

FADAL



GE Fanuc Fadal Oi-MC Digital CNC



FADAL MACHINING CENTERS
Blue Technologies





The Series 0i-MC configuration for Fadal VMC's is a full-featured digital control with integrated digital drives, which includes over 200 standard features that are designed to increase the productivity of your operation, and will continue to deliver results over the life of your investment.

An Optional Advanced Control Package includes Powerful features such as

Manual Guide i, AICC (Artificial Intelligence Contour Control), Machine Condition Selecting Function and a 256 MB Flash Card.

Loaded with premium features to ensure maximum productivity:

- Compatibility with other GE Fanuc Series, no learning curve required
- Multi-language support
- Simple programming and operation
- Operator friendly graphic display for visual part program verification
- Extended help functions and alarm/operation history
- High-speed machining for better quality parts, faster
- Tool Life Management for maximum machine utilization
- Cutter Compensation for blueprint dimension data input
- Canned Cycles for simplified part programming
- Custom Macro B for extending existing canned cycles, or creating new ones
- Rigid Tapping for high-quality tapping with low-cost, Rigid Tap holders
- Skip Cycle Programming for on-machine probing.
- Power Up & Go: Machine Axis and Tool Changer Referencing is not required. Fanuc's Encoders provide absolute feedback.
- Fiber Optic cables between control cabinet and pendant providing higher noise immunity.
- Fully Regenerative Amplifiers, which generate less heat and reduces motor temperature.

Advanced Functionality

- Interpolation: In addition to Linear or Circular Interpolation, the Series 0i features Helical Interpolation or Cylindrical Interpolation (for cylindrical groove cutting).
- Tool Life Management: Tools can be easily classified in various groups; tool life and tool numbers in groups can be stored in the CNC control memory in the form of simple tables.
- Scaling and Coordinate Rotation: Program command values can be easily scaled in a range between 0.001 to 999,999 or from 0.00001 to 9.99999. It is also possible to rotate a programmed shape around an angle, clock wise or counter-clockwise, without changing the shape definition.
- AI Advanced Preview Control: This function features the capability to look ahead multiple program blocks to optimize the acceleration and deceleration of the cutting speed. Machining trajectory error in corners and small radii are significantly reduced.
- Rigid Tapping: This function allows a fast and accurate tapping through the synchronization of the spindle position loop with the tap axis (Z-Axis).
- Automatic Corner Override: This function automatically reduces the feedrate when cutting inner corners. It will prevent an overload of the cutter and improve the smoothness of the cutting surface.



Ease-of-use through PCMCIA Port

PC memory and LAN cards can be inserted into a PCMCIA slot in the front panel of the LCD. Memory cards enhance ease-of-use by enabling NC programs, and parameter and tool compensation settings, to be uploaded or downloaded. Alarm and operation histories, which are logged in the CNCs, can also be retrieved easily via a memory card. When the CNC is connected to a PC via a LAN card, the servo motors can be tuned to match the machine tool. This is made possible by running the GE Fanuc SERVO software tool on the PC.

One Touch Buttons

Calculator

Handy calculator for simple shopfloor trigonometry and speed and feed calculations.



Datum Setting (Work Coordinates Setting)

User friendly program datum setting.



Tool Length Setting:

Simple tool length setting function with dynamic graphical display for no-nonsense easy tool set-up.



Power Set

Tool Load Monitoring with Feed rate Override



Probe Set

Pre-Installed Renishaw Work and Tool Measure Graphical User Interface



Optional Advanced Control Package

Manual Guide i

Manual Guidance is an operator friendly programming environment. An easy to read screen and simple operator interface design is at the center of Manual Guidance i. Single screen graphical design with clear functional zones, dynamic soft keys and pop-up windows guide the operator step by step through the process of programming and part setup. With minimal training, it is possible to program a wide range of parts. Powerful graphical simulation allows immediate rendering to preview your part.

