# ST506 HARD DISK DRIVES

| 20 MB HDU | MINISCRIBE M-8425 | ST506 |
|-----------|-------------------|-------|



| ROTATION | CYLINDERS | DISKS | HEADS | RECORD. |
|----------|-----------|-------|-------|---------|
| 3600 RPM | 612 | 2 | 4 | MFM |

| JUMPERS | | | | DRIVE ADDRESS SELECTION |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | |
| ON | OFF | OFF | OFF | Drive 1 |
| OFF | ON | OFF | OFF | Drive 2 |
| OFF | OFF | ON | OFF | Drive 3 |
| OFF | OFF | OFF | ON | Drive 4 |
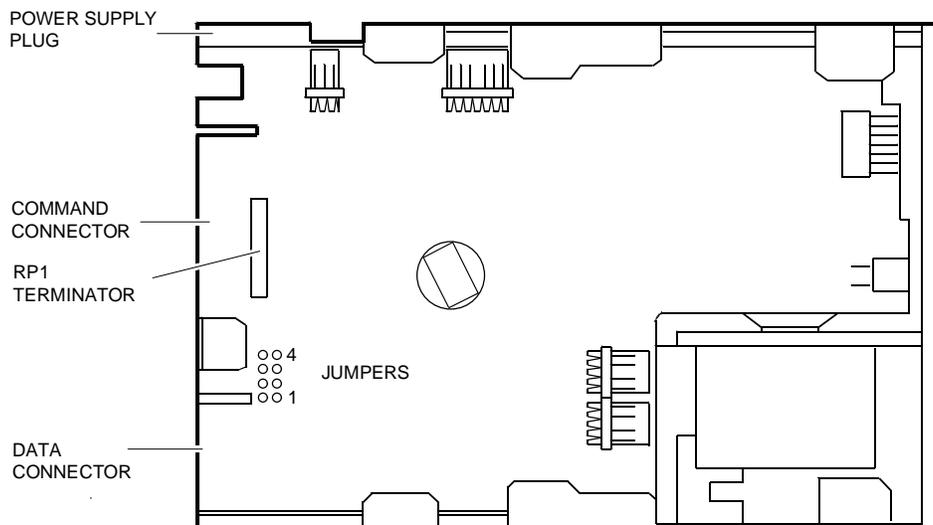
**TERMINATOR RP1**

Terminator RP1 must always be present on the last drive in the line of HDUs; the terminator must be removed from all the others. If there is only one drive, there must be a terminator.

| 20 MB HDU | SEAGATE ST125 | ST506 |
|-----------|---------------|-------|



| ROTATION | CYLINDERS | DISKS | HEADS | RECORD. |
|----------|-----------|-------|-------|---------|
| 3600 RPM | 615 | 2 | 4 | MFM |

| JUMPERS J7 | | | | DRIVE ADDRESS SELECTION |
|------------|------------|------------|-----------|-------------------------|
| PINS 15-16 | PINS 13-14 | PINS 11-12 | PINS 9-10 | |
| ON | OFF | OFF | OFF | Drive 1 |
| OFF | ON | OFF | OFF | Drive 2 |
| OFF | OFF | ON | OFF | Drive 3 |
| OFF | OFF | OFF | ON | Drive 4 |

| JUMPERS J7 | CONNECTION TYPE |
|------------|-----------------|
| PINS 1-2 | |
| ON | Radial connection |
| OFF | Daisy chain connection |

