

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 P70 386.

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 15F2198

Form Number S15F-2198-00

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	Undetermined Problem
4.0	Power Supply Voltages
5.0	Enable and Disable Settings
6.0	External Display Self-Test
7.0	Display Adapter 8514/A
8.0	Keyboard
9.0	Printer
10.0	Memory
11.0	Symptom-to-FRU Index
12.0	How To Use This Parts Catalog
12.1	Example of a Parts List
13.0	Parts



+----+

- 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 11.0.

+----+

|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 11.0.  
| - or -  
| If that does not correct the problem, go to "Undetermined Problem" in  
| topic 3.0.

+----+

|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 8.0.
2. If the printer has incorrect responses, go to "Printer" in topic 9.0.
3. If the display has problems such as jittering, rolling, shifting, or being out-of-focus, go to "External Display Self-Test" in topic 6.0.
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 11.0.

-----

## 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. (If SCSI and non-SCSI devices both are missing, go to "Undetermined Problem" in topic 3.0.)

### 2.3 SCSI Devices

The adapter supporting the missing device may be defective.

1. Power-off the system and disconnect any external devices from 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 3.0 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 3.0.

**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 *Undetermined Problem*

1. Power-off the system.
2. Remove or disconnect one of the following adapters or devices.
  - a. Non-IBM devices
  - b. Any external device (modem, printer, mouse, external display, etc.)
  - c. Math coprocessor
  - d. Any adapter
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 good, replace the system board.

4.0 Power Supply Voltages

If the voltages are not correct, or if the fan is not running, 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
-11.5	-12.6	6, 7, or 8	1

5.0 *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.

6.0 External Display Self-Test

1. Power-off the system unit and external display.
2. Disconnect the external display signal cable.
3. Power-on the external display.
4. Turn the contrast to its maximum position.
5. Turn the brightness control to its detented center 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.

7.0 Display Adapter 8514/A

PICTURE 2

8.0 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 3

**ARE THE VOLTAGES CORRECT?**

Yes No

| |  
| |  
| +---+  
| |002|  
| +---+  
| Possible failing FRUs are:  
| 1. Keyboard cable  
| 2. System board.  
|

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

Replace the keyboard.

-----

9.0 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.

10.0 Memory

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

00011000 indicates a system board parity check.

Remove the memory module kits in connectors 2, 3, and 4 if any. If the problem remains, replace the kit in connector 1; if that does not solve the problem, replace the system board.

If the problem disappears after removing the memory module kits, install the kits, one at a time, until the problem returns. Replace the kit that caused the error to return; if that does not solve the problem, replace the system board.

00011100 indicates a memory expansion adapter parity check. Remove the memory expansion adapter from the expansion slot. If the adapter has 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.

00021500 or 00021600 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 00011000 error, described above.

11.0 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.

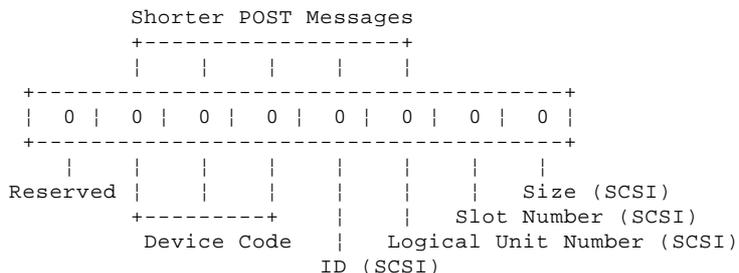
If the system displays an error message and gives an incorrect audio response, start with the FRUs listed for that error message. An "X" in an error message can be any number.

**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
No beep	<b>System Board</b> Power Supply Speaker Assembly
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>Plasma Display Adapter</b> System Board Power Supply
One long and two short beeps	<b>Plasma Display Adapter</b> System Board Power Supply
One short beep and a blank or unreadable display with	<b>System Board</b> Power Supply

no external display	Plasma Display Assembly
One short beep and diskette prompt or a program loads from the fixed disk drive	<b>Diskette Drive</b> System Board Power Supply Diskette Drive Cable
000110XX (See "Memory" before replacing any FRUs.)	<b>System Board Memory Module Kit</b> System Board
000111XX (See "Memory" before replacing any FRUs.)	<b>Memory Expansion Kit</b> Memory Expansion 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 (See "Installed Devices List" for more information.)	<b>Set Configuration/Features</b> System Board
000166XX	<b>Any Adapter</b>
000194XX	<b>System Board</b> Memory Module
0001XXXX (not listed above)	<b>System Board</b>
000201XX	<b>System Board Memory Module Kit</b> or <b>Memory Expansion Adapter</b> or <b>Memory Expansion Kit</b> System Board
20X (slot 0)	<b>System Board Memory Module Kit</b> System Board
20X (slot 1)	<b>Adapter Memory</b> Memory Adapter
000211XX, 000215XX, 000216XX, 000225XX (See "Memory" before replacing any FRUs.)	<b>System Board Memory Module Kit</b> System Board
000301XX, 000302XX	<b>Keyboard</b> Keyboard Cable
000303XX	<b>System Board</b> Keyboard Keyboard Cable

