IBM

@server

iSeries

PCI Card Installation Instructions

Version 5

SENG-4745-01

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> **Note**
>
> Before using this information and the product it supports, be sure to read the "Safety and Environmental Notices" on page iii and the "Notices" on page 59.

Safety and Environmental Notices

Danger Notices

A danger notice calls attention to a situation that is potentially lethal or extremely hazardous to people.

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

> **An electrical outlet that is not correctly wired could place hazardous voltage on metal parts of the system or the products that attach to the system. It is the customer's responsibility to ensure that the outlet is correctly wired and grounded to prevent an electrical shock. (RSFTD201)**

DANGER

> **To prevent a possible electrical shock when adding or removing any devices to or from the system, ensure that the power cords for those devices are unplugged before the signal cables are connected or disconnected. If possible, disconnect all power cords from the existing system before you add or remove a device. (RSFTD203)**

Caution Notices

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

CAUTION:
Telecommunications Statement: This unit contains over-voltage circuits between the ac power outlet and the unit. These circuits meet the standard limits described in International Electrical Commission (IEC) 664, installation category II. It is the customer's responsibility to ensure that the power outlet meets the standards of IEC 664, installation category II. (RSFTC214)

Laser Safety Information

CAUTION:
This product may contain a CD-ROM which is a class 1 laser product. (RSFTC240)

Product Recycling and Disposal

Components of the system, such as structural parts and circuit cards, can be recycled 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, reutilize, recycle, or dispose of electronic products. Contact an IBM account representative for more information.

The system unit contains batteries and circuit boards with lead solder. Before you dispose of this unit, these batteries and circuit boards must be removed and discarded according to local regulations or recycled where facilities exist. This book contains specific information on each battery type where applicable.

Battery Return Program

In the United States, IBM has established a collection process for reuse, recycling, or proper disposal of used IBM batteries and battery packs. For information on proper disposal of the batteries in this unit, please contact IBM at 1-800-426-4333. Please have the IBM part number that is listed on the battery available when you make your call. For information on battery disposal outside the United States, contact your local waste disposal facility.

Environmental Design

The environmental efforts that have gone into the design of the system signify IBM's commitment to improve the quality of its products and processes. Some of these accomplishments include the elimination of the use of Class I ozone-depleting chemicals in the manufacturing process, reductions in manufacturing wastes, and increased product energy efficiency. For more information, contact an IBM account representative.

Chapter 1. You have received your ordered feature card

These instructions will step you through installing PCI cards in the following system units and the following expansion units:

- 270
- 820
- 830
- 840
- SB2
- SB3
- 5074
- 5075
- 5078
- 5079
- 8079
- xSeries Server

This feature is customer installable. However, the installation of this feature is intended for an experienced user who understands industry terminology with system experience. You can elect not to do this installation yourself. Contact IBM® or an Authorized Dealer to make arrangements for them to perform the feature installation for a fee.

Before you begin

This feature is customer-installable. You can elect not to do this installation yourself. Contact IBM or an Authorized Dealer to make arrangements for them to perform the feature installation for a fee.

You need to allow additional time to complete your jobs, back up your system, initial program load (IPL) your system, and verify your hardware configuration.

When you use these instructions, you may do some of the following:

- Remove the system unit covers.
- Install your new hardware.
- Install covers.
- IPL your operating system.
- Verify your new hardware configuration.

Some of the pictures in these instructions may not look exactly like the system unit that you have. However, the steps to perform the task are the same.

__ 1. Ensure that you have a current backup of your system (including operating systems, licensed programs, and data).

__ 2. Ensure that you take a few minutes to become familiar with these instructions.

__ 3. If there are incorrect, missing or visibly damaged parts, contact one of the following:

- Your authorized dealer
- IBM Rochester Manufacturing Automated Information Line (R-MAIL)
  - 1-800-300-8751 (United States)
  - 1-507-253-5242 (worldwide)

__ 4. If you encounter difficulties during the installation, contact your authorized service provider or your authorized dealer.

__ 5. Determine if there are any existing PTF prerequisites before you install your new feature. Go to this Web site and locate your feature number and OS/400® release and check the prerequisites.

`http://as400service.ibm.com/s_dir/slkbase.NSF/`

Then do the following to get to the Customer Install Features Prerequisites:

a. Select **All Documents**

b. Select **Collapse**

c. Select **General Information**

d. Select **Offerings**

e. Select **Feature Prerequisites**

f. Select **Customer Install Features Prerequisites**

Chapter 2. Installing your new feature card

This feature is customer installable. However, the installation of this feature is intended for an experienced user who understands industry terminology and who has some system experience. If you elect not to do this installation yourself, contact IBM or an Authorized Dealer to make arrangements for them to perform the feature installation for a fee.

These instructions help you install a new feature card in your unit. In some cases it may be necessary to move cards already in your system. For more information on when it may be necessary to move PCI cards, refer to the *iSeries System Builder*, SG24–2155. Then return here and refer to "Moving a card in your iSeries" on page 41.

System areas allowing customer access are blue in your unit (for instance—latches, handles, and so forth).

Integrated xSeries Adapter for iSeries feature

Are you installing machine type 1519 or card number 2689 in a xSeries server?

No   **Yes**

↓   Go to "Installing Integrated xSeries Adapter for iSeries" on page 53.

Continue with the instructions.

Terms you need to know

IOA   Input/Output Adapter

IOP   Input/Output Processor

IOP Card Group

An IOP Card Group is an IOP and all IOAs controlled by that IOP.
- A maximum of four IOAs and one IOP are allowed in an IOP card group.
- An exception is the IXS card (feature card 2890) which has a maximum of three IOAs in the same IOP card group.

Feature Number
Use feature numbers to order new features for system units and expansion units.

CCIN (Customer Card Identification Number)
The CCIN is the identifier number on the feature card.

PCI Bridge Set
A set of PCI card positions. IOP Card Groups may not cross PCI Bridge Set boundaries.

Selecting the method to determine card placement

There are two ways to determine your card placement:

- A card placement tool is available on the Internet. Go to:

  `http://www.ibm.com/as400/cif`

  After you have used the tool to determine the card placement, return to these instructions to install the card. Go to "Installing your card" on page 10.

  Or.
- Continue with these instructions.

Finding your current system configuration

Find out the *current* configuration of your iSeries system unit or expansion unit. Bring up an iSeries session and sign on to the system. If you have more than one iSeries, bring up a session on the system that is being upgraded and that you have service tools authority.

__ 1. Type **strsst** on the command line of the *Main Menu* and press Enter.

__ 2. Type **your service tools userid and service tools password** on the *Start Service Tools (STRSST) Sign On* display and press Enter.

__ 3. Select **Start a service tool** from the *System Service Tools (SST)* display and press Enter.

__ 4. Select **Hardware service manager** from the *Start a Service Tool* display and press Enter.

__ 5. Select **Packaging hardware resources (system, frames, cards...)** from the *Hardware Service Manager* display and press Enter.

__ 6. Type **9** on the **System Unit** line and press Enter.

__ 7. Select **Include empty positions**.

__ 8. Look for the cards in the **Card Pos** column (xxx). Write the **Type** number of the existing cards (xxxx) in the appropriate "Current Configuration Tables" on page 25.

__ 9. Press F12 one time.

__ 10. Do you have an expansion unit attached?

    No   **Yes**

    ↓

        __ a. Type **9** on the **System Expansion Unit** line and press Enter.

        __ b. Select **Include empty positions**.

        __ c. Look for the cards in the **Card Pos** column (Cxx). Write the **Type** number of the existing cards (Cxx) in the appropriate "Current Configuration Tables" on page 25.

        __ d. When complete, press F12 one time.

        __ e. If you have more than one expansion unit, go to step 10a and repeat the steps for each expansion unit that is listed.

Determining the best place to install your card

    __ 1. Are you installing a 2890 feature?

        No   **Yes**

↓ The 2890 IOP (IXS) card is customer installable in the 270 system unit and the 5075 expansion unit when it is attached to the 270 system unit.

Are you installing a 2890 in a 270 system unit or 5075 expansion unit attached to a 270 system unit?

No   Yes

↓

__ a. The 2890 is installed in the card position labeled **IXS**. Refer to "Current Configuration Tables" on page 25.

__ b. In the 270 system unit, the 2890 card occupies one card position, and a second card position reduces to a short card position.

__ c. In the 5075 expansion unit, the 2890 card occupies two card positions, and a third card position reduces to a short card position.

__ d. The first LAN IOA will go in the short card position.

__ e. If there is a second LAN, that card will go in the next position.

__ f. Check your current system configuration to see if the IXS position and LAN IOA positions are available. If not, you need to move cards. Go to "Moving a card in your iSeries" on page 41 if you need to move a card or go to "Installing your card" on page 10 if you can install the IXS card now.

The 2890 card is only customer installable in a 270 system unit or 5075 expansion unit. Contact IBM Service to install the 2890 in other units.

__ 2. Are you installing a 2842 or 2843 IOP feature?

Yes   No

↓   Go to step 5 on page 6.

__ 3. Use Table 1 to locate values of your current configuration.

- Install the 2842 or 2843 IOP in any card position labeled **IOP**. There are some imbedded IOPs. Refer to "Current Configuration Tables" on page 25.
- You may need to move an IOA card to install your IOP. If you need to move an IOA, to determine where to move the card, go to step 5 on page 6.
- By installing an IOP, you are creating a new IOP card group.
- IOPs cannot be placed in consecutive positions.

Table 1. IOP Card numbers, names, memory values, performance values and restrictions

Feature Number	CCIN Number	Description	Restrictions	Maximum Number IOAs	Memory Value	Performance Value
Imbed IOP	284B, 284C, 284D, 284E, 286C, 286F	IMBED IOP	• IOPs cannot be placed in consecutive positions	4	100	100

Table 1. IOP Card numbers, names, memory values, performance values and restrictions (continued)

Feature Number	CCIN Number	Description	Restrictions	Maximum Number IOAs	Memory Value	Performance Value
2842	2842	PCI Node Input/Output Processor (IOP)	• Only 270 and 5075 • IOPs cannot be placed in consecutive positions • A maximum of two 2842's in 270 units • A maximum of three 2842's in 5075 units	4	100	100
2843	2843	PCI Node Input/Output Processor (IOP)	• IOPs cannot be placed in consecutive positions • A maximum of five 2843's in 820 units • A maximum of three 2843's in 5075 units • A maximum of four 2843's in 830/840 units • A maximum of five 2843's in 5074 units • A maximum of two 2842's in SB2/SB3 units	4	211	100
2890	2890–001	Integrated NetFinity Server Input/Output Processor (IOP)	• IOPs cannot be placed in consecutive positions • Only 4838, 2743, 2760, and 2744 IOAs can be added in the same IOP card group • Two positions are used by the 2890 card except for 270 units	2 (270, 5075)	Not applicable	Not applicable
2790	2890–001	PCI Integrated NetFinity Server	• Not customer installable	3	Not applicable	Not applicable
2891	2890–002	PCI Integrated xSeries Server	• IOPs cannot be placed in consecutive positions • Only 4838, 2743, 2760, and 2744 IOAs can be added in the same IOP card group • Two positions are used by the 2891 card except for 270 units	2 (270, 5075)	Not applicable	Not applicable
2791	2890–002	PCI Integrated xSeries Server	• Not customer installable	3	Not applicable	Not applicable

__ 4. Install your IOP card. Go to "Installing your card" on page 10.

__ 5. Fill in the "Placement Tables" on page 31 to determine the best place to install or move your IOA card, using the card information on the "Current Configuration Tables" on page 25 (entered at step 8 on page 4).

    __ a. Locate the first IOP (2842, 2843, 2890, IMBED).

    __ b. Determine the IOAs controlled by the IOP (*IOP card group*).

        • An IOP card group is an IOP and all IOAs controlled by that IOP.

- IOP card groups cannot cross PCI Bridge Set boundaries. Refer to "Current Configuration Tables" on page 25.

__ c. Locate the first IOP card group with an empty position.

__ d. Find and enter (on the placement table) the values of each **IOA** that is currently installed in this IOP card group with an empty position. Use Table 2 to find the values.

__ e. Install the new card in the next available position in the IOP card group. Do not leave open positions if possible.

 You should try to not move your console position.

__ f. Write down the feature number or CCIN of the new card in the table.

__ g. Find and enter the values of the new card in the placement table.

__ h. Add together the IOAs *Memory Value* and write down in the *IOA Totals*.

__ i. Add together the IOAs *Performance Value* and write down in the *IOA Totals*.

__ j. If the totals are **not** greater than the value of the IOP for that card group, verify the restrictions, such as card length to make sure the card can be installed in the empty position. If the restrictions are not met, choose another empty position and repeat the process. Otherwise, you are ready to install the new card in that empty position.

__ k. If the totals **are** greater than either IOP card value, it is recommended to move to the next available IOP card group with an empty card position and repeat the steps to complete another *Placement Worksheet*.

__ l. Press F3 three times and press Enter to return to the *Main Menu*.

__ m. Go to "Installing your card" on page 10.

Table 2. Card numbers, names, memory values, performance values and restrictions

Feature Number	CCIN Number	Description	Restrictions	Card Length	Memory Value	Performance Value
0092	2689	Integrated Adapter for xSeries		Long	N/A	N/A
2743	2743	PCI Ethernet/IEEE 802.3 adapter	These restrictions do not apply if 2743 is part of a CCIN 2890 IOP card groups. • Do not place in a 5V position • Place in a 64 bit position except in iSeries 270 where a 32 bit position must be used because there are no 64 bit positions or iSeries 820 where a 64 bit position is preferred but a 32 bit position may be used • Limited to one per PCI Bridge Set boundary • An IOP with a 2743 supports a maximum of one other IOA of any kind	Short	2	26

Table 2. Card numbers, names, memory values, performance values and restrictions (continued)

Feature Number	CCIN Number	Description	Restrictions	Card Length	Memory Value	Performance Value
2744	2744	PCI 100/16/4MB Token-Ring	• No more than total of two 4838 and 2744 in any combination allowed per IOP, except for CCIN 2890 IOPs	Short	25	36
2749	2749	PCI Ultra Magnetic Media Controller		Short	22	25
2760	2760	PCI 1 Gbps Ethernet UTP	These restrictions do not apply if 2760 is part of a CCIN 2890 IOP card groups. • Do not place in a 5V position • Place in a 64 bit position except in iSeries 270 where a 32 bit position must be used because there are no 64 bit positions or iSeries 820 where a 64 bit position is preferred but a 32 bit position may be used • Limited to one per PCI Bridge Set boundary • An IOP with a 2743 supports a maximum of one other IOA of any kind	Long	2	26
2763	2763	PCI 2-Port RAID Disk Unit Controller	• Only on 270, 820, 5075 • No more than two allowed per IOP • Only one 2763, 4748, 4778, 9748 or 9778 in the same IOP card group with 2817, 4815, 4816, 4818	Long	29	21
2765	2765	PCI Fibre Channel Tape Controller	• Limited to no more than two 2765 or 2766 per PCI Bridge Set boundary	Short	36	50
2766	2766	PCI Fibre Channel Disk Unit Controller	• Only one per IOP and no other IOAs • Limited to no more than two 2765 or 2766 per PCI Bridge Set boundary • Not permitted in any SB2 or SB3 systems and attached units	Short	–	–
2772	2772	Dual WAN/Modem Adapter	Non-CIM (complex impedence matching)	Short	15	14
2773	2773	Dual WAN/Modem Adapter	CIM (complex impedence matching)	Short	15	14
9767	2767	PCI Disk Unit Controller IOA	• Only on 270, 820, 5075	Short	29	21
2768	2768	PCI Magnetic Media Controller		Short	22	25

Table 2. Card numbers, names, memory values, performance values and restrictions (continued)

| Feature Number	CCIN Number	Description	Restrictions	Card Length	Memory Value	Performance Value
2817	2817	PCI 155 Mbps MMF ATM	• Only one 2817, 4815, 4816, or 4818 per IOP • Only one 2763, 4748, 4778, 9748, 9778 within same IOP card group as 2817 • If you have one 2817, 4815, 4816, or 4818, then you can have only one 2744 or 4838 in the IOP card group	Short	35	47
4723	2723	PCI Ethernet/IEEE 10		Short	25	12
4745	2745	PCI Node WAN		Short	15	14
4746	2746	PCI Twinaxial Workstation Controller		Short	10	6
4748/9748	2748	PCI RAID Disk Unit Controller	• No more than three 4748, 9748, 4778, or 9778 allowed per IOP • Only one 2763, 4748, 4778, 9748, or 9778 in the same IOP card group with 2817, 4815, 4816, or 4818	Long	29	21
4750	2750	PCI ISDN BRI U	• No more than one allowed per IOP	Long	25	7
4751	2751	PCI ISDN BRI S/T	• No more than one allowed per IOP	Long	25	7
4761	2761	Remote Access Integrated Modem (8-port)	• No more than one allowed per IOP	Long	22	7
4778/9778	4778/9778	PCI RAID Disk Unit Controller	• No more than three 4748, 9748, 4778, or 9778 allowed per IOP • Only one 2763, 4748 or 9748 in the same IOP card group with 2817, 4815, 4816, or 4818	Long	29	25
4815	2815	PCI 155MBPS UTP 0C3 ATM	• Only one 2817, 4815, 4816, or 4818 per IOP • Only one 2763, 4748, 4778, 9748 or 9778 within same IOP card group as 4815 • If you have one 2817, 4815, 4816, or 4818, then you can have only one 2744 or 4838 in the IOP card group	Short	35	47

Feature Number	CCIN Number	Description	Restrictions	Card Length	Memory Value	Performance Value
4816	2816	PCI 155Mbps MMF ATM	• Only one 2817, 4815, 4816, or 4818 per IOP • Only one 2763, 4748, 4778, 9748, or 9778 within same IOP card group as 4816 • If you have one 2817, 4815, 4816, or 4818, then you can have only one 2744 or 4838 in the IOP card group	Short	35	47
4818	2818	PCI 155Mbps SMF 0C3 ATM	• Only one 2817, 4815, 4816, or 4818 per IOP • Only one 2763, 4748, 4778, 9748, or 9778 within same IOP card group as 4818 • If you have one 2817, 4815, 4816, or 4818, then you can have only one 2744 or 4838 in the IOP card group	Short	35	47
4838	2838	PCI 100/10Mbps Ethernet	• No more than total of two 4838 and 2744 in any combination allowed per IOP, except when part of 2890 IOP card group	Short	25	36
4801	4758–023	PCI Cryptographic Coprocessor	• Cannot be controlled by the Imbed IOP in 270 or 820 units • Cannot be controlled by the base IOP in 830, 840, SB2, or SB3 units	Short	11	18
9767	2767	PCI Disk Unit Controller	• Only one per system	Short	29	21
9771	2771	PCI 2–Line WAN w/Modem	• Only one per system	Short	15	14

Installing your card

__ 1. Remove or open the back cover of the system unit, expansion unit or rack where you will install the new feature card. Refer to "Removing the covers" on page 33 for more information.

