

High-reliability and High-performance
Wire-cut Electric Discharge Machine

FANUC ROBOCUT

α -C400iA/ α -C600iA



High-reliability and high-performance wire-cut electric discharge machine with FANUC standard CNC installed

FANUC ROBOCUT α -CiA series

High-Speed & High-Precision

Discharge Control : AIP2

Skim Cutting PSU : SF2, MF2

Auto Wire Feeding : AWF2



High-Reliability

Worldwide Standard **CNC**

Operation Guidance

ROBOCUT-LINK*i*

High-Performance

Low Running Cost

PCD Tool Cutting

Automatic Measurement

High-Speed & High-Precision

Discharge Control AIP2 providing high-speed and high-precision cutting

Skim Cutting Power Supply SF2 and MF2 providing high-quality cutting surface

Auto Wire Feeding AWF2 expanding applications of wire threading

High-Performance

Lower running cost reducing widely than before

PCD tool cutting providing high-quality tool edge

Automatic measurement function operating by touch probe

High-Reliability

Worldwide standard **FANUC CNC** with high-reliability

Operation guidance functions for supporting operator

ROBOCUT-LINK1 for production and quality management



α-C400iA



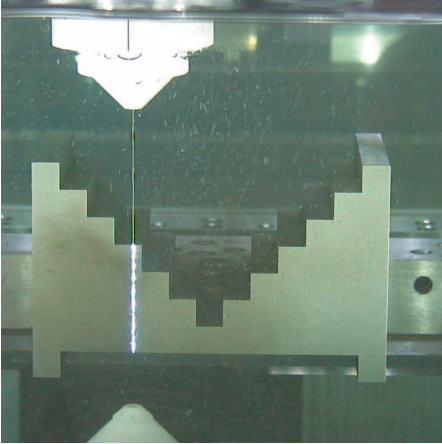
α-C600iA

High-Speed & High-Precision

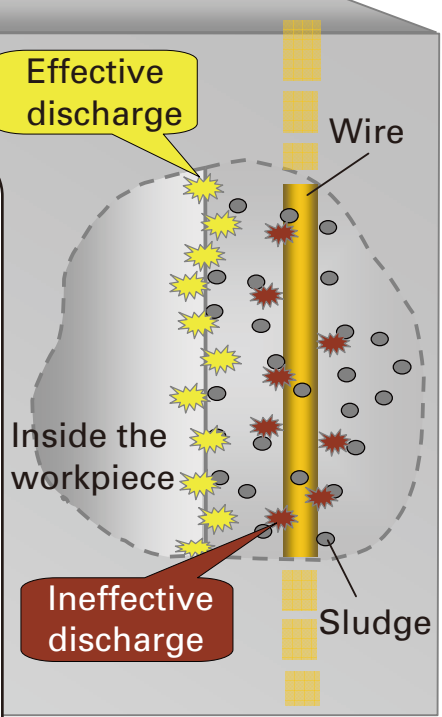
Discharge Control AIP2 providing high-speed and high-precision cutting

- Appropriate discharge control according to cutting amount monitored by the number of effective discharge pulses contributing to cutting

Enhanced the accurate step shape cutting by detecting work thickness according to the number of discharge pulses

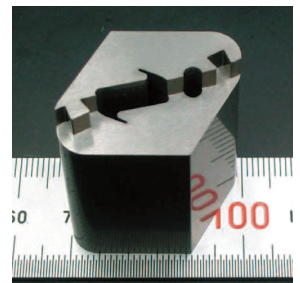
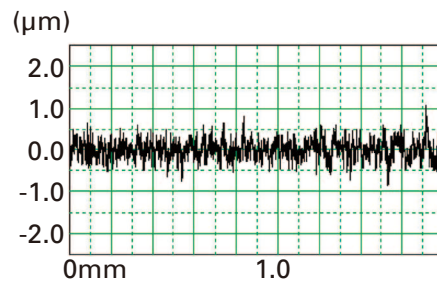
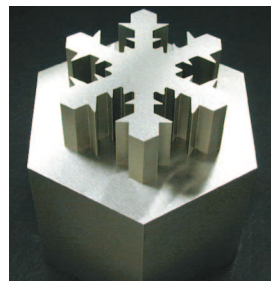
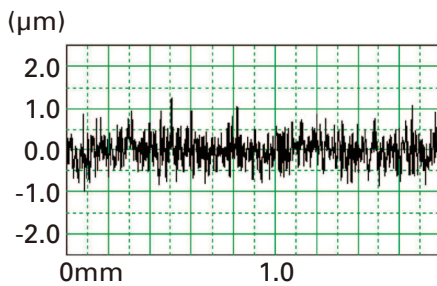


[Cutting example]
 Die steel
 Thickness 10-80mm
 Wire ϕ 0.25 BS
 3 times cutting
 Accuracy $\pm 5\mu\text{m}$



Skim Cutting Power Supply SF2 and MF2 providing high-quality cutting surface

- Surface roughness $Ra0.30\mu\text{m}$ by standard power supply SF2 (Standard Finish 2) for the die steel of below 60mm thickness
- Surface roughness $Ra0.10\mu\text{m}$ by optional power supply MF2 (Micro Finish 2) for the tungsten carbide 10-30mm thickness

