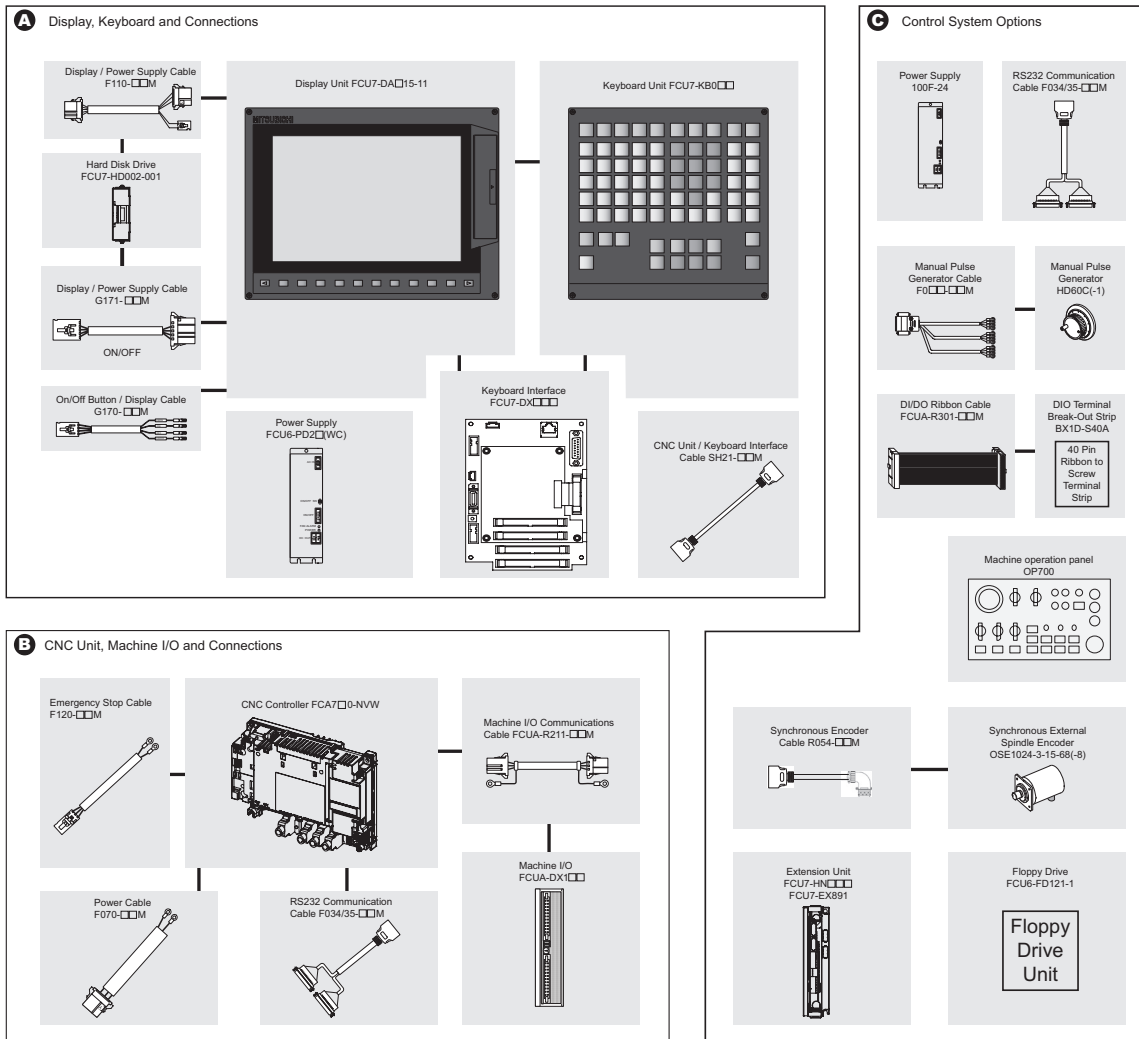


# M700V Computerized Numerical Controller

The CNC M700V Series is designed to provide productivity and operating ease. The M700V Series features nano-control technology to meet the needs of a new era, and also incorporates an original high-speed servo network. As Mitsubishi Electric's flagship machining center, the M700V Series continues to deliver world-class specifications and optimum performance to users. The new Mitsubishi Electric CNC series opens new horizons of productivity, leading you to the next level of success.

