



FAGOR AUTOMATION

CNC 8070 OL



Leading technology made affordable

The new generation of Fagor CNC's
utilize the latest technological
innovations to make your job easier



Remote diagnostic
and troubleshooting

E-mail communication
with the user



High resolution
graphics

10.4" or 15"
touch screen

USB communication

Navigation using
soft keys
(graphics + text)



Keyboard protected
against shop floor
contamination and liquids
(IP 65)

Icon- based
navigation

Integrated mouse



Customized operator
keyboards



Adaptable to your needs

The CNC 8070 may be combined with other hardware devices to let the manufacturer control all kinds of applications.



Laser cutting



Profiler



Punch press

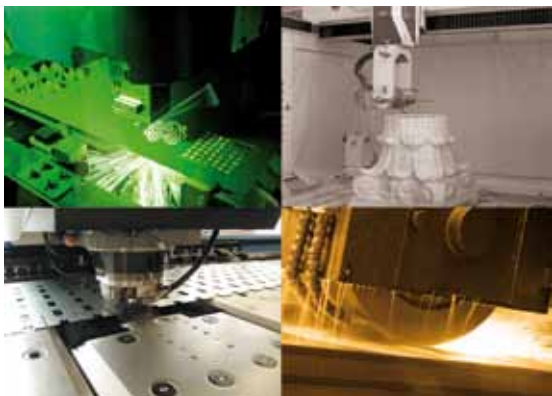


Grinder



Fagor offers customizing tools to adapt the CNC to his needs and make it unique on the market, hence differentiating it from its competitors. It allows integrating third-party software so the user can edit and execute, from screens created specifically for it, operations and cycles for which the machine has been built.

Present in a wide range of machines and sectors



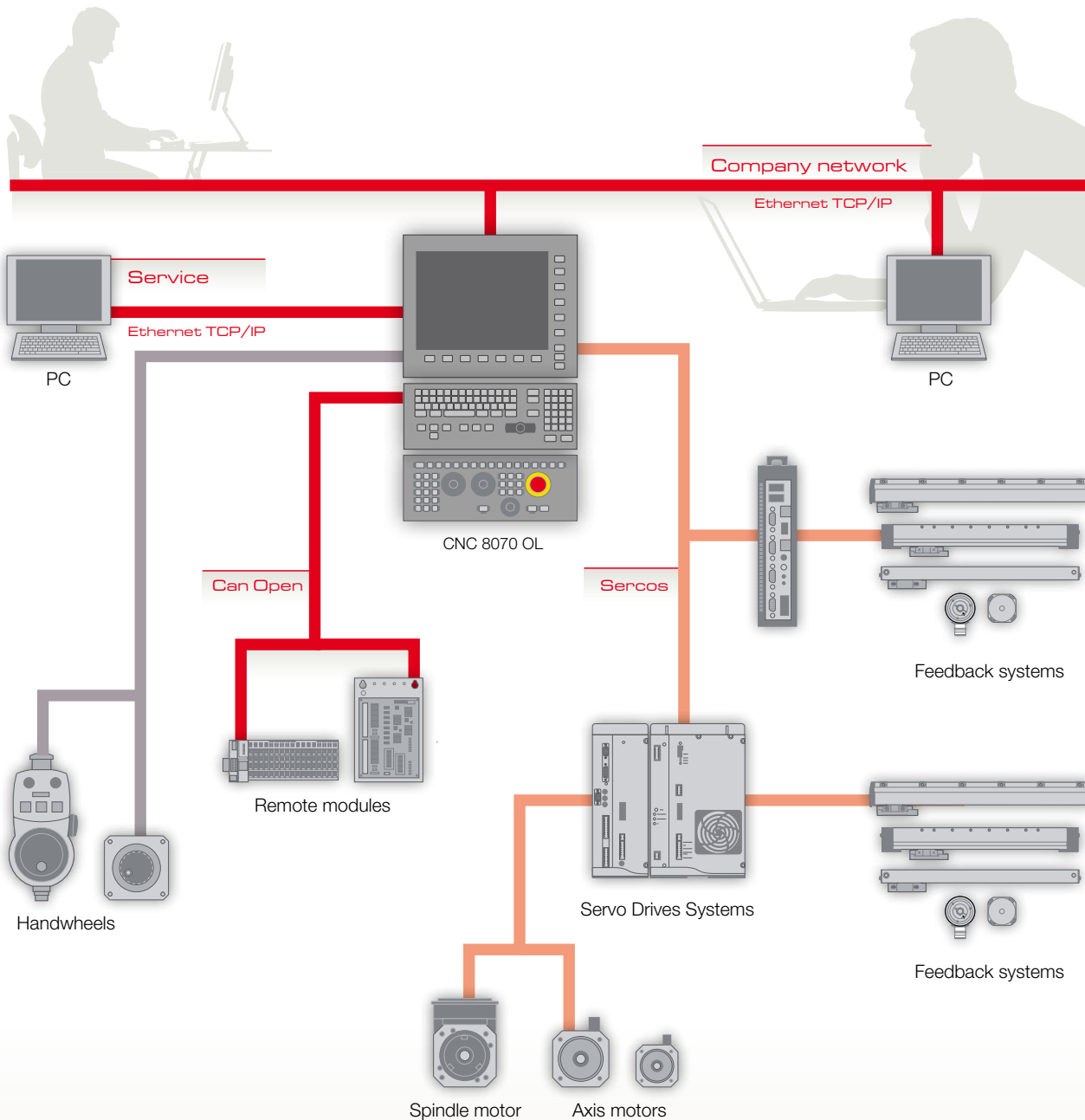
- Shears and press brakes
- Laser cutting machines
- Woodworking machines
- Stone/marble working machines
- Punch presses
- Gear hobbers
- Grinders
- Press brakes
- Blast machines
- Polishing machines
- Profilers
- Waterjet cutting machines
- Saws
- Glass working machines Etc.

