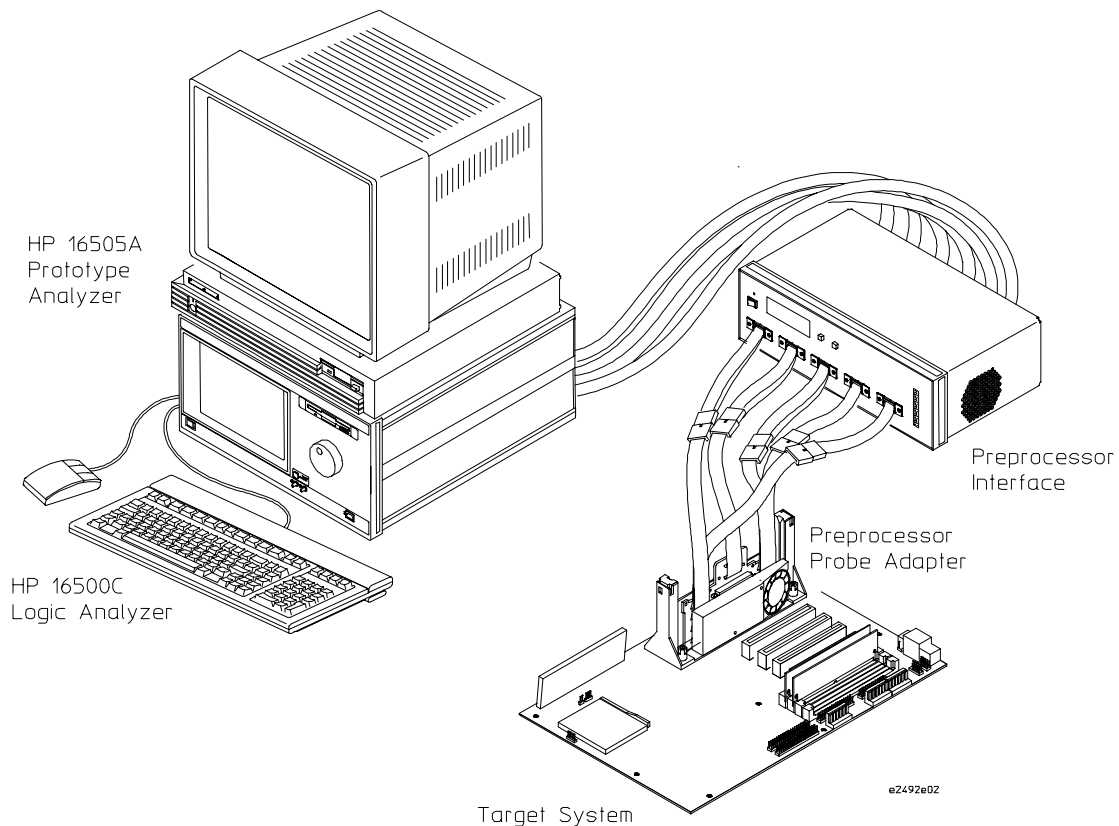

Installation Guide

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December 1997

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HP E2492A Probe Adapter for the Intel Deschutes Processor

Installation at a Glance



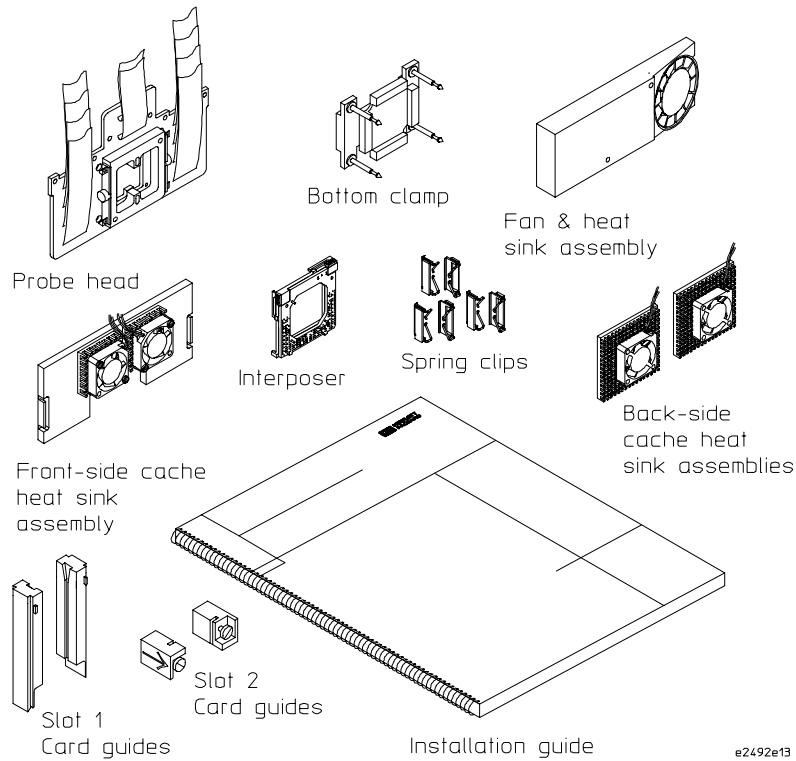
This Installation Guide explains how to install Hewlett-Packard's probe adapter for Intel Deschutes processors. This probing system provides a quick and reliable connection from a Deschutes processor to the HP E2487A Preprocessor Interface. The probe adapter contains equipment and procedures for connecting to both slot 1 and slot 2 Deschutes processors.

Installation Overview

- Remove the processor card from the S.E.C. cartridge.
- Install the probe adapter assembly onto the processor card.
- Insert the processor card back onto the target system.
- Connect the preprocessor interface to the probe adapter.

Equipment Supplied

- Bottom clamp
- Interposer
- Probe head
- Fan and heat sink assembly
- Front-side cache heat sink assembly (required for slot 2 processors)
- Back-side cache heat sink assembly (required for slot 2 processors)
- Slot 1 card guides (2)
- Slot 2 card guides (2)
- Spring clips (6)
- This Installation Guide



Equipment Supplied

Minimum Equipment Required

- A target system with the processor card removed from the S.E.C. cartridge. Detailed instructions for disassembling the S.E.C. cartridge can be found in Intel's *S.E.C. Cartridge Disassembly Application Note*.

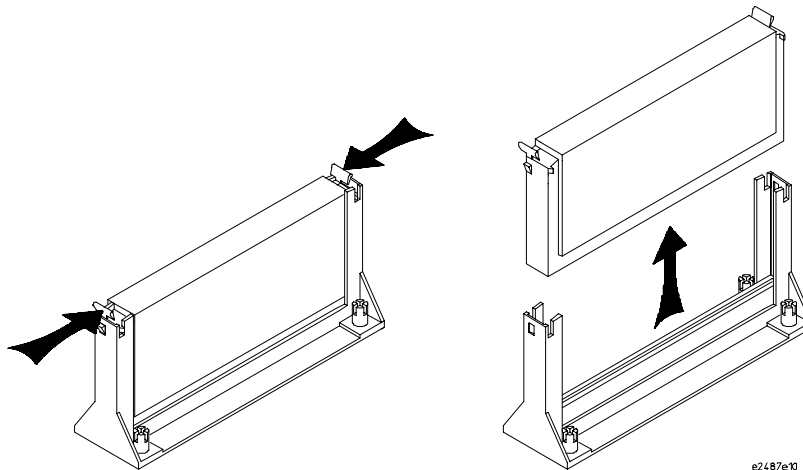
To disassemble the slot 1 S.E.C. cartridge

The slot 1 S.E.C. cartridge consists of a thermal plate, skirt, cover, and processor card. The thermal plate, skirt, and cover must be removed to access the processor card.

Detailed instructions for disassembling the slot 1 S.E.C. cartridge can be obtained from Intel. The following procedures are only intended as an overview.

Disassembling the S.E.C. cartridge voids the Intel warranty. Also, there is a high probability that the cover and thermal plate will be destroyed during disassembly, and a small possibility that the processor card will be destroyed. The S.E.C. cartridge is not intended to be reassembled after disassembly.

