



# Sun Enterprise™ 10000, 6x00, 5x00, 4x00, 3x00 System and CPU/Memory Boards Thermal Pad Installation Guide

---

Sun Microsystems, Inc.  
901 San Antonio Road  
Palo Alto, CA 94303  
U.S.A. 650-960-1300

Part No. 806-5605-10  
May 2000, Revision A

Send comments about this document to: [docfeedback@sun.com](mailto:docfeedback@sun.com)

Copyright 2000 Sun Microsystems, Inc., 901 San Antonio Road • Palo Alto, CA 94303-4900 USA. All rights reserved.

This product or document is protected by copyright and distributed under licenses restricting its use, copying, distribution, and decompilation. No part of this product or document may be reproduced in any form by any means without prior written authorization of Sun and its licensors, if any. Third-party software, including font technology, is copyrighted and licensed from Sun suppliers.

Parts of the product may be derived from Berkeley BSD systems, licensed from the University of California. UNIX is a registered trademark in the U.S. and other countries, exclusively licensed through X/Open Company, Ltd. For Netscape Communicator™, the following notice applies: Copyright 1995 Netscape Communications Corporation. All rights reserved.

Sun, Sun Microsystems, the Sun logo, AnswerBook2, docs.sun.com, and Solaris are trademarks, registered trademarks, or service marks of Sun Microsystems, Inc. in the U.S. and other countries. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. in the U.S. and other countries. Products bearing SPARC trademarks are based upon an architecture developed by Sun Microsystems, Inc.

The OPEN LOOK and Sun™ Graphical User Interface was developed by Sun Microsystems, Inc. for its users and licensees. Sun acknowledges the pioneering efforts of Xerox in researching and developing the concept of visual or graphical user interfaces for the computer industry. Sun holds a non-exclusive license from Xerox to the Xerox Graphical User Interface, which license also covers Sun's licensees who implement OPEN LOOK GUIs and otherwise comply with Sun's written license agreements.

**RESTRICTED RIGHTS:** Use, duplication, or disclosure by the U.S. Government is subject to restrictions of FAR 52.227-14(g)(2)(6/87) and FAR 52.227-19(6/87), or DFAR 252.227-7015(b)(6/95) and DFAR 227.7202-3(a).

**DOCUMENTATION IS PROVIDED "AS IS" AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID.**

Copyright 2000 Sun Microsystems, Inc., 901 San Antonio Road • Palo Alto, CA 94303-4900 Etats-Unis. Tous droits réservés.

Ce produit ou document est protégé par un copyright et distribué avec des licences qui en restreignent l'utilisation, la copie, la distribution, et la décompilation. Aucune partie de ce produit ou document ne peut être reproduite sous aucune forme, par quelque moyen que ce soit, sans l'autorisation préalable et écrite de Sun et de ses bailleurs de licence, s'il y en a. Le logiciel détenu par des tiers, et qui comprend la technologie relative aux polices de caractères, est protégé par un copyright et licencié par des fournisseurs de Sun.

Des parties de ce produit pourront être dérivées des systèmes Berkeley BSD licenciés par l'Université de Californie. UNIX est une marque déposée aux Etats-Unis et dans d'autres pays et licenciée exclusivement par X/Open Company, Ltd. La notice suivante est applicable à Netscape Communicator™: Copyright 1995 Netscape Communications Corporation. Tous droits réservés.

Sun, Sun Microsystems, the Sun logo, AnswerBook2, docs.sun.com, et Solaris sont des marques de fabrique ou des marques déposées, ou marques de service, de Sun Microsystems, Inc. aux Etats-Unis et dans d'autres pays. Toutes les marques SPARC sont utilisées sous licence et sont des marques de fabrique ou des marques déposées de SPARC International, Inc. aux Etats-Unis et dans d'autres pays. Les produits portant les marques SPARC sont basés sur une architecture développée par Sun Microsystems, Inc.

