

Intelligent High Speed CNC Drill with Versatility

FANUC ROBODRILL

α -T21*i*Es/T21*i*E/T21*i*EL

α -T14*i*Es/T14*i*E/T14*i*EL

α -T21*i*Es_e/T21*i*E_e/T21*i*EL_e

α -T14*i*Es_e/T14*i*E_e/T14*i*EL_e



Intelligent High Speed CNC Drill with Versatility

FANUC ROBODRILL α -iE series

FANUC ROBODRILL α -iE series is a high speed versatile AI CNC drill with spindle taper size No. 30 for high precision and high efficiency production.

High speed, high precision, and ultimate efficiency

Nano CNC System

- Has a ultra-precision pulse coder for control with interpolation and feedback in nanometers

High acceleration positioning

- Acceleration over 1.5G

Rigid structure of machine mechanism

- High precision machining at high efficiency

AI contour control I & HRV control

- Greatly reduces profile errors caused by servo delays



Intelligent Control

AI contour control II

- Implements very smooth machined surfaces

AI tool life management

- Tool life management based on frequency and time of use, and cutting load

AI thermal displacement compensation

- Compensation for thermal displacement that may occur when the spindle and feed axis operate

Robot system

- From a robot station

Standard

- Program transfer

CIMP

- Transfers personal data

Cus

- Easy to equip

α -T21*i*Es/T21*i*Ese
 α -T14*i*Es/T14*i*Ese



980mm

Space saver

Stroke X300×Y300(+100)×Z330mm

α -T21*i*E/T21*i*Ee
 α -T14*i*E/T14*i*Ee



1,550mm

Best seller drill with No.30 Taper

Stroke X500×Y400×Z330mm

α -T21*i*EL/T21*i*ELe
 α -T14*i*EL/T14*i*ELe



2,100 mm

Wide stroke

Stroke X700×Y400×Z330mm

Tool turret	X-axis travel(Longitudinal movement of table)			Control unit
	300	500	700	
21Tools	α -T21 <i>i</i> Es	α -T21 <i>i</i> E	α -T21 <i>i</i> EL	Series 31 <i>i</i> -A5
14Tools	α -T14 <i>i</i> Es	α -T14 <i>i</i> E	α -T14 <i>i</i> EL	
21Tools	α -T21 <i>i</i> Ese	α -T21 <i>i</i> Ee	α -T21 <i>i</i> ELe	Series 31 <i>i</i> -A
14Tools	α -T14 <i>i</i> Ese	α -T14 <i>i</i> Ee	α -T14 <i>i</i> ELe	

Suitable for a wide range of parts machining
and three-dimensional machining

Robotization, Networking, and System integration

em

Standard package to a large-scale production line

Ethernet

Transfer and network building

LICITY[®] DRILL MONITOR *i*

machining programs and monitors the operating status from a computer

tom PMC function

creation of sequence programs suitable for your peripheral equipment

Operational Excellence

- MANUAL GUIDE *i*
- Quick editor
- Production control and tool counter
- Setup file

Safety Excellence

- Conformance on the European safety standards
- Dual check safety function
- Front door with an electromagnetic lock

Management Excellence

- ISO9001 certified
- ISO14001 certified

Versatile Applications to Meet Wide-variety of Machining Needs

Auto parts machining

Highly rigid mechanism achieves heavy machining efficiently in milling, boring and side cutting. Multi-face machining and contouring makes auto parts machining easier.



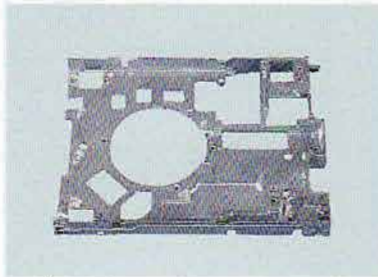
Crank case



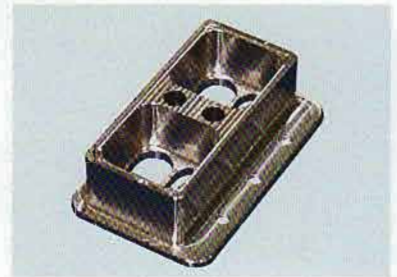
Exhaust manifold (FCD450)

Electrical parts and small parts

High speed axis feed, high speed spindle operation and optimal acceleration and deceleration control provides efficiency of machining and reduced cycle time. This series is also suitable for machining of electrical and small parts, from high-speed cutting of light metal such as aluminum to cutting of stainless steel.



3.5" HDD frame



Stainless steel parts

Three-dimensional machining

High-speed and High-precision machining for resin models, electrodes and precision parts, is possible with high speed processing. NURBS interpolation and super-minute line segment program provide smooth machined surfaces requiring little finishing, in a short time.



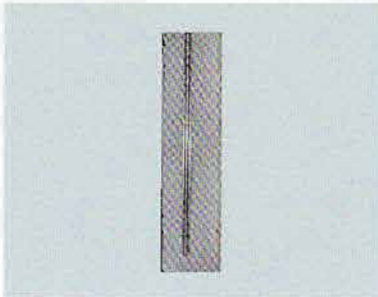
Resin model



Graphite electrode

Deep and small hole drilling

Deep hole over 30 times deeper than the hole diameter and small hole about 0.1mm at its diameter can be drilled.



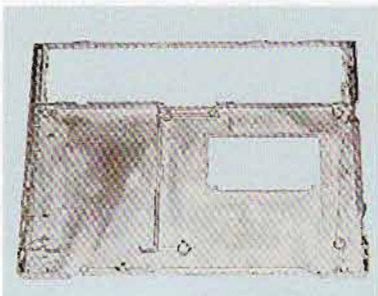
Deep hole ($\phi 3.3 \times 96\text{mm}$) drilling (section) (SUS430)



$\phi 16 \times 150\text{mm}$ (SCM420)

Deburring and chamfering

Precise high-speed contouring allows deburring and chamfering for sophisticated parts such as magnesium mold, die cast, forged or cast parts. This series is also available for machining the datum plane at the succeeding process.