__ 2. Locate the feature card area.

__ 3. Determine if the feature cards are secured in place with either latches or screws.

Does your unit have card latches?
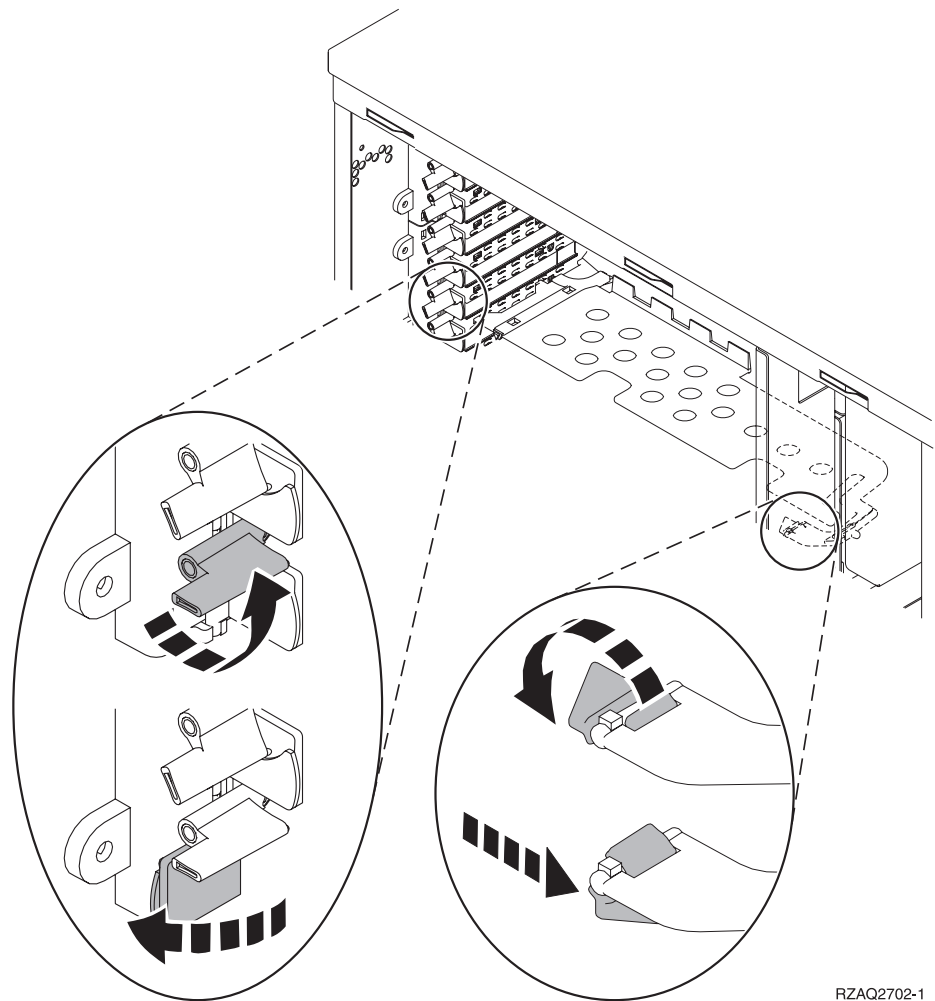
RZAQ2702-1

If **yes**, your iSeries can either be powered off or powered on when you
install your new card. Decide which way you want to install your
card—"Your iSeries is powered on during installation" on page 12 or "Your
iSeries is powered off during installation" on page 16.

If **no**, your unit uses screws to secure the cards.

RV5B001-0
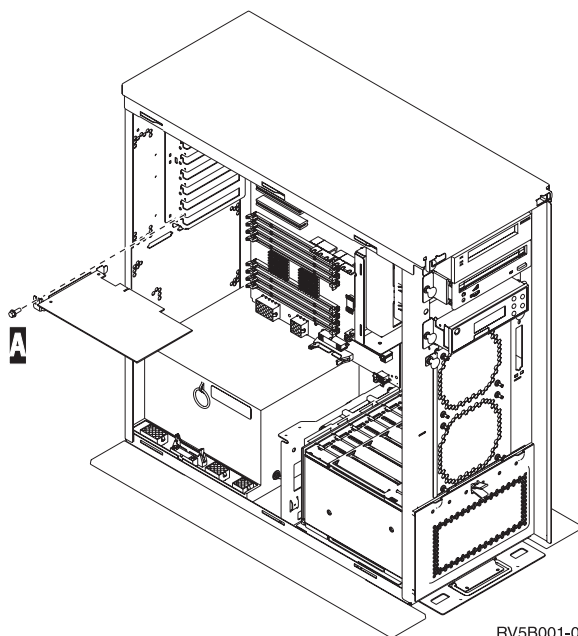
____ a. To install the new feature card, you must power off your unit.

____ b. Go to "Your iSeries is powered off during installation" on page 16.

Your iSeries is powered on during installation

____ 1. Type `strsst` on the command line of the *Main Menu* and press Enter.

____ 2. Type `your service tools userid and service tools password` on the *System Service Tools (SST) Sign On* display and press Enter.

____ 3. Select **Start a service tool** from the *System Service Tools (SST)* display and press Enter.

____ 4. Select **Hardware service manager** from the *Start a Service Tool* display and press Enter.

____ 5. Select **Packaging hardware resources (system, frames, cards...)** from the *Hardware Service Manager* display and press Enter.

____ 6. Type **9** on the *System Unit* or *Expansion Unit* line of the unit where your are installing the new card and press Enter.

____ 7. Select **Include empty positions**.

____ 8. **Attach the disposable wrist strap to prevent electrostatic discharge from damaging a device.** Attach the adhesive part of the foil to an unpainted surface.

   Notes:

   a. Follow the same precautions you would use without the wrist strap. The 2209 Disposable Wrist Strap is for static control. It will not increase nor decrease your risk of receiving electric shock when using or working on electrical equipment.

   b. Discard the wrist strap immediately and contact your dealer for a replacement, if the disposable wrist strap appears damaged or is cut off. Do not continue until a new wrist strap is available.

   c. Remove the liner from the copper foil at the end, when you unroll the strap.

d. Attach the copper foil to an **exposed, unpainted** metal surface on the frame of the unit (electrical ground).

__ 9. Select **Concurrent Maintenance** on the empty card position where you plan to install the card. Press Enter.

__ 10. Select **Toggle LED blink off/on**. A light-emitting diode (LED) blinks identifying the position you chose to install the new feature card.

__ 11. Select **Toggle LED blink off/on** to stop the blinking LED.

__ 12. Open the latch at the card position where you plan to install the card. Move the blue latch counter clockwise and then swing the black latch out.
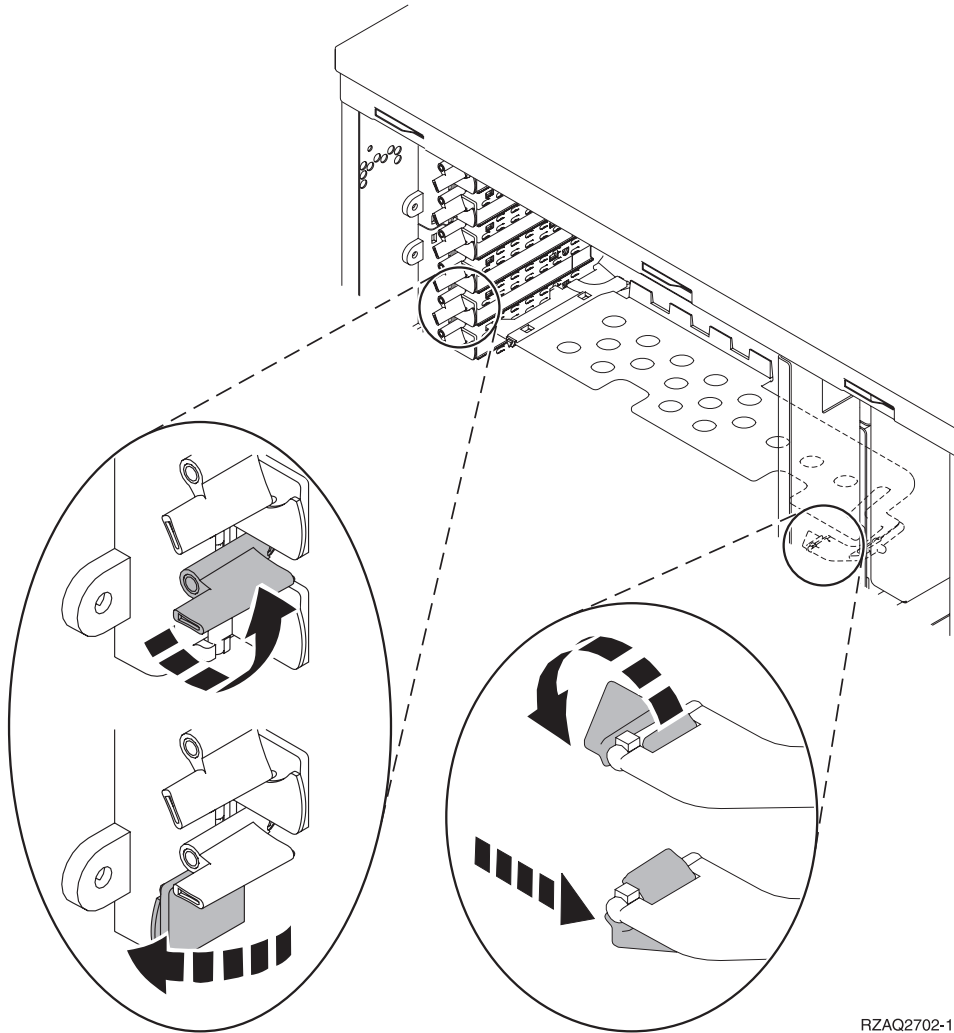
RZAQ2702-1

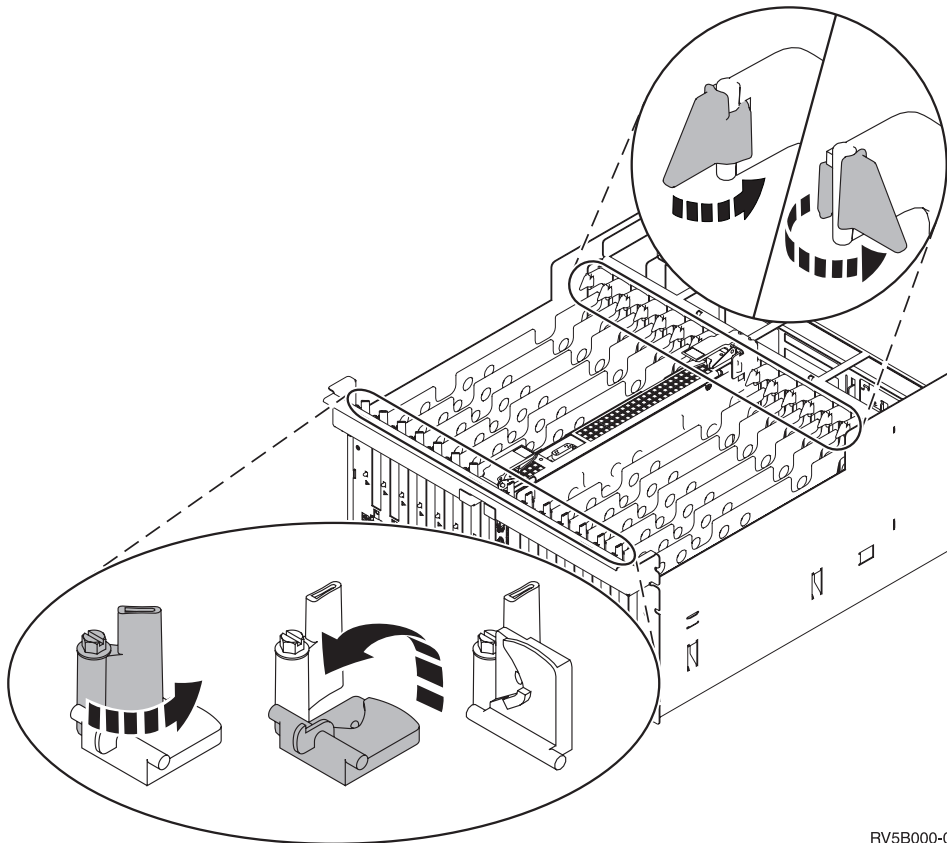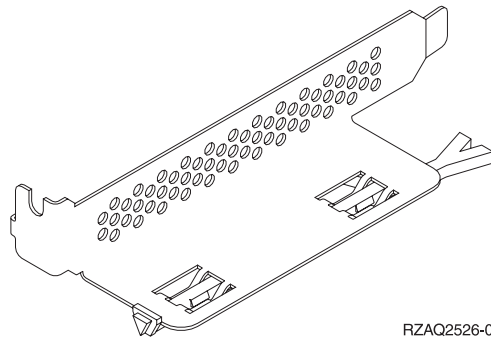*Figure 1. Example of 270, 820, 5075 Card Latch*

Figure 2. Example of 830, 840, SB2, SB3, 5079 Card Latches

  __ 13. Remove the card filler plate.

  __ 14. If installing the 2890 IXS card:

      __ a. Remove a second card filler plate below the one you removed in step 13.

      __ b. Install the card filler plate that came with the 2890 IXS card. This card filler plate is for air flow.

      __ c. Remove the plastic card dividers from the positions the card will occupy. Press down on the ends and pull away from the backplane.

___ 15. **Attention:** Adapter cards are fragile:
- Handle only by the edges
- Keep fingers off printed circuit area
- Use static strap when handling
- Leave in protective packaging until ready to install

___ 16. Align the new adapter card with the card connector inside the system unit or expansion unit and push until it is connected securely.

___ 17. Swing the black latch in and move the blue latch clockwise to secure the card.

___ 18. **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)**

Connect any cables and label the cables with the card slot position.

___ 19. Select **Power on domain** on the *Hardware Resource Concurrent Maintenance* display. Press Enter.

___ 20. Select **Assign to** on the resource with the * on the *Work with Controlling Resource* display. Press Enter.

___ 21. Wait for the *Hardware Resource Concurrent Maintenance* display to appear with the message indicating `Power on complete`.

