

IBM Network Station



IBM Network Station Setup and Use May 1998

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Note

Before using this information and the product it supports, be sure to read the information in Appendix C, "Notices" on page C-1.

Fourth Edition (May 1998)

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Notices (Safety and Environmental)

Safety and environmental notices contain information that is related to using the IBM Network Station network computer in a safe manner. The notices can be in the form of a danger, warning, or caution notice.

Danger Notices

A danger notice calls attention to a situation that is potentially lethal or extremely hazardous to people. The following danger notices pertain throughout this book.

DANGER

To prevent a possible electrical shock when installing the system, ensure that the power cords for all devices are unplugged before installing signal cables. (RSFTD202)

DANGER

To prevent a possible electrical shock when adding the device to a system, disconnect all power cords, if possible, from the existing system before connecting the signal cable to that device. (RSFTD205)

DANGER

To prevent a possible electrical shock during an electrical storm, do not connect or disconnect cables or station protectors for communications lines, display stations, printers, or telephones. (RSFTD003)

DANGER

To prevent a possible electrical shock from touching two surfaces with different electrical grounds, use one hand, when possible, to connect or disconnect signal cables. (RSFTD004)

DANGER

To prevent a possible electrical shock, disconnect the power cord from the electrical outlet before opening the IBM Network Station logic unit. (RSFTD215)

DANGER

To reduce the risk of electrical shock use only AC power sources approved by IBM. (RSFTD216)

Caution Notices

A caution notice calls attention to a situation that is potentially hazardous to people because of some existing condition.

Environmental Design

The environmental efforts that have gone into the design of the Network Station signify the commitment IBM has to improve the quality of its products and processes. Some of these accomplishments include the following:

- Elimination of the use of Class I ozone-depleting chemicals in the manufacturing process
- Reduction in manufacturing wastes
- Increased product energy efficiency

For more information, contact an IBM account representative.

About this Book

The IBM Network Station network computer allows you to use an industry-standard monitor, keyboard, and mouse. After you connect the components, you have the option of connecting the network computer to multiple IBM platforms. This book provides the information you need to install, upgrade, or exchange parts in your Network Station.

Chapter 1, *Introducing the Network Station*, describes the capabilities of the Network Station.

Chapter 2, *Setting Up Your Type 8361 Network Station*, helps you identify the components of your Type 8361 Network Station and tells you how to connect them.

Chapter 3, *Setting Up Your Type 8362 Network Station*, helps you identify the components of your Type 8362 Network Station and tells you how to connect them.

Chapter 4, *Using Your Network Station*, lists the possible Type 8361 Network Station and Type 8362 Network Station software functions and where to find instructions.

Chapter 5, *Upgrading or Exchanging Memory Modules and L2 Cache*, lists the required steps to upgrade or exchange your Network Station memory modules.

Chapter 6, *Solving Problems and Replacing the IBM Network Station*, contains information for diagnosing and repairing problems.

Appendix A, *Parts List Type 8361 and Type 8362 Network Station*, contains the parts list for the Type 8361 Network Station and the Type 8362 Network Station.

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<http://www.ibm.com/nc/pubs>

Note: Updates to this information prior to the next edition are in the English version only.

Related Information

For more information about attaching the Network Station to your server and general network administrator requirements, refer to the *IBM Network Station Manager Installation and Use* (SC41-0664) documentation and 5250 Information Display System Planning Guide (GA21-9337).

For information about the monitor or printer that is attached to the Network Station, refer to the specific documentation for the device.

Chapter 1. Introducing the Network Station

The IBM Network Station network computer (hereafter referred to as Network Station) is a network computer that takes advantage of leading-edge application technologies such as intranets, the Internet, and Java. This low-cost network computer is like a simple, nonprogrammable workstation with a graphical user interface.

The Network Station features a PowerPC microprocessor, random access memory (RAM), an optional smartcard drive (Type 8362 only), a serial port, and a parallel port. The Network Station has an integrated network interface connector that supports ethernet, token-ring, or twinaxial connections.

When you power on the Network Station, it does the following:

- The network computer performs initial hardware diagnostics.
- The network computer establishes a communication session with the assigned server.
- The network computer downloads operating system code from the server into random access memory (RAM).

After the operating system code loads on the Network Station, a logon screen appears. This screen requests system information, user ID information and password information. The Network Station verifies your user information and downloads your personal system configuration and preferences, such as application appearance or keyboard mappings. You can have unique preferences downloaded to any network computer you use on the local area network (LAN). Your network computer then communicates with other authorized servers.

With an IBM Network Station Manager software package that is installed on your server, the Network Station supports any of the following tasks:

- The network computer operates as a 5250 emulator and a 3270 emulator.
- The network computer uses software such as a Web browser to connect to the Internet.
- The network computer accesses personal computer applications on a PC server through X-Windows terminal support. This function requires additional support programs on the PC server.
- The network computer prints on a local printer or on a configured printer that is connected to a host.
- The network computer accesses Java applications and applets with the local Java Virtual Machine.

The Network Station is easy to set up, use, manage, and support. Maintaining software and data in a central location eliminates the need to store applications or data on a conventional desktop workstation. You can now access your current business applications, the Internet, corporate intranets, and multiple servers all with one desktop network computer — the IBM Network Station.

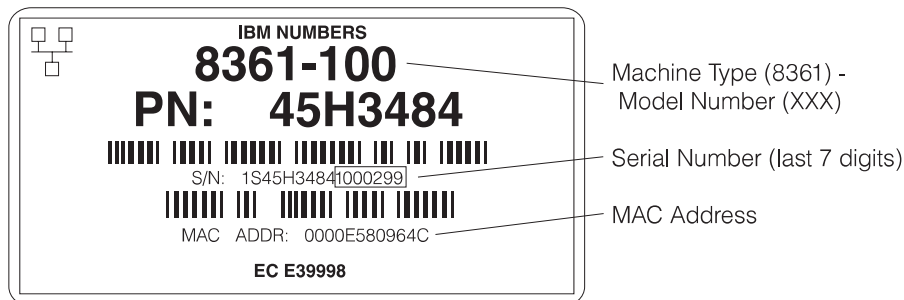
Chapter 2. Setting Up Your Type 8361 Network Station

This chapter describes the parts of your Type 8361 Network Station. This chapter also provides the information you need to set up your network computer and connect it to your network.

Please record the serial number, machine type, model number, and media access control (MAC) address in Table 2-1 from your network computer packaging label. Refer to Figure 2-1 to help you identify the label. Record the installed memory from your packing slip.

The serial number, machine type, model number, and installed memory information provide you with an easy reference for configuration and maintenance. Some configurations require the MAC address to operate your network computer.

Category:	Your information:
Serial Number	
Machine Type and Model Number	
MAC Address	
Installed Memory	

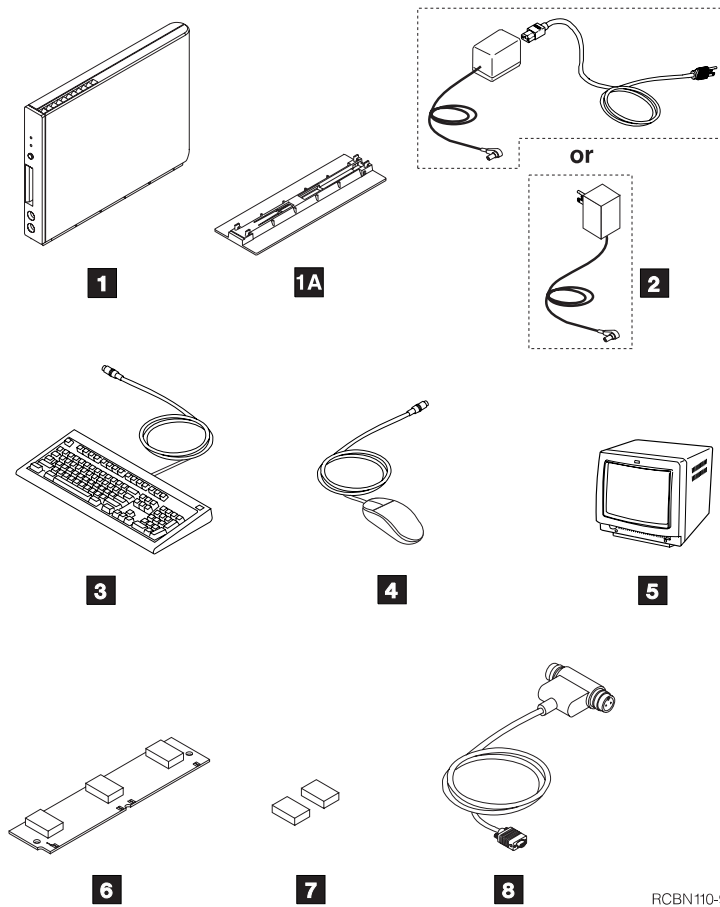


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Figure 2-1. Type 8361 Network Station packaging label.

Type 8361 Network Station Components

As you unpack your network computer, refer to Figure 2-2 on page 2-2 to identify the parts that you received with your Type 8361 Network Station. A description of each part follows the illustration.



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Figure 2-2. Type 8361 Network Station Components

Note: Items **5**, **6**, **7**, and **8** are IBM options. If you did not order them, you may not have these items.

- 1** Logic unit
- 1A** Logic unit base
- 2** Power module
- 3** Keyboard
- 4** Mouse
- 5** Monitor
- 6** Memory SIMM
- 7** Video memory modules
- 8** Auto termination-twinaxial T connector cable (Model 341 only)

The Logic Unit

The logic unit is a slim mechanical enclosure that has external connectors and internal memory options.

The external connectors on the logic unit are for network connections, PCMCIA cards, serial devices, local printers, and a monitor. The Type 8361 Network Station supports most VGA or better monitors.

The PCMCIA slot at the front of the logic unit accepts standard PCMCIA cards. PCMCIA cards may add functions such as communications, additional memory, or applications to your network computer.

Internally, the logic unit has two slots for single inline memory modules (SIMMs). The SIMMs store the operating system code after it is downloaded from the server.

Table 2-2. Type 8361 Network Station model, base memory, and network connector table.

Type-Model	Base Memory	Network Connector
8361-100	8 MB	Ethernet
8361-110	16 MB EDO	Ethernet
8361-200	8 MB	Token-ring
8361-210	16 MB EDO	Token-ring
8361-341	16 MB EDO	Twinaxial

You can add one optional 8 MB, 16 MB, or 32 MB SIMM to any model. Models 8361-110, 8361-210, and 8361-3xx require EDO memory. In Models 100 and 200, you can replace your original 8 MB SIMM with a 16 MB, or a 32 MB SIMM. In models 110, 210, and 3xx, you can replace your original 16 MB EDO SIMM with a 32 MB EDO SIMM.

The logic unit contains two sockets for optional video memory modules. IBM manufactures the logic unit with 1 MB of video memory. You can add an additional 1 MB of video memory by installing the optional modules in the sockets.

The video memory upgrade supports the functions of higher-resolution VGA monitors. With the video memory upgrade, you can increase the resolution of your monitor up to 1600 x 1200 picture elements.

You can install the logic unit base **1A** to stand your Type 8361 Network Station vertically so that you use less desk space.

Power Module

There are two types of power supplies for the Type 8361 Network Station. The power module that is shipped with your network computer is designed specifically for the country you reside in.

One power module plugs directly into the electrical outlet. The second type of power module plugs into the logic unit with a detachable power cord that connects the power module to the electrical outlet.

Keyboard and Mouse

The Type 8361 Network Station uses the standard IBM keyboard and mouse. You may purchase an optional 5250 keyboard converter (see Table A-5 on page A-9) to use a 5250 122-key keyboard. This converter must be ordered separately.

Communications Requirements

The Type 8361 Network Station communicates through an RJ-45 cable connector or a mini D shell cable connector on the back of the logic unit. The type of communication is Ethernet, token-ring, or twinaxial. The Type 8361 Network Station model determines the type of communication that is used. Refer to Table 2-2 on page 2-3. Find your logic unit type number and model number printed on the label that is located near the mounting holes on the side cover.

Type 8361 Network Station Models 100 and 110 require an Ethernet Telephone Twisted Pair (TTP) cable with an RJ-45 (8 position) connector. This is an Industry Standard 10BaseT (RJ-45 plug) cable with the normal requirements and standards for distances, hubs, and taps. The cable type is category 3.

Type 8361 Network Station Models 200 and 210 require a token-ring Telephone Twisted Pair (TTP) cable with an RJ-45 (8 position) connector. Industry Standard token-ring requirements and standards apply for distances and taps. The required cable type is category 3 for 4 MB ring speed operation. The required cable type is shielded twisted pair category 4 or 5 for 16 MB ring-speed operation.

Note: Properly connected twisted pair cables must meet country-electromagnetic emissions limits.

Type 8361 Network Station Model 341 requires the mini D shell to auto termination twinaxial T connector cable **8**. This cable connects to a twinaxial workstation attachment cable from your server. You must set a unique twinaxial address for each individual network computer through the Setup Utility or from the Network Station Manager. Refer to "Assigning a Twinaxial Address to a Type 8361 Network Station Model 341" on page 2-11 or the *IBM Network Station Manager Installation and Use* (SC41-0664) information for detailed instructions.

Note: You may find the *IBM Network Station Manager Installation and Use* (SC41-0664) information shipped with the server software. You can also access it from the internet at <http://www.ibm.com/nc/pubs>.

Setup Steps

Before you set up your Type 8361 Network Station, you need the following:

- The keyboard language identifier for non-English (US) keyboards. The default keyboard setup is for English (US) keyboards. Refer to the *IBM Network Station*

Manager Installation and Use (SC41-0664) information for detailed instructions on how to change the keyboard language identifier.

- The communications cable used to connect the logic unit to the host server.

Note: IBM ships a communication cable **8** with the Type 8361 Network Station Model 341 only. IBM does not ship a communications cable with the Type 8361 Network Station models 100, 110, 200, or 210.

