8.0 PCB JUMPER OPTIONS

8.1 DISK DRIVE ADDRESS SELECTION JUMPER

In multidrive configurations, it is necessary to configure each drive with a unique address. A maximum of seven drives is permitted per single host controller. The address for the drive is determined by installing the jumper plug in the appropriate jumper location (Figure 8•1, Drive Jumper Options). Table 8•1, Drive Select Jumpers, shows the drive selection jumpers. As shipped from the factory, the drive is configured as logical unit number one. Removing the jumper entirely is equivalent to a "no select."

DRIVE SELECT NUMBER	JUMPER INSTALLED
1	DS1
2	DS2
3	DS3
4	DS4
5	DS5
6	DS6
7	DS7

Table 8•1
Disk Drive Select Jumpers

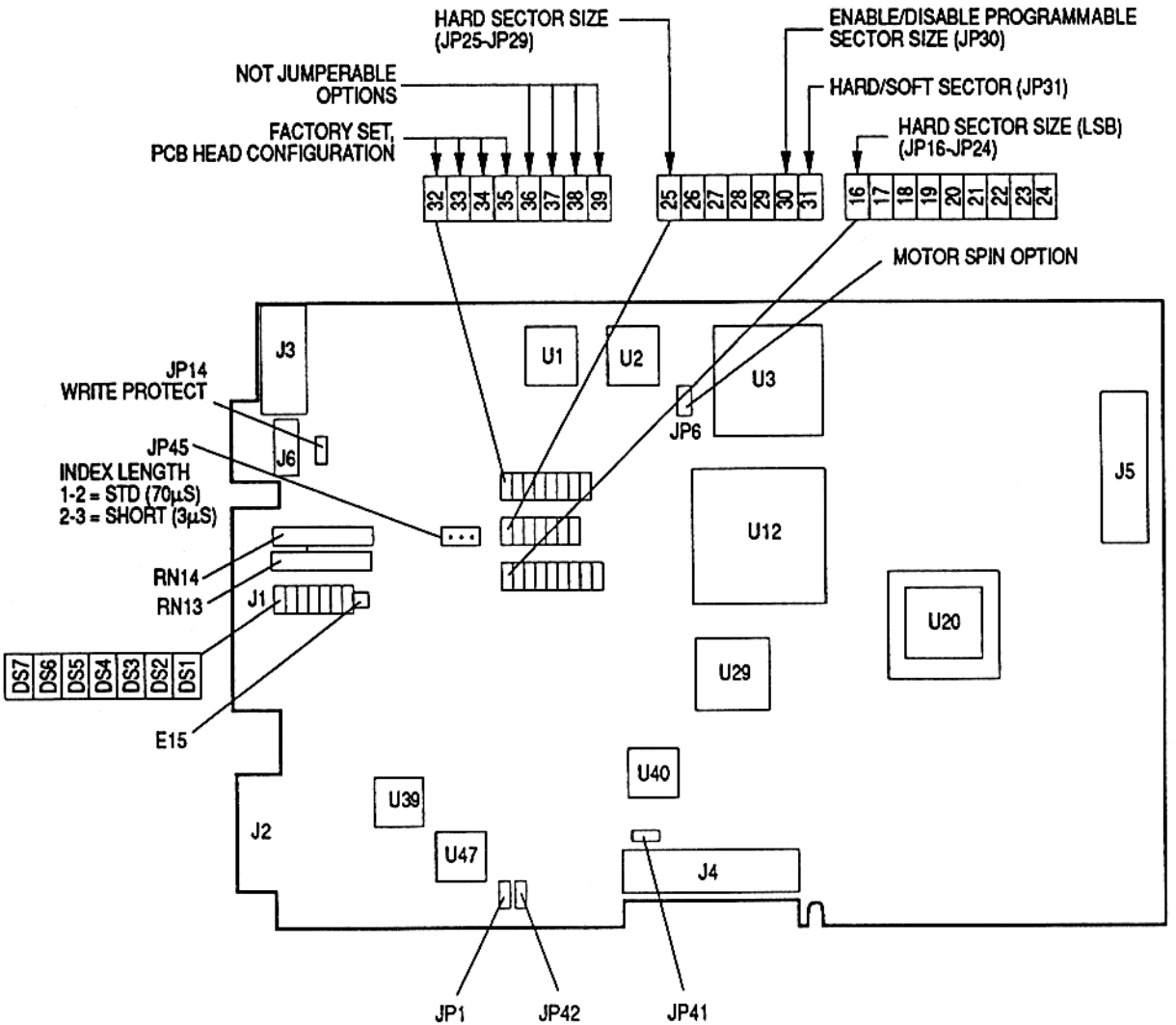

Figure 8-1
Disk Drive Jumper Options

JUMPER	DESCRIPTION
JP1 (in)	Used for Manufacturing Testing
JP6 (in)	In = Motor Spinup Option Disabled Out = Remote Motor Spinup Option Enabled
DS1-DS7 (DS1 in)	Drive Select
JP14 (out)	In = Write Protected Out = No Write Protection
JP16-JP29	Unformatted Hard Sector Size in Bytes Jumpers, LSB = JP16, MSB = JP29 (refer to the table Customer Selectable Jumpers)
JP30	In = Enables Programming of the Hard Sector Size Through the Interface Out = Disable this Function
JP31	In = Soft Sector Mode Out = Hard Sector Mode
JP32-35, JP38	PCB Head Configuration
JP41	Test Connection, Not a Jumperable Option
JP42 (in)	Used for Manufacturing Testing
JP45	Used for Conversion to Short Index 1,2=Standard Index (70µS), 2,3=Short Index (3µS)
NOTE: *JP4, JP5, JP15, JP36, JP37, JP39, JP40, JP41 ARE NOT JUMPERABLE OPTIONS. THE ONLY CUSTOMER CONFIGURABLE OPTIONS ARE JP6 , JP14, JP16-JP29, JP30, JP31, JP45, AND DS1-DS7.*	

Table 8-2
Jumper Selections

8.2 DATA HEAD SELECTION JUMPERS (JP32-JP35 AND JP38)

Jumpers have been provided to allow the number of usable data heads to be selected. In order for the drive to respond correctly to the request configuration command - number of heads, these jumpers are set at the factory to correspond with the model of the drive. Table 8-3, Data Head Number Selection Jumpers, shows the various configuration options.

DRIVE MODEL	NUMBER OF DATA HEADS	JUMPER CONFIGURATION				
		JP32	JP33	JP34	JP35	JP38
XT-4170E	7	In	In	In	Out	Out
