FRONT

PICTURE 1

June 19, 1990

Part Number 15F2158

Form Number S15F-2158-00

Safety Information

Refer to the *Hardware Maintenance Reference General Information* pamphlet for the following safety information:

- General Safety during Work
- Electrical Safety

Second Edition (June 1990)

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IBM
Personal System/2.

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1.0 Product Description

The following are features of the IBM (*) Personal System/2 (*) External Storage Enclosure For SCSI Devices:

- Cover lock
- Small Computer System Interface (SCSI) Fixed Disk Drive
- Power supply and fan assembly with:
  - Manual switching to support 90 to 137 Vac or 180 to 265 Vac, 50 or 60 Hz
  - 329 Watts.

(*) Trademarks of the International Business Machines Corporation.

Subtopics
1.1 Cover Lock
1.2 Fixed Disk Drive
1.3 Terminators

1.1 Cover Lock

The cover lock is on the front of the system unit and can be unlocked with the user's key.

If the keys for the cover lock are lost, a new cover-lock assembly can be ordered (see "Parts Catalog" in the *Hardware Maintenance Service*). The new assembly contains two keys. Use one of the new keys along with a pair of pliers to force the old cover lock open.

1.2 Fixed Disk Drive

The External Storage Enclosure For SCSI Devices has fixed disk drives that automatically position the read/write heads in nondata areas when the system is powered-off.

The External Storage Enclosure For SCSI Devices system is shipped with a 320MB SCSI fixed disk drive. If multiple devices are installed, they must be the type of devices that are supported by the SCSI adapter installed in the base system.

1.3 Terminators

On expansion-units that have two or more SCSI drives, the terminator must be installed on drive in the lowest bay in the unit. All other internal drives must have the terminator removed.

The location, quantity, and appearance of the terminator may vary from drive to drive. An identification label or tag (usually "T-RES") is attached to the terminator for easy identification.

Note: For additional information on this subject, see "SCSI Devices" in the "Supplements" section of this manual.

2.0 Operating Requirements

This section describes the operations that occur from the time the system is powered -on until the minimum operating requirements have been met.

Subtopics

2.1 Power Supply

Before the power cord is connected to an outlet, the power supply must be manually switched to either 115 (90 to 137) Vac or 230 (180 to 265) Vac.

Warning: Damage may result if the power supply voltage switch is not set to the proper position.

After the voltage switch is properly set, the power cord can be plugged into an outlet and the system can be powered-on. The ac input is converted to dc outputs that supply the system with proper operating voltages.

Whenever the power supply is powered-off for a minimum of 10 seconds and then powered-on, the power supply generates a 'power good' signal. The 'power good' signal resets system logic, and senses proper operation of the power supply. When the minimum under-voltage sense levels are established and the 'power good' signal has risen to its active level, all power requirements have been met. The minimum under-voltage sense levels are listed in the following figure.

Output (Vdc)	**Minimum Under-Voltage Sense Level (Vdc)**
+ 5.0	**+** 4.5
+ 12.0	**+** 10.8
- 12.0	**-** 10.2
- 5.0	**-** 4.2

2.2 Power-On Self-Test

When instructed by the maintenance procedures to "Power-on the system," switch on the power to all externally attached devices (such as the External Storage Enclosure For SCSI Devices system, displays, printers, or plotters) **before** switching on power to the system unit.

When instructed by the maintenance procedures to "Power-off the system," switch off the power to all externally attached devices, and then the power to the base system unit.

3.0 Specifications

Size

- Depth: 508 mm (20.0 in.)
- Height: 501.6 mm (19.75 in.)
- Width: 203.2 mm (8.0 in.).

Weight

- Minimum configuration: 21.8 kg (48 lb)
- Maximum configuration: 29.0 kg (64 lb).

Environment

- Air Temperature:
  - System on: 16° to 32° C (60° to 90° F)
  - System off: 10° to 43° C (50° to 110 ° F)
- Humidity:
  - System on: 8% to 80%
  - System off: 5% to 80%
- Maximum altitude: 2134 m (7000 ft).