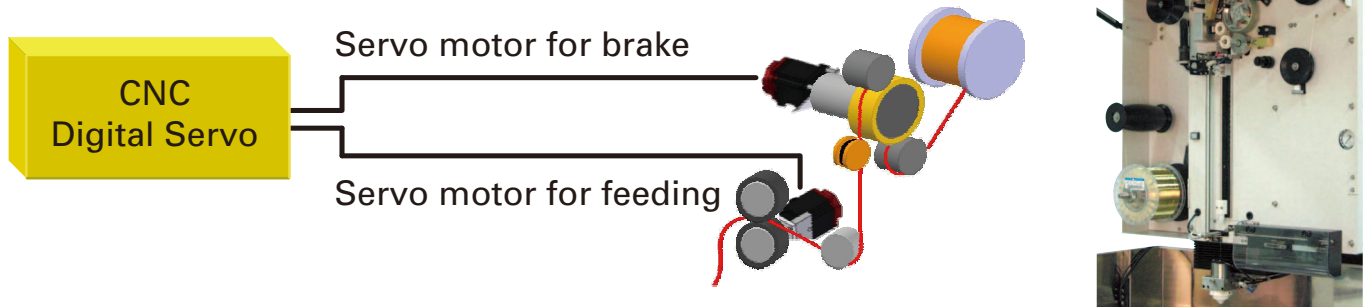


[Cutting example : SF2]
 Die steel 40/60mm
 Wire ϕ 0.25 BS
 Die and Punch
 5 times cutting
 Surface roughness $0.29\mu\text{mRa}$ ($2.5\mu\text{mRz}$)

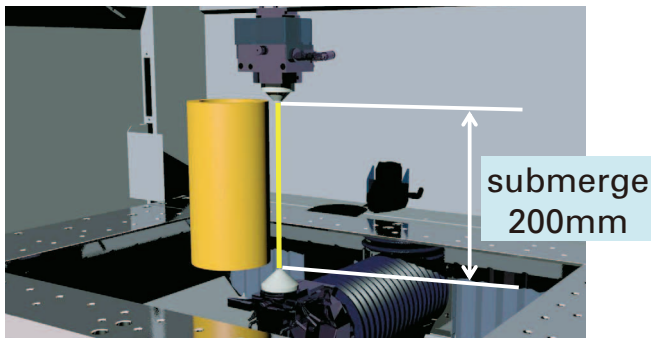
[Cutting example : MF2]
 Tungsten carbide 30mm
 Wire ϕ 0.20 BS
 Best surface roughness
 9 times cutting
 Surface roughness $0.10\mu\text{mRa}$ ($0.7\mu\text{mRz}$)

Auto Wire Feeding AWF2 expanding applications of wire threading

- High-precision wire tension enhanced high-speed and high-performance AWF by FANUC's digital servo technology



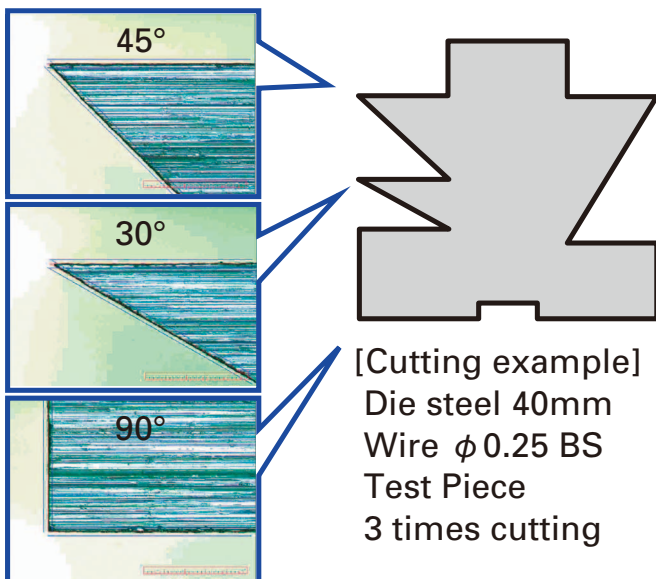
- Wire threading of work thickness 200mm in water and work thickness 150mm at the wire break point



Compensation functions with high-speed and high-precision cutting

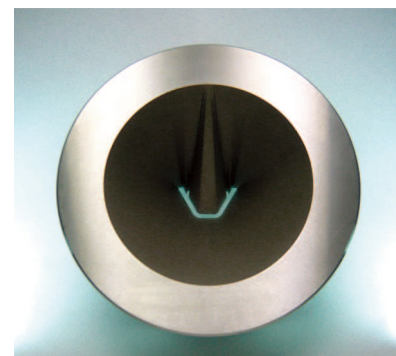
Corner Shape Compensation

- 20% reduction of cutting time keeping corner accuracy in rough cut



Taper Cutting Compensation

- Automatic compensation of different cutting amount between upper and lower surface of work



