

AI Nano CNC for High-Speed, High-Accuracy machining

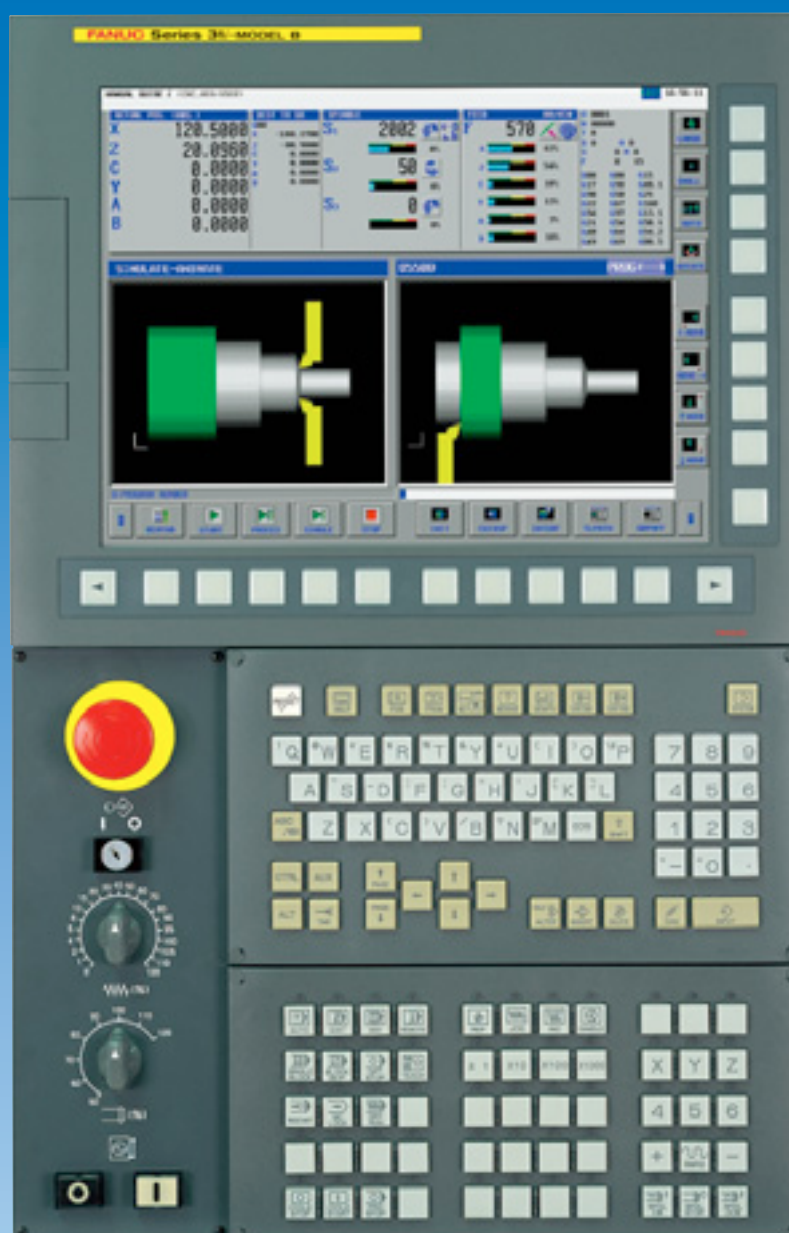
**FANUC Series 31 $i$ -MODEL B**

**FANUC Series 31 $i$ -MODEL B5**

**FANUC Series 32 $i$ -MODEL B**

**FANUC Series 30 $i$ -MODEL B**

**FANUC Series 35 $i$ -MODEL B**



# AI Nano CNC for High-Speed, High-Accuracy machining

## Wide Application Range

The CNC best suited to the use can be selected.

## **FANUC** Series 31*i*-MODEL B

Max. number of paths : 4 paths

Max. total number of control axes : 26 axes (20 feed axes, 6 spindles)

Max. number of simultaneous control axes : 4 axes

This is the core model of FANUC CNC with the performance of the world highest level. With abundant functions and advanced control technology, it is the most suitable for a high-grade lathe and machining center.

## **FANUC** Series 31*i*-MODEL B5

Max. number of paths : 4 paths

Max. total number of control axes : 26 axes (20 feed axes, 6 spindles)

Max. number of simultaneous control axes : 5 axes

In addition to the feature of above 31*i*-B, this model has simultaneous 5-axis machining function and can machine the work of complex shape at high-speed, highly-accurate and high-quality. It is suit for the leading-edge 5-axis machining center.

## **FANUC** Series 32*i*-MODEL B

Max. number of paths : 2 paths

Max. total number of control axes : 16 axes (10 feed axes, 6 spindles)

Max. number of simultaneous control axes : 4 axes

This is a standard model with sufficient CNC functions and is suit for the control of a standard lathe and a machining center.

## **FANUC** Series 30*i*-MODEL B

Max. number of paths : 10 paths

Max. total number of control axes : 40 axes (32 feed axes, 8 spindles)

Max. number of simultaneous control axes : 24 axes

The big capability of this model helps to realize an advanced multi axis machine tool. Thanks to a number of control axes, various machining processes can be executed at the same time. Its 5-axis machining function can achieve the machining of complex shape. It has the flexibility to control various types of machine tools.

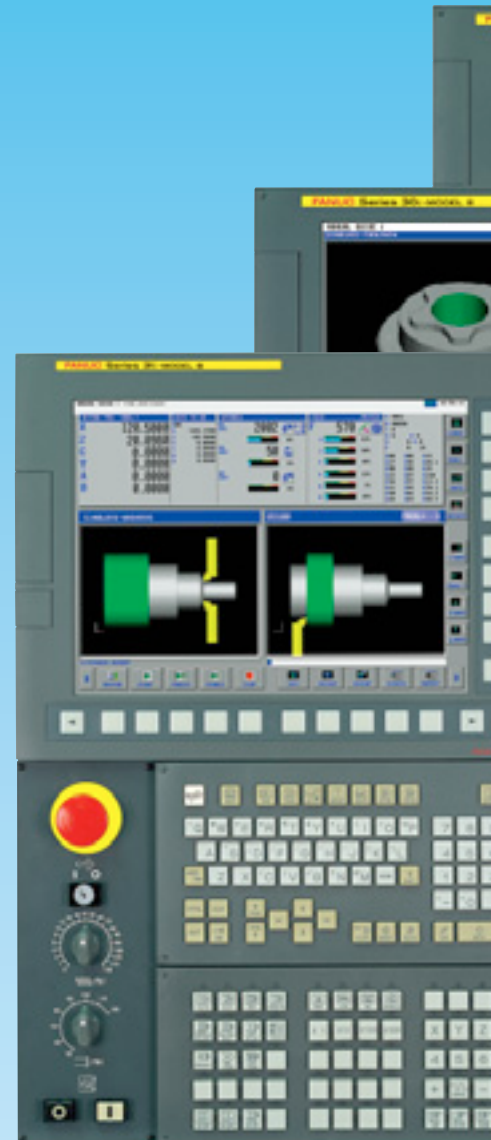
## **FANUC** Series 35*i*-MODEL B

Max. number of paths : 2 paths

Max. total number of control axes : 8 axes (6 feed axes, 2 spindles)

Max. number of simultaneous control axes : 3 axes

This model is CNC for the transfer machine. It has powerful PMC function and basic CNC function, and can execute simple machining at high speed.





## State-of-the-Art Hardware

Ultra-thin, high-speed and high-reliability is achieved by state-of-the-art hardware, including ultra high-speed processors in use, high-speed CNC internal bus, and optical fiber cables used for high-speed data transfer.

