

WeldPRO™

Basic Description

WeldPRO, FANUC Robotics' latest plug-in to the Roboguide® off-line programming tool, allows users to simulate a robotic arc welding process in 3-D space. Driven exclusively by a FANUC Robotics Virtual Robot Controller, WeldPRO is empowered with the most accurate program teaching tools and cycle time information available in any simulation package.

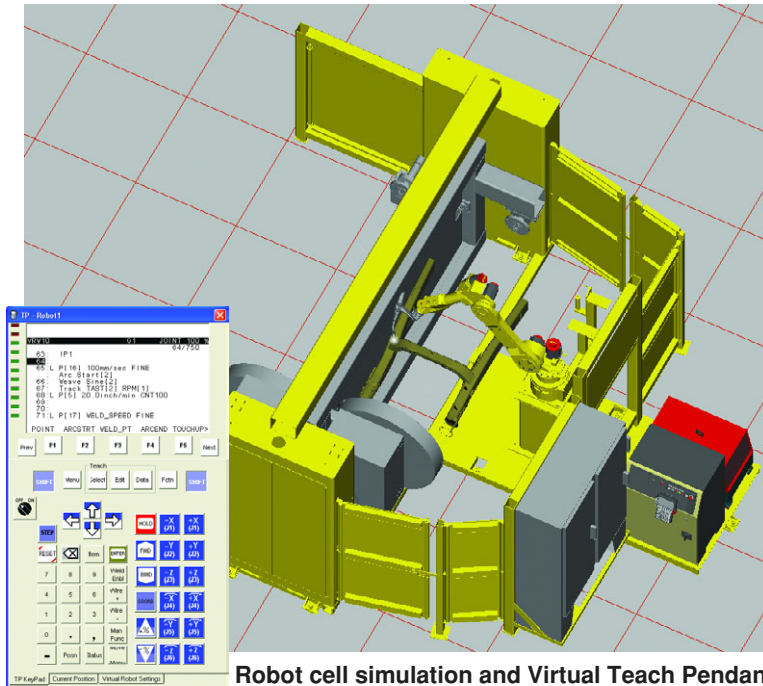
A user can easily navigate through WeldPRO to create complete workcells by importing actual tooling and workpiece CAD files. Anyone familiar with programming a FANUC robot will be able to easily create new weld paths with proper torch angles and process parameters. All programs and settings from the virtual workcell can be transferred to the real robot to decrease installation time.

WeldPRO is recommended for the following applications:

- GMAW Welding
- Plasma Welding
- GTAW Welding
- Plasma Cutting

Benefits

- With WeldPRO, robotic welding and cutting applications can be validated in a virtual environment without the time consuming and costly need to acquire an actual robot, associated parts, tooling and welders.
- By importing part and tooling CAD models into a WeldPRO simulation, projects and applications are qualified quicker and more accurately than through manual methods.
- WeldPRO allows for offline "what if" scenario simulations. Users can improve and touch-up existing robotic applications without experiencing downtime and lost production.



Robot cell simulation and Virtual Teach Pendant

- WeldPRO provides the most accurate cycle time information for FANUC robots compared to any other simulation package available in the industry.
- Working with the Virtual Teach Pendant, operators can gain experience and training on an exact replica of their workcell, without any expensive hardware.

Features

- **FANUC robot library** - Quick access to any FANUC robot for system layout and simulation. Each robot model comes complete with an associated Virtual Robot Controller and a unique robot solid model to replicate the robot's operation as precisely as possible within a simulation environment.
- **Built-in CAD models** - Instant access to many commonly used fixtures, tables, weld equipment and weld torches. Additional simple 3-D geometric shapes are provided as modeling tools to create custom machines, tools and/or fixtures.
- **Built-in System models** - Standard FANUC workcell configuration information is stored in system files and is automatically loaded with the workcell geometry CAD data. Custom workcell setup data can be stored and used in other simulations.
- **Auxiliary Axis Support** - Custom components requiring extended axis or multi-group support can be easily added and configured as required. Positioners, rails, or booms can be attached to each motor to give an accurate representation of a custom workcell configuration.
- **CAD Import (IGES files)** - CAD models of existing parts, fixtures and positioners can be imported directly into WeldPRO to build system layouts and to evaluate system operation.
- **CAD to Path teaching** - Create weld paths by clicking on the part CAD model to generate the points of the program part. WeldPRO automatically creates the TP program and optimizes the path for linear or circular motion.

