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## Appendix C. Jumpers, Switches, and Pin Assignments

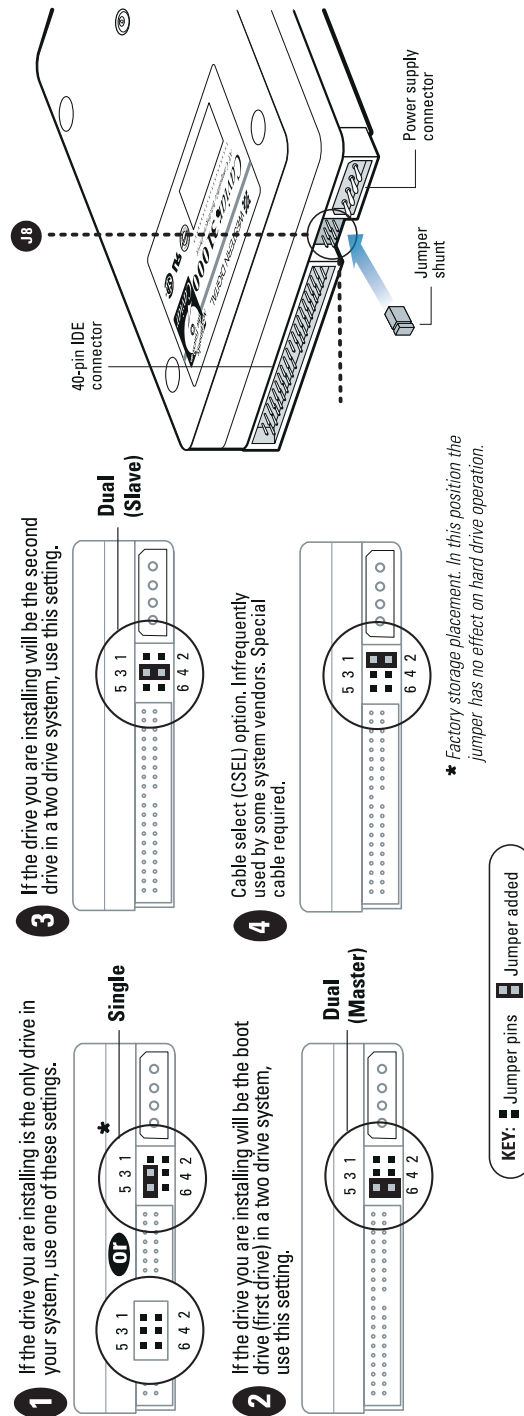
Jumpers and switches on the SBC and hard drives allow you to customize the operation of your computer.

Some jumpers cover two of three pins on a 3-pin block. Other jumpers are installed across two pins on a 2-pin block or are not installed. To change the position of a jumper on a 3-pin block, do the following.

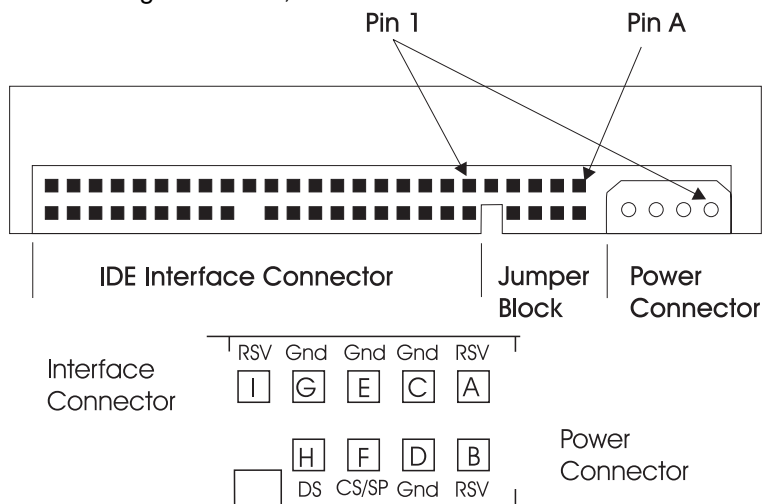
1. Turn off the computer and disconnect the power cord.
2. Remove the system unit cover.
3. Remove all components needed to gain access to the jumper.
4. Lift the jumper straight off the pin block.
5. Align the holes in the bottom of the jumper with the center pin and the pin that was not covered previously.
6. Slide the jumper fully onto these pins.
7. Reassemble the components that were removed, and install the system unit cover.
8. Reconnect the system unit power cord.

