FANUC
CNC EUROPE

Series 0*i*/0*i* Mate-Model D

Extreme reliability in CNC machining

EFFICIENT · RELIABLE · INNOVATIVE
CNC Systems
FANUC
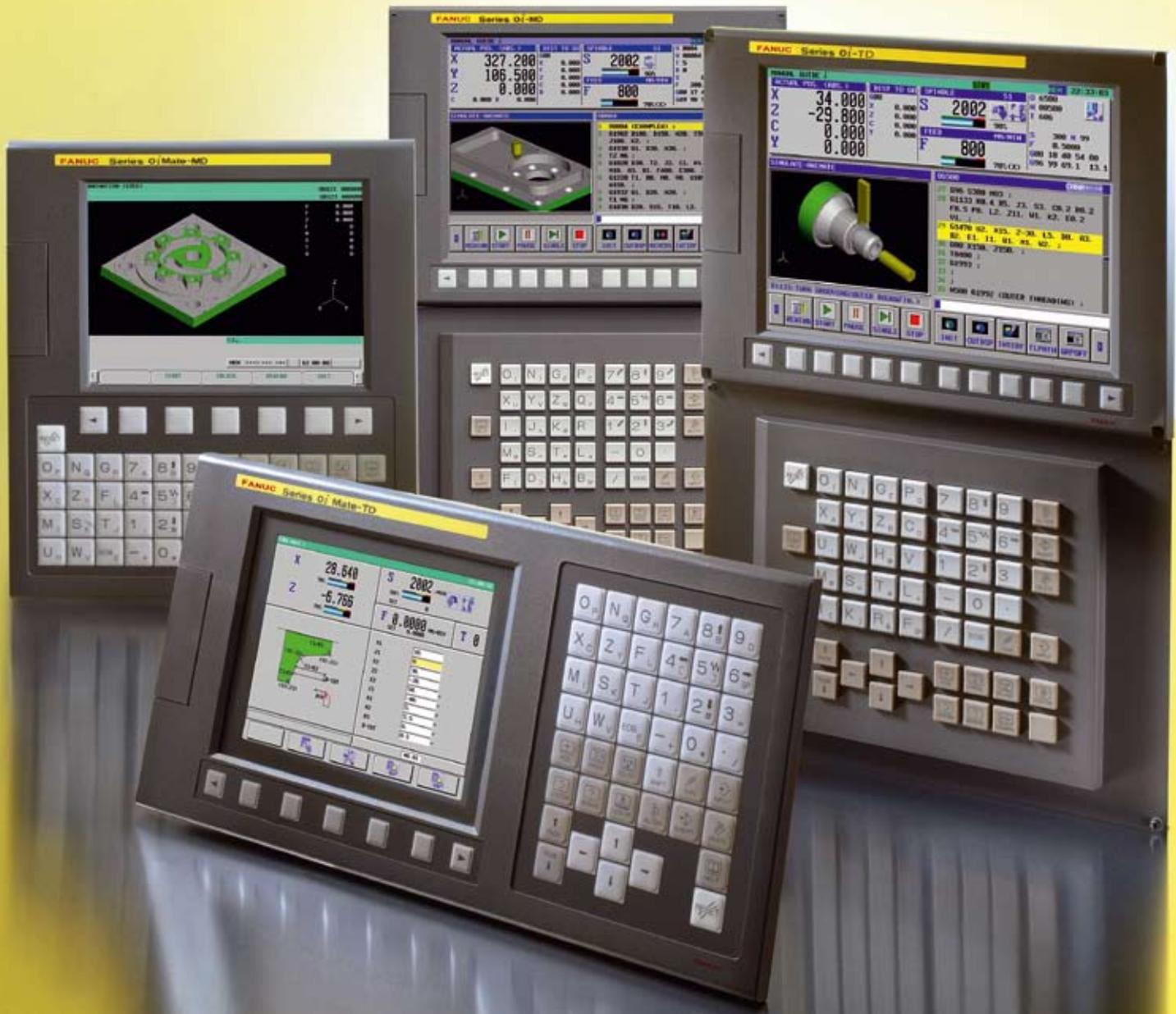
Many applications – one CNC

Series 0*i* and Series 0*i* Mate

With over 700,000 systems installed, the series 0 and 0*i* from FANUC is the world's most popular CNC. The new more powerful generation 0*i*-D is set to continue being the number one CNC of choice.