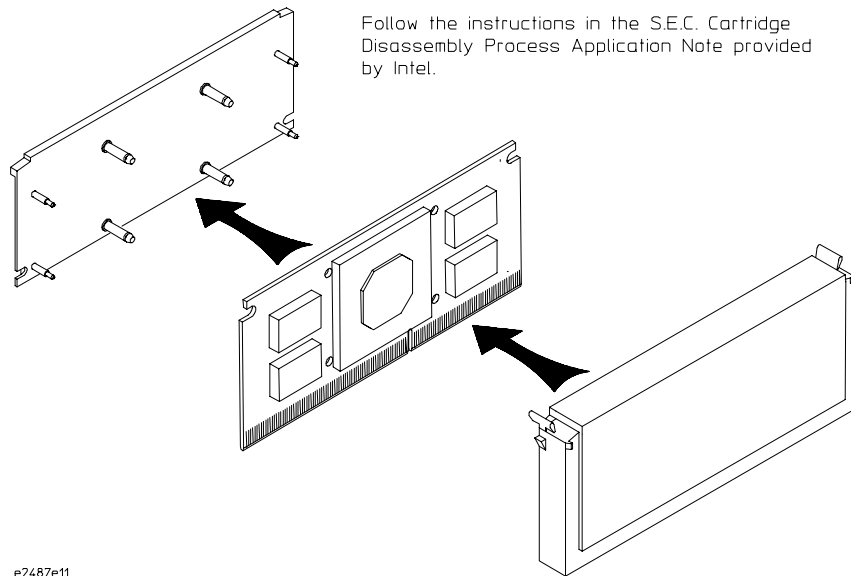
- 1 Remove the slot 1 S.E.C. cartridge from the target system by pushing in the two tabs on top of the cartridge, then pulling the cartridge up.



Removing the S.E.C. Cartridge

To disassemble the slot 1 S.E.C. cartridge

- Using the instructions in the Intel *S.E.C. Cartridge Disassembly Application Note*, insert a 1/8" small flat blade screwdriver between the cover and the thermal plate, next to one of the four barbed posts located at each corner of the thermal plate. Twist the screwdriver until the barbed post pops free. Repeat this procedure for the other barbed post at the same end of the cartridge, then repeat for the other end of the cartridge.



Disassembling the S.E.C. Cartridge

- Using the instructions in the Intel *S.E.C. Cartridge Disassembly Application Note*, separate the tabs on the thermal plate away from the locator pins with fine-tip round nose pliers. Remove the spring retainer clips, then separate the thermal plate from the processor card.
- Remove any excess thermal grease from the processor heat spreader.

CAUTION

Do not allow any thermal grease to get on the pads on top of the microprocessor. The thermal grease could create an open electrical connection between the probe head and the microprocessor.

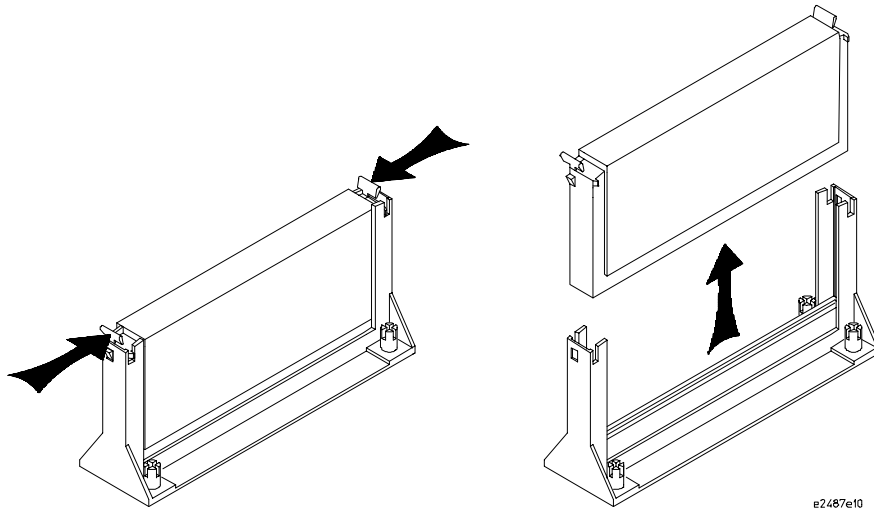
To disassemble the slot 2 S.E.C. cartridge

The slot 2 S.E.C. cartridge consists of a thermal plate, skirt, cover, and processor card. The thermal plate, skirt, and cover must be removed to access the processor card.

Detailed instructions for disassembling the slot 2 S.E.C. cartridge can be obtained from Intel. The following procedures are only intended as an overview.

Disassembling the S.E.C. cartridge voids the Intel warranty. Also, there is a high probability that the cover and thermal plate will be destroyed during disassembly, and a small possibility that the processor card will be destroyed. The S.E.C. cartridge is not intended to be reassembled after disassembly.

- 1 Remove the slot 2 S.E.C. cartridge from the target system by pushing in the two tabs on top of the cartridge, then pulling the cartridge up.

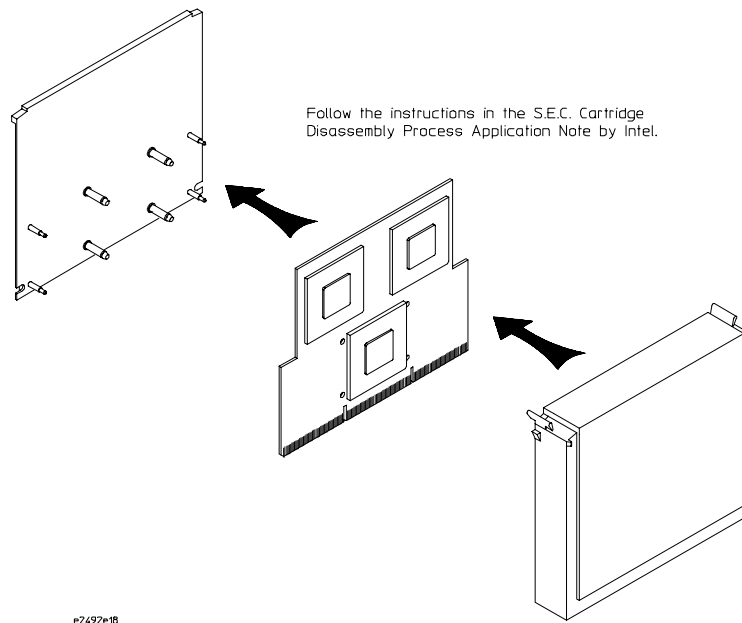


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Removing the S.E.C. Cartridge

To disassemble the slot 2 S.E.C. cartridge

- Using the instructions in the Intel *S.E.C. Cartridge Disassembly Application Note*, insert a 1/8" small flat blade screwdriver between the cover and the thermal plate, next to one of the four barbed posts located at each corner of the thermal plate. Twist the screwdriver until the barbed post pops free. Repeat this procedure for the other barbed post at the same end of the cartridge, then repeat for the other end of the cartridge.



Disassembling the S.E.C. Cartridge

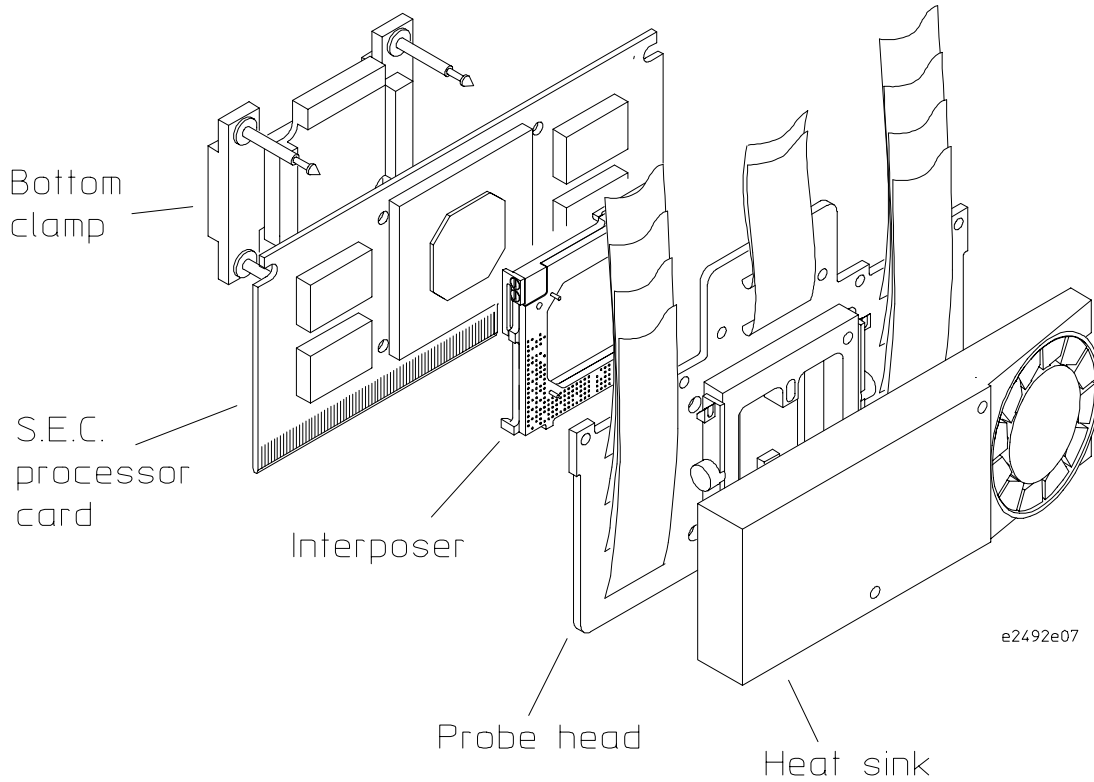
- Using the instructions in the Intel *S.E.C. Cartridge Disassembly Application Note*, separate the tabs on the thermal plate away from the locator pins with fine-tip round nose pliers. Remove the spring retainer clips, then separate the thermal plate from the processor card.
- Remove any excess thermal grease from the processor heat spreader.

