Features

♦ Up to 7 axes with 4 axes interpolated simultaneously being possible to interpolate X Y Z now and X U W later.

♦ 1 execution channel. In applications requiring more execution channels, we recommend using the Fagor 8070 OL CNC model.

♦ Integrated PLC with programming in: equations, contacts and C language.

♦ Ethernet connection to communicate with VGA monitors with or without touch screen

♦ Closed system (it is not possible to install external software). Using the Fagor FGUIM application it is possible to customize the interface. An external PC with its own interface is also possible.

♦ No PCI bus expansion option

♦ 1 GB RAM memory

♦ 2 GB Compact Flash (0,3 ~ 0,4 GB for Oem / User). No expansion possible.

♦ Digital and analog interface. Sercos and Mechatrolink 1-2 (optional) field bus
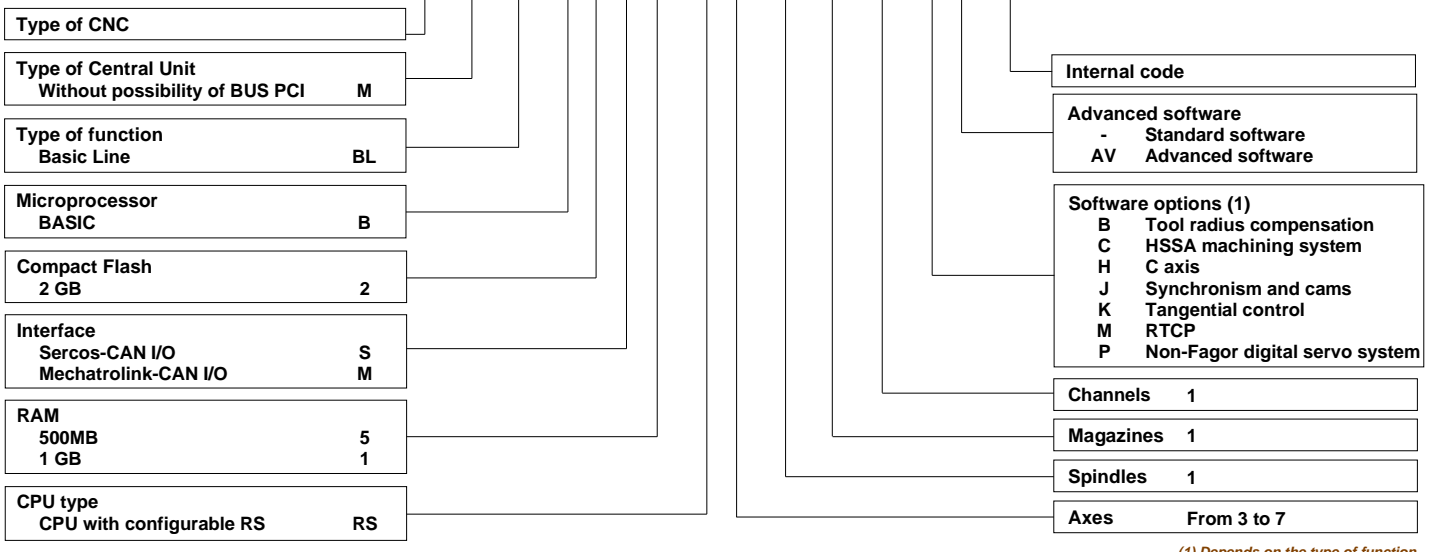
♦ Configurable RS 232, 422, 485
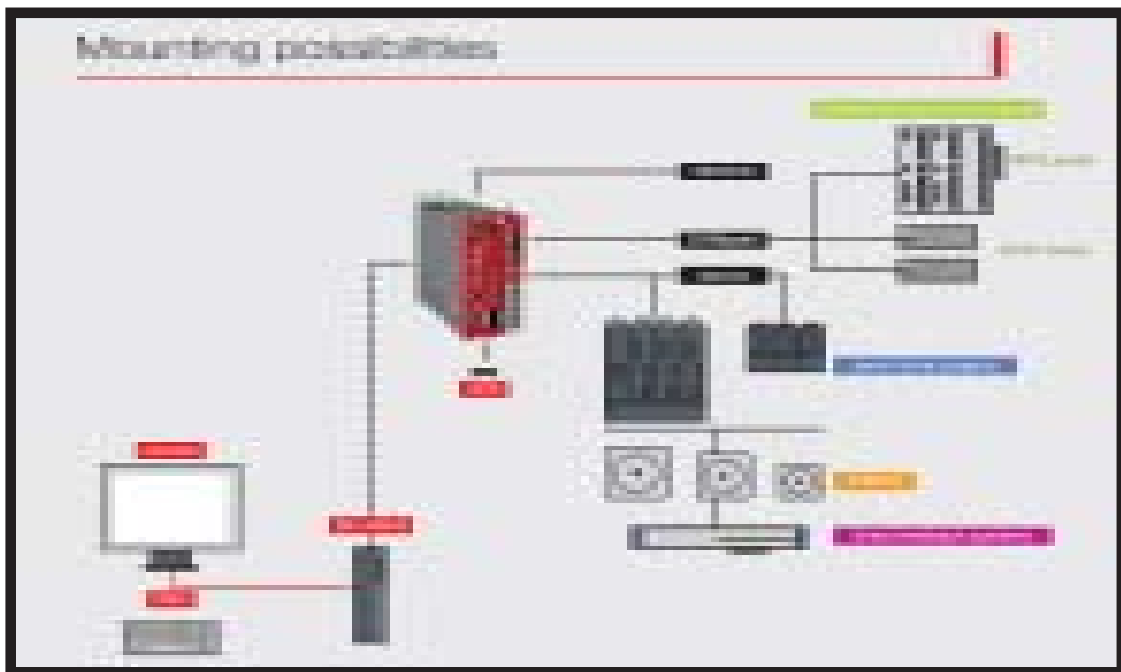
Software options