If you do not have a communications cable, refer to “Communications Requirements” on page 2-4 to determine the type of cable you need.

Take the following steps to set up your Type 8361 Network Station:

1. Use only the power module that is supplied with your Type 8361 Network Station. The power module is marked in one of the following ways:
 - CLASS II and rated: INPUT: 120 V ac 60 Hz. 0.41 A; OUTPUT: 18 V ac 40 VA maximum
 - CLASS II and rated: INPUT: 110-127 V ac 60 Hz. 0.41 A; OUTPUT: 18 V ac 40 VA maximum
 - CLASS I and rated: INPUT: 230 V ac 50 Hz. 0.3 A; OUTPUT 18 V ac 40 VA maximum
 - CLASS I and rated: INPUT: 220-240 V ac 50/60 Hz. 0.3 A; OUTPUT 18 V ac 40 VA maximum

Note: Do not use a Type 8362 Network Station power module on a Type 8361 Network Station.

Read the information in “Notices (Safety and Environmental)” on page v before you continue with the setup of your .

2. If you received any memory module options (**6** or **7** in Figure 2-2 on page 2-2) to install in your Type 8361 Network Station, please refer to Chapter 5, “Upgrading or Exchanging Memory Modules and L2 Cache” on page 5-1. After you install your memory module, return here to complete the installation of the network computer.

3. Decide where you want to place the logic unit.

You can place the logic unit flat on your desk or use the logic unit base to stand the logic unit vertically. However, mounting the logic unit on a wall is the preferred placement.

Note: Before you permanently place your Type 8361 Network Station logic unit, make sure that there is enough room to access all the cable connectors.

If you will mount your logic unit on the wall, go to step 4.

If you will install your logic unit flat on your desk, go to step 5 on page 2-7.

If you will install your logic unit vertically on your desk, go to step 6 on page 2-8.

4. Mount the logic unit on a wall by doing the following:
 - a. Select the appropriate place to mount the logic unit. Allow space for cables below the logic unit and at least 180 mm (7 inches) above the logic unit.

- b. Mark two places on the wall for the mounting screws. Place the marks on a horizontal line approximately 50 mm (2 inches) below where the top of the logic unit will be. Place the marks 137 mm (5 3/8 inches) apart. Refer to Figure 2-3 on page 2-7 as a template to mark the places for the mounting screws.
- c. Install two screws with a head diameter of 9 mm (3/8 inch) or less, using the appropriate anchor hardware for your wall. Ensure that the screw heads do not extend more than 7 mm (1/4 inch) from the wall surface. See Figure 2-3 on page 2-7. The mounting should be sufficient to support approximately 5 kg (11 lb).
- d. Place the mounting holes (**A** in Figure 2-3 on page 2-7) over the mounting screws. Slide the unit down along the wall so that it hangs from the screws.
- e. Use the two tabs (**B** in Figure 2-3 on page 2-7) that extend from the cover to prevent removal of your logic unit. Secure the logic unit by installing a device, such as a 3.8 mm (1/8 inch) cable with a lock or two screws, into the two tabs. Contact your network administrator to obtain the device that is used at your company.

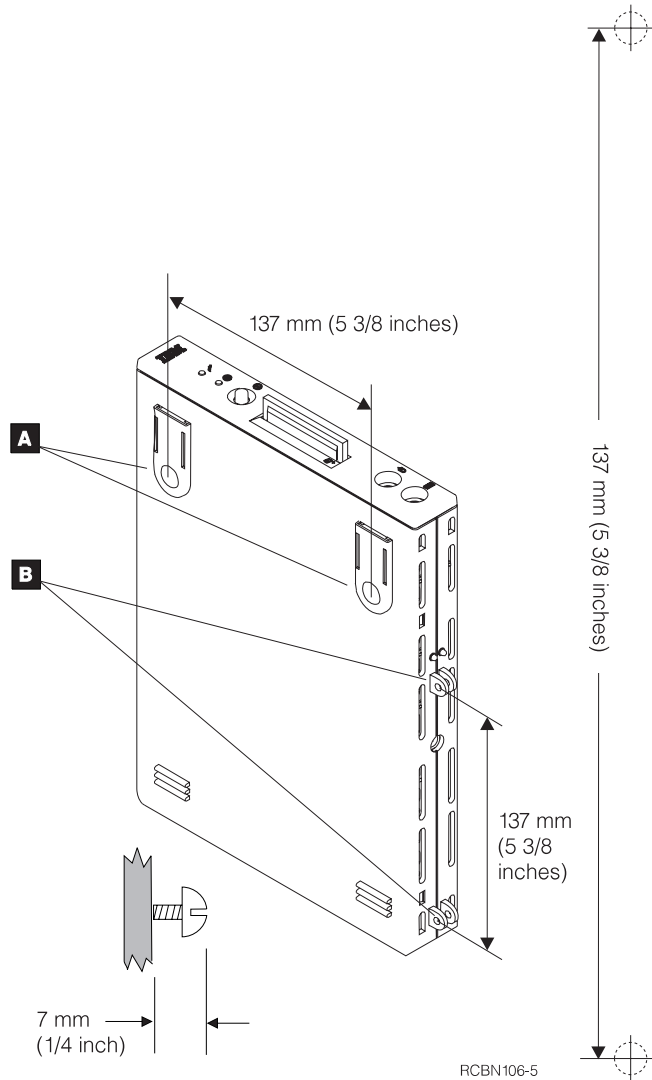


Figure 2-3. Type 8361 Network Station wall mounting diagram and template.

f. Continue with step 7 on page 2-8.

5. Place the Type 8361 Network Station logic unit with the mounting holes down (**A** in Figure 2-3) on a flat surface with enough room for the keyboard and monitor.

Attention: Do not place the monitor on top of the logic unit. The logic unit case is not strong enough to support the weight of the monitor.

To prevent removal of your logic unit, use the two tabs (**B** in Figure 2-3) that extend from the cover. Secure the logic unit by installing a device such as a 3.8 mm (1/8 inch) cable with a lock or two screws into the two tabs.

Continue with step 7 on page 2-8.

6. To mount the logic unit vertically, do the following:
 - a. Turn the logic unit so that tabs are up and the front of the logic unit is facing you as shown in Figure 2-4.
 - b. Connect the power module cord (**A**) to the logic unit.
 - c. Align the cord with the logic unit cover. See Figure 2-4.
 - d. Align the tabs on the base with the slots in the logic unit.
 - e. Slide the base to the back until it softly clicks into place.
 - f. Turn the logic unit upright.

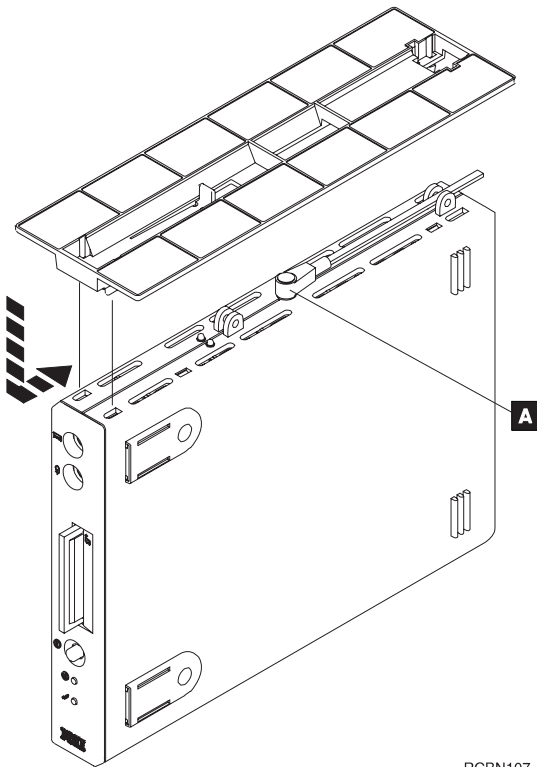
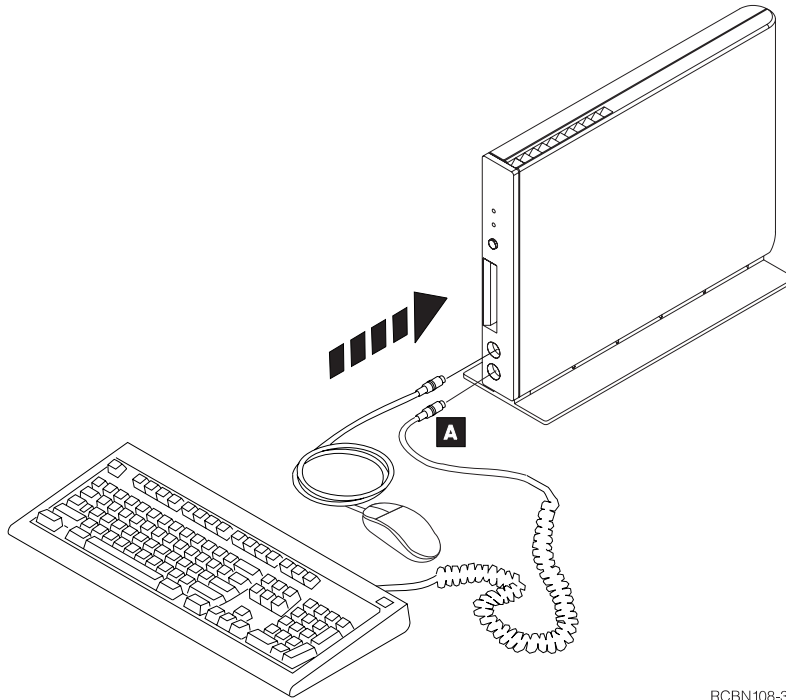


Figure 2-4. Type 8361 Network Station base installation.

7. See Figure 2-5 on page 2-9. Plug the keyboard cable and the mouse cable (**A**) into the appropriate ports on the front of the logic unit.

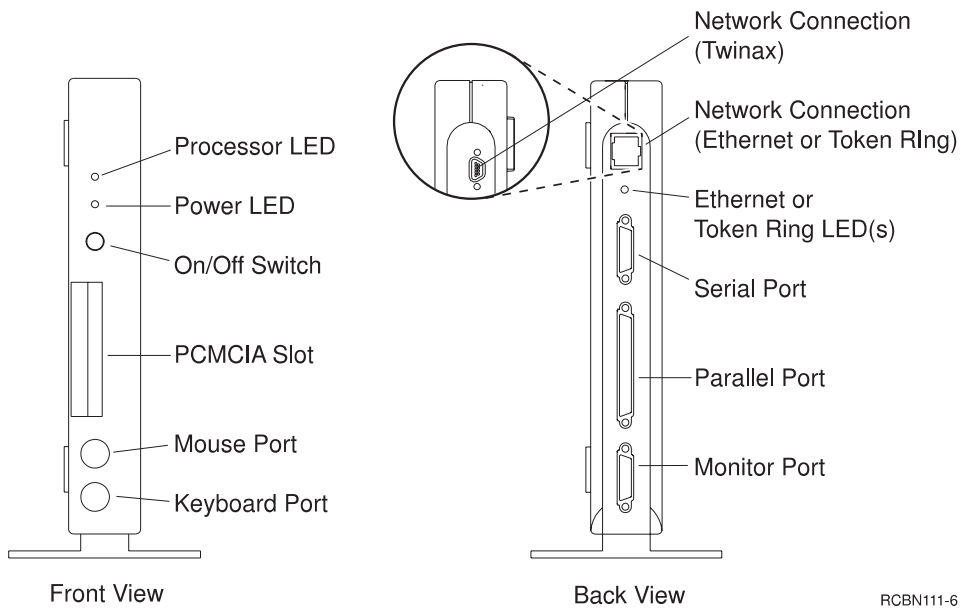


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Figure 2-5. Type 8361 Network Station mouse and keyboard installation.

8. Refer to Figure 2-6 on page 2-10 when you connect the following components of your Type 8361 Network Station.
 - a. Plug the communications cable into the network connector on the back of the logic unit.

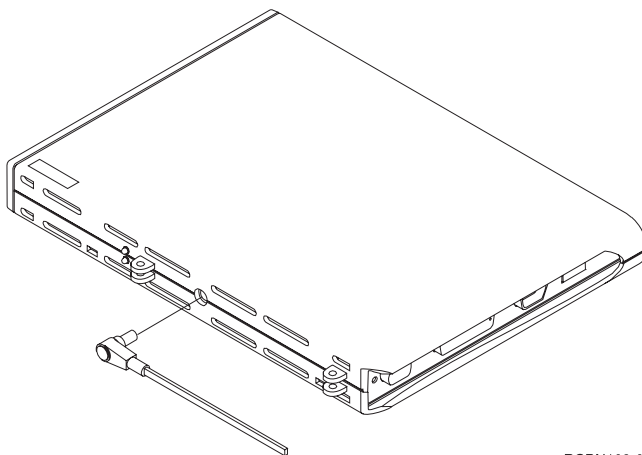
Note: If you have a Model 341, turn the connector screws until tight to secure the mini D shell connector to your logic unit.
 - b. Connect the other end of the communications cable to your network.
 - c. Connect the monitor cable to the monitor port on the back of the logic unit.
 - d. If you plan to use a local printer, connect the printer cable to the parallel port on the back of the logic unit.
 - e. If you plan to use a serial device, connect the device cable to the serial port on the back of the logic unit.
 - f. Tighten all connector screws.



RCBN111-6

Figure 2-6. Type 8361 Network Station front and back view for component installation.

9. If you did not mount the logic unit in the base, plug the power module connector into the Type 8361 Network Station logic unit. See Figure 2-7.



RCBN109-0

Figure 2-7. Type 8361 Network Station power module connection.

10. Plug the power module, monitor, and printer power cords into the electrical outlet.
11. Power on the monitor, printer, and Type 8361 Network Station logic unit.