CAUTION

Do not allow any thermal grease to get on the pads on top of the microprocessor. The thermal grease could create an open electrical connection between the probe head and the microprocessor.

To connect to the slot 1 Deschutes target system

The Deschutes probe adapter connects to the slot 1 processor card once the processor card has been removed from the S.E.C. cartridge.



Slot 1 Connection Overview

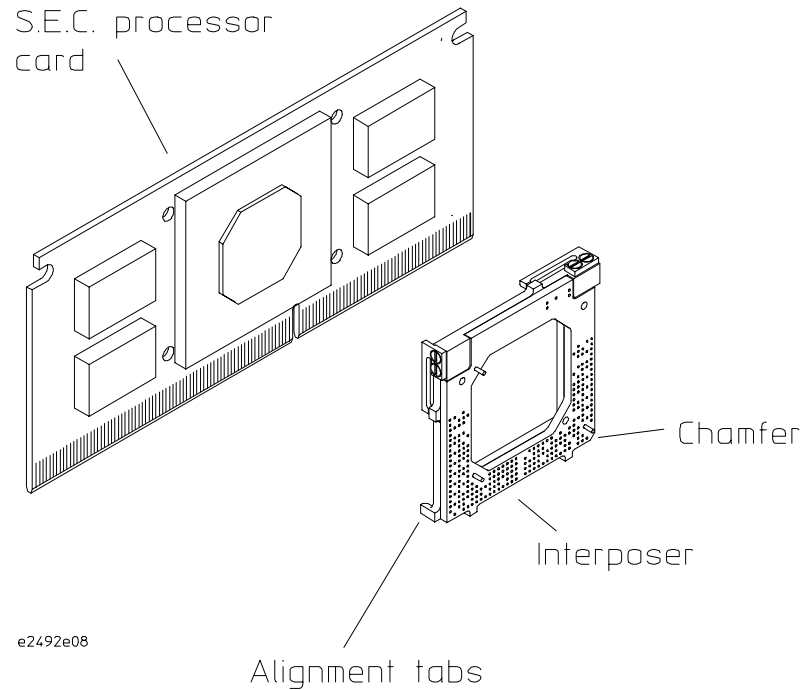
To connect to the slot 1 Deschutes target system

- 1 To prevent equipment damage, remove power from the target system.
- 2 Install the interposer on the microprocessor on the processor card.

The alignment tabs on the interposer aid in making proper alignment. Ensure that pin A1 is oriented correctly (see figure below).

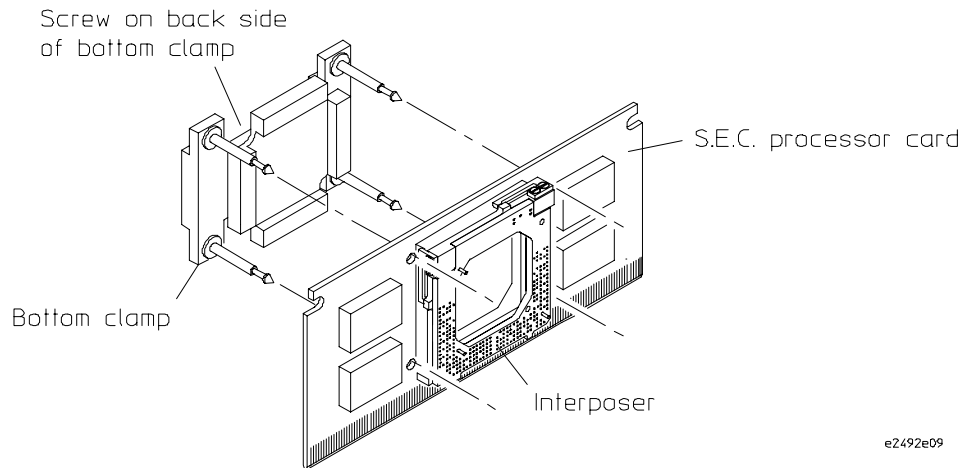
CAUTION

Serious damage to the target system or preprocessor interface can result from incorrect connection. Note the position of pin A1 on the preprocessor interposer and on the microprocessor before making any connection.



Aligning the Probe End

- 3 Loosen the screw on the underside of the bottom clamp.
- 4 Work the four clamp posts of the bottom clamp through the holes in the processor card.

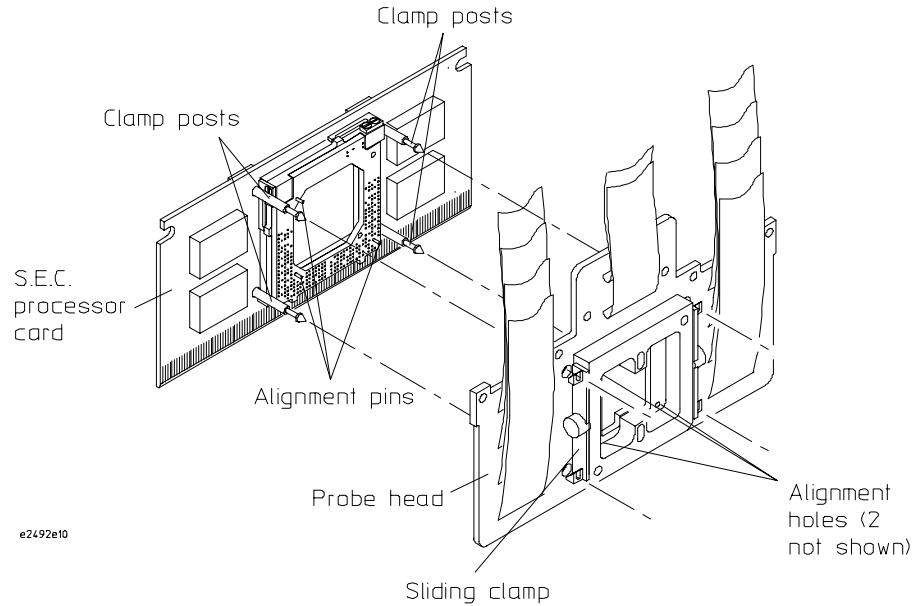


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Aligning the Slot 1 Clamp Posts

To connect to the slot 1 Deschutes target system

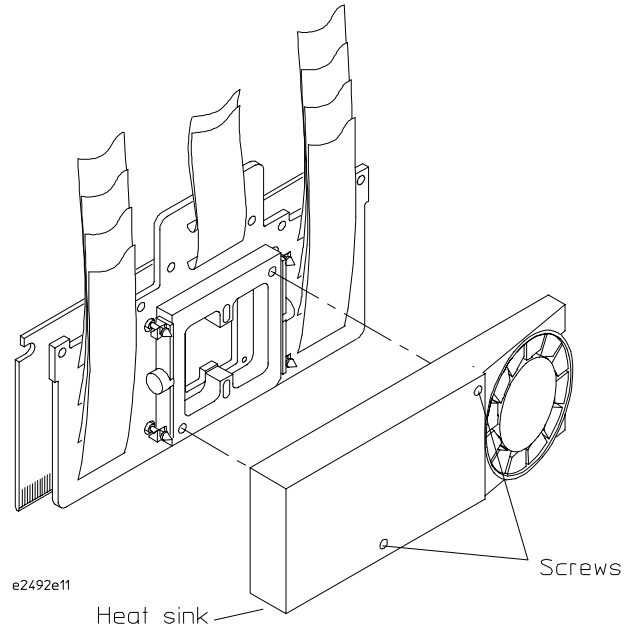
- 5 Place the probe head onto the interposer using the three alignment pins of the interposer and the three alignment holes of the probe head as shown in the figure below.



