FRONT

PICTURE 1

October 31, 1990

This pamphlet contains procedures for isolating problems to a FRU, a
Symptom-to-FRU Index, and a parts listing for the IBM Personal System/2
Model P75 486.

This pamphlet is intended to be used with the IBM Personal System/2
Hardware Maintenance Reference manual (part number 15F2190, form number
S15F-2190-00) and the IBM Personal System/2 *Hardware Maintenance Service*
manual (part number 15F2200, form number S15F-2200-00).

Part Number 84F7593

Form Number S84F-7593-00

FRONT_1 Safety Information

Refer to the *Hardware Maintenance Service General Information* pamphlet for
the following information:
    General Safety
    Electrical Safety
    Safety Inspection Guide.

First Edition (October 1990)

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1.0 General Checkout

The advanced diagnostic tests are intended to test *only* IBM (*)products.
Non-IBM products, prototype cards, or modified options can give false
errors and invalid system responses.

```
+--- IMPORTANT -------------------------------------------------------+
¦                                                                     ¦
¦    SLOT 1 designates the logical position for the SCSI adapter built ¦
¦    into the system board which controls the internal and external   ¦
¦    SCSI devices.                                                    ¦
¦    If you are instructed to replace the SCSI adapter in slot 1,     ¦
¦    replace the system board.                                        ¦
¦    The system board for the Model P75 486 consists of two FRUs.  If ¦
¦    you are instructed to replace this system board, replace the     ¦
¦    system-board FRU first.  If that does not correct the problem,   ¦
¦    reinstall the original system-board FRU, then replace the        ¦
¦    processor-card FRU.                                              ¦
¦    If more than one error code is displayed, diagnose the first error ¦
¦    code first.  The cause of the first error code can cause false   ¦
¦    error codes to be displayed.                                     ¦
¦    If an adapter or device consists of more than one FRU, an error  ¦
¦    code may be caused by any of the FRUs.  Before replacing the     ¦
¦    adapter or device, remove the FRUs, one by one, to see if the    ¦
¦    symptoms change.                                                 ¦
¦                                                                     ¦
+---------------------------------------------------------------------+
```

```
+---+
¦001¦
+---+
```
- Power-off the system and all external devices.
- Check all cables and power cords.
- Make sure there are no diskettes in the drives.
- Power-on all external devices.
- Power-on the system.

ARE ANY EXTERNAL DEVICES ATTACHED TO THE SYSTEM UNIT?

Yes No
```
 ¦    ¦
 ¦   +---+
 ¦   ¦002¦
 ¦   +---+
 ¦   Go to Step 005.
 ¦
 ¦
 ¦
+---+
¦003¦
+---+
```

DID THE POWER-GOOD LIGHT ON ALL OF THE EXTERNAL DEVICES COME ON?

Yes No
```
 ¦    ¦
 ¦   +---+
 ¦   ¦004¦
 ¦   +---+
 ¦   Go to the external devices service pamphlet.
 ¦
 ¦
+---+
¦005¦
+---+
```

DID YOU RECEIVE A POST ERROR CODE?

Yes No
```
 ¦    ¦
 ¦   +---+
 ¦   ¦006¦
 ¦   +---+
 ¦   Continue with Step 014.
 ¦
+---+
¦007¦
+---+
```

**IS THE FIRST POST ERROR CODE WITHIN THE RANGE OF 02080000 190I TO 02410000
190I?**

Yes No
```
 ¦    ¦
 ¦   +---+
 ¦   ¦008¦
 ¦   +---+
 ¦   Continue with Step 014.
 ¦
+---+
¦009¦
+---+
```
- Start the Reference Diskette and verify that the "Enable" and "Disable"

