i Series CNC/SERVO

FA

The world standard CNC from FANUC powers a large installed base.

GENERAL CATALOG

FANUC

The world standard CNC from FANUC powers a large installed base.

FANUC *i* Series CNC/SERVO

State-of-the-Art Hardware

Ultra-thin, high-speed and high reliability are achieved by using state-of-the-art hardware, including ultra high-speed processors, high-speed CNC internal bus and optical fiber cables used for high-speed data transfer.
Using motors with the latest optimum magnetic circuit design and amplifiers with the latest low loss power device make machine tools high-speed, compact and energy saving.

Excellent Operability

0*i*-F and 30*i*-B series CNCs have common screens and operability. Various CNC data can be transferred easily by USB memory. An integrated guidance function helps an operator from creation of a part program to actual machining.

Various Network Functions

A management system using PCs or robots connected via Ethernet can be set up easily. Various types of field networks are also supported.

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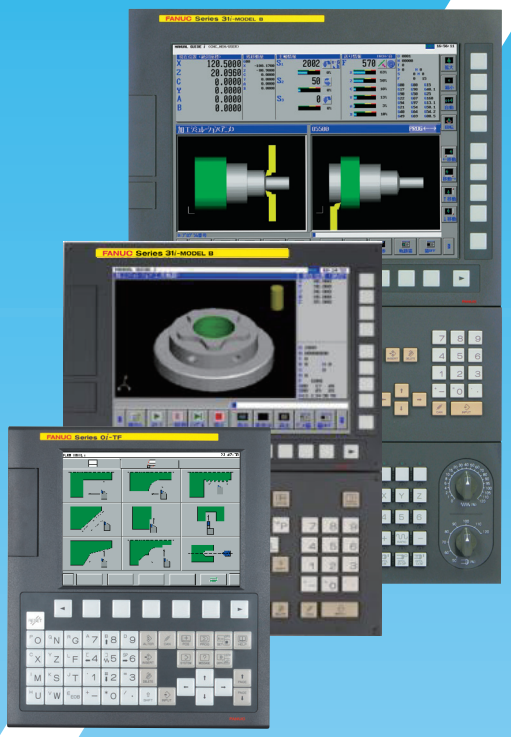

Minimizing
Downtime

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
- Various functions enable 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

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

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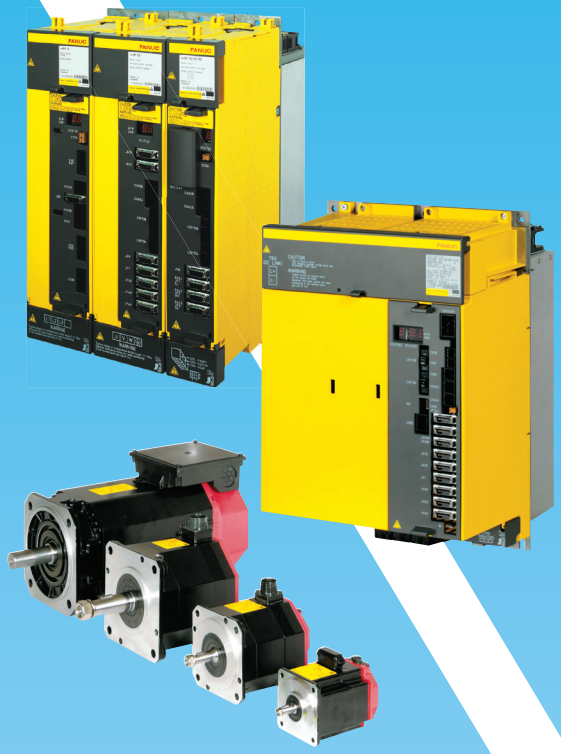


The World Standard CNC/SERVO from FANUC

From the first products shipped in 1958, after more than half a century, FANUC has now produced 3 million CNCs and 15 million servo motors. As the world standard CNC / SERVO, these products are used to power machines around the globe. FANUC is dedicated to continuing to develop products and technology that earns the trust of our customers worldwide.