## Hard Disk Drive Jumper Settings

Hard disk drives use jumpers to configure the drives as the master or the slave. If your drive matches the following illustration, use the information in the drawing to set the jumpers.

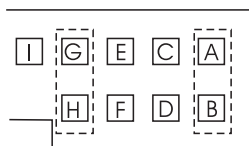


If your drive matches the following illustration, use the information in the illustration to set the jumpers.

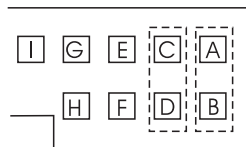


### 16 Logical Head

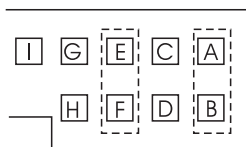
Device 0  
(Master)  
(Shipping  
Default)



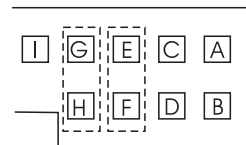
Device 1  
(Slave)



Cable  
Select

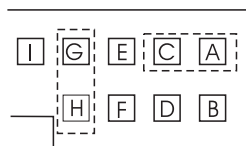


Device 1  
(Slave)  
Present

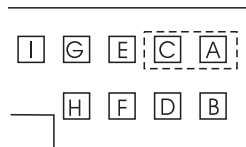


### 15 Logical Head

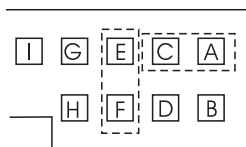
Device 0  
(Master)



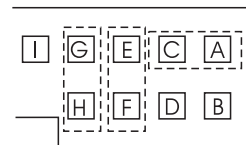
Device 1  
(Slave)



