*FRONT*

PICTURE 1

```
IBM PS/2 Models 35SX and 35LS
Hardware Maintenance Reference
```

```
March 17, 1992
```

```
Part Number 10G6620
```

```
Form Number S84F-9845-02
```

*EDITION Edition Notice*
**Safety Information**

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

   *General Safety*

   *Electrical Safety.*

**Third Edition (March 1992)**

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IBM
Personal System/2

*1.0 Product Description*


The IBM (*) Personal System/2 (*) Model 35 computers have the following
features:

    Security
    -    Cover lock
    -    Power-on password
    -    Keyboard password
    -    Bolt down capability
    System board
    -    20-MHz microprocessor (See  "Microprocessor" in topic 1.2.1)
    -    128KB (KB equals 1024 bytes) of read-only memory (ROM)
    -    Connector for a 80387SX or equivalent math coprocessor
    -    A minimum of 2MB (MB equals 1,048,576 bytes) random access memory
         (RAM) expandable to 16MB on the system board
    -    64 bytes of complementary metal-oxide semiconductor random access
         memory (CMOS RAM)
    -    Read-only memory basic input/output system (ROM BIOS)
    -    16-bit VGA graphics controller (See page 1.2.4.)
    -    Bus Adapter with three 16-bit expansion slots
    -    Serial port
    -    Parallel port
    -    Diskette-drive connector
    -    Keyboard connector
    -    Pointing-device connector
    -    Display connector for 16-bit video graphics array (VGA) controller
    -    Hard disk drive (fixed disk drive) cable connector.
    Power supply
    -    Automatically switches to the 100-125 V ac or the 200-240 V ac
         range
    -    50 or 60 Hz
    -    118 watts.
    Speaker
    Keyboard
    -    Space Saving Keyboard
    -    PS/2 (*) Enhanced Keyboard
    -    PS/2 Host Connected Keyboard.
    Diskette drive support (see "Hard Disk and Diskette Drives" in
    topic 2.2)
    Hard disk drive support (see "Hard Disk and Diskette Drives" in
    topic 2.2).

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     International Business Machines Corporation.

Subtopics
1.1 Security
1.2 System-Board Features

*1.1 Security*

Subtopics
1.1.1 Cover Lock
1.1.2 Power-On Password
1.1.3 Bolt Down Capability

*1.1.1 Cover Lock*

The cover lock is located on the bottom front-left 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 the parts section in the *Hardware Maintenance Service*
pamphlet).  The new cover lock assembly contains two keys.

*1.1.1 Cover Lock*

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can be unlocked with the user's key.

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ordered (see the parts section in the *Hardware Maintenance Service*
pamphlet).  The new cover lock assembly contains two keys.

*1.1.2 Power-On Password*

A power-on password denies access to the system when the system is
powered-on.

To service a system with an active and *unknown* power-on password:

1.  Power-off the system.

2.  Reposition the password-override connector (J14) by lifting it
    straight up.  (See page 7.4 for the connector location.)

    -   If the jumper covers the first and second pins, move it so
        that it covers the second and third pins.
    -   If the jumper covers the second and third pins, move it so
        that it covers the first and second pins.

**Note:**  Once you have moved the jumper to the new position, leave it in
         that position until the next time you need to reset the
         password.

To reactivate the power-on password:

1.  Insert the Starter Diskette into the drive and power-on the
    system.

2.  Select the **Set features** option from the Main Menu, and follow the
    instructions.

*1.1.3 Bolt Down Capability*

The bolt-down feature allows the computer to be attached to a table or
desk.  (See page 7.2 for the bolt-down holes.)

*1.2 System-Board Features*

The major features of the system board are:

    20-MHz microprocessor
    Math coprocessor connector
    CMOS RAM
    16-bit VGA graphics controller
    Serial port
    Parallel port
    Keyboard connector
    Diskette-drive controller
    Pointing-device (mouse) connector.

