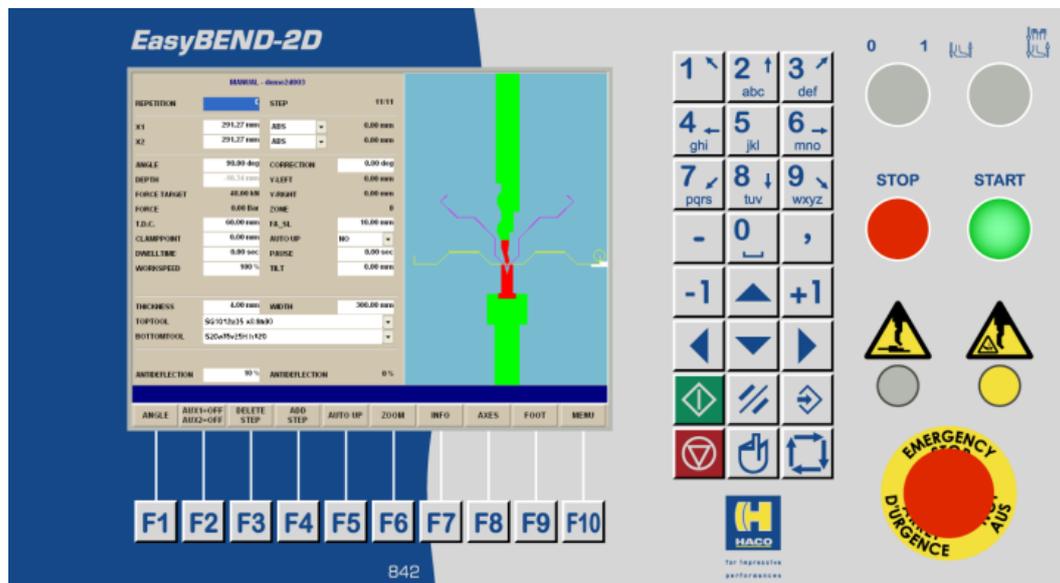# EasyBEND-2D

**Linux-based
press brake control
with angle programming**

Speed and reliability

The **EasyBEND-2D** is a multi-axis control, designed for making press brake productions easier, faster and more reliable.
Thanks to the user-friendly interface, the programming of a press brake is no longer complicated.

With an extensive memory for programs, material- and tool libraries, this control is ideal for the production of many different series.

The **EasyBEND-2D** offers fast graphical programming of 2D products. The automatic bending sequence search with automatic back gauge setting ensures a minimum drawing-to-product time.
Add to that the integrated collision detection and you end up with a perfect execution of the programmed product.
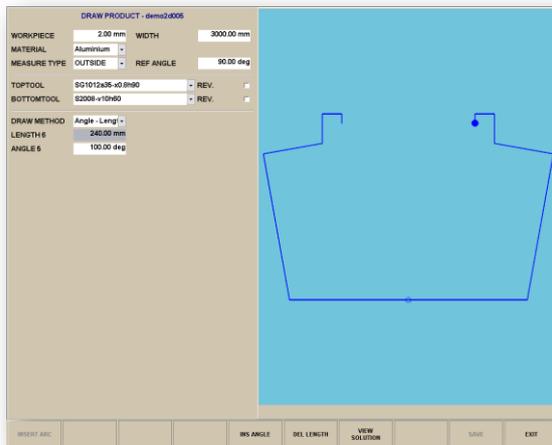
Some features

- 10" color TFT display
- Linux operating system
- Automatic or manual bending
- Unlimited number of programs
- 2D graphical programming
- Multiple drawing methods
- Automatic bending sequence generation
- Automatic back gauge setting
- Tool library (30 toptools - 30 bottomtools)
- Material library (30 materials)
- USB support
- Multi-language support (including simplified Chinese)

Tooling management

The accuracy of the **EasyBEND-2D** is obtained thanks to the extensive editing possibilities of the machine tooling.