Personal computer case (magnesium)



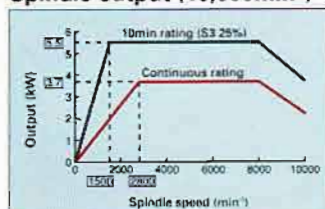
Gear (SCM420)

High-precision indexing is made possible by using a closed loop

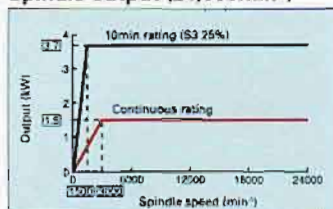
High speed and high power spindle

- Spindle is directly coupled with its motor.
- Least maintenance due to grease sealed bearings.
- The high speed and high precision ball bearing is used for the high-speed spindle.
(Some of touch switches may not be used according to the type of it.)

Spindle output (10,000min⁻¹)



Spindle output (24,000min⁻¹)



Spindle organization

Spindle	Coolant	BT tooling	DIN tooling	NC5 tooling	BIG-PLUS tooling
10,000min ⁻¹	External coolant	Possible (BT30)	Possible (DIN69871-A30)	Possible (NC5-46)	Possible (BBT30)
	Center through coolant	Possible (BT30)	Possible (DIN69871-A30)	Possible (NC5-46)	Possible (BBT30)
24,000min ⁻¹	External coolant	Possible (BT30)	Possible (DIN69871-A30)	Impossible	Possible (BBT30)
	Center through coolant	Possible (BT30)	Possible (DIN69871-A30)	Impossible	Possible (BBT30)

Compact, very rigid basic structure and high-speed, fast-acceleration axis feed

- Rapid traverse speed :
54m/min with FS31i-A5/ 48m/min with FS31i-A
- Max. Acceleration :
over 1.5G with FS31i-A5/ over 1.3G with FS31i-A
- Z-axis travel : 330mm

X-axis travel	Y-axis travel	Table working space	Table loading capacity
300mm	300+100(*)mm	630×330mm	150kg
500mm	400mm	650×400mm	250kg
700mm	400mm	850×410mm	250kg

(*) The additional amount of 100 mm is provided for improving approach characteristics during work.

High speed rigid tapping

- Max tapping up to 8,000min⁻¹ (at 24,000min⁻¹ spindle)/5,000min⁻¹ (at 10,000min⁻¹ spindle)
- Reduced tapping cycle time by quick extraction with override up to 20 times.

Superior performance for machining

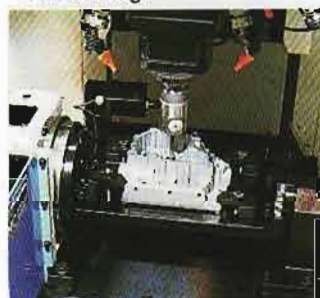
Versatile machining is possible including drilling, tapping, milling and profiling.

A machining sample with 10,000min⁻¹ spindle (*1)

Workpiece	Medium carbon steel	Gray cast iron	Aluminium alloy die casting	Workpiece	Medium carbon steel	Gray cast iron	Aluminium alloy die casting
Drill diameter	25 dia.	25 dia.	30 dia.	Tap size	M16	M20	M24
Drill material	HSS	HSS	HSS	Tap pitch	2	2.5	3
Spindle Speed S	318	382	637	Spindle Speed S	298	264	219
Feedrate F (*2)	48	115	255	Feedrate F (*2)	596	660	657
Coolant	Water-immiscible cutting fluid	Emulsion type water-miscible cutting fluid		Coolant	Water-immiscible cutting fluid	Emulsion type water-miscible cutting fluid	
Load meter %	140	140	140	Tolerance class			6H

Simultaneous 4-/5-axis machining

- Additional 1-/2-axis control can be added to enable simultaneous contour control of up to 4 or 5 axes.
- High-precision indexing is made possible by using a closed loop.
- With the FANUC Series 31i-A5, One or two additional axes can be added.
- With the FANUC Series 31i-A, One additional axes can be added.
- An index table can be used to enable multi-surface machining.



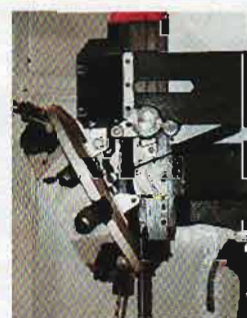
Four-face machining using an additional axis and an index table
Valve body cover (ADC12)



Three-dimensional contouring using two additional axes and a tilting index table
Impeller (Aluminum alloy)

High speed and high reliable tool change

- Simple and reliable proprietary tool turret mechanism
- Tool changing time (cut to cut) :
1.8sec.
- Models for 21 tools and for 14 tools are available.



Enhanced high speed and high acceleration spindle reduces machining cycle time significantly.

A machining sample with 24,000min⁻¹ spindle (*1)

Workpiece	Medium carbon steel	Aluminium alloy die casting	Workpiece	Medium carbon steel	Aluminium alloy die casting
Drill diameter	20 dia.	22 dia.	Tap size	M16	M24
Drill material	HSS	HSS	Tap pitch	2	3
Spindle Speed S	398	1012	Spindle Speed S	298	219
Feedrate F (*2)	40	253	Feedrate F (*2)	596	657
Coolant	Water-immiscible cutting fluid	Emulsion type water-miscible cutting fluid	Coolant	Water-immiscible cutting fluid	Emulsion type water-miscible cutting fluid
Load meter %	140	125	Tolerance class		6H

(*1) Sample data may vary on machining conditions

(*2) Unit : mm/min

Intelligent Control

High-speed control

Bell-shaped acceleration/deceleration, in-position width switching for rapid traverse/cutting feed, rapid traverse overlapping, and other control functions, as well as AI contour control I for reading 30 blocks in advance, optimize axis motion and reduce machining cycle time.

Optimal acceleration/deceleration

During positioning, acceleration/deceleration is optimally controlled according to the torque and speed characteristics of the motor.

