

FRONT

PICTURE 1

March 21, 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 50.

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

Part Number 15F2193

Form Number S15F-2193-00

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 (March 1990)**

**The following paragraph does not apply to the United Kingdom or any country where such provisions are inconsistent with local law:**

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This publication could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time.

It is possible that this publication may contain reference to, or information about, IBM products (machines and programs), programming, or services that are not announced in your country. Such references or information must not be construed to mean that IBM intends to announce such IBM products, programming, or services in your country.

Requests for technical information about IBM products should be made to your IBM Authorized Dealer or your IBM Marketing Representative.

IBM may have patents or pending patent applications covering subject matter in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to the IBM Director of Commercial Relations, IBM Corporation, Armonk NY 10504.

**| Copyright International Business Machines Corporation 1990. All rights reserved.**

Note to US Government users-Documentation related to Restricted rights-Use, duplication, or disclosure is subject to restrictions set forth in GSA ADP Schedule Contract with IBM Corp.

*FRONT\_2 Special Notices*

References in this publication to IBM products, programs, or services do not imply that IBM intends to make these available in all countries in which IBM operates. Any reference to an IBM product, program or service is not intended to state or imply that only IBM's product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any of IBM's intellectual property rights or other legally protectible rights may be used instead of the IBM product, program, or service. Evaluation and verification of operation in conjunction with other products, programs, or services, except those expressly designated by IBM, are the user's responsibility.

IBM may have patents or pending patent applications covering subject matter in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to the IBM Director of Commercial Relations, IBM Corporation, Purchase, NY 10577.

The following terms, denoted by an asterisk (\*) in this publication, are trademarks of the IBM Corporation in the United States and/or other countries:

IBM  
Personal System/2.

CONTENTS Table of Contents

FRONT_1	Safety Information
FRONT_2	Special Notices
CONTENTS	Table of Contents
1.0	General Checkout
2.0	Installed Devices List
2.1	Automatic Configuration
2.2	Device Type
2.3	SCSI Devices
2.4	Non-SCSI Devices
3.0	Power-On Password
4.0	Undetermined Problem
5.0	Power Supply Voltages / Fan
6.0	Enable and Disable Settings
7.0	Display Self-Test
8.0	Display Adapter 8514/A
9.0	Keyboard
10.0	Printer
11.0	Memory
12.0	Symptom-to-FRU Index
13.0	System Overview
14.0	How To Use This Parts Catalog
14.1	Example of a Parts List
15.0	Parts

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:**

- 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 SCSI DEVICES ATTACHED TO THE SYSTEM?**

Yes No

| |  
| |  
| |  
| |  
| |  
| |  
| |  
| |  
| |

+----+  
|003|  
+----+

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

Yes No

| |  
| |  
| |  
| |  
| |  
| |  
| |  
| |

+----+  
|005|  
+----+

**DID YOU RECEIVE A POST ERROR CODE?**

Yes No

| |  
| |  
| |  
| |  
| |  
| |  
| |

+----+  
|007|  
+----+

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

Yes No

| |  
| |  
| |  
| |  
| |  
| |

+----+  
|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 receive a warning on the screen regarding the "Keep" and "Remove" settings, follow the instructions on the screen before continuing.

**DID YOU HAVE TO CORRECT ANY OF THE ENABLE AND DISABLE SETTINGS?**

Yes No

| |  
| |  
| |  
| |  
| |  
| |

+----+  
|011|

+----+  
- Remove the Reference Diskette and restart the system.

**DID THE ERROR REMAIN?**

**Yes No**

| |  
| |  
| +----+  
| |012|  
| +----+  
| If you suspect another problem, or want 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.  
| - or -  
| 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 display has problems such as jittering, rolling, shifting, or being out-of-focus, go to "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|  
| +----+  
| 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.

+----+

| 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.

-----

## 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 External Diskette Drive adapter or another unrecognizable adapter.
- The missing device is defective.
- An adapter 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" in topic 2.1 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

The adapter supporting the missing device may be defective. If more than one SCSI adapter is installed, isolate them one at a time.