Coupled with the latest FANUC drive technology, the 0*i*-D and 0*i* Mate-D are perfect for all types of machine tools:

- Lathes
- Milling Machines
- Machining Centres
- Drilling

High functionality with the greatest reliability

Being the number 1 in CNC technology has made FANUC the world market leader supplying proven, reliable systems and, when more than 200 state of the art features are packed in to the 0i-D, you have the best ingredients for a highly productive machine tool.

FANUC CNC controls are the most reliable available something that is regularly confirmed by machine users and independent studies. Statistically speaking, a controller error occurs only after more than 10 years of use.

Series 0i Mate–Model D

This model can control up to 3 axes simultaneously and together with the Series ßi drives, this is the ideal combination for standard machine tools. The integrated 8.4" colour LCD screen supports both MANUAL GUIDE 0i and TURN MATE i interactive programming software.

Series 0i–Model D

The 0i-D CNC includes features and functions usually associated with high performance systems including a total axis capability of 8 with 4 being able to interpolate simultaneously. Both ßi and αi drive technology can be connected and whilst MANUAL GUIDE 0i and TURN MATE i are both supported on the 8.4" LCD, by requesting a 10.4" colour LCD, the enhanced MANUAL Guide i conversational programming software can be used.

Productivity advantages

- Compatibility with previous versions Series 0 and 0i-Models A, B and C

- Make use of existing programs without modification

- Simple programming and operation

- Minimal training required

- Operator friendly graphic display for part program verification

- Multi-Language Support

- Use of αi and ßi drive systems

- Extended help functions and alarm/operation history

- High-Speed Machining

- Tool Management for maximum machine utilisation

- Cutter Compensation for direct input from drawings

- Canned cycles and Custom Macro B for simplified part programming

- Standard Nano-Interpolation and Ethernet interface (0i-Model D only)

- Advanced functionalities like Jerk Control, Nano Smoothing and AI Contour Control II

Simple operation – fast machining

Operation and programming software is tailored to the correct application. The following user-friendly solutions are available:

○ TURN MATE *i*,

○ MANUAL GUIDE 0*i*

○ MANUAL GUIDE *i*

These innovative programming environments fully optimise the cycle from part design to production.

TURN MATE *i*

TURN MATE *i* software can be installed on 0*i*-TD and 0*i* Mate-TD CNC controls (8.4˝ colour LCD) and all types of turning cycles are supported, such as, roughing, finishing, threading, grooving and drilling.

The operator does not have to have prior knowledge of ISO programming codes. Additionally there is the choice of executing machining cycles either using manual controls – with the benefit of setting limits using the simple conversational screen dialogue – or linking operations to form an automatic sequence.

All the relevant information, axis positions, spindle rpm, feedrate, tool number and machine status, is displayed clearly to the operator using simple graphics within each screen.
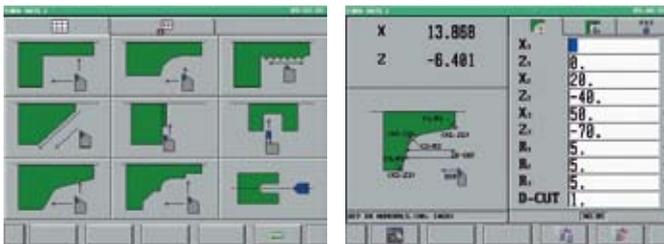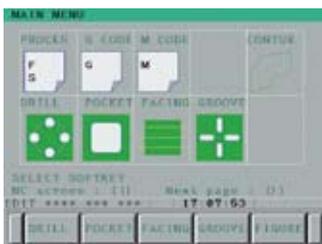
MANUAL GUIDE *i*

MANUAL GUIDE *i* is a software package available for the 0*i*-D controls with 10.4˝ LCD display. It provides fast and efficient programming for milling, turning and mill/turn centres. The screen menus are self-explanatory and the simulation process clear and precise so providing a comfortable environment to program in – even for complex parts.

