“Premium Series”
Hybrid Press Brakes

Business Development Department
February 2021

Version1

Premium Series CNC Press Brakes

APHS-H Hybrid Press Brake

APHS-H Hybrid Press Brake

Please check out the video on official **Baykal Youtube account**:
https://www.youtube.com/watch?v=3q4rcAXsk7A

APHS-H Hybrid Press Brake

Products - **Premium Series** APHS HYBRID

Premium Series
APHS - HYBRID

New Hybrid Press Brake Delivers Energy Saving and Ultimate Accuracy and Repeatability.

01
Extensive Bending Solutions
Thanks to Well Considered Machine Design

02
Get Started in a Simple Way
Program Easily

03
High Speed Installation
Thanks to Surface-Mounted Structure

04
Efficient Bending Complex Parts
with Extremely Massive Dimensions as Well

05
Brings Your Project to Life
Flexibility and Precision

06
High Powerful Bending
with Exceptional Force

Why Hybrid Press Brake?

 **%60 ENERGY SAVE**	**To reduce electrical consumption and heat, the pump motor is active only when the machine is working.**
 **%40 FASTER**	**Compared with standard hydraulic press brakes, Hybrids can easily reach 200 mm/s movement speeds.**
 **ENVIRONMENTAL**	**60 % less energy and oil consumption in average compared to the Standard Hydraulic Press Brakes.**
 **SILENT WORKING (63 db)**	**As servo motor and pump assembled inside the tank with compact design of hydraulic system, 13% more silent work achieved.**

Hybrid Key benefits

* Improved productivity up to 30%.
* Improved energy efficiency up to 60%.
* Reduced tank volume, approx. 60% less.
* Minimum risk of leakage.
* Cost Effective
* High Precision
* "0" zero hydraulic assembly work.
* Closed cycle: "0" maintenance cost.

Why Hybrid Press Brake?

ENERGY SAVE

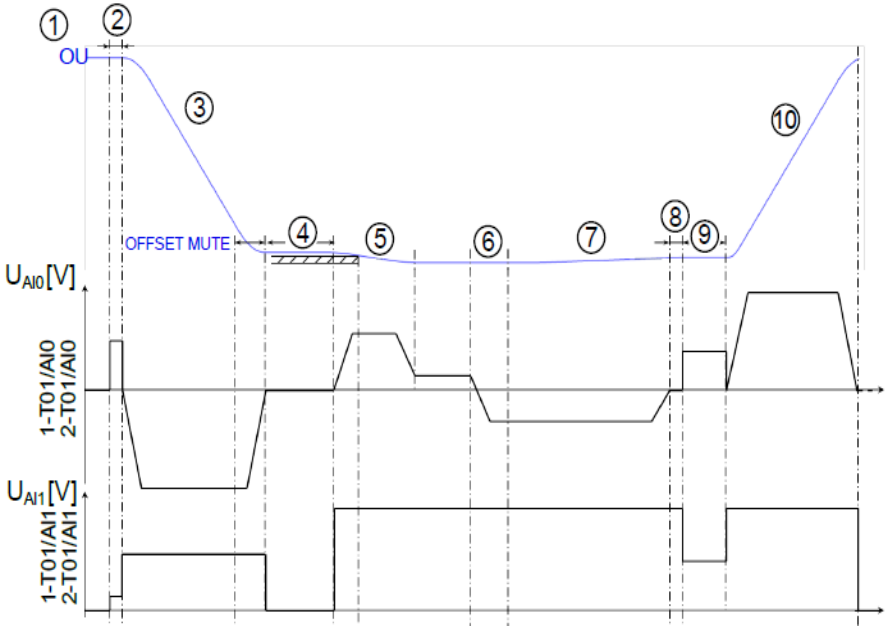
Up to 60%

At standard hydraulic system pump motor is working continuously but at hybrid system servo motor is working only when it is necessary.

By preparation of material process and Adjustment time of the mechanical parts on the machine, servo motor stops and unnecessary consumption is prevented.

Furthermore with compact hydraulic design and accumulator, unnecessary high speed and circulation are prevented which increases efficiency.

Why Hybrid Press Brake?



Especially as seen at the graphic;

6-bending, 7-forming 8-decompration, 9-preparation 10-return back

At these stages energy save is achieved.

