFA

. Automatic servo-motorized bending follower supports;
. Controlled by the CNC;
. Recommended for heavy parts or large thin plate;
. Extendable table;
. Supportaded on longitudinal sliding rails;
. Manual adjustment of X and Y position.

LOAD CAPACITY
180 kg per support.

ACF1 / ACF2

. Automatic servo-motorized bending follower supports;
. Controlled by the CNC;
. Recommended for heavy parts or large thin plate;
. Extendable table;
. Supportaded on longitudinal sliding rails;
. Manual adjustment of X and Y position.

LOAD CAPACITY
. **ACF1**: 160 kg per support.
. **ACF2**: 400 kg per support.

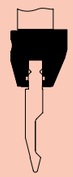
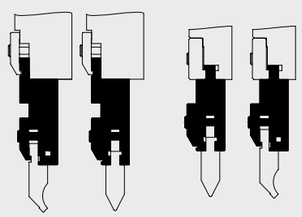
Quick clamping can make a difference in the process, **lowering manufacturing costs and increasing profitability.**

. Quick Clamping

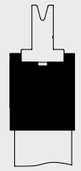
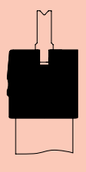
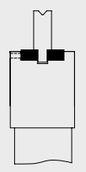
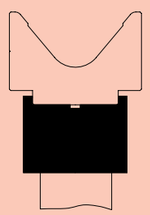
When there are frequent tooling changes, punches or dies can be changed over in a short time by using the quick clamps. **The time saved will be higher as more often will be necessary to change tools.**

In all top clamping the punches can be removed directly from the front, so it is not necessary to slide it on one side. This operation compared to conventional **allows a reduction of times greater than 8x.**

TOP QUICK CLAMPING

		Manual	Hydraulic	Pneumatic	Tang	
PROMECAM	ROL200D	●			PROMECAM	
	Speed Grip	●			PROMECAM	
	ROL200 HID D		●		PROMECAM	
	FR-P			●	PROMECAM	
	Speed Grip PN			●	PROMECAM	
WILA	NSCL PRO	●	●	●	WILA	
	NSCL PREMIUM	●	●	●	WILA	
AMERICAN	PCA1/2	●			PROMECAM	
	PCA3	●			AMERICAN	
HEAVY DUTY	RTHD	●	●		RICO HD	

BOTTOM QUICK CLAMPING

		Manual	Hydraulic	Pneumatic	Slot	
PROMECAM	ROL2	●			60/90	
	ROL2 HYD		●		60/90	
	ROL2 PN			●	60/90	
	DCB-W	●	●	●	60/13	
	- Without or with RICO CNC crowning					
WILA	NSCR PRO	●	●	●	13	
	NSCR PREMIUM	●	●	●	13	
	- Without or with Wila CNC crowning					
AMERICAN	DCB-A	●	●	●	60/12,7	
	- Without or with RICO CNC crowning					
HEAVY DUTY	RTHD	●	●	●	60/90/120	
	- Without or with RICO CNC crowning					

. LED toll locator

LedBar is a bending aid that helps the operator to position tools and parts during bending.

RICO LEdBar	Wila Smart Tool Locator	WILA TIPS tool identification and positioning system
		

. Angle measurers

	React	EyeV	IRIS Plus
			
Type	Protractor	Laser	Camera
Active correction	-	●	●
Accuracy	0,1°	0,1°	0,5°
Max. V die	-	140 mm	40 mm

. Safety lasers

	Fiessler AKAS-II F AKAS-II M	Fiessler AKAS 5M	Lazersafe LZS-2	Lazersafe IRIS
				
Type	Laser	Laser	Laser	Camera
Min. muting point distance	11 mm	2 mm	4 mm	3 mm
Automatic “Y” adjustment	-	●	●	●

. Eco-Boost

+ Produtivity **-** Consumption

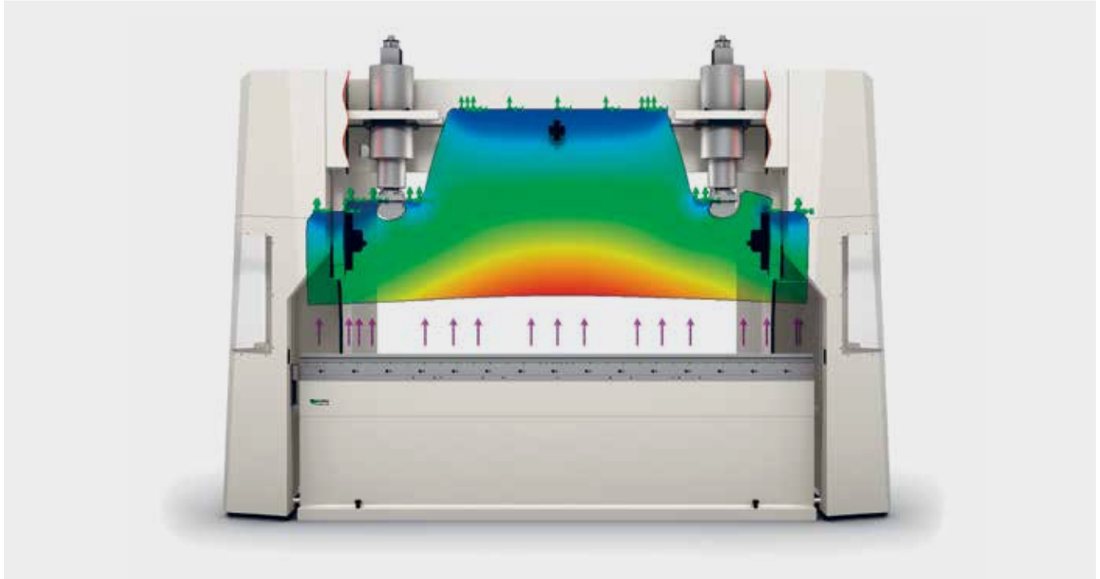
Increases return speed and significantly reduces energy consumption with the START/STOP system.

Eco-Boost 1	up to 200 Ton
Eco-Boost 2	from 200 up to 300 Ton

Speed values with Eco-Boost are described in the technical data sheet.

. Crowing table

This system **enables the user to offset deformations of the beam while bending**. By this, the angle remains constant throughout the length. The compensating arc is accurately calculated taking into account the design of the machine and its deformations under load. The process is automatic and the calculation takes into account the thickness of the sheet, type of material, opening of the V and length.