Subtopics
1.2.1 Microprocessor
1.2.2 CMOS RAM
1.2.3 ROM BIOS
1.2.4 16-bit VGA Graphics Controller
1.2.5 Serial Port
1.2.6 Parallel Port
1.2.7 Diskette-Drive Controller
1.2.8 Keyboard Connector and Pointing-Device Connector

*1.2.1 Microprocessor*

The Model 35 SX and 35 LS use an 80386SX microprocessor; the Model 35 SLC
uses an IBM386 SLC microprocessor, a high-performance 80386-compatible
microprocessor with 8KB of internal cache memory.  Both microprocessors
have a 32-bit internal bus with a 16-bit external data bus and a 24-bit
external address bus.  Both operate in two modes:  real-address and
virtual-address (protected) mode.  The processor speed is 20 MHz.

*1.2.2 CMOS RAM*

The CMOS RAM provides 64 bytes of storage.  The real-time clock uses the
first 14 bytes to track the date, time, and battery level.  The remaining
50 bytes are used to store system-configuration and security information.

The data stored in CMOS RAM is kept active by the battery when the system
is powered-off.  If the stored data is lost due to a depleted or removed
battery, the data can be restored by using the Starter Diskette to allow
the automatic configuration program to run.  The data also can be restored
by using the restore configuration program on the user's backup copy of
the Starter Diskette.

*1.2.3 ROM BIOS*

ROM BIOS contains the instructions and routines that control the keyboard,
diskette drives, hard disk drive, displays, and other major input/output
devices in the system.  Some adapters have their own ROM modules
containing extended BIOS routines that work with the system board ROM
BIOS.  The routines for performing the power-on self-test (POST) are also
contained in the ROM BIOS.

*1.2.4 16-bit VGA Graphics Controller*

A 16-bit VGA graphics controller is on the system board.  The controller
supports color and monochrome analog direct drive displays in a variety of
modes, including alphanumeric text mode and all-points-addressable (APA)
graphics mode.

The controller supports a maximum of 720 x 400 picture elements (PELs) in
the text mode and a maximum of 640 x 480 PELs in graphics mode.  The
16-bit VGA graphics controller can support up to 256 colors or 64 shades
of gray at one time.  Main frame interactive (MFI) modes 2, 3, 4, and 5
are also supported.  Composite video is not supported.

*1.2.5 Serial Port*

The serial port is fully programmable and supports asynchronous
communications.  The 25-pin, D-shell connector provides the signals to
drive a device with a standard 25-contact, RS-232 connector.  The
connected device is identified (addressed) by the system configuration as
either Serial 1 (primary) or Serial 2 (alternate).

If an option adapter with a serial port is installed in the system, it
should be set to Serial 2.

**Note:**  Conflicts occur when using multiple communication lines if two or
more lines are addressed the same.
Select the **Set configuration** option on the Starter Diskette.
Select **View configuration** to verify that no lines are addressed the
same.

*1.2.6 Parallel Port*

The parallel port allows the attachment of devices that accept eight bits
of parallel data at standard transistor-transistor-logic (TTL) levels.
The port has a 25-pin, D-shell connector and is designed primarily for
printers.  However, the port can be used as a general input/output port
for any device or application that matches its input/output capabilities.
The connected device is identified (addressed) by system configuration as
Parallel 1, Parallel 2, or Parallel 3.

*1.2.7 Diskette-Drive Controller*

The controller connects to the diskette drive(s) through a single 40-pin
connector on the system board.  Signals and voltages are supplied through
the diskette-drive cable that plugs into the connector.

*1.2.8 Keyboard Connector and Pointing-Device Connector*

The two 6-pin connectors at the rear of the system board are for
connecting a keyboard and a pointing device (mouse).  The keyboard
connector is marked with a small keyboard figure molded into the back
panel; the unmarked connector is for the pointing device.  The interface
logic does not allow the keyboard and the pointing device to be
interchangeable.

*2.0 Option Compatibility*

Subtopics

*2.1 Incompatible Adapters*

Certain adapters are not compatible when used in the same system.  If one
of the following adapters is installed, the other adapters listed cannot
be installed in the same system unit:

    Synchronous Data Link Control (SDLC) Adapter
    3278 - 3279 Emulation Adapter.

Problems can occur in the system when adapters share the same interrupt
level.  Check the adapter interrupt levels to ensure that they do not
conflict.  If the adapters have selectable interrupt levels, verify that
the jumpers on the adapters are not set for the same level.