L'interface d'utilisation graphique OPEN LOOK et Sun™ a été développée par Sun Microsystems, Inc. pour ses utilisateurs et licenciés. Sun reconnaît les efforts de pionniers de Xerox pour la recherche et le développement du concept des interfaces d'utilisation visuelle ou graphique pour l'industrie de l'informatique. Sun détient une licence non exclusive de Xerox sur l'interface d'utilisation graphique Xerox, cette licence couvrant également les licenciés de Sun qui mettent en place l'interface d'utilisation graphique OPEN LOOK et qui en outre se conforment aux licences écrites de Sun.

**CETTE PUBLICATION EST FOURNIE "EN L'ETAT" ET AUCUNE GARANTIE, EXPRESSE OU IMPLICITE, N'EST ACCORDEE, Y COMPRIS DES GARANTIES CONCERNANT LA VALEUR MARCHANDE, L'APTITUDE DE LA PUBLICATION A REPOUDRE A UNE UTILISATION PARTICULIERE, OU LE FAIT QU'ELLE NE SOIT PAS CONTREFAISANTE DE PRODUIT DE TIERS. CE DENI DE GARANTIE NE S'APPLIQUERAIT PAS, DANS LA MESURE OU IL SERAIT TENU JURIDIQUEMENT NUL ET NON AVENU.**



# Thermal Pad Replacement Procedures

---

Perform these procedures to replace the old exposed thermal pads or the newer wrapped thermal pads on Sun Enterprise™ 10000, 6x00/5x00/4x00/3x00 system and CPU/memory boards. These procedures must be performed by a Sun certified technician.

---

## Related Documentation

Application	Title	Part Number
Service	<i>Sun Enterprise™ 10000, 6x00, 5x00, 4x00, 3x00 System and CPU/Memory Boards Cleaning Guide</i>	806-4561-10

---

## Sun Welcomes Your Comments

Sun is interested in improving its documentation and welcomes your comments and suggestions. You can email your comments to Sun at:

[docfeedback@sun.com](mailto:docfeedback@sun.com)

Please include the part number (806-5605-10) of your document in the subject line of your email.

---

# Thermal Pad Kit Contents

The thermal pad kit contains the following items:

- Thermal Pad Placement Template
- Four Thermal Pads

---

**Note** – Four thermal pads will install on one Sun Enterprise 10000 system board or two Sun Enterprise 6x00/5x00/4x00/3x00 CPU/memory boards.

---

---

# Tools Required

The following tools are necessary to remove, install, and handle the components:

- Phillips #1 screwdriver
- 3/32 Hex driver
- Grounding wrist strap
- Padded ESD mat

---

# Remove Selected Components

1. **Attach a grounding wrist strap.**
2. **Remove the system or CPU/memory board and place it on the padded ESD mat.**



---

**Caution** – The heatsinks on the processor modules can be hot. Remove the processor modules carefully or permit them to cool to avoid burns.

---

3. **Remove five 3/32-inch hex-head screws from the processor module compression connectors.**

- 4. Lift the processor module straight from the system or CPU/memory board mating surface and the single standoff (for Sun Enterprise 6x00/5x00/4x00/3x00 CPU/memory boards only) that locks the module to the board.**

Use pressure applied with fingers to assist in removing the module from the standoff.

