

ES2004

EVOBEND SERIES

SERVO PRESS BRAKE

PRECISION BENDING SYSTEMS



2000 kN / 4000 mm / 10+1 axes

ES2004

EVOBEND SERIES / SERVO PRESS BRAKE



01 Direct servo drive

02 CNC control options

03 Hydraulic clamping available

04 10+1-axis configuration

2000 kN

PRESS FORCE

4000 mm

BENDING LENGTH

10+1 axes

AXIS CONFIGURATION

Equipment and CNC pages present series configurations. Confirm the final scope of supply in the technical agreement.

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MAIN CHARACTERISTICS

01 PRECISION & POSITIONING

- 01 Linear scales verify ram position across the bending length.
 - 02 Y-axis positioning accuracy is ± 0.01 mm across the ES range.
 - 03 Servo-driven backgauges support fast, repeatable sheet positioning.
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02 STRUCTURE & CONFIGURATION

- 01 Opening height, stroke and throat depth vary with the selected model.
 - 02 The welded monoblock frame is stabilised and checked by finite-element analysis.
 - 03 Electrical components support machine control and serviceability.
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03 DRIVE & OPERATION

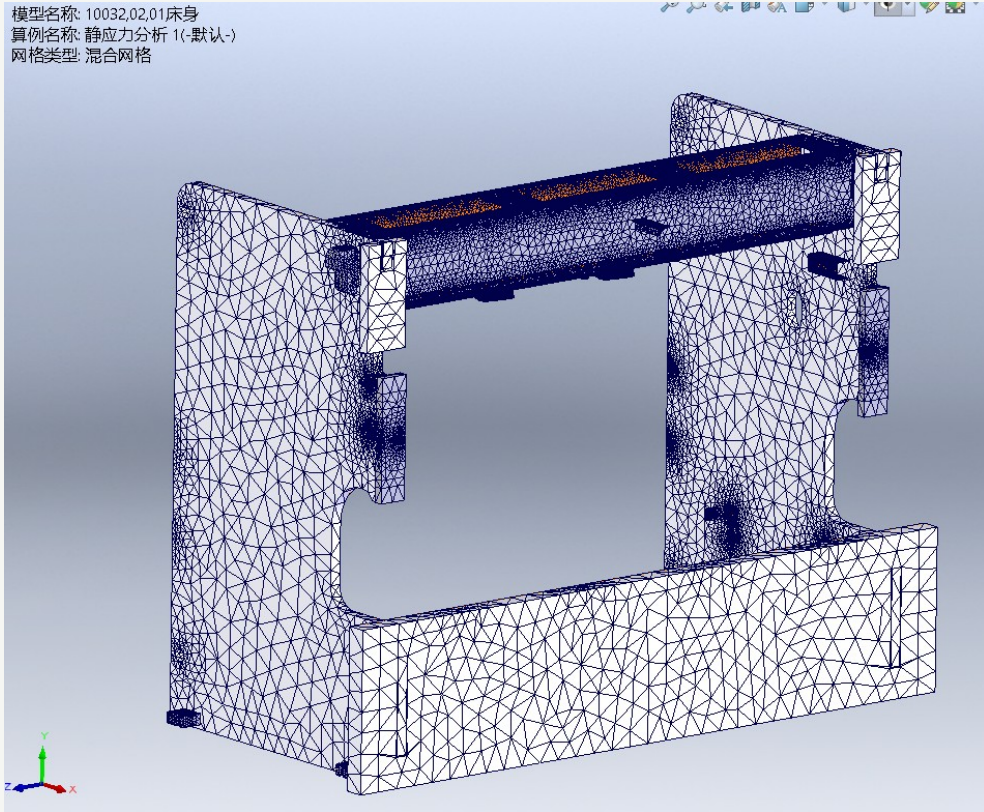
- 01 Servo motor and ball-screw mechanisms provide controlled ram motion.
 - 02 Compact machine architecture simplifies routine maintenance.
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TECHNICAL SPECIFICATION

