Further Advancing the World Standard CNC from FANUC

FANUC

Series 0*i*-MODEL F

Further Advancing the World Standard CNC from FANUC

FANUC Series 0*i*-MODEL F

New 0*i* series CNC Provides Added Value to Machine Tools

- New 15 inch large screen in 0*i* series
- Servo technology with the highest performance in the world
- Achieves both high accuracy and smoothness with easily adjusting steps
- Provides the convenience of PC on CNC
- Loader control commanded by G code meets the request of automation

Mach
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Minimizing
Downtime

Machining Performance

High-Speed and High Quality Machining Excellent Control Functions

- Nano CNC system combined with precise nano-calculation and leading-edge servo technology
- AI Contouring Control effective for high-speed and high precision machining
- Smooth Tolerance Control makes it easy to adjust the precision needed for machining
- Smart Overlap enables a shorter cycle time for machining parts
- Servo HRV provides high-speed and high accuracy
- Spindle HRV has high acceleration and high response
- FANUC SERVO GUIDE with quick and smart tuning

Pursuing Ease of Use
Abundant CNC Functions and Operabili

- Increasing the number of controllable axes makes it ideal for a wider range of machines
- 15 inch display unit is available in addition to the 8.4/10.4 inch display unit
- Loader is cost effective and easily configured with the new Loader Control function
- FANUC Platform enables the convenience of a PC in the CNC
- Support of various industrial networks and field networks
- Direct editing and operation of the CNC program on memory card

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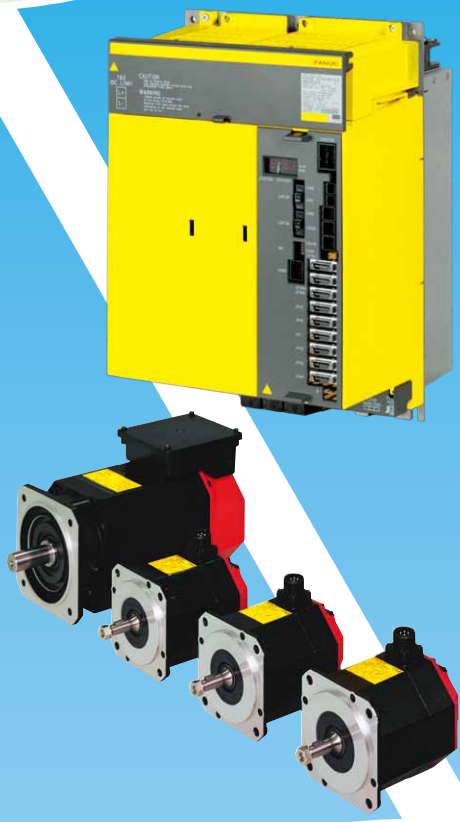


Ease of Use

Seamless Functions with 30*i*-B series CNC

- Common screen and operability
- Common maintenance
- Common network functions
- Use of common peripheral devices
- Support of the same PMC functions

High Performance and Value

- Packaged with CNC functions in each type
- Ultra compact CNC with less-wiring and high reliability with leading-edge technology
- Providing the best solution with the combination of *βi* servo system

CNC Lineup

FANUC Series 0*i*-MF

CNC for Machining Center
1 path system total controllable axes: up to 9 ※1
2 path system total controllable axes: up to11 ※1
Simultaneous controlled axes : up to 4 axes

FANUC Series 0*i*-TF

CNC for Lathe
1 path system total controllable axes: up to 9 ※1
2 path system total controllable axes: up to12 ※1
Simultaneous controlled axes : up to 4 axes

FANUC Series 0*i*-PF

CNC for Punch Press
1 path system total controllable axes: up to 7 ※1
Simultaneous controlled axes : up to 4 axes

(※1 : Total controllable axes is the sum of feed and spindle axes. Please refer to the specifications as for the specifications of each type, including the maximum values of feed axes and spindle axes.)

Ease of Use

ity

- Integrated Operation & Programming Guidance with extremely simplified operations

FANUC MANUAL GUIDE *i*

- Programming Guidance with various machining cycles

FANUC MANUAL GUIDE 0*i*

- High-speed and large capacity PMC with Function Block function as standard and multi-path PMC
- Safety achieved by the Dual Check Safety embedded into CNC
- Customize functions for each unique machine
- Tuning functions help easily set-up machine tool

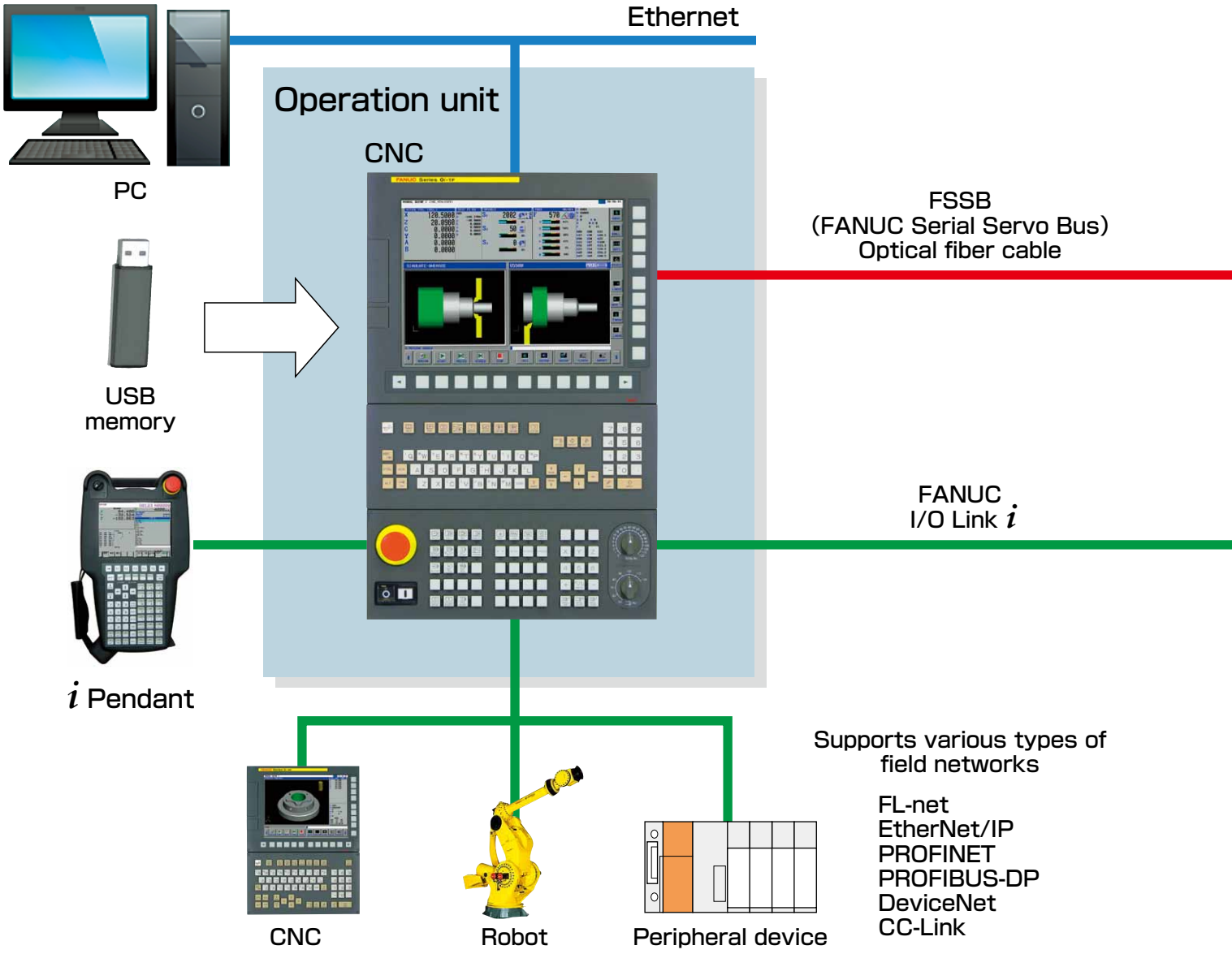
Minimizing Downtime

Focusing on Minimizing Downtime High Reliability and Easy Maintenance

- Highly reliable hardware allows stable operation in a harsh factory environment
- Preventive maintenance to avoid machine from unexpected stop by sudden trouble, such as leakage detection function which detects the insulation deterioration of motor
- Various types of enhanced diagnosis functions improve maintainability so that the cause of trouble can be identified quickly

