Dock II (3546)

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General Checkout

The IBM* ThinkPad* Dock II (hereinafter referred to as the *Dock II*) expands the capability of the IBM ThinkPad 360, 750, and 755 notebooks (hereinafter referred to as the *computer*), using the IBM AT* Bus architecture.

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.

Warning

- Drives in the computer that you are servicing might have been rearranged or the drive startup sequence might have been altered. Be extremely careful during write operations such as copying, saving, or formatting. Data or programs can be written over if you select an incorrect drive.
- Only certified and trained personnel should service the computer.
- The parts exchange form or parts return form attached to the FRU to be returned must describe the following:
  - Name and phone number of servicer (in print).
  - Date serviced.
  - Date failed.
  - Date purchased.
  - Failure symptoms, error codes, and beep symptoms.
  - Procedure index and page number on which the symptom or error code is described.
  - The failing FRU name and part number.
  - Machine type, model number, and serial number.
  - Customer name and address

Checkout Guide: During the warranty period, the customer may be responsible for repair costs if the computer damage was caused by misuse, accident, modification, unsuitable physical or operating environment, or improper maintenance by the customer.

The following list provides some common items that are not covered under warranty and some symptoms that may indicate the system was subjected to stresses beyond normal use.

The following are not covered under warranty:

- LCD panel cracked by applying excessive force or being dropped
- Scratched (cosmetic) parts
- Cracked or broken plastic parts, latches, or connectors caused by excessive force
- Damage caused by liquid spilled into the system
- Damage caused by improperly inserting a PCMCIA card or installation of a incompatible card
- Damage due to foreign material in the FDD or FDD bay

If the following symptoms are present, they may indicate damage caused by non-warranted activity:

- Missing parts may be a symptom of unauthorized service or modification.
- HDD spindles become noisy if subjected to high levels of force or being dropped
- I9990303 errors may be caused by exposure to extreme magnetic fields

Overall Procedure

1. Check that the computer is correctly docked to Dock II.
2. If possible, make sure that there are no hardware setting conflicts, such as in interrupt levels, memory addresses, DMA channels, and I/O addresses.
3. Check that the SCSI ID is set correctly.
4. Test and correct any computer problem before you test it with Dock II. Use the computer documentation to resolve any computer problems.
5. Test the computer with the external keyboard, external display, mouse, and parallel and serial device connectors. (Use the keyboard/mouse connector to test the external keyboard and mouse.) If no problems are found, connect the external keyboard, mouse, parallel and serial devices to Dock II, then connect Dock II to the computer and test it.
6. If external devices are attached to Dock II, such as an audio amplifier, check the device by referring to the manual shipped with the device.
7. If the user did not bring the computer with Dock II when service is needed, use a computer that works correctly with Dock II.

How to Diagnose Combined FRUs: If an adapter or device consists of more than one FRU, an error code can be caused by any of the FRUs. Before replacing the adapter or device, remove the FRUs, one by one, to see if the symptom changes.

(CONTINUED)

How to Use Error Messages: The error messages caused by Dock II, the attached computer, and the attached devices are displayed on the LCD of the attached computer or on the external display. Use the error codes displayed on the screen to diagnose failures. If more than one error code is displayed, begin the diagnosis with the first error code. The cause of the first error code can result in false error codes being displayed. If the error code is displayed, see the "Symptom-to-FRU Index" on page 416.

Important: When the Problem Determination Procedure in the operation manual that is supplied with the adapter or device says "Have the system unit serviced", this means the computer and Dock II.

001

– Turn off the computer and all external devices.
– Remove the computer from Dock II.
– Connect the external keyboard, mouse, parallel and serial devices to the computer, if used. (Use the keyboard/mouse connector for testing the external keyboard and mouse.)
– Diagnose all computer problems first (see the computer *Hardware Maintenance Service* manual).

DID THE TEST COMPLETE WITHOUT ANY ERROR?

Yes **No**

002

Have the computer serviced.

003

– Install the computer on Dock II. Make sure that the computer is firmly connected.
– Check all cables and power cords.
– Check the fan in the power supply in Dock II and make sure it is working correctly.

Notes:

1. The mouse or some other pointing device do not work if they are connected to the keyboard/numeric keypad connector.
2. The mouse or some other pointing device do not work if they are connected to the mouse connector on the numeric keypad that is connected to Dock II.
3. The computer keyboard does not work when an external keyboard is connected to Dock II.

– Reinstall all external devices.
– Turn on all external devices.

(Step **003** continues)

003 (continued)

– Press and hold **F1**, then turn on the computer. (Hold **F1** until the **Easy-Setup** screen or an error message appears.) See “How To Run the Diagnostics” on page 405.

Note: If a warning beep sounds for the correct operation, go to the “Symptom-to-FRU Index” on page 416.

– Write down all post error codes that are displayed. (Press the **Pause** key when an error code appears to keep the screen from scrolling. Press **F1** to continue.)

If the POST stops and you cannot continue, go to “Symptom-to-FRU Index” on page 416.

ARE THERE ANY EXTERNAL DEVICES ATTACHED TO THE DOCK II?

Yes **No**

004

Go to Step 007.

005

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

Yes **No**

006

See the manual for the failing device.

007

DID YOU RECEIVE A POST ERROR CODE?

Yes **No**

008

If you cannot check the error code:

– Press and hold **F1**, then turn on the computer. (Hold **F1** until the **Easy-Setup** screen or an error message appears.)

– Write down all post error codes that are displayed. (Press the **Pause** key when an error code appears to keep the screen from scrolling. Press **F1** to continue.)

To run system checkout, or if you suspect another problem, go to Step 010.

009

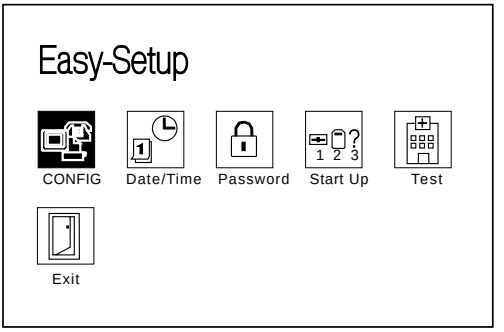
Go to “Symptom-to-FRU Index” on page 416.

010

(Step **010** continues)

(CONTINUED)

010 (continued)
DID THE EASY-SETUP SCREEN APPEAR?



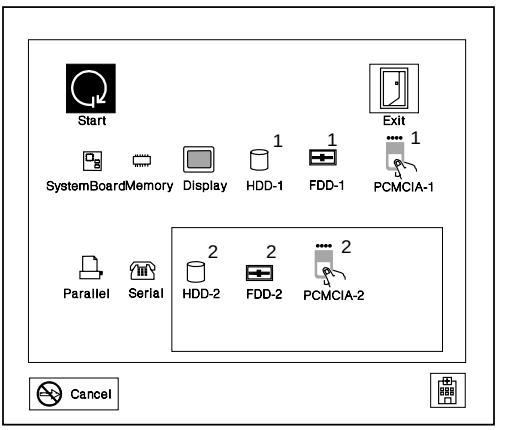
Yes **No**

011

The system may have hung during the running of the POST. Note the symptoms and go to "Symptom-to-FRU Index" on page 416.

012

– Select **Test** and press **Enter**.
DID THE DIAGNOSTIC SCREEN APPEAR?



Yes **No**

013

– If the keyboard does not work, go to "External Keyboard" on page 404.
– Otherwise, go to "Symptom-to-FRU Index" on page 416.

014

(Step **014** continues)

014 (continued)
IS THE CONFIGURATION THE SAME AS THE INSTALLED DEVICES?

Yes **No**

015

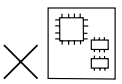
– Go to "Checking the Installed Devices" on page 397.

016

– Select **Start** and press **Enter**.
Diagnostic tests will run on all available devices.

If the test finds a device error, the error is displayed with an X beside the device name.

For example:



SystemBoard
DEV 001
ERR 02
FRU 0010

DEV: Device ID
ERR: Error Description Code
FRU: FRU Code

Note: If the test stops or hangs during the test, replace the last device that was tested.

DID THE TESTS FIND A DEVICE ERROR?

Yes **No**

017

The error was not detected by the basic test. Go to Step 019.

018

– Note the error codes and go to "FRU Codes" on page 419 and replace the appropriate FRUs.

019

– Go to the advanced diagnostic screen by pressing **Ctrl**+**A**, and run the following tests.

- Diskette drive test (use a blank diskette).
- Serial port test (with the wrap plug).

  Note: Install the wrap plug on the serial port of Dock II.
- Parallel port test (with the wrap plug).

  Note: Install the wrap plug on the parallel port of Dock II.
- PCMCIA-2 test (with the PC test card).

  Note: Install the PC Test Cards into the PCMCIA slot of Dock II.

(Step **019** continues)

(CONTINUED)

019 (continued)

- Keyboard test (see “How to Run the Keyboard Test” on page 407).

DID THE ADVANCED DIAGNOSTICS FIND AN ERROR?

Yes **No**

020

The problem was not detected by the diagnostics.
Check that the cables and connectors are not damaged.
If a SCSI device is not installed, start at Step 3.
If a SCSI device is installed, do the following:

1. Check that the total number of the attached SCSI devices is less than eight.
2. Check that the SCSI terminator is correctly installed.

   If the problems still remain, run the SCSI test. (See “Running Diagnostics” on page 410.)
3. Reconnect all adapters, drives, and devices, then test the system several times. A **Loop Test** option is available for running all the tests. (See “How to Run the Loop Test” on page 407.)

   After stopping the loop test, check that the error log appears in the error list. (See “Error Log” on page 409.)
   If no errors were detected, go to “Undetermined Problems” on page 421 and use the user reported symptom.
   If any errors are detected, go to “Numeric Error Codes” on page 418.

021

Note the error code and go to “FRU Codes” on page 419 and replace the appropriate FRUs. If the problem remains after all repair actions are taken, go to “Undetermined Problems” on page 421.

Checking the Installed Devices

The HDD-1 or FDD-1 represents the **first** drive in the system configuration, respectively. Similarly, the HDD-2 or FDD-2 represents the **second** drive, usually attached through a Dock II.

Notes:

1. Neither the Dock II nor the adapters and SCSI devices installed in the Dock II appear as icons on the screen.
2. HDD-1 and HDD-2 icons are for the 2.5-inch ThinkPad hard disk drive.

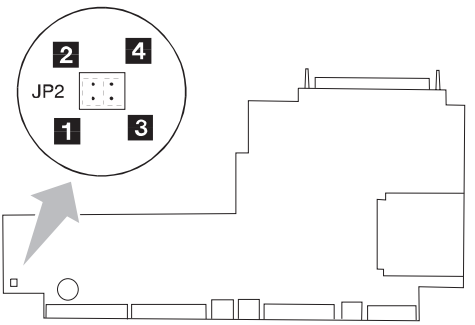
If the devices are installed, but the icon appears in a gray shade rather than a dark shade on the basic diagnostic screen, it means that the devices are defective. Turn off the computer and make sure that the devices are correctly connected. If the symptom still remains after the computer is turned on, replace the devices or the main card of Dock II.

Power Supply

If the power-on indicator is not on and the power supply fan is not turning, check the power cord for continuity and correct installation.

If the power cord is not the problem, either the power supply is defective, or another component is defective causing the power supply to cut off. To verify that the power supply is operating correctly, do the following:

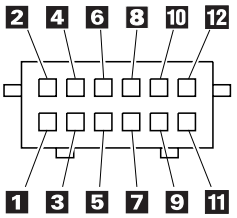
1. Turn off the computer and disconnect the Dock II power cord.
2. Remove all internal and external devices, and the computer from the Dock II.
3. Remove the power supply connector CN26 from the main card (refer to “Main Card” on page 453) and CN56 from the riser card (refer to “Riser Card” on page 455).
4. Remove the SCSI power supply connector from the SCSI device.
5. Install jumpers between pins 1 and 2, and pins 3 and 4 of JP2 on the main card.



6. Connect the Dock II power cord.
7. Check the power supply voltages on the CN26, CN56, and SCSI connectors by referring to the respective voltage tables. Then, check that the fan is turning. If the voltage is not correct or the fan is not turning, replace the power supply.
8. Connect the Dock II power cord.

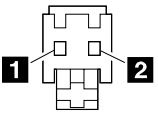
If any of the voltages are not correct, replace the power supply. If replacing the power supply does not correct the problem, then replace the main card.

