FAGOR AUTOMATION

Ordering Handbook

CNC 8065 Q7-A

Ref.2101

Original instructions

FAGOR

FAGOR AUTOMATION

DENOMINATIONS

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CNC (Central Unit in Operator Panel)

CNC 8065	C65
CNC 8065 Power	C65P

Central Unit FOR CABINET (Without monitor)

UC 8065	U65
UC 8065 Power	U65P

Monitor type (only for CNC)

10" LCD + Keyboard	10K
10" LCD Horizontal	10H
10" LCD Horizontal Touch Screen	10HT
10" LCD Vertical	10V
10" LCD Vertical Touch Screen	10VT
15" LCD	15
15" LCD Multitouch Screen	15AT

Type of function

Milling machines & Centers	M
Lathes and Turning Centers	T

Processor

Basic Processor	B
High level Processor	P

Nand Flash

8 GB	8
16 GB	16

Interface

Sercos	S

Windows

Windows 7	7
Windows 7 Multitouch	7A
Windows 10	10

Software pack

Soft pack 0 (basic)	P0
Soft pack 1	P1

MDU
Dual-use products (2)

Internal code
09

Advanced software
- Standard software
AV Advanced software

Software options (1)

A	Up to 4 interpolated axes
C	High speed machining (HSSA)
d	DMC (Dynamic Machining Calculator)
f	Soft FFC
H	C axis
i	i4.0 CONNECTIVITY PACK
J	Position and velocity synchronism
K	Tangential control
L	Dual-purpose machine M and T cycles
m	FMC (Fagor Machining Calculator)
M	RTCP
N	Y Axis
O	IEC 61131
R	Open system
r	Third Party IOs
S	HD graphics
a	Conversational (IIP)
U	Conversational User Cycles
v	Volumetric comp. (FVC) standard
V	Volumetric comp. (FVC) up to 10 m3
W	Volumetric comp. (FVC) more than 10 m3
x	FCAS (Fagor Collision Avoidance System)
X	PROGTL3 editing
Y	PPTRANS Part Program Translator
z	60/65/70 OPERATING TERMS
b	Kinematic calibration

Channels	From 1 to 4
Magazines	From 1 to 4
Spindles	From 1 to 6
Axes	From 3 to 31

(1) Depends on the type of function

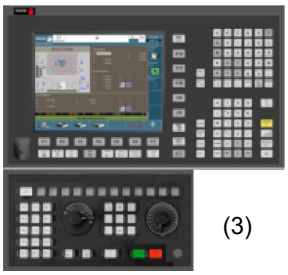
(2) Products manufactured by FAGOR AUTOMATION since April 1st 2014 will include "-MDU" in their identification if they are included on the list of dual-use products according to regulation UE 428/2009 and require an export license depending on destination.

CENTRAL UNIT IN FRONTAL PANEL

MONITOR & OPERATOR PANEL

8065 CNC with 10.4” LCD and Operator Panel

(1)


(2)

(4)

(3)

Code	Model	Description	
83600000	MONITOR-LCD-10 VERTICAL	10" LCD Vertical monitor	(1)
83600001	MONITOR-LCD-10 TOUCH VERTICAL	10" LCD Touch screen Vertical monitor	
83600002	MONITOR-LCD-10 HORIZONTAL	10" LCD Horizontal monitor	(2)
83600003	MONITOR-LCD-10 TOUCH HORIZONTAL	10" LCD Touch screen Horizontal monitor	
83600004	MONITOR-LCD-10K-001	10" LCD Monitor + Keyboard	(4)

Code	Model	Description	
83600010	OP PANEL 329	JOG Panel, 329 mm	(3)

15” LCD and Operator Panel

(1)

(2)

(4)

(1) (3)

(4)

Monitor (choose one of them)

Code	Model	Description	
83700053	MONITOR-LCD-15	15" LCD monitor	(1)
83700059	MONITOR-LCD-15A-MULTITOUCH	15" LCD Capacitive MultiTouch monitor screen	

Keyboard (choose one of them)

Code	Model	Description	
83760019	HORIZONTAL KEYB 2.0+TOUCHPAD	2.0 Horizontal Qwerty keyboard with touchpad mouse	(2)
83760028	HORIZONTAL KEYB 2.0-A	2.0-A Horizontal Qwerty keyboard with touchpad mouse and thin profile	
83760020	HORIZONTAL KEYB	Horizontal Qwerty keyboard	
83760022	VERTICAL KEYB	Vertical alphanumeric keyboard	(3)

Operator Panel (choose one of them)

Code	Model	Description	
83760024	OP PANEL	JOG Panel	(4)
83760025	OP PANEL+SPDL RATE	JOG Panel with Spindle override	
83760029	OP PANEL-A	JOG Panel with thin profile	
83760030	OP PANEL+SPDL RATE-A	JOG Panel with Spindle override with thin profile	

CENTRAL UNIT IN FRONTAL PANEL

CENTRAL UNIT

Code	Model	Description	
83700151	8065-M-ICU-A	Integrate Central Unit with EtherCAT for Milling machines	(1)
83700152	8065 Power-M-ICU-A	Integrate Central Unit with EtherCAT for Milling machines	
83700153	8065-T-ICU-A	Integrate Central Unit with EtherCAT for Lathes	
83700154	8065 Power-T-ICU-A	Integrate Central Unit with EtherCAT for Lathes	