♦ **Number of axes** .... 3 to 7

♦ **Number of interpolated axes** 4

♦ **Soft Tool Radius Compensation** .... Option

♦ **Soft C axis** .... Option

♦ **Soft RTCP (Rotating Tool Center Point) for 4-axis** .... Option

♦ **Soft HSSA Machined System** .... Option

♦ **Soft Synchronism and Cams** .... Option

♦ **Soft Tangential Control** .... Option

♦ **Bus digital No Fagor (for bus Mechatrolink)** .... Option

Denominations

UC70-☐-☐-☐☐☐☐-☐-☐-☐-☐-☐-☐☐-☐

Type of CNC

Type of Central Unit	
Without possibility of BUS PCI	M

Type of function	
Basic Line	BL

Microprocessor	
BASIC	B

Compact Flash	
2 GB	2

Interface	
Sercos-CAN I/O	S
Mechatrolink-CAN I/O	M

RAM	
500MB	5
1 GB	1

CPU type	
CPU with configurable RS	RS

Internal code

Advanced software	
-	Standard software
AV	Advanced software

Software options (1)	
B	Tool radius compensation
C	HSSA machining system
H	C axis
J	Synchronism and cams
K	Tangential control
M	RTCP
P	Non-Fagor digital servo system

Channels	1

Magazines	1

Spindles	1

Axes	From 3 to 7

(1) Depends on the type of function

Central Unit

Code	Model	Description	
83701031	8070-BL-MCU-RS	Basic Line Modular Central Unit	
83700080	MP-BASIC-3	Basic Microprocessor	
83740054	CF-2GB	2 GB Compact Flash	
83700033	SER-CAN-8I-8IO	Sercos-Can module	(1)
83700047	MCHTR-CAN-8I-8IO	Mechatrolink-Can module	

(1)   Choose one of them

Software Options

			8070	
			BL	
		AXES	3 to 7	
		INTERPOLATED AXES	4	
		SPINDLES	1	
		MAGAZINES	1	
		CHANNELS	1	
83740030		SOFT ADDIT AXES	( )	Additional axes
83740011	B	SOFT TOOL RADIUS COMP	( )	Tool radius compensation, G40 ... G43 functions
83740013	C	SOFT HSSA MACHINING SYSTEM	( )	High Speed algorithm
83740021	F	SOFT DIGITAL SERCOS	(A)	Sercos driver system
83740042	P	SOFT DIGIT NO FAGOR	( )	NO Fagor digital drive system
83740010	H	SOFT C AXIS	( )	C axis
83740035	J	SOFT SYNCHRONISM	( )	Spindle / Axes Synchronization
83740012	K	SOFT TANGENTIAL CONTROL	( )	Tangential control
83740009	M	SOFT RTCP	( )	RTCP option

