

NOTE



All numerical values are in metric units [with U.S. customary units in brackets]. Dimensions are in millimeters [and inches]. Unless otherwise specified, dimensions have a tolerance of ± 0.13 [$\pm .005$] and angles have a tolerance of $\pm 2^\circ$. Figures and illustrations are for identification only and are not drawn to scale.

1. INTRODUCTION

This specification covers the requirements for application of AMPMODU Mod II .025 square posts with bandolier carrier strip. The square posts are available with a standard star or small star configuration. These square posts are designed to be strip-fed and machine applied to printed circuit (pc) boards.

When corresponding with personnel, use the terminology provided in this specification to facilitate your inquiries for information. Basic terms and features of this product are provided in Figure 1.

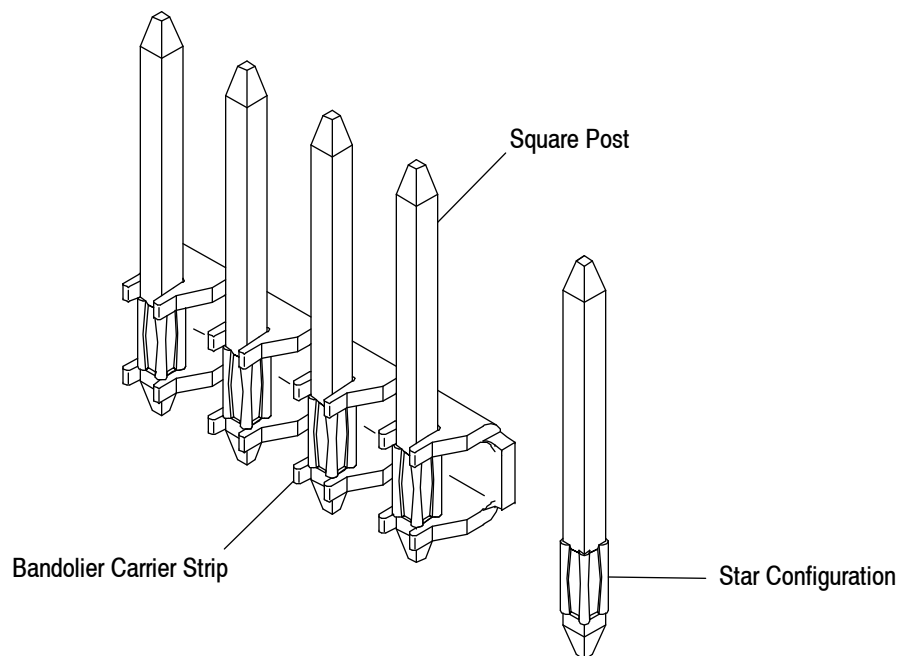


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

Revisions to this application specification include:

- Changed company name and logo

2.2. Customer Assistance

Reference Product Base Part Numbers 103577 (standard star) and 146079 (small star) and Product Code 5498 are representative of AMPMODU Mod II .025 square posts with bandolier carrier strip. Use of these numbers will identify the product line and expedite your inquiries through a service network established to help you obtain product and tooling information. Such information can be obtained through a local Representative or, after purchase, by calling PRODUCT INFORMATION at the number at the bottom of page 1.

2.3. Drawings

Customer Drawings for product part numbers are available from the service network. If there is a conflict between the information contained in the Customer Drawings and this specification or with any other technical documentation supplied, the information contained in the Customer Drawings takes priority.

2.4. Instructional Material

Instruction Sheets (408-series) provide product assembly instructions or tooling setup and operation procedures and Customer Manuals (409-series) provide machine setup and operating procedures. Documents available that pertain to this product are:

| | |
|----------|---|
| 408-6944 | Bandolier Post Insertion Tool 91419-1 |
| 408-9816 | Handling of Reeled Products |
| 409-5863 | Comp-U-Sertor* II Machine 122300-[] |
| 409-5872 | Modular Insertion System (MIS) Bench Machine 217600-[] |
| 409-5889 | MIS Bandolier Post Insertion Head Assemblies 904590-1, 904591-1, and 904592-1 |
| 409-5893 | Modular Insertion System (MIS) Bench Machine 662820-[] |

3. REQUIREMENTS

3.1. Storage

A. Orientation

Reels should be stored vertically.