Completely integrated solu

A unique integrated platform for all your needs

Fagor Automation's unique integrated platform brings together every electronic element of your machine: the CNC , digital servo motors and drives, linear and angular feedback and ensures seamless integration, guaranteeing robust machine design and extreme performance to obtain maximum efficiency.

These elements working in perfect harmony and intelligently selecting and executing the machining algorithms to exceed user's expectations – EVERYTIME.





Reliable, robust and durable: Total quality

In order to ensure superior system performance under tough ambient conditions (temperature, vibrations etc.), various product testing methods like HALT-HASS process (unique, accelerated product reliability test methods) for detecting and resolving any product weakness are used ensuring very high product reliability at launch.

Greater data exchange flexibility with external devices (USB, local network, web etc.) increases the threat of potential virus attacks from external intrusion. The CNC operating system is shielded with FBWF, a feature that protects it against virus attacks as well as any unexpected shutdowns and wrongful software installations.

The quality, robustness and reliability of Fagor Automation systems have been accredited and certified by many renowned agencies (TÜV, CE, etc.).



Continuous innovation to meet our customer's needs

A major part of Fagor Automation's successful history is due to our constant investment commitment in company's infrastructure and R&D+i (Research, Development and innovation). This allows us to continuously develop leading products for the marketplace.

Fagor's technical center in Spain, called AOTEK has also jointly participated with other domestic and international research centers and universities on many prestigious technical projects like POWER-OM, ReBORN, CHAMELEON and IMPELER etc.

Fagor Automation recently increased its R&D+i capabilities by adding 2 new technical centers in Ivrea (Italy) and Beijing (China).



Commitment to environment

Development and implementation of advance technologies has helped us to create more "GREEN" CNC designs without needing any batteries or fans hence removing such environmentally unfriendly components demonstrating our commitment to preserving and protecting the environment.

Using regenerative power supplies with our digital servo drive systems eliminates the heat loss generated by resistors during motor braking while returning that energy to the power source- hence providing economical savings while helping the environment.

The CNC 8070 also contains a wide set of documentation including a technical manual which can be accessed by utilizing the on-screen help key.

