

Nano CNC for High-Speed, High-Accuracy machining

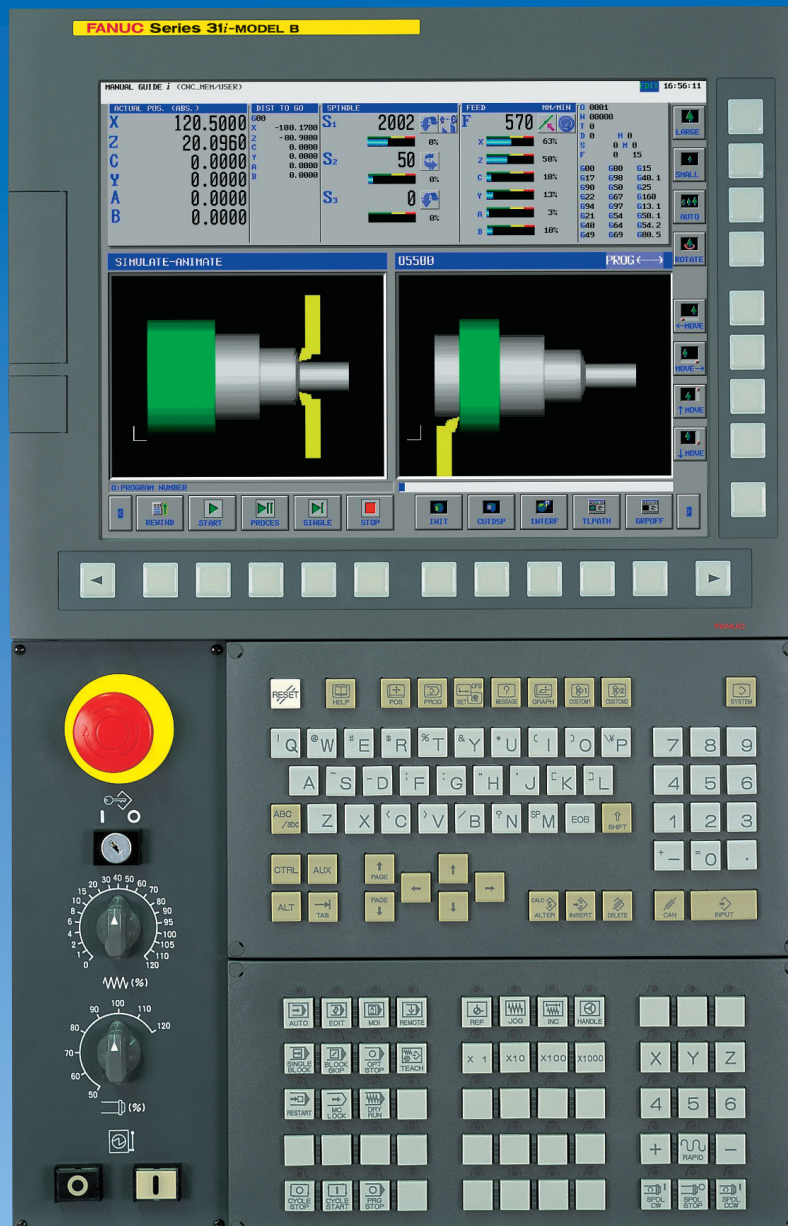
FANUC Series 31i-MODEL B

FANUC Series 31i-MODEL B5

FANUC Series 32i-MODEL B

FANUC Series 30i-MODEL B

FANUC Series 35i-MODEL B



Nano CNC for High-Speed, High-Accuracy machining

Wide Application Range

The CNC best suited to the use can be selected.

FANUC Series 31i-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 31i-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 31i-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 32i-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 30i-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 35i-MODEL B

Max. number of paths : 4 paths

Max. total number of control axes : 20 axes (16 feed axes, 4 spindles)

Max. number of simultaneous control axes : 4 axes

This model is CNC for the transfer line. 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.

Various Network 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

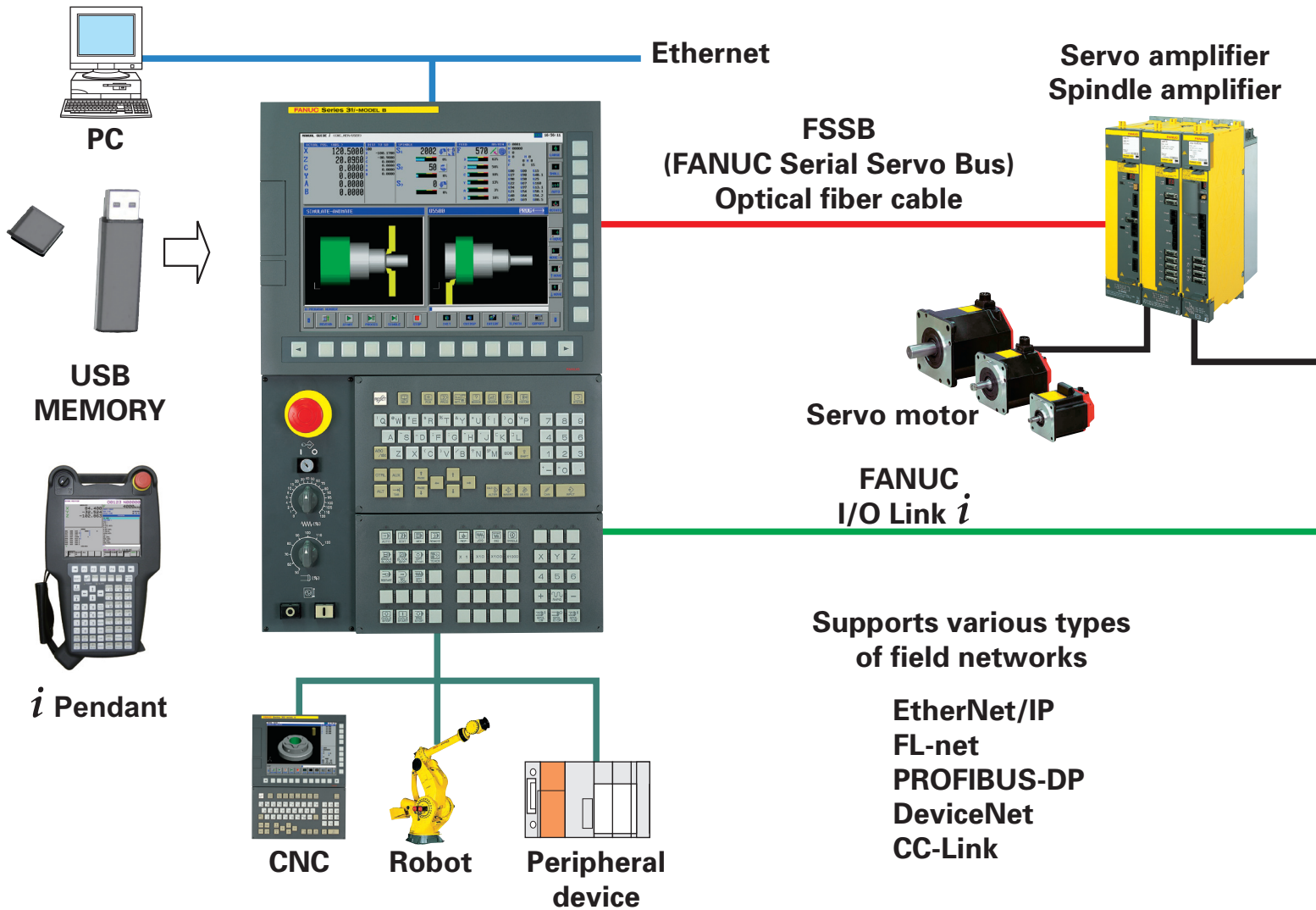
The CNC control unit is incorporated with the LCD panel and the power magnetics cabinet does not require its space. The use of the ultra-high-speed serial communication function reduces wiring. Powerful PMC function extends flexibility of machine design and built-in safety function helps MTB to conform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