The software is structured in such a way that a part program in ISO format can be generated in a few simple steps. Graphic, user-friendly symbols and pop-up menus overlay a main CNC screen, which includes a wealth of machine information and means that the operator is always in control.
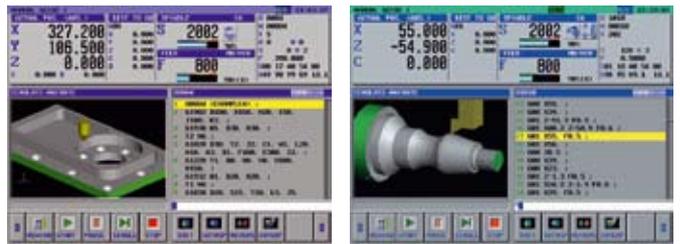
MANUAL GUIDE 0*i*

MANUAL GUIDE 0*i* is a programming tool that provides operator assistance to generate ISO code part programs for straightforward milling and turning applications. Guidance prompts for conventional G-code commands and machining cycles help build the part program, which may include contoured shapes, pocketing and drilling cycles as required.

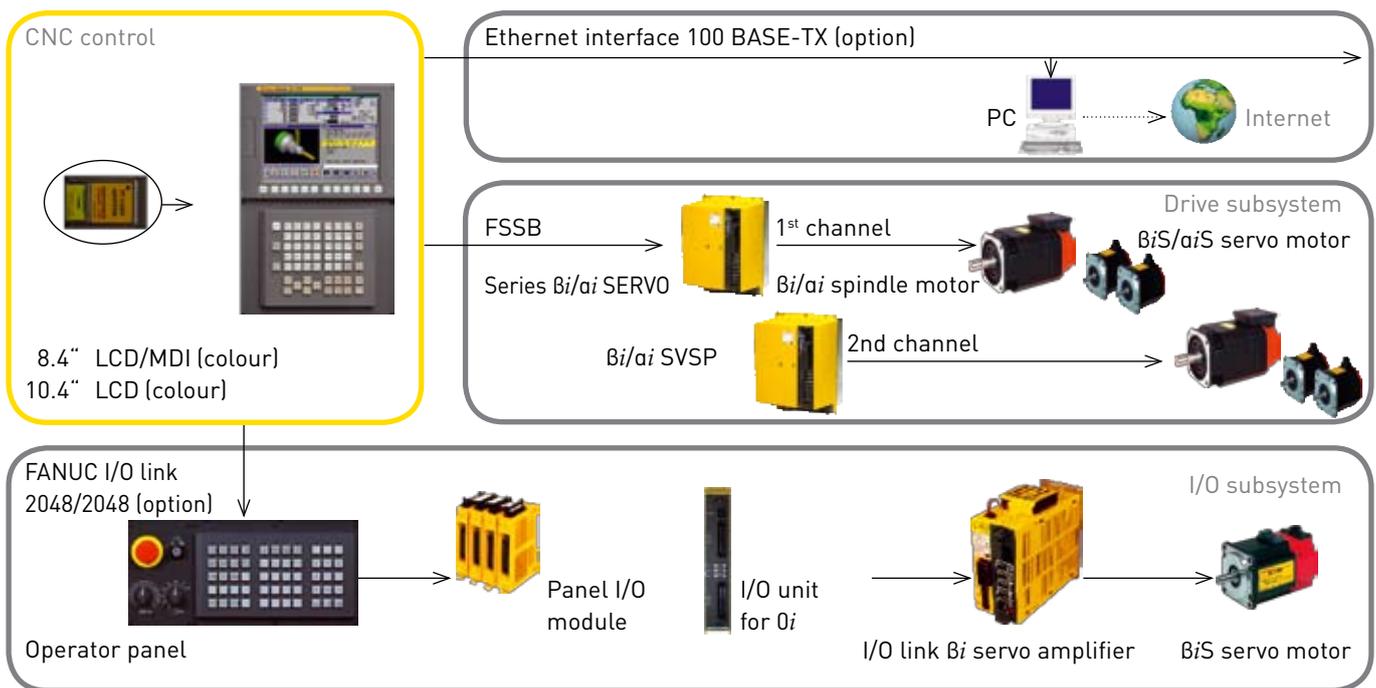## NCGuide/NCGuidePro

NCGuide and NCGuidePro are software simulation packages to run on a PC. With NCGuide either the basic CNC operation or the programming environment MANUAL GUIDE *i* can be simulated. The extended NCGuidePro additionally allows the machine interface (PMC) to be written and tested. That means, you can have a series 0*i*-D CNC on your desk without the need for any physical hardware.
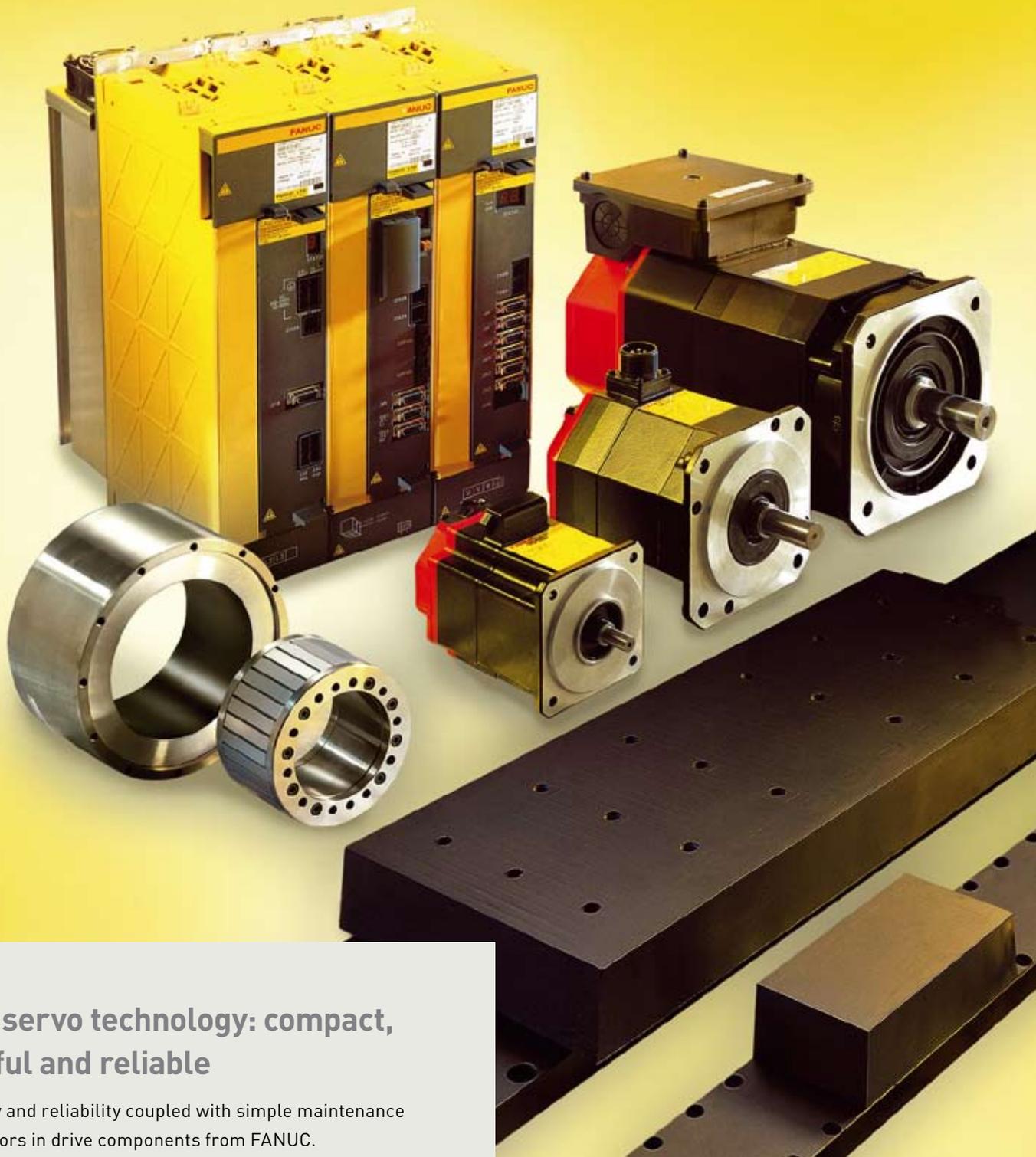
Control and drives –
a perfect match