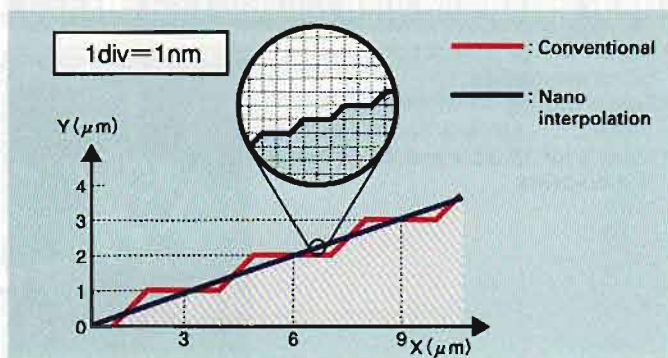
Making full use of the motor characteristics at a low speed reduces positioning (rapid traverse) time, resulting in reduction in machining cycle time.

HRV control

The latest and quick response servo motor α is series with an ultra-precision pulse coder of 16,000,000pulse/rev resolution is adopted. And a combination of HRV control, which are leading-edge digital servo/spindle control technologies, reduces possible servo delay and allows the least tracking error on high-speed machining.

Nano interpolation

Nano-interpolation is ultra-precision interpolation which calculates a position command to be transmitted to the digital servo in nanometers (nm) even when the unit used for the command in the program is μm . Together with nano-feedback by the ultra-precision pulse coder with a resolution of 16,000,000 pulses/rev., nano-interpolation implements very smooth movement to improve the precision of machined surfaces.



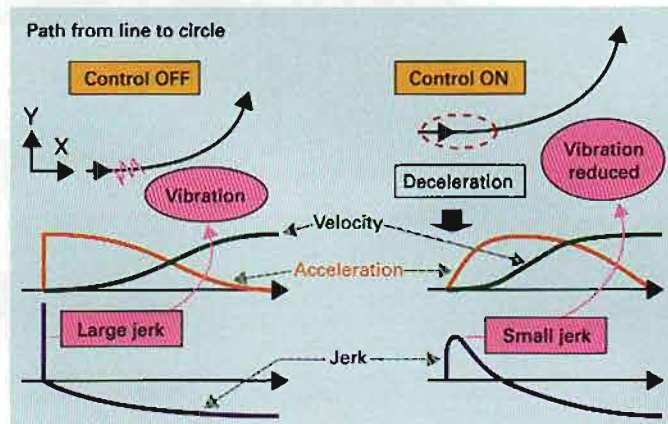
AI contour control II (option)

AI contour control II implements high-speed, high-precision machining by reading 200 blocks in advance for acceleration/deceleration control.

The number of blocks to be read in advance can be increased, thereby enabling up to 1,000 blocks to be read in advance for acceleration/deceleration control. This enables high-speed, high-precision machining without feedrate variations even for a program consisting of super-minute line segments. Nano-interpolation can be used to obtain smooth machined surfaces requiring little finishing.

Jerk Control (option)

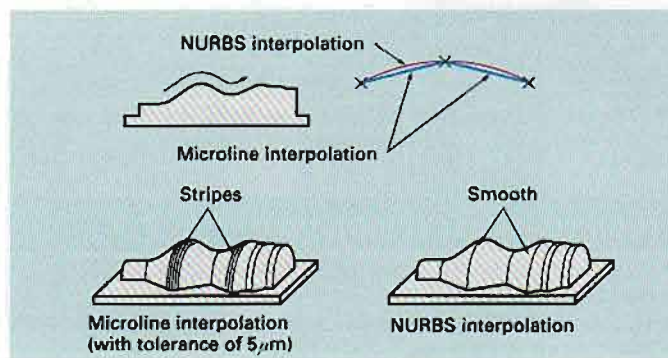
Mechanical shock during machining is reduced more than ever before by performing acceleration/deceleration control (smooth bell-shaped acceleration/deceleration before interpolation) that keeps a low level of jerk, which is the rate of change of acceleration with respect to time. In a machining program, a portion in which a specified profile is smooth but significant change in acceleration causes mechanical shock is automatically determined, and controlled so that a suitable speed is achieved.



NURBS interpolation (option)

NURBS curves, which have become widespread as a method of representing free curves, can be specified in a program. High-precision interpolation is performed on each NURBS curve so that a smooth machined surface very close to the designed profile can be obtained. The size of a program can also be reduced as compared with that of a program consisting of minute straight line commands.

Note) CAM system for programming is required to support the NURBS interpolation



Nano-smoothing (option)

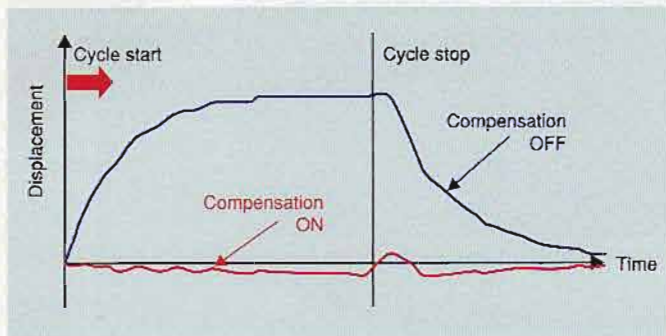
From a program consisting of minute line segments created with a CAD/CAM system, the original curved surface is estimated as NURBS curves. The generated NURBS curves are interpolated in nanometers, so that a smooth machined surface close to the designed profile can be obtained, thereby reducing the number of hand finishing process steps.

Fast data server (option)

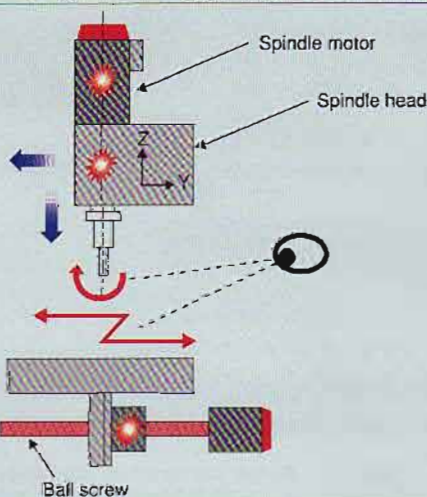
A huge program for three-dimensional machining that contains continuous settings for small amounts of travel can be stored on the ATA flash card built into the fast data server, and can be used for high-speed machining. DNC operation can also be performed from a personal computer. Memory-based operation can be performed using macro statements and subprogram calls from the ATA flash card. Programs stored on the ATA flash card can be edited.