[Cutting example]
Die steel 80mm
Wire φ0.20 BS (Soft wire)
Extrusion die
4 times cutting
Taper : Max 30°

* All cutting results obtained under FANUC-designated conditions

High-Performance

Lower running cost reducing widely than before

Long Life of Filter

- New lineup 450mm filter
- 1.8 times longer lifetime

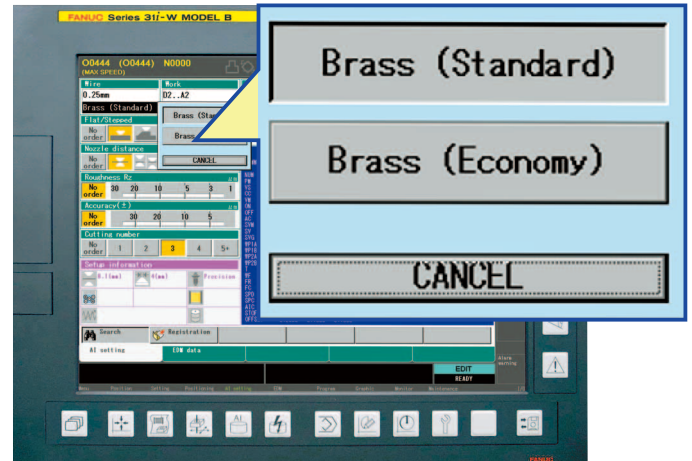
Running Cost
Approx. 25% reduction
than conventional



Wire Consumption Saving (ECO Mode)

- Cutting conditions of the ECO mode

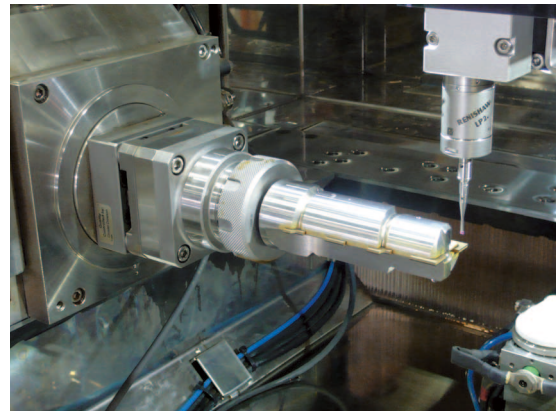
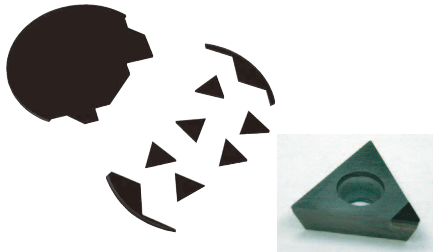
Running Cost
Approx. 30% reduction
than conventional



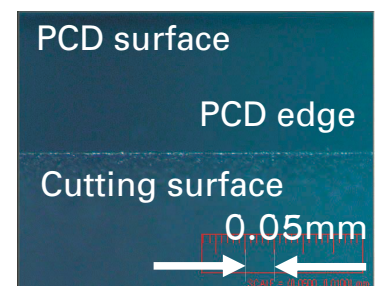
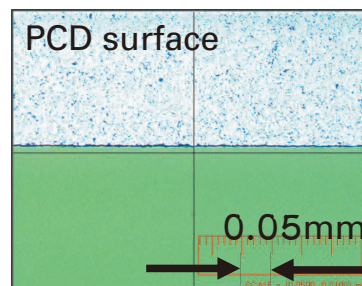
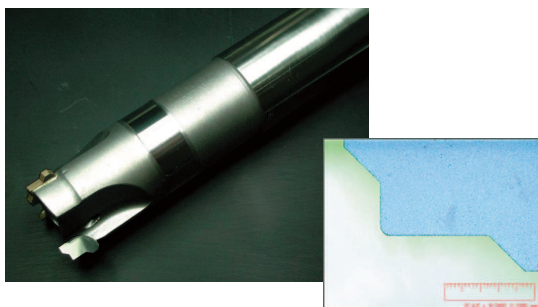
AI Setting Screen

PCD tool cutting providing high-quality tool edge (Option)

