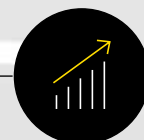**FANUC**

Tackle complexity in the new world of manufacturing

The next-generation CNC: FANUC Series 500*i*-A

max

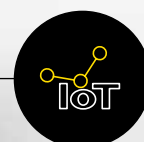**Enhanced machining performance and reliability**

Maximising Uptime

Ease of use

Energy savings

IoT

IoT ready for production efficiency increase

Optimised for performance

The new 500*i*-A introduces several key innovations. Operators will benefit from FANUC's latest *i*HMI2 CNC interface, which retains the attractive look and feel of the original *i*HMI while mantaining the familiar operability of legacy systems. For every task, all interactions can be handled on one screen, eliminating the need to switch between multiple screens. Additionally, the 500*i*-A enables programming of PMC (Programmable Machine Control) systems using the IEC-defined Structured Text language. Another notable enhancement is the simplification of five-axis programming processes. With the help of a special tool, the 500*i*-A can accommodate various machine kinematics.

500*i*-A key features

- Renewal of basic structure from 30*i* series
- Further enhanced machining performance and reliability
- Five-axes Integrated Technology
- Newly designed control unit and operation screen
- Enriched customisation functions
- Advanced information security, network technology & safety
- Enhanced machining performance and usability with αi-D series SERVO system

Enhanced performance and reliability

Maximise your machining performance and drive cycle time reductions due to the dual engine architecture, a new CPU and complete renewal of the hardware and software, combined with newly introduced features and capabilities.

Enhanced performance

- 2.7 times higher CPU processing power (than 30*i*-B Plus)
- enhanced graphic for LCD-mounted CNC
- multiple Gigabit Ethernet interfaces

Enhanced reliability

- battery-less CNC system
- enhanced maintainability
- easy to maintain hardware

Increased high-speed and high-precision performance
thanks to the next-generation drive system – FANUC αi-D series SERVO

- better surface quality
- same performance with less electricity consumption
- energy savings and reduced carbon footprint thanks to: integrated energy recovery system, 10% reduction in power loss and smaller size
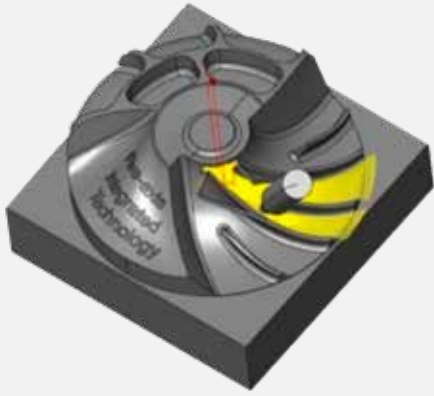
Easy-to-use 5-axis machining function

Higher usability of 5-axis machining functions thank to the support of digital technology and a new machine configuration setting tool. Allows further process integration and enhanced productivity.

5-axis machining - new functionalities:

- manual operation in the workpiece set-up
- built-in 3D interference check and continuous tool length compensation
- flexible use of 5-axis commands during machining
- supporting various machine kinematics
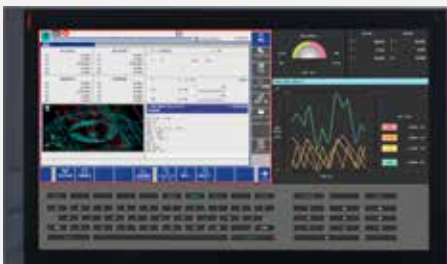
Improved display performance and usability

The new screen operation system, FANUC *i*HMI2, enables easy control of the CNC screen and various applications. It is fully customisable using FANUC PICTURE 2, and its auto-scaling functionality adapts to different screen sizes. Additionally, it can be accessed via a web browser on any mobile device connected to the network.

Achieve greater efficiency in setup and machining operations
With a "one task, one screen" approach, there's no need to switch between screens. Rich touch gestures and intuitive operation help reduce setup time and shorten overall work time.

Easily create customised screens with FANUC PICTURE2
Reduce development time with a new user interface and a rich parts. The all-new interface strongly supports both screen design and debugging. Basic screen elements—such as trees and tables—have been expanded to enhance usability and utilise the 500*i*-A operation screen for your screen development:


- using screen parts on machine tool builder's screens
- enabling screen customisation based on 500*i*-A operation screen

Fast PMC development with IEC Structured Text

The newly designed User Interface, PMC Program Design, and Structured Text (ST) Language accelerate PMC development:

- uniform operability as PMC screens on the CNC
- IEC standard ST language
- various IEC standard Data types
- variable based programming
- project management of multiple programs and data
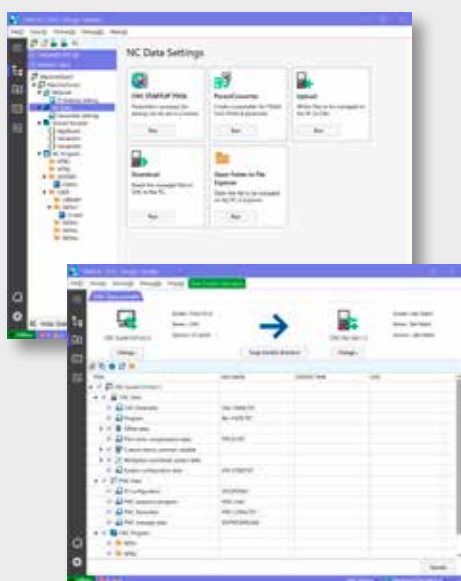
Your digital design support – FANUC CNC Design Studio

Leverage the power of digital design with Digital Twin technology. Simulate all machine processes—including high-speed operations—in a safe and reliable environment. FANUC CNC Design Studio integrates and works seamlessly with several setup tools:

- PMC Programmer
- FANUC PICTURE 2
- Acceptance Test Support Tool
- CNC Startup Tool

Your benefits:

- centralises data necessary for electrical design by project management
- setting tools are integrated and collaborate with CNC Design Studio
- enables batch transfer to multiple CNCs and data copying between CNC and CNC GUIDE2

FANUC Series 500*i*-A overview

CNC model	501*i*S-A	501*i*-A	502*i*S-A	502*i*-A	503*i*-A
Max. controlled paths	15	15	4	4	2
Max. controlled axes	96	96	26	26	12
Max. simultaneously controlled axes	24	4	5	4	4
Max. spindle axes	24	24	8	8	8