Note: Power on the monitor before you power on the logic unit. Some Network Station configurations will not initialize properly unless you power on the monitor first.

If you have a non-English (US) keyboard, you may have to configure the keyboard language identifier the first time you power on your Type 8361 Network Station. There are two methods to set the keyboard language identifier that are detailed in the *IBM Network Station Manager Installation and Use* information. You can do this from either the Setup Utility or from the Network Station Manager program.

The setup of your IBM Network Station hardware is now complete.

To operate your Type 8361 Network Station, you must connect to a properly configured network server. The server typically has IBM Network Station Manager software installed with a configuration for each Network Station.

Refer to the *IBM Network Station Manager Installation and Use* information on how to configure the server and your Network Station.

Assigning a Twinaxial Address to a Type 8361 Network Station Model 341

You must assign your Type 8361 Network Station Model 341 a logical twinaxial address before it works in a twinaxial network. Planning a twinaxial network may take considerable time and effort. Refer to the *5250 Information Display System Planning Guide* (GA21-9337) for detailed information. As you plan your twinaxial network topology, assign a twinaxial address to each Type 8361 Network Station Model 341.

Check the following list before you power on your Type 8361 Network Station Model 341:

- Your server must be configured and operating properly.
- Power on the workstation controller.
- Tighten all cable connections.

After you power on your Type 8361 Network Station Model 341 for the first time, you will be asked to enter a twinaxial address. You must enter a number between 0 and 6. Enter the correct address from your previous twinaxial topology planning.

If you need to manually assign or reset a twinaxial address, access the Network Station Setup Utility and perform the following instructions:

1. Power on the monitor and the logic unit.
2. When the NS0500 message appears on the black screen, press the escape key.
3. Press F8 to access the Set Twinax Station Address screen.
4. Press F11 to restore the previous twinaxial address.
5. Enter an address value between 0 and 6.
6. Press the Enter key to save the new twinaxial address.

7. Press the Enter key to restart the logic unit.

Your twinaxial address is now configured.

Chapter 3. Setting Up Your Type 8362 Network Station

This chapter describes the parts of your Type 8362 Network Station. This chapter also provides the information you need to set up your network computer and connect it to your host network.

Please record the serial number, machine type, model number, and media access control (MAC) address from your network computer packaging label. Refer to Figure 3-1 to help you identify the label. Record the installed memory from your packing slip.

The serial number, machine type, model number, and installed memory information provide you with an easy reference for configuration and maintenance. Some configurations require the MAC address to operate your network computer.

<i>Table 3-1. Type 8362 Network Station configuration and maintenance record.</i>	
Category:	Your information:
Serial Number	
Machine Type and Model Number	
MAC Address	
Installed Memory	

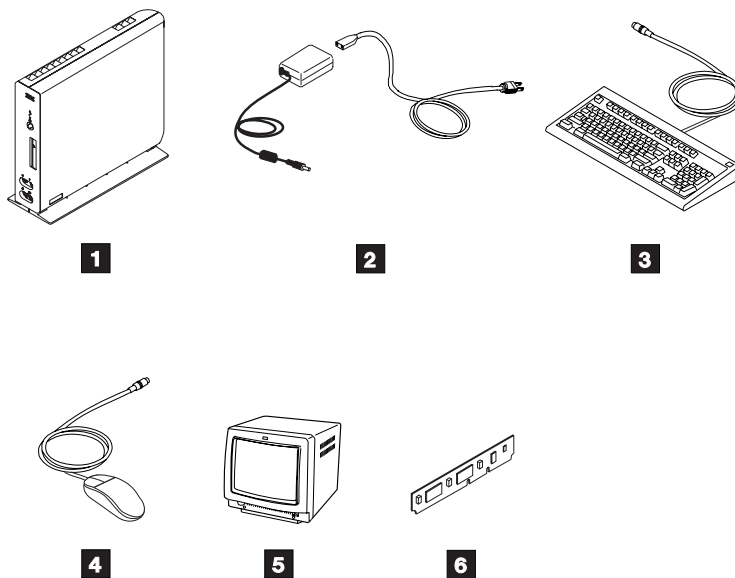


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Figure 3-1. Type 8362 Network Station packaging label.

The Type 8362 Network Station Components

As you unpack your network computer, refer to Figure 3-2 to identify the parts that you received with your Type 8362 Network Station. A description of each part follows the illustration.



RBCN145-3

Figure 3-2. Type 8362 Network Station components.

Note: Items **5** and **6** are optional. You may not have these items if they were not ordered.

- 1** Logic unit
- 2** Power module
- 3** Keyboard
- 4** Mouse
- 5** Monitor
- 6** L2 cache

The Logic Unit

The logic unit is a slim mechanical enclosure that has external connectors and internal memory options.

The external connectors on the logic unit are for network connections, serial devices, local printers, monitors, microphones, headphones, speakers, and smartcards. The Type 8362 Network Station supports most VGA or better monitors.

The PCMCIA slot at the back of the logic unit, if installed, accepts standard PCMCIA cards. PCMCIA cards may add functions such as communication, additional memory, or applications to your network computer.

The smartcard slot on the front of the logic unit accepts standard smartcards. The smartcards may add functions such as personalized applications to your network computer.

Internally, the logic unit has two memory slots for the single inline memory modules (SIMMs). The SIMMs store the operating system code after it is downloaded from the server. Your Type 8362 Network Station comes with either 32 MB or 64 MB of memory. You may upgrade network station memory to 64 MB in pairs of EDO memory only.

Table 3-2. Type 8362 Network Station model, base memory, and network connector table.

Type-Model	Base Memory	Network Connector
8362-A22	32 MB EDO	Token-ring
8362-A23	64 MB EDO	Token-ring
8362-A52	32 MB EDO	Ethernet
8361-A53	64 MB EDO	Ethernet

For information about upgrading memory modules, please see “Type 8362 Network Station Single Inline Memory Module Upgrades and L2 Cache Installation” on page 5-5.

Standard video memory in the Type 8362 Network Station is 2 MB. No video memory upgrade is available.

To allow for proper system cooling, the Type 8362 Network Station logic unit must remain vertical.

Power Module

The power module that is shipped with your network computer is designed specifically for the country in which you reside. The power module plugs into the logic unit, and a detachable power cord connects the power module to the electrical outlet.

Keyboard and Mouse

The Type 8362 Network Station uses the standard IBM keyboard and mouse.

Communications Requirements

The Type 8362 Network Station communicates through the RJ-45 network connector on the back of the logic unit. The type of communication is token-ring or Ethernet. The Type 8362 Network Station model determines the type of communication that is used. Your unit type number and model numbers are on a label on the side cover of your network computer. The type number and the model number are either 8362-A22, 8362-A23, 8362-A52, or 8362-A53.

Type 8362 Network Station Models A22 and A23 require a token-ring Telephone Twisted Pair (TTP) cable with an RJ-45 (8 position) connector. Industry Standard token-ring requirements and standards apply for distances and taps. 4 MB ring speed operation requires a category 3 cable, and 16 MB ring speed operation requires shielded twisted pair category 4 or 5.

The Type 8362 Network Station Models A52 and A53 require an Ethernet Telephone Twisted Pair (TTP) cable with an RJ-45 (8 position) connector. This is an Industry Standard 10BaseT (RJ-45 plug) cable with the normal requirements and standards for distances, hubs, and taps operating at both 10 MB and 100 MB. The cable type is category 3 or better for 10 MB and category 5 for 100 MB.

Note: Properly connected twisted pair cables must meet country-electromagnetic emissions limits.

Setup Steps

Before you setup your Type 8362 Network Station, you need the following:

- The keyboard language identifier for non-English (US) keyboards. The default keyboard setup is for English (US) keyboards. Refer to the *IBM Network Station Manager Installation and Use* (SC41-0664) information for detailed instructions.
- The communications cable used to connect the logic unit to the host server.

Note: IBM does not ship a communications cable with the Type 8362 Network Station.

If you do not have a communications cable, refer to “Communications Requirements” on page 3-3 to determine the type of cable that you need.

Take the following steps to set up your Type 8362 Network Station:

1. Use only the power module that is supplied with your Type 8362 Network Station. The power module is marked in one of the following ways:
 - CLASS II and rated: INPUT: 100-240V 1.3A-0.7A 50-60 Hz.; OUTPUT: 16 V—3.36A (non-grounded)
 - CLASS II and rated: INPUT: 100-240V 1.3A-0.7A 50-60Hz.; OUTPUT: 16V—3.36A (grounded)

Read the information in “Notices (Safety and Environmental)” on page v before you continue with the setup of your Type 8362 Network Station.

2. Decide where you want to place the logic unit.

Place the Type 8362 Network Station logic unit vertically on a clean, flat surface with room for the keyboard and monitor.

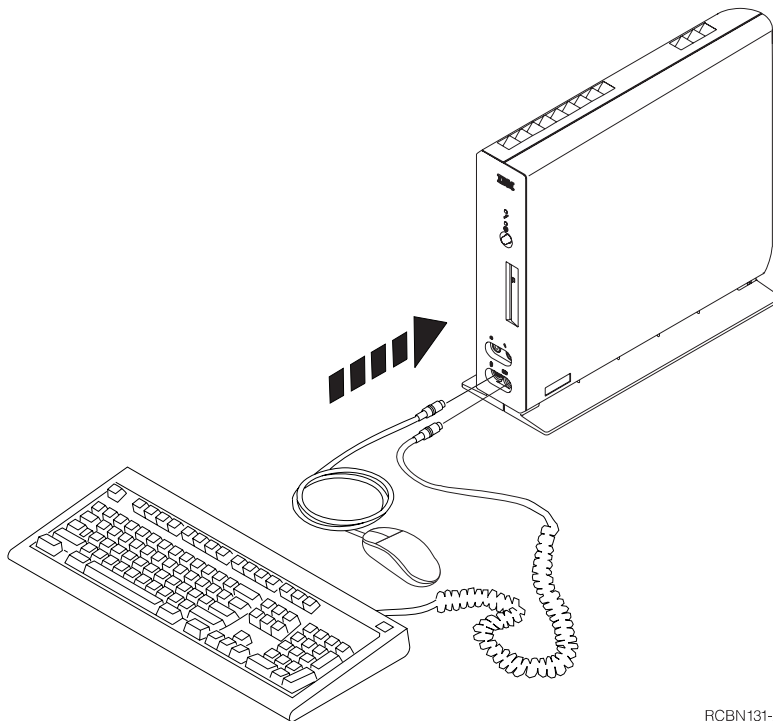
The network computer must remain vertical for proper system cooling.

3. Plug the keyboard into the front of the logic unit.

Note: The arrow on the keyboard connector must face to the left when you connect it.

4. Plug the mouse into the front of the logic unit. See Figure 3-3 on page 3-5.

Note: The arrow on the mouse connector must face to the left when you connect it.



RCBN131-2

Figure 3-3. Type 8362 Network Station keyboard and mouse installation.

5. When you connect the following components of your Type 8362 Network Station, refer to Figure 3-4 on page 3-6.
 - a. If you have a microphone, plug it into the front of your logic unit.
 - b. If you have headphones or speakers, plug them into the front of your logic unit.
 - c. Plug the communications cable into the network connector on the back of the logic unit.
 - d. Connect the other end of the communications cable to your network.
 - e. Connect the monitor cable to the monitor port on the back of the logic unit.
 - f. If you plan to use a local printer, connect the printer cable to the parallel port on the back of the logic unit.
 - g. If you plan to use a serial device, connect the device cable to the serial port.
 - h. Connect the power module to the power connector.

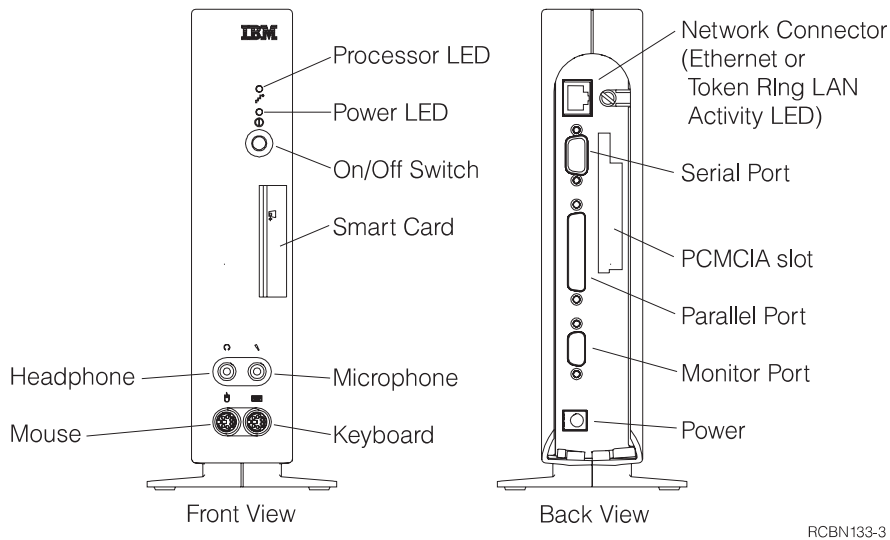


Figure 3-4. Type 8362 Network Station front and back view for component installation.

6. Plug the power module, monitor, and printer power cords into the electrical outlet.
7. Power on the monitor, printer, and Type 8362 Network Station logic unit.

Note: Power on the monitor before you power on the logic unit. Some Network Station configurations will not initialize properly unless you power on the monitor first.

If you have a non-English (US) keyboard, you may need to configure the keyboard language identifier the first time you power on your Type 8362 Network Station. There are two methods to set the keyboard language identifier, detailed in the *IBM Network Station Manager Installation and Use* information. You can do this from the Setup Utility or from the Network Station Manager program.

The setup of your IBM Network Station hardware is now complete.

To operate your Type 8362 Network Station, you must connect to a properly configured network server. The server typically has IBM Network Station Manager software installed with a configuration for each Network Station.

