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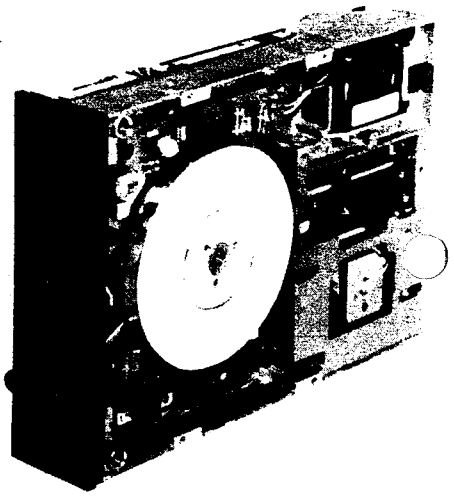
Y-E DATA

Product Specifications

1.6/1.0 MB Dual Speed 5.25 Inch Floppy Disk Drive

YD-380-1714



Y-E DATA Inc.
FDL-523010 REV. B

REVISIONS			
DATE	REV.	DESCRIPTION	REVISED PAGES
Feb 1984	A	FIRST EDITION	ALL
Nov 1984	B	New LSI PCB version	iii, 1-1, 2-2, 3-1, 3-2, 3-4, 3-8, 3-12, 4-1, 4-5, 7-1, 7-2, 8-1

Note: In this publication

(1) The YD-380 will be referred to as simply a "drive".
(2) The high density 5.25-in. flexible disk will be referred to as simply a "disk".

Y-E DATA

Y-E DATA Inc.

TO ALL Y-E DATA CUSTOMERS
NOVEMBER 21, 1984

YD-380 SPECIFICATION UPDATE

The following specification revisions and additions apply to all versions of the YD-380 5.25 inch 1.6 MB floppy disk drive.

1. ENVIRONMENTAL CONDITIONS

	TEMPERATURE	HUMIDITY
OPERATING	5 °C to 46 °C (**)	20 to 80% (maximum wet bulb 29 °C)
NON-OPERATING (*)	5 °C to 46 °C (**)	20 to 80% (maximum wet bulb 29 °C)
STORAGE	-20 °C to 60 °C	10 to 90% (no condensation)
TRANSPORT	-40 °C to 65 °C	5 to 95 % (no condensation)

(*) In standby mode with power on (no seek or read /write operation)

(**) Because the temperatures indicated as upper limits above change depending on installation, make sure that the maximum temperature measured at the disk jacket is 52° C or below.

	VIBRATION	SHOCK
OPERATING	0.5G (10 to 100 HZ)	1G (10 ms MAX)
NON-OPERATING	2G	2G
STORAGE	2G	30G
TRANSPORT	2G	30G

2. MTBF has been raised from 12,000 to 15,000 hours.

3. Motor start time has been changed from 1 second to 0.4 seconds

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Chapter 1 General Description

The dual speed model YD-380 (half height, high density, double sided 5.25-in. flexible disk drive) is a direct access data storage device developed for greater compatibility, larger storage capacity, smaller size, higher reliability and lower cost.

The drive can utilize either a high density or double density removable 5.25-in. flexible disk.

Key features of this product include:

(1) Dual Storage Capacity

The dual speed model YD-380 offers the user both the high density of an 8-in. two-sided double density drive and the regular density of a 5.25-in. 1 MB drive in a compact half-height body.

The new dual speed feature give system designers and users the increased capacity of high density drives and the standard 5.25" format and density in one package.

(2) Small Size

The YD-380 has one eighth the volume of an 8-in. flexible disk drive, and only half the height of a conventional 5.25-in. drive, which allows two drives to be mounted in place of one standard drive.

(3) High Reliability

The YD-380 has a newly designed head, a double sided supporting mechanism and a reliable steel belt for head-positioning.

Belt changes have been eliminated by the addition of a long-life brushless motor, which drives the disk directly.

(4) High Speed

The YD-380 offers the same data transfer rate and access time as 8-in. flexible disk drives. One of the main features of the drive is a fast track to track access time of 3ms, made possible by an advanced high speed miniature stepping motor.

(5) Ease of Use

- Disk loading/unloading can be quickly and easily performed with the YD-380 pop-up mechanism.
- A lever clamps the disk to assure stable operation.
- Daisy chain capability for up to four drives.
- Drive In Use Indicator.

Chapter 2 Product Specifications

2.1 Performance

High Speed Mode	Single Density	Double Density
Capacity		
Unformatted	802K Bytes	1604K Bytes
Formatted		
(1) 26 sectors/track	513K Bytes	1025K Bytes
(2) 15 sectors/track	591K Bytes	1183K Bytes
(3) 8 sectors/track	631K Bytes	1262K Bytes
Recording Density	4823 BPI	9646 BPI
Track Density	96 TPI	96 TPI
Cylinders	77	77
Tracks	154	154
Encoding Method	FM	MFM
Rotational Speed	360 RPM	360 RPM
Transfer Rate	250K Bits/sec	500 K Bits/sec
Latency (Average)	83 ms	83 ms
Access Time		
Average	91 ms	91 ms
Track to Track	3 ms	3 ms
Settling Time	15 ms	15 ms
Head Load Time	50 ms	50 ms
Motor Start Time	1 sec	1 sec

Low Speed Mode	Single Density	Double Density
Capacity		
Unformatted	500K Bytes	1000K Bytes
Formatted		
(1) 16 sectors/track	327.7K Bytes	655.4K Bytes
(2) 5 sectors/track	368.6K Bytes	737.3K Bytes
(3) 5 sectors/track	409.6K Bytes	819.2K Bytes
Recording Density	2961 BPI	5922 BPI
Track Density	96 TPI	96 TPI
Cylinders	80	80
Tracks	160	160
Encoding Method	FM	MFM
Rotational Speed	300 RPM	300 RPM
Transfer Rate	125K Bits/sec	250 K Bits/sec
Latency (Average)	100 ms	100 ms
Access Time		
Average	95 ms	95 ms
Track to Track	3 ms	3 ms
Settling Time	15 ms	15 ms
Head Load Time	50 ms	50 ms
Motor Start Time	1 sec	1 sec

Table 2.1 Performance

2.2 Physical Specifications

DC Power Requirements	+12VDC ±5% (Ripple 200mVpp Max.) 0.3A (Typ.) 1.2A (Max.) +5VDC ±5% (Ripple 100mVpp Max.) 0.4A (Typ.) 0.5A (Max.)	
Power Consumption	5.6W (Typ.)	
Environmental Limits Operating	Ambient Temperature Relative Humidty Maximum Wet Bulb	5°C to 43°C 20% to 80% 29°C
Non-Operating	Ambient Temperature Maximum Wet Bulb	–20°C to 50°C No condensation
Mechanical Dimensions	Width 146.0 mm Height 41.0 mm Depth 203.2 mm (Max.)	
Weight	1.6 kg (Typ.)	
Mounting Recommendations	Refer to Figure 6.2.	

Table 2.2 Physical Specifications

2.3 Reliability

MTBF	12000 POH under typical usage
PM (Preventive Maintenance)	Every 2 years
MTTR	30 minutes
Component Life	5 years or 15,000 POH
Error Rates Soft Read Errors Hard Read Errors Seek Errors	 1 per 10^9 bits read 1 per 10_{12} bits read 1 per 10_6 seeks

Table 2.3 Reliability

Chapter 3 Electrical Interface

The interface of the YD-380 flexible disk drive can be divided into two categories: Signal and Power. Refer to Figure 3.13 for all interface connections.

3.1 Signal Interface

All lines in the signal interface are TTL compatible.

3.1.1 Input Lines

The drive has the input lines shown below. All lines are active (true) when low.

(1) Drive Select 0 – 3	(9) Low Speed
(2) Motor On	
(3) Direction Select	
(4) Step	
(5) Write Data	
(6) Write Gate	
(7) Side One Select	
(8) Head Load	

Table 3.1 Input Lines

The input circuit lines have the following electrical specifications.

False	High	+2.4V to +5.25V
True	Low	±0V to +0.4V
Input Impedance		150ohms pulled up to +5V

Table 3.2 Input Circuit Electrical Specifications

3.1.1.1 Drive Select 0 – 3

Up to four drives can be daisy chained by installing a shorting plug on the PCB.
With a shorting plug installed as shown below, the controller can select one drive by Drive Select 0 – 3 lines. Drive Select 1, when activated to a low level, selects a drive with DS1 shorted.

	Drive Select			
	0	1	2	3
DS0	S	O	O	O
DS1	O	S	O	O
DS2	O	O	S	O
DS3	O	O	O	S

Table 3.3 Shorting Plugs
S = short, O = open (Eleco P/N 00-8261-0272-00-807)

3.1.1.2 Motor On

A low active level on this line starts the drive motor. A 1.0 second delay after the line goes low is required before any read or write operation can be initiated.

3.1.1.3 Direction Select

This line defines the direction of read/write head movement when the Step line is pulsed.

High level	Out (away from the center of the disk)
Low level	In (towardthe center of the disk)

Table 3.4 Direction Select Signal

Any change in the Direction Select line must be made at least 1 μsec before the leading edge of the Step pulse, and at least 1 μsec after the trailing edge of the Step pulse. See Figure 3.15 for timing information.

3.1.1.4 Step

This signal moves the magnetic heads in the direction indicated by the Direction Select signal.