___ 22. If you have more cards to install, go to "Determining the best place to install your card" on page 4 and repeat the steps to install the next card.

___ 23. If you are finished installing all the cards, remove the wrist strap.

___ 24. Install the unit covers.

___ 25. Did you install a 2890 IXS card?

No   Yes

↓

    ___ a. If you installed a 2890 IXS card, we recommend that you perform a verification test.

    ___ b. Sign on the system unit. Ensure that you have service tools authority.

    ___ c. Type **strsst** on the command line and press Enter.

    ___ d. Type **your service tools userid and service tools password** on the *System Service Tools (SST) Sign On* display and press Enter.

    ___ e. Select **Start a service tool** from the *Start a Service Tools* display and press Enter.

    ___ f. Select **Hardware service manager** from the display and press Enter.

    ___ g. Select **Packaging hardware resources (system, frames, cards...)** from the display and press Enter.

    ___ h. Type **9** on the *System Unit or Expansion Unit* line.

    ___ i. Press Page Down if needed and look at the *Card Pos* column.

        ___ 1) Select **Associated Logical Resources** on the line next to the 2890 that was just installed. Press Enter.

        ___ 2) Select **Verify** on the line next to the 2890 card (Communication IOA).

   __ 3) Press Enter at the *Verification Test* display.

   __ 4) Select **Processor Internal Test** and press Enter.

   __ 5) Press Enter at the *Number of Test Runs* display.

   __ 6) When the test is complete, the message "The test is successful" appears on the *Verification Test Results* display.

   __ 7) Press Enter twice.

   __ 8) Select **Hardware Memory Test** and press Enter.

   __ 9) Press Enter at the *Number of Test Runs* display.

> **Note:** If the test fails, make sure that you have installed the card properly. If the test continues to fail, contact your authorized dealer or service provider.
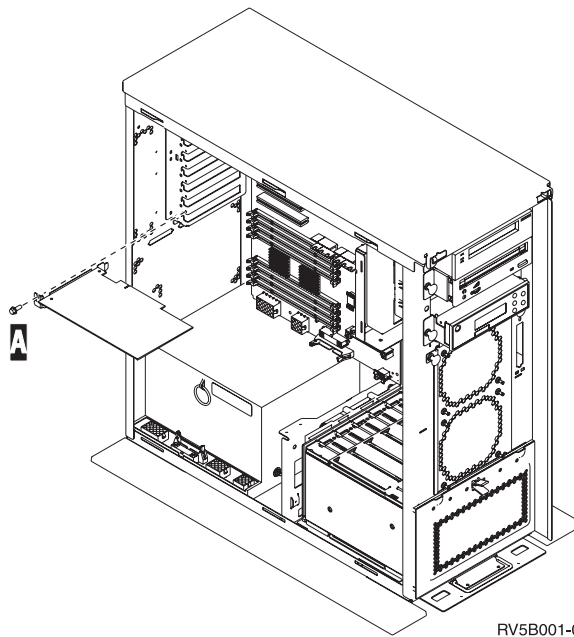
   __ 10) When the test is complete, the message "The test is successful" appears on the *Verification Test Results* display.

   __ 11) Press Enter twice.

   __ 12) Press F3 three times and press Enter to return to the *Main Menu*.

__ a. Sign on the system unit. Ensure that you have service tools authority.

__ b. Type **strsst** on the command line of the iSeries session and press Enter.

__ c. Type **your service tools userid and service tools password** on the *Start a Service Tools (STRSST) Sign On* display and press Enter.

__ d. Select **Start a service tool** from the *Start a Service Tools* display and press Enter.

__ e. Select **Hardware service manager** from the display and press Enter.

__ f. Select **Packaging hardware resources (system, frames, cards...)** from the display and press Enter.

__ g. Type **9** on the *System Unit or Expansion Unit* line.

__ h. Press Page Down if needed and look at the *Card Pos* column for the adapter card you just installed.

__ 26. Your feature upgrade is complete.

__ 27. Press PF3 three times and press Enter to get back to the *Main Menu*.

Your iSeries is powered off during installation

   __ 1. Ensure that all jobs are complete.

   __ 2. When all jobs are complete, type **pwrdwnsys *immed** on an iSeries command line and press Enter.

   __ 3. When the iSeries power down is complete, unplug any power cords, such as printers and displays, from electrical outlets.

   __ 4. Unplug the system or expansion unit power cord from the electrical outlet.

   __ 5. **Attach the disposable wrist strap to prevent electrostatic discharge from damaging a device.** Attach the adhesive part of the foil to an unpainted surface on the frame of the unit.

Notes:

a. Follow the same precautions you would use without the wrist strap. The 2209 Disposable Wrist Strap is for static control. It will not increase nor decrease your risk of receiving electric shock when using or working on electrical equipment.

b. Discard the wrist strap immediately and contact your dealer for a replacement, if the disposable wrist strap appears damaged or is cut off. Do not continue until a new wrist strap is available.

c. Remove the liner from the copper foil at the end, when you unroll the strap.

d. Attach the copper foil to an **exposed, unpainted** metal surface on the frame of the unit (electrical ground).

__ 6. Locate the adapter card positions inside your system unit.

__ 7. Does your unit have screws to secure the cards?
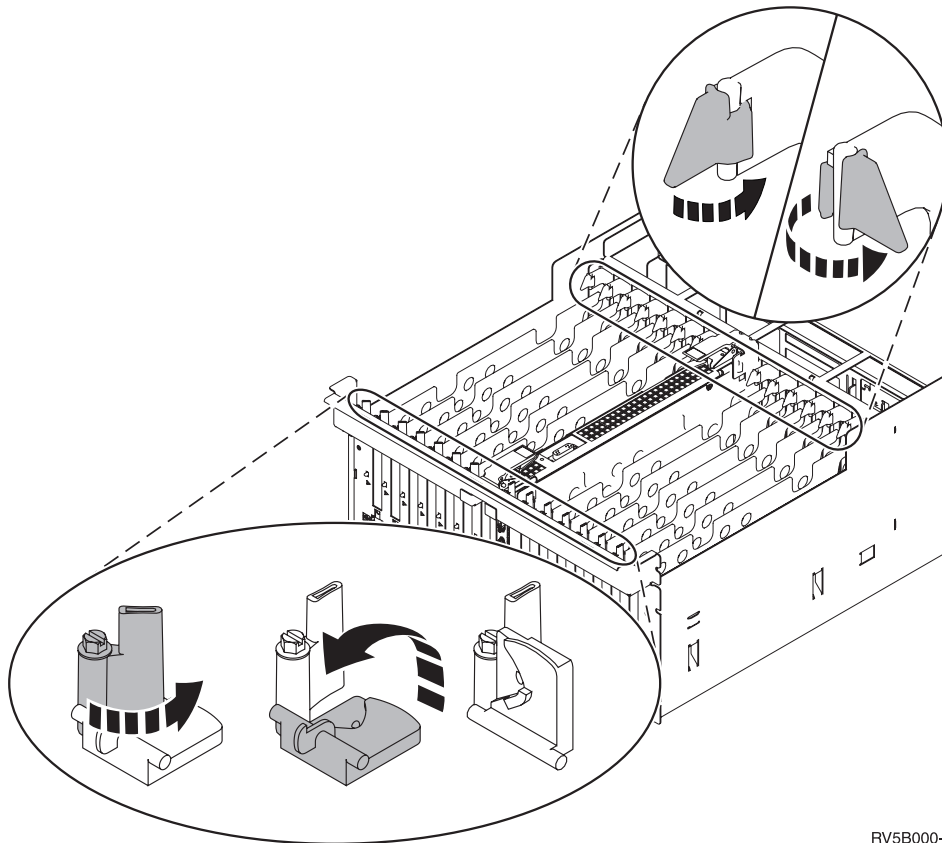

RV5B001-0

No   Yes

↓

        __ a. Remove the screw from the card position where you plan to install the card.

        __ b. Go to step 9 on page 19.

__ 8. Open the latch at the card position where you plan to install the card. Move the blue latch counter clockwise and then swing the black latch out.
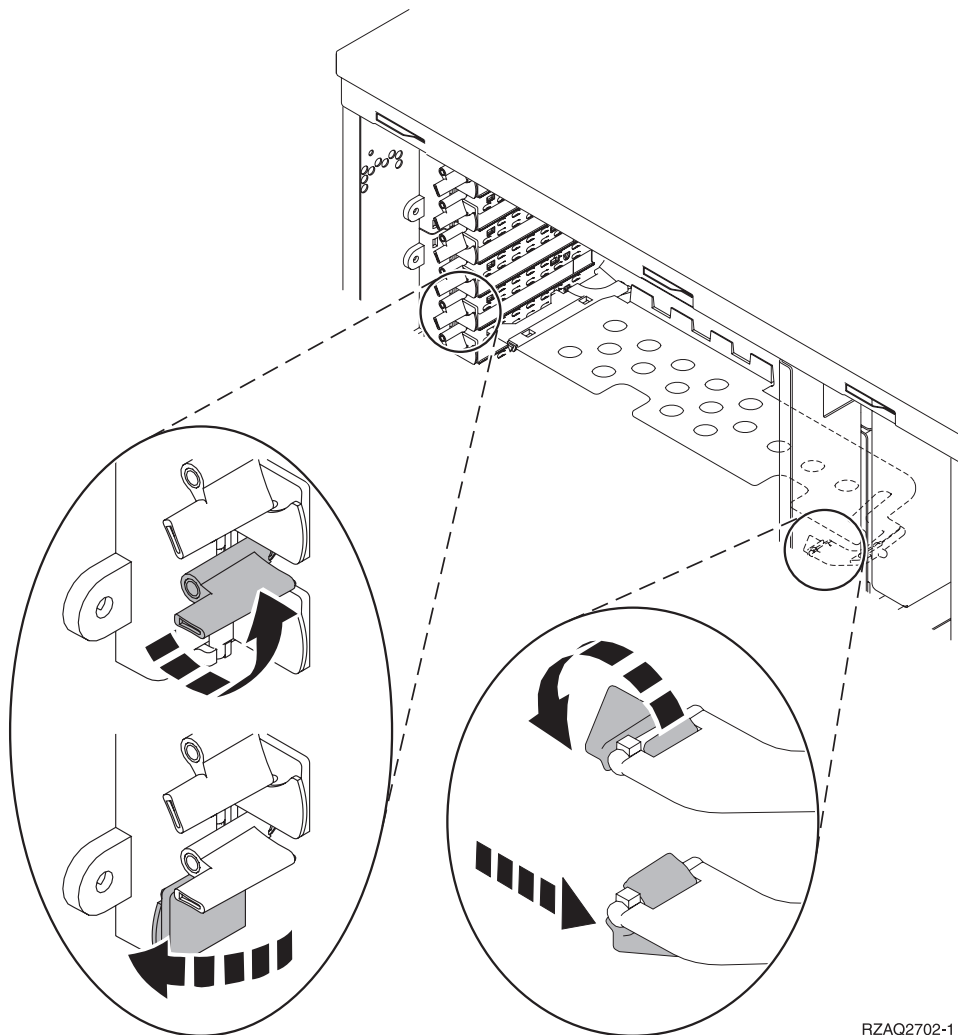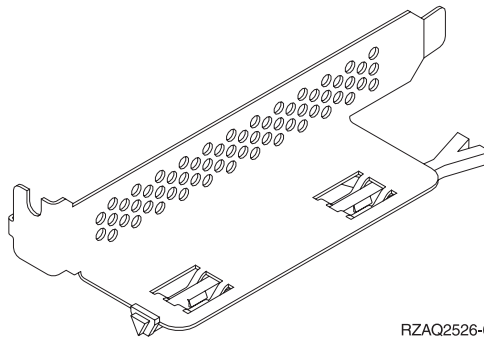
Figure 3. Example of 270, 820, 5075 Card Latch

RZAQ2702-1

Figure 4. Example of 830, 840, SB2, SB3, 5079 Card Latches

__ 9. Remove the card filler plate.

__ 10. If installing the 2890 IXS card:

    a. Remove a second card filler plate below the first one removed.

    b. Install the card filler plate that came with the 2890 IXS card. This card filler plate is for air flow.

    c. Remove the plastic card dividers from the positions the IXS card will occupy. Press down on the release lever at the headstock end and pull away from the backplane.

__ 11. **Attention:** Adapter cards are fragile:
- Handle only by the edges
- Keep fingers off printed circuit area
- Use static strap when handling
- Leave in protective packaging until ready to install

__ 12. Align the new adapter card with the card holders inside the system unit and push until it is connected securely.

__ 13. Swing the black latch in and move the blue latch clockwise or install the screw to secure the card.

__ 14. **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)**

Connect any cables and label the cables with the card position.

__ 15. If you have more cards to install, go to step 6 on page 17 and repeat the steps to install the next card.

__ 16. If you are finished installing all cards, remove the wrist strap.

__ 17. Install the unit covers.

__ 18. **DANGER**

> **An electrical outlet that is not correctly wired could place hazardous voltage on metal parts of the system or the products that attach to the system. It is the customer's responsibility to ensure that the outlet is correctly wired and grounded to prevent an electrical shock. (RSFTD201)**

Plug in the system unit and system unit console into an electrical outlet. Plug in everything you previously unplugged such as printers and displays.

__ 19. Is your system unit an iSeries 270 or 8xx?

270   8xx

↓   Go to step 22 on page 21.

__ 20. Look at the Function/Data display on the control panel.

__ 21. Does **01 B N V=S** appear in the Function/Data display?

Yes   No

↓   Do the following:
  __ a. Press the Increment/Decrement push button until **02** appears in the Function/Data display.
  __ b. Press the Enter push button on the control panel.
  __ c. Press the Increment/Decrement push button until **B** appears in the Function/Data display.
  __ d. Press the Enter push button on the control panel.
  __ e. Press the Increment/Decrement push button until **N** appears in the Function/Data display.
  __ f. Press the Enter push button on the control panel.
  __ g. Press the Increment/Decrement push button until **S** appears in the Function/Data display.

      __ h. Press the Enter push button on the control panel.

      __ i. Press the Increment/Decrement push button until **01** appears in the Function/Data display.

      __ j. Press the Enter push button on the control panel.

           01 B N S should appear in the Function/Data display. If it does not, repeat steps 21a on page 20 through 21i.

    Go to step 24.

__ 22. Look at the Function/Data display on the control panel.

__ 23. Does **01 B V=S** appear in the Function/Data display with IPL mode Normal (OK) selected?

    Yes   **No**

    ↓   Do the following:

      __ a. Press the Mode Select button until the Manual mode indicator (a small hand) lights up.

      __ b. Press the Increment/Decrement push button until **02** appears in the Function/Data display.

      __ c. Press the Enter push button on the control panel.

      __ d. Press the Increment/Decrement push button until **B** appears in the Function/Data display.

      __ e. Press the Enter push button on the control panel.

      __ f. Press the Increment/Decrement push button until **S** appears in the Function/Data display

      __ g. Press the Enter push button on the control panel.

      __ h. Press the Mode Select button until the Normal indicator (**OK**) lights up.

      __ i. Press the Increment/Decrement push button until **01** appears in the Function/Data display.

      __ j. Press the Enter push button on the control panel.

           01 B S should appear in the Function/Display display. If it does not appear, repeat steps 23a through 23i.

__ 24. Press the Power push button that is located on the iSeries control panel. There is approximately a 10 second delay before the power-on light comes on, and data appears in the Function/Data display.

    Note: The system takes approximately 5 to 20 minutes to power on and complete an IPL. When the IPL is complete, 01 B N S appears in the Function/Data display.

__ 25. Did you install a 2890 IXS card?

    No   **Yes**

    ↓

      __ a. If you installed a 2890 IXS card, we recommend that you perform a verification test.

      __ b. Sign on the system unit. Ensure that you have service tools authority.

      __ c. Type **strsst** on the command line of the iSeries session and press Enter.

    __ d. Type **your service tools userid and service tools password** on the *Start a Service Tools (STRSST) Sign On* display and press Enter.

    __ e. Select **Start a service tool** from the *Start a Service Tools* display and press Enter.

    __ f. Select **Hardware service manager** from the display and press Enter.

    __ g. Select **Packaging hardware resources (system, frames, cards...)** from the display and press Enter.

    __ h. Type **9** on the *System Unit or Expansion Unit* line.

    __ i. Press Page Down if needed and look at the *Card Pos* column.

        __ 1) Select **Associated Logical Resources** on the line next to the 2890 that was just installed. Press Enter.

        __ 2) Select **Verify** on the line next to the 2890 card (Communication IOA).

        __ 3) Press Enter at the *Verification Test* display.

        __ 4) Select **Processor Internal Test** and press Enter.

        __ 5) Press Enter at the *Number of Test Runs* display.

        __ 6) When the test is complete, the message "The test is successful" appears on the *Verification Test Results* display.

        __ 7) Press Enter twice.

        __ 8) Select **Hardware Memory Test** and press Enter.

        __ 9) Press Enter at the *Number of Test Runs* display.

> **Note:** If the test fails, make sure that you have installed the card properly. If the test continues to fail, contact your authorized dealer or service provider.

        __ 10) When the test is complete, the message "The test is successful" appears on the *Verification Test Results* display.

        __ 11) Press Enter twice.

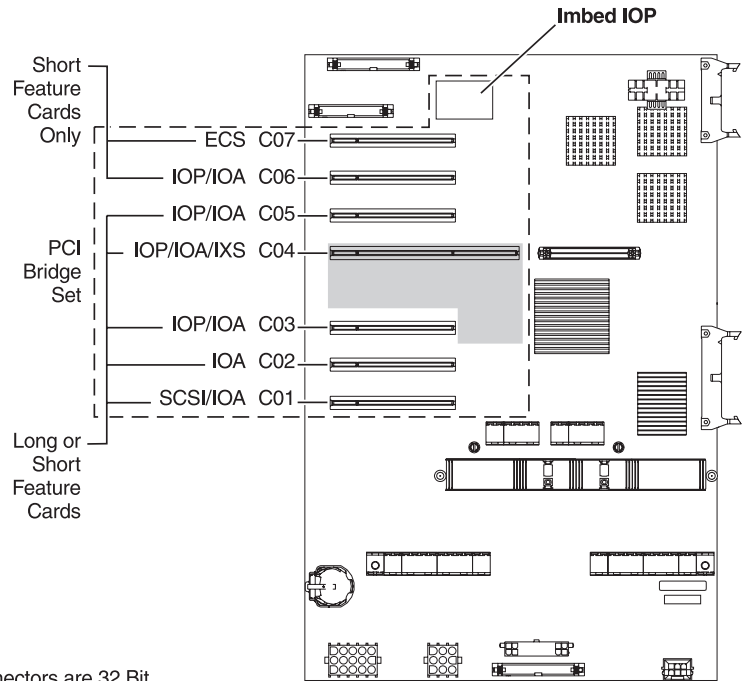   __ 12) Press F3 three times and press Enter to return to the *Main Menu*.

__ a. Sign on the system unit. Ensure that you have service tools authority.

__ b. Type **strsst** on the command line of the iSeries session and press Enter.

__ c. Type **your service tools userid and service tools password** on the *Start a Service Tools (STRSST) Sign On* display and press Enter.

__ d. Select **Start a service tool** from the *Start a Service Tools* display and press Enter.

__ e. Select **Hardware service manager** from the display and press Enter.

__ f. Select **Packaging hardware resources (system, frames, cards...)** from the display and press Enter.

__ g. Type **9** on the *System Unit or Expansion Unit* line.

__ h. Press Page Down if needed and look at the *Card Pos* column for the adapter card you just installed.

__ 26. Your feature upgrade is complete.

__ 27. Press PF3 three times and press Enter to get back to the *Main Menu*.

Current Configuration Tables

270 System Unit

Position	Type
Imbed IOP	
C07	———
C06	———
C05	———
C04	———
C03	———
C02	———
C01	———

Short Feature Cards Only — ECS C07, IOP/IOA C06, IOP/IOA C05

PCI Bridge Set — IOP/IOA/IXS C04, IOP/IOA C03, IOA C02

Long or Short Feature Cards — SCSI/IOA C01
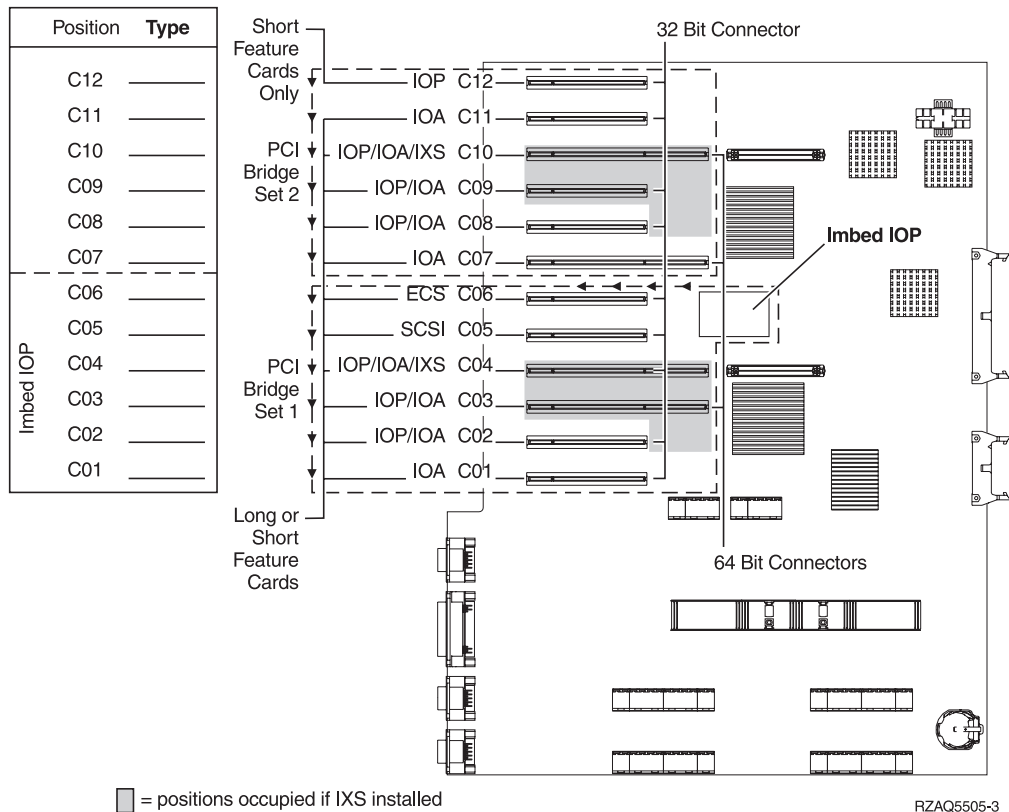
Imbed IOP

Note: All of the connectors are 32 Bit

☐ = positions occupied if IXS installed

RZAQ5504-3

- The Imbed IOP controls position C07, C01 and possibly C06 and C05.
- IOPs control the IOAs in the positions below the IOP. For example, an IOP in C04 would control IOAs in C03 and C02.
- SCSI in the diagram indicates the first internal disk unit controller position (cards 2763, 4748, 4778, or 9767). Place IOA 2763, 4748, 4778, or 9767 in position C01. The first disk unit controller card must be in C01 and connect the load source disk unit internal tape and CD or DVD.
- A second 2763, 4748 or 4778 is allowed in a 270 system unit with an attached 7104 expansion unit.

820 System Unit

Position	Type
C12	_____
C11	_____
C10	_____
C09	_____
C08	_____
C07	_____
C06	_____
C05	_____
C04	_____
C03	_____
C02	_____
C01	_____

Imbed IOP (C01–C06)

Short Feature Cards Only

IOP C12
IOA C11
PCI Bridge Set 2
IOP/IOA/IXS C10
IOP/IOA C09
IOP/IOA C08
IOA C07
ECS C06
SCSI C05
PCI Bridge Set 1
IOP/IOA/IXS C04
IOP/IOA C03
IOP/IOA C02
IOA C01

32 Bit Connector

Imbed IOP

64 Bit Connectors

Long or Short Feature Cards

☐ = positions occupied if IXS installed
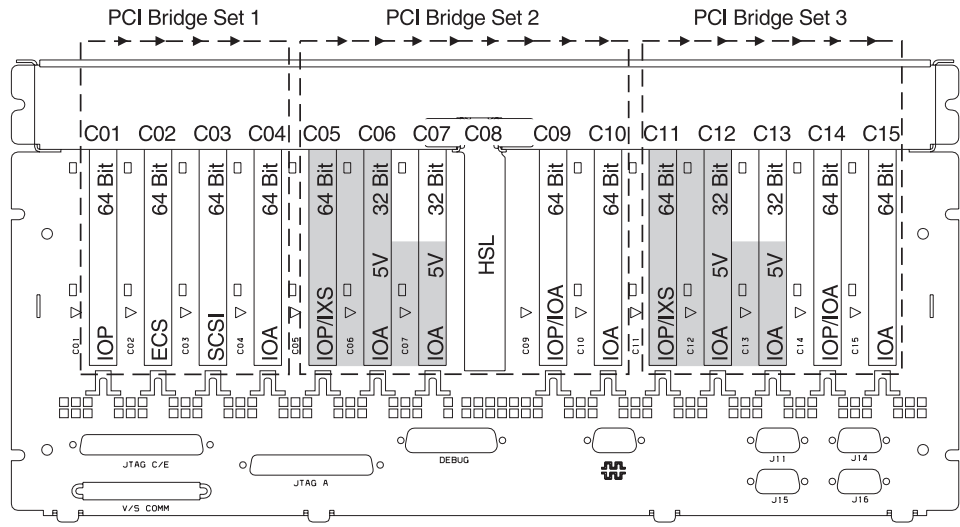
RZAQ5505-3

- The Imbed IOP controls C06, C05, and possibly C04 and C03.
- IOPs control IOAs in the direction of the arrows in the PCI Bridge Set.
- SCSI in the diagram indicates the first internal disk unit controller position (cards 2763, 4748, 4778, or 9767). Place IOA 2763, 4748, 4778 or 9767 in position C05. The first disk unit controller card must be in C05 and connect the load source disk unit internal tape and CD or DVD.
- Two internal disk unit controllers allowed per 820 system unit.
- A second internal disk unit controller in the system unit is only allowed when removable cable retention mechanisms are installed.
- The second internal disk unit controller cannot be in card position C07 or C08.

830, 840, SB2, and SB3 System Unit

- IOPs control IOAs in the direction of the arrows in the PCI Bridge Sets.
- SCSI in the diagram indicates the first internal disk unit controller position (cards 9748 or 9778). Place IOA 9748 or 9778 in position C03. The first disk unit controller card must be in C03 and connect the load source disk unit internal tape and CD or DVD.
- In addition, two 4748 or 4778 cards are allowed in 830 or 840 system units.

- Additional disk unit controllers are not allowed in SB2 and SB3 system units.

= positions occupied if IXS installed

Note: Long or short feature cards can go in any position.
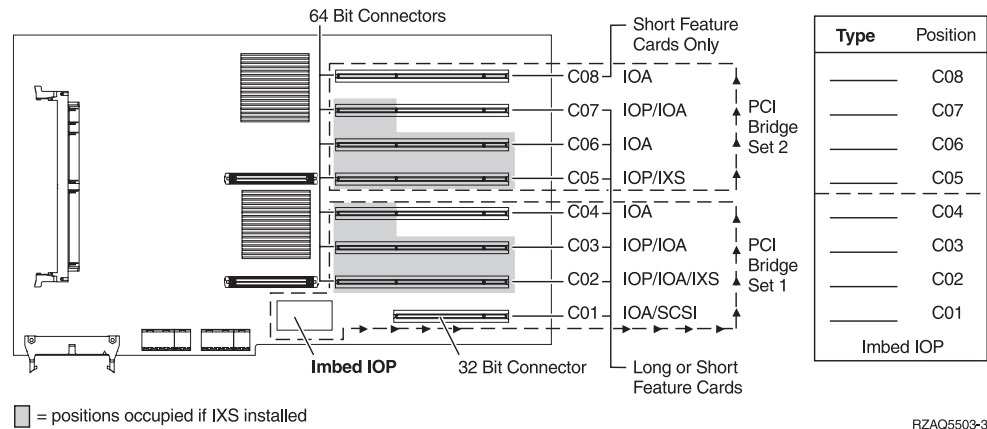
RZAQ5506-4

8079 Unit

For the lower unit, refer to a 840 system unit and for the upper unit, refer to the 5074 expansion unit.

5075 Expansion Unit

You need one diagram for each expansion unit attached to the system unit. Copy the diagram for your use.

- The Imbed IOP controls C01 and possibly C02, C03 and C04.
- IOPs control IOAs in the direction of the arrows in the PCI Bridge Set.
- SCSI in the diagram indicates the disk unit controller position (cards 2763, 4748, or 4778). Place IOA 2763, 4748 or 4778 in position C01.
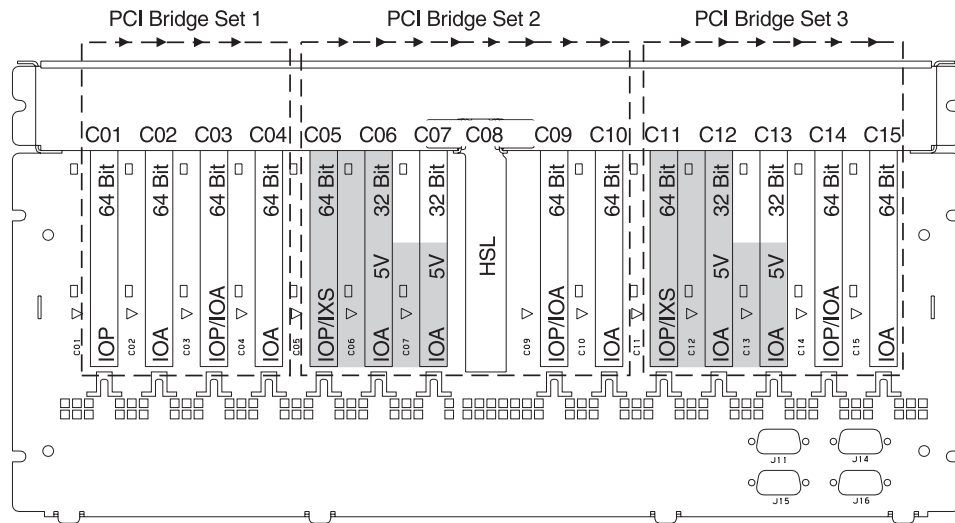
Resource Name: _____

64 Bit Connectors

Type	Position
_____	C08
_____	C07
_____	C06
_____	C05
_____	C04
_____	C03
_____	C02
_____	C01
Imbed IOP	

Short Feature Cards Only

C08 — IOA
C07 — IOP/IOA — PCI Bridge Set 2
C06 — IOA
C05 — IOP/IXS
C04 — IOA
C03 — IOP/IOA — PCI Bridge Set 1
C02 — IOP/IOA/IXS
C01 — IOA/SCSI

Imbed IOP   32 Bit Connector   Long or Short Feature Cards

☐ = positions occupied if IXS installed

RZAQ5503-3

5074 Expansion Unit

You need one diagram for each expansion unit attached to the system unit. Copy the diagram for your use.

- Place the first IOA 4748 or 4778 in position C02, C03, or C04.
- 5074 expansion units have a maximum of three IOA 4748 or 4778 cards.
- IOPs control IOAs in the direction of the arrows in the PCI Bridge Sets.

Resource Name: _____

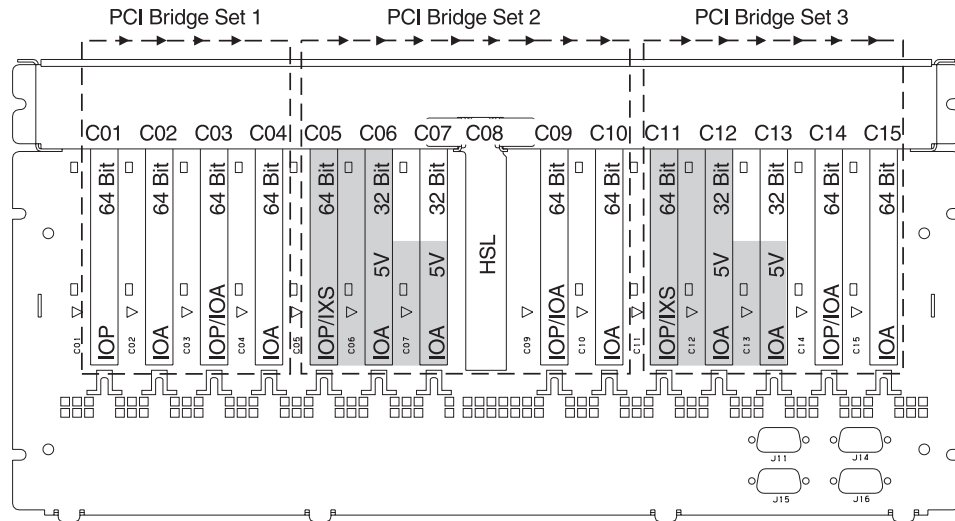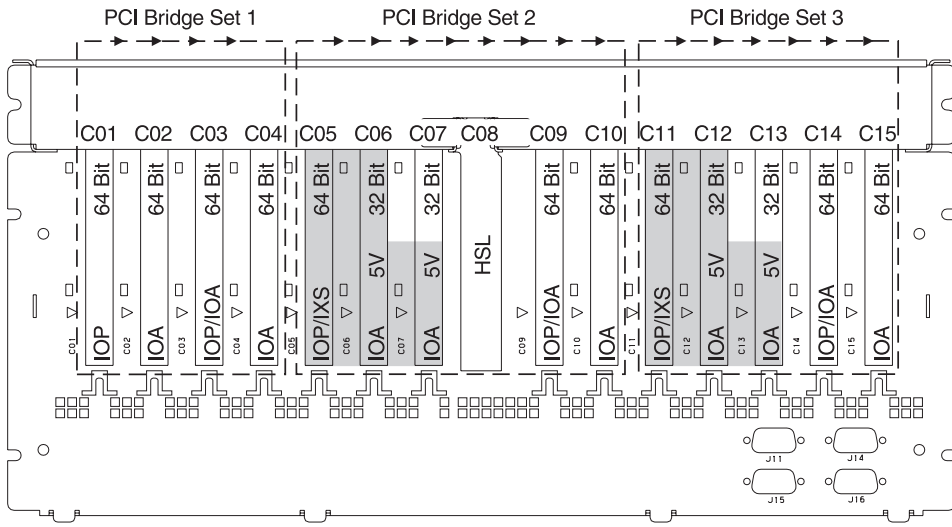PCI Bridge Set 1   PCI Bridge Set 2   PCI Bridge Set 3

☐ = positions occupied if IXS installed

Note: Long or short feature cards can go in any position.

Position	Type														
	C01	C02	C03	C04	C05	C06	C07	C08	C09	C10	C11	C12	C13	C14	C15
	___	___	___	___	___	___	___	HSL	___	___	___	___	___	___	___

RZAQ5507-4

5078 Expansion Unit

Resource Name: _____

PCI Bridge Set 1   PCI Bridge Set 2   PCI Bridge Set 3

C01	C02	C03	C04	C05	C06	C07	C08	C09	C10	C11	C12	C13	C14	C15
64 Bit	64 Bit	64 Bit	64 Bit	64 Bit	32 Bit	32 Bit	HSL	64 Bit	64 Bit	64 Bit	32 Bit	32 Bit	64 Bit	64 Bit
IOP	IOA	IOP/IOA	IOA	IOP/IXS	5V IOA	5V IOA		IOP/IOA	IOA	IOP/IXS	5V IOA	5V IOA	IOP/IOA	IOA

☐ = positions occupied if IXS installed

Note: Long or short feature cards can go in any position.

Type								HSL							
Position	C01	C02	C03	C04	C05	C06	C07	C08	C09	C10	C11	C12	C13	C14	C15

RZAQ5507-4

5079 Expansion Unit

You need one diagram for each expansion unit attached to the system unit. Copy the diagram for your use.

- Place the first IOA 4748 or 4778 in position C02, C03, or C04.
- The top and bottom of the 5079 expansion units have a maximum of three IOA 4748 or 4778 cards (total of six).
- IOPs control IOAs in the direction of the arrows in the PCI Bridge Sets.
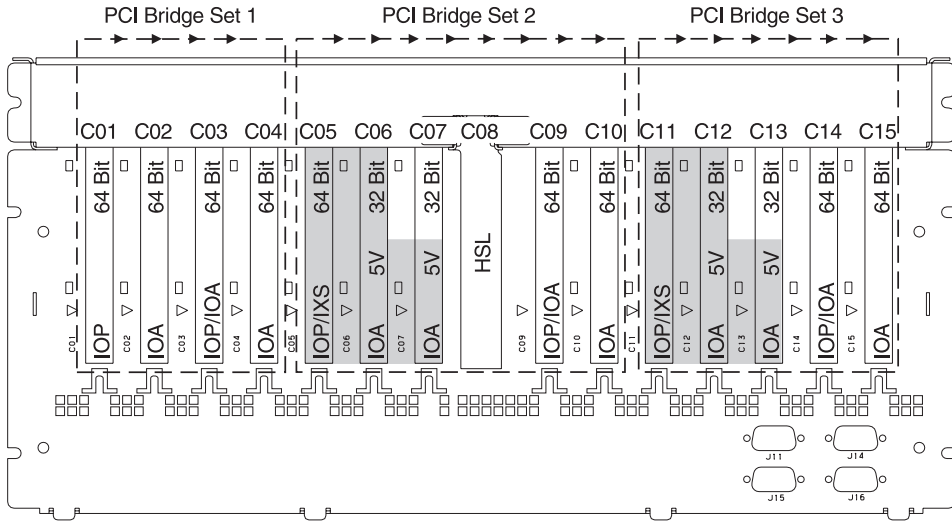
Resource Name: _____

PCI Bridge Set 1   PCI Bridge Set 2   PCI Bridge Set 3

C01 C02 C03 C04 C05 C06 C07 C08 C09 C10 C11 C12 C13 C14 C15

▢ = positions occupied if IXS installed

Note: Long or short feature cards can go in any position.

Position	Type														
	C01	C02	C03	C04	C05	C06	C07	C08 (HSL)	C09	C10	C11	C12	C13	C14	C15

RZAQ5507-4

PCI Bridge Set 1   PCI Bridge Set 2   PCI Bridge Set 3

C01 C02 C03 C04 C05 C06 C07 C08 C09 C10 C11 C12 C13 C14 C15

▢ = positions occupied if IXS installed

Note: Long or short feature cards can go in any position.

Position	Type														
	C01	C02	C03	C04	C05	C06	C07	C08 (HSL)	C09	C10	C11	C12	C13	C14	C15

RZAQ5507-4

Placement Tables

If your unit is powered off, look at the back of the unit and write down the numbers on the cards in the correct table. Refer to the "Current Configuration Tables" on page 25 for location of IMBED IOPs.

Copy and use one worksheet for each IOP in all of your units.

Example of a Completed Placement Table

IOP Card Group	Card Position	Feature Number or CCIN Number from Type Column	Memory Value	Performance Value
IOP	**C01**	**2842**	**100**	**100**
IOA	C02	2748	30	21
IOA	C03	4745	15	7
IOA	C04	4746	10	6
IOA	C05	4838 (new card)	26	37
	IOA Totals		81	71

Imbed IOP

IOP Card Group	Card Position	Feature Number or CCIN Number from Type Column	Memory Value	Performance Value
IOP	**C**	**Imbed**	**100**	**100**
IOA	C			
IOA	C			
IOA	C			
IOA	C			
	IOA Totals			

2842 IOP

IOP Card Group	Card Position	Feature Number or CCIN Number from Type Column	Memory Value	Performance Value
IOP	**C**	**2842**	**100**	**100**
IOA	C			
IOA	C			
IOA	C			
IOA	C			
	IOA Totals			

2843 IOP

IOP Card Group	Card Position	Feature Number or CCIN Number from Type Column	Memory Value	Performance Value
	C	2843	211	100
	C			
	C			
	C			
	C			
	IOA Totals			

2890 Integrated xSeries Server IOP

2890 Restrictions:

- Add only 4838, 2744, 2743, and 2760 IOAs.
- The 2890 card except for 270 system unit uses three slots.
- There is no memory, or performance values maximum limits.

IOP Card Group	Card Position	Feature Number or CCIN Number from Card Position
	C	2890 IXS
	C	
	C	
	C	

Removing the covers

Locate the diagram of the unit you are working on.

270 and 820 System Units

To access the PCI card location, you need to remove the back cover and the side cover:

__ 1. Place your hand near the bottom of the back cover and lift up and out.

__ 2. **Attention:** If removing side cover while powered on, errors may occur due to electromagnetic interference.

Remove the right side cover (view from back) by loosening the thumbscrews and sliding the cover from front to back until it stops.

__ 3. Pull the cover out.
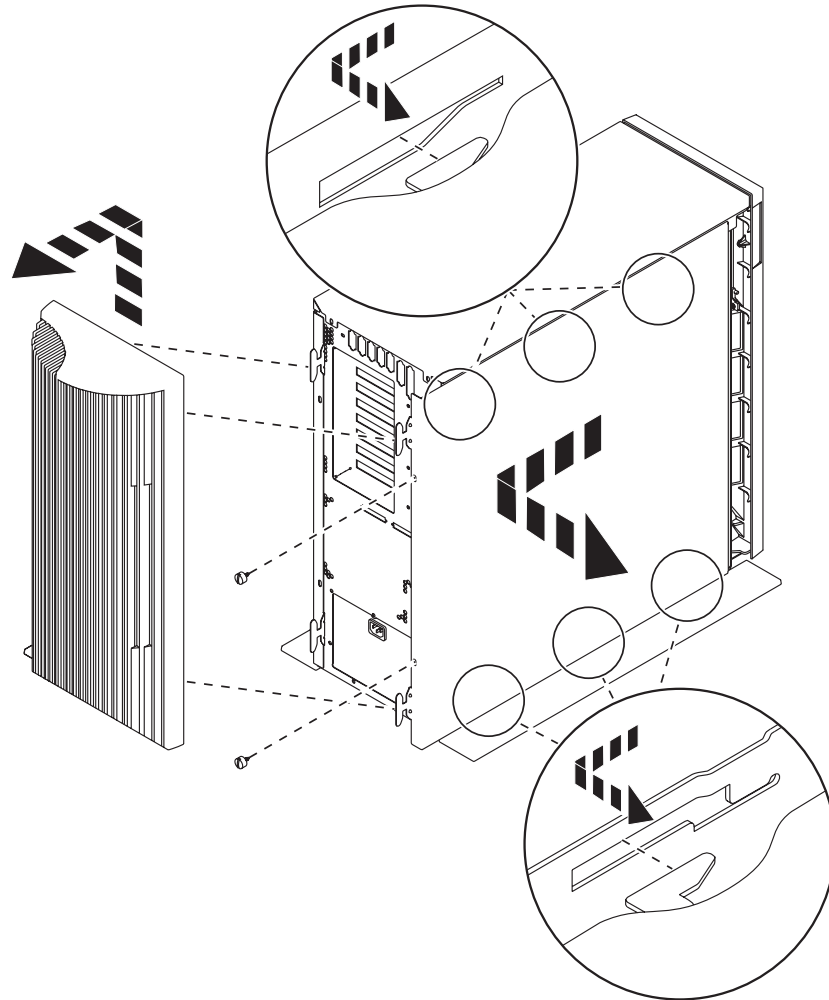
RZAQ2517-0

830, 840, SB2, SB3, 5074 and 5079 Units

To access the PCI card location, you need to open the back cover:

- A Open the back cover
- B Remove the back cover

RZAG6502-0
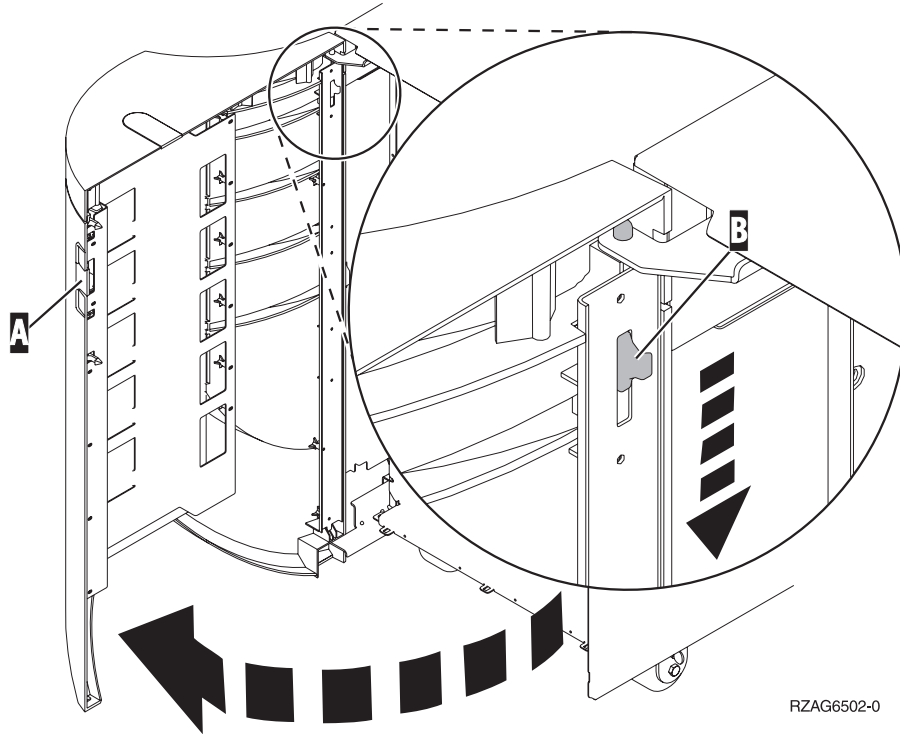
5075 Expansion Unit

To access the PCI card location, you need to remove the back cover and the side cover:

1. Place your hand near the bottom of the back cover and lift up and out.
2. **Attention:** If removing side cover while powered on, errors may occur due to electromagnetic interference.

   Remove the left side cover (view from back) by loosening the thumbscrews and sliding the cover from front to back until it stops.
3. Pull the cover out.
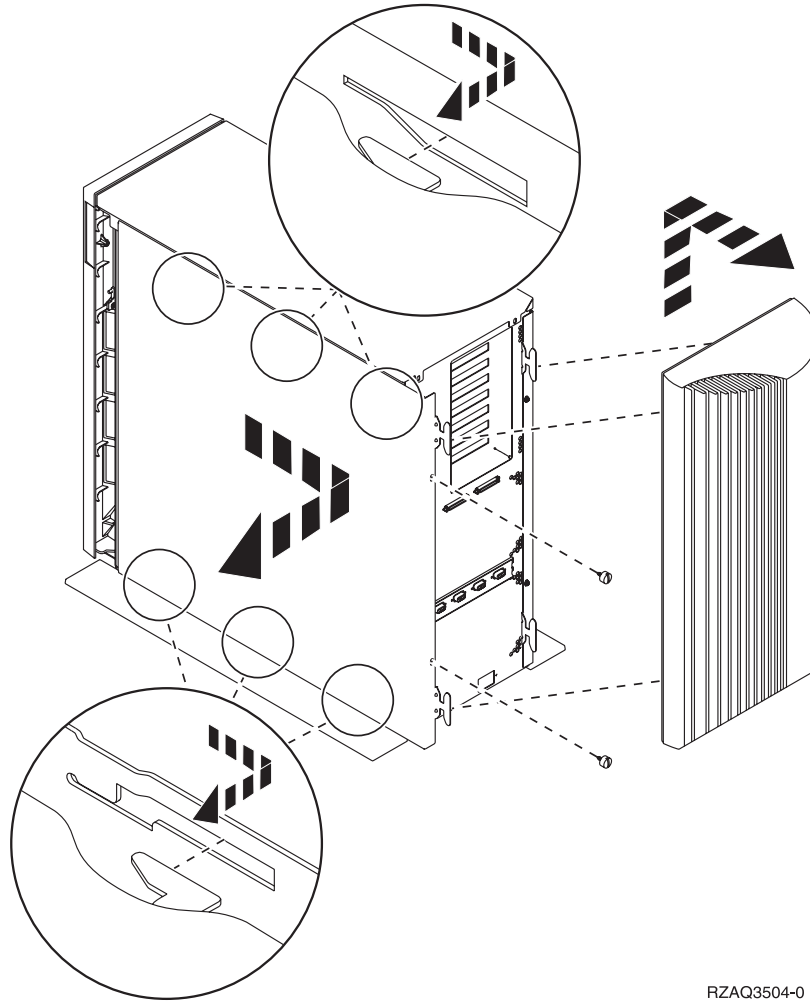
RZAQ3504-0

5078 Expansion Unit

To access the PCI card location, open the back and remove the air flow shield.
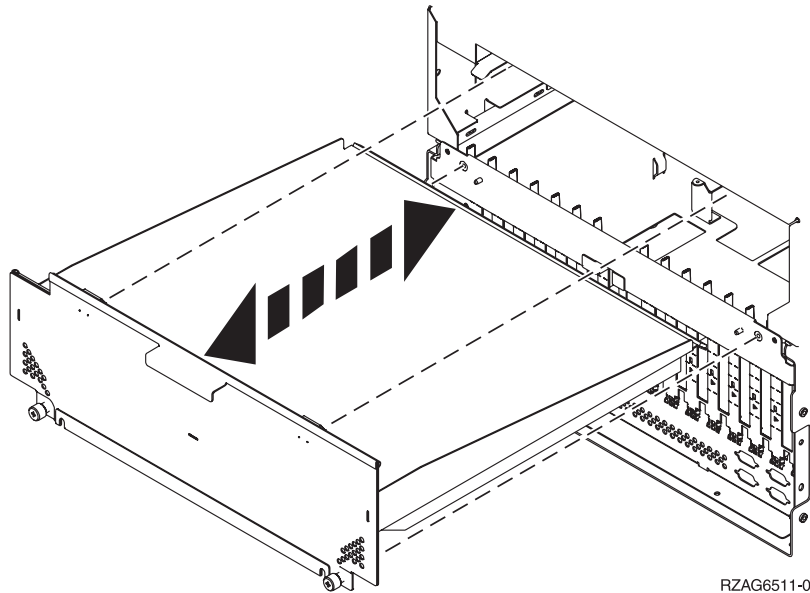
RZAG6511-0

Accessing units in a rack

1. Press latches **B** and pull the server out using the handle **C** .
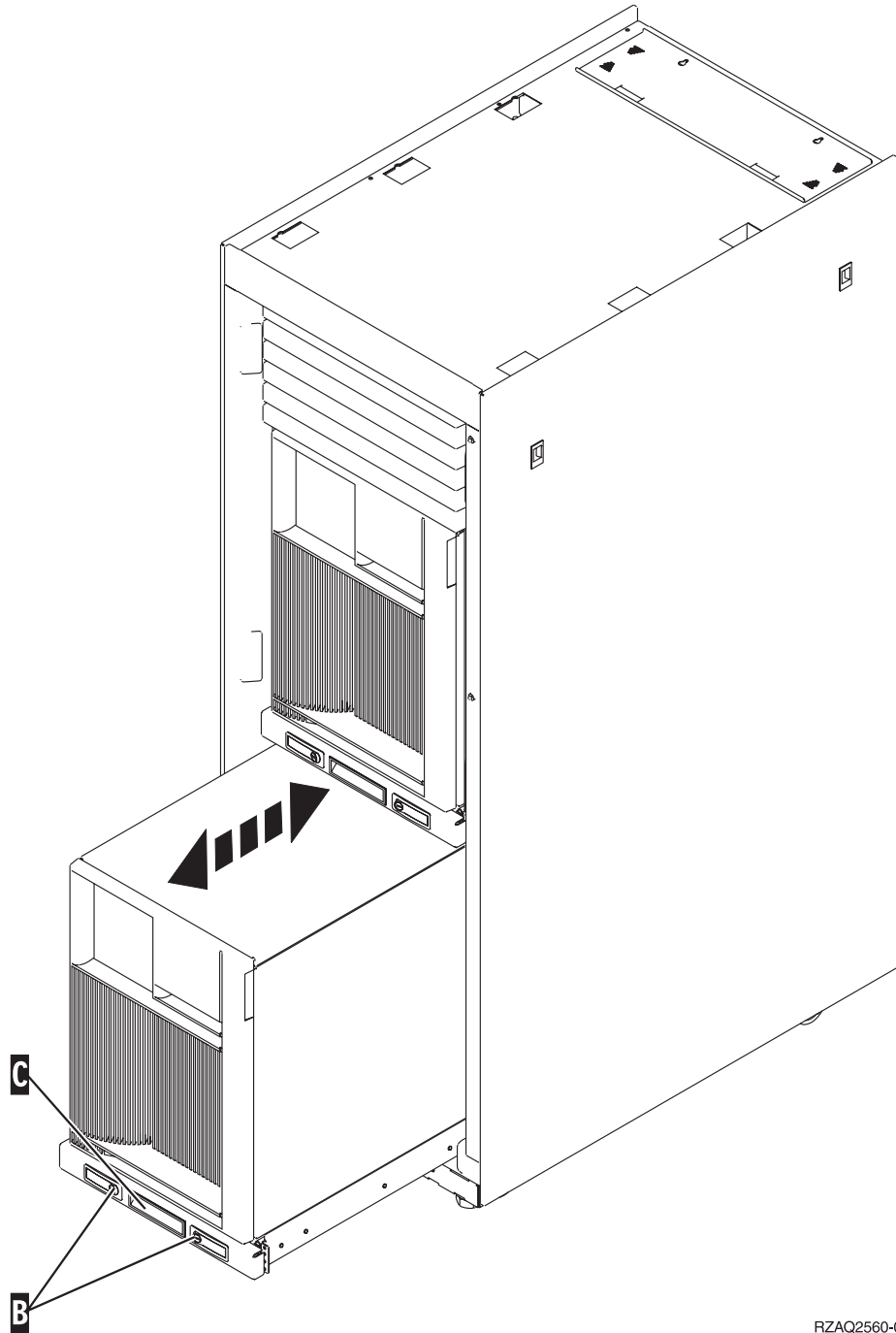
RZAQ2560-0

2. Refer to previous unit diagrams to remove the side cover.

3. If you are cabling the server, feed the excess cabling along the cable management arm **D** and secure the cables with the fasteners.

RZAQ2561-0

System unit control panel

Go to the front of your iSeries system unit. Open the control panel door.

Your control panel looks like either Figure 5 or Figure 6 on page 40. Refer to the control panel for your unit.

RV5B002-4

Figure 5. Control panel without Electronic Keystick

A Power On Light
- A blinking light indicates power to the unit.
- A constant light indicates that the unit is up and working.

B Power Push button

C Processor Activity

D System Attention

E Function/Data Display

F Increment/Decrement buttons

G Enter Push button

.

.

.

.

.

.

.

.

.

.

If your control panel looks like this, before you can use F Increment/Decrement buttons and G Enter push button, you need to press H Mode Selects to select Manual mode N .
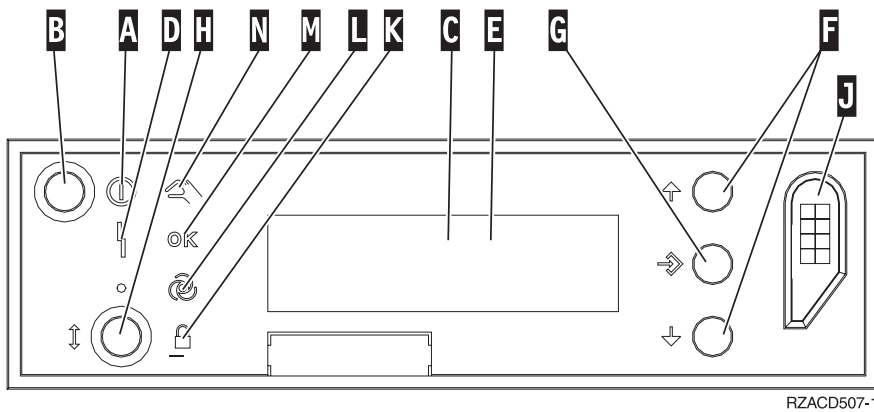
Figure 6. Control panel with Electronic Keystick

A	Power On Light
	• A blinking light indicates power to the unit.
	• A constant light indicates that the unit is up and working.
B	Power Push button
C	Processor Activity
D	System Attention
E	Function/Data Display
F	Increment/Decrement buttons
G	Enter Push button
H	Mode Selects
J	Electronic Keystick Slot
K	Secure
L	Auto
M	Normal
N	Manual

Moving a card in your iSeries

__ 1. Remove or open the back cover of the system unit or expansion unit where you will remove the feature card. Refer to "Removing the covers" on page 33 for more information.

__ 2. Locate the feature card area.

__ 3. Either latches or screws secure the cards in place.

Does your unit have card latches?
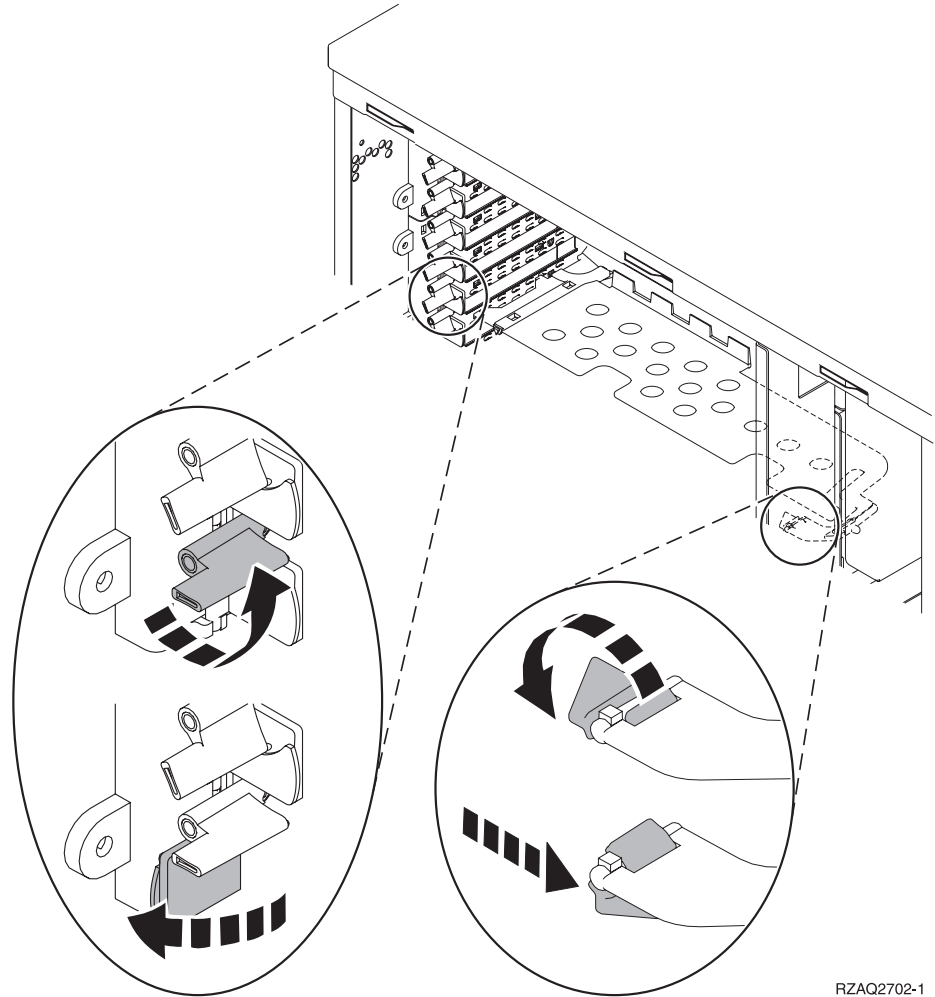
RZAQ2702-1

If **yes**, your iSeries can either be powered off or powered on when you install your new card. Decide which way you want to install your card—"Your iSeries is powered on while moving cards" on page 42 or "Your iSeries is powered off while moving cards" on page 46.

If **no**, your unit has screws to secure the cards.

RV5B001-0
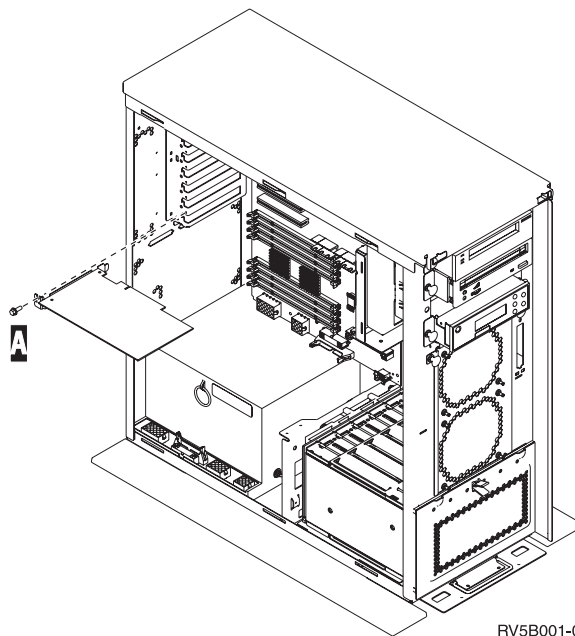
  __ a. To move or install a feature card, you must power off your unit.

  __ b. Go to "Your iSeries is powered off while moving cards" on page 46.

Your iSeries is powered on while moving cards

  __ 1. Type `strsst` on the command line of the *Main Menu* and press Enter.

  __ 2. Type **your service tools userid and service tools password** on the *Start Service Tools (STRSST) Sign On* display and press Enter.

  __ 3. Select **Start a service tool** from the *System Service Tools (SST)*display and press Enter.

  __ 4. Select **Hardware service manager** from the *Start a Service Tool* display and press Enter.

  __ 5. Select **Packaging hardware resources (system, frames, cards...)** from the *Hardware Service Manager* display and press Enter.

  __ 6. Type **9** on the *System Unit* or *Expansion Unit* line of the unit where you are installing the new card and press Enter.

  __ 7. Select **Include empty positions**.

  __ 8. **Attach the disposable wrist strap to prevent electrostatic discharge from damaging a device.** Attach the adhesive part of the foil to an unpainted metal surface on the frame of the unit.

    Notes:

    a. Follow the same precautions you would use without the wrist strap. The 2209 Disposable Wrist Strap is for static control. It will not increase nor decrease your risk of receiving electric shock when using or working on electrical equipment.

    b. Discard the wrist strap immediately and contact your dealer for a replacement, if the disposable wrist strap appears damaged or is cut off. Do not continue until a new wrist strap is available.

    c. Remove the liner from the copper foil at the end, when you unroll the strap.

d. Attach the copper foil to an **exposed, unpainted** metal surface on the frame of the unit (electrical ground).

__ 9. Select **Concurrent Maintenance** on the card position where you want to remove the card. Press Enter.

__ 10. Select **Toggle LED blink off/on**. A light-emitting diode (LED) blinks identifying the position you chose.

__ 11. Select **Toggle LED blink off/on** to stop the blinking LED.

__ 12. Select **Power off domain** on the *Hardware Resource Concurrent Maintenance* display. Press Enter.

__ 13. Wait for the *Hardware Resource Concurrent Maintenance* display to appear with the message indicating Power off complete.

__ 14. Open the latch at the card position where you plan to remove the card. Move the blue latch counter clockwise and then swing the black latch out.
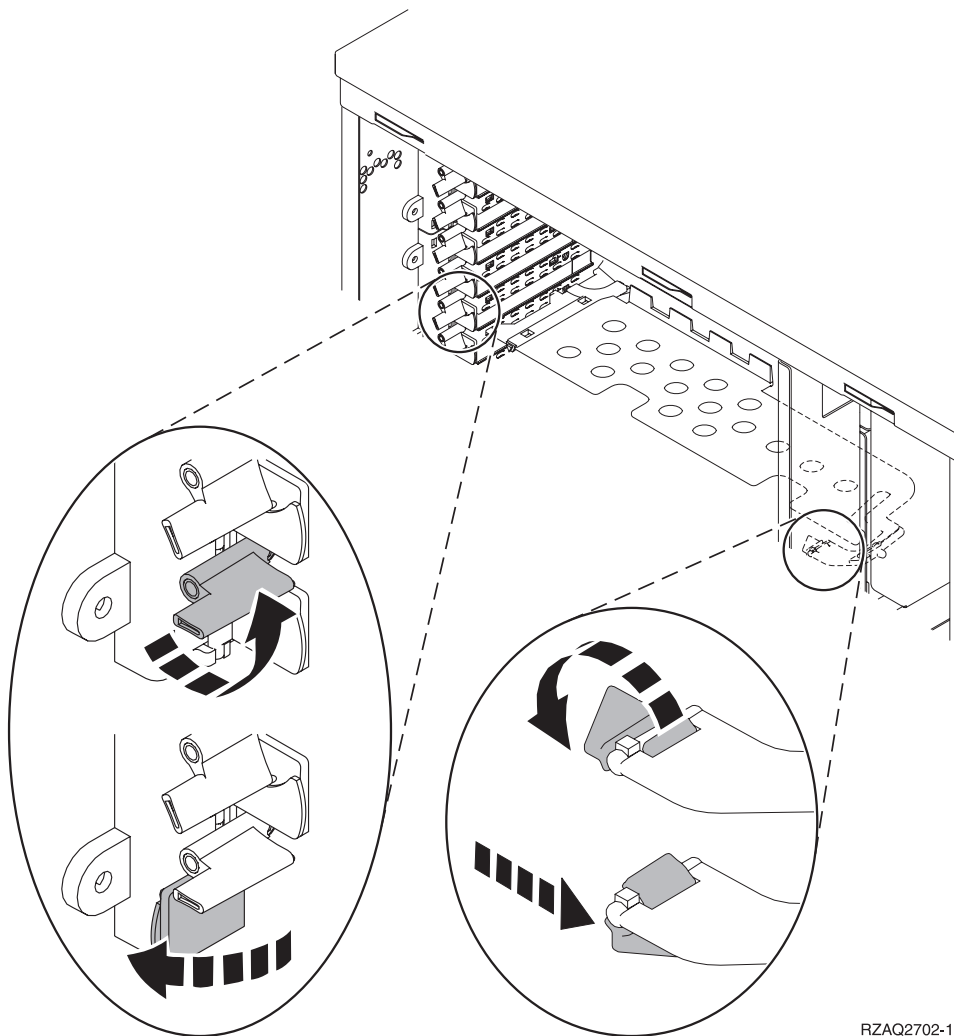
RZAQ2702-1

Figure 7. Example of 270, 820, 5075 Card Latch
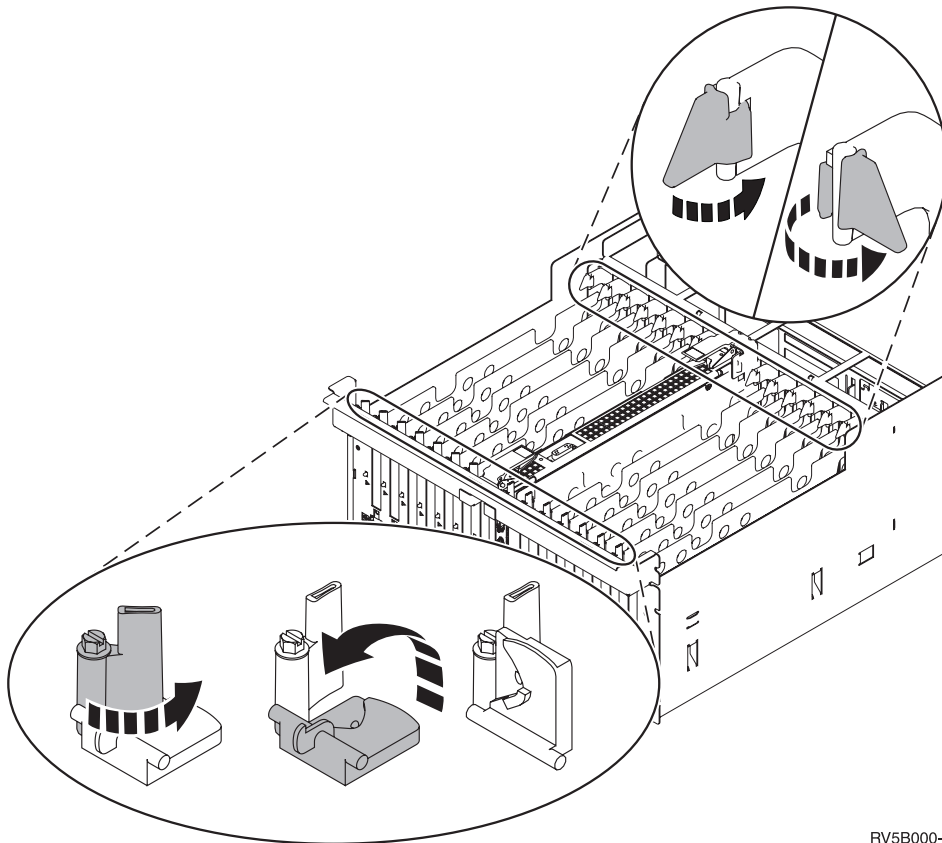
RV5B000-0

Figure 8. Example of 830, 840, SB2, SB3, 5079 Card Latches

__ 15. Remove the card and place it in a protective package.

__ 16. **Attention:** Adapter cards are fragile:

- Handle only by the edges
- Keep fingers off printed circuit area
- Use static strap when handling
- Leave in protective packaging until ready to install

__ 17. Locate the adapter card you want to install in this position.

__ 18. If installing the 2890 IXS card:

__ a. Remove a second card filler plate below the first one removed.

__ b. Install the card filler plate that came with the 2890 IXS card. This card filler plate is for air flow.
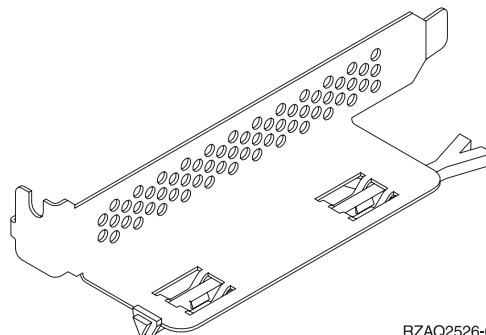
RZAQ2526-0

__ c. Remove the plastic card dividers from the positions the IXS card will occupy. Press down on the release lever at the headstock end and pull away from the backplane.

__ 19. Align the adapter card with the card connector inside the system unit or expansion unit and push until it is connected securely.

__ 20. Swing the black latch in and move the blue latch clockwise to secure the card.

__ 21. Connect any cables and label the cables with the card position.

__ 22. Select **Power on domain** on the *Hardware Resource Concurrent Maintenance* display. Press Enter.

__ 23. Press Enter.

__ 24. Select **Assign to** on the resource with the * on the *Work with Controlling Resource* display. Press Enter.

__ 25. Wait for the *Hardware Resource Concurrent Maintenance* display to appear with the message indicating `Power on complete`.

__ 26. If you have more cards to move or want to install the card you removed in another position, go to "Determining the best place to install your card" on page 4.

__ 27. If you are finished moving and installing all the cards, remove the wrist strap.

__ 28. Install the unit covers.

__ 29. Did you install a 2890 IXS card?

> **No**   **Yes**
>
> ↓
>
> __ a. If you installed a 2890 IXS card, we recommend that you perform a verification test.
>
> __ b. Sign on the system unit. Ensure that you have service tools authority.
>
> __ c. Type **strsst** on the command line and press Enter.
>
> __ d. Type **your service tools userid and service tools password** on the *Start Service Tools (STRSST) Sign On* display and press Enter.
>
> __ e. Select **Start a service tool** from the *Start a Service Tools* display and press Enter.
>
> __ f. Select **Hardware service manager** from the display and press Enter.
>
> __ g. Select **Packaging hardware resources (system, frames, cards...)** from the display and press Enter.
>
> __ h. Type **9** on the *System Unit or Expansion Unit* line.
>
> __ i. Press Page Down if needed and look at the *Card Pos* column.
>
> > __ 1) Select **Associated Logical Resources** on the line next to the 2890 that was just installed.
> >
> > __ 2) Select **Verify** on the line next to the 2890 card.
> >
> > __ 3) Press Enter at the *Verification Test* display.
> >
> > __ 4) Select **Processor Internal Test** and wait for it to complete.
> >
> > __ 5) Select **Hardware Memory Test** and wait for it to complete.

      __ 6) Press Enter at the *Number of Test Runs* display.

> **Note:** If the test fails, make sure that you have installed the card properly. If the test continues to fail, contact your authorized dealer or service provider.

      __ 7) When the test is complete, the message "This test is successful" appears on the *Verification Test Results* display.

      __ 8) Press Enter twice.

      __ 9) Press F3 three times to return to the *Main Menu*.

  a. Sign on the system unit. Ensure that you have service tools authority.

  b. Type **strsst** on the command line and press Enter.

  c. Type **your service tools userid and service tools password** on the *Start Service Tools (STRSST) Sign On* display and press Enter.

  d. Select **Start a service tool** from the *Start a Service Tools* display and press Enter.

  e. Select **Hardware service manager** from the display and press Enter.

  f. Select **Packaging hardware resources (system, frames, cards...)** from the display and press Enter.

  g. Type **9** on the *System Unit or Expansion Unit* line.

  h. Press Page Down if needed and look at the *Card Pos* column for the adapter card you just installed.

__ 30. Your feature upgrade is complete.

__ 31. Press PF3 three times and press Enter to get back to the *Main Menu*.

__ 32. Your feature upgrade is complete.

Your iSeries is powered off while moving cards

__ 1. Ensure that all jobs are complete.

__ 2. When all jobs are complete, type **pwrdwnsys *immed** on an iSeries command line and press Enter.

__ 3. When the iSeries is complete, unplug any power cords, such as printers and displays, from electrical outlets.

__ 4. Unplug the system or expansion unit power cord from the electrical outlet.

__ 5. **Attach the disposable wrist strap to prevent electrostatic discharge from damaging a device.** Attach the adhesive part of the foil to an unpainted surface on the frame of the unit.

> **Notes:**

  a. Follow the same precautions you would use without the wrist strap. The 2209 Disposable Wrist Strap is for static control. It will not increase nor decrease your risk of receiving electric shock when using or working on electrical equipment.

  b. Discard the wrist strap immediately and contact your dealer for a replacement, if the disposable wrist strap appears damaged or is cut off. Do not continue until a new wrist strap is available.

  c. Remove the liner from the copper foil at the end, when you unroll the strap.

  d. Attach the copper foil to an **exposed, unpainted** metal surface on the frame of the system unit (electrical ground).
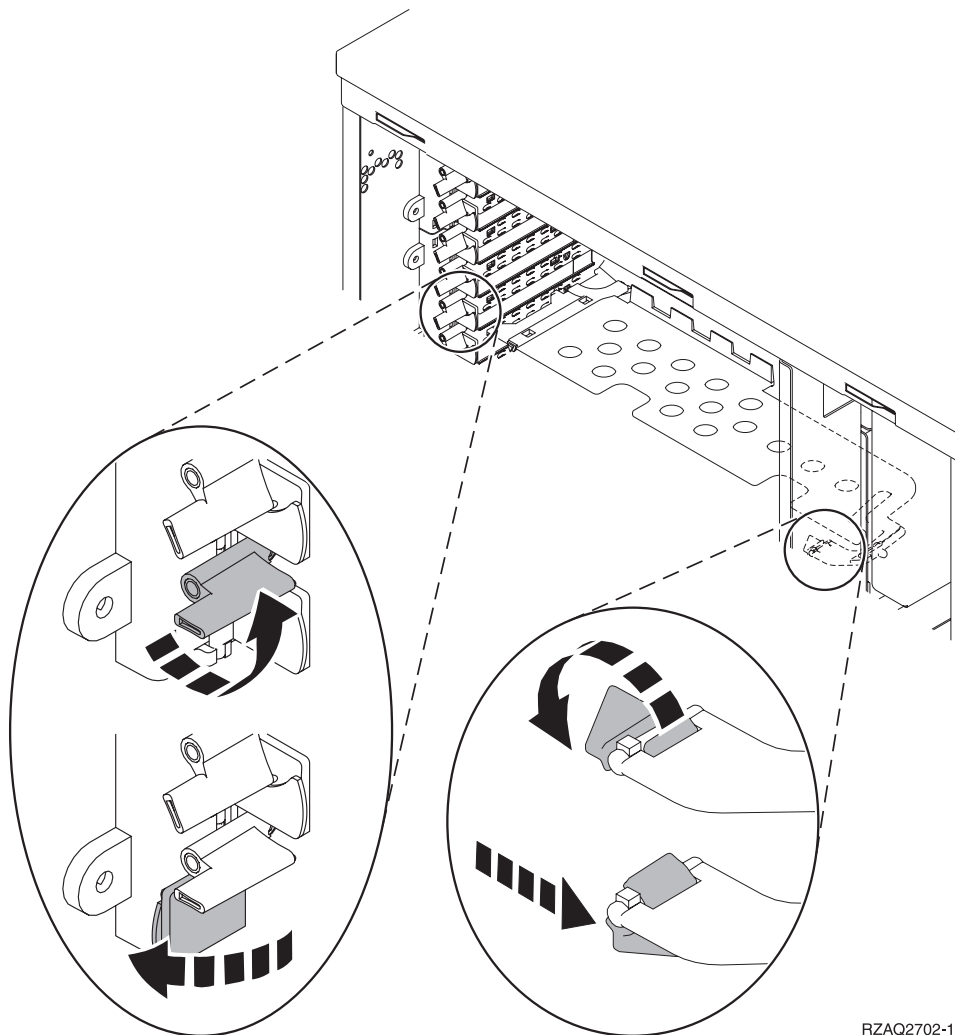
___ 6. Locate the adapter card positions inside your system unit.

___ 7. Does your unit have screws to secure the cards?

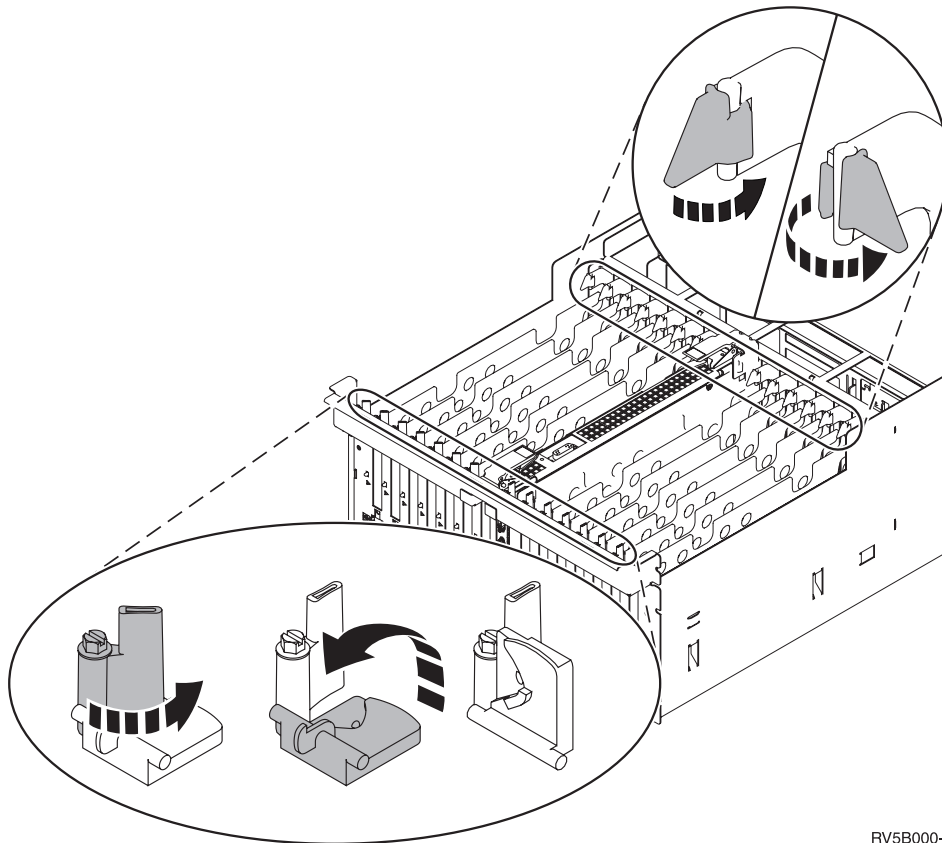RV5B001-0

No   **Yes**

↓
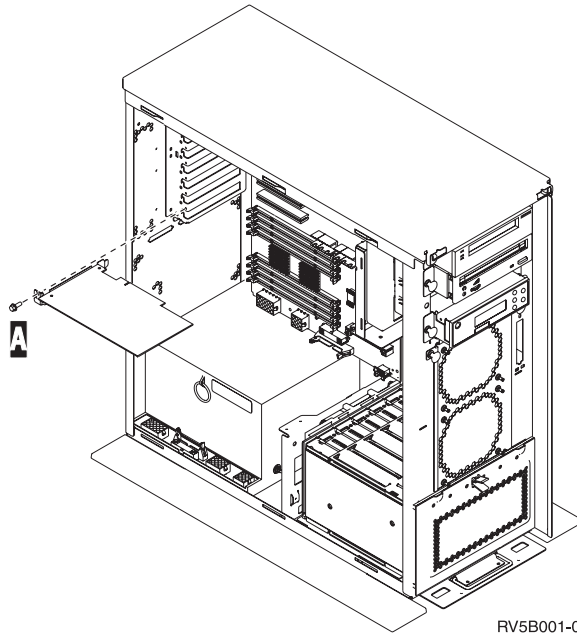
___ a. Remove the screw from the card position where you plan to remove the card.

___ b. Go to step 9 on page 49.

___ 8. Open the latch at the card position where you plan to remove the card. Move the blue latch counter clockwise and then swing the black latch out.

