FAGOR AUTOMATION

CNC 8065   Ordering Handbook
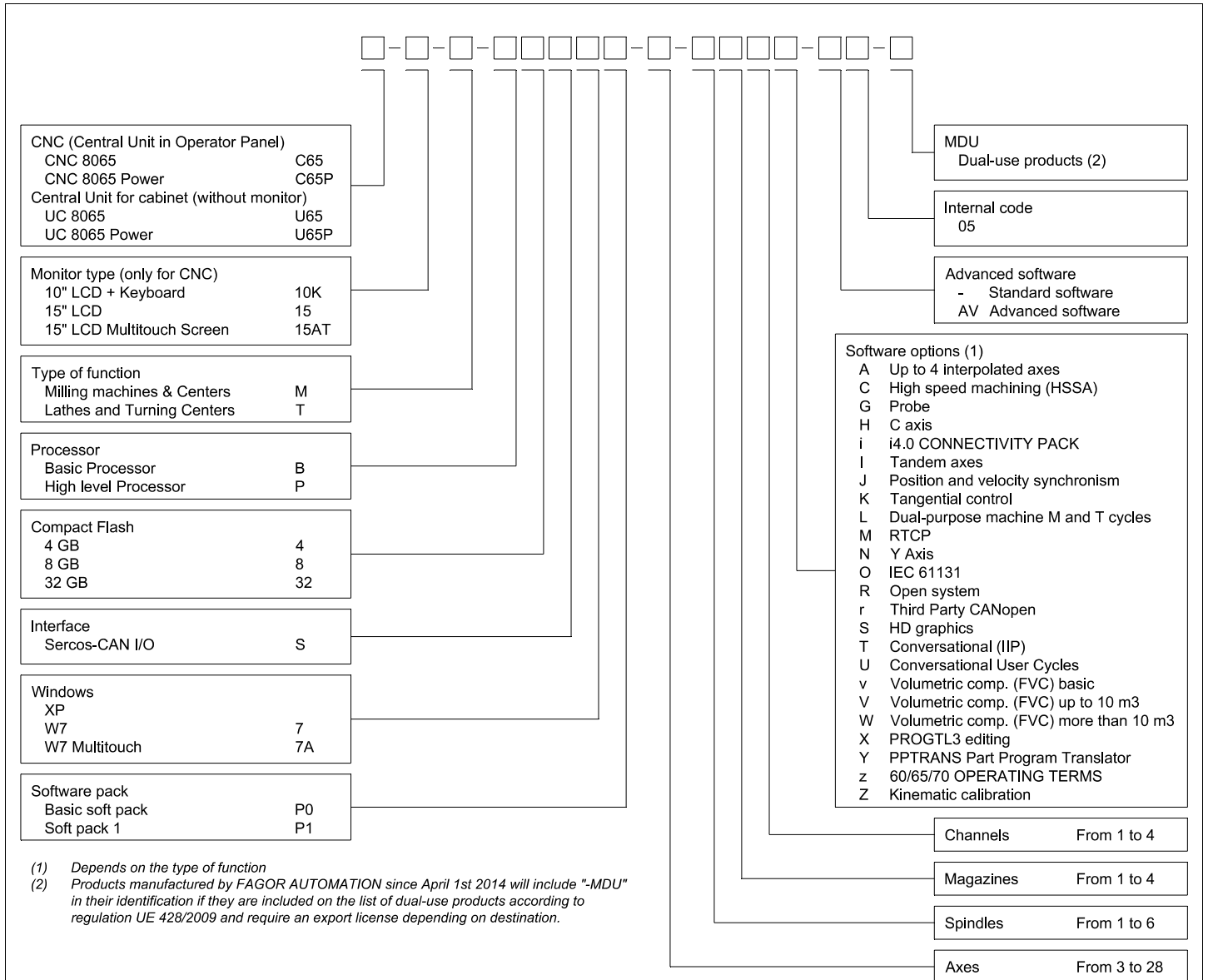
Ref.1711   Original instructions

FAGOR

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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
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

Compact Flash
4 GB	4
8 GB	8
32 GB	32

Interface
Sercos-CAN I/O	S

Windows
XP	
W7	7
W7 Multitouch	7A

Software pack
Basic soft pack	P0
Soft pack 1	P1

(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.

