

REV	REASON	<b>REUSABLE RECEPTACLES FOR COMPONENT TESTING</b>	ENGINEERING RELEASE DATE
			1-17-90
			APPROVAL
			FRANK BOYD

**1. INTRODUCTION**

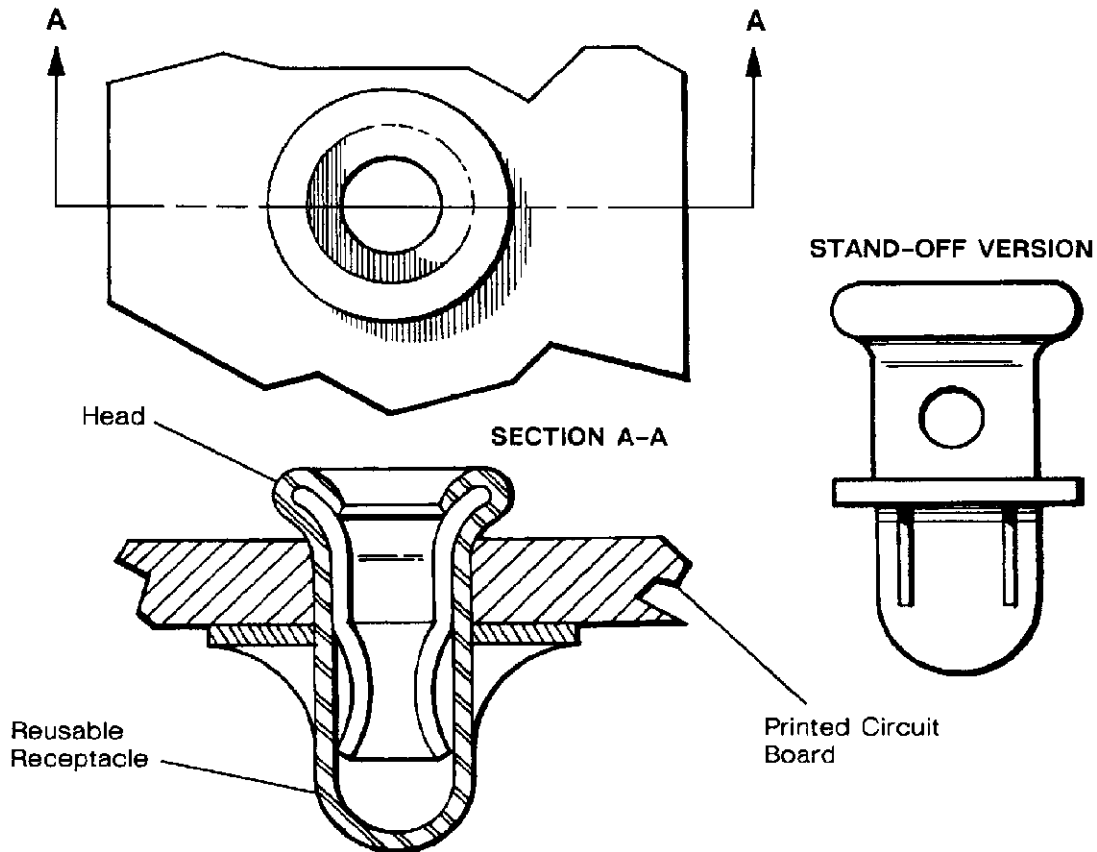
This specification covers the requirements for application of the AMP® Reusable Receptacle for component testing. These requirements are applicable to either hand or machine insertion.

AMP Reusable Receptacles are used in testing and mounting printed circuit (pc) board components. They are also used as sockets for testing transistors, resistors, diodes, capacitors, and other components at the beginning of the prototype stage.

The receptacles are available in standard open and closed-bottom versions, an economy closed bottom version, and a stand-off version. These receptacles extend the life of pc boards as well as components, and protect them from damage during burn-in and bread-boarding. They also eliminate individual soldering of each component lead into the circuit layout. Testing is accomplished by hand insertion of component leads. Both open and closed-bottom types feature gold-plated cups. The economy and stand-off versions are tin-lead plated.

Figure 1 contains basic product features, and the terms used in the figure appear throughout the rest of this specification.

**NOTE** All dimensions are given in inches unless otherwise specified. Metric equivalents (mm) may be obtained by multiplying the dimensions by 25.4.