State-of-the-Art Hardware

Ultra-Compact, Reduced Wiring, High Reliability



Thin and Compact CNC [Patent approved]

Small sized CNC integrated with the LCD enables a compact operation unit. The depth of CNC is only 60mm (*1).
Large 15 inch display is now available in the 0*i* series CNC, in addition to the 8.4/10.4 inch display.
(*1:8.4/10.4 display with no optional slot)

Enhanced Basic Performance

Basic performance of the CNC, servos and the PMC to support advanced various functionalities, such as loader control and Smooth tolerance control.

Reduced Wiring [Patent approved]

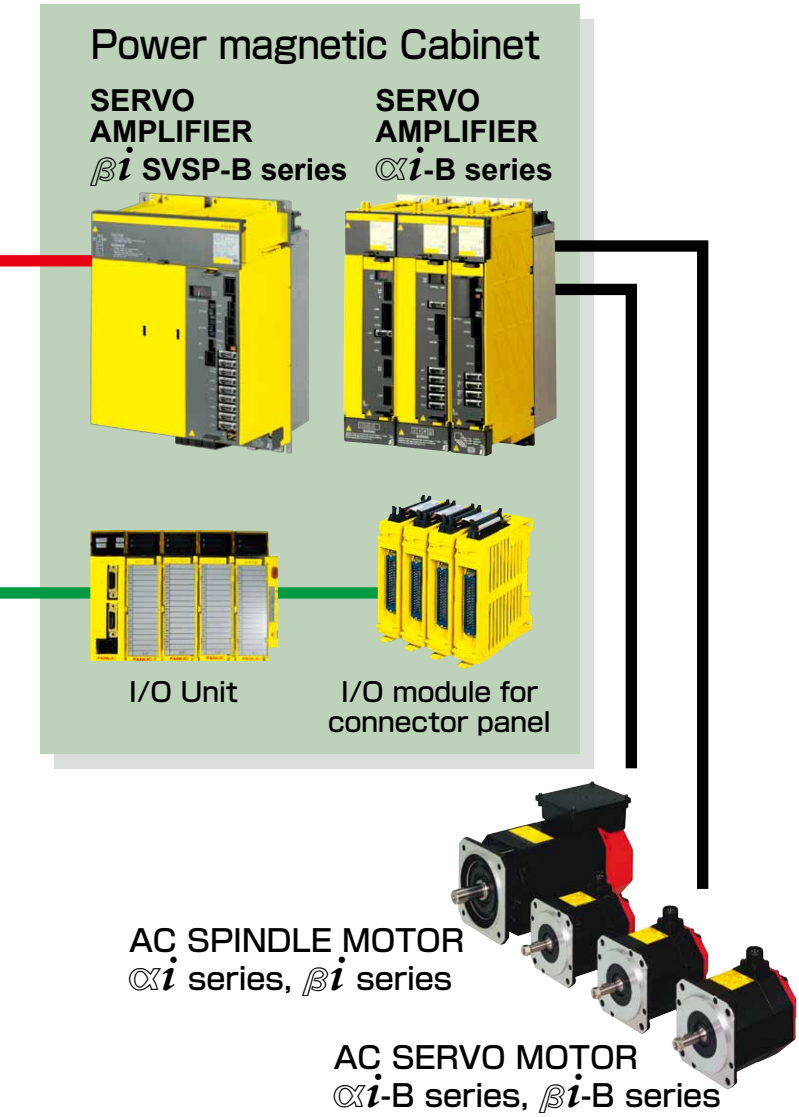
Faster FSSB and FANUC I/O Link *i* realize further reduction of wiring and lower wiring cost.

Faster FSSB [Patent approved]

CNC and the amplifiers are connected with FSSB (FANUC Serial Servo Bus) using optical fiber cable. High performance and reduced wiring are realized by optimizing communication protocol and ECC technology with the high-speed and high level noise tolerance by the optical fiber cable. In addition, spindle amplifiers can be now connected to FSSB.

FANUC I/O Link *i* [Patent approved]

FANUC I/O Link *i* is a serial I/O interface between the PMC and various I/O units. Various kinds of units such as general I/O modules, machine operator panel can be connected to this I/O interface.
FANUC I/O Link *i* helps with quick recovery from trouble by making it easy to pinpoint the faulty part using various error detection capabilities such as bitwise DO ground fault detection and I/O power supply failure detection, etc. FANUC I/O Link *i* realizes Dual Check Safety with a single cable, although conventional systems require two cables.



AC SPINDLE MOTOR
αi series, βi series

AC SERVO MOTOR
αi-B series, βi-B series

Network Support Functions

The various Industrial Ethernet and field networks are supported in order to suit a variety of network environments in the factory.
Ethernet is supported as a basic function, and the CNC can be connected to a personal computer to transfer a variety of NC data.

i Pendant

i Pendant is a portable operating unit. It is possible to watch the CNC screen and operate the machines at a distant point from the main operator's panel. Moreover, touch panel and the manual pulse generator can be selected as an option.

High Reliability Realized by ECC

By applying the ECC (Error correcting code), it can automatically correct the error from electrical noise inside of the CNC. As a result, a highly reliable CNC is realized.

FANUC AC SERVO MOTOR αi-B, βi-B series

High performance AC SERVO MOTOR for feed axis of machine tools

Smooth rotation and compact size
Quick acceleration
Excellent waterproofing
Compact size and high resolution PULSECODER
Bayonet type power connector
Reduced Backlash Brake
Line-up with both 200V input and 400V input.

FANUC AC SPINDLE MOTOR αi, βi series

High performance AC SPINDLE MOTOR for spindles of machine tools

High power and high torque with compact size.
High efficiency and low heat generation by SPINDLE HRV Control.
Hollow shaft models which enable center-through-coolant available.
Line-up with both 200V input and 400V input.

FANUC SERVO AMPLIFIER αi-B, βi SVSP-B series

Various line-up, compact and energy saving SERVO AMPLIFIER.

Smart Rigid Tapping is available. It' s effective to cycle time reduction.
Insulation deterioration of motor can detect in heavy environment with cutting fluid.
Cooling fan motor is installed. And It' s easy to replace fan motors from front side.
Cause of alarms can find quickly by trouble diagnosis function.
Multi-axes and all-in-one amplifier are available, too.
Machine protection at power failure is available with additional modules.
Energy consumption is saved by utilizing the latest low loss power device.
Line-up with both 200V input and 400V input.

Easy Maintenance

Unexpected system down can be prevented by predictive trouble detection and warning indication.
Fans for cooling and battery are stored in a cartridge and can be replaced quite easily, and maintainability is enhanced.
Various alarm detection functions help reduce downtime by making it easy to pinpoint the faulty part.

High performance

High-Speed, High Quality Machining

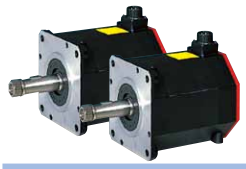
Nano CNC System [Patent approved]

High Quality Machining Achieved by Coordination Between“ High Precision Operation in Nanometers” and “State-of-the-Art Servo Technology”

Nano interpolation that computes position commands for the digital servo control unit in nanometers, SERVO HRV Control and SPINDLE HRV Control for which the control cycle is made faster, and FANUC AC SERVO MOTOR αi-B series with a high resolution pulse coder are used as standard and make up “ Nano CNC System,” which achieves high-quality machining.