PROMECAM

WILA

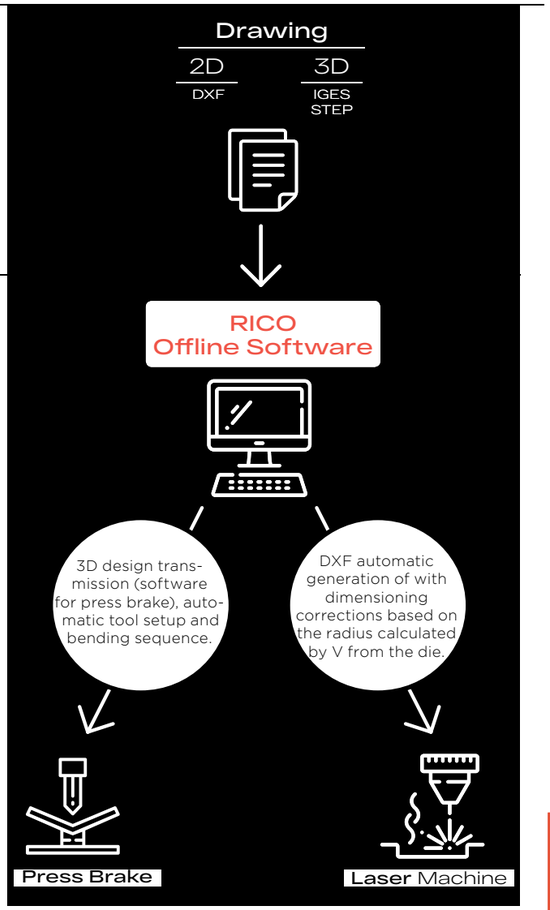
. Offline software

All **RICO** press brakes are supplied with offline software included depending on the machine CNC control model. In the case of 3D software, it allows the import of 2D/3D drawings, automatically programming the bending and creating a dxf file for the cutting.

MAIN ADVANTAGES:

- Automatic planification
- Automatic tool setup
- Automatic bending sequence and 3D simulation

	2D	3D
Profile TL S	●	-
Profile T2D	●	-
Profile T3D	●	●
MBend	●	●



. Industry 4.0

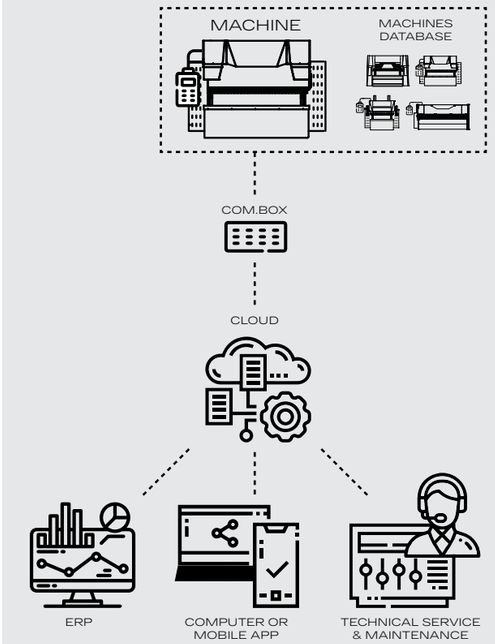
RICO Software P4 - Machine Management

FEATURES:

- Production, maintenance and information, management;
- Artificial intelligence, predictive information;
- Control of energy consumption;
- Multi-machine;
- App for any device;
- Intuitive/Configurable;
- Transparent;
- Cybersecure - cloud system (Azure).

MAIN ADVANTAGES:

- Ease of access to production data;
- Analytical study of production process and costing;
- Calculation of operating costs;
- Integration with ERP software;
- Maintenance plan and maintenance reports.



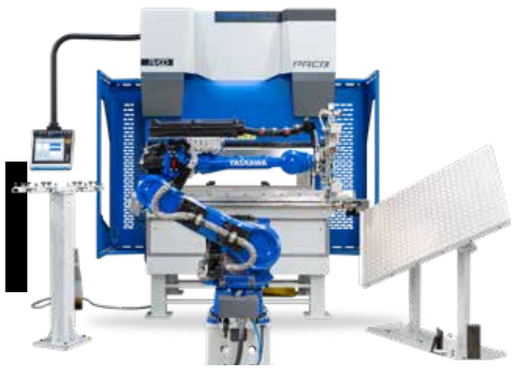
Integrations

Competing for Automation

PR-CELL
Bending process automation

TANDEM
For large bending lengths

Bē Special



.01 PR-CELL - Robotic bending cell

. Robot integration

Automation is the solution for repeatability processes. It is now possible to consider these solutions for small quantities with offline programming without machine interruption.

PR-CELL, is the independent solution for automated bending process, from feeding, handling and palletizing. Various control systems, security and automatic tools changes are possible.

