iSeries

Model 825 in a rack installation instructions

Version 5

iSeries

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Version 5

Note

Before using this information and the product it supports, be sure to read the information in "Notices," on page 47.

Fourth Edition (August 2005)

This edition applies to version 5, release 3, modification 0 of IBM Operating System/400® (product number 5722–SS1) and to all subsequent releases and modifications until otherwise indicated in new editions. This version does not run on all reduced instruction set computer (RISC) models nor does it run on CISC models.

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Install a Model 825 in a rack

This feature is customer installable. However, the installation of this feature is intended for an experienced user who understands industry terminology with system experience. **Also, as you follow the instructions, after removing the devices to make the system weigh less, three people are needed to safely lift the unit onto the rack.** When you use these instructions, you will perform some or all of the following tasks:

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

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

You can choose to perform these tasks yourself or contact IBM(R) or an authorized service provider to make arrangements for them to perform the tasks for a fee. Should you encounter difficulties when performing a task, contact your authorized dealer or service provider.

Rack safety instructions

CAUTION:

- **Do not install a unit in a rack where the internal rack ambient temperatures will exceed 40 degrees C.**
- **Do not install a unit in a rack where the air flow is compromised. Any side, front or back of a unit used for air flow through the unit must not be in direct contact with the rack.**
- **Care should be taken to ensure that a hazardous condition is not created due to uneven mechanical loading when installing a unit in a rack. If the rack has a stabilizer it must be firmly attached before uninstalling or removing this unit.**
- **Consideration should be given to the connection of the equipment to the supply circuit so that overloading of the circuits does not compromise the supply wiring or overcurrent protection. To provide the correct power connection to a rack, refer to the rating labels located on the equipment in the rack to determine the total power requirement of the supply circuit.**
- **An electrical outlet that is not correctly wired could place hazardous voltage on the metal parts of the system or the devices that attach to the system. It is the responsibility of the customer to ensure that the outlet is correctly wired and grounded to prevent an electrical shock.**
- **Since the design and configuration of rack enclosures varies, consideration must be given to the placement of IBM units into third party racks and third party units into IBM racks. It is the customer's responsibility to ensure the unit can be safely mounted in the rack and the rack enclosure adequately provides proper ventilation/cooling, proper stability, and sufficient structural integrity for the unit when installed in the rack. (RSFTC247)**

CAUTION:
These instructions describe how to install a rack stabilizer to the bottom front of each rack to prevent the rack from falling over when you slide or pull out the system units. Do not attempt to slide out or install any system units until the stabilizer is correctly installed. Use caution when moving the rack and its system units. (RSFTC063)

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CAUTION:
The weight of this part or unit is between 32 and 55 kilograms (70.5 and 121.2 pounds). It takes three persons to safely lift this part or unit. (RSFTC205)

CAUTION:
When the unit is extended, its weight can turn over a rack that is not steady. Before you pull the unit out of the rack, ensure that a rack stabilizer is attached to the bottom front of the rack.

Do not pull out more than one unit at a time. The rack can turn over if you pull out more than one unit at a time. (RSFTC224)

Before you begin

Before you begin a replacement or installation task, follow these steps:

__ 1. **For an installation and if possible, for a replacement, ensure that you have a current backup of your system (including operating system, licensed programs, and data).** If you have backed up the operating system and licensed programs since the last time you applied PTFs, that backup is acceptable.

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

__ 3. Ensure that you have access to a medium flat-bladed screwdriver.

__ 4. If there are incorrect, missing, or visibly damaged parts, contact one of the following:
   - Your authorized service provider
   - In the United States: IBM® Rochester Manufacturing Automated Information Line (R–MAIL) at 1–800–300–8751
   - In countries outside of the United States: Use the following Web site to locate your service and support numbers:

     `http://www.ibm.com/planetwide`

__ 5. If you are installing new hardware in logical partitions, you need to plan and understand the requirements to be successful. Go to Logical partitions in the *Information Center*. Then return to these instructions.

__ 6. If you encounter difficulties during the procedure, contact your authorized service provider or your authorized dealer.

__ 7. Determine if there are any existing PTF prerequisites before you install your new feature. Go to the following Web site:

   `http://www-912.ibm.com/s_dir/slkbase.NSF/slkbase`

   a. Select **All Documents**.
   b. Select **General Information**.
   c. Select **Offerings**.
   d. Select **Feature Prerequisites**.
   e. Select **Customer Installation Features Prerequisites**.
   f. Locate your feature number and OS/400® release, and check the prerequisites.

Model 825 installation in a rack instructions

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

Are you installing a new 825 unit in a rack?

__ **Yes**: Go to "Rack installation instructions" on page 3.

__ **No**: Continue with the next step.

__ Ensure that you have a current backup of your system (including operating systems, licensed programs, and data) if you are installing an existing up and running unit in a rack.

__ If you have installed logical partitions on your system unit, refer to the *iSeries Information Center*. Go to Manage logical partitions in the *iSeries Information Center* to find instructions on powering down a system with logical partitions.

__ If an Integrated xSeries Adapter (IXA) is present on the system, shut it down using OS/400 options.

__ Ensure that all jobs are complete.

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

__ When the iSeries is completely powered down, disconnect all PCs from the system unit. Power off all devices, such as printers and displays, that are connected to the system unit.

__ Unplug any power cords, such as printers and displays, from electrical outlets.

__ Unplug the system unit and expansion unit power cords from the electrical outlets.

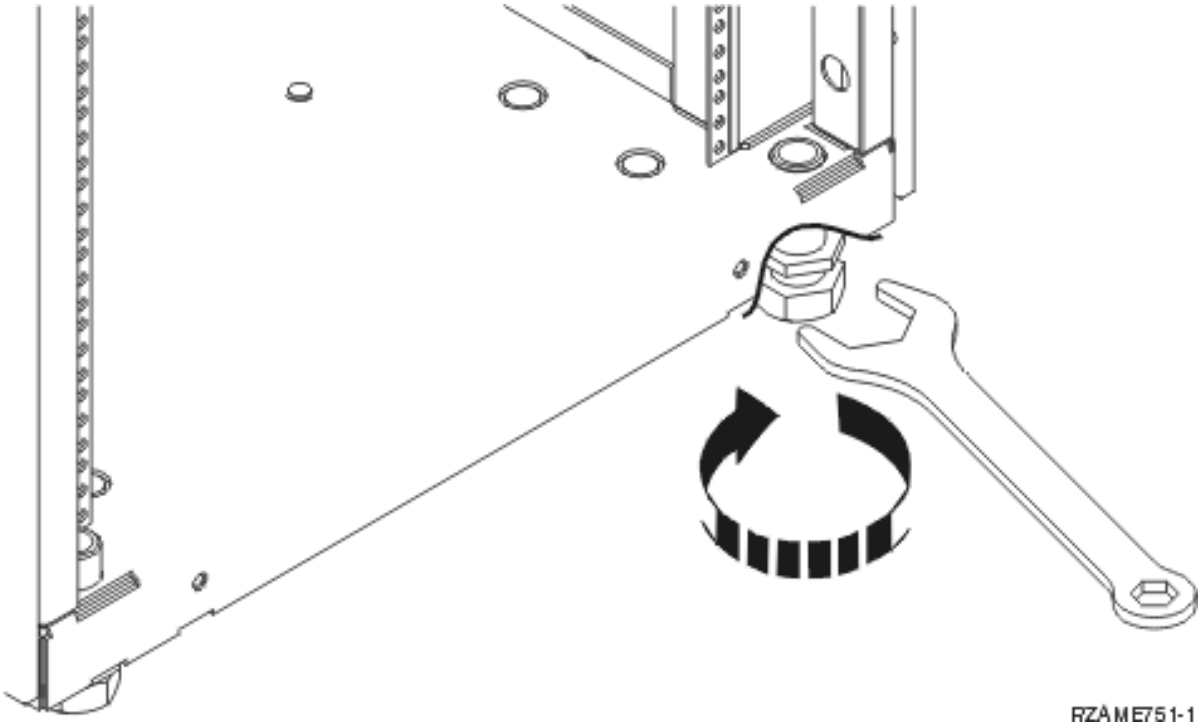
Rack installation instructions

__ 1. Open all boxes that were shipped.

__ 2. Complete the rack unpack instructions that came with the rack. If you are installing the unit in an existing rack, go to step 7 on page 4.

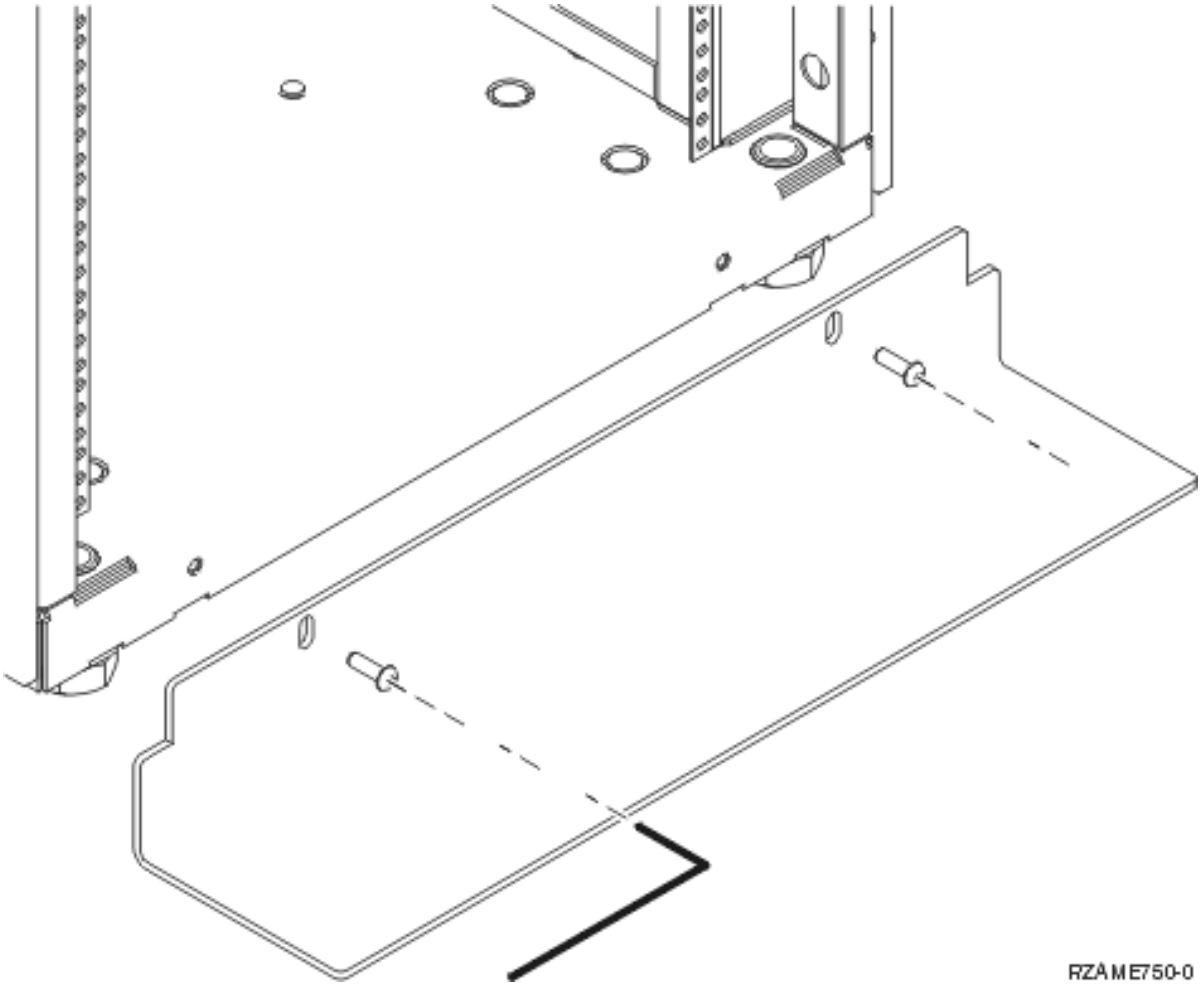
__ 3. Place the empty rack at the site you identified when completing your planning tasks for your order.

__ 4. Use the wrench that is provided to lower the front and back stabilizers all the way to the floor.

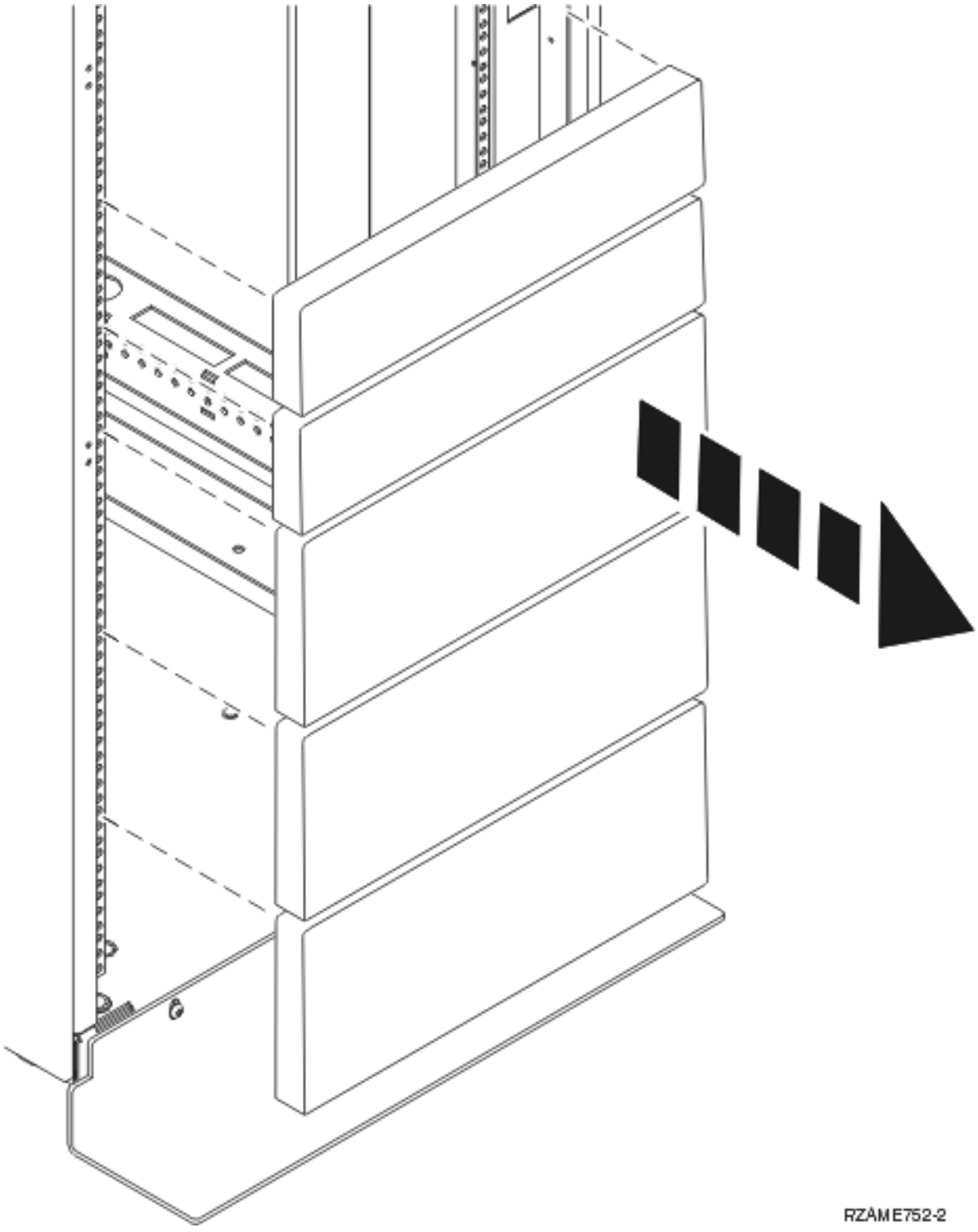


__ 5. **CAUTION:**
These instructions describe how to install a rack stabilizer to the bottom front of each rack to prevent the rack from falling over when you slide or pull out the system units. Do not attempt to slide out or install any system units until the stabilizer is correctly installed. Use caution when moving the rack and its system units. (RSFTC063)

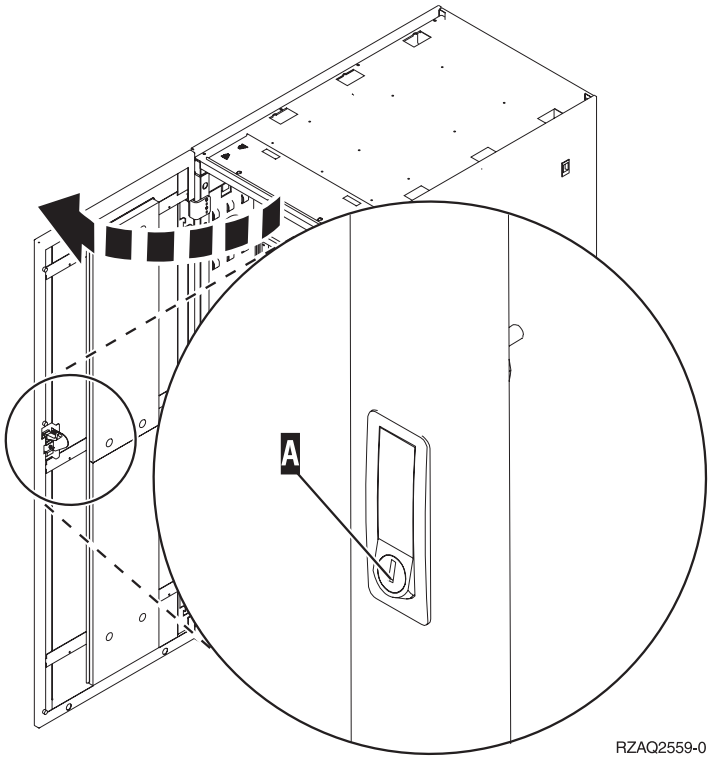
__ 6. Install the tip plate on the front of the rack.