(1) Choose one of them

Code	Model	Description	
83600056	SERCOS-2-A	Sercos module	(1)
83700204	MP-BASIC-6	Basic Processor	(2)
83700205	MP-PLUS-6	High level Processor	
83701121	NF-8GB	8 GB NandFlash	(2)
83701122	NF-16GB	16 GB NandFlash	
83700250	MOD-4GB-RAM	4 GB RAM module	(1)

(1) Required always (2) Choose one of them

Code	Model	Description	
83740063	SOFT WINDOWS 7	WINDOWS 7 software (for no touch monitors)	(1)
83740059	SOFT WINDOWS 7A	WINDOWS 7 multi touch software (for touch monitors)	
83740098	SOFT WINDOWS 10	WINDOWS 10 software	

(1) Choose one of them

CENTRAL UNIT IN ELECTRICAL CABINET

CENTRAL UNIT

Code	Model	Description	
83700157	8065-M-MCU-A	Modular Central Unit with EtherCAT for Milling machines	(1)
83700158	8065 Power-M-MCU-A	Modular Central Unit with EtherCAT for Milling machines	
83700159	8065-T-MCU-A	Modular Central Unit with EtherCAT for Lathes	
83700160	8065 Power-T-MCU-A	Modular Central Unit with EtherCAT for Lathes	

(1) Choose one of them

Code	Model	Description	
83600056	SERCOS-2-A	Sercos module	(1)
83700204	MP-BASIC-6	Basic Processor	(2)
83700205	MP-PLUS-6	High level Processor	
83701121	NF-8GB	8 GB NandFlash	(2)
83701122	NF-16GB	16 GB NandFlash	
83700250	MOD-4GB-RAM	4 GB RAM module	(1)

(1) Required always (2) Choose one of them

Code	Model	Description	
83740063	SOFT WINDOWS 7	WINDOWS 7 software (for no touch monitors)	(1)
83740059	SOFT WINDOWS 7A	WINDOWS 7 multi touch software (for touch monitors)	
83740098	SOFT WINDOWS 10	WINDOWS 10 software	

(1) Choose one of them

19" and 21" Panel PC

(1)

(2)

(3)

PPC (choose one of them)

Code	Model	Description	
83760040	PPC-19-F-B-16-7A	PANEL PC 19" 16Gb	(1)
83760041	PPC-19-N-B-16-7A	PANEL PC 19" 16Gb (without logo)	
83760042	PPC-21W-F-B-16-7A	PANEL PC 21" Widescreen 16Gb	(2)
83760043	PPC-21W-N-B-16-7A	PANEL PC 21" Widescreen 16Gb (without logo)	
83760044	PPC-21W-F-B-16-7A-M128	PANEL PC 21" Widescreen 16Gb - 128Gb expansion	
83760045	PPC-21W-N-B-16-7A-M128	PANEL PC 21" Widescreen 16Gb - 128Gb expansion (without logo)	

Keyboard (choose one of them)

Code	Model	Description	
83760019	HORIZONTAL KEYB 2.0+TOUCHPAD	2.0 Horizontal Qwerty keyboard with touchpad mouse	(3)
83760028	HORIZONTAL KEYB 2.0-A	2.0-A Horizontal Qwerty keyboard with touchpad mouse and thin profile	

Complete the configuration with:
(4) Operator panel as shown in page 3.

Monitor 18W and 21W

(1)

Monitor 18W and 21W (choose one of them)

Code	Model	Description	
83700067	MONITOR-18W MULTITOUCH	18" Widescreen LCD monitor	(1)
83700057	MONITOR-21W MULTITOUCH	21" Widescreen LCD monitor	
83700058	MONITOR-21W MULTITOUCH NEUTRO	21" Widescreen LCD monitor (without logo)	

Complete the configuration with:
(2) or (3) Keyboard as shown in page 3 (except 83760019 HORIZONTAL KEYB 2.0+TOUCHPAD).
(4) Operator panel as shown in page 3.

SOFTWARE OPTIONS FOR MILLING MACHINE & VMC

CNC 8065 M with Feature pack 0 (For simple 3 axes machines up to 6 axes maximum)

CNC 8065 M with Feature pack 1
(For 5 axes interpolation RTCP machines, up to 8 axes maximum, gantry axis, tandem axes and magazine axis)

CNC 8065 Power M with Feature pack 0 (For 5 axes machines up to 12 axes, up to 4 spindles)

CNC 8065 Power M with Feature pack 1
(For 8 axes machines up to 31 axes, several magazines, several channels)