- Superior cutting edge with PCD generator



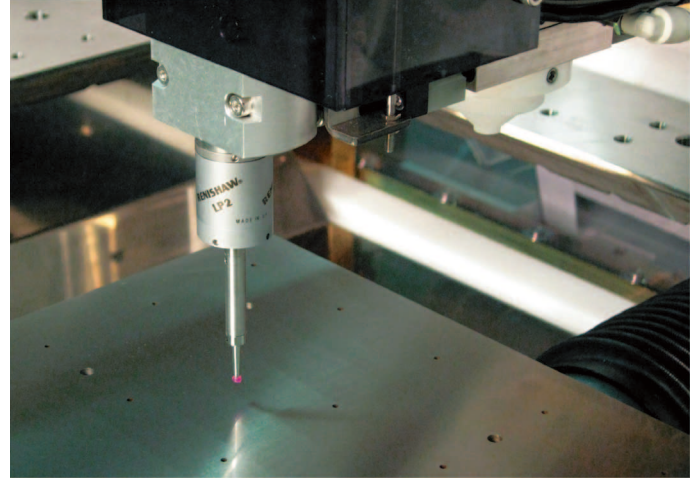
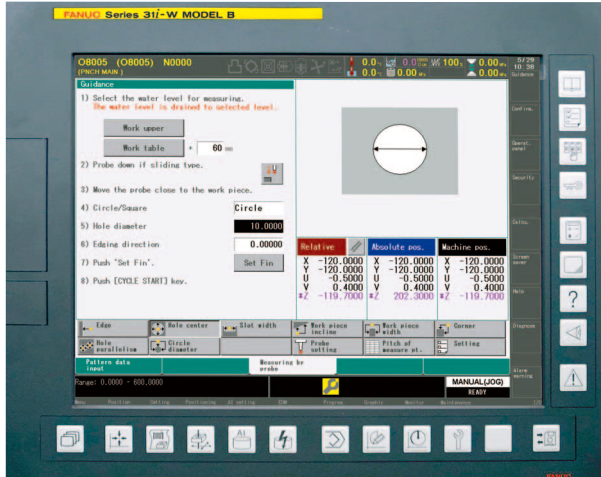
[Cutting example]
Minimum damage (after skim cutting)



Automatic measurement function operating by touch probe (Option)

Probe Measurement Function

- Simple measuring of work piece on the machine such as edge position, hole center, hole pitch

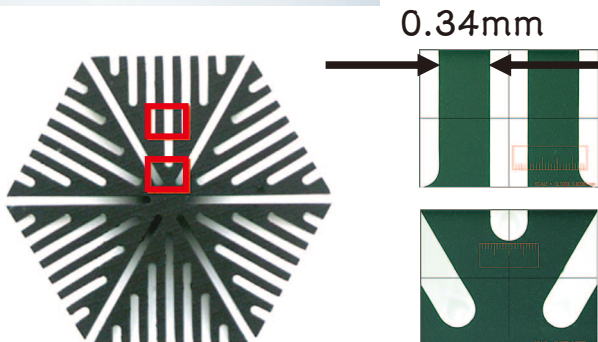
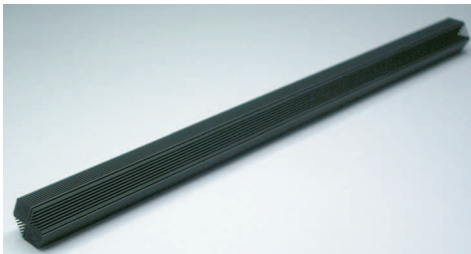


Measuring by Probe Screen

Cutting performance meeting various needs

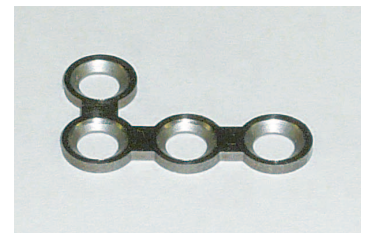
Graphite Cutting

[Cutting example]
Thickness 150mm
Wire ϕ 0.20 BS



Medical Equipment Parts Cutting

[Cutting example]
Titanium
Thickness 1mm
Wire ϕ 0.25 BS



[Cutting example]
Stainless Tube
Wire ϕ 0.20 BS
Pitch 0.7mm



* All cutting results obtained under FANUC-designated conditions

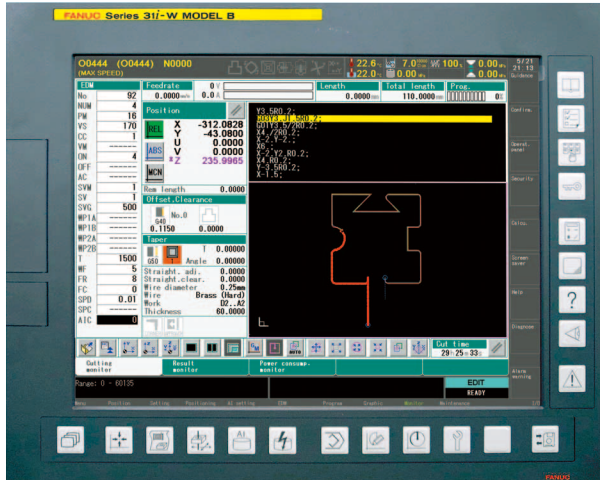
High-Reliability

Worldwide standard FANUC CNC with high-reliability

- Excellent operability and economical efficiency with CNC FANUC Series 31i-WB

Cutting Monitor Function

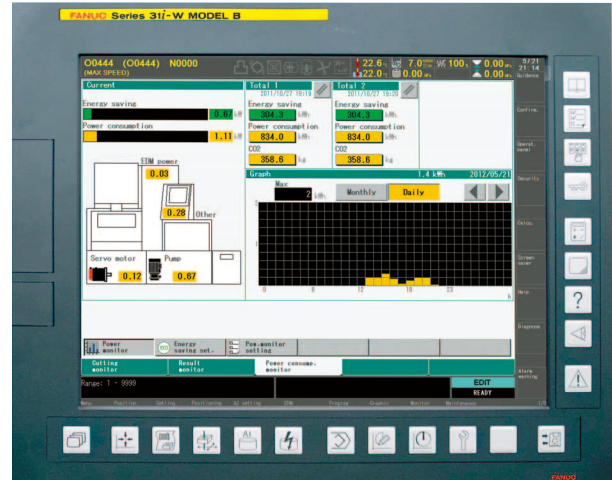
- Display of cutting condition, cutting information and the cutting path on a screen
- Easy check of cutting status