__ 7. Remove all the filler panels to allow access to the inside of the rack enclosure.



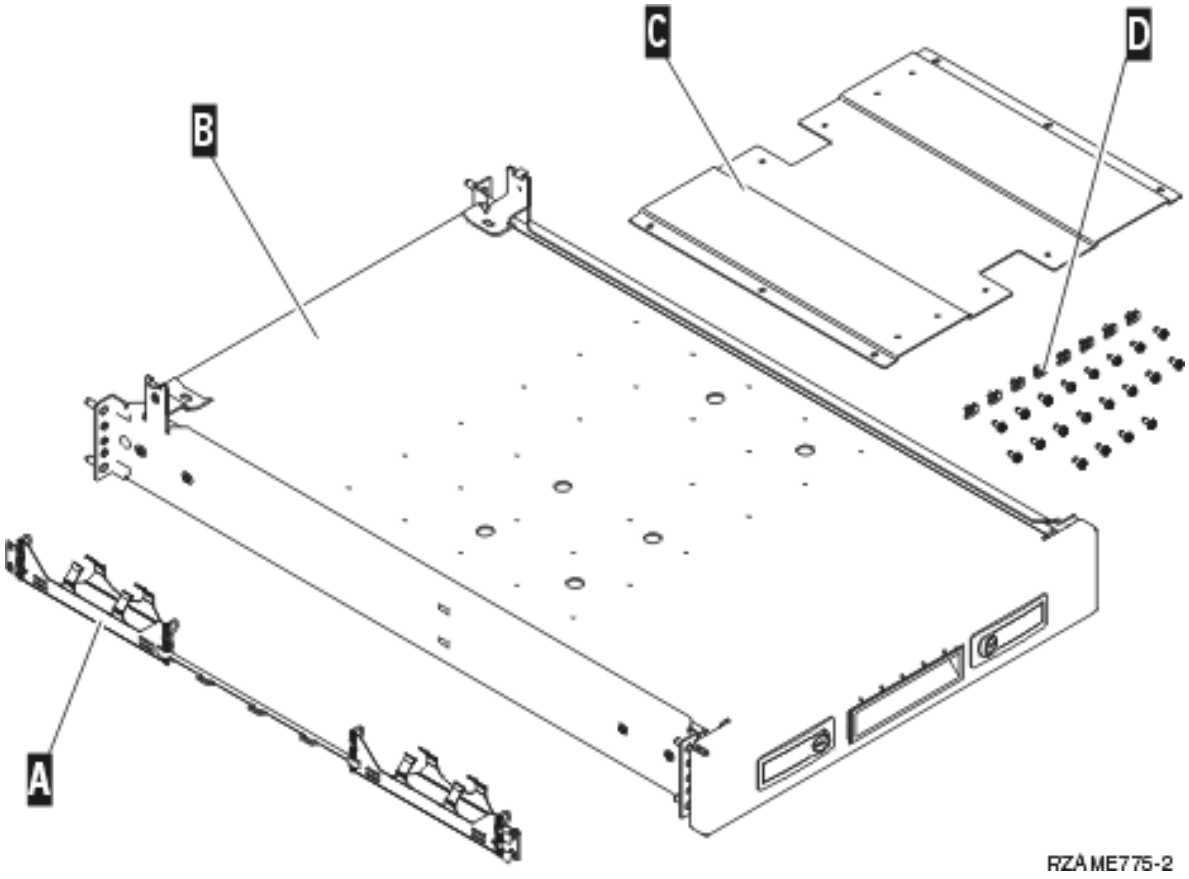
__ 8. Open the back door.



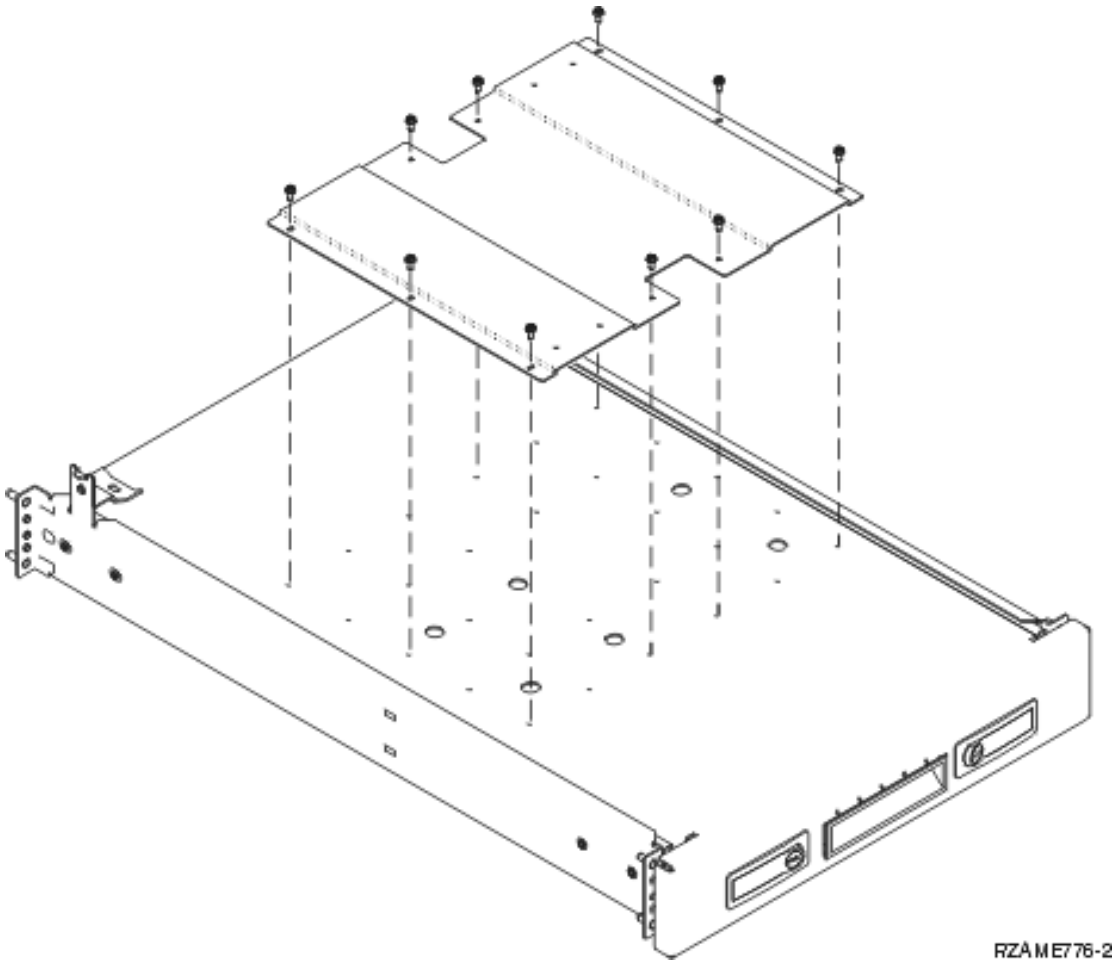
__ 9. Plan where you will place the units you are installing in the rack. Install units in the lower part first. Place the larger and heavier units in the lower part of the rack.

Rack shelf installation instructions

__ 1. Locate the cable management arm assembly **A**, rack shelf with rail assembly **B**, adapter plate **C**, clips and screws **D**. Some extra screws are provided.

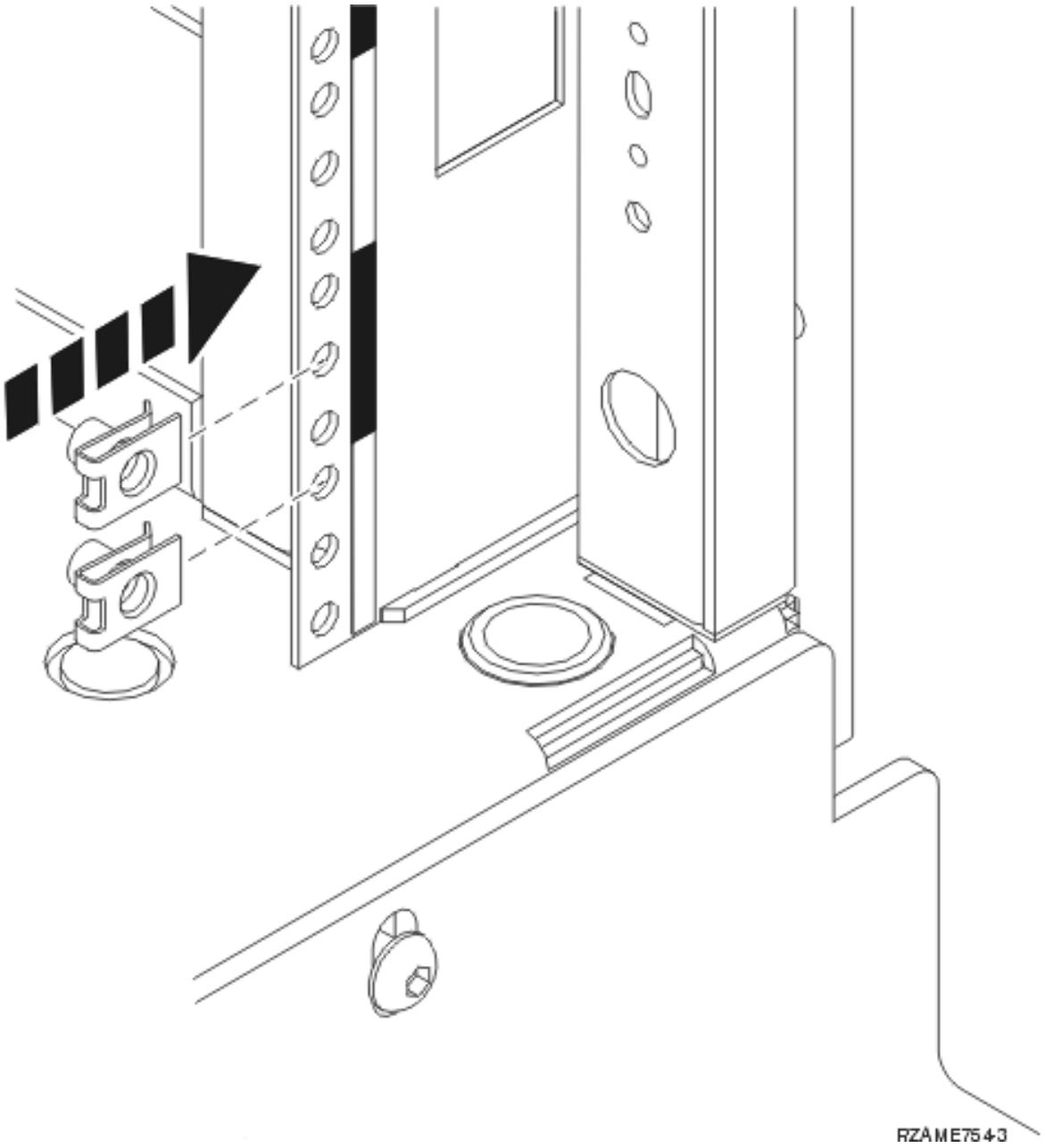


__ 2. Install the adapter plate on the shelf.
   __ Locate the 10 screws to install the 825 adapter plate.
   __ Install the plate as shown with the tool provided.

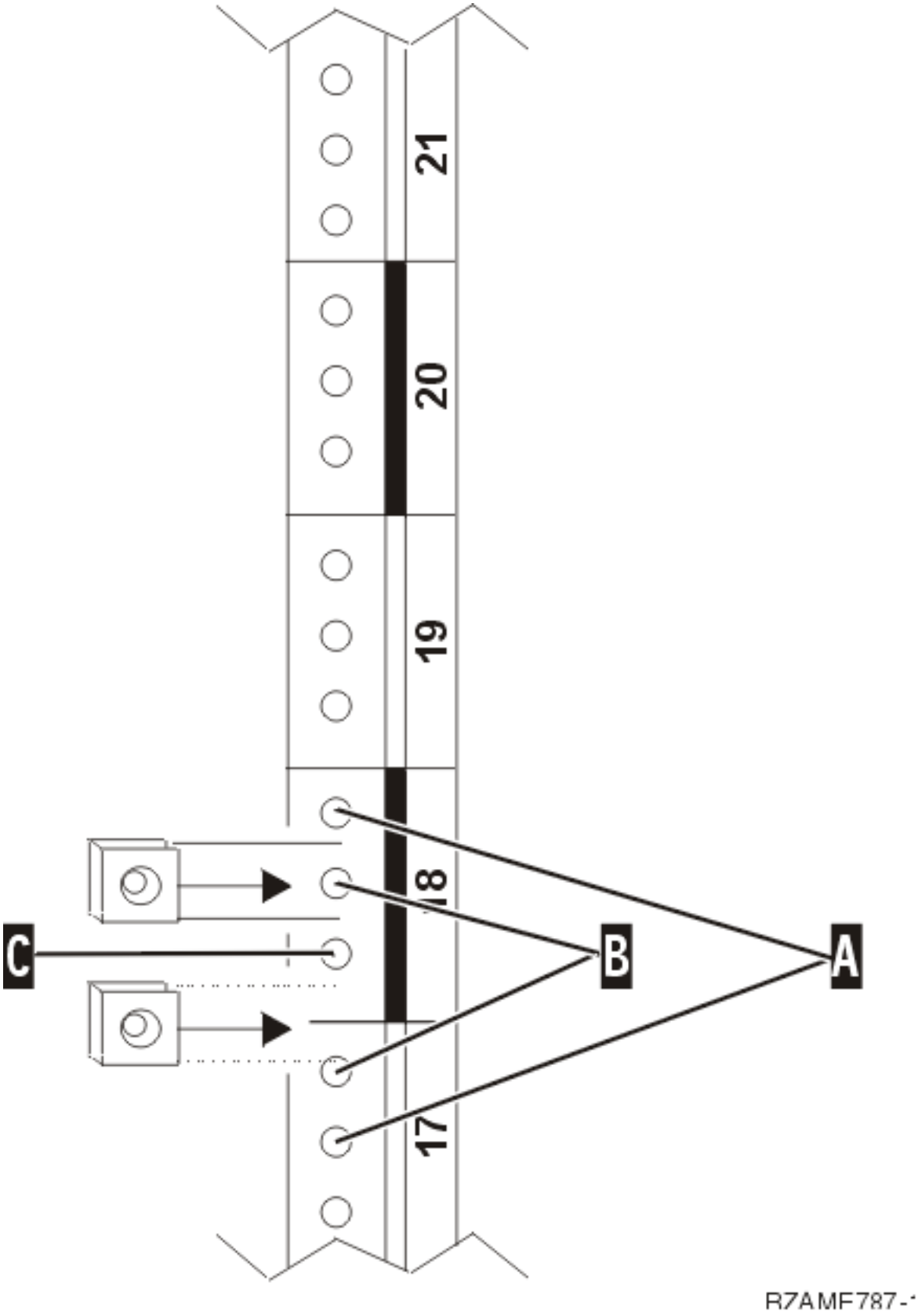


__ 3. Install four clips on the front of the rack.

If you are installing the system unit in the lower part of the rack, place the clips in EIA sections 1 and 2.



To install in the upper part, place the clips in EIA sections 17 and 18.