**Fig. 1. Product Features**

## 2. REFERENCE MATERIAL

### 2.1. Customer Assistance

Product Part Number 380598 and Product Code 1336 are representative numbers that identify the Reusable Receptacles. 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. Specifications

AMP Product Specification 108-1079 provides performance requirements and test data relating to the receptacles.

### 2.4. Instructional Material

AMP Customer Manual CM 5449 and CM 5752 cover the machines used for inserting receptacles into pc boards.

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. Printed Circuit (PC) Board

#### A. PC Board Selection

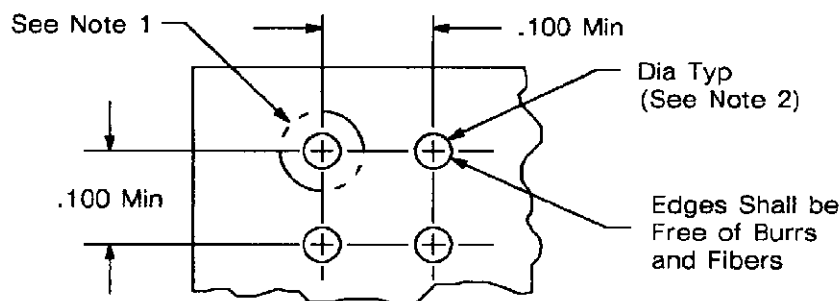
PC boards may be single sided or double sided, with or without plated-thru holes.

#### B. PC Board Thickness

Recommended thickness shall be a minimum .031 inches.

#### C. PC Board Layout

The layout shall be as indicated in Figure 2.



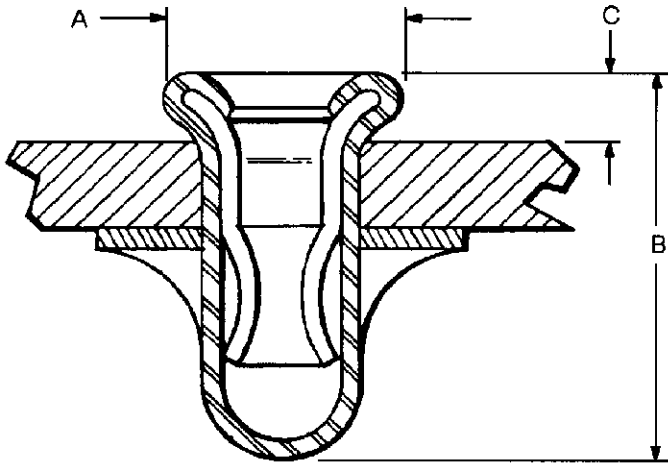
**NOTE 1** For components other than miniature spring sockets mounted on the printed circuit (pc) board, the clearance envelope for the applicator tooling shall be .310 inches minimum diameter on head side of pc board and .200 inches minimum diameter on the other side.

**NOTE 2** For plated-thru holes, tin-lead plating shall not exceed .001 inches to ensure minimum retention. If using hand insertion, hole size should be  $.089 \pm .0015$ . If using machine insertion, hole size should be  $.086 \pm .0015$ .

Fig. 2. PC Board Layout

**3.2. Insertion**

The minimum allowable retention force for an inserted, unsoldered socket shall be 0.5 lb. Sockets shall meet the requirements specified in Figure 3 after insertion.



"A" MAX. HEAD DIA.	"B" LENGTH	"C" INSERT HEIGHT	INSERTION MACHINE PART NUMBER
.125	.244/.262●	.035 REF	682127-1 or 818120-2
	.236/.254●		
	.254/.262●●		
	.262●●●	.145	

- Use with washer. In some applications, a washer may be required to provide necessary clearance between the opening of the receptacle and the pc board.
- Use without washer.
- Stand-off version.

Fig. 3. Socket Insertion

**3.3. Soldering and Cleaning**

**A. Flux Selection**

Socket shall be fluxed prior to soldering by use of a medium active rosin base flux or a medium to highly active organic flux. Selection of the proper flux will depend on the type of pc board and other components, if any, mounted on the board. Additionally, the choice of flux will have to be compatible with the flow solder line, manufacturing, and safety requirements.

**B. Cleaning**

Removal of fluxes, residues, and activators is mandatory. Cleaning procedures are dependent upon the type of flux used on the solder line.

**C. Drying**

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

**3.4. Workmanship**

There shall be no deformation of the socket during the insertion operation that will affect the performance.