Why Hybrid Press Brake?

Fast and Precise

Fast fall down and return back speeds are %40 faster than standard hydraulic press brake. Approach speed is 150 mm/s on 200 tons hydraulic press brakes and this will reach up to 200 mm/s on hybrid press brakes.

Furthermore at robotic applications, bending speed can be increased approximately 100% with bending speed of 20 mm/sec. with the advantage of servo motor

Easy maintenance and assembly

With easy to reach valves and components at compact design hydraulic unit, maintenance is much more easier and faster.

Why Hybrid Press Brake?

Enviromental

The capacity of total oil usage is approximately 80lt. Oil tank capacity is 210 lt on 200 tons standard hydraulic press brakes. As of no piping system on hybrid press brakes, oil consumption cost decreases around 70% depending on oil usage life time and amount.

No heating problem

As Oil cycle path and speed decreased, oil heating problem resolved and oil lifetime increased.

Repeatability with Servo motor system

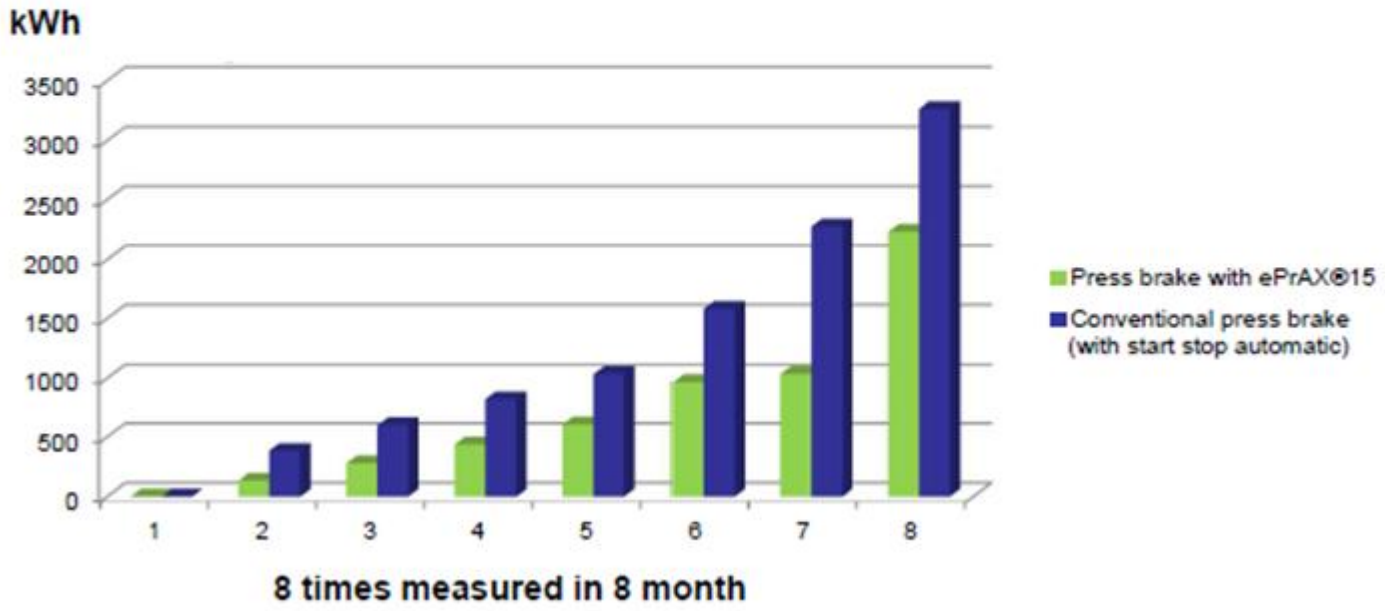
With servo motor and compact hydraulic system, precision and repeatability achieved as 0.01.

APHS-H Hybrid Press Brake

Consumption: kWh

	Strokes	working h	kWh
Press brake withePrAX®15	154,511	2,352	1,325
Conventional press brake	149,086	3,266	3,158
	+ 5,425	- 914	- 1,833

ePrAX15 needs only 1,325 kWh for all 154,511 strokes. The conventional press brake needs 3,266 kWh for all 149,086 strokes.