Power Supply Connector CN25



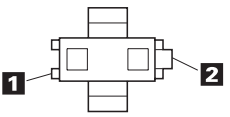
Pin	Signal	V dc Min.	V dc Max.
1	+5 volts	+4.75	+5.25
2	Ground	–	–
3	+12 volts	+11.4	+12.6
4	Ground	–	–
5	Sub+5 volts	+4.75	+5.25
6	System On	–	–
7	Power On	–	–
8	Mode Control	–	–
9	Security	–	–
10	Ground	–	–
11	Sub+12 volts	+11.4	+12.6
12	NC	–	–

Power Supply Connector CN26



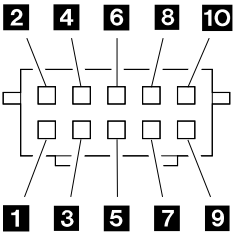
Pin	Signal	V dc Min.	V dc Max.
1	CVCC	+19	+21
2	Ground	–	–

Power Supply Connector-Reserved



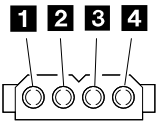
Pin	Signal	V dc Min.	V dc Max.
1	CVCC	+19	+21
2	Ground	–	–

Power Supply Connector CN56



Pin	Signal	V dc Min.	V dc Max.
1, 2, 3	+5 volts	+4.75	+5.25
4, 5	Ground	–	–
6	+12 volts	+11.4	+12.6
7	Ground	–	–
8	–12 volts	–11.4	–13.2
9	–5 volts	–4.53	–5.5
10	Ground	–	–

SCSI Power Supply Connector



Pin	Signal	V dc Min.	V dc Max.
1	+12 volts	+11.46	+12.6
2, 3	Ground	–	–
4	+5 volts	+4.758	+5.25

Printer

Test the printer by connecting it to the computer before testing it on Dock II.

1. Make sure the printer is correctly connected and the power is turned 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, connect a wrap plug on the parallel connector on the rear of Dock II and run the advanced diagnostic tests to determine the failing FRU.

If the advanced diagnostic tests (with the wrap plug connected) did not detect a failure, replace the printer cable.

If the problem is not corrected, do one of the following:

- If the printer is attached to the parallel connector of Dock II, replace the main card of Dock II.
- If the printer is attached to the parallel connector on the adapter, replace the FRUs in the following order one at a time until the problem is corrected:

  Note: If the replaced parts did not resolve the problem, put the original parts back in the Dock II. Do not replace non-defective parts.

  1. Adapter
  2. Main card of Dock II

External Display

If the screen is rolling, replace the external display.
If the problem is not corrected, replace FRUs in the following order one at a time until the problem is corrected:

Note: If the replaced parts did not resolve the problem, put the original parts back in the Dock II. Do not replace non-defective parts.

- If the external display is attached to Dock II:
  - Main card of Dock II
- If the external display is attached to the display adapter:
  1. Display adapter
  2. Main card of Dock II
  3. Riser card

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

1. Turn off Dock II and the external display.
2. Disconnect the external display signal cable from Dock II.
3. Turn on the external display.
4. Turn the contrast control to its maximum position.
5. Turn the brightness control to its center detent position.

Check for the following conditions:

- The screen should be white or light gray, with a black margin as described below:
  - 2–20 mm (0.08–0.79 in.) wide on one or both sides
  - 2–50 mm (0.08–1.97 in.) wide on the top, bottom, or both sides
  - For other test patterns, see the appropriate display manual.
- The screen contrast and brightness controls should vary the intensity of the screen.

If the external display does not meet these specifications, replace the external display.

If the external display meets these specifications, replace FRUs in the following order one at a time until the problem is corrected.

Note: If the replaced parts did not resolve the problem, put the original parts back in the Dock II. Do not replace non-defective parts.

If the external display is attached to Dock II:

1. Main card of Dock II
2. External display

If the external display is attached to the display adapter:

1. Display adapter
2. Main card of Dock II
3. Riser card
4. External display

External Keyboard

Notes

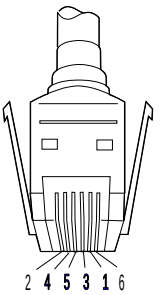
If a mouse or other pointing device is attached, remove it and see if the error symptom goes away. If the symptom goes away, the mouse or other pointing device is defective.

The computer keyboard does not work when an external keyboard is connected.

001

– Turn off the computer.
– Disconnect the keyboard cable from the external keyboard.
– Turn on the computer and check the keyboard cable connector for the following voltages. All voltages have a ±5% voltage tolerance.

Pin	Voltage (V dc)
1	+5.0
2	Not Used
3	Ground
4	+5.0
5	+5.0
6	Not Used



ARE ALL VOLTAGES CORRECT?

Yes **No**

002

Replacing the following FRUs one at a time until the problem is corrected.

Note: If the replaced parts did not resolve the problem, put the original parts back in the Dock II. Do not replace non-defective parts.

1. Keyboard cable
2. Main card of Dock II

003

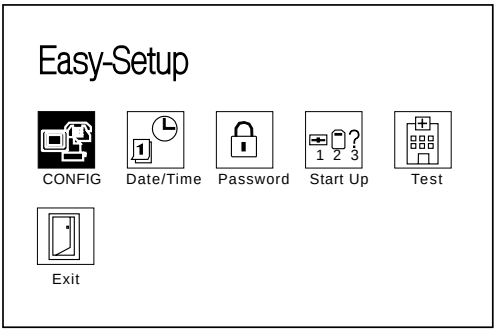
Replace the external keyboard.

How To Run the Diagnostics

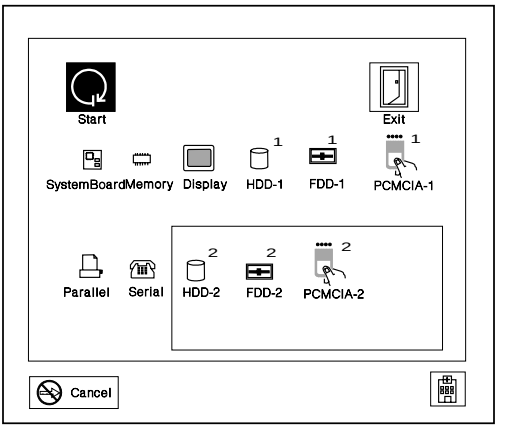
Do the following to run the diagnostic tests.

Either the TrackPoint II or the cursor move keys can be used to interact with the tests. The Enter key works the same as selecting the OK icon to reply OK.

1. Press and hold **F1**, then turn on the computer. Hold **F1** until the **Easy-Setup** screen appears.

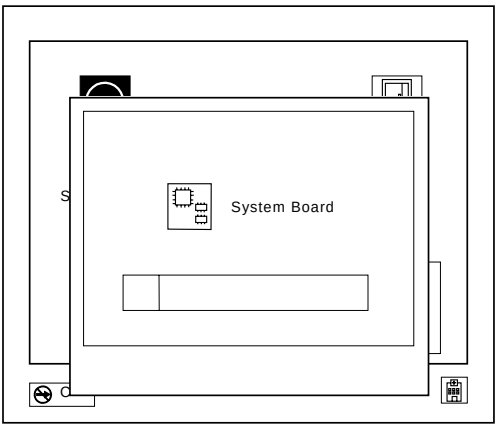


2. Select **Test** and press **Enter**. The basic diagnostic screen appears.



3. Select a device and press **Enter** to run the test.

4. The test progress screen appears.

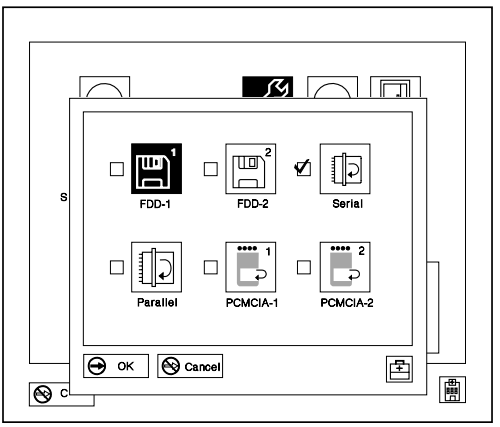


5. **OK** appears when the test ends without any errors.

Advanced Diagnostic Tests

1. Go to the advanced diagnostic screen by pressing **Ctrl**+**A** on the basic diagnostic screen.
2. Select **Tool** to install the tools.
3. Select a device, press the **Spacebar**, and install the tool. Multiple devices can be selected by repeating this step.

   A √ mark appears for the selected device.



4. Select **OK** and press **Enter** if the selection is OK.
5. Select a device and press **Enter** to start the tests.

How to Run All Tests: In the advanced diagnostic screen, select **Test All** to test all devices.

How to Run the Loop Test

1. Go to the advanced diagnostic screen by pressing **Ctrl**+**A** on the basic diagnostic screen.
2. Select the **Looptest** icon and press **Enter** or click the click button.
3. Select a device and press the **Spacebar**. A √ mark appears for the selected device.
4. If the selection is OK, select **OK** and press **Enter** to start the loop test.
5. To exit the loop test, press and hold **Ctrl**+**Pause** until the interrupt is accepted by the test program. A beep sounds when the interrupt is accepted. The test loop stops at the end of the current test.

How to Run the Keyboard Test: Use the following procedure to run the keyboard key test.

1. Turn off the computer.
2. Remove the external keyboard, if one is attached.
3. Press and hold **F1** key, then turn on the computer. Hold **F1** until the **Easy-Setup** screen appears.
4. Select **Test** and press **Enter**. The basic diagnostic screen appears.
5. Press **Ctrl**+**A** to go to advanced diagnostic screen.
6. Press **Ctrl**+**K** (a keyboard graphic appears on the screen).
7. By pressing a key, the mark appears or disappears on the corresponding key position on the screen. Repeat this step for any keys that need to be tested.
8. To exit the test, press **Esc** or select the cancel icon.

How to Run the Audio Test: Use the following procedure to run the audio tests.

1. Turn off the computer.
2. Insert the maintenance diskette into diskette drive **A** and turn on power.
3. Select the Audio Diagnostics from the main menu.
4. Select **Tests** from the menu bar and press **Enter**.
5. Select **All tests** from the pull-down menu and press **Enter**.

   Run options are set to test once and stop on error as defaults. Other options can be selected by the pull-down menu of **Setting-up**.
6. Follow the instructions that appear on the screen to proceed with the tests.
7. If the tests end without detecting any error, the “All tests passed OK” message appears.
8. If an error is detected, the FRU code and error description message appear. Go to “FRU Codes” on page 419 and replace the FRU.

9. To exit the test screen, press **Esc**.

   Notes:

   a. If an instruction to plug the external loop cable appears, connect it between the microphone/line jack of the computer and the headphone jack of Dock II.

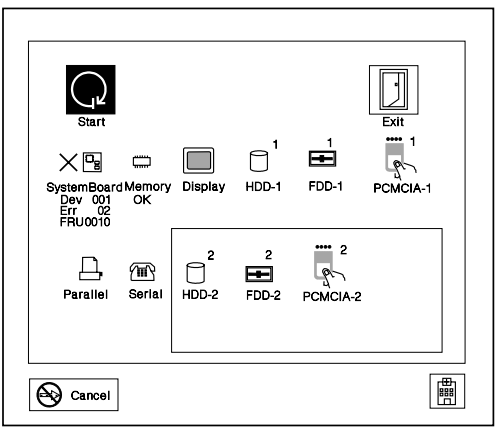
   b. If an instruction to plug the headphone appears, connect it to the headphone jack of Dock II.

   c. **Volume Control Test** does not work when the computer is docked to Dock II.

PC Test Card LED: The green LED on the PC test card lights when the PCMCIA test is running. If the LED does not go on, check that the card is installed correctly by reseating the card. If it still does not light after reseating, try using another slot for the test. If the LED still does not go on and the test fails, replace the FRU shown in the diagnostic error code.

Diagnostic Error Indications: If an error is detected, the following appears:

- Large **X** on the left-side of the device icon.
- Device ID (three digits).
- Error code (two digits).
- FRU code (four digits).



The FRU code represents two FRUs. The leftmost two digits indicates the higher priority of replacement.

The device ID and error codes are used to indicate the detail portion of the FRU which caused the error.

Errors during the POST: If the POST detects an error, a three- to eight-digit error code is displayed.

Memory Errors: If the POST detects a memory error in the first 640KB of system memory, all of the first bank memory is de-allocated and the test continues with the second 640KB of the second bank memory. If the total amount of error free memory becomes less than 2MB, a 2XX POST error occurs and the system stops. All of the remaining memory is used as system memory. When the POST memory test has completed, the usable memory size is compared with the configuration data and if a mismatch is detected, a 2XX error code occurs. The user can continue with system operation by pressing F1 and call for service at a later time.

The memory sizes that are de-allocated because of the POST process is kept by the hibernation or suspend functions. To test this memory, it must be re-configured as part of the original memory size. The memory re-configuring is done by turning power off and on.

De-allocation support is done only by the POST for memory errors. All unrecoverable memory errors that occur during normal operation cause an interrupt to the operating system.

Error Log: Diagnostic errors are printed on the printer that is attached to parallel port when the error is detected. The error is also logged in the system memory.

Use the following procedure to display the errors.

1. End the test, if it is running.
2. Press **Ctrl**+**A** to select the advanced diagnostic mode.
3. Press **Ctrl**+**E**.
4. The error log appears.
5. To exit the screen, select the cancel icon or press **Esc**.