The detailed graphical simulation of the tool-editor results in a clear view of one of the most important aspects in bending productions:
the tooling.

Graphical programming

With the easy and intuitive drawing methods, a part is drawn in just seconds.
Graphical support ensures that no more mistakes are made during the concept of the workpiece.

The **EasyBEND-2D** is then capable of generating a bending sequence for the drawn part. This happens automatically, while still leaving the possibility to intervene manually.

Program management

Workpiece programs can be stored, copied, moved, renamed, deleted on the harddrive.
However it's also possible to load programs via USB memory device.

Cost-effective investment

Despite the many high-quality features and options, the **EasyBEND-2D** represents a fairly inexpensive investment compared to other systems with similar capabilities (DELEM, Cybelec, ...).

Whereas other manufacturers offer many unnecessary or merely aesthetic features, the **EasyBEND-2D** focuses on the requirements that *really* matter in industrial sheet production:
- Simple programming
- Fast, accurate production
- User-friendly interface

Detailed specifications

Hardware
- 10" color TFT display
- Front panel protection cover
- Pump activation and emergency stop integrated on the control panel
- Depth axis servo system for direct servo valve control
- DC single axis back gauge control
- Incorporated proportional valve drive
- USB
- Multiple control methods selectable on the control (CE)

General control functions
- Automatic or manual bending
- Extensive program management (harddisk & USB)
- Absolute or incremental programming of the back gauge
- Program target angle, depth or pressure
- Automatic calculation of needed force or pressure
- Automatic angle correction
- Manual adjustment of Top Dead Centre (TDC), speed changeover point, dwell time, delay, back gauge retraction, clamping point, auto-up
- Graphical tool library (30 toptools, 30 bottomtools)
- Material library (30 materials)
- Editing of tools
- Editing of existing workpieces
- Visual simulation of workpiece and machine-elements
- Automatic bending sequence search
- Manual bending sequence construction
- Visualization of found solution
- Hemming
- Program-info page
- Tilt
- Programmable CNC-controlled anti-deflection
- Programmable decompression (time and distance)
- Jogging
- Multiple counters (control time, pump time, steps, workpieces,…)
- Mm or Inch
- Programmable limits
- Tool height calibration mode
- Programmable finger height adjustment

Other features
- Parameters
- Diagnostics and service routines
- Language support (including simplified Chinese)
- Manual (English or native language)
- Optional personalized front cover
- Lifelong servicing

Electrical specifications

(specs may vary in case of extended axes)

- **Power supply** : 24V DC ±25%

- **25 digital inputs** (24V DC ±25%)
  (some are pre-set by PLC function)
  - down-command
  - back gauge limits
  - reference back gauge
  - feedback hydraulic valves
  - etc.

- **25 digital outputs** (24V DC / 1A)
  (some are pre-set by PLC function)
  - enable DC back gauge
  - hydraulic valves
  - pneumatic finger control
  - anti-deflection control
  - etc.

- **2 analog inputs** (0 → 5 V DC)
  (pre-set by PLC function)
  - hydraulic pressure sensor
  - anti-deflection position

- **7 analog outputs**
  - 4 proportional hydraulic valves for position control (current for direct valve control)
  - speed control DC back gauge (0V → ±10V)
  - 2 proportional hydraulic valve current for pressure control (bending/crowning)
  - analog out for back gauge speed control

- **3 incremental encoder inputs**
  (5 → 24V DC / 25 kHz)

- **Encoder specifications**
  - open collector / depth axis / +5V power supply
  - push / pull (back gauge) / 5V or 12V power supply
  - no symmetric channels required (A-B-Ref)
  - 1 refpulse per revolution/length

- **Electrical connections**
  - easy plug connection
  - according to attached connector layout
  - no special tools or connectors required

- **Optional CAN-extension**

- **Pre-configured for HOERBIGER**
  Easy Control open loop system