Robotic cells *integration*

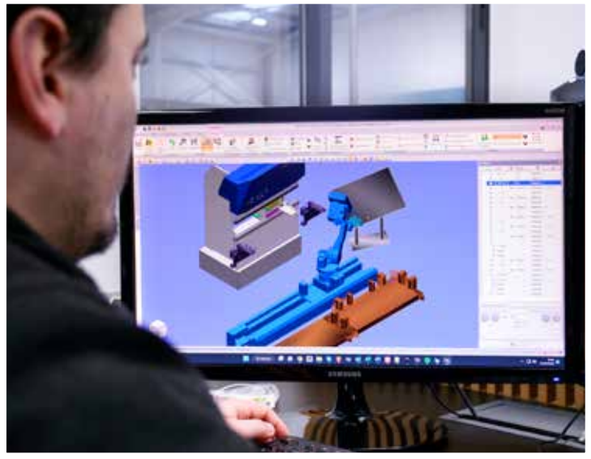
PR-Cell - **Interconnectivity**

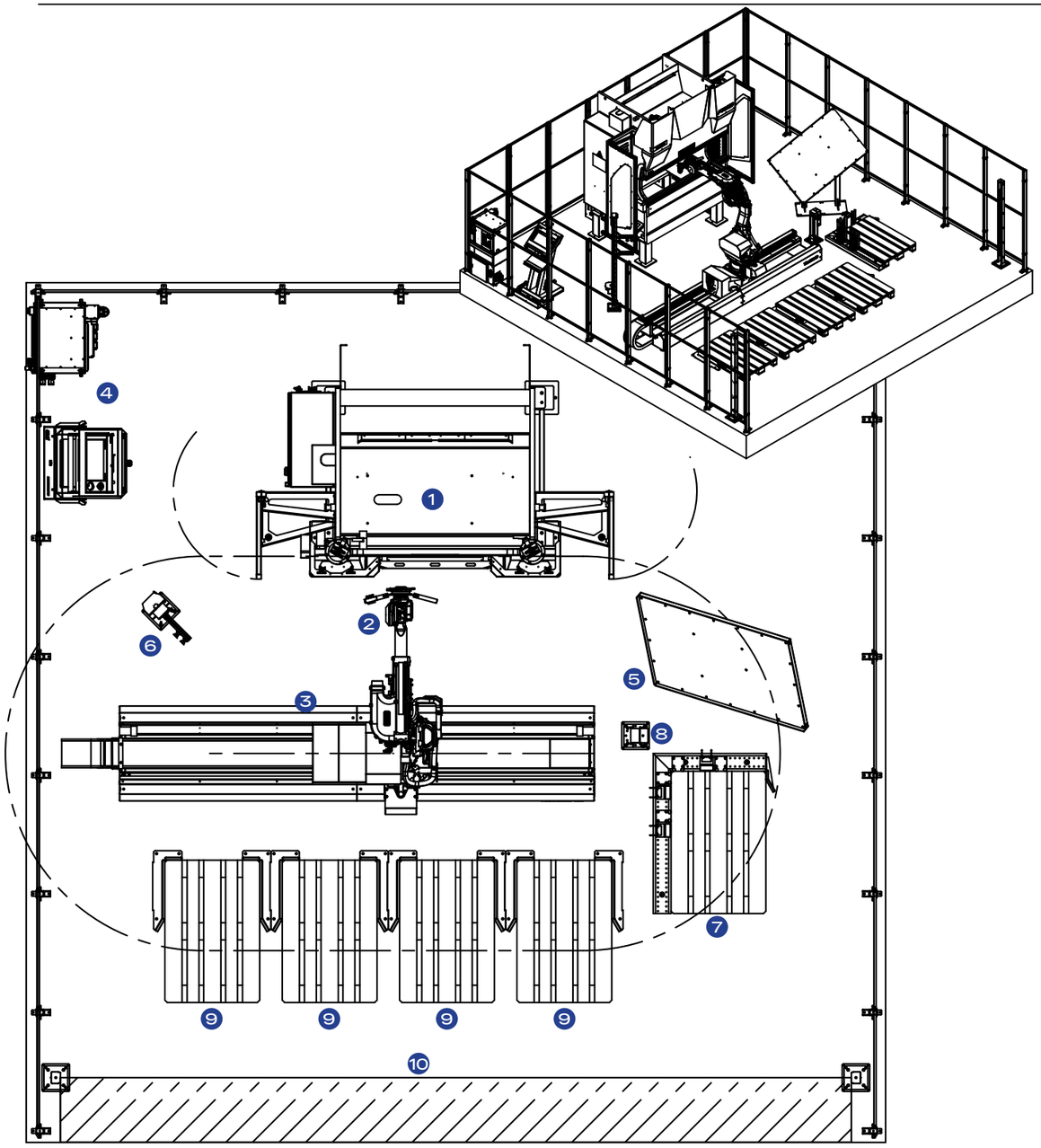
The robotic bending cell can be fully customized according to the characteristics of the parts. **The entire process is developed using intelligence and control systems that prevent potential failures.**

With the integration of the offline programming software, it is possible to perform all the programming of the press brake and the robot remotely without the need to stop the machine. This solution greatly increases productivity and allows the use of small series.

This solution offers several benefits, namely:

- Increased production cadence;
- Increased productivity;
- Increased profits;
- Reduction of operating costs;
- Reduction of errors;
- Greater guarantee in meeting deadlines;
- Higher product quality;
- Increased security;
- Better cost control.





LEGEND	
1	RICO Press brake
2	Robot
3	Track
4	Controller
5	Reference table
6	Regrip station
7	Loading zone
8	Thickness measurement & double sheet
9	Unloading zone
10	Safety barriers

Higher
production capacity

. TANDEM Integration

For long lengths bending, it is possible to use two press brakes in a Tandem system. This system allows the two machines to be operated simultaneously, or independently, guaranteeing the same precision and speed.

Doble
your produtive strenght

TI 1
Safety system
Barriers

TI 2
Safety system
Laser

It is possible to purchase **a first press brake with Tandem preparation** for a future integration of the second machine.

HGR

Competing for **Dynamics**

With a unique operating principle, HGR shears are distinguished by their dynamic structural behavior and cutting quality.

The mechanical system offers a high quality cut without vibration, thus increasing the machine's useful life.

HGR

Cutting perfect

BEST CUT, BEST DURABILITY.

Vertical cutting is the most effective and accurate system compared to alternative ones. Here it is possible to adjust the cutting angle depending on the type of material and thickness of the plate.

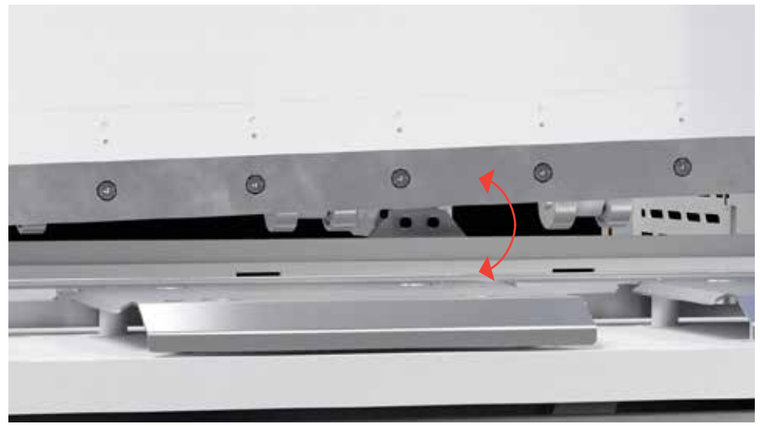
Details that makes the *difference*

/ Vertical cut

This system guarantees the homogeneous distribution of force along the entire length, which results in a smooth and a vibration-free cut.

/ Variable rake angle

In order to minimize the “helix” effect of the sheet, the HGR shear allows to vary the angle depending on the thickness of the sheet. This rake variation is done automatically.



/ RAE System

While cutting, the back gauge automatically retracts to avoid collision with the plate.

VERSATILITY

With a cutting capacity of 4 mm to 40 mm thick. And from 1.2 m to 8 m in length, the HGR shear has a wide variety of solutions and automation.

Overcoming *all the expectations*

Strong & *Reliable*

HGR is the ideal solution to achieve demanding levels of productivity, precision and safety.

.01 HGR range

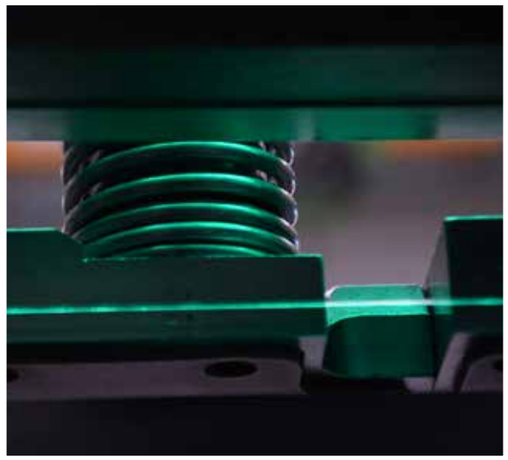
.HGR

CAPACITY	LENGTH (mm) 1250	1550	2050	2550	3050	4050	6050
4 mm	o	●	●	●	●	●	●
6 mm		o	●	●	●	●	●
8 mm			●	●	●	●	●
10 mm			●	●	●	●	●
13 mm			●	●	●	●	●
16 mm			o		●	●	o
20 mm					●	●	
25 mm					●	o	
30 mm					●		
35 mm					●		
40 mm					●		