Some adapters are not supported by the Model 35 computers.  Supported
option adapters are listed in the parts section of the *Hardware
Maintenance Service* pamphlet.

*2.2 Hard Disk and Diskette Drives*

The Model 35 computers support the AT-bus hard disk interface on the
system board.  One 40MB hard disk drive or one 80MB hard disk drive can be
installed in the lower bay.  The hard disk drive and hard-disk-drive
interface must be the same.

The Model 35 computers support one 1.2MB 5.25-inch diskette drive in the
lower bay, or one or two 3.5-inch diskette drives.  The 3.5-inch diskette
drive must be either a 1.44MB or a 2.88MB diskette drive.

**Note:**  The lower bay supports either a diskette drive or a hard disk
         drive.

*2.3 Terminators*

Terminators are not required for the drives used in the Model 35
computers.

*2.4 Drive and Diskette Compatibility*

The following provides information concerning the identification of
3.5-inch diskette drives.

```
+---------------------------------------------------------------------+
¦ Diskette                        ¦ Identifying                       ¦
¦ Drive                           ¦ Mark                              ¦
+---------------------------------+-----------------------------------¦
¦ 3.5-Inch - 720KB                ¦ None                              ¦
+---------------------------------+-----------------------------------¦
¦ 3.5-Inch - 1.44MB               ¦ 1.44 on the Eject Button          ¦
+---------------------------------+-----------------------------------¦
¦ 3.5-Inch - 2.88MB               ¦ 2.88 on the Eject Button          ¦
¦                                 ¦                                   ¦
¦                                 ¦                                   ¦
+---------------------------------------------------------------------+
```

The following provides information concerning the compatibility of
3.5-inch diskettes to 3.5-inch diskette drives.

```
+---------------------------------------------------------------------+
¦ Diskette       ¦ 720KB          ¦ 1.44MB         ¦ 2.88MB           ¦
¦ Capacity       ¦ Drive          ¦ Drive          ¦ Drive            ¦
+----------------+----------------+----------------+------------------¦
¦ 1.0MB          ¦ Read/Write     ¦ Read/Write     ¦ Read/Write       ¦
+----------------+----------------+----------------+------------------¦
¦ 2.0MB          ¦ Not Compatible ¦ Read/Write     ¦ Read/Write       ¦
+----------------+----------------+----------------+------------------¦
¦ 4.0MB          ¦ Not Compatible ¦ Not Compatible ¦ Read/Write       ¦
¦                ¦                ¦                ¦                  ¦
¦                ¦                ¦                ¦                  ¦
+---------------------------------------------------------------------+
```

The following provides information concerning the identification of
5.25-inch diskettes drives.

```
+---------------------------------------------------------------------+
¦ Diskette                        ¦ Identifying                       ¦
¦ Drive                           ¦ Mark                              ¦
+---------------------------------+-----------------------------------¦
¦ 5.25-Inch - 360KB               ¦ Asterisk on Bezel                 ¦
+---------------------------------+-----------------------------------¦
¦ 5.25-Inch - 1.2MB               ¦ None                              ¦
¦                                 ¦                                   ¦
¦                                 ¦                                   ¦
+---------------------------------------------------------------------+
```

The following provides information concerning the compatibility of
5.25-inch diskettes to 5.25-inch diskette drives.

```
+---------------------------------------------------------------------+
¦ Diskette       ¦ 360KB          ¦ 1.2MB          ¦                  ¦
¦ Capacity       ¦ Drive          ¦ Drive          ¦                  ¦
+----------------+----------------+----------------+------------------¦
¦ 360KB          ¦ Read/Write     ¦ Read/Write     ¦                  ¦
+----------------+----------------+----------------+------------------¦
¦ 1.2MB          ¦ Not Compatible ¦ Read/Write     ¦                  ¦
¦                ¦                ¦                ¦                  ¦
¦                ¦                ¦                ¦                  ¦
+---------------------------------------------------------------------+
```

**Note:**  For additional information, see "Diskette Drives and Diskettes" in
        the *IBM Personal System/2 Hardware Maintenance Reference General
        Information* pamphlet in this manual.

