

FRONT

PICTURE 1

March 10, 1992

This pamphlet contains a Symptom-to-FRU Index, a parts listing, and procedures for isolating problems to a FRU for the IBM Personal System/2 Model 25 SX.

This pamphlet is intended to be used with the IBM Personal System/2 *Hardware Maintenance Reference* manual (part number 15F2190, form number SBOF-3989-0) , and the *Hardware Maintenance Service* manual (part number 15F2200, form number SBOF-3988-0).

Part Number 10G6610

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FRONT_1 Safety Information

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

- General Safety
- Electrical Safety
- Safety Inspection Guide.

First Edition (March 1992)

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Subtopics

FRONT_2.1 General IBM Electro-Static Discharge (ESD) Instructions

FRONT_2.1 General IBM Electro-Static Discharge (ESD) Instructions

These are general instructions for handling ESD sensitive parts. Any part containing transistors or ICs should be considered ESD Sensitive. *Use product specific ESD procedures when they exceed the requirements noted here.* ESD damage can occur when there is a difference in charge between objects. We can protect against ESD damage, by equalizing the charge so that the machine, the part, the work mat and the person handling the part are all at the same charge. Ground is desirable but not required to protect against ESD damage. The wrist band must be worn against the skin. The grounding cord system should be selected to provide protection for the specific service requirement. If an ESD sensitive part is swapped, the mat must be used to provide an ESD safe work surface to protect the part removed from the product. The mat may not be required for a simple insertion. The mat may be used as a ESD protective container for swapping parts between machines. The mat should be used with the BLACK side up.

The ESD ground clip can be attached to any frame ground, ground braid or green wire ground. For products that are double insulated, or battery operated, an ESD common ground or reference point should be used. The round ground prong on the AC plug, can be used on AC operated products. Coax or connector outside shells can be used on double insulated or battery operated products.

ESD sensitive parts must not touch any part of your clothing. Most clothing is insulative and retains a charge *even when you are wearing a wrist strap.* Avoid contact with other people when handling ESD sensitive parts. Keep ESD sensitive parts in protective packages until they are inserted into the product.

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1.0 General Checkout

The 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.

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Subtopics

- 1.1 How to Diagnose Combined FRUs
- 1.2 How to Use Error Messages
- 1.3 How to Disable the Power-on Password

1.1 How to Diagnose Combined FRUs

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.

If you are instructed to replace the system board and that does not correct the problem, replace the bus adapter and reinstall the original system board.

1.2 How to Use Error Messages

Use the error codes displayed on the screen to diagnose failures. 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 you did not receive any error code, see if the error symptom is listed in the "Symptom-to-FRU Index" in topic 13.0.

1.3 How to Disable the Power-on Password

To disable the power-on password, move the J2 jumper on the system board to the unused position. Refer to the *Model 25 SX Hardware Maintenance Reference* for the location of the J2 jumper on the system board.

+----+
|001|
+----+

- Power-off the system and all external devices.
- Check all cables and power cords.
- Make sure there is no diskette in the drive.
- Power-on all external devices.
- Power-on the system.
- Watch the screen for a POST error code.

DID YOU RECEIVE A POST ERROR CODE?

Yes No

| |
| |
| +----+
| |002|
| +----+
| Go to Step 010.
|

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

IS THE ERROR 162?

Yes No

| |
| +----+
| |004|
| +----+
| If the error is 106XX, go to "Symptom-to-FRU Index" in topic 13.0.
| If you suspect any other Ethernet network problem, go to "Testing the
| Ethernet Adapter" in topic 11.0.
|
| If the error is 166XX, go to "Symptom-to-FRU Index" in topic 13.0.
| If you suspect any other Token-Ring network problem, go to "Testing
| the Token-Ring Adapter" in topic 12.0.
|
| For any other error, go to Step 010.
|

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

- Insert your advanced diagnostics 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 BOTH RESPONSES?

Yes No

| |
| +----+
| |006|
| +----+
| Go to "Symptom-to-FRU Index" in topic 13.0.
|
| If that does not correct the problem, go to "Undetermined Problem" in
| topic 2.0.
|

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

- Press **Enter**.

HAS THE CONFIGURATION BEEN INTENTIONALLY CHANGED?

Yes No

| |
| +----+
| |008|
| +----+
| Press **N**, then go to Step 012.
|

+----+
|009|
+----+

Press **Y** to run Automatic Configuration and verify that the error is no longer present. If you return to this point again, go to Step 007 and answer No.