Completely integrated solu

Offering complete solution



Spindle Motors

Fagor Automation offers a wide range of motors for a broad range of application requirements.

Small compact motors balance for high speed starting at 3.7 kW and expanded to large machine, high power applications up to 130 kW. Designed for low noise & vibration levels all the way up to 15,000 rpm.

Offered as an option, motors with dual winding (Y/Delta, star/triangle) and direct drive with a built-in hold in the shaft for automated tool cooling. (Coolant through the Spindle feature).

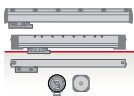
Axis motors range from 3000 rpm to 6000 rpm and a stall torque from 0.2 Nm up to 115 Nm.



Servo Drive Systems

The Fagor Automation's digital servo drive system is the perfect solution for the machine-tool manufacturer who demand high performance machining.

Fagor Automation drives are designed to obtain maximum efficiency from their motors offering the best solution for spindle or asynchronous motors and axis control (brushless, direct torque, linear motor).



Feedback systems

Fagor Automation offers optical linear, angular and rotary encoders for optimizing machine performance.

The encoders send the real data of the movement to the CNC and the CNC minimizes the errors due to thermal behavior of the machine or to leadscrew errors providing a robust and reliable solution for applications requiring high levels of positional control in demanding operating conditions and environments.

We offer solutions to meet the needs of various kinds of machines: analog incremental signals (TTL or 1 Vpp) and absolute digital signals; measuring lengths from 0.070 m to 60 m; resolution of up to 0.01 μm and accuracy of $\pm 3 \mu\text{m/m}$. They use TDMS (Thermally determined mounting system) that prevents measuring errors due to temperature changes and can work at a feedrate of up to 180 m/min.

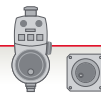




Remote CAN I/O modules

These modules are easy to install.

Can be mounted at strategic points of the machine, thus having extra logic inputs and outputs distributed next to the devices. Using these modules makes it easier to lay out the elements of the electrical cabinet and therefore translates into reduced costs due to fewer cable/wiring being utilized.



Handwheels

Fagor Automation offers various solutions for jogging the axis using handwheels, allowing the machine operators to visually inspect the components while also assisting with the setup.

The intelligent handwheels (with built-in LCD screens) also allow monitoring and execution of many machining functions.