settings are correct. (For more information, go to "Enable and Disable
Settings" in topic 6.0.)
- If you get a warning message to instruct you to "Keep" and "Remove"
  setting, follow the instructions on the screen before continuing.
DID YOU HAVE TO CORRECT ANY OF THE SETTINGS?
Yes No
 ¦   ¦
 ¦   +---+
 ¦   ¦010¦
 ¦   +---+
 ¦   Go to "Symptom-to-FRU Index" in topic 12.0.
 ¦   - Before replacing any SCSI devices, verify that there are no
 ¦   duplicate SCSI ID settings.
 ¦
+---+
¦011¦
+---+
- Remove the Reference Diskette and restart the system.
DID THE ERROR REMAIN?
Yes No
 ¦   ¦
 ¦   +---+
 ¦   ¦012¦
 ¦   +---+
 ¦   If you suspect another problem, or wish to run System Checkout,
 ¦   continue with Step 014.
 ¦
+---+
¦013¦
+---+
Go to "Symptom-to-FRU Index" in topic 12.0.

+---+
¦014¦
+---+
- Insert your Reference Diskette.
- Press Ctrl+Alt+Del and check for the following responses:
  1. One or two short beeps.
  2. IBM logo screen appears.
DID YOU RECEIVE THE RESPONSES LISTED ABOVE?
Yes No
 ¦   ¦
 ¦   +---+
 ¦   ¦015¦
 ¦   +---+
 ¦   Go to "Symptom-to-FRU Index" in topic 12.0.
 ¦   If that does not correct the problem, go to"Undetermined Problem" in
 ¦   topic 4.0 .
 ¦
+---+
¦016¦
+---+
- Advance to the Main Menu.
- Press Ctrl+A and run System Checkout.

  Notes:

  1. If the system has incorrect keyboard responses, go to "Keyboard" in
      topic 9.0.

  2. If the printer has incorrect responses, go to "Printer" in
      topic 10.0.

  3. If the external display has problems such as jittering, rolling,
      shifting, or being out-of-focus, go to "External Display Self-Test"
      in topic 7.0.

  4. A minimum of 512KB of memory must be active to load the diagnostic
      tests.

IS THE LIST OF INSTALLED DEVICES CORRECT?
Yes No
 ¦   ¦
 ¦   +---+
 ¦   ¦017¦
 ¦   +---+
 ¦   Go to "Installed Devices List" in topic 2.0.
 ¦
+---+
¦018¦
+---+
- Run the diagnostic tests.
DID THE TESTS IDENTIFY A FAILURE?

Note: If the test stops and you cannot continue, replace the last device being tested.
Yes No
```
 |     |
 |    +---+
 |    ¦019¦
 |    +---+
 |    Go to Step 021.
 |
+---+
¦020¦
+---+
```
Follow the action described on the screen. If that does not correct the
problem go to "Symptom-to-FRU Index" in topic 12.0.

```
+---+
¦021¦
+---+
```
DID YOU RECEIVE A POST ERROR CODE?
Yes No
```
 |     |
 |    +---+
 |    ¦022¦
 |    +---+
 |
 |    You may have an intermittent problem:
 |        Check for damaged cables and connectors.
 |        Reseat all adapters, drives, and modules.
 |        Check the system unit fan for proper operation.
 |        Start an error log and run the tests multiple times.
 |        Go to "Undetermined Problem" in topic 4.0.
 |
+---+
¦023¦
+---+
```
Go to "Symptom-to-FRU Index" in topic 12.0.
If that does not correct the problem, go to"Undetermined Problem" in
topic 4.0 .

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2.0 Installed Devices List

If an adapter or device is missing from the list, you may have one of the
following conditions:
    Your Reference Diskette does not contain the module of code required
    to support that device.
    The missing device is a 5.25-Inch 360KB or 1.2MB External Diskette
    Drive adapter, or another unrecognizable adapter.
    The missing device is defective.
    An adapter or system board is defective.

Subtopics
2.1 Automatic Configuration
2.2 Device Type
2.3 SCSI Devices
2.4 Non-SCSI Devices

2.1 Automatic Configuration

Warning: A customized setup configuration (other than default settings)
may exist on the system you are servicing. Running Automatic
Configuration may alter those settings. Note the current configuration
settings (using the View Configuration option) and verify that the
settings are in place when service is complete. (For more information
about configuration, refer to the *Hardware Maintenance Reference* manual.)

