REV	REASON
A	Per ECN AG 2324
B	Per ECN AG 2448

MICRO-EDGE* SIMM (SINGLE IN-LINE MEMORY MODULE) CONNECTORS

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APPROVAL
JIM LAMBERT

1. INTRODUCTION

This specification covers the requirements for application of AMP* MICRO-EDGE SIMM Printed Circuit (pc) Board Connectors. There are connectors for vertical and angular (low-profile) motherboard-to-daughterboard (SIMM) applications. They have in-row contact tails spacing on .100 inch centers, and board slot contacts on .050 or .100 inch centerline spacing. The board slot contacts are designed for a pc board and pad combined thickness of .047 to .054 inch. The connectors can be positioned on a pc board by hand or by robotic equipment.

Connectors are available in various lengths. All have a polarizing rib at the number one circuit position, spring latches, and guide posts. Vertical connectors with contacts on .050 and .100 centerlines are available in single and double configurations. The .050 centerline connector is available with fluted (interference fit) guide post. Low profile connectors with contacts on .050 and .100 centerline spacing are available with single and double configurations. Single and double .050 centerlines are available with or without split or fluted (interference fit) center guide posts and doubles are available with center fluted post only. Refer to Figure 1 for connector features that will be referred to throughout this specification. Use these terms when corresponding with AMP Representatives to facilitate assistance.

NOTE

All dimensions in this specification are in inches. They have a decimal tolerance of .005 and an angle tolerance of ±2° unless otherwise specified. Metric equivalents (mm) can be obtained by multiplying the given dimension by 25.4.