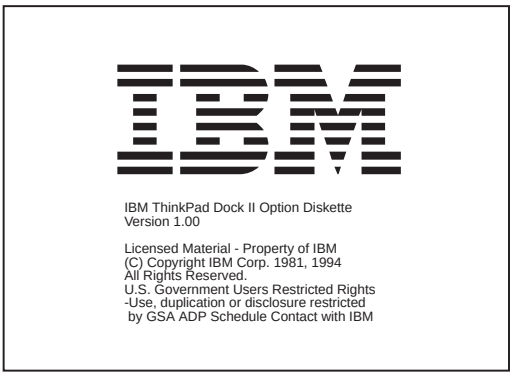
The error log is not saved when system power is turned off.

Running Diagnostics

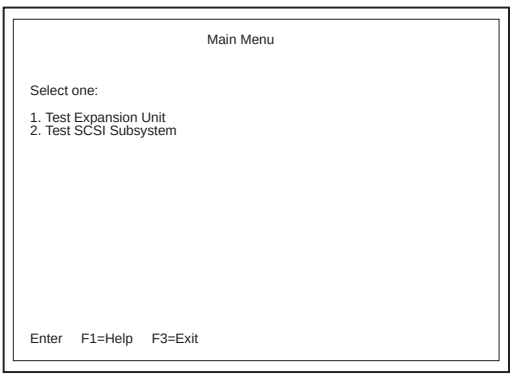
The Dock II Options Diskette helps you troubleshoot expansion unit, SCSI adapter, and SCSI device problems through a series of menus.

Run the diagnostics after you have completed the installation of your Dock II and SCSI devices to verify that these devices work correctly. Do the following:

1. Turn off the computer, the Dock II, and external SCSI devices.
2. Insert the Option Diskette into drive A.
3. Turn on all attached external SCSI devices, the computer, then the Dock II.
4. The **Logo Screen** appears.



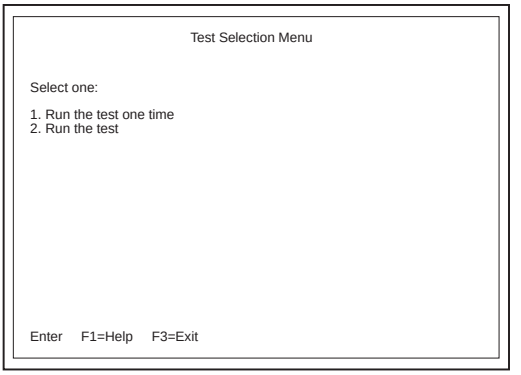
5. After a few seconds the **Main Menu** appears.



6. Select a device for testing and go to the respective section.

Testing the Expansion Unit

1. The **Test Selection Menu** appears when you select **Test Expansion Unit** on the **Main Menu**.

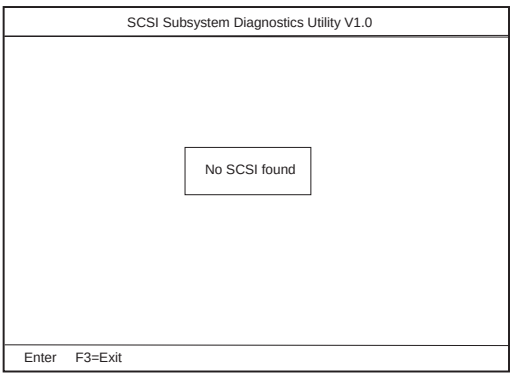


2. Select an item on the screen and follow the instructions that appear on the screen.

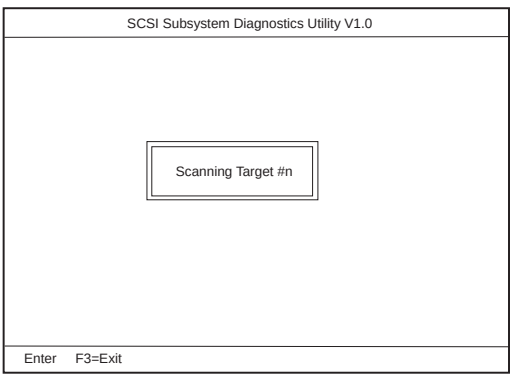
Testing the SCSI Subsystem

Note: If a SCSI adapter is installed in an ISA slot, remove it before running the SCSI diagnostic program.

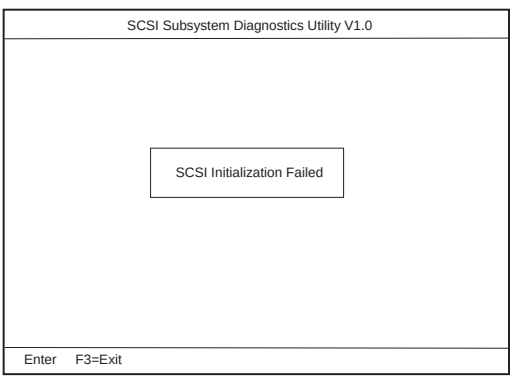
1. When you select **Test SCSI Subsystem** on the **Main Menu**, the diagnostics program checks the system configuration for SCSI devices and displays the following if no SCSI controller is found.



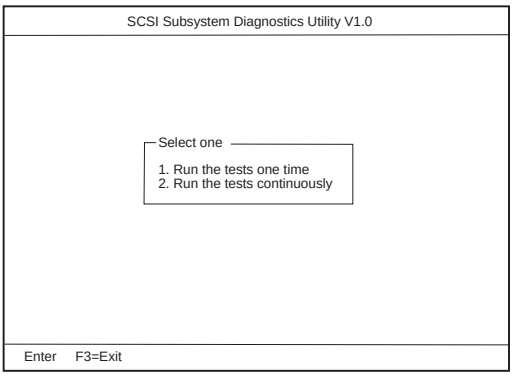
   If a SCSI controller is found, the computer goes on to initialize the SCSI devices and displays the following.



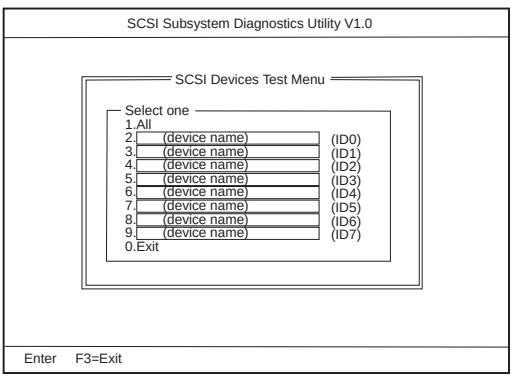
2. If the initialization fails, the following screen appears.



3. If the initialization ends successfully, the following screen appears. Select an item.



4. The **SCSI Devices Test Menu** appears. Select one of the devices.

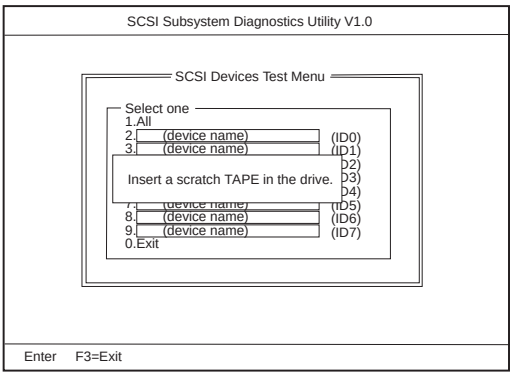


The device name may be any of the following:

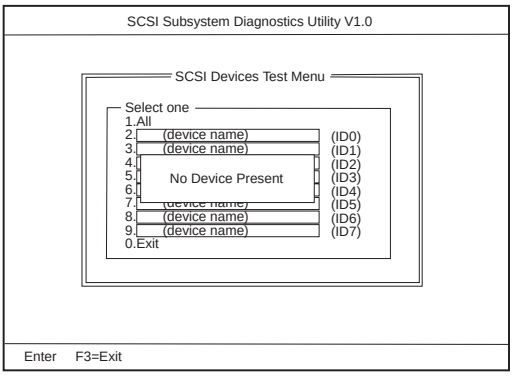
- SCSI Hard Disk
- SCSI Tape Drive
- SCSI CD-ROM
- SCSI Optical Drive
- or No Device

The SCSI controller of Dock II appears as ID7 on the screen.

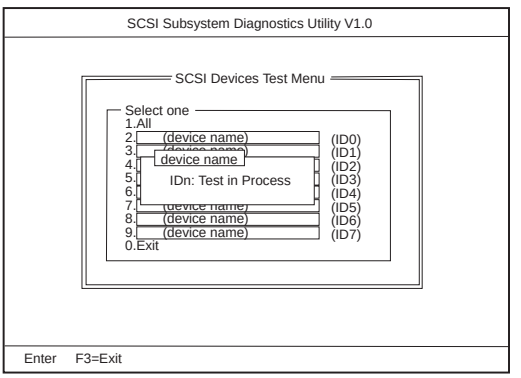
5. If a SCSI device exists and a test media is required to test the SCSI device, the following pop-up menu appears (shows the case of a SCSI tape drive).



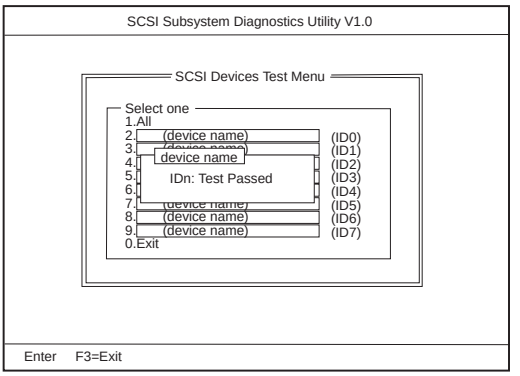
6. Insert the requested media and wait for approximately 30 seconds until the media is loaded.
7. Press any key. If no SCSI devices are found, a pop-up menu appears.



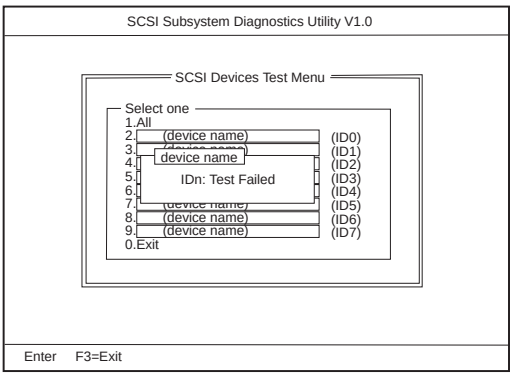
8. The test begins and the following pop-up menu appears.



9. If the test is successful, the following appears.



10. If the test is unsuccessful, the following appears.



Symptom-to-FRU Index

The Symptom-to-FRU Index lists error symptoms and possible causes. The most likely cause is listed first.

Note: Replace the FRUs one at a time in the sequence shown in the FRUs of the Dock II Sequence of Action column. If a replaced part did not resolve the problem, put the original part back in the Dock II. Do not replace non-defective parts.

Always begin with "General Checkout" on page 390. This index also can be used to help you decide which FRUs to have available when servicing the Dock II.

Numeric error codes show the errors detected in the POST or system operation. **X**, when included in the error code, can be any number.

FRU codes are used for errors detected by diagnostic tests.

If no error codes are available, use narrative symptoms.

If the symptom is not listed or you cannot correct the problem using this index, go to "Undetermined Problems" on page 421.

If you cannot correct the problem using this index, go to "Undetermined Problems" on page 421.

IMPORTANT:

1. Before replacing any SCSI device, verify that there are no duplicate SCSI ID settings.
2. Make sure that there are no conflicts of hardware settings, such as, interrupt level, memory address, DMA channel, and I/O address.
3. If you have both an error message and an incorrect audio response, diagnose the error message first.
4. If you cannot run the advanced diagnostic tests, but did receive a POST error message, diagnose the POST error message.
5. If you did not receive an error message, look for a description of your error symptoms in the first part of this index.
6. Check all power supply voltages before you replace the main card, riser card, and audio card of the Dock II. (See "Power Supply" on page 398.)