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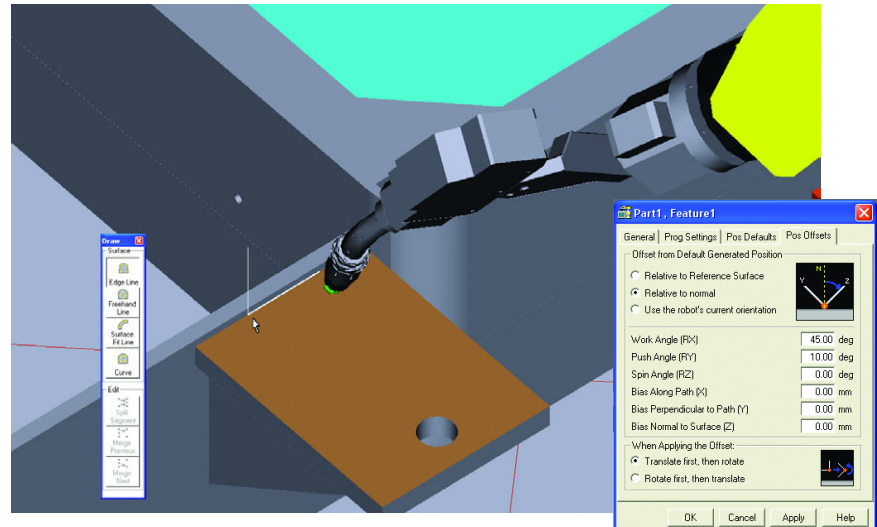
Weld gun angles, weld schedules and weave schedules can all be entered by the programmer to create a complete, ready to run weld path.

- **Simple robot teaching** - Easy creation of robot paths by teaching positions on the part model(s) or by entering robot coordinates manually. An innovative robot programming drag and drop Teach Tool is accompanied with traditional teach pendant style jogging panel.
- **Full two-way compatibility** - Allows for the virtual and real robot to be exactly identical, including weld schedules, I/O configuration, register comments and system settings.
- **Robot reach check** - A 3-D view of the robot work envelope is provided for layout of parts, fixtures and other cell components effectively within the workcell. Simple controls for changing the viewing perspective allow the layout and work envelope to be seen in any direction.
- **Collision detection** - Visual identification of collisions during the robot simulation identifies areas that need to be re-programmed or allows the relocation of the robot, tooling and/or part before an actual robot becomes installed in the plant.
- **Profiler** - The teach pendant program profiler allows program cycle time to be reviewed quickly for timing bottlenecks and operational slowdowns. Processing problems can be avoided long before the robot is placed into production.
- **TP Trace** - A unique capability to display the actual robot motion vs. the taught path. It includes a TP trace by speed, orientation and acceleration, allowing touchup of the robot program before the robot is actually deployed.
- **Animation AVI** - Allows the user to record the simulation of the robot system for later customer presentation and/or proposal uses. This system simulation video can be easily copied to a CD or other formats and delivered as needed as part of any system quotation or presentation.

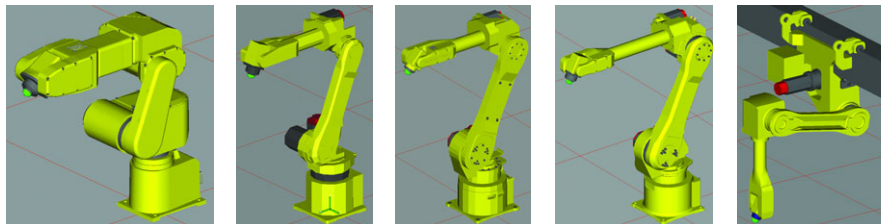
WeldPRO PC Requirements

| Minimum | Recommended |
|--|------------------------------------|
| Intel® Pentium® III processor 800 MHz | Intel® Pentium® IV processor 1 GHz |
| 256 MB RAM | 512 MB RAM |
| Hard Disk with 450 MB available disk space | NVIDIA graphics card |
| Microsoft® Windows® 2000™ | Microsoft® Windows® XP™ |

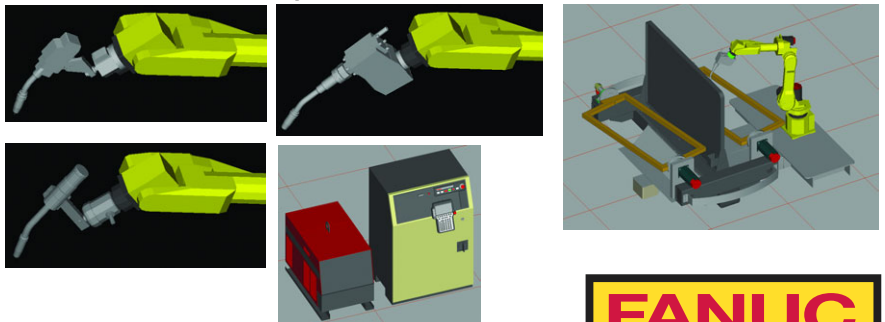
Example of CAD to Path Function



FANUC robot library includes all ARC Mate models



Built-In CAD model examples



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