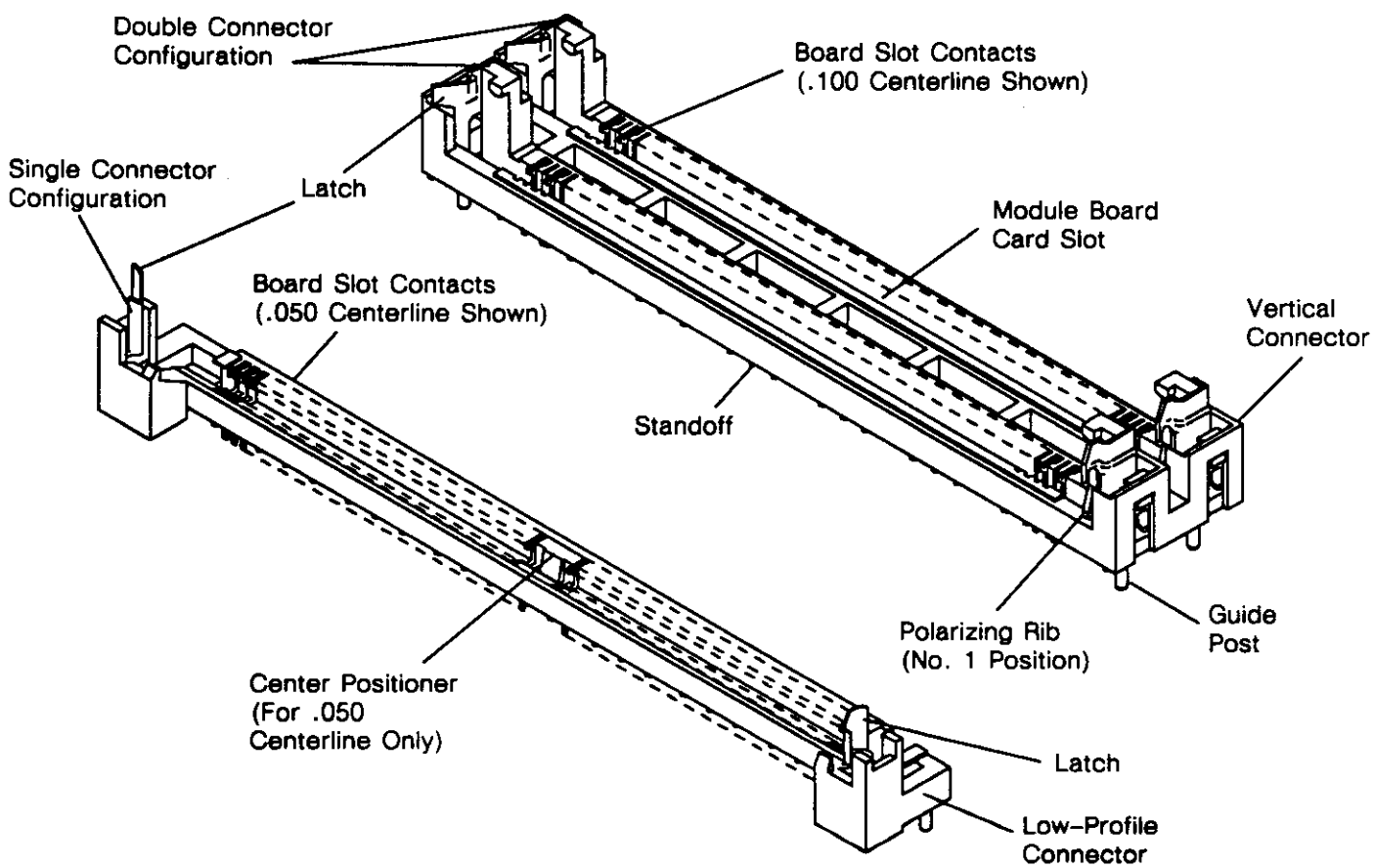

Fig. 1. Product Features

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2. REFERENCE MATERIAL

2.1. Customer Assistance

Reference Part Number 821824 and Product Code 0340 are representative numbers that identify AMP MICRO-EDGE Simm Connectors. These numbers are used in the AMP network of customer service to access tooling and product application information. This service is provided by your local AMP representative (Field Sales Engineer, Field Application Engineer, etc) or, after purchase, by calling the CUSTOMER HOTLINE number at the top of page 1.

2.2. Engineering Drawings

Customer Drawings for specific products are available from the responsible AMP Engineering Department via the service network. The information contained in the Customer Drawings takes priority if there is a conflict with this specification or with any other technical documentation supplied by AMP Incorporated.

2.3. Product Specifications

AMP Product Specification 108-1095 provides performance criteria for these connectors.

2.4. Instructional Material

AMP Instruction Sheet IS 9413 is packaged with the connectors and provides step-by-step daughterboard insertion and removal procedures. IS 9519 provides removal procedures with AMP Removal Tool 821987.

Customer Manuals (CM), providing instructions on machine setup and operation procedures, will be supplied for any machine that you may request AMP Tooling Engineers to develop for this product.

AMP Corporate Bulletin No. 52 is available upon request and can be used as a guide in soldering. This bulletin provides information on various flux types and characteristics along with the commercial designation and flux removal procedures. A checklist is attached to the bulletin as a guide for information on soldering problems.

3. REQUIREMENTS

3.1. Storage

Connectors should remain in the shipping containers until ready for use to prevent deformation to the contact tails and or damage to the housings. When handling the connectors, pick them up by the housing only.