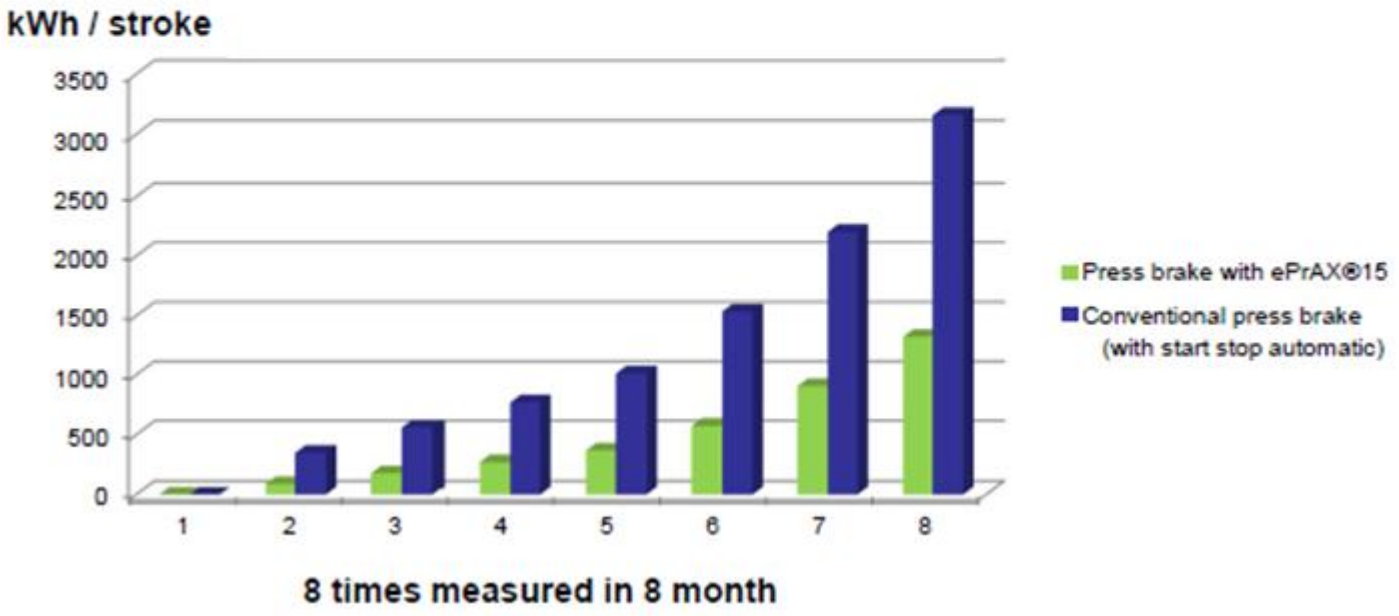
Measured by Hawe in End User

APHS-H Hybrid Press Brake

Consumption: kWh/stroke

	Strokes	working h	kWh	kWh/stroke
Press brake withePrAX®15	154,511	2,352	1,325	0.0080
Conventional press brake	149,086	3,266	3,158	0.0201
	+ 5,425	- 914	- 1,833	- 0.0124

ePrAX15 needs only 0.0080 kWh for each stroke. The conventional press brake needs 0.0201 kWh average for each stroke.



Measured by Hawe in End User

APHS-H Hybrid Press Brake - Technical Data

We are proud to present high precision **APHS Hybrid** Series as one of the leading Press Brake of the World. The future technology based **APHS Hybrid** Series force boundaries by transforming even hardest bending to the easiest with User Friendly CNC Controller, ergonomic design and low operation cost.

Model		APHS-H HYBRID								
No		31120	31160	31200	31240	31300	41160	41200	41240	41300
Bending Length	mm	3100	3100	3100	3100	3100	4100	4100	4100	4100
Bending Force	Tons	120	160	200	240	300	160	200	200	300
Rated Power *	kW	2x6	2x9.2	2x9.2	2x9.2	2x9.2	2x9.2	2x9.2	2x9.2	2x9.2
Oil Capacity	lt	2x34.5	2x55	2x55	2x55	2x55	2x55	2x55	2x55	2x55
Inside Frames	mm	2550	2550	2550	2550	2550	3550	3550	3550	3550
Daylight opening	mm	540	540	530	530	660	530	530	530	635
Stroke	mm	260	260	260	260	320	260	260	260	320
Throat Gap	mm	410	410	410	410	500	410	410	410	500
Approach	mm/s	200	200	200	160	140	200	200	160	140
Working	mm/s	10	10	10	8	7	10	10	8	7
Return	mm/s	200	200	200	160	140	200	200	160	140

* Refer to the data of Hawe about main motors.

