



act/weld

The off-line programming software for arc-welding robots

Off-line robot programming

With **act/weld**, Alma's off-line programming software under Windows®, you fully optimize the rate of utilization and the flexibility of your arc-welding robots.

Graphic programming of the robot from a virtual 3D scene and qualified welding conditions: **act/weld** combines powerful algorithms aimed at robotics (trajectory calculation, obstacle avoidance) together with advanced expertise in welding. All parameters are taken into account thanks to a simulator and a post-processor specific to each controller.

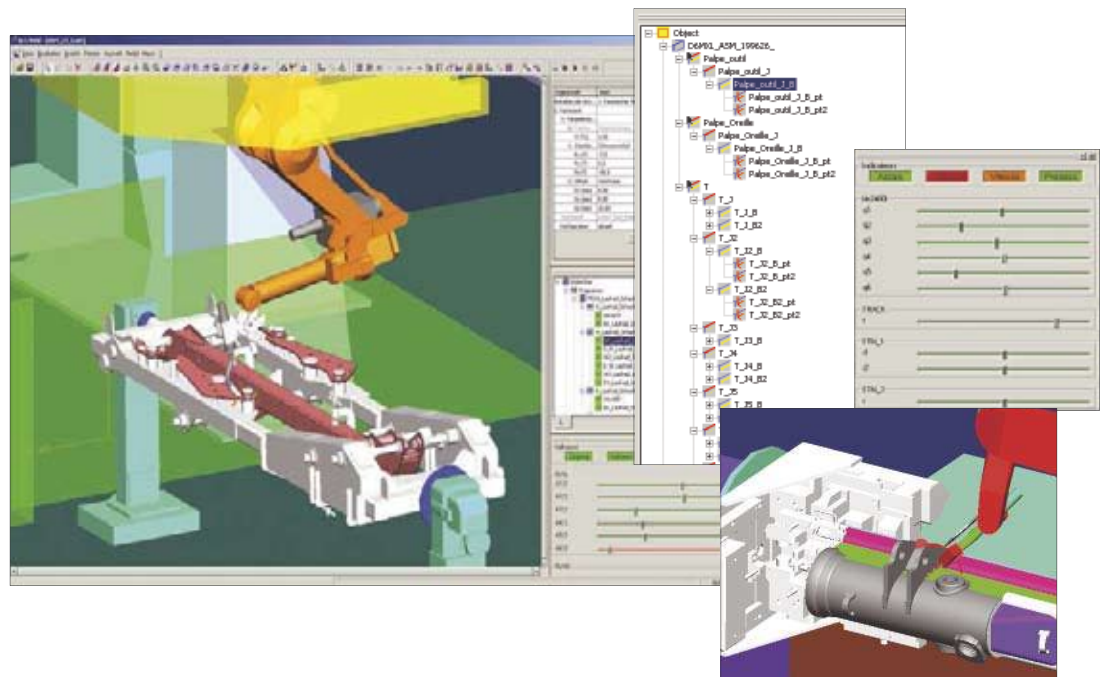
Simulation for optimal welding:

Thanks to the quality of the simulation, the operator can safely validate the feasibility of a part welding or tooling design, and even study the layout of a cell.

A reliable and high-level programming system:

The integrated functions of cell, part and programme calibration allow the taking into account of all these functions: trajectory follow-up, shifting of trajectories via sensing, seam follow-up or laser camera.

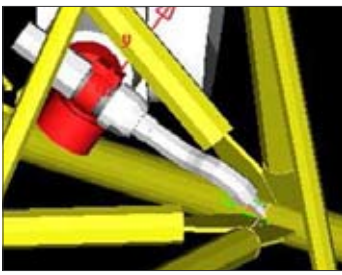
With Alma, you benefit from our on-site experience acquired thanks to many programmes implemented with success.