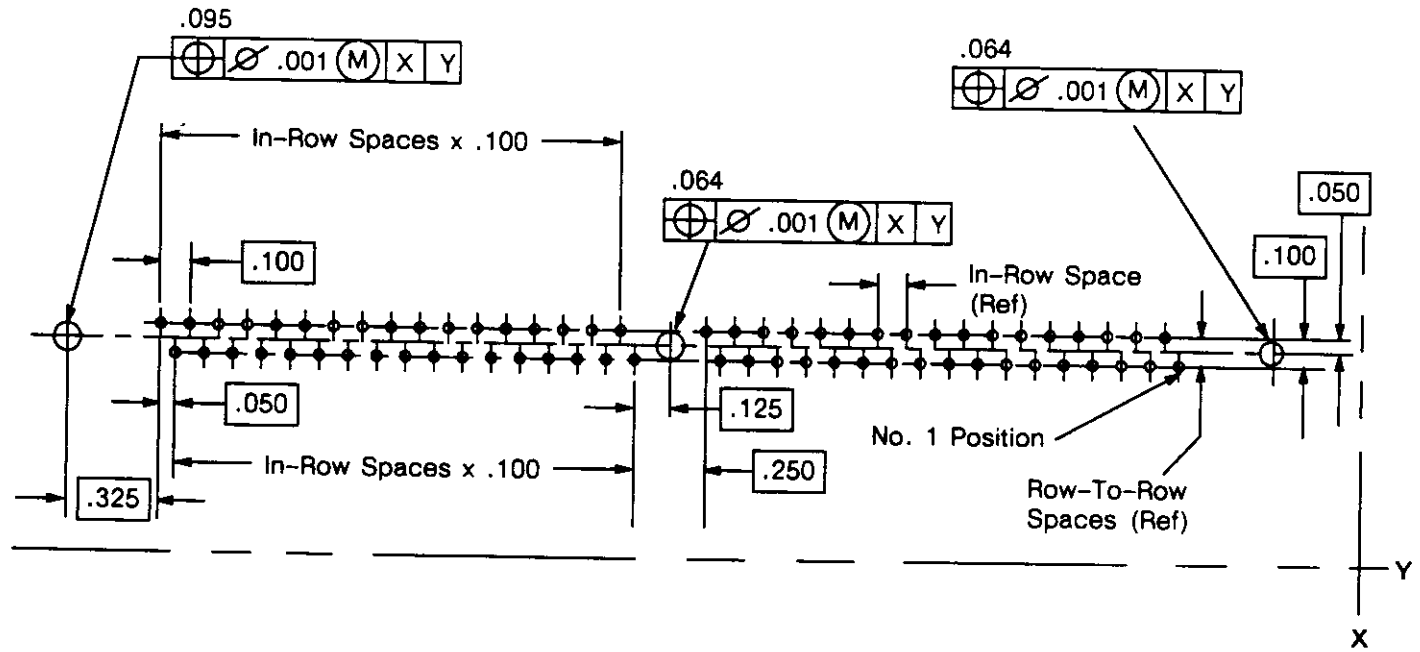
3.2. PC Board Layouts

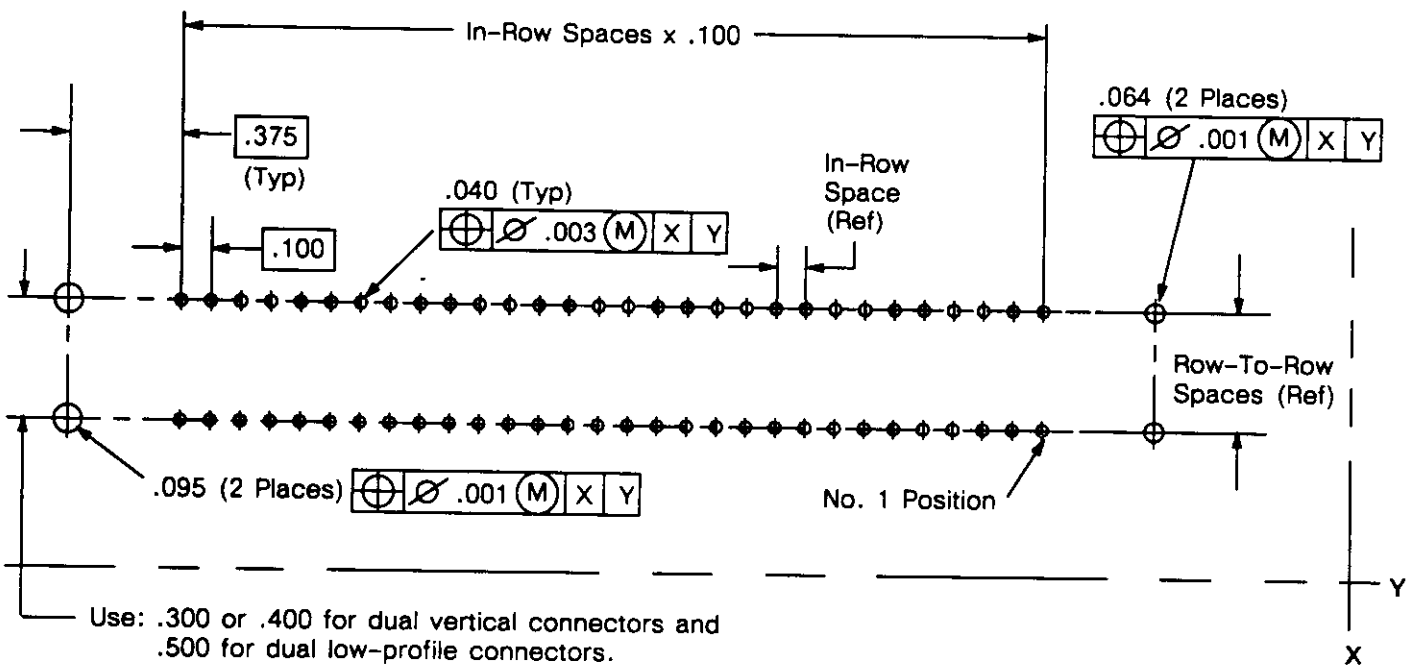
NOTE

The layouts that are provided cover the basic connector designs that are readily available. Other connector can be designed to meet your needs. Use the AMP Customer Drawings for connector layouts that are not covered on this specification.

A. Motherboard

The motherboard thickness must be .062 ± .005 and the contact holes must be precisely located to assure maximum performance and proper placement of the connector on the pc board. Determine whether the connector to be installed is for a daughterboard with .100 or .050 centerline spacing, then make a layout using the appropriate dimensions provided in Figure 2.