Operation takes place when the signal changes from "Low" to "High" level, that is, with the last step pulse, before continuing the seek operation.
The access motion is initiated on each low level to high level transition, or the trailing edge of the signal pulse.

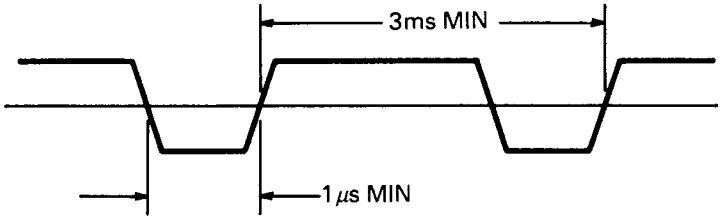


Fig. 3.5 Step

3.1.1.5 Write Data

The data to be written on the disk arrives on this input line.

Each transition from a high level to a low active level on this line causes the current through the read/write head to be reversed, thereby writing a data bit. This line is enabled by Write Gate being low active. Refer to Figure 3.17 for timing information.

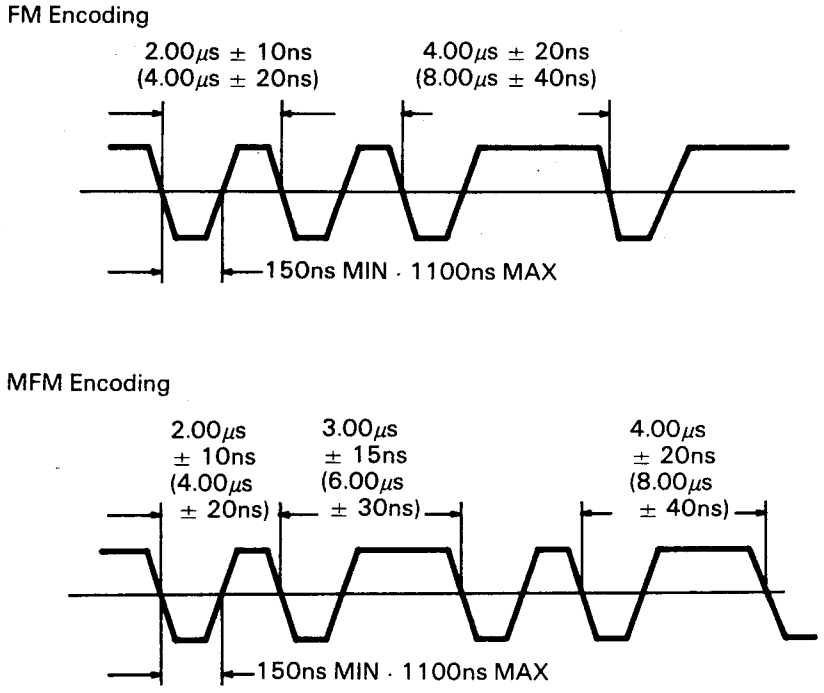


Fig. 3.6 Write Data

3.1.1.6 Write Gate

A low active level on this line allows Write Data to be written on the disk.
A high inactive level on this line enables the read data logic and stepping logic.
Refer to Figures 3.16 and 3.17 for timing information.
Deactivation of Drive Select and Motor On, and/or changing side Select must be delayed at least 590 μsec (100 μsec) after deactivating Write Gate because the erase head remains active for this period.

3.1.1.7 Side One Select

This line defines which side of a two-sided disk is used or reading or writing.

A high inactive level on this line selects the read/write head on the side 0 surface of the disk. A low active level on this line selects the read/write head on the side 1 surface of the disk. When switching from one head to the other, a 100 μsec delay is required before any read or write operation can be initiated.

Note: Figures in parentheses are for Low Speed mode.

3.1.1.8 Head Load

A low active level on this line, when the drive selected by Drive Select is ready, causes the read/write heads to be loaded against the disk. After activating this line, a 50 msec delay is required before any read or write operation can be initiated.

3.1.1.9 Low Speed

This line determines the motor speed when the drive is selected. The speed defined by this line is latched by the leading edge of Drive Select and will not be changed by turning off Drive Select or Motor On.

High level	360 rpm	High speed mode
Low level	300 rpm	Low speed mode

Table 3.7 Low Speed Signal

Correct read/write operations are not guaranteed for 0.4 sec after switching the motor speed, although the change will not affect the Ready signal.

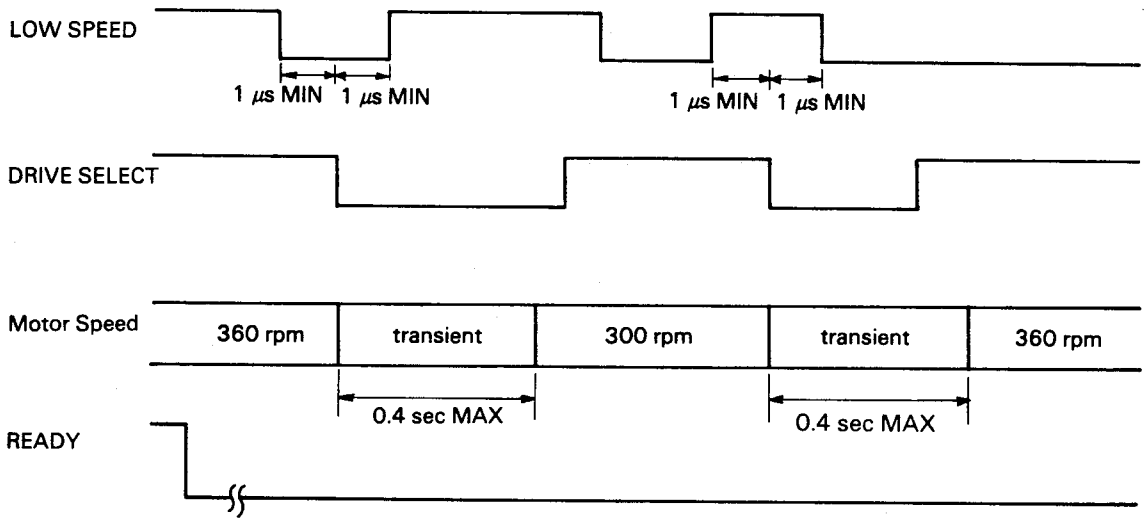


Fig. 3.8 Motor Speed Switching

When the drive is initially turned on, the motor speed is set in High Speed mode.

Application Note: The controller (host system) can distinguish between 1.6 MB and 1.0 MB disks in the drive by starting a Read operation. If the operation is not successful, it means that the motor speed does not conform to the disk type and the controller should switch the Low Speed line to set the drive in the correct mode.

3.1.2 Output Lines

The drive has output lines shown below. These output lines are enabled by a low active level on the Drive Select line.

(1) Track 00
(2) Index
(3) Write Protect
(4) Ready
(5) Read Data

Table 3.9 Output Lines

The Output circuit lines have the following electrical specifications.
Refet to Figure 3.14 for the interface circuit.

High level	False	Collector cutoff current: 250 μA (Max.)
Low level	True	0 to 0.4V Maximum sink current: 40 mA

Table 3.10 Output Circuit Electrical Specifications

3.1.2.1 Track 00

A low active level on this line indicates that the read/write heads are positioned at track zero (the outermost track).
This signal is at a high inactive level when the selected drive's read/write heads are not at track 00.

3.1.2.2 Index

This interface signal is provided by the drive once for each detection of the index hole on the disk, or each revolution of the disk. Normally this signal is at a high level and makes the transistion to the low active level when the index hole is detected. The controller should detect Index with the leading transition of this signal, not with the level.

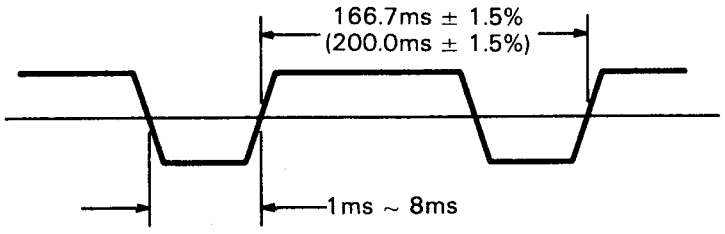


Fig. 3.11 Index

Note: Figures in parentheses are for Low Speed mode.

3.1.2.3 Write Protect

A low active level on this line indicates that a disk with a write protect notch is loaded.
The signal is a low active level when it is protected. Under normal operation, the drive will inhibit writing when a protected disk is loaded.

3.1.2.4 Ready

This line goes low only when the following conditions have been satisfied.

(1) The drive is supplied with +5V and +12V DC.
(2) A disk is properly inserted.
(3) The drive has detected four index pulses since the start of disk rotation.

3.1.2.5 Read Data

This line provides the "raw data" (clock and data together) as detected by the drive electronics. Normally, this signal is a high level to a low level should be used for clock bit and data bit separation. The leading edge of each bit pulse can be ±350 ns (±700 ns) from its nominal position. Timing characteristics are shown in Figure 3.16.