		Software Pack	8065 M		8065 M Power	
			Pack 0	Pack 1	Pack 0	Pack 1
		AXES (minimum - maximum)	3 to 6	5 to 8	5 to 12	8 to 31
		SPINDLES (minimum - maximum)	1	1 to 2	1 to 4	1 to 6
		MAGAZINES (minimum - maximum)	1	1	1 to 2	1 to 4
		CHANNELS (minimum - maximum)	1	1	1	1 to 4
83740030		SOFT ADDIT AXES	( )	( )	( )	( )
83740031		SOFT ADDIT SPINDLES	(-)	( )	( )	( )
83740032		SOFT ADDIT TOOL MAGAZ	(-)	(-)	( )	( )
83740033		SOFT ADDIT CHANNELS	(-)	(-)	(-)	( )
83740008	A	SOFT 4 AXES INTERPOLATION LIMIT	( )	( )	( )	( )
83740011	B	SOFT TOOL RADIUS COMP	(S)	(S)	(S)	(S)
83740013	C	SOFT HSSA II MACHINING SYSTEM	(S)	(S)	(S)	(S)
83740019	D	SOFT EDIT/SIMUL	(S)	(S)	(S)	(S)
83740018	E	SOFT PROFILE EDITOR	(S)	(S)	(S)	(S)
83740021	F	SOFT DIGITAL SERCOS	(S)	(S)	(S)	(S)
83740007	G	SOFT PROBE	( )	(S)	(S)	(S)
83740010	H	SOFT C AXIS	(S)	(S)	(S)	(S)
83740073	N	SOFT Y AXIS	( )	( )	( )	( )
83740034	I	SOFT TANDEM AXES	(-)	( )	(S)	(S)
83740035	J	SOFT SYNCHRONISM	(-)	(-)	( )	(S)
83740012	K	SOFT TANGENTIAL CONTROL	(-)	(S)	(S)	(S)
83740036	L	SOFT DUAL-PURPOSE (milling & lathe cycles)	(-)	(-)	( )	(S)
83740009	M	SOFT RTCP *(*)*	(-)	( )	( )	(S)
83740043	R	SOFT OPEN SYSTEM	(-)	(-)	( )	( )
83740065	r	SOFT THIRD PARTY IOS	( )	( )	( )	( )
83740076	S	SOFT HD GRAPHICS (High Definition) *(*)*	( )	( )	(S)	(S)
83740077	a	SOFT IIP (Interactive Icon-based Pages) CONVERSATIONAL *(1)*	( )	(S)	(S)	(S)
83740072	U	SOFT CONVERS USER CYCLES	( )	( )	( )	( )
83740071	v	SOFT FVC (Fagor Volumetric compensation) STANDARD	( )	( )	( )	( )
83740078	V	SOFT FVC (Fagor Volumetric compensation) UP TO 10m3	(-)	(-)	( )	( )
83740079	W	SOFT FVC (Fagor Volumetric compensation) MORE 10m3	(-)	(-)	( )	( )
83740074	X	SOFT PROGTL3	( )	( )	( )	( )
83740075	Y	SOFT PPTRANS	( )	( )	( )	( )
83740066	b	SOFT KINEMATIC CALIBRATION	( )	( )	( )	( )
83740045	i	SOFT i4.0 CONNECTIVITY PACK	( )	( )	( )	( )
83740068	z	SOFT 60/65/70 OPERATING TERMS	( )	( )	( )	( )
83740055	d	SOFT DMC	( )	( )	( )	( )
83740056	m	SOFT FMC	( )	( )	( )	( )
83740057	f	SOFT FFC	( )	( )	( )	( )
83740069	x	SOFT FCAS	(-)	(-)	( )	( )

(-)	Not available
( )	Optional Feature
(S)	Standard

(*) SOFT RTCP and SOFT FCAS features requires a MP-PLUS (High level Processor)
Having more than one channel, SOFT HD GRAPHICS features requires a MP-PLUS (High level Processor)

(1) Only with 1 channel

SOFTWARE OPTIONS FOR LATHE

CNC 8065 T with Feature pack 0 (For simple 3 axes machines up to 5 axes maximum)

CNC 8065 T with Feature pack 1
(For machines with tailstock tandem, up to 7 axes maximum, live tool, tandem, tailstock and magazine axis)

CNC 8065 Power T with Feature pack 0 (For machines up to 12 axes, up to 4 spindles, live tool, C and Y axes)

CNC 8065 Power T with Feature pack 1
(For machines up to 29 axes, several magazines, several channels)

			8065 T		8065 T Power	
		Software Pack	Pack 0	Pack 1	Pack 0	Pack 1
		AXES (minimum - maximum)	3 to 5	5 to 7	5 to 12	8 to 29
		SPINDLES (minimum - maximum)	2	2	3 to 4	3 to 6
		MAGAZINES (minimum - maximum)	1	1 or 2	1 or 2	1 to 4
		CHANNELS (minimum - maximum)	1	1 or 2	1 or 2	1 to 4
83740030		SOFT ADDIT AXES	( )	( )	( )	( )
83740031		SOFT ADDIT SPINDLES	(-)	(-)	( )	( )
83740032		SOFT ADDIT TOOL MAGAZ	(-)	( )	( )	( )
83740033		SOFT ADDIT CHANNELS	(-)	( )	( )	( )
83740008	A	SOFT 4 AXES INTERPOLATION LIMIT	( )	( )	( )	( )
83740011	B	SOFT TOOL RADIUS COMP	(S)	(S)	(S)	(S)
83740013	C	SOFT HSSA II MACHINING SYSTEM	( )	(S)	(S)	(S)
83740019	D	SOFT EDIT/SIMUL	(S)	(S)	(S)	(S)
83740018	E	SOFT PROFILE EDITOR	(S)	(S)	(S)	(S)
83740021	F	SOFT DIGITAL SERCOS	(S)	(S)	(S)	(S)
83740007	G	SOFT PROBE	( )	(S)	(S)	(S)
83740010	H	SOFT C AXIS	( )	(S)	(S)	(S)
83740073	N	SOFT Y AXIS	( )	( )	( )	(S)
83740034	I	SOFT TANDEM AXES	(-)	( )	(S)	(S)
83740035	J	SOFT SYNCHRONISM	(-)	( )	( )	(S)
83740012	K	SOFT TANGENTIAL CONTROL	(-)	(-)	( )	(S)
83740036	L	SOFT DUAL-PURPOSE (milling & lathe cycles)	(-)	(-)	( )	(S)
83740009	M	SOFT RTCP *(*)*	(-)	(-)	( )	(S)
83740043	R	SOFT OPEN SYSTEM	(-)	(-)	( )	( )
83740065	r	SOFT THIRD PARTY IOS	( )	( )	( )	( )
83740076	S	SOFT HD GRAPHICS (High Definition) *(*)*	( )	( )	(S)	(S)
83740077	a	SOFT IIP (Interactive Icon-based Pages) CONVERSATIONAL *(1)*	( )	(S)	(S)	(S)
83740072	U	SOFT CONVERS USER CYCLES	( )	( )	( )	( )
83740071	v	SOFT FVC (Fagor Volumetric compensation) STANDARD	( )	( )	( )	( )
83740078	V	SOFT FVC (Fagor Volumetric compensation) UP TO 10m3	(-)	(-)	( )	( )
83740079	W	SOFT FVC (Fagor Volumetric compensation) MORE 10m3	(-)	(-)	( )	( )
83740074	X	SOFT PROGTL3	( )	( )	( )	( )
83740075	Y	SOFT PPTRANS	(-)	(-)	(-)	(-)
83740066	b	SOFT KINEMATIC CALIBRATION	( )	( )	( )	( )
83740045	i	SOFT i4.0 CONNECTIVITY PACK	( )	( )	( )	( )
83740068	z	SOFT 60/65/70 OPERATING TERMS	( )	( )	( )	( )
83740055	d	SOFT DMC	(-)	(-)	(-)	(-)
83740056	m	SOFT FMC	( )	( )	( )	( )
83740057	f	SOFT FFC	( )	( )	( )	( )
83740069	x	SOFT FCAS	(-)	(-)	( )	( )