Note: The dimensions are the same for a single row connector except that only one row of contact tines holes will be needed.

Fig. 2. Motherboard Layout

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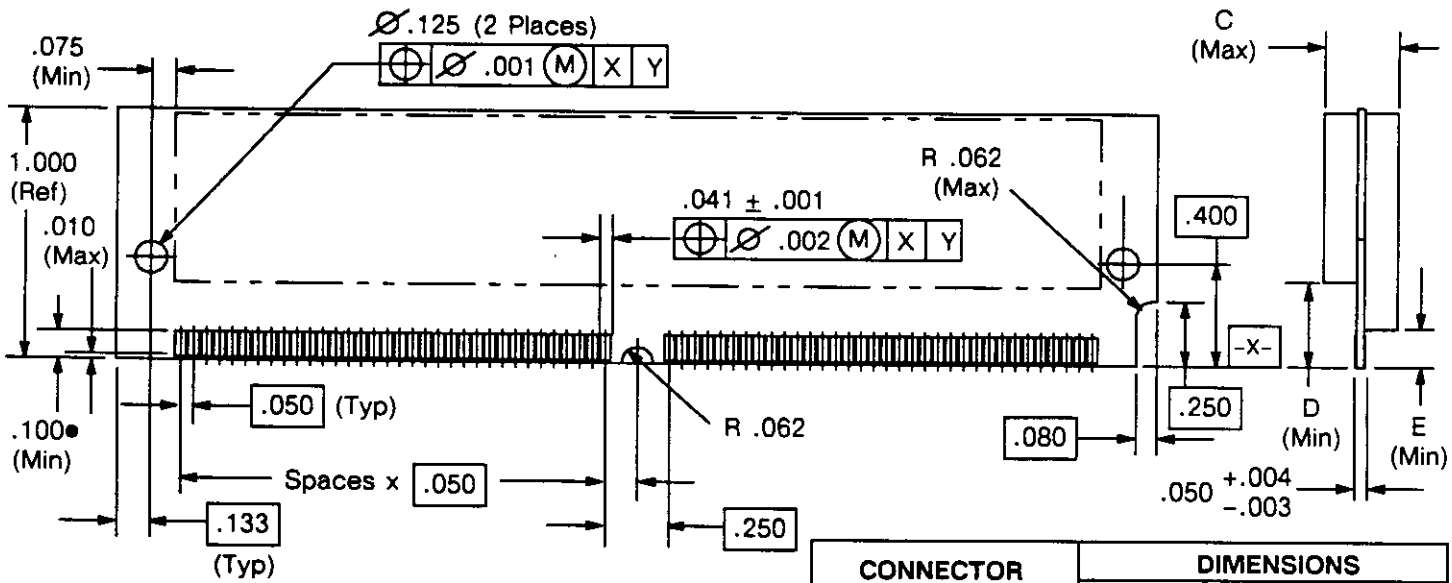
B. Daughterboard

The daughterboard thickness must be .047 to .054 including the pad thickness on both sides of the pc board. Mating pads must be electrically connected to each other through the pc board. The pads shall be copper plated with .000050 minimum nickel, then plated with .000300 tin-lead or .000030 minimum gold. The overall width of the board in the latch area must be within the tolerance specified to ensure a good connection between the contacts and pads. Layout the daughterboard using the dimensions provided in Figure 3.