*3.0 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
3.1 Power Supply
3.2 Power-On Self-Test (POST)
3.3 System Memory

*3.1 Power Supply*

The power supply switches to either the 100--125 V ac or 200--240 V ac
range when the power cord is plugged into an outlet.  The ac input is
converted to the proper dc operating voltages.

When the system is powered-off for five seconds or more and then
powered-on, the power supply generates a 'power good' signal that resets
the system logic.  The presence of the 'power good' signal indicates that
the power supply is operating properly.

The 'power good' signal turns on the green power-good light on the front
of the system.  If the green light is not on, the power supply is not
functioning properly.

**Note:**  There may be a 3 to 5 second delay before output voltages are
generated after power-on due to system sequencing requirements.

*3.2 Power-On Self-Test (POST)*

The POST is initiated automatically each time the system power is turned
on.

The POST is a series of system checks and initializations that verify the
correct operation of the system unit.  The POST tests only those areas
that allow the system to be operational enough to run advanced
diagnostics.  The POST can detect two types of errors:  critical and
noncritical.

*Critical errors* prevent the system from operating or can cause incorrect
results that are apparent to the user.  Examples of critical errors
include microprocessor or interrupt-controller errors.  If the POST
detects a critical error, the microprocessor attempts to display the error
and all testing stops.

*Noncritical errors* cause incorrect results that might not be apparent to
the user.  An example of a noncritical error would be a serial
communications failure.  If the POST detects a noncritical error, all
testing stops and the microprocessor attempts to display the error.
Pressing F1 allows testing to continue.

When the Advanced Diagnostics Diskette is in drive A (Model 35 SX) or in
the server (Model 35 LS) and it is ready to be loaded, and a noncritical
error is detected, the system displays the POST error message along with a
message generated from the Advanced Diagnostics Diskette.  The Advanced
Diagnostics Diskette message instructs the user to take a specific action
to correct the error.

After a successful POST, one short beep occurs.  Control is then given to
a BIOS routine called the system bootstrap loader.  The bootstrap loader
attempts to load an operating system or a program from either a diskette,
the hard disk drive, or the server of the network.  If no operating system
or program is found, the IBM BASIC screen appears.

*3.3 System Memory*

Subtopics
3.3.1 System-Board Memory
3.3.2 Memory Requirements and Limitations
3.3.3 Memory Errors

*3.3.1 System-Board Memory*

The system has at least 2MB of memory installed at the time of shipment.
Additional memory-module kits can be installed in the second and third
memory-module connectors on the system board.  The maximum system board
memory capacity is 16MB, in any combination of 1, 2, 4, or 8MB
memory-module kits.

*3.3.2 Memory Requirements and Limitations*

When memory is added or removed from the system, run the set configuration
program on the Starter Diskette.

*3.3.3 Memory Errors*

The system reallocates system-board memory in 1MB blocks for 1MB and 2MB
memory-module kits and in 4MB blocks for 4MB and 8MB memory-module kits.
If the POST detects a memory error in the first 1MB of system-board
memory, the entire 1MB of memory is deactivated and an error code is
displayed.

*4.0 Specifications*

**Size**

    Width:  360 mm (14.2 in.)
    Depth:  395 mm (15.6 in.)
    Height:  115 mm (4.5 in.).

**Weight**

    Maximum configuration:  10.8 kg (23.8 lb.).

**Environment**

    Temperature:
    -   Power-on:  10° to 35°C (50° to 95°F)
    -   Power-off:  10° to 43°C (50° to 110°F).
    Humidity:
    -   Power-on:  8% to 80%
    -   Power-off:  8% to 80%.
    Maximum altitude:  2134 m (7000 ft.).

**Heat Output**

    403 British Thermal Units (BTUs) per hour (118 watts maximum).

**Electrical**

    Input Voltage (Sinewave input is required)
    -   Low Range:
        --  Minimum:  100 V ac
        --  Maximum:  125 V ac.
    -   High Range:
        --  Minimum:  200 V ac
        --  Maximum:  240 V ac.
    Input kilovolt-amperes (kVA)
    -   Configuration as shipped from IBM:  0.058 kVA
    -   Maximum Configuration:  Approximately 0.3 kVA.

*5.0 Special Tools*

The following special tools are required to service the system.