MDU
Dual-use products (2)

Internal code
05

Advanced software
-	Standard software
AV	Advanced software

Software options (1)
A	Up to 4 interpolated axes
C	High speed machining (HSSA)
G	Probe
H	C axis
i	i4.0 CONNECTIVITY PACK
I	Tandem axes
J	Position and velocity synchronism
K	Tangential control
L	Dual-purpose machine M and T cycles
M	RTCP
N	Y Axis
O	IEC 61131
R	Open system
r	Third Party CANopen
S	HD graphics
T	Conversational (IIP)
U	Conversational User Cycles
v	Volumetric comp. (FVC) basic
V	Volumetric comp. (FVC) up to 10 m3
W	Volumetric comp. (FVC) more than 10 m3
X	PROGTL3 editing
Y	PPTRANS Part Program Translator
z	60/65/70 OPERATING TERMS
Z	Kinematic calibration

Channels	From 1 to 4

Magazines	From 1 to 4

Spindles	From 1 to 6

Axes	From 3 to 28

CENTRAL UNIT IN FRONTAL PANEL

MONITOR & OPERATOR PANEL

8065 CNC with 10.4" LCD and Operator Panel

Code	Model	Description
83600004	MONITOR-LCD-10K-001	10" LCD Monitor + Keyboard

15" LCD and Operator Panel

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)
83760020	HORIZONTAL KEYB	Horizontal Qwerty keyboard	
83760021	HORIZONTAL KEYB+MOUSE	Horizontal Qwerty keyboard with mouse	
83760022	VERTICAL KEYB	Vertical alphanumeric keyboard	(3)
83760023	VERTICAL KEYB+MOUSE	Vertical alphanumeric keyboard with mouse	

Operator Panel (choose one of them)
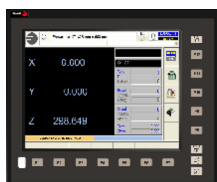
Code	Model	Description	
83760024	OP PANEL	JOG Panel	(4)
83760025	OP PANEL+SPDL RATE	JOG Panel with Spindle override	

CENTRAL UNIT

Code	Model	Description	
83700111	8065-M-ICU	Integrate Central Unit for Milling machines	(1)
83700115	8065 Power-M-ICU	Integrate Central Unit for Milling machines	
83700112	8065-T-ICU	Integrate Central Unit for Lathes	
83700116	8065 Power-T-ICU	Integrate Central Unit for Lathes	

(1) Choose one of them

Central Unit components

Code	Model	Description	
83700065	SER-CAN-8I-8IO-A	Sercos-Can module	(1)
83700200	MP-BASIC-4	Basic Processor	(2)
83700201	MP-PLUS-4	High level Processor	
83701061	CF-DMA-4GB	4 GB Compact Flash for Basic Processor	
83701059	CF-DMA-8GB	8 GB Compact Flash for Basic Processor	
83701062	CF-DMA-32GB	32 GB Compact Flash for Basic Processor	
83701090	CF-DMA-B7-4GB	4 GB Win7 Compact Flash for Basic Processor	
83701091	CF-DMA-B7-8GB	8 GB Win7 Compact Flash for Basic Processor	
83701092	CF-DMA-B7-32GB	32 GB Win7 Compact Flash for Basic Processor	(2)
83701064	CF-DMA-P-4GB	4 GB Compact Flash for High level Processor	
83701066	CF-DMA-P-8GB	8 GB Compact Flash for High level Processor	
83701065	CF-DMA-P-32GB	32 GB Compact Flash for High level Processor	
83701081	CF-DMA-P7-8GB	8 GB Win 7 Compact Flash for High level Processor	
83701080	CF-DMA-P7-32GB	32 GB Win 7 Compact Flash for High level Processor	

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

CENTRAL UNIT IN ELECTRICAL CABINET

CENTRAL UNIT

Code	Model	Description	
83700113	8065-M-MCU	Cabinet Central Unit for Milling machines	
83700117	8065 Power-M-MCU	Cabinet Central Unit for Milling machines	
83700114	8065-T-MCU	Cabinet Central Unit for Lathes	(1)
83700118	8065 Power-T-MCU	Cabinet Central Unit for Lathes	