(-)	Not available
( )	Optional feature
(A)	Standard feature, Always active

SSOFT TOOL RADIUS COMP

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 (HIGH SPEED)

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 DIGITAL SERCOS

Fagor sercos drive system bus

SOFT DIGITAL NO FAGOR

Digital drive system bus for Mechatrolink

SOFT C AXIS

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

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 RTCP

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

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.

There three different RIOs: RIOW & RI05 series use CANopen protocol and RIO70 serie use CANfagor protocol. The RIO70 serie can not be combined with the others.

There are digital inputs/outputs and analog inputs/outputs in three series, but feed-back module is only available in RIO70 series.

RIOW modules are smaller than RIO5 and RIO70, but the RIO70 modules have double half-card and you can configure modules to your needs.

Analog configurations need RIO70 modules, because feed-back inputs are only available in this model.

Remote Modules - RIOW serie

RIOW series. Remote modules with CANopen protocol
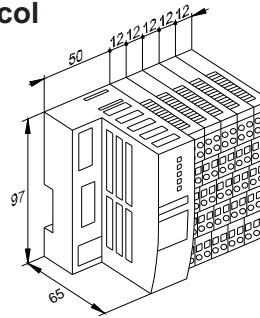
|		
Header CANopen	**RIOW CANOPEN STAND**	03300010
Expansion module with 8 digital inputs	**RIOW 8DI-51205053**	03300008
Expansion module with 8 digital outputs	**RIOW 8DO-51205043**	03300007
Expansion module with 4 analog inputs	**RIOW 4AI-51205050**	03300006
Expansion module with 4 analog outputs	**RIOW 4AO-51205039**	03300005
Expansion module with 2 PT100 inputs	**RIOW 2AI PT100-51205048**	03300004
$24V_{DC}$ 10A power supply for the modules	**RIOW PS24-51205036**	03300003
Line terminating module.	**RIOW END-51205037**	03300000

Remote Modules - RIO70 serie

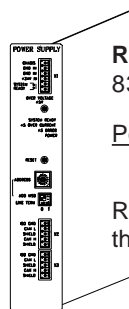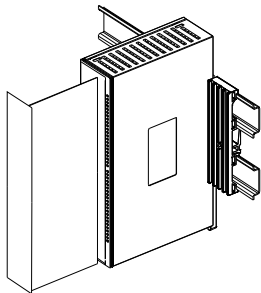## RIO70 series. Remote modules with CANfagor protocol.

The 8070 CNC can handle up to 32 groups of Remote Modules.

Each group carries an I/O Power Supply and may consist of up to 16 modules.

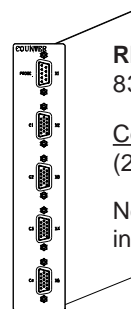All groups are interconnected through a CAN Bus with the Central Unit and the Operator Panel.
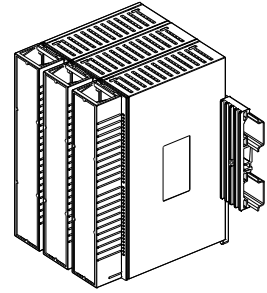
Remote Modules. Full-card

RIO70 POWER SUPPLY
83720100

Power Supply

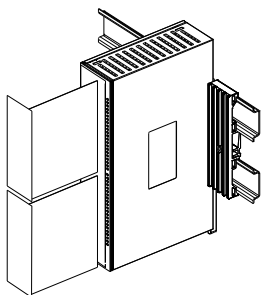Required always. Placed on the left side of the group.

RIO70 4 FEED-BACK MOD
83720101

Counter (Option)
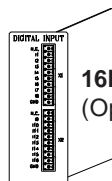(2 Feed-Back + 2 Probe)

Needed when using an analog interface with the drive.

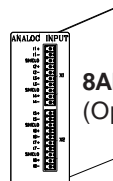### Remote Modules. Double half-card.