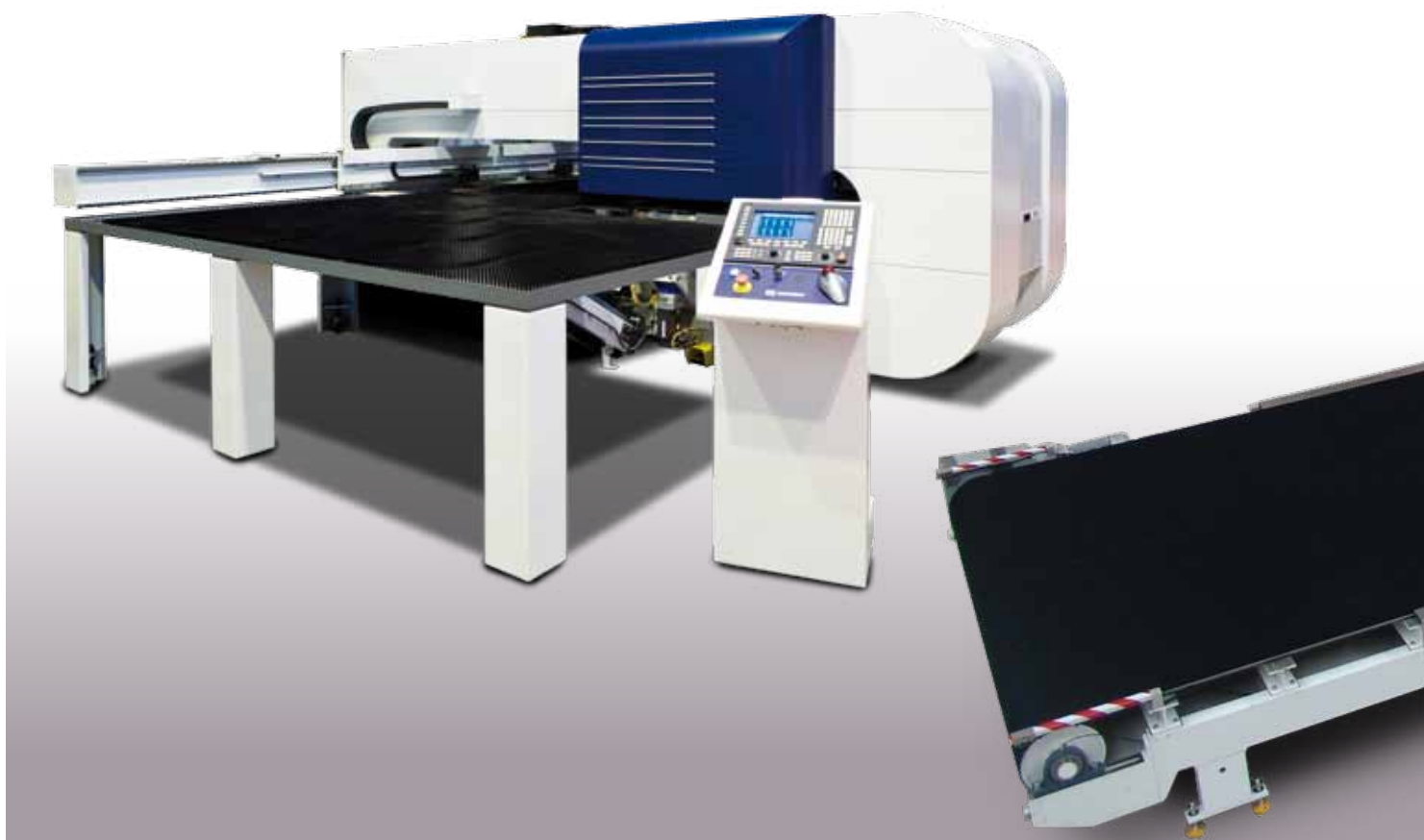


Simulator for PC

This feature simulates the PC to operate like CNC.

It is an ideal training tool which compliments the design and programming department (CAD-CAM) as it allows editing/programming capability away from the noise and distractions of the manufacturing floor.

Tailored solutions





Optimizing machine efficiency

Faster and more economical setup tools

Setting up an advance CNC machine tool can be both challenging and very time consuming due to lack of right setup tools. Fagor Automation offers a large library of setup tools including on board oscilloscope, Ball bar test, Bode Diagram and servo tuning software like Finetune etc.

Setup wizard

Fagor Automation offers a quick setup wizard for easier integration of its complete system hence substantially reducing the machine build-time. Based on the machine configuration the OEM is guided thru automatic selection of PLC program and some basic machine parameter allowing you to move the axes instantaneously.

Auto adjustment of axis (Finetune software)

The FTUNE program automatically optimizes the various servo control loops of the machine to obtain the highest performance as demanded by the machine manufacturers.

Combining the setup wizard with Finetune provides the following benefits:

- A big reduction in machine setup time.
- Reduce setup time minimizes machine tool production costs.
- Better quality axis and spindle adjustment
- The intuitive auto-tuning software doesn't require any specialized skills.
- It prevents and eliminates mistakes that normally occur during the manual adjustment process.
- Achieving optimum adjustment greatly enhances the life of the machine's mechanical components.
- The simplicity of auto-tune software allows the user to tweak it's performance as the machine dynamics change over prolonged usage.

Bode diagram

Is a tool for determining the machine's frequency response. With this information, it becomes possible to filter vibrations produced from the resonance of mechanical design of the machine, thus allowing the machine builder/user to obtain best adjustment and stability.