Miscellaneous Symptoms

Symptom/Error	FRU/Action
Program-load error during remote IPL from the file servicer.	**Network Adapter**
External display screen changes colors.	**Go to "External Display" on page 402.**
One or more keys do not work on the external keyboard, but the Dock II is otherwise functional.	**Go to "External Keyboard" on page 404.**
Computer does not work, the power-on indicator does not turn on, but the fan runs.	**See "Undetermined Problems" on page 421.**
Power-good light does not turn on, fan does not run, and the computer is not functional.	**See "Undetermined Problems" on page 421.**
Although the computer is turned off, the fan of the Dock II power supply is running.	**The fan is working correctly. To stop the fan, set the key lock to the external left position.**
Computer is functional and the fan runs, but the power on indicator does not turn on.	1. **LCD Circuit Board Group** 2. Riser card 3. Go to "Power Supply" on page 398.
Intermittent failures.	**Do the loop test. (See "How to Run the Loop Test" on page 407.)**
The power of Dock II cannot be turned off.	1. **Riser card** 2. Main card
LCD (Dock II) for the hard disk drive stays on.	1. **2.5-inch hard disk drive** 2. HDD installation kit
LCD (Dock II) for the hard disk drive is not working, but the Dock II is functional.	1. **Check the LCD Circuit Board Group** 2. LCD Circuit Board Group 3. Main card 4. Riser card
Beep sounds continuously.	1. **Before replacing any devices, check that the release/lock lever is opened.** 2. Security feature group 3. Main card

Symptom/Error	FRU/Action
The HDD-2 is not recognized and no error codes appear on the screen. (The password of the HDD-2 is still set.)	1. **Remove the hard disk password for the ThinkPad hard disk as follows:** a. Install the second hard disk drive on the computer. b. Remove the hard disk password.
Note: The HDD-2 icon indicates that the 2.5-inch ThinkPad hard disk drive is installed in Dock II.	

Numeric Error Codes

Symptom/Error	FRU/Action
10X, 11X	1. **Adapter in slot (if used)** 2. Riser card 3. Main card
195 (The computer was docked to the Dock II while in hibernation mode.)	1. **Do the following steps.** **a. Turn off and undock the system.** **b. Turn on and shut down the system.** **c. Turn off and dock the system.**
1XX	**See the Symptom-to-FRU Index for the computer you are servicing. If the problem remains, go to "Undetermined Problems" on page 421.**
2XX	1. **See the Symptom-to-FRU Index for the computer you are servicing.** **2. Main card** **3. IC DRAM card or DIMM card**
3XX	**See "External Keyboard" on page 404.**

Symptom/Error	FRU/Action
6XX	1. **Before changing any devices, run the diagnostic test. (See the "How To Run the Diagnostics" on page 405.)** 2. FDD external attachment kit 3. Diskette drive assembly 4. Riser card
11XX, 12XX	1. **Serial devices** 2. Communication cable 3. Riser card
17XX	1. **Hard disk drive (2.5-inch ThinkPad hard disk drive)** 2. HDD installation kit 3. Main card
24XX	1. **Main card** 2. Riser card
860X	1. **Mouse** 2. External keyboard 3. Riser card
I9990301, I9990302 I9990305	**See the Hardware Maintenance Manual of the computer**.
Not shown above	1. **See the** *Hardware Maintenance Manual* **of the computer.** 2. See "Undetermined Problems" on page 421.

FRU Codes

If an error is detected by the diagnostic tests, a four-digit FRU code is displayed. Two suspected FRU codes are shown. The two leftmost digits indicate the first FRU code. The following table shows the FRU codes and their FRUs. The most probable failing FRU is shown first.

Note: Replace the FRUs one at a time in the sequence shown in the FRUs of the Dock II column. If a replaced part did not resolve the problem, put the original part back in the Dock II. Do not replace non-defective parts.

Always start with the first FRU then continue down the list. The two rightmost digits indicate the net FRU code. Do these FRU replacements in the same way as with the first FRU codes.

Undock the computer from the Dock II to check that the FRU code appears with the computer only. If a FRU code appears, replace the FRU indicated in the

Symptom-to-FRU Index for the computer you are servicing. Then dock the computer on the Dock II to check if any FRU codes appear. Use the table below.

FRU Code	FRU/Action
10	1. **Main card** 2. Riser card
15	1. **Audio card** 2. Riser card
30	Reserved
32	1. **See "External Keyboard" on page 404.** 2. Main card 3. Riser card
33	1. **External mouse** 2. Main card 3. Riser card
45	**See "External Display" on page 402.**
51	1. **Diskette drive (FDD-2)** 2. Main card 3. Riser card
56	1. **Diskette drive (FDD-2)** 2. Main card 3. Riser card
61	1. **Hard disk drive (HDD-2)** 2. Main card 3. HDD installation kit
70	**Main card**
80	Reserved
90	Reserved

If the problem remains after the FRUs are replaced, go to "Undetermined Problems" on page 421.

Undetermined Problems

Use the following procedure when the diagnostic tests do not identify the failing adapter or device.

Check that all cables, wires, and connectors are connected so that they do not cause a short circuit. If any problems are found, reconnect or replace them.

Check the power supply for correct operation (see “Power Supply” on page 398). If the power supply is operating correctly, return here and continue with the following procedures.

1. Turn off the computer.
2. Remove or disconnect one at a time the following adapters or devices from Dock II. (Do not isolate adapters or devices that are known to be good.)
   a. Non-IBM devices.
   b. A modem, printer, mouse, external keyboard, external display, external diskette drive, numeric keypad, or other external devices.
   c. Any adapter.

      Note: Removing an adapter or device may cause configuration errors. Ignore error code 174.

   d. SCSI device.
   e. Hard disk drive.
3. Turn on the system and check if the problem has changed.
4. If the symptom remains, repeat Steps 1 through 3 until you find the failing adapter or device, or until all adapters or devices have been removed.
5. If all adapters or devices have been removed and the problem remains, replace the following Dock II FRUs one at a time.

   Note: If a replaced part did not resolve the problem, put the original part back in the Dock II. Do not replace non-defective parts.

   a. Riser card
   b. Main card
   c. Dock II audio card

If the problem goes away when you remove an adapter, but replacing the adapter does not correct the problem, replace the main card of Dock II.

Product Overview

The features of the Dock II are:

- Security
  - Security lock
  - Security hole
- Main Card
  - SCSI Subsystem
    - SCSI devices
    - Terminators
  - Audio Jacks
    - Stereo speakers
    - Headphone jack
    - Speaker-in jacks
    - Audio-out jacks
  - PCMCIA slots
  - External display connector
  - Docking connector
  - External SCSI connector
  - FDD connector
  - Parallel connector
  - Serial connector
  - Keyboard/numeric keypad connector
  - Mouse/pointing device connector
- Riser Card
  - AT slot
  - Storage device connectors
    - Internal hard disk connector
    - Internal SCSI device connector
- Power Supply

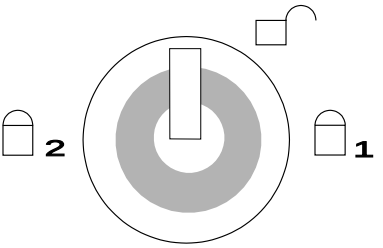
Security

The Dock II has two features to secure it from being used by unauthorized persons.

Security Lock: The security lock is located on the left panel of the Dock II and can be unlocked with the security lock key. This security lock provides the following protection:

- **Cover Lock** prevents unauthorized access to the devices and options inside the Dock II.
- **Computer Lock** protects from unauthorized removal of the computer.
- **Key Controlled Power** prevents unauthorized use of the Dock II or unauthorized access to the data stored on the internal SCSI device through the external SCSI connector by securing the power.

The key lock has three positions.



Icon	Cover Lock	Computer Lock	Power Secured	Key
1	Lock	Lock	No	Removable
	Unlock	Unlock	No	Not Removable
2	Lock	Lock	Yes	Removable

Security Hole: A hole for the Kensington** lock is located at the rear of the Dock II. The cable on the Kensington lock is looped around a stable chair or a similar item and the Kensington lock is attached to the hole at the rear of the Dock II. This prevents the Dock II to be carried away by an unauthorized person.

Main Card

SCSI Subsystem: The Dock II supports the SCSI controller and BIOS which has functions similar to the Adaptec AHA-1530P** Adapter. The Dock II also supports the IBM SCSI device for PS/2*.

SCSI Devices: The SCSI controller on the main card supports up to seven SCSI devices (includes internal and external). Two of the seven devices can be installed inside the Dock II.

Terminators: The terminator requirements for SCSI devices are:

- The last device in an external SCSI chain must have the terminator installed. Some devices may require more than one terminator.
- All other external SCSI devices must have the terminators removed.
- The internal SCSI device must have the terminator installed.

The location and appearance of the terminators may vary from device to device. An identification label or tag (usually “T-RES”) is attached to each terminator for easy identification.

The Dock II has an active terminator which terminates the external SCSI connector automatically.

Audio Jacks: The Dock II has three audio sources, a CD-ROM audio, a speaker-in, and a computer audio. These three sources are mixed and sent to the audio out jack or are amplified and sent to the speaker or the headphone jacks.

Stereo speakers: The Dock II provides a pair of stereo speakers.

Headphone jack: A headphone jack is provided for connecting a headphone cable.

Speaker-in jacks: Speaker-in jacks are for the audio cable that is connected to the line-out of the AT sound adapter through the Dock II stereo speakers.

Audio-out jacks: Audio-out jacks are for an external audio device, such as a speaker system (through the amplifier).

PCMCIA slots: Two PCMCIA slots are available for inserting different kinds of PCMCIA cards.

External Display Connector: This connector, on the rear of the Dock II, is a 15-pin, D-shell connector. The external display connector is the connector for the display signal cable of the external display.

Docking Connector: This 240-pin connector is the expansion interface connector for notebook PCs and has the capabilities to support the following features:

- AT-bus signals (excluding power voltages; 5 V, -5 V, 12 V, -12 V)
- Analog video interface
- Serial connector signals
- Parallel connector signals
- Keyboard and mouse signals
- IDE hard disk drive signals
- LED control signals
- Audio (CRT, TFT, Color LCD) signals
- Audio signals
- FDD signals
- PCIC control signals
- Power control signals
- Power voltages

External SCSI Connector: The external SCSI connector is a 50-pin, external device connector and is for external SCSI devices. A maximum of seven SCSI devices (both internal and external) are supported.

FDD Connector: This connector is a 26-pin, D-shell connector and is for the FDD External Attachment Kit. Users can attach the diskette drive that was removed from the computer to the Dock II with this kit.

Parallel Connector: The parallel connector allows the attachment of devices that accept eight bits of parallel data at standard transistor-transistor logic (TTL) levels. The connector is a 25-pin, D-shell connector and is primarily for printers. However, the connector can be used as a general input/output connector for any device or application that matches its input/output capabilities. The signal from the parallel port of the computer is replicated to the parallel connecter of
Dock II.

Serial Connector: This connector is a fully programmable serial connector that supports asynchronous communications. The 9-pin, D-shell connector provides the signals to drive a serial (or EIA-232D) device. The signal from the serial port of the computer is replicated to the serial connecter of
Dock II.

Keyboard/Numeric Keypad Connector: This 6-pin connector on the rear of the Dock II allows the attachment of a keyboard. The keyboard/numeric keypad connector is marked with a small keyboard symbol. The numeric keypad is attached to this keyboard/numeric keypad connector.

Mouse/Pointing Device Connector: This 6-pin connector on the rear of the Dock II allows the attachment of a pointing device (mouse). The mouse/pointing device connector is marked with a small mouse symbol.

Note: A mouse or pointing device will not work if either is connected to the mouse connector of the numeric keypad.

Riser Card

AT Slots: Two full-size AT slots (98-pin) allow the attachment of option cards.

Storage Device Connectors: These connectors are for the internal storage options. Any two of the following devices are supported as storage options.

- Internal hard disk drive
- Internal SCSI device (1-inch height)
- Internal SCSI device (half height)

Internal Hard Disk Connector: The internal hard disk drive connector is a 60-pin connector for the ThinkPad hard disk or for the IDE hard disk.

Internal SCSI Device Connectors: The SCSI device connector is a 50-pin, SCSI interface connector which transfers system data to and from the SCSI device. This connector is for the cable of an internal SCSI device.

Power Supply

The power supply switches automatically to either the 100–125 V ac or the 200–240 V ac voltage range when the power cord is plugged into a power outlet. The power supply converts ac voltage to dc voltage to supply the Dock II and the computer with the correct operating voltages.

Specifications

Physical Characteristics

Depth	400 mm (15.7 in.)
Width	380 mm (15.0 in.)
Height	Front: 67 mm (2.6 in.) Rear: 124 mm (4.8 in.)
Weight	7.7 kg (17.0 lb)

Electrical Characteristics

- **Heat output**

  Base Configuration: 181 BTUs/hour
  Maximum Configuration: 498 BTUs/hour

- **Input Voltage-Sine Wave Input (50 or 60 Hz)**

  Low Range:
  Minimum: 100 V ac
  Maximum: 125 V ac
  High Range:
  Minimum: 200 V ac
  Maximum: 240 V ac

- **Input kilovolt-Amperes (k·VA) (approximately)**

  Configuration as shipped from IBM: 0.053 k·VA
  Maximum configuration: 0.105 k·VA

Environmental Requirements

- **Operating Environment:**
  Temperature: 5° to 35°C (41° to 95°F)
  Relative Humidity: 8% to 95% (non-condensing)
  Maximum wet bulb temperature: 29.4°C (85°F)
- **Non-operating Environment:**
  Temperature: 5° to 43°C (41° to 109°F)
  Relative Humidity: 8% to 95% (non-condensing)
  Maximum Wet Bulb: 29.4°C (85°F)
- **Storage**
  Temperature: -20° to 60°C (-4° to 140°F)
  Relative Humidity: 5% to 95% (non-condensing)
  Maximum Wet Bulb: 29.4°C (85°F)
- **Maximum altitude:** 2435 m (8000 ft)

Audio-Circuit Specifications

- **Speaker-In to Audio-Out**
  Output (mV rms): 190 to 270
  S/N ratio (dB): >48
  Total Harmonic Distortion (THD) (%): <1
- **Speaker-In to Headphone Jack**
  Output (mV): >1
  S/N ratio (dB): >50
  Total Harmonic Distortion (THD) (%): <1
- **Speaker-In to Embedded Speaker**
  Output (W): >2
  S/N ratio (dB): >45
  Total Harmonic Distortion (THD) (%): <2

FRU Removals and Replacements

This section contains information on removals and replacements, and locations.