Product Lineup

A wide range of CNCs for simple machine tools to the most complex, as well as for other general industrial machines. The motor lineup is engineered for small to large machines. Depending on the application, the best system is designed to optimize machine tool performance.

Worldwide Customer Service and Support

FANUC has a world-class customer service and support network with over 230 offices worldwide. FANUC provides the highest quality service with prompt response from a strategically located office nearest you.

Ease of Use

Ease of Use

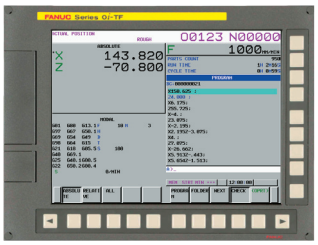
Pursuing Ease of Use
Abundant CNC Functions and Operability

- FANUC Platform enables the convenience of a PC in the CNC
- Direct editing and operation of CNC program on memory card
- Integrated Operation & Programming Guidance with extremely simplified operations

  FANUC MANUAL GUIDE *i*
- Training of CNC operations on a PC

  FANUC NCGuide
- 8.4/10.4/15 inch display units are available
- Loader is cost effective and easily configured with the new Loader Control function
- High-speed and large capacity PMC with Function Block function as standard and multi-path PMC
- Safety achieved by Dual Check Safety embedded into the CNC
- Customize functions for each unique machine
- Tuning functions help easily set-up machine tool

CNC Lineup



FANUC Series 0*i*-MODEL F

Max. number of paths : 2 paths
Max. total number of controlled axes : 9 axes/1path system, 11axes/2path system
Max. number of simultaneous controlled axes : 4 axes

Series 0*i*-MODEL F is a new model of 0*i* series CNC that is widely used in the world, it greatly enhances basic performance and has common operability of the 30*i*-B series CNC with the performance of the world's highest level.
The latest preventive maintenance functions and easy maintenance, in addition to high reliability, contribute to the improvement of minimizing downtime of machine tools.

FANUC Series 31*i*-MODEL B

Max. number of paths : 4 paths
Max. total number of controlled axes : 26 axes
Max. number of simultaneous controlled axes : 4 axes

With the world's highest level of performance, this is the core FANUC CNC model. With abundant functions and advanced control technology, it is ideal for high performance lathes and machining centers.

FANUC Series 31*i*-MODEL B5

Max. number of simultaneous controlled axes : 5 axes

In addition to the 31*i*-B features above, this model has simultaneous 5-axis machining functions and can machine at high-speed with high quality.

FANUC Series 32*i*-MODEL B

Max. number of paths : 2 paths
Max. total number of controlled axes : 16 axes
Max. number of simultaneous controlled axes : 4 axes

This is designed for the control of standard lathes and machining centers.

FANUC Series 30*i*-MODEL B

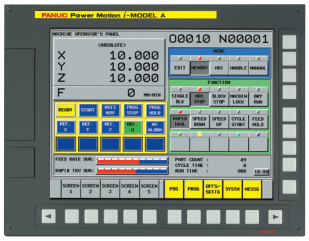
Max. number of paths : 10 paths
Max. total number of controlled axes : 40 axes
Max. number of simultaneous controlled axes : 24 axes

The 30*i*-B is an advanced CNC for multi-axis, multi-path machine tools. Due to the high number of controlled axes and paths, various machining processes can be executed at the same time. It has 5-axis machining functions and the flexibility to control various types of machine tools.

