FRONT

PICTURE 1

This pamphlet is intended to be used with the IBM Personal System/2
Hardware Maintenance Reference manual (part number 15F2190, form number
S15F-2190, SBOF-3989) and the IBM Personal System/2 *Hardware Maintenance
Service* manual (part number 15F2200, form number S15F-2200, SBOF-3988).

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

General Safety

Electrical Safety.

Second Edition (February 1992)

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IBM PS/2 Model 57 SX, 57 SLC, M57 SLC HMR
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    IBM
    Micro Channel
    Personal System/2.
    XGA

1.0 Product Description

The IBM (*) Personal System/2 (*) Model 57 computers feature the IBM Micro
Channel (*) architecture. Other features include:

    Security: cover lock, power-on password, keyboard password, and
    U-bolt feature
    System board
    -   20-MHz microprocessor (See "Microprocessor" in topic 1.2.1)
    -   256KB (KB equals 1024 bytes) of read-only memory (ROM).
    -   Connector for a 80387SX or equivalent math coprocessor
    -   A minimum of 4MB (MB equals 1,048,576 bytes) random access memory
        (RAM) expandable to 16MB on the system board
    -   64 bytes of complementary metal-oxide semiconductor (CMOS) random
        access memory (RAM) with a real-time clock and an 8KB CMOS RAM
        extension
    -   Read-only memory basic input/output system (ROM BIOS)
    -   16-bit VGA controller and connector
    -   Bus adapter with five 16-bit expansion slots
    -   Serial port with DMA serial support
    -   Parallel port with DMA serial support
    -   Diskette-drive controller
    -   Small computer system interface (SCSI) controller with internal
        and external connector
    -   Keyboard connector
    -   Pointing-device connector
    197 watt power supply, manually switchable to 100-125 V ac or to
    200-240 V ac, 50 or 60 Hz
    Speaker
    Battery (to keep CMOS RAM active when power is off)
    Enhanced Keyboard (101/102 key) or Host Connected Keyboard (122 key)
    or Space Saving Keyboard (84 key)
    Four bays for internal devices
    -   Bay 1 is for the 3.5-inch 2.88 diskette drive
    -   Bay 4 is for the 80MB or the 160MB SCSI hard disk drive
    -   Bay 2 and bay 3 are for 3.5- or 5.25-inch half-high or slim-high
        devices or one 5.25-inch full high device.

The Model M57 SLC has the following additional features:

    CD-ROM II Drive (bay 2)
    XGA (*) Display Adapter/A (expansion slot 3)
    M-Audio Capture/Playback Adapter/A (expansion slot 5)
    Front control panel with microphone and headphone jacks, and a volume
    control
    IBM Mouse.

Included with the system are an install program diskette, a system
software compact disk (CD), and a diagnostic CD.

 (*) Trademarks of the International Business Machines
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 (*) XGA is a trademark of the IBM Corporation.

Subtopics
1.1 Security
1.2 System Board
1.3 Power Supply
1.4 System Memory
1.5 Testing Programs and System Utilities

1.1 Security

Subtopics
1.1.1 Cover Lock
1.1.2 Power-On Password
1.1.3 U-Bolt Security Feature

1.1.1 Cover Lock

The cover lock is located on the system unit front panel in the bottom
left corner 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.

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left corner and 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

When active, a power-on password will prevent access to the system until
the correct password is entered.

To service a system with an active and *unknown* power-on password,
power-off the system, move the jumper on J18 so that it connects the
center pin and the pin on the opposite end of the connector. (You can
leave the jumper in this position until the next time you need to remove
the password.) See "System Board" in topic 6.5 for the location of the
password-override connector J18.

To reactivate the password, start the system, select the **Set features**
option from the main menu, then select **Set Password and Unattended Start
Mode** and follow the instructions.