+----+
|010|
+----+

- Insert your advanced diagnostics 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 BOTH RESPONSES?

Yes No

```
| |
| |
| +---+
| |011|
| +---+
| Go to "Symptom-to-FRU Index" in topic 13.0.
|
| If that does not correct the problem, go to "Undetermined Problem" in
| topic 2.0.
```

+---+

|012|

+---+

- Select **Test the System**.
- Select **System Checkout**.

- If the system has incorrect keyboard responses, go to "Keyboard" in topic 6.0.
- If the printer has incorrect responses, go to "Printer" in topic 7.0.
- If the display has problems such as jittering, rolling, shifting, or being out-of-focus, go to "Display" in topic 4.0.

IS THE LIST OF INSTALLED DEVICES CORRECT?

Yes No

```
| |
| |
| +---+
| |013|
| +---+
| Go to "Installed Devices List" in topic 5.0.
|
| If that does not resolve the problem, continue with Step 015.
```

+---+

|014|

+---+

- Run the advanced diagnostic tests.

DID THE TESTS IDENTIFY A FAILURE?

Note: If the test stops and you cannot continue, replace the last device tested.

Yes No

```
| |
| |
| +---+
| |015|
| +---+
| Check the "Symptom-to-FRU Index" in topic 13.0 for any POST error or
| other error symptom you might have. If your error symptom is not
| listed, go to "Undetermined Problem" in topic 2.0.
```

If you cannot find a problem, it may be intermittent:

- 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. (Use a DOS-formatted diskette.)

+---+

|016|

+---+

Follow the instructions on the display.

If that does not correct the problem, go to "Symptom-to-FRU Index" in topic 13.0.

2.0 Undetermined Problem

Check the power supply voltages (see "Power Supply Voltages" in topic 3.0). If the voltages are correct, return here and continue with the following steps:

1. Power-off the system.
2. Remove or disconnect the following, one at a time:
 - a. Non-IBM devices
 - b. External devices (modem, printer, or mouse)
 - c. Math coprocessor
 - d. Any adapters
 - e. Bus adapter
 - f. Memory module kit
 - g. Hard disk drive (fixed disk drive) cable
 - h. Diskette drive cable.
3. Power-on the system.
4. Repeat steps 1 through 3 until you find the failing device or adapter.

If all devices and adapters have been removed and the problem continues, replace the system board.

3.0 Power Supply Voltages

If the power-on indicator is not on, or if the power-supply fan is not running, check the power cord for proper installation and continuity. Verify that the voltage-selector switch is set for the correct voltage.

If these are correct, check the voltages listed in the following figures.

PICTURE 2

Vdc Minimum	Vdc Maximum	--Lead Pin	+Lead Pin
+ 4.8	+ 5.2	P6-5	P6-1
+ 4.8	+ 5.2	P6-5	P6-10
+ 4.5	+ 5.4	P6-9	P6-5
+11.5	+12.6	P6-5	P6-3
+10.8	+12.9	P6-4	P6-8

If the voltages are not correct, check the power cord for continuity. If the power cord is good, replace the display assembly.

4.0 Display

If the screen is rolling, replace the display assembly. If that does not correct the problem, replace the system board.

If the screen is not rolling, do the following to run the display self-test:

1. Power-off the system.
2. Unplug the display signal cable.
3. Power-on the system. (For an external display, also turn on the display.)
4. Turn the brightness and contrast controls clockwise to their maximum setting.
5. Check for the following conditions:
 - The screen should be white or light gray with a black margin. On an external display, the black margin for the 8513, 8514 and 8515 displays should measure 2-20 mm (0.08-0.79 in.) wide on one or both sides.
 - The contrast and brightness controls should vary the screen intensity.

If both of these conditions are not present, replace the display assembly.

If both conditions are present, replace the system board. If that does not correct the problem, replace the display assembly.

5.0 Installed Devices List

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 *Model 25 SX Hardware Maintenance Reference pamphlet*.)

If the number of diskette drives shown in the installed devices list is not correct, do the following:

1. Restart the system.
2. Correct the drive information in the Set Configuration menu.
3. Run the diagnostic tests.

If you cannot correct the drive information, replace FRUs, in the following order, until the problem goes away: diskette drive; diskette drive cable; system board.