AI thermal displacement compensation

Compensation for thermal displacement is carried out at real time by monitoring the operation status of the spindle and feed axis and estimating an elongation along the each axes. (The precision of compensation varies with the operating conditions.)



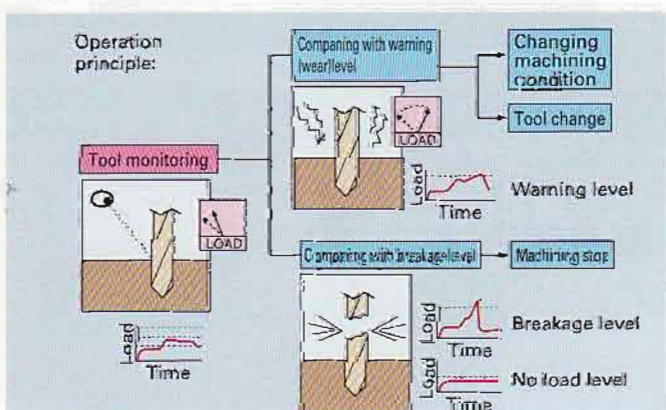
Monitor the operation status of the X-, Y-, and Z-axes and spindle



AI tool life management / AI tool monitoring (option)

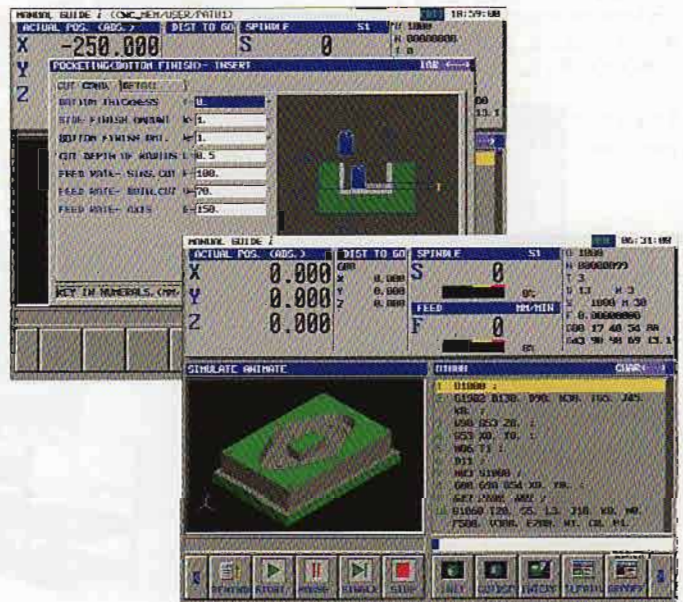
The tool life management traces tool status such as frequency or time of use and replaces a tool when its usage exceeds the preset value. This prevents any trouble on cutting tools such as broken drill.

The built-in AI tool monitor watches actual load on drilling by detecting directly external disturbance load of the spindle motor. This provides superior tool management. (For usable ranges, contact FANUC.)



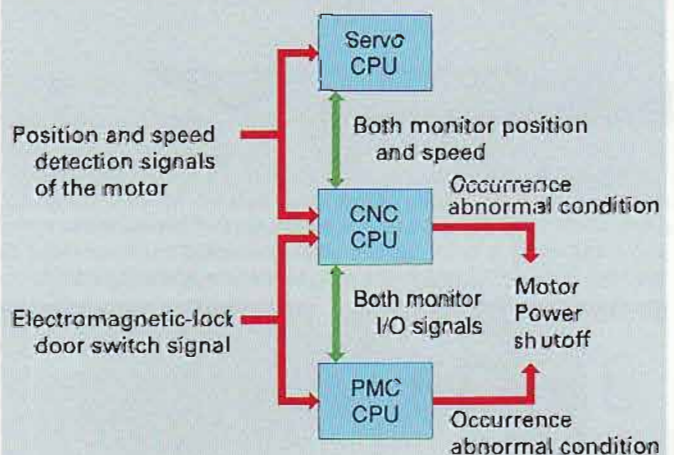
MANUAL GUIDE i

MANUAL GUIDE i can be used to perform all operations from creation of a program to machining on one screen simply. A conventional program using G codes can be created simply using a graphical menu guide. Hole position specification and pocketing can be entered simply without calculations. High-speed real animated simulation with a solid model allows simple machining simulation.



Safety

A dual check safety function is installed, which doubly monitors feedrate, position, and safety signals using two CPUs. Neither special operation nor waiting time for safety check is required. Together with the electromagnetic lock mechanism on each door, this function ensures the safety of the operators without reducing efficiency. The category-3 safety level defined in EN 954-1 is ensured.



CE Mark (for EU countries) (option)

Changes (such as adding power noise filters) made in addition to the improved safety mentioned above had the product certified by third-party certification institutes.

Robotization, Networking and System Integration

Robot standard package

A robot standard package with a versatile mini-robot FANUC Robot LR Mate 100iB/200iB installed can easily implement a compact machining cell with low-price that enables processes such as loading/unloading and deburring of workpieces.

- The package of two ROBODRILLS and one robot is also available.
- With the robot operation screen of the ROBODRILL, you can operate a robot, open and close a robot hand, open and close an automatic side door and view the system status.
- Interlocking with safety consideration is incorporated in ROBODRILL.

Thanks to the multiple robots, machining system without any peripheral devices is also available.



Robot operation screen



Example of robot hand



Robot standard package with LR Mate 100iB



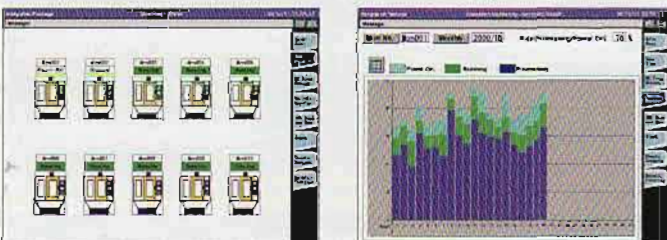
Machining robot system

Network

The Ethernet function is available as standard communication for network.