Alignment Pins Placement

- 6 Move the top sliding clamp forward on the probe end until it holds the clamp posts of the bottom clamp.
- 7 Tighten the screw on the underside of the bottom clamp.
If the screw is too loose, the probe head will not make good contact with the microprocessor pins.

- 8 Insert the heat sink into the rectangular opening on top of the preprocessor interface. Tighten the two screws until the heat sink is snug. Do not over tighten.



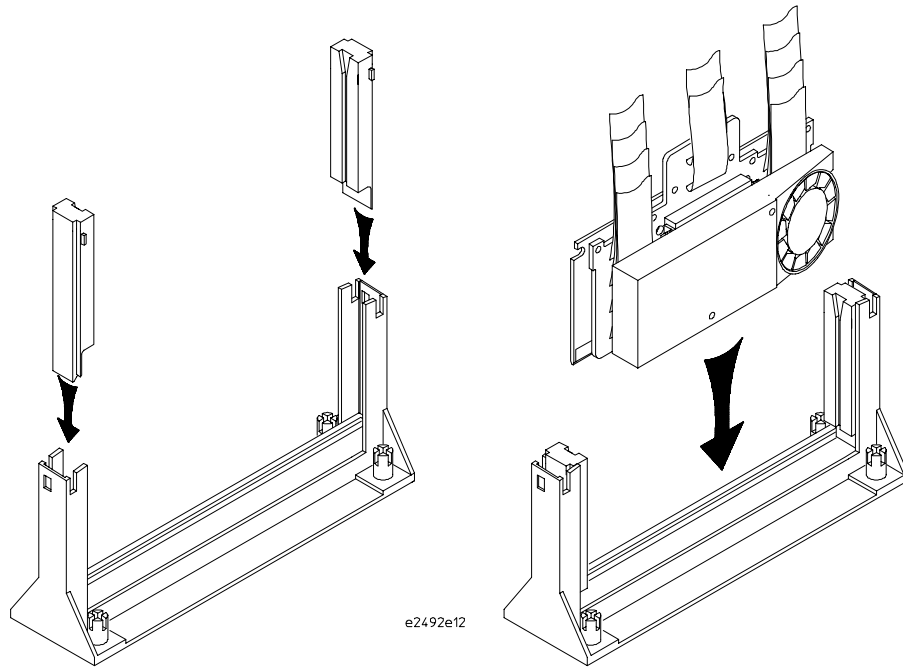
Connecting the Heat Sink

- 9 Connect the heat sink fan to a +12 Volt power source.
The black wire is ground, and the red wire is positive. To protect your target system, ensure the fan is running whenever the target system is powered.

CAUTION

This fan only operates on 12 Vdc. The remaining fans require 5 Vdc. Failure to connect the fans to the appropriate power source will damage the fans, and could cause overheating.

- 10 Slide the two card guides into the ends of the S.E.C. slot, then slide the assembled Deschutes probe package into the slot until the connector is fully seated.

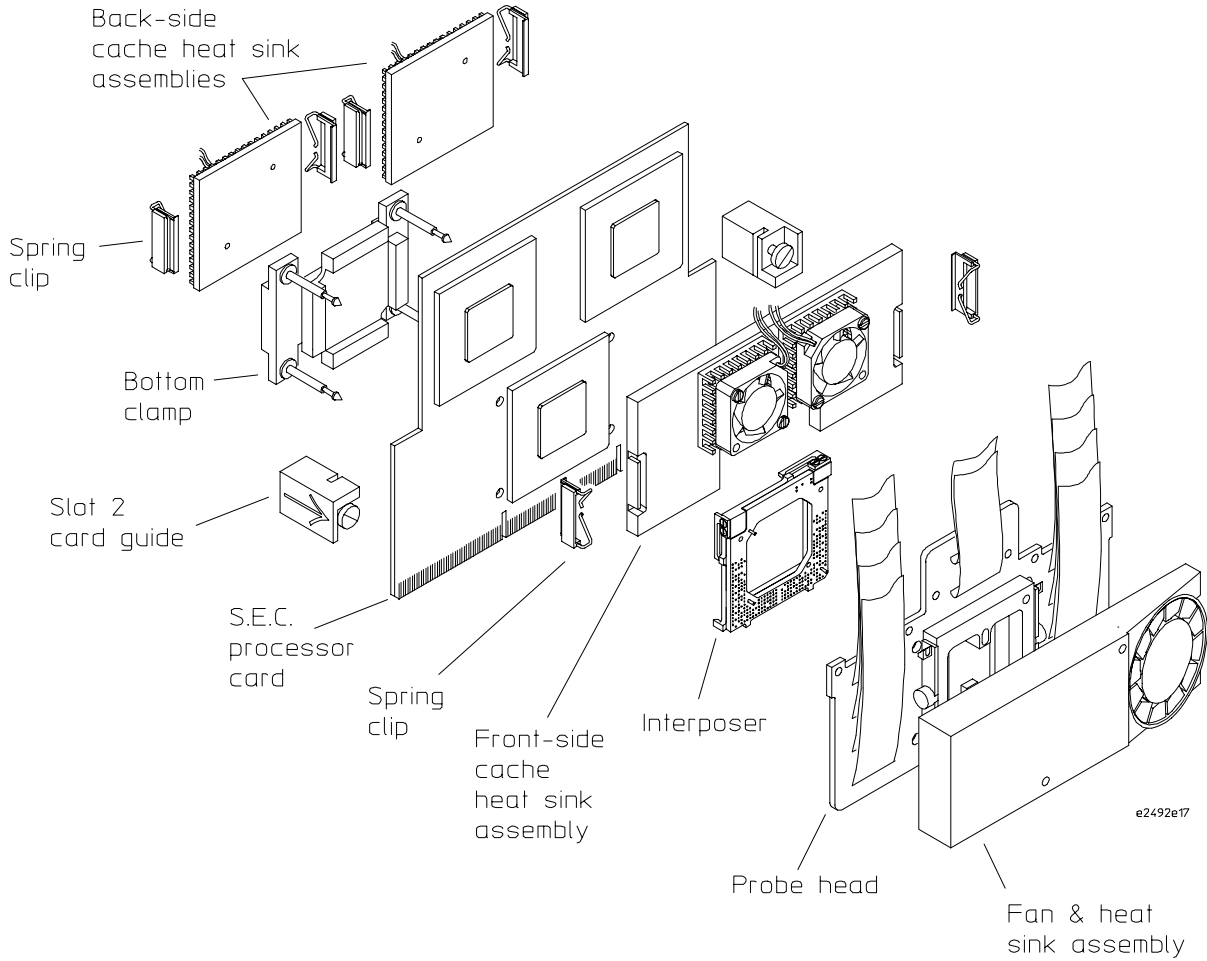


Slot 1 Final Connection Procedure

You are now ready to connect the Deschutes probe to the HP E2487A Preprocessor Interface. Refer to the *HP E2487A Preprocessor Interface User's Guide* for connection information.

To connect to the slot 2 Deschutes target system

The Deschutes probe adapter connects to the slot 2 processor card once the processor card has been removed from the S.E.C. cartridge.