● Standard O Under request

. Standard equipment

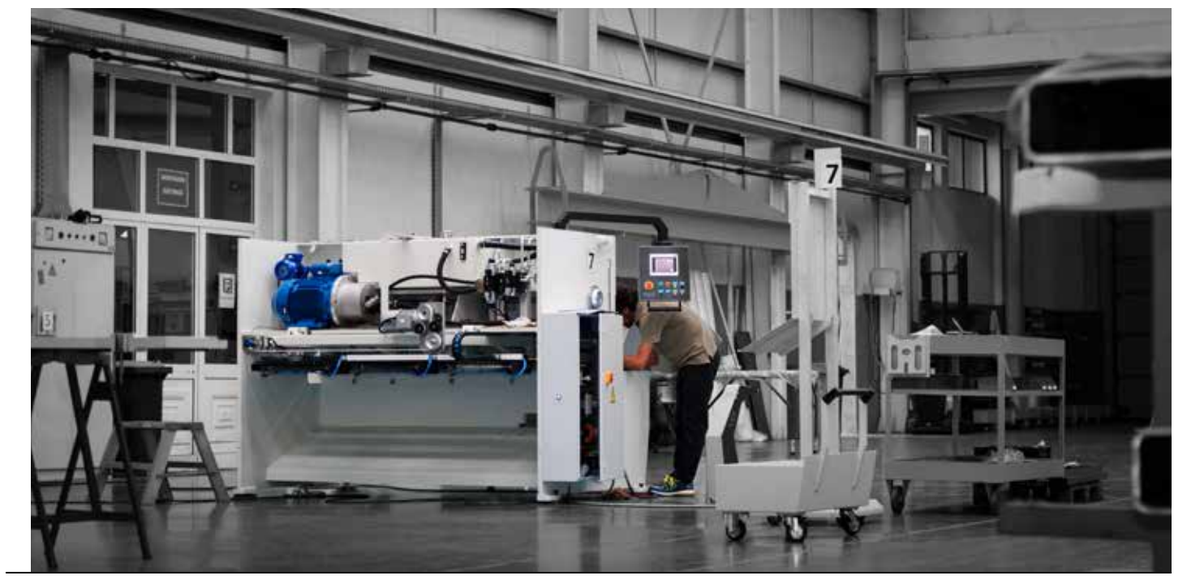
Type	
Control	Elgo P40
Systems	Vertical cut
	Automatic variable rake angle
	Automatic cutting lenght
	RAE - Automatic retration
	Standby function
Frontal supports	1000 mm squaring arm
	1000 mm single support
Frontal safety	Mechanical finger protection
Rear safety	Safety barriors (type IV)
Back gauge	BGS
Others	Hanging swivel control panel
	Cutting lighting shadow line
	LED table lighting
	Hold down jacks performing progressive load with Fibroflex
	2 operating modes: continuous or cycle-by-cycle cut
	Independent hold down jacks (pre-selected)
	Frontal table with ball joints
	Hours counter



. Controls

Models	P 40 S	P 40T	DAC-360T	CybTouch 8G
Memory capacity (lines)	1000	1000	2500	4800
Screen	2.7'' LCD	5.7'' TFT	7'' TFT	7'' CRT
Touch screen	-	●	●	●
Materials list	3	3	6	10
Cuts counter	Ascending	Ascending/ descendant	Programmable	Programmable
Programming of:				
- Retraction	-	-	●	●
- Pressure	-	●	●	●
- Length	●	●	●	●
Control of:				
- Pneumatic sheet support	-	●	●	●
- Angle	●	●	●	●
- Blade gap	○	○	●	●
Offline software	-	-	DAC-360T	-

Standard Optional



Front Feeder **HGR**

Automatic feeder.

HGR Front Feeder the ideal solution to reach demanding productivity and cadence levels.

It includes automatic positioning grippers that allows to perform programed cuts from entire plates, in a continuous way.


System OFF


System ON

Anti-Twist

Flat cutting.

The Anti Twist is a hydraulic system, with cylinders installed in the lower area of the shear, which exerts force against the sheet to be cut, keeping it straight during the cutting process.

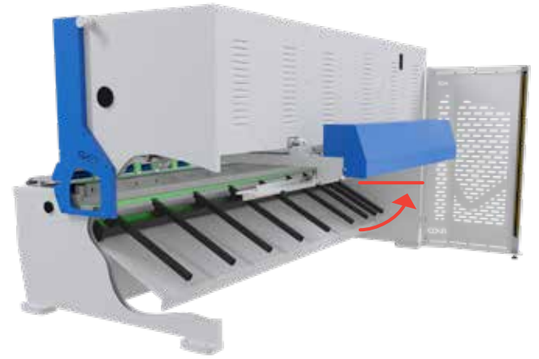
Cylinders are installed along the entire length of the machine.
The system is activated on the control panel in an automatic way.
The movement is synchronized with the blade holder and the force is distributed progressively.

Technical data	
Cylinders distance	Aprox. 400 mm
Machine capacity reduction with ANTI TWIST	Aprox. 30%
Minimum cutting width	20 mm

. Rear sheet support & extraction systems

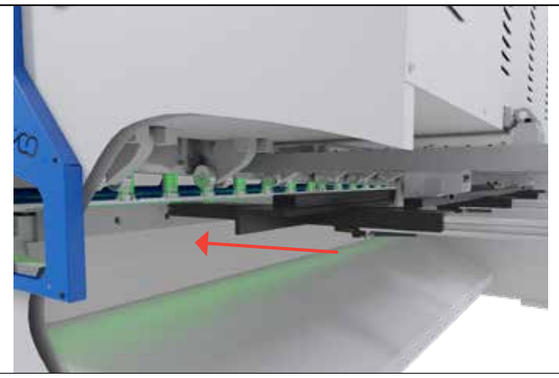
MAC 1

. Pneumatic sheet support with automatic drive;
. Adjustable speed;
. Tilting movement from the sheet extraction ramp.



MAC 2

. Pneumatic sheet support with automatic drive;
. Adjustable speed;
. Multiple cylinders installed in the back gauge;
. Linear movement parallel to the sheet to be cut.



FSE

. Front sheet extraction system up to 450 mm length;
. Includes 1 extraction drawer.

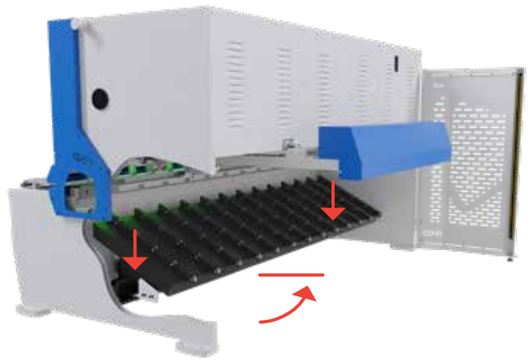
FSE system is only available with MAC2 or without pneumatic support.

MAC 3

. Pneumatic sheet support with automatic drive;
. Adjustable speed;
. Linear movement vertical and perpendicular to the sheet to be cut;
. Conveyor sheet extraction with belts;
. 3 operating modes;
. Sheet scrap box.