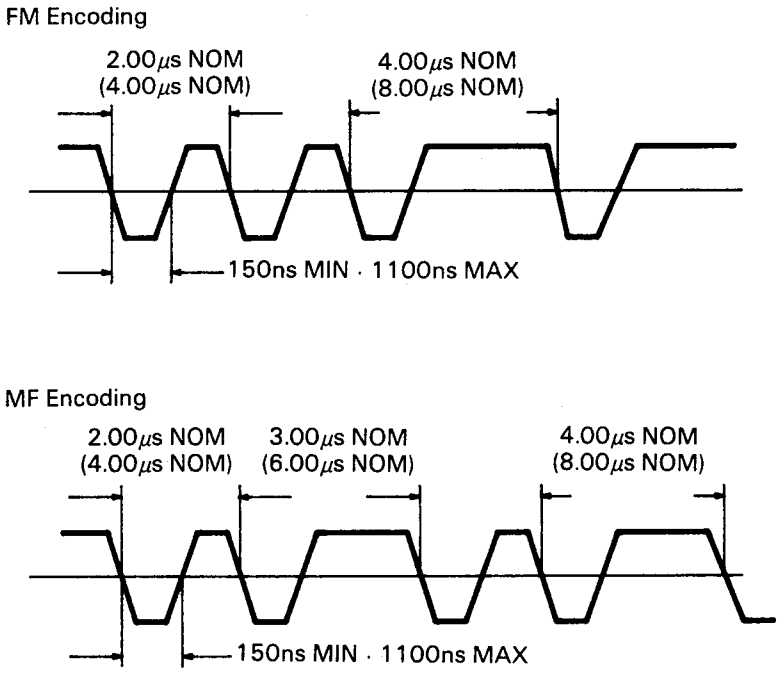


Fig. 3.12 Read Data

Note: Figures in parentheses are for Low Speed mode.

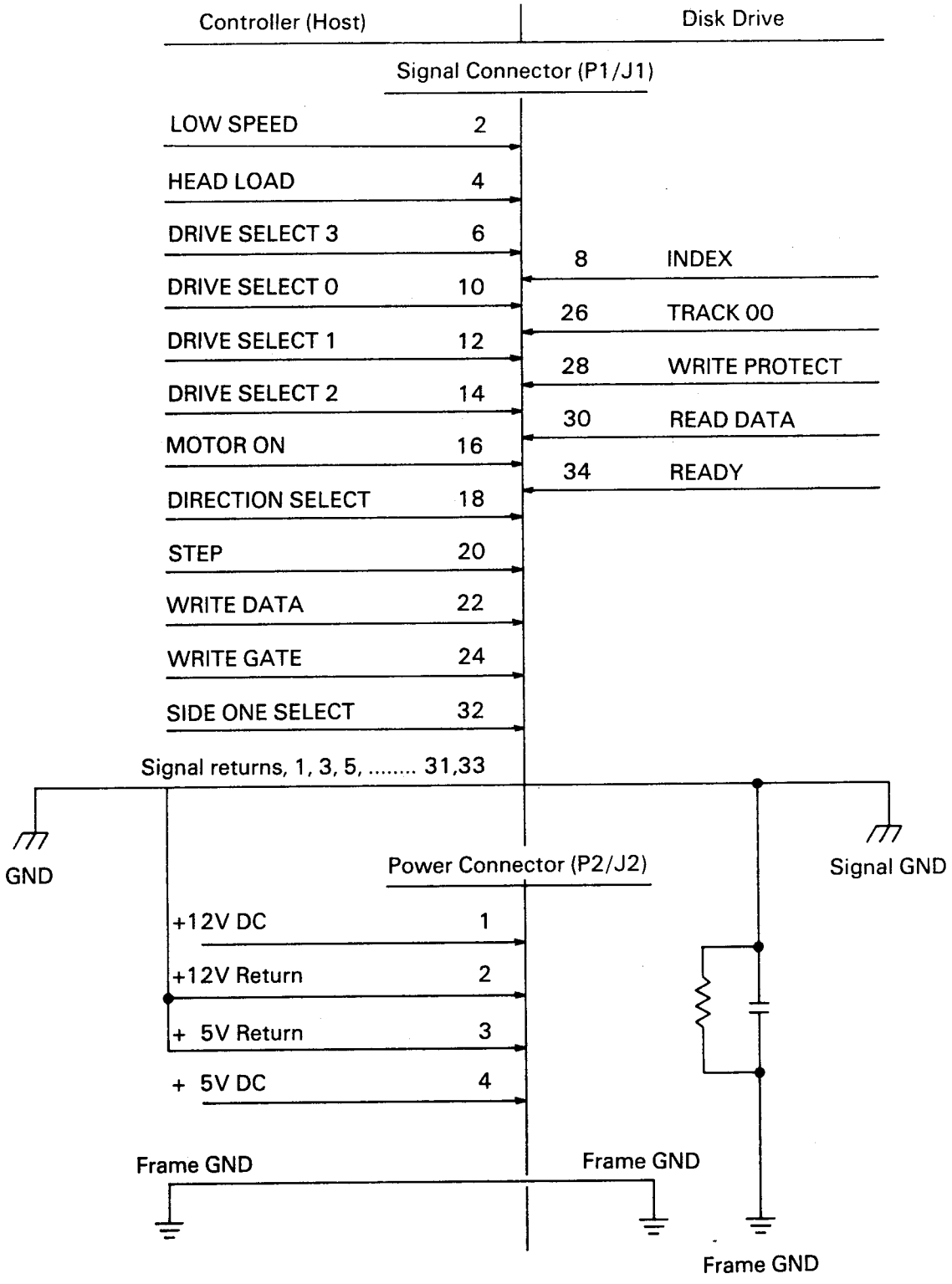


Fig. 3-13 Interface Connections

3.1.3 Interface Circuits

The disk drive uses 7438 NAND buffers as line drivers, and TTL gates as line receivers.
The input of each receiver in a single drive or in the last drive of a daisy chain should be terminated in 150 ohms pulled up to +5 volts.
The illustration below shows the recommended controller interface circuit.

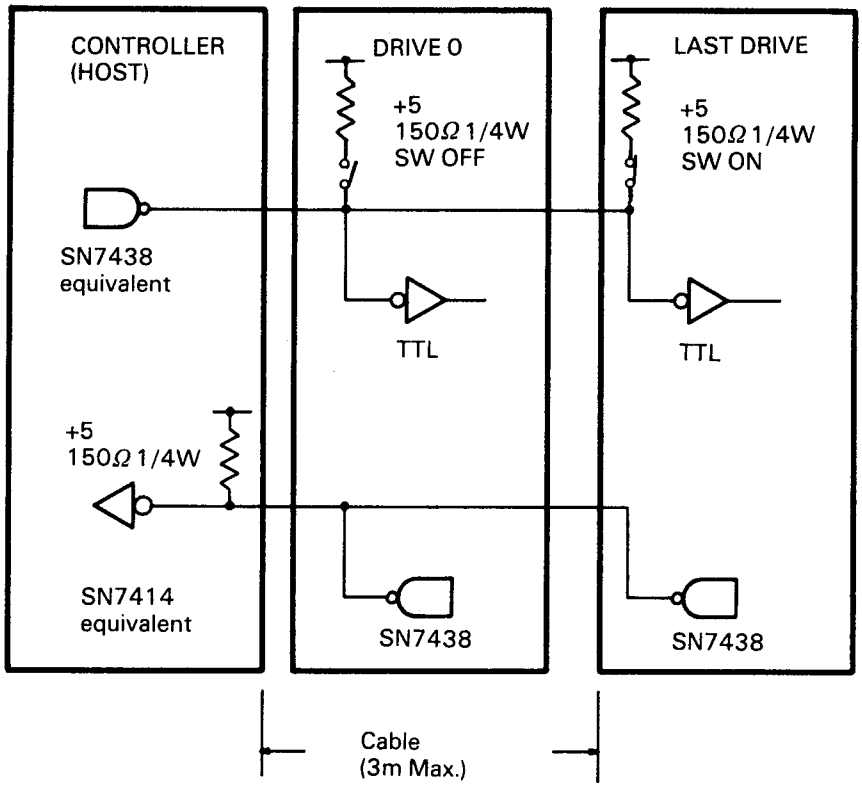


Fig. 3.14 Interface Circuit

3.1.4 Functional Operations

3.1.4.1 Power Sequencing

The +5V and +12V power sources can be applied in any order, however, the write gate line must be turned and kept off prior to powering the drive on or off.

When power is applied, the read/write heads automatically return to track 00 regardless of Drive Select. The step rate is approximately 5 ms. The step signal on the interface is ignored while returning to track 00.

Motor Speed is set to high when power is applied.