2.2 Device Type

Run **Automatic Configuration** (see "Automatic Configuration" before
continuing) and determine which type of device, SCSI or non-SCSI, is
missing from the Installed Devices List, in Advanced Diagnostics, then
continue with the following steps. (If SCSI and non-SCSI devices both are
missing, go to "Undetermined Problem" in topic 4.0.)

2.3 SCSI Devices

Note:

*SLOT 1 designates the logical position for the SCSI adapter built into the
system board which controls the internal and external SCSI devices.
If you are instructed to replace the SCSI adapter in slot 1, replace the
system board.*

The adapter supporting the missing device may be defective. If more than
one SCSI adapter is installed, isolate adapters in the option slots one by
one, then suspect the system board.
1. Power-off the system and disconnect all cables attached to the system
    board and the SCSI adapter.
2. Terminate the adapter, as required.
Warning: See "Automatic Configuration" in topic 2.1 before continuing.

3. Power-on the system and run **Automatic Configuration**. If the adapter
    is not on the Installed Devices List, in Advanced Diagnostics, the
    adapter or the system board is defective. If the adapter is on the
    list, run the adapter diagnostic tests.
4. If the adapter fails the tests, replace it or the system board (SLOT
    1). If the adapter passes the tests, a different adapter may be
    defective.
5. Reconnect the cables to the SCSI adapter or system board, then
    terminate the adapter, as required.
6. Go to "Undetermined Problem" in topic 4.0 to find the problem.

2.4 Non-SCSI Devices

The missing device is defective.

If that does not correct the problem, go to "Undetermined Problem" in topic 4.0.

Note: If the number of diskette drives shown on the list is incorrect, an error can occur during the tests. Restart the system and verify that the drive information on the **Set Configuration** menu is correct, then continue testing.

3.0 System Unit Fan

A non-functioning fan can cause heat to build up resulting in intermittent
problems.

If the fan is not running, replace the power supply.

4.0 Undetermined Problem

1. Power-off the system.
2. Remove or disconnect one of the following adapters or devices.
    Non-IBM devices
    Any external device (modem, printer, mouse, or external display)
    Any adapter
    Fixed disk or diskette drive
    Memory module kits.
3. Power-on the system.
4. If the symptom remains, repeat steps 1, 2, and 3 until you find the failing adapter or device.
5. If all adapters and devices have been removed and the problem persists, check the power supply voltages. If the voltages are correct, replace the system board. If the voltages are not correct, replace the power supply. If the symptom remains, reinstall the original system board and replace the processor card.

5.0 Power Supply Voltages

To check the power supply voltages, do the following:
1. Power-off the system.
2. Unplug the two power-supply connectors.
3. Power-on the system and check for the voltages listed below.
        If the voltages are not correct, check the power cord for
        continuity.
        If the power cord is good, replace the power supply.

Vdc Minimum	Vdc Maximum	Ground (-) Pin	Positive (+) Pin
+4.8	+5.2	6, 7, or 8	3, 4, or 5
+11.5	+12.6	6, 7, or 8	2
-11.0	-12.9	6, 7, or 8	1

PICTURE 2

6.0 Enable and Disable Settings

To verify that the "Enable" and "Disable" settings are correct, select **Set and View SCSI Device Configuration** from the **Set Configuration** menu, and determine if there are any "Presence Error Reporting" devices listed. The settings must be as follows:
  Devices connected to the system must be set to "Enabled."
  Devices listed but not connected must be set to "Disabled."

Change the settings by pressing **F5**, then save them by pressing **F10**.

7.0 External Display Self-Test
1. Power-off the system unit and the external display.
2. Disconnect the external-display signal cable from the system unit.
3. Power-on the external display.
4. Turn the contrast to its maximum position.
5. Turn the brightness control to the center detent position.