MAC X

. Servo-pneumatic sheet support with automatic drive;
. Adjustable speed;
. Double movement: vertical and tilting;
. Ensures full support of the sheet during cutting.



RTS - Return to Sender

RTS System - Return to Sender allows you to send the cut sheet directly to the operator via the entry zone.

. Motorized auto accompaniment;
. Controlled by CNC.

Only available with MacX.

Back gauges

BGS S

. AC motor
. Ball screws
. Belt transmission
. Speed: 70 mm/s
. Accuracy: ± 0,10 mm

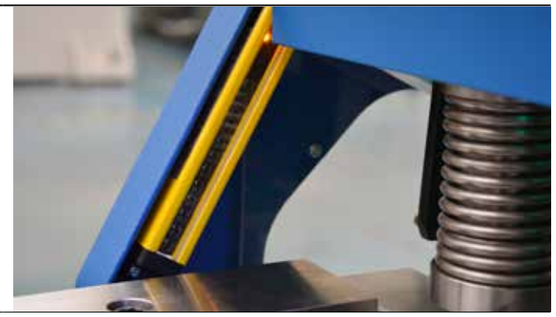
BGA

. Brushless servo motor
. Ball screws
. Belt transmission
. Speed: 250mm/s
. Accuracy: ± 0.05 mm

. Frontal Safety

Tilting finger protection

Photoelectric barriors



. Other opcionals

Laser cutting line

Frontal sheet extraction ramp

THICK METAL CUTTING

RICO®
PRECISION IDEAS

Competing *for* **Heavy Dutty**

.Rico Green

. The **way is green**

RICO promotes an environmentally friendly policy and for that purpose has introduced alternative solutions in all its equipments that reduces energy consumption and consequently the environmental impact.

When *nature* goes *Bending*

Standby FUNCTION

All **RICO** machines have an integrated **StandBy function**. This feature automatically stops the motor after 5 min (configurable value) of inactivity. **StandBy function** automatically provides effective energy savings.

75% Idle Saving
10% Efective Saving

ECO-Boost

ECO-Boost is a system that offers more productivity with environmental benefits.

- ⊕ **Return speed**
- ⊕ **Energy efficiency**
- ⊖ **Noise**
- ⊖ **Consumption: Start/Stop**
- ⊖ **Maintenance**

99% Idle Saving
25% Efective Saving
60% Increase return speed

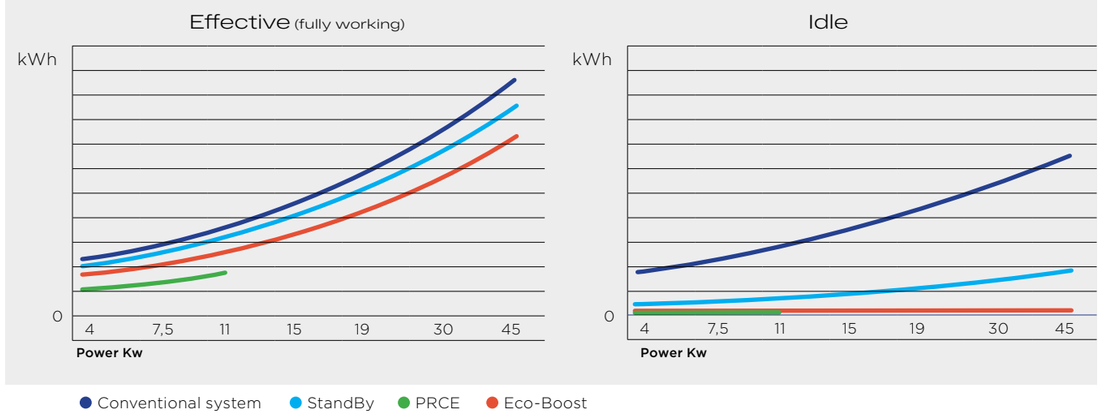
PRCE RICO

The beam synchronism, the positioning reading through precision optical linear encoders and an innovative servo-electric system guarantees:

- ⊕ **Precision**
- ⊖ **Cycle time**
- ⊖ **Energy Consumption**
- ⊖ **Maintenance**