1.1.3 U-Bolt Security Feature

A U-bolt can be attached to the rear of the system unit. A security cable
or other similar device then can be used to attach the system unit to a
table, desk, or other secure object. A 19mm (3/4 in.) U-bolt or wire rope
clip similar to the National Manufacturing No.3230, STK No. 176-735, is
required.

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table, desk, or other secure object. A 19mm (3/4 in.) U-bolt or wire rope
clip similar to the National Manufacturing No.3230, STK No. 176-735, is
required.

1.2 System Board

The major features of the system board are:

    20-MHz microprocessor (See "Microprocessor" in topic 1.2.1)
    Socket for a 80387SX or equivalent math coprocessor
    CMOS RAM and CMOS RAM extension
    16-bit VGA controller
    Serial port with DMA serial support
    Parallel port with DMA serial support
    Diskette-drive controller
    SCSI controller, internal and external connectors
    Keyboard connector and pointing-device (mouse) connector.

Subtopics
1.2.1 Microprocessor
1.2.2 Math Coprocessor Socket
1.2.3 CMOS RAM and CMOS RAM Extension
1.2.4 16-Bit VGA Controller
1.2.5 Serial Port
1.2.6 Parallel Port
1.2.7 Diskette-Drive Controller
1.2.8 SCSI Device Controller
1.2.9 Keyboard Connector and Pointing-Device Connector

1.2.1 Microprocessor

The Model 57 SX uses a 386SX microprocessor; the Model 57 SLC and Model
M57 SLC use 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. The microprocessor operates at 20 MHz
in both the real-address mode and virtual-address (protected) mode.

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microprocessors have a 32-bit internal bus with a 16-bit external data bus
and a 24-bit external address bus. The microprocessor operates at 20 MHz
in both the real-address mode and virtual-address (protected) mode.

1.2.2 Math Coprocessor Socket

A 80387SX, or equivalent math coprocessor can be installed into the
coprocessor socket to increase performance with some software programs.

1.2.3 CMOS RAM and CMOS RAM Extension

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 8KB CMOS RAM extension stores additional configuration and
system-status information.

The data stored in CMOS RAM and CMOS RAM extension 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 using one of the
following methods:

    If the user has a customized configuration that uses settings other
    than the default, run the **Restore configuration** option from the system
    utility programs stored on the hard disk drive.

    If the configuration settings use the default, run the **Automatic
    configuration** option from the system utility programs stored on the
    hard disk drive.

1.2.4 16-Bit VGA Controller

A 16-bit VGA 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 1056 x 400 picture elements (PELs) in
the text mode and a maximum of 640 x 480 PELs in the graphics mode. Up to
256 colors or 64 shades of gray can be used at one time. The
3278-compatibility modes 2, 3, 4, and 5 are 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 by the system configuration Serial 1
(primary) through Serial 16 (alternate) address.

If an option adapter with a serial port is installed in the system, the
device address should be identified as one of the alternate Serial Ports 2
through 16.

Note: Conflicts occur when using multiple devices if two or more devices
         are addressed the same. Select the **Set configuration** option from
         the system utility programs stored on the hard disk drive. Select
         View configuration to verify that no ports 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 has the same input/output capabilities.
The connected device is identified (addressed) by the system configuration
as Parallel 1, Parallel 2, Parallel 3, or Parallel 4.

When an option adapter with an additional parallel port is installed, it
should be identified as Parallel 2, 3, or 4. The system can support two
different devices, each addressed separately.

1.2.7 Diskette-Drive Controller

The controller connects to the diskette drives through a single 40-pin
connector on the system board. Signals and voltages are supplied through
the diskette-drive cable that plugs into the drive connector. Up to three
diskette drives can be supported.

1.2.8 SCSI Device Controller

The SCSI device controller is an interface that transfers system data to
and from SCSI devices. The SCSI controller has two connectors. An
internal 50-pin device connector that allows the attachment of internal
SCSI devices, and a 60-pin external device connector that allows the
attachment of external SCSI devices. A total of seven SCSI devices are
supported.