If the number of hard disk drives shown in the installed devices list is not correct, do the following:

1. Check the hard disk drive jumper settings (see "Hard Disk Drive Jumper Settings" in topic 9.0).
2. Check the voltages to the hard disk drive (see "Power Supply Voltages" in topic 3.0) and tighten all drive cables.
3. Restart the system and check the configuration.

- If the drive is still missing from the installed devices list, replace the drive.

If the problem remains, replace the drive cable. If that does not fix the problem, replace the system board.

If any other adapter or device is missing from the installed devices list, add it to the list and continue with the diagnostic tests.

Note: If you cannot add a missing adapter or device to the list, the diagnostic code for it is not on the advanced diagnostic diskette. Run the diagnostics provided with that device.

6.0 Keyboard

Note: If a mouse or other pointing device is attached, remove it and see if the error symptom goes away. If the symptom goes away, the mouse or pointing device is defective.

+----+
|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.

7.0 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 FRU failed.

If the advanced diagnostic tests (with the wrap plug installed) do not detect a failure, replace the printer cable. If that does not correct the problem, replace the system board or adapter connected to the printer cable.

8.0 Memory

+----+
|001|
+----+

- Power-off the system.
- Insert the advanced diagnostics diskette into drive A.
- Power-on the system.
- Make a note of any POST errors you receive. Disregard 164 errors (memory size).

DID YOU RECEIVE A XXXXXX XXXX 2XX POST ERROR?

Yes No

|
|
+----+
|002|
+----+

Press the **F1** key to continue.

- Run the memory tests. Use the **RUN TESTS ONE TIME** option.

DID THE MEMORY TESTS COMPLETE WITHOUT AN ERROR?

Yes No

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

Follow the instructions on the display.

+----+
|004|
+----+

Your system memory is now functioning correctly. If you suspect an intermittent problem, start an error log. (Use a DOS-formatted diskette.)

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

Press the **F1** key to continue.

- Run the memory tests. Use the **RUN TESTS ONE TIME** option. If you cannot run the memory test or the test does not find a problem, remove the memory module kit. If the problem goes away, replace the memory module kit. If that does not fix the problem, replace the system board.

9.0 Hard Disk Drive Jumper Settings

The hard disk drive must be set as the primary drive. To set the jumpers, turn the drive upside down, with the connector facing away from you. The drive has a jumper block in one of two positions. Refer to the following figure, and set the jumper as shown.

Note: Do not change any other switches or jumpers.

Subtopics

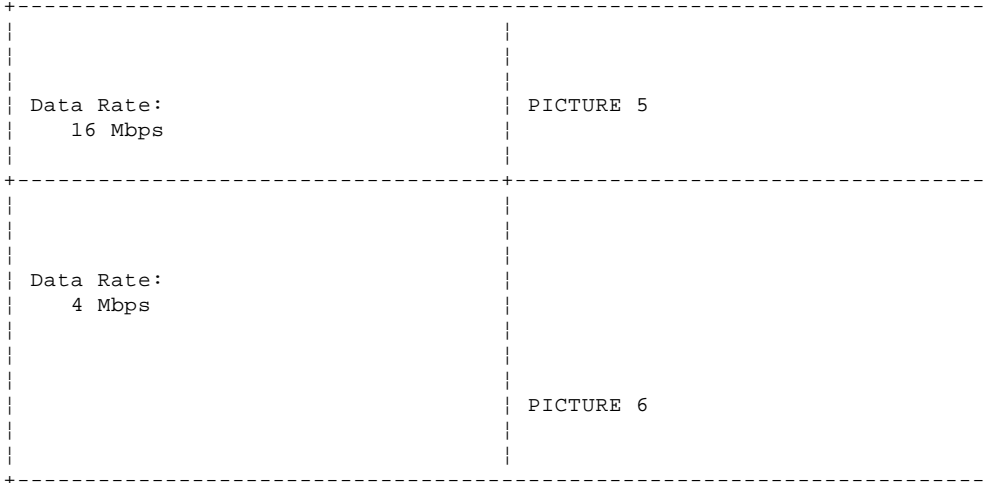
9.1 40MB or 80MB Hard Disk Drive

9.1 40MB or 80MB Hard Disk Drive

PICTURE 4

10.0 Token-Ring Data Rate Switch Settings

Switch 12 on the switch block indicates the rate (4 Mbps or 16 Mbps) at which the adapter transfers data to the network. Set the switches as shown to match the data rate of the LAN segment.