Refer to the *IBM Network Station Manager Installation and Use* information for detailed instructions on how to configure the server and your Network Station.

Chapter 4. Using Your Network Station

You can use the Network Station in several different ways according to the needs of your business. You may use your Network Station in one or more of the following ways:

- A 5250 emulator
- A 3270 emulator
- A Web browser
- With Java

You must configure a network server to serve software applications to your Network Station. A network administrator commonly handles this configuration. Refer to the *IBM Network Station Manager Installation and Use* (SC41-0664) information typically sent with the server software.

The *IBM Network Station Manager Installation and Use* information includes the following information that deals with how to configure and use the IBM Network Station:

- How to install and configure Network Station Manager on your server.
- How to install and configure applications on the server.
- How to connect to a host server.
- How to change your user profile options such as:
 - Keyboard style
 - Monitor settings
 - Screen colors
 - Applications showing on the menu bar
- How to print from your network computer to your local printer or to a printer that is attached to a host system.
- How to save data, close applications, sign off, and power down your network computer.
- How to configure and enable the power management feature.

Chapter 5. Upgrading or Exchanging Memory Modules and L2 Cache

This chapter contains instructions for adding optional or upgraded memory modules to your Type 8361 Network Station or your Type 8362 Network Station.

Handling Static-Sensitive Devices

When you handle options and other computer components, take these precautions to avoid static electricity damage:

- **Attention:** When you add an option, do *not* open the static-protective package until you are ready to install the option.
- Limit your movement. Movement can cause static electricity to build up around you.
- Always handle components carefully. Handle memory modules by the edges. Never touch exposed circuitry.
- Prevent others from touching components.
- When possible, remove the option and install it directly in the computer without setting the option down. When this is not possible, place the static-protective package that the option came in on a smooth, level surface and place the option on it.
- Do not place the option on the computer cover or other conductive metal surface.

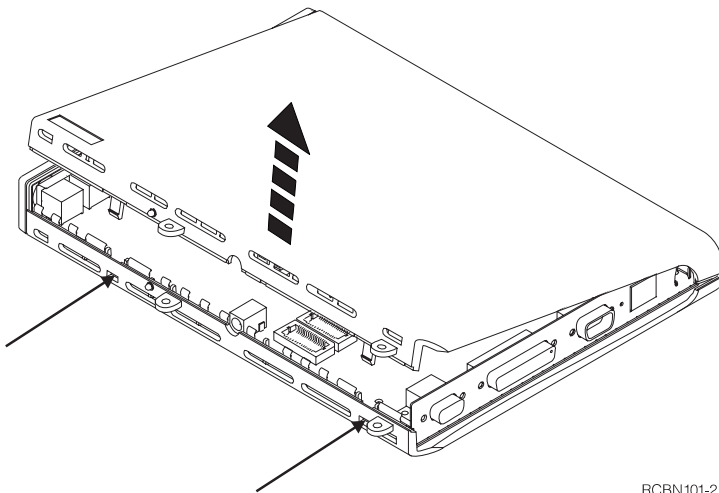
Type 8361 Network Station Single Inline Memory Module Upgrades and Video Memory Module Upgrades

Use the procedures in this section when you upgrade or exchange single inline memory modules (SIMMs) or install video memory modules in your Type 8361 Network Station. For new installation upgrades, begin with step 3.

1. Unplug your power module from the electrical outlet. If you have the logic unit base installed, remove it by pulling the release tab, or lift the logic unit from its wall mounting.
2. Remove all the cables that are connected to the logic unit.
3. Remove the cover of the logic unit by doing the following:
 - a. Refer to Figure 5-1 on page 5-2. Lay the logic unit on a flat surface so that the front panel is facing to the left and the connectors are facing right.
 - b. Locate the two small locking clips. (See Figure 5-1 on page 5-2.)
 - c. Use a pen or similar object to press straight in on the two clips to release the top cover.
 - d. Remove the cover by doing the following:

Attention: You may damage the cover if you do not perform this step.

- 1) Pull the front panel with the blue IBM logo to the left so that four small tabs clear the front panel as you lift the cover.
- 2) Tilt the cover toward the rear until it releases.
- 3) Remove the cover and set it aside.

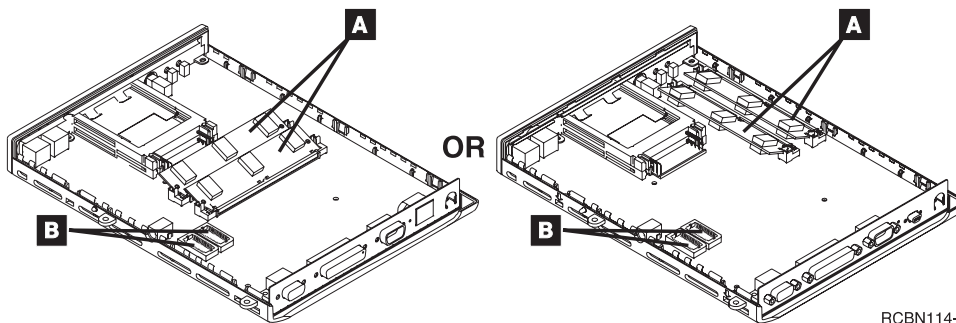


RCBN101-2

Figure 5-1. Type 8361 Network Station cover removal procedure.

4. Refer to Figure 5-2 to see a logic unit with two SIMMs installed (**A**) and the video memory module sockets (**B**). If you have not previously installed a memory option SIMM, your logic unit may have only one SIMM installed.

Note: The SIMMs in some Type 8361 Network Station logic units tilt away from the PCMCIA drive (not shown).



RCBN114-5

Figure 5-2. Type 8361 Network Station SIMMs and video memory module locations.

If you are installing video memory modules, go to step 7 on page 5-4.

When you are installing or upgrading a SIMM:

- If your logic unit has an empty SIMM socket, go to step 6 on page 5-3.

Note: Models 110, 210, and 3xx require EDO memory.

- If your logic unit does not have an empty SIMM socket, go to step 5.
5. To remove the SIMM, refer to Figure 5-3 and take the following steps:
- a. Use your fingers or thumbs to pull back on the two tabs that are located on each end of the SIMM socket.
 - b. Pull the two tabs back far enough to allow the SIMM to pop up past the tabs.
 - c. Hold the SIMM on the edge of both ends and gently remove it from the socket.

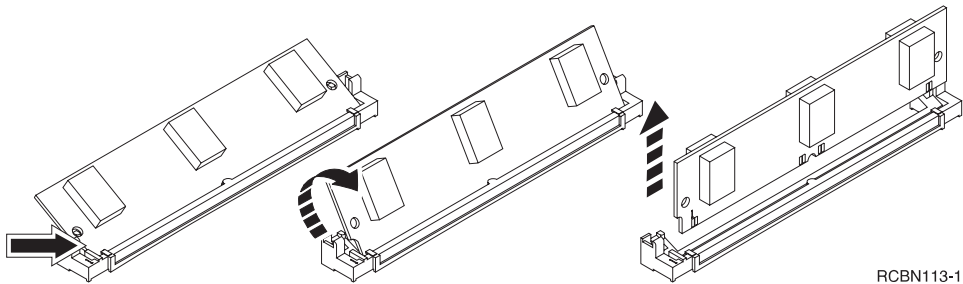


Figure 5-3. Type 8361 Network Station SIMM removal.

Refer to “Replacing the Type 8361 Network Station Logic Unit” on page 6-8 for instructions on how to return your Type 8361 Network Station logic unit with the proper memory installed.

6. Install the SIMM in the empty slot by referring to Figure 5-4 and following these steps:
- a. Hold the SIMM on the edge of both ends and gently insert it into the socket.
 - b. Tilt the SIMM back until it locks into the two tabs that are located on each end of the SIMM socket.

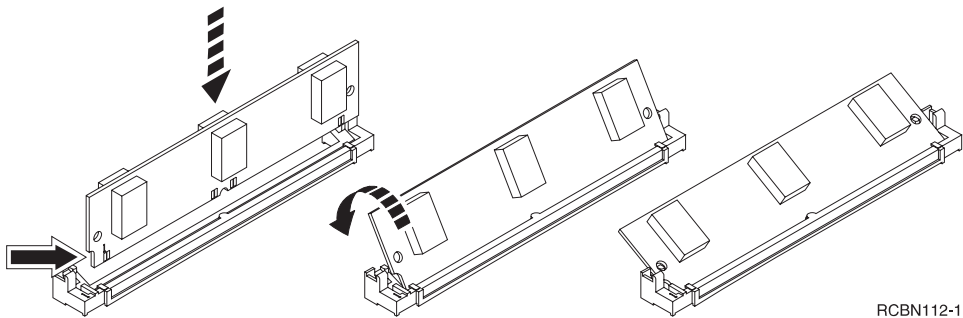
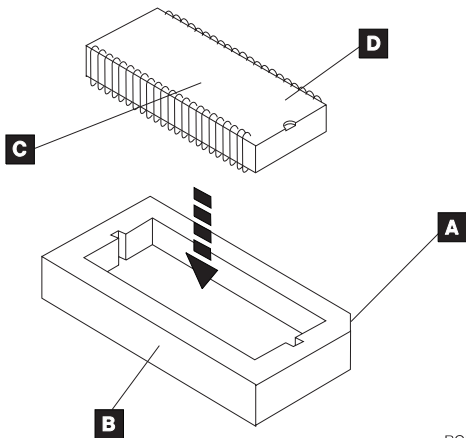


Figure 5-4. Type 8361 Network Station SIMM installation.

If you have an optional video memory module to install, go to step 7 on page 5-4.

If you do not have an optional video memory module to install, go to step 8 on page 5-4.

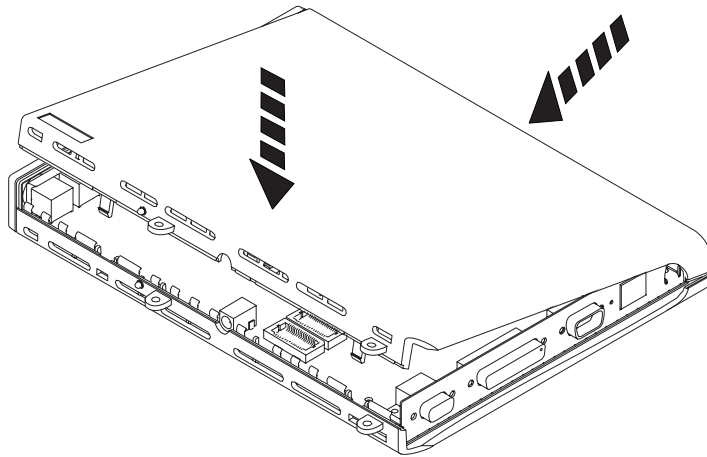
7. Install each of the optional video memory modules into an empty socket. The sockets are identified as **B** in Figure 5-2 on page 5-2. Refer to Figure 5-5 and follow these steps:
 - a. Align the module (**C**) so that the index mark (**D**) of the memory module corresponds with the index mark (**A**) of the socket (**B**).
 - b. Carefully push the memory module down into the socket.



RCBN120-2

Figure 5-5. Type 8361 Network Station video memory module installation.

8. Refer to Figure 5-6 on page 5-5. Install the cover on the logic unit by doing the following:
 - a. Lay the logic unit on a flat surface so that the front is facing to the left and the connectors are facing right.
 - b. Position the cover over the logic unit.
 - c. Align the brackets with the slots at the top of the logic unit.
 - d. Tilt the cover down.
 - e. Press on the cover until the two locking tabs click through the openings in the bottom of the logic unit.
 - f. Press on the edge of the cover near the front panel so that it locks into place.



RCBN105-2

Figure 5-6. Type 8361 Network Station cover installation.

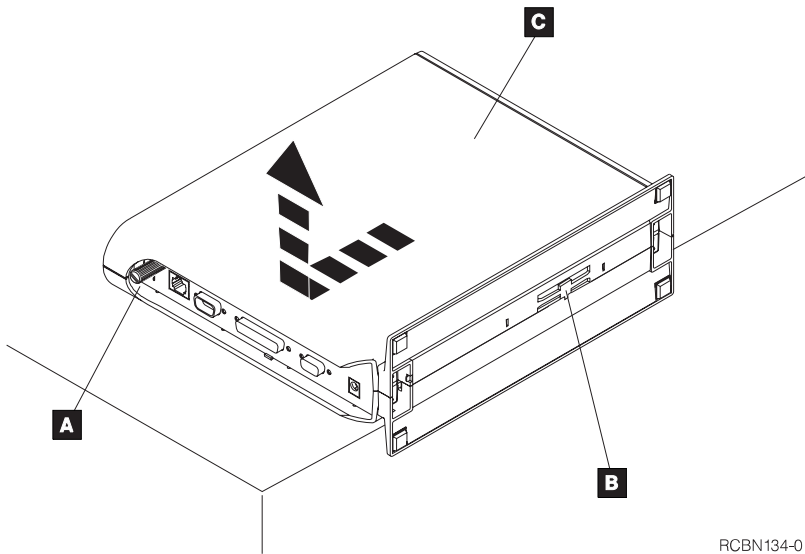
Your memory upgrade is now complete. Refer to Chapter 2, “Setting Up Your Type 8361 Network Station” on page 2-1 for assistance in reconnecting your cables, mounting the logic unit, and powering up your Type 8361 Network Station.

Type 8362 Network Station Single Inline Memory Module Upgrades and L2 Cache Installation

Use the procedures in this section to upgrade or exchange single inline memory modules (SIMMs) or to install or exchange an L2 Cache in your Type 8362 Network Station.