99% Idle Saving
50% Efective Saving

Energy consumption

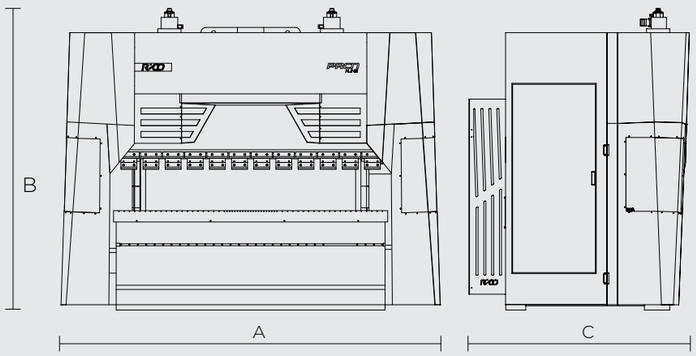


Tech-nical Data

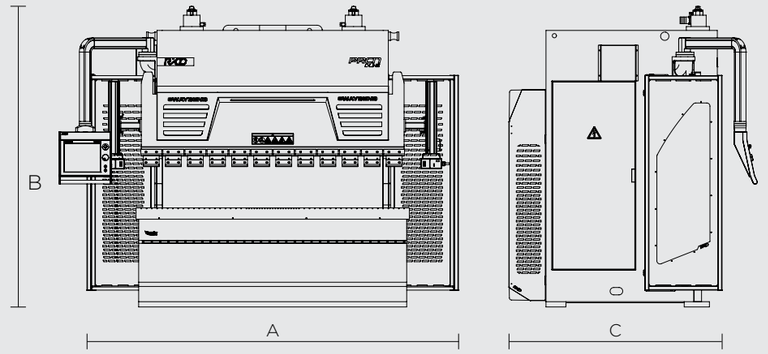
.PRCN

PRCN I-LINE	Bending length	Tonnage	Throat depth	Beam stroke	Beam tilting	Daylight Promecam	Daylight Wila	Y axes speed: Fast	Y axes speed: Bending	Y axes speed: Return	Y axes speed: Return Eco-Boost *	Oil capacity	Motor power	Dimensions: Total length (A)	Dimensions: Total height (B)	Dimensions: Total width (C)	Dimensions: Dist. between frames	Dimensions: Height under floor	Aprox. weight
	mm	Ton	mm	mm				mm/s				Lts	kW	mm					Kg
2070	2100	70	310	300	+/-25	520	500	210	0-10/18	145	220	100	7,5	3080	2790	2030	1600	0	6820
2570	2600	70	310	300	+/-25	520	500	210	0-10/18	145	220	100	7,5	3580	2790	2030	2100	0	7300
3070	3100	70	310	300	+/-25	520	500	210	0-10/18	145	220	100	7,5	4080	2790	2030	2600	0	7640
25100	2600	100	410	300	+/-25	520	500	200	0-10/18	145	220	190	11	3620	2890	2110	2100	0	8060
30100	3100	100	410	300	+/-25	520	500	200	0-10/18	145	220	190	11	4120	2890	2110	2600	0	9230
35100	3600	100	410	300	+/-25	520	500	200	0-10/18	145	220	190	11	4620	2890	2110	3100	0	10670
40100	4100	100	410	300	+/-25	520	500	200	0-10/18	145	220	190	11	5120	2890	2110	3600	0	12050
30135	3100	135	410	300	+/-25	520	500	200	0-10/17	135	200	230	11	4300	2900	2220	2600	0	11450
35135	3600	135	410	300	+/-25	520	500	200	0-10/17	135	200	230	11	4780	2900	2220	3100	0	13050
40135	4100	135	410	300	+/-25	520	500	200	0-10/17	135	200	230	11	5120	2900	2220	3600	0	14080
30160	3100	160	410	300	+/-25	520	500	200	0-10/17	155	205	230	15	4260	2975	2310	2600	0	12550
35160	3600	160	410	300	+/-25	520	500	200	0-10/17	155	205	230	15	4765	2975	2310	3100	0	14600
40160	4100	160	410	300	+/-25	520	500	200	0-10/17	155	205	230	15	5120	2975	2310	3600	0	16500
30200	3100	200	410	300	+/-25	520	500	200	0-10/17	130	200	230	15	4240	3015	2100	2600	0	15140
35200	3600	200	410	300	+/-25	520	500	200	0-10/17	130	200	230	15	4740	3015	2100	3100	0	16410
40200	4100	200	410	300	+/-25	520	500	200	0-10/17	130	200	230	15	5240	3015	2100	3600	0	20200

* Optional
Content subject to change without notice. V4.03.



PRCN C-LINE	Bending length	Tonnage	Throat depth	Beam stroke	Beam tilting	Daylight Promecam	Daylight Wila	Y axes speed: Fast	Y axes speed: Bending	Y axes speed: Return	Y axes speed: Return Eco-Boost *	Oil capacity	Motor power	Dimensions: Total length (A)	Dimensions: Total height (B)	Dimensions: Total width (C)	Dimensions: Dist. between frames	Dimensions: Height under floor	Aprox. weight
	mm	Ton	mm	mm				mm/s				Lts	kW	mm					Kg
30250	3100	250	410	350	+/-25	570	570	180	0-10/17	130	205	400	19	4110	3450	2020	2600	0	18080
35250	3600	250	410	350	+/-25	570	570	180	0-10/17	130	205	400	19	4440	3450	2020	3100	0	19720
40250	4100	250	410	350	+/-25	570	570	180	0-10/17	130	205	400	19	4940	3450	2020	3600	0	21700
30300	3100	300	410	350	+/-25	570	570	180	0-10/17*	130	205	400	30	3970	3450	2020	2600	0	19130
35300	3600	300	410	350	+/-25	570	570	180	0-10/17	130	205	400	30	4470	3450	2020	3100	0	20730
40300	4100	300	410	350	+/-25	570	570	180	0-10/17	130	205	400	30	4970	3450	2020	3600	0	23600
35400	3600	400	410	400	+/-25	620	620	170	0-10	120	x	450	30	4660	3760	2400	3100	0	26000
40400	4100	400	410	400	+/-25	620	620	170	0-10	120	x	450	30	5160	3760	2400	3600	0	28000
35450	3600	450	410	400	+/-25	620	620	150	0-10	105	x	450	30	4480	3735	2395	3100	0	27000
40450	4100	450	410	400	+/-25	620	620	150	0-10	105	x	450	30	4980	3735	2395	3600	0	28700
35500	3600	500	410	400	+/-25	620	620	140	0-10	105	x	450	37	4700	3750	2290	3100	0	28320
40500	4100	500	410	400	+/-25	620	620	140	0-10	105	x	450	37	5200	3750	2290	3600	0	31850



These dimensions may differ on customized machines. Dimensions for transport may differ.

.PRCB

PRCB	Bending length	Tonnage	Throat depth	Beam stroke	Beam tilting	Daylight Promecam	Daylight Wila	Y axes speed: Fast	Y axes speed: Bending	Y axes speed: Return	Y axes speed: Return Eco-Boost *	Oil capacity	Motor power	Dimensions: Total length (A)	Dimensions: Total height (B)	Dimensions: Total width (C)	Dimensions: Dist. between frames	Dimensions: Height under floor	Aprox. weight
	mm	Ton	mm	mm				mm/s				Lts	kW	mm					Kg
1530	1600	30	310	280	+/-10	500	480	210	0-10/20	140	230	75	4	2570	2670	1880	1200	0	3700
2030	2100	30	310	280	+/-10	500	480	210	0-10/20	140	230	75	4	2950	2670	1880	1600	0	4300
2070	2100	70	310	280	+/-10	500	480	210	0-10/18	145	220	100	7,5	3030	2800	2000	1600	0	5800
2570	2600	70	310	280	+/-10	500	480	210	0-10/18	145	220	100	7,5	3360	2800	2000	2100	0	6300
3070	3100	70	310	280	+/-10	500	480	210	0-10/18	145	220	100	7,5	4030	2800	2000	2600	0	7000
20100	2100	100	410	280	+/-10	500	480	200	0-10/18	145	220	190	11	3050	2800	2060	1600	0	6800
25100	2600	100	410	280	+/-10	500	480	200	0-10/18	145	220	190	11	3550	2800	2060	2100	0	7600
30100	3100	100	410	280	+/-10	500	480	200	0-10/18	145	220	190	11	4050	2800	2060	2600	0	8400
35100	3600	100	410	280	+/-10	500	480	200	0-10/18	145	220	190	11	4380	2800	2060	3100	0	9450
40100	4100	100	410	280	+/-10	500	480	200	0-10/18	145	220	190	11	5070	2800	2060	3600	0	11050
60100	6100	100	410	280	+/-10	500	480	200	0-10/18	125	200	190	11	6960	3120	1950	5100	0	19000
30135	3100	135	410	280	+/-10	500	480	200	0-10/17	135	200	230	11	4070	2880	1760	2600	0	9900
35135	3600	135	410	280	+/-10	500	480	200	0-10/17	135	200	230	11	4400	2880	1760	3100	0	10600
40135	4100	135	410	280	+/-10	500	480	200	0-10/17	135	200	230	11	5090	2880	1760	3600	0	12500
60135	6100	135	410	280	+/-10	500	480	200	0-10/17	115	180	230	11	6980	3180	1950	5100	0	20000
30160	3100	160	410	280	+/-10	500	480	200	0-10/17	155	205	230	15	4070	2935	1835	2600	0	10700
35160	3600	160	410	280	+/-10	500	480	200	0-10/17	155	205	230	15	4410	2935	1835	3100	0	11940
40160	4100	160	410	280	+/-10	500	480	200	0-10/17	155	205	230	15	5090	2935	1835	3600	0	13600
60160	6100	160	410	280	+/-10	500	480	200	0-10/17	135	195	230	15	6980	3290	2000	5100	0	22000
30200	3100	200	410	280	+/-10	500	480	200	0-10/17	130	200	230	15	4090	2935	1960	2600	0	12580
35200	3600	200	410	280	+/-10	500	480	200	0-10/17	130	200	230	15	4590	2935	1960	3100	0	13240
40200	4100	200	410	280	+/-10	500	480	200	0-10/17	130	200	230	15	5110	2935	1960	3600	0	16000
60200	6100	200	410	280	+/-10	500	480	200	0-10/17	110	180	230	15	7000	3500	2000	5100	0	25200