ES2004 / ELECTRIC SERVO PRESS BRAKE

Description	Unit	ES2004
Press force	KN	2000
Distance between side frames	mm	3840
Bending length	mm	4000
Open height	mm	470
Standard stroke	mm	180
Throat depth	mm	320
Working height	mm	930
Axis	pcs	10+1
TRAVERSE PATHS		
Y axis	mm	180
X axis	mm	600
R axis	mm	150
Z axis	mm	2800
SPEED		
Y axis approach speed	mm/s	110
Y axis return speed	mm/s	110
Y axis bending speed	mm/s	0.2-30
X axis	mm/s	500
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	4850×1680×2900
Ambient air temperature	°C	0-40°C
Humidity	/	40%-60%RH
Noise level	dBA	75-85
Altitude	m	< 1000
Design service life limit	year	10
Gross weight	kg	17000
Pneumatic pressure	MPa	/
Hydraulic system pressure	MPa	3.5-5.0
Main motor	kW	19.6
Gross motor	kW	80.4

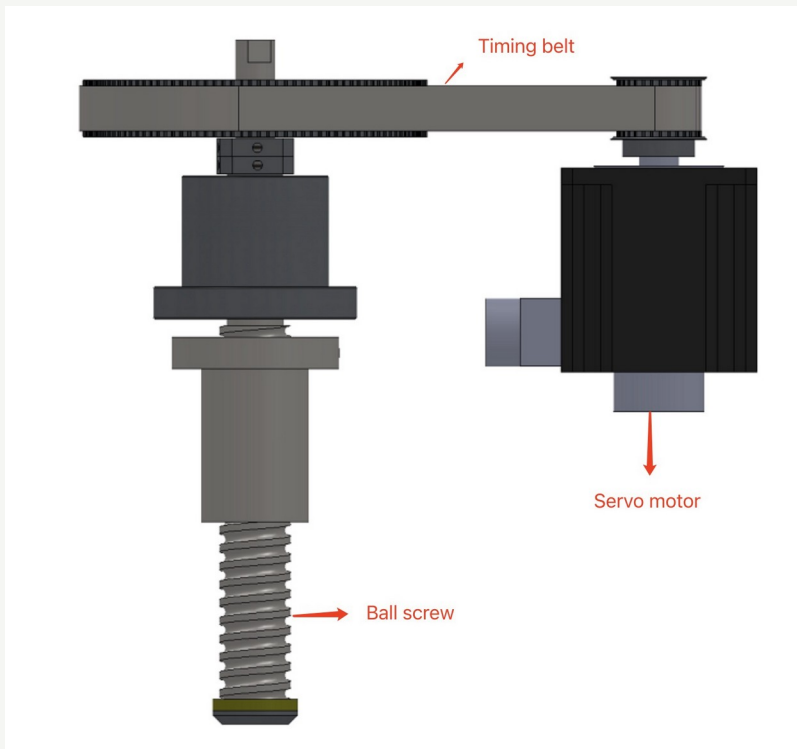
MAIN EQUIPMENT & FEATURES



- 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.