**IBM PS/2 Model P70 386 HMS**  
Symptom-to-FRU Index

000304XX	System Board Keyboard
000305XX	Keyboard Cable
000401XX	System Board
000602XX	Defective Diskette
0006XXXX	Diskette Drive System Board Power Supply Diskette Drive Cable
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
001207XX	Communications Cable Dual Async Adapter/A
0012XXXX (not listed above)	Dual Async Adapter/A System Board
0014XXXX (See "Printer" before replacing any FRUs.)	Printer System Board
001780XX, 001781XX, 001782XX	Fixed Disk Fixed Disk Drive Cable System Board
001790XX or 001791XX	Fixed Disk Fixed Disk Drive Cable
0017XXXX (not listed above)	Fixed Disk Fixed Disk Drive Cable System Board Power Supply
004611XX, 004630XX	Multiport/2 Interface Board Multiport/2 Adapter
004612XX, 004613XX, 004640XX, 004641XX	Memory Module Package Multiport/2 Adapter

**IBM PS/2 Model P70 386 HMS**  
Symptom-to-FRU Index

004650XX	<b>Multiport Interface Cable</b>
0046XXXX	<b>Multiport/2 Adapter</b> Interface Board Memory Module Package
008601XX, 008602XX	<b>Pointing Device</b>
008603XX	<b>System Board</b>
008604XX	<b>System Board</b> Pointing Device
0096XXXX	<b>SCSI Adapter (with cache)</b> Any SCSI Device System Board
010007XX	<b>Communications Cable</b> Multiprotocol Adapter/A
0100XXXX (not listed above)	<b>Multiprotocol Adapter/A</b> System Board
0101XXXX (not listed above)	<b>Modem Adapter/A</b> System Board
010480XX, 010481XX, 010482XX, 010483XX	<b>Fixed Disk Drive</b> System Board Fixed Disk Drive Cable
010490XX or 010491XX	<b>Fixed Disk Drive</b> Fixed Disk Drive Cable
0104XXXX (not listed above)	<b>Fixed Disk Drive</b> System Board Fixed Disk Drive Cable Power Supply
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
014901XX	<b>Plasma Display Adapter</b> System Board Plasma Display
014902XX	<b>Plasma Display Adapter</b> System Board Plasma Display

014922XX	Plasma Display Plasma Display Adapter System Board
014932XX	External Display Plasma Display Adapter
016500XX	6157 Tape Attachment Adapter
016520XX	6157 Streaming Tape Drive
016540XX	6157 Streaming Tape Drive 6157 Tape Attachment Adapter
0166XXXX, 0167XXXX, (For diagnostic information refer to the Token-Ring Network Adapter/A service information.)	Token-Ring Network Adapter/A System Board
0208XXXX (Verify there are no duplicate SCSI ID settings.)	Any SCSI 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
0210XXXC (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
0210XX XU (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

Symptom-to-FRU Supplemental Numbers:

-----

-----

-----

-----

-----

-----

-----

-----

-----

-----

-----

-----

-----

12.0 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

12.1 Example of a Parts List

12.1 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	

13.0 Parts

**System Unit**

Battery	72X8498	
Bus Interface Assembly	65X1567	
Serial number xxxx49999 or earlier		
Bus Interface Assembly	56F9101	
Serial number xxxx49999 or earlier		
Bracket, Bus Interface	6279235	
Cable, Keyboard	65X1576	
Cable, Plasma Display Signal	65X1574	
Cable, Plasma Display Power (See page 13.0)		38F5939
Serial number xxxx49999 or earlier		
Cable, Plasma Display Power	56F9087	
Serial number xxxx50001 or later		
Catch, Diskette Drive	23F2742	
Cover, PDP Connector	65X1558	
Serial number xxxx49999 or earlier		
Cover, PDP Connector	56F9102	
Serial number xxxx50001 or later		
Cover, Diskette Drive	65X1561	
Serial number xxxx49999 or earlier		
Cover, Diskette Drive	56F9088	
Serial number xxxx50001 or later		
Cover, Fixed Disk Drive	65X1563	
Serial number xxxx49999 or earlier		
Cover, Fixed Disk Drive	56F9089	
Serial number xxxx50001 or later		
Cover, Rear	65X1582	
Serial number xxxx49999 or earlier		
Cover, Rear	56F9096	
Serial number xxxx50001 or later		
Cover, Main, Type 8573-031 (R),	38F7821	
Serial Number 23xx49999 or earlier		
Cover, Main, Type 8573-031 (R),	56F9090	
Serial Number 23xx50001 or later		
Cover, Main (Type 8573-031 (R),	38F8947	
Serial Number 99xx49999 or earlier		
Cover, Main (Type 8573-031 (R),	56F9091	
Serial Number 99xx50001 or later		
Cover, Main (Type 8573-061 (R),	65X1577	
Serial Number 23xx49999 or earlier		
Cover, Main (Type 8573-061 (R),	56F9092	
Serial Number 23xx50001 or later		
Cover, Main (Type 8573-061 (R),	23F3206	
Serial Number 99xx49999 or earlier		
Cover, Main (Type 8573-061 (R),	56F9093	
Serial Number 99xx50001 or later		