FANUC Series 35*i*-MODEL B

Max. number of paths : 4 paths
Max. total number of controlled axes : 20 axes
Max. number of simultaneous controlled axes : 4 axes

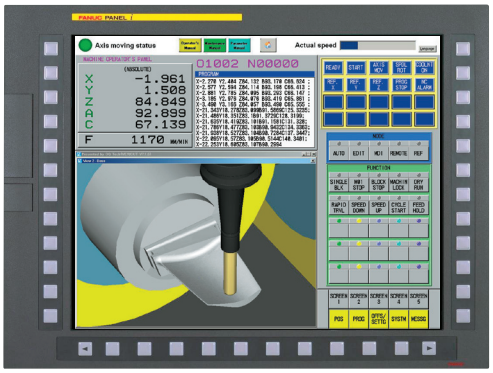
The 35*i*-B CNC is for transfer lines. It has powerful PMC functions and basic CNC functions. The 35*i*-B can execute simple machining at high speed.



FANUC Power Motion *i*-MODEL A

Max. number of paths : 4 paths
Max. total number of controlled axes : 32 axes
Max. number of simultaneous controlled axes : 4 axes

Power Motion *i*-A is a CNC suitable for industrial machines with multi-axis and multi-path control due to its Multi-axis High-response Function which enables quick start/stop of axes.



FANUC PANEL *i*

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

αi series SERVO

αi series SERVO is a high-speed, high precision and high efficiency servo system making machine tools high-speed, high precision, compact and energy saving. The wide range of 0.5kW to 220kW is designed for various types of machines.

FANUC AC SERVO MOTOR αi-B series
FANUC LARGE SERVO MOTOR αi-B series

Ultra smooth rotation and quick acceleration AC SERVO MOTOR is best suited for axis feed in machine tools.

FANUC AC SPINDLE MOTOR αi series
FANUC LARGE SPINDLE MOTOR αi series

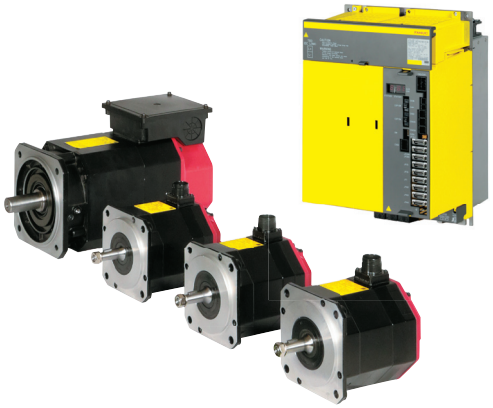
High performance AC SPINDLE MOTOR with high power at high speed is best suited for spindles in machine tools.

FANUC SERVO AMPLIFIER αi-B series

Compact and energy saving Servo Amplifier contributes to the reduction of the cabinet size.

βi series SERVO

βi series SERVO with high performance and value has suitable performance and functions for feed axis and spindle axis of machine tools.



FANUC AC SERVO MOTOR βi-B series

High performance and value AC SERVO MOTOR for feed axis of machine tools

FANUC AC SPINDLE MOTOR βi series

High performance and value AC SPINDLE MOTOR for spindle axis of machine tools

FANUC SERVO AMPLIFIER βiSVSP-B series

All-in-one (servo 3 axes + spindle 1 axis) packaged servo amplifier with high performance and value combined with Series 0i-MODEL F.

FANUC BUILT-IN SPINDLE MOTOR Bi series

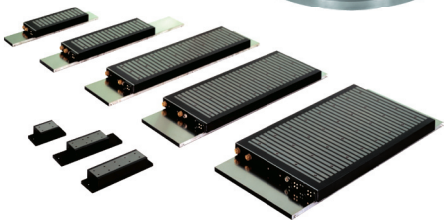
BiI series offers high power up to high-speed range due to the speed range switching control and is suitable for every kind of machine tool spindle.

BiS series offers large torque at low speed with compact motor size by strong neodymium magnets, and is suitable for turning or gear cutting machine.

