



**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  $\pm 0.13$  [ $\pm .005$ ] 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 the Cable to PC Board Lug Power Connector. The lug is designed to be crimped with cables and seated onto a pc board via eye-of-needle compliant pin contacts to provide electrical current to the pc board.

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

### Cable to Board Lug Power Connector (LUG)

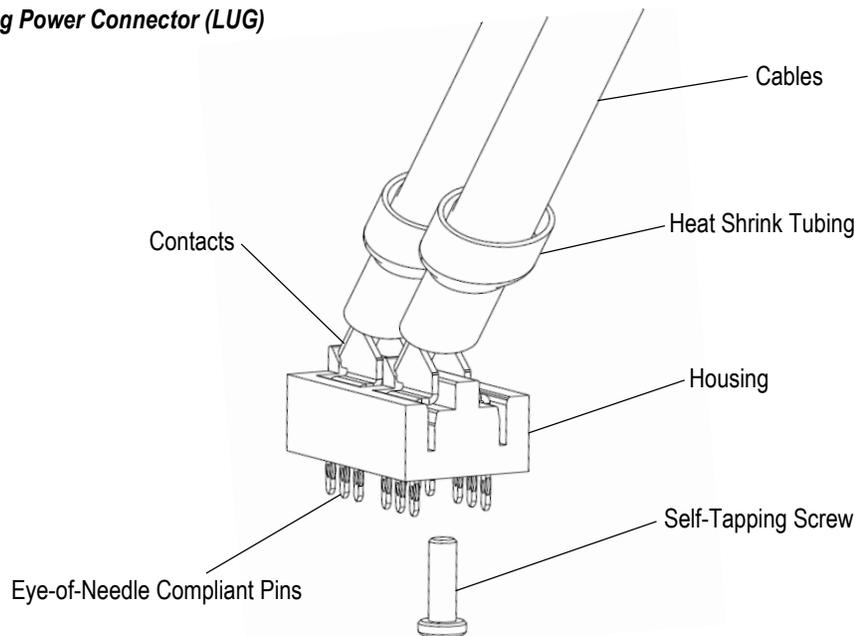


Figure 1

## 2. REFERENCE MATERIAL

### 2.1. Revision Summary

Initial release of application specification

### 2.2. Customer Assistance

Reference Product Base Part Number 2159562 and Product Code V835 are representative numbers of this connector. Use of these numbers will identify the product line and help you to obtain product and tooling information. Such information can be obtained through a local TE Representative, by visiting our website at [www.te.com](http://www.te.com), or by calling PRODUCT INFORMATION or the TOOLING ASSISTANCE CENTER at the numbers at the bottom of this page.

### 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.

### 3. REQUIREMENTS

#### 3.1. Safety

Do not stack product shipping containers so high that the containers buckle or deform.

#### 3.2. Storage

##### A. Ultraviolet Light

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

##### B. Shelf Life

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

##### C. Chemical Exposure

Do not store product near any chemical listed below as they may cause stress corrosion cracking in the material.

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

#### 3.3. PC Board

##### A. Material and Thickness

The pc board material shall be glass epoxy (FR-4). The pc board shall have a minimum thickness of 1.37 mm [.054 in.].

##### B. Recommended PC Board Layout

Recommended pattern and dimensions, as well as tolerances, are shown in Figure 2.

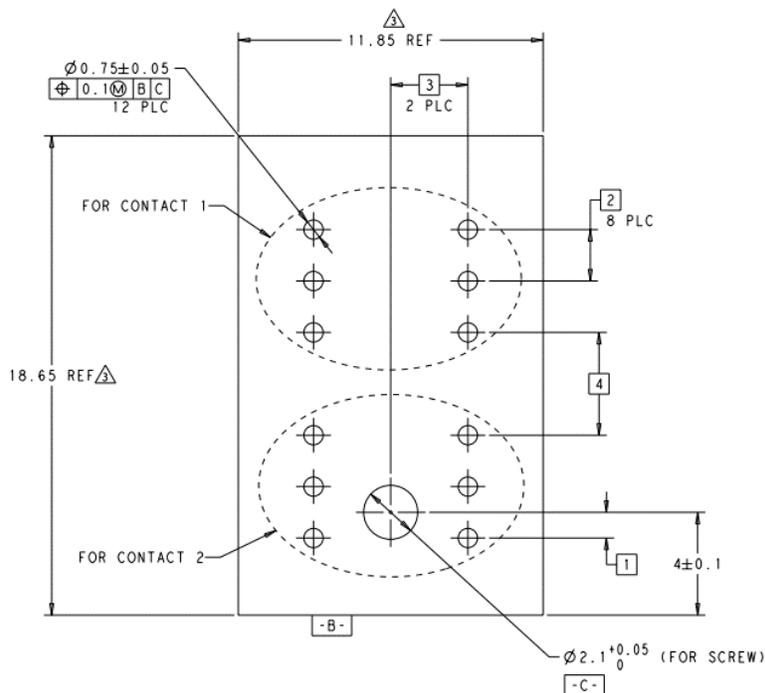


Figure 2

### C. Hole Dimensions

Holes shall be drilled and plated according to dimensions provided in Figure 3.