Nano Interpolation

FANUC SERVO AMPLIFIER αi-B series



High-response and high-resolution pulse coder 32 million/rev

FANUC AC SERVO MOTOR αi-B series

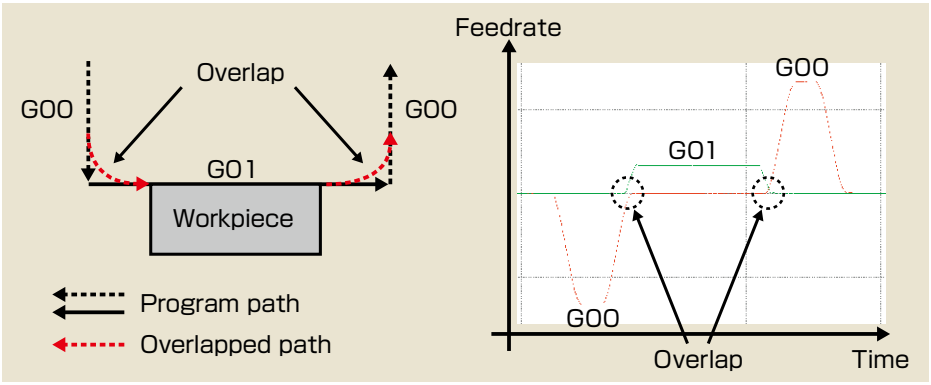
SERVO HRV Control
SPINDLE HRV Control

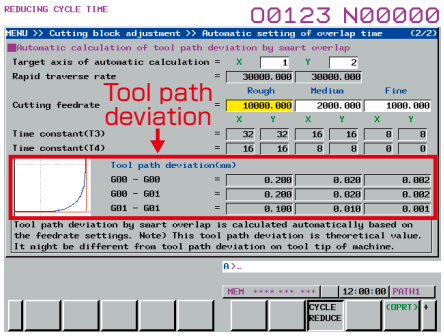
FANUC AC SPINDLE MOTOR αi series

Smart Overlap

Reducing cycle time in part machining

It is possible to reduce cycle time by enabling to overlap between blocks of cutting feed and rapid traverse.
Confirmation of tool path deviation is easy by automatic calculation screen for tool path deviation.





Automatic calculation screen for tool path deviation

High-speed and high-quality machining package

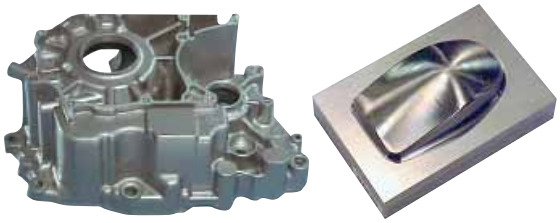
Achieving high-speed, high-accuracy, and high-quality machining easily for parts and die-molds

Packaging the following functions

- Functions for achieving high speed, high precision and high quality machining while reducing machine shock
- Functions for easily adjusting surface quality, surface precision, and machining time

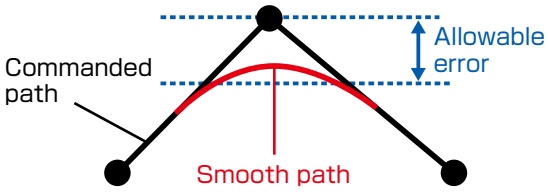
Optimum feedrate and acceleration control by reading blocks in advance (AI contour control II)

On complex machining that are specified in continuous small blocks, it is possible to judge machining shape by reading blocks in advance and machine various kinds of parts and die/mold with optimum feedrate and acceleration according to the performance of the machine.



Achieving high-quality machining by specifying machining accuracy (Smooth tolerance control)

By specifying allowable error (Tolerance) for desired machining, it is possible to make smooth path within Tolerance and change machining precision easily. If continuous small segments are also specified, it is possible to prevent mechanical shock and improve smoothness of finishing surface.



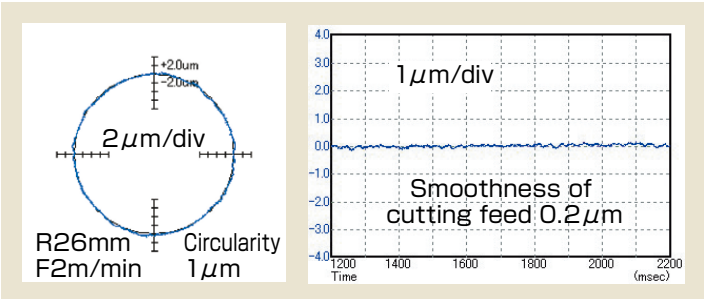
Advanced Digital Servo Technology

SERVO Motor System

SERVO HRV Control

High-speed and high precision servo control

By combining hardware technology and software technology such as the latest servo control HRV+, high-speed and high precision control with nano-meter level is ensured.
Mechanical resonance can be suppressed by automatic following HRV filter even though its frequency changes.

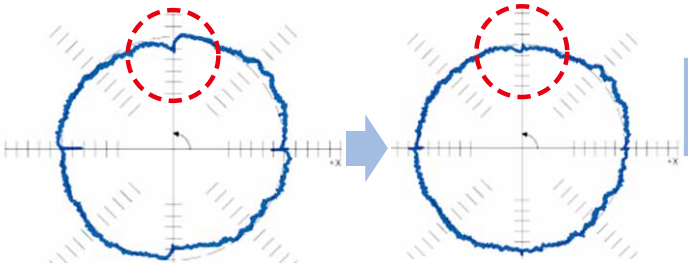


Application example of SERVO HRV+

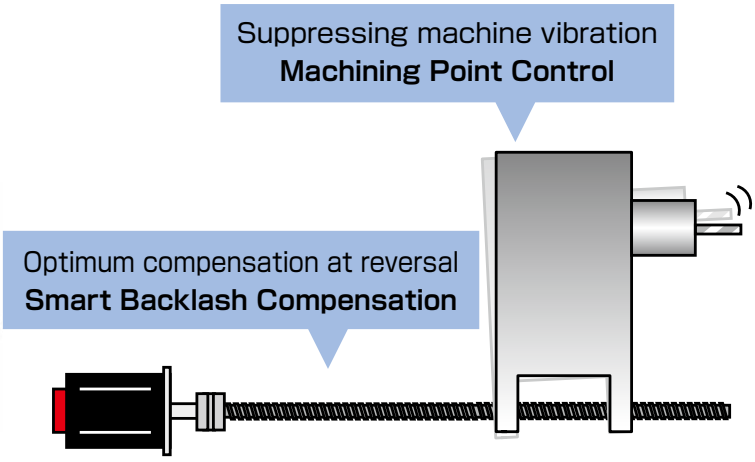
High quality cutting surface by Optimum compensation to machining point

"Smart Backlash Compensation" can compensate the lost motion caused elastic deformation of ball screw, and " Machining Point Control" suppresses vibration at machining point.