FANUC SYNCHRONOUS BUILT-IN SERVO MOTOR DiS series

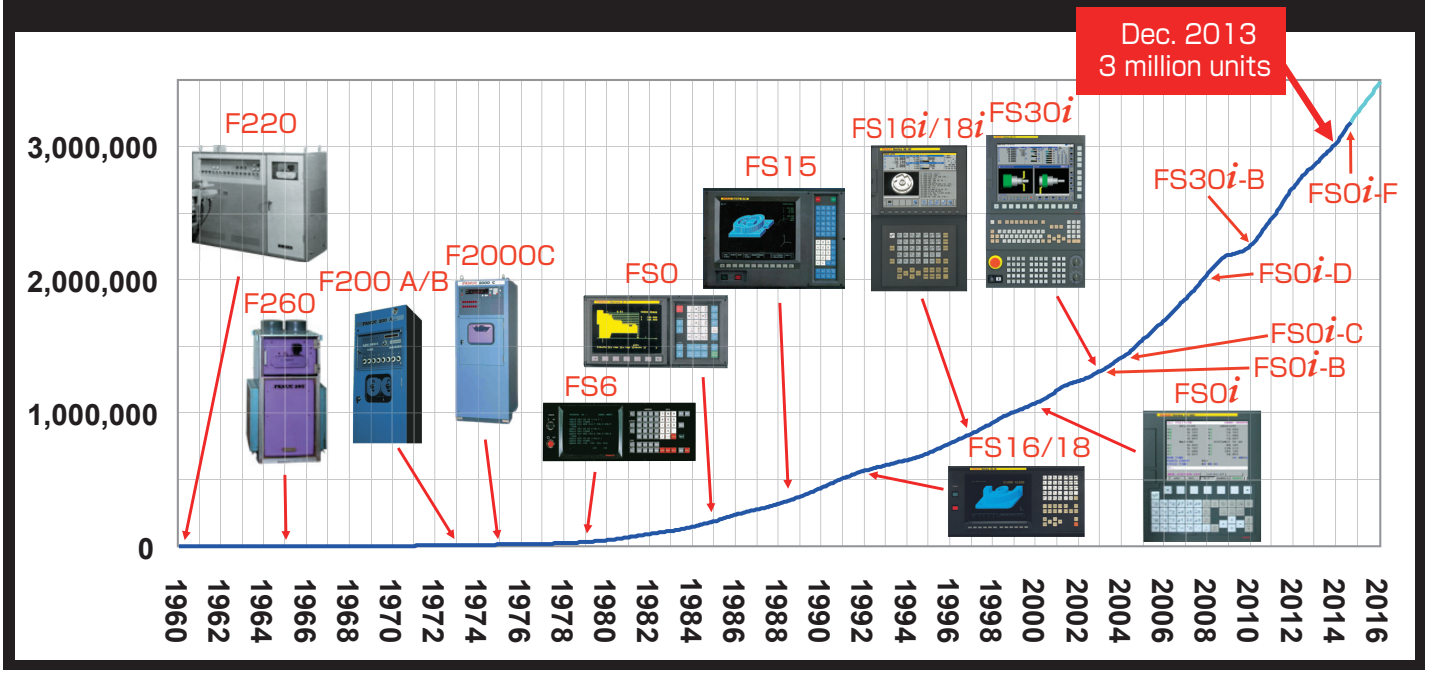
DiS series is a direct drive motor achieving large torque and smooth axis feed. It is designed to use with a rotary table in machine tools and a rotary axis in 5-axis machine tools to achieve high-speed and high precision – and also makes mechanical parts maintenance free.

FANUC LINEAR MOTOR LiS series



LiS series has the performance of 4m/s maximum speed and 30G maximum acceleration, enabling high precision by high gain servo, rigid long stroke, and maintenance free mechanism.

World's No.1 CNC Manufacturer



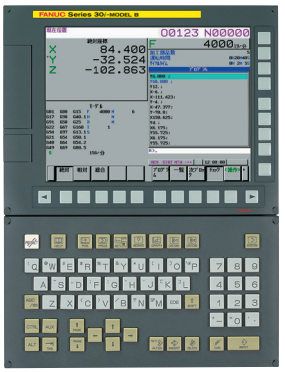
Nano CNC System

[Patent approved]

Machining Performance

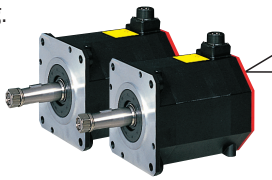
High quality machining achieved by coordination between high precision operation in nanometers and state-of-the-art servo technology

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 quality machining.