3.1.4.2 Track Accessing

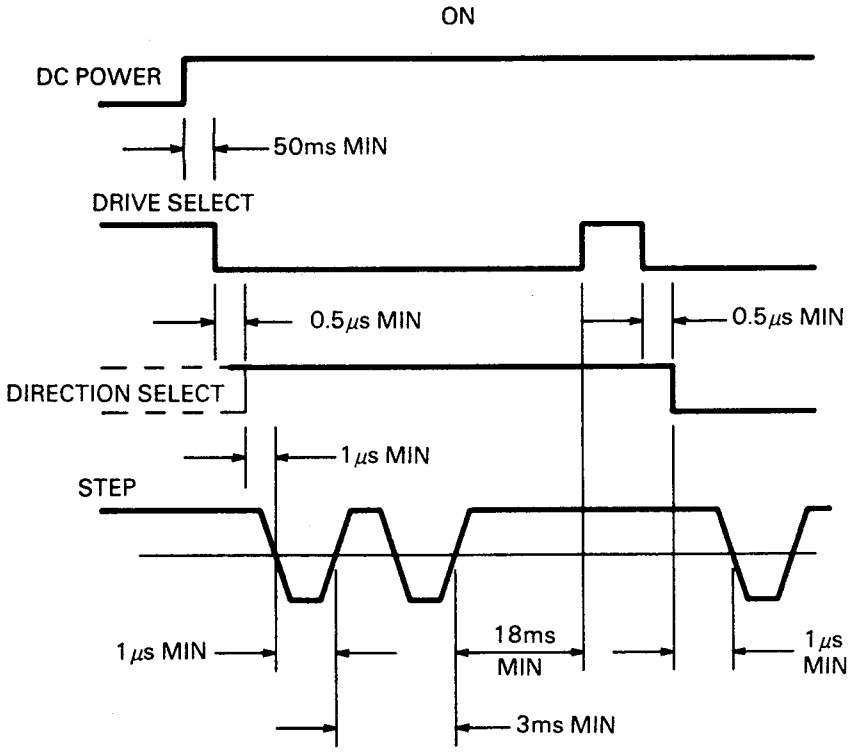


Fig. 3.15 Track Access Timing

3.1.4.3 Read Operation

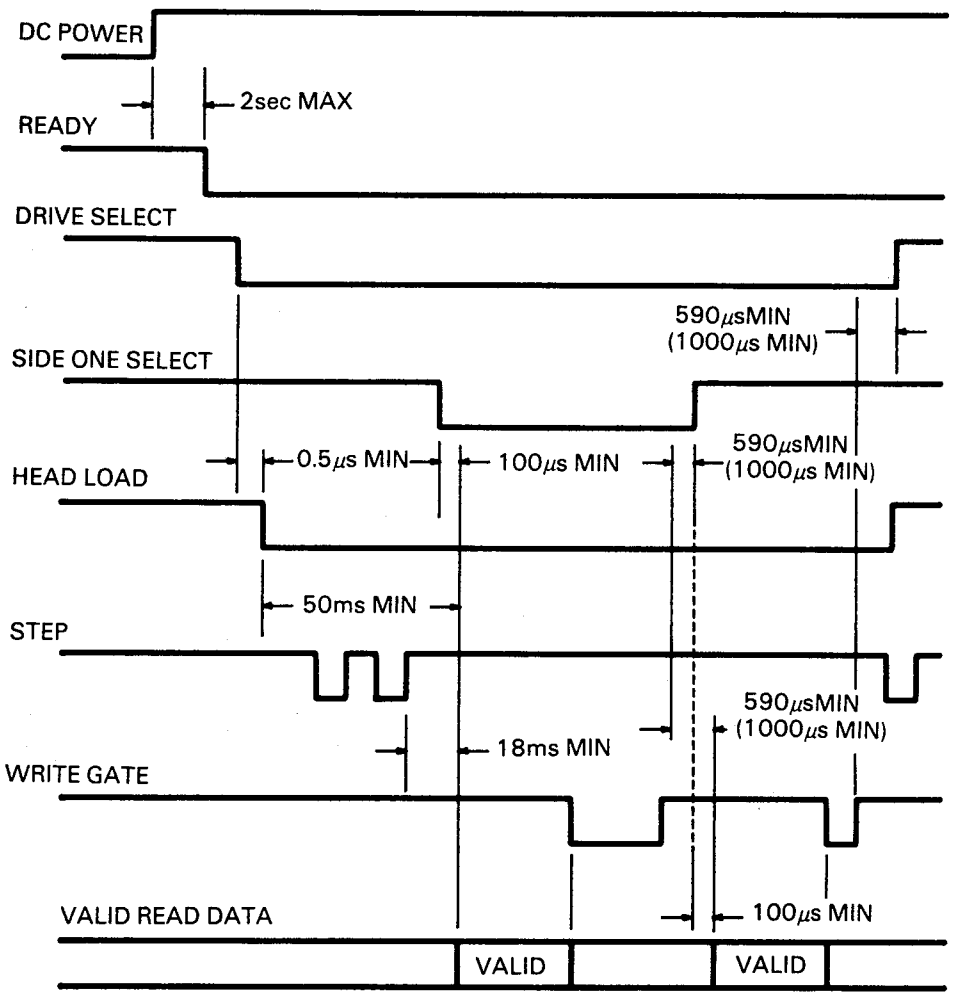


Fig. 3.16 Read Timing

Note: Figures in parentheses are for Low Speed mode.

3.1.4.4 Write Operation

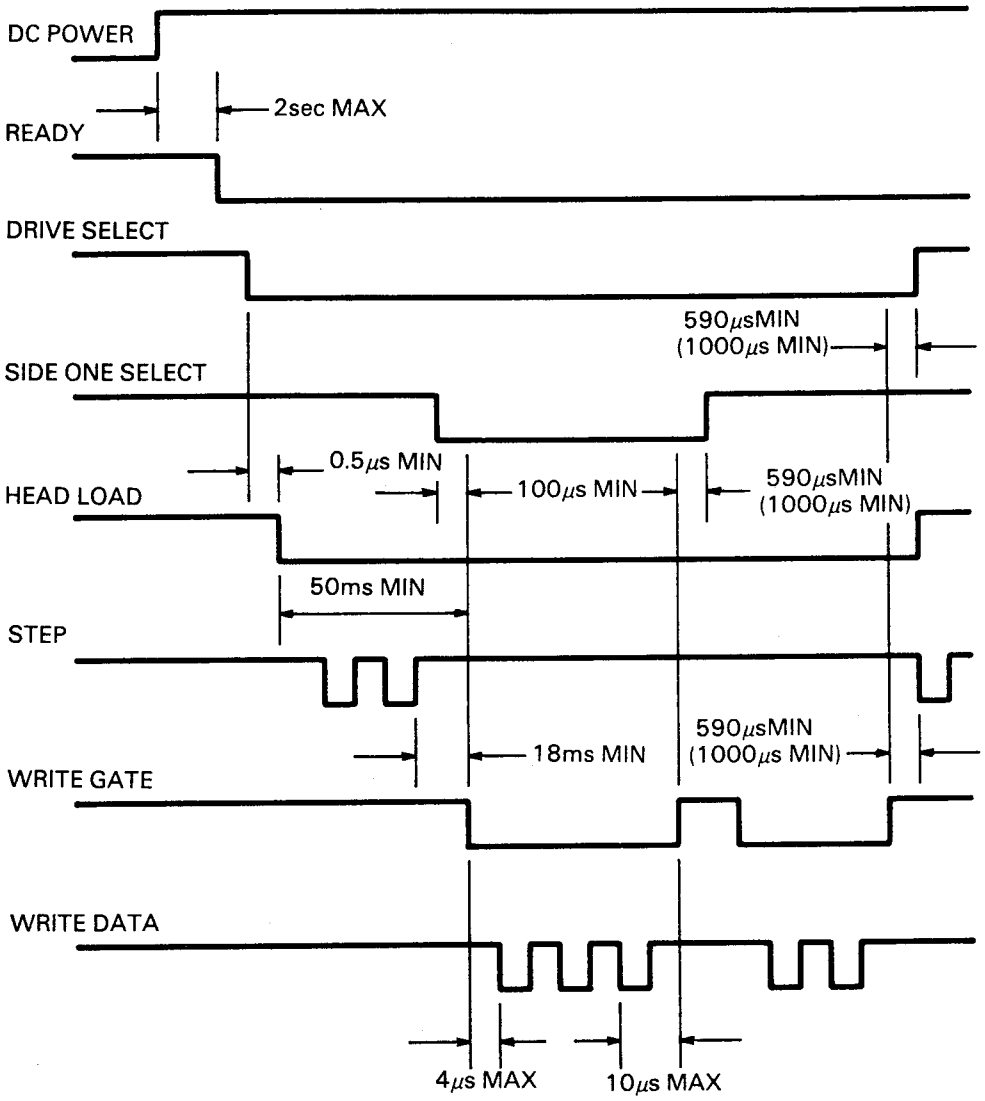


Fig. 3.17 Write Timing

Note: Figures in parentheses are for Low Speed mode.

3.2 Power Interface

3.2.1 Power Specifications

Item		DC +12V	DC +5V
Voltage		DC +12V ±10% (1)	DC +5V ±5%
Ripple Voltage (Including spike noise)		200mVpp Max.	100mVpp
Operating Current Consumption			
Normal Operation	Standard (2)	0.3A	0.4A
	Maximum (3)	0.5A Max.	0.5A Max.
Motor Start		1.2A Max. (4)	0.4A Max.
Standby Current Consumption (Motor not running)			
	Standard	0.05A	0.35A
	Maximum	0.1A Max.	0.4A Max.
Power Consumption			
Operating		5.6W	
Standby		2.4W	

Table 3.18 Power Specifications

Notes:

1) 12V ±5% during Read/Write.
2) Standard Conditions are: 12V, 5V; Normal Temperature; Motor running; Heads loaded.
3) Maximum Conditions are: Writing with 12V +5%, 5V +5%, Temperature 5°C; Motor running; Heads loaded.
4) Indicates motor starting during carriage seek operation. If seek operation not in progress then 0.4A maximum.

Chapter 4 Physical Interface

The physical interface between the drive and the host system is made through two connectors: I/O signals (P1/J1) and DC power (P2/J2).
The drive also provides a frame ground terminal.
The illustration below show interface connections.