[Example of Smart Backlash Compensation]



OFF ON

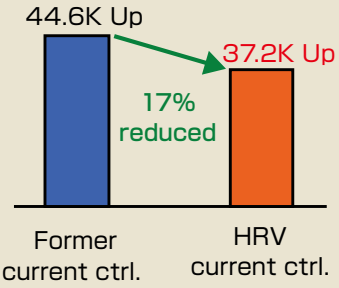


SPINDLE HRV Control

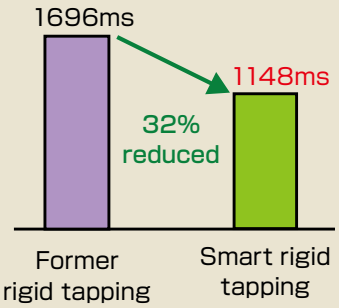
Fast response and high precision of spindle

Features include:

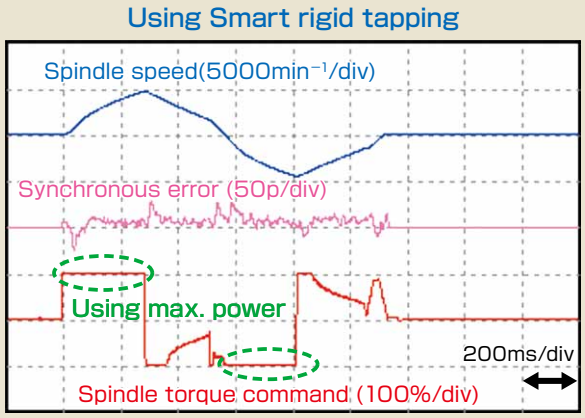
- Achieving high gain control and low heat generation at high-speed rotation by faster sampling time of the current control loop
- Optimum orientation using the optimum deceleration level according to the inertia of works or tools
- Supporting Nano Interpolation in position control enabling Nano CNC system for spindle as well as feed axis
- Smart rigid tapping function using maximum Acc/Dec power of spindle motor and achieving the fastest tapping with no tuning



Temperature rise of motor winding at continuous acc./dec. (ex.)



Cycle time of rigid tapping (ex.) Pitch1mm 25screws S5000



Highly precise synchronization using max. Acc/Dec power

Pursuing Ease of Use

Ease of Use

Abundant CNC functions

Increase of CNC Functions

Increasing the number of controllable axes and paths makes it ideal for a wider range of machines.

- Extended axis number (from 8 axes to 9 axes) on 1 path system
- Extended axis number (from 11 axes to 12 axes) on 2 path system of 0*i*-TF
- 2 path system is available on 0*i*-MF
- No count Cs axis for number of feed axes, the number of controllable feed axes is increased

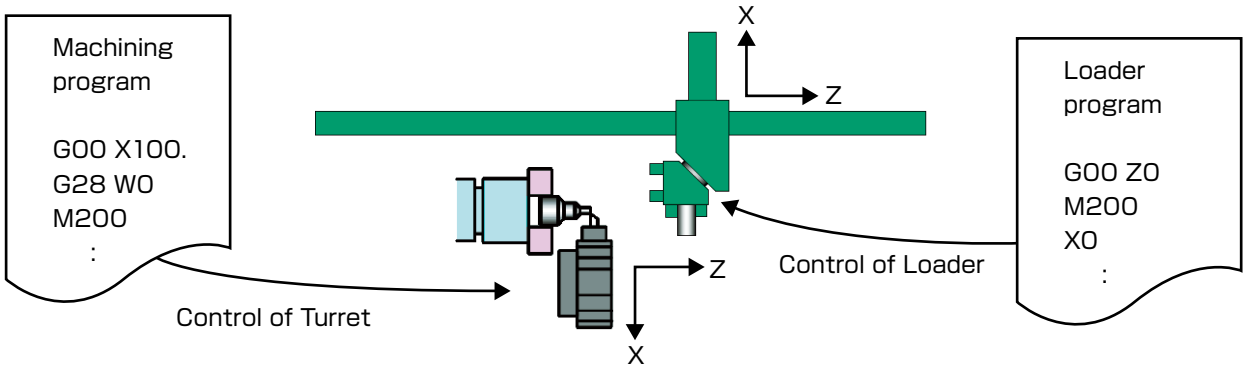
In addition to 8.4/10.4 display unit, larger 15 inch display unit is available.
By using the large display, the operability is further improved.
Enabling the commonly used and other various functions (program folder management of part program etc.) of 30*i*-B series, the usability of CNC system is further improved.

- Axis name expansion
- Program folder management
- Quick program restart
- 26 languages are supported
- Flexible path axis assignment
- Multi-path PMC function, Ladder Dividing Management function
- Main menu screen etc.

15 inch display unit

Function for Loader Control

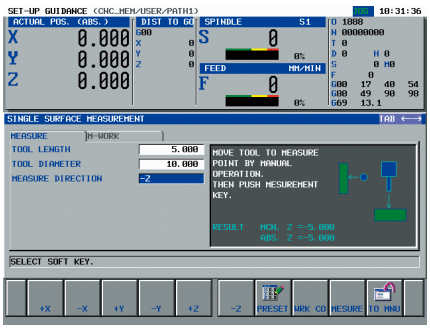
Loader control can be easily achieved at low cost. This function can contribute to the automation of machine tools. Loader can be controlled by the same G codes as those of machining programs. There is no need to control an axis by the PMC ladder, etc. Loader programs can be executed independently of machining programs.



Set-up Guidance Function

Measurement is achieved by touching the tool to the work manually. And the measurement value can be set to the work coordinate system.
As a result, the arrangements time can be greatly reduced.

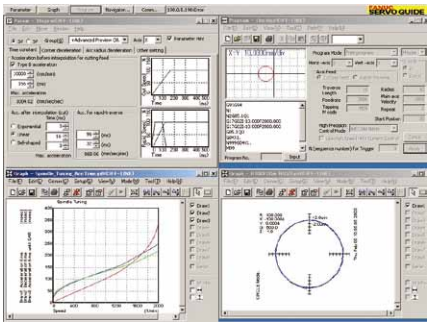
- Single surface measurement
- Outside diameter measurement
- Inside diameter measurement
- Outside width measurement
- Inside width measurement
- Measurement of corner outside
- Measurement of corner inside
- Angled work measurement



FANUC SERVO GUIDE

Quick & smart tuning of servo and spindle

This PC software provides the integrated environment for making test programs, setting parameters, and data measurement needed for servo tuning.
SERVO GUIDE supports to measure not only servo and spindle axis motion but also CNC internal processing status and PMC signal, which helps to analyze machine sequence. It also supports continuous measurement for long hours.
Servo and spindle parameter tuning is supported by automatic tuning function for gains, filters and others.



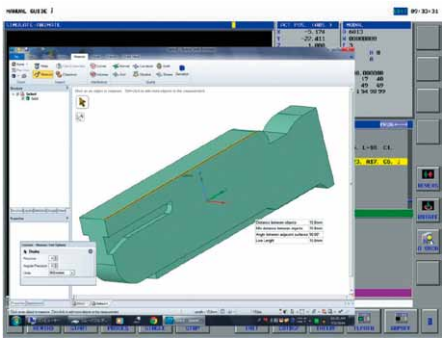
Excellent Operability

Ease of Use

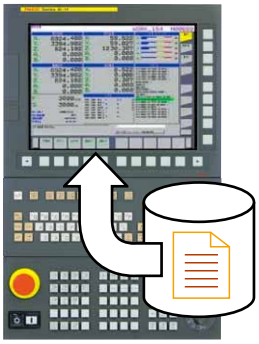
FANUC Platform Provides Convenience of PC on CNC

Convenient platform with useful functions (e.g. high-speed graphics, large memory, etc.) can be added on CNC.

