Robotmaster®
CAD/CAM FOR ROBOTS

New Features
&
Enhancements

Robotmaster Version 5

JABEZ *Technologies*

Robotmaster Version 5 provides innovative new tools to effortlessly program and optimize robot tasks producing error-free robot paths. Expanding on powerful optimizing tools Robotmaster Version 5 has set a new standard for programming robots with the same ease and functionality as CNC machines. Below is a preview of some of the powerful enhancements of Robotmaster Version 5.

Workspace Analysis

The new Workspace Analysis (WSA) is designed to make the part placement experience simple and easy. When presented with the task of programming a part with a robot, it is often difficult and time consuming to determine where to properly position and orient the part. The WSA feature takes away most of the time and headache that is involved in figuring out the appropriate position and orientation of a part to be located in the workspace of the robot.

This feature is also useful for designing fixtures for the part or validating the choice of robot, tooling and overall setup. The WSA allows the user to visualize what used to be an unknown challenge, requiring lengthy manually trial and error, finding the optimal setup in mere minutes.
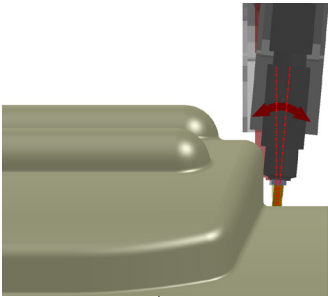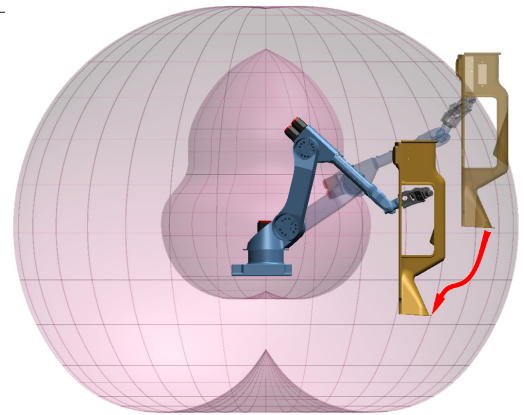
Tool Tilt Optimization

The new Tool Tilt Optimization (TTO) provides the user with increased flexibility when it comes to avoiding collisions and optimizing robot motion. The TTO feature allows a programmer to manage tool tilt angles easily and quickly always ensuring smooth robot motion. The user is now in full control of the tilt direction with visual tools that will help a programmer find solutions to challenges that would otherwise be difficult or impossible to resolve.

Rail Optimization

The new Rail Optimization provides an easy tool to program rails more effectively. The rail position can be controlled with great flexibility ensuring proper robot posture, maximizing the entire workspace and easily exploiting the full potential of a robot mounted on rails. It is no longer difficult to synchronize the rail and robot motion ensuring an optimized and continuous process without interruptions to reposition the robot on the rail.
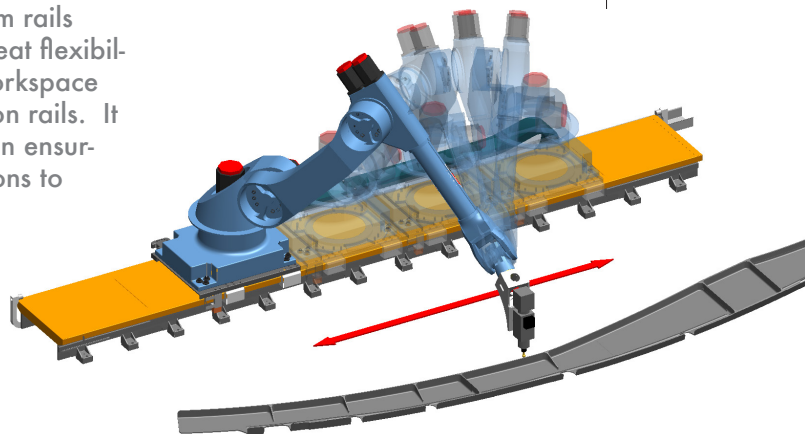
Optimization Enhancements

Optimization has been enhanced with the addition of Advanced Layers. Gradient maps provide the robot joint angles as well as the robot's elbow posture. These enhancements offer powerful tools to adequately manage the robot's posture as well as optimize for any specific robot joint.