The screen should be white with a black margin, as described below (some
shading may occur near the edges). If the screen differs, replace the
external display. If the display passes the test, replace the system
board or the plasma-display card.

8503, 8512, 8513, 8514, 8515: 2-20 mm (0.08-0.79 in.) wide on one or
both sides.
8506: 2-35 mm (0.08-1.38 in.) wide on the top, or bottom, or both.
8507, 8508: 2-20 mm (0.08-0.79 in.) wide on the top, or bottom, or
both.

8.0 Display Adapter 8514/A

PICTURE 3

9.0 Keyboard

```
+---+
¦001¦
+---+
```
- Power-off the system.
- Disconnect the keyboard cable from the keyboard.
- Power-on the system and check the keyboard cable connector for the
  voltages shown. All voltages are ±5%.

   PICTURE 4

+---------------+
¦ **Pin**¦ **Voltage** ¦
¦   ¦ **(Vdc)**   ¦
+----+----------¦
¦ 2 ¦ +5.0   ¦
+----+----------¦
¦ 3 ¦ Ground   ¦
+----+----------¦
¦ 4 ¦ +5.0   ¦
+----+----------¦
¦ 5 ¦ +5.0   ¦
¦   ¦   ¦
+---------------+

ARE THE VOLTAGES CORRECT?
Yes No
```
 ¦    ¦
 ¦    +---+
 ¦    ¦002¦
 ¦    +---+
 ¦    Possible failing FRUs are:
 ¦    1.  Keyboard cable
 ¦    2.  System board.
 ¦
+---+
¦003¦
+---+
```
Replace the keyboard.

10.0 Printer
1. Make sure the printer is properly connected and powered-on.
2. Run the printer self-test.

If the printer self-test does not run correctly, the problem is in the
printer. Refer to the printer service manual.

If the printer self-test runs correctly, install a wrap plug on the
parallel port and run the advanced diagnostic tests to determine which of
the following FRUs is failing:
     System board
     Parallel adapter
     Printer cable.

11.0 Memory

Power-off the system before removing or replacing parts.

00**110**00 indicates a system board parity check error.

    Remove all memory module kits except the one in position 1. If the
    problem remains, replace the kit in position 1. If the kit does not
    solve the problem, replace the system board.

    If the problem disappears after removing the memory module kits (you
    should still have a kit in position 1), install the kits, one at a
    time, until the problem returns. Replace the kit that caused the
    problem to return. If the kit does not solve the problem, replace the
    system board.

00**111**00 indicates a memory expansion adapter parity check error.

    Remove the memory expansion adapters from the expansion slots one at a
    time until you no longer get a 111 error. (If all of the adapters
    have been removed and you still have a 111 error, replace the system
    board.)

    Remove the memory expansion kits from the adapter that was removed
    last. Install the kits one at a time until the failure returns.
    Replace the kit that caused the error to return; if that does not
    solve the problem, replace the adapter.

00**215**00, 00**216**00 indicates a failing system board memory module kit.

    If the error message does not indicate the location of the failing
    kit, follow the procedure for a 00**110**00 error, described above.

12.0 Symptom-to-FRU Index

Error symptoms and the FRUs that might be responsible for the failure are
listed in the "Symptom-To-FRU index." The most-likely failing FRU is
listed first.

If the system displays an error message and gives an incorrect audio
response, start with the FRUs listed for that error message. An X in an
error message can be any number.

Notes:

1. Before replacing any SCSI devices, verify that there are no duplicate
    SCSI ID settings.

2. If you are unable to find an error message, you have an IBM device
    with its own service manual or a device not supported by the advanced
    diagnostic tests. Refer to the manual for that device.