Heat Output

1245 British Thermal Units (BTU) per hour (365 Watts per hour)

Electrical Input

- Sine wave input is required
- Input Range
  - Low Range:
    -- Minimum: 90 Vac - Maximum: 137 Vac.
  - High Range:
    -- Minimum: 180 Vac - Maximum: 265 Vac.
- Input kilovolt-amperes (kVA)
  - Minimum configuration (as shipped from IBM): 0.10 kVA
  - Maximum configuration: 0.54 kVA.

4.0 Special Tool

To service the External Storage Enclosure For SCSI Devices, a volt-ohm meter similar to the Triplet Model 310 (1) is required.

(1) Manufactured by Triplett Corporation, Bluffton, Ohio 45817, U.S.A.

5.0 Repair Information

This section contains information about removals and replacements, locations, and safety grounds.

CAUTION:
Before removing any field replaceable unit (FRU), power-off the system, unplug all power cords from electrical outlets, and disconnect any interconnecting cables.

The arrows in the removal and replacement procedures show the direction to remove a FRU, or the direction to turn a screw or press a tab to release the FRU. The arrows are marked in numeric order to show the correct sequence of removal.

Remove any FRUs listed at the top of the page first. Go to the removal procedure for each FRU listed, remove it, then continue with the failing FRU removal.

To replace a FRU, reverse the removal procedure and follow any notes that pertain to replacement. See "Locations" for internal cable connection and arrangement information.

6.0 Service Position

The External Storage Enclosure For SCSI Devices should be upright when being serviced.

CAUTION:
The system unit with options may weigh as much as 29 kilograms (64 pounds). Be careful when moving or changing the position of the unit. To ensure general safety, do not attempt to lift any object that you think is too heavy for you.

7.0 Removals and Replacements

Subtopics

7.1 1005 Cover and Front Bezel

CAUTION:
Before removing any FRU, power-off the system, unplug all power cords from electrical outlets, and disconnect any interconnecting cables.

PICTURE 2

7.2 1010 Cover Lock

- Cover and Front Bezel **(1005)**

PICTURE 3

7.3 1015 Pedestal

PICTURE 4

7.4 1020 Drive Retainer and Bezels

Cover and Front Bezel **(1005)**

PICTURE 5

7.5 1025 Switch Panel Assembly

- Cover and Front Bezel **(1005)**
- Drive Retainer and Bezels **(1020)**

PICTURE 6

7.6 1030 Fixed Disk Drives

Warning: Before replacing the fixed disk drive, have the user back up all information from the fixed disk drive.

Notes:

1. The last fixed disk drive in the chain should always have the terminator installed.
2. See "Internal Cables," page 8.4, for cable connections.

- Cover and Front Bezel **(1005)**
- Drive Retainer and Bezels **(1020)**

PICTURE 7

7.7 1035 Power Supply

- Cover and Front Bezel **(1005)**
- Disconnect all cables from the power supply.

PICTURE 8

7.8 1040 Ground Assembly

- Cover and Front Bezel **(1005)**
- Power Supply **(1035)**

PICTURE 9

7.9 1045 Load Distribution Card and Power Cable

- Cover and Front Bezel **(1005)**
- Power Supply **(1035)**

PICTURE 10

7.10 1050 Rear Bezel

Note: Loosen and remove the expansion-slot covers before removing the rear bezel.

- Cover and Front Bezel **(1005)**
- Power Supply **(1035)**

PICTURE 11

8.0 Locations

Subtopics
8.1 Front View
8.2 Rear View
8.3 Interior View
8.4 Internal Cables

8.1 Front View

1 Power switch
2 Power-good light
3 Serial number
4 DASD bezel A
5 DASD bezel B
6 DASD bezel E
7 DASD bezel D (top)
8 DASD bezel D (bottom)
9 Cover lock

PICTURE 12

8.2 Rear View

1 SCSI-cable connector
2 Back-cover plate
3 Power-cord connector
4 Serial number
5 Voltage-select switch

PICTURE 13

8.3 Interior View

1 Load Distribution Card
2 Power supply
3 Option device bays
4 Drive retainer

PICTURE 14

8.4 Internal Cables

This diagram shows the arrangement of the cables that connect the various devices.

1 Switch-panel cable
2 Signal cable
3 Power supply
4 Device power cables

PICTURE 15

9.0 Safety Grounds

PICTURE 16