A great CNC system is the perfect combination between control and drives. That's what FANUC gives you for optimum machine tool performance.

The 0*i* Mate is complimented by ß*i* amplifiers and motors whilst the 0*i* can also be matched with α*i* components for ultimate performance.

Simple parameter loading means that previous versions of FANUC systems can be quickly upgraded to the latest technology.

CNC control

Ethernet interface 100 BASE-TX (option)

PC   Internet

Drive subsystem

FSSB   1st channel   ß*i*S/α*i*S servo motor

Series ß*i*/α*i* SERVO   ß*i*/α*i* spindle motor

ß*i*/α*i* SVSP   2nd channel

8.4˝ LCD/MDI (colour)
10.4˝ LCD (colour)

FANUC I/O link
2048/2048 (option)

I/O subsystem

Operator panel

Panel I/O module

I/O unit for 0*i*

I/O link ß*i* servo amplifier   ß*i*S servo motor

Example configuration

Digital servo technology: compact, powerful and reliable

High quality and reliability coupled with simple maintenance are key factors in drive components from FANUC.

The motors are characterised by their small outline, which significantly contributes to the trend towards more compact machines. Similarly minimum footprint amplifier design reduces the size needed for the electrical installation.

Through the use of modern bus-systems and connector technology the linking of individual modules is greatly simplified and, for the environment, the whole drive concept is extremely energy efficient. FANUC Servo Guide is a utility software that enables both servo and spindle applications to be tuned to provide the optimum performance.

Series 0*i*-Model D – Reliable and versatile

Slim compact design

In the series 0*i*-D, the CNC hardware is situated behind the LCD screen extending to a depth of 70 mm making it an ideal component in the design of compact machines.

PCMCIA port – simple and practical

Each LCD unit has an inbuilt PCMCIA slot through which CNC programs may be transferred to and from external PCs using memory cards. Simple. Practical.

Choice of LCD displays

The 0*i* Mate features an 8.4″ colour LCD display that can be either in a vertical or horizontal format with integrated keyboard.

With the 0*i* control, the 8.4″ display is complemented by the larger 10.4″ colour LCD, which is also available as a touchscreen.

Maintenance friendly

Replaceable components like the back-up battery and fan units are modularised for easy change without the need for tools. A comprehensive package of maintenance functions is included in the CNC operating system to help keep your machine running.

Customised solutions

There are a number of ways that either 0*i* or 0*i* Mate controls may be customised to suit the unique requirements of a machine builder. Display screens are designed using a C-language code call C-Executer or alternatively, FANUC Picture is a utility program that simplifies the construction of custom screens with pre-defined graphic symbols.

Integrated Safety

Present day machine tools have to comply with safety category Performance Level D (EN/ISO 13849-1). With Dual Check Safety, the Serie 0*i*-D have a safety function integrated in the CNC that complies with European safety standards.