Centralized management package **CIMPLICITY® DRILL MONITOR i** can be used on a personal computer connected to the network to manage ROBODRILL programs and monitor the operating status.



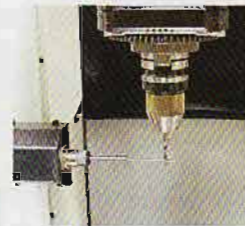
Equipment for system configuration

Centering system



Probe

Broken tool detection unit

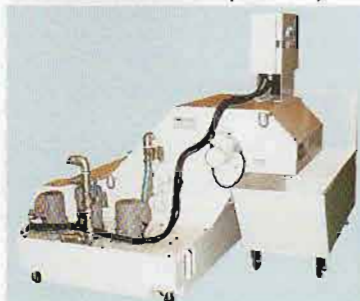


Receiver

Mist separator



Coolant unit with chip conveyor



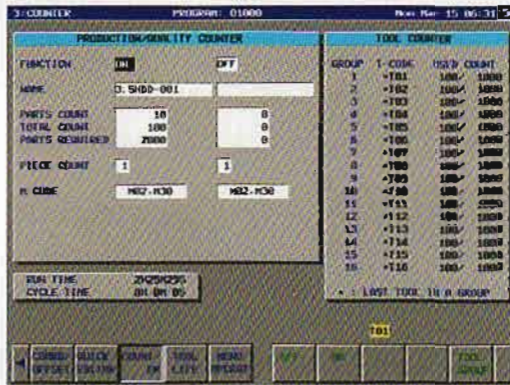
2-pallet type pallet changer installed at side



Easy Operation

Production control and tool counter

Two production monitoring counters and two accumulation counters are applicable for recognition of scheduled parts production, status display, termination of machining and so on. These counters are indispensable for production. The use status of tools with the tool life management function can also be checked using the tool counter on the same screen.



Setup file

Initial setting information can be stored such as parts coordinate system, offsets values, program identification and so on. Automated initialization for operation is available simply by calling a set of information for ease of use.

Quick editor

Quick Editor used to create or edit a program is an easy-to-use full-screen editor, which can perform copy, move, search, cursor jump, and other operations like an editor for PCs. The guidance input function for G codes or M codes allows you to edit a program efficiently. Effective edit of programming is also possible through on-screen selection of G and M codes with guidance.



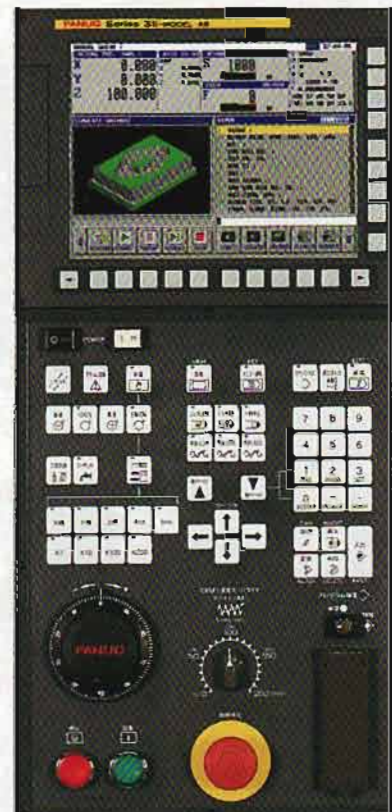
Program management

Large-sized program memory can be easily managed based on program folders and file names (each having up to 32 characters).

Compact operator's panel and 10.4" color LCD

Standard display with 10.4" color LCD integrated with the operator panel features ease of use with least key stroke operations. The soft keys vertically provided to the right of the display unit can be used as machine operation menu keys.

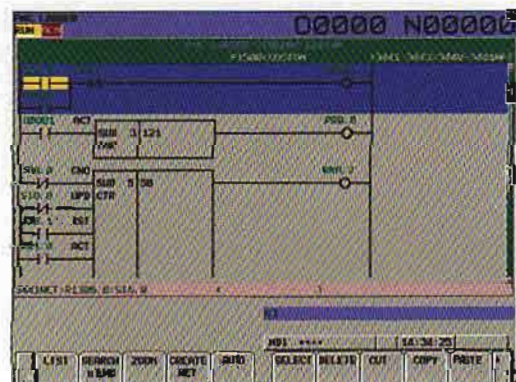
In a memory card slot located at the side of the display unit, a compact flash card can be inserted to perform DNC operation or to enable the card to be used as a large-sized program memory device.



* The above photo is that for α -T21/E and α -T14/E

Custom PMC

The custom PMC function which allows simple control of peripheral devices is installed as standard. A sequence program can be created and edited easily on a screen with symbols. This function provides 16 input and 16 output signals as basic features and also available up to 352 input and 256 output signals in total as optional features.



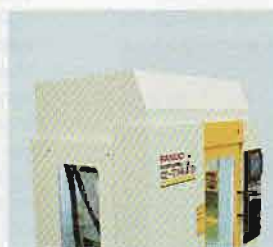
Accessory (option)



Wide opening door :
730mm for α -T14iE



Air blow for chips



Top cover



Signal lamp



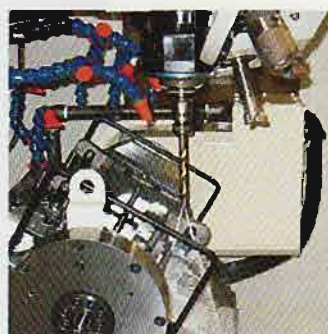
Tool length switch for
automatic measurement



Coolant unit (tank)



Coolant unit with chip flush
(spot gun provided)



Center through coolant



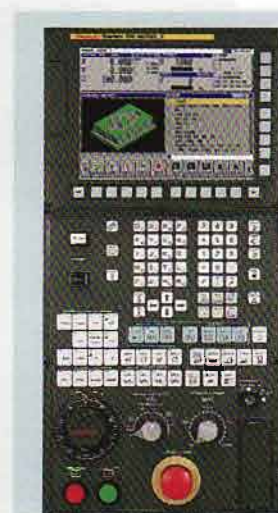
Automatic fire extinguisher
(Note)