Personal computer function with Windows® OSs

FANUC PANEL *i* realizes the advanced combination between a CNC and personal computer by an original high-speed interface. 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

[Patent approved]

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 35*i*-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

[Patent approved]

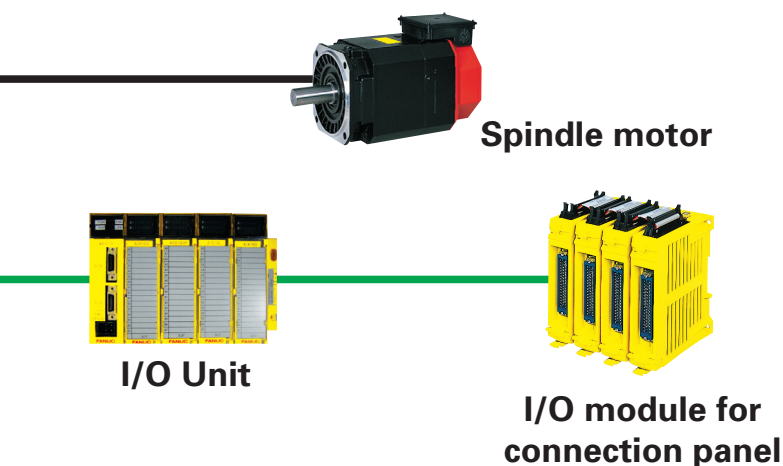
The CNC and amplifiers are connected with FSSB (FANUC Serial Servo Bus) using optical fiber cable. Leading-edge DSPs and newly-designed FSSB offer advanced servo control such as multi-axis control and fast current control. In addition, spindle amplifiers can be now connected to FSSB.

FANUC I/O Link *i*

[Patent approved]

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.

i Pendant

i Pendant is a portable operating unit. It is possible to watch the CNC screen and operate the machines at a point distant from main operator's panel.

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
- Trouble 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

[Patent approved]

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 being 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

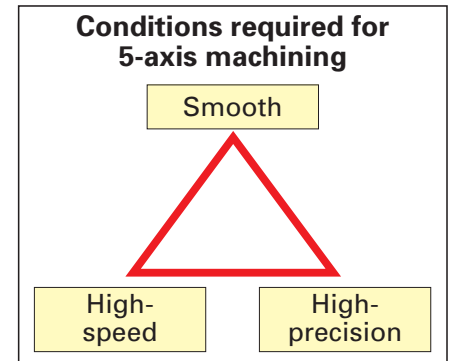
A high-precision 5-axis machining is achieved by applying the high-precision machining technology (AI contour control) that FANUC has cultivated for years.

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

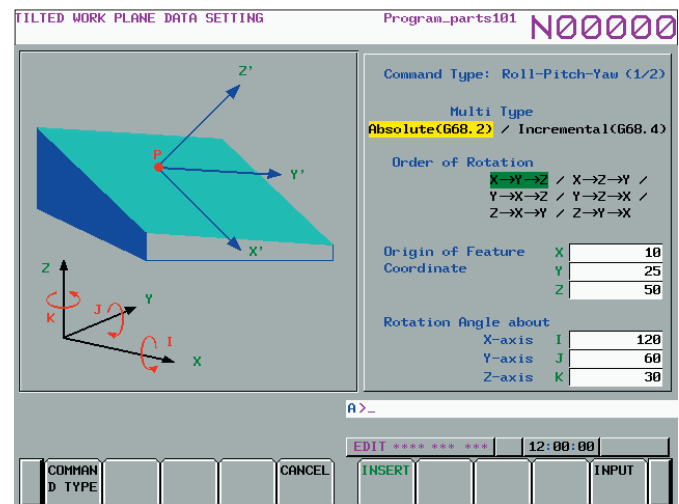
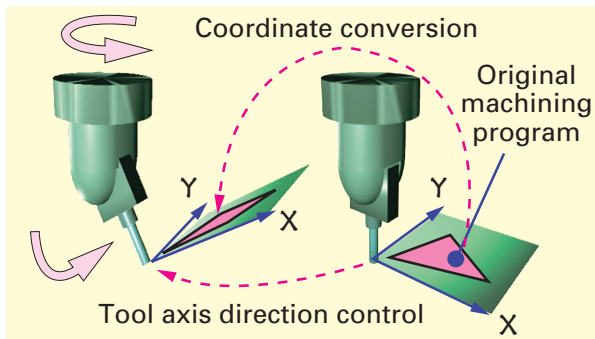


Tilted working plane indexing

[Patent approved]

30i-B, 31i-B, 31i-B5, 32i-B 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 indexing 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.



