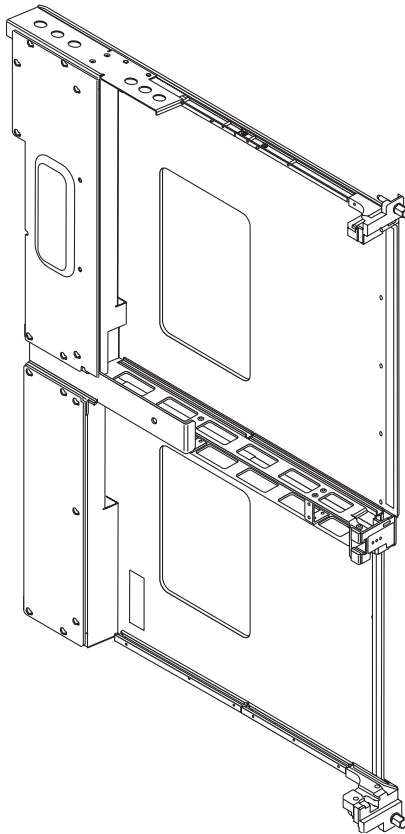# Sun Fire™ 15K/12K Systems Carrier Plate Upgrade Kit

Carrier Plate Upgrade Kit

The system board carrier plate upgrade kit has been developed to improve the air flow and cooling to the Sun Fire 15K/12K Systems. The kit contains a full set of eighteen (18) system board carrier plates for the front and rear of your system.

TABLE-1 lists the carrier plate contents and quantity of items within this upgrade kit.

TABLE-1   Carrier Plate Upgrade Kit

Part Number	Qty.	Description
541-0119	12	Carrier plate assembly carrier plate at slots 1,2,3,6,7,8, 10,11,12,15,16,17
541-0120	2	Carrier plate assembly carrier plate at slots 0 and 9
541-0121	4	Carrier plate assembly carrier plate at slots 4, 5, 13, and 14

Note – Prior to installation, Sun Microsystems technicians need to reference Infodoc 75561, URL `http://sunsolve.sun.com`, for additional required carrier plate upgrade information.

Preparing for the Carrier Plate Upgrade

Caution – Be sure you are properly grounded before you begin the hardware removal and installation. There are four ground points on the system cabinet, two at the front top left and top right, and two at the rear top left and top right.

Review the Sun Fire 15K/12K Systems Service manual before you begin the upgrade.

Note – The section number and page number of your version of the Sun Fire 15K/12K Systems Service Manual may vary, depending on the time of shipment. Refer to the table of contents to locate the sections mentioned in the following steps.

1. **Read all of the instructions for "Inserting a Board Set Carrier Plate" in the** *Sun Fire 15K/12K Systems Service Manual.*
2. **Review "Powering Off an Expander Board" in the** *Sun Fire 15K/12K Systems Service Manual.*

Preparing the Sun Fire 15K/12K Systems

Caution – Prior to performing the carrier plate upgrade procedures, ensure the system power is off and that all domains are down.

Note – Service technicians must plan for adequate and safe storage space for all expander, I/O, and system boards during this upgrade procedure.

1. **Ensure the system has been powered off.**

2. **Label and remove all of the I/O cables.**

3. **Label and remove the standard CPUs or CPU filler panels from the upper Slot 0 section of the system (SB0 through SB8 on the front and SB10 through SB17 on the rear).**

4. **Label and remove the I/O boards and I/O filler panels from the lower Slot 1 section of the system (IO0 through IO8 on the front and IO9 through IO17 on the rear).**