Illumination



Intermittent central
lubrication

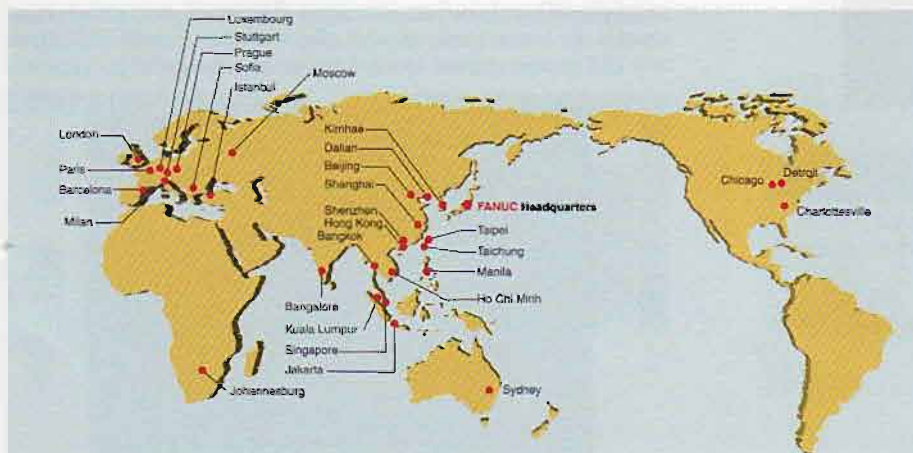


Operation panel with
alphabetical key

(NOTE) When machining a flammable material such as resin, select the automatic fire control equipment against fire hazards. For the materials covered by the automatic fire control equipment, contact the ROBODRILL sales personnel.

Worldwide customer service and support

FANUC operates customer service and support system anywhere in the world through subsidiaries, affiliates and distributor partners. FANUC provides the highest quality service with the quickest response at the location nearest you.



FANUC training center

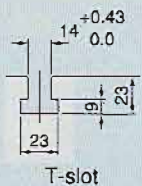
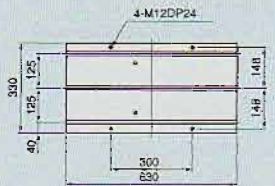
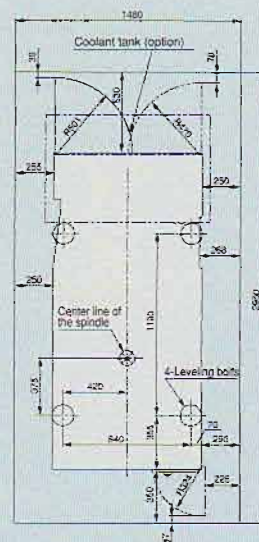
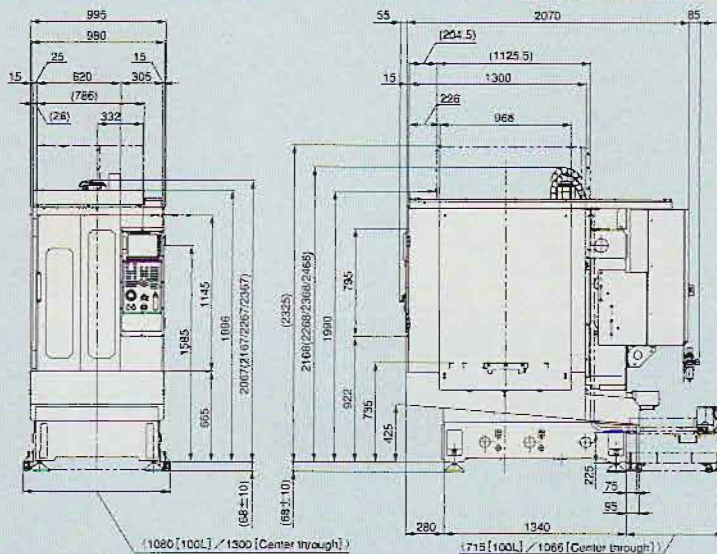
FANUC Training Center operates training programs on FANUC ROBODRILL *i* series throughout the year, which focus on practical operations and programming with machining know how and maintenance.



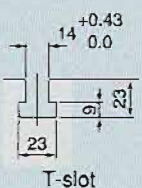
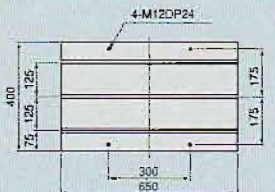
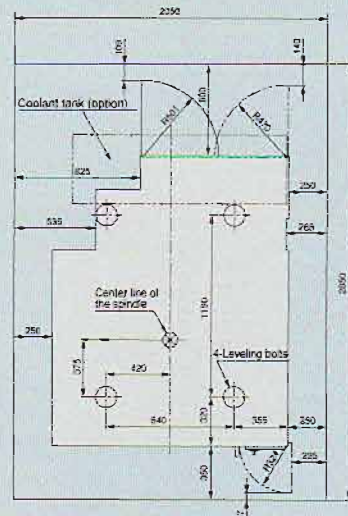
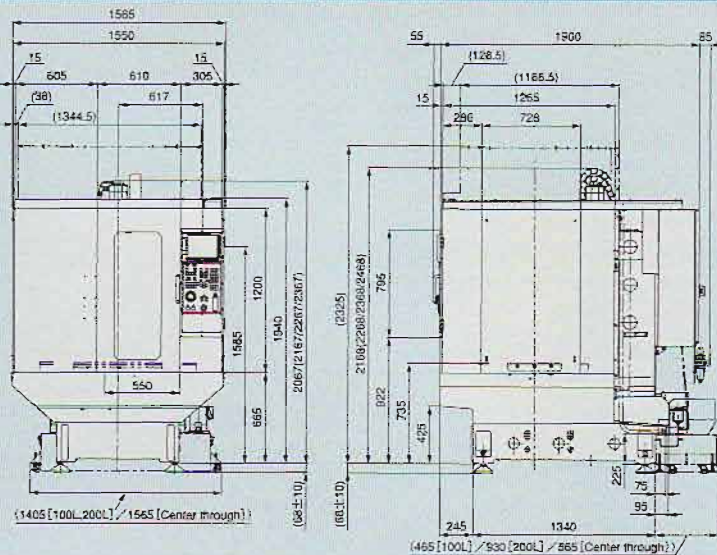
Inquiries : Yamanakako-mura,
Yamanashi, Japan 401-0501
Phone : 81-555-84-6030 Fax : 81-555-84-5540