(-)	Not available
( )	Optional Feature
(S)	Standard

(*) SOFT RTCP and SOFT FCAS features requires a MP-PLUS (High level Processor)
Having more than one channel, SOFT HD GRAPHICS features requires a MP-PLUS (High level Processor)

(1) Only with 1 channel

MODELS & SOFTWARE OPTIONS

The sales configuration of the CNC 8065 is based on the machine's configuration. It offers the most appropriate configuration (hardware and software) for the application and machine type.

We offer different models.

CNC 8065 M	with basic features for Milling machines & VMC
CNC 8065 Power M	with power features for Milling machines & VMC
CNC 8065 T	with basic features for Lathes
CNC 8065 Power T	with power features for Lathes

Machine configurations with more than 8 axes or various magazines or channels required the “CNC 8065 Power” model. Also, there are some features, like volumetric compensation, axis or spindle synchronism, or PC applications, that required the “CNC 8065 Power” model.

Considering the requirements of the most typical applications, the features have been grouped by packages. Which:

- Simplifies the product configuration.
- Prevents placing wrong purchase orders.
- The package system allows to have several offers for different models.

Configurations for Milling machine & VMC

8065 M with Feature pack 0 • For simple 3 axes machines up to 6 axes maximum. • Focused on VMC with ARC and rotary table.	**8065 M with Feature pack 1** • For 5 axes machines up to 8 axes maximum. • Focused on gantry machines with tandem and Dynamic RTCP optional.
8065 Power M with Feature pack 0 • For 5 axes machines up to 12 axes, up to 4 spindles.	**8065 Power M with Feature pack 1** • For 8 axes machines up to 31 axes, several magazines, several channels.

Configurations for Lathes

8065 T with Feature pack 0 • For simple 2 axes machines up to 5 axes maximum. • XZC axes, tailstock, auxiliary axis and live tool.	**8065 T with Feature pack 1** • Focused on machines with tailstock tandem, up to 7 axes maximum or simple double channel lathes. • Live tool, tandem, tailstock and magazine axis.
8065 Power T with Feature pack 0 • For machines up to 12 axes, up to 2 channels, several spindles. • Live tool, C and Y axes.	**8065 Power T with Feature pack 1** • For machines up to 29 axes, several magazines, several channels.

SOFTWARE DESCRIPTIONS

Live tool.

The live tool must always be set as another spindle, both in open loop and in threading operations.

SOFT 4 AXES INTERPOLATION LIMIT

It limits the number of axes that may be interpolated at the same time. When having this software option, they can interpolate a maximum of 4 axes at the same time.

SOFT TOOL RADIUS COMP (Standard on all models)

Tool compensation allows programming the contour to be machined based on part dimensions and without taking into account the dimensions of the tool that will be used later on. This avoids having to calculate and define the tool path depending on the radius of the tool.

SOFT HSSA MACHINING SYSTEM (HSSA II)

The acronym “HSSA” means High Speed Surface Accuracy. It is the new improved version of HSC (High Speed Cutting).

HSSA algorithm calculations make it possible to optimize high speed machining. This achieves higher cutting speeds, smoother contours, better surface finish and higher accuracy.

SOFT EDIT/SIMUL (Standard on all models)

It allows editing, modifying and simulating a part-program.

SOFT PROFILE EDITOR (Standard on all models)

It allows editing part profiles graphically and importing DXF files.

SOFT DIGITAL SERCOS (Standard on all models)

Sercos drive system bus.

SOFT PROBE

The CNC may have two probes; usually a tabletop probe to calibrate tools and a measuring probe to measure the part.

It also offers functions G100, G103 and G104 for programming probing moves.

This feature activates the probing canned cycles that help measuring part surfaces and calibrating tools updating their dimensions.

