

FAGOR AUTOMATION

CNC 8060

Ordering Handbook

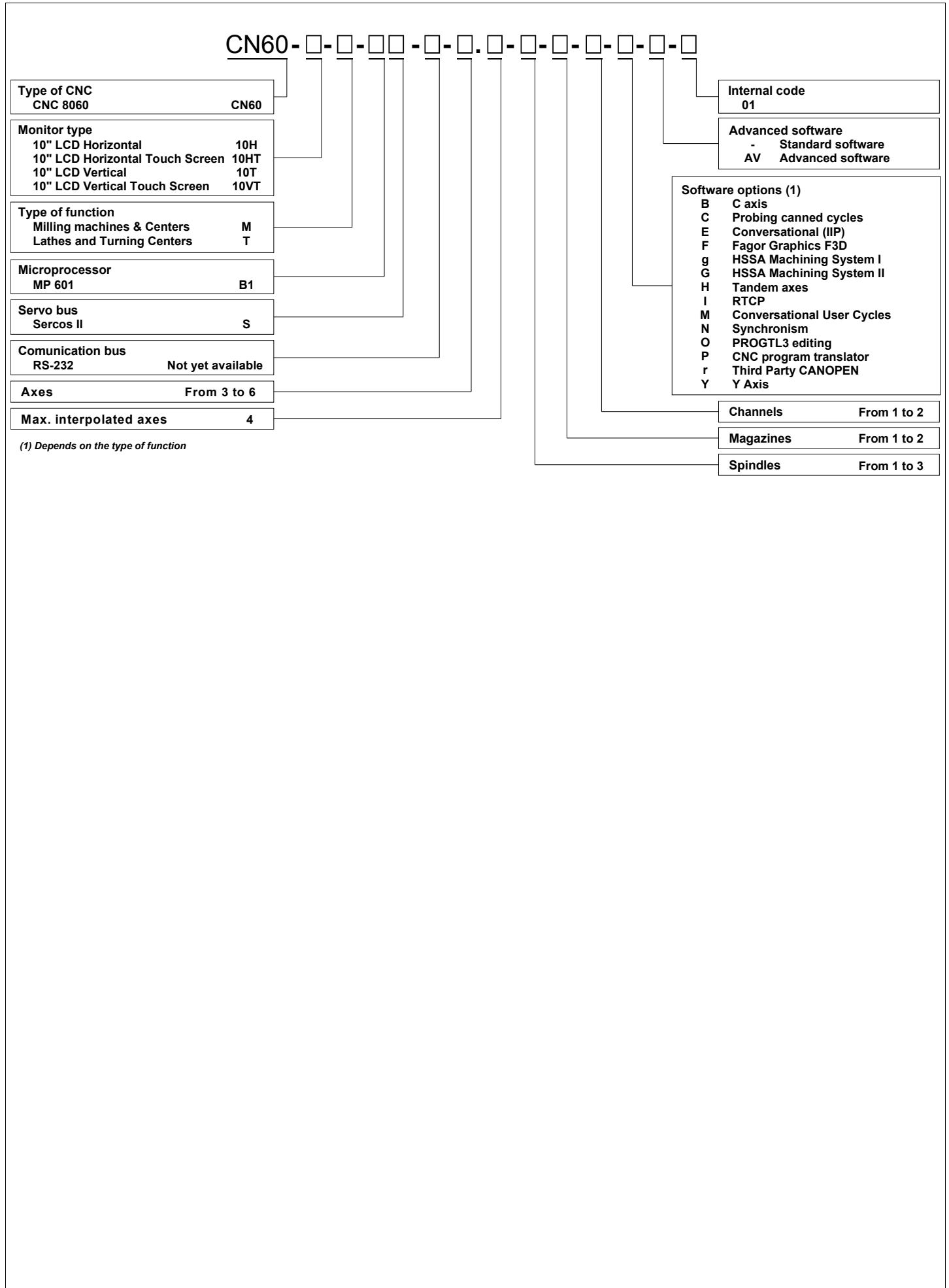
Ref. 1703

Original instructions



FAGOR AUTOMATION

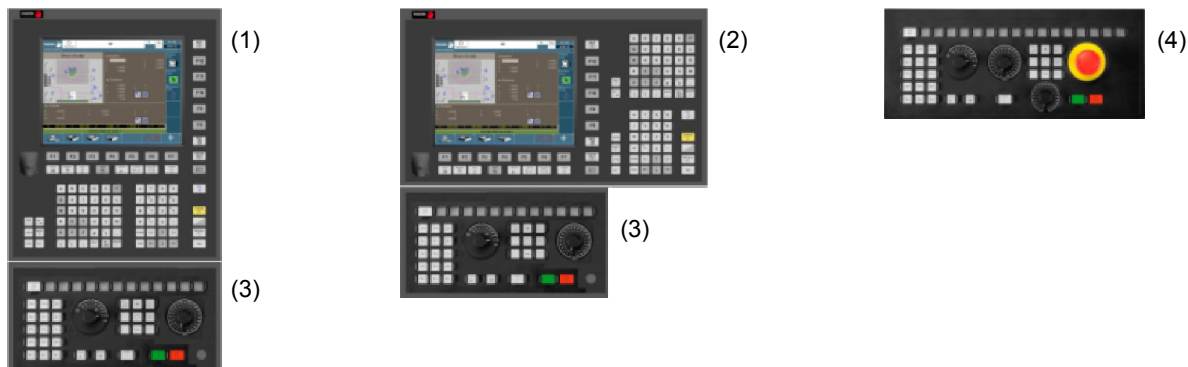
DENOMINATIONS



CONFIGURATION

MONITOR & OPERATOR PANEL

8060 CNC with 10.4" LCD & Key board, separate Operator Panel



Monitor (choose one of them)

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	(1)
83600002	MONITOR-LCD-10 HORIZONTAL	10" LCD Horizontal monitor	(2)
83600003	MONITOR-LCD-10 TOUCH HORIZONTAL	10" LCD Touch screen Horizontal monitor	(2)

Operator Panel (choose one of them)

Code	Model	Description	
83600010	OP PANEL 329	JOG Panel, 329 mm	(3)
83760024	OP PANEL	JOG Panel, 420 mm	(4)
83760025	OP PANEL+SPDL RATE	JOG Panel with Spindle override	(4)

CENTRAL UNIT

Central Unit (choose one of them)

Code	Model	Description
83600015	8060-M-ICU	Integrate Central Unit for Milling machines
83600018	8060-T-ICU	Integrate Central Unit for Lathes

Operator Panel (choose one of them)

Code	Model	Description	
83600031	MP-601	Microprocessor	compulsory
83600050	8060-SERCOS-2	Sercos board	compulsory

MODELS & SOFTWARE OPTIONS

			8060	
			M	T
Monitor			10H/V	10H/V
AXES		(min.-max.)	3 .. 6	3 .. 6
INTERPOLATED AXES		(max.)	4	4
SPINDLES		(min.-max.)	1 .. 2	1 .. 3
MAGAZINES		(min.-max.)	1	1 .. 2
CHANNELS		(min.-max.)	1	1 .. 2
Max. AXES + SPINDLES			7	7
83600076		SOFT 8060 ADDIT AXES	()	()
83600078		SOFT 8060 ADDIT SPINDLES	()	()
83600079		SOFT 8060 ADDIT TOOL MAGAZ	(-)	()