---

**Note** – The standoff is present only on Sun Enterprise 6x00/5x00/4x00/3x00 CPU/memory boards.

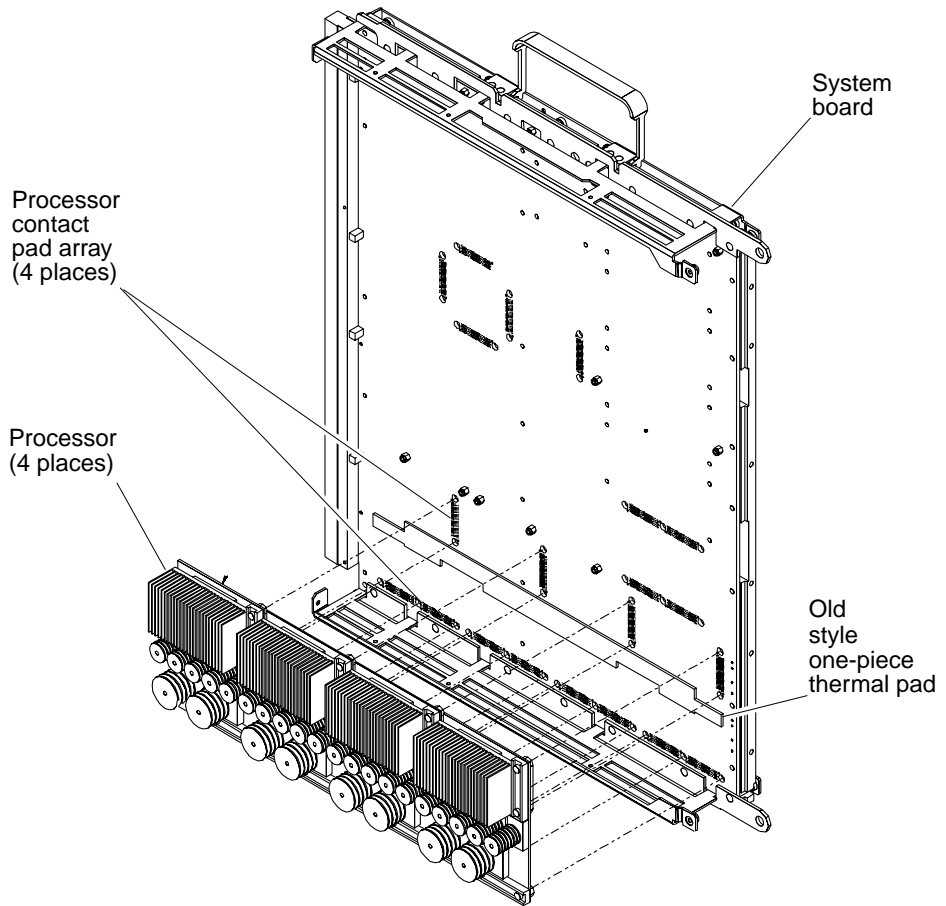
---

- 5. Place the processor module on the padded ESD mat.**
- 6. Repeat Step 3 through Step 5 to remove all modules present.**

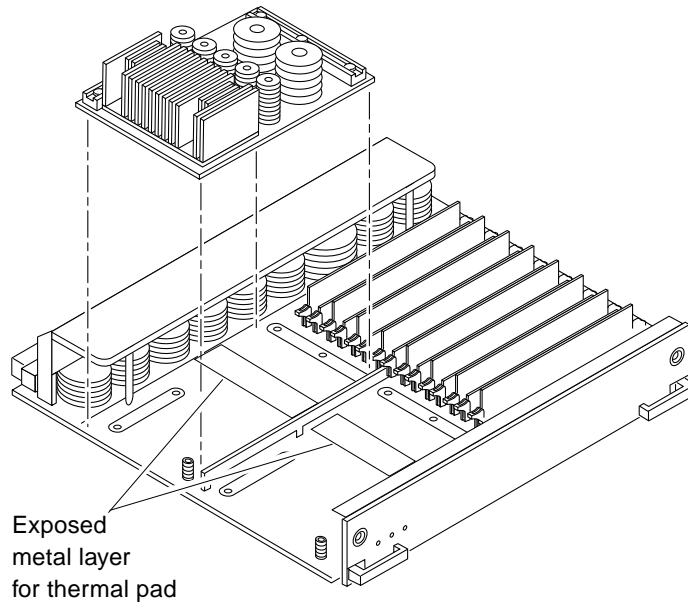
---

**Note** – If the old style exposed thermal pad is being replaced on the Sun Enterprise 10000 system board by newer individual wrapped thermal pads, then all four processor modules must be removed.