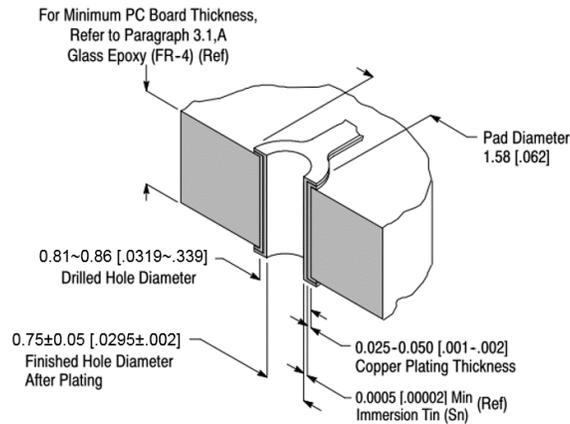


Figure 3

### 3.4. Seating the Connector



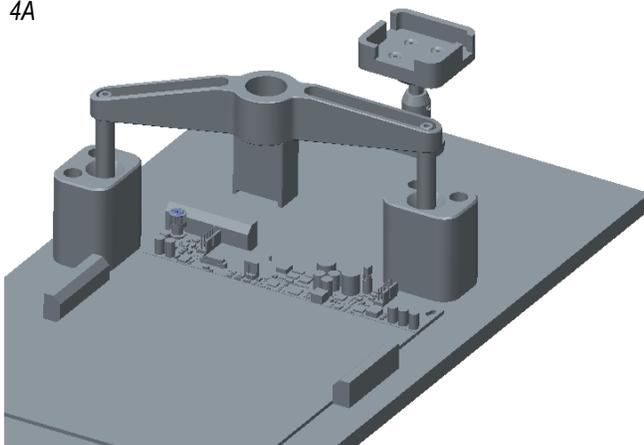
**NOTE**

The following seating steps and Figure 4 are for reference only.

At this time, the following steps provide the seating process:

1. Place the pc board on the pc board support fixture. See Figure 4A.
2. Lay the previously terminated connector onto the raised holder at the end of the support fixture as shown in Figure 4B. Position the lug onto the pc board so that the contacts are properly aligned with the holes in the pc board and the pc boards support fixture. Place the lug onto the pc board until the open section of the contacts are resting securely on, but have not fully entered the holes on the pc board.

4A



4B

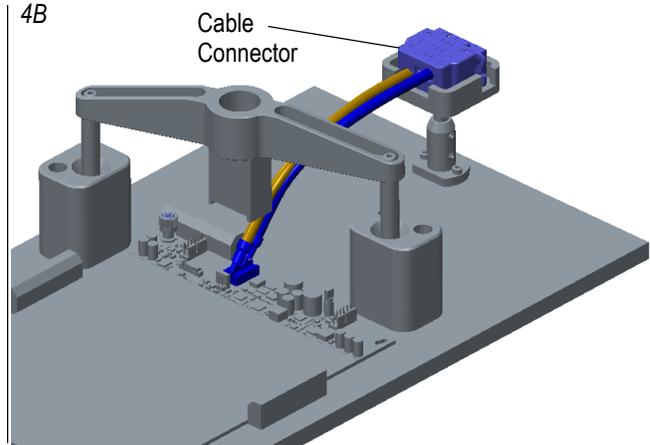


Figure 4 (cont'd)