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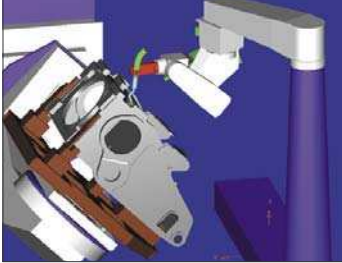
If you wish to find out more about our solution, please contact us



Main technical features

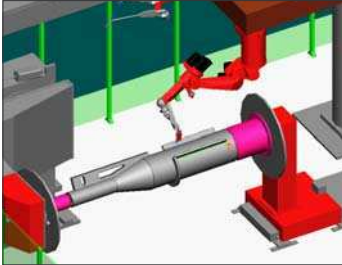
Working environment

- 32 bits Windows®-native software
- Integrated Visual Basic® programming language to develop macros
- Display of cell and programme objects in the form of "tree views"
- Control panel displaying the axe movement and visual indicators for limit values (accessibility, collision, speed, craft)
- Function of multiple selection directly in the "tree view"
- "Isology" function: direct transposition of an object's attributes to one or several others
- Very user-friendly handling of objects in space thanks to the "graphic mover" tool



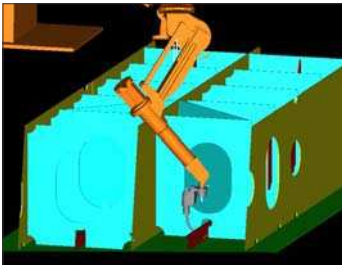
3D CAM import and modeling

- Import of parts and tooling in IGES and STEP formats
- Import of native 3D models in option (Catia® v4/v5, Inventor®, ProEngineer®, SAT/ACIS®)
- Cell modelling functions in option (robots, manipulators, gantries, tooling, parts)



Calibration

- Repositioning the part with regard to the robot
- Calibration function of the robot systematically implemented by Alma when launching the software on site (updating of the virtual cell with regard to the genuine cell)

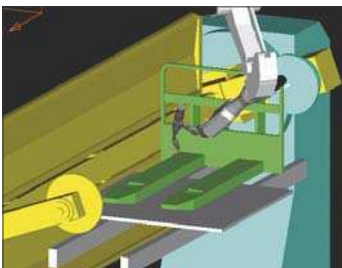


Definition of the welding task

- Torch angles, wire length, welding speed at characteristic points
- Welding parameters (current, weaving) at characteristic points
- Multi-pass seams
- Discontinuous seams
- Scheduling of weld beads
- Duplication of a seam model
- Visualisation of the torch when defining the weld beads

Adjustment of the welding programme

- Generation of a programme from the welding task
- Generation of sensing sequences to reposition the seams or sub-programmes
- Selection of axis configurations (robot and external axis) in pre-defined lists adapted to each robotics cell (example: free gantry and fixed manipulator) to automatically find an optimal robot position



- Duplication of welding parameters with the "isology" function
- Moving the programme points thanks to a "3D mover"
- Detection of collisions on the complete model of the installation (part, tooling and machine)
- Automatic check of the whole programme with visualisation of potential anomalies in the "tree view" (speed, collisions, accessibility, craft tolerances)
- Realistic simulation of the programme by taking into account the robot features (speed, acceleration, specific points) and calculation of the cycle time
- Automatic generation of trajectories to gain access to the seams with obstacle avoidance.
- Management of tool grasp and ungrasp (for example: change of torch or ungrasp of a camera)

Post-processors

- Generation of the welding programme in controller language, taking into account the movement instructions in the different shift modes (circular, linear...), the welding parameters (speed, dwell time, current and weaving parameters), the external-axis shifts and the seam corrections with sensor
- Management of peripheral units of laser-camera type
- Recovery and updating of programmes after modification on the controller (according to controller language)

Required hardware configuration

- Pentium IV / 1 Ghz / RAM 512 Mb
- 3D graphic card / driver OpenGL
- Windows XP Professional