(1) Choose one of them

Central Unit components

Code	Model	Description	
83700065	SER-CAN-8I-8IO-A	Sercos-Can module	(1)
83700200	MP-BASIC-4	Basic Processor	(2)
83700201	MP-PLUS-4	High level Processor	
83701061	CF-DMA-4GB	4 GB Compact Flash for Basic Processor	
83701059	CF-DMA-8GB	8 GB Compact Flash for Basic Processor	
83701062	CF-DMA-32GB	32 GB Compact Flash for Basic Processor	
83701090	CF-DMA-B7-4GB	4 GB Win7 Compact Flash for Basic Processor	
83701091	CF-DMA-B7-8GB	8 GB Win7 Compact Flash for Basic Processor	
83701092	CF-DMA-B7-32GB	32 GB Win7 Compact Flash for Basic Processor	(2)
83701064	CF-DMA-P-4GB	4 GB Compact Flash for High level Processor	
83701066	CF-DMA-P-8GB	8 GB Compact Flash for High level Processor	
83701065	CF-DMA-P-32GB	32 GB Compact Flash for High level Processor	
83701081	CF-DMA-P7-8GB	8 GB Win 7 Compact Flash for High level Processor	
83701080	CF-DMA-P7-32GB	32 GB Win 7 Compact Flash for High level Processor	

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

19" and 21" Panel PC

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)	

Keyboard (only one option)

Code	Model	Description	
83760019	HORIZONTAL KEYB 2.0+TOUCHPAD	2.0 Horizontal Owerty keyboard with touchpad mouse	(3)

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

Monitor 21W

Monitor 21W (choose one of them)

Code	Model	Description
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.

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	or	UC 8065 M	with basic features for Milling machines & VMC
CNC 8065 Power M	or	UC 8065 Power M	with power features for Milling machines & VMC
CNC 8065 T	or	UC 8065 T	with basic features for Lathes
CNC 8065 Power M	or	UC 8065 Power M	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 basic	**8065 M with Feature pack 1**
• For simple 3 axes machines up to 6 axes maximum.	• For 5 axes machines up to 8 axes maximum.
• Focused on VMC with ARC and rotary table.	• Focused on gantry machines with tandem and Dynamic RTCP optional.
8065 Power M basic	**8065 Power M with Feature pack 1**
• For 5 axes machines up to 12 axes, up to 4 spindles.	• For 8 axes machines up to 28 axes, several magazines, several channels.

Configurations for Lathes

8065 T basic	**8065 T with Feature pack 1**
• For simple 2 axes machines up to 5 axes maximum.	• Focused on machines with tailstock tandem, up to 7 axes maximum or simple double channel lathes.
• XZC axes, tailstock, auxiliary axis and live tool.	• Live tool, tandem, tailstock and magazine axis.
8065 Power T basic	**8065 Power T with Feature pack 1**
• For machines up to 12 axes, up to 2 channels, several spindles.	• For machines up to 28 axes, several magazines, several channels.
• Live tool, C and Y axes.	

SOFTWARE OPTIONS FOR MILLING MACHINE & VMC

CNC 8065 M or UC 8065 M
• For simple 3 axes machines up to 6 axes maximum.

CNC 8065 M, or UC 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 or UC 8065 Power M
• For 5 axes machines up to 12 axes, up to 4 spindles.

CNC 8065 Power M, or UC 8065 Power M, with Feature pack 1
• For 8 axes machines up to 31 axes, several magazines, several channels.

			8065 M		8065 M Power	
	Software Pack		Basic	Pack 1	Basic	Pack 1
	Processor		Basic Plus	Basic Plus	Plus	Plus
	Compact Flash (GB)		4, 8, 32	4, 8, 32	4, 8, 32	4, 8, 32
	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 (M & T)	(-)	(-)	( )	(S)
83740009	M	SOFT RTCP (*)	(-)	( )	( )	(S)
83740043	R	SOFT OPEN SYSTEM	(-)	(-)	( )	( )
83740065	r	SOFT THIRD PARTY CANOPEN	( )	( )	( )	( )
83740076	S	SOFT HD GRAPHICS (*)	( )	( )	(S)	(S)
83740077	T	SOFT IIP CONVERSATIONAL (1)	( )	(S)	(S)	(S)
83740072	U	SOFT CONVERS USER CYCLES	( )	( )	( )	( )
83740071	v	SOFT FVC BASIC	(-)	(-)	( )	( )
83740078	V	SOFT FVC UP TO 10m3	(-)	(-)	( )	( )
83740079	W	SOFT FVC MORE 10m3	(-)	(-)	( )	( )
83740074	X	SOFT 70 PROGTL3	( )	( )	( )	( )
83740075	Y	SOFT PPTRANS	( )	( )	( )	( )
83740066	Z	SOFT KINEMATIC CALIBRATION	( )	( )	( )	( )
83740045	i	SOFT i4.0 CONECTIVITY PACK	( )	( )	( )	( )
83740068	z	SOFT 60/65/70 OPERATING TERMS	( )	( )	( )	( )