11.0 Testing the Ethernet Adapter

To test the Ethernet adapter:

1. Insert the feature diskette in the diskette drive, then power-on the system. The Ethernet Setup/Diagnostic program will automatically load.

Note: If the system is already on, type **A:F1DIAG** at the DOS command prompt then press **Enter** to load the Ethernet Setup/Diagnostic program.

2. Select **Option 2. Test the Adapter** from the Main Menu, then press **Enter**. The adapter address will be displayed for a few seconds before the diagnostics are run.

Subtopics

11.1 RPL Error Conditions for Ethernet

11.1 RPL Error Conditions for Ethernet

The following is a list of possible error conditions that can occur when the workstation is attempting to connect to the network:

Problem	Action
<p>ET--00:00:02 Field stops incrementing</p>	<p>If the elapsed time indicator stops incrementing, check that:</p> <ol style="list-style-type: none"> 1. All cables and cords are properly attached to the workstation. 2. The address for the network adapter was properly added to the network software. 3. The adapter configuration (BNC/UTP) is set properly. 4. The server is operational. <p>If the above items are correct, restart the workstation. If the problem remains, replace the Ethernet adapter.</p>
<p>RQ--XXXX Field appears and XXXX is a value greater than 000A</p>	<p>If a number greater than 000A appears, the file server is not present or is overloaded. Check that:</p> <ol style="list-style-type: none"> 1. The server is available and fully operational. 2. The address for the network adapter was properly added to the network software. 3. The adapter configuration (BNC/UTP) is set properly. <p>If the above items are correct and the problem remains, replace the Ethernet adapter.</p>
<p>SF--XXXX Field appears and XXXX is a value greater than 000A</p>	<p>If a number greater than 000A appears, the server was found, but is not responding. Check that:</p> <ol style="list-style-type: none"> 1. The server is available and fully operational. 2. The address for the network adapter was properly added to the network software. <p>If the above items are correct and the problem remains, replace the Ethernet adapter.</p>

12.0 Testing the Token-Ring Adapter

To test the Token-Ring adapter:

1. Insert the feature diskette in the diskette drive, then power-on the system. The Token-Ring Setup/Diagnostic program will automatically load.

Note: If the system is already on, type **A:F1DIAG** at the DOS command prompt then press **Enter** to load the Token-Ring Setup/Diagnostic program.

2. Select **Option 2. Test the Adapter** from the Main Menu, then press **Enter**. The adapter address will be displayed for a few seconds before the diagnostics are run.

The following is a list of possible error conditions that can occur when the workstation is attempting to connect to the network:

Problem	Action
<p>ET--00:00:02 Field stops incrementing</p>	<p>If the elapsed time indicator stops incrementing, check that:</p> <ol style="list-style-type: none"> 1. All cables and cords are properly attached to the workstation. 2. The file server is operational. 3. The correct data rate is set for the Token-Ring adapter. <p>If the above items are correct, restart the workstation. If the problem remains, replace the Token-Ring adapter. If the problem still remains, replace the system board.</p>
<p>CE--0085 Field appears</p>	<p>This field indicates that a data-rate configuration error was found during power-on self-test.</p> <p>To correct this error, go to "Token-Ring Data Rate Switch Settings" in topic 10.0 to match the data rate of the LAN segment.</p> <p>If the problem remains, replace the Token-Ring adapter.</p> <p>If the problem still remains, replace the system board.</p>
<p>BU--XXXX Field appears</p>	<p>This field indicates errors that occur during startup.</p> <p>If a code other than 0000 appears and the field is highlighted, an error has occurred. The following is a list of possible error codes.</p> <ul style="list-style-type: none"> <input type="checkbox"/> 0024-- The shared RAM diagnostic failed. Ensure that the RAM address assigned for the Token-Ring adapter does not conflict with other devices installed in the workstation. <input type="checkbox"/> All other error codes-- Replace the Token-Ring adapter. If the problem remains, replace the system board. <p>If the above items are correct, restart the workstation.</p> <p>If the problem remains, replace the Token-Ring adapter. If the problem still remains, replace the system board.</p>
<p>OP--0000 XX Field appears flashing or is</p>	<p>If a code other than 0000 appears:</p>

