

EHM 4004

SYNERGYBEND SERIES

HYBRID PRESS BRAKE

PRECISION BENDING SYSTEMS



EHM 4004

SYNERGYBEND HYBRID PRESS BRAKE



- 1** Servo + hydraulic combination drive
- 2** International-standard CNC controls
- 3** Fast set-up; hydraulic clamping available
- 4** 8+1 axes configuration

Energy efficiency

Reduced maintenance costs

Quieter, cleaner operation

Precision and control

Faster operation and productivity

Flexibility for complex bending

INDEX

01	PRODUCT OVERVIEW	02
02	CORE SPECIFICATION	04-05
03	EQUIPMENT & MOTION	06-11
04	CNC & SOFTWARE	12-16
05	SAFETY & TOOLING	17-18
-	CONTACT	19

MAIN CHARACTERISTICS

01 ENERGY & ENVIRONMENT

- 01 Lower energy consumption than traditional hydraulic press brakes.
- 02 Reduced oil usage and less heat generation for stable long-term performance.
- 03 Quieter operation and lower risk of oil leakage, contamination and downtime.

02 PRECISION & PRODUCTIVITY

- 01 Faster response and shorter cycle times.
- 02 Precise ram control for improved bending repeatability.
- 03 Control of speed, pressure and position for complex bending jobs.

03 SERVICE & START-UP

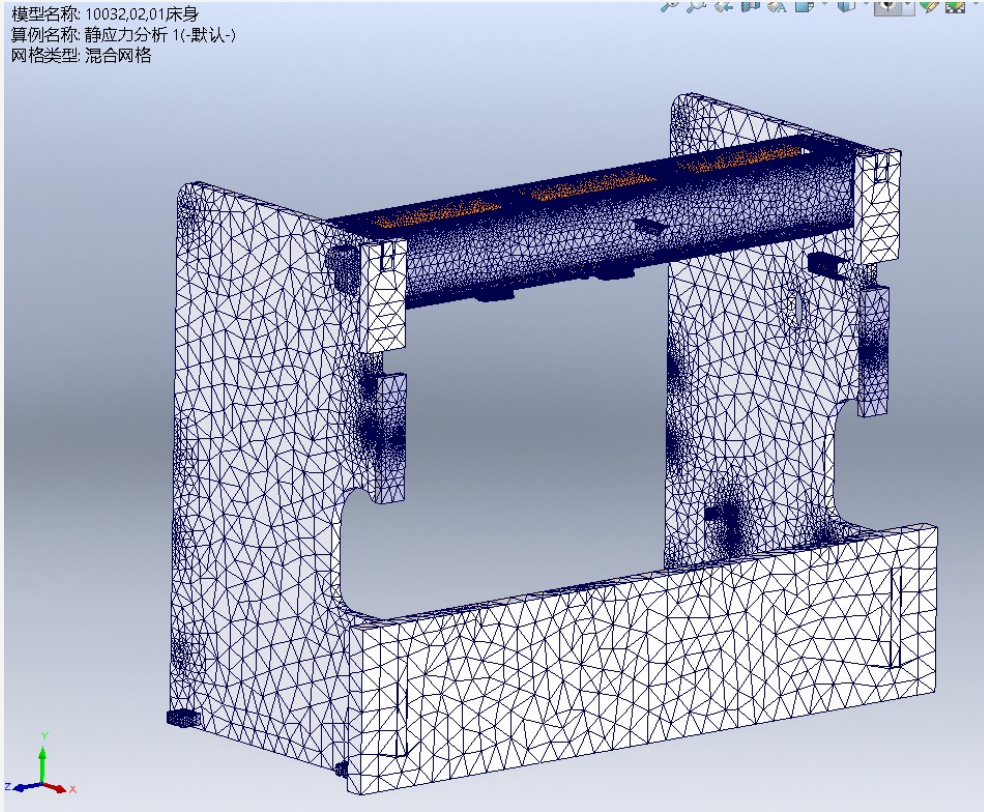
- 01 Lower maintenance needs: fewer hydraulic components under constant load.
- 02 Faster start-up without long hydraulic warm-up time.