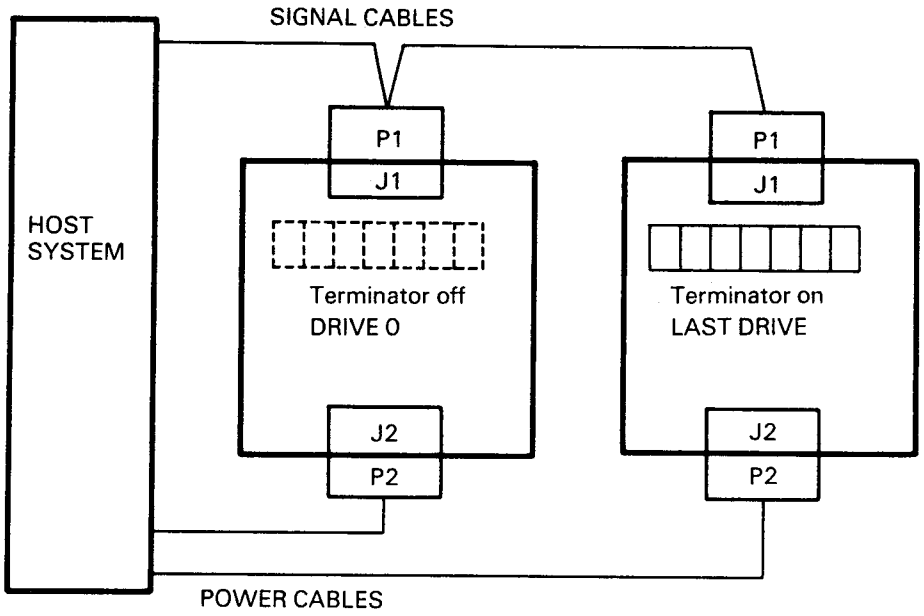


Fig. 4.1 Interface Connection

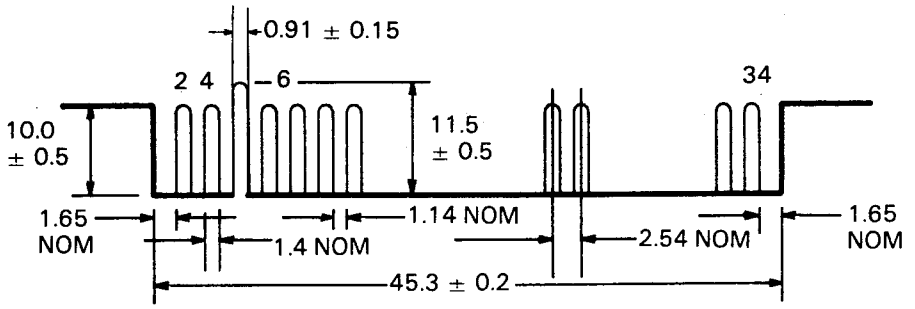
4.1 Connectors and Cables

4.1.1 Signal Connector and Cable (J1/P1)

4.1.1.1 Connector J1

Connection to J1 is through a 34 pin PCB edge card connector.
The pins are numbered 1 through 34 with the even numbered pins on the componet side of the PCB and the odd numbered pins on the non-component side.
A key slot is provided between pin 4 and 6 for optional connector keying. The dimensions for this connector are shown in the illustration below.

Note: Dimensions in millimeters



Board Thickness 1.6

Fig. 4.2 J1 Connector Dimensions (Component Side)

4.1.1.2 Connector P1 for Flat Cable

PARTS	3M P/N
Connector	3463-0001
Polarizing Key	3439-0000
Crimp Tool Pree Locator Plate Platen	 3640 3443-11 3442-3
Flat Cable (3m Max.)	3365-34

Table 4.3 Connector P1 Requirements

4.1.1.3 Connector P1 for Twisted Wire Pairs

Parts	Crimp Type AMP P/N	Solder Type AMP P/N
Housing	583717-5	583717-5
Contact	1-583616-1	583854-3
Polarizing Key	583274-1	583274-1
Crimp Tool	90268-1	
Extractor Tool	91073-1	91073-1
Twisted Pairs (3m Max.)	AWG26	AWG26

Fig. 4.4 Connector P1 Requirements

4.1.2 DC Power Connector and Cable (J2/P2)

Parts	P2 (Cable Side) AMP P/N	J2 (Drive Side) AMP P/N
Housing	1-480424-0	172349-1
Contact (4 pins)	60619-1 or 170121-1	
Crimp Tool	90124-2	
Extractor Tool	1-305183-2	
Cable (3m Max.)	AWG18	

Table 4.5 Connector J2/P2 Requirements

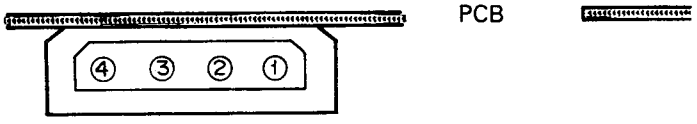


Fig. 4.6 J2 Connector

4.1.3 Frame Ground Terminal

Fast-on Tab	Mating connector
AMP P/N 61761-2	AMP P/N 60972-1

Table 4.7 Frame Ground Terminal

The drive must be grounded at the host system to insure proper operation.
If the frame can not be grounded sufficiently, the host system and the drive should be connected via a cable.
A fast-on tab is provided on the drive for this purpose. Connect a cable on this tab with a mating connector.

4.2 Connector Pin Assignments

4.2.1 Signal Connector Pin assignments

Signal Return Pin No.	Signal Pin No.	Signal Name
1	2	LOW SPEED
3	4	HEAD LOAD
5	6	DRIVE SELECT 3
7	8	INDEX
9	10	DRIVE SELECT 0
11	12	DRIVE SELECT 1
13	14	DRIVE SELECT 2
15	16	MOTOR ON
17	18	DIRECTION SELECT
19	20	STEP
21	22	WRITE DATA
23	24	WRITE GATE
25	26	TRACK 00
27	28	WRITE PROTECT
29	30	READ DATA
31	32	SIDE ONE SELECT
33	34	READY

Table 4.8 Signal Connector Pin Assignments

4.2.2 DC Power Connector Pin Assignments

Pin No.	Signal Name
1	+12V DC
2	+12V RETURN
3	+ 5V RETURN
4	+ 5V DC

Table 4.9 DC Power Connector Pin assignments

4.3 Terminators

All signal inputs are terminated in a switch terminator (150 Ohm resistor pack). The switches are in ON position with all terminators connected when the drive is shipped. Before use, make sure that all the drives in the chain are turned OFF except for the last drive, which should remain ON. Refer to Figure 4.1.

Chapter 5 Mounting

5.1 Mechanical Dimensions

(1) Refer to Figure 6.1 for dimensions of the drive.
(2) The standard color of the front is as follows:
  (a) Front Bezel: Black (Munsell N1.5 equivalent)
  (b) Front Lever: Black (Munsell N1.5 equivalent)

5.2 Mounting Recommendations

(1) Refer to Fig. 6.2 for recommended mounting.
(2) Do not mount the drive with the PCB down when in horizontal front-loading position.
(3) When the drive is mounted in slanting position, the angle should be less than 20 degrees.