## General System Diagram for M700-NVW Configuration (Windows® based CNC / XP Embedded)



## Display, Keyboard, and Connections

### Control Axes

Description	Machining Center			Lathe			
	M720VW	M730VW	M750VW	M720VW	M730VW	M750VW	
1.1.1	Number Of Basic Control Axes (NC Axes) (*1)	3	3	3	2	2	2
1.1.2	Max. Number of Axes (NC Axes + Spindles + PLCs)	12	16	16	12	16	16
1.1.2	Max. Number of NC Axes (In Total for All the Part Systems)	6	16	16	12	16	16
1.1.2	Max. Number of Spindles	4	4	4	4	6	6
1.1.2	Max. Number of PLC Axes	6	6	6	6	6	6
1.1.3	Max. Number of Auxiliary Axis	4	6	6	4	6	6
1.1.4	Number of Simultaneous Contouring Control Axes	4	4	8	4	4	8
1.1.5	Max. Number of NC Axis in a Part System	6	8	8	6	8	8
1.2.1	Standard Number of Part Systems	1	1	1	1	1	1
1.2.2	Max. Number of Part Systems	1	2 (*2)	2 (*2)	2 (*2)	4 (*2)	4 (*2)

**Notes:**

1. Standard
2. Optional

### Windows XP Display

Description	Model Number	Stocked Item	Notes
10.4" Color	FCU7-DA646-11	S	
10.4" Color Touch	FCU7-DA646-31	-	
15" Color	FCU7-DA636-11	S	
15" Color Touch	FCU7-DA636-31	-	

### Keyboard

Description	Model Number	Stocked Item	Notes
M700V Keyboard for M/C 8.4"	FCU7-KB021	-	
M700V Keyboard for Lathe 8.4"	FCU7-KB022	-	
M700V Keyboard for 10.4" and 15"	FCU7-KB041	S	

### Keyboard Interface

Description	Model Number	Stocked Item	Notes
Keyboard I/F Sync 32/32 With 3 MPG I/F	FCU7-DX670	-	
Keyboard I/F Source 32/32 With 3 MPG I/F	FCU7-DX671	-	
Keyboard I/F Sync 64/64 With 3 MPG I/F	FCU7-DX770	-	
Keyboard I/F Source 64/64 With 3 MPG I/F	FCU7-DX771	S	

### Hard Disk Drive

Description	Model Number	Stocked Item	Notes
M700V 20GB Hard Drive with Windows XPE	FCU7-HD002-001	S	Cable included

### Display to Power Supply Cable

Description	Model Number	Stocked Item	Cable Length
DCIN Display to Power Supply Cable	F110-0.5M	S	0.5M
DCIN Display to Power Supply Cable	F110-5.0M	S	5.0M
DCIN Display to Power Supply Cable	F110-10.0M	S	10.0M

### On / Off Button to Display Cable

Description	Model Number	Stocked Item	Cable Length
On / Off Button to Display Cable	G170-0.5M	S	0.5M
On / Off Button to Display Cable	G170-5.0M	S	5.0M
On / Off Button to Display Cable	G170-10.0M	S	10.0M

### Display to Power Supply On / Off Cable

Description	Model Number	Stocked Item	Cable Length
On / Off Display to Power Supply Cable	G171-0.5M	S	0.5M
On / Off Display to Power Supply Cable	G171-5.0M	S	5.0M
On / Off Display to Power Supply Cable	G171-10.0M	S	10.0M

### Power Supply

Description	Model Number	Stocked Item	Notes
24VAC 200-230 V/3A Power Supply with Connector	FCU6-PD25(WC)	-	
24VAC 200-480 V/8A Power Supply with Connector	FCU6-PD27(WC)	S	