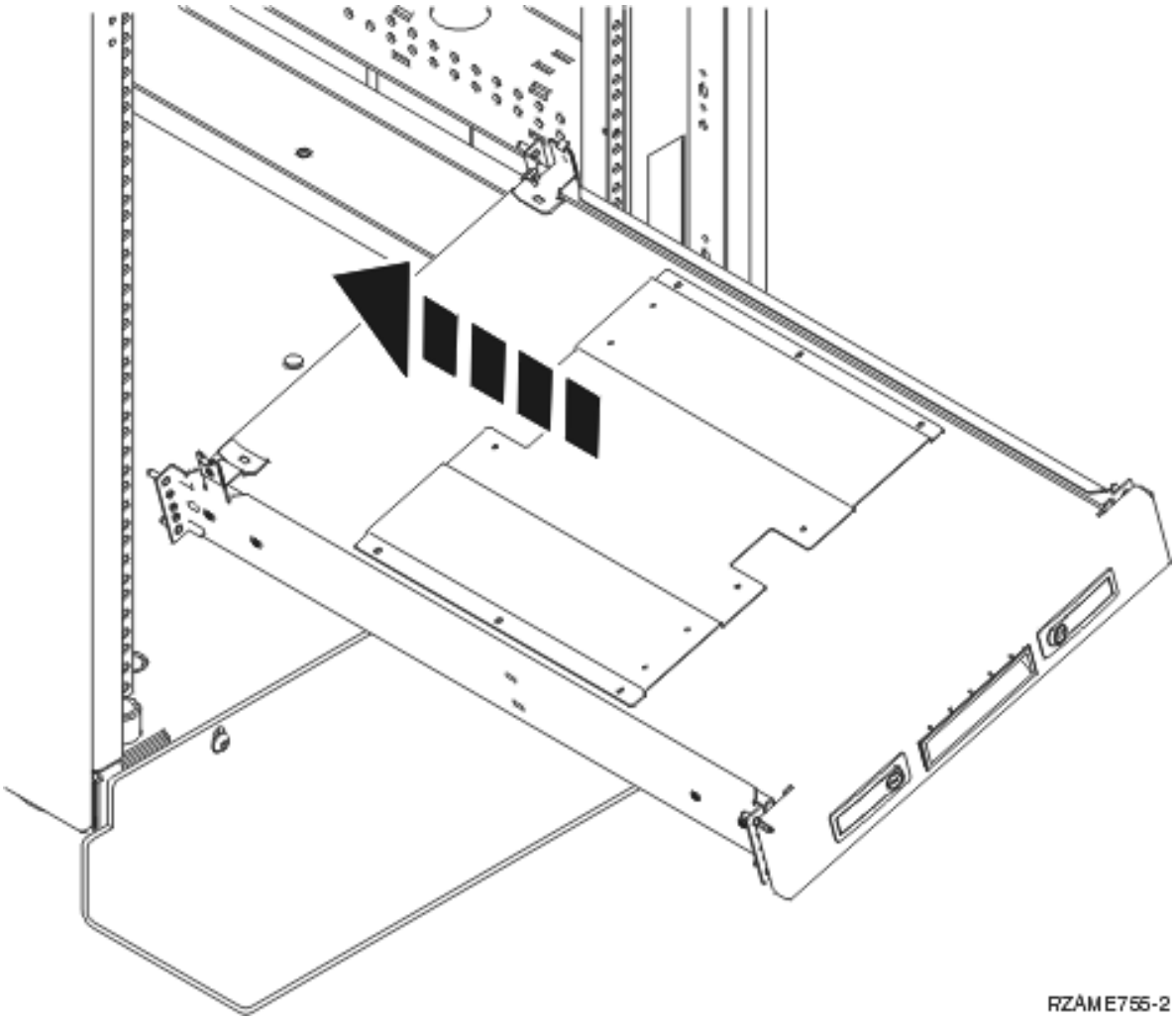


A Guidepins
B Clips

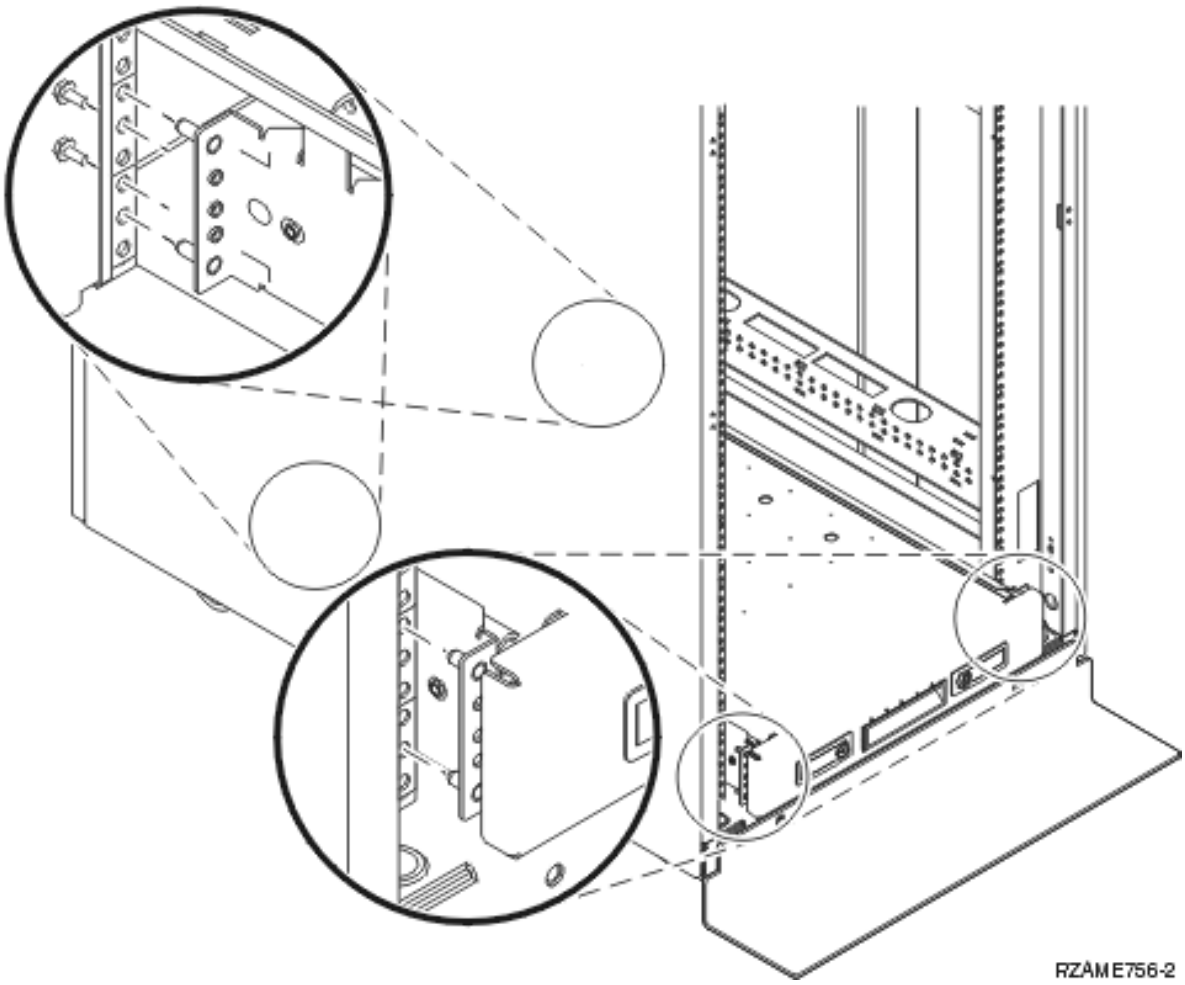
C Empty

__ 4. Two people are needed to install the shelf and rail assembly. One is positioned in back and the other one in the front of the rack.

__ 5. Lift the shelf and rail assembly into the rack from the front. You need to slant the shelf to fit through the front opening.



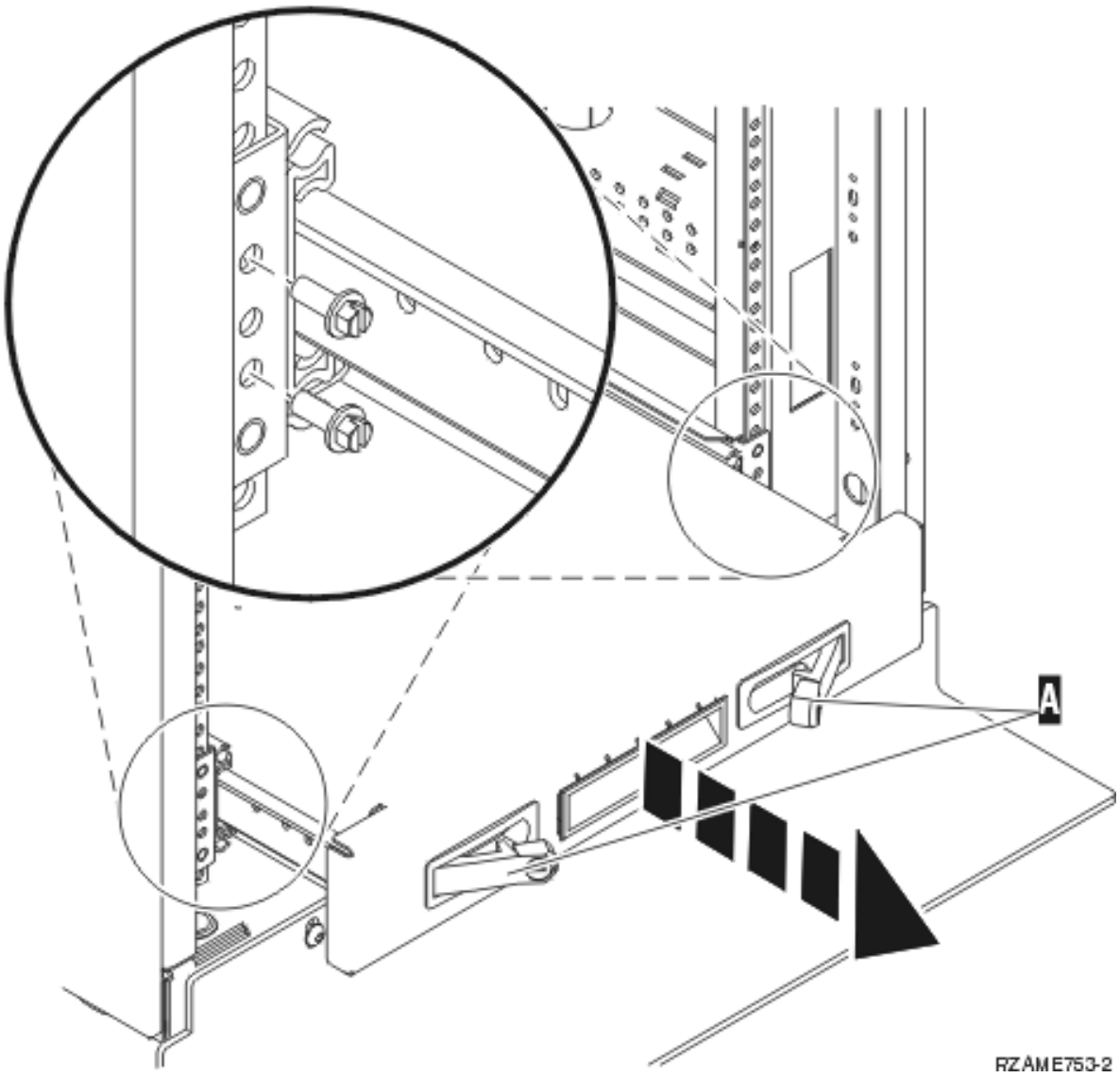
__ 6. Align and insert the guidepins on the rail assembly with the correct holes in the back frame.



__ 7. Align and insert the guidepins on the rail assembly with the correct holes in the front frame.

__ 8. Install two screws on each side of the back frame to secure the shelf assembly.

__ 9. Open the latches **A** on the shelf. Slide the shelf partially out. Install the two screws on each side of the front frame to secure the shelf assembly.



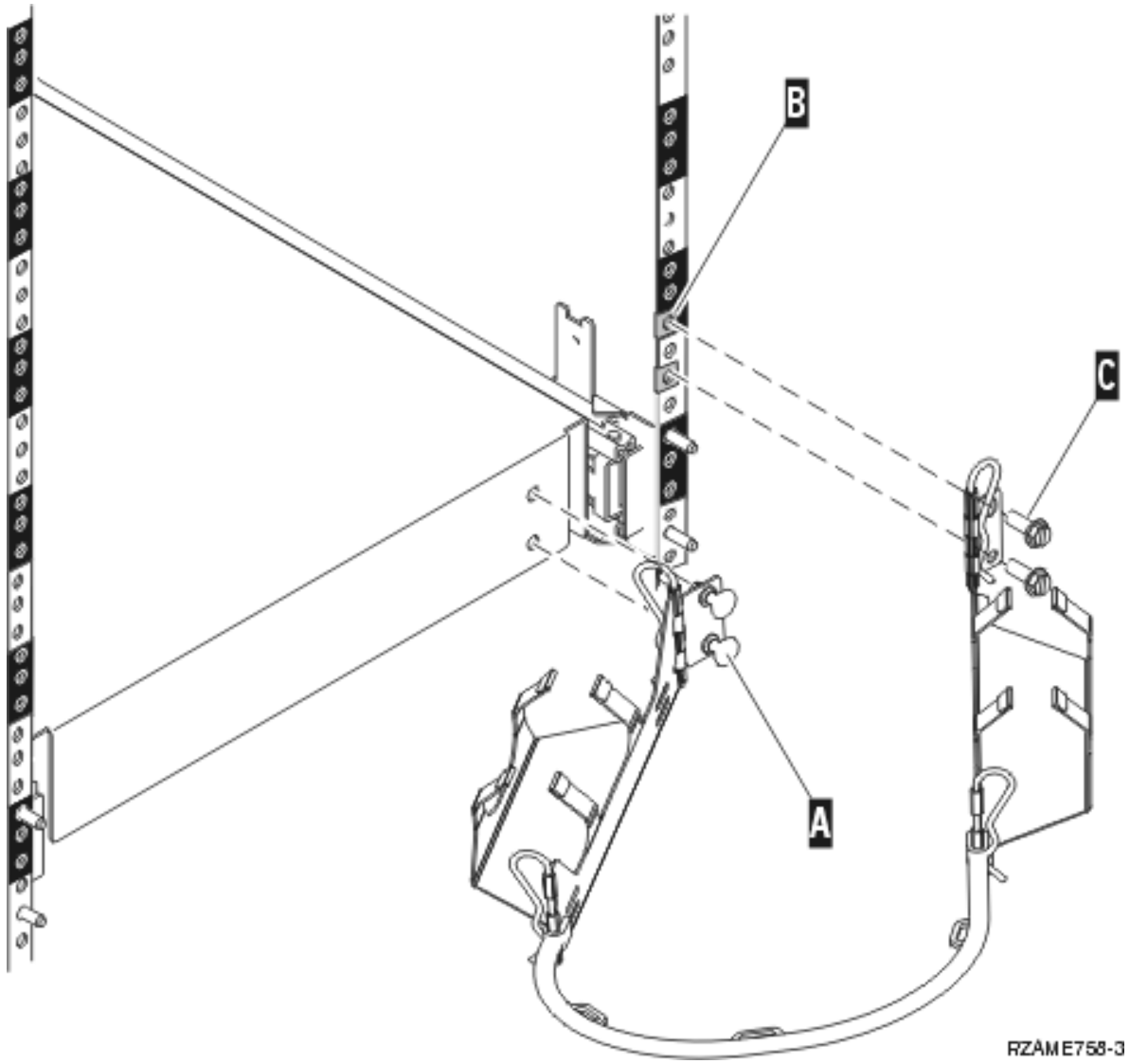
Note: If you have difficulty installing the screws, ensure the clips you previously installed are still in the correct position.

__ 10. Slide the shelf into the rack.

__ 11. Press in the latches to lock shelf in the rack.

__ 12. Locate the cable management arm assembly.

__ 13. Push in the latches to secure the cable management arm to the back of the shelf **A**.



__ 14. Install two clips in the back frame **B** .

__ 15. Install the two screws where the clips are located to attach the other end of the cable management arm to the back frame **C** .

__ 16. The rack shelf and rail assembly installation is complete.

__ 17. Continue with the instructions.

Remove devices before lifting the system unit into the rack

To safely lift your system unit onto the rack shelf, follow the instructions to remove devices from the unit. Place devices that you remove in the electrostatic discharge bags that are provided to prevent damage.

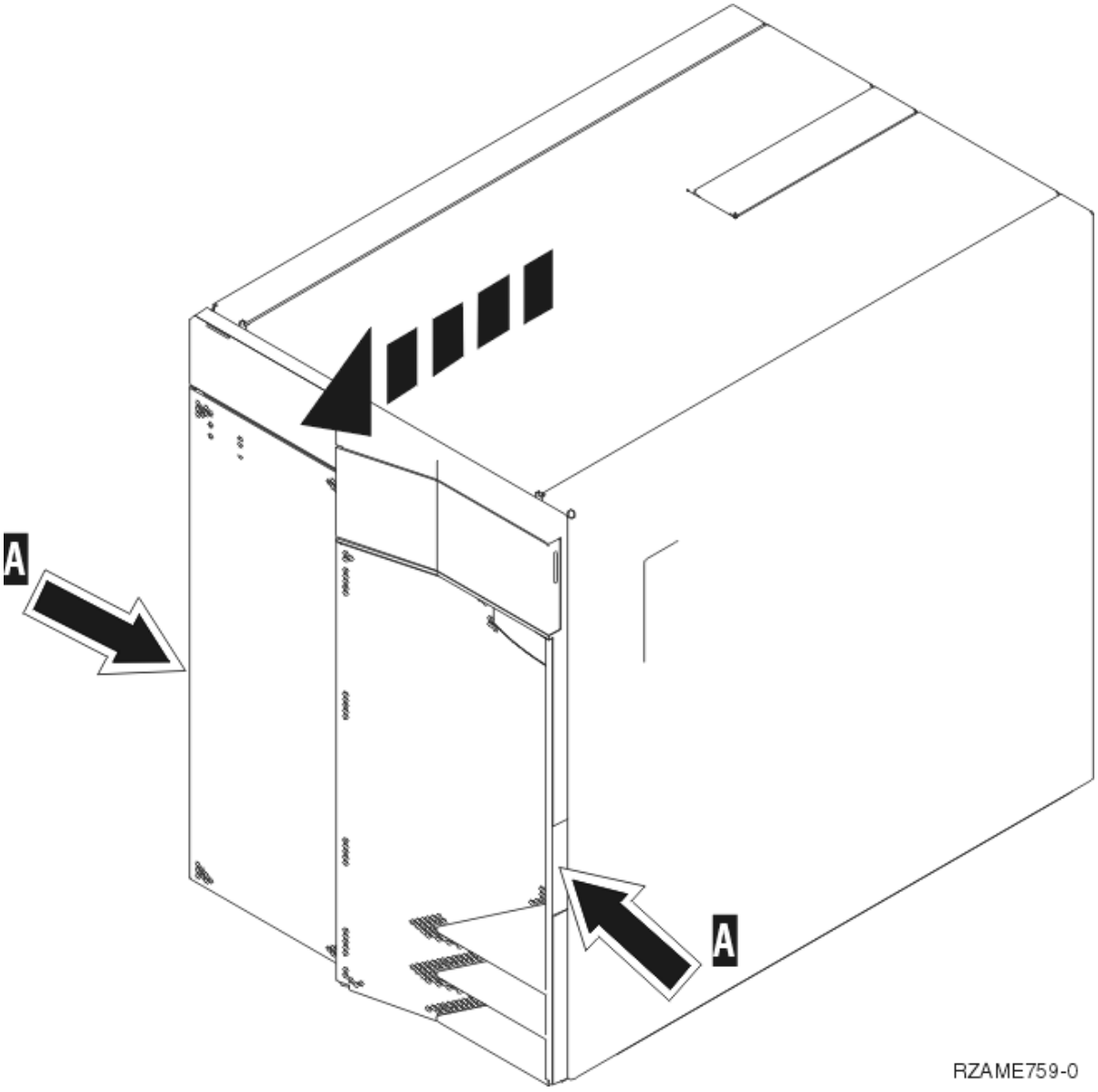
After removing the devices to get the system unit to an acceptable weight, three people are needed to safely lift the system unit onto the rack shelf.

Continue with the following instructions.

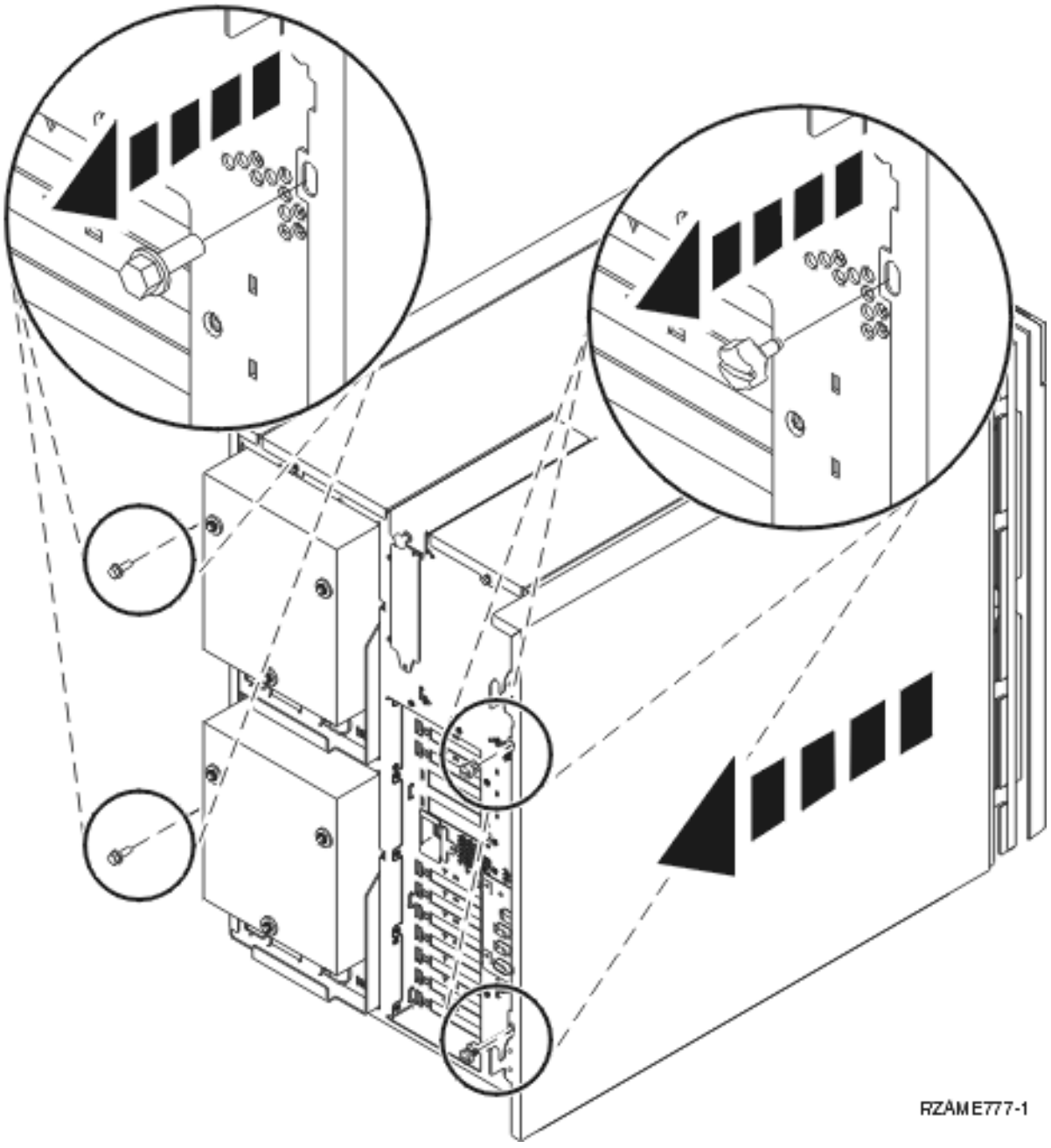
Remove covers

Remove the front and side covers.