**Volt-Ohm Meter**

A meter similar to the Triplett Model 310. (1)

**Wrap Plug**

The Tri-Connector wrap plug (IBM part 72X8546) is used during advanced
diagnostic tests of serial and parallel ports.

PICTURE 2

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

*6.0 Removals and Replacements*

This section contains information on removals and replacements, locations,
and grounds.

The arrows in the removals and replacements figures show the direction of
movement to remove a field replaceable unit (FRU), to turn a screw, or to
press a tab to release a FRU.  The arrows are marked in numeric order to
show the correct sequence of removal.

When other FRUs must be removed prior to removing the failing FRU, they
are listed at the top of the page.  Go to the removal procedure for each
FRU listed, remove the FRU, and then continue with the removal of the
failing FRU.

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.

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

Warning:  The system board, adapters, memory modules, and the math
coprocessor are sensitive to, and can be damaged by, electrostatic
discharge.  Establish personal grounding by touching a ground point with
one hand before touching these units.

**Note:**  An electrostatic discharge (ESD) strap may be used to establish
        personal grounding.

*6.1 1005  Cover*

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

1.  Turn the cover lock key to the unlock position.

2.  Loosen the cover screw by turning it counterclockwise.

3.  Remove the system unit by sliding it out of the cover.

PICTURE 3

PICTURE 4

*6.2 1010  Adapters*

Cover **(1005)**

**Note:**  Before replacing an adapter, note the locations of the adapter and
         cables.  When replacing an adapter, install the replacement adapter
         in the same slot as the adapter that was removed.

         Stored configuration information depends on the location of the
         adapter.  If the replacement adapter is installed in a different
         location, run the set configuration program on the user's Starter
         Diskette to reset the system-configuration information.


PICTURE 5

*6.3 1015  Bus Adapter*

Cover **(1005)**
Adapters **(1010).**


PICTURE 6


PICTURE 7
6.3 - 1

*6.4 1020  Hard Disk Drive*

Warning:  Improper shipping or handling can result in permanent loss of
all data and formatting on the hard disk drive.  Have the user back up all
information on the hard disk drive.

    Cover **(1005)**
    Retainer Plate **(1065)**.


PICTURE 8

6.4 - 1


PICTURE 9


*6.5 1025  Diskette Drive and Second Drive Bezel*


Cover **(1005)**
Retainer Plate **(1065).**



                              PICTURE 10



                              PICTURE 11


**To remove the second drive bezel:**

1.  Locate the two latches  1  at the right end of the cover plate.

2.  Press both latches to the left at the same time until the cover plate
    pops out.



PICTURE 12


PICTURE 13


                         (Rear View)

*6.6 1030  Cover Lock Assembly*

Cover **(1005)**

PICTURE 14

*6.6 1030  Cover Lock Assembly*

Cover **(1005)**

PICTURE 14

*6.7 1035  Real-Time Clock Module*

CAUTION:
The real-time clock module contains a lithium battery that presents a
fire, explosion, or sever burn risk.  Do not recharge it, disassemble it,
heat it above 100°C (212°F), incinerate it, or expose its cell contents to
water.  Dispose of the module as required by local ordinances or
regulations.  When replacing the module, use only Part No. 8509237.  Use
of another module could result in ignition or explosion of the module.
Replacement modules can be ordered from IBM or IBM Authorized Dealers.

Warning:  Remove the clock module carefully.  Do not bend the pins when
removing the clock module.  The clock module can be damaged by
electrostatic discharge, prying between the connector, or prying between
the connector and the system board.

     Cover **(1005)**
     Adapters **(1010).**


                         PICTURE 15


*6.8 1040  Power Supply*

    Cover **(1005)**
    Control Assembly **(1060).**

**Note:**  Before replacing the power supply, disconnect all power cables
      extending from the power supply.


PICTURE 16

*6.8 1040  Power Supply*

    Cover **(1005)**
    Control Assembly **(1060).**


**Note:**  Before replacing the power supply, disconnect all power cables
      extending from the power supply.

*6.9 1045  Math Coprocessor*

    Cover **(1005)**
    Adapters **(1010)**
    Bus Adapter **(1015)**.