BALL SCREW DRIVE MECHANISM



SERVO MOTION

High-speed ball-screw motion

Stable repeatability

Lower environmental impact

More strokes per hour

Fast ram response

SERVO MOTOR & DRIVE

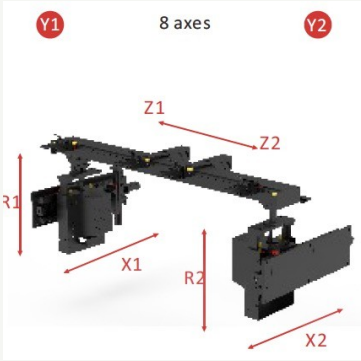
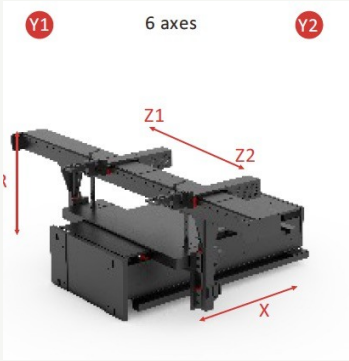
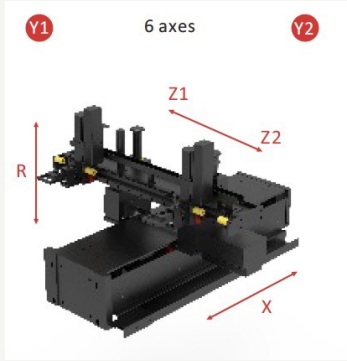
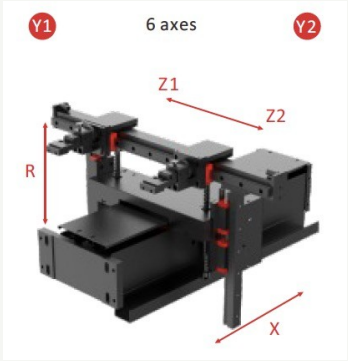
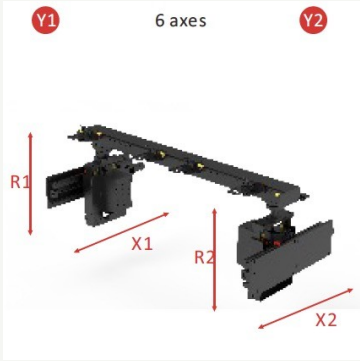
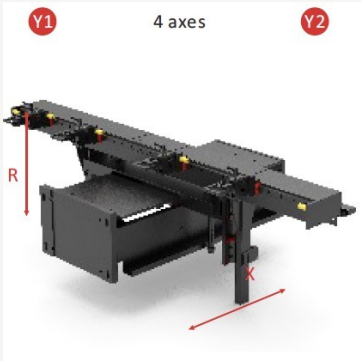
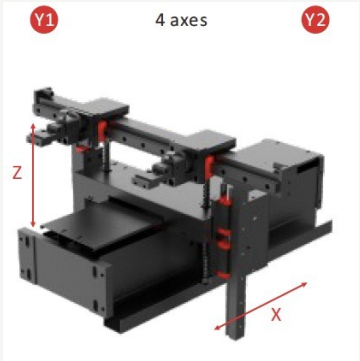
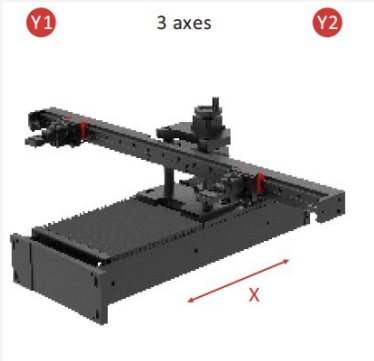
**SANYO****MITSUBISHI**

Mitsubishi MELSERVO and Sanyo Denki SANMOTION systems combine precision, speed, efficiency and reliability.

- 01 Higher part accuracy and consistent bend angles
- 02 Shorter cycle times and higher throughput
- 03 Lower energy and hydraulic-oil consumption
- 04 Gentler mechanical operation and longer service life
- 05 STO / SIL 3 / CE / ISO 13849 safety support

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.



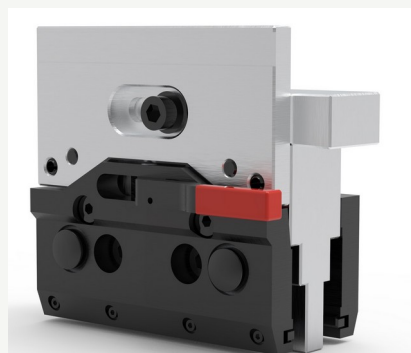
PROGRAMMABLE BENDING AID

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.