Figure 9. Example of 270, 820, 5075 Card Latch

RZAQ2702-1

Figure 10. Example of 830, 840, SB2, SB3, 5079 Card Latches

__ 9. Remove the card and place it in a protective package.

__ 10. **Attention:** Adapter cards are fragile:
- Handle only by the edges
- Keep fingers off printed circuit area
- Use static strap when handling
- Leave in protective packaging until ready to install

__ 11. Locate the adapter card you want to install in this position.

__ 12. Align the adapter card with the card holders inside the system unit and push until it is connected securely.

__ 13. Swing the black latch in and move the blue latch clockwise to secure the card.

__ 14. **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)**

Connect any cables and label the cables with the card position.

__ 15. If you have more cards to move or want to install the card you removed in another position, go to "Your iSeries is powered off while moving cards" on page 46 and repeat the steps to install the next card.

__ 16. If you are finished moving and installing all cards, remove the wrist strap.

__ 17. Install the unit covers.

__ 18. **DANGER**

> **An electrical outlet that is not correctly wired could place hazardous voltage on metal parts of the system or the products that attach to the system. It is the customer's responsibility to ensure that the outlet is correctly wired and grounded to prevent an electrical shock. (RSFTD201)**

Plug in the system unit and system unit console into an electrical outlet. Plug in everything you previously unplugged such as printers and displays.

__ 19. Is your system unit an iSeries 270 or 8xx?

270   **8xx**

↓   Go to step 22.

__ 20. Look at the Function/Data display on the control panel.

__ 21. Does **01 B N V=S** appear in the Function/Data display?

No   **Yes**

↓   Do the following:

__ a. Press the Increment/Decrement push button until **02** appears in the Function/Data display.

__ b. Press the Enter push button on the control panel.

__ c. Press the Increment/Decrement push button until **B** appears in the Function/Data display.

__ d. Press the Enter push button on the control panel.

__ e. Press the Increment/Decrement push button until **M** appears in the Function/Data display.

__ f. Press the Enter push button on the control panel.

__ g. Press the Increment/Decrement push button until **S** appears in the Function/Data display.

__ h. Press the Enter push button on the control panel.

__ i. Press the Increment/Decrement push button until **01** appears in the Function/Data display.

__ j. Press the Enter push button on the control panel.

01 B M S should appear in the Function/Data display. If it does not, repeat steps 21a through 21i.

__ 22. Look at the Function/Data display on the control panel.

__ 23. Does **01 B V=S** appear in the Function/Data display?

Yes   **No**

↓   Do the following:

__ a. Press the Mode Select button until the Manual mode indicator (a small hand) lights up.

__ b. Press the Increment/Decrement push button until **02** appears in the Function/Data display.

__ c. Press the Enter push button on the control panel.

__ d. Press the Increment/Decrement push button until **B** appears in the Function/Data display.

__ e. Press the Enter push button on the control panel.

    __ f. Press the Increment/Decrement push button until **S** appears in the Function/Data display

    __ g. Press the Enter push button on the control panel.

    __ h. Press the Increment/Decrement push button until **01** appears in the Function/Data display.

    __ i. Press the Enter push button on the control panel.

       01 B S should appear in the Function/Display panel. If it does appear, not repeat steps 23a on page 50 through 23h.

    __ j. Go to step 24 on page 21.

__ 24. Did you install a 2890 IXS card?

    No   **Yes**

    ↓

    __ a. If you installed a 2890 IXS card, we recommend that you perform a verification test.

    __ b. Sign on the system unit. Ensure that you have service tools authority.

    __ c. Type **strsst** on the command line and press Enter.

    __ d. Type **your service tools userid and service tools password** on the *System Service Tools (SST) Sign On* display and press Enter.

    __ e. Select **Start a service tool** from the *Start a Service Tools* display and press Enter.

    __ f. Select **Hardware service manager** from the display and press Enter.

    __ g. Select **Packaging hardware resources (system, frames, cards...)** from the display and press Enter.

    __ h. Type **9** on the *System Unit or Expansion Unit* line.

    __ i. Press Page Down if needed and look at the *Card Pos* column.

        __ 1) Select **Associated Logical Resources** on the line next to the 2890 that was just installed.

        __ 2) Select **Verify** on the line next to the 2890 card.

        __ 3) Press Enter at the *Verification Test* display.

        __ 4) Select **Processor Internal Test** and wait for it to complete.

        __ 5) Select **Hardware Memory Test** and wait for it to complete.

        __ 6) Press Enter at the *Number of Test Runs* display.

          Note: If the test fails, make sure that you have installed the card properly. If the test continues to fail, contact your authorized dealer or service provider.

        __ 7) When the test is complete, the message "This test is successful" appears on the *Verification Test Results* display.

        __ 8) Press Enter twice.

        __ 9) Press F3 three times to return to the *Main Menu*.

__ a. Sign on the system unit. Ensure that you have service tools authority.

      __ b. Type **strsst** on the command line and press Enter.

      __ c. Type **your service tools userid and service tools password** on the *System Service Tools (SST) Sign On* display and press Enter.

      __ d. Select **Start a service tool** from the *Start a Service Tools* display and press Enter.

      __ e. Select **Hardware service manager** from the display and press Enter.

      __ f. Select **Packaging hardware resources (system, frames, cards...)** from the display and press Enter.

      __ g. Type **9** on the *System Unit or Expansion Unit* line.

      __ h. Press Page Down if needed and look at the *Card Pos* column for the adapter card you just installed.

__ 25. Your feature upgrade is complete.

__ 26. Press F3 three times and press Enter to get back to the *Main Menu*.

Installing Integrated xSeries Adapter for iSeries

Card number 2689 or machine type 1519 model 100 is the Integrated xSeries Adapter for iSeries. You will install the card in your xSeries server. Refer to your xSeries server documentation to complete some of the steps.

Prerequisites

Ensure you have the following before starting your installation:

- Machine type 1519 model 100–2689 card assembly shipped with two cables
- xSeries server **without** disk units
- Mouse, keyboard and display for xSeries server
- High speed link (HSL) cable (more than one may be needed for a HSL loop)
- System power control network (SPCN) cable
- V5R1 operating system

Preparing the server

The boot fail counter and virus detection need to be turned off before installing the card.

1. Power on the xSeries server.
2. The IBM logo display appears.
3. Press **F1** after the prompt appears on the display to go to setup.
4. Select **Start Options**. Press Enter.
5. Select **boot fail count** using the down arrow (↓).
6. Change the value to **Disabled** using the right arrow (→).
7. Select **virus detection** using the down arrow (↓).
8. Change the value to **Disabled** using the right arrow (→).
9. Press **Esc** two times to exit.
10. Select **yes** from the *Settings were changed* display.
11. Power off the xSeries server. Go to the information you received with your xSeries for instructions to power off.
12. For the latest system BIOS and Advanced System Management firmware, go to `http://www.pc.ibm.com/support`

Card placement

Refer to the following list for the Integrated Adapter for xSeries card placement in the different servers. For a current list of xSeries servers, go to:

`http://www.ibm.com/servers/eserver/iseries/windowsintegration`

Server	Card Position
7100	1 or 2
7600	1 or 2
xSeries 250	1 or 2
xSeries 350	2

Installing the card

To install the card, refer to your xSeries server information when completing the following steps:

__ 1. Make sure the server is powered off.

__ 2. **Unplug the server power cord from the electrical outlet**.

__ 3. You need to provide 3.3v standby power for the card position. For servers 7100, 7600 and 250, locate J47 if installing in card position 1, or J20 if installing in card position 2. For server 350, locate J80.
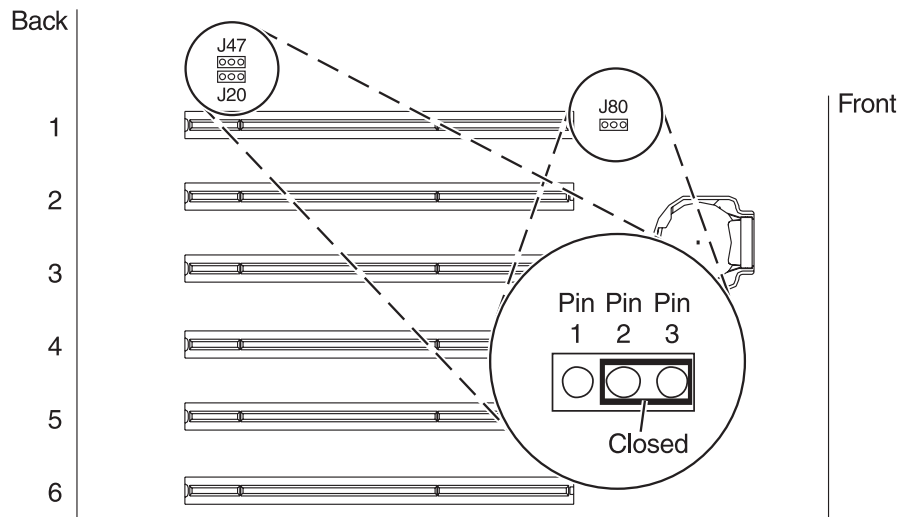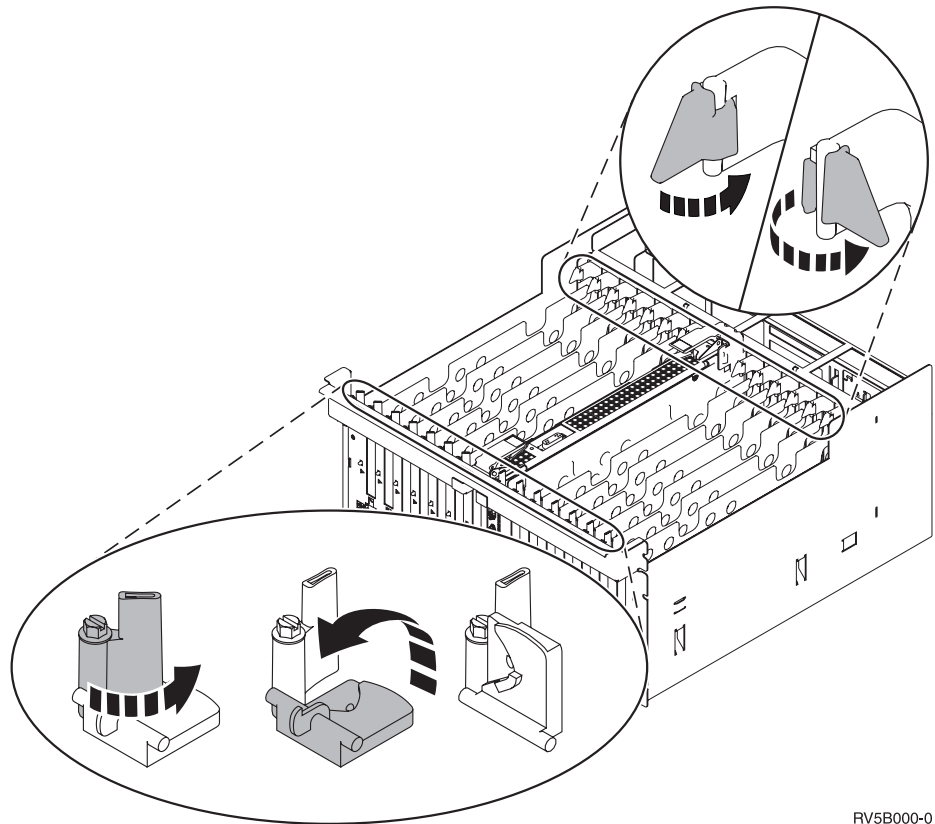

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Move the jumper from pins 2 and 3 to pins 1 and 2.

> **Note:** You may need to remove the memory card to access J47, J20 and J80. Refer to your xSeries server information.

__ 4. You may need to move an existing card to install the Integrated Adapter card in the correct position.

__ 5. Two card positions are used by the card.

__ 6. Refer to the xSeries information to install the card.

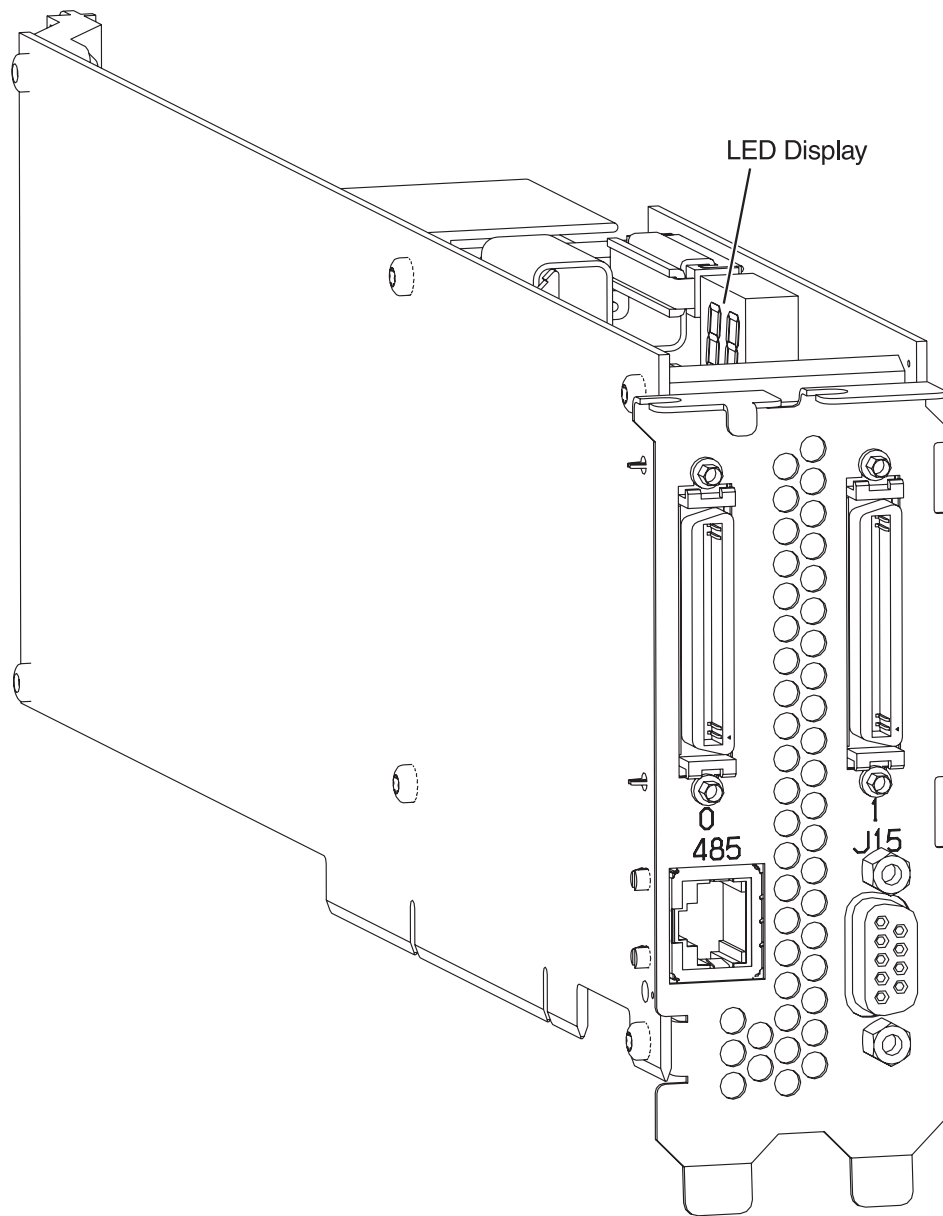__ 7. Make sure the card is securely latched.

RV5B000-0

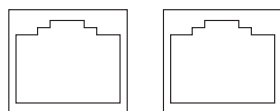__ 8. After the card is installed, return to these instructions.

Connecting the cables

1. Connect PN 04N2652 to the 2689 card J15 label. Connect the cable to the SPCN network of your iSeries system.

LED Display

0
485

1
J15

RZAQ4514-0

2. Connect cable PN 21P4162 to the card 485 label.
3. Connect the other end of the cable to either RS-485 port on the server.

A   RS485   B

RZAQ4517-0

4. Connect any high speed link (HSL) cables that you ordered to the card 0 and 1 label. Refer to *High Speed Link Environment Instructions* on the *iSeries 400 Installation and Service Library*, SK3T-4096-00 CD-ROM to complete the HSL cables installation.

5. Plug the server into an electrical outlet.

6. Power on the iSeries.

7. To complete the installation, go to the *iSeries Information Center*, SK3T-4091-00 or the following Web site:

   `http://www.ibm.com/eserver/iseries/infocenter`

   follow the path, `Integrated operating environments—>Windows server on iSeries`

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Version 5

Publication No. SENG-4745-01

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