1.2.9 *Keyboard Connector and Pointing-Device Connector*

The two 6-pin connectors at the rear of the system board are for a
keyboard and a pointing device (mouse). The keyboard connector is marked
with a small keyboard symbol; the mouse connector is marked with a small
mouse symbol. The interface logic enables the keyboard and the pointing
device to be interchanged.

1.3 Power Supply

The manually-switchable power supply must be switched to either the
100-125 V ac or the 200-240 V ac setting *before* the power cord is plugged
into an outlet. The ac input is converted to dc outputs that supply the
system with the proper operating voltages.

When the system is powered-off and then powered-on, the power supply
generates a 'power good' signal that resets 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 unit, indicating that all system-board power requirements
have been met.

There can be a 3 to 5 second delay before output voltages are generated
after power-on, due to system sequencing requirements.

1.4 System Memory

The Model 57 has at least 4MB of memory installed at the time of shipment.
Additional memory module kits can be installed in the second (MEM2) and
third (MEM3) memory module connectors on the system board. The maximum
system-board memory capacity is 16MB, in any combination of 2, 4, or 8MB
memory module kits.

Note: The amount of usable memory will be less than the amount of
         installed memory. (The system software and some functions, such as
         video and SCSI, use some of the memory space.) The difference
         between the usable memory and the installed memory is most
         noticeable when the installed memory is greater than 12MB.

Subtopics
1.4.1 Interleaved Memory Configurations

Subtopics

1.4.1 Interleaved Memory Configurations

The memory controller supports interleaved memory when memory module kits
of the same size and speed are installed as shown in the following table.

MEM 1	MEM 2	MEM 3
2MB	Empty	Empty
2MB	2MB	Empty
2MB	2MB	2MB*
4MB	4MB	Empty
4MB	4MB	4MB*
* The memory in MEM 3 does not operate as interleaved memory.		

Installing memory in one of these combinations can increase performance.

During the memory tests, an "i" will appear next to the test when an
interleaved memory configuration is being tested.

Note: Interleaved memory is not supported when memory is disabled.

When memory is added or removed from the system, run the **Set configuration**
option from the system utility programs stored on the hard disk drive.

If a memory error occurs, memory is reallocated into 1MB blocks for 2MB
memory module kits and into 1MB to 4MB blocks for 4MB and 8MB memory
module kits. If the POST detects a memory error in the first 1MB of
system memory, the entire 1MB is deactivated and an error code is
displayed.

1.5 Testing Programs and System Utilities

When the system was manufactured the system programs were copied into a
System Partition. This code consists of system utility programs,
diagnostic programs, and some power-on self-test (POST) and basic
input/output system (BIOS) code. The System Partition is not affected
when the drive is formatted using the operating system FORMAT command.

Subtopics
1.5.1 POST
1.5.2 Utility Programs and Diagnostic Tests

1.5.1 POST

Some POST code (stage 1) is stored in ROM. This code performs some
preliminary testing at the start of the power-on sequence. The balance of
the POST code (stage 2) is stored in the System Partition.

When stage 1 POST begins at power-on, it:

    Checks the basic system-board functions
    Initializes the video function
    Initializes the memory subsystem and tests the first 1MB of memory
    Verifies that the default hard disk drive is functioning
    Verifies that the system programs are in the System Partition on the
    hard disk drive with SCSI ID 6.
    Loads the stage 2 POST code into RAM.

Stage 2 POST performs additional tests of the hardware and then
initializes the system. When the POST finishes, system control is given
to the operating system.

If the POST detects an error, an error code (usually eight digit) is
displayed.

Note: If the error occurs during the stage 2 POST code loading sequence,
        or if the stage 2 POST code on the hard disk drive is missing,
        damaged, or incorrect, an I999XXXX error code is displayed ("X" can
        be any number). Most of these errors can be resolved *without*
        replacing any FRUs. Refer to the procedure in the *Hardware
        Maintenance Service* to resolve these problems.