Cutting Monitor Screen

Power Consumption Monitor Function

- Real time display of power consumption situation
- Display of cumulative electric power

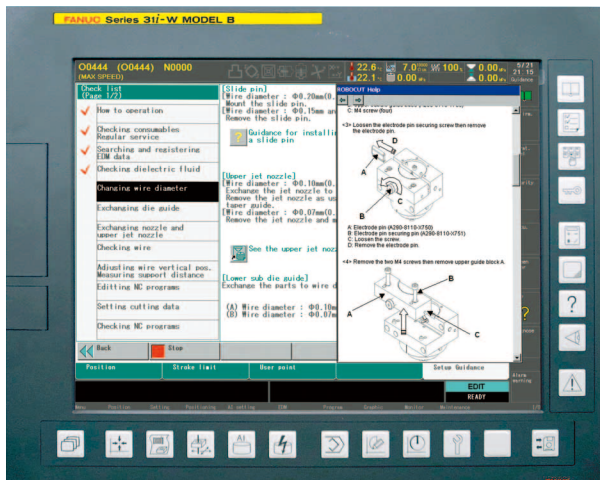


Power Consumption Monitor Screen

Operation guidance functions for supporting operator

Setup Guidance Function

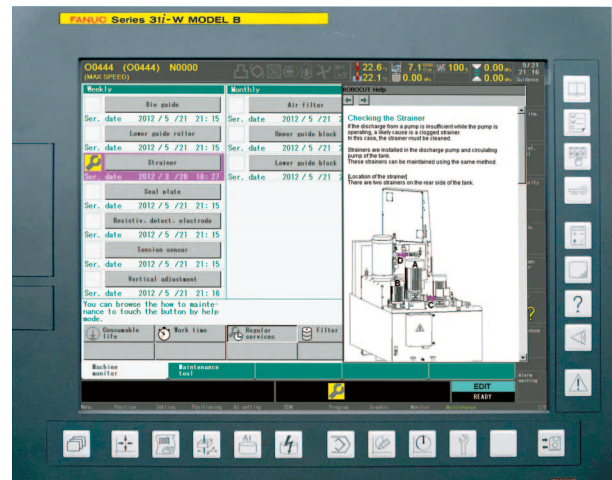
- Indication of setup operation in order
- prevention of operation mistakes



Setup Guidance Screen

Maintenance Guidance Function

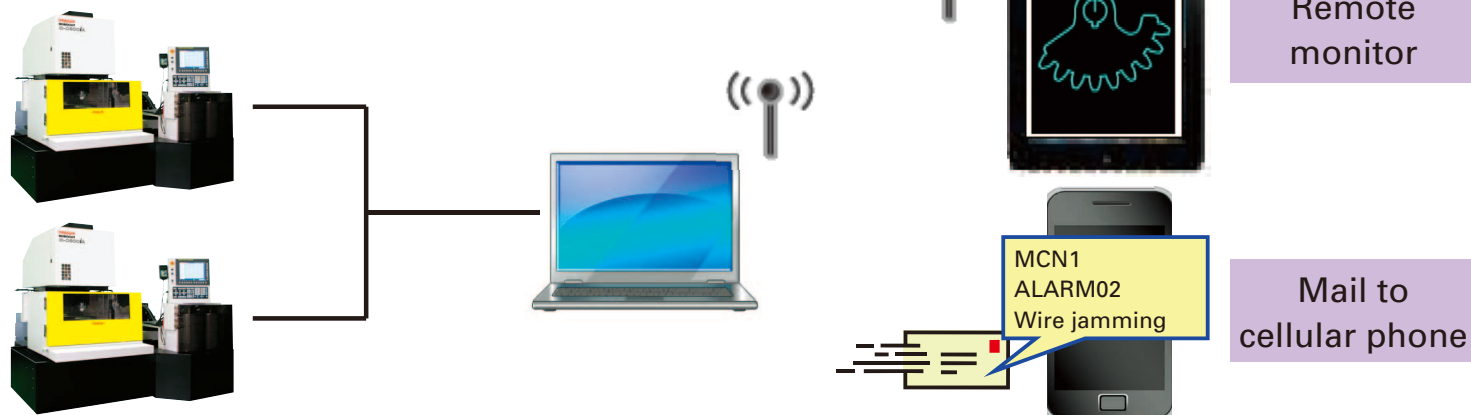
- Support of usual maintenance
- Easy explanations with many pictures