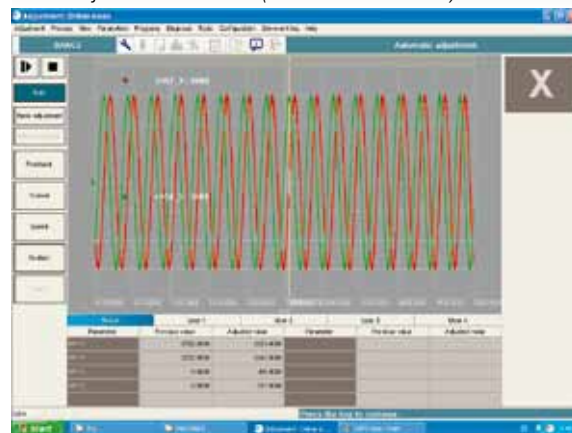
Circularity (roundness) test

Helps improve the behavior of the axes when reversing their moving direction. When executing a circle, the feature graphically compares the actual path with the theoretical path and then provides the necessary tools for the correct adjustment.

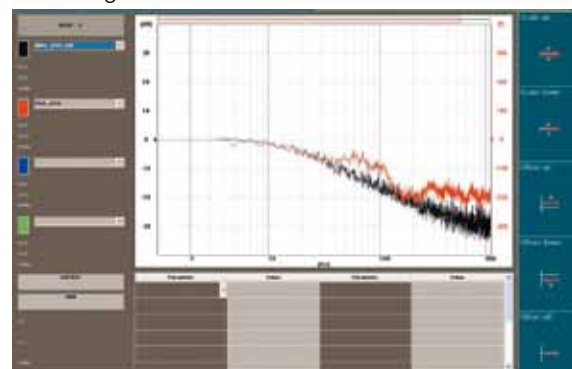
Oscilloscope

The oscilloscope feature is a tool which provides assistance when adjusting the axes performance. It allows the ability to display and correct the machine performance and dynamic behavior with the help of 4 work channels which show both analog and digital variables.

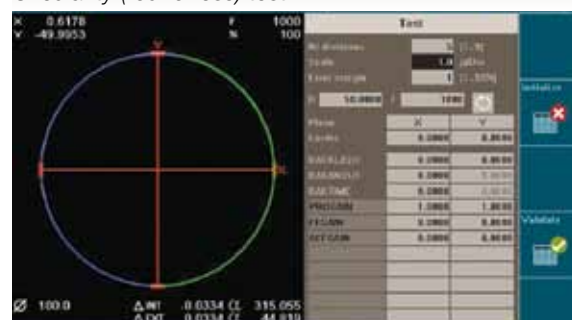
Auto adjustment of axis (Finetune software)



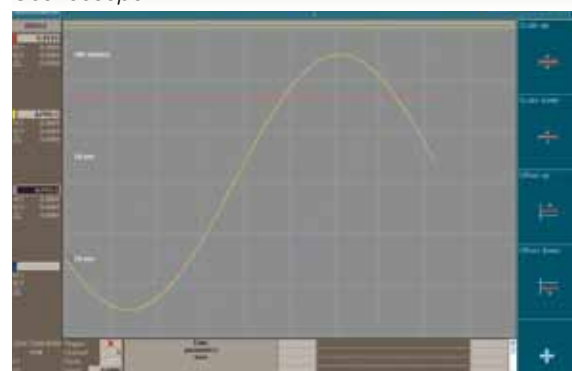
Bode diagram



Circularity (roundness) test



Oscilloscope



maintenance tools

Tele-diagnosis



Tele-diagnosis

The CNC 8070 offers tele-diagnosis software as standard allowing the OEM to connect to the machine user via internet to inspect, troubleshoot and repair the machine tool.

This feature allows the machine builder to provide quick technical assistance without having to send a technician to the user's site hence eliminating unnecessary and expensive travel in many cases.

File encryption



File encryption

Fagor Automation offers the manufacturers the possibility to protect their "know-how" using a file encryption system.

The manufacturer can select the file to be protected, encrypt it and delete the original file.

The program will continue to work exactly the same way as before, but it cannot be displayed, edited or modified.

Incidence alert



Incidence alert

Machining of large complex parts or batch production takes a long time and doesn't require operator presence at all times. Under such circumstances an incidence may occur which could prevent the machine to continue working, affecting productivity.