<p>highlighted</p>	<ul style="list-style-type: none"> □ If the code is 0011 or 002D and the field is flashing: <ol style="list-style-type: none"> 1. Ensure that all cables and cords are properly attached to the workstation and network-access point. 2. Ensure that the file server is available and fully operational. □ If the code is 002E and the field is highlighted, the adapter is configured for a different data rate than the LAN segment. <p>To correct this error, you must manually change the data rate for the network adapter. Refer to "Token-Ring Data Rate Switch Settings" in topic 10.0 to match the data rate of the LAN segment.</p> <p>If the above items are correct and the problem remains, replace the Token-Ring adapter. If the problem still remains, replace the system board.</p>
<p>RQ--XXXX Field appears and XXXX is a value greater than 10</p>	<p>A number greater than 10 indicates that the file server is not present or is overloaded.</p> <ol style="list-style-type: none"> 1. Ensure that the file server is available and fully operational. 2. Ensure that the address for the Token-Ring adapter installed in the workstation has been properly added to the network software. <p>If the above items are correct and the problem remains, replace the Token-Ring adapter. If the problem still remains, replace the system board.</p>
<p>SF--XXXX Field appears and XXXX is a value greater than 10</p>	<p>A number greater than 10 indicates that the file server has been found, but is not responding.</p> <ol style="list-style-type: none"> 1. Ensure that the file server is available and fully operational. 2. Ensure that the address for the Token-Ring adapter installed in the workstation has been properly added to the network software. <p>If the above items are correct and the problem remains, replace the Token-Ring adapter. If the problem still remains, replace the system board.</p>
<p>RS--XXXX Field appears</p>	<p>If this field appears in reverse video with a code other than 0000, a ring error was detected. The following is a list of possible error codes where X can be any number:</p> <ul style="list-style-type: none"> □ 2000-- The adapter has detected a soft-error condition. Restart the workstation. □ 04XX or 08XX-- Replace the Token-Ring adapter. If the problem remains, replace the system board. □ X1XX-- The Token-Ring adapter has been removed from the

	<p>ring. Ensure that the correct adapter address was added to the network software. If the above item is correct and the problem remains, replace the Token-Ring adapter. If the problem still remains, replace the system board.</p> <ul style="list-style-type: none"> □ 0080-- One of the error log counters has incremented past 256. Restart the workstation. □ 0040 or 0060-- If the workstation is the only system connected to the LAN, restart the workstation. If other workstations are connected to the LAN, run the diagnostic diskette (see "Testing the Token-Ring Adapter" in topic 12.0) and select "Ring Diagnostics" from the main menu. <p>If the problem remains, replace the Token-Ring adapter. If the problem still remains, replace the system board.</p> <ul style="list-style-type: none"> □ All other error codes-- run the diagnostic diskette (see "Testing the Token-Ring Adapter" in topic 12.0) and select "Ring Diagnostics" from the main menu. <p>If the problem remains, replace the Token-Ring adapter. If the problem still remains, replace the system board.</p>
<p>PC--4020 Field appears</p>	<p>This field indicates that the adapter is not functioning properly with the workstation. In most cases, the screen will freeze and this field will be highlighted because the adapter cannot continue. Restart the workstation.</p> <p>If the problem remains, replace the Token-Ring adapter. If the problem still remains, replace the system board.</p>
<p>AC--0040 0000 0000 Field appears</p>	<p>This field indicates that the adapter has detected an internal error. Restart the workstation.</p> <p>If the problem remains, replace the Token-Ring adapter. If the problem still remains, replace the system board.</p>
<p>AE--166 XX--0011 Field appears</p>	<p>This field indicates that the workstation contains two Token-Ring adapters. The primary adapter shown here (166) could not establish communication with the file server. The reason is indicated by the XX message and can be either BU or OP. The BU and OP were described previously on page 12.0.</p> <p>Restart the workstation.</p> <p>If the problem remains, replace the Token-Ring adapter. If the problem still remains, replace the system board.</p>

13.0 Symptom-to-FRU Index

The Symptom-to-FRU Index lists error symptoms and possible causes. The most likely cause is listed first. When servicing a system, always begin with "General Checkout" in topic 1.0. This index can also be used to help you decide which FRUs to have available when servicing a system.

If you are unable to correct the problem using this index, go to "Undetermined Problem" in topic 2.0.

Warning: Follow "General IBM Electro-Static Discharge (ESD) Instructions" in topic FRONT_2.1 before touching system boards, adapters, math coprocessors, memory module kits, diskette drives, or hard disk drives.