1. Power-off the system and disconnect all internal and external cables attached to 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 is defective. If the adapter is on the list, run the adapter diagnostic tests.
4. If the adapter fails the tests, replace it. If the adapter passes the tests, a different adapter may be defective.
5. Reconnect the cables to the SCSI adapter, 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 Power-On Password

To service a system with an active, unknown, power-on password do one of the following, depending on which battery and speaker assembly is installed.

- On the type with two pins on the side of the speaker assembly, short the pins together.
- On the type with no pins, insert a meter lead into the connector (protruding from under the battery) and short the other end of the lead to frame ground.

Power-on the system and leave the assembly shorted until completion of POST. This deactivates the password.

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, or mouse)
  - Math Coprocessor
  - Any adapter
  - Fixed disk or diskette drive
  - Memory module kits.
3. Power on the system.
4. If the symptom remains, repeat the above steps until you find the failing adapter or device.
5. If all adapters and devices have been removed and the problem remains, check the power supply voltages. If the voltages are correct, replace the system board. If the voltages are not correct, replace the power supply.

5.0 Power Supply Voltages / Fan

If the fan is not running, check the fan connector for -9.0 to -15.0 Vdc, approximately -12 Vdc desired. If the voltage is correct, replace the fan. If the voltage is not correct, check the power supply voltages.

PICTURE 2

Remove the power supply and place it with the connector facing up. Power-on the power supply 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	-Lead Pin	+Lead Pin
-9	-15.0	2	1
+9.0	+15.0	2	3
+3.7	+6.2	2	15

PICTURE 3

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 the F5 key; then save them by pressing the F10 key.



7.0 *Display Self-Test*

1. Power-off the system unit and display.
2. Disconnect the display signal cable.
3. Power-on the 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 display. If the display passes the test, replace the system board or display adapter that the display is attached to.

- 8503, 8512, 8513, 8514:** 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 4

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  $\pm 5\%$ .

PICTURE 5

**ARE THE VOLTAGES CORRECT?**

Yes No

| |  
| +---+  
| |002|  
| +---+  
| Possible failing FRUs are:  
| 1. Fuse, or 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

**Note:** Power-off the system before removing or replacing parts.

00011000 indicates a system board parity check error.

Replace the memory modules. If that does not solve the problem, replace the system board.

00011100 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 00011100 error. (If all of the adapters have been removed and you still have a 00011100 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.

201 memory errors display as **AAAAAA** BBBB 201. Use the following figure to identify the possible failing FRUs.

<b>AAAAAA</b>	<b>Possible FRUs</b>
000000 to 0FFFFFF	1. System Board Memory 2. System Board
100000 and above	1. Memory on an adapter 2. Memory adapter

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.

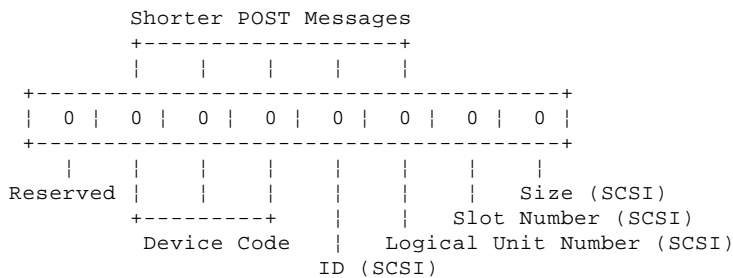
If the system displays an error message and gives an incorrect audio response, start with the FRUs listed for that error message. An "X" in an error message can be any number.

**Note:** 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.

**How to Read POST Error Messages**

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.



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.