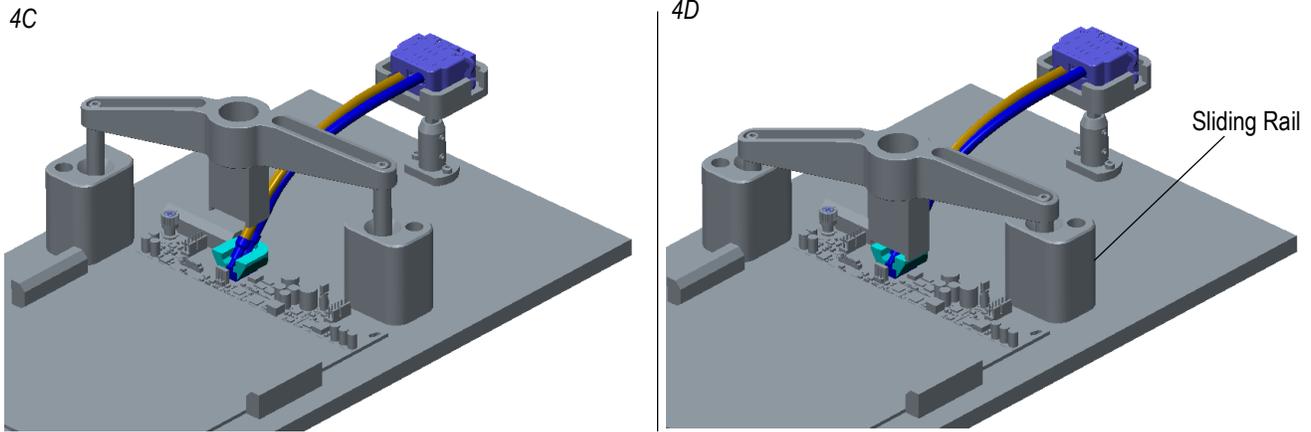


Figure 4 (end)

3. Position the lug with one hand while placing the seating tool onto the lug with the other hand. After seating tool is fully seated on the lug, hold on to the seating tool and lug. Push down the insertion tool, (which is held by the sliding rail on the support module) onto the seating tool. See Figure 4C.
4. Verify the alignment of the pc board support fixture, pc board, lug, seating tool, and insertion tool before placing them into the power unit. See Figure 4D.

### 3.5. Installing the Lug

A suitable machine capable of supplying a minimum controllable downward force of 500 N must be used (insertion force will vary according to pc board variations). Force must be applied evenly on the connectors to prevent deformation or other damage to the contacts and housing. After the lug seats onto the pc board, a supplied screw needs tightened to hold the housing to the pc board. Access to this screw is a screw hole in the housing to provide retention. Recommend cross-slotted screwdriver size is 1.7 to 2 mm, with a torque force range of 0.1 to 0.15 N.m.

The tap standoffs must be seated on the pc board not exceeding the dimension given in Figure 5. The lug must be installed with tooling described in Section 5 TOOLING.

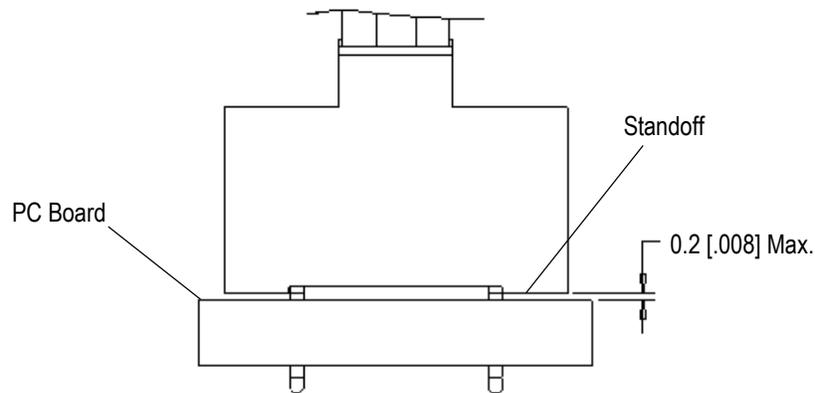


Figure 5

### 3.6. Replacement and Repair



**CAUTION**

The components of the lug assembly are not repairable. Any defective or damaged taps or components must be replaced. A lug must not be re-used after it has been removed from the pc board. To ensure plated through-hole integrity, the pc board should only be used no more than three insertion times. Tools for removing connectors from pc boards are provided in Section 5 TOOLING.

#### 4. QUALIFICATION

The Cable to PC Board Lug Power Connector has not been sent for agency evaluation and testing.

#### 5. TOOLING

Tooling and instructional material packaged with the tooling are given in Figure 6.

##### 5.1. PC Board Support

A pc board support must be used to prevent bowing of the pc board during the seating of a connector onto the board. It should have a flat surface with holes or a channel wide and deep enough to receive any contacts that may protrude below the pc board surface during seating of the connector.

##### 5.2. Seating Tools

Seating tools have been designed to push on the contacts and seat the connector on the pc board. The tool will prevent contacts from backing out the housing and prevent damage to the housing. The seating tool must be used with application tool or power unit.

##### 5.3. Power Units

Power units are automatic or semi-automatic machines used to assist in the application of a product. These power units supply the necessary force onto a seating tool used to seat the connector onto the pc board.

##### 5.4. Extraction Tools

Extraction tools and removal tools are designed to remove the lug from pc board.

##### 5.5. Insertion Tools

Insertion tools are designed for inserting the lug into pc board, and seating tools are designed for seating guide pins and modules or connector assemblies onto the pc board without damaging.