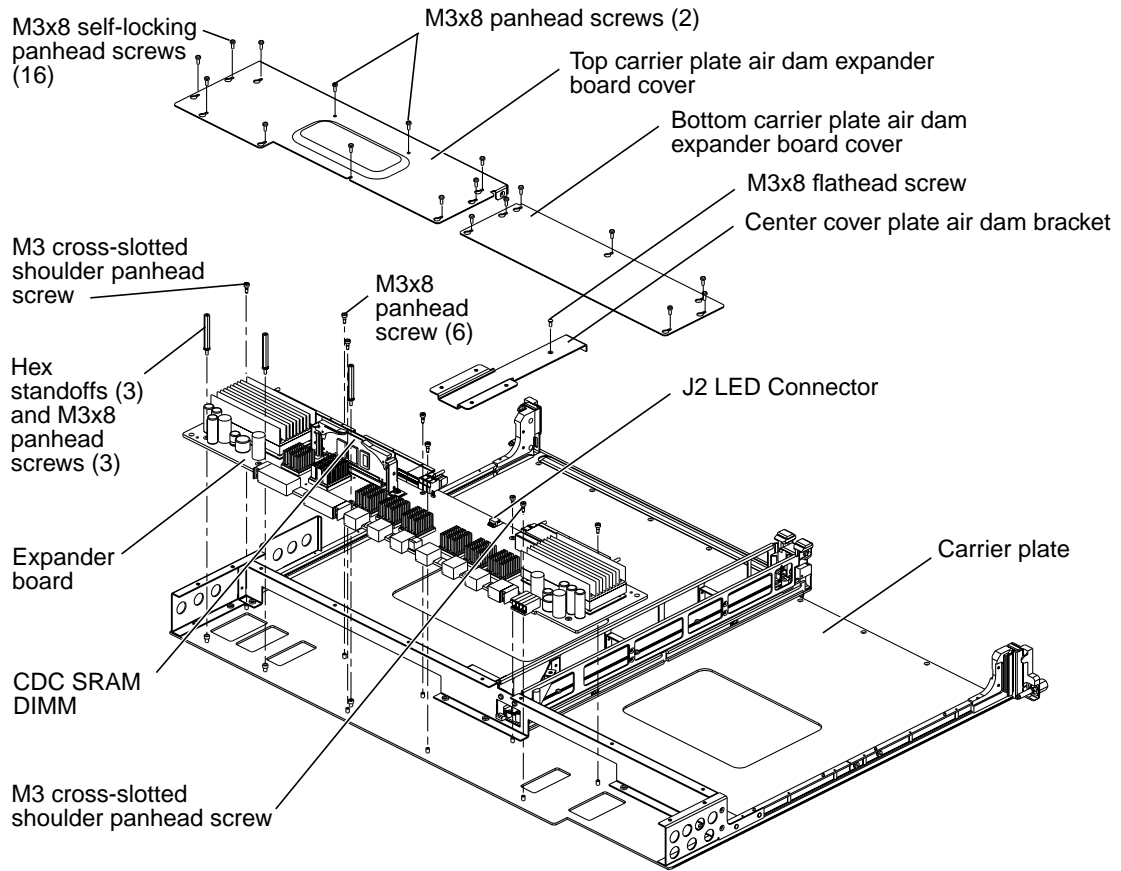## Removing the Carrier Plate

⚠️ **Caution –** It is critical that you carefully handle the removal of each carrier plate. Use caution when placing the carrier plate on an ESD surface as to not damage the connector or any components on the expander board at the end of the system board carrier plate.

1. **Using the two (2) .05 inch hex socket-fixed torque drivers, which are located in the torque tool-holder bracket on the inside of the front right-side door, simultaneously loosen the carrier plate captive ejector bracket screws to unseat the carrier plate and its expander board from the Sun Fireplane.**

   Once the ejector screws are loosened with the torque driver, you can continue to simultaneously unscrew the carrier plate manually.

2. **Firmly grasp the center edge of the carrier plate and evenly pull outward to remove the carrier plate from the card cage.**

   Avoid any angled pulling of the carrier plate as you pull outward along the card guides of the card cage.

3. **Holding the center of the carrier plate with one hand and the bottom edge of the carrier plate securely with the other hand, remove the carrier plate from the card cage and place it on an ESD-protected surface, component side up.**

Removing and Installing the Expander Board on the New System Board Carrier Plate

Note – Review the Carrier Plate Replacement Modifications in the *Sun Fire 15K/12K Systems Service Manual* for the specific configurations for each carrier plate location.

1. **Place one of the new system board carrier plates on an ESD work surface.**

2. **Refer to "Removing an Expander Board" in the *Sun Fire 15K/12K Systems Service Manual* to remove the expander board from the current system board carrier plate.**

3. **Firmly grasp the expander board with the components upward and the LED connector toward the LED board of the carrier plate, and position the expander board onto the carrier plate aligning the eleven (11) mounting holes with the eleven (11) mounting standoffs on the carrier plate.**

4. **Install the two (2) M3 cross-slotted shoulder screws to the expander.**

5. **Secure the expander with the six (6) M3x8 panhead screws.**

The following are the labels and callouts in the figure:

- M3x8 self-locking panhead screws (16)
- M3x8 panhead screws (2)
- Top carrier plate air dam expander board cover
- Bottom carrier plate air dam expander board cover
- M3x8 flathead screw
- Center cover plate air dam bracket
- M3 cross-slotted shoulder panhead screw
- M3x8 panhead screw (6)
- Hex standoffs (3) and M3x8 panhead screws (3)
- J2 LED Connector
- Expander board
- Carrier plate
- CDC SRAM DIMM
- M3 cross-slotted shoulder panhead screw

6. **Use the 0.25 inch (6 mm) nut driver to install the three (3) threaded hex standoffs.**

7. **Connect the LED ribbon cable (P2) into the connector (J2) on the expander board.**

8. **Install the center cover plate air dam bracket with the one (1) M3x8 flathead screw.**

9. **Install the top and bottom expander covers and secure with the sixteen (16) M3x8 self-locking panhead screws.**

10. **Install the two (2) M3x8 self locking flathead screws into the two non-slotted holes in the top expander cover.**

11. **Install the carrier plates in the required sequence.**

    All carrier plates with the expander board must be installed prior to the installation of any system boards or filler panels.

> ⚠️ **Caution –** To avoid damage to the Sun Fireplane, all carrier plates must be installed in their proper sequence prior to installing any Slot 0 or Slot 1 boards. Refer to "Inserting a Board Set Carrier Plate" in the *Sun Fire 15K/12K Systems Service Manual* and the Sun Fire 15K/12K Systems carrier plate insertion sequence procedure in Infodoc 75561, URL `http://sunsolve.sun.com`.

12. **Install all required Slot 0 and Slot 1, filler panels, and associated cables as outlined in the *Sun Fire 15K/12K Systems Service Manual*.**

13. **After completion of all carrier plate replacements, review the platform message log to verify SMS has received the message that the component has been inserted, by typing:**

```
sc% showlogs -F
```

Review the board insertion message. You will see a message similar to the one as follows.

```
Jun 16 14:30:05 2003 sun15-sc0: esmd[7167]: [0 4824421445907014
NOTICE Boards.cc 1646] EXB at EXxx inserted
```

where *xx* is the expander assembly 0-17.

Note – Service technicians must complete the instructions documented in Infodoc 75561 prior to powering on the expander board.

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14. **For the expander board power-on procedures, refer to "Powering On an Expander Board" in the *Sun Fire 15K/12K Systems Service Manual*.**

15. **For the expander board verification procedures, refer to "Verifying an Expander Board" in the *Sun Fire 15K/12K Systems Service Manual*.**

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