XT-4230E	9	In	In	In	Out	In
XT-4380E	15	In	In	In	In	Out

Table 8-3
Data Head Number Selection Jumpers

8.3 Write Protect Selection Jumper (JP14)

Jumper JP14 is the write protect jumper. When the jumper is present (installed), the drive is write-protected and can only be read; no writing may take place. The drive does not have this jumper installed when it is shipped from the factory.

8.4 Option for Sequential Spindle Motor Spinup Jumper (JP6)

The spindle motor spinup jumper (JP6) allows a string of drives to be started sequentially by the controller. When the jumper is present (installed), the drive automatically spins up as soon as power is applied. If JP6 is removed, the drive is started by issuing the appropriate command from the controller. As shipped from the factory, jumper JP6 is installed.

8.5 Test Jumpers (JP1, JP41, JP42)

These jumpers provide access to certain test signals. The specific signals and the normal factory settings are shown in Table 8-4, Test Pin Jumpers.

JUMPER	FACTORY SETTING	NOTES ON FUNCTION
JP1	In	Write Data
JP41	N/A	Test Pins, Not Jumperable
JP42	In	Write Gate

Table 8-4
Test Pin Jumpers

8.6 HARD SECTOR CONFIGURATION JUMPERS (JP16-29)

Jumper JP31 selects the mode of operation. Jumper JP31 installed configures the drive as a soft sector drive; removed, it configures the drive as a hard sectored drive.

Jumpers JP16 through JP29 allow the user to configure the drive's hard sector size. The sector size can range from a minimum of 123 to a maximum of 10,470 bytes per sector, with 1 byte granularity.

The hard sector configuration jumpers are encoded in a binary fashion, with JP16 being the least significant byte, and JP29 being the most significant byte. An installed jumper equates to a one.

Jumper JP30, if installed, enables setting the hard sector size over the ESDI interface.

JUMPER	# BYTES/SECTOR
J16	1
J17	2
J18	4
J19	8
J20	16
J21	32
J22	64
J23	128
J24	256
J25	512
J26	1,024
J27	2,048
J28	4,096
J29	8,192

Example: 36 Sectors Desired

1. $\frac{20,940 \text{ Bytes/Track}}{36 \text{ Sectors}} = 581$ Bytes/Sector
2. Install Jumpers J25, J22, J18, +J16
   Number Bytes/Sector = 512 + 64 + 4 + 1 = 581

Table 8-5
Customer Selectable Jumpers