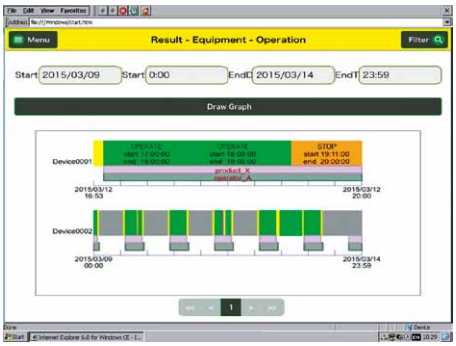
- Remote desktop function improves convenience of CNC by enabling operation of the PC connected via Ethernet from CNC. (e.g. operating the CAD/CAM, referencing the manual, etc.)
- Large program can be edited and operated with built-in large memory
- Web browser can be used



Remote desktop function
Operating the PC connected via Ethernet from CNC



Memory operation with large memory



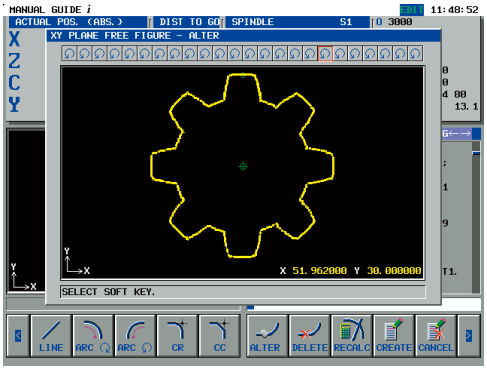
Web browser

Integrated Operation & Programming Guidance with extremely simplified operations

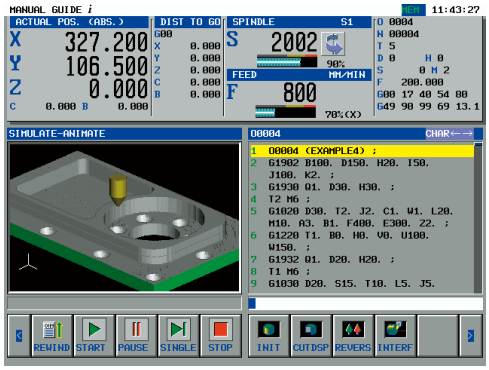
FANUC MANUAL GUIDE *i*

MANUAL GUIDE *i* is an integrated operation guidance, which provides easy operation guidance from programming through machine operation on one single screen. It can be used for lathes, milling machines and machining centers.

- Integrated operating screen
- ISO code part programming
- Powerful program editing functions
- Various machining cycles
- Realistic machining simulation
- Set-up guidance
- Multi-path lathe function



Free figure input screen



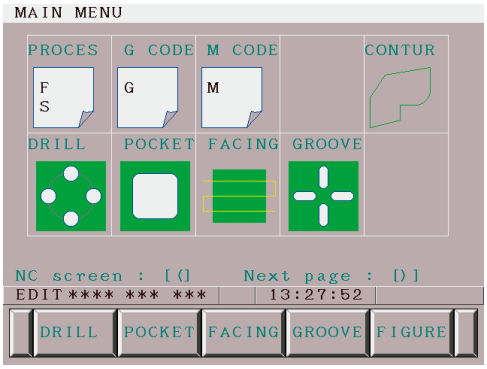
Machining simulation screen
(Scaling and rotation of animation)

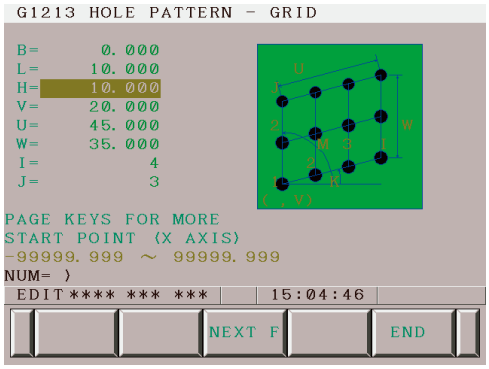
Programming Guidance with various machining cycles

FANUC MANUAL GUIDE Oi

MANUAL GUIDE O*i* is an easy to use part programming operation guidance function that simplifies the creation of a machining program. It is concentrated to the functionality of creating a part program and can be used for lathes, milling machines and machining centers.

- ISO code part programming
- G-code and M-code assistance
- Various machining cycles
- Contour programming





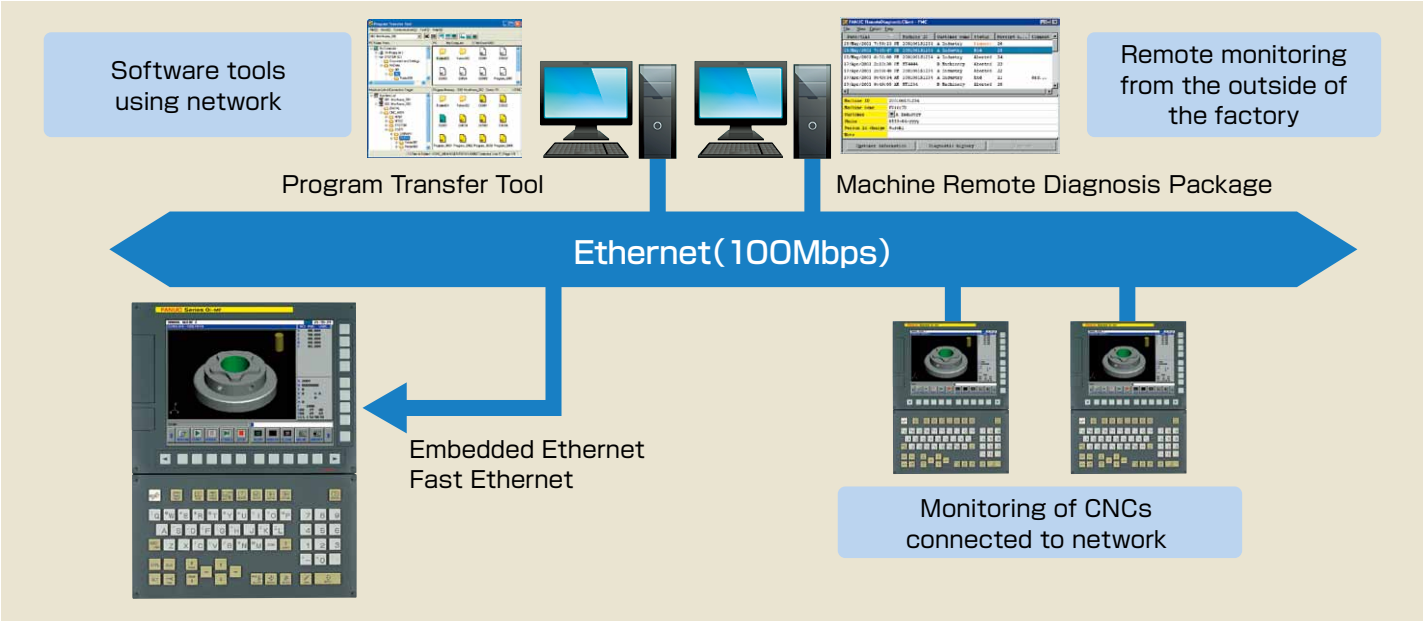
Network Support Functions

Ease of Use

With plenty of network functions, you can construct an optimum system for machine tools

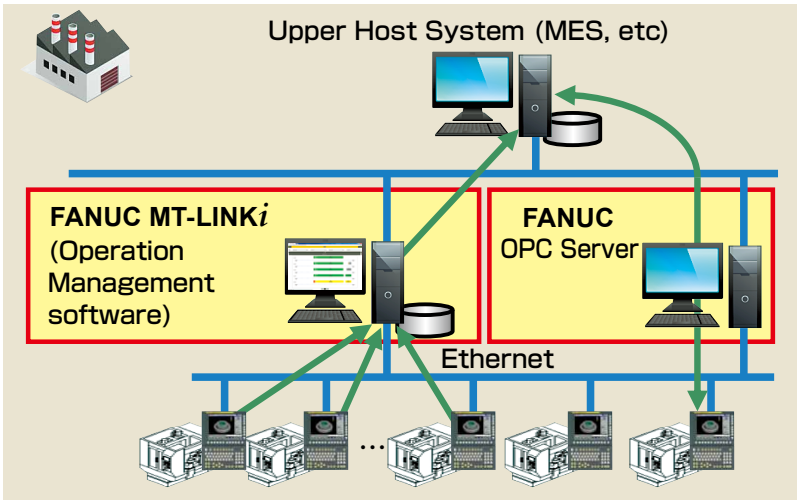
Ethernet

Embedded Ethernet of 100Mbps is supported on the CNC main board. CNC can be connected to a personal computer to transfer NC programs and monitor CNC status.
The Fast Ethernet board can be mounted as an option. Data can be transferred simultaneously among multiple computers at high speed. These features are ideal to construct a production system which exchanges information among machining lines and factory host computer.