Cable  
Select

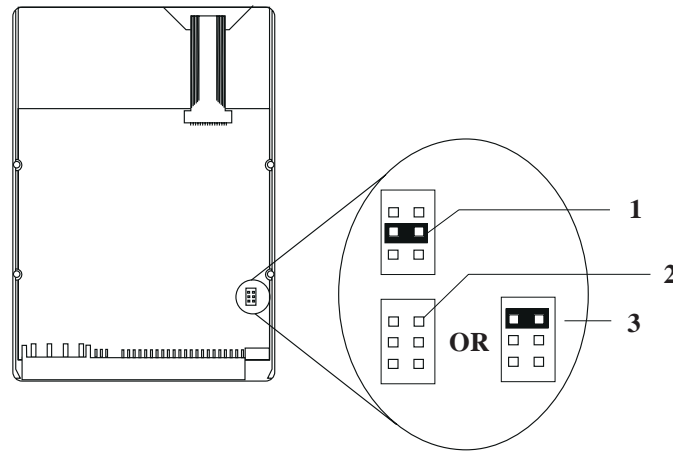


Device 1  
(Slave)  
Present



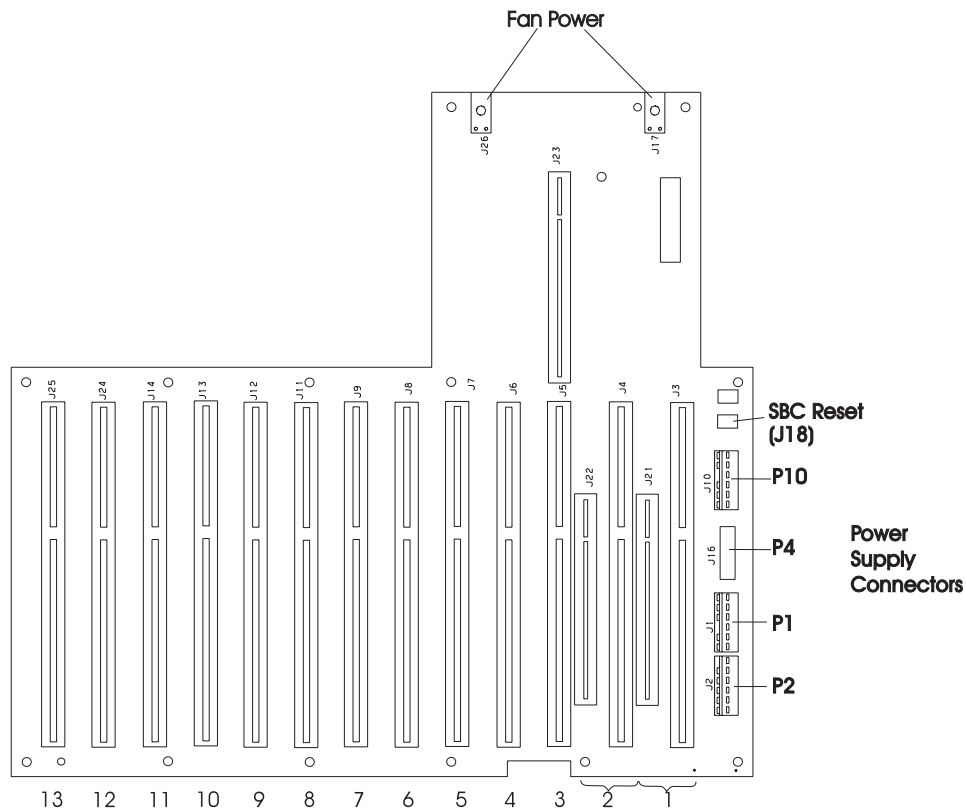
If your drive matches the following illustration and is operating as the master drive, set the jumper to setting 1.

If your drive is operating as the slave drive, set the jumper to either setting 2 or setting 3. (Setting 3 is recommended because it allows you to store the jumper for use in the future.)