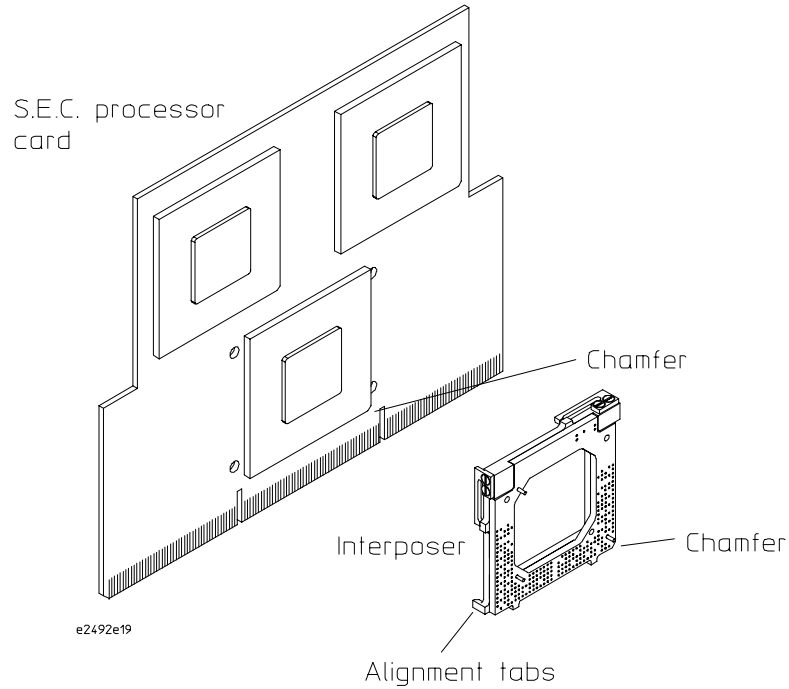
Slot 2 Connection Overview

To connect to the slot 2 Deschutes target system

- 1 To prevent equipment damage, remove power from the target system.**
- 2 Install the interposer on the microprocessor on the processor card.**
The alignment tabs on the interposer aid in making proper alignment.
Ensure that the chamfered corner is oriented correctly (see figure below).

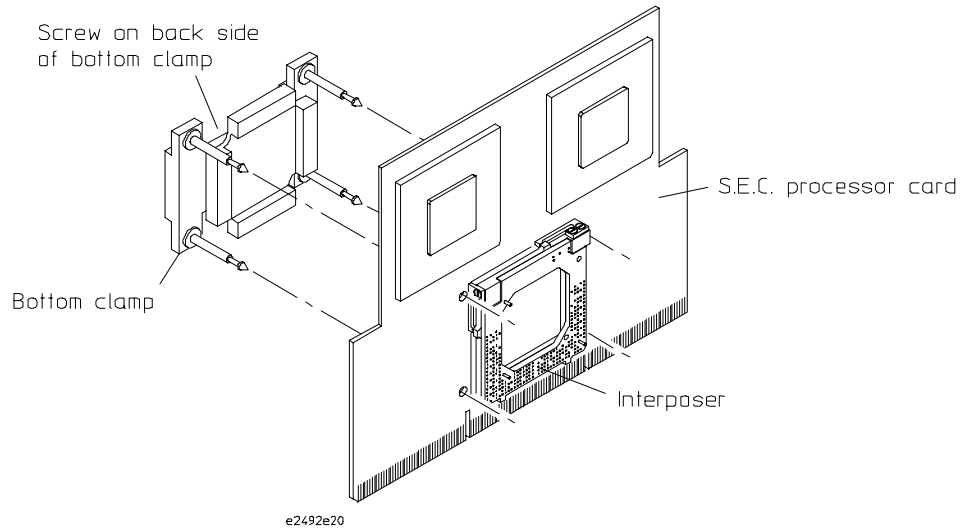
CAUTION

Serious damage to the target system or preprocessor interface can result from incorrect connection. Note the position of the chamfered corner on the preprocessor interposer before making any connection.



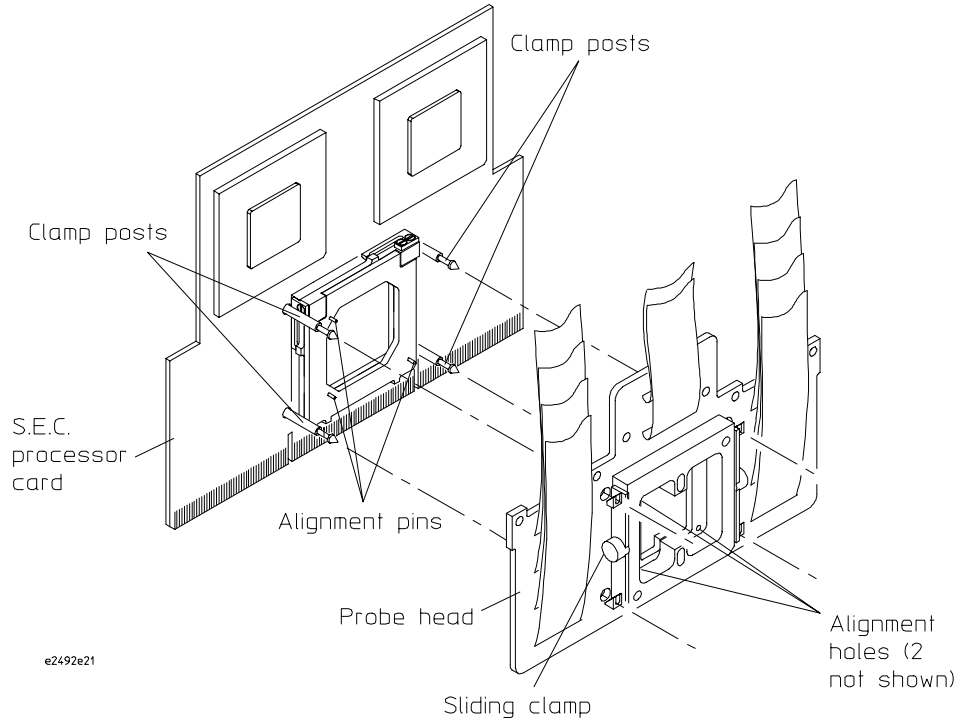
Aligning the Probe End

- 3 Loosen the screw on the underside of the bottom clamp.
- 4 Work the four clamp posts of the bottom clamp through the holes in the processor card.



Aligning the Slot 2 Clamp Posts

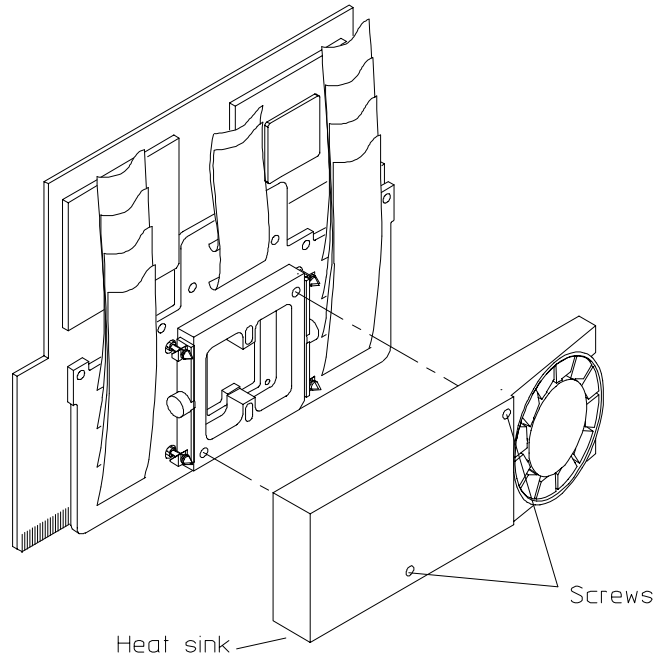
- 5 Place the probe head onto the interposer using the three alignment pins of the interposer and the three alignment holes of the probe head as shown in the figure below.



Alignment Pins Placement

- 6 Move the top sliding clamp forward on the probe end until it holds the clamp posts of the bottom clamp.
- 7 Tighten the screw on the underside of the bottom clamp.
If the screw is too loose, the probe head will not make good contact with the microprocessor pins.