B. Ultraviolet Light

Prolonged exposure to ultraviolet light may deteriorate the chemical composition used in the posts.

C. Shelf Life

The posts should remain in the shipping containers until ready for use to prevent deformation to the posts. The posts should be used on a first in, first out basis to avoid storage contamination that could adversely affect performance.

D. Chemical Exposure

Do not store the posts near any chemicals listed below, as they may cause stress corrosion cracking in the posts.

| | | | | | |
|----------|------------|----------|------------|----------|------------------|
| Alkalies | Ammonia | Citrates | Phosphates | Citrates | Sulfur Compounds |
| Amines | Carbonates | Nitrites | Sulfur | Nitrites | Tartrates |

3.2. Material

The bandolier carrier strip is made of brass. The square posts are made of phosphor bronze and plated with the following variations:

NOTE

Tooling used to insert the posts into the pc board corresponds to the post plating. Refer to Section 5 for tooling.



Plating A

Duplex plated 0.00076 [.000030] gold on contact area. 0.00254 through 0.00508 [.000100 through .000200] tin-lead on solder area with entire post underplated 0.00127 [.000050] nickel

Plating B

Duplex plated 0.00038 [.000015] gold on contact area. 0.00254 through 0.00508 [.000100 through .000200] tin-lead on solder area with entire post underplated 0.00127 [.000050] nickel

Plating C

0.00254 through 0.00508 [.000100 through .000200] tin-lead over 0.00127 [.000050] nickel on entire post

3.3. PC Board

A. Material and Thickness

The pc board material will be glass epoxy (FR-4, G-10). The pc board thicknesses are given in Figure 2.