Machine Monitor Screen

ROBOCUT-LINK *i* for production and quality management (Option)

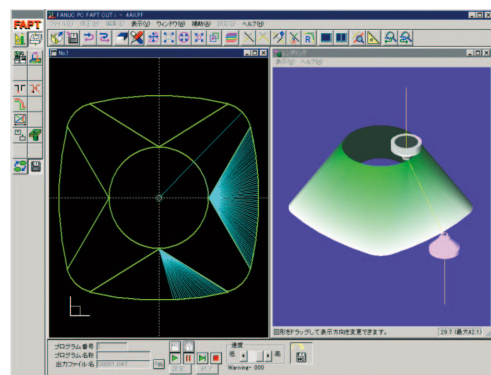
- Real time monitor of cutting status
- High-Speed NC program transfer



*OS : Microsoft® Windows® 7 **Subject to Internet provider

CAM software only for ROBOCUT PC FAPT CUT *i* (Option)

- Creates optimum NC programs for ROBOCUT by interactive operation
- Enables easy creation of NC programs for taper cutting, gear cutting, etc.
- User friendly design including a self-learning function

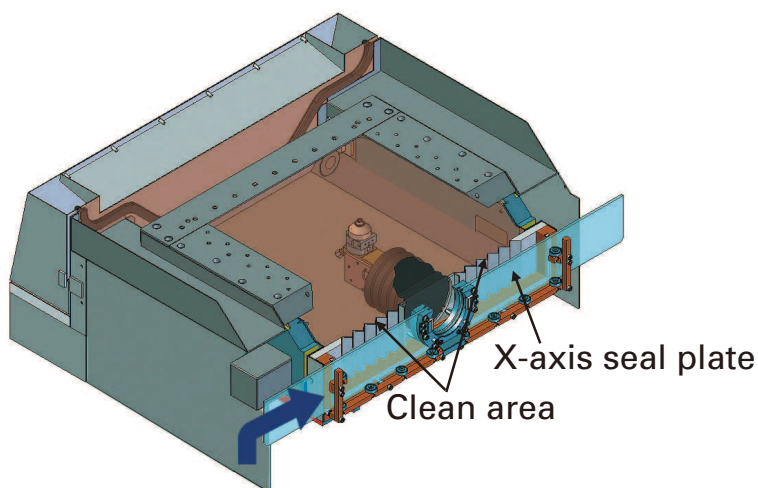


*OS : Microsoft® Windows® 2000 SP4 / XP SP2 / Vista / 7
except for Windows® XP Professional / Vista / 7 x64 Edition