Additional enhancements to optimization include:

- Ability to optimize up to three parameters: tool rotation, tool tilt and rail position;

- Errors on the path are displayed with a red ruler and hovering the mouse over this band displays information about the error;

- The path between program points can be checked during optimization, ensuring enhanced error detection;

- A new mapping technique is used to display multi-turn joints, this tool is very useful to de-bug issues typical to joints 4 and 6 on a standard 6-axis robot;
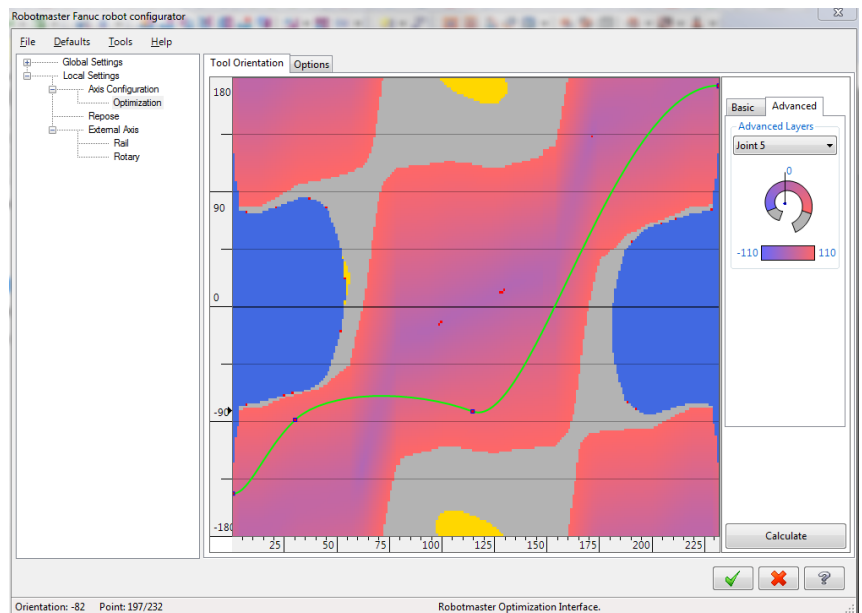
## Post Processor Graphical Configurator
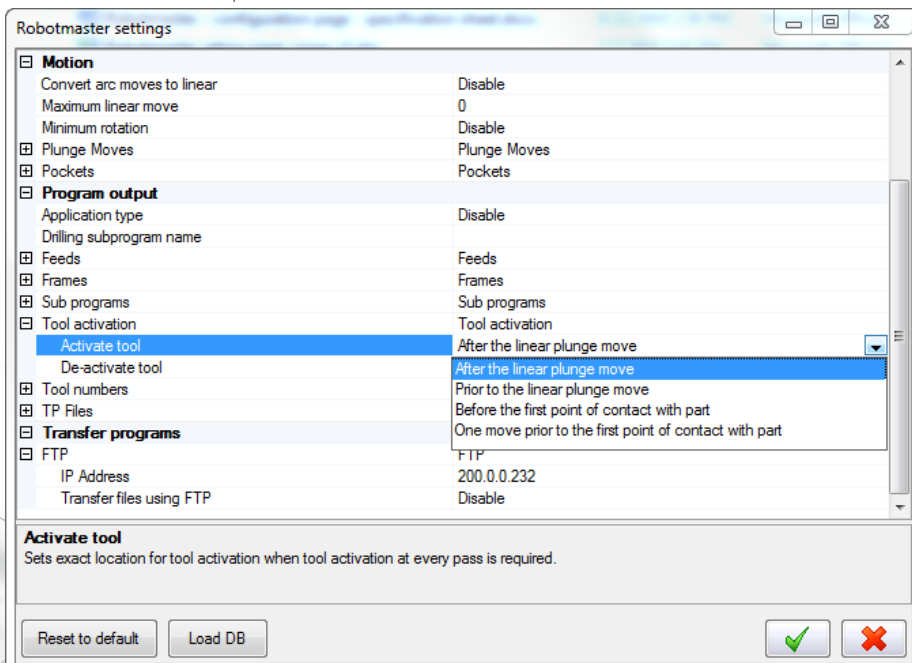
A new post processor configurator allows the user to quickly set appropriate settings for ultimate control of program codes. Extensive configuration parameters are available for each specific robot brand providing for flexible code output that fully exploits the language syntax and robot features.
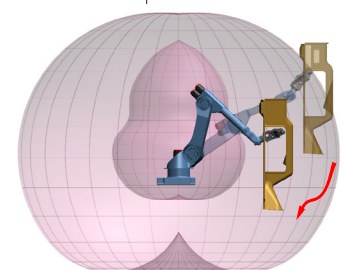
Optimization enhancements:

- Ability to optimize up to three parameters: tool rotation, tool tilt and rail position
- Errors are displayed with a red band on the bottom ruler and hovering the mouse over this band displays information about the error
- The path between program points can be checked during optimization, ensuring enhanced error detection
- Gradient maps display the values of each robot joint or external axes
- A new mapping technique is used to display multi-turn joints, this tool is very useful to de-bug issues typical to joints 4 and 6 on a standard 6-axis robot
- The elbow angle of the robot can be displayed as a gradient map, allowing the ability to manage the robot posture
- An observation zone can be set on any robot joint to monitor its values
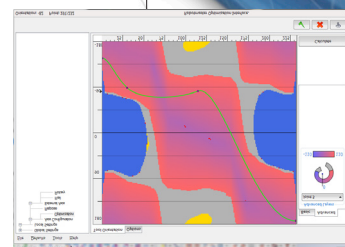
Productivity enhancements:

- Workspace analysis tool
- Ability to use the simulator to set repose values
- Motion settings and robot configuration which are global parameters can be set as local settings for a specific operation
- Converting joint moves to linear is now available for all robot brands
- New settings dialog enabling flexible user preferences
- Ability to set default preferences for local settings
- Enhanced saving and reading of global and local settings
- Ability to check prior operations during simulation and optimization
- Enhanced control of rotary axes

Performance enhancements:

- Maximum program size has been increased to 2 million points
- New database with enhanced performance and future flexibility
- Operation synchronization for synchronizing modified operations for quicker processing
- Memory caching for increased performance during optimization and simulation
- Automatic data management on RAM or disk for optimal performance for small and large programs
- Faster calculation time for simulation and optimization
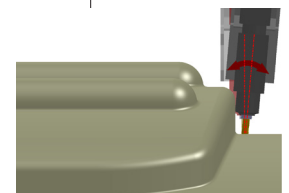
Interface enhancements:

- Global and local settings have been separated
- Global and local settings can be accessed using buttons on the main interface
- New settings interface provides increased user preferences
- New post processor configuration interface

Simulator enhancements:

- Increased performance for simulating large programs
- Improvements to graphics and rendering
- Ability to jog parallel link robots and robots having joint 3 values from horizontal
- Full screen simulation with larger graphics area
- Ability to by-pass robot joint limitations for simulation providing for an easy way to de-bug programs
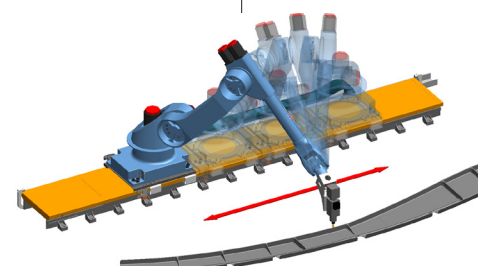
Post Processor enhancements:

- Faster post processing
- Graphical post configuration interface for easily setting program output preferences

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