Chapter 6 Diagrams

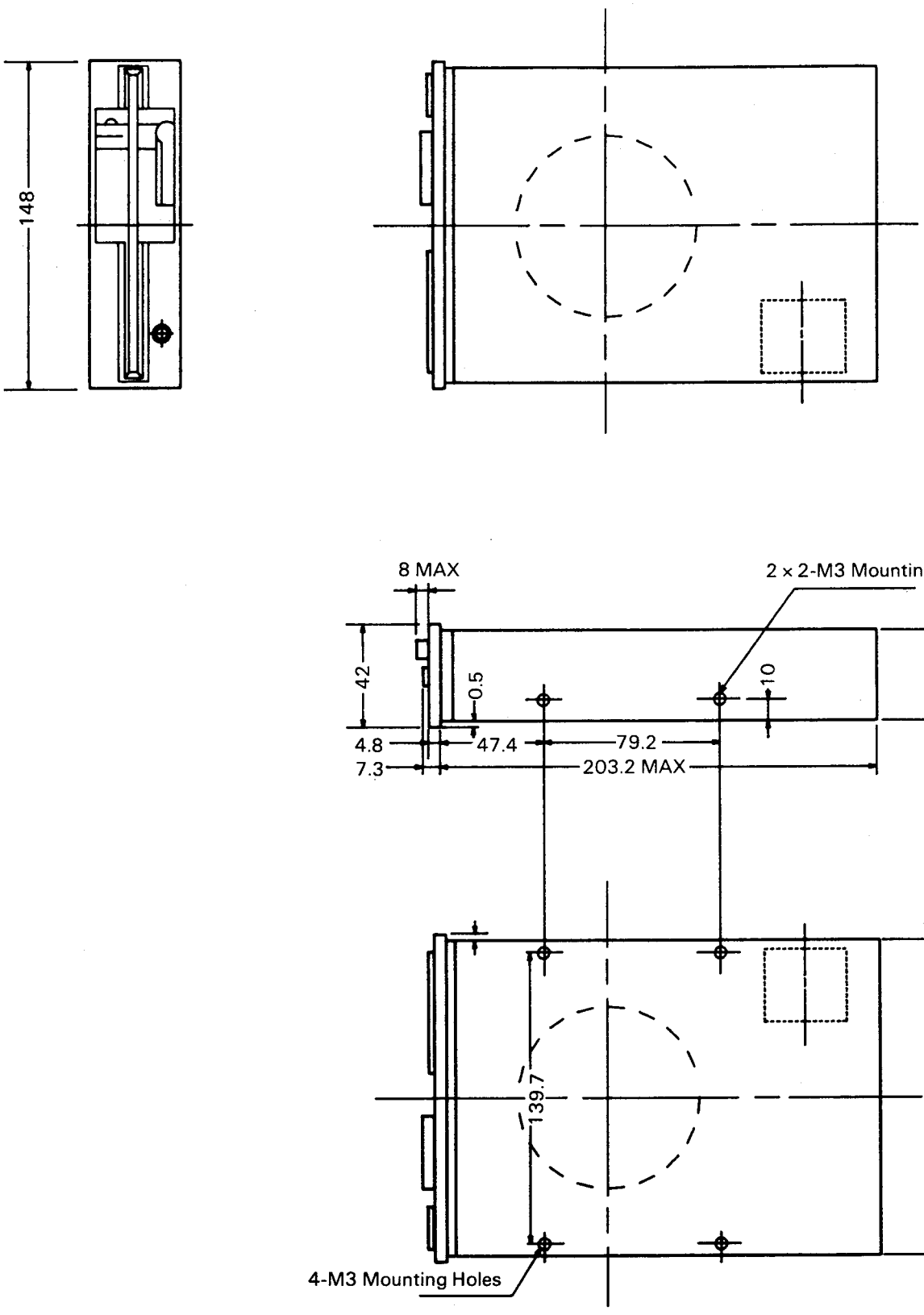


Fig. 6.1 Mechanical Dimensions

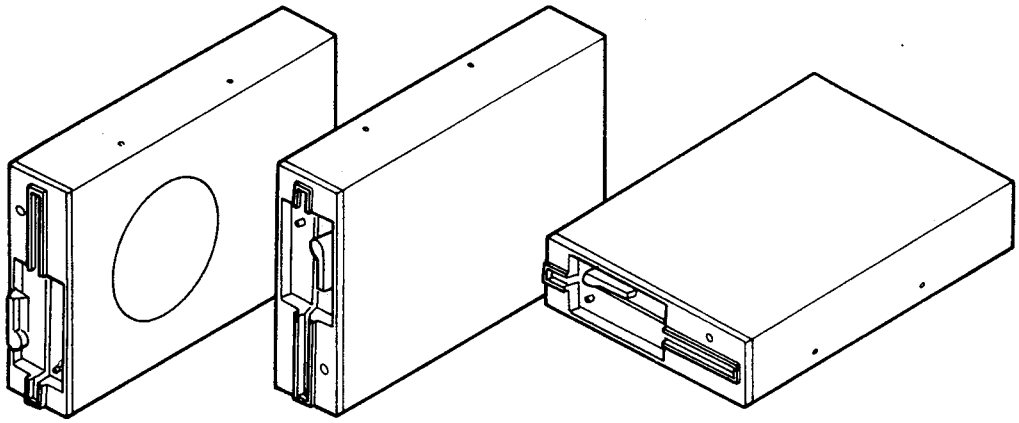


Fig. 6.2 Recommended Mounting

Chapter 7 Other Functional Characteristics

7.1 Automatic Motor On/Off

With the power properly supplied, the drive motor is controlled as follows.

(1) When Motor On is at low level,
   (a) inserting a disk starts the drive motor.
   (b) removing a disk stops the drive motor.

(2) When Motor On is at high level,
   The drive motor starts when a disk is inserted and stops a short period of time after.

7.2 Ready Signal Output

With the MR shorting plug open, the Ready signal is output regardless of the Drive Select signal level.

7.3 Mixed Use with 8 Inch Flexible Disk Drives

With the TD shorting plug open, the YD-380 can be daisy-chained with 8 inch flexible disk drives. The last drive in a mixed daisy chain must be an 8 inch drive.

7.4 Drive in Use Indicator

7.4.1 Standard

The Drive In Use indicator lights when the following conditions are satisfied.

(1) The drive is Drive Selected.
(2) The drive is ready.

7.4.2 In Use Option

With the following shorting plugs set as shown below, signal pin 4 is assigned as the In Use signal in place of the Head Load signal.

(1) Open the HL shorting plug.
(2) Short the INU shorting plug.
(3) Short the LA shorting plug.
(4) Open the LB shorting plug.

The drive operates with the In Use signal as described below.

(1) With the In Use line at a low active level, the drive latches the leading edge of the Drive Select signal to light drive In Use indicator. The indicator stays lit even after the Drive Select signal turns off.
(2) With the In Use line at high inactive level, the leading edge of the Drive Select signal releases the latch to turn off the drive In Use indicator. The Drive Select signal does not turn on the indicator.

The following Figures and Tables show the input lines, the interface connection, and the signal connector pin assignments when the In Use option is incorporated.

(1) Drive Select 0 – 3	(9) Low Speed
(2) Motor On	
(3) Direction Select	
(4) Step	
(5) Write Data	
(6) Write Gate	
(7) Side One Select	
(8) In Use	

Table 7.1 Input Lines (Refer to Table 3.1)

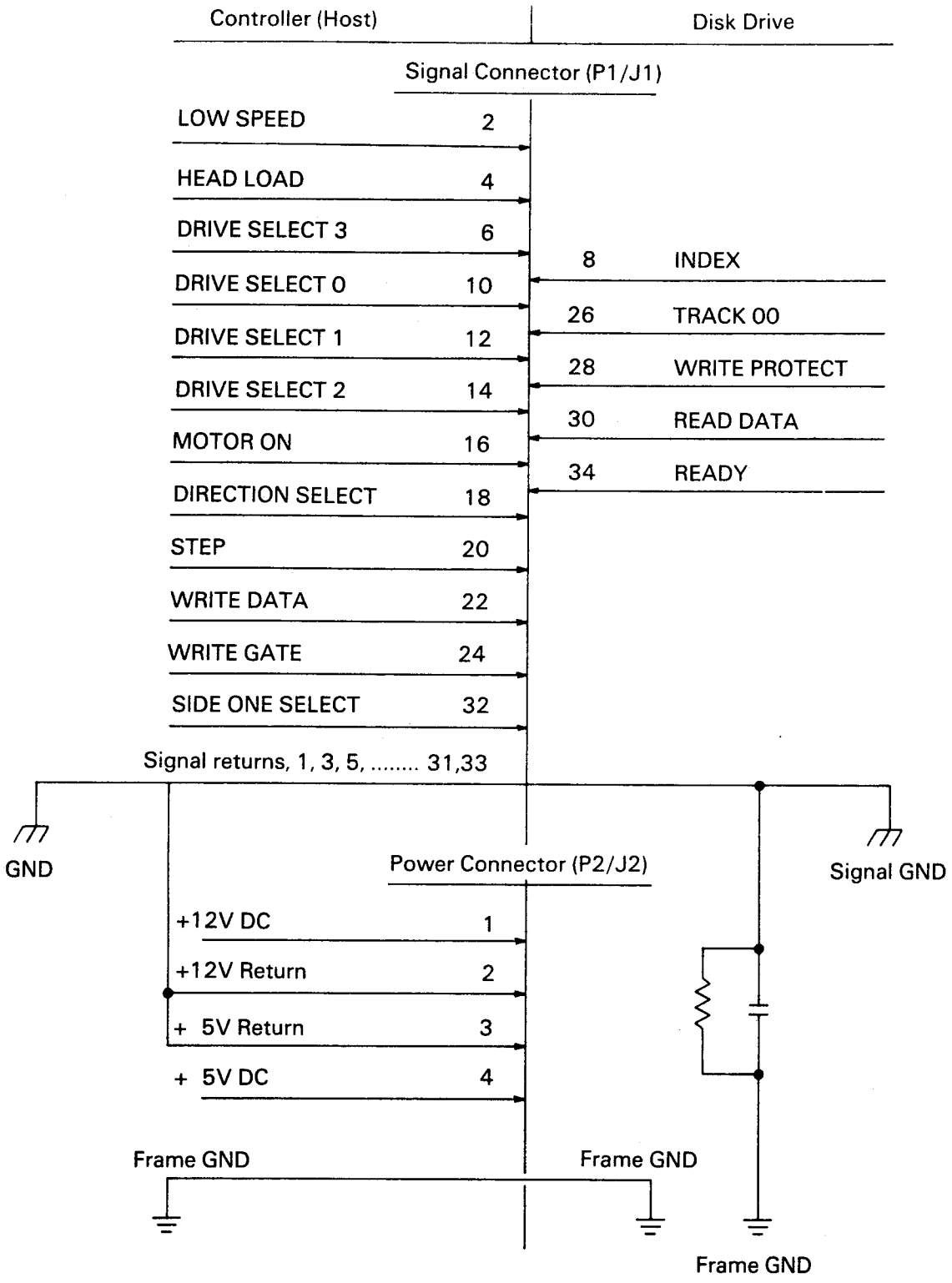


Fig. 7.2 Interface Connections (Refer to Fig. 3.13)

Signal Return Pin No.	Signal Pin No.	Signal Name
1	2	LOW SPEED
3	4	HEAD LOAD
5	6	DRIVE SELECT 3
7	8	INDEX
9	10	DRIVE SELECT 0
11	12	DRIVE SELECT 1
13	14	DRIVE SELECT 2
15	16	MOTOR ON
17	18	DIRECTION SELECT
19	20	STEP
21	22	WRITE DATA
23	24	WRITE GATE
25	26	TRACK 00
27	28	WRITE PROTECT
29	30	READ DATA
31	32	SIDE ONE SELECT
33	34	READY

Table 7.3 Signal Connector Pin Assignments (Refer to Table 4.8.)