TECHNICAL SPECIFICATION

EHM 4004

Description	Unit	EHM 4004
Press force	KN	4000
Distance between side frames	mm	3100
Bending length	mm	4000
Open height	mm	580
Standard stroke	mm	300
Throat depth	mm	470
Working height	mm	1035
Axis	pcs	8+1
TRAVERSE PATHS		
Y axis	mm	300
X axis	mm	600
R axis	mm	150
Z axis	mm	2300
SPEED		
Y axis approach speed	mm/s	130
Y axis return speed	mm/s	130
Y axis bending speed	mm/s	8~10
X axis	mm/s	300
R axis	mm/s	62
Z axis	mm/s	500
ACCURACY		
Y axis	mm	±0.01
X axis	mm	±0.01
R axis	mm	±0.1
Z axis	mm	±0.1
Power supply	/	380VAC/3P+PE/50Hz
Size(L×W×H)	mm	4970X1860X3370
Ambient air temperature	°C	0-40°C
Noise level	dBA	75-85
Altitude	m	<1000
Design service life limit	year	10
Gross weight	kg	20500
Pneumatic pressure	MPa	/
Hydraulic system pressure	MPa	28
Main motor	kW	9
Gross motor	kW	20
oil consumption	L	240

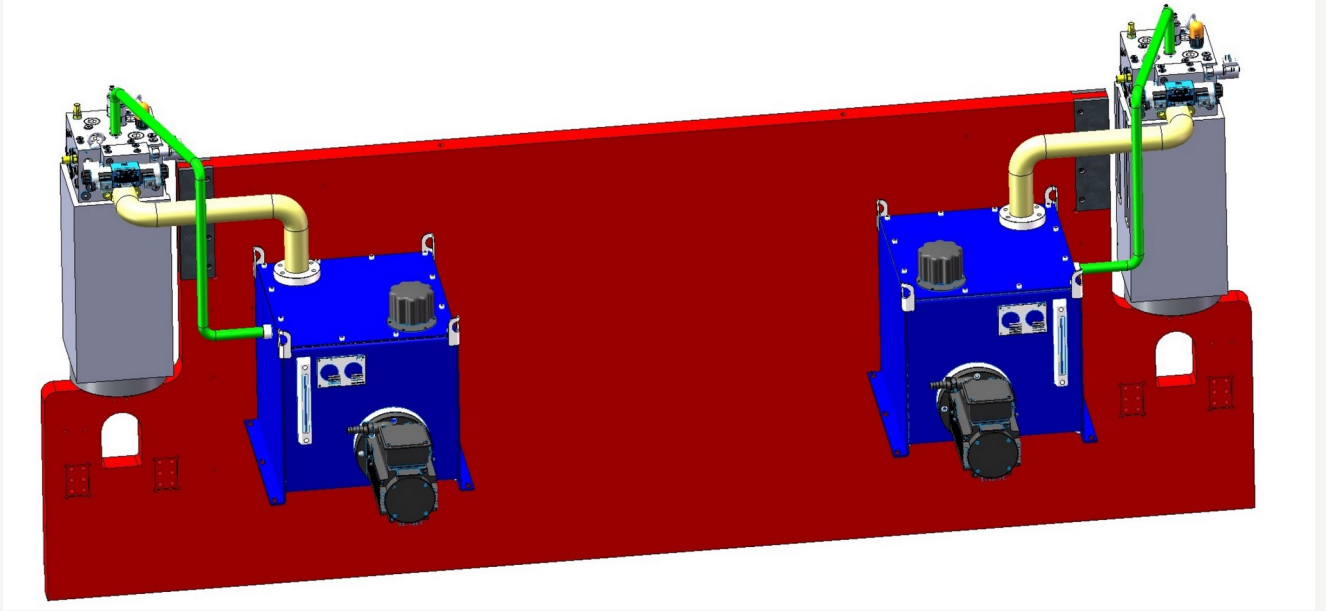
MAIN EQUIPMENT & FEATURES



- 01** ANSYS finite-element analysis verifies frame and slider strength.
- 02** Integral welded construction provides high structural rigidity.
- 03** Annealing and aging treatments relieve welding stress and protect long-term accuracy.