Legal Notice: Machines built with CE-safety conformity are available as option.
Design and specifications are subject to change without notice.

APHS-H Hybrid Press Brake

Standard Features and Equipment	
Control Unit	Delem DA-66T Touch Screen
Backgauge	X+R Axis Backgauge (Driven by Servo Motors and Drives)
Backgauge Range	X=750mm R=160mm
Backgauge Fingers	2 Pieces Flat Backgauge Fingers
Front Arms	2 Pieces Front Support Arms with Brushes
Crowning	CNC Crowning
Tools & Clamping	Promecam Clamping / Standard Top and Bottom Tools
Security	Back and Side Covers with Switch

Additional Equipment	
Backgauge Options	X+R+Z1+Z2 AXIS X+R+X5+Z1+Z2 AXIS X1+X2+R1 / R2+Z1+Z2 AXIS
Backgauge Finger	Additional Backgauge Finger (1 Unit)
Security Options	AKAS II (FMSC PLC) AKAS III-P-Motorized (FMSC PLC)
Control Unit Option	Delem DA-69T Touch Screen Esa S 675W Touch Screen
Crowning Option	Manual Crowning
Clamping Options	Hydraulic Clamping Pneumatic Clamping Quick Release Clamping
Support Arms Options	Additional Front Support Arms (1 Unit) CNC Sheet Follower (1 Unit)

Premium Series CNC Press Brakes

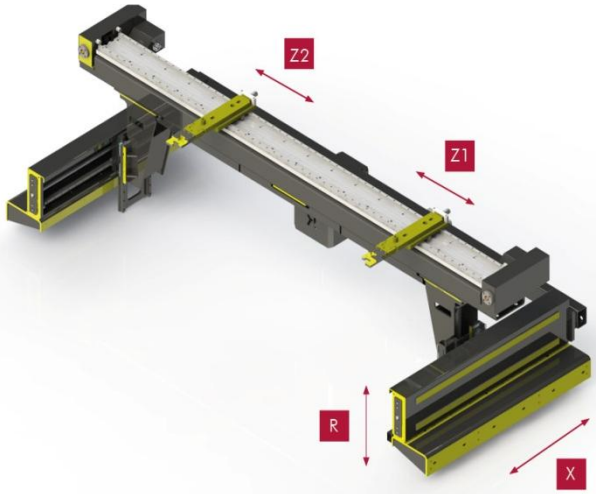
Standard Equipments

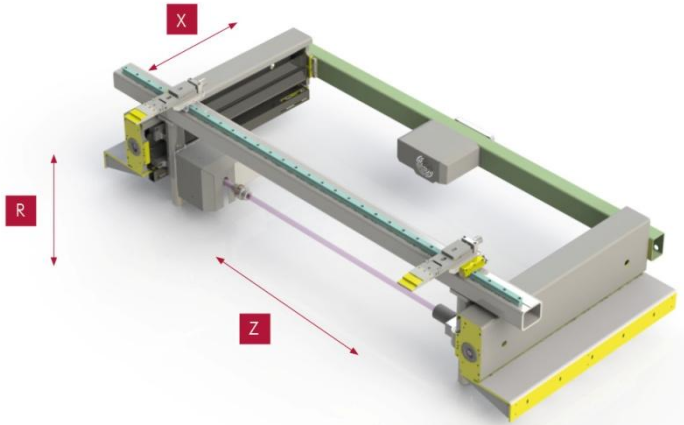
STANDARDS	**HYBRID**
Backgauges	X+R Axis
Tools & Clamping	Promecam
Security	Back and Side Covers with Switch
Control Unit	Delem 66T
Front Arms	2xWith Brushes
Crowning	CNC
New Arm Design	Standard

Advanced Backgauge Solutions

BACKGAUGE AXIS	HYBRID
X-R AXIS	Standard
X+R+Z1+Z2	Optional
X+R+X5+Z1+Z2	Optional
X1+X2+R1+R2+Z1+Z2	Optional