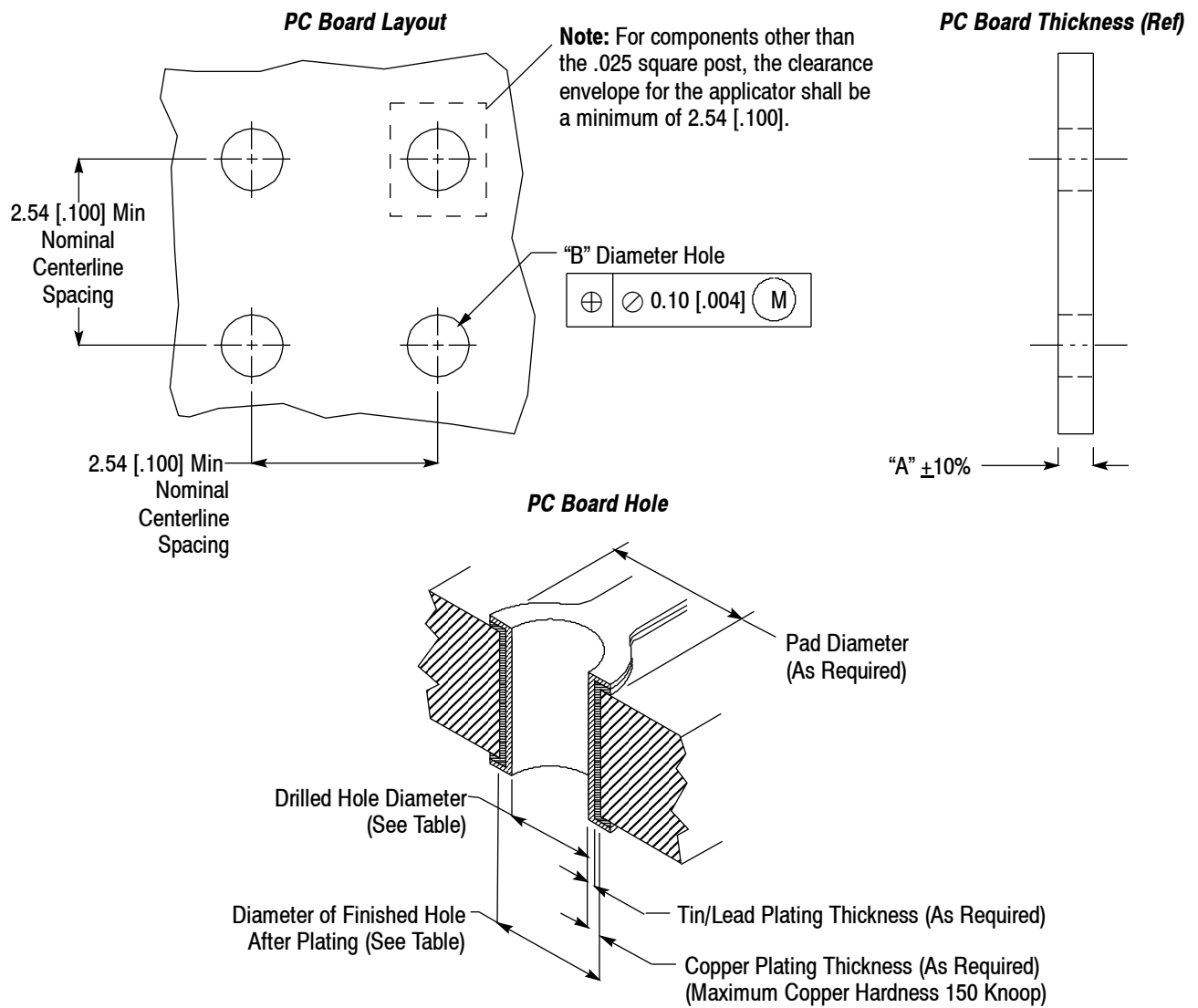
NOTE

Contact the TOOLING ASSISTANCE CENTER or PRODUCT INFORMATION at the numbers at the bottom of page 1 for suitability of other pc board materials and thicknesses.



B. Layout

The post holes in the pc board must be precisely located to ensure proper placement and optimum performance of the post. The hole dimensions must be observed when preparing the pc board. The pc board layout is given in Figure 2.



| POST CONFIGURATION | PC BOARD THICKNESS (Dimension A) | PC BOARD THROUGH HOLE SIZE (Dimension B) | |
|--------------------|----------------------------------|--|------------------------|
| | | PLATED | NON-PLATED |
| Standard Star | 1.57 [.062] | 0.86±0.05 [.034 ±.002] | 0.91±0.05 [.036 ±.002] |
| | 2.36 [.093] | | |
| | 3.18 [.125] | | |
| Small Star | 1.57 [.062] | 0.79±0.05 [.031 ±.002] | — |
| | 2.36 [.093] | | |
| | 3.18 [.125] | | |
| | 4.52 [.178] | | |
| | 5.54 [.218] | | |

Figure 2

C. Holes

The pc board holes must be drilled and plated through or not plated to precise dimensions. The dimensions are given in Figure 2.

3.4. Post Application

A. Rotation

Post rotation shall be within the limits specified in Figure 3.

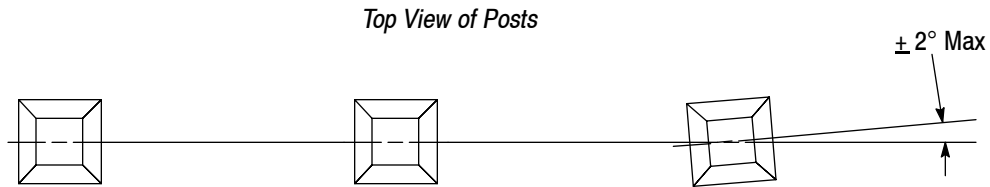
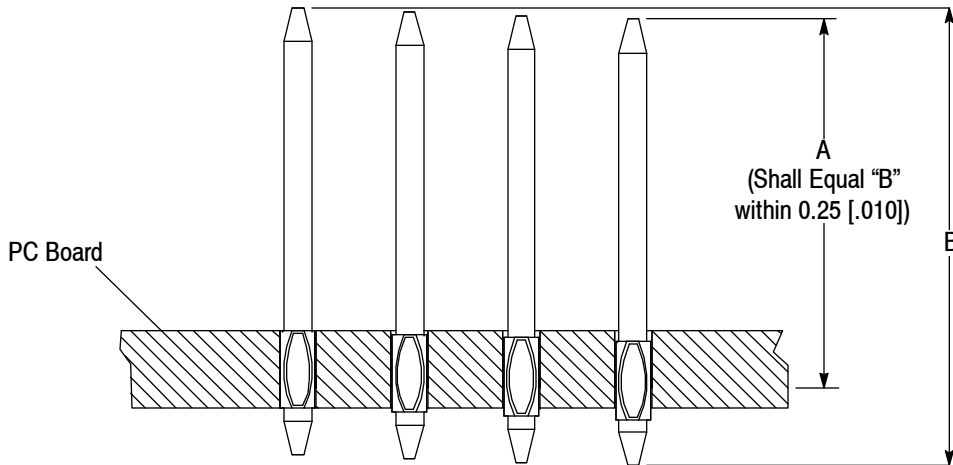


Figure 3

B. Insertion

Post insertion shall be as indicated in Figure 4.



Note: Insertion depth for square post with star will depend on pc board thickness and location of star on post.

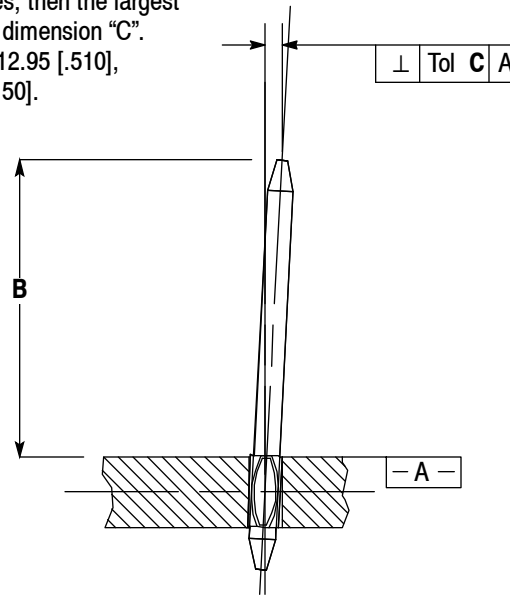
Note: For insertion depths greater than “A” maximum, contact TOOLING ASSISTANCE CENTER at the bottom of page 1 for information on tooling compatibility.

Figure 4

3.5. Post Perpendicularity

Post perpendicularity shall be as indicated in Figure 5.

Note: If dimension "B" is between values, then the largest value shall be used to determine dimension "C".
For example, if dimension "B" is 12.95 [.510], dimension "C" shall be 0.381 [.0150].



| DIMENSION | |
|--------------|---------------|
| "B" | "C" |
| 2.54 [.100] | 0.191 [.0075] |
| 5.08 [.200] | 0.191 [.0075] |
| 7.62 [.300] | 0.191 [.0075] |
| 10.16 [.400] | 0.254 [.0100] |
| 12.7 [.500] | 0.318 [.0125] |
| 15.24 [.600] | 0.381 [.0150] |
| 17.78 [.700] | 0.444 [.0175] |
| 20.32 [.800] | 0.508 [.0200] |
| 22.86 [.900] | 0.572 [.0225] |

Figure 5

3.6. Workmanship

There shall be no scratches, nicks, or tool marks of any kind in the mating area of the post. A burnish is considered an improved surface finish and is an acceptable condition provided that it does not penetrate the finish plating. Scratches and tool marks on the post contact tine are acceptable provided they do not penetrate the plating to the base metal. The dimension for maximum cutoff burr is given in Figure 6.

NOTE

All inspection shall be performed under 10 X magnification.



Note: Application tooling shall be adjusted so the cutoff burr does not appear on the mating end of the post (typically the top of the post).

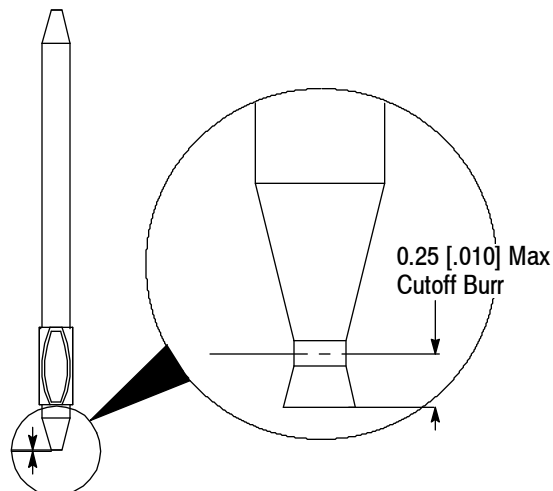


Figure 6

4. QUALIFICATION

AMPMODU Mod II .025 square posts with bandolier carrier strip does not require agency qualification.

5. TOOLING

Tooling available for application of the strip-form square posts include semi-automatic machines and automatic machines. For additional information on modified designs and additional tooling concepts, contact one of the service groups at the bottom of page 1. Tooling recommendations are provided in Figure 7.

5.1. Power Units

The automatic and semi-automatic machines provide the force to drive the insertion head.

5.2. Insertion Head

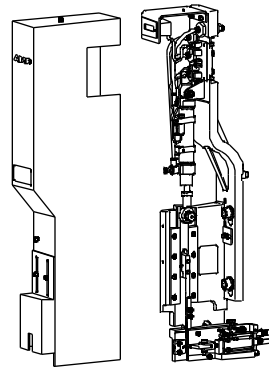
The insertion head is used to insert the posts to a pre-determined depth and must be installed in a power unit.

5.3. Hand Insertion Tools

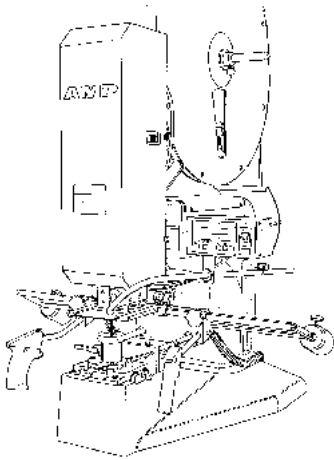
The hand insertion tools are designed for prototype and low-volume applications.



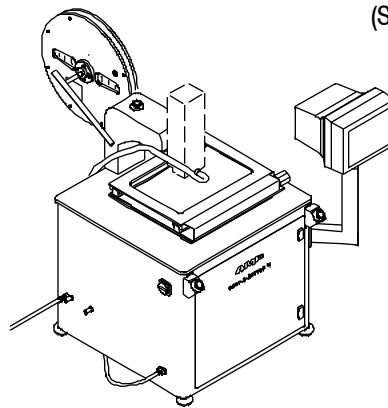
Bandolier Post Insertion
Tool 91419-1 (408-6944)



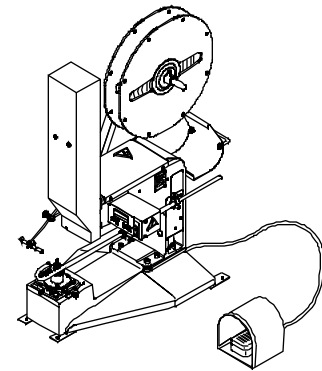
Bandolier Insertion Head (Typ)
(See Table)



MIS Bench Machine 217600-[]
(409-5872)



Comp-U-Sertor I Machine
122300-[] (409-5863)