## High-Speed, High-Precision and High-Quality Machining

High-speed, high-accuracy machining is realized by using not only the CNC that controls the machine with nanometer resolution but also detectors and servos with ability controlling nanometer.

## High-Speed, High-Precision and Smooth simultaneous 5-Axis Machining

These models are available for 5-axis machines with various configurations. A function which enables smooth, high-speed and high-precision machining and easy programming of machining of complex figures with tilted plane and a function of facilitating setup are included.

## Excellent Operation

Various CNC data can be transferred easily by USB memory that is a popular device. A integrated guidance function helps an operator from creation of a part program to actual machining.

## Complete with Network Support Functions

A management system with personal computers and a robot connected via Ethernet can be constructed easily. Various types of field networks are also supported.

## High Reliability and Easy Maintainability

High-reliability hardware allows stable operation in a harsh factory environment. Various types of enhanced diagnosis functions improve maintainability so that the cause of trouble can be identified quickly.

## Easy Incorporation into Machine Tools

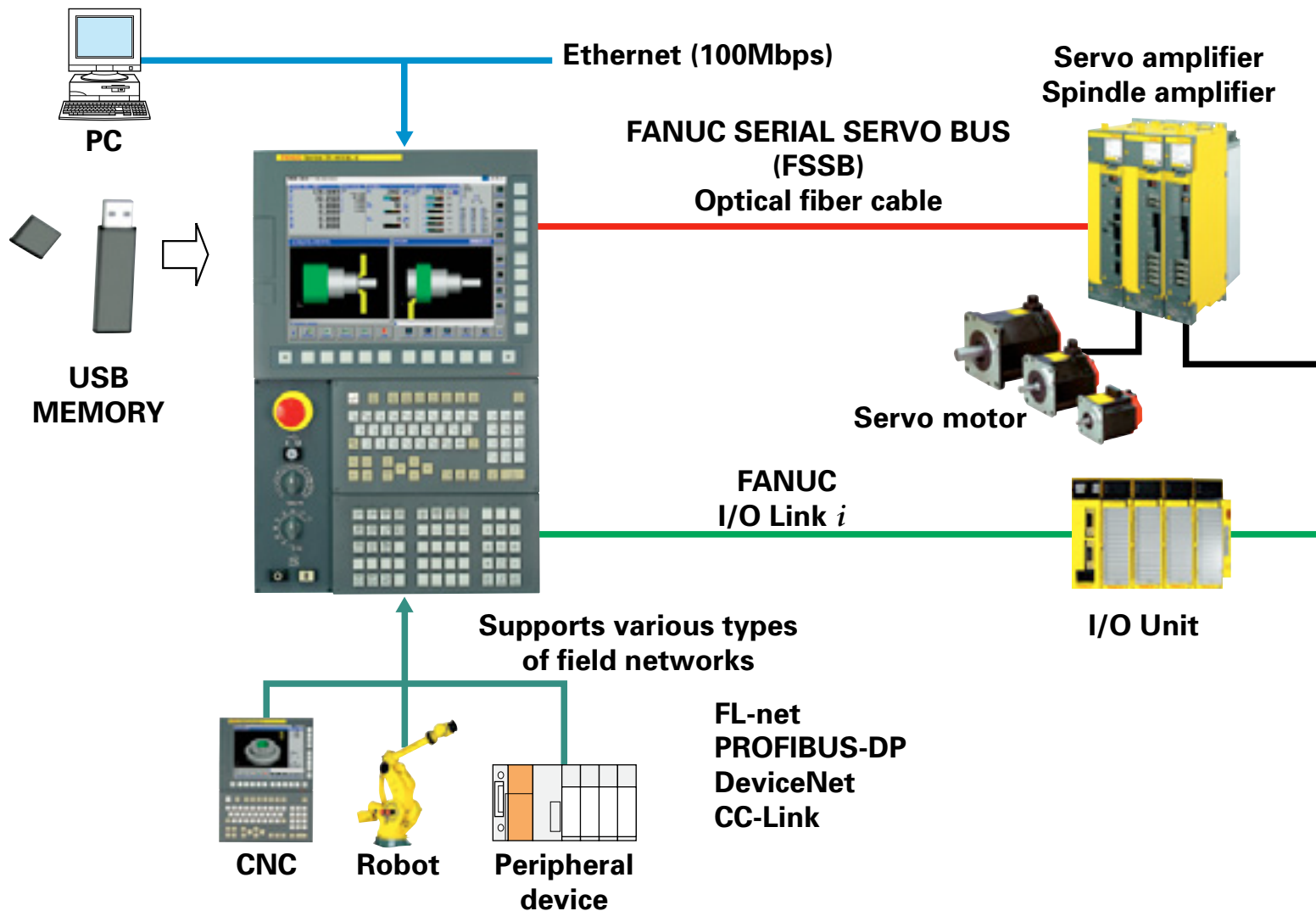
The CNC control unit is incorporated with the LCD panel and the power magnetics cabinet does not require its space. The use of the ultra-high-speed serial communication function reduces wiring. Powerful PMC function extends flexibility of machine design and built-in safety function helps MTB to conform safety regulation easily.

## Personal computer function with Windows® OSs

The personal computer function with Windows® XP can be added the function of a personal computer without restricting CNC control function. The personal computer function with Windows® CE, which is a compact operating system for embedded use which requires no hard disk, are also available.

# State-of-the-Art High-Speed, High-Reliability Hardware

## Ultra-Compact, Reduced wiring, High-Reliability



### Enhanced basic performance

The leading-edge hardware has enhanced the basic performance of the CNC, servos and the PMC to support advanced CNC functionality such as 5-axis machining, multi-axis multi-path control.

### Thin and compact

[US Patent No.5940292]

The LCD-mounted type CNC with all the functionality implemented behind the display greatly reduces CNC mounting space on the machine. This contributes to downsizing. Intelligent communication functions are also embedded in the ultra-thin control unit of 60mm in depth, which helps design a compact operator's panel. 15" (except for 35i-B), 10.4" and 8.4" color LCDs are available as a CNC display. The stand-alone type CNC, a control unit with a separate display, is also available. You can select a CNC suitable to your machine structure.

### Leading-edge servo control with fast FSSB and high-speed DSP

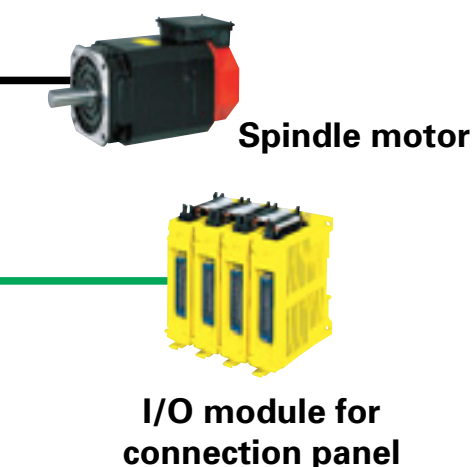
[US Patent No.5990638, etc]

The CNC and amplifiers are connected with FSSB (Fanuc Serial Servo Bus) using optical fiber cable. Leading-edge DSPs and newly-designed FSSB offer advanced servo control such as multi-axis control and fast current control. In addition, spindle amplifiers can be now connected to FSSB.

### FANUC I/O Link *i*

FANUC I/O Link *i* is a serial I/O interface between the PMC and various I/O units. The number of DI/DO points per channel is 2048/2048, doubled from conventional FANUC I/O Link.





FANUC I/O Link *i* helps quick recovery from troubles by making it easy to pinpoint the faulty part using abundant error detection capability such as bitwise DO ground fault detection and I/O power supply failure detection. FANUC I/O Link *i* realizes dual check safety with a single cable although conventional systems require two cables. Conventional I/O units for FANUC I/O Link are supported.

### Reduced wiring

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

### USB memory interface

A USB port is added on the front of the CNC display unit. USB memory easily obtainable in the market can be used to input and output various data in the CNC, and the usability is enhanced.

## FANUC AC SERVO MOTOR *αi* series

AC SERVO MOTOR *αi* series, having compact size, smooth rotation and quick acceleration, is suited to axis feed in machine tools.

Compact and high-resolution *αi* series Pulsecoder is built into all *αi* series motors.

AC SERVO MOTOR *αi* series also have high speed servo motors for live tool.

## FANUC AC SPINDLE MOTOR *αi* series

AC SPINDLE MOTOR *αi* series, having high power and high acceleration by optimum winding design and effective cooling structure, is suited to high power, high speed spindles in machine tools.

AC SPINDLE MOTOR *αi* series also have large spindle motors suited to large size machine tools.

## FANUC SERVO AMPLIFIER *αi* series

*αi* series SERVO AMPLIFIER has compact size and achieves energy saving

[Reduced Wiring]

- FSSB (optical fiber cable) connection of Spindle amplifier in addition to Servo amplifier

[Energy Saving]

- Output power increased, and also energy consumption reduced by adopting the latest low loss power device.

[Enhanced maintainability]

- Detachable fan motors from front side
- Built-in leakage detection function
- Power supply monitoring function
- Failure diagnosis function

### Enhanced network functions

Enhanced network functions support various types of field networks. Embedded Ethernet of 100Mbps is also supported as a standard function.

### High reliability realized by ECC

[Japanese patent No.3565798, etc.]

Error correcting code (ECC) is a leading-edge high-reliability technology. Should an error occur during data transfer, it can be detected and corrected.

Although ECC has already been applied to various portions of the CNC, the range of application is further expanded and the whole CNC system is protected. ECC and original low power technologies contribute to high reliability.

# 5-axis machining functions achieve a smooth, high-speed,

Provided for a smooth, high-speed, and high-precision 5-axis machining

30i-B, 31i-B5 Only

FANUC's 5-axis machining functions achieve a smooth machining not only in a high-precision mold machining but also in a high-speed part machining.

## Smooth

In the case of not only tool center point machining but also side cut machining, a smooth 5-axis machining is achieved by automatic commands compensation of the machining programs. And it results in the reduction of the machining time because of eliminating needless accelerations/decelerations.

## High-speed

A high-speed 5-axis machining is achieved by optimizing algorithms of CNC software.

## High-precision

A high-precision 5-axis machining is achieved by applying the high-precision machining technology (AI contour control) that FANUC has cultivated for years.

## Easy to use

Convenient functions, taking the operators on machining site into consideration, are supplied.

## Cooperation with CAM

The latest 5-axis machining functions are supported by major CAM makers' cooperation

### Conditions required for 5-axis machining

Smooth

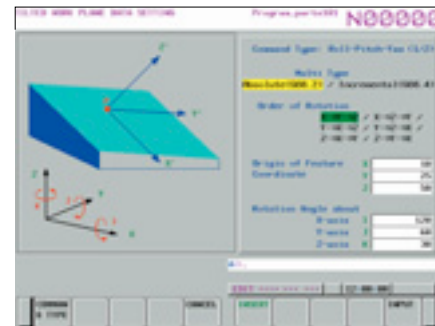
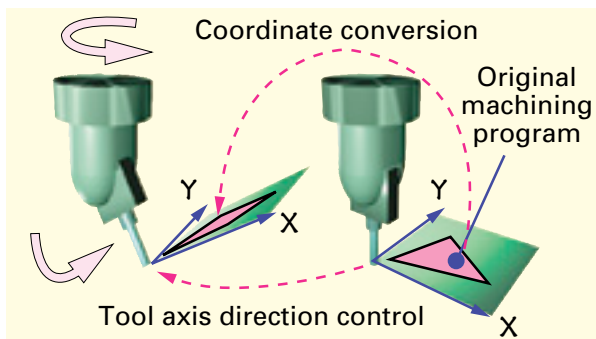
High-speed

High-precision

## Tilted working plane command with guidance

30i-B, 31i-B, 31i-B5 Only

For machining a hole, pocket, or another figure on a tilted plane on a workpiece, specifying the working plane with plane (X, Y) makes programming very easy. The tilted working plane command enables this specification and also positions the tool automatically so that the tool becomes perpendicular to the tilted working plane without specifying the tool direction. There are 6 kinds of tilted working plane command types (Eulerian angle, two vectors, roll-pitch-yaw, projection angles, three points, tool axis direction), and they can be visually selected with the guidance screen. The necessary data for each command types can be directly inputted with the screen. So, the tilted working plane can be specified easier.

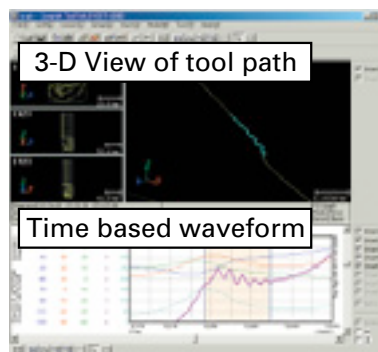


## FANUC SERVO GUIDE 3-D View Function

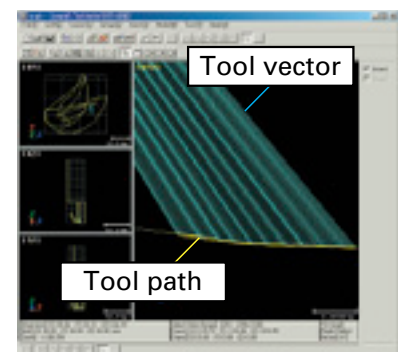
30i-B, 31i-B5 Only

Servo tuning tool, FANUC SERVO GUIDE supports 3-D View Function.

"3-D tool path" and "Time based waveform of each servo axis" are displayed in the same window. Direction of tool is displayed also in addition to 3-D tool path, which enables to visualize "deviation of cutting surface". FANUC SERVO GUIDE is useful servo tuning tool for 5-axis machining, which saves time for tuning parameters and precision evaluation.



Tool path with time based waveform



Tool Vector Visualization

# and high-precision machining

## High-speed Smooth TCP that achieves a smooth high-speed and high-quality 5-axis machining

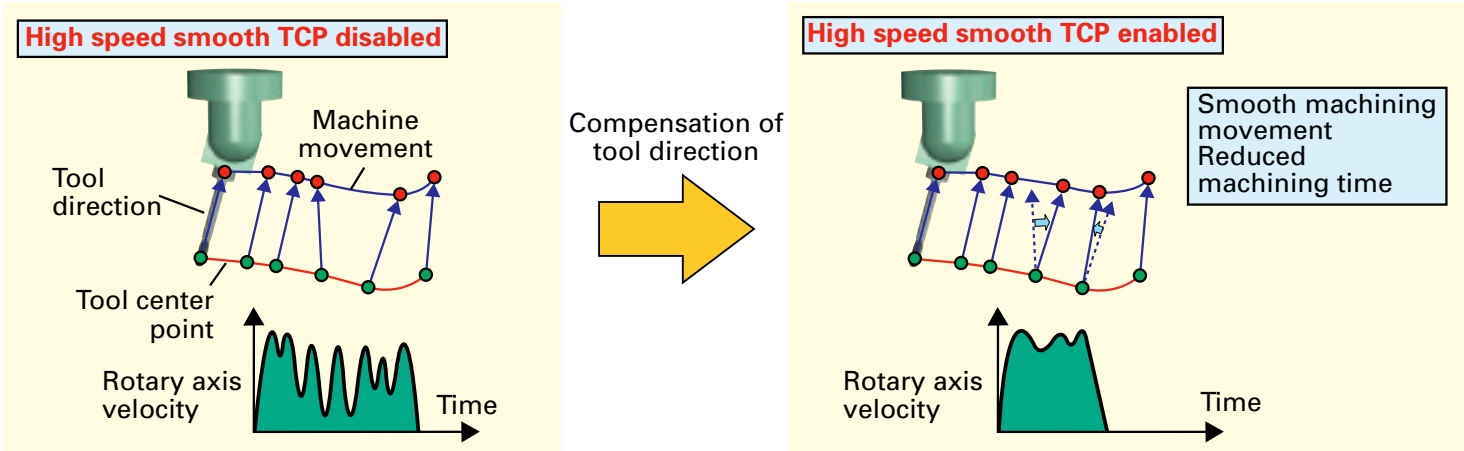
30i-B, 31i-B5 Only

### High-speed and smooth machining using tool center point

[Japanese patent No.4351281]

When a machining program with TCP (Tool Center Point control) has unevenness in tool direction command in comparison with TCP movement command, the tool direction varies, and a machined surface is degraded (stripes appear) and a machining time increases.

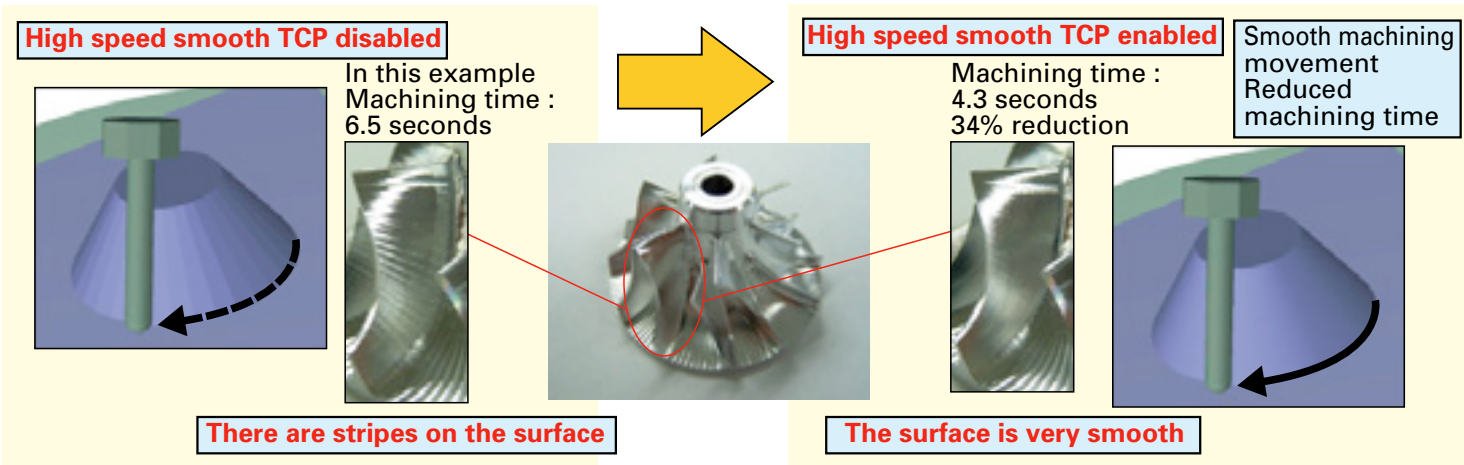
Smooth TCP makes the machining movement smooth by compensating tool direction so as to decrease the unevenness, and improves the quality of the machining surface and reduces the machining time.



### High-speed and smooth machining using tool side cutter

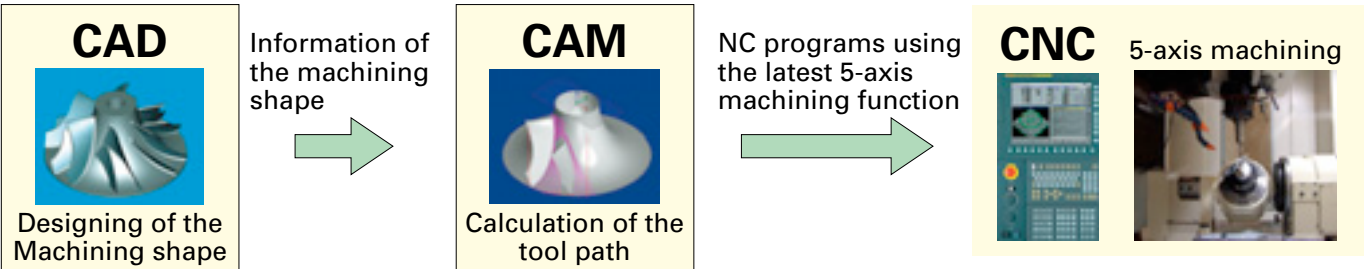
[Patent Pending]

High speed smooth TCP improves the quality of the surface greatly by moving tool posture and tool center point smoothly.



### Cooperation with CAM

With the cooperation of major CAM makers(\*), the NC programs can be made using the latest 5-axis machining functions.



(\*) CNC software, Dassault Systems, DELCAM, DP Technology, EUKLID, Gibbs and Associates, OPEN MIND, Sescoi KK, Tebis AG, UGS Corp., Vero International (Alphabetical order)

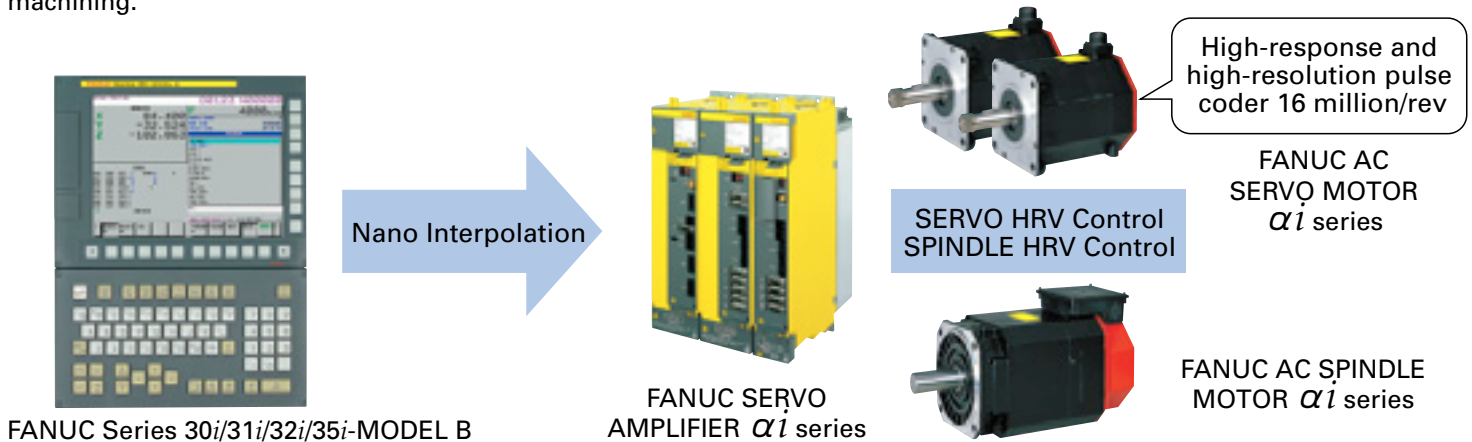
# High-Speed, High-Quality Machining

## High-Quality Machining Realized for All Types of Machining from Part Machining to Complex Die Mold Machining

### Nano CNC System

#### 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 SERVO MOTOR  $\alpha i$  series with a high-resolution pulse coder are used as standard and make up “Nano CNC System,” which achieves high-speed, high-quality machining.



### AI Contour Control I / AI Contour Control II

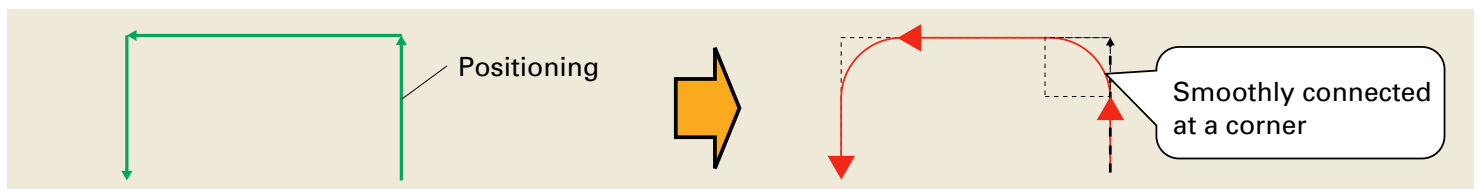
30i-B, 31i-B, 31i-B5, 32i-B Only

The specified figure is determined by programmed commands read in advance to control the feed rate and acceleration so that they are optimum for the machine performance. Corners and curves are automatically determined to enable machining at the feed rate optimum for the machining profile.

#### Reducing of cycle time by optimization of positioning

Positioning and cutting are executed without a pause in AI contour control. The cycle time will be shortened because feed axes do not stop at each end of block.

Additionally, successive positioning blocks are smoothly connected; therefore positioning becomes more faster for decreasing acceleration at a corner.

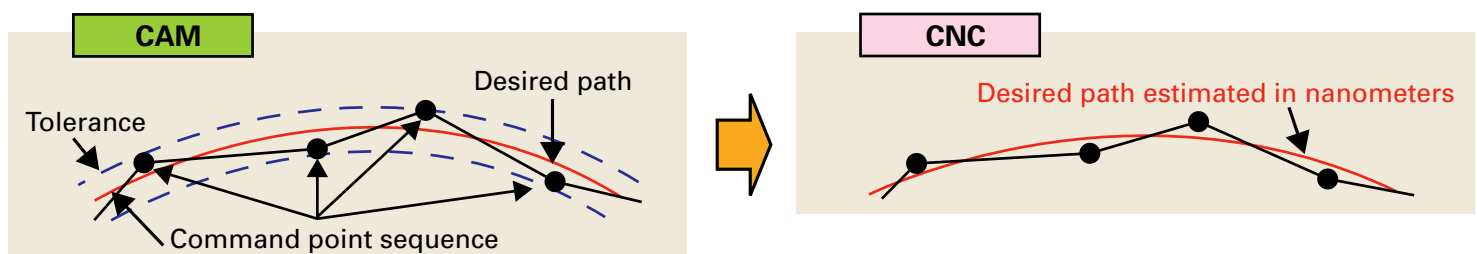


### Nano Smoothing

[Japanese patent No.3904993] 30i-B, 31i-B, 31i-B5, 32i-B Only

For machining of a die with a free-form curved surface, since a curve becomes a polygon when a machining program is specified with linear interpolation, stripes may be made on the finished surface.

“Nano Smoothing” estimates a desired path within the tolerance with NURBS curves using a minute line segment command point sequence created by a CAD/CAM system and interpolates the generated NURBS curves in nanometers. This technology gives a smooth machined surface approximate to the designed figure and reduces manual finishing processes.





# High Quality and Energy Saving Servo

## SERVO HRV (High Response Vector) Control

[Japanese patent No.3442340, and seven registered]

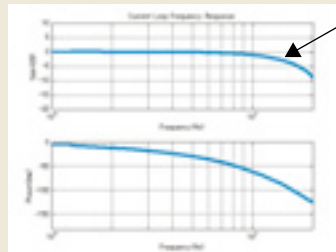
High-speed and high-precision SERVO HRV Control realizes a Nano CNC system. SERVO HRV4 Control (only for Series 30i-B, 31i-B and 31i-B5) has come along, as an extension of SERVO HRV3 Control proven with high-speed, high-precision machining. Its features are listed below:

- Always using servo position commands specified in nanometers
- Using the  $\alpha i$  Pulse/Counter with an ultra-high resolution of 16 million resolution/rev as standard detector
- Using an ultra high-speed servo control processor, enabling high-speed current control and velocity control
- Elimination of mechanical resonance using an auto following HRV Filter and reduction of vibrations of the end of the machine using Distortion prediction control

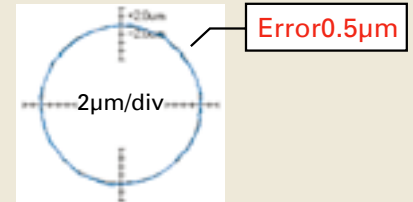
With a combination of these functions, nano-level control achieves high-quality machining.

Each component of SERVO HRV Control has been enhanced and the basic performance, including response to commands and disturbance suppression characteristics, has greatly been improved. Current control, basis of all types of servo control, shows a fast response of more than 1 kHz at the maximum. High-speed current control can realize higher-gain velocity control.

Example of Current Loop Frequency Response



Example of circle with a radius of 100mm and a feed rate of 20m/min



HRV4 (Velocity gain 1600%)

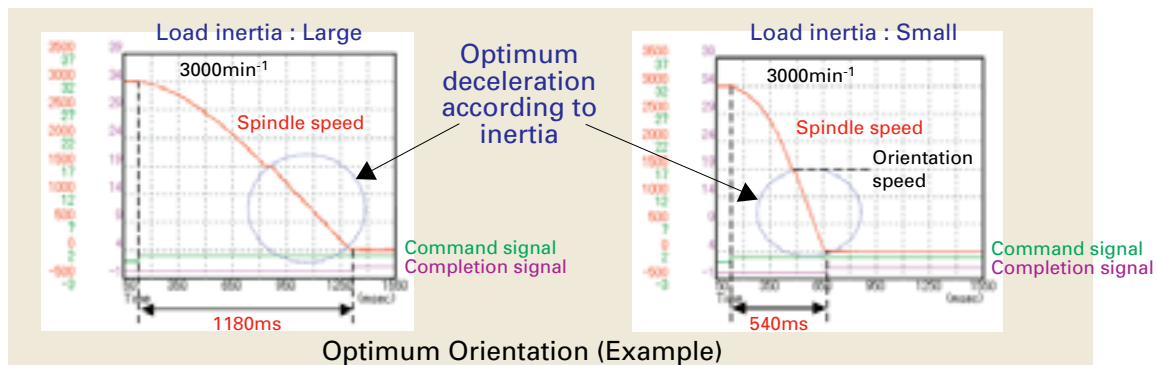
## SPINDLE HRV (High Response Vector) Control

[Japanese patent No.4099503, and two registered]

SPINDLE HRV Control realizes fast response and high precision of spindles. SPINDLE HRV4 Control is the successor of SPINDLE HRV3 Control which features high-precision control. Followings are the features.