* Optional | ** Size is smaller in Tandem machines.
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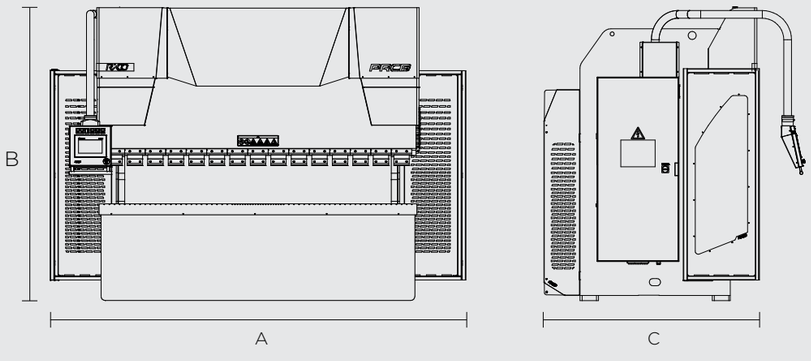

PRCB Heavy Duty	Bending length	Tonnage	Throat depth	Beam stroke	Beam tilting	Daylight Promecam	Daylight Wila	Y axes speed: Fast	Y axes speed: Bending	Y axes speed: Return	Y axes speed: Return Eco-Boost *	Oil capacity	Motor power	Dimensions: Total length (A)	Dimensions: Total height (B)	Dimensions: Total width (C)	Dimensions: Dist. between frames	Dimensions: Height under floor	Aprox. weight
	mm	Ton	mm	mm				mm/s				Lts	kW	mm					Kg
30250	3100	250	410	330	+/-10	550	550	180	0-10/17	130	205	400	19	4110	3435	2010	2600	0	15800
35250	3600	250	410	330	+/-10	550	550	180	0-10/17	130	205	400	19	4610	3435	2010	3100	0	17400
40250	4100	250	410	330	+/-10	550	550	180	0-10/17	130	205	400	19	5140	3435	2010	3600	0	19600
60250	6100	250	410	330	+/-10	550	550	180	0-10/17	110	195	400	19	7040	3660	2040	5100	0	30000
30300	3100	300	410	330	+/-10	550	550	180	0-10/17	130	205	400	30	4130	3435	2015	2600	0	16360
35300	3600	300	410	330	+/-10	550	550	180	0-10/17	130	205	400	30	4630	3435	2015	3100	0	18400
40300	4100	300	410	330	+/-10	550	550	180	0-10/17	130	205	400	30	5155	3435	2015	3600	0	21200
60300	6100	300	410	330	+/-10	550	550	180	0-10/17	110	195	400	30	6960	3620	2100	5100	0	33500
35400	3600	400	410	380	+/-10	600	600	170	0-10	120	x	450	30	4675	3580	2400	3100	0	22900
40400	4100	400	410	380	+/-10	600	600	170	0-10	120	x	450	30	5175	3580	2400	3600	0	25000
60400	6100	400	410	380	+/-10	600	600	170	0-10	100	x	450	30	7170	3680	2450	5100	1100	35400
35450	3600	450	410	380	+/-10	600	600	150	0-10	105	x	450	30	4655	3620	2410	3100	0	23700
40450	4100	450	410	380	+/-10	600	600	150	0-10	105	x	450	30	5195	3620	2410	3600**	0	27500
60450	6100	450	410	380	+/-10	600	600	150	0-10	90	x	450	30	7060	3880	2450	5100	1350	37600
35500	3600	500	410	380	+/-10	600	600	140	0-10	105	x	450	37	4500	3580	2450	3100	0	26000
40500	4100	500	410	380	+/-10	600	600	140	0-10	105	x	450	37	5100	3580	2450	3600**	0	30000
60500	6100	500	410	380	+/-10	600	600	140	0-10	90	x	450	37	7080	4050	2530	5100	1700	42000
40600	4100	600	410	430	+/-10	650	650	130	0-10	115	x	600	45	5230	4040	2600	3600**	500	34000
60600	6100	600	410	430	+/-10	650	650	130	0-10	100	x	600	45	7080	4140	2600	5100	1700	46000

.PRCE

PRCE	Bending length	Tonnage	Throat depth	Beam stroke	Beam tilting	Daylight Promecam	Daylight Wila	Y axes speed: Fast	Y axes speed: Bending	Y axes speed: Return	Motor power	Dimensions: Total length (A)	Dimensions: Total height (B)	Dimensions: Total width (C)	Dimensions: Dist. between frames	Dimensions: Height under floor	Aprox. weight
	mm	Ton	mm	mm				mm/s			kW	mm					Kg
1040	1100	40	210	270	+/-5	490	470	220	0-10/20	220	6,5	2110	3050	1590	1200	0	4200
1540	1600	40	210	270	+/-5	490	470	220	0-10/20	220	6,5	2610	3050	1590	1700	0	4500
2040	2100	40	310	270	+/-5	490	470	220	0-10/20	220	6,5	3030	3050	1980	1600	0	4700
2080	2100	80	310	270	+/-5	490	470	210	0-10/20	210	10	3050	3100	2130	1600	0	6800
2580	2600	80	310	270	+/-5	490	470	210	0-10/20	210	10	3550	3100	2130	2100	0	7150
3080	3100	80	310	270	+/-5	490	470	210	0-10/20	210	10	4050	3100	2130	2600	0	7500

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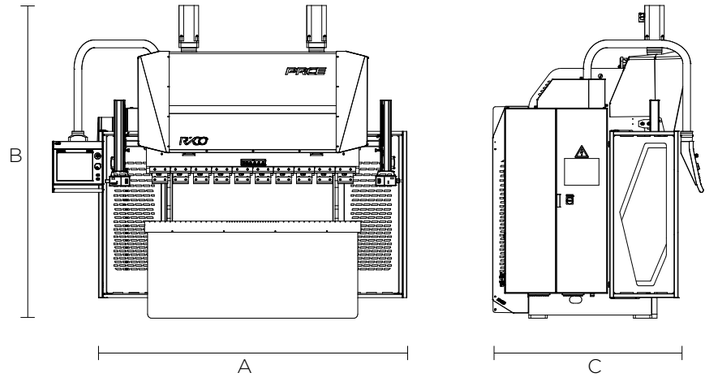