Advanced Backgauge Solutions

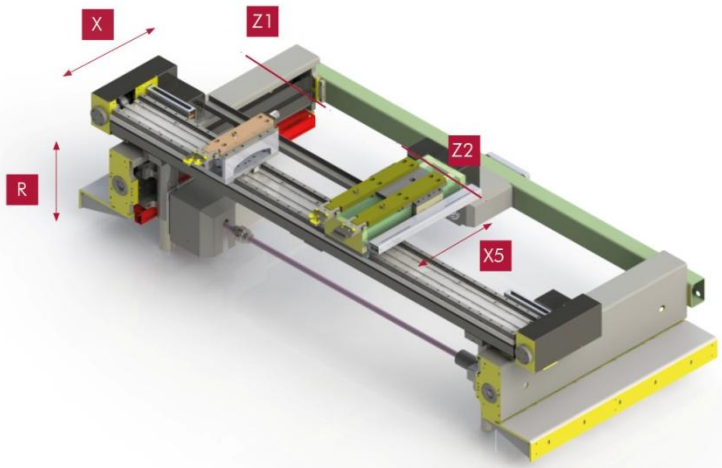


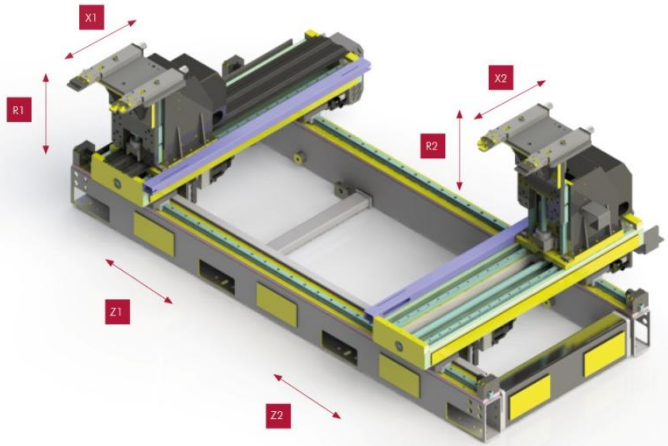


X-R AXIS			
	X-Axis	R-Axis	Z-Axis
RANGE	750 mm	160 mm	Manuel
PRECISION	± 0.03 mm	± 0.05 mm	Manuel
SPEED	350 mm/s	240 mm/s	Manuel

X+R+Z1+Z2 AXIS			
	X-Axis	R-Axis	Z-Axis
RANGE	750 mm	160 mm	Variable
PRECISION	± 0.03 mm	± 0.05 mm	± 0.05 mm
SPEED	350 mm/s	240 mm/s	1000 mm/s

Advanced Backgauge Solutions



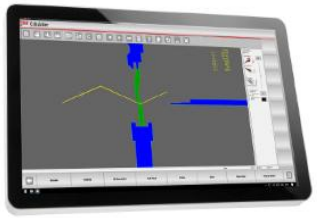


X+R+X5+Z1+Z2 AXIS				
	X-Axis	X5-axis	R-Axis	Z-Axis
RANGE	750 mm	± 125 mm	160 mm	Variable
PRECISION	± 0.03 mm	± 0.05 mm	± 0.05 mm	± 0.05 mm
SPEED	350 mm/s	240 mm/s	240 mm/s	1000 mm/s

X1+X2+R1+R2+Z1+Z2 AXIS			
	X1-X2 Axis	R1-R2 Axis	Z1-Z2 Axis
RANGE	750 mm	160 mm	Variable
PRECISION	± 0.03 mm	± 0.05 mm	± 0.05 mm
SPEED	350 mm/s	240 mm/s	1000 mm/s

Advanced CNC Controller Options

Features	**Delem DA-66T**	**Delem DA-69T**	**Esa S 675W**
Configuration	Standard	Optional	Optional
Screen	17 inch	17 inch	21″ TFT LCD
Resolution	1280 x 1024 pixels	1280 x 1024 pixels	1920 x 1080 pixels
Operating System	Windows CE	Windows CE	Windows 10
Characteristics	2D	3D	Standard 2D Optional 3D
Offline Software	Lite Version	Standard	Standard



Delem DA-66T 2D CNC Touch Screen Controller

The DA-66T offers 2D programming that includes automatic bend sequence calculation and collision detection. Full 3D machine set-up with multiple tool stations giving true feedback on the product feasibility and handling. Highly effective control algorithms optimize the machine cycle and minimize set-up time. This makes using press brakes easier, more efficient and more versatile than ever.