- Achieving high gain control and low heat generation at high speed rotation by faster sampling time of the current control loop
- Optimum orientation automatically changing the deceleration control according to the inertia of works or tools
- Supporting Nano Interpolation in position control enabling Nano CNC system for spindles as well as feed axes

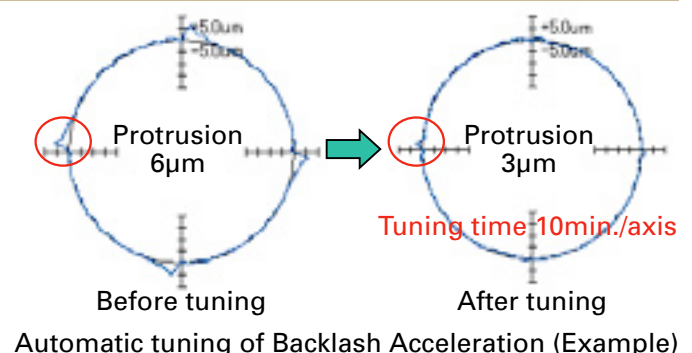
SPINDLE HRV Control realizes fast response, high efficiency, and high precision of spindles of machine tools.



## FANUC SERVO GUIDE

FANUC SERVO GUIDE is integrated tuning tool for servo and spindle axis, which provides the integrated environment for "Making test program", "Setting parameters" and "Data measurement" for servo and spindle tuning.

Tuning navigator is automatic tuning function for gains, filters and others, which enables high-level servo tuning in a short time. Automatic tuning of Backlash Acceleration saves time for high speed and high precision tuning.

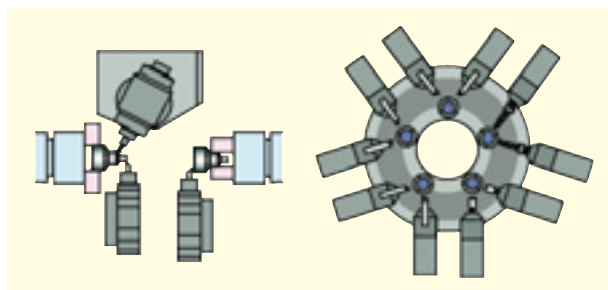


# Flexible Support of Various Mechanical Configurations

## Expanded multi-axis and multi-path functions

30i-B, 31i-B, 31i-B5, 32i-B Only

A single CNC can achieve complex control of a multi-path lathe with many turrets, compound machine tool with a milling head, or automatic lathe requiring many axes and command systems. These series provide many functions required for multi-path control, such as synchronous/composite control, superimposed control, flexible axis assignment, waiting function, and interference check. A merger between high-speed, high-precision control technology that FANUC has cultivated for years and multi-axis multipath control technology further promotes improvements in precision and efficiency of lathes and automatic lathes.

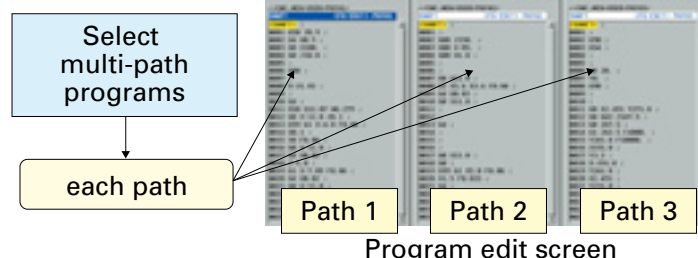


## Multi-path program management function

30i-B, 31i-B, 31i-B5, 32i-B Only

Program management function is suitable for machining by multi-path programs.

All part programs for machining can be created and selected by one operation easily. These programs can be displayed and edited on one screen simultaneously (Maximum 3 programs). These multi-path programs for one machining can be input or output to as one file.



## Complex machining functions

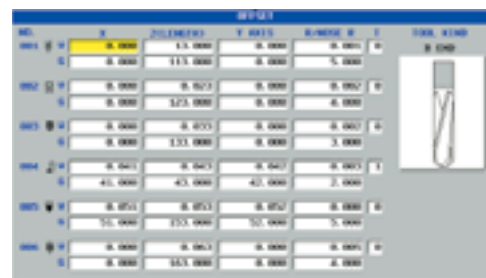
30i-B, 31i-B, 31i-B5, 32i-B Only

### • Integrated tool offset screen

An integrated offset screen is provided, which allows the user to manage offset data for both milling tools and turning tools on the same offset screen.

### • Lathe/Machining center G code system switching function

Two operation mode which are Lathe mode and Machining center mode can be switched by M code command. Functions for both Lathe mode and Machining mode can be used in one program.

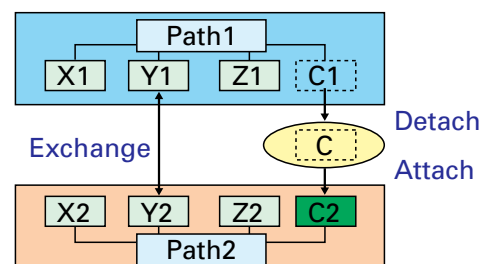


Integrated tool offset screen

## Flexible Path Axis Assignment

30i-B, 31i-B, 31i-B5, 32i-B Only

Flexible Path Axis Assignment enables switching control axes among any given paths in multi path control system such as compound machines, automatic lathes and rotary index machines, which can machine multiple workpieces on multiple tool posts at the same time for greatly efficiency.



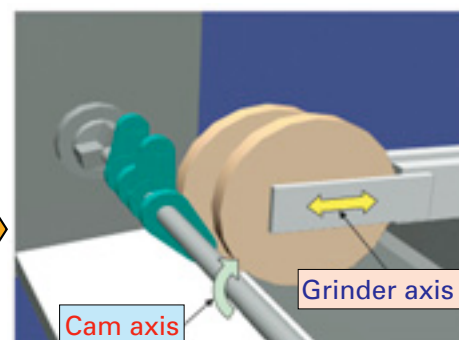
## Path Table Operation Function

30i-B, 31i-B, 31i-B5 Only

To reduce the part machining cycle time and enable complicated multi-axis and multi-path machining, a free machining path can be specified independently of CNC blocks, interpolation functions such as linear/circular interpolation, and the paths of the system.

Each axis position and auxiliary function in connection with time, spindle/axis position can be specified individually.

Grinder axis Path Table	
L0.	X10.
L1.	X11.
L3.	X13.
:	:
L180.	X100.
:	:



# Excellent operation

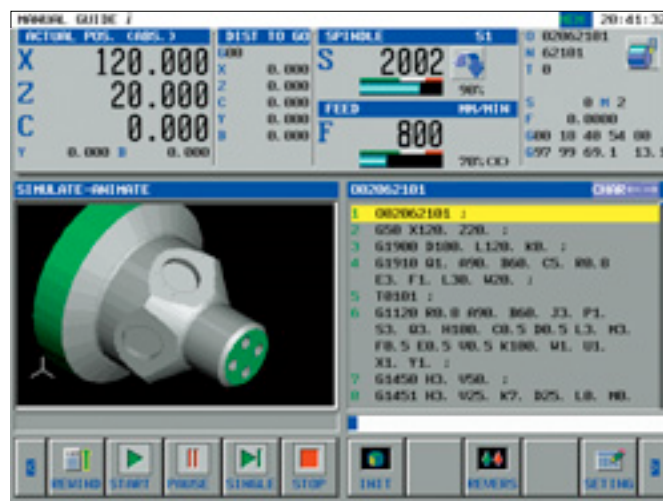
## FANUC MANUAL GUIDE *i*

30i-B, 31i-B, 31i-B5, 32i-B Only

### Integrated Operation & Programming Guidance with extremely simplified operations

This is an integrated operation guidance, which provides handy operation guidance for programming through machine operation on one single screen.