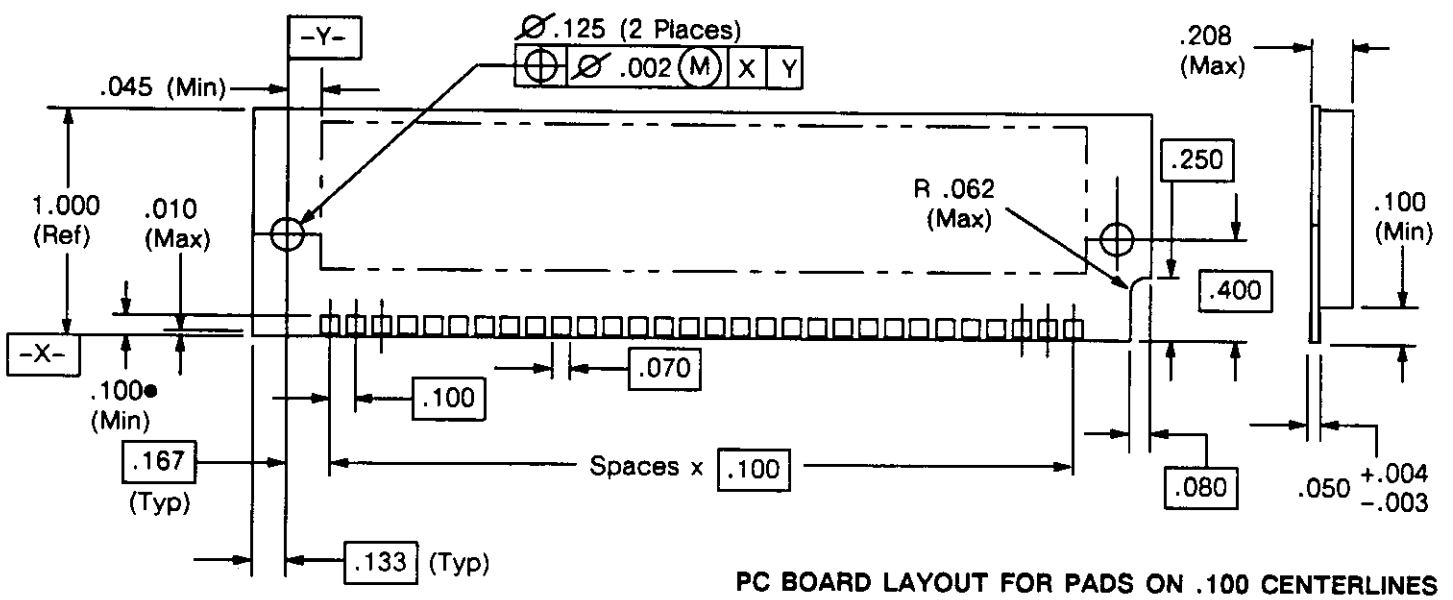
CAUTION

The connectors have been designed for the weight of a daughterboard 1 inch long with a moderate amount of components attached. Longer lengths or heavy component density may require that you construct a pc board support to prevent excess weight from disengaging the connector.



PC BOARD LAYOUT FOR PADS ON .050 CENTERLINES

CONNECTOR CONFIGURATION	DIMENSIONS		
	C	D	E
Vertical	.360	.125	.100
Low-Profile	.370	.220	.100



PC BOARD LAYOUT FOR PADS ON .100 CENTERLINES

● This area of pad must be free of via holes.

Fig. 3. Daughterboard Layout

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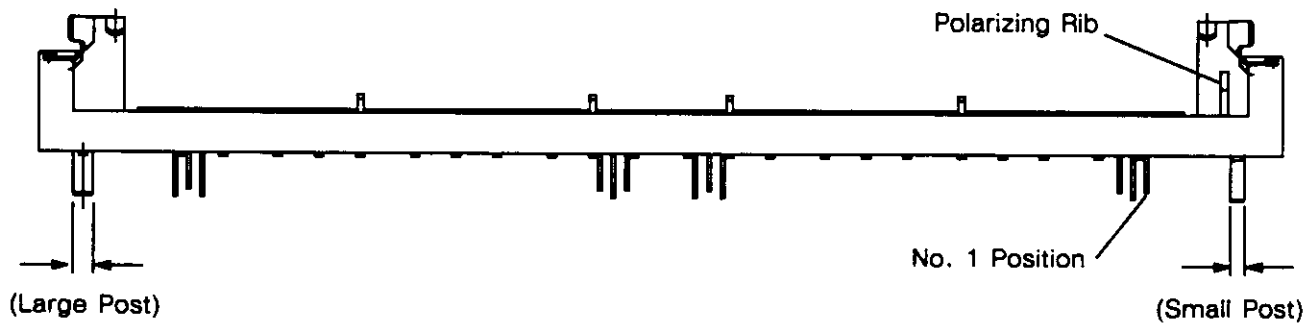
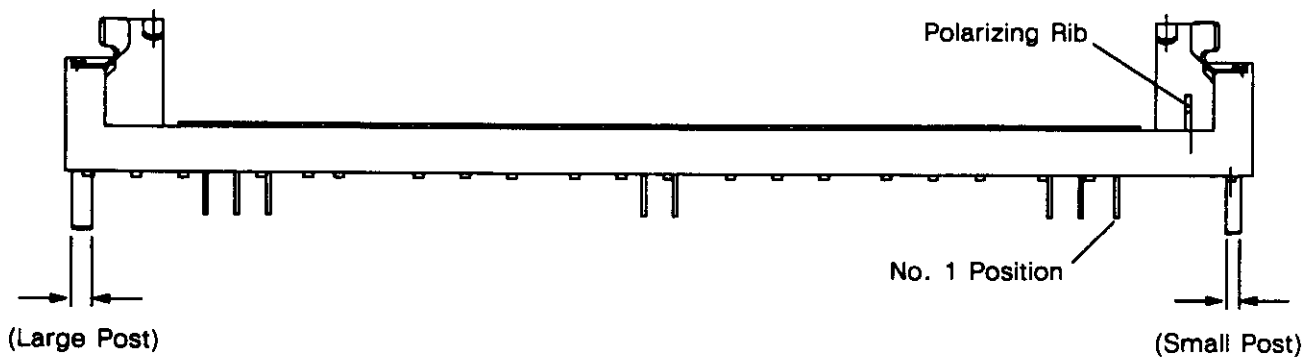
3.3. Polarization

There are two different guide post sizes to assure proper placement of the connector on the pc board. The number 1 circuit position and the polarizing rib are located at the connector end that has the smallest diameter guide post. The polarizing rib will prevent improper insertion of the daughterboard into the connector. See Figure 4.



CONNECTOR WITH DAUGHTERBOARD CONTACTS ON .050 CENTERLINES



CONNECTOR WITH DAUGHTERBOARD CONTACTS ON .100 CENTERLINES

Fig. 4. Polarization cad

3.4. Connector Installation

Initially, the connector must be oriented so the larger and smaller diameter guide posts are positioned over their respective mounting holes, then all solder tails should be started and inserted simultaneously into the board until the housing is parallel with the board and the standoffs are seated on the board.

3.5. Clinching Solder Tails

The solder tail can be alternately clinched once to help hold the connector on the pc board during handling and during the soldering process. Clinching a solder tail the second time could result in breakage and/or malfunction of the contact. Care must be taken to avoid raising the housing off the board when applying clinching pressure.

3.6. Soldering Headers

A. Flux Selection

The solder tails and attaching hardware must be fluxed prior to soldering with a rosin base flux. Selection of the proper flux will depend on the type of printed circuit board and other components mounted on the board. Additionally, the flux will have to be compatible with the flow solder line, manufacturing, and safety requirements.

B. Cleaning

After soldering, removal of fluxes, residues, and activators is necessary. Consult with the supplier of the solder and flux for recommended cleaning solvents. The following is a listing of common cleaning solvents that will not affect the connectors for a period of 5 minutes at 105°F.

1,1,1-Trichlorethane	Freon TMS■	Freon TF■
Dow Prelete●	Freon TA■	Freon TMC■
Allied Genesolv†	Freon TE■	

● Designation of Dow Chemical Co.
† Designation of Allied-Signal, Inc.
■ Designation of DuPont

DANGER *Consideration must be given to toxicity and other safety requirements recommended by the solvent manufacturer. Refer to the Material Safety Data Sheet (MSDS) for characteristics and handling of cleaners.*

NOTE *If you have a particular solvent that is not listed, consult an AMP Representative before using it on these connectors.*

C. Drying

When drying cleaned assemblies and printed circuit boards, make certain that temperature limitations of -55° to 105°F are not exceeded. Excessive temperatures may cause housing degradation.

D. Soldering Guidelines

Refer to Paragraph 2.4. for instructional material that is available for establishing soldering guidelines.

3.7. Repair

The connector should be checked immediately after soldering to be sure the standoffs are within the dimension provided in Figure 5. If the connector is not properly seated, the solder can be removed and the connector reseated and resoldered. However, if there is any damage to the contacts or housing the connector must be removed and replaced with a new one.