### CNC Unit to Keyboard Interface Communication Cable

Description	Model Number	Stocked Item	Cable Length
Communication Cable (G013)	SH21-0.35M	S	0.35M
Communication Cable (G013)	SH21-0.5M	S	0.5M
Communication Cable (G013)	SH21-1.0M	S	1.0M
Communication Cable (G013)	SH21-3.0M	-	3.0M
Communication Cable (G013)	SH21-5.0M	S	5.0M
Communication Cable (G013)	SH21-10.0M	S	10.0M

## Controller, Machine I/O and Connections

### CNC Control Unit

Description	Model Number	Stocked Item	Notes
M720V CNC Unit	FCA720-NVW	S	
M730V CNC Unit	FCA730-NVW	S	
M750V CNC Unit	FCA750-NVW	-	Special Order Requirement - Export Controlled

### CNC Unit to Emergency Stop Cable

Description	Model Number	Stocked Item	Cable Length
Emergency Stop Cable	F120-0.5M	S	0.5M
Emergency Stop Cable	F120-1.0M	S	1.0M
Emergency Stop Cable	F120-3.0M	S	3.0M
Emergency Stop Cable	F120-5.0M	S	5.0M
Emergency Stop Cable	F120-10.0M	S	10.0M

### CNC Unit +24V Power Cable

Description	Model Number	Stocked Item	Cable Length
24V Power Cable	F070-0.5M	S	0.5M
24V Power Cable	F070-1.0M	S	1.0M
24V Power Cable	F070-3.0M	S	3.0M
24V Power Cable	F070-5.0M	S	5.0M
24V Power Cable	F070-10.0M	S	10.0M

### CNC Unit RS-232 Communication Cable

Description	Model Number	Stocked Item	Cable Length
1CH RS-232 SIO Communication Cable	F034-1.0M	-	1.0M
1CH RS-232 SIO Communication Cable	F034-5.0M	S	5.0M
1CH RS-232 SIO Communication Cable	F034-10.0M	S	10.0M
2CH RS-232 SIO Communication Cable	F035-1.0M	-	1.0M
2CH RS-232 SIO Communication Cable	F035-5.0M	-	5.0M
2CH RS-232 SIO Communication Cable	F035-10.0M	-	10.0M

## Machine I/O Selection

Description	Model Number	Stocked Item	Notes
RIO Sync DI / DO = 32/32	FCUA-DX100	-	Quantity 2 40-pin ribbon connections
RIO Source DI / DO = 32/32	FCUA-DX101	-	
RIO Sync DI / DO = 64/64	FCUA-DX110	-	Quantity 4 40-pin ribbon connections
RIO Source DI / DO = 64/64	FCUA-DX111	S	
RIO Sync DI / DO = 64/48 + AO 1 Point	FCUA-DX120	-	
RIO Source DI / DO = 64/48 + AO 1 Point	FCUA-DX121	S	
RIO Sync DI / DO = 32/32 + AL 4 Point AO 1 Point	FCUA-DX140	-	
RIO Source DI / DO = 32/32 + AI 4 Point AO 1 Point	FCUA-DX141	S	

Note: Add one F070-\_\_M cable for each I/O unit. These units use 40-pin ribbon connectors and it is recommended to include cables FCUA-R301-\_\_M and terminal strips BX1D-S40A.

## Machine I/O Communications Cable

Description	Model Number	Stocked Item	Cable Length
RIO Communication Cable	FCUA-R211-0.3M	S	0.3M
RIO Communication Cable	FCUA-R211-1.0M	S	1.0M
RIO Communication Cable	FCUA-R211-3.0M	S	3.0M
RIO Communication Cable	FCUA-R211-5.0M	S	5.0M
RIO Communication Cable	FCUA-R211-10.0M	S	10.0M

Note: Include one FUA-R211-\_\_M cable for each I/O unit and one for connection to the CNC unit.