Symptom	FRU/Action
One or more keys do not work	<b>Keyboard</b> Keyboard Cable System Board
Changing Colors	<b>Display</b>
No beep and the system is otherwise functional.	<b>Speaker Assembly</b> System Board
No beep and system is nonfunctional (See "Undetermined Problem" before replacing any FRUs.)	<b>System Board</b> Power Supply
Continuous beep	<b>Power Supply</b> System Board
Repeating short beeps	<b>Power Supply</b> System Board Keyboard (stuck key)
One long and one short beep	<b>System Board</b> Display Option Adapter Power Supply

**IBM PS/2 Model 50 HMS**  
Symptom-to-FRU Index

One long and two short beeps	<b>System Board</b> Power Supply
One short beep and a blank or unreadable display (See "Display Self-Test" before replacing any FRUs.)	<b>System Board</b> Power Supply Display
One short beep and load diskette prompt or a program loads from the fixed disk drive	<b>Diskette Drive</b> System Board Power Supply Diskette Drive Bus Adapter
000110XX (See "Memory" before replacing any FRUs.)	<b>System Board Memory</b> System Board
000111XX (See "Memory" before replacing any FRUs.)	<b>Adapter Memory</b> Memory Adapter
000112XX, 000113XX	<b>Any Adapter</b> System Board
000161XX	<b>Battery</b>
000162XX (Verify the "enable," "disable" settings are correct before replacing any FRUs.)	<b>Any Device</b>
000163XX, 000164XX, 000165XX (If setting configuration does not solve the problem, see "Installed Devices List.")	<b>Set Configuration/Features</b> System Board
000166XX	<b>Any Adapter</b>
0001XXXX (not listed above)	<b>System Board</b>
20X (slot 0)	<b>System Board Memory</b> System Board
20X (slot 1 - 8)	<b>Adapter Memory</b> Memory Adapter
XXXXXX XXXX 201 (See "Memory" before replacing any FRUs.)	<b>System Board Memory</b> System Board <b>Adapter Memory</b> Memory Adapter
000301XX, 000302XX	<b>Keyboard</b> Keyboard Cable
000303XX	<b>System Board</b> Keyboard Keyboard Cable

**IBM PS/2 Model 50 HMS**  
Symptom-to-FRU Index

000304XX	System Board Keyboard
000305XX	Fuse Keyboard Cable
000401XX	System Board
000602XX	Defective Diskette
0006XXXX	Diskette Drive System Board Power Supply Diskette Drive Bus Adapter
0007XXXX	Math Coprocessor System Board
001102XX, 001106XX	System Board Any Serial Device
001107XX	Communications Cable System Board
001108XX, 001109XX	System Board Any Serial Device
0011XXXX (not listed above)	System Board
001202XX, 001206XX	Dual Async Adapter/A Any Serial Device
001207XX	Communications Cable Dual Async Adapter/A
001208XX, 001209XX	Dual Async Adapter/A Any Serial Device
0012XXXX (not listed above)	Dual Async Adapter/A System Board
0014XXXX (See "Printer" before replacing any FRUs.)	Printer System Board
0017XXXX	Fixed Disk Drive Fixed Disk Drive Adapter System Board Power Supply
002401XX, 002402XX (changing colors)	Display
002401XX, 002402XX (no changing colors)	System Board



**IBM PS/2 Model 50 HMS**  
Symptom-to-FRU Index

	Display
002409XX	Display
002410XX	System Board
004611XX, 004630XX	Multiport/2 Interface Board Multiport/2 Adapter
004612XX, 004613XX, 004640XX, 004641XX	Memory Module Package on the Multiport/2 Adapter Multiport/2 Adapter
004650XX	Multiport Interface Cable
0046XXXX	Multiport/2 Adapter Multiport/2 Interface Board Memory Module Package
00744XXX, 00745XXX, 00746XXX, 00747XXX (See "Display Adapter 8514/A" in topic 8.0 to determine failing module.)	8514/A Memory Module
0074XXXX (not listed above)	Display Adapter 8514/A System Board
00850XXX, 00851XXX	80286 Expanded Memory Adapter/A System Board
00852XXX	Memory Module Package on the 80286 Expanded Memory Adapter/A 80286 Expanded Memory Adapter/A System Board
008601XX, 008602XX	Pointing Device
008603XX	System Board
008604XX	System Board Pointing Device
0096XXXX	SCSI Adapter (with cache) Any SCSI Device System Board
010002XX, 010006XX	Multiprotocol Adapter/A Any Serial Device
010007XX	Communications Cable