For more information on POST, see the *Diagnostic Information for Micro
Channel Computers* pamphlet.

1.5.2 Utility Programs and Diagnostic Tests

To access the system utility programs or customer or advanced diagnostic
tests do the following:

> Press **Ctrl+Alt+Del**
> When the cursor appears on the right side of the screen, press
> **Ctrl+Alt+Ins**.

After a few moments, the Main Menu will appear. You can then access the
customer diagnostics or press Ctrl+A to access advanced diagnostics.

For more information on system utility programs or customer and advanced
diagnostics, see the *Diagnostic Information for Micro Channel Computers*
pamphlet.

2.0 Option Compatibility

The Model 57 computers support many options designed for IBM Personal
System/2 Micro Channel computers. Most of these are listed in the parts
section of the *Hardware Maintenance Service* pamphlet.

Subtopics
2.1 Internal SCSI Devices
2.2 Terminators
2.3 Drive and Diskette Compatibility

2.1 Internal SCSI Devices

The Small Computer System Interface (SCSI) controller on the system board
will support up to seven SCSI devices; up to three may be inside the
system unit.

Note: The total length of all SCSI cables attached to a SCSI controller
        should not exceed 6 m (19.7 ft.). Configurations that exceed this
        maximum length are not supported. The total length includes all
        internal and external SCSI cables. The internal SCSI cable length
        is 1 m (3.3 ft.).

Subtopics
2.1.1 Default Hard Disk Drive
2.1.2 Replacing the Default Hard Disk Drive
2.1.3 Replacement hard disk drives are shipped without a System Partition.

2.1.1 Default Hard Disk Drive

The default hard disk drive (SCSI ID 6) has a protected partition (System
Partition) that contains the system programs. For more information about
these programs, see "Testing Programs and System Utilities" in topic 1.5.

The hard disk drives automatically position the read/write heads in
nondata areas when the system is powered-off.

2.1.2 Replacing the Default Hard Disk Drive

2.1.2 Replacing the Default Hard Disk Drive

2.1.3 Replacement hard disk drives are shipped without a System Partition.
If the drive you are replacing is the default drive, start the system with
the customer's back up copy of the System Partition installed, select
Backup/Restore System Programs from the Main Menu, then **Restore the System
Partition** to create a System Partition and copy the system programs onto
the new hard disk drive.

Note: If the system programs have been loaded onto the hard disk drive
         but the customer's operating system has not been loaded, the Insert
         Diskette icon will appear on the display.

2.2 Terminators

Terminator requirements are:

    Diskette Drives: do not use or require terminators.

    SCSI Hard Disk Drives and other SCSI devices:

-   The last device in a SCSI chain (both internal and external) must
    have the terminator installed. Some devices might require more
    than one terminator.

-   All other SCSI devices must have the terminators removed.

    SCSI Adapter: terminator requirements for the SCSI adapter vary
    depending on the configuration of the system and the type of adapter.

The location and appearance of the terminators may vary from device to
device. An identification label or tag (usually "T-RES") is attached to
each terminator for easy identification on SCSI adapters and devices. The
terminator on the system board is shown in "1090 SCSI Terminator" in
topic 5.17.

Note: For additional information see "SCSI Devices" in the "Options and
      Adapters" section of this manual.

2.3 Drive and Diskette Compatibility

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

Diskette Drive	Identifying Mark
3.5-Inch - 1.44MB	1.44 on the Eject Button
3.5-Inch - 2.88MB	2.88 on the Eject Button

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

Diskette Capacity	1.44MB Drive	2.88MB Drive
1.0MB	Read/Write	Read/Write
2.0MB	Read/Write	Read/Write
4.0MB	Not Compatible	Read/Write

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

Diskette Drive	Identifying Mark
5.25-Inch - 360KB (External)	Asterisk on Bezel
5.25-Inch - 1.2MB (Internal)	1.2 on the Eject Button

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

Diskette Capacity	360KB Drive	1.2MB Drive		
360KB	Read/Write	Read/Write		
1.2MB	Not Compatible	Read/Write		

Note: A 360KB diskette written to or formatted on a 1.2MB drive can be
read reliably only on a 1.2MB drive.