The double half-size Remote Modules are made of two of the following cards.

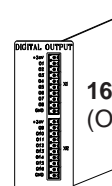These are the 14 possible combinations.
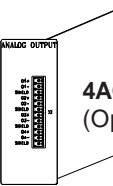
16DI (Option)

16 Digital Inputs

8AI (Option)

8 Analog Inputs

16DO (Option)

16 Digital Outputs

4AO (Option)

4 Analog Outputs

RIO70 16DI/—MOD	83720102
RIO70 16DI/16DI MOD	83720103
RIO70 16DI/16DO MOD	83720104
RIO70 16DI/8AI MOD	83720105
RIO70 16DI/4AO MOD	83720106
RIO70 16DO / —MOD	83720108
RIO70 16DO/16DO MOD	83720109
RIO70 16DO/8AI MOD	83720110
RIO70 16DO/4AO MOD	83720111
RIO70 8AI/—MOD	83720113
RIO70 8AI/8AI MOD	83720114
RIO70 8AI/4AO MOD	83720115
RIO70 4AO/—MOD	83720117
RIO70 4AO/4AO MOD	83720118

Consumption of the remote modules

The power supply is in charge of supplying to the rest of the modules through +5V and ±18V and managing the internal bus of the group. The total consumption of the group depends on the configuration of the modules.

		5V	±18V
DI	Digital inputs	0,40 watts	- - -
DO	Digital outputs	0,65 watts	- - -
AI	Analog inputs	0,30 watts	1,80 watts
AO	Analog outputs	0,35 watts	3,40 watts
CT	Counters	1,75 watts	- - -
CPU	CPU-CAN	0,60 watts	- - -

The consumption of the CPU-CAN is added to each module of the configuration. When mounting two half-size modules together (in the same box), the consumption of the CPU-CAN must only be added once.

The total consumption of the group must not exceed the following maximums:

• For +5V, a maximum consumption of 10 watts.
• For ±18V, a maximum consumption of 7.2 watts.
If any of them is exceeded, double the group. Use two power supplies and distribute the modules.

Example		
Modules	5V	±18V
(CT) + (CPU)	1,75 + 0,6	- - -
(DI) + (DI) +(CPU)	0,4 + 0,4 + 0,6	- - -
(DO) + (DO) + (CPU)	0,65 + 0,65 + 0,6	- - -
(AO) + (CPU)	0,35 + 0,6	3,4
Total consumption	6,60 watts	3,4 watts

Remote Modules - RIO5 serie

RIO5 series. Remote modules with CANopen protocol
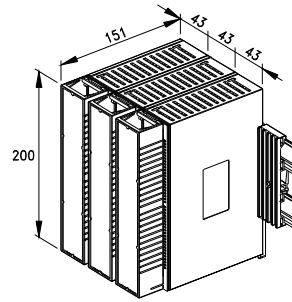
RIO5 PS-24I/16O 83070015
   Header module with power supply, 24 digital inputs and 16 digital outputs

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.

Ready Made cables for CAN Bus (CAN CABLE) and Sercos ring (SFO & SFO-FLEX).
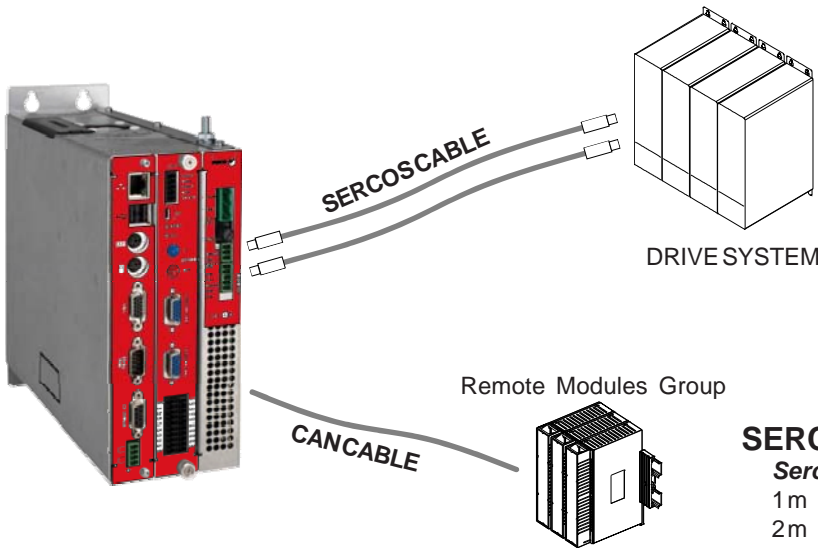
Each drive module having the Sercos interface option offers a small cable for connecting it to the adjacent module. Only the lines going to the CNC (Back anf forth) or the ones joining the far between modules.