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

(*) SOFT RTCP and SOFT IEC 61131 LANGUAGE 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 or UC 8065 T
• For simple 3 axes machines up to 5 axes maximum.

CNC 8065 T, or UC 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 or UC 8065 Power T
• For machines up to 12 axes, up to 4 spindles.
• Live tool, C and Y axes.

CNC 8065 Power T, or UC 8065 Power T, with Feature pack 1
• For machines up to 29 axes, several magazines, several channels.

		8065 T		8065 T Power	
	Software Pack	Basic	Pack 1	Basic	Pack 1
	Processor	Basic / Plus	Basic / Plus	Plus	Plus
	Compact Flash (GB)	4, 8, 32	4, 8, 32	4, 8, 32	4, 8, 32
	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 to 2	1 to 2	1 to 4
	CHANNELS (minimum - maximum)	1	1 to 2	1 to 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 (M & T)	(-)	(-)	( )	(S)
83740009 M	SOFT RTCP (*)	(-)	(-)	( )	(S)
83740043 R	SOFT OPEN SYSTEM	(-)	(-)	( )	( )
83740065 r	SOFT THIRD PARTY CANOPEN	( )	( )	( )	( )
83740076 S	SOFT HD GRAPHICS (*)	( )	( )	(S)	(S)
83740077 T	SOFT IIP CONVERSATIONAL (1)	( )	(S)	(S)	(S)
83740072 U	SOFT CONVERS USER CYCLES	( )	( )	( )	( )
83740071 v	SOFT FVC BASIC	(-)	(-)	( )	( )
83740078 V	SOFT FVC UP TO 10m3	(-)	(-)	( )	( )
83740079 W	SOFT FVC MORE 10m3	(-)	(-)	( )	( )
83740074 X	SOFT 70 PROGTL3	( )	( )	( )	( )
83740075 Y	SOFT PPTRANS	(-)	(-)	(-)	(-)
83740066 Z	SOFT KINEMATIC CALIBRATION	( )	( )	( )	( )
83740045 i	SOFT i4.0 CONECTIVITY PACK	( )	( )	( )	( )
83740068 z	SOFT 60/65/70 OPERATING TERMS	( )	( )	( )	( )

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

(*) SOFT RTCP and SOFT IEC 61131 LANGUAGE 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 DESCRIPTIONS

Compact Flash (GB)

It may be of 4GB, 8GB or 32 GB. It must be present in all the configurations. By default, the option with the least capacity is always offered, the 4GB compact by default.

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.

SOFTWARE DESCRIPTIONS

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.

SOFT THIRD PARTY CANOPEN

Enables the use of CANopen non-Fagor 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) BASIC
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.

BASIC: 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.

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 through the CAN bus.

REMOTE MODULES – RIOW serie

RIOW series. Remote modules with CANopen protocol

Code	Model	Description
03300010	RIOWCANOPENSTAND	Header CANopen
03300008	RIOW 801-51205053	Expansion module with 8 digital inputs
03300007	RIOW 800-51205043	Expansion module with 8 digital ouputs
03300006	RIOW 4AI-51205050	Expansion module with 4 analog inputs
03300005	RIOW 4AO-51205039	Expansion module with 4 analog ouputs
03300004	RIOW 2AI PT100-51205048	Expansion module with 2 PT100 inputs
03300003	RIOW PS24-51205036	24VDc 10A power supply for the modules
03300000	RIOW END-51205037	Line terminating module

REMOTE MODULES – RIOR serie

RIOR series. Remote modules with CANopen protocol
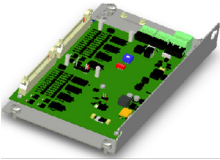
Code	Model	Description
83720200	RIOR-48I32O	Module with 48 digital inputs and 32 digital outputs.
83720201	RIOR-48I32O-4AI2AO	Module with 48 digital inputs, 32 digital outputs, 4 analog inputs and 2 analog outputs.