Notes:

1. If you have both an error message and an incorrect audio response, diagnose the error message first.
2. If you cannot run the advanced diagnostic tests but did receive a POST error code, diagnose the POST error message.
3. If you did not receive any error message, look for a description of your error symptoms in the first part of this index.
4. Check all power supply voltages before you replace the system board. (See "Power Supply Voltages" in topic 3.0.)
5. Check the hard disk drive jumper settings before you replace a hard disk drive. (See "Hard Disk Drive Jumper Settings" in topic 9.0.)

In the following index, an "X" in an error message can be any number.

Symptom/Error	FRU/Action
No beep during POST but system works correctly otherwise	System Board
No beep during POST	See "Undetermined Problem" in topic 2.0. System Board Memory Module Kit Any Adapter or Device Bus Adapter Power Cord Display Assembly
One long and two short beeps during POST	System Board
Continuous beep	System Board
Repeating short beeps	Keyboard (stuck key?) System Board Keyboard Cable
Changing or wrong colors	Display Assembly
Intensity or coloration varies from left to right of characters and color bars	Display Assembly System Board
Other display problems not listed above (including blank or illegible display)	See "Display" in topic 4.0 . System Board Display Assembly
Diskette drive in-use light remains on or does not light when drive is active	Diskette Drive System Board Diskette Drive Cable
Power-on indicator or hard disk drive in-use light not on but system works correctly otherwise	Display Assembly System Board
The "Insert a Diskette" icon or the "BASIC" screen appears with a known-good diagnostics diskette in first 3.5-inch diskette drive	Diskette Drive System Board Diskette Drive Cable Network Adapter
A nonsystem disk or disk	Diskette Drive

IBM PS/2 Model 25 SX HMR
Symptom-to-FRU Index

error-type message with a known-good diagnostic diskette	System Board Diskette Drive Cable
Incorrect memory size during POST	See "Memory" in topic 8.0. System Board
110 ?????	See Step 005 of "Memory" in topic 8.0. Memory Module Kit System Board
Printer problems	See "Printer" in topic 7.0.
Serial or parallel port device failure (system board port)	Device Self-Test OK? Device Cable System Board
Serial or parallel port device failure (adapter port)	Device Self-Test OK? Device Cable Alternate Adapter System Board Bus Adapter
XXXX ROM Error	Any Adapter
Some or all keys on the keyboard do not work.	Keyboard System Board Keyboard Cable
Real-Time Clock inaccurate	Clock Battery System Board
161	Run Auto Configuration. Clock Battery System Board
162 (and unable to run advanced diagnostics)	Check Power Supply Voltages. Diskette Drive System Board Diskette Drive Cable
162	Run Auto Configuration. Clock Battery System Board
163	Time and Date Set? Clock Battery System Board
164	Run Auto Configuration. See "Memory" in topic 8.0. System Board
199	See "Installed Devices List" in topic 5.0.
1XX (not listed above)	System Board
XXXXXX XXXXXB 230	Memory adapter address switches set wrong.
2XX or XXXXXX XXXX 2XX	See "Memory" in topic 8.0. Memory Module Kit System Board
305 (A defective keyboard, keyboard cable, or mouse can blow the system-board non-replaceable fuse. If you suspect one of these FRUs, replace it when you replace the system board.)	System Board Keyboard Keyboard Cable Mouse
3XX (not listed above)	Keyboard System Board Keyboard Cable
604 or 662	Wrong diskette drive type installed.

14.0 Parts

This section contains a graphic overview and a parts catalog for the Model 25 SX.

Subtopics

14.1 How To Use The Parts Catalog

14.2 Example of a Parts List

14.1 How To Use The 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

14.2 Example of a Parts List

Index	System Unit	
1	Cover	72X8501
2	Front Bezel/Logo (R)	72X8502
	Miscellaneous Hardware Kit (AR)	72X8580
	□ Knob Assembly, Hard Disk	
	Drive Support Structure	

PICTURE 7

16.0 Parts Catalog

Warning: Follow "General IBM Electro-Static Discharge (ESD) Instructions" in topic FRONT_2.1 before touching system boards, adapters, math coprocessors, memory module kits, diskette drives, or hard disk drives.