1. Unplug the power module from the electrical outlet.
2. Remove all of the cables that are connected to the logic unit.
3. Remove the cover of the logic unit by doing the following:
 - a. Refer to Figure 5-7 on page 5-6. Place the logic unit on your desk so the front panel is facing to the right and the connectors are facing to the left. Let the logic unit base hang over the edge of the desk in front of you.
 - b. Loosen the thumbscrew (**A**) that is located next to the networking connectors.

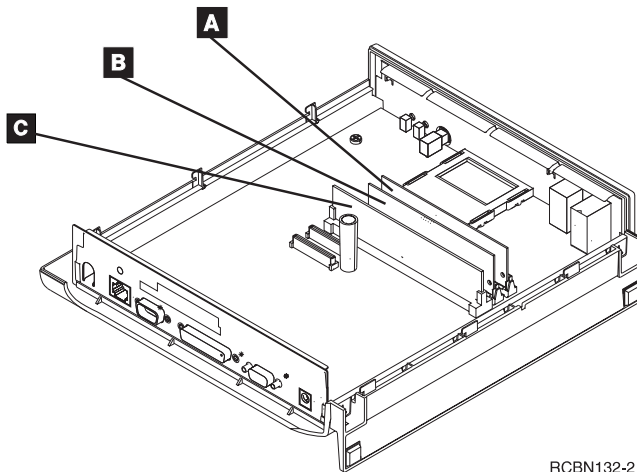
Note: The screw will not come all the way out of the logic unit.
 - c. Press in and hold the cover latch (**B**).
 - d. Hold the bottom cover stationary.
 - e. Slide the top cover (**C**) to the left until it catches.
 - f. Carefully remove the top cover to protect the metal shield from damage.
 - g. Set the top-cover aside.



RCBN134-0

Figure 5-7. Type 8362 Network Station cover removal procedure.

- Figure 5-8 shows the location of the two main SIMM slots (**A** and **B**) and the L2 cache (**C**).



RCBN132-2

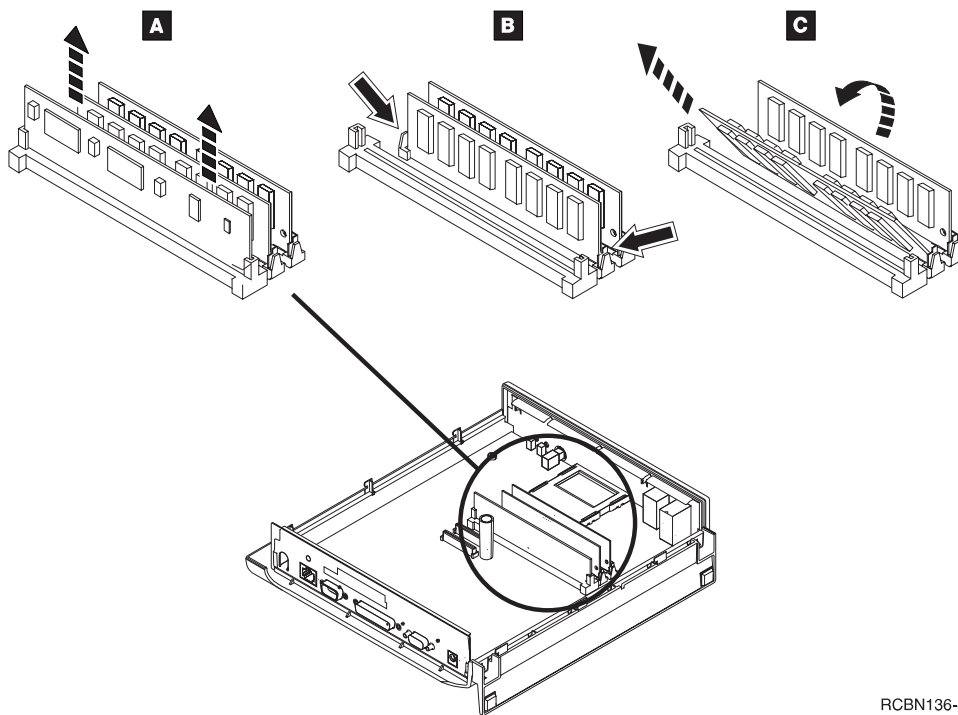
Figure 5-8. Type 8362 Network Station SIMMs and L2 Cache location.

If you do not have an L2 Cache installed:

- Go to step 6 on page 5-7 if you need to upgrade or exchange SIMMs before you install the L2 Cache.
- Go to step 8 on page 5-8 to install an L2 Cache only.

If you have an L2 Cache, you need to remove the L2 Cache before you upgrade, or exchange your SIMMs. Continue with the next step.

5. Refer to figure Figure 5-9. Do the following steps to remove the L2 Cache:
 - a. Lay the network computer on your desk so the back of the logic unit is towards you. Refer to Figure 3-4 on page 3-6.
 - b. Hold the L2 Cache by both upper corners.
 - c. Use force to lift the L2 Cache out of the socket.
 - d. Remove the L2 Cache and set it aside.



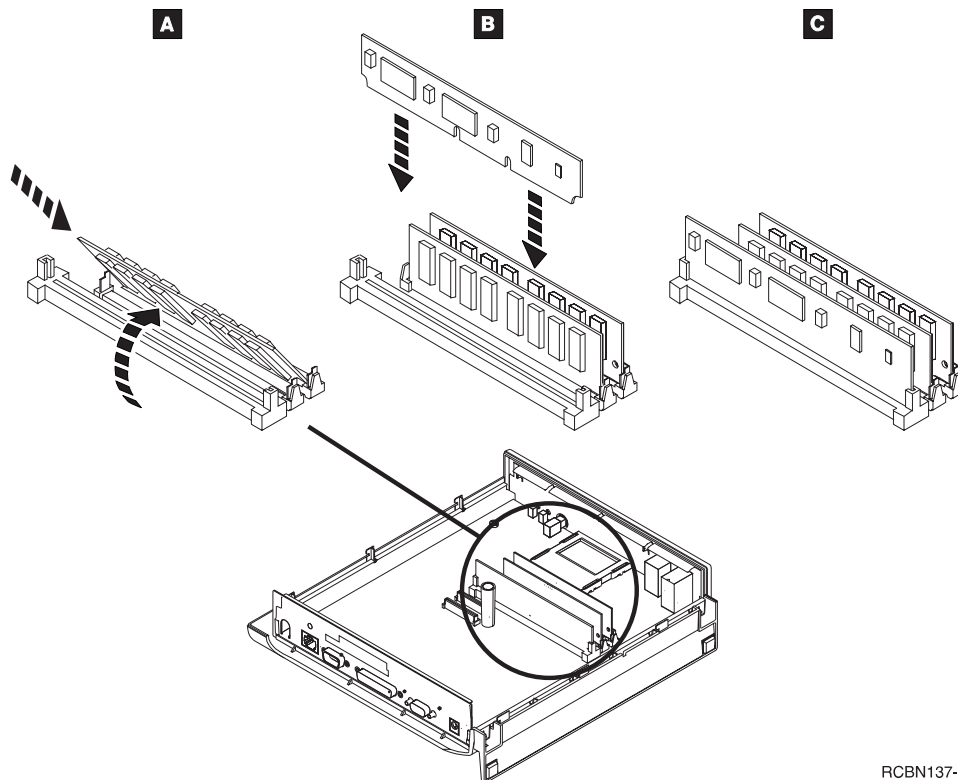
RCBN136-4

Figure 5-9. Type 8362 Network Station SIMM removal procedure.

6. Refer to Figure 5-9. To remove your SIMMs do the following steps:
 - a. Release the two tabs **B** in the first SIMM socket.
 - b. Tilt the SIMM down toward you **C**.
 - c. Remove the SIMM and set it aside.
 - d. Repeat steps a, b, and c for the SIMM in the second SIMM socket.

Refer to "Replacing the Type 8362 Network Station Logic Unit" on page 6-9 for instructions on how to return your Type 8362 Network Station logic unit with the proper memory installed.

7. Refer to Figure 5-10 on page 5-8. Install new SIMMs by doing the following:
 - a. Hold the SIMM with cut-away notch to the lower right.
 - b. Slide the SIMM into socket **A** at a 60-degree angle.
 - c. Push the SIMM upright until the tabs lock the SIMM into place.
 - d. To install the second SIMM, repeat steps a, b, and c in the second SIMM socket.



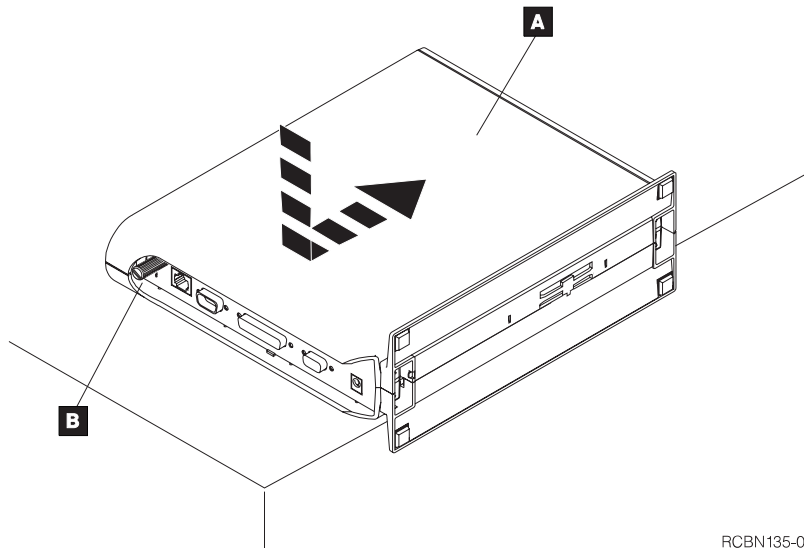
RCBN137-4

Figure 5-10. Type 8362 Network Station SIMM installation procedure.

8. Refer to Figure 5-10. Install the L2 Cache by doing the following:
 - a. Lay the network computer on your desk so the back connectors are facing you.
 - b. Hold the L2 cache with two hands.
 - c. Align the L2 cache with the socket.

Note: There are two notches in the connector edge of the L2 Cache. Align the notch closest to the center of the L2 Cache with the key in the connector.
 - d. Push the lower left corner of the L2 cache into the socket and hold.

- e. Push the right side of the L2 cache into the socket until it seats firmly.
 - f. Press the L2 cache firmly into the socket with your thumbs.
9. Refer to Figure 5-11 and replace the cover by doing the following:
- a. Place the logic unit on your desk so the front panel is facing to the right and the connectors are facing to the left. Let the logic unit base hang over the edge of the desk in front of you.
 - b. Align the cover (**A**) with the guide fingers in the bottom cover.
 - c. Carefully press the cover into place.
 - d. Turn the logic unit so the thumbscrew and back connectors are facing you.
 - e. Hold the middle of the logic unit base.
 - f. Hold the top of the logic unit with the vent holes in your other hand.
 - g. Squeeze lightly and slide the cover (**A**) forward with your thumbs.
 - h. Tighten the thumbscrew (**B**).



RCBN135-0

Figure 5-11. Type 8362 Network Station cover replacement procedure.

Your memory upgrade is now complete. Refer to Chapter 3, "Setting Up Your Type 8362 Network Station" on page 3-1 for assistance in reconnecting your cables, mounting the logic unit, and powering up your Type 8362 Network Station.

Chapter 6. Solving Problems and Replacing the IBM Network Station

This chapter contains information that helps you determine the cause of a network computer problem. Follow the steps that are listed in this chapter to solve the problem.

If you are unable to solve the problem, you can request service for your Network Station by telephoning IBM service. In the USA, telephone 1-800-IBM-SERV (1-800-426-7378). You need to provide the machine type, model number, and serial number when you telephone IBM service. On the Type 8361 Network Station this information is on the label that is located near the mounting holes on the logic unit cover. On the Type 8362 Network Station this information is on the label that is located in the lower corner of the side cover.

Problem Solving Steps

To determine what caused your Network Station problem, follow these steps:

1. Record the error message number, error message text, and description of the problem.
2. Find the problem symptom in Table 6-1, Table 6-2 on page 6-7, Table 6-3 on page 6-7, or Table 6-4 on page 6-7 and follow the instructions to solve the problem.
3. If you need to replace a part, find the part in Figure A-1 on page A-2 or Figure A-2 on page A-4 and order the part from IBM or your reseller.

If your Network Station is under maintenance contract or warranty, contact IBM Service to obtain parts. See "Warranty Service" on page B-2.

4. After you receive the new part, refer to Chapter 5, "Upgrading or Exchanging Memory Modules and L2 Cache" on page 5-1 for instructions on exchanging the part.
5. If you need to return your logic unit to IBM, refer to "Replacing the Type 8361 Network Station Logic Unit" on page 6-8 or "Replacing the Type 8362 Network Station Logic Unit" on page 6-9.

If you continue to have problems, contact your reseller, or IBM.

Table 6-1 (Page 1 of 6). Problem Description Table for Type 8361 and Type 8362 Network Stations

Symptom	What you should do
Power LED is off	

Table 6-1 (Page 2 of 6). Problem Description Table for Type 8361 and Type 8362 Network Stations

Symptom	What you should do
Type 8361 or Type 8362 Network Station power LED is off and processor LED is off	<ul style="list-style-type: none"> Verify that the power switch is turned on. Test the electrical outlet by plugging in a different electrical device to determine if the outlet has power. If possible, trade power supplies with another Network Station to determine if the power supply is failing. <p>Note: Do not use an Type 8362 Network Station power module on an Type 8361 Network Station.</p> <ul style="list-style-type: none"> If the power supply is working, then the Network Station is no longer functional. See "Replacing the Type 8361 Network Station Logic Unit" on page 6-8 or "Replacing the Type 8362 Network Station Logic Unit" on page 6-9.
Type 8361 or Type 8362 Network Station power LED is off and processor LED is on	The Network Station is no longer functional. See "Replacing the Type 8361 Network Station Logic Unit" on page 6-8 or "Replacing the Type 8362 Network Station Logic Unit" on page 6-9.
Monitor problems	
Monitor is not responding	<ul style="list-style-type: none"> Ensure that the monitor is properly connected to the logic unit. Ensure that the monitor is properly connected to the power outlet and turned on. Ensure that when the logic unit is powered on, the LAN Activity LED blinks once and the power LED is lit. Switch monitors with an Network Station that has a properly functioning monitor to determine if your monitor is failing. The server resolution in the Network Station Setup Utility may be incorrect. Refer to the <i>IBM Network Station Manager Installation and Use</i> information for instructions. Type 8361 only: Ensure that the SIMMs are correctly installed inside the logic unit by performing the following steps: <ol style="list-style-type: none"> Turn off the logic unit. Watch the power LED as you turn the logic unit back on. If the power LED blinks twice, the SIMM is missing or installed incorrectly. Refer to step 1 on page 5-1 for information about how to remove and install system memory.
Blank screen after operating system code download	The Network Station resolution in the Network Station Setup Utility may be incorrect. Refer to the <i>IBM Network Station Manager Installation and Use</i> information for instructions.
Monitor shows wrong color, or scrolling lines	Check your monitor cable connections; then, if necessary, test a properly functioning monitor on your Network Station. The Network Station resolution in the Network Station Setup Utility may be incorrect. Refer to the <i>IBM Network Station Manager Installation and Use</i> information for instructions.
Display image too large to fit on monitor	Your Type 8361 or Type 8362 Network Station may be set to automatically detect which monitor you are using. For autodetect to work correctly, you must power on the monitor before you power on the logic unit.

Table 6-1 (Page 3 of 6). Problem Description Table for Type 8361 and Type 8362 Network Stations

Symptom	What you should do
Error messages	
Try to determine the cause and solution of the problem from the description in the message text. If you continue to have problems, contact your reseller, or IBM.	
Blinking power LED	
If your Network Station is not functioning properly and the <i>power LED is blinking</i> in a pattern, an error has occurred. The LED blinks a certain number of times, pauses for a short time, and repeats the same pattern of blinks again. Refer to the blink patterns below to determine the error.	
1 blink and then pause	Serial I/O chip is not responding to start-up test. See "Replacing the Type 8361 Network Station Logic Unit" on page 6-8 or "Replacing the Type 8362 Network Station Logic Unit" on page 6-9.
2 blinks and then pause	The system SIMM is missing, incorrectly installed, or defective. Remove and reinstall the SIMMs. Keep in mind that Type 8361 Network Station Models 110, 210 and 3xx require EDO memory. Type 8361 only: Refer to step 1 on page 5-1 for SIMM removal and reinstallation instructions. Type 8362 only: Refer to step 1 on page 5-5 for SIMM removal and reinstallation instructions
3 blinks and then pause	There is an illegal memory configuration.
4 blinks and then pause	The memory test failed. Type 8361 only: Remove and reinstall the SIMMs. Keep in mind that Models 110, 210, and 3xx require EDO memory. Refer to step 1 on page 5-1 for instructions. If the memory test fails again, replace the memory. Refer to Table A-1 on page A-2 to find the part number for the SIMMs. Type 8362 only: Remove and reinstall the SIMMs. Refer to step 1 on page 5-5 for instructions. If the memory test fails again, replace the memory. Refer to Figure A-2 on page A-4 to find the part number for the SIMMs.
6 blinks and then pause	Video memory initialization failed. See "Replacing the Type 8361 Network Station Logic Unit" on page 6-8 or "Replacing the Type 8362 Network Station Logic Unit" on page 6-9.
7 blinks and then pause	Video memory test failed. See "Replacing the Type 8361 Network Station Logic Unit" on page 6-8 or "Replacing the Type 8362 Network Station Logic Unit" on page 6-9.
Memory problems	
Insufficient memory	You may need to add more system memory to your network computer. Some applications require more memory than your network computer might have. Refer to the <i>IBM Network Station Manager Installation and Use</i> information for memory usage requirements for various software.

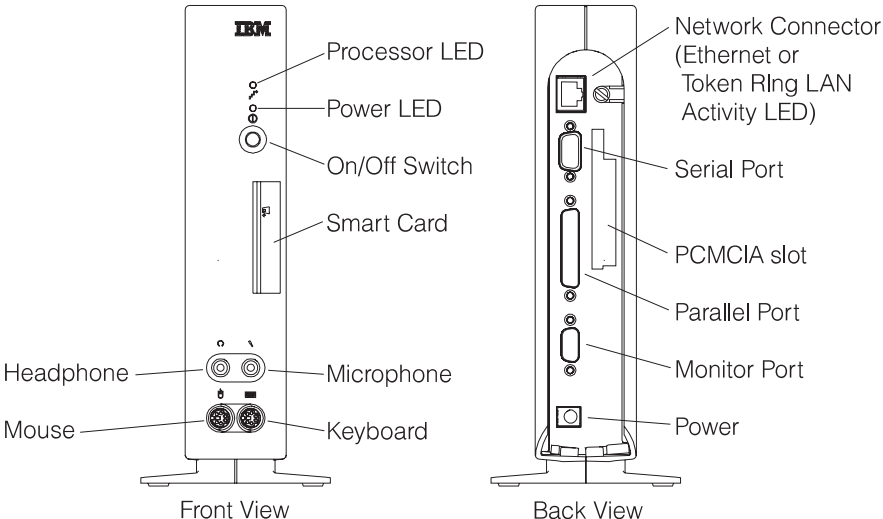
Table 6-1 (Page 4 of 6). Problem Description Table for Type 8361 and Type 8362 Network Stations

Symptom	What you should do
Adding memory	<p>If you need to add memory to your network computer, refer to Table A-1 on page A-2 or Table A-2 on page A-5 to find the part number for the memory SIMMs.</p> <p>Refer to "Type 8361 Network Station Single Inline Memory Module Upgrades and Video Memory Module Upgrades" on page 5-1 for instructions on installing additional memory in a Type 8361 Network Station logic unit.</p> <p>Refer to "Type 8362 Network Station Single Inline Memory Module Upgrades and L2 Cache Installation" on page 5-5 for instructions on installing additional memory in a Type 8362 Network Station logic unit.</p>
Keyboard or mouse is not working	
Keyboard problems	<ul style="list-style-type: none"> • Ensure that the keyboard is correctly connected to the logic unit. If possible, trade keyboards with a network computer that has a properly functioning keyboard. • Verify that the keyboard is not connected to the mouse connector.
Keyboard language not correct	The keyboard language may be incorrect or the keyboard may be from a network computer that uses a different language. See the <i>IBM Network Station Manager Installation and Use</i> information for additional information.
Message: No input device detected. Startup will continue in one minute.	<p>If this message is displayed during the boot of the network computer, an input device is not properly connected. To correct the problem, do the following:</p> <ol style="list-style-type: none"> 1. Power off the logic unit. 2. Disconnect the keyboard and mouse. 3. Ensure that the mouse and keyboard were plugged in to the correct receptacles and then reconnect the devices. 4. Power on the logic unit. <p>If you receive this message again, you may need to replace the keyboard. Refer to Table A-3 on page A-5 for the correct part number.</p>
Message: Keyboard initialization timeout	<p>Power off the logic unit, ensure that the keyboard is plugged into the correct receptacle, and then power on the logic unit.</p> <p>If you receive this message again, you may need to replace the keyboard. Refer to Table A-3 on page A-5 for the correct part number.</p>
Message: Mouse status timeout	<p>Power off the logic unit, ensure that the mouse is plugged into the correct receptacle, and then power on the logic unit.</p> <p>If you receive this message again, you may need to replace the mouse. Refer to Table A-1 on page A-2 for the correct Type 8361 Network Station part number. Refer to Table A-2 on page A-5 for the correct Type 8362 Network Station part number.</p>
Mouse problems	Ensure that the mouse is correctly connected to the logic unit. If possible, trade the mouse with a network computer that has a properly functioning mouse. Verify the keyboard is not connected to the mouse connector.
Serial or Parallel port problems	

Table 6-1 (Page 5 of 6). Problem Description Table for Type 8361 and Type 8362 Network Stations

Symptom	What you should do
Printer problems	Verify that the configuration information for your network computer printer is correct. Refer to the <i>IBM Network Station Manager Installation and Use</i> information for details.
Serial device problems	Verify that your network computer serial device configuration information is correct. Refer to the <i>IBM Network Station Manager Installation and Use</i> information for details.
Communications problems Type 8361 Network Station	
<p>The following illustration shows the LED lights on the Type 8361 Network Station logic unit. These lights can help you determine the cause of a problem.</p> <p>The diagram shows two views of the logic unit. The front view on the left has three indicators: a small circle for the Processor LED, a slightly larger circle for the Power LED, and a larger circle for the On/Off Switch. The back view on the right shows two network connection ports at the top, each with a corresponding LED below it. A circular inset provides a magnified view of the back panel, showing the Twinax and Ethernet/Token Ring ports and their respective LEDs. Labels with leader lines identify each component.</p>	
<p>Look at the back of the logic unit. If the communications function of your network computer is working properly, you should see a solid-green indicator LED. If the green LED is off or blinking there are communications problems. On token-ring models only, if the amber LED is on or blinking, there are communication problems. Refer to Table 6-2 on page 6-7 for additional information on token-ring errors.</p>	
<p>Green LED is not on solid. Token-Ring Models only: Amber LED is on or blinking.</p>	<p>Ensure that the network cable is correctly connected to the logic unit and to the server.</p> <p>Refer to the <i>IBM Network Station Manager Installation and Use</i> information to determine whether the server is functioning properly.</p> <p>For additional information about token-ring error indicators, refer to Table 6-2 on page 6-7. For additional information about Ethernet error indicators, refer to Table 6-3 on page 6-7.</p>
Network cable problem	If possible, trade network cables with another network computer that is functioning properly to determine if the cable is failing. If you determine that the cable is the cause of the problem, replace the cable.
Communications problems Type 8362 Network Station	

Table 6-1 (Page 6 of 6). Problem Description Table for Type 8361 and Type 8362 Network Stations

Symptom	What you should do
<p>The following illustration shows the LED lights on the Type 8362 Network Station logic unit. These lights can help you determine the cause of a problem.</p>	
 <p>The diagram shows two views of the logic unit. The front view (left) includes labels for Processor LED, Power LED, On/Off Switch, Smart Card, Headphone, Microphone, Mouse, and Keyboard. The back view (right) includes labels for Network Connector (Ethernet or Token Ring LAN Activity LED), Serial Port, PCMCIA slot, Parallel Port, Monitor Port, and Power. The IBM logo is visible at the top of the front view.</p> <p style="text-align: right;">RCBN133-3</p>	
<p>Look at the back of the logic unit. You should see a solid-green indicator LED integrated into the network connector if the communications function of your network computer is working properly. If the green LED is off or blinking there are communications problems. On token-ring models only, if the amber LED is on or blinking, there are communication problems. Refer to Table 6-2 on page 6-7 for additional information about token-ring errors.</p>	
<p>Green LED is not on solid. Token-Ring Models only: Amber LED is on or blinking.</p>	<p>Ensure that the network cable is correctly connected to the logic unit and to the server.</p> <p>Refer to the <i>IBM Network Station Manager Installation and Use</i> information to determine whether the server is functioning properly.</p> <p>For additional information about token-ring error indicators, refer to Table 6-2 on page 6-7.</p>
<p>Network cable problem</p>	<p>If possible, trade network cables with another network computer that is functioning properly to determine if the cable is failing. If you determine that the cable is the cause of the problem, replace the cable.</p>

Amber LED	Green LED	Explanation
Off	Off	The adapter initialization is in progress, the power is off, or the adapter is not active.
Off	Blinking	The power is off or the adapter is not actively performing self-diagnostics and is waiting to open. If this condition occurs after an "open" request has been made, the adapter has closed.
Off	On	The adapter is open and operating.
On	Off	The adapter failed the self-diagnostic test. See "Replacing the Type 8361 Network Station Logic Unit" on page 6-8 or "Replacing the Type 8362 Network Station Logic Unit" on page 6-9.
Blinking	Off	The adapter has closed due to a failure with the "open" request, a wire fault was detected, or an "auto-remove" failure occurred.
Blinking	Blinking	The adapter is active and waiting for initialization.
Blinking	On	The adapter has detected beaconing or encountered an error.

Green LED	Explanation
Off	The adapter has not recorded an Ethernet signal.
On	The adapter network connection is operating properly.

Symptom	What you should do:
The Network Station is unable to receive the operating system code from the server	<ul style="list-style-type: none"> The configuration may be incorrect on the server. Refer to the <i>IBM Network Station Manager Installation and Use</i> publication for instructions and correct settings. Type 8361 Network Station Model 341 only: The twinaxial address may not be set properly, or the workstation controller may not be powered on. See "Assigning a Twinaxial Address to a Type 8361 Network Station Model 341" on page 2-11.

Replacing the Network Station

All parts of the IBM Network Station network computer, such as the keyboard, mouse, and optional features are Customer Replaceable Units (CRUs). Refer to your local telephone listing to contact your IBM Helpcenter for assistance on how to return your unit to IBM. Country warranty service terms and conditions apply.

The replacement unit becomes your property in exchange for the failed unit, which becomes the property of IBM.

- **US Only:**

If you require warranty service, you should call 1-800-426-7378 (1-800-IBM-SERV). IBM will assist you with problem analysis and with instructions on how to return your unit to IBM. If you need a replacement unit, IBM will deliver the unit by courier.

You need to pack the failed unit in the shipping carton that contained the replacement unit and follow the IBM return shipping instructions. IBM will cover shipping charges both ways.

If you do not use the approved shipping container, any damage to the failed unit may be charged to you. You may be charged for the replacement unit if you do not return the failed unit to IBM within 30 days.

Replacing the Type 8361 Network Station Logic Unit

When you or your service provider returns your Type 8361 Network Station, you must return your original memory that is installed in the slot closest to the PCMCIA connector. Remove any optional 8 MB, 16 MB, or 32 MB SIMMs from your network computer and install them in your replacement.

If you upgraded your network computer base memory to either 16 MB, or 32 MB, remove this memory and install it in the replacement. If you do not have your original base memory, swap the SIMM from the replacement logic unit into the failed logic unit for return to IBM.

Refer to Table 6-5 to determine the correct memory to return to IBM with your logic unit.

Table 6-5. Type 8361 Network Station memory return table.

Machine Type and Model	MB	Qty	Description
Type 8361-100	8 MB	1	8 MB SIMM installed
Type 8361-110	16 MB	1	16 MB EDO SIMM installed
Type 8361-200	8 MB	1	8 MB SIMM installed
Type 8361-210	16 MB	1	16 MB EDO SIMM installed
Type 8361-341	16 MB	1	16 MB EDO SIMM installed

Note: Models 110, 210, and 3xx must have EDO SIMMs installed.

Do not remove your video memory. If you installed the 1 MB video memory upgrade **B** in Figure 5-2 on page 5-2, you will receive a 1 MB video memory upgrade with the replacement logic unit.

Refer to Chapter 5, "Upgrading or Exchanging Memory Modules and L2 Cache" on page 5-1 for instructions on how to remove and replace SIMMs in your logic unit.

Replacing the Type 8362 Network Station Logic Unit

When you or your service provider returns your Type 8362 Network Station logic unit, you must return the original memory. If you upgraded your network computer base memory to 64 MB, make sure to remove this memory and install it in the replacement. If you do not have your original base memory, swap the SIMMs from the replacement logic unit into the failed logic unit for return to IBM.

Refer to Table 6-6 to determine the correct amount of memory to return to IBM with your logic unit.

Machine Type and Model	MB	Qty	Description
Type 8362-A22	32 MB	2	16 MB EDO SIMMs installed
Type 8362-A23	64 MB	2	32 MB EDO SIMMs installed
Type 8362-A52	32 MB	2	16 MB EDO SIMMs installed
Type 8362-A53	64 MB	2	32 MB EDO SIMMs installed

If you have an L2 Cache installed in your logic unit, remove it and install it in your replacement logic unit before returning the failed logic unit to IBM.

Refer to “Type 8362 Network Station Single Inline Memory Module Upgrades and L2 Cache Installation” on page 5-5 for instructions on how to remove and replace SIMMs and how to remove and replace the L2 Cache in your logic unit.

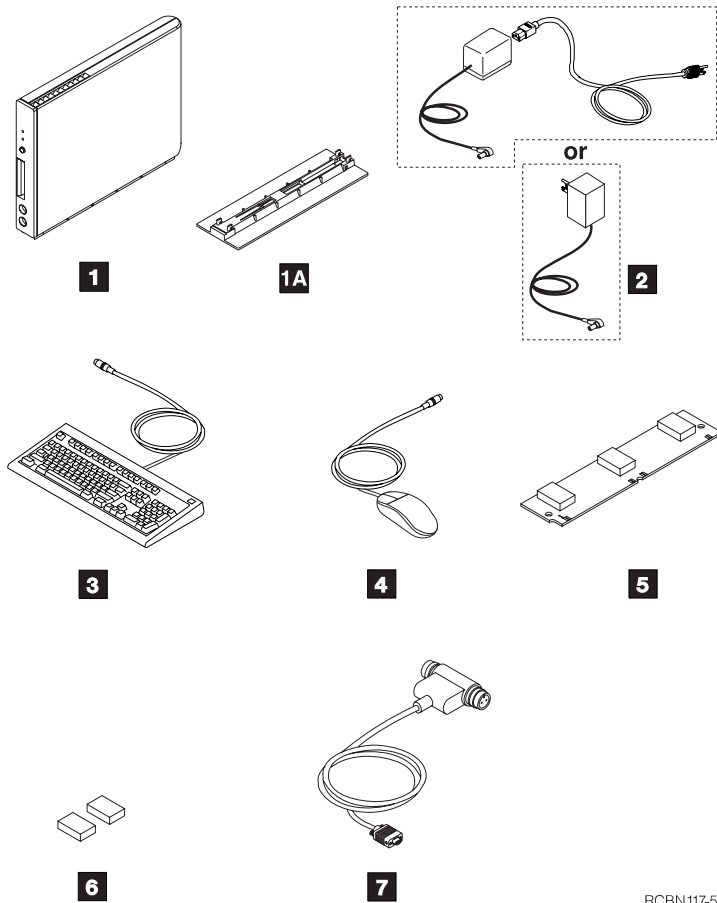
Appendix A. Parts List Type 8361 and Type 8362 Network Station

You can order IBM replacement parts for the Type 8361 Network Station and the Type 8362 Network Station. Refer to your local telephone listing to contact your IBM representative to order warranty and non-warranty spare parts.

Type 8361 Network Station parts

Some parts for the Type 8361 Network Station are unique, and some parts are common across all Network Stations. All models use the same keyboard part numbers. Refer to the diagram below to help you determine the correct part to order. Then locate the part in the following tables:

- Table A-1 on page A-2 for Type 8361 parts only.
- Table A-3 on page A-5 for keyboard part numbers.
- Table A-4 on page A-7 for power cord part numbers.
- Table A-5 on page A-9 for cabling part numbers.



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Figure A-1. Type 8361 Network Station illustrated parts list.

Table A-1 (Page 1 of 3). Type 8361 Network Station Parts			
Reference	Description	Specific Country	Part Number
Logic Unit and Associated Parts Type 8361 Network Station			
1	Logic Unit for Model 100 (Ethernet)		45H3484
1	Logic Unit for Model 110 (Ethernet)		91H3698
1	Logic Unit for Model 200 (token-ring)		45H3485
1	Logic Unit for Model 210 (token-ring)		91H3699

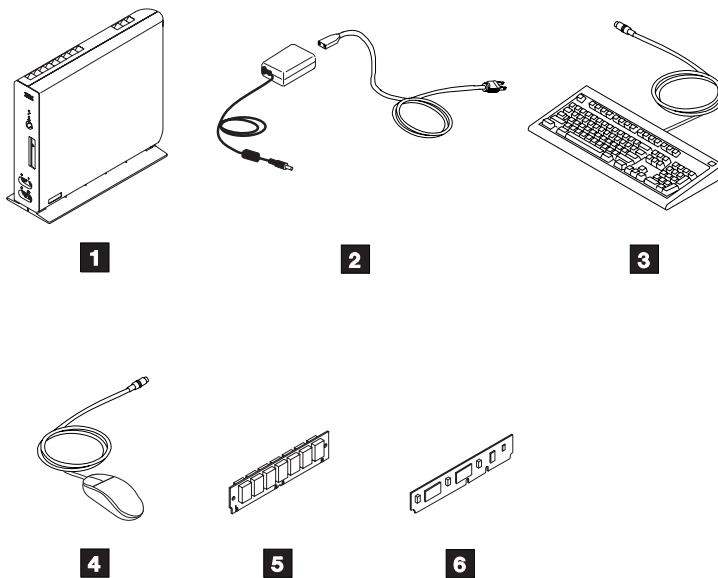
<i>Table A-1 (Page 2 of 3). Type 8361 Network Station Parts</i>			
Reference	Description	Specific Country	Part Number
1	Logic Unit for Model 341 (twinaxial)		17G1553
	Removable logic unit cover Type 8361		45H3498
1A	Base mounting stand		45H3467
7	Mini D shell to auto termination twinaxial T connector cable		17G1538
4	Mouse, two button		06H4595
Power Modules Type 8361 Network Station			
2	120 V ac direct plug-in power module	Anguilla, Antigua, Aruba, Bahamas, Barbados, Belize, Bermuda, Bolivia, Brazil, Caicos Islands, Canada, Cayman Islands, Colombia, Costa Rica, Cuba, Curacao, Ecuador, El Salvador, Guam, Guatemala, Guyana, Haiti, Honduras, Jamaica, Liberia, Mexico, Montserrat, Netherlands Antilles, Nicaragua, Panama, Philippines, St. Kitts, Tahiti, Tortola, Trinidad, Turks Island, USA, Venezuela, Virgin Islands	45H3490
2	100 V ac power module 50 or 60 Hz	Japan	45H3495
2	230 V ac power module with detachable power cord (uses one of the power cords listed in Table A-4)		45H3491
2	220-240 V ac power module with detachable power cord (uses one of the power cords listed in Table A-4)	Korea	17G1534
2	220-240 V ac power module with detachable power cord (uses one of the power cords listed in Table A-4)		45H3496
Memory Options Type 8361 Network Station¹			
5	8MB memory SIMM		75H5500
5	8MB EDO memory SIMM		91H3748
5	16MB memory SIMM		75H5501
5	16MB EDO memory SIMM		91H3749
5	32MB memory SIMM		75H5502
5	32MB EDO memory SIMM		91H3750

Table A-1 (Page 3 of 3). Type 8361 Network Station Parts			
Reference	Description	Specific Country	Part Number
6	1MB video memory		42H2828
Note:			
1. Type 8361 Models 110, 210 and 3xx require EDO memory.			

Type 8362 Network Station parts

Some parts for the Type 8362 Network Station are unique, and some parts are common across all Network Stations. All models use the same keyboard part numbers. Refer to the diagram below to help you determine the correct part to order. Then locate the part in the following tables:

- Table A-2 on page A-5 for Type 8362 parts only.
- Table A-3 on page A-5 for keyboard part numbers.
- Table A-4 on page A-7 for power cord part numbers.
- Table A-5 on page A-9 for cabling part numbers.



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Figure A-2. Type 8362 Network Station illustrated parts list.

<i>Table A-2. Type 8362 Network Station Parts</i>			
Reference	Description	Specific Country	Part Number
Logic Unit and Associated Parts Type 8362 Network Station			
1	Logic Unit for Model A22 (token ring), without L2 Cache		07L7560
1	Logic Unit for Model A23 (token ring), without L2 Cache		07L7561
1	Logic Unit for Model A52 (Ethernet), without L2 Cache		07L7563
1	Logic Unit for Model A53 (Ethernet), without L2 Cache		07L7564
1	Logic Unit for Model A52 (Ethernet), without L2 Cache and PCMCIA drive		07L8691
1	Logic Unit for Model A53 (Ethernet), without L2 Cache and PCMCIA drive		07L8692
	Removable logic unit cover Type 8362		07L7565
4	Mouse, two button		76H5080
Power Modules Type 8362 Network Station			
2	100V-240V ac power module, 3-pin connector (grounded). You also may need a linecord from Table A-4 on page A-7.		11J8956
2	100V-240V ac power module, 2-pin connector (ungrounded). You also may need a linecord from Table A-4 on page A-7.	Japan	11J8974
Memory Options Type 8362 Network Station¹			
5	16 MB EDO SIMM		91H3749
5	32 MB EDO SIMM		91H3750
6	L2 Cache 512 KB SRAM		75H5462
Note:			
1. Type 8362 Model A22, A23, A52, A53 memory upgrades must be done in pairs of EDO memory only.			

<i>Table A-3 (Page 1 of 3). Type 8361 and Type 8362 Network Station Parts</i>			
Reference	Description	Specific Language	Part Number
Keyboards for Type 8361 and Type 8362 Network Stations			
3	Keyboard	Arabic	8131596

Table A-3 (Page 2 of 3). Type 8361 and Type 8362 Network Station Parts

Reference	Description	Specific Language	Part Number
3	Keyboard	Belgian (Dutch)	75H9514
3	Keyboard	Belgian (French)	75H9513
3	Keyboard	Brazilian (Portuguese)	73G4616
3	Keyboard	Bulgarian	75H9515
3	Keyboard	Chinese (Simplified)	07H0705
3	Keyboard	Chinese (Traditional)	75H9505
3	Keyboard	Czech	75H9516
3	Keyboard	Danish	75H9517
3	Keyboard	Dutch	75H9518
3	Keyboard	English (UK)	75H9540
3	Keyboard	English (US)	75H9505
3	Keyboard	English (US ISO)	75H9548
3	Keyboard	Finnish	75H9536
3	Keyboard	French	75H9519
3	Keyboard	French (Canadian)	75H9507
3	Keyboard	French (Canadian 1988)	42H1295
3	Keyboard	German	75H9520
3	Keyboard	Greek	75H9522
3	Keyboard	Hebrew	75H9523
3	Keyboard	Hungarian	75H9524
3	Keyboard	Icelandic	75H9525
3	Keyboard	Italian	75H9526
3	Keyboard	Japanese Kanji	66G0507
3	Keyboard	Korean (106)	07H0706
3	Keyboard	Norwegian	75H9527
3	Keyboard	Polish	75H9528
3	Keyboard	Portuguese	75H9529
3	Keyboard	Romanian	75H9530
3	Keyboard	Russian	75H9532
3	Keyboard	Russian Cyrillic	75H9531
3	Keyboard	Serbian Cyrillic	75H9533
3	Keyboard	Slovakian	75H9534
3	Keyboard	Slovenian	75H9541
3	Keyboard	Spanish	75H9535
3	Keyboard	Spanish (Latin-American)	75H9509

Reference	Description	Specific Language	Part Number
3	Keyboard	Swedish Finnish	75H9536
3	Keyboard	Swiss (French)	75H9537
3	Keyboard	Swiss (German)	75H9537
3	Keyboard	Swiss (Italian)	75H9526
3	Keyboard	Thai	75H9545
3	Keyboard	Turkish (F)	75H9539
3	Keyboard	Turkish (Q)	75H9538