The "Process Informer" feature can send text messages (SMS) and emails informing the machine user on its status hence allowing him to take immediate corrective action.

OEM integrated documentation



OEM integrated documentation

The machine manufacturers can enter their own PLC messages to warn the operator about preventive and maintenance measures.

The PLC messages may refer to maintenance manuals, text files, photos or even videos. This feature helps to reduce the OEM's maintenance tasks while minimizing machine idle time since the user has access to all the necessary information to resolve the problem.

Global support network



We'll assist you wherever you are

Our worldwide network ensures quick response time to any technical support you may require with our products at any time.

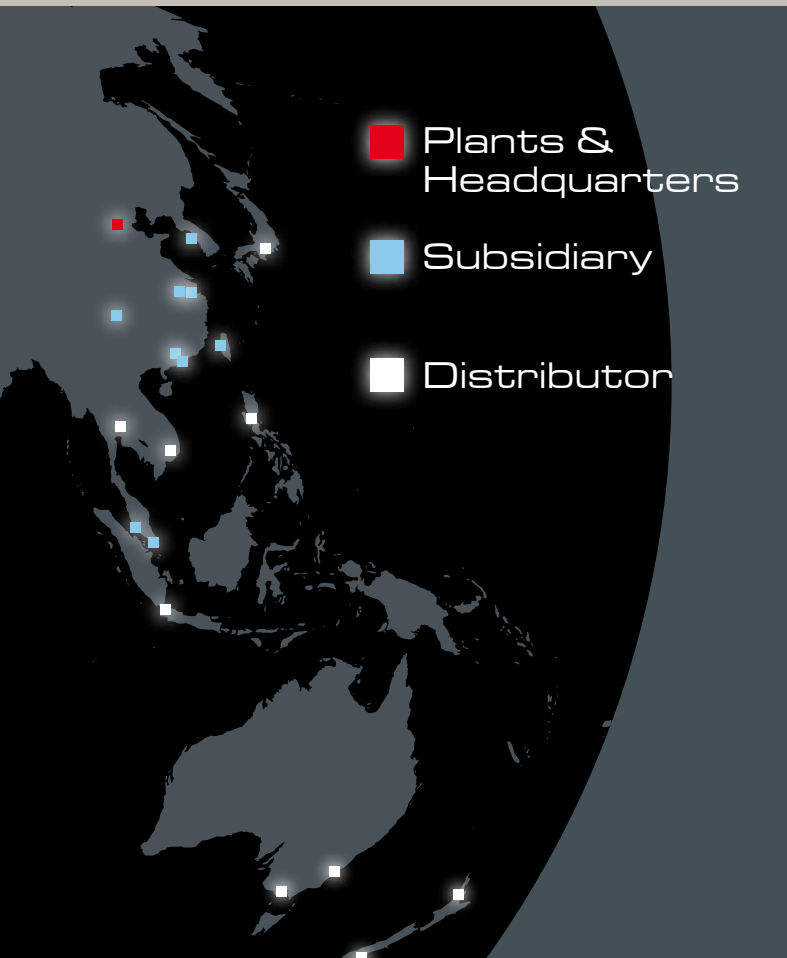
Our global network consists of more than 30 branch offices and 40 distributors.

Personalized attention

Fagor Automation's sales and application team works very closely with their customers ensuring that the best solution is chosen for every application.

A team of highly specialized engineers from Fagor Automation works on site with the customers during the setup of the product ensuring best performance from the product and making adjustments to obtain highest machining quality.





Unparalleled commitment to customer support

In a more and more competitive world the machine down time is expensive and hence it is critical to partner with an organization which values customer support as its highest priority.

Fagor Automation offers high quality pre and post sales assistance through qualified personnel to meet all your requirements.

Guaranteed non-stop production

Fagor Automation guarantees minimum down time in case a situation may occur requiring any spare parts. Our foremost priority is to minimize the production stoppage time.

Our standard product exchange policy ensures the customer is back up and running in record time producing parts and making money.



Maintenance

Fagor Automation provides a comprehensive maintenance service plan both for repairing or replacing a part.