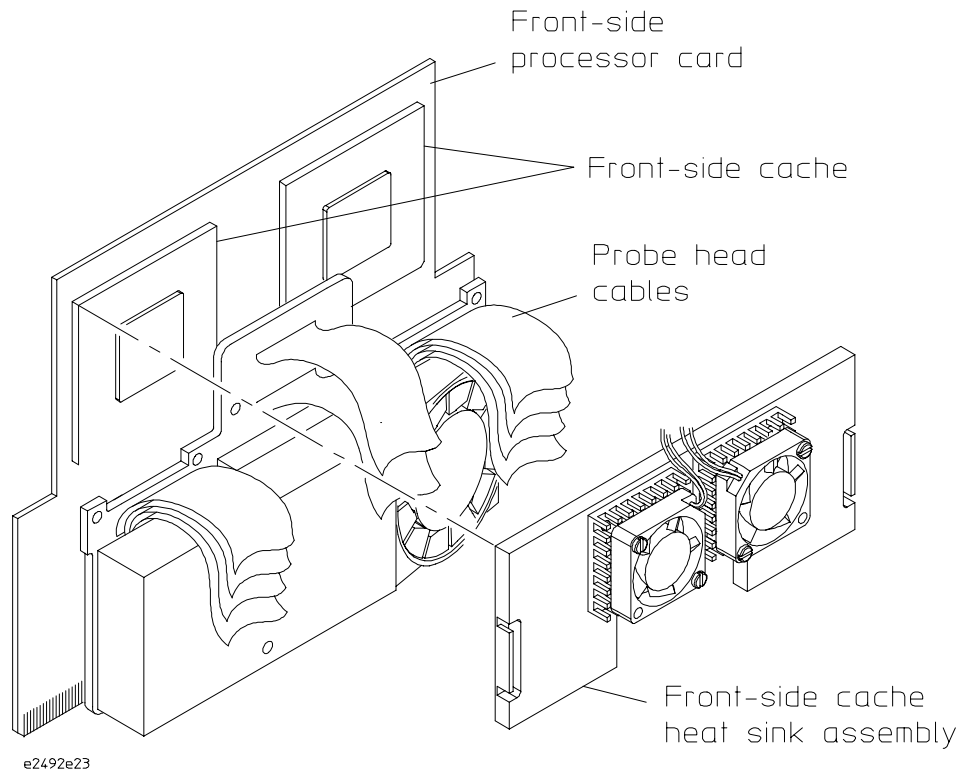
- 8 Insert the heat sink into the rectangular opening on top of the preprocessor interface. Tighten the two screws until the heat sink is snug. Do not over tighten.



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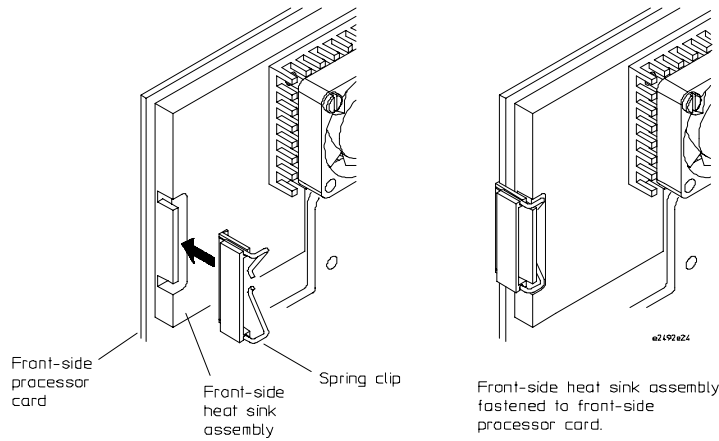
Connecting the Heat Sink

- 9 Move the probe head cables so the heat sink assembly fits against the front-side cache on the processor card.



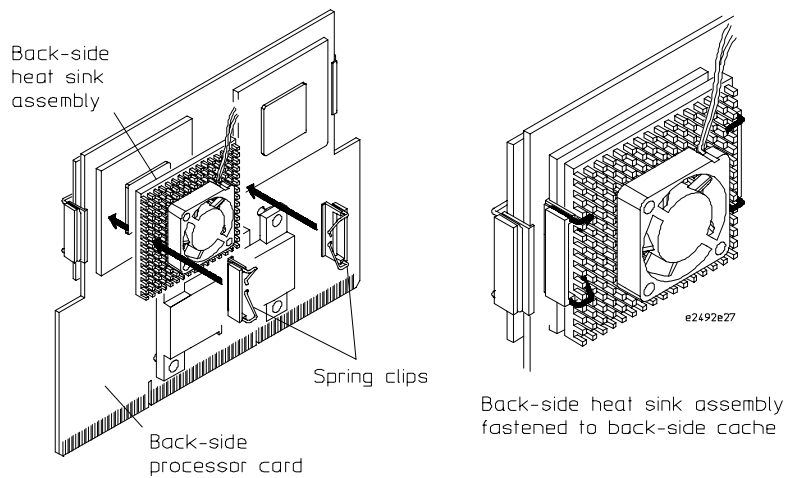
Connecting the Heat Sink Assembly to the Processor Card

- 10** Use the spring clamps to fasten the front-side cache heat sink assembly to the front-side cache.



Fastening the Front-Side Cache Heat Sink Assembly to the Front-Side Cache

- 11** Use the spring clamps to fasten the back-side cache heat sink assembly to the back-side cache.



Fastening the Back-Side Cache Heat Sink Assembly to the Back-Side Cache

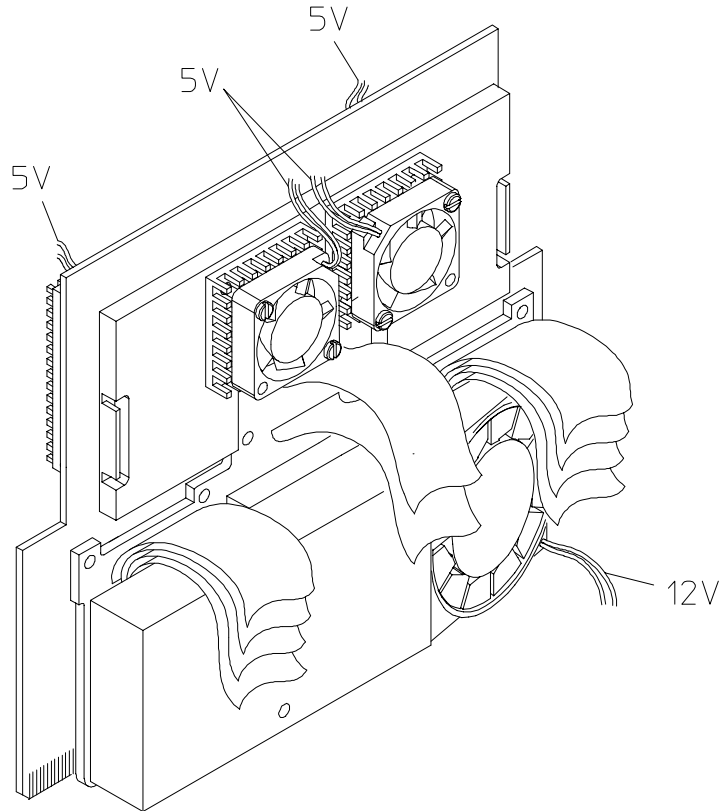
- 12** Repeat step 11 for the second back-side cache heat sink.

13 Connect the heat sink fan to the appropriate power sources.

In the illustration below, the top four power leads require +5 Volts and the bottom power lead pair requires +12 Volts. For all lead sets, the black wire is ground, and the red wire is positive. To protect your target system, ensure the fans are running whenever the target system is powered.

CAUTION

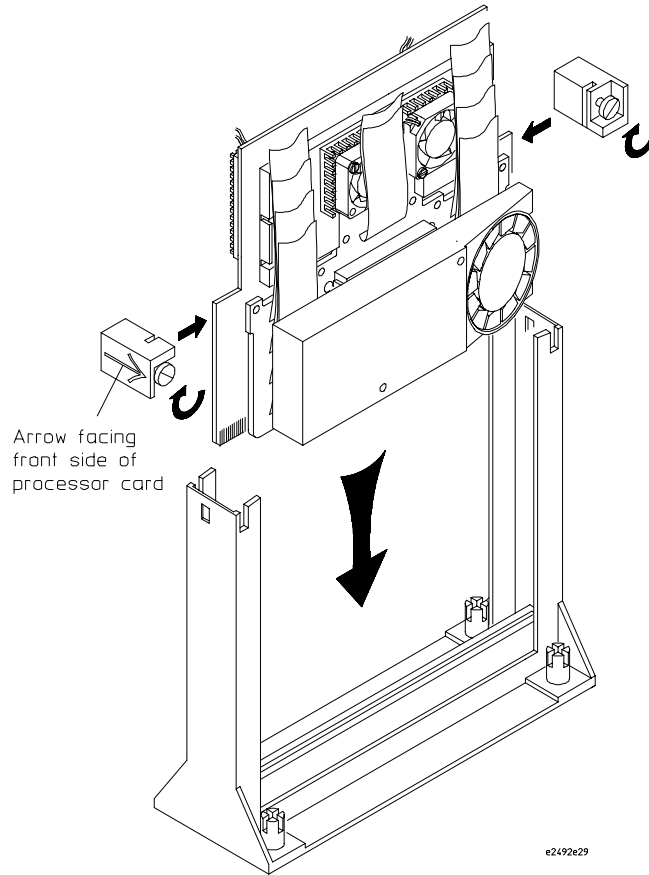
Failure to connect the fans to the appropriate power source will damage the fans, and could cause overheating.



