



Almacam Tube, improve production efficiency with an automated solution to program your tube and profile cutting machines

It integrates all the steps in the programming process: CAD import or modeling of the tubes and profiles, management of manufacturing orders, automatic nesting of the tubes and profiles to cut, creation and automatic scheduling of trajectories, generation of ISO codes. The software functions automatically but lets the user manage specific situations in order to guarantee optimum execution of the programming.

Almacam Tube benefits from Alma's considerable expertise in programming 3D/ Tubes machines and cutting robots, acquired thanks to the many installations it has carried out and its partnerships with several manufacturers.

Manage all types of tube cutting machines

support all technologies, brands and possible kinematics, with no limit on the number of driven axes

Save time

with tube unfolding and unbending as well as automatic recognition of the cross sections

Enhance assembly manufacturing

by adding connections (e.g., notches) between tubes or profiles

Automate operations

by generating cutting trajectories and programs for pipes and profiles effortlessly

Import CAD easily

of single parts or assemblies, including automatic retrieval of quantities

Optimize machine use

by managing specific machine functions, such as mechanical operations (e.g: drilling, tapping, flow drilling), axis redundancies or sensing (laser, touch probe)

→ Modeling

- 3D modeling of tubes and profiles of any kind of section.
- Library of predefined sections of tubes and profiles (international standards).
- Libraries of predefined shapes for the sections, holes, end cuts and folds.
- Possibility to define holes of any shape and add bevels at the modeling stage.
- Possibility to set several types of machining to cutting contours.

→ Import of parts and assemblies

- Import of 3D parts and assemblies in Parasolid®, STEP, IGES and SAT/ACIS® format.
- Import of 3D models in native formats (Catia® V4/V5, PTC Creo®/ProENGINEER®, Inventor®, Solid Edge®, SOLIDWORKS®, Unigraphics®).
- Import of 3D models using formats specific to the design of metallic structures (IFC, DSTV).
- Automatic recognition of tube and profile sections during CAD import geometrical properties holes.
- Possibility to modify the geometry of imported CAD parts.
- Function to add connections between parts of an imported CAD assembly.
- Possibility to unfold and unbend an imported CAD part that consists of a folded tube.
- Automatic recognition of any type of chamfered cutting and automatic calculation of cutting paths.

→ Launching order management and raw material stock management

- Automatic creation of launching orders and retrieval of quantities from the CAD models of tube assemblies.
- Preparation and management of launching orders with the possibility to manage the raw material stock.

→ Optimized tube nesting

- Optimized multiple-part nesting on multiple bars.
- Management of different lengths for the bars.
- Analysis of the exact geometry of tube end cuts and analysis of complex cutting paths for profile nesting.
- Possibility to authorize the rotation of parts around their axis according to the section.
- Automatic check of gaps between parts and of margins at the bar extremities.
- Automatic management of complete or partial common cut between tube extremities.
- Operation in batch mode.

→ Programming of 3/4/5-axis machines

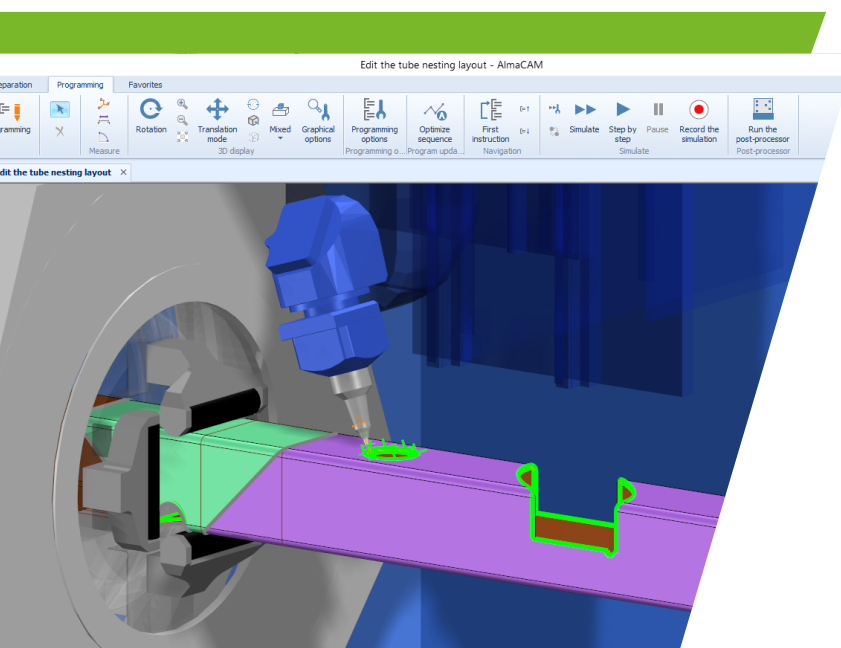
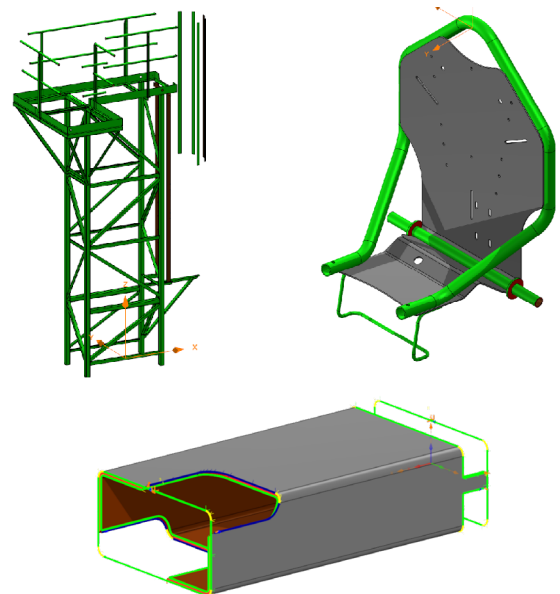
- Automatic creation of the cutting program
- Realistic simulation and control functions with visual anomaly indicators
- Assessment of cutting feasibility according to machine characteristics (axis ranges, speeds and accelerations) with automatic detection of potential collisions
- Simulations of multi-mandrel machines
- Management of sensing operations (e.g., hole centering, tube twisting)
- Generation of NC programs using a machine-specific postprocessor and generation of a workshop document.

→ Advanced functions

- Coupling constraints for multi-mandrel machines.
- Automatic recognition of clamping rules of mandrel (chuck) jaws.
- Automatic programming of loading/unloading units.
- Tube handling by systems other than axis.
- Management of sensing (centering of holes, tube twisting etc.)
- Management of machines combining laser cutting with mechanical units (drilling, milling, filling, tapping etc.) with automatic allocation of mechanical tools.

→ Workshop document

- Generation of a workshop document containing all the information related to the cutting programs, nesting layouts and quantities of parts to cut.
- Accurate estimation of cutting times taking into account the technological parameters and kinematic characteristics of the machine (speed, acceleration of each axis).



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