SOFT C AXIS

It activates the kinematics for working with C axis and their associated machining cycles.

The 8065 CNC may be used with several C axis spindles. The parameters of each spindle indicate whether it will work as a C axis or not and it won’t be necessary to activate another axis in the machine parameters.

SOFT Y AXIS

Y axis option added in XC and ZC plane profiles.

In profile cycles in the XC and ZC planes, the icon has been added to choose between C axis and Y axis.

SOFT TANDEM AXES

A tandem axis consists in two motors mechanically coupled (slaved) and making up a single transmission system (axis or spindle). This system is normally used to move the axes on large machines.

The CNC configuration contemplates both axes of the tandem. Only an axis is programmed (the master tandem). The other one (the slave tandem) cannot be programmed, but it is controlled by the CNC.

When activating this feature, it must be borne in mind that for each Tandem axis of the machine, another axis must be added to the whole configuration of the machine. For example, on a large 3-axis lathe (XZ and tailstock), if the tailstock is a Tandem axis, the final purchase order for the machine must indicate 4 axes.

SOFT SYNCHRONISM

Axes and spindles may be synchronized in 2 ways, in velocity or in position.

The CNC configuration contemplates 2 axes or 2 spindles that are synchronized. Once synchronized, only the master is displayed and programmed.

SOFT TANGENTIAL CONTROL

“Tangential Control” Keeps a rotary axis always in the same orientation with respect to the programmed path. The machining path is defined in the axes of the active plane and the CNC keeps the orientation of the rotary axis along the whole path.

SOFT DUAL-PURPOSE

It allows having milling and turning machining cycles.

On lathes with Y axis, it allows making pockets, bosses and even irregular pockets with islands with the Y axis using milling cycles. Turning cycles may be used on mills that have a rotary axis working as C axis.

This feature is only available on the “8065 Power CNC” model.

SOFT RTCP

The “DYNAMIC RTCP” option is a must for machining in RTCP (Rotating Tool Center Point) with 4, 5 or 6-axis interpolation.

This feature requires a MP-PLUS (High level Processor).

SOFT OPEN SYSTEM

The CNC is a closed system that offers all the features needed to machine parts. However, sometimes, specific customers use third-party applications for taking measurements, doing statistics or running other tasks besides machining a part.

This feature must be active when installing this type of applications, even if it is an Office file. Once the application has been installed, it is recommended to close the CNC back in order to prevent the operators from installing other kinds of applications that could slow the system down and affect the machining operations.

This feature is only available on the “8065 Power CNC” model.

SOFTWARE DESCRIPTIONS

SOFT THIRD PARTY IOs

Enables the use of non-Fagor Input/Output modules.

SOFT HD GRAPHICS (High Definition)

It offers high definition solid 3D graphics during the execution and simulation of the machining operation.

While machining, a high definition 3D graphic simulation shows the tool removing material from the part. This is a real time graphic representation that shows the status of the part at all times. The image may be turned, rotated, enlarged or reduced, and even 2 or 4 views of the part may be displayed.

Having more than one channel, a MP-PLUS (High level Processor) is required to use this feature.

SOFT IIP (Interactive Icon-based Pages) CONVERSATIONAL

This programming system is a conversational language, especially designed for people with no prior programming knowledge or not familiarized with Fagor CNC's. Therefore, an operator of a conventional machine can start working on Fagor CNC in a couple of hours.

Working in conversational mode is easier than in ISO mode. It ensures proper data entry and minimizes the number of operations to be defined. There is no need to work with part-programs.

SOFT CONVERS USER CYCLES

Alows to integrate user cycles in conversational mode.

SOFT FVC (Fagor Volumetric compensation) STANDARD

SOFT FVC (Fagor Volumetric compensation) UP TO 10m3

SOFT FVC (Fagor Volumetric compensation) MORE 10m3

5-axis machines are usually used to make large parts. The accuracy of the parts is limited by the machine manufacturing tolerances and by the effect of temperature while machining

In industries like aerospace, the machining demands render the classical compensation tools insufficient. Volumetric compensation FVC comes in to complement the machine adjusting tools. By mapping the total work volume of the machine, the CNC knows the exact position of the tool at all times. After applying the necessary compensations, the resulting part has the desired accuracy and tolerance.

There are 3 choices depending on the size of the machine, basic, up to 10 m3 and over 10 m3.

STANDARD: Faster to calibrate (time), assuming that being less accurate than the other two, is sufficient for the precisions that are required.

UP TO 10m3 and MORE 10m3: More accurate, require precise calibration.

This feature is only available on the "8065 Power CNC" model.

SOFT PROGTL3

Profile programming using geometric language without having to use external CAD systems. Program integration and interaction with real-time simulation and creating solids defined by a plane profile and one or several section profiles.

SOFT PPTRANS

Part-program translator.

SOFT KINEMATIC CALIBRATION

This work mode may be used to calibrate a kinematics for the first time and also, every so often, re-calibrate it to correct the possible deviations originated in the day-to-day machine work.

SOFT i4.0 CONNECTIVITY PACK

Software feature defined to enable access to API8070, the library for the development of applications to communicate with the Fagor CNC.

SOFT 60/65/70 OPERATING TERMS

The "Operating Terms" option allows activating a temporary use license in the CNC, valid until a date determined by the OEM.

SOFT DMC (Dynamic Machining Control)

DMC adapts the feedrate during machining to maintain the cutting power as close as possible to ideal machining conditions.