__ 1. Remove the front cover by gripping the sides of the cover and pulling the cover toward you **A**.



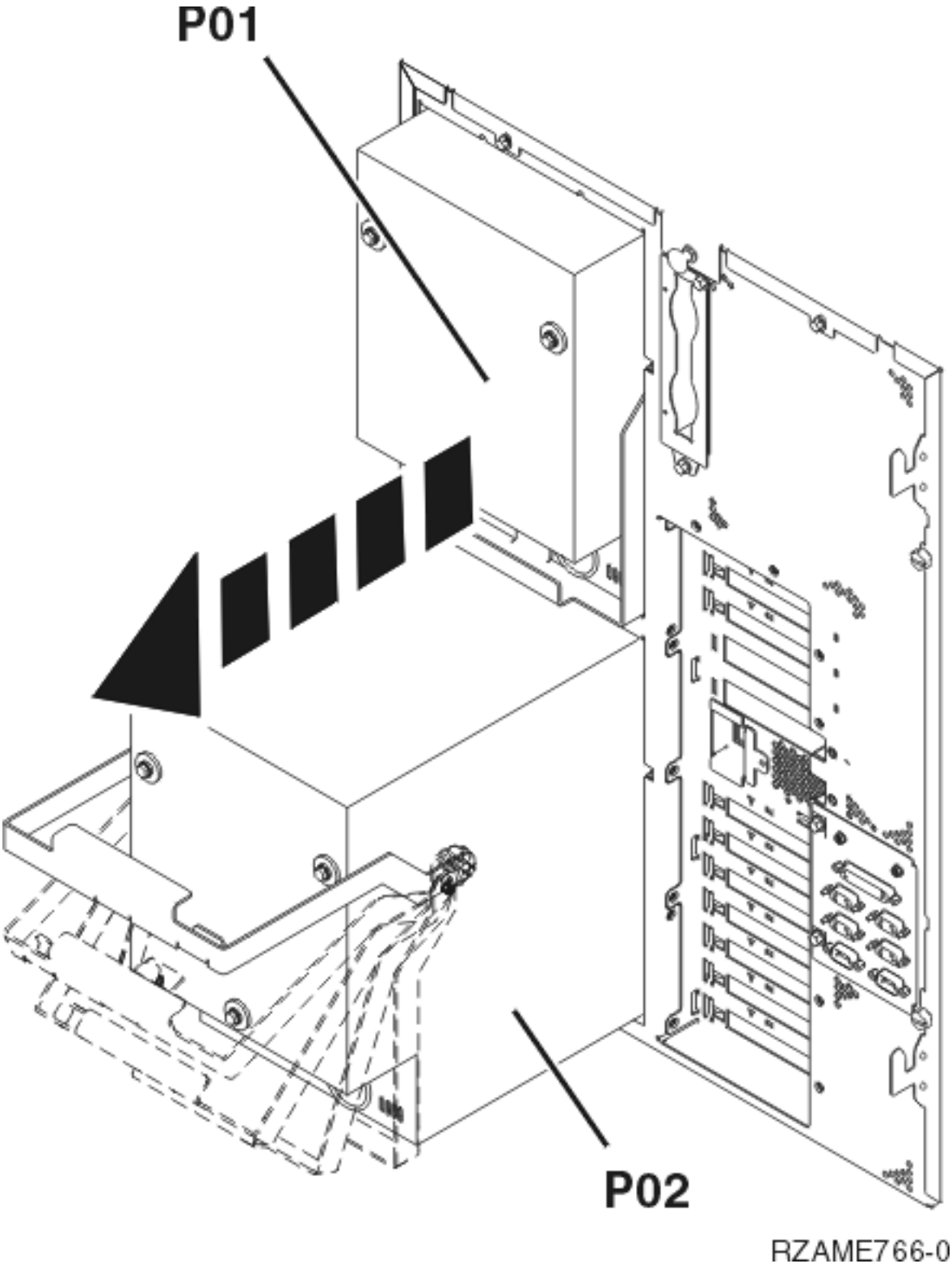
__ 2. Remove the side covers by loosening and removing the two thumbscrews and the two slotted retainer screws on the back. Slide each of the covers from front to back until it stops.



__ 3. Pull the cover out.

Remove power supply

__ 1. Locate the power supply area at the back of the unit (P01 and P02).



__ 2. Pull the latch on the power supply handle.

__ 3. Lift up the handle on the power supply.

__ 4. Support the bottom of the supply as you slide it out of the unit.

__ 5. Repeat the steps to remove the other power supply.

Electrostatic discharge

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

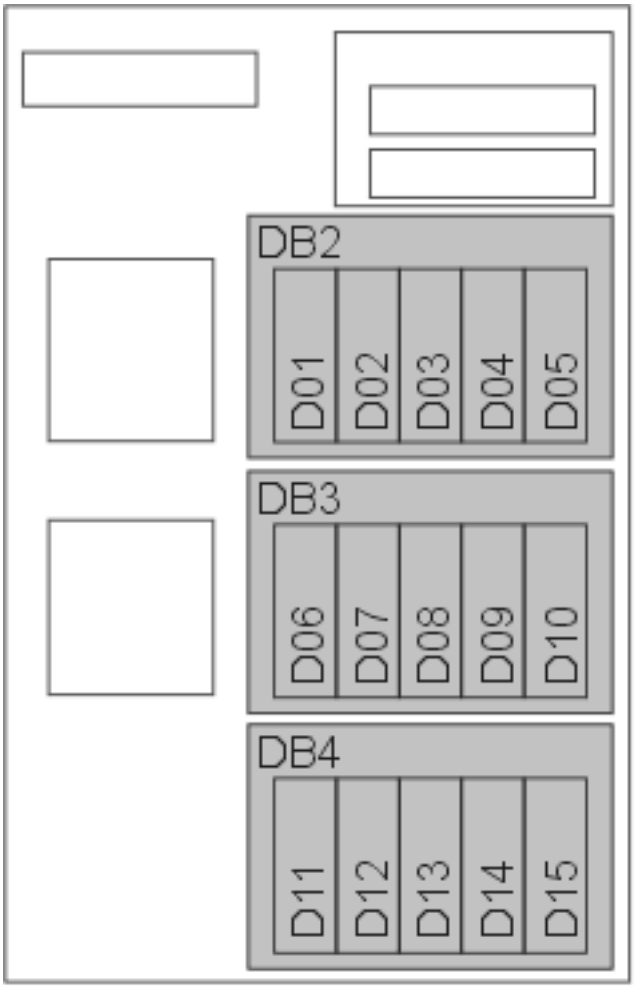
Notes:

1. Follow the same precautions you would use without the wrist strap. The 2209 Disposable Wrist Strap is for static control. It will not increase or decrease your risk of receiving electric shock when using or working on electrical equipment.
2. Remove the liner from the copper foil at the end when you unroll the strap.
3. Attach the copper foil to an **exposed, unpainted** metal surface on the frame of the unit (electrical ground).
4. **Place devices that you remove in electrostatic discharge bags to prevent damage.**

Remove disk units

__ 1. The disk units are located in the front of your system unit.

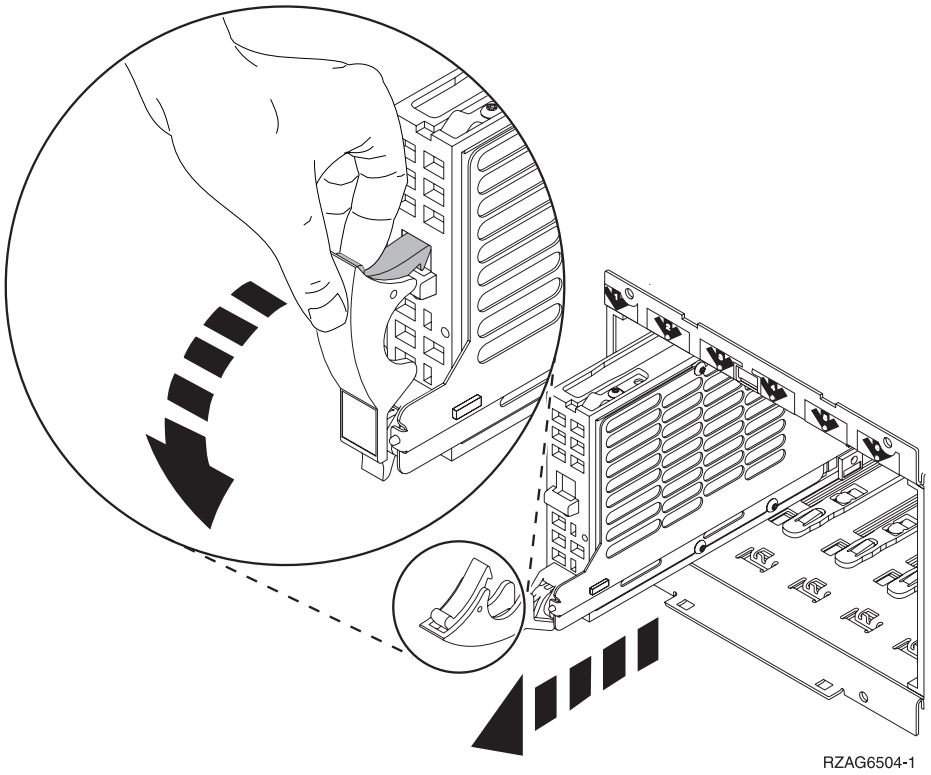
__ 2. **It is very important to label the disk units and locations** as you remove them so they are later installed in the exact same position. For example, D01. Remove D01 first.



RZAME767-1

__ 3. Squeeze and pull the handle out toward you and down before you remove the disk unit. If the handle is not all the way down, the disk unit will not slide out of the system.

__ 4. Support the bottom of the disk unit assembly as you slide it completely out of the system. Do not hold the disk unit by the handle.

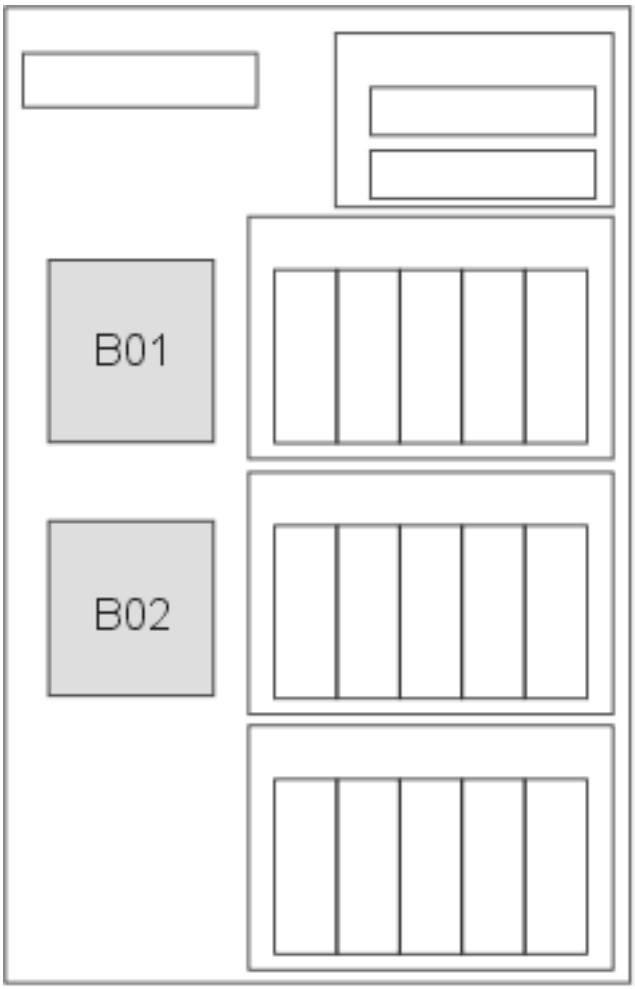


__ 5. Label the disk unit and put it in a static protective bag.

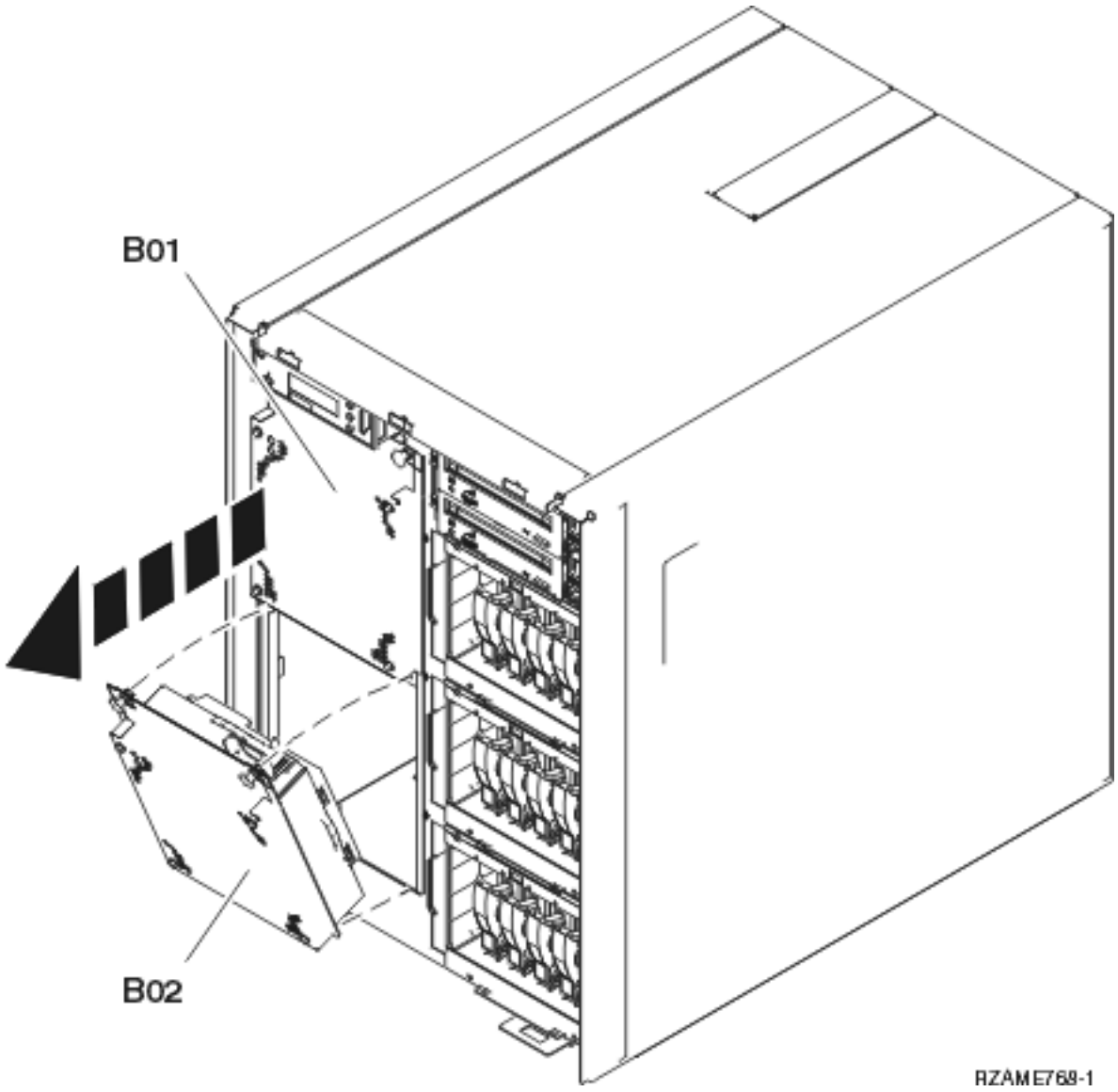
__ 6. Repeat the above steps for each disk unit in your system.

Remove fans

__ 1. Locate the fans in the front of your system unit (B01 and B02).



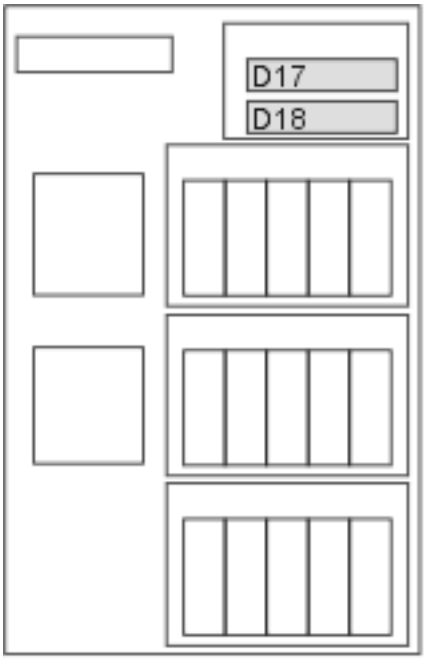
__ 2. Remove the fan assembly by pulling the latches.



__ 3. Repeat for each fan.

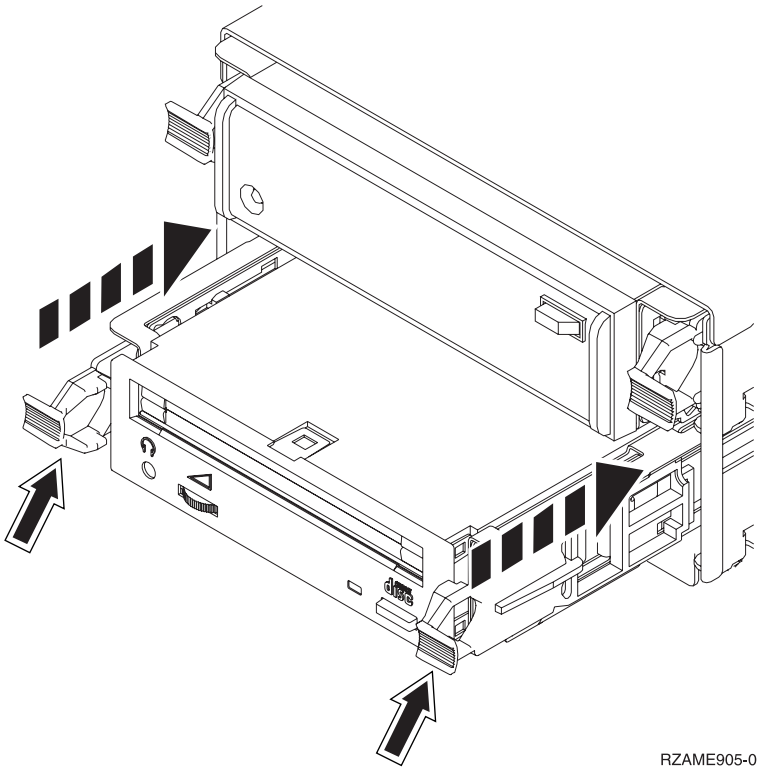
Remove tape, CD–ROM and DVD devices

__ 1. Locate the devices on the front of the system unit.



RZAME779-0

__ 2. Pull both handles on both sides of the device toward you.



RZAME905-0

__ 3. Slide the device out.

__ 4. Do not hold the device by the handles.

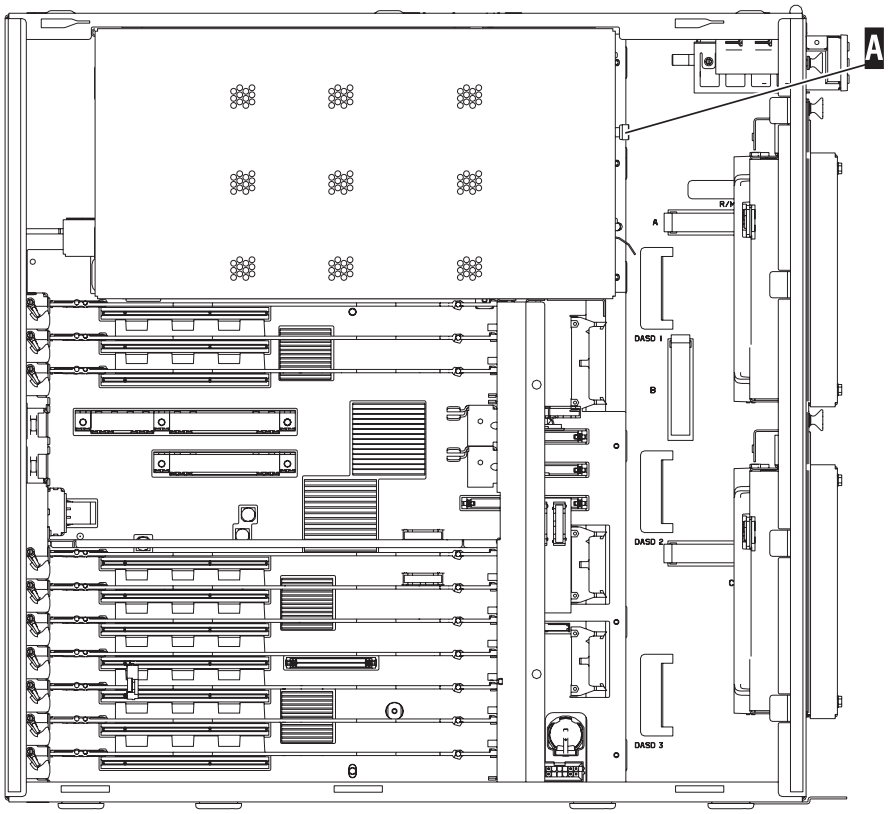
__ 5. Place the device in a static protective bag.

__ 6. Repeat the steps to remove each device.

Remove processor assembly

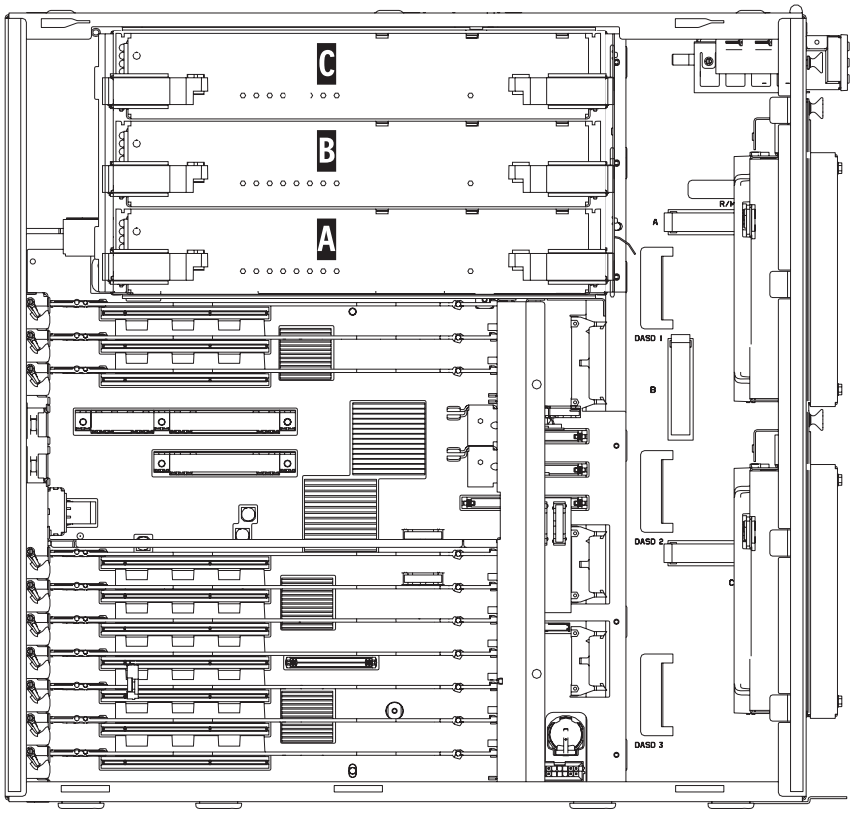
__ 1. Locate the processor assembly inside the side of the system unit.

__ 2. Remove the access cover **A** .



RZAME902-0

__ 3. Remove the processor card assemblies by doing the following:



RZAME901-1

__ a. Label the processor card assemblies and the location so they can be installed later in the same location.

__ b. Unlatch the two latches until the card assembly slightly “pops” out.

__ c. Pull on both latches at the same time to remove the card assembly from the system unit.

__ d. Put the card assembly in a static protective bag.

__ 4. Repeat the steps to remove all processor card assemblies.

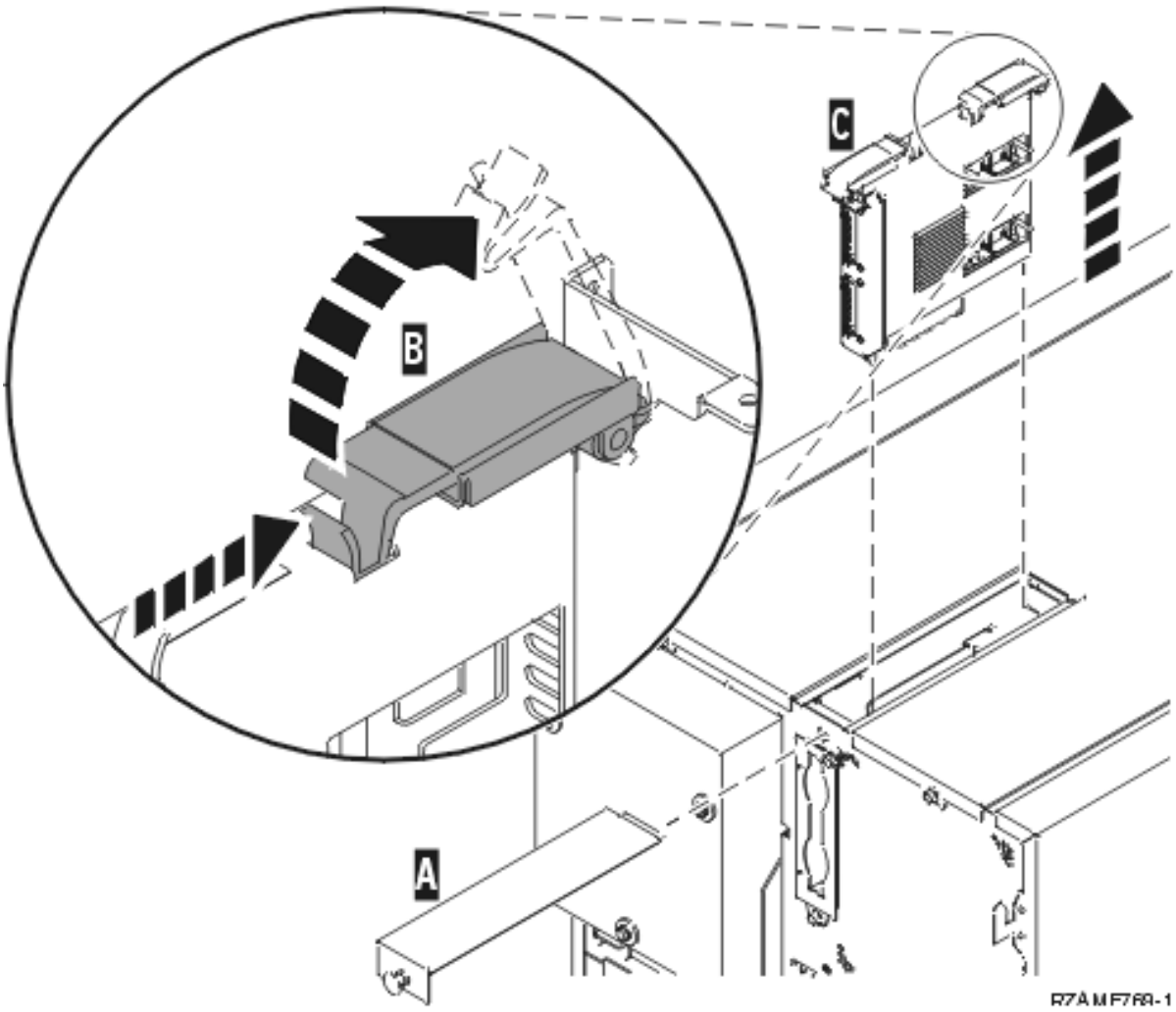
Remove the network interface card

__ 1. Locate the network interface card on the top, back of the system unit.

__ 2. Make sure you have removed all processor assemblies before removing the network interface card.

__ 3. Remove any external cables from the card and note their locations.

__ 4. Remove the small cover on the top **A**. Pull the push-button out and slide the cover back to remove.



__ 5. Unlatch the two latches until the card assembly slightly "pops" out **B**.
__ 6. Pull on both latches at the same time to remove the card assembly from the system unit **C**.
__ 7. Put the card assembly in a static protective bag.

Remove PCI cards

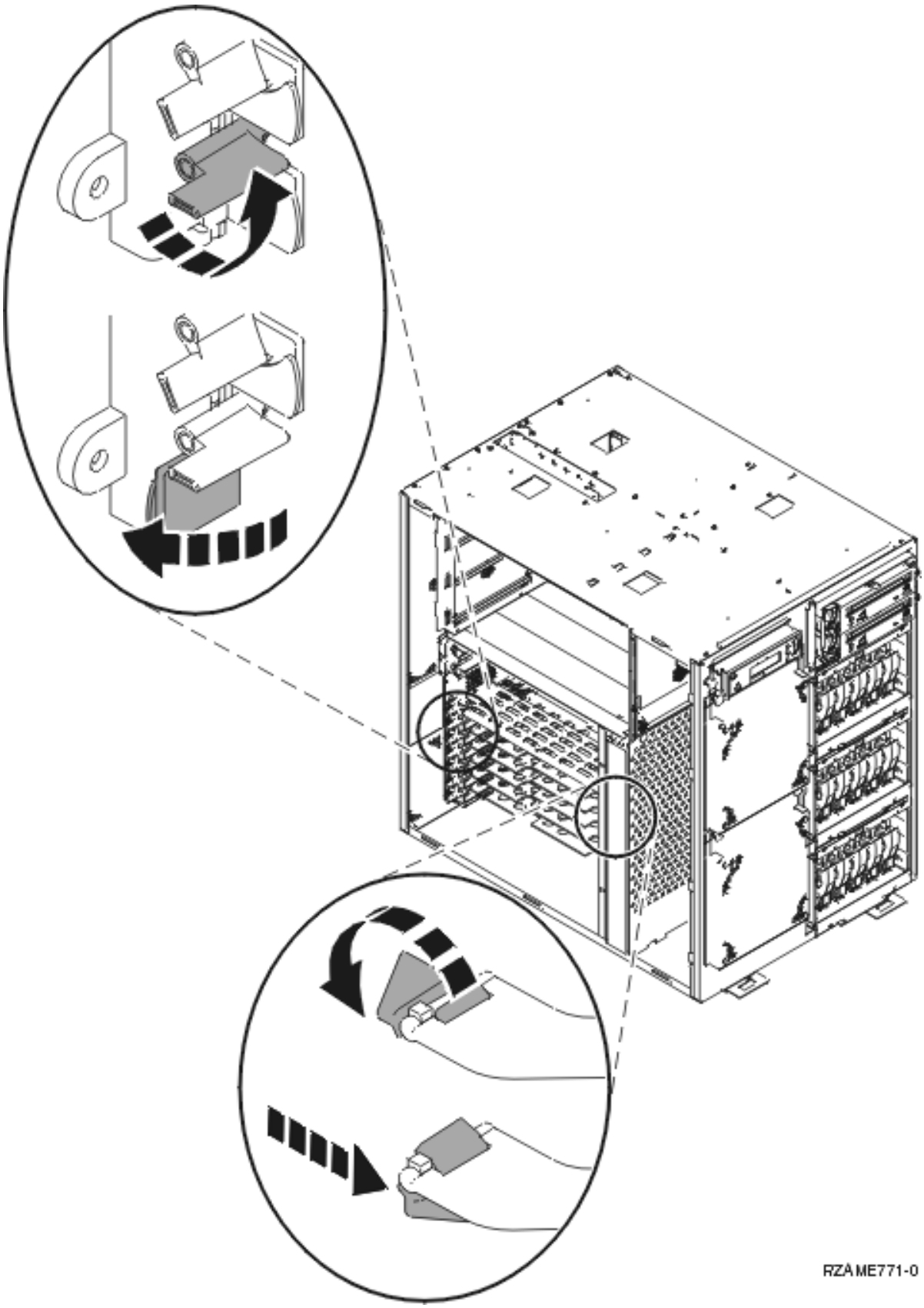
__ 1. Locate the PCI card positions inside the side of your system unit.
__ 2. **Attention:** Adapter cards are fragile:
- Handle only by the edges.
- Keep fingers off printed circuit area.
- Use static strap when handling.

__ 3. Start at the top when removing the cards.
__ 4. Remove any cables from the cards and note their locations.
__ 5. **As you remove the card, it is very important to write down the card number and position**. Record the card number in the correct position in the following table:

Position	Card Number
C12	
C11	
C10	

C09 HSL	
C08 HSL	
Imbed IOA	
C06	
C05	
C04	
C03	
C02	
C01	

__ 6. Open the latch at the card position where you plan to remove the card. Move the latch counterclockwise and then swing the latch out.



__ 7. Remove the card.

__ 8. Place the card in a static protective bag.
__ 9. Repeat the steps for each card.

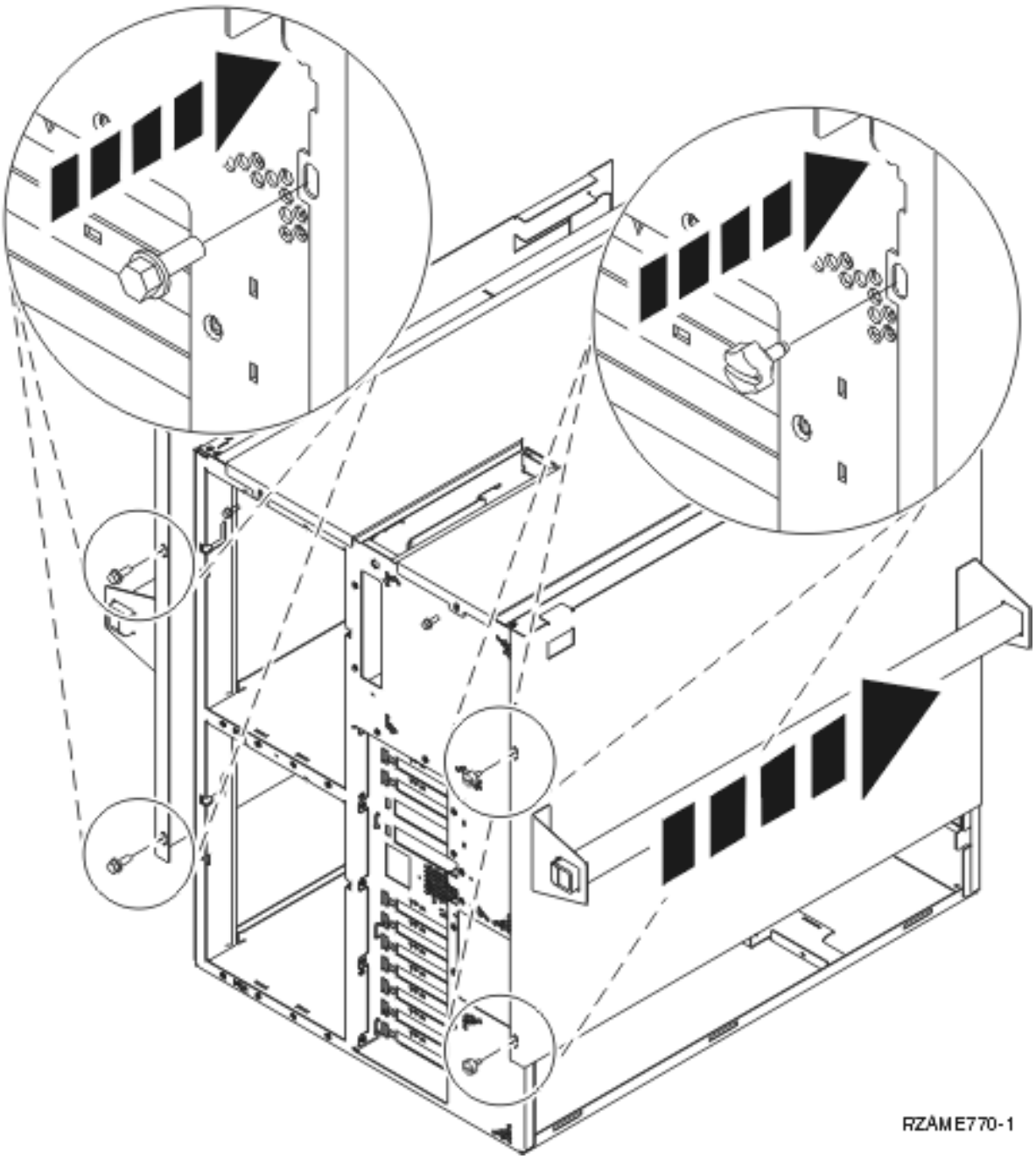
Install unit in the rack

Use the following instructions to lift the system unit into the rack and attach it to the shelf.

__ 1. **CAUTION:**
When the unit is extended, its weight can turn over a rack that is not steady. Before you pull the unit out of the rack, ensure that a rack stabilizer is attached to the bottom front of the rack.

Do not pull out more than one unit at a time. The rack can turn over if you pull out more than one unit at a time. (RSFTC224)

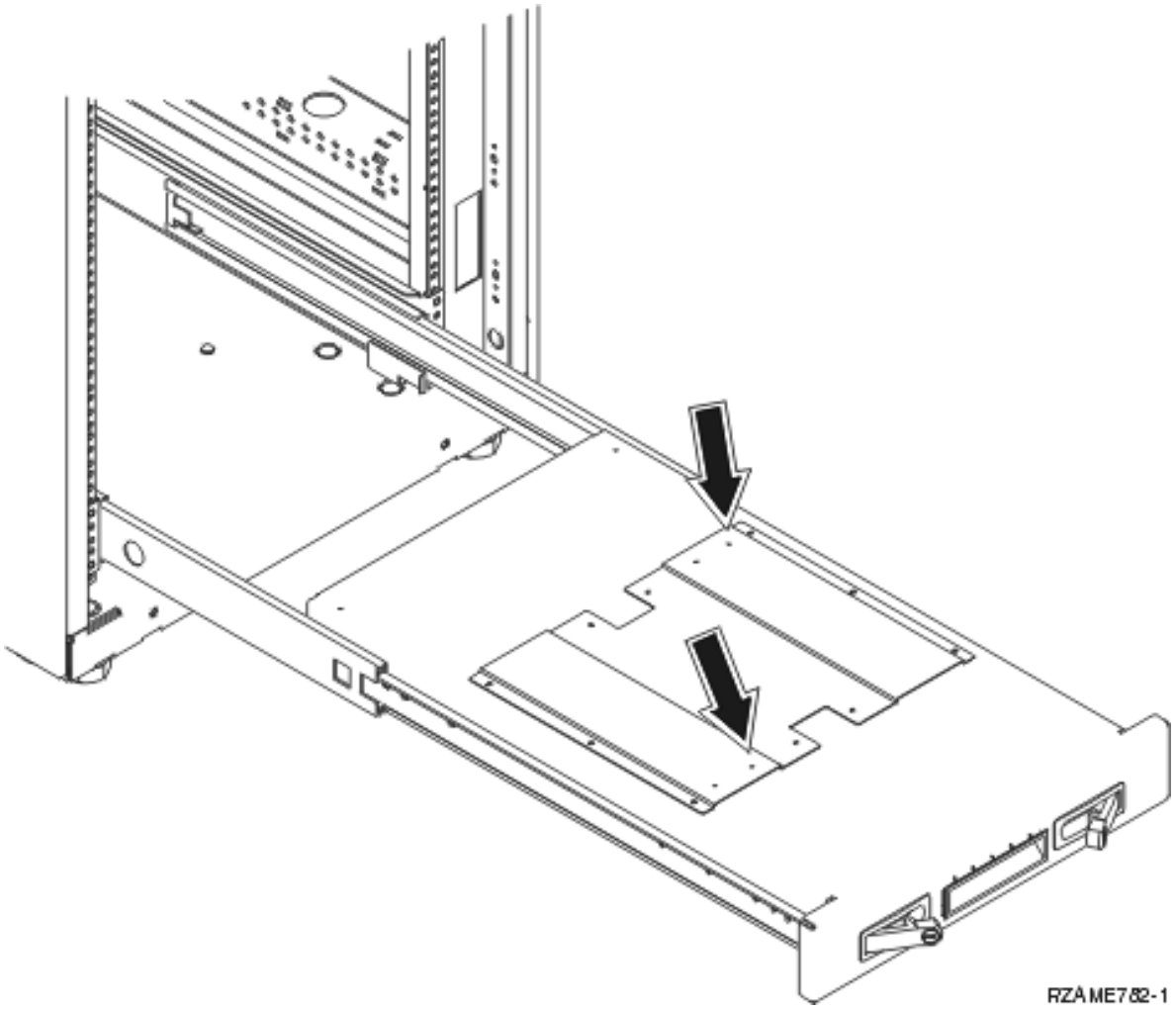
__ 2. Install the side covers with lifting bars. Install the two thumbscrews and two slotted retainer screws that originally were used to attach the system unit covers.



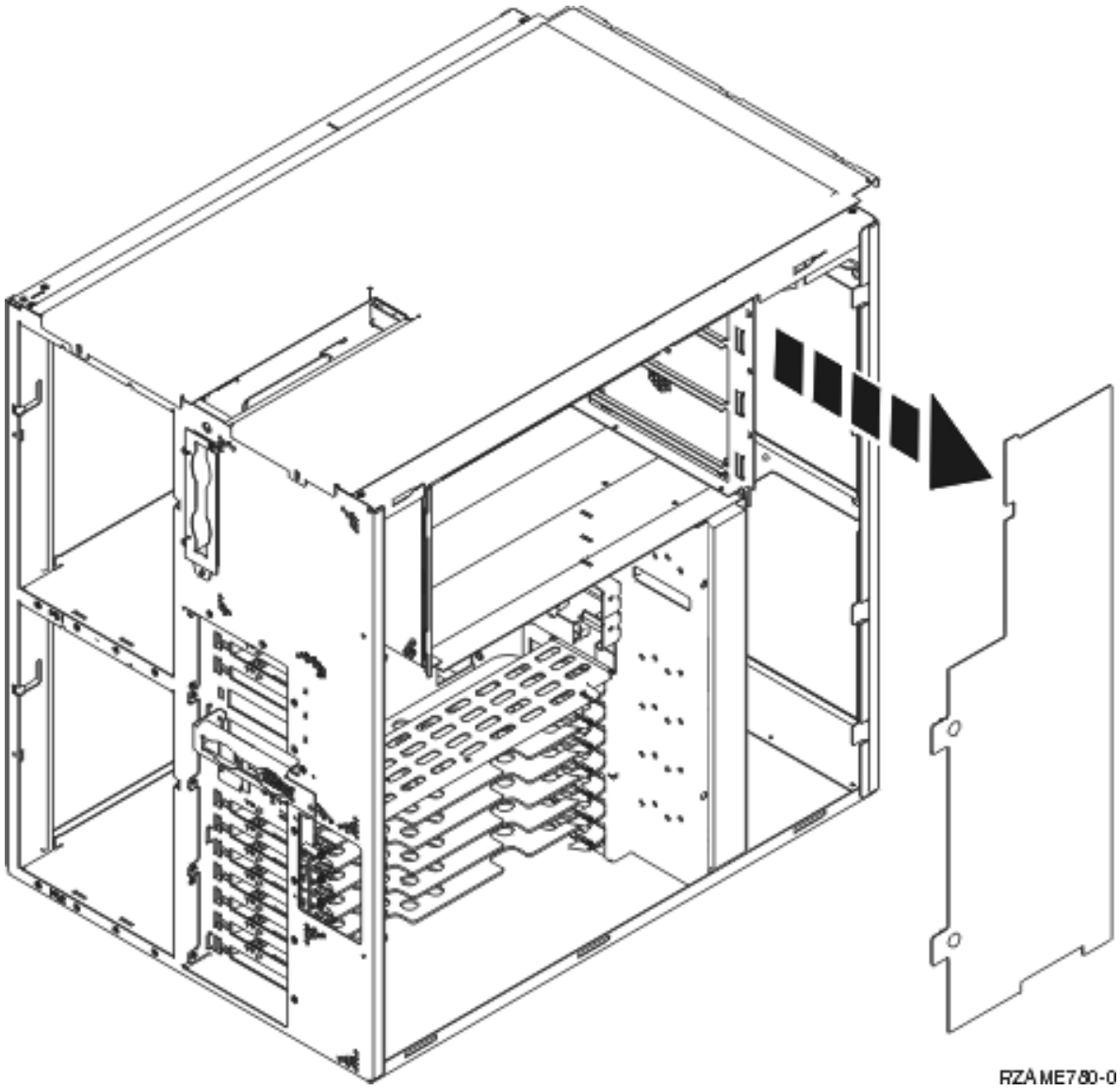
__ 3. **CAUTION:**
The weight of this part or unit is between 32 and 55 kilograms (70.5 and 121.2 pounds). It takes three persons to safely lift this part or unit. (RSFTC205)

__ 4. Pull the rack shelf out until fully extended and locked in place.

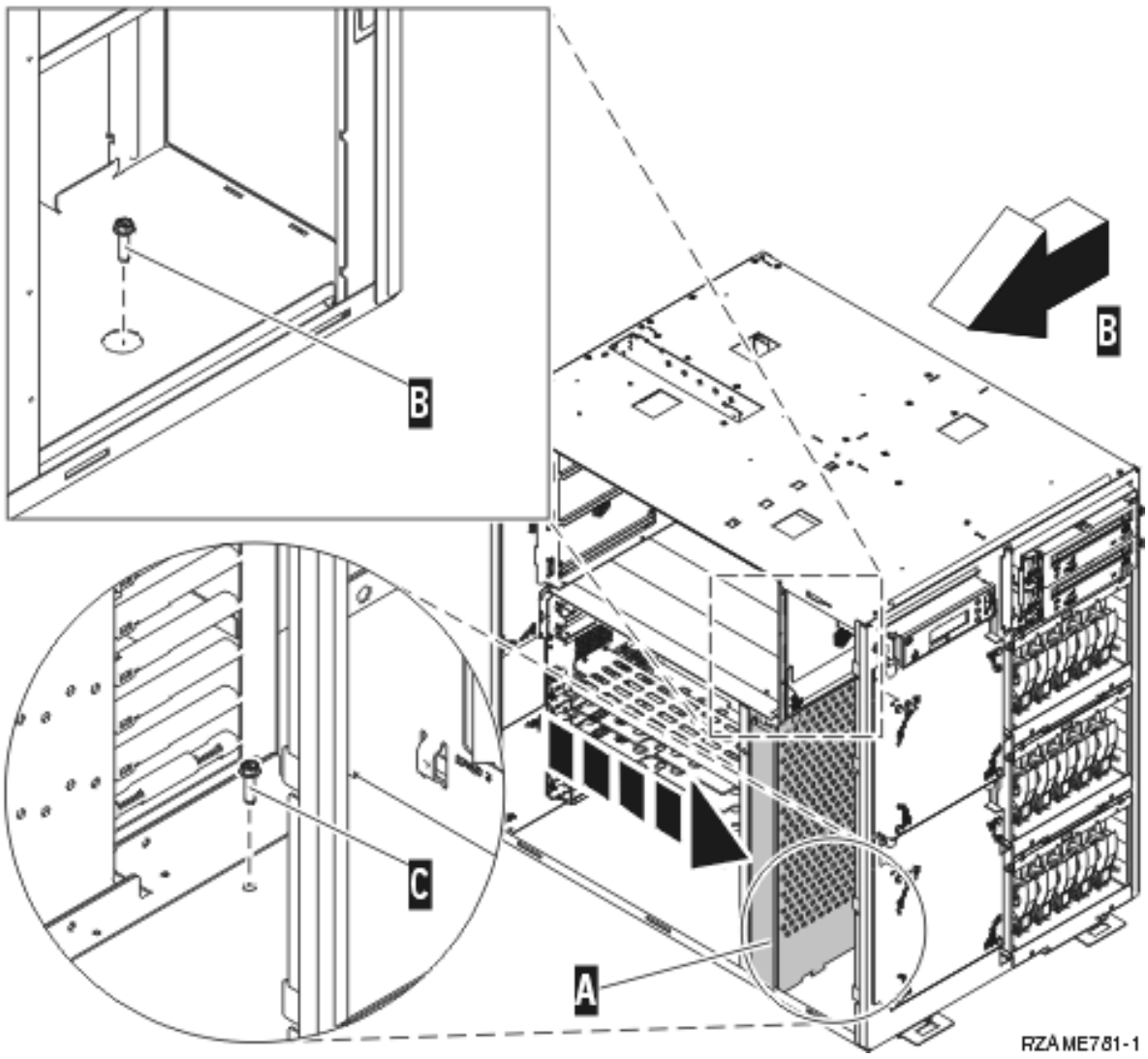
__ 5. Locate, on the adapter plate that is attached to the shelf, the two holes where you will install screws to securely attach the unit to the shelf.



__ 6. Lift the unit onto the shelf.
__ 7. Position the unit close to the front of edge of the shelf, approximately 2.5 centimeters.
__ 8. Remove the side covers with lifting bars.
__ 9. Remove the air flow deflector.



__ 10. Move the bottom of the foam forward out of the way **A** .



__ 11. Install the two screws in the unit to secure the rack shelf. One screw location is in the back power supply area **B** . The other screw location is in the front foam area **C** .

__ 12. Move the foam back in place.

__ 13. Install the air flow deflector.

__ 14. Continue with the instructions.

Install devices that were removed

Use the following instructions to install the devices that were removed.

Electrostatic discharge

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

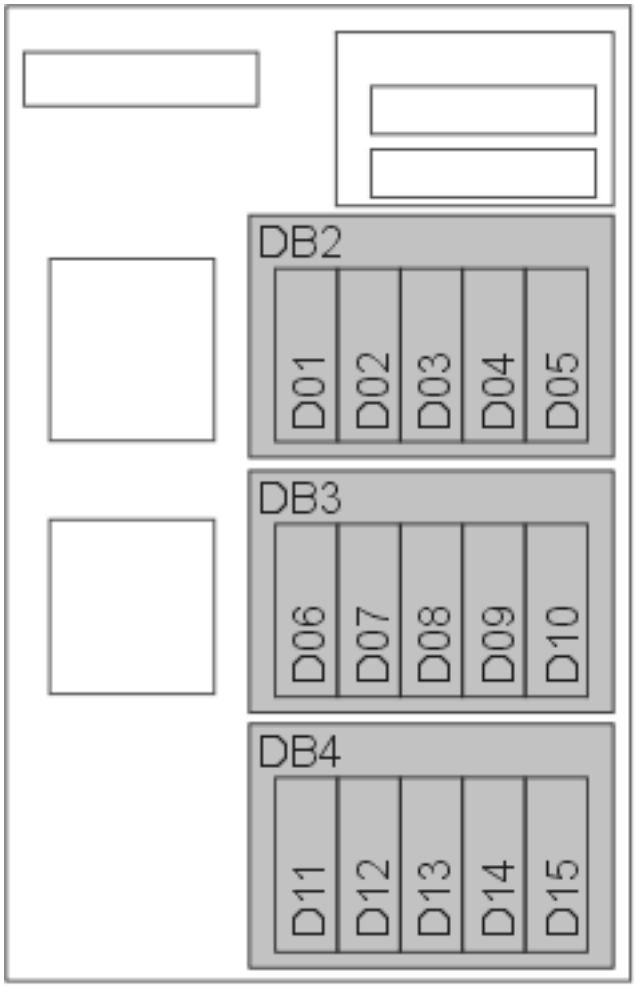
Notes:

1. Follow the same precautions you would use without the wrist strap. The 2209 Disposable Wrist Strap is for static control. It will not increase or decrease your risk of receiving electric shock when using or working on electrical equipment.
2. Remove the liner from the copper foil at the end when you unroll the strap.

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

Install disk units

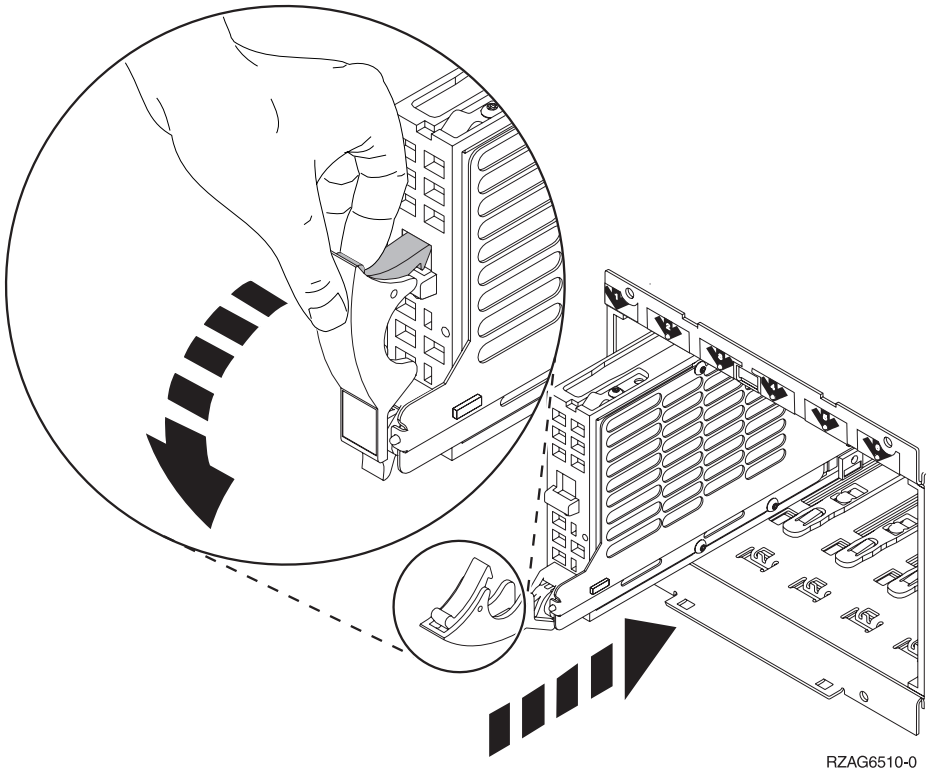
__ 1. The disk units are located in the front of your system unit.



RZAME767-1

__ 2. Locate the disk drives and look at the label of the disk unit. **It is very important to replace the disk units in the same exact location where they were removed.**

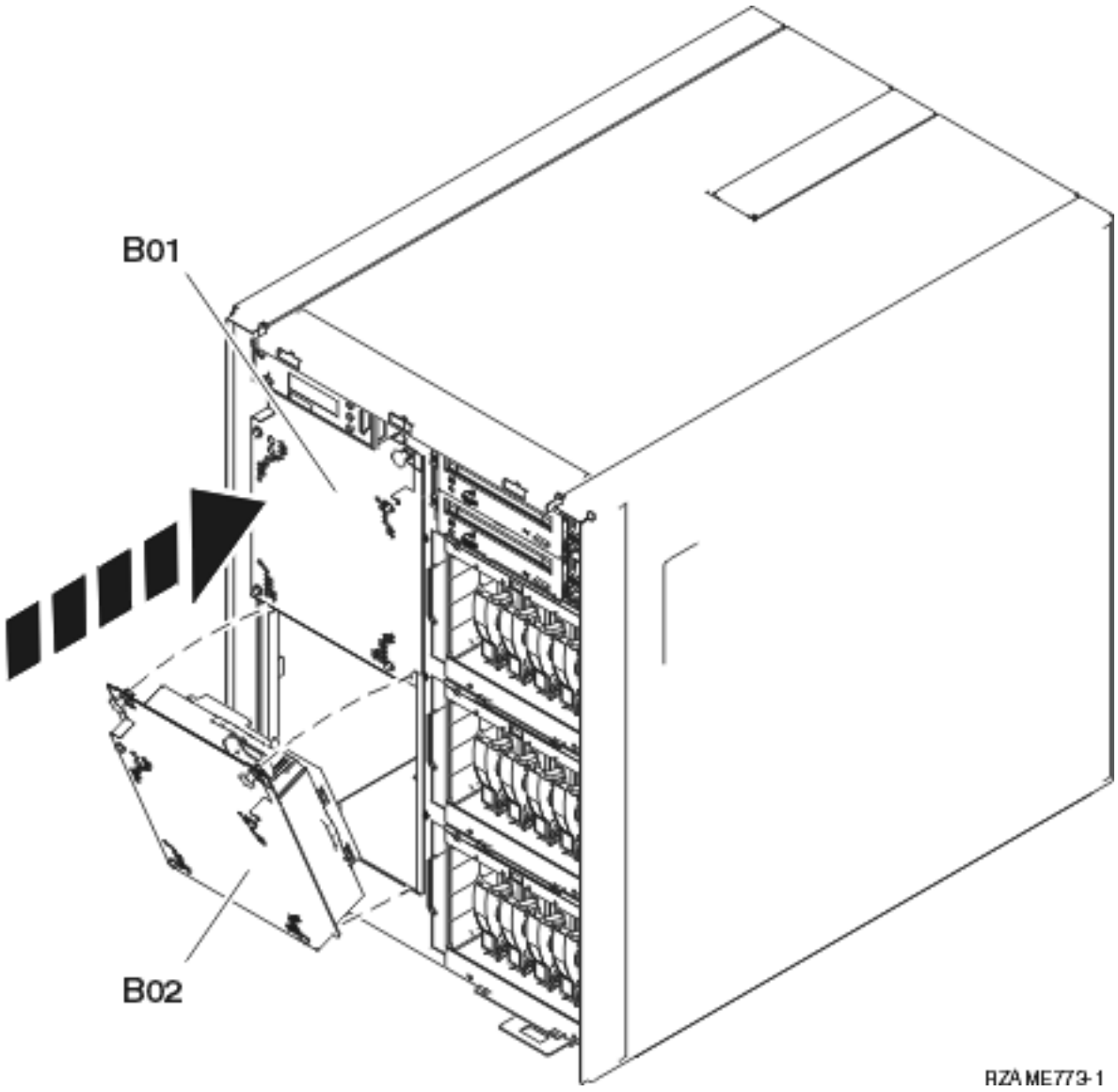
__ 3. Squeeze and pull the handle out toward you and down before you install the disk unit. If the handle is not all the way down, the disk unit will not slide into the unit. View video.



__ 4. Do not hold the disk unit by the handle.
__ 5. Support the bottom of the disk unit assembly, slide the disk unit all the way in and lock it in place by closing the latch.
__ 6. Repeat the above steps for each disk unit in your system.
__ 7. Install the disk unit covers.
__ 8. Continue with the instructions.

Install fans

__ 1. Locate the fan area on the front of the unit (B01 and B02).
__ 2. Install the fan assembly.

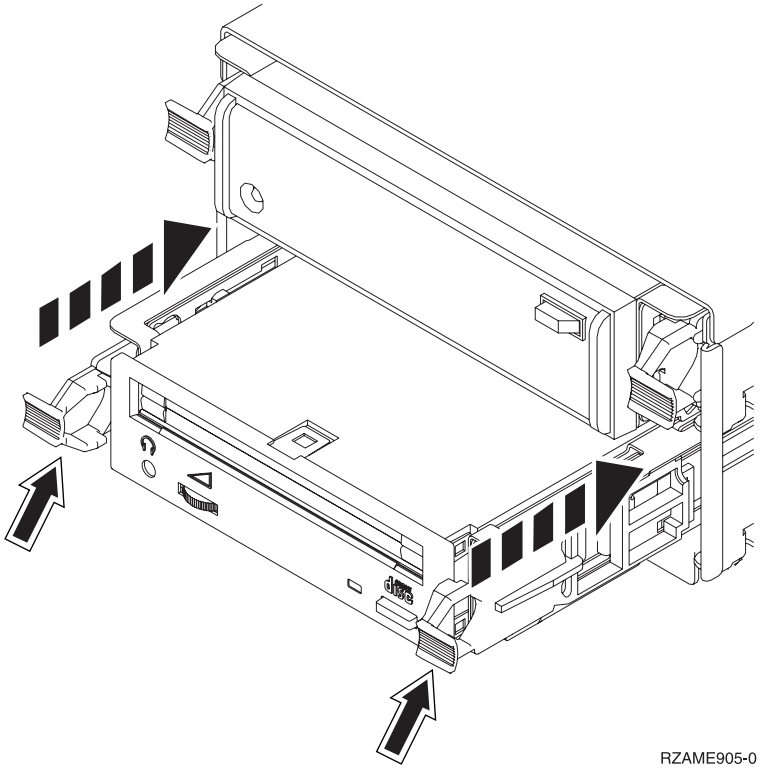


__ 3. Push in the latches.

Install tape, CD–ROM and DVD devices

__ 1. Install the device by sliding it forward and into the system unit. You may need to remove the filler blank above the control panel.

__ 2. Push the two latches that secure the device to the system unit frame until they stop.



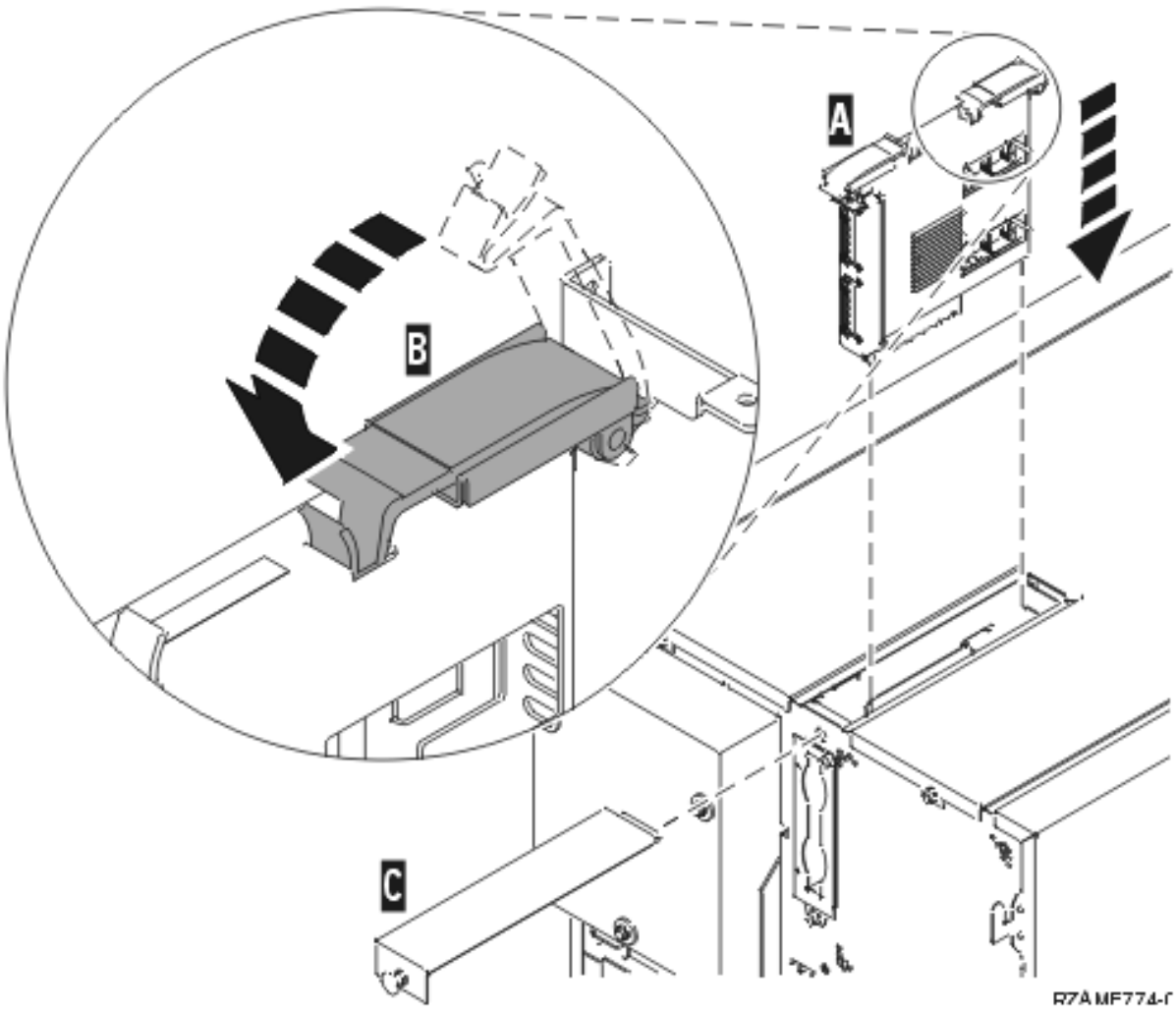
__ 3. Repeat the steps for each removable media device.

Install network interface card

__ 1. Make sure you install the network interface card before the processor assemblies.

__ 2. Install any external cables from the card.

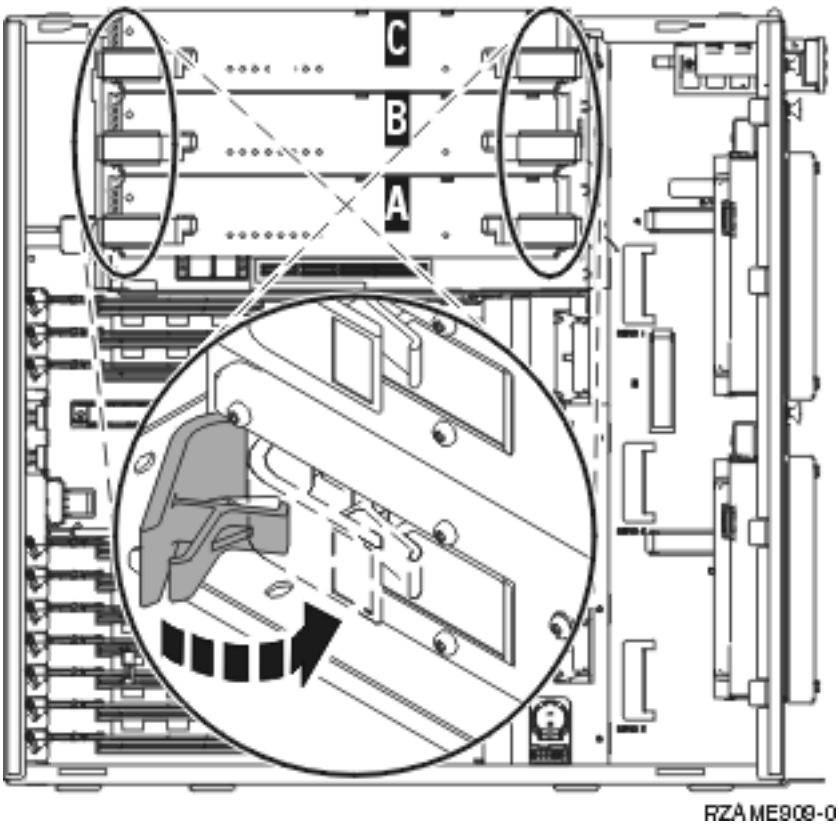
__ 3. Slide the card assembly into the system unit **A**.



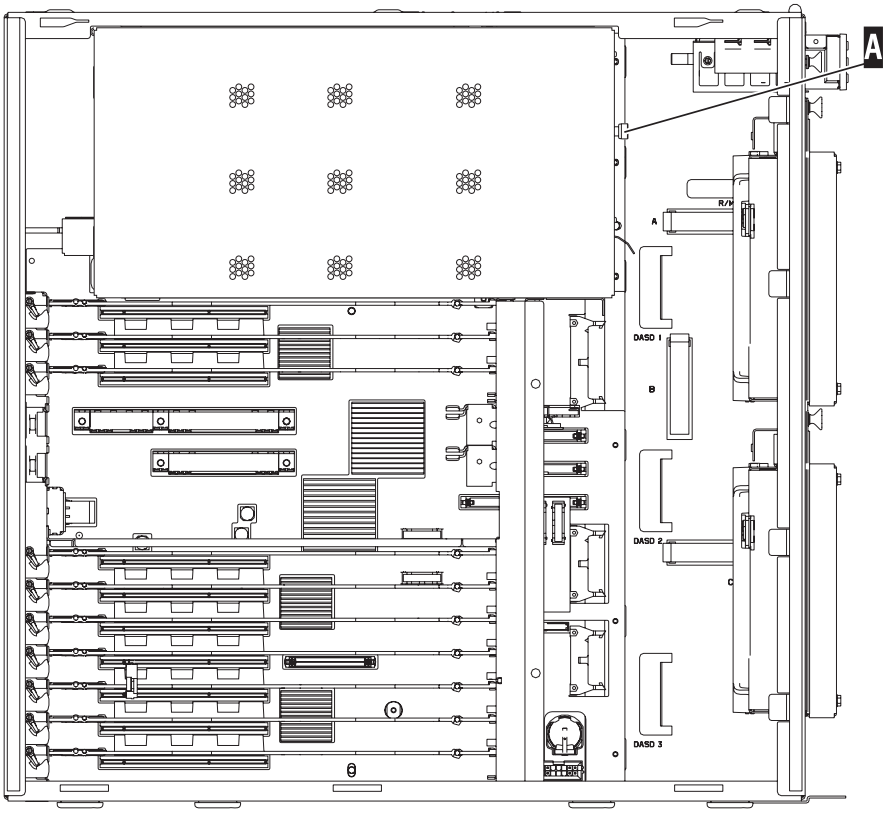
__ 4. Push on both card latches at the same time.
__ 5. Close the latches when you cannot push the card assembly any further into the system unit **B**.
__ 6. Install the small cover on the top **C**.
__ 7. Push in the push-button.

Install processor assembly

__ 1. Install the processor card assemblies by doing the following:
    __ a. Install the processor card assemblies in the correct location.
    __ b. Slide the card assembly into the system unit using the guiderails.
    __ c. Pull on both latches at the same time.
    __ d. Close the latches when you cannot push the card assembly any further into the system unit.



__ 2. Install the access cover **A** .



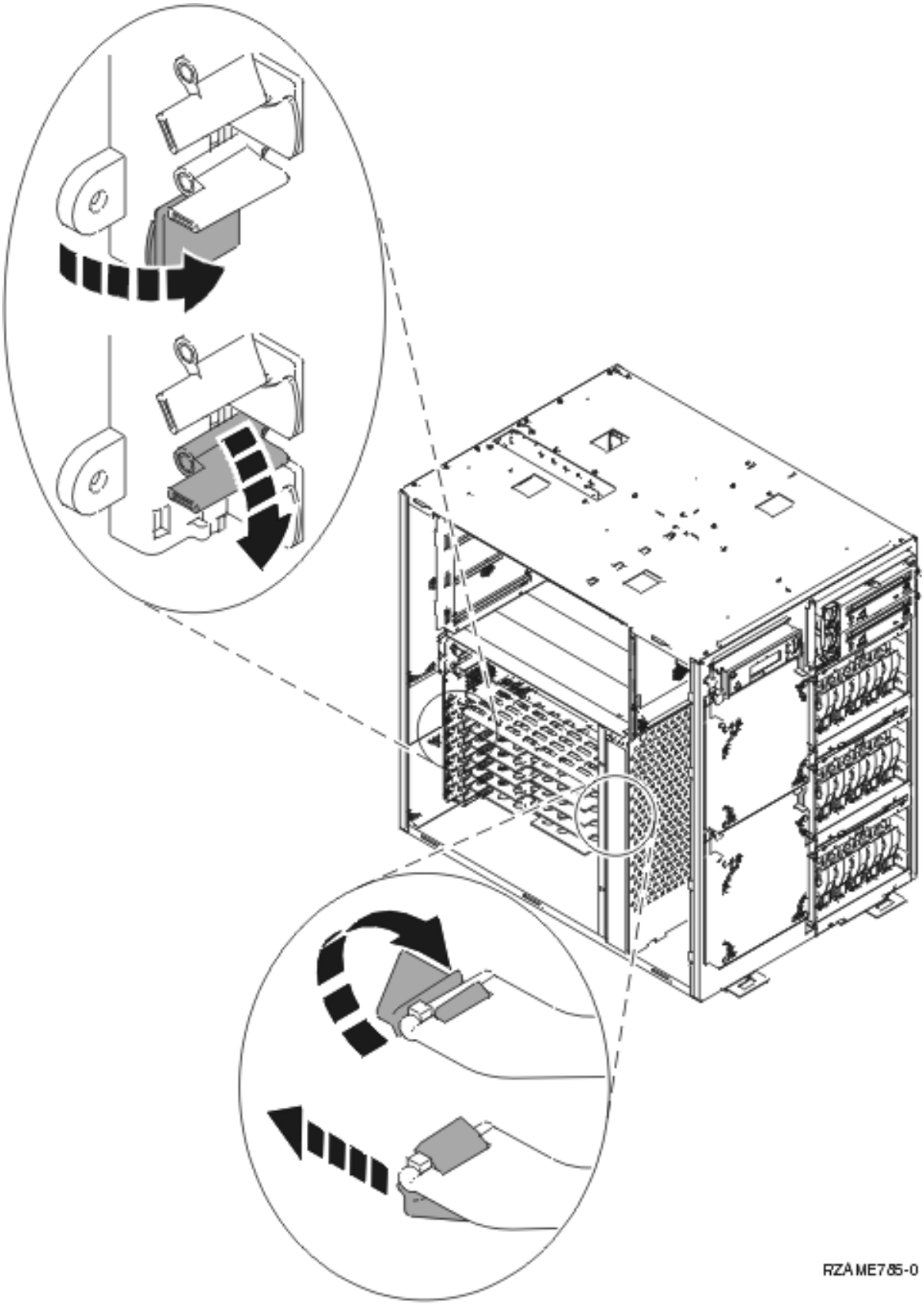
__ 3. Repeat the steps to install all processor card assemblies.