"On Site Service": Repairing and resolving the problem at customer's site including replacement of parts.

"In House Repair Service": Machine repair service at various Fagor Automation facilities around the world.

"Nonstop Production Service": Provides immediate replacement of the part instead of repairing so that the machine idle time is minimized.

Technical characteristics

Main characteristics

LCD monitor	10.4"/15"
15" LCD monitor with touch screen	Δ
Mouse integrated into the keyboard	Δ
Spindle override potentiometer	Δ
Ethernet	O
USB connections	2
User memory up to	2.3 GB / 30.3 GB
Block processing time	0.5 / 0.25 ms
Look-ahead blocks	300
Maximum local digital I/O	8/8 (*)
Max. expansion Remote digital I/O	1024/1024
Serial line that may be configured as RS232, RS422 or RS485	O
Digital servo drives	O
Analog servo drives	O
Nanometric accuracy	O
PWM control for laser machines	Δ
Telediagnosis	O
File encryption	O
Languages supported	11 (**)
Customizable interface	O

Machine configuration

Basic axis configuration	3
Maximum axis configuration	28
Maximum configuration of interpolated axes	28 (***)
Maximum configuration of spindles	4
Maximum configuration of execution channels	4
Gantry	O
Tandem	Δ
Third-party kinematics	O
Work in inclined planes	O
RTCP	Δ
Bidirectional leadscrew compensation	O
Cross compensation	O
Volumetric compensation FVC	Δ
Combined feedback	O
Independent channel axes	O
Multi-axis management	O
Synchronism and cams	Δ
Setup assistance	O

Tools

Maximum number of tools	1000
Tool offset	100000
Tool life monitoring	O
Tool geometry compensation	O
Tool measuring cycles	O
Ground tool management	O

Operation & Display

Pop-up browsing	O
Graphics with tool path lines	O
3D simulation	O
Zoom in simulation	O
Graphic simulation of a program while executing another program	O
Clock & parts counter	O
Machining time estimate	O

Editing & Programming

ISO and parametric language	O
IIP programming language (Interactive Icon-based Pages)	Δ
IEC-61131 programming language	Δ
Probing cycles	Δ
Zero offsets	99 x 10 fixtures (clamps)
Incremental zero offsets	99
Feed handwheel	O
Path handwheel	O
Feedrate as an inverted function of time	O
Teach-in editing	O
DXF converter	O
Profile editor (Mini Cad)	O
HSSA (High Speed Surface Accuracy) machining system	Δ
Interruption subroutines	O
Coordinate system rotation (pattern rotation)	O
Manual intervention during machining	O
C axis	Δ
Electronic threading	O
Helical interpolation / Rigid tapping	O

O Standard

Δ Optional

(*) The 8 digital outputs may be configured as inputs via machine parameter.

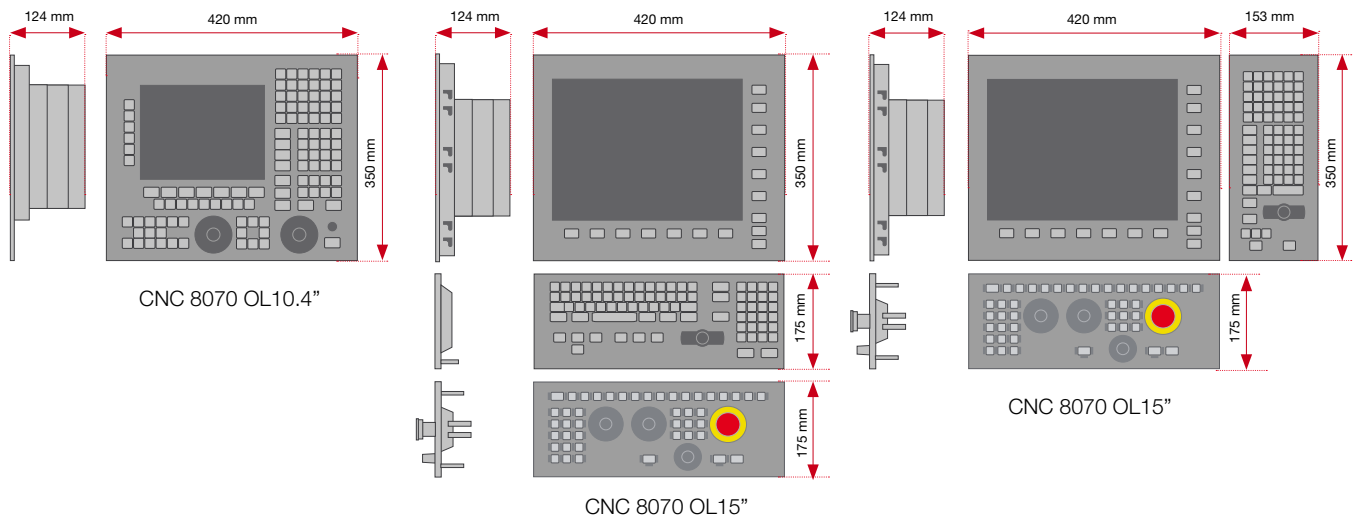
(**) English, Spanish, Italian, German, French, Basque, Portuguese, Chinese, Russian, Czech and Korean.