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.HGR

HGR	Lenght	Thickness: Mild steel (420 N/mm²)	Thickness: Stainless steel (700 N/mm²)	Rake angle	Strokes/min: Angle >	Strokes/min: Angle <	Hold down jacks	Back gauge stroke	Throat depth	Motor power	Oil capacity	Dimensions: Total Length (A)	Dimensions: Total height (B)	Dimensions: Total width (C)	Dimensions: Height under floor	Aprox. weight
	mm	mm	mm	°	qt	qt	qt	mm	mm	kW	Lts	mm				Kg
154	1550	4	2,8	1,5/0,7	25	34	10	1000	135	5,5	55	2100	1720	2330	0	3350
204	2050	4	2,8	1,5/0,7	22	33	12	1000	135	5,5	55	2600	1720	2330	0	3750
254	2550	4	2,8	1,5/0,7	17	27	14	1000	135	5,5	55	3100	1720	2330	0	4600
304	3050	4	2,8	1,5/0,7	16	23	17	1000	135	5,5	55	3600	1720	2400	0	5200
404	4050	4	2,8	1,5/0,7	11	18	22	1000	155	7,5	110	4600	1790	2660	0	9300
604	6050	4	2,8	1,5/0,7	10	16	31	1000	264	11	150	6600	2220	2630	0	17300
206	2050	6	4	1,5/0,7	23	33	12	1000	155	11	110	2600	1800	2500	0	4500
256	2550	6	4	1,5/0,7	17	25	14	1000	155	11	110	3100	1800	2500	0	5140
306	3050	6	4	1,5/0,7	17	25	17	1000	155	11	110	3600	1800	2500	0	6000
406	4050	6	4	1,5/0,7	12	18	22	1000	155	11	150	4600	1950	2760	0	10000
606	6050	6	4	1,5/0,7	9	14	31	1000	272	11	150	6600	2250	2700	0	25400
208	2050	8	5,5	2/0,7	14	21	12	1000	205	11	150	2620	1950	2610	0	5750
258	2550	8	5,5	2/0,7	13	20	14	1000	205	11	150	3120	1950	2600	0	6500
308	3050	8	5,5	2/0,7	10	16	17	1000	205	11	150	3620	1950	2620	0	8900
408	4050	8	5,5	2/0,7	7	12	22	1000	205	11	220	4610	2250	2520	0	13000
608	6050	8	5,5	2/0,7	6	12	31	1000	265	15	220	6650	2500	2680	0	31350
210	2050	10	7	2/1	16	24	12	1000	205	15	150	2620	1950	2610	0	6300
2510	2550	10	7	2/1	15	23	14	1000	205	15	150	3120	1950	2620	0	7050
310	3050	10	7	2/1	12	19	17	1000	205	15	150	3620	1950	2620	0	9570
410	4050	10	7	2/1	8	13	22	1000	210	15	220	4610	2250	2520	0	13500
610	6050	10	7	2/1	4	7	31	1000	277	15	220	6620	2810	3060	0	33800
213	2050	13	9	2/1	14	20	12	1000	210	18,5	220	2630	2200	2500	0	8300
2513	2550	13	9	2/1	13	19	14	1000	210	18,5	220	3120	2200	2500	0	9720
313	3050	13	9	2/1	10	15	17	1000	210	18,5	220	3620	2200	2500	0	12500
413	4050	13	9	2/1	8	13	22	1000	210	18,5	220	4660	2250	2580	0	14500
613	6050	13	9	2/1	4	7	31	1200	277	18,5	220	6780	3000	3370	910	54400
316	3050	16	11	3/1,5	7	14	17	1000	220	22	220	3720	2300	2550	0	13750
416	4050	16	11	3/1,5	4	8	22	1200	220	22	220	4700	2650	2800	0	19400
320	4050	20	14	3/1,5	4	7	22	1200	215	37	430	4760	2530	2880	0	24500
420	3050	25	17	3/1,5	5	7	17	1200	215	37	430	3870	2660	2890	0	21500
325	3050	25	17	3 / 1,5	5	7	17	1200	215	37	430	3790	2680	2890	0	23500
330	3050	30	21	3.5 / 2º	3	4	15	1200	215	45	600	4000	2870	3000	0	32000
335	3050	35	24	3.5 / 2º	2,5	3,5	15	1200	215	45	600	4000	2870	3000	0	33000
340	3050	40	28	4 / 2,5º	2	3	15	1200	215	45	600	4000	2870	3000	0	34000

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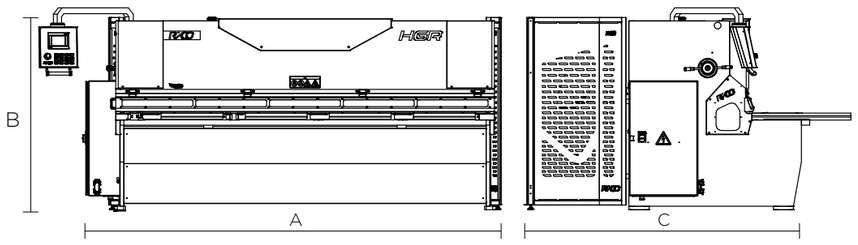
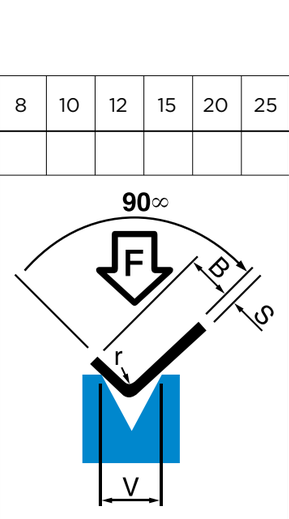


.08 Bending table

Required bending tonnage (Ton/m)

Rm=420 N/mm^2 - Rm=700 N/mm^2

R	B	V	S (mm) 0,5	0,6	0,8	1	1,2	1,5	2	2,5	3	4	5	6	8	10	12	15	20	25	30
0,5	3	4	4 7	6 10	12 20																
0,7	3,5	5	3 5	5 8	9 15	15 25															
0,8	4	6	2 4	3 6	7 12	11 19	18 30														
1	5,5	8		2 4	5 8	8 13	12 21	21 35													
1,3	6,5	10			4 6	6 10	9 15	15 26	30 50												
1,5	8	12				5 8	7 12	12 20	23 38	39 66											
2	10,5	16					5 8	8 13	16 26	27 45	44 71										
2,5	13	20						6 10	12 19	20 33	31 52	60 101									
3,2	16,5	25							9 15	14 24	23 38	44 73	76 126								
4,4	21	32								11 18	16 27	32 53	54 90	85 142							
5	26	40									12 21	23 38	39 66	62 103	121 202						
6,5	32,5	50										18 30	29 48	45 76	88 147	151 252					
8	41	63											22 37	33 55	70 117	109 182	173 288				
10	52	80												25 42	46 77	79 131	124 207	213 354			
12	65	100													35 59	58 96	91 151	155 258	302 504		
15	81,5	125														44 74	66 110	113 189	220 367	378 630	
20	104	160															50 83	81 135	158 263	269 448	425 709
25	130	200																62 104	115 192	197 328	310 517
37	163	250																	89 148	144 240	227 378
45	195	300																		120 200	173 288



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