FANUC MT-LINK *i* (Operation Management software) / FANUC OPC Server

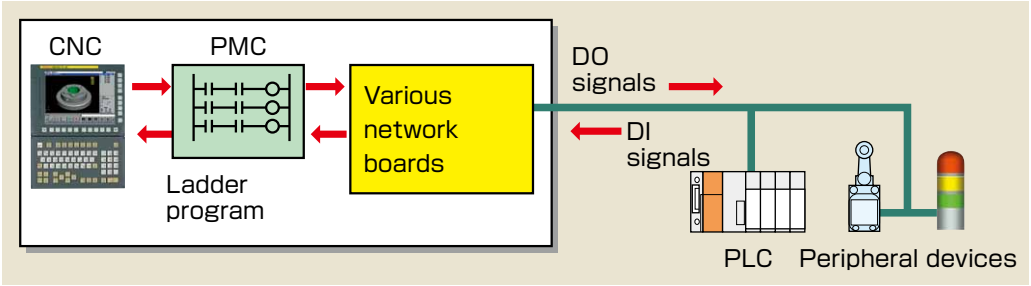
This is a PC software that can manage the operational state of machine tools by connecting with them in the factory. It is suitable for the centralized control of the machine tools in the factory because the function to forward the processing program is provided. The collected data like the operation results can be accessed by the upper host system such as MES (Manufacturing Execution System).
Moreover, the PC software for the OPC server is prepared. This software can read and write the variable data between machine tools and the MES system with the OPC client function. The machine tools can be connected with the upper host system such as MES by using these software.



Industrial Ethernet / Field Network

The I/O signals of various peripheral devices such as waterproof equipment can be controlled and monitored by the ladder program.

Supports various networks
- FL-net
- EtherNet/IP
- PROFINET
- PROFIBUS-DP (Master/Slave)
- DeviceNet (Master/Slave)
- CC-Link (Slave)



Powerful PMC

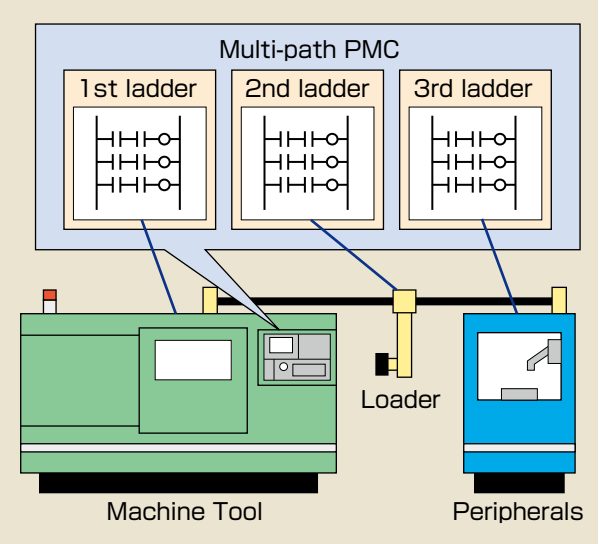
Ease of Use

High-Speed, Large Capacity, and Multi-path PMC

High-Speed and Large Capacity

PMC becomes much faster. PMC, which consists of a dedicated processor and custom LSI, processes a large sequence of programs at a high speed.

- Program capacity Max. 100,000 steps (Total of all PMC paths)
- Internal relay (R) Max. 60,000 bytes
- Data table (D) Max. 60,000 bytes
- PMC paths Max. 3 paths (Max. 16 ladder programs)



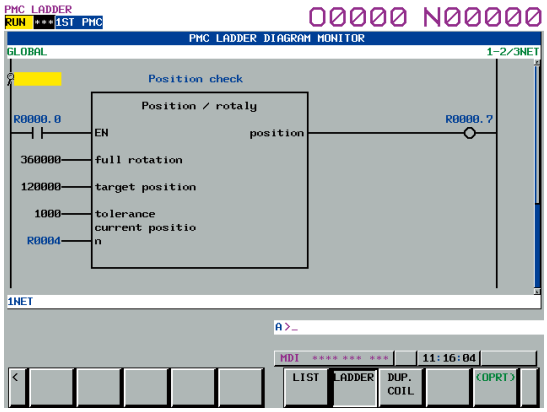
Multi-path PMC

One PMC can execute up to 3 independent ladder programs. Each ladder program has an independent data area, which enables programs to be developed as independent modules. Ladder programs for loader and peripheral control can be created, added and modified separately. Ladder programs can easily be developed and the machine can easily be systematized according to each user's machine configuration. External PLC or other devices for peripheral control becomes unnecessary, which reduces system costs.

Function Block function (Basic function)

- This function enables to call up repeatedly used ladder circuit patterns in blocks.
- By combining multiple Function Blocks, machine tool builders can create complex ladder programs more efficiently, as if assembling components, with fewer steps for ladder program development and fewer ladder diagram drawings for maintenance.
- Many functions, such as PMC axis control and peripheral equipment control, are provided by customizable function blocks as PMC Function Library in FANUC LADDER-III's CD.

(Note: Function block does not have an effect on reducing the total program size.)



Function Block function

Safety Function

Ease of Use

Dual Check Safety + Servo STO

Dual Check Safety is a safety function that conforms to the international safety standard (ISO 13849-1 PL d). This function offers a high level of safety by redundant monitoring, and by providing duplicate paths of breaking power for the servo/spindle amplifier. Safety functions built into the CNC make it easier to conform to the safety standards for machine tools.

- Cost can be reduced by significantly simplifying additional circuits for adherence to the safety standard.
- Two PMC functions have been incorporated into the CNC to duplicate sequence control for safety-related input/output signals.
- Safety-related input/output that is defined by a MTB allows redundant monitoring for controlling peripheral devices.
- By using FANUC I/O Link *i*, 1 channel I/O Link cable can configure safety function.
- The safety machine operator's panel which can make the key signals a safety-related signal is prepared.
- STO (Safe Torque Off function) is equipped in the servo amplifier. Power lines for the motor can be shut off without using the electro-magnetic conductor.

Many Customizable Functions

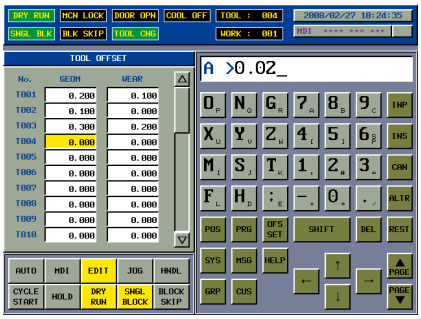
Ease of Use

Customizable functions are available, which allow machine tool builders to customize their own machine tools

Customizing operation screens	→	C Language Executor/**FANUC PICTURE**
MCN operator's panel is realized by softkey	→	Machine operation menu function
Implementing original sequence control based on PMC	→	**FANUC LADDER-Ⅲ**

C Language Executor

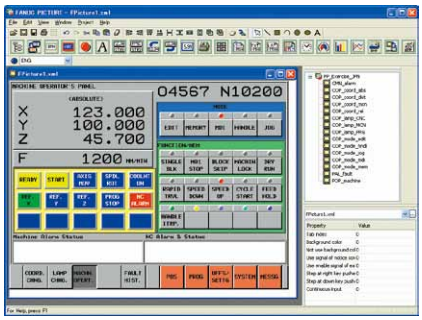
Machine tool builders can create their own operation screens, which enables unique CNC display and operation.



- C language is used for programming.
- Multi window display enables creation of pop-up menus.
- Operation screens using the touch panel can be created.
- In addition to standard ANSI functions, many functions are available for CNCs and PMCs.
- High-level tasks to which high execution priority is assigned can monitor signal and position information.