**IBM PS/2 Model 50 HMS**  
Symptom-to-FRU Index

	Multiprotocol Adapter/A
010008XX, 010009XX	<b>Multiprotocol Adapter/A</b> Any Serial Device
0100XXXX (not listed above)	<b>Multiprotocol Adapter/A</b> System Board
010102XX, 010106XX, 010108XX, 010109XX	<b>Modem Adapter/A</b> Any Serial Device
0101XXXX (not listed above)	<b>Modem Adapter/A</b> System Board
010480XX, 010481XX, 010482XX, 010483XX	<b>Fixed Disk Drive</b> System Board Power Supply Fixed Disk Drive Cables
0107XXXX	<b>5.25 inch External Diskette Drive</b> 5.25 inch External Diskette Drive Adapter/A
0112XXXX	<b>SCSI Adapter (without cache)</b> Any SCSI Device System Board
012102XX, 012106XX, 012108XX, 012109XX	<b>300/1200/2400 Modem/A</b> Any Serial Device
0121XXXX (not listed above)	<b>300/1200/2400 Modem/A</b> System Board
016500XX	<b>6157 Tape-Attachment Adapter</b>
016520XX	<b>6157 Streaming-Tape Drive</b>
016540XX	<b>6157 Streaming-Tape Drive</b> 6157 Tape-Attachment Adapter
0166XXXX, 0167XXXX, (For diagnostic information refer to the Token-Ring Network Adapter/A service information.)	<b>Token-Ring Network Adapter/A</b> System Board
016500XX	<b>6157 Tape Attachment Adapter</b>
016520XX	<b>6157 Streaming Tape Drive</b>
016540XX	<b>6157 Streaming Tape Drive</b>

IBM PS/2 Model 50 HMS

Symptom-to-FRU Index

	6157 Tape Attachment Adapter
0194XXXX	Memory-module package on the 2-8MB 80286 Memory Expansion Option 2-8MB 80286 Memory Expansion Option System Board
0208XXXX (Verify there are no duplicate SCSI ID settings.)	Any Device
0210XXXX (If the failing device is an external device, go to the external devices service pamphlet.)	SCSI Fixed Disk Drive (60MB) SCSI Adapter SCSI Cable
0210XXXX (If the failing device is an external device, go to the external devices service pamphlet.)	SCSI Fixed Disk Drive (120MB) SCSI Adapter SCSI Cable
0210XXXE (If the failing device is an external device, go to the external devices service pamphlet.)	SCSI Fixed Disk Drive (320MB) SCSI Adapter SCSI Cable
0210XXXU (If the failing device is an external device, go to the external devices service pamphlet.)	SCSI Fixed Disk Drive (Size Undetermined) SCSI Adapter SCSI Cable
0215XXXX (If the failing device is an external device, go to the external devices service pamphlet.)	SCSI CD-ROM Drive SCSI Adapter SCSI Cable

Supplemental Symptom-to-FRU Index:


-----

-----

-----

-----

-----

-----

PICTURE 6

14.0 How To Use This Parts Catalog

**SIMILAR ASSEMBLIES:** If two assemblies contain a majority of identical parts, they are broken down on the same list. Parts peculiar to one or the other of the assemblies are listed separately and identified by description.

**AR:** (As Required) indicates that the quantity is not the same for all machines.

**R:** (Restricted) indicates that the part has a restricted availability.

**INDENTURE** the indenture is marked by a series of dots located before the parts description. The indenture indicates the relationship of a part to the next higher assembly. For example:

**Indenture Relationship of Parts**

- (No dot) Main Assembly
- (One dot)  Detail parts of a main assembly
- (One dot)  Subassembly of the main assembly
- (Two dot)   Detail part of a one-dot subassembly
- (Two dot)   Subassembly of a one-dot subassembly

Subtopics

14.1 Example of a Parts List

14.1 Example of a Parts List

**System Unit**

Cover	72X8501
Front Bezel/Logo (R)	72X8502
Miscellaneous Hardware Kit (AR)	72X8580
<input type="checkbox"/> Knob Assembly, Fixed Disk Drive Support Structure	
<input type="checkbox"/> Knob	
<input type="checkbox"/> Washer	