## Control System Options

### Power Supply

Description	Model Number	Stocked Item	Notes
24VDC-4.5A Power Supply	LCL150	S	

### DIO Cable Selection

Description	Model Number	Stocked Item	Cable Length
DIO Ribbon Cable FLT / RND	FCUA-R301-0.5M	S	0.5M
DIO Ribbon Cable FLT / RND	FCUA-R301-1.0M	S	1.0M
Remote I/O RND to FLT Ribbon Cable	FCUA-R301-2.0M	S	2.0M
DIO Ribbon Cable FLT / RND	FCUA-R301-3.0M	S	3.0M
DIO Ribbon Cable FLT / RND	FCUA-R301-5.0M	S	5.0M

Note: Requires 1 BX1D-S40A for each cable

### DIO Terminal Break-Out Strip

Description	Model Number	Stocked Item	Notes
40-Pin Ribbon to Screw Terminal Strip	BX1D-S40A	S	

### Manual Pulse Generator

Description	Model Number	Stocked Item	Notes
Manual Pulse Generator	HD60C	S	
Manual Pulse Generator (With MELDAS Mark)	HD60C-1	-	

### Manual Pulse Generator Cable

Description	Model Number	Stocked Item	Cable Length
1CH MPG Cable	F020-0.5M	S	0.5M
1CH MPG Cable	F020-5.0M	S	5.0M
1CH MPG Cable	F020-10.0M	S	10.0M
2CH MPG Cable	F021-0.5M	-	0.5M
2CH MPG Cable	F021-5.0M	-	5.0M
2CH MPG Cable	F021-10.0M	-	10.0M
3CH MPG Cable	F022-0.5M	-	0.5M
3CH MPG Cable	F022-5.0M	-	5.0M
3CH MPG Cable	F022-10.0M	-	10.0M

### Machine Operation Panel

Description	Model Number	Stocked Item	Notes
M700V Operation Panel	OP700	S	Requires Qty 4 FCUA-R301-__M Requires Qty 1 F070-__M
	FCU7-KB921	S	Standard Specs - Need G460-0.5M Cable
	FCU7-KB922	S	Custom Specs - Need G460-0.5M Cable
	FCU7-KB926	S	Rotary Switches, E-Stop

Note: Requires either DX unit attached to Keyboard or Remote D-I/O module.

### Synchronous External Spindle Encoder

Description	Model Number	Stocked Item	Notes
6000 RPM External Spindle Encoder	OSE1024-3-15-68	-	
8000 RPM External Spindle Encoder	OSE1024-3-15-68-8	S	

### Synchronous Encoder Cable

Description	Model Number	Stocked Item	Cable Length
Angle Spin ENC to NC Communication Cable	R054-3.0M	-	3.0M
Angle Spin ENC to NC Communication Cable	R054-5.0M	S	5.0M
Angle Spin ENC to NC Communication Cable	R054-10.0M	S	10.0M