HYBRID DRIVE



SERVO CONTROL. HYDRAULIC POWER.

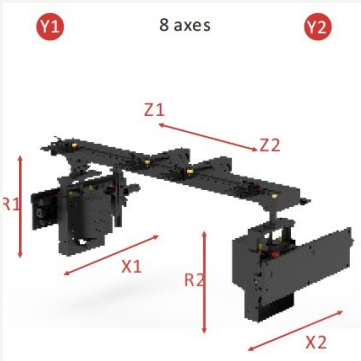
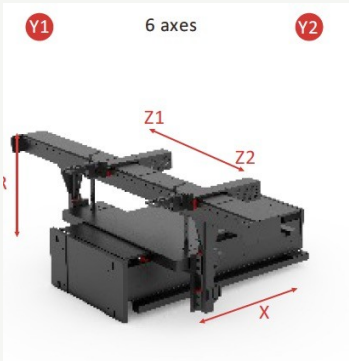
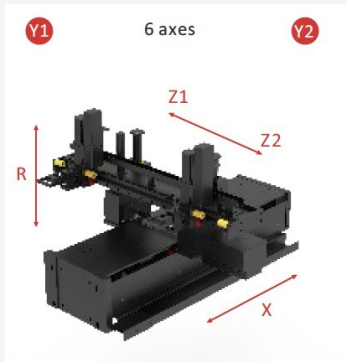
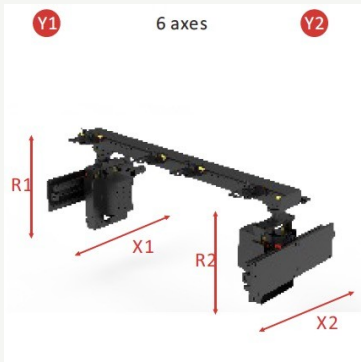
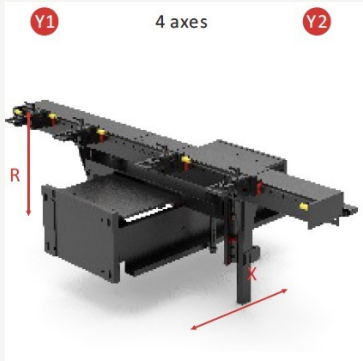
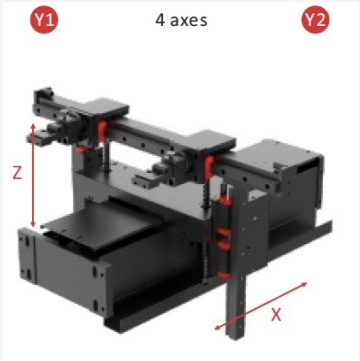
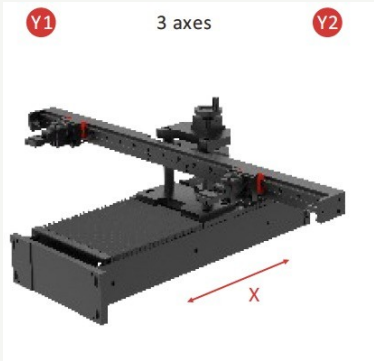
The hybrid drive system of a press brake combines servo motor control with hydraulic power transmission. In this system, a servo motor drives the hydraulic pump according to the actual bending demand, instead of keeping the pump running continuously like a traditional hydraulic machine.

During operation, the servo motor controls the pump speed and oil flow precisely. The hydraulic oil is pressurized and delivered to the cylinders, pushing the ram downward to bend the sheet metal. The control system adjusts the servo motor, oil pressure, and cylinder movement to achieve accurate ram positioning, stable bending force, and synchronized motion.

After the bending process, the hydraulic circuit redirects the oil and the servo motor assists the return movement. This system keeps the strong forming force of hydraulic drive while improving energy efficiency, response speed, noise control, and bending accuracy.

BACK GAUGES

Accurate sheet positioning for consistent bends. Multiple axis configurations extend flexibility for complex parts.



SHEET SUPPORT

SIMPLE SUPPORT ARMS WITH GUIDE

Two simple support arms with guide along the machine with height adjustment.