FANUC PICTURE

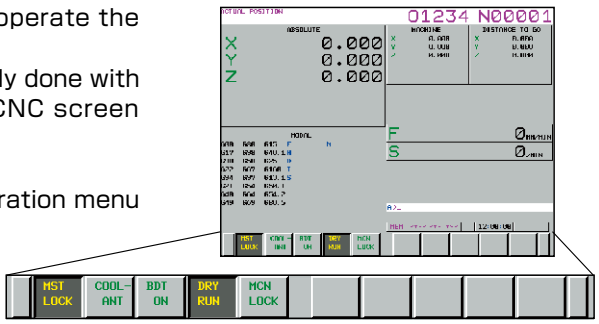
FANUC PICTURE enables a machine operation screen to be created only by pasting screen components such as buttons and lamps on the personal computer.



- Easy-to-use interface unique to FANUC.
- A screen usable on a display unit with or without a touch panel can be created.
- A screen usable on a 15 inch display unit and with vertical soft keys can be created.
- A created screen is executed by the C language executor, and can coexist with a C language executor application created by a machine tool builder.

Machine Operation Menu Function

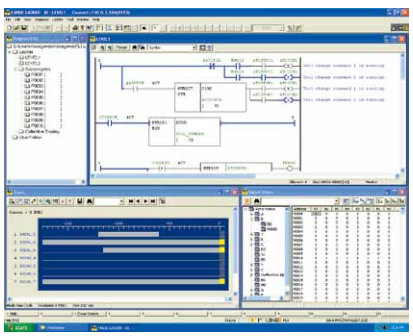
The softkey displayed on CNC screen can be used as a button to operate the machine.
Machine operation such as turning on or off the coolant, that is usually done with the machine operation board, can be done with a softkey on the CNC screen instead.



- The vertical softkey or horizontal softkey is used as a machine operation menu key.
- The hierarchy of the machine operation menu and the displayed character string can be set easily with a special tool on PC.

FANUC LADDER-Ⅲ

For machine customization, a machine tool builder's own sequence control can be incorporated into the built-in PMC. A PMC sequence program can be created on a personal computer by using FANUC LADDER-Ⅲ, a very easy-to-use programming tool with many useful functions.



- A program can be created with ladder and function block.
- A program can be coded using signal names instead of signal addresses.
- Online monitoring and editing can be performed by connecting a personal computer with the CNC via Ethernet.
- Including PMC Function Library which enables you to integrate functions such as PMC axis control easily.

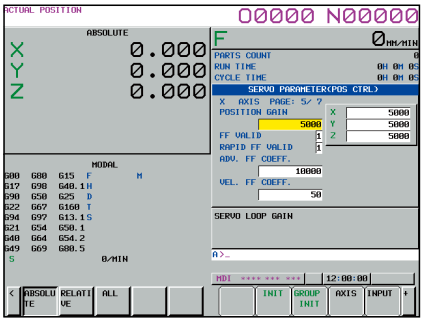
Easy Setup and Maintenance

Ease of Use

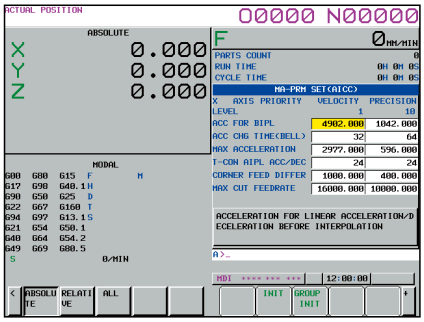
Easily support setup and tuning of CNC system

Parameter Tuning Screen

Parameter Tuning Screen supports the necessary parameter setting for start-up and adjustment of CNC, Servo and Spindle. In menu screen, various setting and adjustment screens are selected by cursor operation, and the parameter is set on each screen.



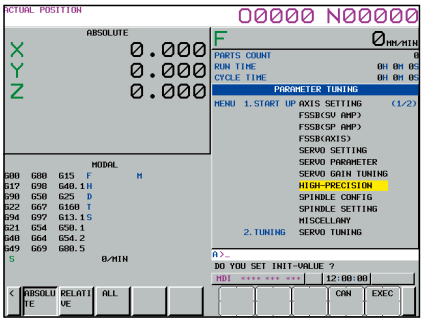
Servo parameter setting screen



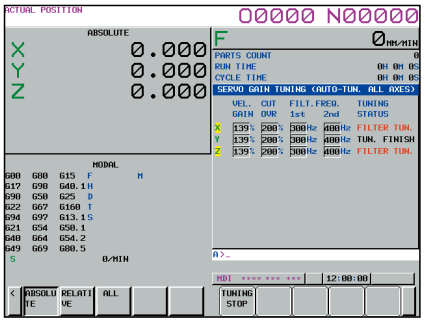
Machining parameter setting screen

"One-shot setting" for servo axes and "One-shot tuning" of filter and velocity gain

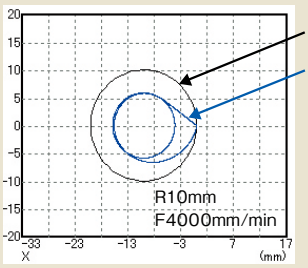
The recommended parameters for high-speed and high precision machining can be set only by pressing the soft-key once. Usually enough precision can be achieved with only this "One-shot setting".
If higher precision is required, filters to eliminate machine resonance and optimum velocity gain for each machine can also be set automatically by only pressing soft-key for Parameter Tuning of Servo Gain.



Menu screen

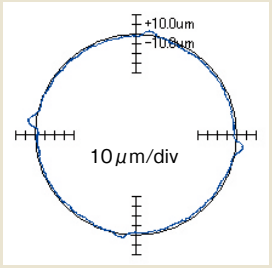


Servo gain tuning screen



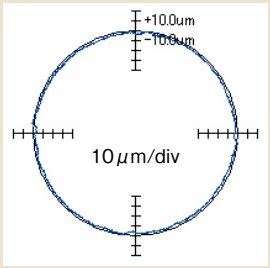
Radius shrinkage 4mm

Before applying
Parameter Setting for High Precision



Protrusion 6μm

After applying
Parameter Setting for High Precision

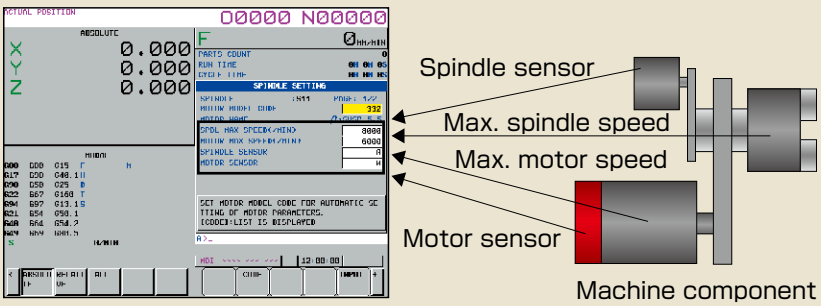


Protrusion 3μm

After applying
Parameter Tuning of Velocity Gain

"One-shot setting" for spindle axes

The initial parameters for start-up of the spindle can be set by "One-shot setting". The necessary parameters are set automatically by inputting spindle configuration items, such as motor model, maximum speed, sensors. This screen supports the initial setting also for the optimum orientation function and the parameters for high speed rigid tapping.