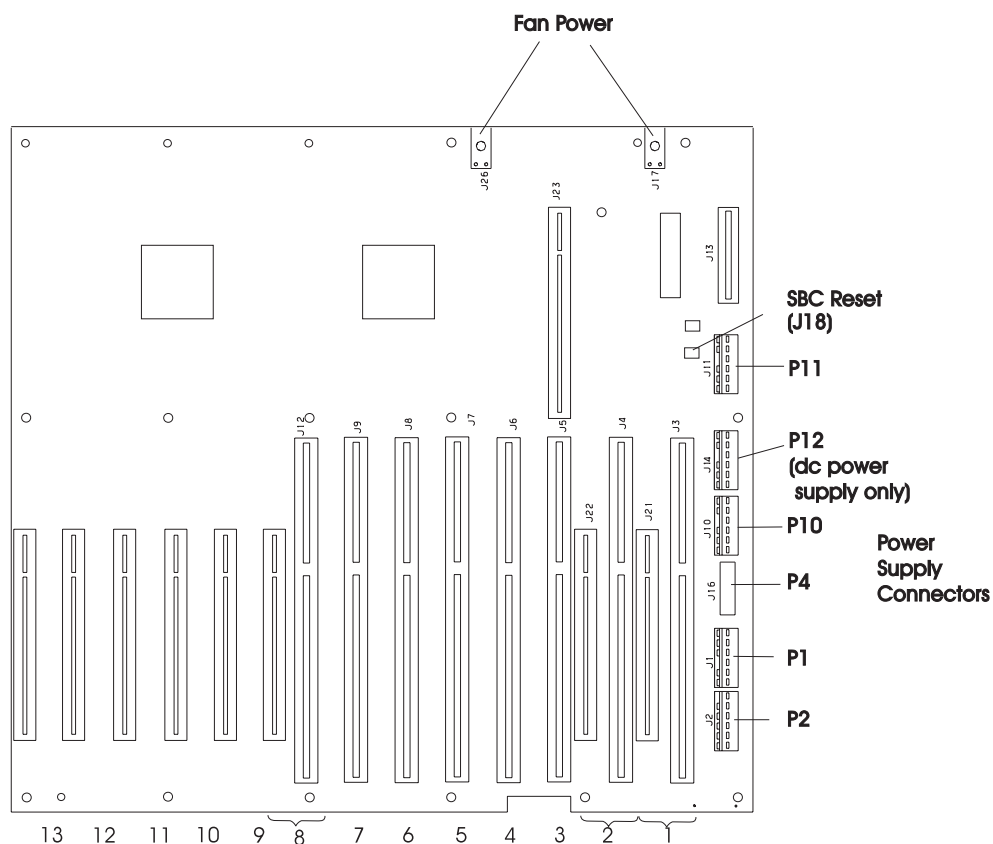


## Backplane Connectors

The following illustration shows the connectors on the model 001 backplane.



The following illustration shows the connectors on the model 101 backplane.



*Table C-1. PCI-Bus Expansion-Slot Assignments*

| PCI Bus  | Expansion Slots | Comments                                     |
|--|-----------------|--|
| 0  | 1, 2            | Primary bus—slot 2 is not bus-master-capable |
| 1  | 8, 9, 10, 11    |  |
| 2  | 12,13           |  |
| <b>Note:</b> All PCI connectors are bus-master-capable except the connector in slot 2. |                 |  |

## SBC Connectors

The following illustrations show the connectors on the SBCs as used in the 7588 Industrial Computer.