| JUMPERS JP1 | | STORING WRITE FAULT |
|-------------|----------|---------------------|
| PINS 1-2 | PINS 2-3 | |
| ON | | Write Fault is deleted when Write Gate is false. A Write Fault is only kept when Write Gate is true. * |
| | ON | Keeps Write Fault true after Write Gate becomes false and it is advisable for controllers that do not detect the rising edge of Write Fault. This option depends on the configuration for J7 pins 5-6:<br>- Pins 5-6=OFF: Write Fault can only be deleted at power down.<br>- Pins 5-6=ON: Write Fault can only be deleted when the drive is not selected any more. |
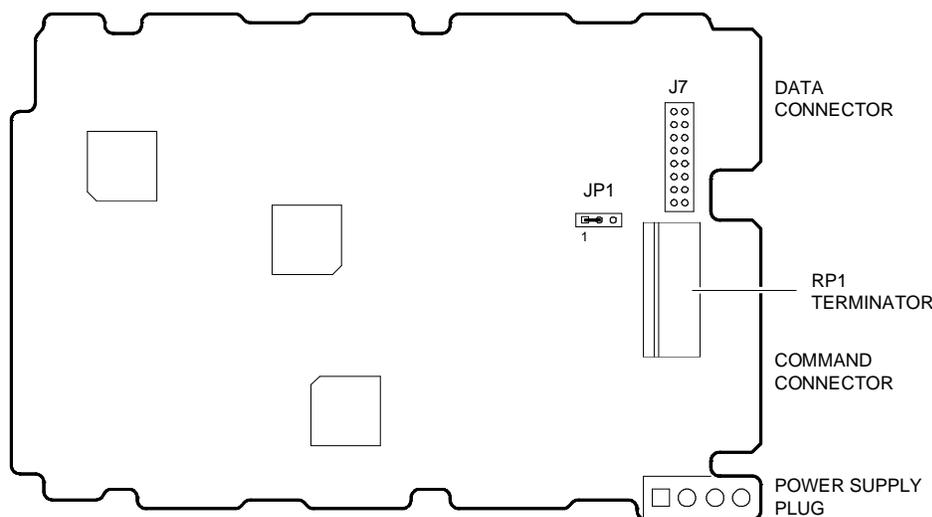
**TERMINATOR RP1**
Terminator RP1 must be connected to all the drives in a radial connection and the last drive in a daisy chain connection. The RP1 terminators must be removed from the first to the second to last drives in a daisy chain connection.

| 20 MB HDU<br>40 MB HDU<br>40 MB HDU | NEC D3126<br>NEC D3142<br>NEC D3146H | ST506 |
|---|---|---|



5

POWER SUPPLY CONNECTOR

DIP-SWITCH SW1

COMMAND CONNECTOR

DIP-SWITCH SW2

DATA CONNECTOR

JUMPERS JP

JP1 JP2 JP3 JP4
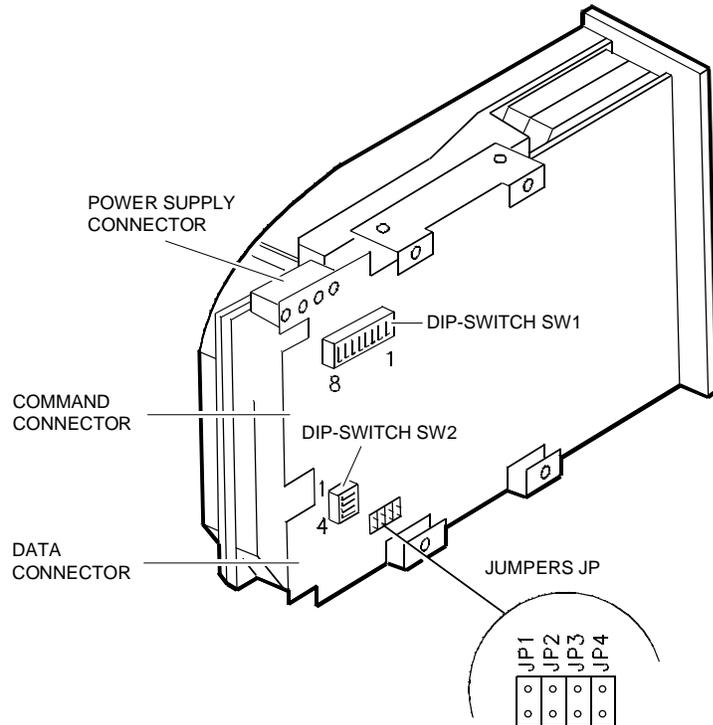
| MODEL | ROTATION | CYLINDERS | DISKS | HEADS | RECORD. |
|---|---|---|---|---|---|
| NEC D3126<br>NEC D3142<br>NEC D3146H | 3564 RPM | 612 | 2 | 4 | MFM<br>MFM<br>MFM |

| DIP-SWITCH SW1 | | | | | | | | CONNECTION TYPE AND TERMINATOR |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
| ON | ON | ON | ON | ON | ON | ON | ON | Radial connection |
| OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | Daisy chain connection from the first to the second to last unit connected |
| OFF | ON | ON | ON | ON | ON | ON | ON | Daisy chain connection for the last unit connected. |

| DIP-SWITCH SW2 | | | | DIRVE ADDRESS SECTION |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | |
| ON | OFF | OFF | OFF | Drive 1 |
| OFF | ON | OFF | OFF | Drive 2 |
| OFF | OFF | ON | OFF | Drive 3 |
| OFF | OFF | OFF | ON | Drive 4 |