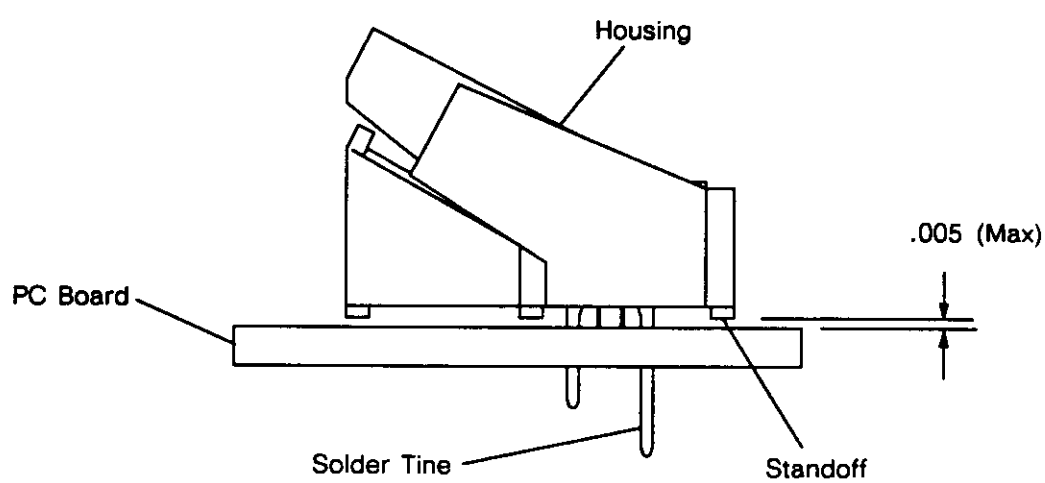


Fig. 5. Connector Placement cad

4. QUALIFICATION

The AMP MICRO-EDGE Connectors are designed in accordance with the JEDEC (Joint Electronic Device Engineering Council) Specification on Single In-line Package (SIP) Outlines.

5. TOOLING (Figure 6)

Tools recommended for these connectors are:

PC Board Support (for seating connectors)
Removal Tool (821987)
Robotic Equipment (for production line operation)

A. PC Board Support

A pc board support must be used to support the board while allowing the contacts and guide posts to pass through without interference. AMP does not manufacture or market board supports. We recommend the construction of one that meets your particular application requirements.

B. Removal Tool

Individual daughterboards can be removed without the use of a tool. However, for convenience, especially when multiple connectors are in a closely confined area, the removal tool is recommended. It is adjustable to the various connector sizes that are available. See Figure 6.

C. Robotic Equipment

The robotic equipment must have a true position accuracy tolerance of .010 to properly locate the connectors for insertion. This includes gripper and fixture tolerances as well as equipment repeatability. It must use the connector datum surfaces detailed on the Customer Drawing to ensure reliable connector placement.

AMP Tool Engineers have designed machines for a variety of application requirements. For assistance in setting up prototype and production line equipment, contact AMP Tool Engineering through your local AMP Representative or call the AMP Customer Hotline at the top of page 1.

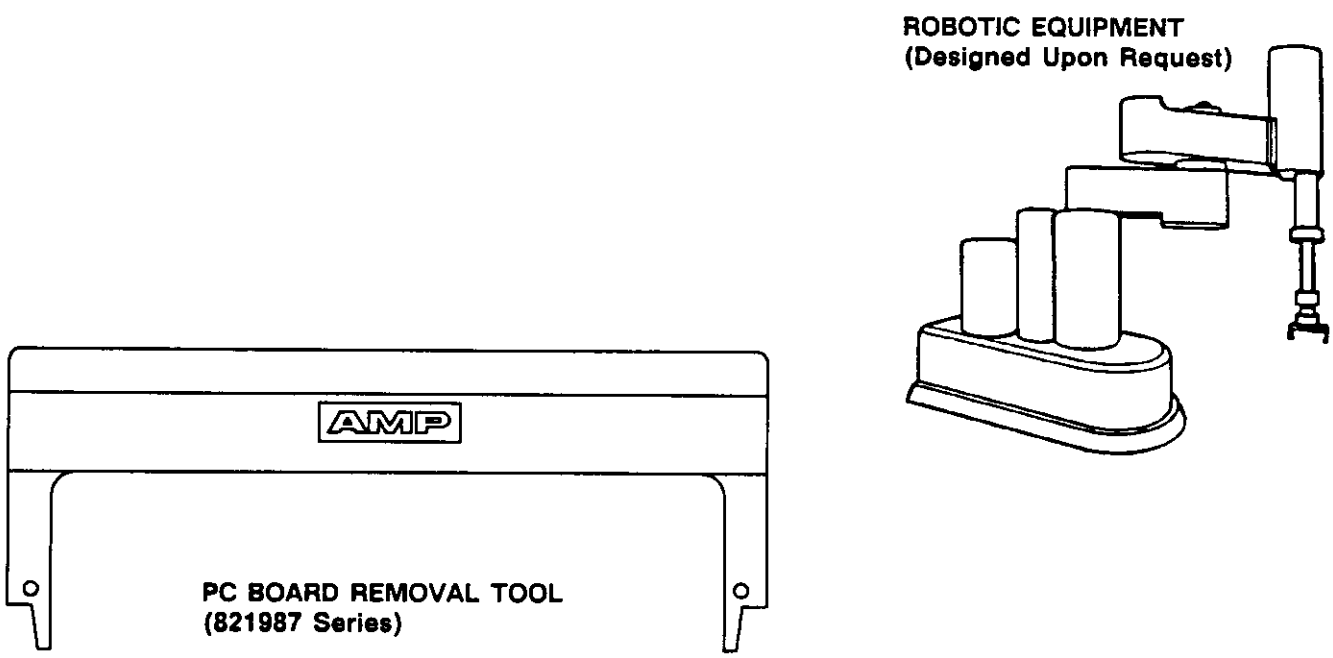


Fig. 6. Tooling

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6. VISUAL AID

The following illustration shows typical applications of AMP MICRO-EDGE Connectors and calls out the conditions that production personnel should check to ensure a good installation. For dimensional inspection, refer to the details in the preceding pages of this specification.