SOFT FMC (Fagor Machining Calculator)

The FMC application consists of a database of materials to be machined and machining operations (milling and turning) with an interface to choose suitable cutting conditions for these operations.

SOFT FFC (Fagor Feed Control)

During the execution of a canned cycle of the editor, the FFC function makes it possible to replace the feedrate and speed programmed in the cycle with the active values of the execution, which are acted upon by the feed override and speed override.

SOFT FCAS (Fagor Collision Avoidance System)

The FCAS (Fagor Collision Avoidance System) option monitors automatically, in MDI/MDA, manually and tool inspection movements in real time, so as to avoid collisions between the tool and the machine.

FCAS is only available on the "8065 Power CNC" model, on single-channel machines that use HD graphics with a model configuration of the machine adjusted to reality (xca file). Default xca files supplied by Fagor are generic, which means they are not suitable for the FCAS option.

REMOTE I/O MODULES

Are easy to install, they can be mounted at strategic points of the machine for having extra inputs and outputs distributed next to each device. They are distributed in groups and are connected to the central unit.

REMOTE MODULES - RIOW-E serie

RIOW-E series. Remote modules with EtherCAT protocol

Code	Model	Description
03300060	F-IL EC BK-PAC	EtherCAT INLINE Bus coupler
03300061	IB IL 24 DI 8/HD-ECO	INLINE module 8 digital inputs
03300062	IB IL 24 DI 32/HD-PAC	INLINE module 32 digital inputs
03300063	IB IL 24 DO 8/HD-ECO	INLINE module 8 digital outputs
03300064	IB IL 24 DO 32/HD-PAC	INLINE module 32 digital outputs
03300065	IB IL AI 4/U-PAC	INLINE module 4 analog inputs
03300066	IB IL AO 2/UI-PAC	INLINE module 2 analog outputs
03300067	IB IL RTD 4/PT100-ECO	INLINE module 4 inputs resistance thermometer
03300090	IB IL 24 PWR IN-PAC	24V Power Expansion Accessory

REMOTE MODULES - RIOR-E serie

RIOR-E series. Remote modules with EtherCAT protocol

Code	Model	Description
83720202 (*)	RIOR-E-48I32O	Module with 48 digital inputs and 32 digital outputs.
83720203 (*)	RIOR-E-48I32O-ANALOG	Module with 48 DI, 32 DO, 2 AI, 4 AO and 2 Pt100.

(*) In creation.

REMOTE MODULES - RCS-S

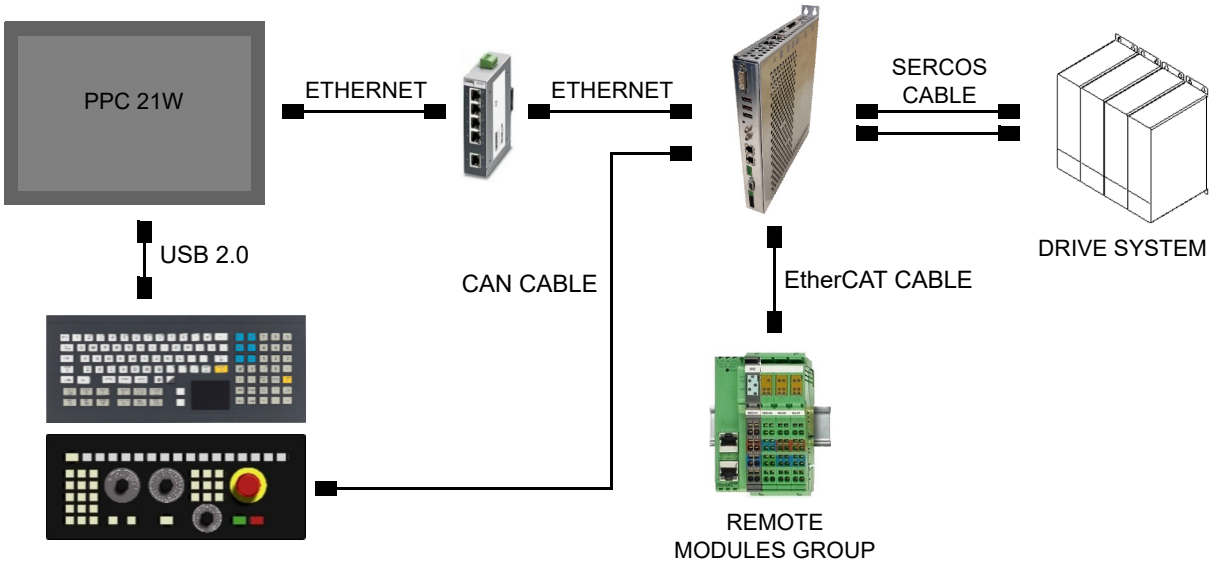
RCS-S series. Remote counter Station - Sercos protocol

Code	Model	Description
83720500	RCS-S-4F4AO	Module with 4 feedback inputs and 4 analog outputs.