Guidance screen

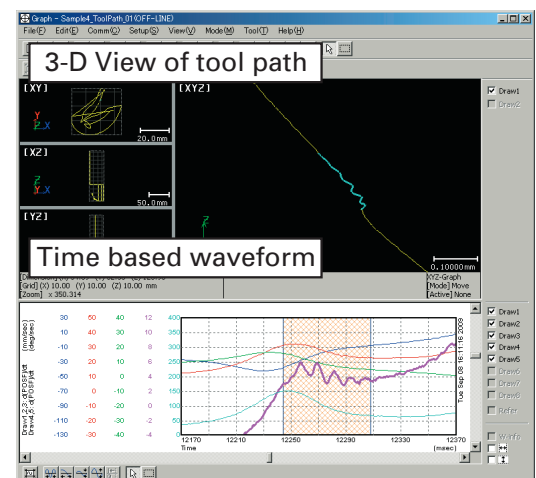
FANUC SERVO GUIDE 3-D View Function

[Patent approved]

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. Scale-upped display or color-coded display of path deviation makes it easy to find a point to be tuned. FANUC SERVO GUIDE is useful servo tuning tool for 5-axis machining, which saves time for tuning parameters and precision evaluation.



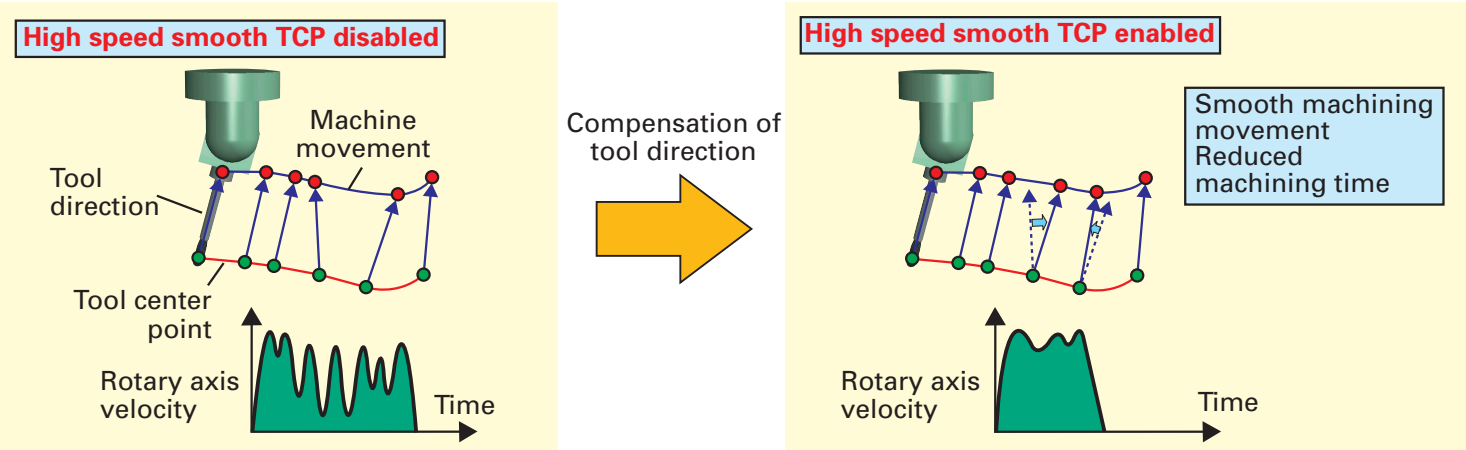
Tool path with time based waveform

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

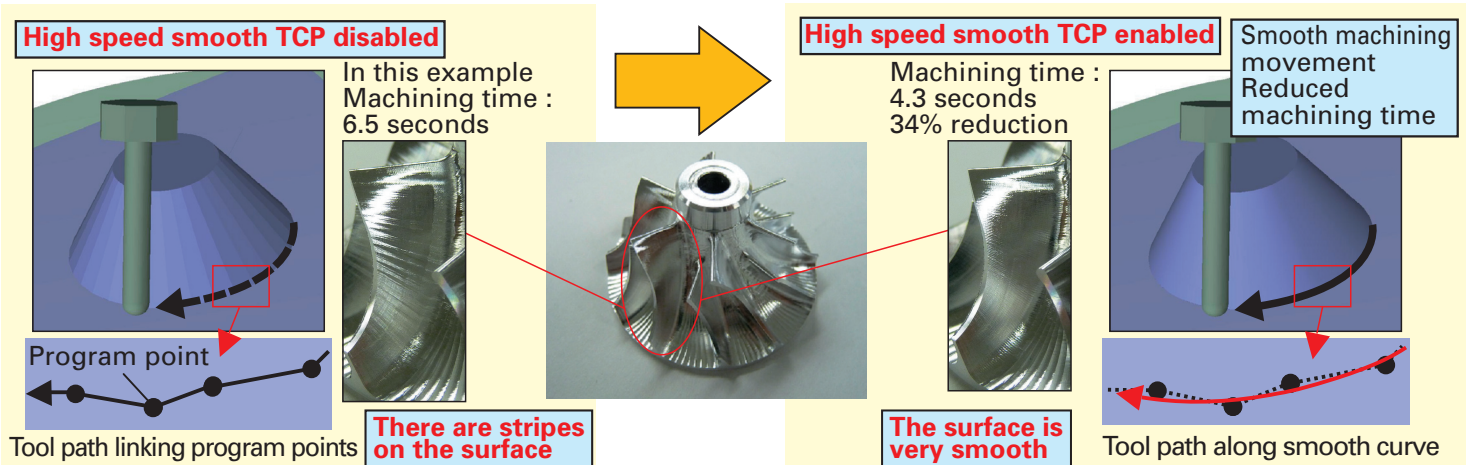
High-speed and smooth machining using tool center point [Patent approved]

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.