83600077		SOFT 8060 ADDIT CHANNELS	(-)	()
		SOFT TOOL RADIUS COMP	(A)	(A)
		SOFT EDIT/SIMUL	(A)	(A)
		SOFT PROFILE EDITOR	(A)	(A)
		SOFT DIGITAL SERCOS	(A)	(A)
83600084	G	SOFT 60 HSSA II MACHINING SYSTEM	()	()
83600081	C	SOFT 60 PROBE	()	()
83600080	B	SOFT 60 C AXIS	()	()
83600097	Y	SOFT 60 Y AXIS	()	()
83600094	H	SOFT 60 TANDEM AXES	()	()
83600092	N	SOFT 60 SYNCHRONISM	(-)	()
83600086	I	SOFT 60 RTCP	()	(-)
83740065	r	SOFT THIRD PARTY CANOPEN	()	()
83600083	F	SOFT 60 F3D GRAPHICS	()	()
83600082	E	SOFT 60 IIP CONVERSATIONAL	()	()
83600089	M	SOFT 60 CONV USER CYCLES	()	()
83600095	O	SOFT 60 PROGTL3	()	(-)
83600096	P	SOFT 60 PPTRANS	()	()

(-)	Not available
()	Optional Feature
(A)	Standard feature

SOFTWARE DESCRIPTIONS

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 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 60 HSSA MACHINING SYSTEM (HSSA II) (8060 CNC only)

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 60 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 60 C AXIS

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

SOFT 60 Y AXIS

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

SOFT 60 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 60 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 60 RTCP

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

SOFT THIRD PARTY CANOPEN

Enables the use of CANopen non-Fagor modules.

SOFT 60 F3D GRAPHICS

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.