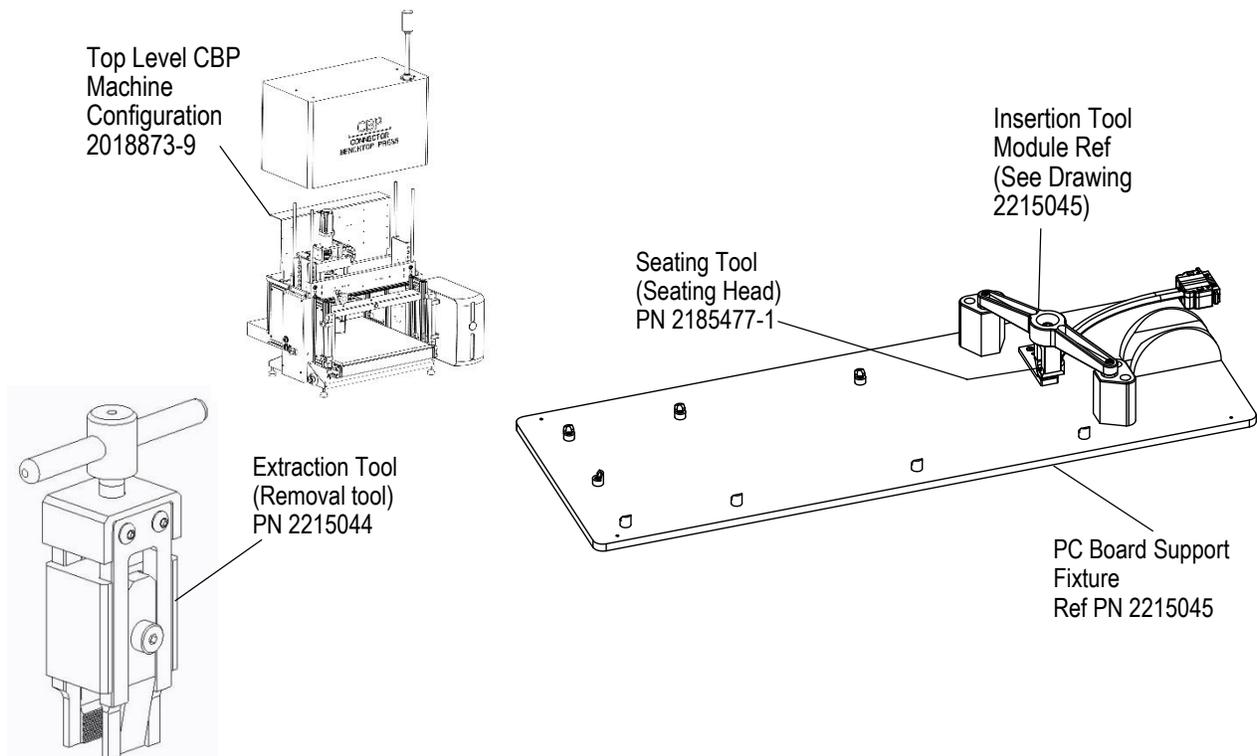
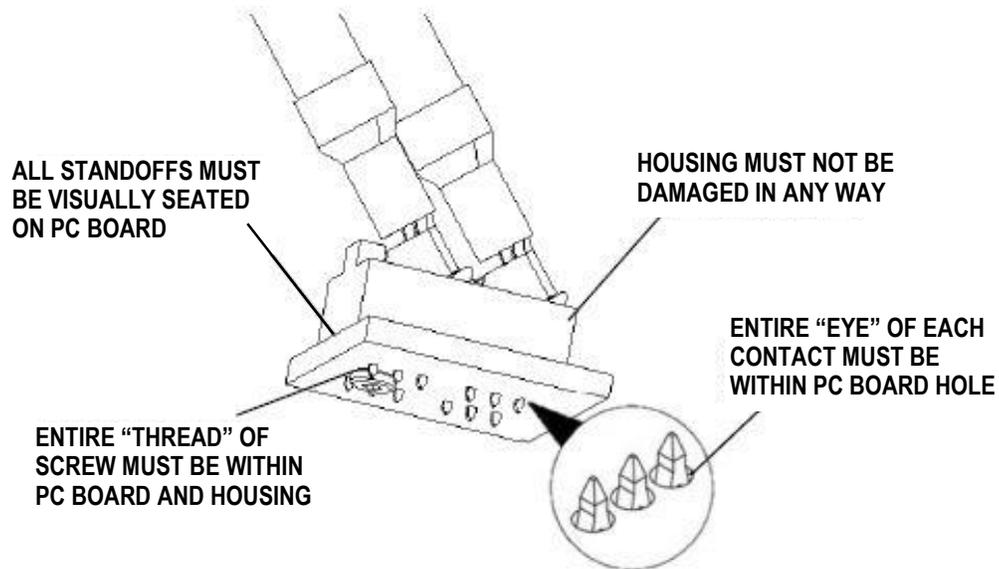


Figure 6

## 6. VISUAL AID

The illustration below shows a typical application of this product. 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 7. VISUAL AID**