(※) C&G System, CNC software, Dassault Systems, DELCAM, DP Technology, Gibbs and Associates, OPEN MIND, SESCOI KK, Tebis AG, Vero International (Alphabetical order)

High-Speed, High-Quality Machining

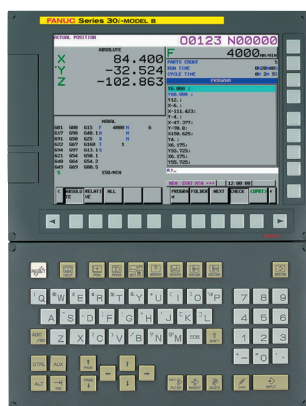
High-Quality Machining Realized for All Types of Machining from Part Machining to Complex Die Mold Machining

Nano CNC System

[Patent approved]

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

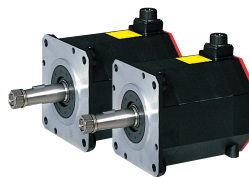
Nano interpolation that computes position commands for the digital servo control unit in nanometers, SERVO HRV Control and SPINDLE HRV Control for which the control cycle is made faster, and FANUC AC SERVO MOTOR αi series with a high-resolution pulse coder are used as standard and make up “Nano CNC System,”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



Nano Interpolation



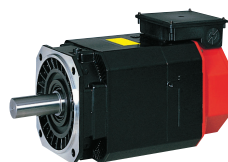
FANUC SERVO AMPLIFIER αi series



SERVO HRV Control
SPINDLE HRV Control

High-response and high-resolution pulse coder 16 million/rev

FANUC AC SERVO MOTOR αi series



FANUC AC SPINDLE MOTOR αi series

AI Contour Control I / AI Contour Control II

[Patent approved] 30i-B, 31i-B, 31i-B5, 32i-B Only

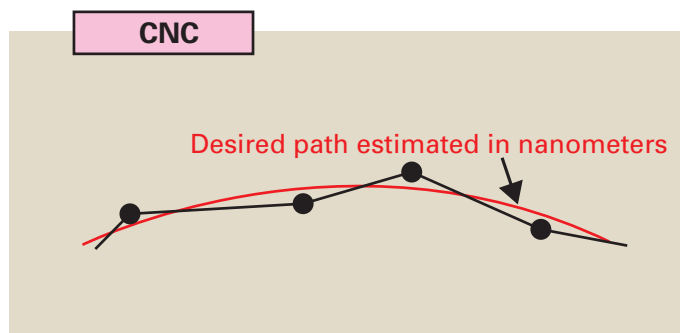
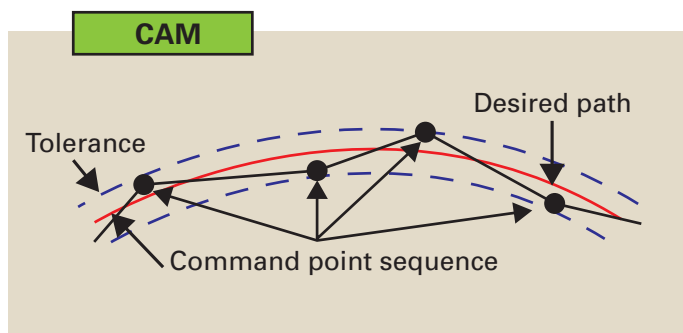
The specified figure is determined by programmed commands read in advance to control the feed rate and acceleration so that they are optimum for the machine performance. Corners and curves are automatically determined to enable machining at the feed rate optimum for the machining profile.

Nano Smoothing

[Patent approved] 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

[Patent approved]

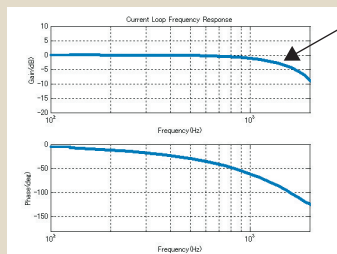
High-speed and high-precision SERVO HRV Control realizes a Nano CNC system. SERVO HRV4 Control (only for Series 30i-B, 31i-B and 31i-B5) is available, as an extension of SERVO HRV3 Control proven with high-speed, high-precision machining. Its features are listed below:

- Always using servo position commands specified in nanometers
- Using the αi Pulsecoder 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 Torsion Preview Control

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

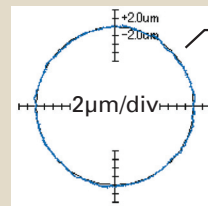
Each component of SERVO HRV Control has excellent performance, including response to commands and disturbance suppression characteristics. Current control, basis of servo control, shows a fast response of more than 1 kHz at the maximum. High-speed current control can realize higher-gain velocity control.

Example of Current Loop Frequency Response



Bandwidth 1400Hz

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



Error 0.5µm

HRV4 (Velocity gain 1600%)

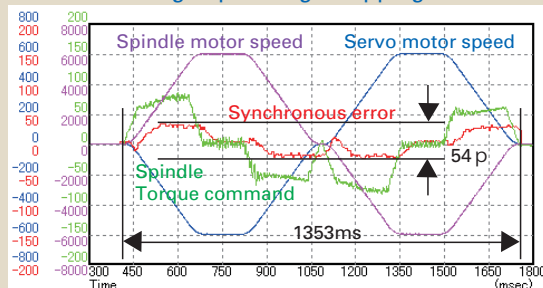
SPINDLE HRV (High Response Vector) Control

[Patent approved]

SPINDLE HRV Control realizes fast response and high precision of spindle. SPINDLE HRV4 Control is an extension of SPINDLE HRV3 Control which features high-precision control. Its features are listed below.