Standard

- 2D graphical programming
- 3D visualization in production mode
- 17" high resolution color TFT
- Full Windows application suite
- USB keyboard & mouse interface
- Sensor bending & correction interface
- 2D Profile-T Lite offline software

Delem DA-69T 3D CNC Touch Screen Controller

The DA-69T offers 2D as well as 3D programming that includes automatic bend sequence calculation and collision detection. Full 3D machine set-up with multiple tool stations giving true feedback on the product feasibility and handling.

Highly effective control algorithms optimize the machine cycle and minimize set-up time. This makes using press brakes easier, more efficient and more versatile than ever.

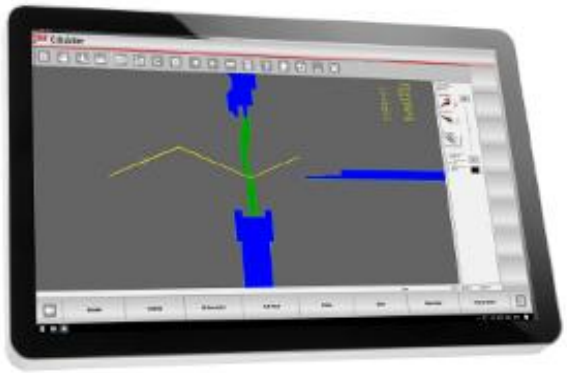
Optional

- 3D graphical programming
- 3D visualization in production mode
- 17" high resolution color TFT
- Full Windows application suite
- USB keyboard & mouse interface
- Sensor bending & correction interface
- 3D Profile-T offline software

Esa S 675W 2D CNC Touch Screen Controller

The S675 W is top-of-the-line CNC Controller for press brakes. It offers highest performance with 21'' multi-touch screen for the best operating experience you'll ever have. A totally renewed interface, specifically designed for multi touch screen.

Optional 2D and 3D



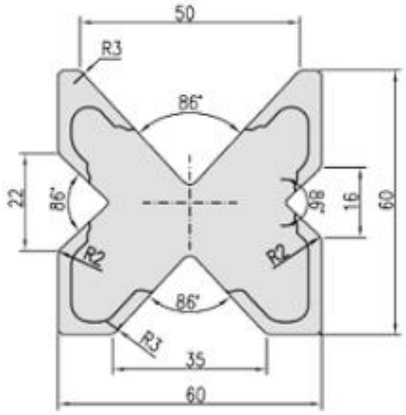
- Interactive 2D graphic editor for workpieces and tools data entry.
- 2D graphic display of machine frame, work-piece and tools.
- 2D automatic identification of the best bending sequence.
- Automatic calculation of bending force and force limitation as a function of the maximum tool load.
- Complete offline programming of tools and programs by means of a standard PC.

Tool Clamping Systems

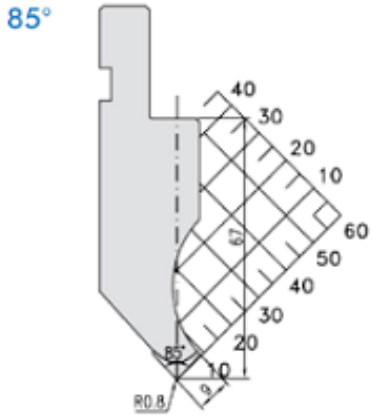
Promecam (Standard)

World most popular clamping system enable to use segmented tooling and wide variety of tool options.

Top and Bottom Tools



Bottom Tool: BS 10100 (H: 67mm)
Material: 42CrMo4-100 ton / mt
INDUCTION HRC 52 - 55
Induction Depth 2 - 3 mm



Top Tool: BS 10100 (H: 67mm)
Material: 42CrMo4-100 ton / mt
INDUCTION HRC 52 - 55
Induction Depth 2 - 3 mm

Quick Release Clamping (Optional)

Wila (Optional)

Wila New-Standard Tool Holders make it possible to change tools very quickly.