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Slot 2 Heat Sink Power Requirements

- 14 Loosen the screws on the two Slot 2 card guides. Attach the card guides to the processor card and tighten the screws. Slide the assembly into the ends of the S.E.C. slot until the connector is fully seated.

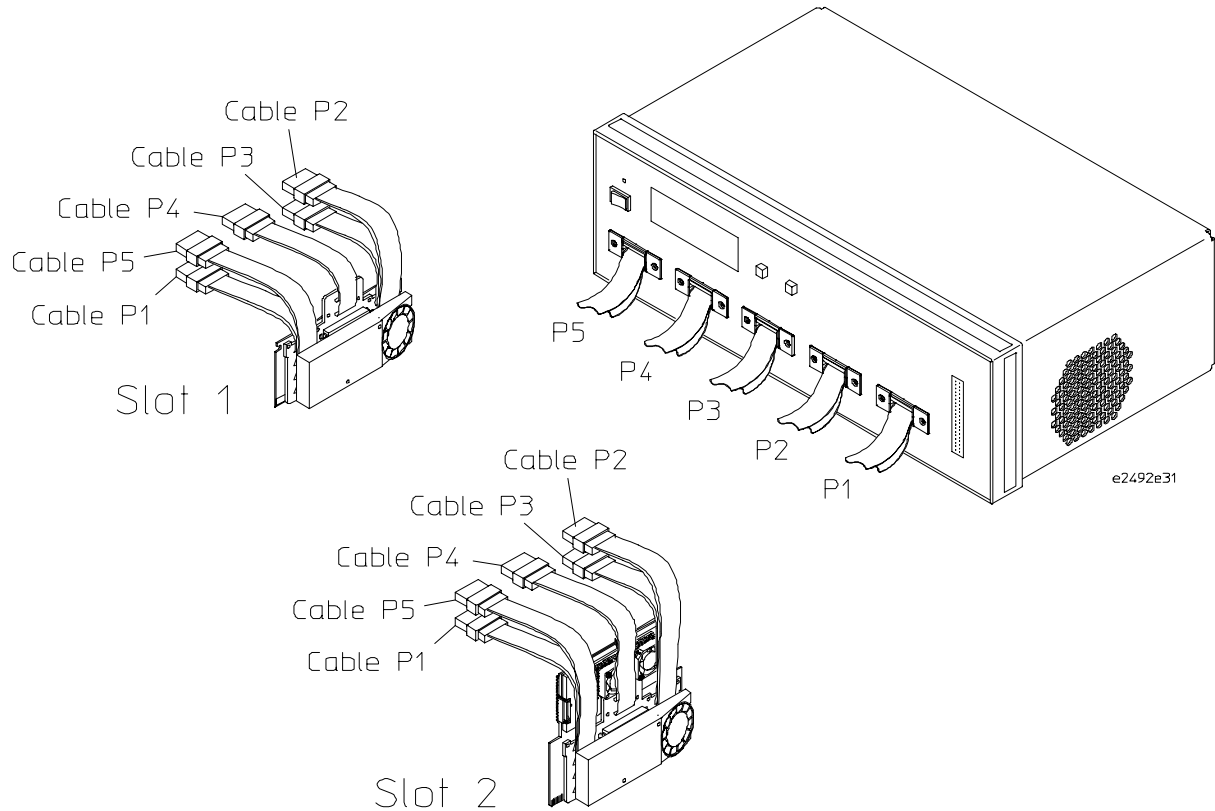


Sliding the Assembled Deschutes Probe Package into the Slot

You are now ready to connect the Deschutes probe to the HP E2487A Preprocessor Interface. Refer to the *HP E2487A Preprocessor Interface User's Guide* for connection information.

To connect the probe adapter to the HP E2487A Preprocessor Interface

The probe adapter has five high-density connectors, labeled Cable P1 through Cable P5. The HP E2487A Preprocessor Interface also has five high-density cabled connectors, labeled P1 through P5. Connect the probe adapter cables to the correspondingly-numbered preprocessor cables.



Connect the Probe Adapter to the HP E2487A Preprocessor Interface

Power requirements

The probe adapter draws a maximum 100 mA @ 5V, which is supplied by the logic analyzer.

CAT I, Pollution degree 2.

Cleaning

Remove any dust or debris from the probe adapter with precision dusting cleaner (otherwise known as inert dusting gas or compressed air).

Replaceable parts

The repair strategy for this probe is product replacement. However, the following table lists some mechanical parts that may be replaced if they are damaged or lost. Contact your nearest Hewlett-Packard Sales Office for further information on servicing the board.

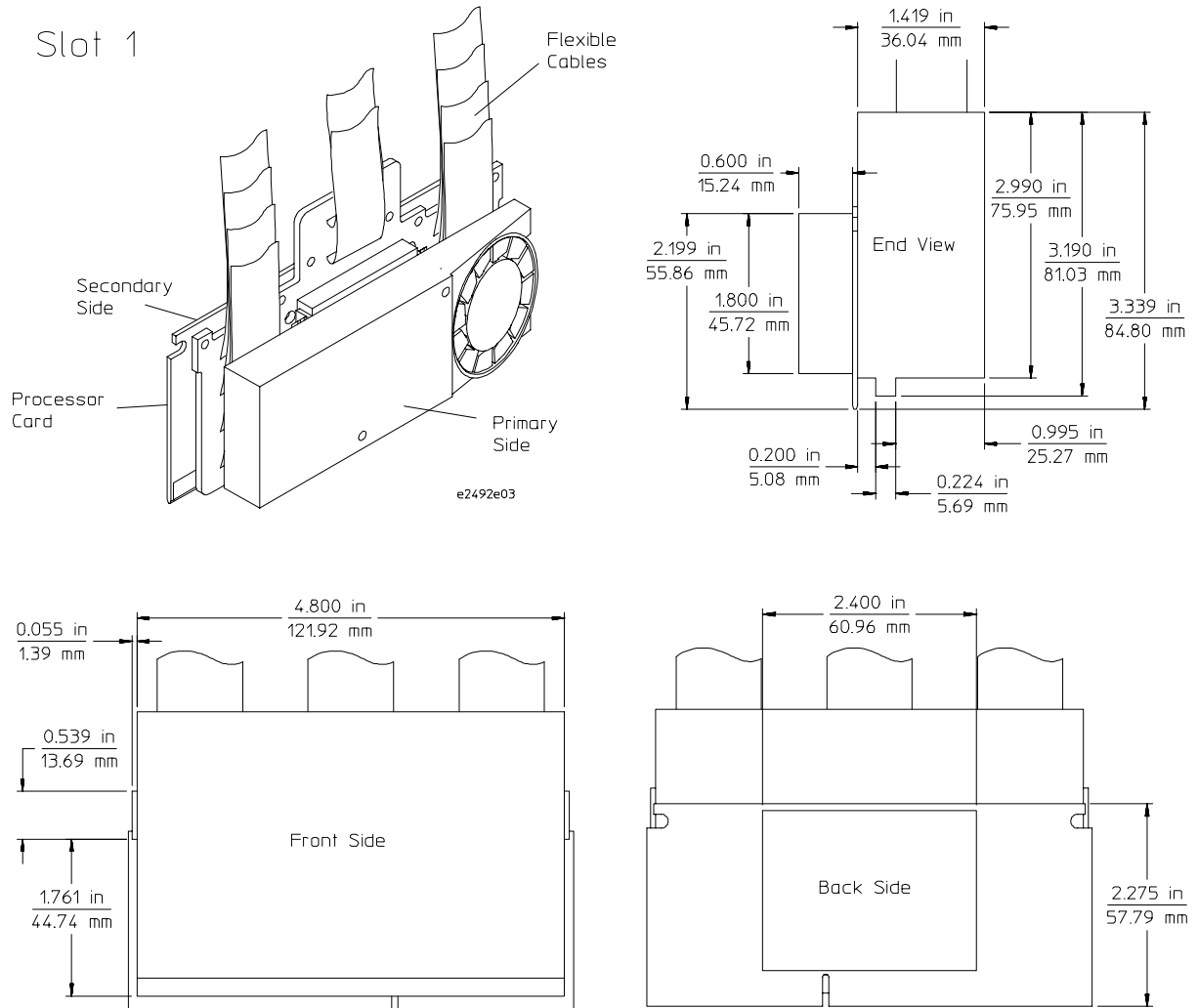
Exchange assemblies are available when a repairable assembly is returned to Hewlett-Packard. These assemblies have been set up on the "Exchange Assembly" program. This allows you to exchange a faulty assembly with one that has been repaired, calibrated, and performance verified by the factory. The cost is significantly less than that of a new assembly.