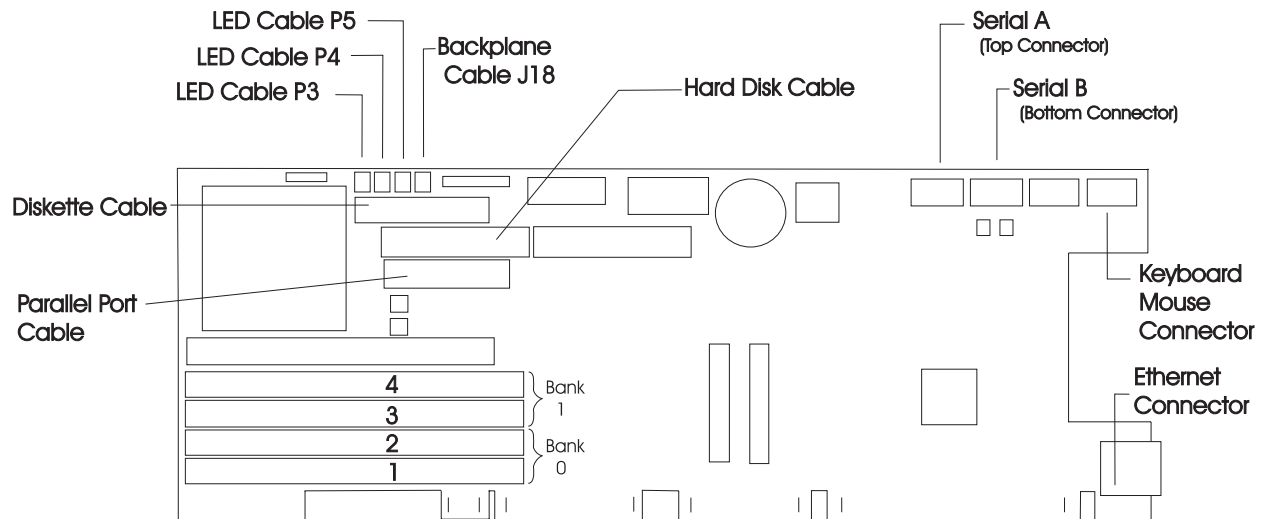


Figure C-1. Connectors on the 586 and 586E SBCs

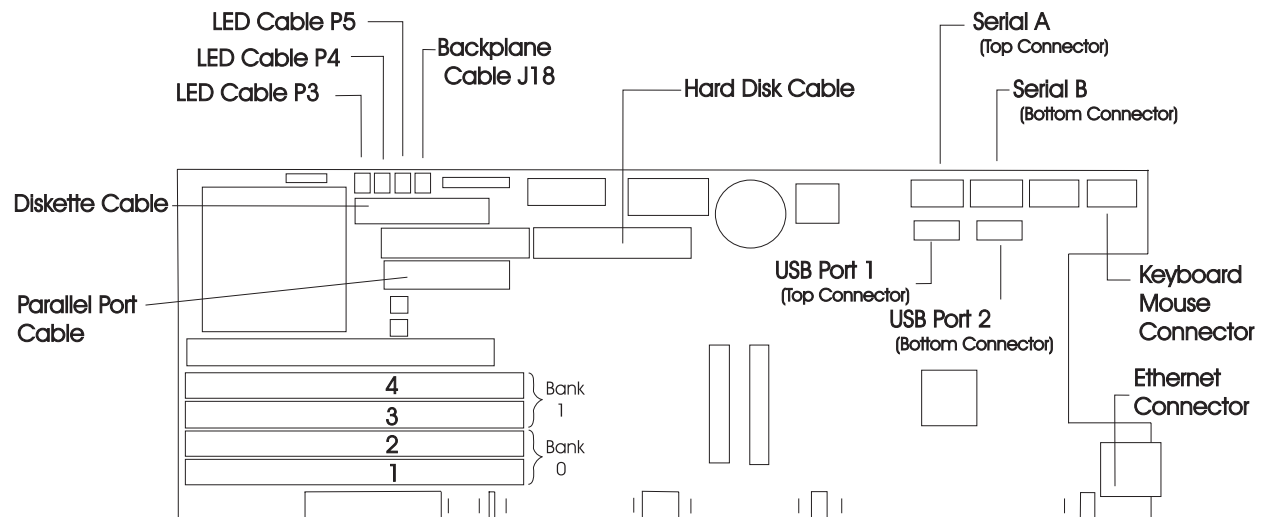


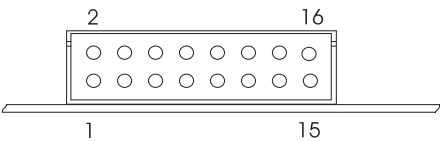
Figure C-2. Connectors on the 586U and 586EU SBCs

# SBC Settings

The following jumper settings are valid only for the 586U and 586EU SBCs. The jumpers are installed in the external power connector, as shown.

**Attention**

Do not install jumpers in the external power connector on the 586 or 586E SBC. Damage will result.



| Microprocessor   | Jumper Settings |
|------------------|-----------------|
| Classic Pentium  |                 |
| Pentium with MMX |                 |
| K6-2             |                 |

Figure C-3. Processor Voltage Selection Jumpers

| Table C-2. Configuration Switch Definitions |                       |
|---|-----------------------|
| Switch                                      | Description           |
| 1   | CPU speed 0           |
| 2   | CPU speed 1           |
| 3   | CPU speed 2           |
| 4   | Enable RS-232         |
| 5   | Auto boot             |
| 6   | CPU/PCI clock speed 0 |
| 7   | CPU/PCI clock speed 1 |
| 8   | Disable video         |
| 9   | Reserved              |