7.5 Head Load

7.5.1 Standard

Refer to 3.1.1.8.

7.5.2 With In Use Option

When signal pin 4 is used as the In Use signal as described in 7.4.2, Head Load can operate in either of the following ways.

(1) Drive Select signal controls.
   (a) Short the HS shorting plug.
   (b) Open the HM shorting plug.

   With the shorting plugs set as shown above, the read/write heads are loaded against the disk when the drive is Drive Selected.
   After activating the Drive Select line, a 50 msec delay is required before any read or write operation can be initiated.

(2) Motor On signal controls Head Load operation.
   (a) Short the HM shorting plug.
   (b) Open the HS shorting plug.

   With the shorting plugs set as shown above, the read write heads are loaded against the disk when the Motor On signal is activated.

The following figures show read timing and write timing when the In Use option is used.

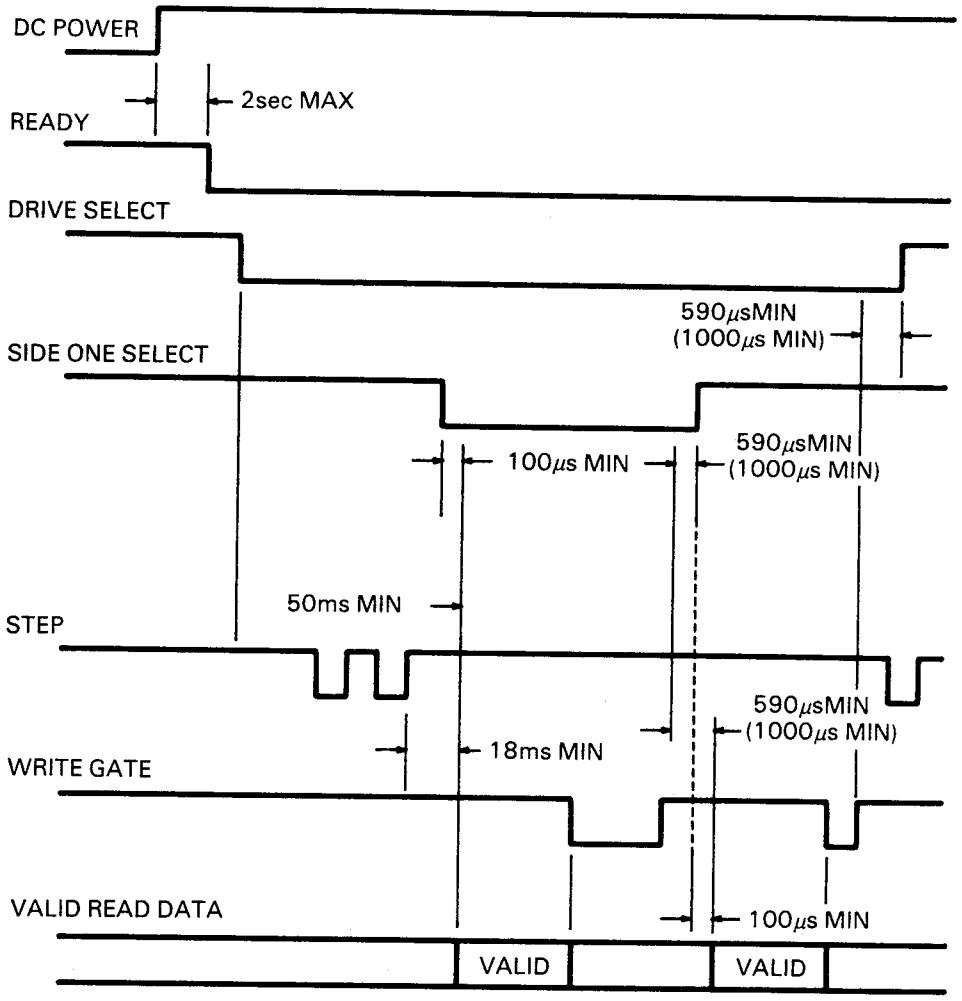


Fig. 7.4 Read Timing (Refer to Fig. 3.16.)

Note: Figures in parentheses are for Low Speed mode.

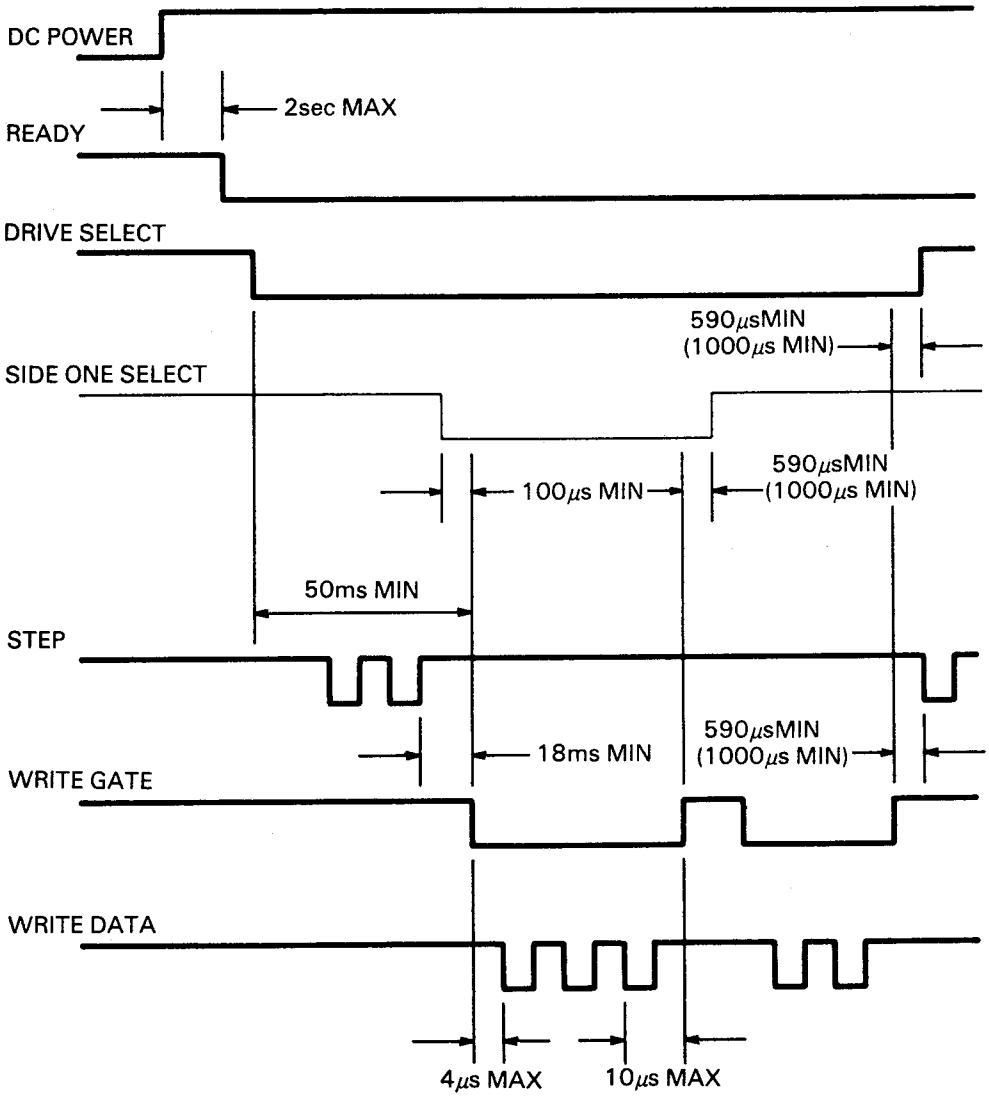


Fig. 7.5 Write Timing (Refer to 3.17.)

Note: Figures in parentheses are for Low Speed mode.

Chapter 8 Table of Shorting Plugs

The shorted and open functions of shorting plugs, jumpers and DIP switches are shown in the table below. When shipped from the factory, the plugs and jumpers are set as shown in "Standard".

Name	Standard	Option 1	Option 2	Option 3	Remarks
HL	S	S	O	O	Refer to 7.4.2.
INU	O	O	S	S	Refer to 7.4.2.
HM	O	O	O	S	Refer to 7.5.2.
HS	O	O	S	O	Refer to 7.5.2.
DS0	S	S: one of four O: other	Same as left	Same as left	Refer to 3.1.1.1.
DS1	O				
DS2	O				
DS3	O				
MR	S	S or O	Same as left	Same as left	Refer to 7.2.
TD	S	S or O	Same as left	Same as left	Refer to 7.3.
LA	O	O	S	S	Refer to 7.4.2.
LB	S	S	O	O	Refer to 7.4.2.

Note:

Not defined : not defined in this manual
S : shorted with a shorting plug
O : opened with a shorting plug removed
J : shorted with a jumper
PS : shorted trace
ON : DIP switches turned on
OFF : DIP switches turned off

Table 8.1 Shorting Plugs

Chapter 9 Table of Test Points

Test points on the PCB are shown below.

Test Points	Functions
TP 1A 1B	Differential output of read/write head amplifier
TP 2A 2B	Output of differentiator amplifier
TP 3	Output of index sensor (high active)
TP 4	Output of erase gate (low active)
TP 5	Output of track 00 sensor (high active)
G	Ground for test points

Table 9.1 Table of Test Points

Y-E DATA Inc.