Nano Interpolation

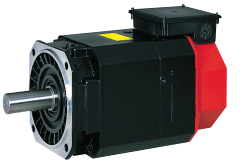
FANUC AC SERVO AMPLIFIER αi -B series



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

FANUC AC SERVO MOTOR αi-B series

SERVO HRV Control
SPINDLE HRV Control

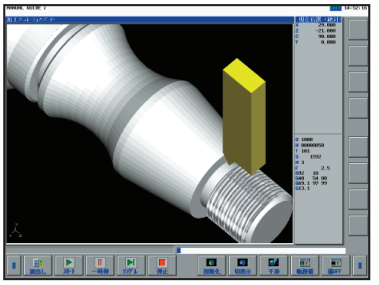


FANUC AC SPINDLE MOTOR αi series

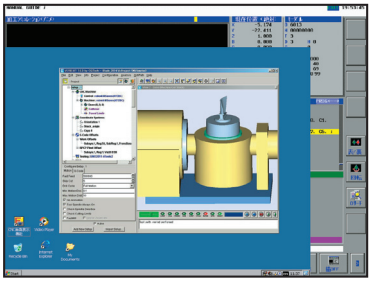
FANUC Platform

Ease of Use

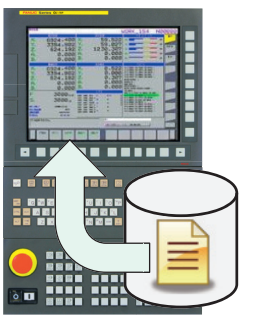
Convenient platform with useful functions of PC (e.g. high-speed graphics, remote desk top function, large memory, etc.) can be added on the CNC.