Spindle parameter setting screen

Easy Maintenance

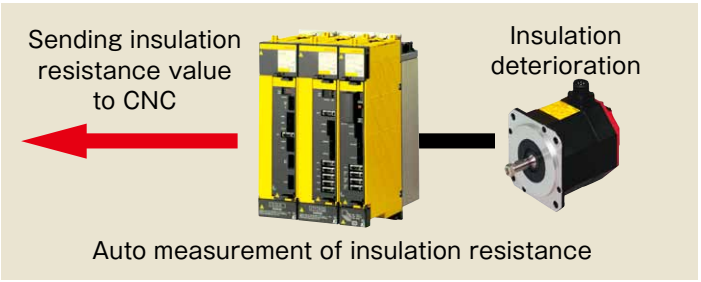
Minimizing Downtime

Functions for minimizing downtime

Preventive Maintenance

Leakage Detection Function

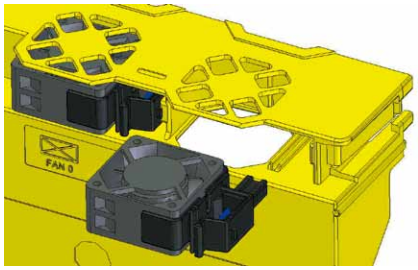
Insulation deterioration sometimes causes a machine to stop due to cutting fluid infiltrating the motor, especially in a severe machining environment. The leakage detection function built-in amplifier automatically measures insulation resistance of the motor, and detects insulation deterioration when it comes to an abnormal level, thereby preventing machine from unexpected stop.



Auto measurement of insulation resistance

Cooling Fan Warning Function

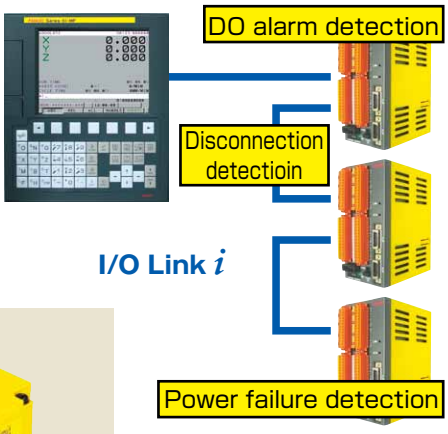
Fan motors may have some trouble with exposure to coolant oil with long-term usage in a FA environment. A decrease in rotational speed of each cooling fan motor of the CNC and the amplifier is detected as a warning. By this function, deterioration of the fan are detected and can be replaced before fan stops. Fans are stored in a cartridge and can be replaced quite easily, so maintainability is enhanced.



Failure Part Detection

Trouble Diagnostic Function

If a power failure or disconnection of the communication cable happened on the I/O modules and servo amplifiers, it would be detected from a warning alarm from detection functions embedded in the I/O Link *i* and FSSB. It can specify at which point the failure happens. In addition to that, I/O link *i* can detect the ground fault of each DO.



Encoder Communication Check Circuit

When Pulsecoder communication alarm occurs, it is sometimes time consuming to identify the failing part because there are three possibilities: detector, feedback cable, or servo amplifier. It might cause long machine downtime.
Encoder Communication Check Circuit outputs the dummy feedback signal which makes it easier to identify the failing part quickly.

Protecting Machine at Power Failure

Machine Protection at Power Failure

Damage of workpieces and tools at power failure is prevented where a stable power supply cannot be expected.

- **Gravity-axis drop prevention**
  Motor brake is activated quickly by detecting the power failure using power failure detection method in the standard αiPS-B.
- **Stop distance reduction** *1)
  Feed axes are decelerated to stop in order to prevent feed axes crashing with high-speed machine tools.
- **Retract** *2)
  Tool is retracted from workpiece keeping synchronization with gear cutting machine.

*1), *2) "Power Failure Backup Module (Hardware)" or "Power Failure Backup Function (Software)" shall be applied.


PFB-24 PFB-R PFB-C Capacitor Module

Power Failure Backup Module MODEL B

Powerful Software Tools

Supports development of machine tool builders in a variety of fields such as simulation and data management

FANUC NCGuide

Software tool "FANUC NCGuide" simulates CNC operation on a PC to fully utilize the ever advancing CNC functions. FANUC NCGuide is available for the following two purposes:

- Training of CNC / MANUAL GUIDE *i* operations
- Development and debugging of PMC ladder and custom software

Training of CNC / MANUAL GUIDE *i* operations

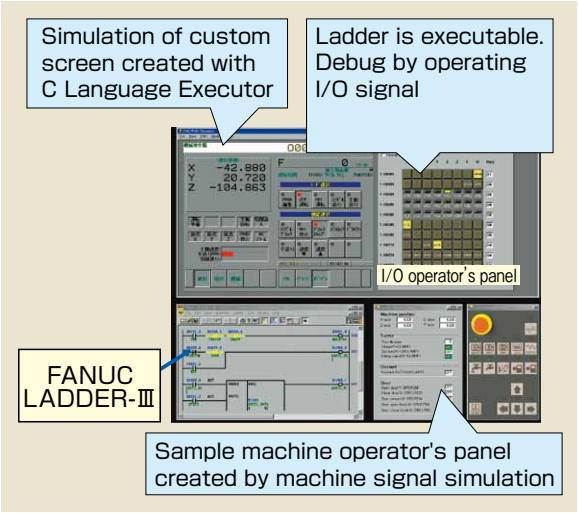
FANUC NCGuide is a software tool that enables training of CNC / MANUAL GUIDE *i* operations on a PC. It allows operators to be trained without using an actual machine tool. This software tool can also be used for CNC education of students in school. With a machining simulation function of MANUAL GUIDE *i*, machining programs can be checked easily.

- Training of CNC / MANUAL GUIDE *i* can be enabled
- Edit operation of the machining programs and cycles at EDIT mode can be enabled
- Machining simulation function (animation, tool path drawing) can be enabled

Development and debugging of PMC ladder and custom software

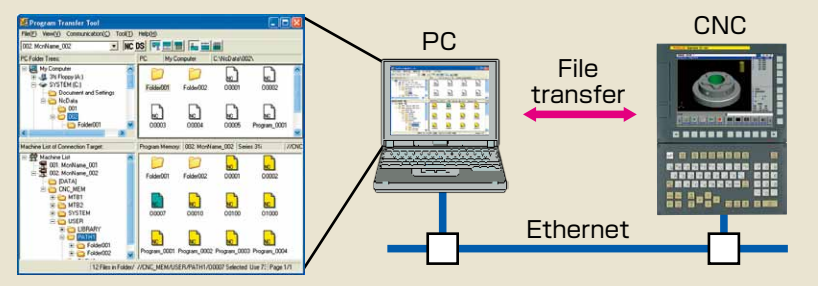
With a PMC simulation function, execution and debugging of the ladder is available on a PC.
FANUC PICTURE, C Language Executor and Macro Executor can also be executed, so that this software tool can be used to debug a custom screen created by a machine tool builder.

- PMC ladder can be executed on PC
- Ladder can be efficiently debugged with a PMC simulation function interacting with the CNC simulation function
- Ladder can be edited and displayed interacting with FANUC LADDER-Ⅲ
- With a machine signal simulation function, the ladder can be debugged in near-actual machine environment
- Custom software made with FANUC PICTURE / C Language Executor / Macro Executor can be executed



FANUC Program Transfer Tool

FANUC Program Transfer Tool is a software tool for transferring part programs and data by connecting PC and CNC via Ethernet.
Files in the CNC program memory are displayed on the tool in an easy-to-understand way, so input/output operation can be easily performed with a mouse.



FANUC CNC Setting Tool

FANUC CNC Setting Tool is a software tool used to set and manage CNC parameters on a personal computer. Parameters can be set and managed efficiently without referring to the manual.

- Parameters are classified by the CNC function
- Detailed explanation is displayed by selecting a parameter
- CNC parameter is transmitted via Ethernet or memory card

Maintenance and Customer Support

Worldwide Customer Service and Support

FANUC operates customer service and support network worldwide through subsidiaries and affiliates. FANUC provides the highest quality service with the prompt response at any location nearest you.

FANUC Training Center

FANUC Training Center operates versatile training courses to develop skilled engineers effectively in several days.

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FS0*i*-F(E)-02, 2015.9, Printed in Japan