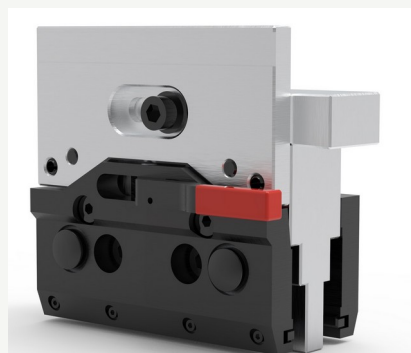
PROGRAMMABLE BENDING AID

Designed for bending large-format and heavy-gauge sheets, this lifting table serves as an essential bending aid for operator safety and part quality. The table elevation is programmable via the CNC control, automatically positioning the sheet at optimal working height.

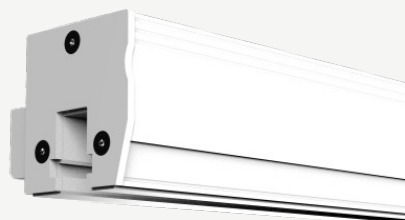


CLAMPING SYSTEM

AMADA-STYLE QUICK CLAMP



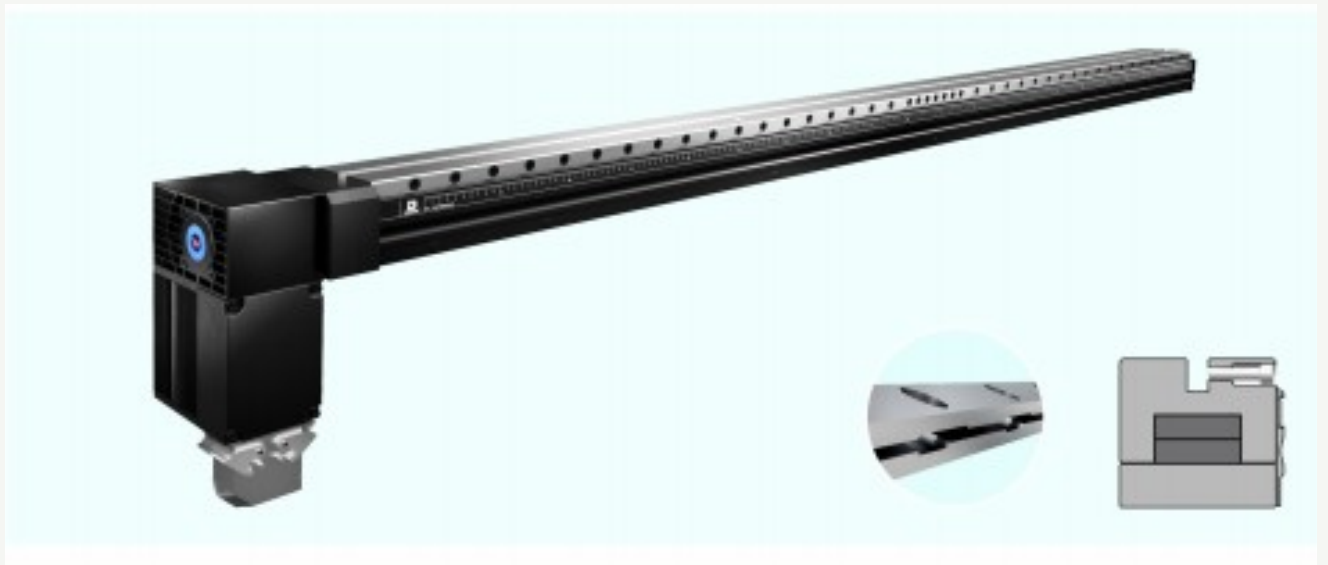
WILA-STYLE HYDRAULIC CLAMP



MECHANICAL-HYDRAULIC CROWNING SYSTEM

OPERATING PRINCIPLE

A series of wedge-shaped compensation blocks sits along the lower die mounting surface. Hydraulic actuation creates a controlled upward curve that counteracts ram and frame deflection during bending.



CNC-controlled hydraulic actuation combines with proven wedge mechanics to correct frame deflection while preserving the simplicity and durability required in demanding production environments.

