H/W Upgrade Note

64 MB SIMM Upgrade for R8000 Indigo^2 and POWER CHALLENGE M Systems

SIMM Installation Overview

The instructions in this note allow you to install the new 64 MB SIMMs in R8000™ Indigo^2™ and POWER CHALLENGE™ M systems. These SIMMs are slightly wider than 16 MB and 32 MB SIMMs, and require careful insertion and removal.

Note: These 64 MB SIMMs use a completely redesigned removal tool. The tool is included, and should be taped to the service provider envelope.

Upgrade installation procedures include:

- Shutting down the system and removing the covers
- Putting on the wrist strap and installing the new SIMMs
- Reinstalling the covers, restarting the system, and checking the memory

Caution: This information is written only for Silicon Graphics® support personnel, or other trained and authorized field personnel who are responsible for the installation of this hardware upgrade. End users should contact their service provider to install the upgrade.

Note that you should install any software that comes with the kit before you upgrade the system.

Checking the Kit

Verify you have the items in the following list before starting the upgrade:

- 64 MB SIMMs in an antistatic container
- SIMM removal tool
- antistatic wrist strap

You need a medium size (#2) Phillips-head screwdriver to install this upgrade. Note that the screwdriver is not included in the upgrade kit.

See Figure 1-1 for kit contents.

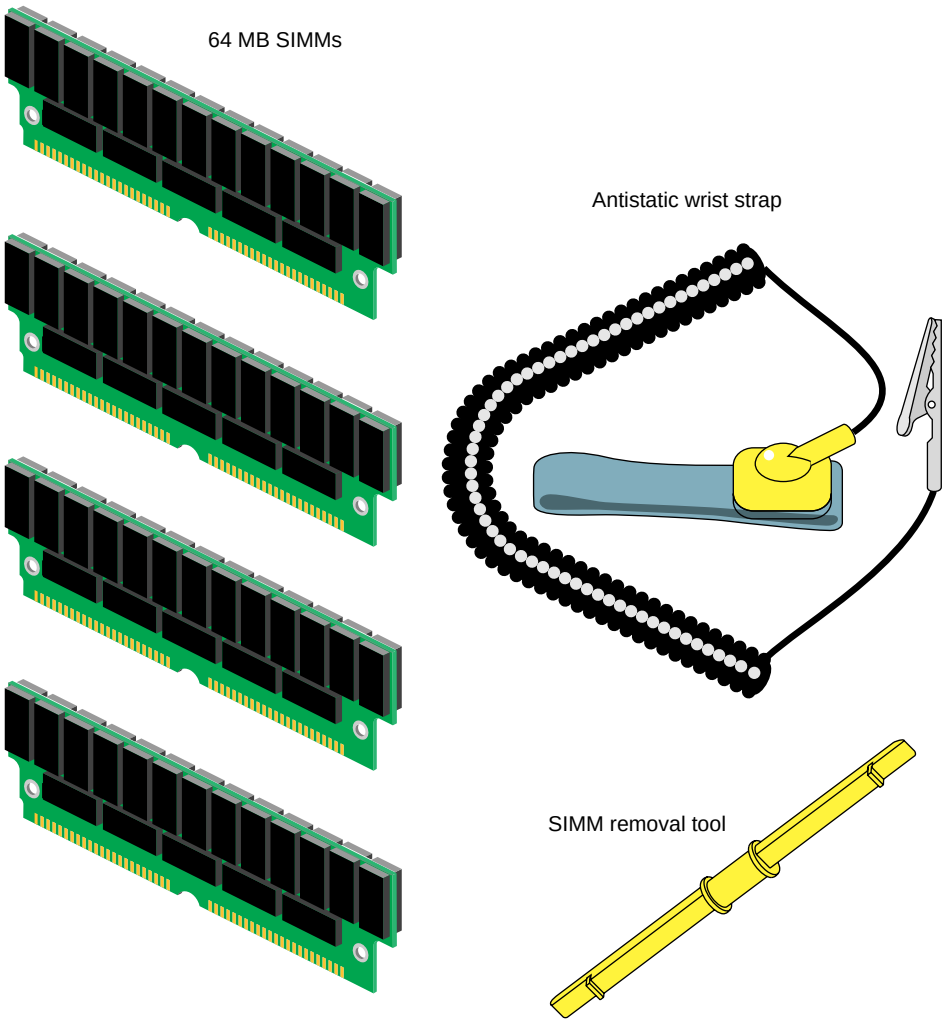

Figure 1-1 64 MB SIMMs, Removal Tool, and Wrist Strap

Upgrade Instructions

Begin the upgrade by properly shutting down the system and powering it off. Then move to the front of the unit and remove the covers. Use the following steps:

1. Snap the front cover away from the top and press the power switch.
2. Press down on the tabs and remove the front bezel (see Figure 1-2).
3. Press up on the tabs at either side of the drive openings.
4. Pull up on the cover and lift it back and away from the chassis.