| JUMPERS JP | | | | OPERATING MODE |
|---|---|---|---|---|
| JP1 | JP2 | JP3 | JP4 | |
| OFF | OFF | OFF | OFF | Normal * |
| ON | OFF | OFF | ON | Random seek |
| ON | OFF | ON | OFF | Repeat seek |
| ON | OFF | ON | ON | Retract |
| ON | ON | OFF | ON | Random seek and CSS |
| ON | ON | ON | OFF | Repeat random seek and CSS |

| 40 MB HDU | FUJITSU M2227D2 | ST506 |
|---|---|---|



POWER SUPPLY
CONNECTOR

COMMAND
CONNECTOR

DATA
CONNECTOR

DIP-SWITCH SW1
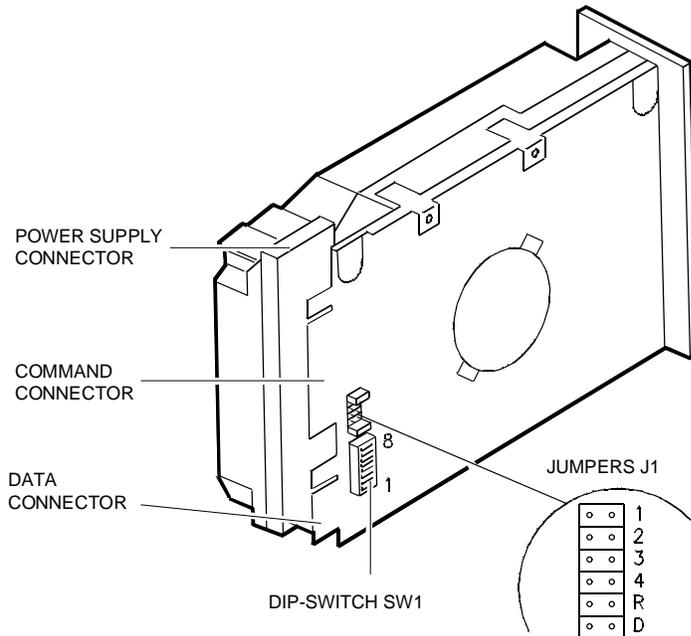
JUMPERS J1

| ROTATION | CYLINDERS | DISKS | HEADS | RECORD. |
|---|---|---|---|---|
| | 615 | | 8 | MFM |

| JUMPERS J1 | | | | DRIVE ADDRESS SELECTION |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | |
| ON | OFF | OFF | OFF | Drive 1 |
| OFF | ON | OFF | OFF | Drive 2 |
| OFF | OFF | ON | OFF | Drive 3 |
| OFF | OFF | OFF | ON | Drive 4 |

| JUMPERS J1 | | CONNECTION TYPE |
|---|---|---|
| **R** | **D** | |
| ON | OFF | Radial connection |
| OFF | ON | Daisy chain connection |

| DIP-SWITCH SW1 | | | | | | | | TERMINATOR |
|---|---|---|---|---|---|---|---|---|
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | |
| ON | ON | ON | ON | ON | ON | X | ON | Terminator connector, (for all drives in a radial connection and for the last drive in a daisy chain connection). |
| OFF | OFF | OFF | OFF | OFF | OFF | X | OFF | Terminator disconnected (for daisy chain connection from the first to the second to last unit connected). |
| X | X | X | X | X | X | OFF | X | Used if the connection is as follows:<br>- The read/write operations after Drive Select are executed after confirmation of the Seek Complete signal from the drive<br>- The Drive Select signal is disabled when the drive is access. |
| X | X | X | X | X | X | ON | X | Used when the controller has not got the characteristics described in the previous paragraph. |