Subtopics
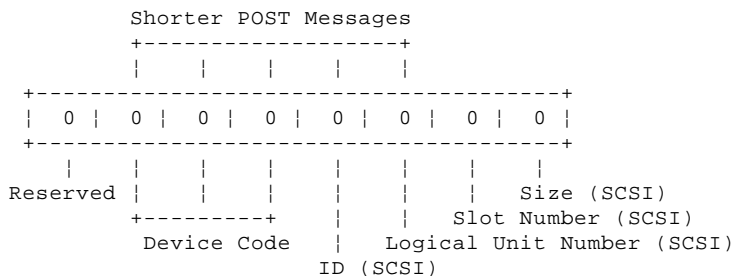12.1 How to Read POST Error Messages

12.1 How to Read POST Error Messages

Note:

SLOT 1 designates the logical position for the SCSI adapter built into the system board which controls the internal and external SCSI devices.
If you are instructed to replace the SCSI adapter in slot 1, replace the system board.

POST error messages are displayed on the screen as three, four, five, or eight digits. The error messages that can be displayed as shorter POST messages are highlighted in this index. Some digits will represent different information for SCSI errors versus non-SCSI errors.

The following example shows which digits display the shorter POST error messages and also defines the SCSI information in an eight-digit error message.

```
            Shorter POST Messages
            +-------------------+
            ¦   ¦   ¦   ¦   ¦   ¦
   +-------------------------------------+
   ¦ 0 ¦ 0 ¦ 0 ¦ 0 ¦ 0 ¦ 0 ¦ 0 ¦ 0 ¦
   +-------------------------------------+
     ¦   ¦   ¦   ¦   ¦   ¦   ¦   ¦
 Reserved ¦   ¦   ¦   ¦   ¦   ¦  Size (SCSI)
          +---------+   ¦   ¦   Slot Number (SCSI)
            Device Code ¦   Logical Unit Number (SCSI)
                       ID (SCSI)
```

All SCSI devices are set to a different SCSI ID.
Duplicate SCSI ID settings can generate a false error message. Use the SCSI ID to determine whether the error message is coming from an internal or an external device.

Note: The system board for the Model P75 486 consists of two FRUs. If you are instructed to replace the system board, exchange the system board first. If that does not correct the problem, reinstall the original system board, then exchange the processor card.

Symptom	FRU
One or more keys do not work	**Keyboard** Keyboard Cable System Board
Changing colors	**External Display** Plasma Display Card
Power-good light does not light – fan does not run (see "Undetermined Problem" in topic 4.0).	**Power Supply** System Board Any device or adapter
No beep and the system is otherwise functional.	**Speaker Assembly** System Board
No beep and nonfunctional system. (See "Undetermined Problem" before replacing any FRUs.)	**System Board** Power Supply
Continuous beep	**Power Supply** System Board
Repeating short beeps	**Power Supply** System Board Keyboard (stuck key)
One long and one short beep	**Display Option Adapter** (if installed) System Board Power Supply
One long and two short beeps	**Plasma Display Card** System Board Power Supply Display Option Adapter
One short beep and a blank or unreadable display with no external display	**Plasma Display Assembly** Plasma Display Cables Plasma Display Card System Board

One short beep and diskette prompt or a program loads from the fixed disk drive	**Diskette Drive** System Board Power Supply
LED for fixed disk drive stays on.	**Fixed Disk Drive** System Board Power Supply
LED for fixed disk drive not working, but system is completely functional.	**LED Assembly** System Board
SCSI ID of the internal fixed disk drive cannot be set correctly (see *Hardware Maintenance Reference* manual).	**Set Configuration** Internal SCSI Fixed Disk Drive SCSI ID Switch
000**110**XX (See "Memory" before replacing any FRUs.)	**System Board Memory Module Kit** System Board
000**111**XX (See "Memory" before replacing any FRUs.)	**Memory Expansion Kit** Memory Expansion Adapter
000**112**XX, 000**113**XX	**Any Adapter** System Board
000**161**XX	**Battery**
000**162**XX (Verify the "enable," "disable" settings are correct before replacing any FRUs.)	**Any Device**
000**163**XX, 000**164**XX, 000**165**XX (See "Installed Devices List" for more information.)	**Set Configuration/Features** System Board
000**166**XX	**Any Adapter**
000**194**XX	**System Board** Memory Module
0001**XX**XX (not listed above)	**System Board**
000**201**XX	**System Board Memory Module Kit** or **Memory Expansion Adapter** or **Memory Expansion Kit** System Board
20X (slot 0)	**System Board Memory Module Kit** System Board
20X (slot 1 – 4)	**Adapter Memory** Memory Adapter
000**211**XX, 000**215**XX, 000**216**XX, 000**221**XX (See "Memory" before replacing any FRUs.)	**System Board Memory Module Kit** System Board
000**225**XX	**System Board Memory Module Kit** System Board
000**301**XX, 000**302**XX	**Keyboard** Keyboard Cable System Board
000**303**XX	**System Board** Keyboard Keyboard Cable
000**304**XX	**System Board** Keyboard
000**305**XX	**Keyboard Cable**
000**401**XX	**System Board**