Higher performance – greater profit

FANUC CNC controls offer the following benefits:

○ Minimum TCO
(Total Cost of Ownership)*

○ Higher productivity

○ More competitive

* Total investment costs incurred throughout the life cycle of the unit

10 unbeatable sales arguments for CNC controls from FANUC:

1. Maximum uptime with the world's lowest failure rate. Statistics demonstrate that control error rates are in excess of 10 years.
2. Quick and simple programming reduces development times.
3. Continuity of operation and handling reduces training costs.
4. Upward compatibility to run existing programs on new CNC controls.
5. More daily production time because the system is 'ready-to-go' in less than 30 seconds.
6. Secure investment with a guaranteed supply of replacement parts for 25 years and beyond.
7. Minimise downtime by keeping the CNC control separate from PC technology.
8. A partner to rely on for both simple and complex machine tools.
9. Added value through a simple common interface with FANUC robots.
10. State-of-the-art technology for a more competitive edge.

Technical data

Function		0*i* - MD	
		Package A	**Package B**
Controlled paths		1	1
Max. machine controlled axes		8	8
Simultaneously controlled axes		4	4
Max. spindle axes		2	2
Connectable servo motor		α*i*, ß*i*	α*i*, ß*i*
Display units	8.4˝ color LCD	•	•
	10.4˝ color LCD (without touch panel)	•	•
	10.4˝ color LCD (with touch panel)	•	•
	Standalone PANEL *i* (PC)	•	•
NANO interpolation		•	•
Capacity of programs	320K (800m)	–	•
	512K (1,280m)	•	–
	1M (2,560m)	–	–
	2M (5,120m)	☆	–
PMC system	PMC/L function		
	5,000 steps	–	•
	8,000 steps	–	☆
	PMC function		
	24,000 steps	•	–
	32,000 steps	☆	–
I/O Link	1 channel DI/DO		
	256 / 256	–	–
	1,024 / 1,024	•	•
	2 channel DI/DO		
	2,048 / 2,048	☆	–
PMC Function Blocks		☆	☆
Embedded Ethernet		•	•
Memory Card Editing / Operation		•	•
Data Server Editing / Operation		☆	☆
MANUAL GUIDE 0*i*		☆	☆
MANUAL GUIDE *i*		☆	☆
TURN MATE *i*		–	–
AI contour control II		☆	–
Nano Smoothing		☆	–
Jerk Control		☆	–
Spindle control with servo motor		☆	☆
Protection of data at 8 levels		•	•
Dynamic display language switching		•	•
C language executor / FANUC PICTURE		☆	☆
NCGuide / NCGuidePro		☆	☆
Program Transfer Tool		☆	☆
CNC Setting Tool		☆	☆
Tool Management Function		☆	☆

• Basic function   ☆ Optional function   – Not available

0i Mate - MD	0i - TD		0i Mate - TD
Package C	Package A	Package B	Package C
1	2	1	1
5	11 (max. 8 in one path)	8	5
3	4 (each path)	4	3
1	2 • / 3-4 ☆ (max. 3 in one path)	2 •/3 ☆	1 • / 2 ☆
ßi	αi, ßi	αi, ßi	ßi
•	•	•	•
–	•	•	–
–	•	•	–
–	•	•	–
•	•	•	•
–	–	•	–
•	•	–	•
–	• (2 paths)	–	–
–	☆	–	–
•	–	•	•
☆	–	☆	☆
–	•	–	–
–	☆	–	–
•	–	–	•
–	•	•	–
–	☆	–	–
☆	☆	☆	☆
–	•	•	–
•	•	•	•
–	–	–	–
☆	☆(1st path only)	☆	☆
–	☆	☆	–
–	–	☆	☆
–	–	–	–
–	–	–	–
–	–	–	–
–	☆	☆	☆
•	•	•	•
•	•	•	•
–	☆	☆	–
☆	☆	☆	☆
–	☆	☆	–
☆	☆	☆	☆
–	☆	☆	–

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