Detachable Power Cords for Type 8361 and Type 8362 Network Stations		
Plug	Receptacle	Part Number
 125V 15A		Type 8362 only: 75H8989 (1.8 m 5.9 feet) 76H3516 (1.0 m 3.0 feet)
 125V 15A		Type 8362 only: 13H5274 (1.8 m 5.9 feet) 13H5273 (1.0 m 3.1 feet)
 250V 10A		<ul style="list-style-type: none"> • Type 8361 only: • 13F9939 = (1.8 m 5.9 feet) • 13F9940 = (2.7 m 9 feet) • Type 8362 only: • 75H8988 = (1.8 m 5.9 feet)
 250V 15A		<ul style="list-style-type: none"> • Type 8361 only: • 1838574 = (1.8 m 5.9 feet) • 1838576 = (2.7 m 9 feet)
 250V 10A		<ul style="list-style-type: none"> • Type 8361 only: • 13F9996 = (1.8 m 5.9 feet) • 13F9997 = (2.7 m 9 feet) • Type 8362 only: • 75H8992 = (1.8 m 5.9 feet)

Table A-4 (Page 2 of 2). Type 8361 and Type 8362 Network Station Detachable Power Cords













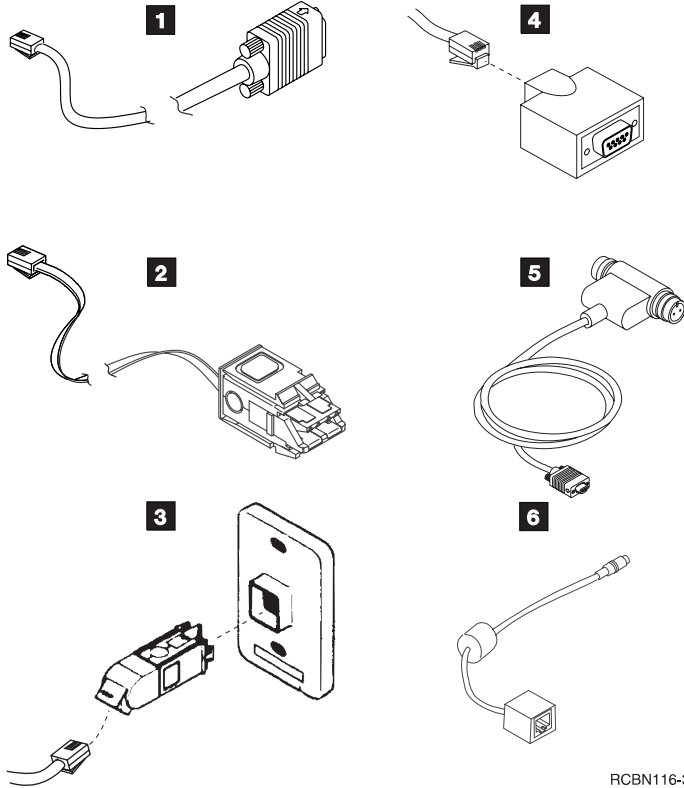
Detachable Power Cords for Type 8361 and Type 8362 Network Stations		
Plug	Receptacle	Part Number
 <p>250V 10A/16A</p>		<ul style="list-style-type: none"> • Type 8361 only: • 14F0086 = (1.8 m 5.9 feet) • 14F0087 = (2.7 m 9 feet) • Type 8362 only: • 75H8999 = (1.8 m 5.9 feet)
 <p>250V 10A/16A</p>		<ul style="list-style-type: none"> • Type 8361 only: • 14F0068 = (1.8 m 5.9 feet) • 14F0069 = (2.7 m 9 feet) • Type 8362 only: • 75H8998 = (1.8 m 5.9 feet)
 <p>250V 10A</p>		<ul style="list-style-type: none"> • Type 8361 only: • 14F0050 = (1.8 m 5.9 feet) • 14F0051 = (2.7 m 9 feet) • Type 8362 only: • 75H8997 = (1.8 m 5.9 feet)
 <p>250V 16A</p>		<ul style="list-style-type: none"> • Type 8361 only: • 14F0014 = (1.8 m 5.9 feet) • 14F0015 = (2.7 m 9 feet) • Type 8362 only: • 75H8993 = (1.8 m 5.9 feet)
 <p>250V 13A</p>		<ul style="list-style-type: none"> • Type 8361 only: • 14F0032 = (1.8 m 5.9 feet) • 14F0033 = (2.7 m 9 feet) • Type 8362 only: • 75H8994 = (1.8 m 5.9 feet)
 <p>250V 16A</p>		<ul style="list-style-type: none"> • Type 8361 only: • 13F9978 = (1.8 m 5.9 feet) • 13F9979 = (2.7 m 9 feet) • Type 8362 only: • 76H3536 = (1.8 m 5.9 feet) • 76H3514 = (1.0 m 3.1 feet)

Table A-5. Optional Cables and Adapters

Communications Cables and Adapters

These optional communications cables and adapters are available from IBM. They are used as alternatives to connect your Type 8361 or Type 8362 Network Station to the communications network. If you need a cable or adapter, refer to the illustration to determine which one you need. Use the reference number that is associated with the cable or adapter to find the part number.



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Reference	Description	Part Number
1	TTP RJ-45 plug STP cable for connection to 9 pin D shell connector	60G1066
2	TTP RJ-45 plug Shielded Twisted Pair (STP) cable for connection to IBM Cabling System connector	60G1063
3	TTP RJ-45 socket adapter for connection to IBM Cabling System	73G8315
4	TTP RJ-45 socket adapter for connection to 9 pin D shell connector	73G8320
5	Mini D shell to auto termination twinaxial T connector cable	17G1538
6	5250 122-key keyboard cable converter	17G1544

Appendix B. Statement of Limited Warranty and License Agreement for Machine Code

Statement of Limited Warranty

The warranties provided by IBM in this Statement of Limited Warranty apply only to Machines you originally purchase for your use, and not for resale, from IBM or your reseller. The term "Machine" means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them. Unless IBM specifies otherwise, the following warranties apply only in the country where you acquire the Machine. If you have any questions, contact IBM or your reseller.

MACHINE: 8361 IBM Network Station
8362 IBM Network Station

Warranty Period*: One year

* Contact your place of purchase for warranty service information.

Production Status

Each Machine is manufactured from new parts, or new and used parts. In some cases, the Machine may not be new and may have been previously installed. Regardless of the Machine's production status, IBM's warranty terms apply.

The IBM Warranty for Machines

IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM's Official Published Specifications. The warranty period for a Machine is a specified, fixed period commencing on its Date of Installation. The date on your receipt is the Date of Installation, unless IBM or your reseller informs you otherwise.

During the warranty period IBM or your reseller, if authorized by IBM, will provide warranty service under the type of service designated for the Machine and will manage and install engineering changes that apply to the Machine.

For IBM or your reseller to provide warranty service for a feature, conversion, or upgrade, IBM or your reseller may require that the Machine on which it is installed be 1) for certain Machines, the designated, serial-numbered Machine and 2) at an engineering-change level compatible with the feature, conversion, or upgrade. Many of these transactions involve the removal of parts and their return to IBM. You represent that all removed parts are genuine and unaltered. A part that replaces a removed part will assume the warranty service status of the replaced part.

If a Machine does not function as warranted during the warranty period, IBM or your reseller will repair it or replace it with one that is at least functionally equivalent, without charge. The replacement may not be new, but will be in good working order. If IBM or

your reseller is unable to repair or replace the Machine, you may return it to your place of purchase and your money will be refunded.

If you transfer a Machine to another user, warranty service is available to that user for the remainder of the warranty period. You should give your proof of purchase and this Statement to that user. However, for Machines which have a lifetime warranty, this warranty is not transferable.

Warranty Service

To obtain warranty service for the Machine, you should contact your reseller or call IBM. In the United States, call IBM at 1-800-IBM-SERV (426-7378). In Canada, call IBM at 1-800-465-6666. You may be required to present proof of purchase.

IBM or your reseller will provide certain types of repair and exchange service, either at your location or at IBM's or your reseller's service center, to restore a Machine to good working order.

When a type of service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. You represent that all removed items are genuine and unaltered. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced. The replacement assumes the warranty service status of the replaced item. Before IBM or your reseller exchanges a Machine or part, you agree to remove all features, parts, options, alterations, and attachments not under warranty service. You also agree to ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange.

You agree to:

1. Obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and
2. Where applicable, before service is provided -
 - a. Follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provide,
 - b. Secure all programs, data, and funds contained in a Machine, and
 - c. Inform IBM or your reseller of changes in a Machine's location.
3. Be responsible for loss of, or damage to, a Machine in transit when you are responsible for the transportation charges.

IBM is responsible for loss of, or damage to, your Machine while it is 1) in IBM's possession or 2) in transit in those cases where IBM is responsible for the transportation charges.

Extent of Warranty

IBM does not warrant uninterrupted or error-free operation of a Machine.

The warranties may be voided by misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by you, removal or alteration of Machine or parts identification labels, or failure caused by a product for which IBM is not responsible.

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2. Reverse assemble, reverse compile, or otherwise translate the Machine Code, unless expressly permitted by applicable law without the possibility of contractual waiver;
3. Sublicense or assign the license for the Machine Code; or
4. Lease the Machine Code or any copy of it.

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Appendix C. Notices

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Power Management

The power consumption for the Type 8361 Network Station is 10 Watts. During periods of inactivity, power consumption reduces to 8 Watts. The power reduction occurs when you use the Type 8361 Network Station with a monitor that implements the Video Electronics Standards Association (VESA) Display Power Management Signalling (DPMS) Standard.

The power consumption for the Type 8362 Network Station is typically 24 Watts. During periods of inactivity, power consumption is reduced to 22 Watts. Type 8362 Network Station supports monitors that implement the Video Electronics Standards Association (VESA) Display Power Management Signalling (DPMS) Standard.

Power management is a feature of IBM Network Station Manager software. The feature reduces the monitor power consumption when your network computer recognizes that you have not used your mouse or keyboard for a period of time.

The power management feature provides three low-power states for your monitor: standby; suspend; and power off. The network administrator defines the delay time for each state. The monitor switches to the defined state after the delay time has elapsed.

The following paragraphs describe how an IBM monitor that complies to the VESA DPMS standard responds to the power management feature for both the Type 8361 Network Station and the Type 8362 Network Station:

Standby state: After a period of inactivity, the Network Station instructs the monitor to enter the standby state. The network computer blanks the monitor screen and alters the power indicator light. When you press a key or move the mouse, the monitor resumes normal operation and restores the screen image. The default time for the standby state is 20 minutes.

Suspend state: If the period of inactivity continues in the standby state, the Network Station instructs the monitor to enter the suspend state to further reduce power consumption. The monitor screen remains blank, and the power indicator light is similar to the standby state or varies slightly. When you press a key or move the mouse, the monitor resumes normal operation and restores the screen image. The default time for the suspend state is 40 minutes.

Power off state: After a further period of inactivity in the suspend state, the Network Station instructs the monitor to enter the power off state. The network computer keeps the monitor screen blank and alters the power indicator light. When you press a key or move the mouse, the monitor resumes normal operation and restores the screen image after a short delay. The default time for the power off state is 60 minutes.

To determine if your monitor is VESA DPMS compliant, refer to the user's guide for your monitor. If you do not attach a VESA DPMS compliant monitor to your Network Station, the power management feature remains inactivate.

The Type 8361 Network Station supports Ethernet and token-ring connectivity. The local area network (LAN) connection remains active regardless of the power management state.

In addition to the VESA DPMS power management, IBM Network Station Manager software provides 603 processor and L2 cache power management on the Type 8361 Network Station.

Contact your network administrator to determine the power management values that are set for your Network Station.

As an Energy Star Partner, IBM has determined that both the Type 8361 Network Station and the Type 8362 Network Station meet the Energy Star Program guidelines for energy efficiency.



Product Recycling and Disposal

You can recycle components, such as structural parts and circuit cards, where recycling facilities exist. IBM does not currently collect and recycle used IBM products from customers in the United States other than those products that are involved in trade-in programs. Companies are available to disassemble, reuse, recycle, or dispose of electronic products. Contact an IBM account representative for more information.

This IBM Network Station contains circuit boards with lead solder. Before you dispose of this unit, remove the circuit boards and discard them according to local regulations or recycle them where facilities exist.

Type 8361 Network Station Electronic Emission Notices

The following statements apply to the IBM Network Station Type 8361 product. The statement for other IBM products that are intended for use with this product will appear in their accompanying manuals.

Electronic Emission Notices

The following Statement applies to this IBM product. The statement for other IBM products intended for use with this product will appear in their accompanying manuals.

Federal Communications Commission (FCC) Statement

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- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an IBM authorized dealer or service representative for help.

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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interferences, and (2) this device must accept any interferences received, including interference that may cause undesired operation.

Responsible Party:

International Business Machines Corporation
Old Orchard Road
Armonk, NY 10504

Telephone: 1-919-543-2193

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Avis de conformité à la réglementation d'Industrie Canada

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This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to CISPR 22 / European Standard EN 55022. The limits for Class B equipment were derived for typical residential environments to provide reasonable protection against interference with licensed communication devices.

Properly shielded and grounded cables and connectors (IBM part number 75G5958 or its equivalent) must be used in order to reduce the potential for causing interference to radio and TV communications and to other electrical or electronic equipment. Such cables and connectors are available from IBM authorized dealers. IBM cannot accept

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Type 8362 Network Station Electronic Emission Notices

The following statements apply to the Type 8362 Network Station product. The statement for other IBM products that are intended for use with this product will appear in their accompanying manuals.

Electronic Emission Notices

Federal Communications Commission (FCC) Statement

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. IBM is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Responsible Party:

International Business Machines Corporation
Old Orchard Road
Armonk, NY 10504

Telephone: 1-919-543-2193

Industry Canada Compliance Statement

This Class A digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.

Avis de conformité à la réglementation d'Industrie Canada

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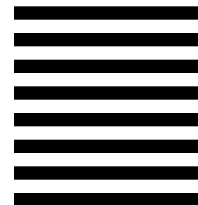
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