The system will not operate properly if the math coprocessor is installed
incorrectly or is the wrong type for the system.

Warning:  Remove the math coprocessor carefully.  Do not bend the pins
when removing the math coprocessor.  The math coprocessor can be damaged
by electrostatic discharge, prying between the module and connector, or
prying between the connector and system board.  Establish personal
grounding by touching a ground point with one hand before touching the
math coprocessor.

**Note:**  The system supplies a connector that accepts a 20-MHz 80387SX or
       equivalent math coprocessor.  When replacing the math coprocessor,
       make sure the dot on the coprocessor is aligned with the dot on the
       system board.


PICTURE 17

*6.10 1050  Memory Module Kits*

    Cover **(1005)**
    Adapters **(1010).**

**Note:**  When servicing the two side-by-side memory-module kits, remove the
      kit in connector 3 first, the kit in connector 2 second, and the
      kit in connector 1 last.


PICTURE 18

*6.11 1055  System Board*

    Cover **(1005)**
    Adapters **(1010)**
    Retainer Plate **(1065)**
    Diskette Drive **(1025)**
    Hard Disk Drive **(1020)**
    Control Assembly **(1060)**
    Bus Adapter **(1015)**
    Math Coprocessor, if installed  **(1045)**
    Memory Module Kits **(1050)**.

1.  Remove the cable shield  2 .

2.  Disconnect all cables and remove screws  1  from the system board.

3.  Lift the system board to clear the locating pin, then remove the system board  3  from the system unit.

4.  When a new system board is installed, use the backup copy of the Starter Diskette to set the time and date, and to restore unique configuration data.


PICTURE 19

*6.12 1060  Control Assembly*

Cover **(1005)**
Retainer Plate **(1065).**


PICTURE 20


PICTURE 21

*6.13 1065  Retainer Plate*

Cover **(1005)**

1.  Press and hold the retainer-plate latch  1  to the right side and
    pivot the retainer plate  2  to the front.

2.  Remove the retainer plate  2  by lifting and pulling it from the
    system unit.


PICTURE 22


PICTURE 23

*6.14 1070  Adapter Guide*

Cover **(1005)**
Adapters **(1010).**


PICTURE 24


6.14 - 1

*7.0 Locations*

Subtopics

*7.1 Front View*

      1    Cover lock
      2    Diskette drive bay
      3    Diskette drive in-use light
      4    Diskette-eject button
      5    Hard disk drive bay
      6    Hard disk drive in-use light
      7    Power-good light
      8    Power switch
      9    Serial number.

PICTURE 25

*7.2 Rear View*

        1    Power connector
        2    Display connector
        3    Serial port
        4    Cover screw
        5    Parallel port
        6    Keyboard connector
        7    Pointing-device connector
        8    Bolt-down holes.

PICTURE 26

*7.3 Interior View*

```
1    Power supply
2    Hard-disk-drive cable
3    Diskette-drive cable
4    Diskette drive
5    Bus adapter
6    Hard disk drive
7    Adapter guide
8    System board.
```

PICTURE 27

```
1    Power supply
2    Hard-disk-drive cable
3    Diskette-drive cable
4    Diskette drive
5    Bus adapter
6    Hard disk drive
7    Adapter guide
8    System board.
```

*7.4 System Board*

```
     1   Real-time clock-module connector
     2   Pointing-device connector
     3   Keyboard connector
     4   Parallel port
     5   Serial port
     6   Display connector
     7   Control connector (Control Assembly)
     8   Power-supply connector (P2)
     9   Power-supply connector (P1)
    10   Diskette-drive connector
    11   Hard-disk drive connector
    12   Password override connector (J14)
    13   80387SX Math Coprocessor connector
    14   Bus-adapter connector
    15   Memory-module connector 1
    16   Memory-module connector 2
    17   Memory-module connector 3.
```

PICTURE 28

*7.5 Safety Label*

The following safety label is installed on the top of the power supply.


PICTURE 29


 1  Danger label

    DANGER:
    DO NOT OPEN.  DANGEROUS VOLTAGE INSIDE.

7.5 - 1

*8.0 Grounds*

     1   Chassis ground
     2   Primary ground.

PICTURE 30

**Notes:**