- The arrows in the removals and replacements show the direction of movement to remove a field replaceable unit (FRU), or to turn a screw to release the FRU. The arrows are marked in numeric order to show the correct sequence of removal.
- When other FRUs must be removed before removing the failing FRU, they are listed at the top of the page. Go to the removal procedure for each FRU listed, remove the FRU, and then continue with the removal of the failing FRU.
- To replace a FRU, reverse the removal procedure and follow any notes that pertain to replacement. See “Locations” on page 450 for internal cable connections and arrangement information.

CAUTION:
Before removing any FRU, turn off Dock II, remove the computer, unplug all power cords from electrical outlets, then disconnect any interconnecting cables.

CAUTION:
In the U.K., by law, the telephone cable must be connected after or disconnected before the power cord.

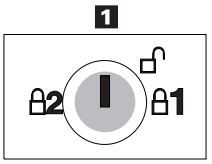
Warning: The main board, adapters, and circuit boards on the drives are sensitive to, and can be damaged by, electrostatic discharge. Establish personal grounding by touching a ground point with one hand before touching these units.

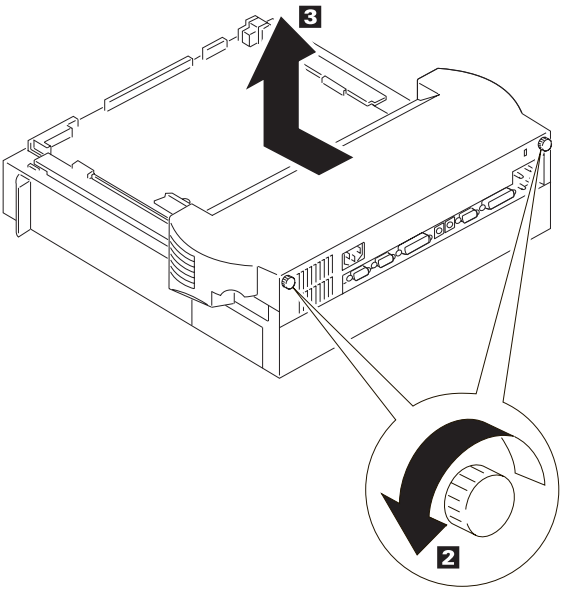
Note: An electrostatic discharge (ESD) strap must be used to establish personal grounding.

1010 Main Cabinet Group

Removal

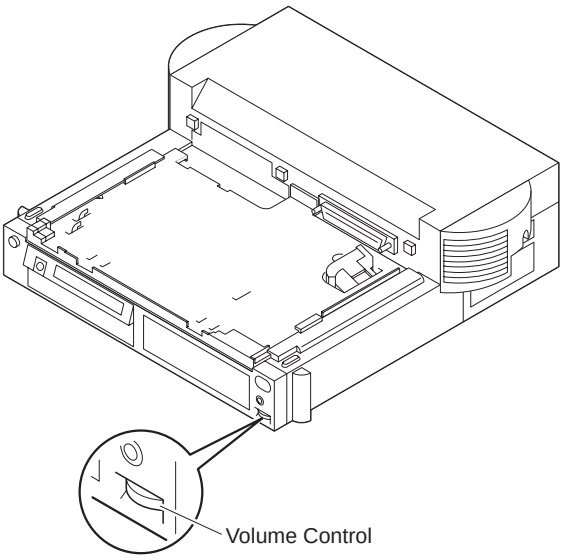
- Make sure the security key is in the vertical position 1 .
- 2 3





Caution

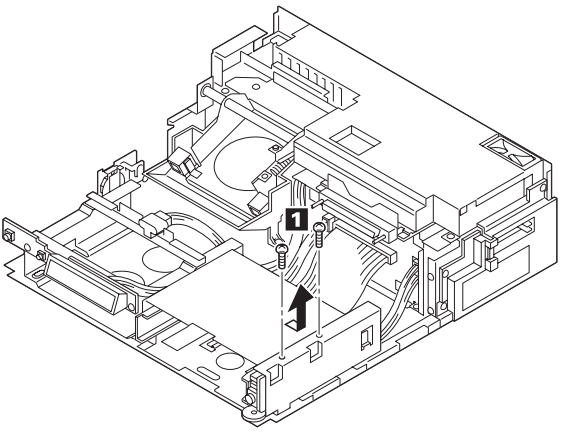
Be careful not to damage the volume control knob when removing the main cabinet group.



1020 Audio Card

Removal

- Main Cabinet Group **(1010)**
- Remove all cables from the connectors on the audio card. (Refer to “Audio Card” on page 454 for the location of these connectors.)
- 1

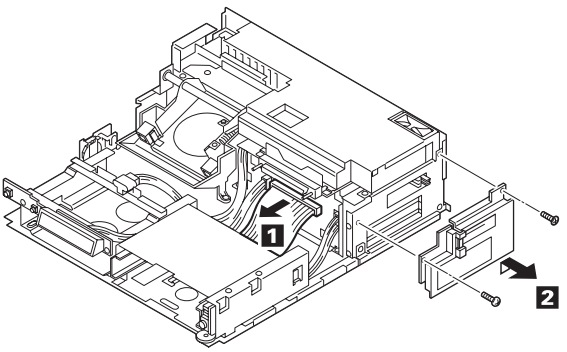


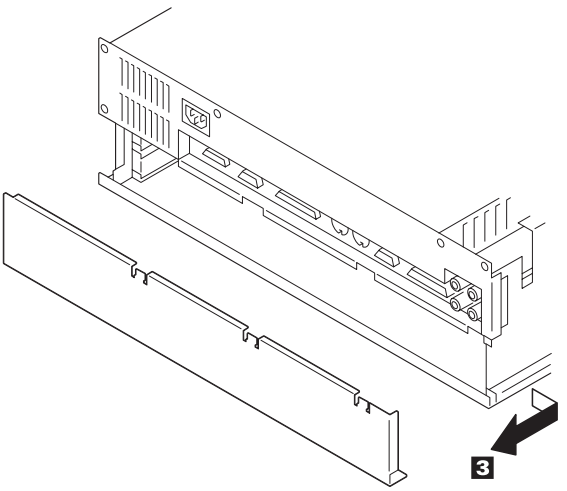
Step	Color and type (quantity)	Length
1	Pan head screw (2) Diameter: 3 mm (0.12 in.)	6 mm (0.24 in.)

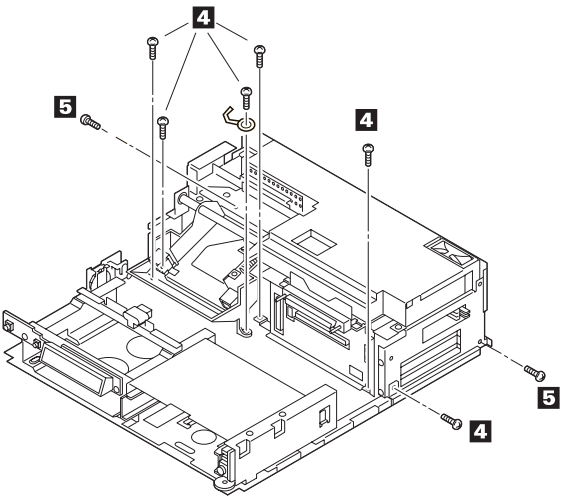
1030 Power Supply Unit

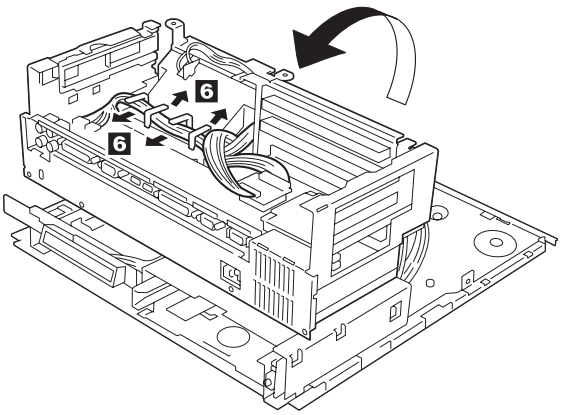
Removal

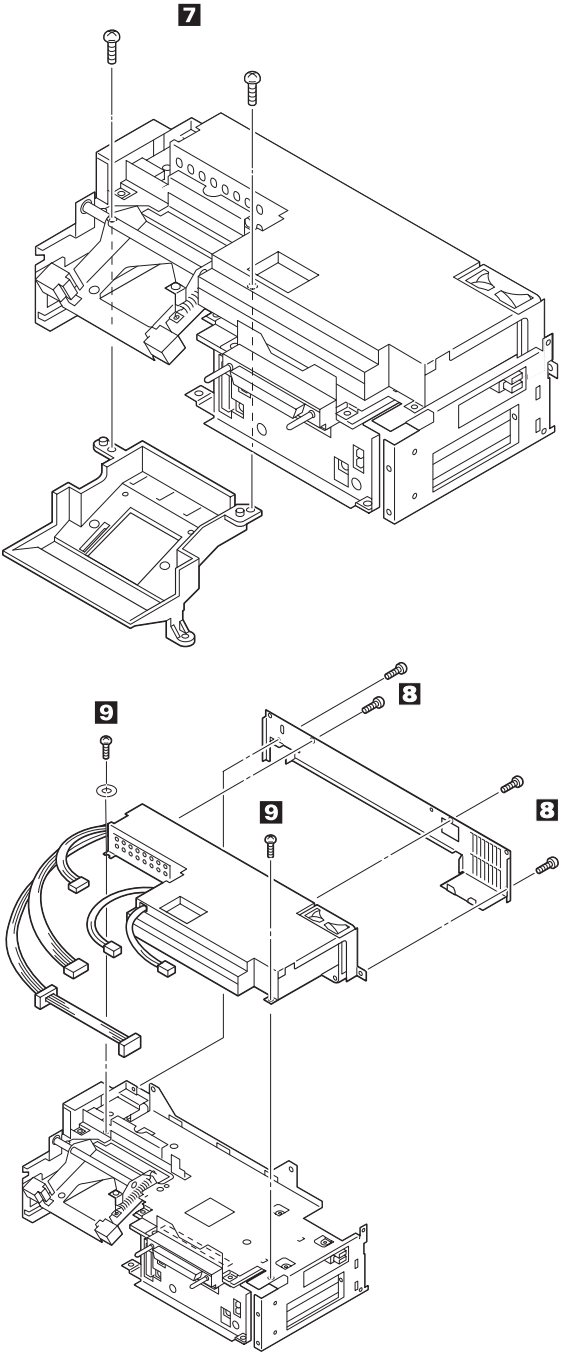
- Main Cabinet Group **(1010)**
- Remove all cables from the connectors on the riser card. (Refer to “Riser Card” on page 455 for the location of these connectors.)
- Remove all cables from the connectors on the main card. (Refer to “Main Card” on page 453 for the location of these connectors.)
- **1** **2** **3** **4** **5**
- Lift up and turn over the power supply assembly then release the cables on the rear of the rack **6** .
- Remove all remaining cables from the connectors on the main card.
- Turn the power supply assembly to the upright position.
- **7** **8** **9** (Do not forget to install the washer on the left screw at replacement in step **9** .)






4
5
4
5
4


6
6

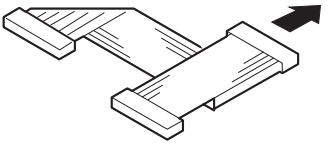

7
9
8
9
8

Step	Color and type (quantity)	Length
2	Pan head screw (1) Diameter: 3 mm (0.12 in.)	8 mm (0.31 in.)
	Flat head screw (1) Diameter: 3 mm (0.12 in.)	6 mm (0.24 in.)
4	Pan head screw (6) Diameter: 3 mm (0.12 in.)	6 mm (0.24 in.)
5	Pan head screw (2) Diameter: 3 mm (0.12 in.)	4 mm (0.16 in.)
7	Binding head tapping screw (2) Diameter: 3 mm (0.12 in.)	6 mm (0.24 in.)
8	Black binding head machine screw (4) Diameter: 3 mm (0.12 in.)	6 mm (0.24 in.)
9	Pan head screw (2) Diameter: 3 mm (0.12 in.)	6 mm (0.24 in.)