- 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 spindle as well as feed axis
- FSSB High-speed Rigid Tapping achieving both high speed and high accuracy with maximum acceleration power of spindle motor

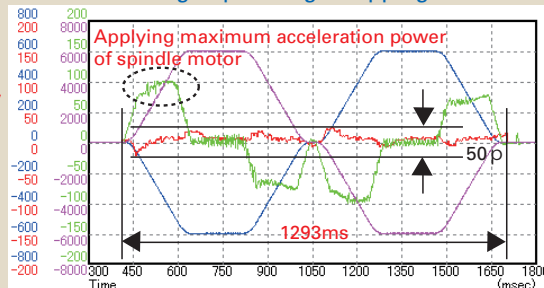
FSSB High-speed Rigid Tapping OFF



Keeping high accuracy

18.2% shorter time constant

FSSB High-speed Rigid Tapping ON



FSSB High-speed Rigid Tapping (Example)

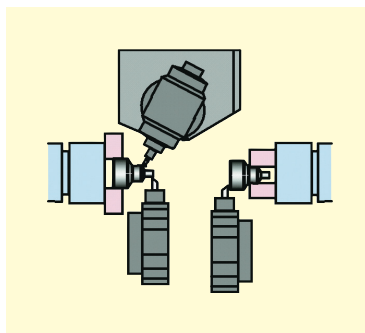
Flexible Support of Various Mechanical Configurations

Expanded multi-axis and multi-path functions

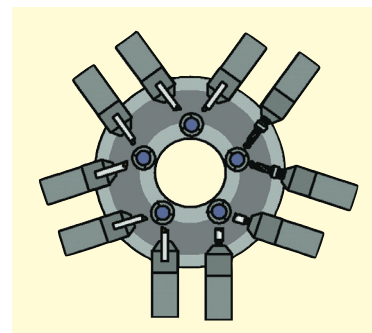
[Patent approved] 30i-B, 31i-B, 31i-B5, 32i-B Only

Enough functions for multi-axis and multi-path control

- 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.



Compound machine



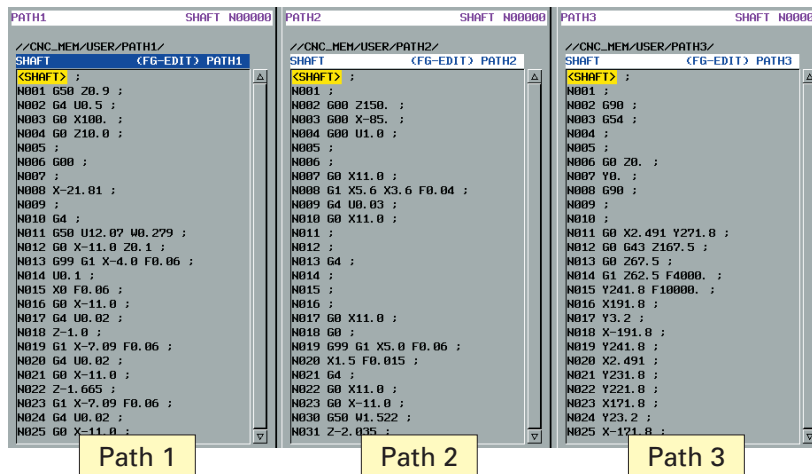
Automatic lathe

Multi-path program management function

[Patent approved] 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.



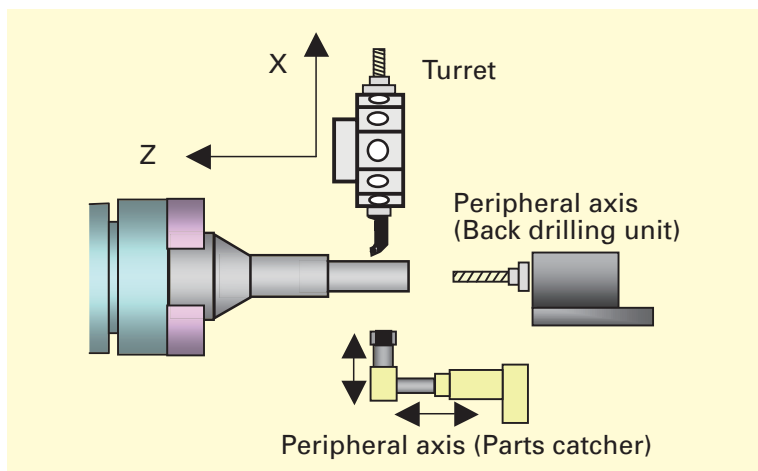
Editing all programs on one screen

Peripheral axis control

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

Easy control of peripheral axes by an NC program

- This function provides an operator an easy way to control a peripheral axes closely related to machining, such as a back drilling unit or a parts catcher, only by using an NC program.
- A peripheral axis controlling program can mix with an NC program for machining and run concurrently.
- A ladder program is no longer necessary to control a peripheral axis.



Excellent operation

FANUC MANUAL GUIDE *i*

[Patent approved] 30i-B, 31i-B, 31i-B5, 32i-B Only

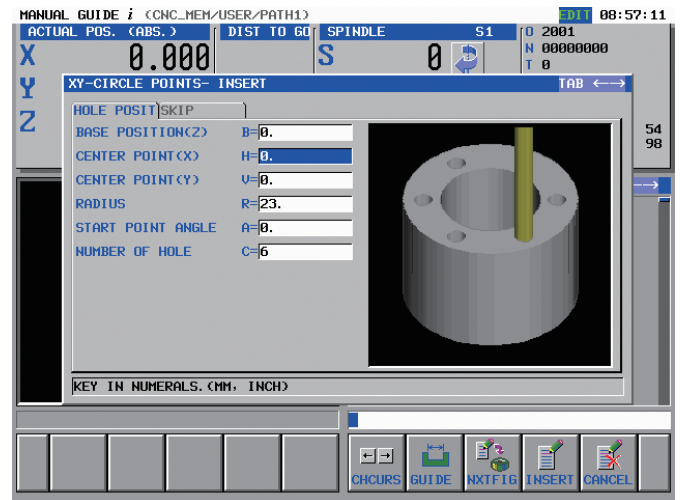
Integrated Operation & Programming Guidance with satisfactory simulation functions

This is a guidance function, which makes operations easy for programming through machining on all-in-one screen.

- Various machining cycles reduce programming time very much.
- Animation that simulates cycle motion immediately makes checking of input data easy.

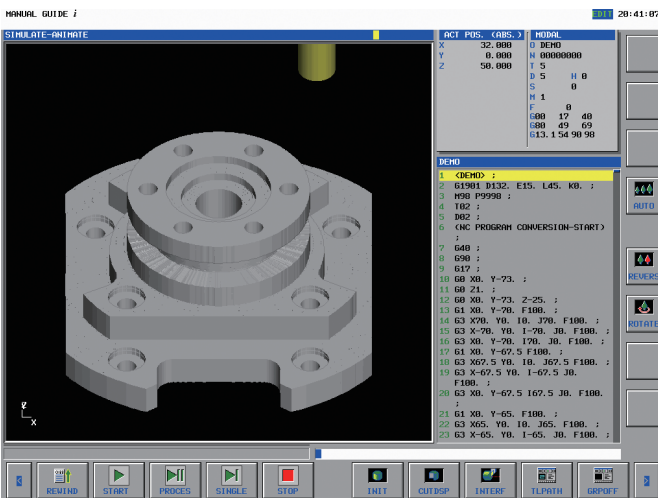


Cycle data input screen

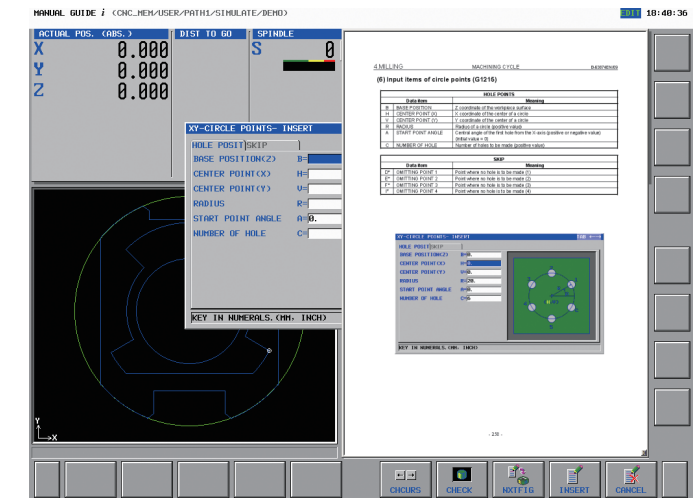


Checking input data by animation

- Program display during simulation enables to check tool motions strictly.



Simulation screen



Explanation for operation of the screen

- Various automatic measurements for tools and work-piece reduce set-up work.
- Machining center, lathe and compound machine are supported.

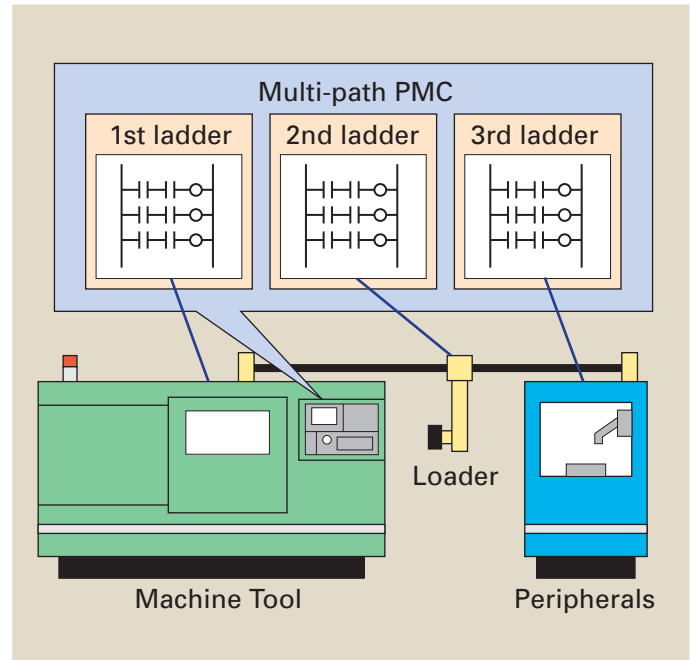
Easy Incorporation into Machine

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

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 (Max. 40 ladder programs)



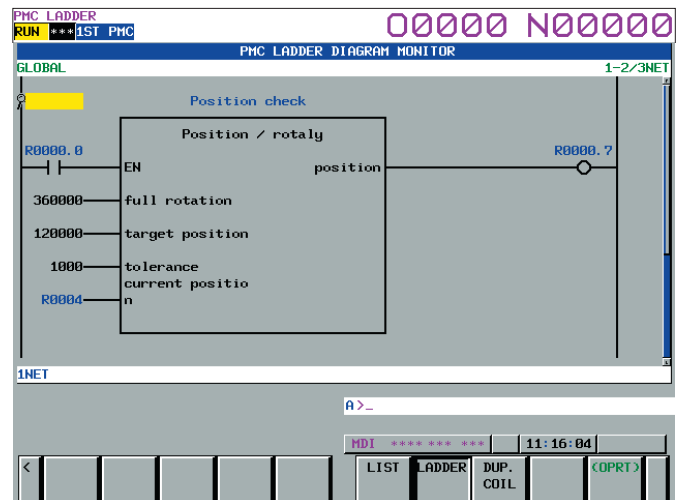
Multi-path PMC

[Patent approved]

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.

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.)



Function Block function

Dual Check Safety

[Patent approved]

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 \dot{i} , 1 channel I/O Link cable can configure safety function.

Plenty of Customize Functions

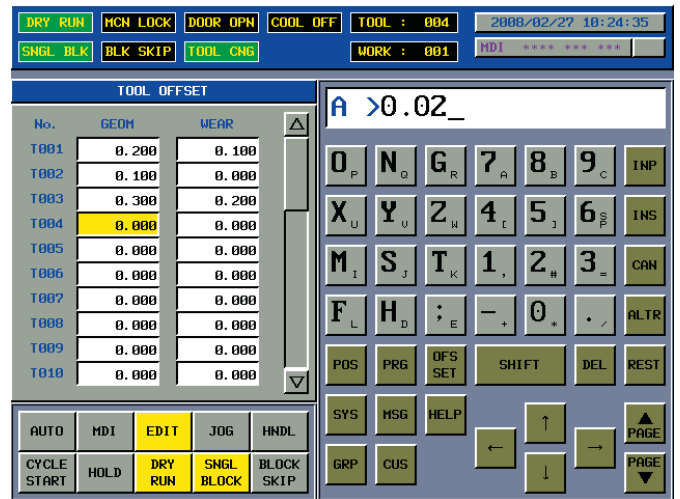
Customize functions are available, which allow machine tool builders to customize their own machine tools uniquely

- 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.

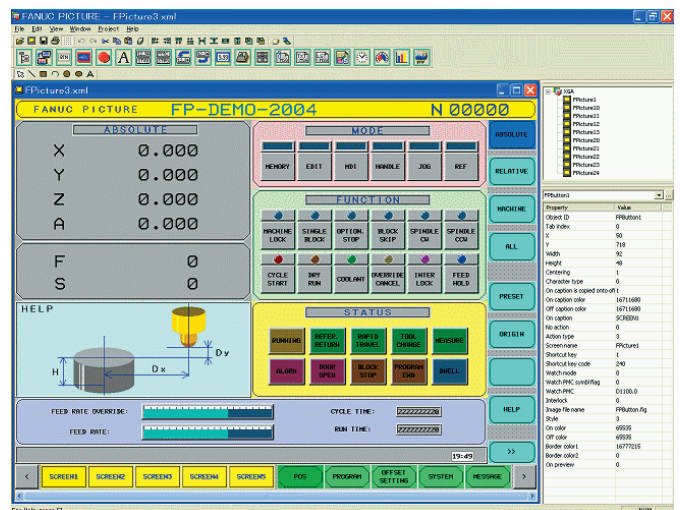
- C language is used for programming.
- Multiwindow display enables creation of pop-up menus.
- Operation screens using the touch panel can be created.
- In addition to standard ANSI functions, many functions are available for CNCs and PMCs.
- High-level tasks to which high execution priority is assigned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



Easy Maintenance

In case of a fault, quick solution of the problem is supported

Alarm history and Operation history

The history of key operation, PMC signal and alarm are recorded automatically and displayed.

When an alarm occurs, data such as modal information and position data can be recorded at the same time. This function is effective for investigation of the alarm.

OPERATION HISTORY			
00123 N0000			
No. 0343 / 4697			
No. DATA	No. DATA	No. DATA	No. DATA
343 1.[SOFT 9]		367 1.[SOFT 8]	383 1.[SOFT 9]
344 1.PS0009	354 2.SM0100	368 1.[SOFT 9]	384 1.[SYSTEM]
2004/03/21	2004/03/21	369 1.<RESET>	385 1.1
19:45:45	19:47:25	370 1.[SOFT 10]	386 1.3
345 1.<MESSAGE>	355 1.<RESET>	371 1.[RIGHT F]	387 1.1
346 1.<PROG>	356 1.<RESET>	372 1.[SOFT 9]	388 1.1
347 1.<CUR ↑>	357 1.<MESSAGE>	373 1.[SOFT 8]	389 1.7
348 1.<CUR ↑>	358 1.<RESET>	374 1.<RESET>	390 1.[SOFT 1]
349 1.<RESET>	359 1.<PROG>	375 1.[SOFT 8]	391 1.<CUR→>
350 1.<RESET>	360 1.[SOFT 9]	376 1.[SOFT 9]	392 1.<CUR→>
351 2004/03/21	361 1.<MESSAGE>	377 1.[RIGHT F]	393 1.1
19:46:05	362 1.<RESET>	378 1.[RIGHT F]	394 1.[INPUT]
352 2004/03/21	363 1.<PROG>	379 1.[RIGHT F]	395 1.[SYSTEM]
19:47:12	364 1.<RESET>	380 1.[SOFT 8]	396 1.<PROG>
353 1.SM0100	365 1.[SOFT 6]	381 1.<RESET>	397 1.<RESET>
2004/03/21	366 1.[SOFT 7]	382 1.[RIGHT F]	

Trouble Diagnosis Function [Patent approved] Machine Alarm Diagnosis

The cause of an alarm can be diagnosed by answering questions displayed on Trouble Diagnosis Guidance Screen when an alarm occurs on CNC. As a result, down time can be shortened.

Moreover, the cause of original alarms and operator messages dependent on the machine which are made by MTB can be diagnosed also with question form.

This function appropriately informs the operator of a breakdown point, replacement of parts, and so on in the machine. These data can be made easily with PC tool.

ACTUAL POSITION	
00000 N00000	
ABSOLUTE	F
X 0.000	0 MM/MIN
Y 0.000	PARTS COUNT 0
Z 0.000	RUN TIME 0H 0M 0S
	CYCLE TIME 0H 0M 0S
	TROUBLE DGN. GUIDANCE
	NC-SV0410 01/01
	Xax:EXCESS ERROR (STOP)
	PROBABLE CAUSE :
	1. CHANGE LOAD LARGELY
	2. SEPARATE DETECTOR FAILURE
	3. SV AMP FAILURE
	GUIDANCE :
	Does TMD vibrate on trouble diagnosis graphic screen before the alarm occur?
	LATCHED
MODAL	
600 680 615 F	M
617 698 640.1 H	M
690 650 625 D	M
622 667 6160 T	
694 697 613.1 S	
621 654 650.1	
640 664 654.2	
649 669 680.5	
S	0/MIN

Excellent maintainability of hardware

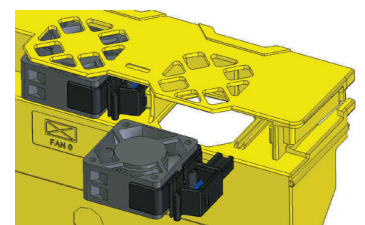
Easy-maintenance Fans and Battery in a cartridge

[Patent approved]

Fans and battery are stored in a cartridge and can be replaced quite easily, and maintainability is enhanced.

(LCD-mounted type CNC)

Fan motors are detachable from front side in case of the amplifier.

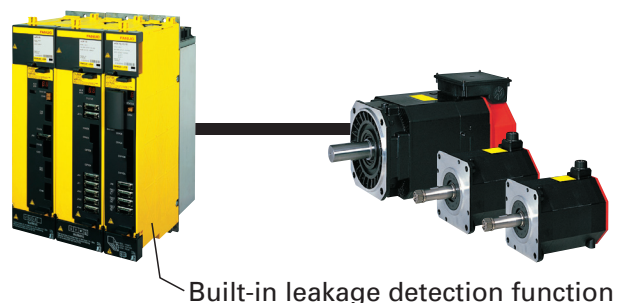


Preventive maintenance

[Patent approved]

Unexpected system down can be prevented by predictive trouble detection and warning indication.