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

3.0 Specifications

Size

```
    Width:   440 mm (17.3 in.)
    Depth:   394 mm (15.5 in.)
    Height:  168 mm (6.6 in.).
```

Weight

```
    Minimum configuration (Model 57 SX and Model 57 SLC):  12 kg (26 lb)
    Minimum configuration (Model M57 SLC):  15.9 kg (35 lb)
    Maximum configuration:  17.3 kg (38 lb).
```

Environment

```
    Temperature
    -   Power on:  10° to 32°C (50° to 90°F)
    -   Power off:  10° to 43°C (50° to 110°F)
    Humidity
    -   Power on:  8% to 85%
    -   Power off:  5% to 85%
    Maximum altitude:  2134 m (7000 ft).
```

Heat Output

```
    120 British thermal units (BTUs) per hour (35 watts) as shipped from
    IBM (Model 57 SX and Model 57 SLC)
    187 BTUs per hour (55 watts) as shipped from IBM (Model M57 SLC)
    1030 BTUs per hour (300 watts) maximum configuration.
```

Electrical

```
    Input Voltage - Sinewave input (50 or 60 Hz)
    -   Low Range
        --  Minimum:  90 V ac
        --  Maximum:  137 V ac
    -   High Range
        --  Minimum:  180 V ac
        --  Maximum:  265 V ac
    Input kilovolt-amperes (kVA)
    -   Configuration as shipped from IBM (Model 57 SX and Model 57 SLC):
        0.07 kVA
    -   Configuration as shipped from IBM (Model M57 SLC):  0.09 kVA
    -   Maximum configuration:  0.5 kVA
```

4.0 Special Tools

The following special tools are required to service the
Model 57.

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.

5.0 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, 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, math coprocessor, and
circuit boards on the drives 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.

Subtopics
5.1 1005 Cover
5.2 1015 Adapters
5.3 1020 Rear Cover
5.4 1025 Bus Adapter and Support Bracket
5.5 1030 Front Retainer Plate
5.6 1035 Internal Drive (Bay 4)
5.7 1040 Internal Drive (Bays 1, 2, 3)
5.8 1045 Power Supply
5.9 1050 Math Coprocessor
5.10 1055 Battery
5.11 1060 Memory Module Kits
5.12 1062 Cached Processor Option
5.13 1065 System Board
5.14 1070 Control Panel Assembly
5.15 1080 Front Adapter Support Guide
5.16 1085 Cover Lock Assembly
5.17 1090 SCSI Terminator

5.1 1005 Cover

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

Note: Unlock the cover.

PICTURE 3

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

Note: Unlock the cover.

5.2 1015 Adapters

Cover **(1005).**

Notes:

1. Before replacing an adapter, note the location of the adapter and
    cables. Disconnect any cables attached to the adapter. Install
    the replacement adapter in the same slot as the adapter that was
    removed.

2. If you are replacing a SCSI adapter, remove the external
    terminator, if present. Reinstall the terminator on the new
    adapter.

3. 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 from the hard disk
    drive drive to reset the system-configuration information.

PICTURE 4

5.3 1020 Rear Cover

Cover **(1005).**

PICTURE 5

5.4 1025 Bus Adapter and Support Bracket

Cover **(1005)**
Adapters **(1015)**
Rear Cover **(1020).**

Note: When a new bus adapter is installed, use the backup copy of the
Reference Diskette to set the time and date, and to restore the
configuration data.

PICTURE 6

5.5 1030 Front Retainer Plate

    Cover **(1005).**

Note: Remove the left bezels from the bottom to top; replace them from
      top to bottom.