Replacement

Note

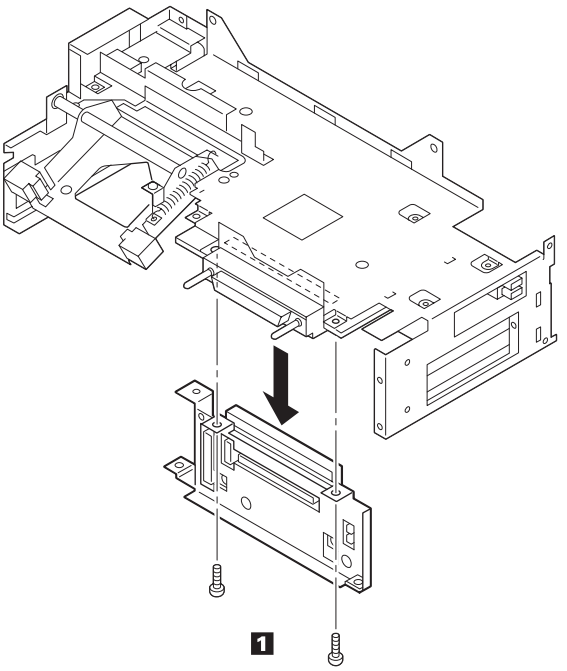
The intersecting end of the SCSI cable should be inserted into the connector on the riser card. See 1 .



1040 Riser Card

Removal

- Main Cabinet Group **(1010)**
- Audio Card **(1020)**
- Power Supply Unit **(1030)**
- Remove all cables from the connectors on the riser card. (Refer to “Riser Card” on page 455 for the location of these connectors.)
- 1



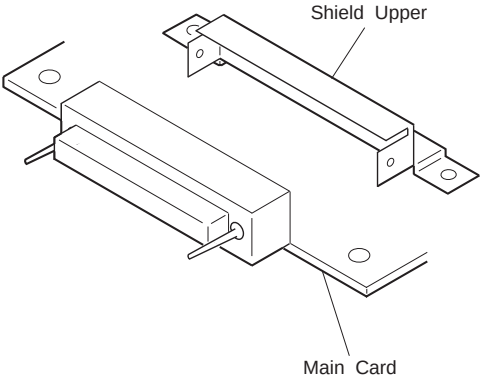
Step	Color and type (quantity)	Length
1	Binding head screw (2) Diameter: 3 mm (0.12 in.)	8 mm (0.24 in.)

1050 Main Card

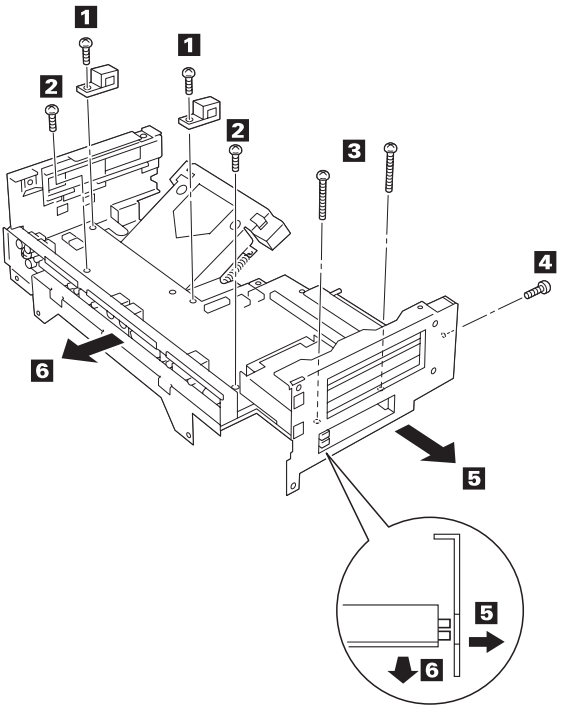
Removal

Note

Do not forget to put back the shield upper to the main card when reassembling the unit.



- Main Cabinet Group **(1010)**
- Audio Card **(1020)**
- Power Supply Unit **(1030)**
- Riser Card **(1040)**
- Remove all cables from the connectors on the main card. (Refer to “Main Card” on page 453 for the location of these connectors.)
- **1** **2** **3** **4** (upside down view)
- Remove the Guide AT after doing **4** .
- Widen the end of the main chassis where the PCMCIA slot is located **5** and pull out the main card from the main chassis **6** .

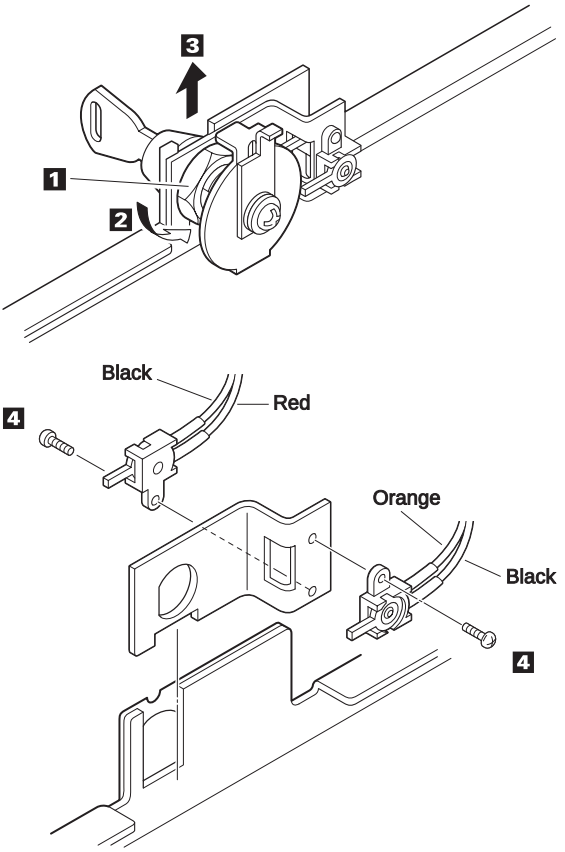


Step	Color and type (quantity)	Length
1	Binding head screw (2) Diameter: 3 mm (0.12 in.)	8 mm (0.24 in.)
2	Pan head screw (2) Diameter: 3 mm (0.12 in.)	6 mm (0.24 in.)
3	Pan head machine screw (2) Diameter: 2 mm (0.08 in.)	20 mm (0.79 in.)
4	Pan head screw (1) Diameter: 3 mm (0.12 in.)	6 mm (0.24 in.)

1060 Keylock Assembly

Removal

- Main Cabinet Group **(1010)**
- Loosen the ring **1**
- **2** **3** **4**

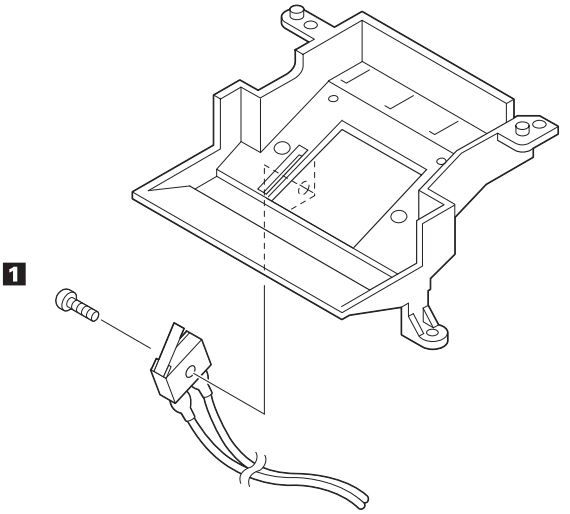


Step	Color and type (quantity)	Length
4	Pan head machine screw (2) Diameter: 2.3 mm (0.09 in.)	4 mm (0.16 in.)

1070 Micro Switch Group

Removal

- Main Cabinet Group **(1010)**
- Power Supply Unit **(1030)** (1 2 3 4 5 6)
- Keylock Assembly **(1060)**
- 1

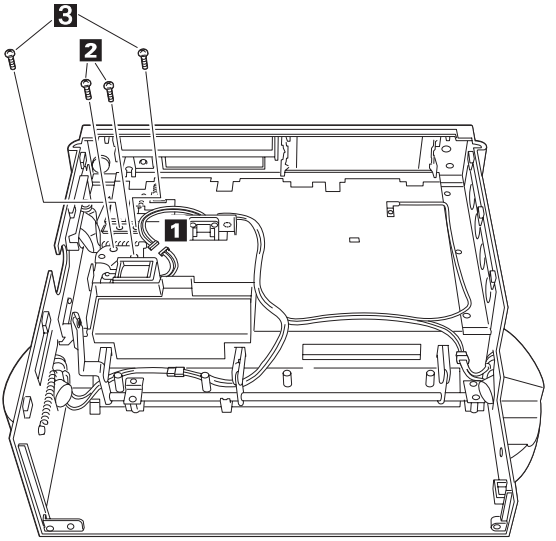


Step	Color and type (quantity)	Length
1	Binding head tapping screw (1) Diameter: 2.3 mm (0.09 in.)	10 mm (0.39 in.)

1080 Solenoid Group

Removal

- Main Cabinet Group **(1010)**
- Tray Unit Group **(1090)**
- **1** **2** **3**

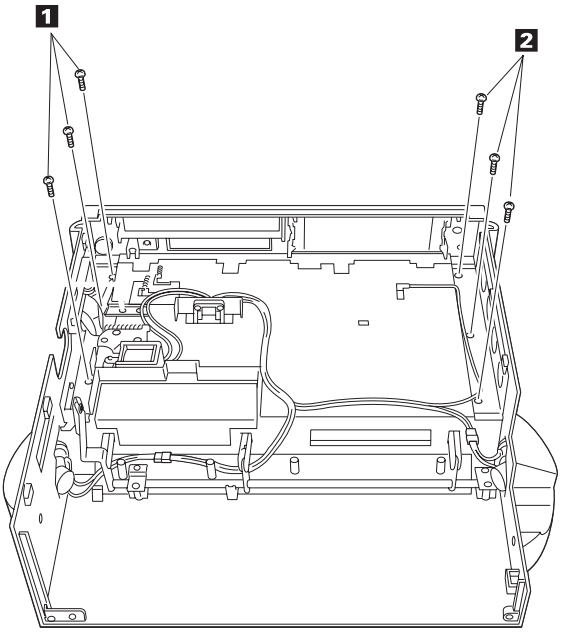


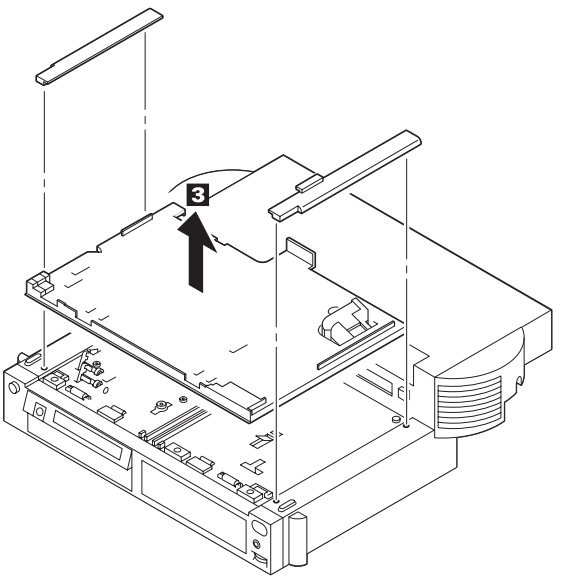
Step	Color and type (quantity)	Length
2	Binding head tapping screw (2) Diameter: 3 mm (0.12 in.)	6 mm (0.24 in.)
3	Binding head tapping screw (2) Diameter: 3 mm (0.12 in.)	8 mm (0.31 in.)

1090 Tray Unit Group

Removal

- Main Cabinet Group **(1010)**
- **1** **2** **3**

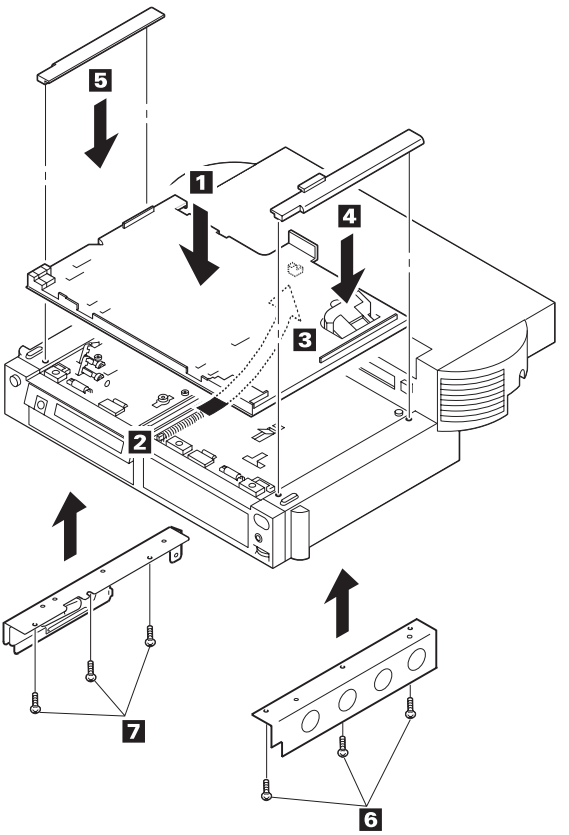




Step	Color and type (quantity)	Length
1	Binding head tapping screw (3) Diameter: 3 mm (0.12 in.)	8 mm (0.31 in.)
2	Binding head tapping screw (3) Diameter: 3 mm (0.12 in.)	8 mm (0.31 in.)

Replacement

- 5 7 2 3 1 4 6
- Main Cabinet Group **(1010)**

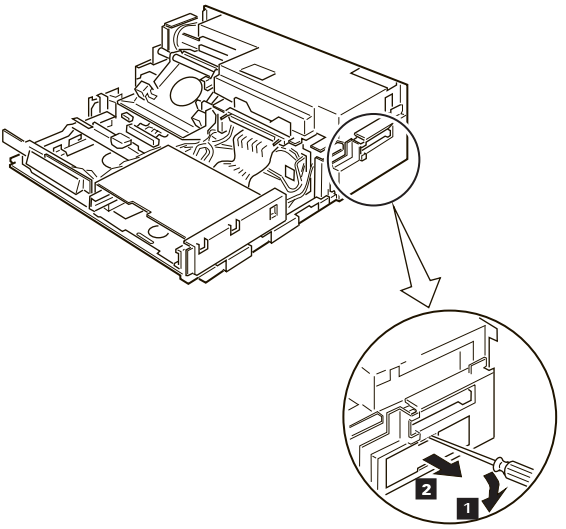


Step	Color and type (quantity)	Length
6	Binding head tapping screw (3) Diameter: 3 mm (0.12 in.)	8 mm (0.31 in.)
7	Binding head tapping screw (3) Diameter: 3 mm (0.12 in.)	8 mm (0.31 in.)

1100 Blank Cover Group

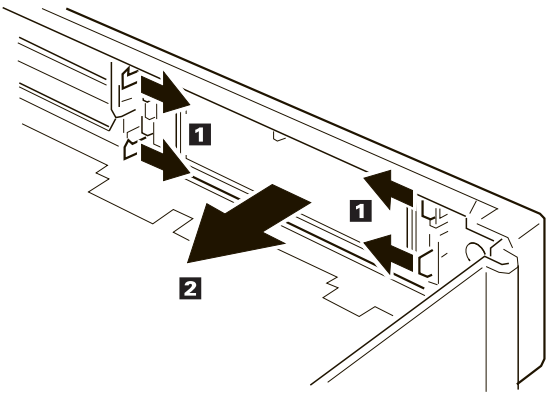
Removal for AT Card Cover

- 1 2



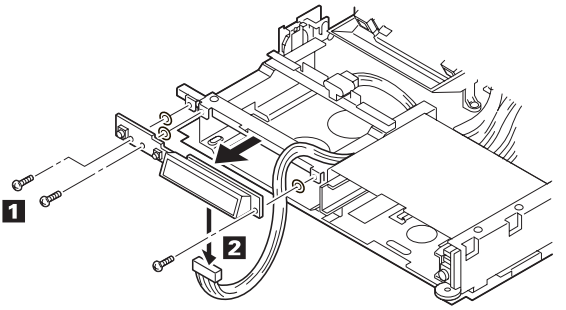
Removal for 1-inch Height and Half Height

- Main Cabinet Group **(1010)**
- 1 2



Removal for LCD Circuit Board Group

- Main Cabinet Group **(1010)**
- 1 2

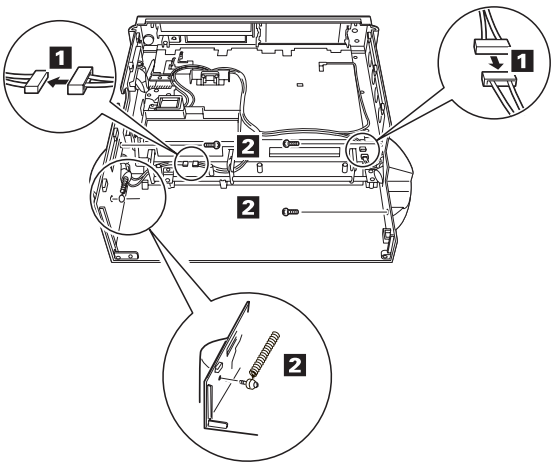


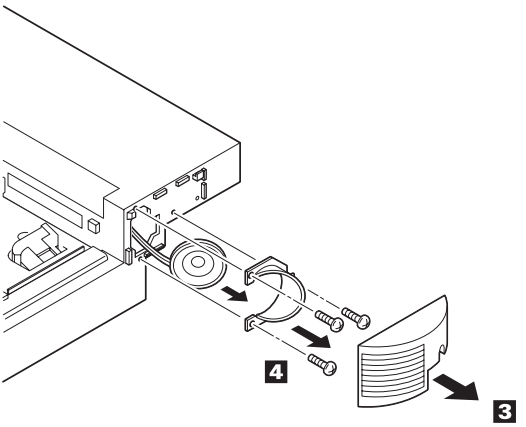
Step	Color and type (quantity)	Length
1	Binding head screw with washer (3) Diameter: 3 mm (0.12 in.)	6 mm (0.24 in.)

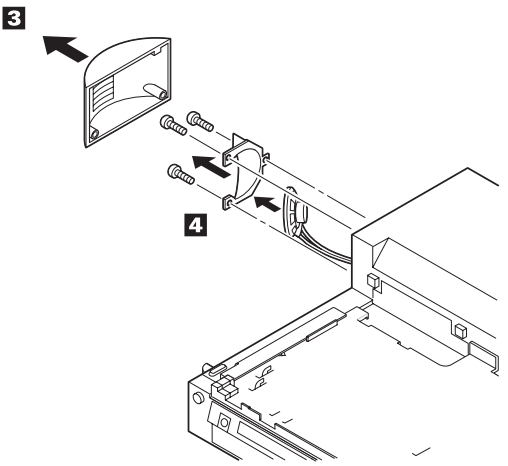
1110 Speaker and Speaker Cover Group

Removal

- Main Cabinet Group **(1010)**
- **1 2 3 4**







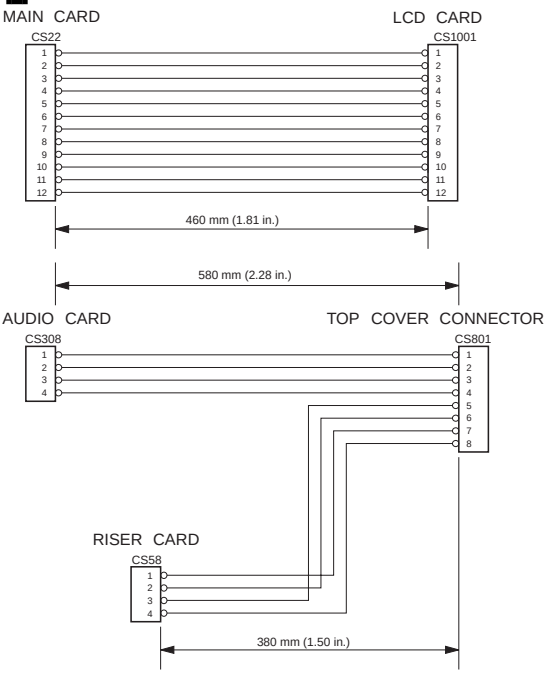
Step	Color and type (quantity)	Length
2	Binding head tapping screw (4) Diameter: 3 mm (0.12 in.)	12 mm (0.47 in.)
4	Binding head tapping screw (6) Diameter: 2.6 mm (0.10 in.)	8 mm (0.31 in.)

1120 Cable Group

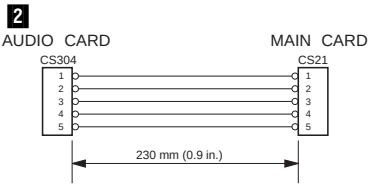
Removal

- Main Cabinet Group **(1010)**

1



2



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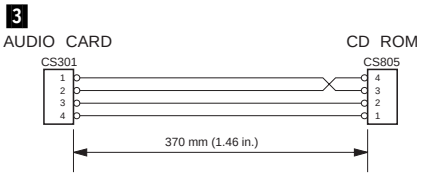

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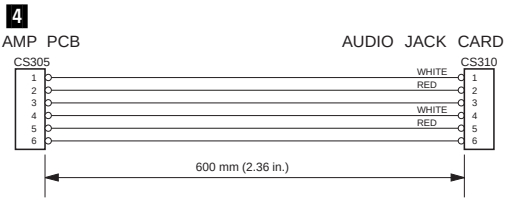

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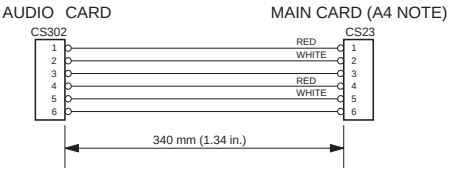

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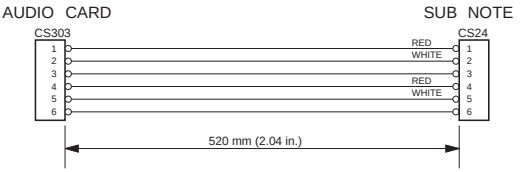
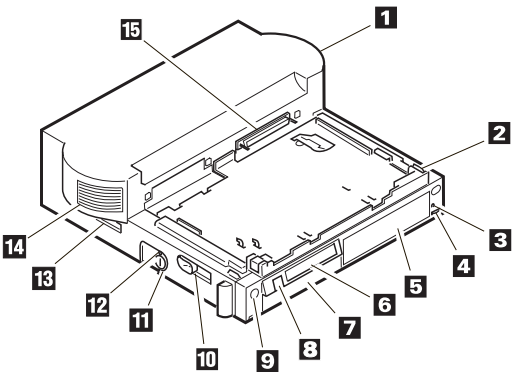


Item	Pins	Length	Ends
1	12	460 mm (1.81 in.)	CS22 - CS1001 (Main Card) (LCD Card)
	4/8	580 mm (2.28 in.)	CS308 - CS801 (Audio Card) (Top Cover Conn.)
		380 mm (1.50 in.)	CS58 - CS801 (Riser Card) (Top Cover Conn.)
2	5	230 mm (0.90 in.)	CS304 - CS21 (Audio Card) (Main Card)
3	4	370 mm (1.46 in.)	CS301 - CS805 (Audio Card) (CD-ROM)
4	6	600 mm (2.36 in.)	CS305 - CS310 (Audio Card) (Audio Jack)
5	6	340 mm (1.34 in.)	CS302 - CS23 (Audio Card) (Main Card)
6	6	520 mm (2.04 in.)	CS303 - CS24 (Audio Card) (Reserved)

Locations

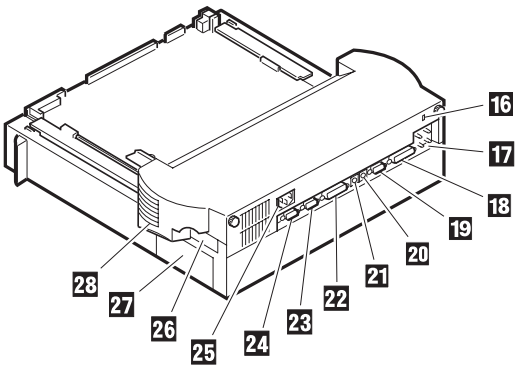
Front View

1. Main Cabinet Group
2. Tray Unit
3. Headphone Jack
4. Volume Control
5. Half-height Drive
6. Status Indicator
7. 1-inch-high Drive
8. Power Switch
9. Eject Switch
10. Eject Lever
11. Security Lock
12. Unlatch Hole
13. Reserved (Always keep this lever to the rear)
14. Left Speaker
15. Notebook Connector (male-type, 240-pin)

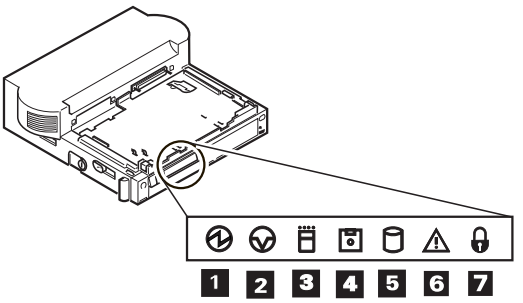


Rear View

16 Security hole
17 Audio-in and Audio-out
18 Parallel Connector (25-pin)
19 Serial Connector (9-pin)
20 Mouse/Pointing Device Connector (6-pin)
21 Keyboard/Numeric Keypad Connector
22 External SCSI Connector
23 External Display Connector (15-pin)
24 External Diskette Drive Connector (26-pin)
25 Power Cord Connector
26 PCMCIA Slots
27 ISA Slots
28 Right Speaker



System Status Indicators



1 Docked

Power On

2 Suspend Status

3 PCMCIA In-use

4 Diskette Drive In-use

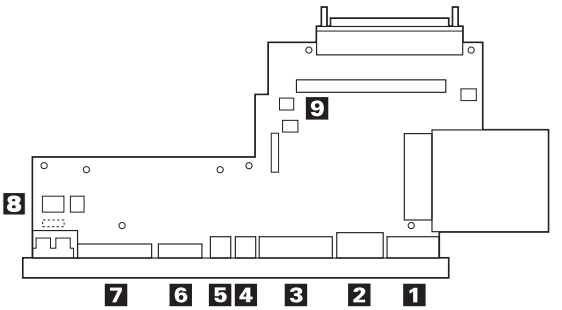
5 Hard Disk In-use

6 Warning

7 Security Key

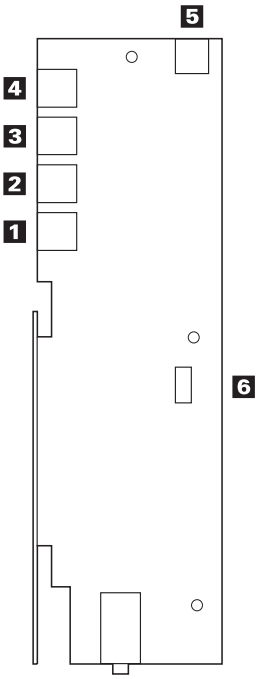
Main Card

1. External Diskette Drive Connector (26-pin)
2. External Display Connector (15-pin)
3. External SCSI Connector
4. Keyboard/Numeric Keyboard Connector
5. Mouse/Pointing Device Connector (6-pin)
6. Serial Connector (9-pin)
7. Parallel Connector (25-pin)
8. Power Supply Connector (CN25)
9. Power Supply Connector (CN26)



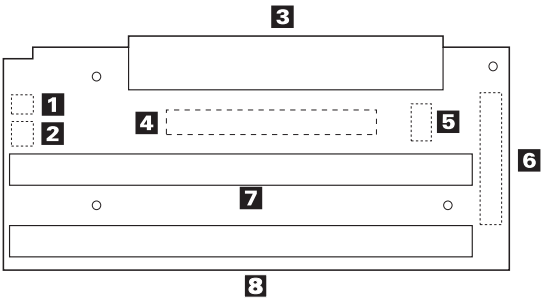
Audio Card

1. CD-ROM Audio Connector (CN301)
2. Audio Jack Connector (CN305)
3. Main Card Connector (CN302)
4. Connector (Reserved) (CN303)
5. Main Card Connector (CN304)
6. Top Cover Connector (CN308)



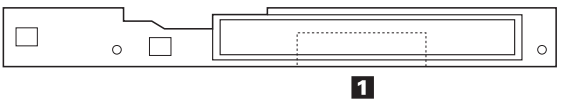
Riser Card

1. Sensor Connector (CN57)
2. Top Cover Connector (CN58
3. Main Card Connector (CN50)
4. Internal SCSI Connector (CN55)
5. Power Supply Connector (CN56)
6. Internal IDE Connector (CN53)
7. AT Slot 1
8. AT Slot 2



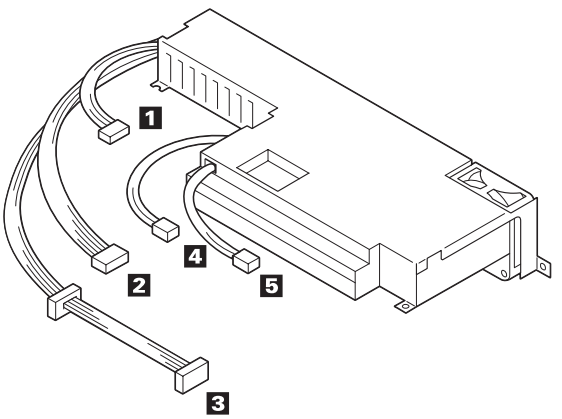
LCD Circuit Board Group

1. Main Card Connector (CN1001)

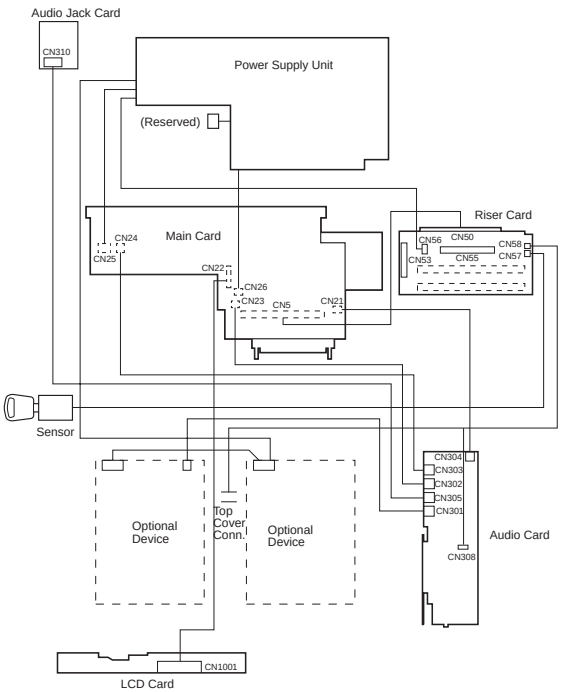


Power Supply

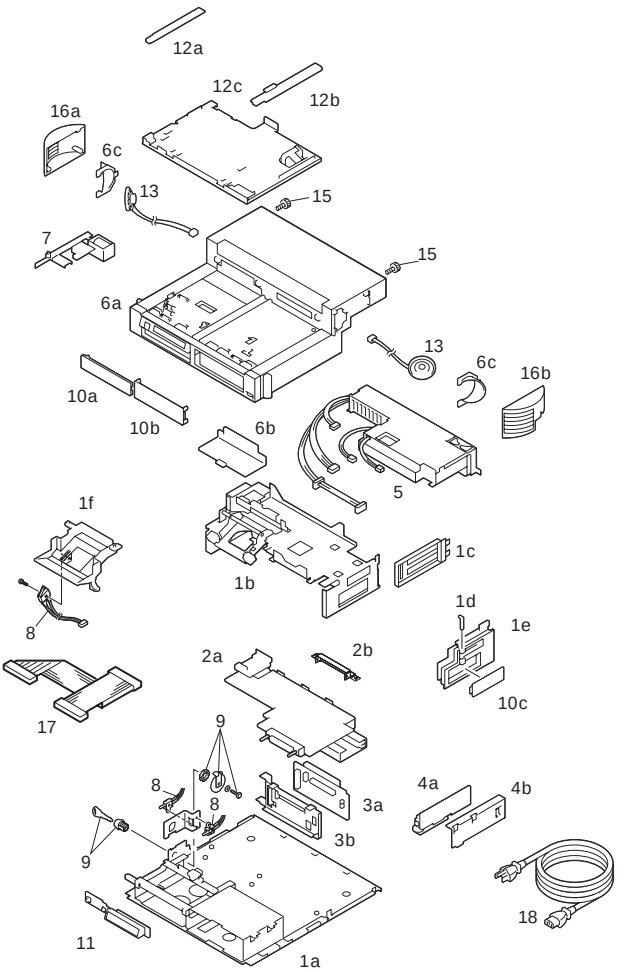
1. Power Supply Connector (CN25)
2. Power Supply Connector (CN56)
3. SCSI Power Supply Connector (4-pin)
4. Power Supply Connector (reserved)
5. Power Supply Connector (CN26)



Cabling


Audio Jack Card
CN310
Power Supply Unit
(Reserved)
Riser Card
CN56
CN50
CN58
CN53
CN55
CN57
Main Card
CN24
CN25
CN22
CN26
CN23
CN5
CN21
Sensor
CN304
CN303
CN302
CN305
CN301
Optional Device
Top Cover Conn.
Optional Device
Audio Card
CN308
CN1001
LCD Card

Parts Listing



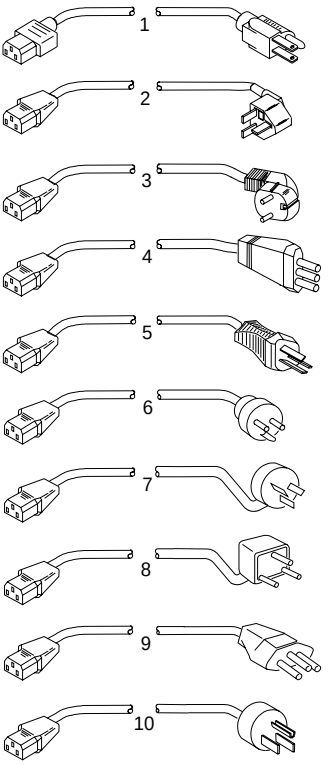
Parts

1	Bottom Cover Assembly	84G3613
	a. Bottom Cover Subassembly	
	b. Main Chassis Assembly	
	c. Bracket AT	
	d. PCMCIA Security Bar	
	e. Side Panel	
	f. Cover 160P-L	
2	Main Card Assembly	84G3614
	a. Main Card Subassembly	
	b. Shield Upper	
3	Riser Card Assembly	84G3615
	a. Riser Card b. Bracket	
4	Audio Card Assembly	84G3616
	a. Audio Card b. Bracket	
5	Power Supply Unit	84G3618
6	Main Cabinet Group	84G3619
	a. Main Cabinet	
	b. Cover 160-Pin	
	c. Bracket Speaker-Left/Right	
7	Solenoid Assembly	84G3620
8	Micro Switch Group	84G3621
9	Keylock Assembly (w/keys)	84G3622
10	Blank Cover Group	84G3623
	a. Blank Bezel for 1 Inch Height	
	b. Blank Bezel for Half Height	
	c. Blank Cover for AT Card	
11	LCD Circuit Board Group	84G3626
12	Tray Unit Group	84G3627
	a. Tray Guide-Left	
	b. Tray Guide-Right	
	c. Tray Assembly	
13	Speaker Group (w/cables)	84G3628
14	Cable Group	84G3629
	Connection Cable 1 (Main-LCD)	
	Connection Cable 1 (Aud./Aud./Riser-Interposer)	
	Connection Cable 2 (Aud.-Main)	
	Connection Cable 3 (Aud.-CD ROM)	
	Connection Cable 4 (Aud.-Audio)	
	Connection Cable 5 (Aud.-Main)	
	Connection Cable 6 (Aud.-Main)	
15	Misc. Kit (Screws and Clamps)	84G3630
16	Speaker Cover Group	84G3633
	a. Speaker Cover Left	
	b. Speaker Cover Right	
17	SCSI Device Cable	84G5253
17	IDE Device Cable	66G3576
18	Power Cord. See page 460.	

Options

Tape Drive Kit	84G1290
Bracket and Bezel	84G1291
Shelf	84G3631
Tray Cover	84G3632

Power Cords



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Note: Use the power cord certified for your country.

1	Colombia, U.S., Venezuela	13F9959
	Japan, 3-pin	65F0031
2	Hong Kong, Singapore, U.K.	14F0033
3	France, Germany, Spain	13F9979
4	Italy	14F0069
5	Australia, New Zealand	13F9940
6	Denmark	13F9997
7	Israel	14F0087
8	Bangladesh, Pakistan, Sri Lanka, South Africa	14F0015
9	Switzerland	14F0051
10	Thailand	1838574

Special Tools

The following special tools are required to service the Dock II.

Volt-Ohm Meter

A meter similar to the Triplet Model 310[1].

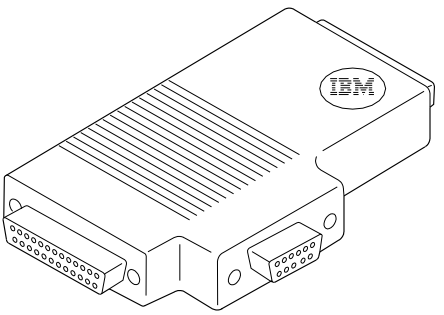
Screwdriver Kit

Use small screwdrivers (IBM part 95F3598) when removing and replacing FRUs.

Wrap Plug

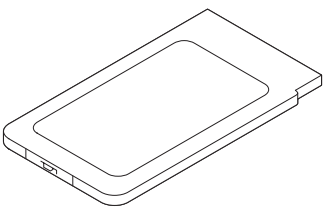
The tri-connector wrap plug (IBM part 72X8546) is used during advanced diagnostic tests of:

- Serial Connectors
- Parallel Connectors



PC Test Card

The PC test card (IBM part 35G4680) is used during advanced diagnostic tests of the PCMCIA slots.



1 Manufactured by Triplett Corporation, Bluffton, Ohio 45817, U.S.A.