CNC CONTROL



DELEM 53TX

- " Hot-key" touch navigation
- 15.6" high resolution wide screen TFT
- Up to 4 axes (Y1,Y2+2 aux. axes)
- Crowning control
- Tool /material /product library
- Servo and frequency inverter control
- Advanced Y-axis control algorithms for closed-loop as well as open-loop valves.
- 2D graphical programming (optional)
- TandemLink (option)
- Network interfacing (optional)
- Profile-53TL offline software



DELEM 58TX

- 2D graphical touch screen programming
- 18.5" high resolution colour TFT
- Bend sequence calculation
- Crowning control
- Tool /material /product library
- Servo and frequency inverter control
- Advanced Y-axis control algorithms for closed-loop as well as open-loop valves.
- Protractor interfacing (option)
- TandemLink (option)
- Network Interface (option)
- Profile-58TL offline software



DELEM 66S

- 2D graphical touch screen programming mode
- 3D visualisation in simulation and production mode
- 24" high resolution colour TFT
- Delem Modusys compatibility (module scalability and adaptivity)
- USB, peripheral interfacing
- Support for Industry 4.0 connectivity (OPC-UA optional)
- Shop floor control, Job list functionality
- Open system architecture
- Sensor bending & correction interface
- Profile-S2D offline software



DELEM 69S

- 3D and 2D graphical touch screen programming mode
- 3D visualization, including 3D machine representation, in simulation and production
- 24" high resolution color TFT
- Delem Modusys compatibility (module scalability and adaptivity)
- USB, peripheral interfacing; user specific application support within the control's multitasking environment
- Sensor bending & correction interface
- Profile-S3D offline software



ROCK / RK22 / RK15

- Scheduled Maintenance Management for a machine always efficient
- IoT support through MQTT protocol
- Advanced programming assisted by attachments and video
- Sampling of the material for an accurate production
- Exporting of computed flat patterns as DXF files

DELEM DA-66S



EMBEDDED RELIABILITY

DA-66S

DA-60S - series 2D graphical control for CNC press brakes

The DA-66S control combines solid fundamental press brake control functionality with enhancements that increase productivity. High accuracy, ease of use and operator support make today's press brakes more versatile. Integration of machines in the manufacturing process chain is central to its design.

Industrial touch-screen technology gives access to the Delem user interface and direct navigation between programming and production. Functions are located where needed, supporting ergonomics throughout the application.

STATE-OF-THE-ART FUNCTIONALITY

2D programming includes automatic bend-sequence calculation and collision detection. Full 3D machine set-up with multiple tool stations provides feedback on feasibility and handling. Effective control algorithms optimise the machine cycle and minimise set-up time. The modular concept supports scalable configurations.

The real-time Linux operating system enables strong integration with the application and a robust basis for maximum reliability. Smooth start-ups are ensured, even after instant shut-off.

The OEM panel above the screen supports machine functions and application switches.

DA-66S FEATURES

- 2D graphical touch screen programming mode
- 3D visualisation in simulation and production mode
- 24-inch high-resolution colour TFT
- Delem Modusys modular scalability and adaptivity
- USB, peripheral interfacing
- Industry 4.0 connectivity (OPC-UA optional)
- Shop floor control; job list functionality
- Open system architecture
- Sensor bending & correction interface
- Profile-S2D offline software

DELEM DA-66S

SPECIFICATIONS

Product configuration

Standard

- Colour LCD display
- 24-inch TFT, high brightness
- 1920 × 1080 pixels, 32-bit colour
- Full touch screen control
- Storage capacity 4 GB
- 3D graphics acceleration
- Network connectivity
- Emergency switch
- Integrated OEM panel
- USB flash memory drive
- Profile-S2D offline software

Ordering information

- DA-66S
- DA-66S-P, CNC panel version

Factory option

- Panel version

Field options

- Part support control
- X1-X2 angle programming
- Barcode reader interfacing
- Protractor interfacing
- Frame deflection compensation
- Sensor bending & correction interfacing
- Sheet thickness measurement and compensation system
- DXF import support
- ACP (Additional Control Panel)
- OPC-UA interface