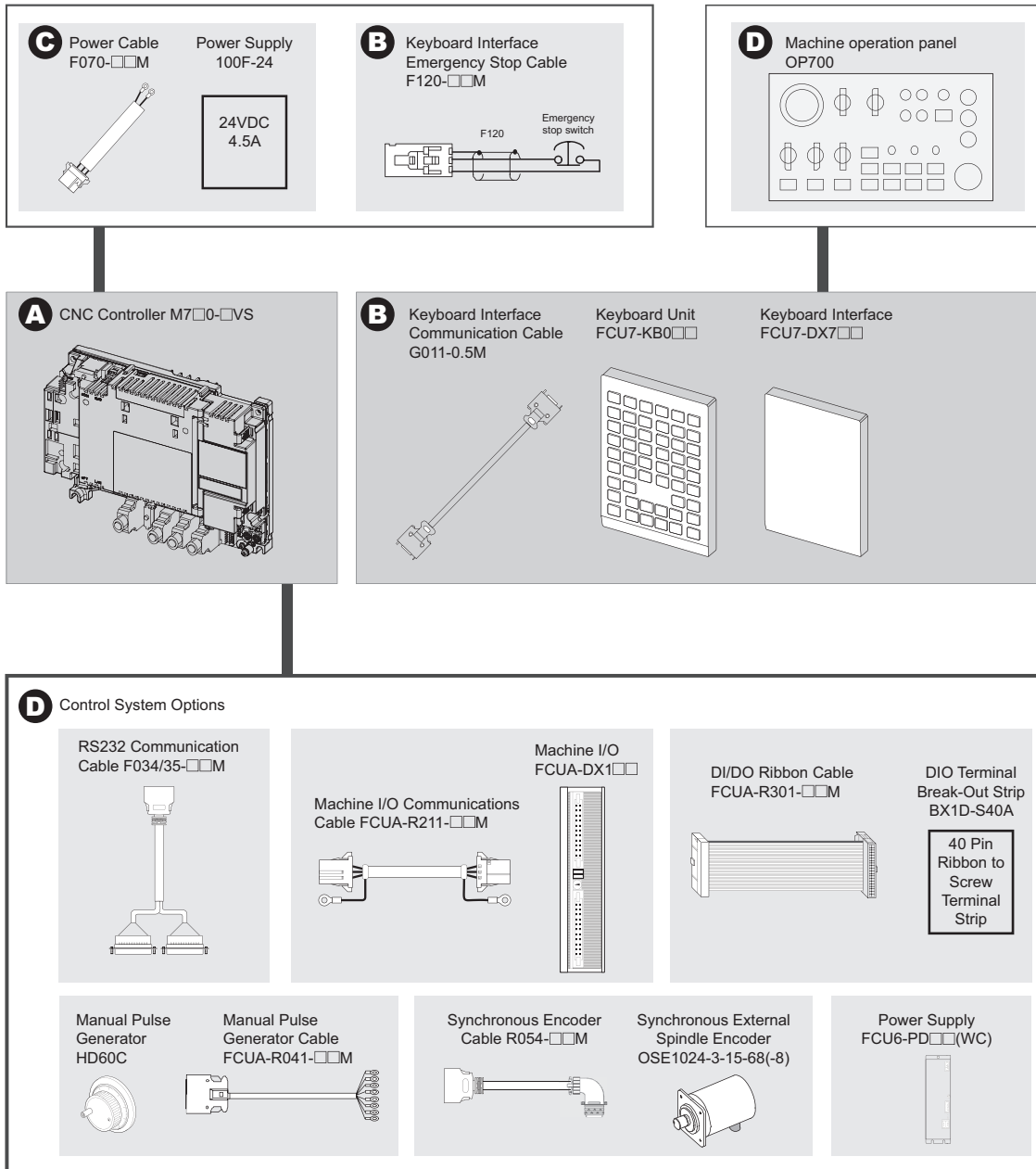
### CNC Extension Units

Description	Model Number	Stocked Item	Notes
Extension Unit 1 Slot	FCU7-EX891	-	
Optical Servo Communication 1 CH	FCU7-HN551	-	
Optical Servo Communication 2 CH	FCU7-HN552	-	
PROFIBUS DP Master I/F	FCU7-HN571	-	
CC-Link Communication 1 CH	FCU7-HN576	S	
CC-Link Communication 2 CH	FCU7-HN577	-	

### Floppy Drive

Description	Model Number	Stocked Item	Notes
M700 Floppy Drive Unit	FCU6-FD121-1	-	Windows XP Displays only

## General System Diagram for M700VS Panel Mounted Configuration



## Control Axes

Description		Machining Center			Lathe		
		M720VS	M730VS	M750VS	M720VS	M730VS	M750VS
1.1.1	Number of Basic Control Axes (NC Axes) (*1)	3	3	3	2	2	2
1.1.2	Max. Number of Axes (NC Axes + Spindles + PLCs)	12	16	16	12	16	16
1.1.2	Max. Number of NC Axes (In Total for All the Part Systems)	6	16	16	12	16	16
1.1.2	Max. Number of Spindles	4	4	4	4	6	6
1.1.2	Max. Number of PLC Axes	6	6	6	6	6	6
1.1.3	Max. Number of Auxiliary Axis	4	6	6	4	6	6
1.1.4	Number of Simultaneous Contouring Control Axes	4	4	8	4	4	8
1.1.5	Max. Number of NC Axis in a Part System	6	8	8	6	8	8
1.2.1	Standard Number of Part Systems	1	1	1	1	1	1
1.2.2	Max. Number of Part Systems	1	2 (*2)	2 (*2)	2 (*2)	4 (*2)	4 (*2)