Table C-3. Processor/Bus Speed Selection Switches

| Switch Number  |     |     |     |     | Multiplier | Bus Frequency | Processor Frequency | SBC Notes |            |
|--|-----|-----|-----|-----|------------|---------------|---------------------|-----------|------------|
| 1  | 2   | 3   | 6   | 7   |            |               |                     | 586 586E  | 586U 586EU |
| Intel Pentium Processors   |     |     |     |     |            |               |                     |           |            |
| Off  | Off | Off | Off | On  | 1.5x       | 50 MHz        | 75 MHz              | 1         | 1, 5       |
| Off  | Off | Off | On  | Off | 1.5x       | 60 MHz        | 90 MHz              | 1         | 1, 5       |
| On   | Off | Off | Off | On  | 2.0x       | 50 MHz        | 100 MHz             | 1         | 2, 5       |
| Off  | Off | Off | On  | On  | 1.5x       | 66 MHz        | 100 MHz             | 1         | 1, 5       |
| On   | Off | Off | On  | Off | 2.0x       | 60 MHz        | 120 MHz             | 1         | 2, 5       |
| On   | Off | Off | On  | On  | 2.0x       | 66 MHz        | 133 MHz             | 1         | 2, 5       |
| On   | On  | Off | On  | Off | 2.5x       | 60 MHz        | 150 MHz             | 1         | 2, 5       |
| On   | On  | Off | On  | On  | 2.5x       | 66 MHz        | 166 MHz             | 1         | 2, 5       |
| Off  | On  | Off | On  | On  | 3.0x       | 66 MHz        | 200 MHz             | 1         | 2, 5       |
| Off  | Off | Off | On  | On  | 3.5x       | 66 MHz        | 233 MHz             | n.s.      | 3, 5       |
| AMD K6-2 Processors  |     |     |     |     |            |               |                     |           |            |
| On   | Off | Off | On  | On  | 2.0x       | 66 MHz        | 133 MHz             | n.s.      | 4, 5       |
| On   | On  | Off | On  | On  | 2.5x       | 66 MHz        | 166 MHz             | n.s.      | 4, 5       |
| Off  | On  | On  | On  | On  | 3.0x       | 66 MHz        | 200 MHz             | n.s.      | 4, 5       |
| Off  | Off | Off | On  | On  | 3.5x       | 66 MHz        | 233 MHz             | n.s.      | 4, 5       |
| On   | Off | On  | On  | On  | 4.0x       | 66 MHz        | 266 MHz             | n.s.      | 4, 5       |
| On   | On  | On  | On  | On  | 4.5x       | 66 MHz        | 300 MHz             | n.s.      | 4, 5       |
| Off  | On  | On  | On  | On  | 5.0x       | 66 MHz        | 333 MHz             | n.s.      | 4, 5       |
| Off  | Off | On  | On  | On  | 5.5x       | 66 MHz        | 366 MHz             | n.s.      | 4, 5       |
| <b>n.s.</b> —Not supported.  |     |     |     |     |            |               |                     |           |            |
| <b>Installing the Pentium processor with MMX or the AMD K6-2 processor on a 586 or 586E SBC will damage the microprocessor when the system is turned on.</b> |     |     |     |     |            |               |                     |           |            |
| <b>Notes:</b>  |     |     |     |     |            |               |                     |           |            |
| 1. Classic Pentium processor only.   |     |     |     |     |            |               |                     |           |            |
| 2. Classic Pentium processor or Pentium processor with MMX.  |     |     |     |     |            |               |                     |           |            |
| 3. Pentium processor with MMX only.  |     |     |     |     |            |               |                     |           |            |
| 4. The AMD K6-2 processors are supported in special applications only. Contact your IBM representative or your place of purchase.                            |     |     |     |     |            |               |                     |           |            |
| 5. Refer to Figure C-3 on page C-7 for processor voltage selection.  |     |     |     |     |            |               |                     |           |            |



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## Serial Port Pin Assignments

| <i>Table C-4. Serial Port Pin Assignments</i> |                     |                            |
|---|---------------------|----------------------------|
| <b>RS-232 Serial A, Serial B</b>              |                     | <b>RS-422/485 Serial B</b> |
| Pin 1   | Carrier detect      | Transmit data (–)          |
| Pin 2   | Receive data        | Receive data (–)           |
| Pin 3   | Transmit data       | Transmit data (+)          |
| Pin 4   | Data terminal ready | Receive data (+)           |
| Pin 5   | Ground              | N/C                        |
| Pin 6   | Dataset ready       | N/C                        |
| Pin 7   | Request to send     | N/C                        |
| Pin 8   | Clear to send       | N/C                        |
| Pin 9   | Ring indicate       | N/C                        |