- Icon menu soft-keys provide convenient programming for sophisticated turning and milling.
- By adopting ISO code format, widely used in part programming, machining program made by CAD/CAM can be used as it is.
- Entered program can be checked easily by realistic animation of milling and turning.
- Set-up operations before and after of machining can be reduced by various automatic measuring of cutting tools and machined workpiece.
- Machining center, lathe, compound machine with milling and turning, and multi-path lathe with plural tool posts and spindles are supported.

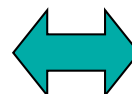


Animation screen

## Input / output with USB memory

Programs and CNC data can be inputted and outputted at the USB port on the front of the CNC display unit easily.

- Various CNC data files can be inputted and outputted like a memory card.
- All CNC data can be saved and restored by an easy operation. It is helpful for surefire and efficient maintenance operation.
- USB memory sticks on the market can be used.
- Because USB memory can be used as an input/output device, the memory card can be used as a large-capacity program memory, storing it in the CNC main unit at all times.



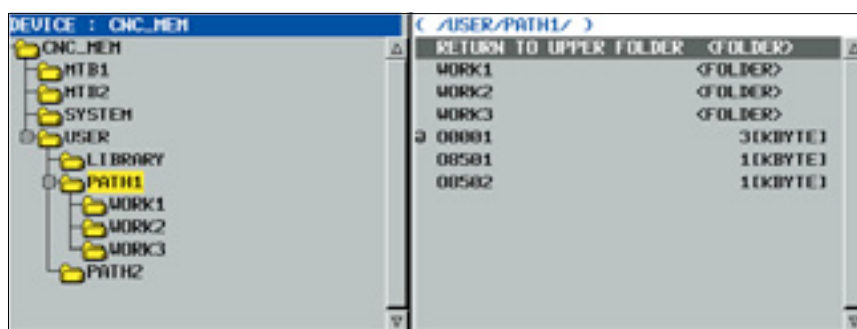
NC program,  
Parameter,  
Ladder program,  
etc.



## Program folder display

Folders of machining programs are displayed as a tree view.

- Enable to copy, move, and input/output operation per folder on tree view screen.
- Easy to understand whole structure of folders.



Program folder display

Files/folders in a folder

# Easy Incorporation into Machine

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

[Japanese patent No. 3896076, US patent No. 6999842]

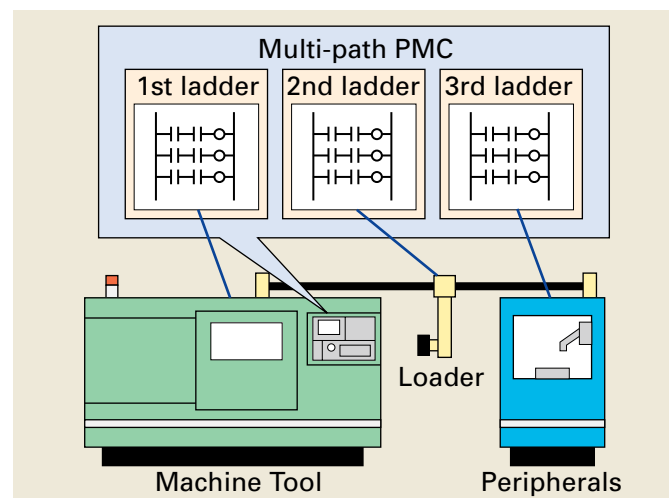
### High-Speed and Large-Capacity

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

- Program capacity Max. 300,000 steps (Total of all PMC paths)
- Internal relay (R) Max. 60,000 bytes
- Data table (D) Max. 60,000 bytes
- PMC paths Max. 5 paths

### Multi-path PMC

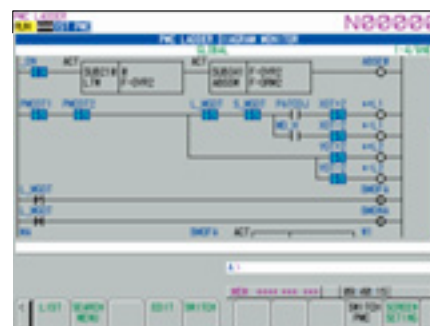
One PMC can execute up to 5 independent ladder programs. Each ladder program has an independent data area, which enables programs to be developed as independent modules. Ladder programs for loader and peripheral control can be created, added and modified separately. Ladder programs can easily be developed 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.



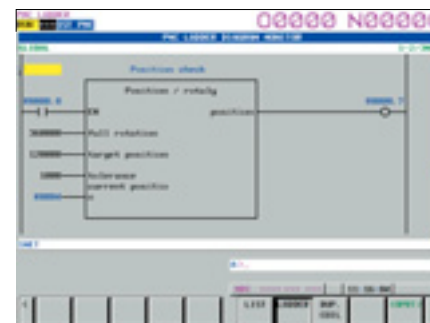
### Enriched computation instructions

PMC can adopt not only sequence control for machine tools but also for various peripherals using enhanced computation instructions.

- The sequence program that requires management of many data can be created easily.
- Complex conditions of numerical data can be programmed by connecting comparison instructions in series.
- There are many useful instructions for controlling interface of peripherals, stopwatch timer instruction, bit operation instructions, etc.



Enriched computation instructions



Function Block function

### Function Block 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.  
(Note: Function block does not have an effect to reduce the total program size.)

## Dual Check Safety

Dual Check Safety is a safety function that conforms to the international safety standard (IEC 61508). This function offers a high level safety by redundant monitor, 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.



# Plenty of Customize Functions

**Customize functions are available, which allow machine tool builders to customize their own machine tools uniquely**

- |   |   |
|---|---|
| • Customizing operation screens   | ⇒ C Language Executor / FANUC PICTURE         |
| • Implementing original sequence control based on the PMC                     | ⇒ FANUC LADDER-III                            |
| • Implementing a machine operator's panel by soft keys                        | ⇒ Machine operation menu                      |
| • Customizing machining and measuring cycle                                   | ⇒ Macro executor                              |
| • Control of a peripheral device with an NC program                           | ⇒ Real-time custom macro                      |
| • Make the machine tool intelligent by using the personal computer technology | ⇒ Personal computer function with Windows® OS |

## C Language Executor

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

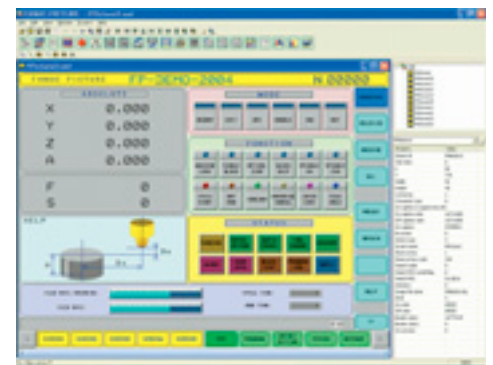
- C language is used for programming.
- Multiwindow display enables creation of pop-up menus.
- Operation screens using the touch panel can be created.
- In addition to standard ANSI functions, many functions are available for CNCs and PMCs.
- High-level tasks to which high execution priority is assigned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

- Programming languages such as the C language are unnecessary.
- 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.