MANUAL GUIDE i
Scaling and rotation of animation

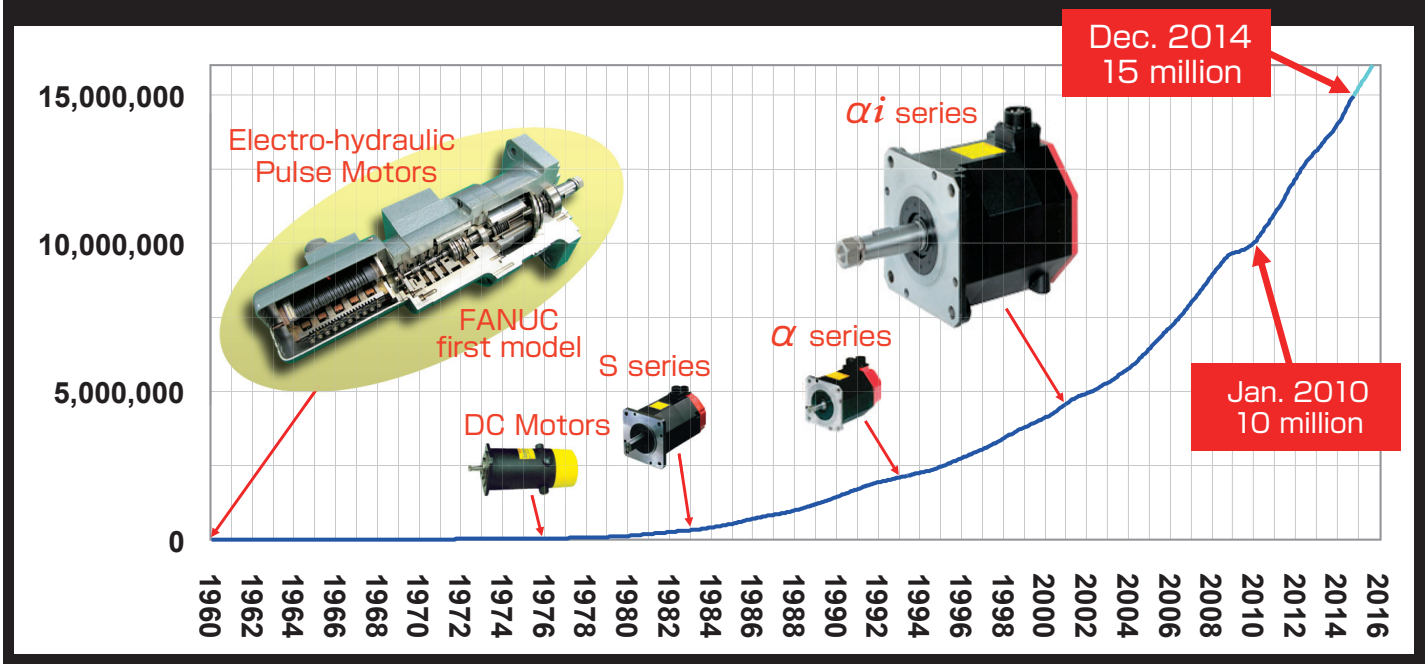


Remote Desk top Function
Operating the PC connected via Ethernet from CNC



Large Memory Operation

World's No.1 Servo Motor Manufacturer

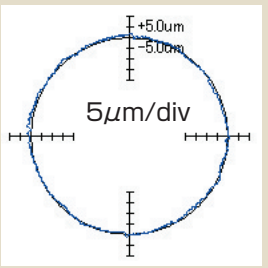


SERVO/SPINDLE HRV Control

[Patent approved] Machining Performance

High speed and high precision servo control

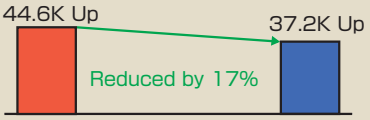
Due to smooth command by Nano CNC and high gain servo system by SERVO HRV Control, high-speed and high precision control with nanometer level is ensured.
Mechanical resonance can be suppressed by Automatic Following HRV Filter even though its frequency is changed.



Circle (Example) R100mm F30m/min

High precision and low heat generation of spindle

SPINDLE HRV Control achieves high response, high precision and high efficiency control for spindle of machine tools. Higher cycle current control reduces heat generation of high-speed spindle motors.



Former current control High cycle current control

Temperature rise of motor winding
at continuous Acc/Dec (Example)

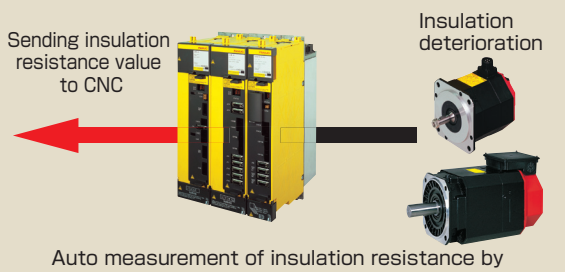
Preventive Maintenance

[Patent approved] Minimizing Downtime

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

Leakage Detection Function

Insulation deterioration sometimes causes abnormal machine stop when cutting fluid infiltrates the motor, especially in a severe machining environment. The leakage detection function built-in αi-B amplifier, as standard, automatically measures insulation resistance of the motor and detects insulation deterioration when it reaches an abnormal level, thereby preventing the machine from an unexpected stop.
In addition, the optional hardware unit is also available for systems which leakage detection function is not built-in.



Auto measurement of insulation resistance by
Leakage detection function

Cooling Fan Warning Function

A decrease in rotational speed of each cooling fan motor of the CNC and the amplifier is detected as a warning.
Also the status of fan motors can easily be monitored on the fan monitor screen, and it is useful for preventive diagnosis.

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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FA*i*(E)-01a, 2015.1, Printed in Japan