Notes:  
 1. Standard  
 2. Optional

## M700VS CNC Controller

Description	Model Number	Stocked Item	Notes
M700VS Control For 8.4"	FCA720P-2VS	S	
M700VS Control For 10.4"	FCA720P-4VS	S	
M700VS Control For 8.4"	FCA730P-2VS	S	
M700VS Control For 10.4"	FCA730P-4VS	S	
M700VS Control For 8.4"	FCA750P-2VS	-	Special Order - Export Controlled
M700VS Control For 10.4"	FCA750P-4VS	-	Special Order - Export Controlled

Note: Need to choose 1 control from above

## Keyboard Unit

Description	Model Number	Stocked Item	Notes
M700VS Keyboard For 8.4"	FCU7-KB024	S	8.4" display only
M700VS Keyboard For 10.4"	FCU7-KB044	S	10.4" display only
	FCU7-KB047	S	10.4" vertical keyboard

Note: Need to choose 1 style keyboard from above.

## Keyboard Interface

Description	Model Number	Stocked Item	Notes
Keyboard I/F Sink 64/64 W 2 MPG I/F	FCU7-DX710	-	
Keyboard I/F Source 64/64 W 2 MPG I/F	FCU7-DX711	S	
Keyboard I/F Sink 96/80 W 2 MPG I/F 1AO	FCU7-DX720	-	
Keyboard I/F Source 96/80 W 2 MPG I/F 1AO	FCU7-DX721	S	
Keyboard I/F Sink 96/96 W 2 MPG IF	FCU7-DX730	-	
Keyboard I/F Source 96/96 W 2 MPG I/F	FCU7-DX731	S	
CC-Link Unit 1 CH	FCU7-HN746	S	

Note: Need to select 1 style I/O module for back of keyboard.

## CNC Unit to Keyboard Interface Communication Cable

Description	Model Number	Stocked Item	Notes
Communication Cable 0.5M (G011)	G011-0.5M	S	Connects from CG71 on control to CG71 on keyboard

## Keyboard Interface Emergency Stop Cable

Description	Model Number	Stocked Item	Notes
Emergency Stop Cable 0.5M	F120-0.5M	S	Qty 1 required
Emergency Stop Cable 1M	F120-1.0M	S	
Emergency Stop Cable 3M	F120-3.0M	S	
Emergency Stop Cable 5M	F120-5.0M	S	
Emergency Stop Cable 10M	F120-10.0M	S	

## Power Supply and Cable

### CNC +24V Power Cable

Description	Model Number	Stocked Item	Notes
24V Power Cable 0.5M	F070-0.5M	S	Quantity: 1 required
24V Power Cable 1M	F070-1.0M	S	
24V Power Cable 3M	F070-3.0M	S	
24V Power Cable 5M	F070-5.0M	S	
24V Power Cable 10M	F070-10.0M	S	

### Power Supply

Description	Model Number	Stocked Item	Notes
24VDC-4.5A Power Supply	LCL150	S	Quantity: 1 required

## Control System Options

### CNC Unit RS232 Communication Cable

Description	Model Number	Stocked Item	Cable Length
1CH RS232 SIO Communication Cable	F034-1.0M	-	1.0M
1CH RS232 SIO Communication Cable	F034-5.0M	S	5.0M
1CH RS232 SIO Communication Cable	F034-10.0M	S	10.0M
2CH RS232 SIO Communication Cable	F035-1.0M	-	1.0M
2CH RS232 SIO Communication Cable	F035-5.0M	-	5.0M
2CH RS232 SIO Communication Cable	F035-10.0M	-	10.0M

### Machine I/O Selection

Description	Model Number	Stocked Item	Notes
RIO Sync DI / DO = 32/32	FCUA-DX100	-	Quantity 2 40-pin ribbon connections
RIO Source DI / DO = 32/32	FCUA-DX101	-	
RIO Sync DI / DO = 64/64	FCUA-DX110	-	Quantity 4 40-pin ribbon connections
RIO Source DI / DO = 64/64	FCUA-DX111	S	
RIO Sync DI / DO = 64/48 + AO 1 Point	FCUA-DX120	-	
RIO Source DI / DO = 64/48 + AO 1 Point	FCUA-DX121	S	
RIO Sync DI / DO = 32/32 + AL 4 Point AO 1 Point	FCUA-DX140	-	
RIO Source DI / DO = 32/32 + AI 4 Point AO 1 Point	FCUA-DX141	S	

Note: Add one F070-\_\_M cable for each I/O unit. These units use 40-pin ribbon connectors and it is recommended to include cables FCUA-R301-\_\_M and terminal strips BX1D-S40A.