000**602**XX	**Defective Diskette**
0006**XX**XX	**Diskette Drive**
	System Board
	Power Supply
	Diskette-Drive Cable
0007**XX**XX	**Processor Board**
	System Board
001**102**XX or 001**106**XX	**System Board**
	Any Serial Device
001**107**XX	**Communications Cable**
	System Board
001**108**XX or 001**109**XX	**System Board**
	Serial Device
00**11XX**XX (not listed above)	**System Board**
001**202**XX or 001**206**XX	**Dual Async Adapter/A**
001**207**XX	**Communications Cable**
	Dual Async Adapter/A
001**208**XX or 001**209**XX	**Serial Device**
00**12XX**XX (not listed above)	**Dual Async Adapter/A**
	System Board
00**14XX**XX (See "Printer" before replacing any FRUs.)	**Printer**
	System Board
004**611**XX, 004**630**XX	**Multiport/2 Interface Board**
	Multiport/2 Adapter
004**612**XX, 004**613**XX, 004**640**XX, or 004**641**XX	**Memory Module Package**
	Multiport/2 Adapter
004**650**XX	**Multiport Interface Cable**
00**46XX**XX	**Multiport/2 Adapter**
	Interface Board
	Memory Module Package
007**44X**XX, 007**45X**XX, 007**46X**XX, 007**47X**XX (See "Display Adapter 8514/A" to determine the failing module)	**8514 Memory Module**
007**4XX**XX (not listed above)	**Display Adapter 8514/A**
	system Board
008**601**XX, 008**602**XX	**Pointing Device**
008**603**XX	**System Board**
008**604**XX	**System Board**
	Pointing Device
009**6XX**XX	**SCSI Adapter** (with cache)
	Any SCSI Device
	System Board
010**007**XX	**Communications Cable**
	Multiprotocol Adapter/A
0100**XX**XX (not listed above)	**Multiprotocol Adapter/A**
	System Board
010**102**XX, 010**106**XX, or 010**108**XX	**Modem Adapter/A**
0010**109**XX	**Serial Device**
0101**XX**XX (not listed above)	**Modem Adapter/A**
	System Board
0**112XX**XX (*SLOT 1 designates the logical*	**SCSI Adapter** (without cache)