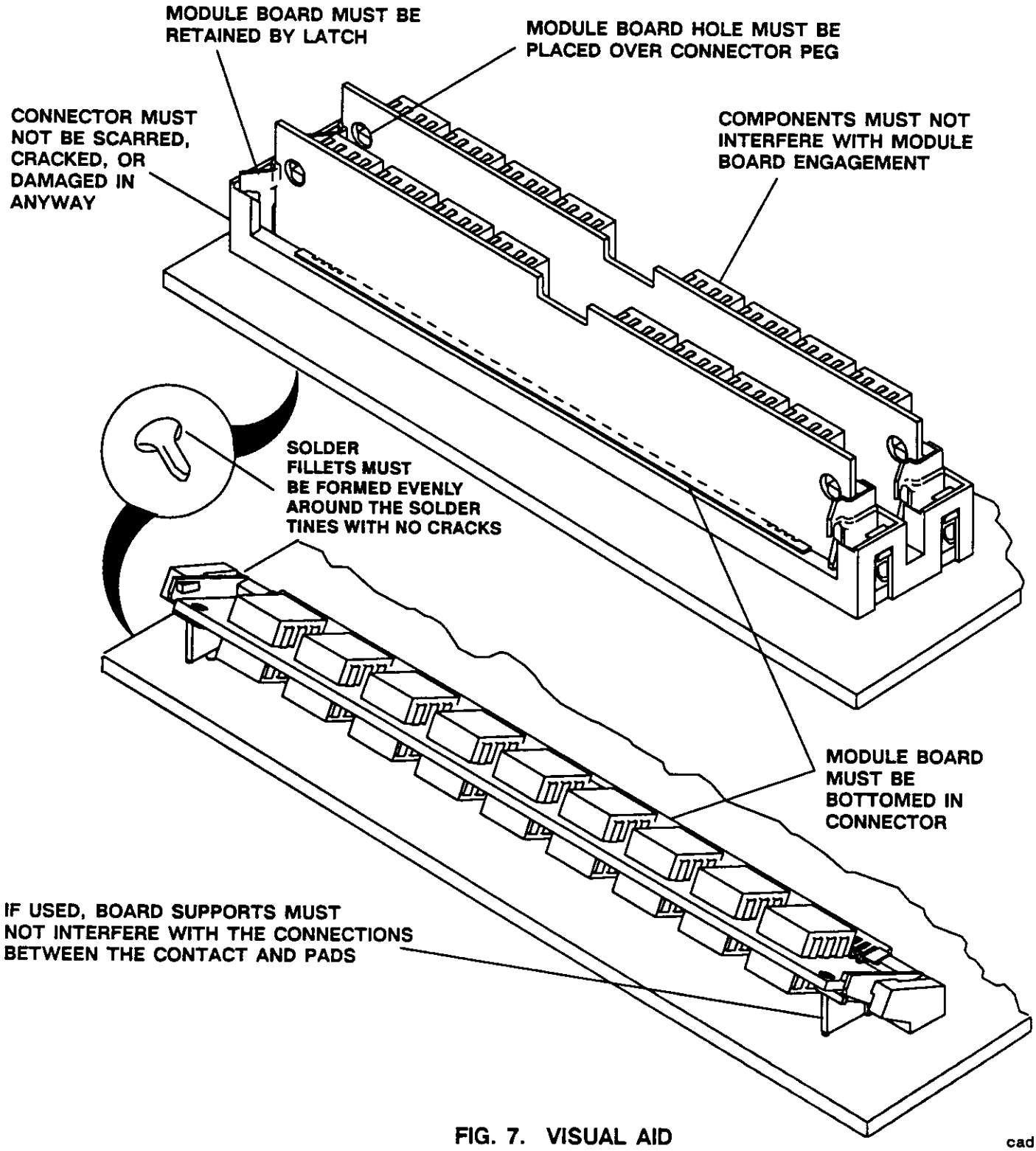

FIG. 7. VISUAL AID

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