### Machine I/O Communications Cable

Description	Model Number	Stocked Item	Cable Length
RIO Communication Cable	FCUA-R211-0.3M	S	0.3M
RIO Communication Cable	FCUA-R211-1.0M	S	1.0M
RIO Communication Cable	FCUA-R211-3.0M	S	3.0M
RIO Communication Cable	FCUA-R211-5.0M	S	5.0M
RIO Communication Cable	FCUA-R211-10.0M	S	10.0M

Note: Include one FUA-R211-\_\_M cable for each I/O unit and one for connection to the CNC unit.

### Power Supply

Description	Model Number	Stocked Item	Notes
24VDC-4.5A Power Supply	LCL150	S	

### DIO Cable Selection

Description	Model Number	Stocked Item	Cable Length
DIO Ribbon Cable FLT / RND	FCUA-R301-0.5M	S	0.5M
DIO Ribbon Cable FLT / RND	FCUA-R301-1.0M	S	1.0M
Remote I/O RND to FLT Ribbon Cable	FCUA-R301-2.0M	S	2.0M
DIO Ribbon Cable FLT / RND	FCUA-R301-3.0M	S	3.0M
DIO Ribbon Cable FLT / RND	FCUA-R301-5.0M	S	5.0M

Note: Requires 1 BX1D-S40A for each cable



### DIO Terminal Break-Out Strip

Description	Model Number	Stocked Item	Notes
40-Pin Ribbon to Screw Terminal Strip	BX1D-S40A	S	

### Manual Pulse Generator

Description	Model Number	Stocked Item	Notes
Manual Pulse Generator	HD60C	S	
Manual Pulse Generator (With MELDAS Mark)	HD60C-1	-	

### Manual Pulse Generator Cable

Description	Model Number	Stocked Item	Cable Length
1CH MPG Cable	F020-0.5M	S	0.5M
1CH MPG Cable	F020-5.0M	S	5.0M
1CH MPG Cable	F020-10.0M	S	10.0M
2CH MPG Cable	F021-0.5M	-	0.5M
2CH MPG Cable	F021-5.0M	-	5.0M
2CH MPG Cable	F021-10.0M	-	10.0M
3CH MPG Cable	F022-0.5M	-	0.5M
3CH MPG Cable	F022-5.0M	-	5.0M
3CH MPG Cable	F022-10.0M	-	10.0M

### Machine Operation Panel

Description	Model Number	Stocked Item	Notes
M700V Operation Panel	OP700	S	Requires Qty 4 FCUA-R301-__M Requires Qty 1 F070-__M
	FCU7-KB921	S	Standard specs - Need G460-0.5M cable
	FCU7-KB922	S	Custom specs - Need G460-0.5M cable
	FCU7-KB926	S	Rotary switches, E-Stop

Note: Requires either DX unit attached to Keyboard or Remote D-I/O module.

### Synchronous External Spindle Encoder

Description	Model Number	Stocked Item	Notes
6000 RPM External Spindle Encoder	OSE1024-3-15-68	-	
8000 RPM External Spindle Encoder	OSE1024-3-15-68-8	S	

### Synchronous Encoder Cable

Description	Model Number	Stocked Item	Cable Length
Angle Spin ENC to NC Communication Cable	R054-3.0M	-	3.0M
Angle Spin ENC to NC Communication Cable	R054-5.0M	S	5.0M
Angle Spin ENC to NC Communication Cable	R054-10.0M	S	10.0M

### Floppy Drive

Description	Model Number	Stocked Item	Notes
M700 Floppy Drive Unit	FCU6-FD121-1	-	Windows XP Displays only