**4. TOOLING**

Loose piece receptacles can be inserted by using a Miniature Spring Socket Insertion Tool (AMP Part Number 382378-1). Strip-form receptacles can be inserted with AMP Insertion Machines 682127-1 or 818120-2. For other tooling recommendations, contact AMP Product Engineering through the AMP Customer Hotline at the top of page 1.

## 5. VISUAL AID

Figure 4 shows a typical termination of an AMP Reusable Component Receptacle. The illustration depicts, in general, the conditions that production personnel should check to ensure a suitable installation. For dimension inspection, refer to the preceding pages of this specification.

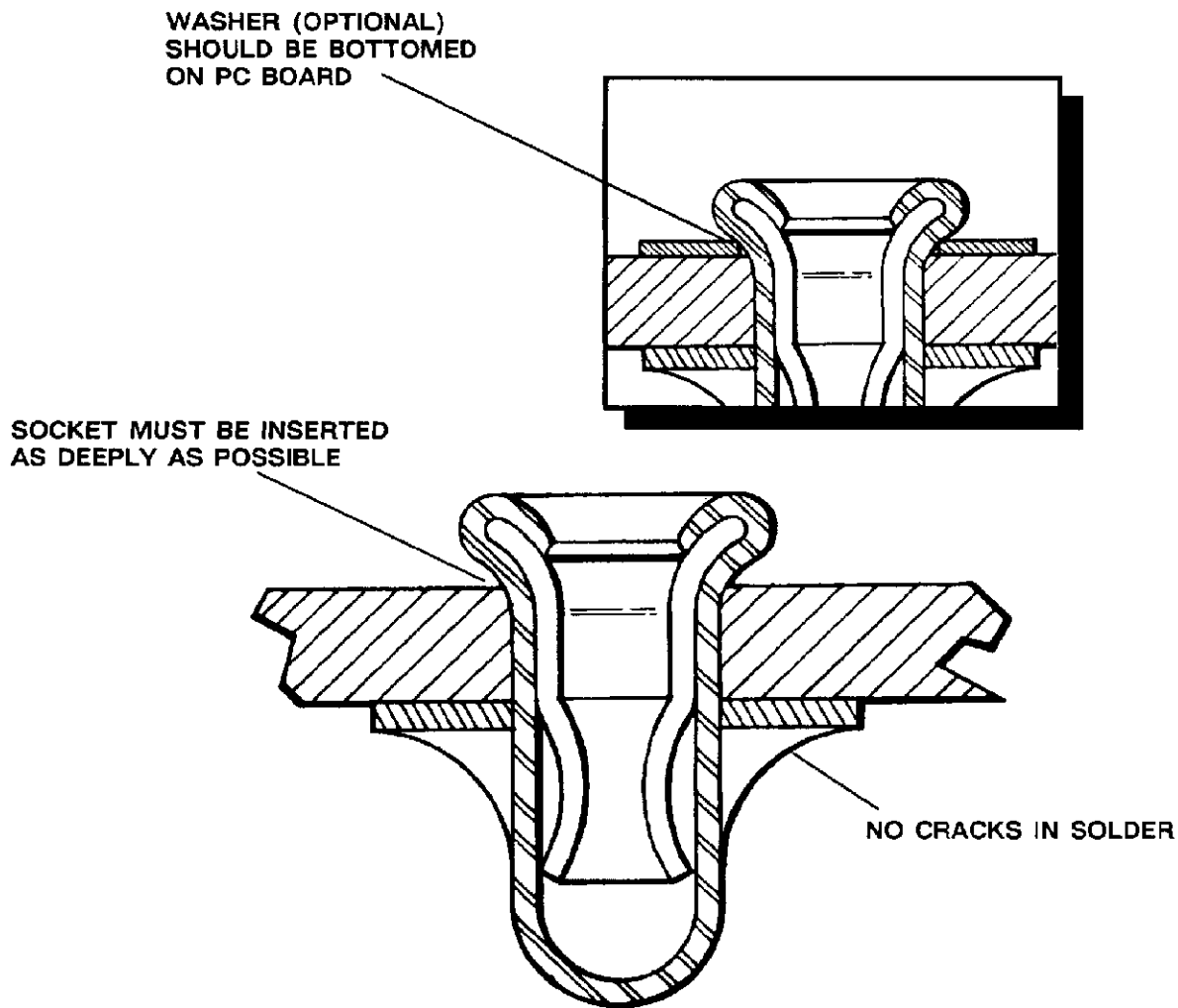


FIG. 4. VISUAL AID