position for the SCSI adapter built into the system board which controls the internal and external SCSI devices. To replace the SCSI adapter in slot 1, replace the system board.)	SCSI Device
000**107**XX	**5.25 inch External Diskette Drive** 5.25 inch External Diskette Drive Adapter/A
0**12102**XX, 0**12106**XX, or 0**12108**XX	**300/1200/2400 Modem Adapter/A**
0**12109**XX	**Serial Device**
0**121XX**XX (not listed above)	**300/1200/2400 Modem Adapter/A** System Board
0**12901**XX, 0**12902**XX, or 0**12903**XX	**Processor Card** System Board
0**14710**XX	**Plasma Display Card** Display Option Adapter (if installed)
0**14711**XX	**Plasma Display Card** Display Option Adapter (if installed)
0**147XX**XX	**Plasma Display Card** Display Option Adapter (if installed) System Board Processor Card
0**1490X**XX 0 **1491X**XX 0 **1492X**XX	**Plasma Display Card** System Board Plasma Display Assembly
0**14932**XX	**External Display** Plasma Display Card
0**14952**XX	**Plasma Display Assembly** Plasma Display Card System Board
0**16500**XX	**6157 Tape Attachment Adapter**
0**16520**XX	**6157 Streaming Tape Drive**
0**16540**XX	**6157 Streaming Tape Drive** 6157 Tape Attachment Adapter
0**166**XXXX, 0**167**XXXX (For diagnostic information, refer to the Token-Ring Network Adapter/A service information.)	**Token-Ring Network Adapter/A** System Board
0**208**XXXX (Verify that there are no duplicate SCSI ID settings.)	**Any SCSI Device**
0**210XXXX** (If the failing device is an external device, go to the external devices service pamphlet.)	**SCSI Fixed Disk Drive** SCSI Adapter SCSI Cable SCSI ID Switch (internal SCSI fixed disk drive only)
0**215XXXX** (If the failing device is an external device, go to the external device service pamphlet.)	**SCSI CD-ROM Drive** SCSI Adapter

Symptom-to-FRU Supplemental Numbers:

13.0 System Overview

PICTURE 5

13.0 System Overview

PICTURE 5

14.0 Parts

Note: When replacing a memory module kit, order the FRU appropriate for the system you are servicing.

Index	System Unit	
8	Battery	64F9987
	Bracket, Bus Interface	6279235
4	Bus Interface, 4-slot	64F9977
	Cable Set, Ground	64F9990
	Cable, Plasma-Display Power (with cable tie)	64F9973
	Cable, Plasma-Display Signal (with cable tie)	64F9974
	Carton Box S/N 99xxxxx S/N 23xxxxx	64F9996 64F9997
16	Catch, Diskette Drive	23F2742
	Connector, Plasma Display	56F9102
	Cover, Connector	64F9978
14	Cover, Diskette Drive	56F9088
	Bracket, Fixed Disk Drive	64F9979
12	Cover, Main (Model 161): S/N 99xxxxx S/N 23xxxxx	64F9980 64F9981
12	Cover, Main (Model 401) S/N 99xxxxx S/N 23xxxxx	64F9982 64F9983
5	Cover, Rear	64F9984
	Display Tilt	56F9100
9	Holder, without Speaker/Battery	64F9986
7	2MB Memory Module Kit	64F3604
7	4MB Memory Module Kit, 70ns	64F3605
11	LED Assembly	65X1569
	Name Plate, System Unit	64F9988
	Name Plate, Keyboard	65X1549
2	Plasma Display Card	78F9897
13	Plasma Display Assembly	64F9985
6	Power Assembly	64F8798
3	Processor Card, 486	64F8789
	Security Key	64F9991
	Screw-kit	64F9989
17	Speaker	78F9921

10	System Board	78F9896
	Tilt Assembly, Diskette Drive	56F9097

	Diskette and Fixed Disk Drive	
15	3.5-Inch Diskette Drive	38F5936
15	3.5-Inch Diskette Drive (with 4MB Sensor)	79F3225
	5.25-Inch Diskette Drive:	
	360KB External (4869-001)	72X6759
	360KB External (4869-501)	72X6768
	360KB Feature Group with Adapter	72X6758
	1.2MB External (4869-002)	15F7993
	1.2MB External (4869-502)	15F7994
	1.2MB Adapter/A	15F7996
	Cable, Diskette Drive	65X1572
1	160MB Fixed Disk (with integrated-SCSI adapter)	56F8851
	SCSI ID Switch for 160MB	79F3218
1	400MB Fixed Disk (with integrated-SCSI adapter)	85F0012
	SCSI ID Switch for 400MB	79F3219
	Cable, Fixed-Disk Power	64F9971
	Cable, Fixed-Disk Signal	64F9976