Outer dimensions

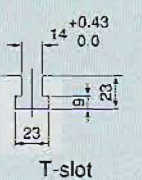
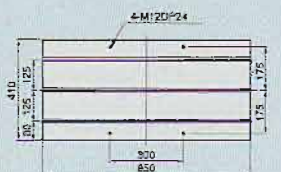
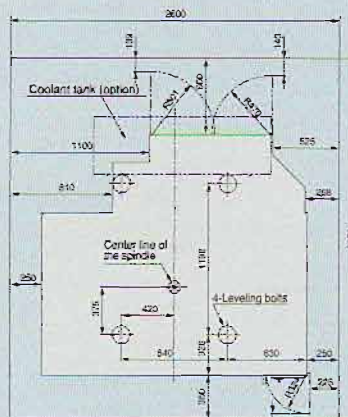
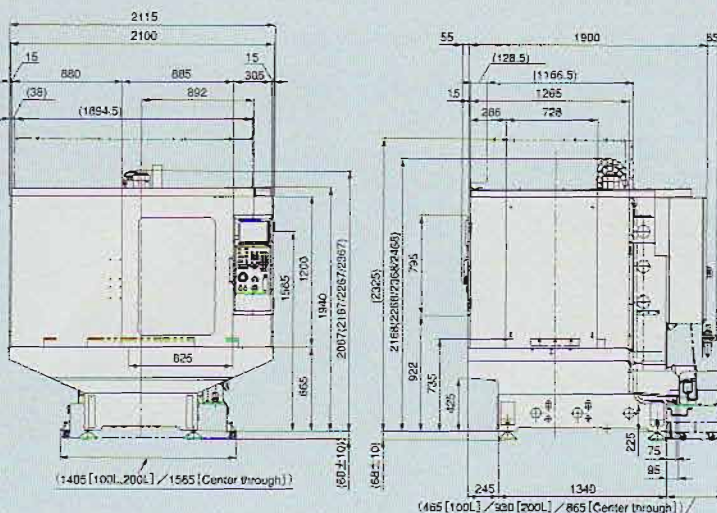
α -T21iEs/T14iEs/T21iEs ϕ /T14iEs ϕ