DRIVE SYSTEM

Remote Modules Group

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

CAN cable for Remote I/O's
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

In order to complete its order

CONFIGURATION: Central Unit

83701031	8070-BL-MCU-RS	Basic Line Modular Central Unit
83700080	MP-BASIC-3	Basic Microprocessor
83740054	CF-2GB	2 GB Compact Flash
83700033	SER-CAN-8I-8IO	Sercos-Can module
83700047	MCHTR-CAN-8I-8IO	Mechatrolink-Can module

SOFTWARE FEATURES

83740030	SOFT ADDIT AXES	Additional axes
83740011	SOFT TOOL RADIUS COMP	Tool radius compensation, G40 ... G43 functions
83740013	SOFT HSSA MACHINING SYSTEM	High Speed algorithm
83740010	SOFT C AXIS	C axis
83740035	SOFT SYNCHRONISM	Spindle / Axes Synchronization
83740012	SOFT TANGENTIAL CONTROL	Tangential control
83740009	SOFT RTCP	RTCP option
83740042	SOFT DIGIT NO FAGOR	NO Fagor digital drive system

MANUALS

03753600	M.CNC 8070 OEM(CAS)	OEM manual in Spanish
03753601	M.CNC 8070 OEM(IN)	OEM manual in English
03753610	M.CNC 8070 USER(CAS)	User Manual in Spanish
03753611	M.CNC 8070 USER(IN)	User Manual in English
03753612	M.CNC 8070 USER(FRA)	User Manual in French
03753613	M.CNC 8070 USER(ALE)	User Manual in German
03753614	M.CNC 8070 USER(ITA)	User Manual in Italian
03753615	M.CNC 8070 USER(BRA)	User Manual in Portuguese-Brazilian

Spare parts

83700049	SER-CAN-8I-8IO (RF)
83700048	MCHTR-CAN-8I-8IO (RF)
83701072	CF-2GB (RF)

REMOTE I/O MODULES

RIO70 series

83720100	RIO70 POWER SUPPLY	Power Supply
83720102	RIO70 16DI/--MOD	16 digital inputs
83720103	RIO70 16DI/16DI MOD	32 digital inputs
83720104	RIO70 16DI/16DO MOD	16 digital inputs / 16 digital outputs
83720105	RIO70 16DI/8AI MOD	16 digital inputs / 8 analog inputs
83720106	RIO70 16DI/4AO MOD	16 digital inputs / 4 analog outputs
83720108	RIO70 16DO / --MOD	16 digital outputs
83720109	RIO70 16DO/16DO MOD	32 digital outputs
83720110	RIO70 16DO/8AI MOD	16 digital outputs / 8 analog inputs
83720111	RIO70 16DO/4AO MOD	16 digital outputs / 4 analog outputs
83720113	RIO70 8AI/--MOD	8 analog inputs
83720114	RIO70 8AI/8AI MOD	16 analog inputs
83720115	RIO70 8AI/4AO MOD	8 analog inputs / 4 analog outputs
83720117	RIO70 4AO/--MOD	4 analog outputs
83720118	RIO70 4AO/4AO MOD	8 analog outputs
83720101	RIO70 4 FEED-BACK MOD	4 feedback inputs

REMOTE I/O MODULES

RIOW series

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

REMOTE I/O MODULES

RIO5 series

83070015	RIO5 PS-24I/16O	83070016	RIO5 24I/16O EXP MOD
83070018	RIO5 PS-2PT100/4AI/4AO	83070017	RIO5 48I/32O EXP MOD

CAN cable for Remote I/O's

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

Sercos optic fiber cables

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

Flexible Sercos optic fiber cables

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