Replaceable Parts

HP Part Number	Description
E2492-60001	Probe Head
E2466-61201	Bottom Clamp
E2492-60002	Interposer
E2492-68501	Fan and Heat Sink Assembly
E2492-61101	Front-side Cache Heat Sink Assembly (slot 2 only)
E2492-61102	Back-side Cache Heat Sink Assembly (slot 2 only)
E2464-23101	Accessory Kit (includes card guides and spring clamps)

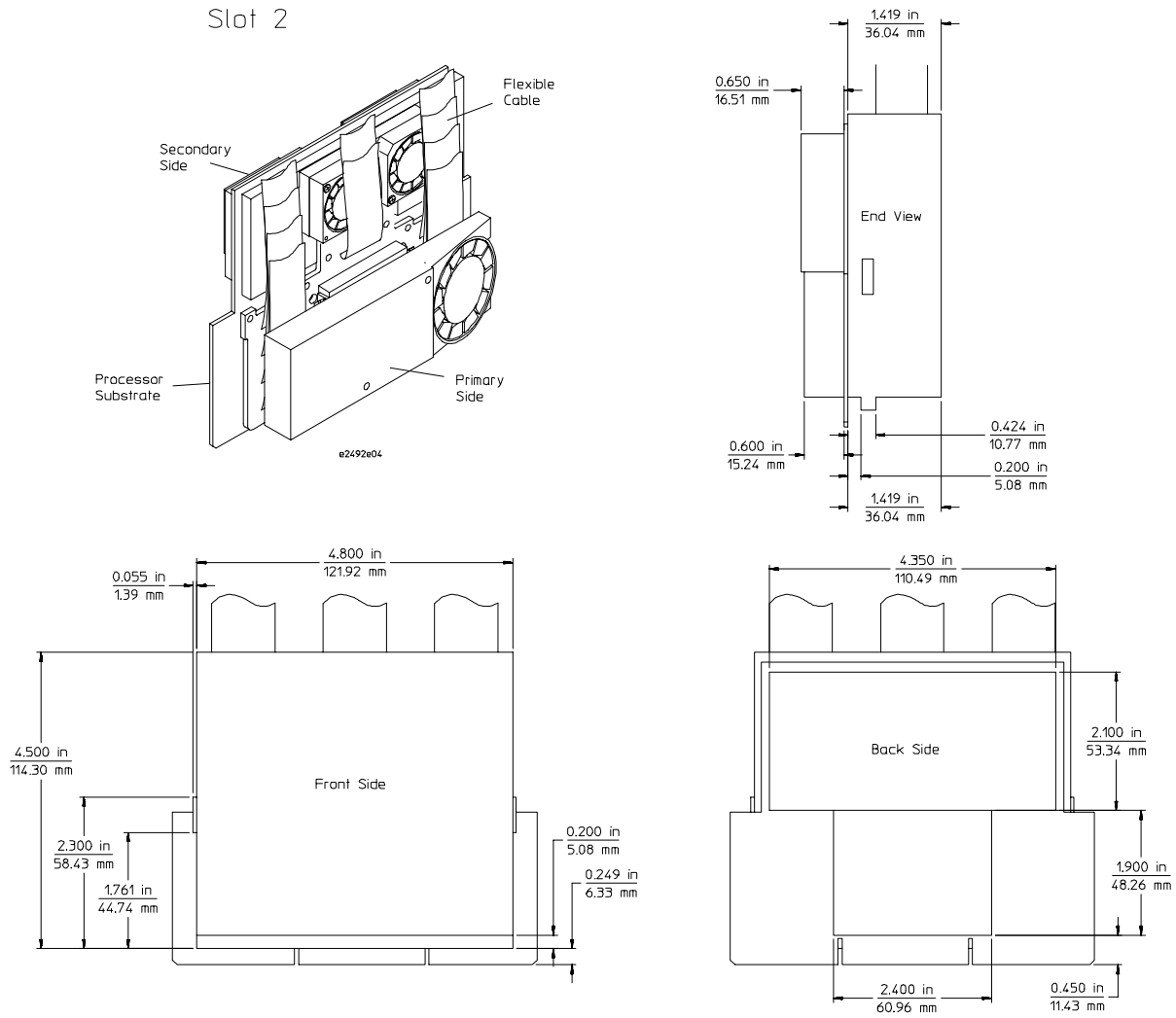
Probe dimensions (slot 1)

The figure below gives the dimensions for the slot 1 Deschutes Probe Adapter Assembly. The dimensions are listed in inches and millimeters.



Probe dimensions (slot 2)

The figure below gives the dimensions for the slot 2 Deschutes Probe Adapter Assembly. The dimensions are listed in inches and millimeters.



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Safety

This apparatus has been designed and tested in accordance with IEC Publication 348, Safety Requirements for Measuring Apparatus, and has been supplied in a safe condition. This is a Safety Class I instrument (provided with terminal for protective earthing). Before applying power, verify that the correct safety precautions are taken (see the following warnings). In addition, note the external markings on the instrument that are described under "Safety Symbols."

Warning

- Service instructions are for trained service personnel. To avoid dangerous electric shock, do not perform any service unless qualified to do so. Do not attempt internal service or adjustment unless another person, capable of rendering first aid and resuscitation, is present.
- Whenever it is likely that the ground protection is impaired, you must make the instrument inoperative and secure it against any unintended operation.
- Do not operate the instrument in the presence of flammable gasses or fumes. Operation of any electrical instrument in such an environment constitutes a definite safety hazard.
- Do not install substitute parts or perform any unauthorized modification to the instrument.

Safety Symbols



Instruction manual symbol: the product is marked with this symbol when it is necessary for you to refer to the instruction manual in order to protect against damage to the product.



Hazardous voltage symbol.



Earth terminal symbol: Used to indicate a circuit common connected to grounded chassis.

WARNING

The Warning sign denotes a hazard. It calls attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in personal injury. Do not proceed beyond a Warning sign until the indicated conditions are fully understood and met.

CAUTION

The Caution sign denotes a hazard. It calls attention to an operating procedure, practice, or the like, which, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the product. Do not proceed beyond a Caution symbol until the indicated conditions are fully understood or met.

Product Warranty

This Hewlett-Packard system product is warranted against defects in material and workmanship for a period of one year from date of purchase. During the warranty period, Hewlett-Packard Company will, at its option, either repair or replace products that prove to be defective. Products must be returned to a service facility designated by HP.

For products returned to Hewlett-Packard for warranty service, the Buyer shall prepay shipping charges to Hewlett-Packard and Hewlett-Packard shall pay shipping charges to return the product to the Buyer. However, the Buyer shall pay all shipping charges, duties, and taxes for products returned to Hewlett-Packard from another country.

Hewlett-Packard warrants that its software and firmware designated by Hewlett-Packard for use with an instrument will execute its programming instructions when properly installed on that instrument.

Hewlett-Packard does not warrant that the operation of the instrument software, or firmware will be uninterrupted or error free.

Limitation of Warranty

The foregoing warranty shall not apply to defects resulting from improper or inadequate maintenance by the Buyer, Buyer-supplied software or interfacing, unauthorized modification or misuse, operation outside of the environmental specifications for the product, or improper site preparation or maintenance.

No other warranty is expressed or implied. Hewlett-Packard specifically disclaims the implied warranties of

merchantability or fitness for a particular purpose.**Exclusive Remedies**

The remedies provided herein are the buyer's sole and exclusive remedies. Hewlett-Packard shall not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory.

Assistance

Product maintenance agreements and other customer assistance agreements are available for Hewlett-Packard products.

For any assistance, contact your nearest Hewlett-Packard Sales Office.

Certification

Hewlett-Packard Company certifies that this product met its published specifications at the time of shipment from the factory. Hewlett-Packard further certifies that its calibration measurements are traceable to the United States National Institute of Standards and Technology, to the extent allowed by the Institute's calibration facility, and to the calibration facilities of other International Standards Organization members.

About this edition

This is the first edition of the *HP E2492A Probe Adapter for the Intel Deschutes Processor Installation Guide*.

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New editions are complete revisions of the manual. Many product updates do not require manual changes and manual corrections may be done without accompanying product changes. Therefore, do not expect a one-to-one correspondence between product updates and manual updates.



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