**System Unit (continued)**

Cover, Main (Type 8573-121 (R),	23F3018	
Serial Number 23xx49999 or earlier		
Cover, Main (Type 8573-121 (R),	56F9094	
Serial Number 23xx50001 or later		
Cover, Main (Type 8573-121 (R),	23F3207	
Serial Number 99xx49999 or earlier		
Cover, Main (Type 8573-121 (R),	56F9095	
Serial Number 99xx50001 or later		
Display Tilt	65X1579	
Serial number xxxx49999 or earlier		
Display Tilt	56F9100	
Serial number xxxx50001 or later		
Holder, Battery and Speaker	65X1571	
LED Assembly	65X1569	
Name Plate	65X1528	
Plasma Display Adapter (See page 13.0)	38F4686	
Plasma Display Assembly (See page 13.0)	38F4737	
Power Supply (See page 13.0)	38F4734	
System Board (16 MHz)	38F5969	
Serial number xxxx49999 or earlier		
System Board (16 MHz)	56F9084	
Serial number xxxx50001 or later		
System Board (20 MHz)	65X1564	
Serial number xxxx49999 or earlier		
System Board (20 MHz)	56F9085	
Serial number xxxx50001 or later		
Speaker	65X1319	
Tilt Assembly, Diskette Drive	65X1559	
Serial number xxxx49999 or earlier		
Tilt Assembly, Diskette Drive	56F9097	
Serial number xxxx50001 or later		
2MB Memory Module	90X8625	
80387 Math Coprocessor, 16 MHz	72X6673	

## Parts

80387 Math Coprocessor, 20 MHz 90X7393

**Diskette and Fixed Disk Drive**

Cable, Diskette Drive	65X1572
Cable, Fixed Disk (8573 - 031)	64F8799
Cable, Fixed Disk (8573 - 061/121)Drive	65X1573
1.44MB Diskette Drive	38F5936
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
30MB Fixed Disk Drive (ESDI)	6128287
(Includes ESDI fixed disk controller)	
60MB Fixed Disk Drive (ESDI)	90X8627
(Includes ESDI fixed disk controller)	
120MB Fixed Disk Drive (ESDI)	90X9286
(Includes ESDI fixed disk controller)	

**Options and Adapters**

Dual Async Adapter/A	34F0008	
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	
<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	09F1890	
Electrical Interface Board		
<input type="checkbox"/> 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 P70 386	25F7540	
Adapter/A		
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	
Screen Reader Keypad	1393515	
Screen Reader Keypad Cable	72X8537	
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	
2-8MB 80386 Memory Expansion Option	90X9566	
<input type="checkbox"/> 2MB Memory Module (for 90X9566)	90X8625	
2MB Memory Module (for system board)	90X8625	
6157 Tape Adapter	92X1459	
80386 Memory Expansion Adapter	72X6671	
80386 Memory Expansion Kit	72X6672	

**Keyboards**

Arabic	65X1616
Belgian	65X1598
Danish	65X1601
French	65X1603
German	65X1604
Greek	65X1614
Hebrew	65X1615
Italian	65X1605
Latin American / Spanish	65X1606
Netherlandish	65X1602
Norwegian	65X1607
Portuguese	65X1608