- Guidance programming
- Advanced editing functions
- Graphic part verification



AI Contour Control

AI Contour Control is an advanced processing feature that provides higher cutting speeds while maintaining high accuracy. These features combine several functions to reduce errors in the machining profile during high-speed machining operations. AI Contour Control enables smoother accelerations and reduced cutter path error in your critical high-speed machining applications. This promotes high quality finished parts and longer machine life.

With AI Contour Control you can

- Achieve faster cycle times by optimizing acc/dec over multiple blocks
- Improve accuracy with higher gains using look ahead feed forward
- Increase the cutting feedrate for parts with rapidly changing profiles by reducing overshoot errors
- Achieve superior surface finish by applying acc/dec before interpolation

Machine Condition Selecting Function

Machine Conditions Selecting Function provides programmable settings from 1 to 10 to balance tool path velocity against tool path accuracy. Roughing operations would require high velocity while finishing operations would require high tool path accuracy. A value of 5 would be an equal balance between velocity and accuracy. R1 would be maximum velocity and minimum accuracy, R10 would be minimum velocity and maximum accuracy.

Over 200 Standard Features including:

- High Speed Machining
- Ai-APC Advanced Preview Control
- 400 registered part programs
- 256K part program storage
- Tool life management
- Helical interpolation
- Cylindrical interpolation
- Inverse Time Feed G93
- Chamfer/Corner Radius
- Programmable Data Input G10
- Up to 400 Registerable Programs
- Rigid tapping
- Mirror image
- Coordinate rotation & scaling
- 400 tool offsets
- 54 work coordinates G54~59, G54P1~P48
- Advanced Canned Cycles
- Custom Macro "B" programming
- Additional Variables #100~#199, #500~#999
- One-button power-up
- PCMCIA Port on front of display unit
- DNC (Drifed) Operation with memory card
- ISO Standard G-Code compatibility
- Fadal & Competitor part program emulator
- Spindle load monitor
- Cutter Compensation (Radius/Diameter)
- Spindle load monitoring
- Program check screen
- Handy Trig Calculator
- Handy Speeds & Feeds Calculator
- Handy Arc Calculator
- True Inch or Metric conversion
- Mid-Program Restart
- Operator Messages.
- Selectable Languages Standard:
 - English, Korean, French, Spanish, Italian, Portuguese, Chinese, German, Dutch Polish, Hungarian, Swedish, Czech.
- Self Diagnostics
- Full English Alarms
- Bell Shaped Acc/Dec
- Embedded Renishaw Probing Macros.
- Macro Executer
- HRV Servo Control
- High Speed Skip Function (G31)

Product Specifications**CNC Hardware**

- 10.4" LCD Color Display Unit
- Up to 4 Programmable Axes
- 32-bit Main Pentium Processor
- 256K Byte (640m / 2100ft) Part Program Storage
- Embedded PMC (PLC) with up to 24,000 Steps and 0.033 μ s per Step
- Hand Wheel Jog
- Fiber Optic Cables between cabinet & Pendant

Communication

- Ethernet Communication
- RS-232 Port

Programming

- Optional Manual Guide i
- Advanced Setup and tuning Tools
- PMC (PLC) Ladder Display and Editing
- Online Help Functions and Assistants
- Background Editor and Help Function
- Extended Part Program Editor
- MDI (Manual Data Input), RS232 or DNC Data Input
- Optional Stop and Block Skip
- Data Server compatibility
- Many Customization Capabilities (HMI, Macro Functions, Operator's Panel)

Drive System

- GE Fanuc's Digital AC Servo Motors and Drives (BETA i Series)

OPTIONAL FEATURES

- Advanced Fanuc Oi-MC Control Package
 - Manual Guide i
 - AICC (Artificial Intelligence Contour Control)
 - Machining Condition Selecting Function
 - 256 MB PCMCIA Flash Card
- CE Compliant Safety Package
- Scale Feedback
- 4th Axis Rotary Interface

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