Delem DA-66S control

Technical specification

General

- Real-time Linux embedded OS
- Multitasking environment
- Instant Shut Off
- Delem Modusys compatible

Electrical / interfacing

- Power supply: 24V
- Modusys HSB bus
- RS232 port (2×)
- Network interface (3×)
- USB port (2×)
- Protractor interfacing
- Angle control interfacing

Control

- Servo / 2-speed AC control
- Unipolar / frequency inverter control
- Direct pressure valve control
- Direct proportional valve Y1, Y2 control
- Direct crowning control
- Multiple digital function outputs
- Tandem operation (multiple)

Mechanical

- Housing 611 × 547 × 123 mm
- Panel version 596 × 402 × 63 mm
- Design, glass surface, aluminium edge
- IP54
- Weight approx. 14.5 kg (incl. housing), 9 kg (panel version)

Programming

- Alphanumeric product naming
- Real-scale product programming and visualisation
- Job list functionality
- Automatic bend sequence calculation
- Easy graphical bend sequence swap and move
- Hemmed products programming
- One-page programming table
- Graphical product and tool selection
- Programmable material properties
- Programmable axis speed
- Free material programming
- Product & tool search filter
- Millimetres/inches, kN/Ton selection
- Stock counter
- Product notes

Tooling

- Graphical tool configuration
- Multiple tool station set-ups
- Tool segmentation visualisation
- Alphanumeric tool identification
- Free graphical tool programming
- Hemming tools
- Radius tools
- Tool adapter support
- DXF tool import (optional)

Computed

- Tooling safety zones
- Press force
- Bend allowance
- Crowning adjustment
- Developed length
- Bottoming force
- Hemming force
- Auto bumping calculation
- Radius programming
- Bend allowance table
- Tool configuration
- Tool segmentation
- Learned angle correction database

Miscellaneous

- Teach-in on all axes
- Handwheel movement of all axes
- Operator-selectable dialogue languages
- Integrated help functions
- Error messaging system
- Diagnostic program
- Remote diagnosis
- Software OEM panel
- User-specific applications support
- Machine time + stroke counter
- On-board analysis tool
- Sequencer functionality (PLC)
- Safety PLC interfacing

DELEM DA-69S



DA-69S FEATURES

- 01 3D and 2D graphical touch screen programming mode
- 02 3D visualisation in simulation and production mode
- 03 24-inch high-resolution colour TFT
- 04 Delem Modusys modular scalability and adaptivity
- 05 USB, peripheral interfacing
- 06 Industry 4.0 connectivity (OPC-UA optional)
- 07 Shop floor control; job list functionality
- 08 Open system architecture
- 09 Sensor bending & correction interface
- 10 Profile-S 3D offline software

DELEM DA-69S

SPECIFICATIONS

Product configuration

Standard

- Colour LCD display
- 24-inch TFT, high brightness
- 1920 × 1080 pixels, 32-bit colour
- Full touch screen control
- Storage capacity 4 GB
- 3D graphics acceleration
- Network connectivity
- Emergency switch
- Integrated OEM panel
- USB flash memory drive
- Profile-S 3D offline software

Ordering information

- DA-69S
- DA-69S-P, CNC panel version

Factory option

- Panel version

Field options

- Part support control
- X1-X2 angle programming
- Barcode reader interfacing
- Protractor interfacing
- Frame deflection compensation
- Sensor bending & correction interfacing
- Sheet thickness measurement and compensation system
- ACP (Additional Control Panel)
- OPC-UA interface



Delem DA-69S control

Technical specification

General

- Real-time Linux embedded OS
- Multitasking environment
- Instant Shut Off
- Delem Modusys compatible

Electrical / interfacing

- Power supply: 24V
- Modusys HSB bus
- RS232 port (2×)
- Network interface (3×)
- USB port (2×)
- Protractor interfacing
- Angle control interfacing

Control

- Servo / 2-speed AC control
- Unipolar / frequency inverter control
- Direct pressure valve control
- Direct proportional valve Y1, Y2 control
- Direct crowning control
- Multiple digital function outputs
- Tandem operation (multiple)