*X = Either one or the other.*

5

| 40 MB HDU | LEXIKON XM-5340 (HD-674) | ST506 |
|-----------|--------------------------|-------|



JUMPERS J1

DIP-SWITCH SW1

1A 1B 1C 1D

TERMINATOR RP1

ON 1 2 3 4

DATA
CONNECTOR

COMMAND
CONNECTOR

POWER SUPPLY
CONNECTOR
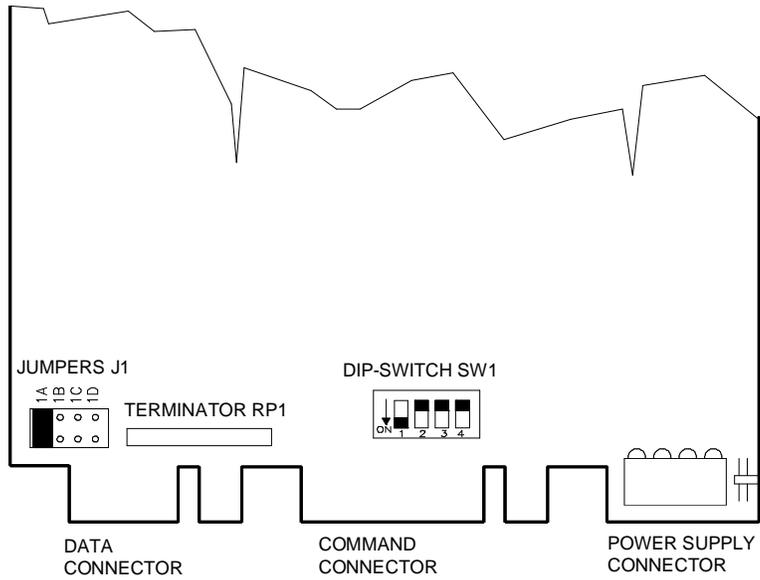
| ROTATION | CYLINDERS | DISKS | HEADS | RECORD. |
|----------|-----------|-------|-------|---------|
|          | 820       |       | 6     | MFM     |

| DIP-SWITCH SW1 | | | | DRIVE ADDRESS SELECTION |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | |
| ON | OFF | OFF | OFF | Drive 1 |
| OFF | ON | OFF | OFF | Drive 2 |
| OFF | OFF | ON | OFF | Drive 3 |
| OFF | OFF | OFF | ON | Drive 4 |

| | JUMPERS J1 | | | | DESCRIPTION |
|---|---|---|---|---|---|
| | 1A | 1B | 1C | 1D | |
| **Normal operation** | Always ON | Always OFF | OFF ON X | X X ON | Daisy chain connection Radial connection Recovery mode |
| **Test** | OFF OFF ON | OFF ON ON | X X X | X X X | Board test Seek test Functional test |

*X = Either one or the other*

**TERMINATOR RP1**

The RP1 terminator must be connected to all the drives in radial connection and to the last drive in a daisy chain connection. The RP1 terminators must be removed from the first to the second to last drive in the daisy chain connection.

| 40 MB HDU<br>62 MB HDU | NEC D5146H<br>NEC D5147H | ST506 |
|---|---|---|
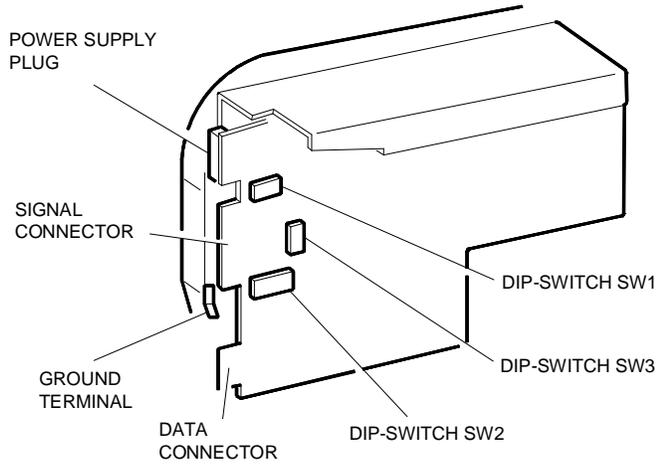


5
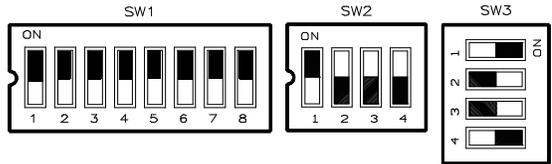
| MODEL | ROTATION | CYLINDERS | DISKS | HEADS | RECORD. |
|---|---|---|---|---|---|
| D5146H | | 615 | | 8 | MFM |
| D5147H | | 615 | | 8 | MFM |

| DIP-SWITCH SW1 | | | | | | | | CONNECTION AND TERMINATOR TYPES |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
| ON | ON | ON | ON | ON | ON | ON | ON | Radial connection |
| OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | Daisy connection from the first to the second to last unit connected. |
| OFF | ON | ON | ON | ON | ON | ON | ON | Daisy chain connection for the last unit connected. |

| DIP-SWITCH SW2 | | | | DRIVE ADDRESS SELECTION |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | |
| ON | OFF | OFF | OFF | Drive 1 |
| OFF | ON | OFF | OFF | Drive 2 |
| OFF | OFF | ON | OFF | Drive 3 |
| OFF | OFF | OFF | ON | Drive 4 |

| DIP-SWITCH SW3 | | | | OPERATING MODE |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | |
| OFF | OFF | OFF | OFF | Working normally * |
| ON | OFF | OFF | ON | Random seek |
| ON | OFF | ON | OFF | Repeat seek |
| ON | OFF | ON | ON | Retract |
| ON | ON | OFF | ON | Random seek e CSS |
| ON | ON | ON | OFF | Repeat random seek e CSS |