SELECT THE CABLES NECESSARY FOR EACH CONFIGURATION

CENTRAL UNIT IN ELECTRICAL CABINET AND PPC MONITOR

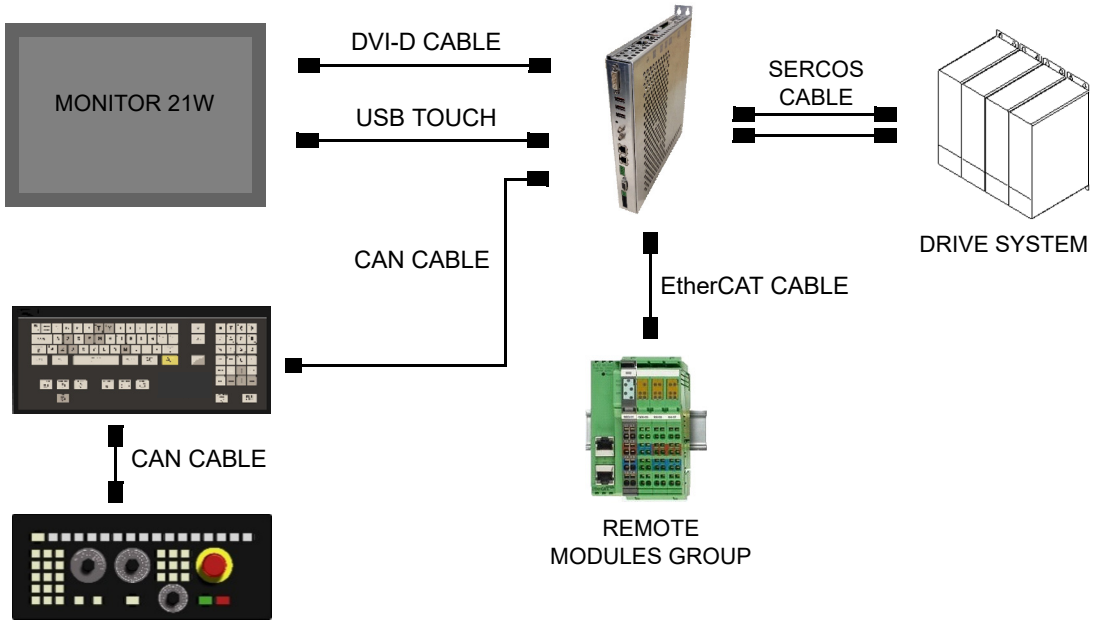
Ready Made cables for EtherCAT bus (ECAT-CABLE), CAN Bus (CAN CABLE) and Sercos ring (SFO & SFO-FLEX).



CENTRAL UNIT IN ELECTRICAL CABINET AND MONITOR 21W

Any passive monitor possible.

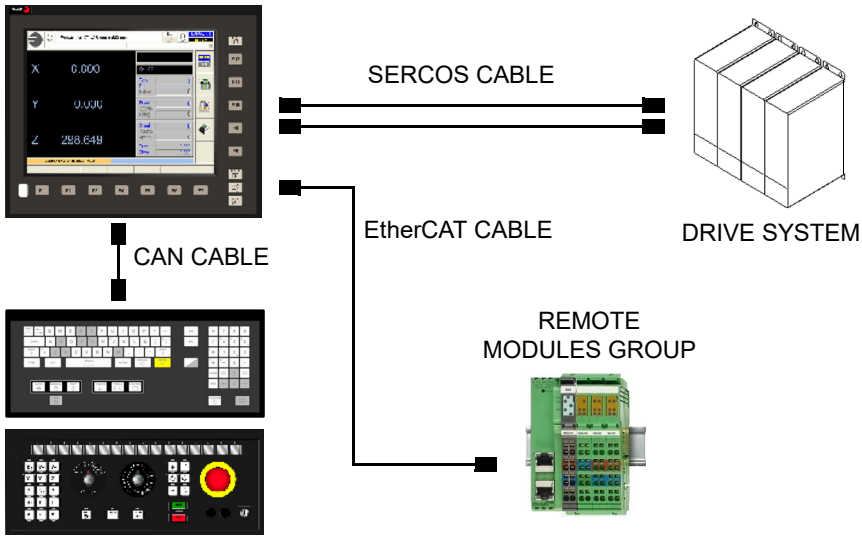
Ready Made cables for monitor (DVI-D and USB TOUCH), EtherCAT bus (ECAT-CABLE), CAN Bus (CAN CABLE) and Sercos ring (SFO & SFO-FLEX).



SELECT THE CABLES NECESSARY FOR EACH CONFIGURATION

CENTRAL UNIT IN OPERATOR PANEL

Ready Made cables for EtherCAT bus (ECAT-CABLE), CAN Bus (CAN CABLE) and Sercos ring (SFO & SFO-FLEX).



DRIVE System

Each drive module having the Sercos interface option offers a small cable for connecting it to the adjacent module.
Only the lines going to the CNC (Back and forth) or the ones joining the far between modules.

SERCOS cables

Sercos optic fiber

1 m	**SFO-1**	03900001
2 m	**SFO-2**	03900002
3 m	**SFO-3**	03900003
5 m	**SFO-5**	03900005
7 m	**SFO-7**	03900007
10 m	**SFO-10**	03900010
12 m	**SFO-12**	03900012

Flexible Sercos optic fiber

10 m	**SFO-FLEX-10**	03910010
15 m	**SFO-FLEX-15**	03910015
20 m	**SFO-FLEX-20**	03910020
25 m	**SFO-FLEX-25**	03910025
30 m	**SFO-FLEX-30**	03910030
35 m	**SFO-FLEX-35**	03910035
40 m	**SFO-FLEX-40**	03910040
40 m	**SFO-V-FLEX-40**	03920040
50 m	**SFO-V-FLEX-50**	03920050
60 m	**SFO-V-FLEX-60**	03920060
75 m	**SFO-V-FLEX-75**	03920075
100 m	**SFO-V-FLEX-100**	03920100

EtherCAT cables for Remote I/Os

5 m	**ECAT-CABLE-5**	03800004
7 m	**ECAT-CABLE-7**	03800005
10 m	**ECAT-CABLE-FLEX-10**	03800006
15 m	**ECAT-CABLE-FLEX-15**	03800007
20 m	**ECAT-CABLE-FLEX-20**	03800008

Ask HQ for the availability of other sizes.