                        PICTURE 7

    Cover **(1005).**

Note: Remove the left bezels from the bottom to top; replace them from
      top to bottom.

5.6 1035 Internal Drive (Bay 4)

Warning: Improper shipping or handling of a hard disk drive can cause
permanent loss of data and formatting. Have the user back up the hard
disk drive before you remove it.

   Cover **(1005)**
   Front Retainer Plate **(1030)**.

PICTURE 8

5.7 1040 Internal Drive (Bays 1, 2, 3)

Warning: Improper shipping or handling of a hard disk drive can cause
permanent loss of data and formatting. Have the user back up the hard
disk drive before you remove it.

Notes:

1. Some drives, such as the 3.5-inch diskette drives, do not use the
    4-pin power supply connector 1.

2. Some drives, such as CD-ROM drives, have an additional cable connected
    to an adapter in an expansion slot. Disconnect this cable before you
    remove the drive.

    Cover **(1005)**
    Front Retainer Plate **(1030)**.

PICTURE 9

5.8 1045 Power Supply

Cover **(1005)**
Rear Cover **(1020).**

PICTURE 10

5.9 1050 Math Coprocessor

   Cover **(1005)**.

Warning: Establish personal grounding by touching a ground point with one
hand before touching the math coprocessor. The math coprocessor can be
damaged by electrostatic discharge. When removing the coprocessor with a
screwdriver, apply gentle pressure to avoid damaging the coprocessor or
socket.

Notes:

1. The Model 57 requires a 20-MHz 80387SX (or equivalent) math
    coprocessor.

2. When replacing the math coprocessor, make sure the dot or dimple on
    the coprocessor is aligned with the beveled corner of the connector.
    (Viewed from the front of the system, the bevel is on the right rear
    corner of the connector.)

3. If a Cached Processor Option is installed, the math coprocessor socket
    is on the option.

                        PICTURE 11

5.10 1055 Battery

    Cover **(1005)**
    Adapters **(1015)** (remove any adapters required)
    Bus Adapter and Support Bracket **(1025).**

    Note: The battery is located on the Bus Adapter and Support Bracket.
          Use care when removing the battery.

CAUTION:
The lithium battery presents a fire, explosion, or severe 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 battery as
required by local ordinances or regulations. When replacing the battery,
use only Part No. 33F8354. Use of another battery could result in
ignition or explosion of the battery. Replacement batteries can be
ordered from IBM or IBM Authorized Dealers.

Note: After you replace the battery, run the **Set configuration** program
      from the hard disk drive.

                              PICTURE 12

5.11 1060 Memory Module Kits

      Cover **(1005)**
      Adapters **(1015)**

Note: Looking from the front of the system, install the memory module
       kits from right to left (MEM 1, MEM 2, then MEM 3). Remove the
       memory module kits from left to right (MEM 3, MEM 2, then MEM 1).

5.11 - 1

PICTURE 13

5.12 1062 Cached Processor Option

     Cover

Notes:

1. The option should be installed in Model 57 SX only.

2. To install the option on a new system board, first remove the
    coprocessor socket from the 11x11-pin connector on the system board.
    The option is installed into the 11x11 pin connector.

                    PICTURE 14

5.13 1065 System Board

>   Cover **(1005)**
>   Adapters **(1015)**
>   Rear Cover **(1020)**
>   Bus Adapter and Support Bracket **(1025)**
>   Cached Processor Option, if installed **(1050)**
>   Memory Module Kits **(1060)**.
>   Connector P2 Interposer Card (Model M57 SLC only).

Notes:

1. Disconnect all cables from the system board.

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

3. If the SCSI Terminator 3 has been removed from the system board you
    are replacing, remove it from the new system board you are installing.

                          PICTURE 15

5.14 1070 Control Panel Assembly

    Cover **(1005)**
    Front Retainer Plate **(1030)**.

Note: To remove the control panel assembly from a Model M57 SLC, first
      slide the panel forward until you can access the two cable
      connectors attached to the rear of the assembly. Disconnect these
      connectors, then remove the assembly.