- A decrease in rotational speed of each cooling fan motor of the CNC and the amplifier is detected as warning. Also the status of fan motors can be monitored on the fan monitor screen easily, and it is useful for preventive diagnosis.
- Insulation deterioration sometimes causes abnormal machine stop when cutting fluid infiltrates the motor, especially in a severe machining environment. The amplifier automatically measures insulation resistance of the motor, and gives a signal when insulation deteriorates to an abnormal level, thereby preventing machine from unexpected stop.



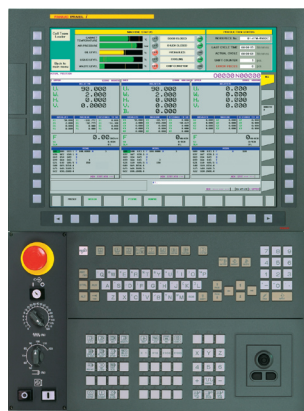
Built-in leakage detection function

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.

FANUC PANEL *i* [Patent approved]

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



FANUC PANEL *i*

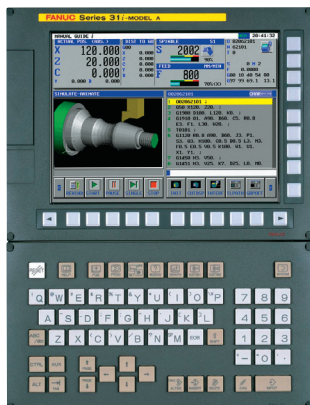


- Feature** Various commercial application software and hardware are available
- Application** Best fit for flexibility with computer applications, such as tool file management by utilizing database
- OS** Windows® Embedded Standard 2009
Windows® Embedded Standard 7

Personal computer function with Windows® CE [Patent approved] 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.

TexFAT : Transaction-safe extended FAT



Integrated CNC with LCD unit

- Feature** 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

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

Inquiries : Yamanakako-mura, Yamanashi,

Japan 401-0501

Phone : 81-555-84-6030

Fax : 81-555-84-5540



FANUC CORPORATION

• Headquarters Oshino-mura, Yamanashi 401-0597, Japan
Phone: 81-555-84-5555 Fax: 81-555-84-5512 <http://www.fanuc.co.jp>

• America and South America

FANUC FA AMERICA CORPORATION
FANUC FA Brazil Ltda

• Europe, the middle east and Africa

FANUC Luxembourg Corporation, S.A.
FANUC FA Deutschland GmbH
FANUC FA France
FANUC FA UK Ltd.
FANUC FA Italia S.r.l.
FANUC FA Iberia S.A.
FANUC FA Satis ve Servis Tic. Ltd. Sti.
FANUC FA Bulgaria Ltd.
FANUC FA CZ s.r.o.
FANUC FA Hungary Kft
FANUC SOUTH AFRICA (PTY) LIMITED
"FANUC AUTOMATION" LLC

Tel 1-847-898-5000 Fax 1-847-898-5001
Tel 55-11-3952-8888 Fax 55-11-3856-0848

Tel 352-727979-1 Fax 352-727979-214
Tel 49-7158-187400 Fax 49-7158-187455
Tel 33-1-4569-6333 Fax 33-1-4569-0325
Tel 44-1895-634182 Fax 44-1895-676140
Tel 39-02-45795-1 Fax 39-02-45795-250
Tel 34-943-74-82-90 Fax 34-943-74-44-21
Tel 90-216-651-1408 Fax 90-216-651-1405
Tel 359-2-963-3319 Fax 359-2-963-2873
Tel 420-234-072-131 Fax 420-234-072-110
Tel 36-23-507-400 Fax 36-23-507-401
Tel 27-11-392-3610 Fax 27-11-392-3615
Tel 7-495-956-9780 Fax 7-495-956-9785

FANUC FA Polska Sp. Zo.o.
FANUC FA Nordic AB
FANUC FA Switzerland GmbH.

• Asia and Oceania

KOREA FANUC CORPORATION
TAIWAN FANUC FA LIMITED
BEIJING-FANUC Mechatronics CO., LTD.
FANUC INDIA PRIVATE LIMITED
FANUC THAI LIMITED
FANUC MECHATRONICS (MALAYSIA) SDN. BHD.
PT. FANUC INDONESIA
FANUC SINGAPORE PTE. LTD.
FANUC OCEANIA PTY. LIMITED
FANUC PHILIPPINES CORPORATION
FANUC VIETNAM LIMITED

Tel 48-71-7766-170 Fax 48-71-7766-179
Tel 46-8-505-80-700 Fax 46-8-505-80-701
Tel 41-32-366-63-63 Fax 41-32-366-63-64

Tel 82-55-278-1200 Fax 82-55-284-9826
Tel 886-4-2359-0522 Fax 886-4-2359-0771
Tel 86-10-6298-4739 Fax 86-10-6298-4741
Tel 91-80-2852-0057 Fax 91-80-2852-0051
Tel 66-2-662-6111 Fax 66-2-662-6120
Tel 60-3-7628-0110 Fax 60-3-7628-0220
Tel 62-21-4584-7285 Fax 62-21-4584-7288
Tel 65-6-220-3911 Fax 65-6-225-0098
Tel 61-2-8822-4600 Fax 61-2-8822-4666
Tel 63-2-813-3155 Fax 63-2-813-3157
Tel 84-8-3824-6638 Fax 84-8-3824-6637

- All specifications are subject to change without notice.
- No part of this catalog may be reproduced in any form.
- The products in this catalog are controlled based on Japan's "Foreign Exchange and Foreign Trade Law". The export of Series 30i-B and 31i-B5 from Japan is subject to an export License by the government of Japan. Other models in this catalog may also be subject to export controls.
- Further, re-export to another country may be subject to the license of the government of the country from where the product is re-exported. Furthermore, the product may also be controlled by re-export regulations of the United States government.
- Should you wish to export or re-export these products, please contact FANUC for advice.