DVI and USB TOUCH cables for passive Monitor

5m	CABLE DVI-D 5M	03780206
5m	CABLE USB 5M - SH	03500001

CAN Cable for Keyboard and Operator Panel

5 m	**CAN CABLE 5M**	03780100
10 m	**CAN CABLE 10M**	03780101
15 m	**CAN CABLE 15M**	03780102
20 m	**CAN CABLE 20M**	03780103
25 m	**CAN CABLE 25M**	03780104
30 m	**CAN CABLE 30M**	03780106
35 m	**CAN CABLE 35M**	03780107
40 m	**CAN CABLE 40M**	03780108
45 m	**CAN CABLE 45M**	03780109
50 m	**CAN CABLE 50M**	03780110
75 m	**CAN CABLE 75M**	03780111
100 m	**CAN CABLE 100M**	03780112
150 m	**CAN CABLE 150M**	03780113

ACCESSORIES

Code	Model	Description	
83600039	CFAST 32GB	32GB CFast Expansion	
83600040	CFAST 128GB	128GB CFast Expansion	
83700075	TRANSP-KEYS & EXTRACTOR	20 transparent key caps and an extractor tool	
83700076	TRANSP-KEYS	20 transparent key caps	
83700077	WHITE-KEYS	20 white key caps	
83740230	ETHERCAT CONFIGURATOR	EtherCAT I/Os configuration software	(1)
03010000	CNC FPS	Fagor External Uninterruptible Power Supply	(2)
03200046	SWITCH SFNB 5TX-2891001	Switch 5 ports 10/100Mb/s	(3)
KT-HBH3-05	HBH3 5 METER KIT	HBH3 Handheld KIT, with 5 meter cable	(4)
KT-HBH3-10	HBH3 10 METER KIT	HBH3 Handheld KIT, with 10 meter cable	
03200009	PS-SF-141005	Hand-Held box Safety 100 pulses 5 V TTL differential (RS422)	(5)
03000003	PS-SF-SHORT CIRCUIT PLUG	Connector to jumper the contacts of the emergency stop.	
03000004	PS-SF-FEMALE CONNECTOR	Female connector	
03000005	PS-SF-MALE CONNECTOR	Male connector	
03200015	HBA-119903	Hand-Held box 100 pulses 5 V TTL differential (RS422)	(6)
03200016	HBA-119904	Hand-Held box 24 pulses 10 - 30 V non-differential square wave, Push-Pull	
03000000	HBA SHORT CIRCUIT PLUG	Connector to jumper the contacts of the emergency stop	
03000001	HBA FEMALE CONNECTOR	Female connector	
03000002	HBA MALE CONNECTOR	Male connector	
03200010	UFO-01-2D-18	Ultra Flat Handwheel 5V	(7)
8I003005	100E	Built-in Handwheel	(8)
83700078	VESA MOUNT ACCESSORY	VESA mounting accessory for monitors from 17” to 23”	(9)

(1)

(2)

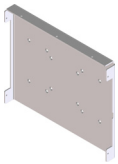
(3)

(4)

(5)
(6)

(7)

(8)

(9)


MANUALS

Printed manuals		
03753900	M.CN8060-65 OEM-CAS	OEM manual in Spanish
03753901	M.CN8060-65 OEM-IN	OEM manual in English
03753910	M.CN8060-65 USER-CAS	User manual in Spanish
03753911	M.CN8060-65 USER-IN	User manual in English
03753912	M.CN8060-65 USER-FRA	User manual in French
03753913	M.CN8060-65 USER-ALE	User manual in German
03753914	M.CN8060-65 USER-ITA	User manual in Italian
03753915	M.CN8060-65 USER-BRA	User manual in Portuguese-Brazilian
03753920	M.CN8060-65 M CYC-CAS	Canned cycles manual for M model in Spanish
03753921	M.CN8060-65 M CYC-IN	Canned cycles manual for M model in English
03753922	M.CN8060-65 M CYC-FRA	Canned cycles manual for M model in French
03753923	M.CN8060-65 M CYC-ALE	Canned cycles manual for M model in German
03753924	M.CN8060-65 M CYC-ITA	Canned cycles manual for M model in Italian
03753925	M.CN8060-65 M CYC-BRA	Canned cycles manual for M model in Portuguese-Brazilian
03753930	M.CN8060-65 T CYC-CAS	Canned cycles manual for T model in Spanish
03753931	M.CN8060-65 T CYC-IN	Canned cycles manual for T model in English
03753932	M.CN8060-65 T CYC-FRA	Canned cycles manual for T model in French
03753933	M.CN8060-65 T CYC-ALE	Canned cycles manual for T model in German
03753934	M.CN8060-65 T CYC-ITA	Canned cycles manual for T model in Italian
03753935	M.CN8060-65 T CYC-BRA	Canned cycles manual for T model in Portuguese-Brazilian

The manuals of the CNC may be downloaded from our FAGOR corporate website.
http://www.fagorautomation.com

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