(***) Products manufactured by FAGOR AUTOMATION since April 1st 2014 will include "-MDU" in their identification if they are included on the list of dual-use products according to regulation UE 428/2009 and require an export license depending on destination.

Configuration / Dimensions

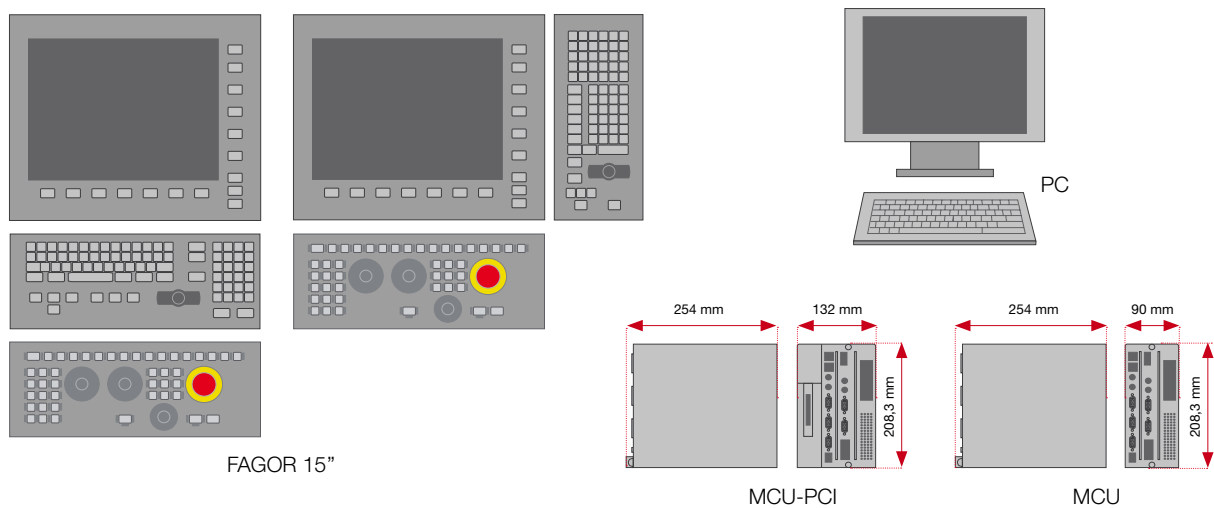
Integrated model

All modes have a central unit integrated into the monitor, with a 10.4" or 15" TFT screen and a compact keyboard.



Modular models. Open and flexible solution.

They consist of separate central unit, monitor and keyboard. Fagor offers separate 15" monitor and keyboards although it is also possible to use another monitor and a QWERTY PC keyboard. There are 2 central units, MCU and MCU-PCI, with a PCI bus option.





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Fagor Automation holds the ISO 9001
Quality System Certificate and the
CE Certificate for all products manufactured.

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