Mechanical

- Housing 611 × 547 × 123 mm
- Panel version 596 × 402 × 63 mm
- Design, glass surface, aluminium edge
- IP54
- Weight approx. 14.5 kg (incl. housing), 9 kg (panel version)

Programming

- Alphanumeric product naming
- 2D/3D real-scale product programming and visualisation
- Job list functionality
- Automatic bend sequence calculation in 2D and 3D
- Easy graphical bend sequence swap and move
- Hemmed products programming
- One-page programming table
- Graphical product and tool selection
- Programmable material properties
- Programmable axis speed
- Free material programming
- Product & tool search filter
- Millimetres/inches, kN/Ton selection
- Stock counter
- Product notes
- DXF import support

Tooling

- Graphical tool configuration
- Multiple tool station set-ups
- Tool segmentation visualisation
- Alphanumeric tool identification
- Free graphical tool programming
- Hemming tools
- Radius tools
- Tool adapter support
- DXF tool import

Computed

- Tooling safety zones
- Press force
- Bend allowance
- Crowning adjustment
- Developed length
- Bottoming force
- Hemming force
- Auto bumping calculation
- Radius programming
- Bend allowance table
- Tool configuration
- Tool segmentation
- Learned angle correction database

Miscellaneous

- Teach-in on all axes
- Handwheel movement of all axes
- Operator-selectable dialogue languages
- Integrated help functions
- Error messaging system
- Diagnostic program
- Remote diagnosis
- Software OEM panel
- User-specific applications support
- Machine time + stroke counter
- On-board analysis tool
- Sequencer functionality (PLC)
- Safety PLC interfacing

SAFETY

LASER SAFE PROTECTION

Emitting and receiving units create a continuous protective field around the punch tip. Operators can work safely while the tools approach at high speed; if an obstruction is detected, the press brake stops immediately.



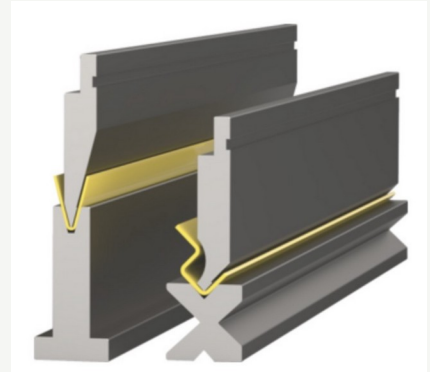
ADDITIONAL SAFETY FEATURES

- 01 Rear photocell protection (on request)
- 02 Interlocked side safety guards
- 03 Wide viewing area around the working zone
- 04 Emergency stops on the control panel and foot pedal

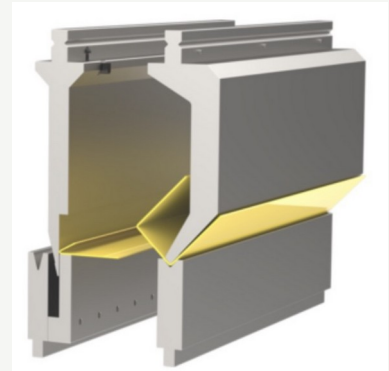
BENDING TOOLS

Industry-standard interfaces cover the most common press-brake tooling systems. Custom tooling can be engineered with customers for application-specific requirements.

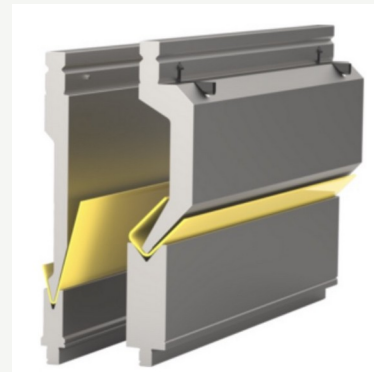
01 AMADA-STYLE



02 TRUMPF-STYLE



03 WILA-STYLE



PRECISION BENDING SYSTEMS



CONTACT

WEB	www.eko-equipment.com
EMAIL	anne@eko-equipment.com
MOBILE	+86 159 8667 1240
Factory address	No. 8 Huanwei Street, Fugang Village, Qingxi Town, Dongguan 518108, Guangdong, China.