15.0 Parts

**System Unit**

Cover	72X8501
Front Bezel/Logo 021 (R) (Exchange Basis Only)	72X8502
Front Bezel/Logo 031, 061 (R) (Exchange Basis Only)	15F7697
Drive Bezel Kit (AR)	15F7571
Blank Drive Bezel (AR)	72X8531
Fan Assembly	72X8515
Support Structure	72X8504
Battery/Speaker Assembly (No Battery)	72X8511
Battery/Speaker Assembly Cable	72X8558
Battery/Speaker Assembly with Attached Cable (No Battery)	15F7472
Battery	72X8498
Cover Lock Assembly (AR)	72X8512
Cover Lock Kit	72X8577
<input type="checkbox"/> Cover Lock Ring (Break-Away)	
<input type="checkbox"/> Cover Lock Pawl	
80287 Coprocessor	72X8528
Power Supply	90X9366
System Base (021)(R)	72X8592
System Base (031, 061)(R)	90X9534
System Board (Type 1)	72X8516
Fuse (3 amp)	72X8561
512KB Memory Module Package (Type 1) Qty. 1	72X8517
System Board (Type 2)	90X9533
Fuse (3 amp)	72X8561
1MB Memory Module Package (Type 2)	90X8624
1MB Memory Module Package (Type 2, 021 Only)	15F7586
2MB Memory Module Package (Type 2)	90X8625
101/102-Key Keyboard Cable	61X8898
Snap Tool	72X8547
Label Kit (AR)	72X8509
<input type="checkbox"/> Battery Ordering Label	
<input type="checkbox"/> Power Supply Warning Label	
Snap Kit (AR)	72X8526
<input type="checkbox"/> Snap Grommet	
<input type="checkbox"/> Snap Plunger	
Miscellaneous Parts Kit (System)	72X8525
<input type="checkbox"/> Base Foot	
<input type="checkbox"/> Captive Screw	
<input type="checkbox"/> 4 mm Screw	
Miscellaneous Parts Kit (Options)	72X8562
<input type="checkbox"/> Adapter Slot Cover	
<input type="checkbox"/> Adapter Handle Bracket	

**Diskette Drive / Fixed Disk Drive**

1.44MB Diskette Drive (AR) (Includes Bezel)	15F7570
<input type="checkbox"/> Diskette Drive Slide (AR)	
1.44MB Diskette Drive Bus Adapter	72X8524
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
20MB Fixed Disk Drive	72X8522
<input type="checkbox"/> Slide (for 72X8522)	
30MB Fixed Disk Drive	90X9403
<input type="checkbox"/> Slide (included in 90X8628)	
60MB Fixed Disk Drive	90X8627
<input type="checkbox"/> Slide (included in 90X8628)	
Fixed Disk Drive Slide Kit	90X8628

**Options and Adapters**

Diskette Drive Bus Adapter	72X8524
Display Adapter 8514/A	1887971
<input type="checkbox"/> Memory Module (for 1887971)	1887708
Dual Async Adapter/A	34F0008
Fixed Disk Drive Adapter (20MB) Type 1	72X8505
Fixed Disk Drive Adapter (60MB) Type 1	90X9571
Fixed Disk Drive Bus Adapter (30/60MB) Type 2	90X9441



## Parts

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	
<input type="checkbox"/> 8-port RS232-C Electrical Interface Board		09F1889
<input type="checkbox"/> 4-port RS232-C Electrical Interface Board		09F1957
<input type="checkbox"/> 4+4-port RS232-C RS422-A Electrical Interface Board	09F1890	
<input type="checkbox"/> 512KB Memory Module Package	16F2267	
Multiprotocol Interface Cable (for 09F1888)		00F5524
Screen Reader Keypad	1393515	
Screen Reader Keypad Cable	72X8537	
SCSI Adapter/A With Cache	15F6779	
Terminator, External (for 15F6779)	33F8464	
Terminator, Internal (for 15F6779)	34F0016	
SCSI Adapter/A Without Cache	15F6561	
Terminator, (for 15F6561)	57F2058	
Token-Ring Network Adapter/A	83X7488	
Token-Ring 16/4 Adapter/A	16F1144	
Token-Ring Adapter/A RPL	83X9180	