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.

REMOTE MODULES – RIO5 serie

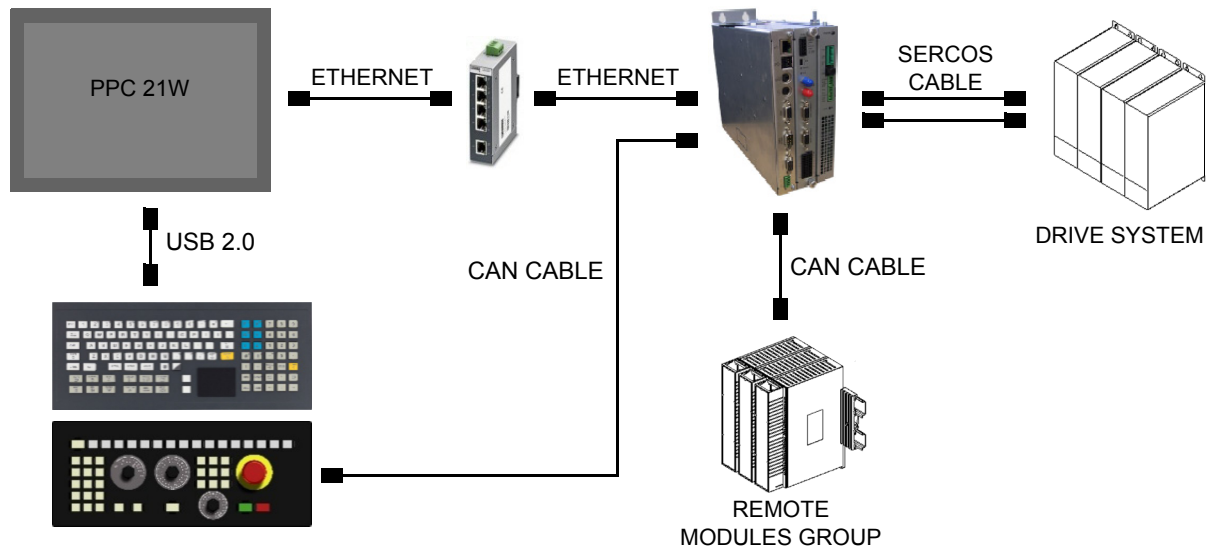### RIO5 series. Remote modules with CANopen protocol

Code	Model	Description
83070015	RIO5 PS-24I/16O	Header module with power supply 24 digital inputs and 16 digital outputs.
83070018	RIO5 PS-2PT100/4AI/4AO	Header module with 4 analog inputs, 4 analog outputs and 2 inputs for PT100 temperature gages.
83070016	RIO5 24I/16O EXP MOD	Expansion module with 24 digital inputs and 16 digital outputs.
83070017	RIO5 48I/32O EXP MOD	Expansion module with 48 digital inputs and 32 digital outputs.