MIS Bench Machine 662820-[]
(409-5893)

| PLATED POST HOLE SIZE ±0.05 [.002] | POST PLATING (Refer to Paragraph 3.2 for Description) | | | APPLICATION TOOLING | |
|--|--|---|---|---------------------|---|
| | A | B | C | INSERTION HEAD | POWER UNIT |
| 0.86 [.034] | ✓ | ✓ | ✓ | 904592-1 | 217600-[] or 122300-[] or 662820-[] |
| 0.86 [.034] | ✓ | ✓ | ✓ | 904591-1 | |
| 0.86 [.034] | ✓ | ✓ | ✓ | 904590-1 | |
| 0.79 [.031] | ✓ | — | — | — | |
| 0.79 [.031] | — | — | ✓ | — | |

Figure 7

6. VISUAL AID

The illustration below shows a typical application of AMPMODU Mod II .025 square posts with bandolier carrier strip. This illustration should be used by production personnel to ensure a correctly applied product. Applications which DO NOT appear correct should be inspected using the information in the preceding pages of this specification and in the instructional material shipped with the product or tooling.

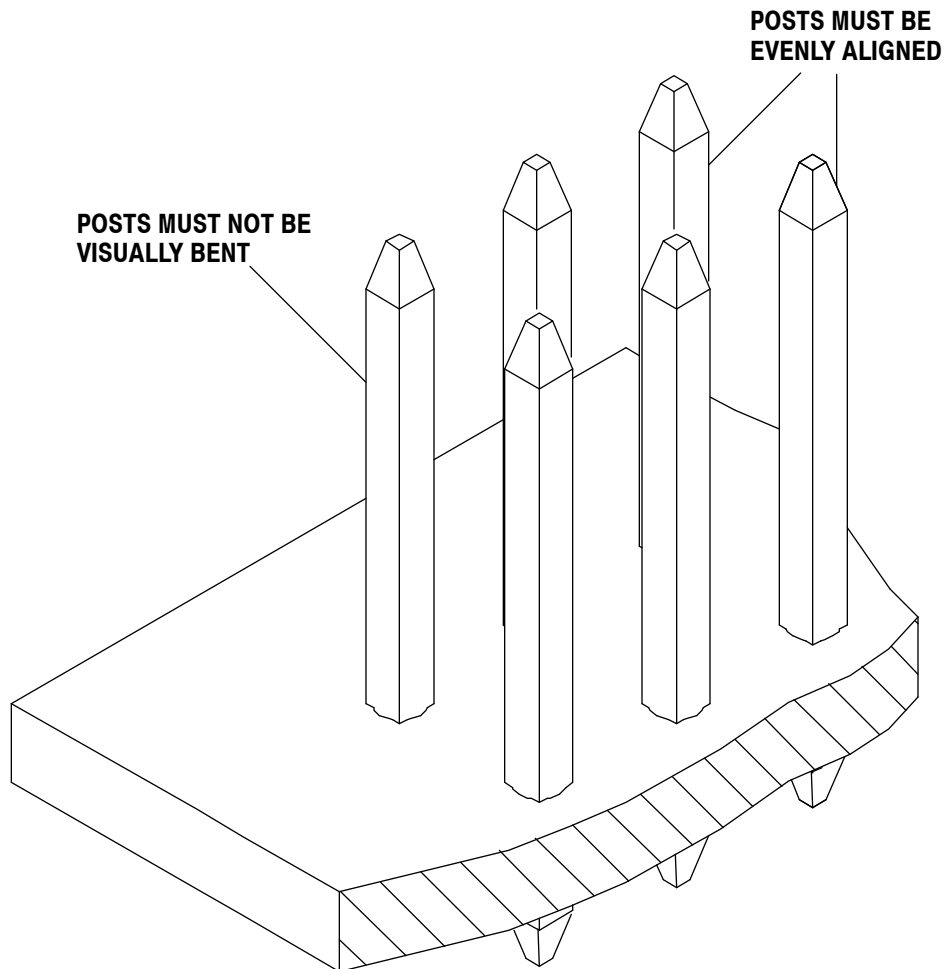


FIGURE 8. VISUAL AID