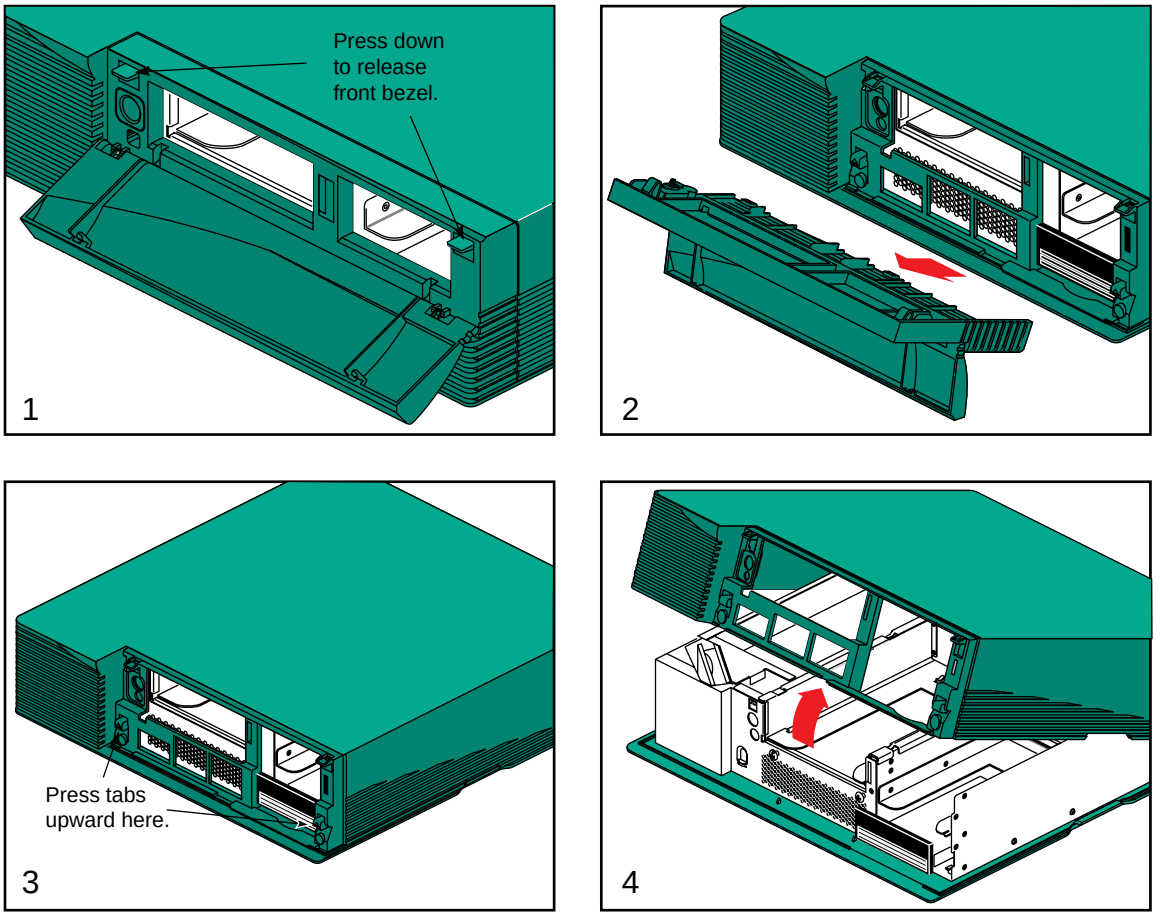

Figure 1-2 Removing the Covers

Removing the Drive Tray

To access the SIMM banks, you must remove the 5-1/4 inch SCSI drive tray that sits above them. Follow these steps, and Figure 1-3, to remove the tray to provide direct access to the SIMM banks:

1. Unlatch and disconnect the flat flex SCSI cable from the rear of the 5-1/4 inch drive tray.
2. Undo the captive screws located in the lower front of the tray (see Figure 1-3).
3. Slide the tray back to unlatch it, then lift it up and out of the system.