SELECT THE CABLES NECESSARY FOR EACH CONFIGURATION
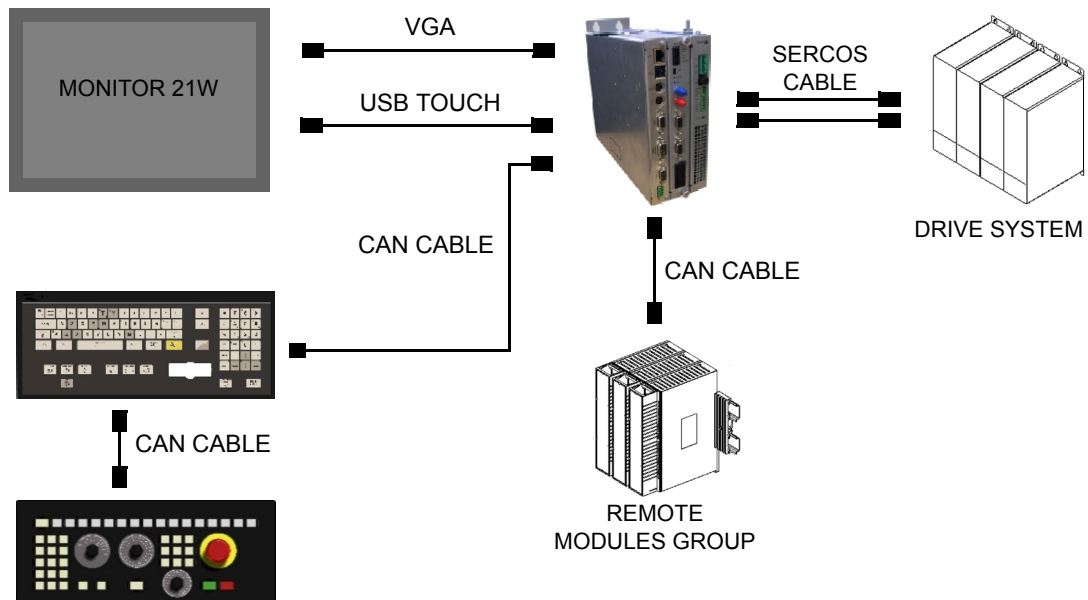
CENTRAL UNIT IN ELECTRICAL CABINET AND PPC MONITOR

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

PPC 21W
ETHERNET
ETHERNET
SERCOS CABLE
DRIVE SYSTEM

USB 2.0

CAN CABLE
CAN CABLE

REMOTE MODULES GROUP

CENTRAL UNIT IN ELECTRICAL CABINET AND MONITOR 21W

Any passive monitor possible.
Ready Made cables for monitor (VGA and USB TOUCH), CAN Bus (CAN CABLE) and ring (SFO & SFO-FLEX).

MONITOR 21W
VGA
USB TOUCH
SERCOS CABLE
DRIVE SYSTEM

CAN CABLE
CAN CABLE

CAN CABLE

REMOTE MODULES GROUP

SELECT THE CABLES NECESSARY FOR EACH CONFIGURATION

CENTRAL UNIT IN OPERATOR PANEL

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

SERCOS CABLE

DRIVE SYSTEM

CAN CABLE

REMOTE
MODULES GROUP

CAN CABLE
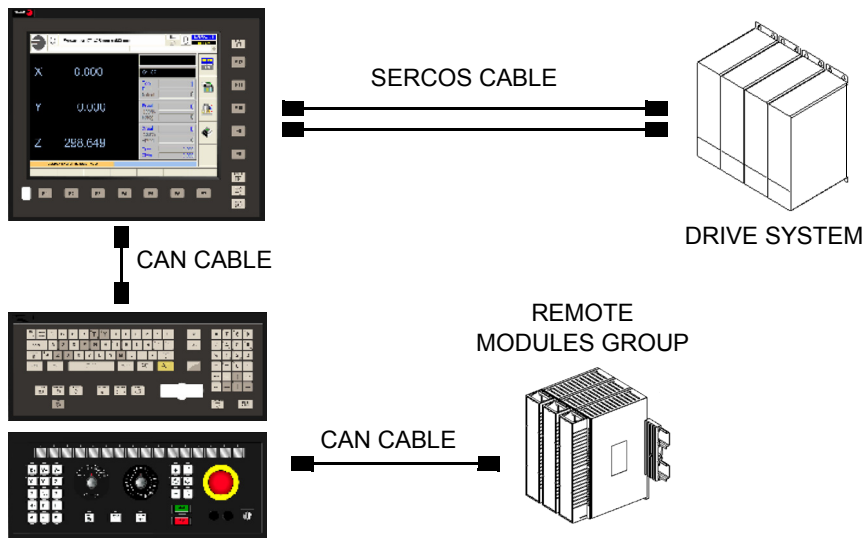
SERCOS cables

Sercos optic fiber

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

Flexible Sercos optic fiber

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

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 anf forth) or the ones joining the far between modules.