**Keyboards (continued), Mouse**

Spanish	65X1609
Swedish	65X1610
Swiss German / French	65X1611
Turkish	65X1613

## Parts

U.K. English	65X1612	
U.S. English	65X1537	
Name Plate	65X1549	
Cable, Common to all Keyboards	65X1576	
Mouse	61X8923	
Mouse Ball and Pop-Off Retainer	33F8461	
Mouse Ball and Twist-Off Retainer	33F8462	
<b>8503 Monochrome Display</b>		
110/120 Vac	68X3045	
220/240 Vac (Northern Hemisphere)	68X3046	
220/240 Vac (Southern Hemisphere)	72X7878	
Tilt/Swivel Stand	68X3061	
<b>8506 Monochrome Display</b>		
110/125 Vac (US/Canada)	39F8087	
110/125 or 200/240 Vac (Northern Hemisphere)		39F8088
110/125 or 220/240 Vac (Southern Hemisphere)		39F8089
<b>8507 Monochrome Display</b>		
110/120 or 220/240 Vac (Universal Model)	6247808	
<b>8508 Monochrome Display</b>		
110/125 Vac (US/Canada)	6247838	
110/125 or 200/240 Vac (Northern Hemisphere)		39F8067
110/125 or 220/240 Vac (Southern Hemisphere)		39F8068
<b>8512 Color Display</b>		
110/120 Vac	61X8924	
220/240 Vac (Northern Hemisphere)	61X8928	
220/240 Vac (Southern Hemisphere)	61X8927	
Tilt/Swivel Stand	61X8925	
<b>8513 Color Display</b>		
110/120 Vac	68X3088	
220/240 Vac (Northern Hemisphere)	72X7870	
220/240 Vac (Southern Hemisphere)	72X7877	
Tilt/Swivel Stand	68X3061	
<b>8514 Color Display</b>		
110/120 Vac	75X5945	
220/240 Vac (Northern Hemisphere)	75X5946	
220/240 Vac (Southern Hemisphere)	75X5947	
Tilt/Swivel Stand	75X5907	
<b>Power Cords</b>		
<b>Warning:</b> Use the power cord certified for your country.		
Power Cord, System Unit, for:	6951311	
Australia, New Zealand		
Power Cord, System Unit, for:	65X1335	
Colombia, U.S., Venezuela		
Power Cord, System Unit, for:	6952356	
Hong Kong, Singapore, U.K.		
Power Cord, System Unit, for:	6952320	
France, Germany, Spain		
Power Cord, System Unit, for:	72X8539	
Italy, Chile		
Power Cord, System Unit, for:	72X8508	
New Guinea, Papua, Paraguay		
Power Cord, System Unit, for:	72X8566	
Denmark		
Power Cord, System Unit, for:	72X8564	
Israel		
Power Cord, System Unit, for:	72X8556	
Bangladesh, Pakistan, South Africa, Sri Lanka		
Power Cord, System Unit, for:	72X8536	
Switzerland		
Power Cord, System Unit, for:	72X8510	
Bolivia, Thailand		
<b>Tools and Miscellaneous</b>		
Tri-Connector Wrap Plug	72X8546	
Wrap Plug	59X4115	
(for 6157 Tape Attachment Adapter)		
Wrap Plug	6165899	

Parts

(for Token-Ring Network Adapter/A	
Wrap Plug (for Realtime Interface	16F2478
Coprocessor Multiport/2) 78-pin	
Wrap Plug (for Multiport Interface Cable)	6425494
Direct Connect 25-pin, ports 0 and 1	
Wrap Plug (for Multiport Interface Cable)	09F1799
Direct Connect 25-pin, ports 2 through 7	
Grounding Wire Set	38F4684
Plastic Envelope (For Wrap Plug)	6138013
Data Migration Facility	61X8936
Tool (For Key Cap Removal)	6110464
Snap Tool (For Snap Removal)	72X8547
Shipping Carton (U.S. and Canada)	23F3196
Shipping Carton (other countries)	23F3195

**Supplemental Parts:**

**IMPORTANT:**

Some early systems require concurrent replacement of the plasma display assembly, plasma display adapter, power supply, or plasma display power cable. Follow the instructions below to determine the proper parts to be replaced. Do not use any part numbers other than the ones listed.

**Instructions:**

**Step 1:** Check the serial number of the system unit. The serial number is under the left corner of the plasma display panel.

**Is the serial number**  
**between 230000001 and 230004000 or**  
**between 231000001 and 231001000 ?**

**Yes:** Go to step 2.  
**No:** Replace the failing part.

**Step 2:** Check the FRU number of the plasma display assembly. The FRU number is on the back of the plasma display panel.

**or**  
 Check the color of the power supply cable from the power supply assembly to the plasma display assembly.

**Is the FRU number of the plasma display assembly 38F4737 ?**  
**or**  
**Is the color of the power supply cable GRAY?**

**Yes:** Replace the failing part.  
**No:** Replace all parts in -- Fig 'PART' unknown -- at the same time.

Part Name	Part Number
Plasma Display Assembly	38F4737
Plasma Display Adapter	38F4686
Power Supply	38F4734
Plasma Display Power Cable	38F5939

Parts for Concurrent Replacement

Printed in the United States of America