PICTURE 16

5.15 1080 Front Adapter Support Guide

Cover **(1005)**
Adapters **(1015).**

PICTURE 17

5.16 1085 Cover Lock Assembly

Cover **(1005).**

PICTURE 18

5.17 1090 SCSI Terminator

Warning: Establish personal grounding by touching a ground point with one
hand before touching the SCSI terminator. The SCSI terminator can be
damaged by electrostatic discharge.

PICTURE 19

5.17 1090 SCSI Terminator

Warning: Establish personal grounding by touching a ground point with one
hand before touching the SCSI terminator. The SCSI terminator can be
damaged by electrostatic discharge.

6.0 Locations

Subtopics

6.1 Front View

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

Note: For Model M57 SLC, bay 2 contains the CD-ROM II Drive. (See page
        6.3.1 for more information.)

PICTURE 20

6.2 Rear View

```
 1  Bolt-down holes
 2  Power connector
 3  Voltage-selector switch
 4  External SCSI connector
 5  Display connector
 6  Serial-port connector
 7  Parallel-port connector
 8  Expansion slots
 9  Keyboard connector
10  Pointing-device connector.
```

Notes:

1. The display, serial port, parallel port, keyboard, and pointing device
    connectors are marked with symbols.

2. For Model M57 SLC, expansion slot 3 contains the XGA Video Adapter/A
    and slot 5 the M-Audio Capture/Playback Adapter/A (ACPA/A). (See page
    6.3.2.)

PICTURE 21

6.3 Model M57 SLC Additional Locations

Subtopics
6.3.1 Control Panel and CD-ROM Drive
6.3.2 ACPA/A and XGA Adapters

6.3.1 Control Panel and CD-ROM Drive

```
1   CD-ROM drive headphone jack
2   CD-ROM drive volume control
3   CD slot
4   CD indicator light
5   CD eject button
6   Control panel mono microphone jack
7   Control panel stereo headphone jack
8   Control panel volume control
```

PICTURE 22

6.3.2 ACPA/A and XGA Adapters

```
    1  ACPA/A headphone (speaker) output (S)
    2  ACPA/A stereo line output (O)
    3  ACPA/A microphone input (M)
    4  ACPA/A stereo line input (I)
    5  XGA Adapter
```

PICTURE 23

```
    1  ACPA/A headphone (speaker) output (S)
    2  ACPA/A stereo line output (O)
    3  ACPA/A microphone input (M)
    4  ACPA/A stereo line input (I)
    5  XGA Adapter
```

6.4 Interior View

    1 Hard disk drive
    2 Diskette drive
    3 Retainer plate
    4 Front adapter-support guide
    5 Bus adapter and support bracket
    6 Memory module connectors
    7 System board
    8 Expansion slots
    9 Power supply.

PICTURE 24

6.5 System Board

```
 1  Pointing-device connector
 2  Keyboard connector
 3  Parallel-port connector
 4  Password-override connector (J18)
 5  Serial-port connector
 6  Display connector
 7  External SCSI connector
 8  SCSI terminator
 9  Control-assembly connector
10  Power-supply connector P2
11  Internal SCSI connector
12  Power-supply connector P1
13  Diskette-drive connector
14  Math coprocessor connector
15  Video memory connectors
16  Bus-adapter connector
17  Memory-module connector 1 (MEM 1)
18  Memory-module connector 2 (MEM 2)
19  Memory-module connector 3 (MEM 3).
```

PICTURE 25

6.6 Cached Processor Option

    1   Cached Processor Option
    2   Coprocessor connector
    3   Standoffs

                            PICTURE 26

6.6 Cached Processor Option

    1   Cached Processor Option
    2   Coprocessor connector
    3   Standoffs

7.0 Grounds

    1 Chassis ground
    2 Primary ground
    3 Power cord connector.

PICTURE 27