α -T21iE/T14iE/T21iE ϕ /T14iE ϕ



α -T21iEL/T14iEL/T21iEL ϕ /T14iEL ϕ



FANUC ROBODRILL α -i E series

Item		α -T21iEs/T21iEse α -T14iEs/T14iEse	α -T21iE/T21iEe α -T14iE/T14iEe	α -T21iEL/T21iELE α -T14iEL/T14iELE	
Machine (Standard)					
Capacity	X-axis travel (Longitudinal movement of table)	300mm	500mm	700mm	
	Y-axis travel (Cross movement of saddle)	300mm + 100mm	400mm		
	Z-axis travel (Vertical movement of spindle head)	330mm			
	Distance from table surface to spindle gage plane	150 to 480mm (When no high column is specified)			
Table	Working space (X-axis × Y-axis)	630 × 330mm	650 × 400mm	850 × 410mm	
	Capacity of workpiece mass	150kg (uniform load)	250kg (uniform load)		
	Working surface configuration	3T-slots, size 14mm pitch 125mm			
Spindle	Speed range	100~10,000min ⁻¹			
	Spindle gage (Call number)	7/24 taper No.30 (with air blow)			
Feedrate	Rapid traverse rate	54m/min (X,Y,Z) : α -T21iEs/T21iE/T21iEL/T14iEs/T14iE/T14iEL 48m/min (X,Y,Z) : α -T21iEse/T21iEe/T21iELE/T14iEse/T14iEe/T14iELE			
	Feedrate	1 to 30,000mm/min			
Turret	Tool change system	Turret type			
	Type of tooling	JIS B 6339-1998 BT30, MAS 403-1982 P30T-1 (45°)			
	Tool storage capacity	21tools : α -T21iEs/T21iE/T21iEL/T14iEs/T14iE/T14iEL 14tools : α -T14iEs/T14iE/T14iEL/T14iEse/T14iEe/T14iELE			
	Maximum tool diameter	80mm			
	Maximum tool length	200mm : α -T14iEs/T14iEse 190mm (Changed by specifications) : α -T21iEs/T21iEse	250mm (Changed by specifications)		
	Method of tool selection	Random shortest path			
	Maximum tool mass	2kg/tool (total mass : 22kg) / 3kg/tool (total mass : 33kg) : α -T21iEs/T21iE/T21iEL/T14iEs/T14iE/T14iEL 2kg/tool (total mass : 15kg) / 3kg/tool (total mass : 22kg) : α -T14iEs/T14iE/T14iEL/T14iEse/T14iEe/T14iELE			
	Tool changing time (Cut To Cut)	1.8 sec. (When 2kg/tool is specified)			
	Motors	Spindle drive motor	5.5kW (10min rating) / 3.7kW (continuous rating)		
	Accuracy	Single direction positioning accuracy(*1)	0.006/300mm : α -T21iEs/T21iE/T21iEL/T14iEs/T14iE/T14iEL 0.010/300mm : α -T21iEse/T21iEe/T21iELE/T14iEse/T14iEe/T14iELE		
Positioning repeatability (*2)		±0.002mm			
Numerical control (Standard) (Note) ☆ : α -T21iEs/T21iE/T21iEL/T14iEs/T14iE/T14iEL ※ : α -T21iEse/T21iEe/T21iELE/T14iEse/T14iEe/T14iELE					
- Control unit FANUC Series 31i-A5 (☆) - Control unit FANUC Series 31i-A (※) - Basic controlled axes 3 axes (X,Y,Z) - Simultaneously controlled axes (3 axes) - HRV control - Rapid traverse bell-shaped acceleration/deceleration - Rigid tapping (M29) - Manual handle feed - Part program storage size (512Kbyte) - Number of registerable programs (1000) - Optimum torque acceleration/deceleration - Back ground editing (Multi part program editing) - Extended part program editing - Quick editor - Control unit incorporated type display unit with 10.4"color LCD(*3) - Directory display of floppy cassette - Reader/puncher interface - Ethernet interface - Coordinate system selection (G92) - Workpiece coordinate system (G52~G59) - Addition of workpiece coordinate system 48 pairs (G54.1) - Return to reference point (G28) - Helical interpolation - Dual check safety - Sub program call (M98/M198)/M99) - Custom macro B (G65,G66/G67) - Canned cycles for drilling (G73,G74,G76,G81~G89/G90) - Coordinate system rotation (G68,G69) - Circular interpolation by R programming - Setup file - MANUAL GUIDE i (Included Measurement Cycle) - Dynamic graphic display - Playback - Retraction for rigid tapping - Compensation of thermal displacement (XYZ axes) - Skip function (G31) - Multi-step skip (G31 P1~4) - Tool compensation memory C - D/H code, Tool geometry/wear - Production control counter - AI contour control I - Stroke limit check before move - Stored stroke check 1 - Stored stroke check 2 (G22/G23) - Custom PMC					
Option (Note) Some options applicable only to certain machine model and configurations. ☆ : α -T21iEs/T21iE/T21iEL/T14iEs/T14iE/T14iEL					
- High column 100/200/300mm - High speed spindle 24,000min⁻¹ - Center through coolant - Double contact tooling (NC5-46/BBT30) - DIN Tooling (DIN 69871-A30) - Illumination - Signal lamp (3 lamps) - Tool length switch - Automatic oil lubricating - Centralized system of grease - Splashguard wide opening door : 730mm (α-T21iE/T14iE/T21iEL/T14iE) - Splashguard wide opening door : 1100mm (α-T21iEL/T14iEL/T21iELE/T14iELE) - Automatic front door opening/closing of splashguard - Automatic side door of splashguard - Side window of splashguard - Basic top cover of splashguard - Full-closed cover of splashguard - Tool pot cover - Coolant unit (Tank capacity : 100 (140)*7, 200L) - Coolant unit with chip flush (Tank capacity : 100 (140)*7, 200L) - Cleaning unit for tool taper shank - Air blow for chips - Automatic fire extinguisher - Additional controlled 1axis (Simultaneously controlled 4 axes) - Additional controlled 2axes (Simultaneously controlled 5 axes) (☆) - Single direction positioning (G80) - Cylindrical interpolation (G07.1) - Conical/spiral interpolation - NURBS interpolation (G06.2) - Jerk control - Tool center point control for 5-axis machining☆ - Tool radius compensation for 5-axis machining☆ 1-digit F code feed - Inverse time feed (G93) - Part program storage size (2Mbyte) - Number of registerable programs 4000 - Operation panel with alphabet key - Multi-language display - Fast data server (with ATA Flash Memory 160MB) - Memory card - ROBODRILL PROGRAM MANAGER2 (for personal computer) - Fast Ethernet board - CIMPLICITY® DRILL MONITOR i (for personal computer) - AI tool monitor - Tool position offset (G45~G48) - Addition of workpiece coordinate system 300 pairs (G54.1) - Scaling (G51/G50) - Figure copy (G72.1,G72.2) - Interruption type custom macro (M96/M97) - Peck drilling cycle for small deep holes - Programmable mirror image (G51.1/G50.1) 3-dimensional coordinate conversion (G68/G69) - Polar coordinate command (G16/G15) - AI contour control II - Look-ahead blocks expansion - Nano Smoothing - Tool length automatic measurement (G37) - High-speed skip - Backup function for power failure - External transfer - Additional I/O unit - FANUC LADDER-III (for personal computer) - CE Mark version - Robot standard package					
Installations					
Power source	Power supply	200 to 220 VAC+10 to -15% 3-phase, 50/60Hz±1Hz 10kVA *4			
	Compressed air supply	0.35 to 0.5MPa(0.5MPa is recommend)(gage pressure) 0.13m ³ /min(at atmospheric pressure) *5			
Machine size	Machine height	2,236±10mm (When no high column is specified)			
	Floor space	995mm×2,210mm	1,585mm×2,040mm	2,115mm×2,040mm	
	Mass of machine	Approx. 1,950kg	Approx. 2,000kg	Approx. 2,100kg	

*1 and *2 are measured in compliance with JIS B6201-1987.

*3 The color LCD has been developed with high-precision technologies and thus features high visibility and image quality. Note, however, that the screen may have a few missing or constantly lit pixels.

*4 In case of center through coolant and cleaning unit for tool taper shank, additional +1kVA is required respectively. In case of additional 1 axis, additional maximum +1kVA is required. In case of additional 2 axes, additional maximum +2kVA is required. A cable with 8mm² or more should be used at primary power connection.

*5 In case of center through coolant, additional +0.05m³/min is required. In case of high speed spindle, additional +0.03m³/min is required.

In case of side automatic door, 0.4 MPa compressed air supply or more is required. *6 Fastening the machine to the floor (mounting anchors) may be required depending on the use conditions and installation environment, or to prevent the machine from toppling over due to an earthquake.

*7 In case of α -T21iEs/T14iEs/T21iEse/T14iEse

FANUC LTD

Shinjo-mura, Yamanashi 401-0597, Japan Phone:81-555-84-5555 Fax:81-555-84-5512
http://www.fanuc.co.jp

All specifications are subject to change without notice.
No part of this catalog may be reproduced in any form.
The photo includes options.
The export of this product is subject to the authorization of the government of the country from where the product is exported, except for α -T21iEse/T21iEe/T21iELE/T14iEse/T14iEe/T14iELE.