Pre-seal mechanism with high-reliability

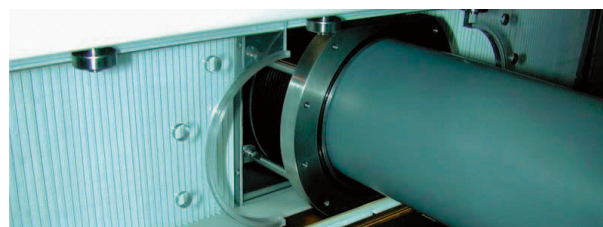
Pre-seal Mechanism

- Prevention of cutting chips (sludge) adhesion on the seal plate



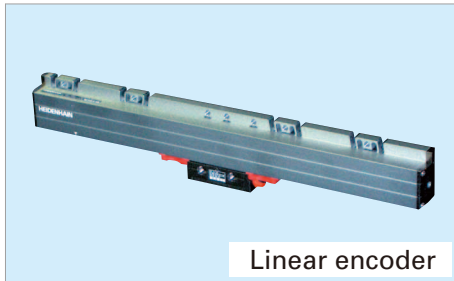
Two-partition Transparent Seal Plate

- Easy to check dirt of the seal plate
- Easy to disassemble and clean

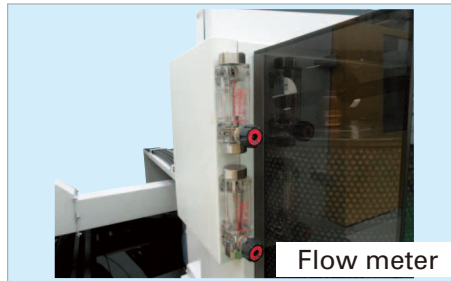


Clean water supply

Various Options



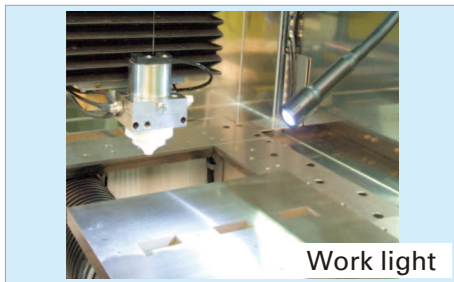
Linear encoder



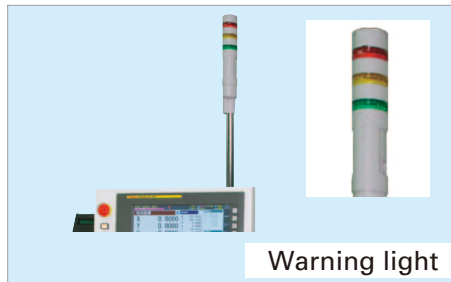
Flow meter



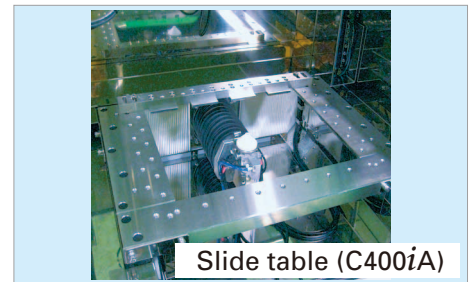
Pre-filter



Work light



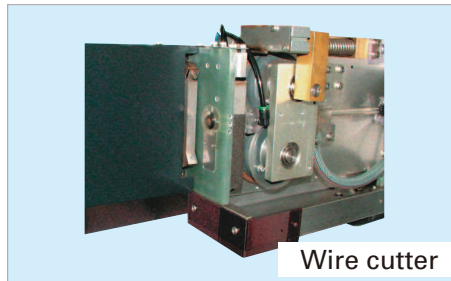
Warning light



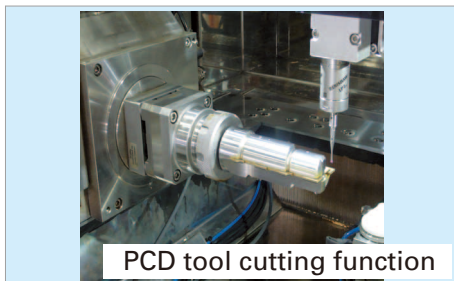
Slide table (C400iA)



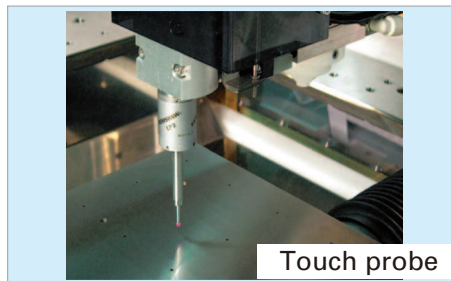
Auto grease lubrication



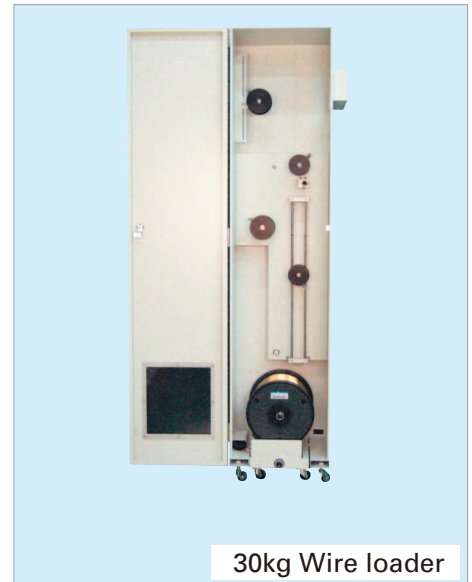
Wire cutter



PCD tool cutting function



Touch probe



30kg Wire loader

Maintenance and Customer Support

Worldwide Customer Support and Service

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.



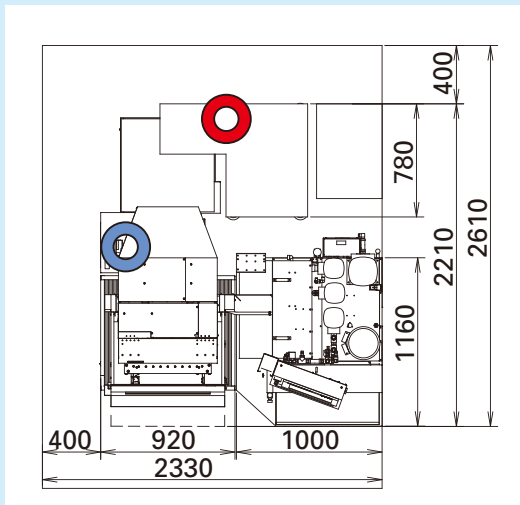
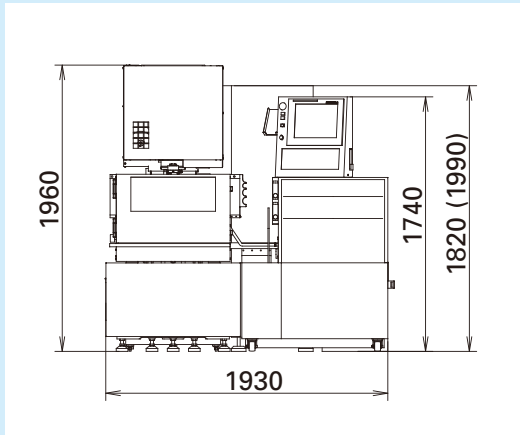
FANUC Training Center



FANUC training center operates training programs on FANUC ROBOCUT which focus on practical operations and programming with cutting know how and maintenance.