| 62 MB HDU<br>71 MB HDU | CDC WREN 2 94205-77<br>CDC WREN 2 94155-86 | ST506 |
|---|---|---|



| MODEL | ROTATION | CYLINDERS | DISKS | HEADS | RECORD. |
|---|---|---|---|---|---|
| 94205-77 | | 981 | | 5 | MFM |
| 94155-86 | | 925 | | 9 | MFM |
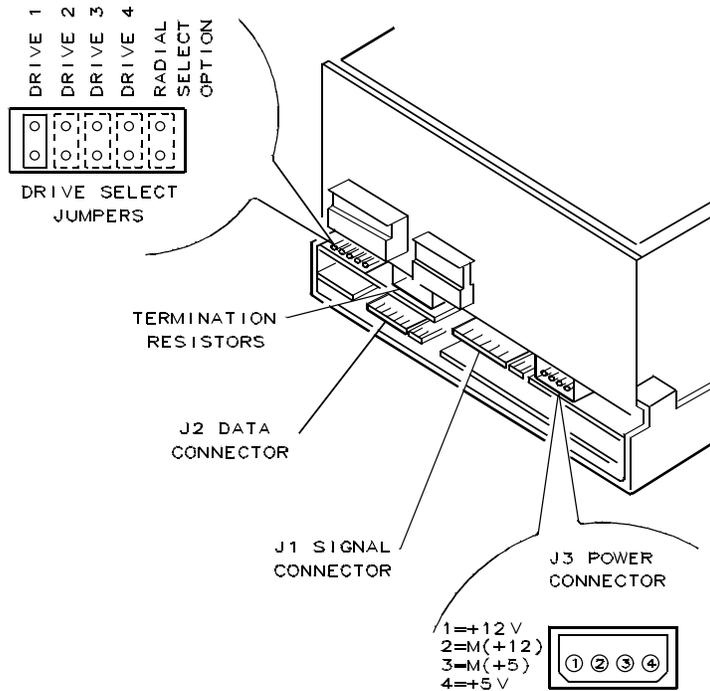
**TERMINATOR**
The terminator must connected to all the drives in radial connection and to the last drive in daisy chain connection. The terminators must be removed from the first to the second to last drive in the daisy chain connection.

| 71 MB HDU | MICROPOLIS 1325/LV | ST506 |
|-----------|--------------------|-------|
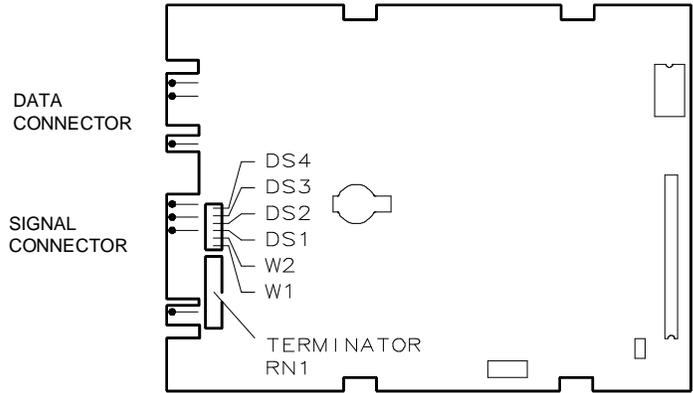


5

| ROTATION | CYLINDERS | DISKS | HEADS | RECORD. |
|----------|-----------|-------|-------|---------|
| 3600 RPM | 1024 | 5 | 8 | MFM |

| JUMPERS | | | | DRIVE ADDRESS SELECTION |
|---------|---------|---------|---------|-------------------------|
| DS1 | DS2 | DS3 | DS4 | |
| ON | OFF | OFF | OFF | Drive 1 |
| OFF | ON | OFF | OFF | Drive 2 |
| OFF | OFF | ON | OFF | Drive 3 |
| OFF | OFF | OFF | ON | Drive 4 |

| JUMPER W1 | WRITE ERROR |
|-----------|-------------|
| ON | Stores write error * |
| OFF | Dos not store write error |

| JUMPER W2 | WRITE ERROR |
|-----------|-------------|
| ON | Daisy chain connection |
| OFF | Radial connection |

**TERMINATOR RN1**

The RN1 terminator must be connected to all the drives in radial connection and to the last drive in daisy chain connection. The terminators must be removed from the first to the second to last drive in daisy chain connection.

■