**Options and Adapters (continued)**

300/1200 Modem Adapter/A	34F0006	
Communications Cable (for 34F0006)	8285985	
300/1200/2400 Modem Adapter/A	65X1253	
Communications Cable (for 65X1253)	94X1540	
3270 Connection	53F6386	
36/38 Emulation Adapter	69X6281	
6157 Tape Adapter	92X1459	
80286 Memory Expansion Adapter	72X8532	
<input type="checkbox"/> Memory Module (for 72X8532)	61X8906	
0-8MB Expanded Memory Adapter/A	1497253	
<input type="checkbox"/> Memory Module (for 1497253)	1497256	
2-8MB 80286 Memory Expansion Option	15F8292	
<input type="checkbox"/> 1MB Memory Module (for 15F8292)	90X8624	
<input type="checkbox"/> 2MB Memory Module (for 15F8292)	90X8625	
80287 Math Co-Processor	72X8532	

**Keyboard / Mouse**

Belgian	1392012	
Canadian French	1392011	
Danish	1392005	
Dutch	1392013	
French	1392000	
German	1392001	
Italian	1392002	
Norwegian	1392007	
Portuguese	1392008	
Spanish	1392003	
Spanish/Latin	1392015	
Swedish	1392009	
Swiss/French/German	1392010	
U.K. English	1392004	
U.S. English	1392090	
101/102-Key Keyboard Cable	72X8537	
Mouse	61X8923	
Mouse Ball and Pop-Off Retainer	33F8461	
Mouse Ball and Twist-Off Retainer	33F8462	

**8503 Monochrome Display**

110/120 Vac	68X3045	
220/240 Vac (Northern Hemisphere)	68X3046	
220/240 Vac (Southern Hemisphere)	72X7878	
Tilt/Swivel Stand	68X3061	

**8506 Monochrome Display**

110/125 Vac (US/Canada)	39F8087	
110/125 or 200/240 Vac (Northern Hemisphere)		39F8088
110/125 or 220/240 Vac (Southern Hemisphere)		39F8089

**8507 Monochrome Display**

110/120 or 220/240 Vac (Universal Model)	6247808	
--	---------	--

**8508 Monochrome Display**

110/125 Vac (US/Canada)	6247838	
110/125 or 200/240 Vac (Northern Hemisphere)		39F8067

**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

**Power Cords**

**Warning:** Use the power cord certified for your country.

Power Cord, Displays, for: Colombia, U.S., Venezuela	68X3071
Power Cord, System Unit, for: Colombia, U.S., Venezuela	62X1045
Power Cord, System Unit, for: Hong Kong, Singapore, U.K.	8529341
Power Cord, System Unit, for: France, Germany, Spain	8529281
Power Cord, System Unit, for: Italy	8529282
Power Cord, System Unit, for: Australia, New Zealand	8529284

**Tools and Miscellaneous**

Tri-Connector Wrap Plug	72X8546
Wrap Plug (for 6157 Tape Attachment Adapter)	59X4115
Wrap Plug (for Token-Ring Network Adapter/A)	6165899
Wrap Plug (for Real-time Interface Co-Processor Multiport/2) 78-pin	16F2478
Wrap Plug (for Multiport Interface Cable) Direct Connect 25-pin, ports 0 and 1	6425494
Wrap Plug (for Multiport Interface Cable) Direct Connect 25-pin, ports 2 through 7	09F1799
Plastic Envelope (For Wrap Plug)	6138013
Data Migration Facility	61X8936
Tool (For Key Cap Removal)	6110464
Snap Tool (For Snap Removal)	72X8547
Shipping Carton (Type 8550)	72X8590

**Supplemental Parts:**

-----  
-----  
-----  
-----  
-----  
-----  
-----  
-----  
-----  
-----  
-----



Printed in the United States of America