CAN cable for Remote I/Os

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

VGA and USB TOUCH cables for 21W Monitor

6m	**CABLE VGA FULLHD 6M**.......	In creation
5m	**CABLE USB 5M - SH**..............	In creation

ACCESORIES

Code	Model	Description	
83760005	CNC FPU	Fagor Power Unit	
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	
03200046	SWITCH SFNB 5TX-2891001	Switch 5 ports 10/100Mb/s	(1)
KT-HBH3-05	HBH3 5 METER KIT	HBH3 Handheld KIT, with 5 meter cable	(2)
KT-HBH3-10	HBH3 10 METER KIT	HBH3 Handheld KIT, with 10 meter cable	
KT-HBH4-EU	HBH4 EU KIT	HBH4 Wireless Handheld KIT, with EU safety module	(3)
KT-HBH4-US	HBH4 US KIT	HBH4 Wireless Handheld KIT, with US safety module	
03200009	PS-SF-141005	Hand-Held box Safety 100 pulses 5 V TTL differential (RS422)	(4)
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)	(5)
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	(6)
8I003006	100P	Portable Handwheel with 3 m cable	(7)
8I003005	100E	Built-in Handwheel	(8)

(1) (2) (3) (4) (5)
(6) (7) (8)
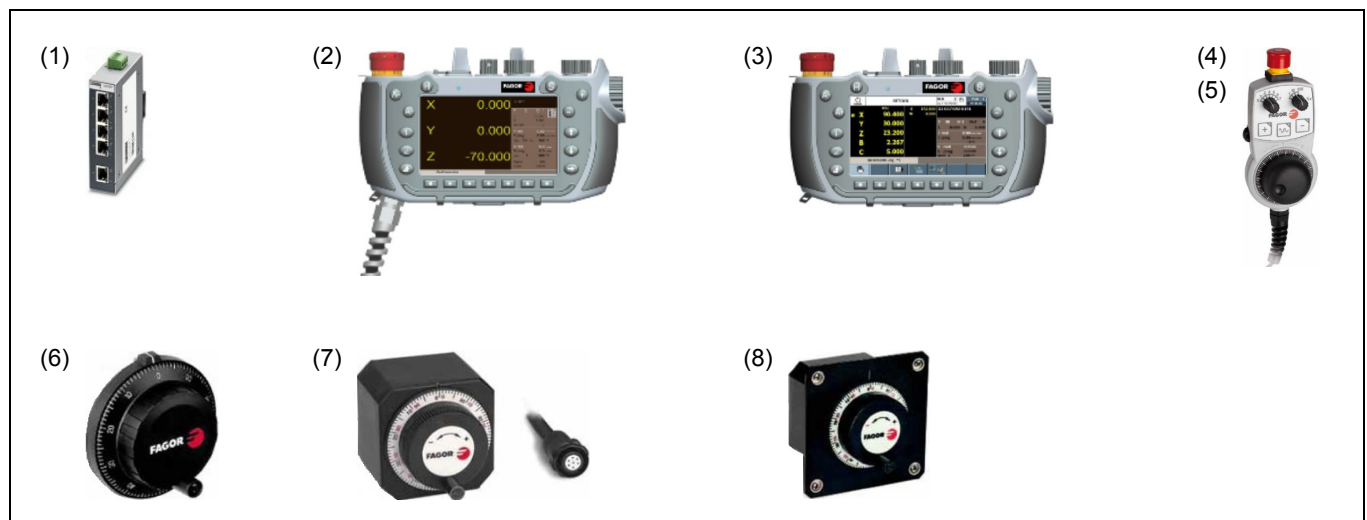
UPGRADES

The following upgrades are used to update a CNC with Windows XP to Windows 7. There are different references depending on the type of processor (Basic or High Level) and the size of the memory.

Code	Model	Description
83701100	CF-DMA-B7- 4GB UPG (RF)	4GB Compact Flash + Windows 7 Upgrade for Basic Processor
83701101	CF-DMA-B7- 8GB UPG (RF)	8GB Compact Flash + Windows 7 Upgrade for Basic Processor
83701102	CF-DMA-B7- 32GB UPG (RF)	32GB Compact Flash + Windows 7 Upgrade for Basic Processor
83701103	CF-DMA-P7- 8GB UPG (RF)	8GB Compact Flash + Windows 7 Upgrade for High level Processor
83701104	CF-DMA-P7- 32GB UPG (RF)	32GB Compact Flash + Windows 7 Upgrade for High level Processor

Consider the following table to understand the handling capacity of the spare parts and upgrades.

	Repair centers	Subsidiaries	Service centers	Customers
(R)	✓	✓	✓	✓
(RS)	✓	✓	✓	
(RF)	✓	✓		
(RC)	✓			

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