NEW STANDARD PRO

NSCL-I-HC-CNC

NSCR-I-HC-CNC

NEW STANDARD PREMIUM

NSCL-II-HC-CNC

NSCR-II-HC-CNC

Tool Clamping Systems

Rolleri Clamping Systems (Optional)

ROL200 represents the patented system created by Rolleri for a safe, vertical tool change for Promecam tools.

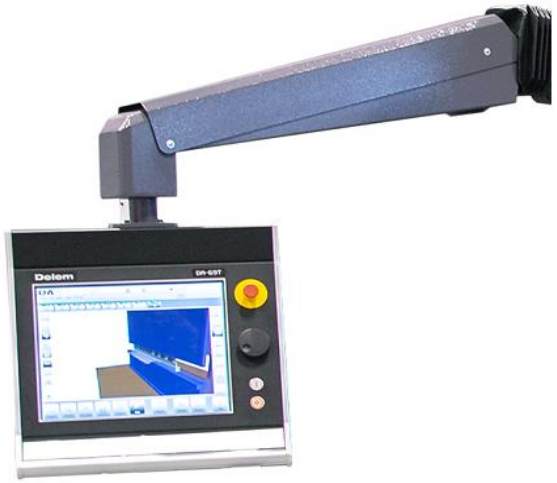
Hydraulic upper fast clamping system with front clamp for Promecam tools, 150mm length, Max. load 1000 kN/m

Pneumatic upper fast clamping system with front clamp for Promecam tools, 150mm length, Max. load 1000 kN/m

Automation Options

New Design CNC Control Unit Arm (Standard)

All our premium Press Brakes are equipped with height adjustable control arm system; operator comfort and easy to use the control unit achieved.



Crowning Systems (Standard)

The CNC-controlled motorized crowning system ensures accurate results at every point of the bending.

Front Arms

Front Arms with Brushes (Standard)

Sliding front arms with brushes, stopper and height adjustment for the material with smooth surfaces.

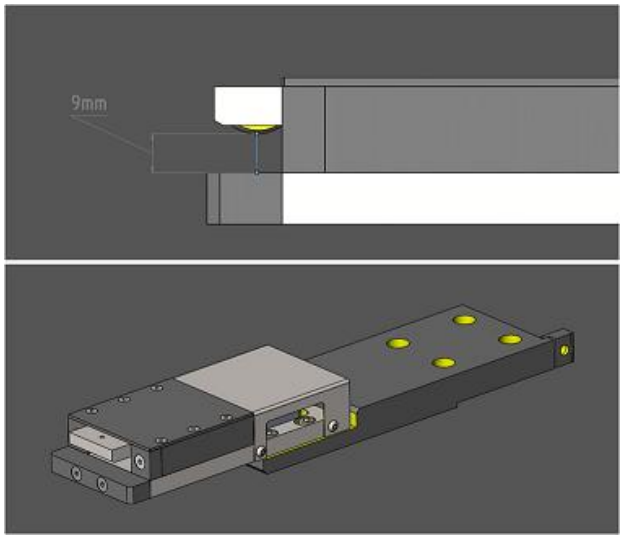
CNC Sheet Following Arms (Optional)

CNC sheet following arms decrease the bending time considerably and lead perfect bending results.

Automation Options

Thickness Measurement (Optional)

It measures the material thickness with sensors in the backgauge finger.



Laser Angle Measurement System (Optional)

%100 correct and precise bending is much easier with laser angle measurement system.

Fiessler Akas II-LC-FMSC PLC (Optional):

Front safety protection complies with CE regulations and prevent operator injuries. .

Fiessler Akas III-LC-FMSC PLC (Optional):

With motorized height adjustment Akas, machine adjustments can be made faster.

Rear Guards

Sliding Door System (Standard)

Sliding door system prevents operator injuries and with the help of its window , operator can see inside during maintenance and operation.

Motorized Shutter System (Optional)

Motorized rear safety system to prevent operator injuries and with the help of its window , operator can see inside during maintenance and operation.

Premium Series

APHS-H Hybrid System

APES Servo Belt&Pulley System

APES-Servo Ball Screw System

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	**youtube.com/baykalmakine**
	**twitter.com/baykalmachine**
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THANK YOU

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