Install PCI cards

__ 1. Locate the adapter card positions inside your system unit.

__ 2. It is very important to install the card back into the same position it was removed. **Use the information you recorded earlier** in step 5 on page 25.

__ 3. Make sure the card latch is open at the card position where you plan to install the card. Move the latch counterclockwise and then swing the latch out.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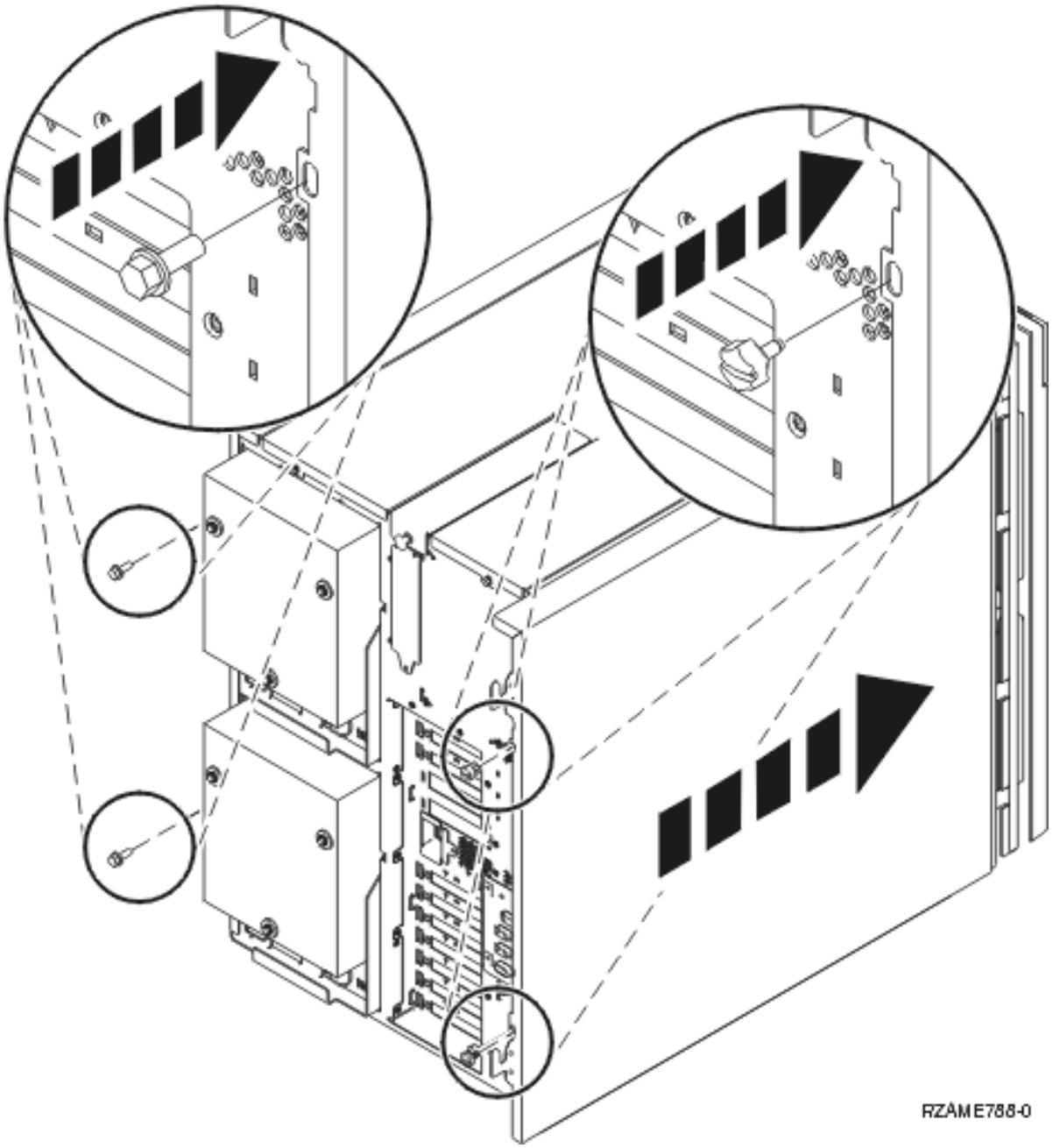
__ 4. **Attention:** Adapter cards are fragile:
   - Handle only by the edges.
   - Keep fingers off printed circuit area.
   - Use static strap when handling.
   - Leave in protective packaging until ready to install.

__ 5. Start at the bottom when installing the cards.
__ 6. Align the card with the card holders inside the system unit and push until it is connected securely.
__ 7. Swing the latch in and move the latch clockwise to secure the card.
__ 8. Connect any cables you removed.
__ 9. Repeat the above steps for each card.

Install covers

Install the front and side covers.

__ 1. Install the side covers.

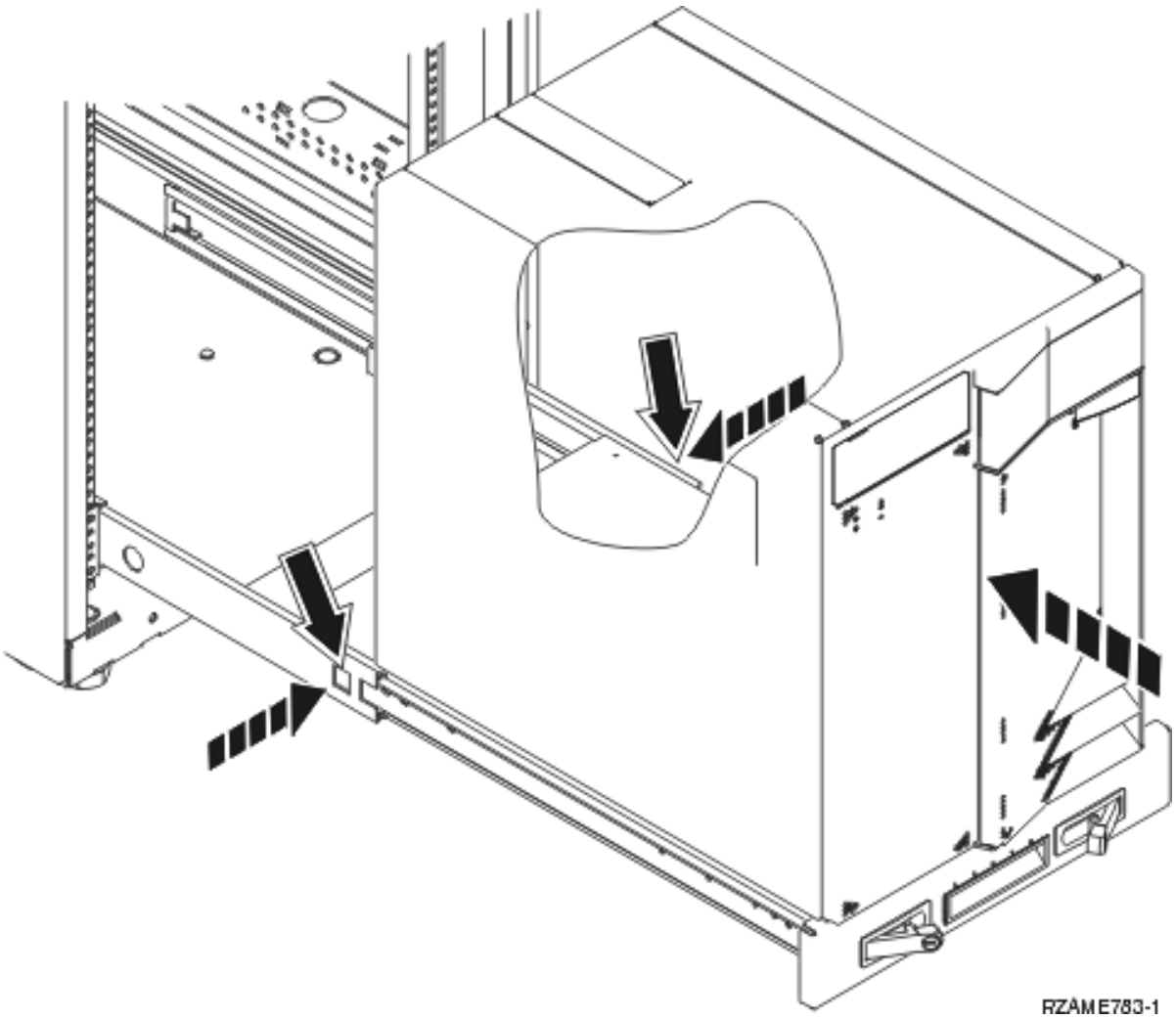


__ a. Install the thumbscrews on the back, left side cover (view from front).

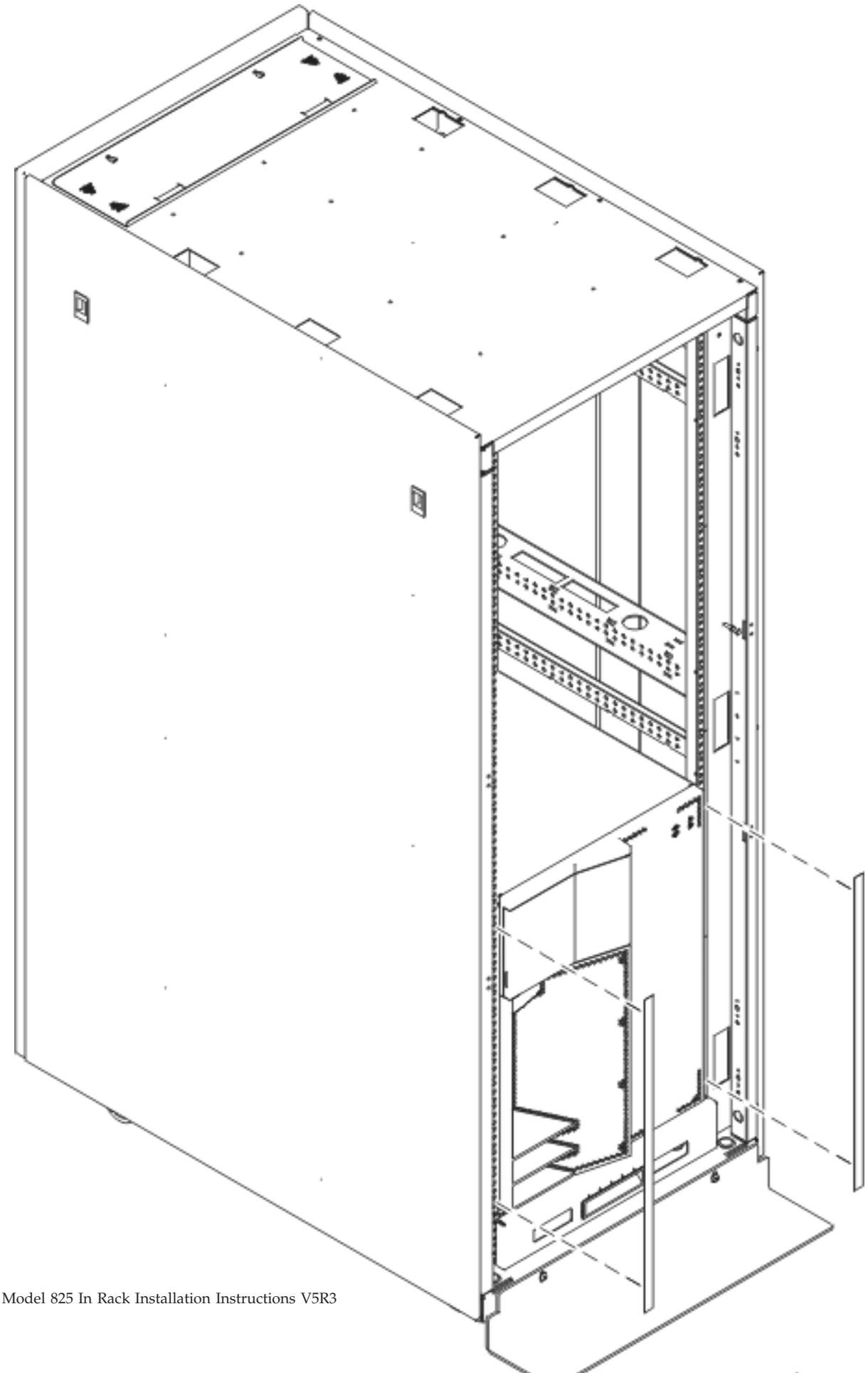
__ b. Install the slotted retainer screws on the back, right side cover (view from front). Slide the shelf partially in to have space to tighten the screws with the tool provided.

__ 2. Install the front cover.

__ 3. Push in the spring latches on the extended shelf rails and slide the shelf in.



__ 4. Close the latches.
__ 5. Replace filler panels in empty spaces.
__ 6. Install the black cover strips over the holes on each side of the unit.



__ 7. Install the rack trim on the sides and top that you removed when unpacking the rack.

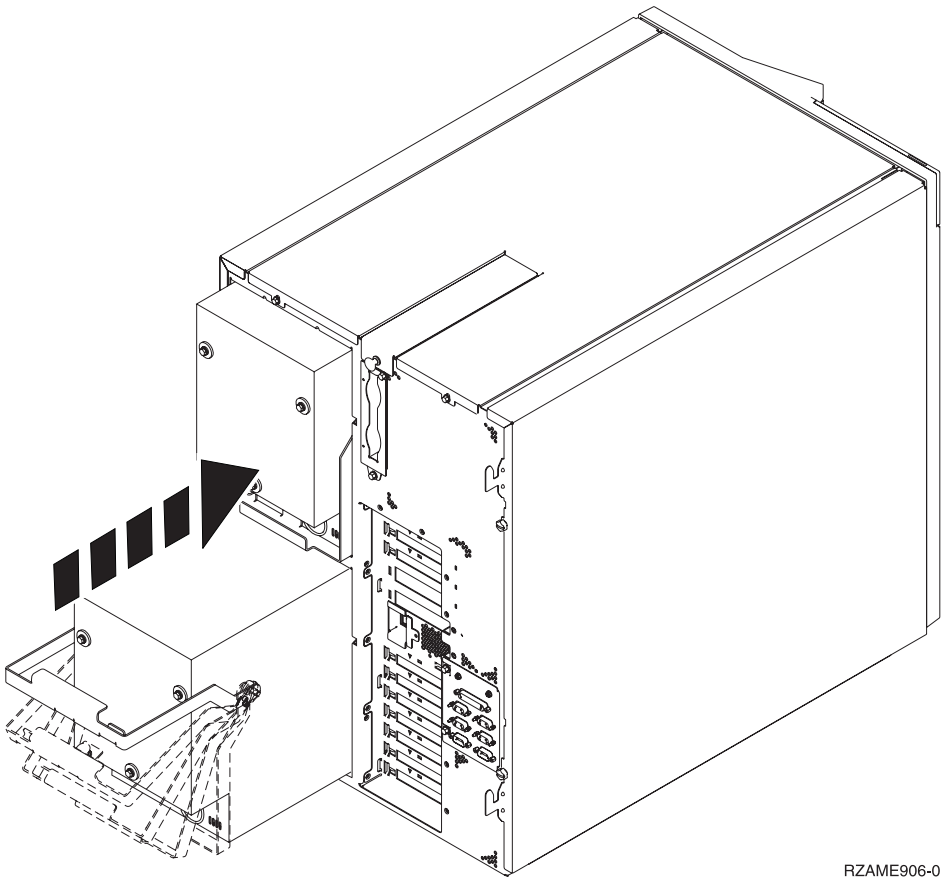
Install power supply

You will install the following devices:

__ 1. Locate the power supply area at the back of the unit.

__ 2. Lift up the handle on the power supply.

View video.



__ 3. Slide the power supply into the system unit.

__ 4. Move the handle down to lock in place.

__ 5. Push in the latch.

Completing the rack installation

Locate the Start Here instructions that came with your unit to finish the set up of your unit. You may have already completed some of the steps.

If you installed an existing system unit:

__ 1. Plug in the power cord for the system unit.

__ 2. Plug in any power cords, such as printers and displays.

__ 3. Power on the system unit and any devices connected to the system unit.

Appendix. Notices

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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
New 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

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European Community Compliance Statement

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Australia and New Zealand Class A statement

Attention: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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The following is a summary of the VCCI Japanese statement in the box above.

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.

Electromagnetic Interference (EMI) Statement - People's Republic of China

Per GB 9254–1998, the user manual for a Class A product must carry the following warning message (English translation from the Chinese standard) about use in a residential environment in Chinese (*Simplified Chinese*):

声　明

此为Ａ级产品，在生活环境中，
该产品可能会造成无线电干扰。
在这种情况下，可能需要用户对其
干扰采取切实可行的措施。

Declaration: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may need to perform practical action.

Electromagnetic Interference (EMI) Statement - Taiwan

警告使用者：
這是甲類的資訊產品，在
居住的環境中使用時，可
能會造成射頻干擾，在這
種情況下，使用者會被要
求採取某些適當的對策。

The following is a summary of the EMI Taiwan statement above.

Warning: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user will be required to take adequate measures.

Radio Protection for Germany

Dieses Gerät ist berechtigt in Übereinstimmung mit Dem deutschen EMVG vom 9.Nov.92 das EG–Konformitätszeichen zu führen.

Der Aussteller der Konformitätserklärung ist die IBM Germany.

Dieses Gerät erfüllt die Bedingungen der EN 55022 Klasse A. Für diese von Geräten gilt folgende Bestimmung nach dem EMVG:

Geräte dürfen an Orten, für die sie nicht ausreichend entstört sind, nur mit besonderer Genehmigung des Bundesministers für Post und Telekommunikation oder des Bundesamtes für Post und Telekommunikation betrieben werden. Die Genehmigung wird erteilt, wenn keine elektromagnetischen Störungen zu erwarten sind.

(Auszug aus dem EMVG vom 9.Nov.92, Para.3, Abs.4)

Hinweis

Dieses Genehmigungsverfahren ist von der Deutschen Bundespost noch nicht veröffentlicht worden.

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

Note: This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- 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.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from IBM authorized dealers. IBM is not responsible for any radio or television interference caused by using other than recommended cables or 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 interferences, and (2) this device must accept any interferences received, including interference that may cause undesired operation.

Responsible Party:

International Business Machines Corporation
New Orchard Road
Armonk, NY 10504

Telephone: 1-919-543-2193

Industry Canada Compliance Statement

This Class B 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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European Community Compliance Statement

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