Product flyer

CAM for bending

A complete CAD/CAM solution dedicated to the bending process

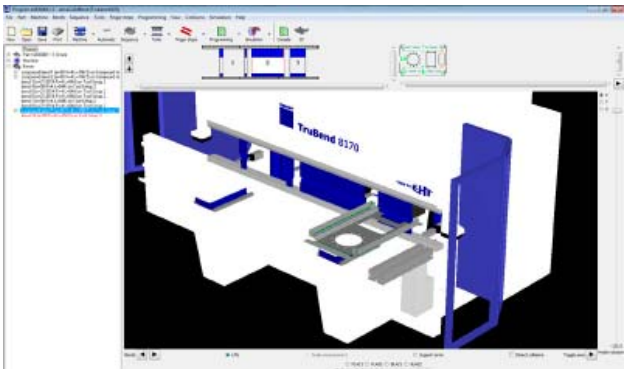
almaCAM Bend is a complete CAD/CAM solution dedicated to the bending process. Without interrupting production, almaCAM Bend enables remote off-line programming of a wide variety of press brakes. Using powerful, realistic and full 3D simulation tools, the application defines bend sequence, tool setup, and gauge positioning automatically, rapidly and reliably while maintaining safe operation. By automating the manufacturing process, almaCAM Bend reduces production cycle time and improves productivity.

Combining advanced and customizable features, **almaCAM Bend** automates the complete bending process including bending sequence, tool selection and positioning, back-gauge position, and program generation.

From the model of the part designed in **act/unfold**, the complete 3D simulation of the bending process allows to define every step of the press brake cycle during which the software verifies target accessibility and collision risk.

Providing automatic and manual functions to interactively configure the programming parameters, **almaCAM Bend** is an intuitive and user-friendly tool that is very easy to use.

The final purpose of **almaCAM Bend** is the NC program generation using the embedded post-processors. All the data generated by **almaCAM Bend** can be collected to generate customized and detailed production reports.



Advantages and benefits

- Reduction of press brake idle periods resulting in increased utilization rates.
- Reduction of time-to-production thanks to an improved production planning.
- Elimination of potential expensive programming mistakes before launching manufacturing thanks to folding simulation and collision detection.
- Reduction of programming cycle.
- Optimized production planning and cost monitoring thanks to the upstream availability of production data.
- Improved organization thanks to almaCAM Bend smooth integration into the existing information system.
- A single programming interface for all CNC press brakes in the workshop.
- Easy to learn and use.

Alma
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Main functions

Working environment

- Permanent display of icons representing each programming step (part, machine, sequence, tools, finger stops, simulation). almaCAM Bend checks the completion of each step before starting the next one.
- Hierarchical display of the cell components (finger stops, tooling with lower and upper fixing elements), part components and fold components.
- Realistic and complete 3D representation of the cell equipment and environment.
- Visualization of the cell ruler with the different tools positioned on it; tool positions can be interactively modified.
- Visualization of the unfolded part with the different folds numbered and display of the active tool and die (during simulation, the processed bend changes color).
- Possibility to memorize preferred views - function keys available to easily retrieve some key positions.
- Built-in material database.
- Tool database managing all available tool types and lengths, adapters and riser blocks.
- Management of numerous press-brake accessories including, for example, a folding and angle measuring assistant.

2D/3D import

- Interaction with the act/unfold module for the creation and unfolding of sheet-metal parts processed in almaCAM Bend.
- 3D-import of sheet-metal parts via act/unfold and neutral (IGES, STEP) or native formats (Catia® v4/v5, Inventor®, Creo®/ProEngineer®, SAT/ACIS, Solid Edge®, SolidWorks®).
- Automatic parameter research and updating when programming a modified part.

Fold sequencing

- Automatic sequencing of folds from pre-defined scenarios and from the selection of a tool, a die and a default adapter.
- Automatic grouping of lined-up folds for tool optimization.
- Scenarios based on the minimal use of tools and manipulations.
- Possible interactive modification of the sequence to test alternate solutions.
- Possibility to split a fold into two stages for production line requirements.
- Possibility to prevent a fold from being completed on the current machine in order to, for example, complete it on another machine.
- Possibility to define additional folds.
- Automatic recognition of folds resulting from pinching and possible edition of pinching parameters.

Selection of tools

- Automatic tool selection and positioning taking into account the tool availability, the folding radius and the maximal supported press rating.
- Possibility to interactively change tools for a given operation.
- Possibility to force the use by default of another tool.
- Automatic calculation according to the components actually available and to the tool length required for the fold completion.
- Automatic taper tool selection to avoid collisions.
- Support of I-Axis hemming tools.

Positioning of finger stops

- Automatic positioning of finger stops.
- Support of several finger stop types and configurations.
- Possibility to complete non-parallel folds if supported by the machine.
- Support of offset tools.
- Interactive control of finger stops with automatic processing of collisions during finger stops positioning.
- Automatic prompts to combine finger stop positions according to the shape of the part.

Realistic 3D simulation

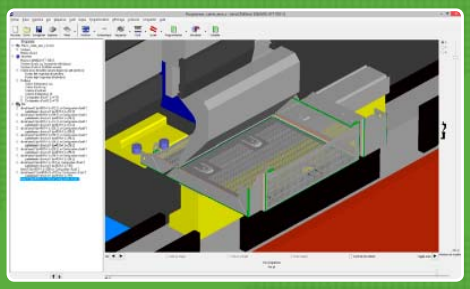
- Real-time realistic simulation of the folding based on 3D models (part, machine, environment, rules, adapters, tools, dies) and performed with the press-brake-brake accessories (folding and angle measuring assistant).
- Automatic detection and visualization of collisions.
- Easy swapping between the edition mode and the simulation mode.

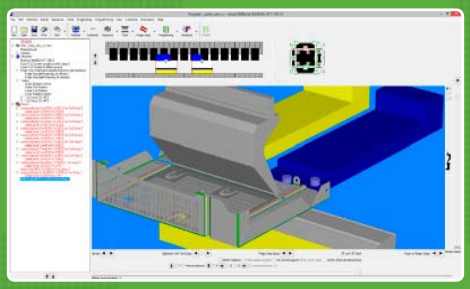
Generation of NC programs

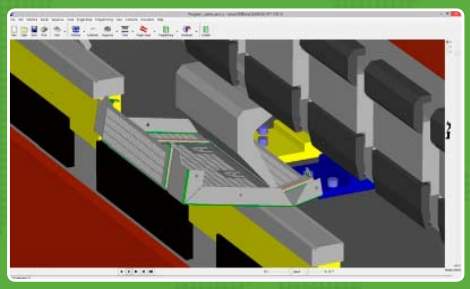
- Automatic generation of NC programs for the major brands of press-brakes.
- Program in the native format of the controller.
- Transfer of programs via network or DNC according to the controller's capabilities.
- Generation of one or several programs according to the CNCs.
- Possible 3D visualization directly on the CNC display or on a work station which is closely located and can be synchronized with the CNC.

Creation of manufacturing reports

- Creation of a complete or simplified manufacturing report.
- List of tools used and positioning.
- Summary of the different folds with all the parameters necessary to their completion (fold detail, radius, axes involved, etc.).
- Detailed description of the various folds along with the previews of each step (before and after the folding operation).
- Possible estimating of the production cycle duration per part.







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