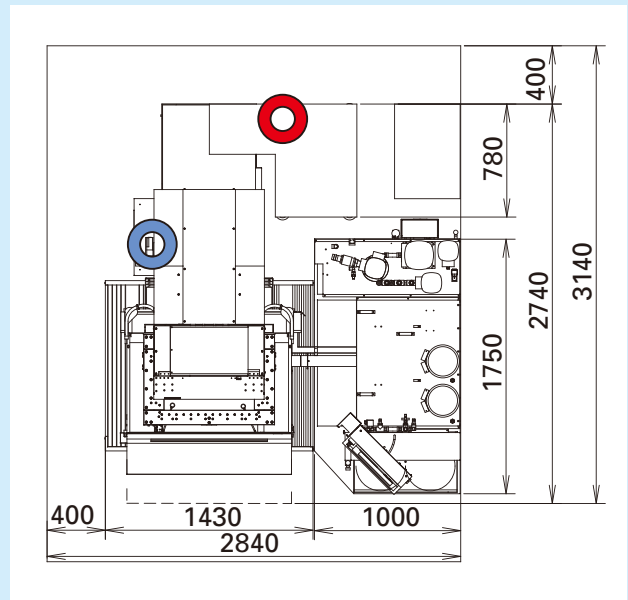
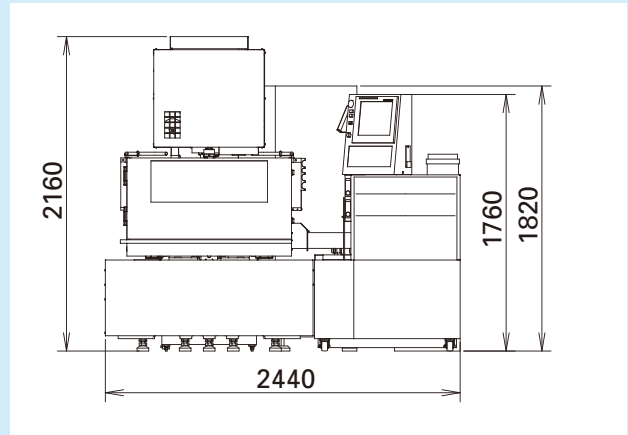
Outer Dimensions and Floor Plan



α -C400iA



-  Power input position (200V AC, 3-phase)
 -  Compressed air input position (Hi-coupler, plug 20P attached)
- *The values in parentheses are for thin wire option.

α -C600iA



-  Power input position (200V AC, 3-phase)
-  Compressed air input position (Hi-coupler, plug 20P attached)

*) The above floor plan is that of a standard type machine. Contact FANUC if you wish to order the options such as a 30kg wire feed unit.

Installing Conditions

Power supply	AC200V \pm 10% 3-phase 50/60Hz \pm 1Hz AC220V \pm 10% 3-phase 60Hz \pm 1Hz Connection cable terminal size : 8-5 Power consumption : 13kVA	Environment	Ambient temperature : 15-30°C *Recommend 20 \pm 1°C for high precision machining. Install under the oil mist free and dust free environment. Humidity : 75%RH or less
Air supply	Air pressure : 0.5 - 1.0 MPa Flow rate : 100L / min or more : 120L / min or more (with a thin wire option) Connection port : Hi coupler 20PM (Nitto Industry Co.,Ltd.) *Regulator-side coupler mounting screw : Rc1/4	Grounding	The unit must be grounded to avoid damage resulting from electro-magnetic interference or electrical leakage. The grounding itself should be of type C (grounding resistance of 10 Ω max.) as specified in the electrical installation standards and should be carried out independently of the grounding of any other piece of machinery(one piece grounding).
Shield room	If discharge noise can interfere with surrounding radio, television and other sets, a shield room needs to be created		

Specifications

Model			α -C400iA	α -C600iA
Maximum workpiece dimensions	without Automatic door	standard	700×600×250 mm	1050×820×300 mm
	with Automatic door	option	700×555×250 mm	1050×775×300 mm
Maximum workpiece mass			500 kg	1,000 kg
XY axis table travel			370×270 mm	600×400 mm
Z axis travel			255 mm	310 mm
UV axis travel			±60 mm×±60 mm	±100 mm×±100 mm
Maximum taper angle	standard		±30°/80 mm	±30°/150 mm
	option		±45°/40 mm	±45°/70 mm
Wire diameter	standard		φ 0.10 ~ φ 0.30 mm	
	option		φ 0.05 ~ φ 0.30 mm	-
Maximum wire mass			16 kg	
Machine mass (approx.)			1,800 kg	3,000 kg
Controller			FANUC Series 31i-WB	
Part program storage size			4MB	
Acoustic noise level			LPA= 64dB LPCpeak= 81dB	

FANUC CORPORATION

Oshino-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 products in this catalog are controlled based on Japan's "Foreign Exchange and Foreign Trade Law". The export from Japan may be subject to an export license by the government of Japan. 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.