Options and Adapters

Display Adapter 8514/A	1887971
Memory Module (for 1887971)	1887708
Dual Async Adapter/A	90X9229
External Storage Device Cable	23F3230
Internal 60MB Adapter/A	30F5273
Adapter Cable (34 pin)	34F2990
Tape Cover Plate	30F5275
Formatted Blank Tape	30F5277
Multiprotocol Adapter/A	90X8995

Realtime Interface Coprocessor Multiport/2	09F1888
8-port RS232-C Electrical Interface Board	09F1889
4-port RS232-C Electrical Interface Board	09F1957
4+4-port RS232-C RS422-A Electrical Interface Board	09F1890
512KB Memory Module Package	16F2267
Multiprotocol Interface Cable (for 09F1888)	00F5524
SCSI Adapter/A with Cache	15F6779
Terminator, External (for 15F6779)	33F8464
Terminator, Internal (for 15F6779)	34F0016
Token-Ring Network Adapter/A	83X7488
Token-Ring 16/4 Adapter/A	16F1144
Token-Ring Adapter/A RPL	83X9180
SCSI Adapter/A without Cache	15F6561
Terminator (for 15F6561)	57F2058
300/1200/2400 Modem Adapter/A	65X1253
Communication Cable (for 65X1253)	94X1540
3270 Connection	53F6386
36/38 Emulation Adapter	69X6281
6157 Tape Adapter	92X1459
Keyboard Extension Cable	56F9098

Keyboard and Mouse

Belgian	65X1598
Canadian French	65F0000
Danish	65X1601
Dutch	65X1602
French	65X1603
German	65X1604
Italian	65X1605
Latin Spanish	65X1606
Norwegian	65X1607
Portuguese	65X1608
Spanish	65X1609
Swedish	65X1610
Swiss / French / German	65X1611
U.K. English	65X1612
U.S. English	65X1537
Turkish	65X1613
Greek	65X1614

Hebrew	65X1615
Arabic	65X1616
Cable	64F9998
Mouse	61X8923

8503 Monochrome Display	
110/120 Vac	68X3045
220/240 Vac (Northern Hemisphere)	68X3046
220/240 Vac (Southern Hemisphere)	72X7878
Tilt/Swivel Stand	68X3061
8507 Monochrome Display	
110/120 or 220/240 Vac (Universal Model)	6247808
8512 Color Display	
110/120 Vac	61X8924
220/240 Vac (Northern Hemisphere)	61X8928
220/240 Vac (Southern Hemisphere)	61X8927
Tilt/Swivel Stand	61X8925
8513 Color Display	
110/120 Vac	68X3088
220/240 Vac (Northern Hemisphere)	72X7870
220/240 Vac (Southern Hemisphere)	72X7877
Tilt/Swivel Stand	68X3061
8514 Color Display	
110/120 Vac	75X5945
220/240 Vac (Northern Hemisphere)	75X5946
220/240 Vac (Southern Hemisphere)	75X5947
Tilt/Swivel Stand	75X5907
8515 Color Display	
001 (US/Canada)	38F3911
002 (Northern Hemisphere)	38F3912
003 (Southern Hemisphere)	38F3913
A01 (Japan/Taiwan/Korea)	38F3914

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Power Cords

PICTURE 6

Index	Power Cords	
	Warning: Use the power cord certified for your country.	
1	Power Cord, System Unit, for: Colombia, U.S., Venezuela	6952300
2	Power Cord, System Unit, for: Hong Kong, Singapore, U.K.	6952356
3	Power Cord, System Unit, for: France, Germany, Spain	6952320
4	Power Cord, System Unit, for: Italy	72X8539
5	Power Cord, System Unit, for: Australia, New Zealand	6952311
5	Power Cord, System Unit, for: Paraguay	72X8508
6	Power Cord, System Unit, for: Denmark	72X8566
7	Power Cord, System Unit, for: Israel	72X8564
8	Power Cord, System Unit, for: Pakistan	72X8556
9	Power Cord, System Unit, for: Switzerland	72X8536

Supplemental Part Numbers:

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