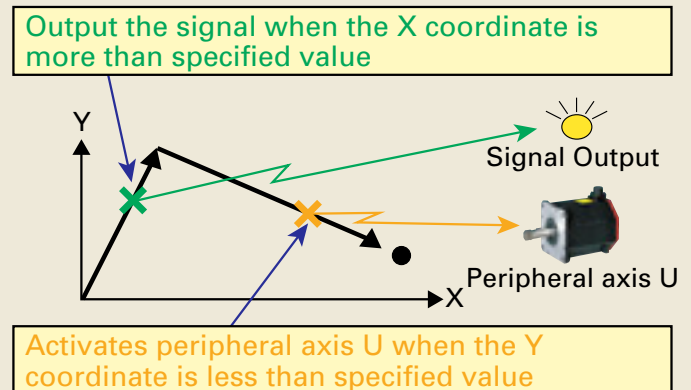
## Real-time Custom Macro

30i-B, 31i-B, 31i-B5, 32i-B Only

Signals and peripheral axes can be controlled from machining programs.

- A macro statement can be executed in real time in synchronization with a machining program.
- Signals can be input and output by using DI/DO variables.
- Operation that the signal status is used as a trigger can simply be created.
- Macro variables can dynamically be read and written.
- Operation that position information of a system variable is used as a trigger can be created.
- Multiple real-time macro statements can be executed concurrently.
- Peripheral axis control can be written in the same program during machining.

Example of real-time custom macro





# Powerful Software Tools

## FANUC NCGuide/NCGuidePro

31i-B, 32i-B, 35i-B Only

Software tools for CNC simulation on the personal computer are provided to fully utilize the ever advancing CNC functions. Two types of packages are available to meet applications.

### FANUC NCGuide : For CNC operation training

- CNC and MANUAL GUIDE *i* training are available.
- Machining programs and machining cycles can be edited in EDIT mode.
- Machining simulation (animated simulation and tool path drawing) are possible.

### FANUC NCGuidePro : For application software development

- PMC ladder can be executed on PC.
- Ladder editing and display interacting with FANUC LADDER-III are possible.
- Ladder debugging operation interacting with CNC simulation is enabled.
- Customized software created with FANUC PICTURE, C Language Executor, or Macro Executor can be executed.



# Personal computer function with Windows® OS

The best combination between a CNC and personal computer is realized by transferring bulk data via an original high-speed interface. Unique dedicated applications can be realized easily by personal computer function, and the machine tools can meet special needs for machine tool customers.

Personal computer functions brings huge potentials through up-to-date computer and information technology for intelligent machine tools.

## Personal computer function with Windows® XP

The FANUC PANEL *i* is a display unit that incorporates personal computer functions. PANEL *i* realizes a high performance personal computer function with Windows® XP connecting to the stand-alone CNC. Various commercial Windows applications can be used.

CNC with  
Windows® XP



PANEL *i*



### Feature

Various commercially application software and hardware are available

### Application

Best fit for flexibility with computer applications, such as tool file management by utilizing database

### OS

Windows® XP Embedded

## Personal computer function with Windows® CE

30i-B, 31i-B, 31i-B5, 32i-B Only

Personal computer function with Windows® CE is using Windows® CE which is a compact operating system for embedded use, and ensures high reliability by highly safety file system "TexFAT". Personal computer function with Windows® CE fits simple dedicated operator's panel design, dedicated machine operations and/or real-time applications. Personal computer function with Windows® CE has two types; the integrated CNC with LCD unit, the stand-alone CNC connected to CNC display unit with Windows® CE computer through high speed serial bus interface.

Integrated CNC  
with  
LCD unit



### Feature

TexFAT : Transaction-safe extended FAT  
High reliability for harsh environment of machining site by using semiconductor memory

### Application

Best fit for simple dedicated application, such as dedicated operator's panel, simple conversational system, production monitoring and management, etc.

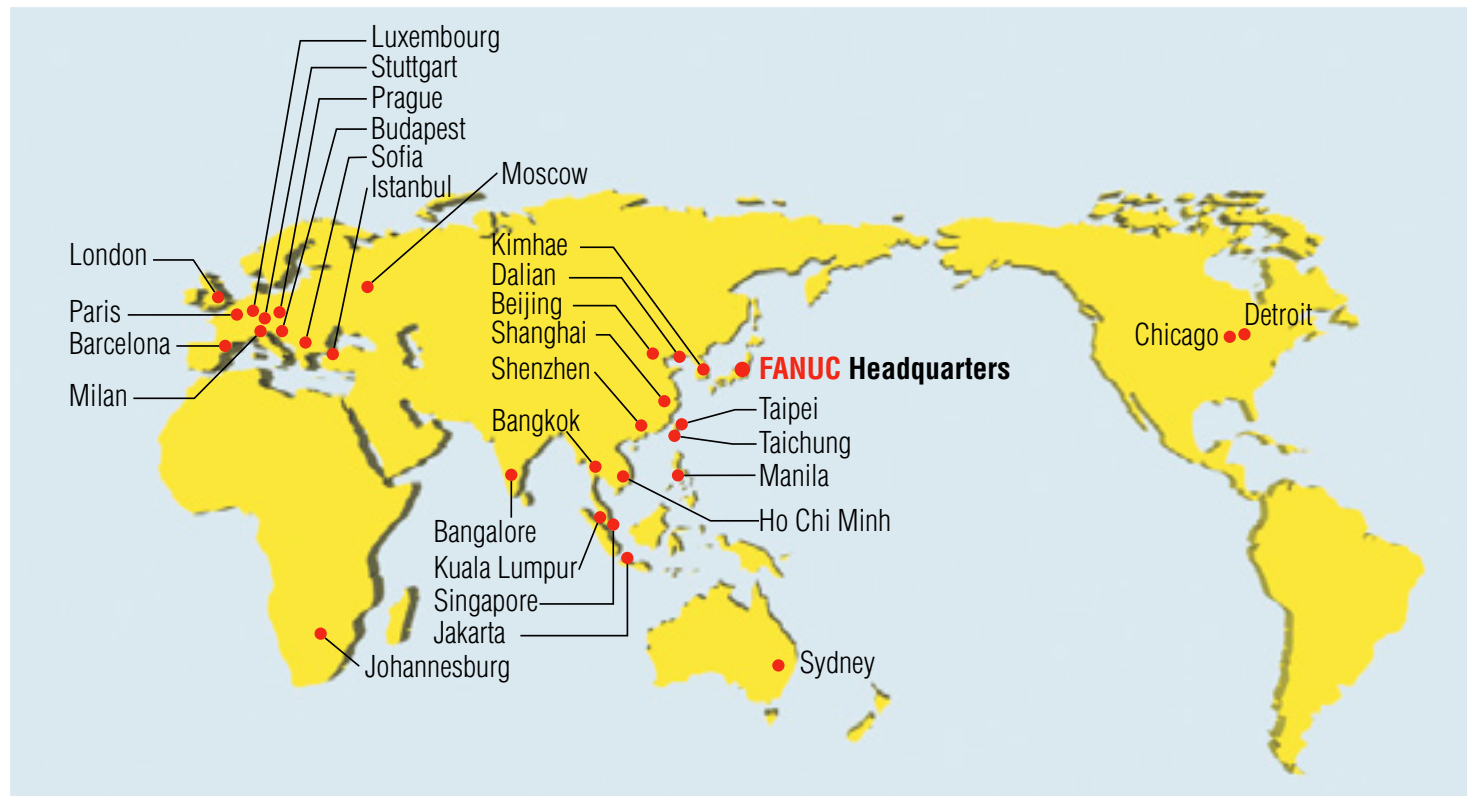
### OS

Windows® Embedded CE 6.0

# 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

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