Sunshine 60 P.O. Box 1171
3-1-1 Higashi-Ikebukuro
Toshima-ku, Tokyo 170, Japan
Tel: Tokyo (03) 989-8001
Telex: 272-3266 YEDATA J
Fax: (03) 989-8008

October 1984
Printed in Japan Ⓖ 500

RETURN LETTER

Title: FDD 723, RC750 flexible disc OEM manual RCSL No.: 991 09822

A/S Regnecentralen af 1979/RC Computer A/S maintains a continual effort to improve the quality and usefulness of its publications. To do this effectively we need user feedback, your critical evaluation of this manual.

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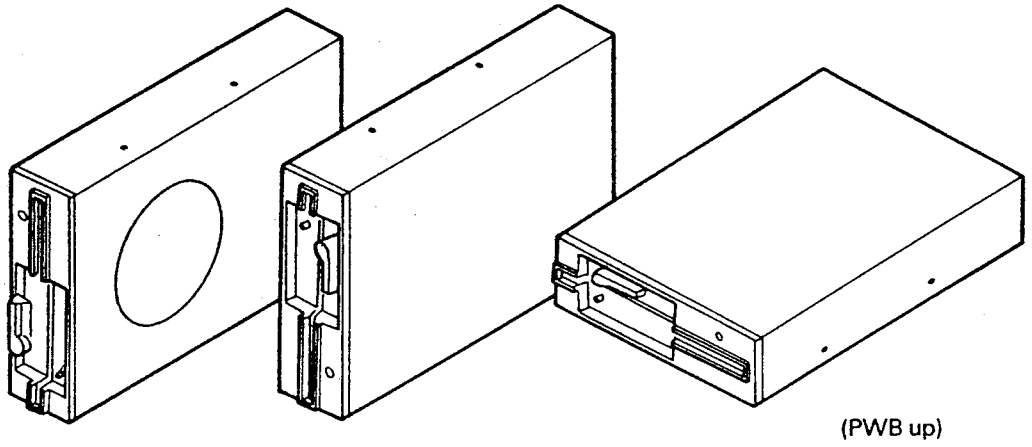

Fig. 6.2 Recommended Mounting

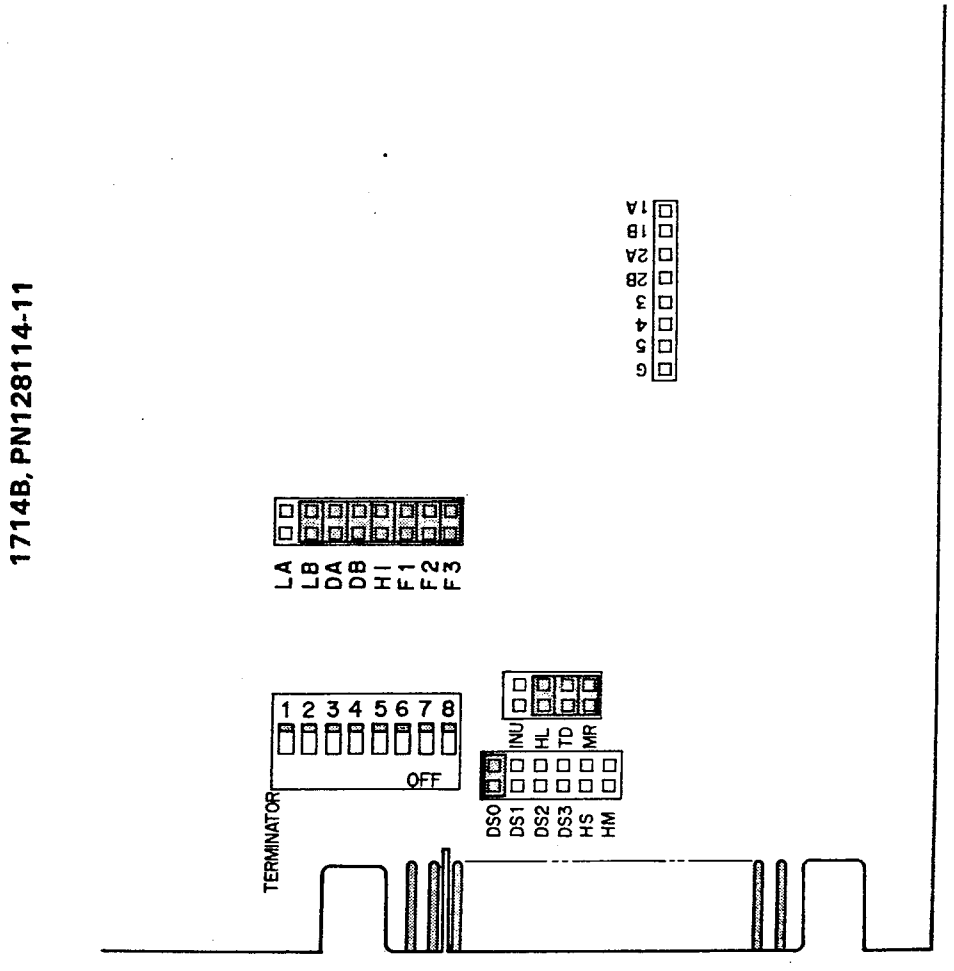

Fig. 6.3 Terminator/Shorting Plug Position Diagram

Chapter 7 Other Functional Characteristics

7.1 Automatic Motor On/Off

With power properly supplied, the drive motor is controlled as follows.
With the Motor On is at low level,
(1) When inserting a disk starts the drive motor.
(a) Removing a disk stops the drive motor.
(b) When Motor On is at high level,
(2) When drive motor will start automatically when the disk is inserted. After the door lever is closed, the motor will turn for a period of time and then stop.

7.2 Ready Signal Output

With the MR shorting plug open, the Ready signal is output regardless of the Drive Select signal level.

7.3 Mixed Use with 8 Inch Flexible Disk Drives

With the TD shorting plug open, the YD-380B can be daisy-chained with 8 inch flexible disk drives. The drive in a mixed daisy chain must be an 8 inch drive.
last

7.4 Drive In Use Indicator

7.4.1 Standard (setting when shipped)

With the shorting plugs set as shown below, signal pin 4 is assigned as the Head Load signal.

(1) Short the HL shorting plug.
(2) Open the INU shorting plug.
(3) Open the LA shorting plug.
(4) Short the LB shorting plug.

The Drive In Use indicator lights when the following conditions are satisfied.

(1) The Drive Select signal is at low active level.
(2) The Ready Signal is at low active level.

7.4.2 Option 1

With the shorting plugs set as shown below, signal pin 4 is assigned as the Head Load signal.

(1) Short the HL shorting plug.
(2) Short the INU shorting plug.*
(3) Short the LA shorting plug.*
(4) Short the LB shorting plug.

The Drive In Use indicator lights when the following conditions are satisfied.

(1) The Drive Select signal is at low active level.
(2) The Head Load signal is at low active level.

7.4.3 Option 2

With the shorting plugs set as shown below, signal pin 4 is assigned as the Head Load signal.

(1) Open the HL shorting plug.*
(2) Short the INU shorting plug.*
(3) Open the LA shorting plug.
(4) Open the LB shorting plug.*

The drive operates with the In Use signal as described below.

(1) With the In Use line at low active level, the In Use indicators of all drives are on, regardless of the Drive Select signal.
(2) With the In Use line at high inactive level, the In Use indicator in the Drive Selected drive is on.

* Setting is different from the setting when shipped.

7.4.4 Option 3

With the shorting plugs set as shown below, signal pin 4 is assigned as the Head Load signal.

(1) Open the HL shorting plug.*
(2) Short the INU shorting plug.*
(3) Short the LA shorting plug.*
(4) Open the LB shorting plug.*

The drive operates with the In Use signal as described below.

(1) With the In Use line at low active level, the drive latches the leading edge of the Drive Select signal, turning on the In Use indicator. The In Use indicator will stay on even after the Drive Select signal goes off.

(2) With the In Use line at high inactive level, the drive latches the leading edge of the Drive Select signal, turning off the In Use indicator. The In Use indicator will stay off even after the Drive Select signal goes off.

7.5 Head Load Option

7.5.1 Standard (setting when shipped)

With the shorting plugs set as shown below and the Drive Selected Drive ready, a low active signal on the Head Load line loads the heads against the disk.

(a) Short the HL shorting plug.
(b) Open the INU shorting plug.
(c) Open the HS shorting plug.
(d) Open the HM shorting plug.

After activating the Head Load line, a 50 msec delay is required before any read or write operation can be initiated.

7.5.2 Option

When signal pin 4 is used as the In Use signal, either of the following procedures will permit the Head Load operation.

(1) The Drive Select Signal controls the Head Load operation.
  (a) Open the HL shorting plug.*
  (b) Short the INU shorting plug.*
  (c) Short the HS shorting plug.*
  (d) Open the HM shorting plug.

With the shorting plugs set as shown above, the read/write heads are loaded against the disk when the Drive Select signal is activated. The same 50 ms delay as in the standard setting is necessary.

(2) The Motor On Signal controls the Head Load operation.
  (a) Open the HL shorting plug.*
  (b) Short the INU shorting plug.*
  (c) Open the HS shorting plug.
  (d) Short the AM shorting plug.*

With the shorting plugs set as shown above, the read/write heads are loaded against the disk when the Motor On Signal is activated.

Note: Shorting plugs HS and HM should not be simultaneously shorted.

* Setting is different from the setting when shipped.