---



**FIGURE 1** Sun Enterprise 10000 System Board



**FIGURE 2** Sun Enterprise 6x00, 5x00, 4x00, 3x00, CPU/Memory Board

---

## Remove the Old Thermal Pad(s)

- 1. Peel away the old thermal pad or pads from the exposed metal layer on the system or CPU/memory board.**

Discard the removed thermal pads.

- 2. Clean the silicone buildup from the back of the processors and the system or CPU/memory board surface. Clean the connector pads and contact pins.**

Use the SunShine Cleaning kit and refer to the *Sun Enterprise 10000, 6x00, 5x00, 4x00, 3x00 System and CPU/Memory Boards Cleaning Guide*.

---

# Install the New Thermal Pads

---

**Note** – The Sun Enterprise 10000 system board requires the use of the template to install the thermal pads in the proper location on the exposed metal layer.

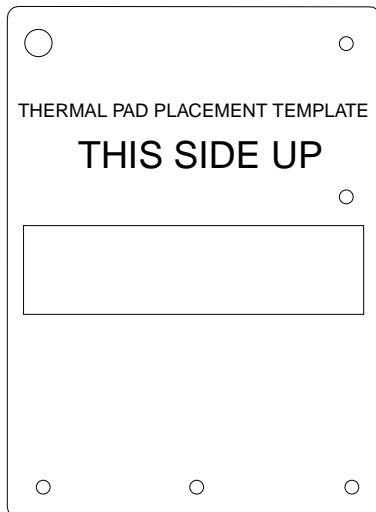
---

1. **Install the thermal pad placement template on the Sun Enterprise 10000 system board in place of the processor (FIGURE 3).**

The side to face up is marked on the template and the holes align with the fastener standoffs on the system board.

2. **Peel away the paper strip from the adhesive on the back of the new thermal pads.**
3. **Center the thermal pad in the opening of the template for a Sun Enterprise 10000 system board (FIGURE 3). Center and place each thermal pad directly on the exposed metal layer strip of the Sun Enterprise 6x00/5x00/4x00/3x00 CPU/memory board.**

Apply pressure across the pad to ensure the adhesive on the pad makes complete contact with the metal layer.



**FIGURE 3** Sun Enterprise E10000 Thermal Pad Placement Template



4. Repeat Step 1 through Step 3 as needed until all processor sites have the wrapped thermal pad installed.

For subsequent thermal pads, allow the template to rest over the adjacent installed thermal pads.

---

## Install the Processor Modules

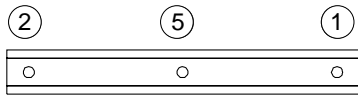
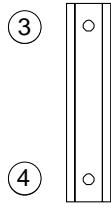
1. Hold the processor module by the edges and align it over the fastener holes.  
Make sure the thermal pad placement template is removed from Sun Enterprise 10000 system boards.
2. Rest the module on the board standoff (for Sun Enterprise 6x00/5x00/4x00/3x00 CPU/memory boards only) and align the compression connectors with the screws.  
Firmly but gently press the module straight down until the standoff post snaps into place and the module connectors are fully seated.

---

**Note** – The standoff is present only on Sun Enterprise 6x00/5x00/4x00/3x00 CPU/memory boards.

---

3. Engage all captive connector screws clockwise with the 3/32 in. hex head torque driver.
  - a. Tighten the captive connector screws in the sequence shown in FIGURE 4 until they touch the metal plate.
  - b. Tighten each captive connector screw in the sequence shown in FIGURE 4 an additional 1/2 turn.
  - c. Tighten the captive connector screws to a final torque of 0.68 Nm (6.0 inch pounds) in the pattern shown in FIGURE 4.



**FIGURE 4** Tightening Pattern for the Processor Module

**4. Install the system or CPU/memory board.**