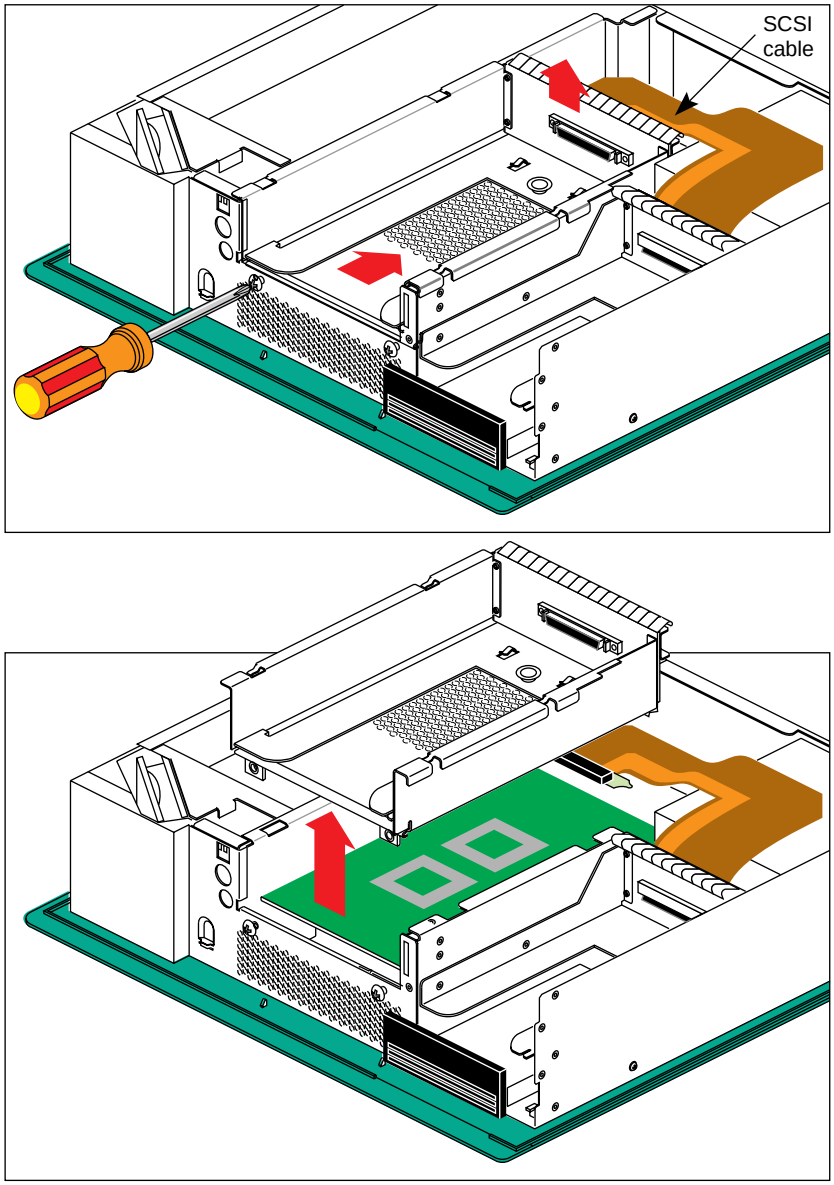

Figure 1-3 Removing the Drive Tray

Installing the 64 MB SIMMs

The 64 MB SIMMs have been designed to fit any of the three available banks in the Indigo^2 or POWER Challenge M chassis. It is important to note that because of the size of the R8000 CPU module, SIMMs in Bank C (SIMMs S9 through S12) and the last SIMM in Bank B (SIMM S8) on the IP26 base board *cannot be taller than* 1.260 inches (32 mm).

If there are SIMMs taller than 1.260 inches already installed in bank A, you can install the 64 MB SIMMs in bank C. Figure 1-4 shows the SIMM banks with the R8000 CPU module removed. The procedure for removing the R8000 CPU module is covered on pages 9 through 11 in the section titled “Removing and Replacing the R8000 Module.” If you need to remove existing SIMMs before installing the 64 MB SIMMs, refer to “Removing SIMMs,” on page 7 and 8.