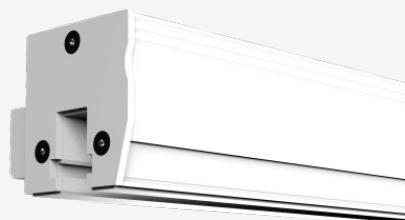


CLAMPING SYSTEM

AMADA-STYLE QUICK CLAMP



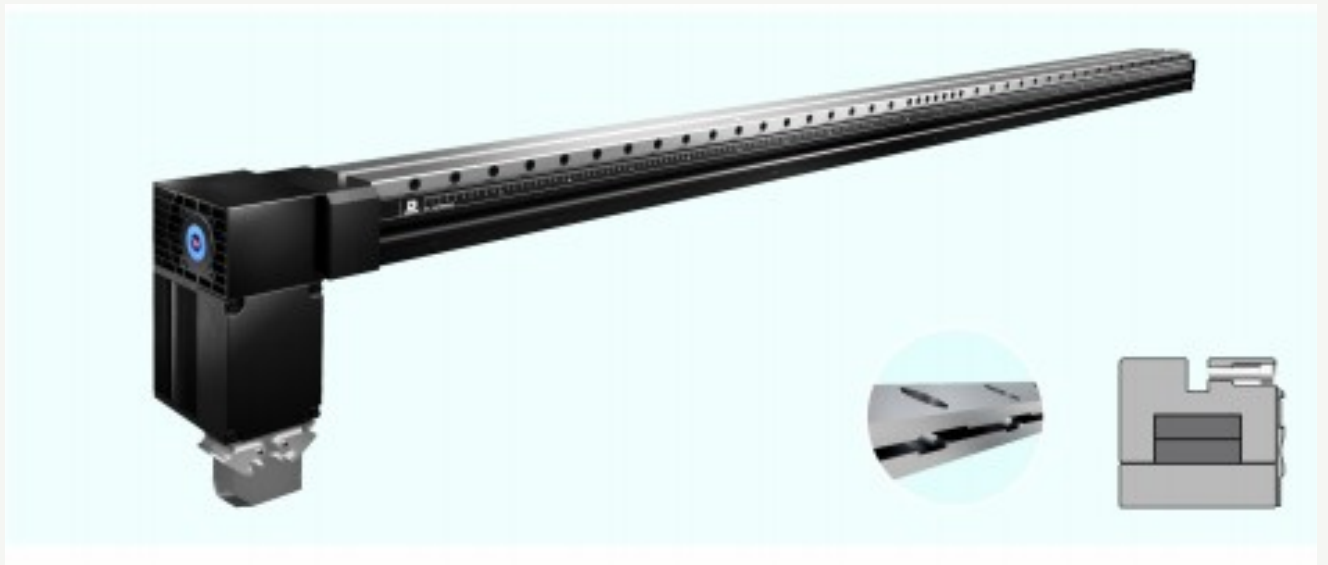
WILA-STYLE HYDRAULIC CLAMP



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
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- Full touch screen control
- Storage capacity 4 GB
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- Network connectivity
- Emergency switch
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- Profile-S 3D offline software

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- DA-69S
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Field options

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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.



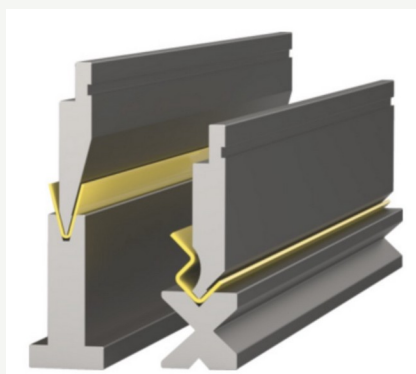
ADDITIONAL SAFETY FEATURES

- 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

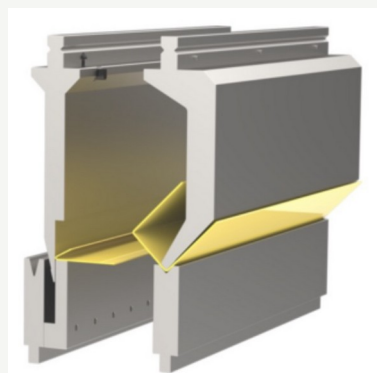
BENDING TOOLS

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

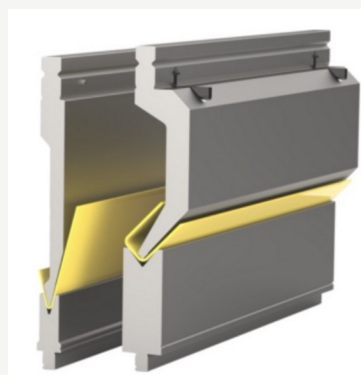
01 AMADA-STYLE



02 TRUMPF-STYLE



03 WILA-STYLE



PRECISION BENDING SYSTEMS



CONTACT

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