Index System Unit

1	Top Cover, Rear and Sides	00F2110	
2	Display Assembly		
	115/230 V, Northern Hemisphere		92F0692
3	Front Bezel	00F2111	
4	Blank Bezel	00F2117	
5	Diskette Drive Bezel	10G6898	
6	Bracket, Base, Rear	64F4100	
7	1.44MB 3.5-Inch Diskette Drive Assembly		64F0162
8	Base-to-Cover Retainer	00F2134	
9	Tilt Assembly	00F2105	
10	Base Frame Assembly	64F0218	
	Front Foot Assembly	00F2114	
11	System Board 16MHZ		
	(with 1MB soldered memory)	10G3713	
11	System Board 16MHZ		
	(with 4MB soldered memory)	04G1621	
	□ Bus Adapter	04G1631	
	□ 1MB Memory Module Kit (85ns)	90X8624	
	□ 2MB Memory Module Kit (70ns)	92F0102	
	□ 2MB Memory Module Kit (80ns)	92F0103	
	□ 2MB Memory Module Kit (85ns)	92F0104	
	□ 4MB Memory Module Kit (70ns)	92F0105	
	□ 4MB Memory Module Kit (80ns)	97F3337	
	□ 8MB Memory Module Kit (70ns)	64F3606	
	□ 8MB Memory Module Kit (80ns)	64F3607	
	□ Clock Battery	33F8354	
12	Bracket, Bus Adapter (2 parts)	96F7347	
	I/O Panel	10G3698	
	Ethernet Adapter	04G1620	
	Token-Ring Adapter	92F9119	
	Bracket, Center Rib	64F0221	
	Hard Disk Drive Bezel with Cover Lock		64F0185
	Front Cover Logo (R)	10G6899	
	Miscellaneous Parts Kit	00F2113	
	□ Screw (Qty 20)		
	□ C Clip, Tilt Assembly		
	□ Cover - Top Cover Screw		
	□ Cover - Expansion Slot		
	□ Retainer - Feature Card		
	□ Spring - Rear Tilt Leg		
	□ Foot Pad		

Internal Diskette Drive

1.44MB 3.5-Inch Diskette Drive Assembly		64F0162
Diskette Drive Cable	04G1632	
Diskette Drive Bezel	10G6898	

External Diskette Drive

360KB Drive (4869-001)	72X6759
360KB Drive (4869-501)	72X6768
Drive Adapter	72X6757
Cable (for 72X6757)	85F0076

Hard Disk Drive

40MB Hard Disk Drive Assembly	04G1630	
80MB Hard Disk Drive Assembly	92F0152	
Hard Disk Drive Power Cable	04G1618	
Hard Disk Drive Signal Cable	04G1633	
Hard Disk Drive Mounting Tray	96F7344	
Hard Disk Drive Bezel with Cover Lock		64F0185

Options and Adapters

3278/3279 Emulation Adapter	8665792
Game Control Adapter	8529151
SDLC Communications Adapter	1501205
Communications Adapter Cable	8529274
Serial/Parallel Adapter	8286147
Serial Adapter Cable	8286170
Serial Adapter Connector	8286194
Ethernet Adapter	04G1620
Token-Ring Adapter	16F0463
Token-Ring 16/4 Adapter	25F8884

Keyboard Cable and Mouse

Keyboard Cable	72X8537
Mouse	1383640
Mouse Ball and Pop-Off Retainer	33F8461
Mouse Ball and Twist-Off Retainer	33F8462

Enhanced Keyboard (101/102 Key)

Canadian French	1394800
Latin American Spanish	1391506
U.S. English	1393990
U.S. English (Fixed keytops)	1397660

Space-saving Keyboard (84/85 Key)

Canadian French	1396051
Latin American Spanish	1396052
U.S. English	1396050
U.S. English (Fixed keytops)	1397680

8513 Color Display (with Tilt/Swivel Stand)

110/120 V ac	68X3088
Tilt/Swivel Stand	68X3061

8514 Color Display (without Tilt/Swivel Stand)

110/120 V ac	75X5945
Tilt/Swivel Stand	75X5907

8515 Color Display (with Tilt/Swivel Stand)

110/120 V ac (US and Canada)	38F3911
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Power Cords

Power Cord, Displays, for U.S.	68X3071
Power Cord, System Unit, for U.S.	62X1045

Tools and Miscellaneous

Tri-Connector Wrap Plug	72X8546
Data Migration Facility	6181936
Tool (For Key Cap Removal)	6110464
Shipping Carton (includes cushions)	00F2115
ESD Kit	6428316
ESD Wrist Band	6405959

Supplemental Parts:

