

# EHC1703

## VERTEXBEND SERIES

### HYDRAULIC PRESS BRAKE

PRECISION BENDING SYSTEMS



# EHC1703

## VERTEXBEND HYDRAULIC PRESS BRAKE



- 1 Hydraulic drive for heavy-duty bending**
- 2 International-standard CNC controls**
- 3 Fast set-up; hydraulic clamping available**
- 4 6+1 axes configuration**

Hydraulic ram actuation

Rigid welded construction

Flexible tooling configurations

Precision and control

Multiple CNC control options

Heavy-duty forming

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# MAIN CHARACTERISTICS

## 01 FORCE & APPLICATION

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- 01 Hydraulic cylinders drive the ram and maintain bending pressure through the stroke.
  - 02 The EHC range covers press forces from 600 to 6000 kN.
  - 03 Bending lengths from 1500 to 6000 mm accommodate different part sizes.
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## 02 STRUCTURE & CONTROL

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- 01 Rigid welded construction supports heavy-duty forming.
  - 02 CNC control regulates ram speed, position and bending force.
  - 03 Different tooling and backgauge configurations support varied bending jobs.
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## 03 SERVICE & OPERATION

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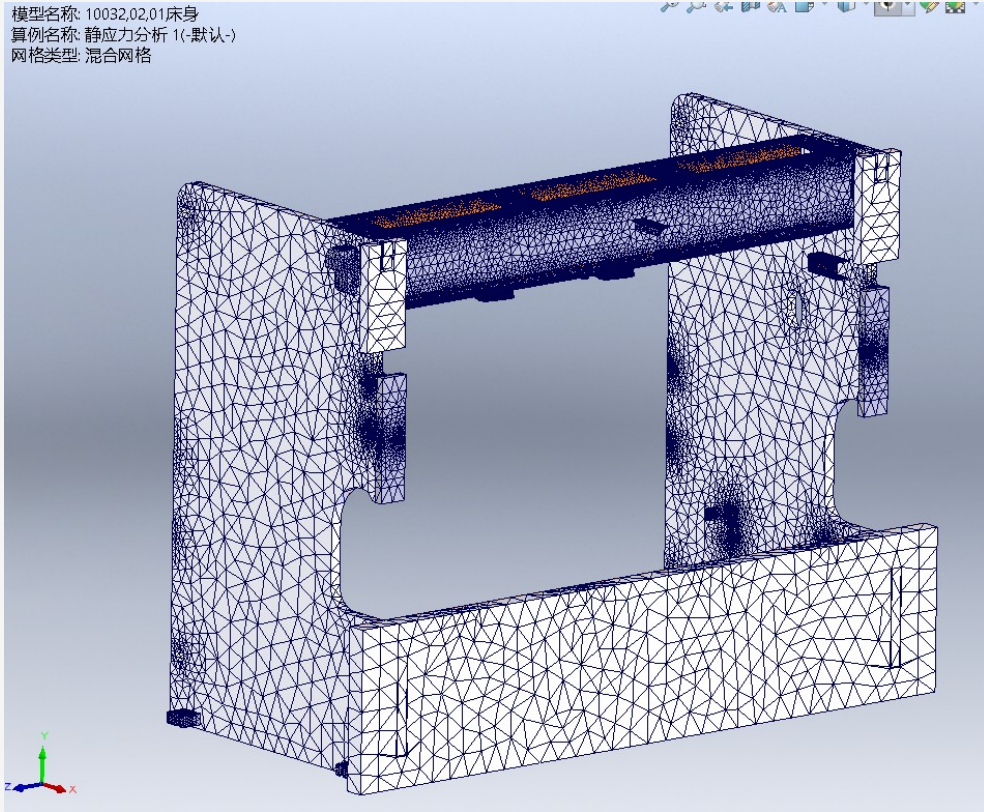
- 01 Routine maintenance covers hydraulic oil, seals, pumps, valves and pipelines.
  - 02 Oil temperature control and leakage prevention support long-term reliability.
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# TECHNICAL SPECIFICATION

## EHC1703

| Description                  | Unit | EHC1703           |
|------------------------------|------|-------------------|
| Press force                  | KN   | 1700              |
| Distance between side frames | mm   | 2700              |
| Bending length               | mm   | 3200              |
| Open height                  | mm   | 580               |
| Standard stroke              | mm   | 315               |
| Throat depth                 | mm   | 405               |
| Working height               | mm   | 830               |
| Axis                         | pcs  | 6+1               |
| TRAVERSE PATHS               |      |                   |
| Y axis                       | mm   | 315               |
| X axis                       | mm   | 500               |
| R axis                       | mm   | 200               |
| Z axis                       | mm   | 2100              |
| SPEED                        |      |                   |
| Y axis approach speed        | mm/s | 180               |
| Y axis return speed          | mm/s | 180               |
| Y axis bending speed         | mm/s | 14                |
| X axis                       | mm/s | 400               |
| R axis                       | mm/s | 120               |
| Z axis                       | mm/s | 1200              |
| 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   | 3800X1730X2800    |
| Ambient air temperature      | °C   | 0-40°C            |
| Noise level                  | dBA  | 75-85             |
| Altitude                     | m    | <1000             |
| Design service life limit    | year | 10                |
| Gross weight                 | kg   | 9100              |
| Pneumatic pressure           | MPa  | /                 |
| Hydraulic system pressure    | MPa  | 28                |
| Main motor                   | kW   | 13.2              |
| Gross motor                  | kW   | 16                |
| oil consumption              | L    | 300               |

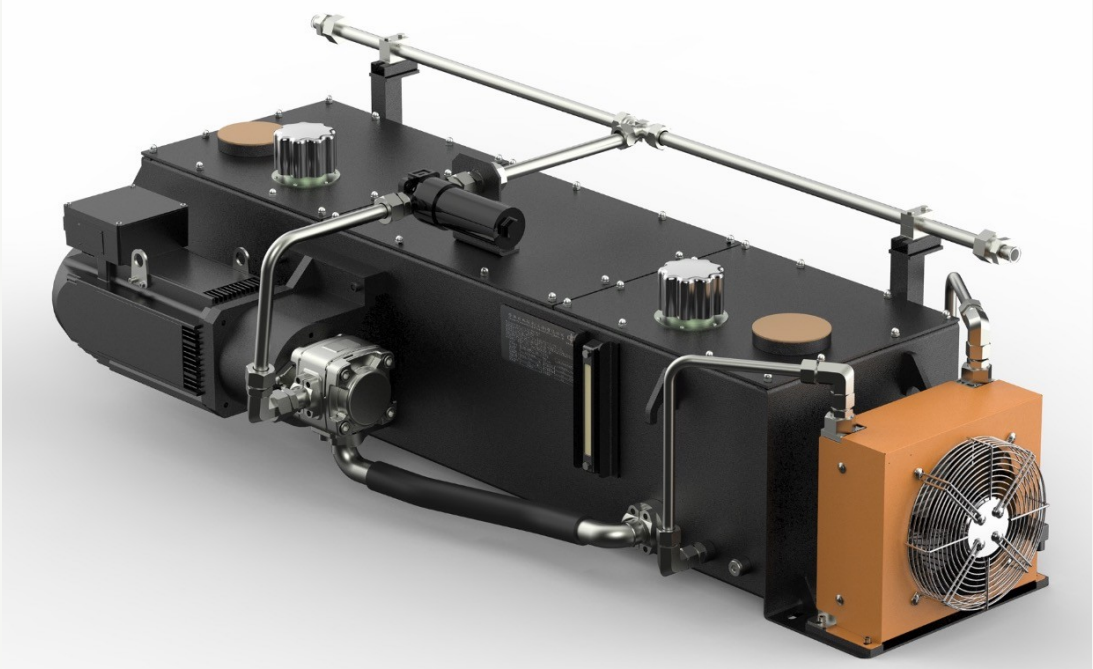
# MAIN EQUIPMENT & FEATURES



- 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.



# HYDRAULIC DRIVE



## HYDRAULIC POWER TRANSMISSION

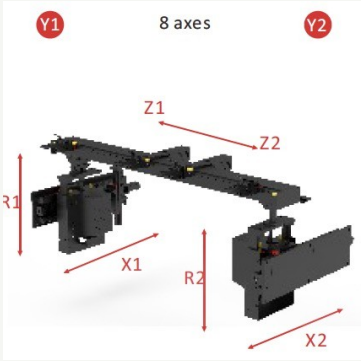
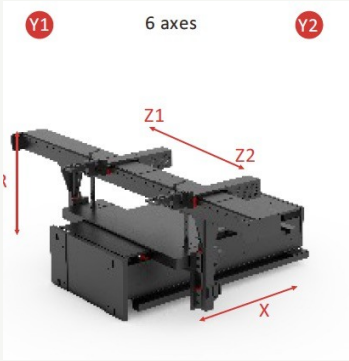
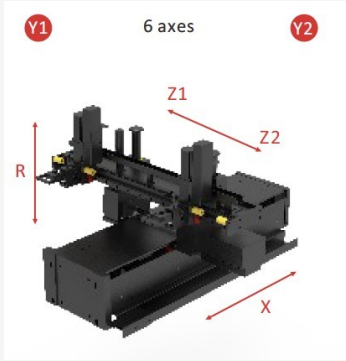
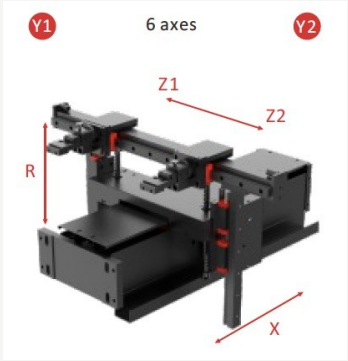
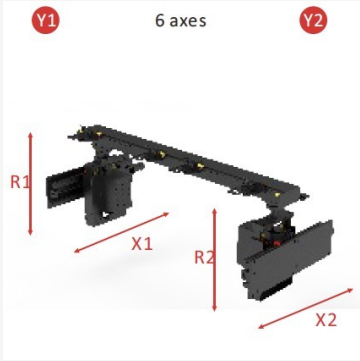
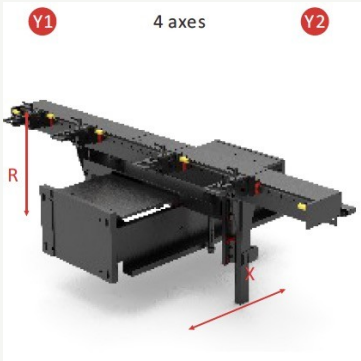
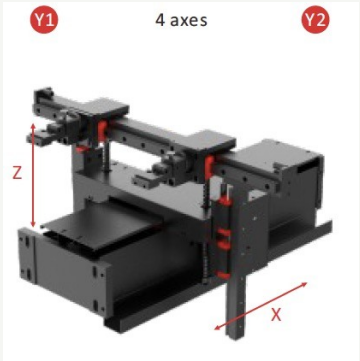
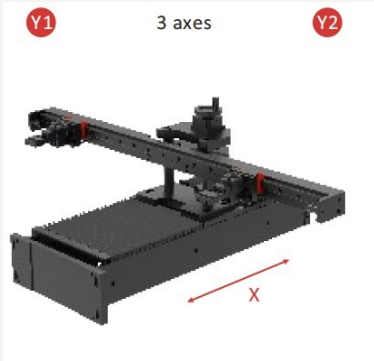
An electric motor drives the hydraulic pump. Pressurised oil flows through valves and pipelines to the cylinders, moving the ram and applying bending force to the sheet metal.

The control system adjusts oil flow, pressure and cylinder movement to regulate ram speed, position and bending force.

After bending, the hydraulic circuit redirects the oil to return the ram to its starting position. Electrical energy becomes hydraulic pressure, then mechanical force.

# 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.



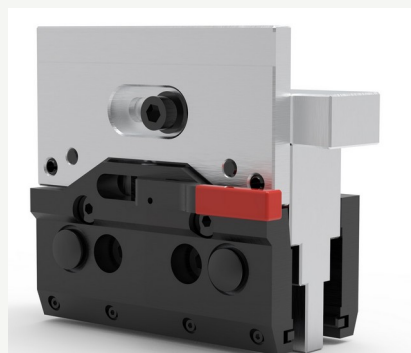
## PROGRAMMABLE BENDING AID

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.