SOFT 60 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 60 CONVERS USER CYCLES

Allows to integrate user cycles in conversational mode.

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.

ACCESORIES

Code	Model	Description
83600036	COMPACT FLASH 2GB	2 GB external Compact Flash

If you are going to use another Compact Flash, always use industrial grade Compact Flash SLC. They support temperatures between -40°C and +80°C, and 27 years with 1000 writes per day.

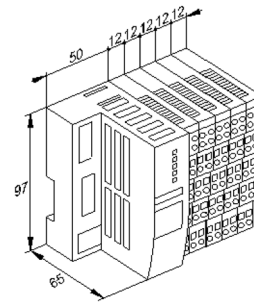
Fagor automation shall not be held responsible for any problems caused by using other lower-quality Compact Flash.

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



Header CANopen.....	RIOWCANOPENSTAND	03300010
Expansion module with 8 digital inputs.....	RIOW 801-51205053	03300008
Expansion module with 8 digital outputs.....	RIOW 800-51205043	03300007
Expansion module with 4 analog inputs.....	RIOW 4AI-51205050	03300006
Expansion module with 4 analog outputs.....	RIOW 4AO-51205039	03300005
Expansion module with 2 PT100 inputs.....	RIOW 2AI PT100-51205048	03300004
24V0c 10A power supply for the modules.....	RIOW PS24-51205036	03300003
Line terminating module.....	RIOW END-51205037	03300000

REMOTE MODULES - RIOR serie

RIOR series. Remote modules with CANopen protocol



RIOR-48I32O.....	83720200
Module with 48 digital inputs and 32 digital outputs	
RIOR-4AI2AO.....	83720201
Module with 4 analog inputs and 2 analog outputs	

REMOTE MODULES - RCS-S

RCS-S series. Remote counter Station - Sercos protocol

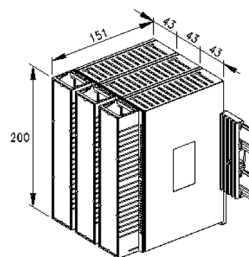


RCS-S-4F4AO.....	83720500
Module with 4 feedback inputs and 4 analog outputs	

REMOTE I/O MODULES

REMOTE MODULES - RIO5 serie

RIO5 series. Remote modules with CANopen protocol

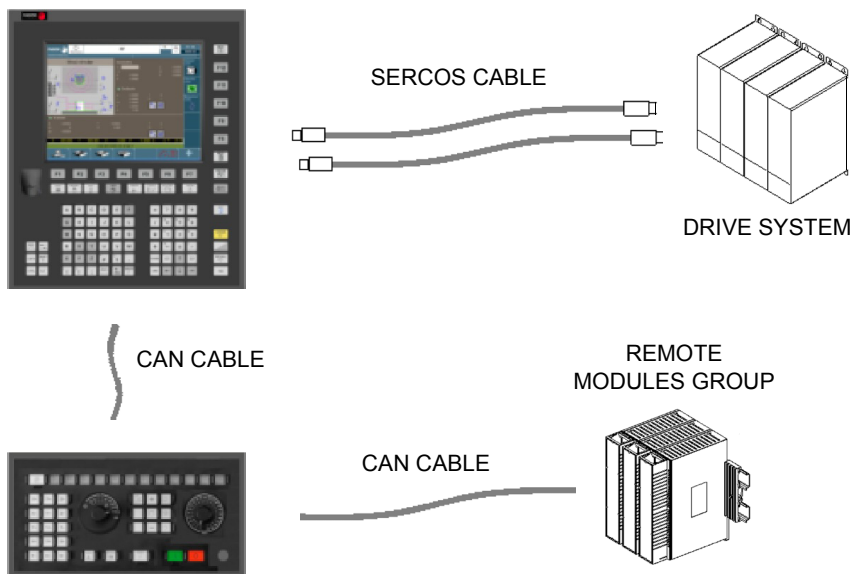


- RIO5 PS-24I/16O**..... 83070015
Header module with power supply, 24 digital inputs and 16 digital outputs
- RIO5 PS-2PT100/4AI/4AO**..... 83070018
Header module with 4 analog inputs, 4 analog outputs and 2 inputs for PT100 temperature gages
- RIO5 24I/16O EXP MOD**..... 83070016
Expansion module with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

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).



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

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-50	03920060
75m	SFO-V-FLEX-75	03920075
100m	SFO-V-FLEX-100	03920100

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

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>

Fagor Automation shall not be held responsible for any printing or transcribing errors in the Ordering Handbook and reserves the right to make any changes to the characteristics of its products without prior notice. You must always compare the data with that appearing in the manual.

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