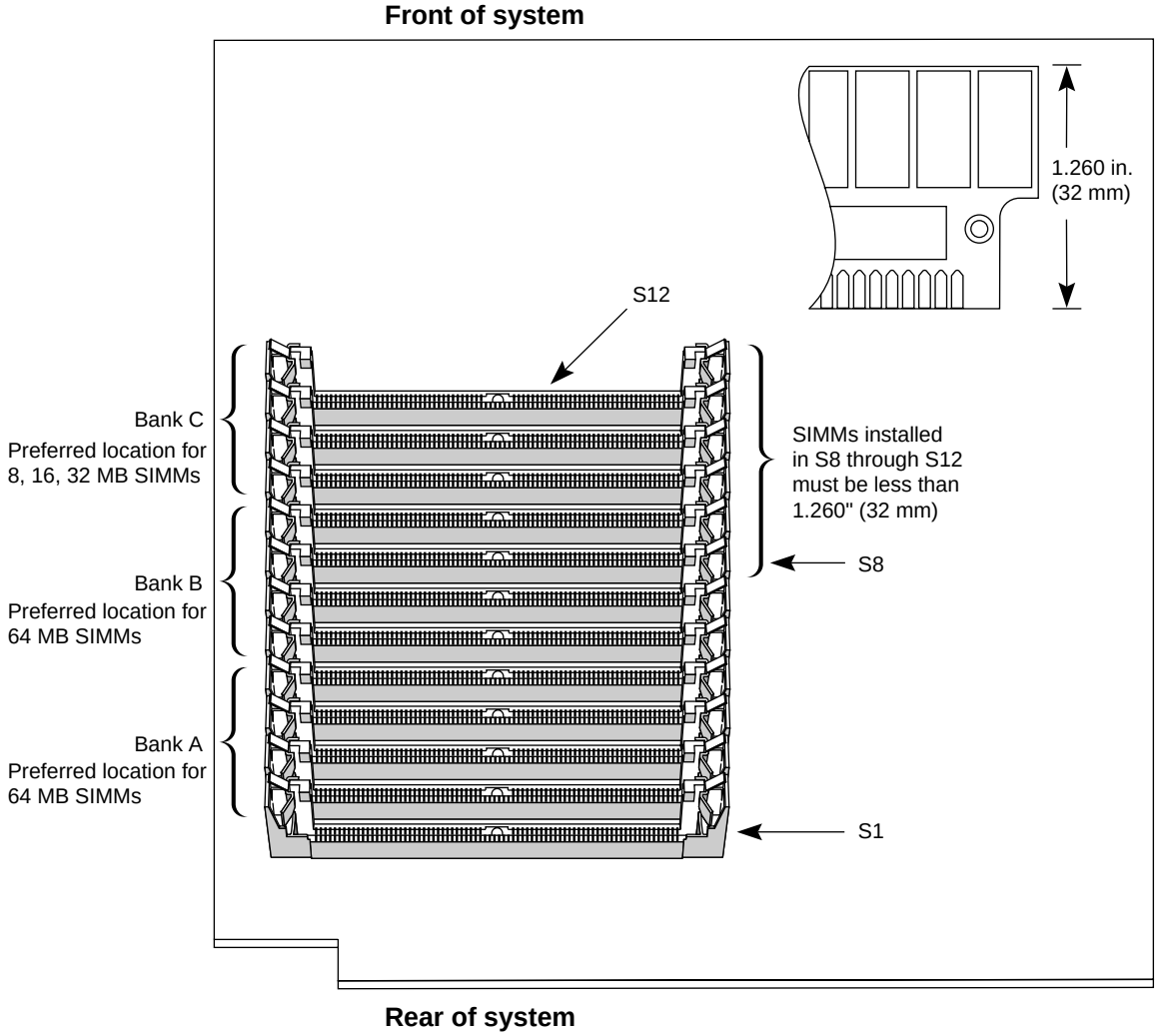

Figure 1-4 SIMM Placement and Height Limitations

Caution: You may populate only two of the three banks with 64 MB SIMMs. Never install SIMMs taller than 1.260 inches (32 mm) in Bank C or in the last slot of Bank B (S8).

To install a bank of 64 MB SIMMs:

1. Make sure the power is off and the system is plugged in.
2. Attach the grounding wrist strap to your arm and clip it to the chassis.

Note: Install the SIMMs in a bank (B or C) nearest the front of the system. When populating bank B or C, you must remove any SIMMs already installed from Bank A forward. You cannot physically install a SIMM when there is another directly behind it. See the section "Removing a SIMM," on page 7.

3. Take one 64 MB SIMM out of the antistatic container and hold it so the "notched" end is on your left (see Figure 1-5).
4. Facing the back of the system, hold the SIMM by the edges and tilt it approximately 40° back toward you.

   Note: The 64 MB SIMM tends to scrape against the right-hand metal retainer clip in the SIMM socket directly behind it. Be careful not to snag a DRAM pin on the left-hand clip or damage to the SIMM can result. If the SIMM snags on either side, use the removal tool to hold back the retainer clip while positioning the SIMM.

5. With the SIMM tilted and aligned in the socket, push it forward and downward, so that both ends of the SIMM "click" into place. The plastic pins on the socket must protrude into the small holes at either end of the SIMM.

   Caution: If the SIMM is not properly seated, with the locator pins aligned in the locator holes, damage to the SIMM may occur.

6. Confirm that the SIMM is fully installed by checking to see if its top is flush with adjacent SIMMs and is not sitting at an angle. Repeat the process from step 3 to install additional SIMMs.

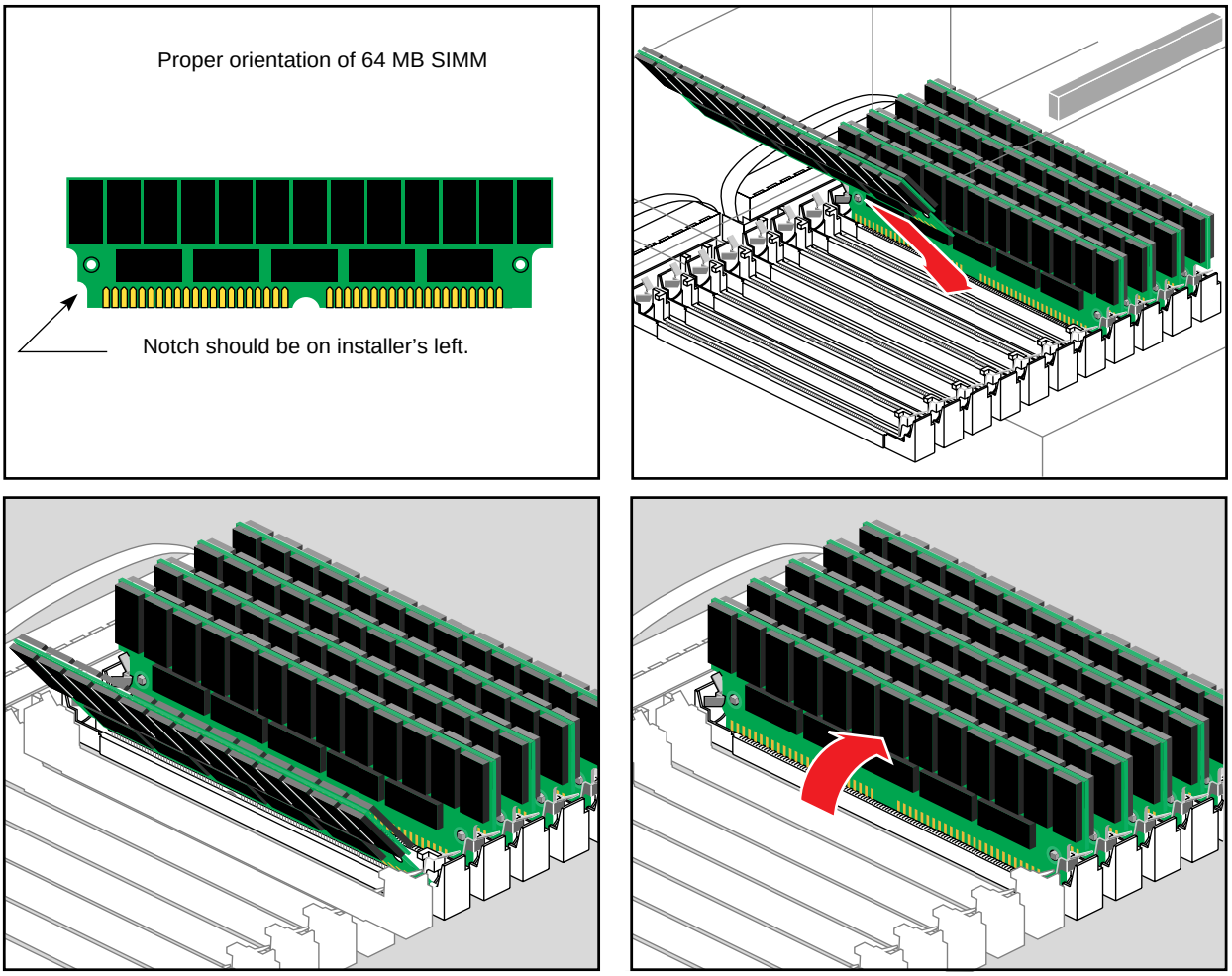

Figure 1-5 Installing a 64 MB SIMM

Removing SIMMs

To install a bank of SIMMs you may have to first remove existing SIMMs. Use the following steps to safely remove SIMMs:

1. Make sure the power is off and the system is plugged in.
2. Attach the grounding wrist strap to your arm and clip it to the chassis.
3. Working from the rear of the system, use the plastic SIMM removal tool to push the metal retaining clip (located at the edge of the socket) outward. See Figure 1-6.

   Note: Higher capacity SIMMs (such as the 64 MB) extend over the top of the SIMM release latches. To unlatch them, push outward on the front part of the SIMM release latch. In the case of lower-capacity SIMMs, you

can press straight down on the release latch to push the retainer clip outward and release the SIMM. See Figure 1-6 for an example of each type.

4. Repeat the step for the opposite end of the socket. When both ends are free, the SIMM should tilt back towards the rear of the system. See Figure 1-7 for examples.
5. Carefully lift the SIMM out of the socket. Repeat the procedures to remove additional SIMMs.

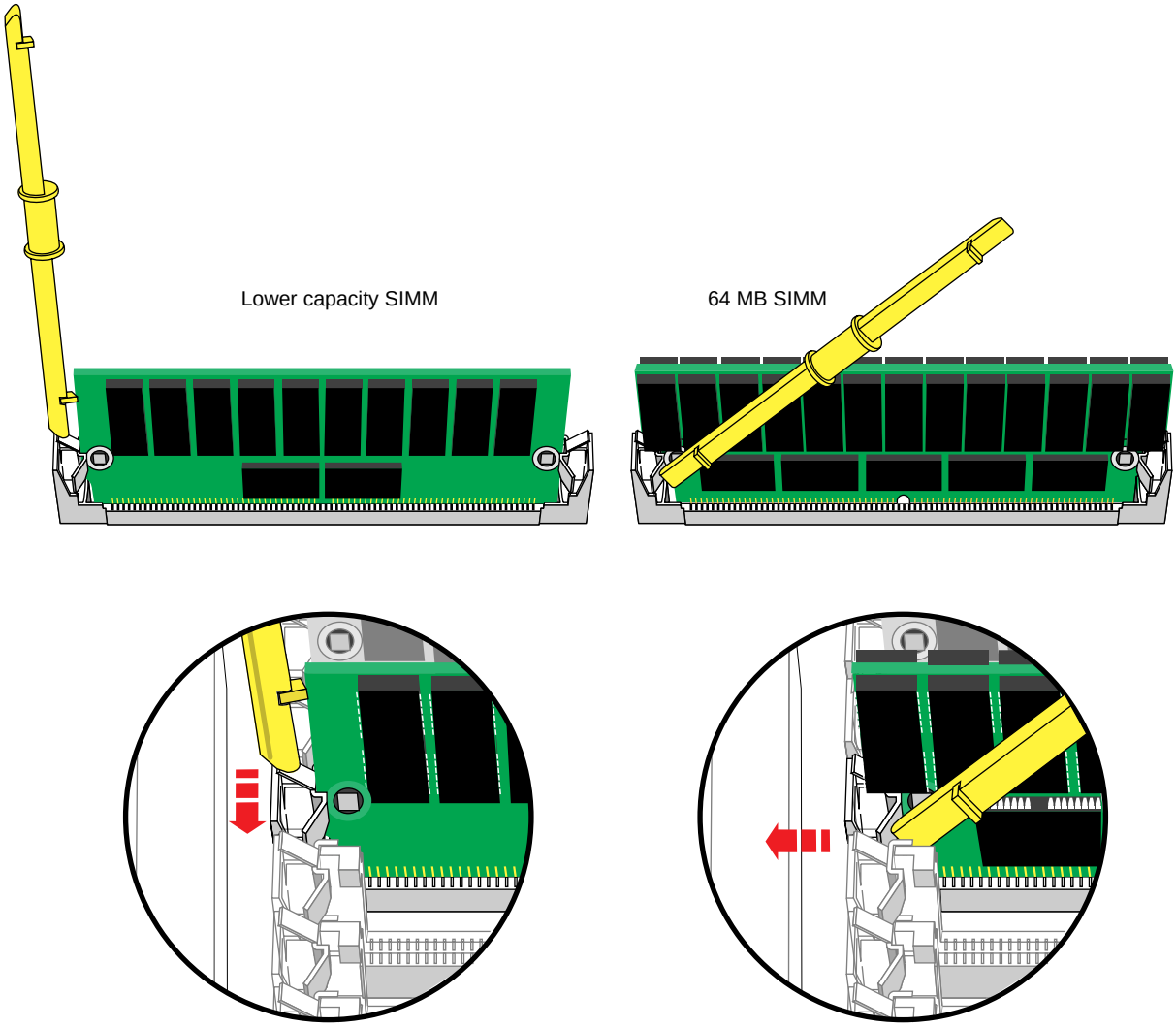

Figure 1-6 Positioning the SIMM Removal Tool

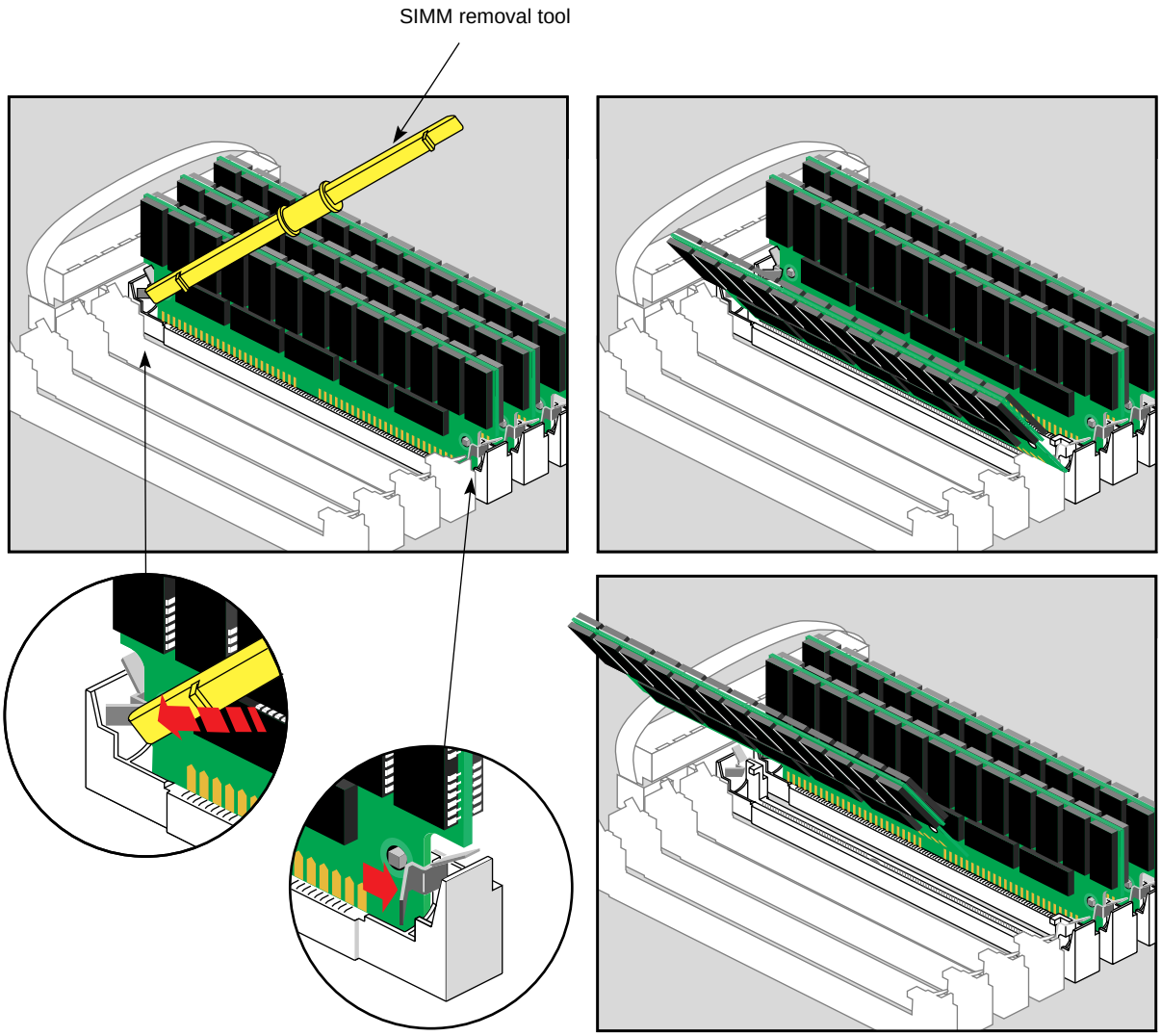

Figure 1-7 Removing a 64 MB SIMM

Removing and Replacing the R8000 CPU Module

In order to populate SIMM bank C (reference Figure 1-4), you must remove the R8000 CPU module. Use the following steps and figure to properly remove the module.

1. Remove the 5-1/4 inch drive tray (if it is installed), using the instructions in "Removing the Drive Tray." Also reference Figure 1-3.
2. With a properly connected grounding strap on your wrist, use a #2 Phillips-head screwdriver to remove the five screws that attach the R8000 CPU module to the standoffs. See Figure 1-8 for the illustrated steps.

Caution: Use care when handling the R8000 CPU module and attached flex cable. Do not set the board down roughly onto a hard surface (such as a desktop or filing cabinet) and be careful not to scrape the underside of the board against parts of the system chassis.

3. Use both hands to raise the module carefully off the standoffs and into a vertical position that puts the least amount of stress on the flex cable.
4. Hold the CPU module steadily with one hand, and use the other to lift the tabs at either end of the flex-cable connector and remove it. Do not twist or rock the CPU module on the flex cable. Bending and twisting the flex cable can damage it.
5. Carefully lift the CPU module away from the chassis and place it on an antistatic surface while you complete the memory upgrade.
6. Reverse these steps and reinstall the module when the memory upgrade is completed.

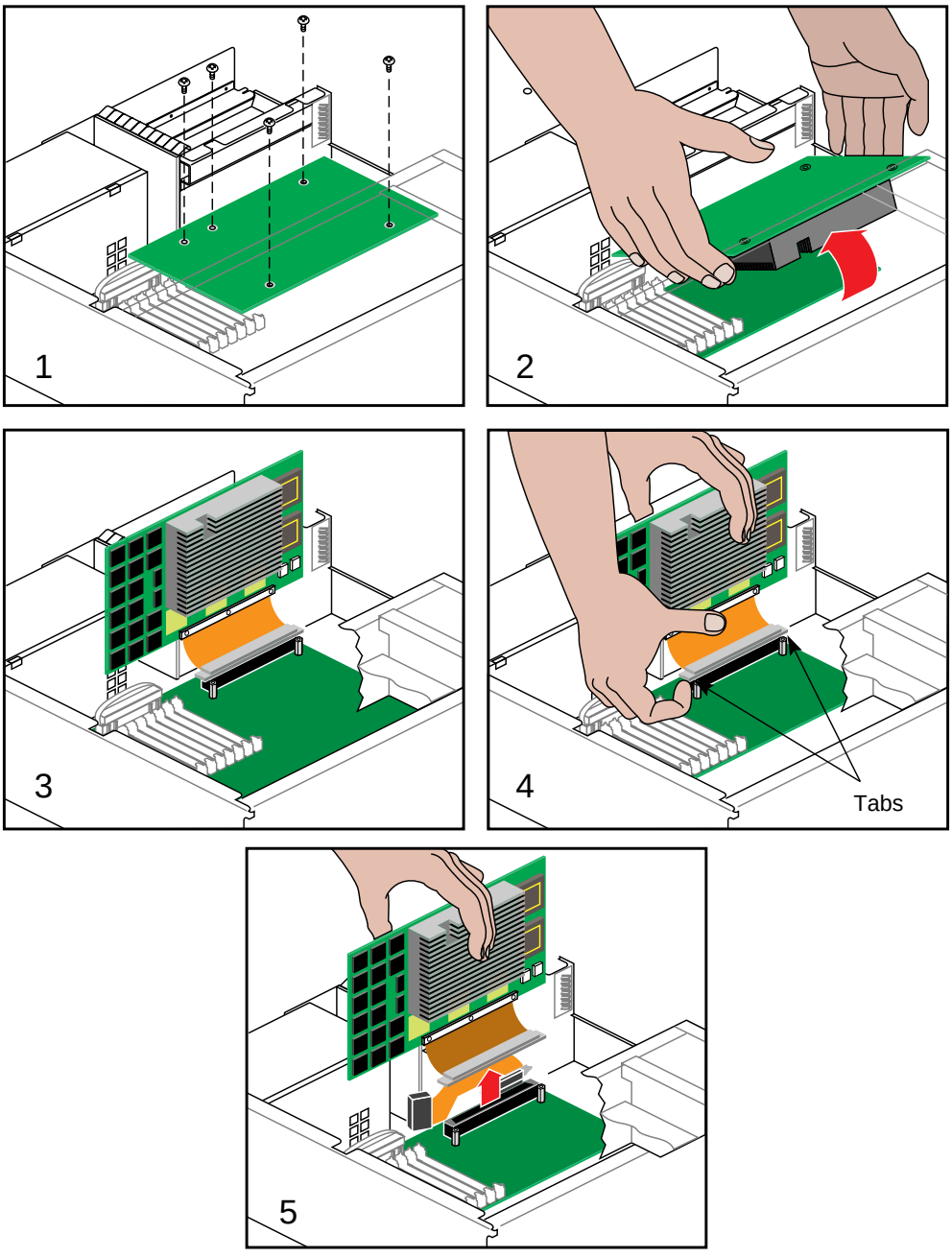

Figure 1-8 Removing the R8000 CPU Module

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