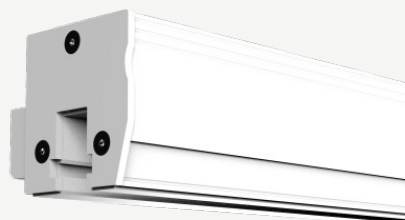


# CLAMPING SYSTEM

## AMADA-STYLE QUICK CLAMP



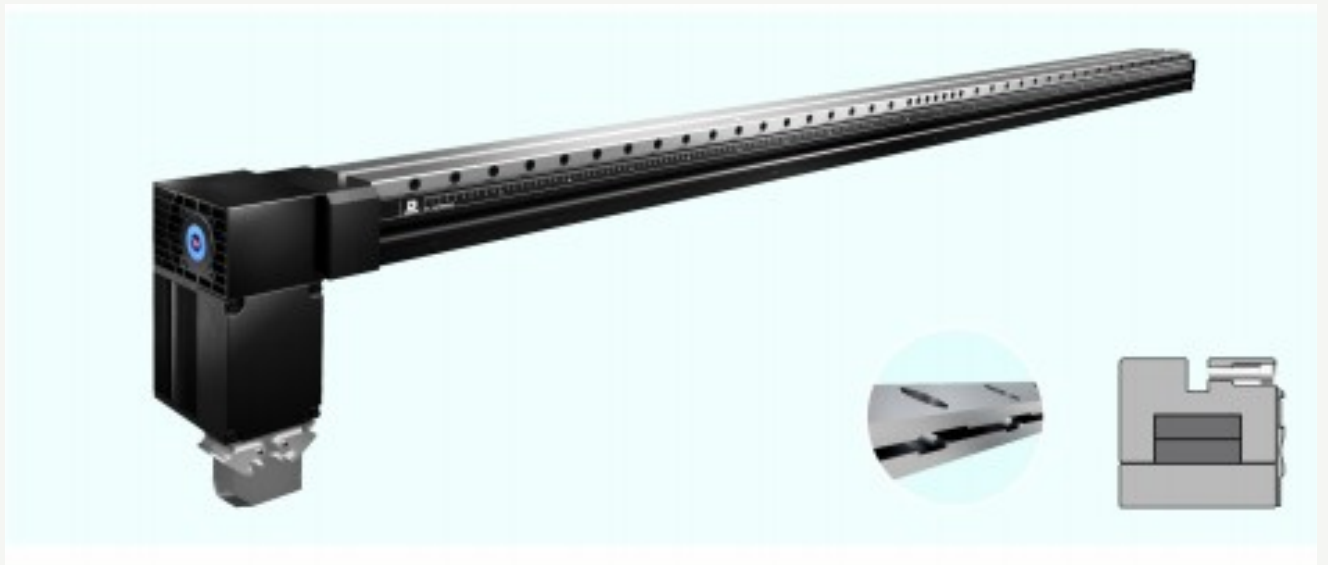
## WILA-STYLE HYDRAULIC CLAMP



# 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

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- Profile-S 3D offline software

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- 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.



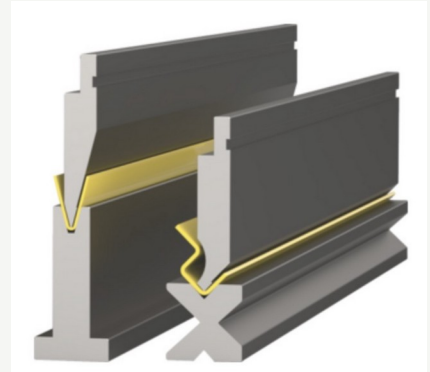
## ADDITIONAL SAFETY FEATURES

- 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

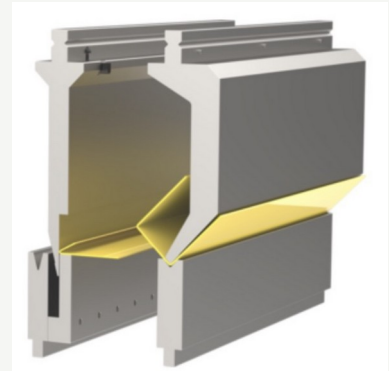
# BENDING TOOLS

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

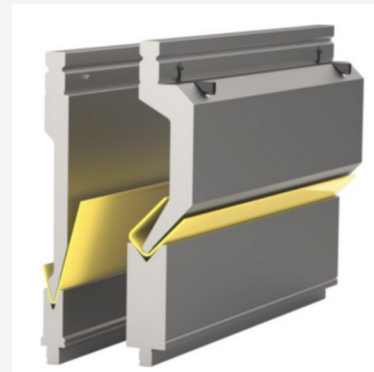
## 01 AMADA-STYLE



## 02 TRUMPF-STYLE



## 03 WILA-STYLE



# PRECISION BENDING SYSTEMS

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## CONTACT

|                 |                                                                                          |
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