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 [±.005] and angles have a tolerance of ±2°. Figures and illustrations are for identification only and are not drawn to scale.

1. INTRODUCTION

This specification covers the requirements for the application of Miniature Circular DIN Shielded Receptacle Connectors. The Circular DIN shielded connectors are available in 4 through 9 positions.

The receptacle connectors are designed to be mounted to a printed circuit (pc) board. These single or stacked right-angle and vertical receptacles are available with or without a hold-down feature on the attached shield. They can be placed on the pc board manually or by robotic equipment.

Refer to Figure 1 for connector features that will be used throughout this specification. Use these terms when corresponding with Tyco Electronics Personnel to facilitate assistance.

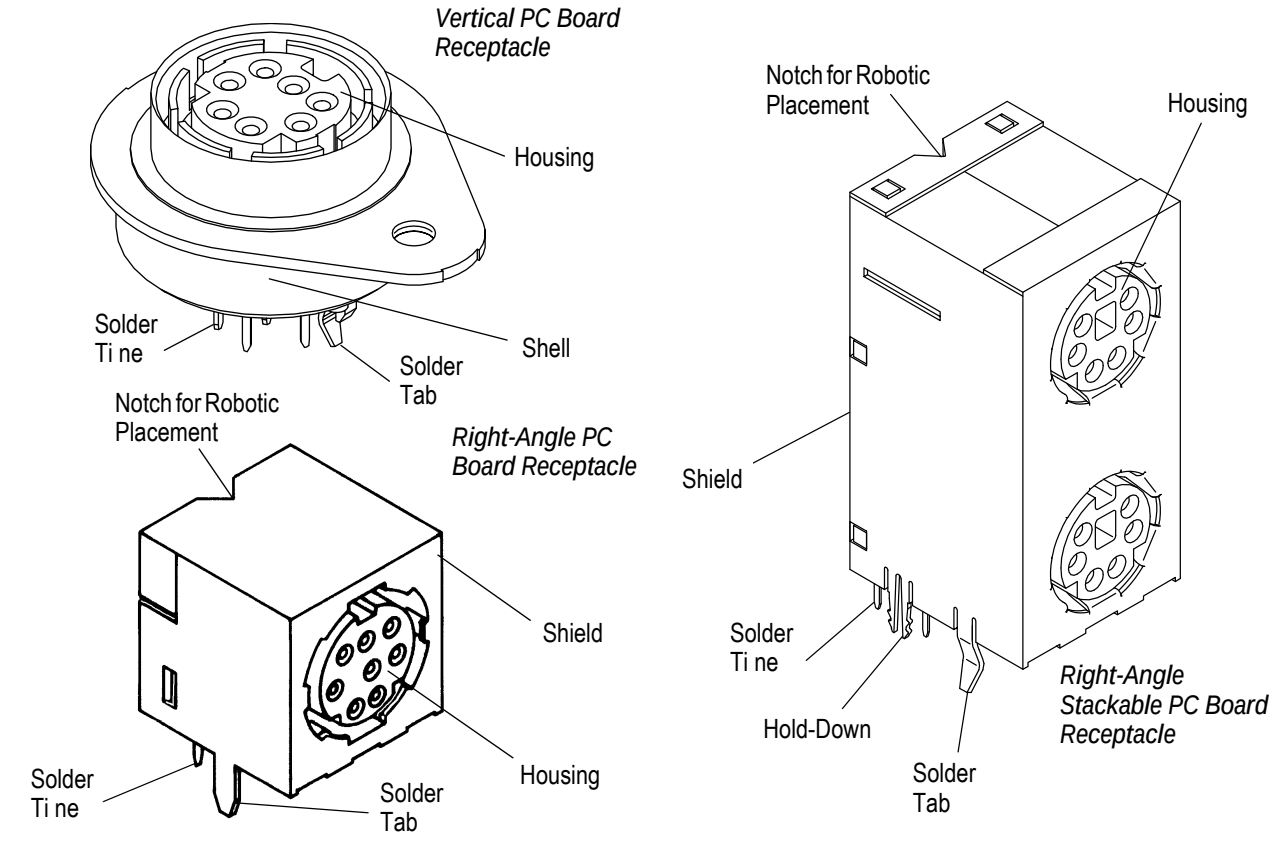


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

This paragraph is reserved for a revision summary covering the most recent additions and changes made to this specification which include the following:

- Updated document to corporate requirements
- New logo

2.2. Customer Assistance

Reference Part Number 749179 and Product Code 4264 are representative numbers of Miniature Circular DIN Shielded Receptacle Connectors. 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 Tyco Electronics Representative or, after purchase, by calling the Tooling Assistance Center or the Product Information number at the bottom of page 1.

2.3. Drawings

Customer Drawings for each product part number are available from the service network. The information contained in Customer Drawings takes priority if there is a conflict with this specification or with any technical documentation supplied by Tyco Electronics.

2.4. Specifications

Product Specifications 108-1225 and 108-1225-1 provide product performance requirements and test information.

2.5. Manuals

Manual 402-40 is available upon request and can be used as a guide in soldering. This manual provides information on various flux types and characteristics along with the commercial designation and flux removal procedures. A checklist is included in the manual as a guide for information on soldering problems.

3. REQUIREMENTS

3.1. Storage

A. Ultraviolet Light

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

B. Shelf Life

The connectors should remain in the shipping containers until ready for use to prevent deformation to the connectors. The connectors should be used on a first in, first out basis to avoid storage contamination.

C. Chemical Exposure

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

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

NOTE

Where the above environmental conditions exist, phosphor-bronze contacts are recommended instead of brass if available.

3.2. Receptacle Connector

The receptacles are designed for pc boards with a nominal thickness of 1.57 mm [.062 in.]. Hole pattern, layout, and panel cutout dimensions are provided in Figures 2A through 2F.

NOTE

The layouts in Figure 2 are composites for all connector positions. The connector positions and circuit numbers will determine the corresponding hole location in the lettered hole pattern.

CONNECTOR POSITIONS	CIRCUIT NUMBER AND HOLE PATTERN LETTERS								
	1	2	3	4	5	6	7	8	9
4	D	A	H	E	---	---	---	---	---
5	C	D	A	H	E	---	---	---	---
6	C	B	D	A	H	E	---	---	---
7	C	B	D	A	H	F	E	---	---
Special 7†	---	---	D	G	A	H	F	E	J
8	C	B	D	G	A	H	F	E	---
9	C	N	D	G	A	H	F	E	J

†Mating face and pc board layout configurations are different and non-intermateable with standard 7-position.

Figure 2A

PC Board Layout for Right-Angle Connector
(Bottom Side of PC Board)

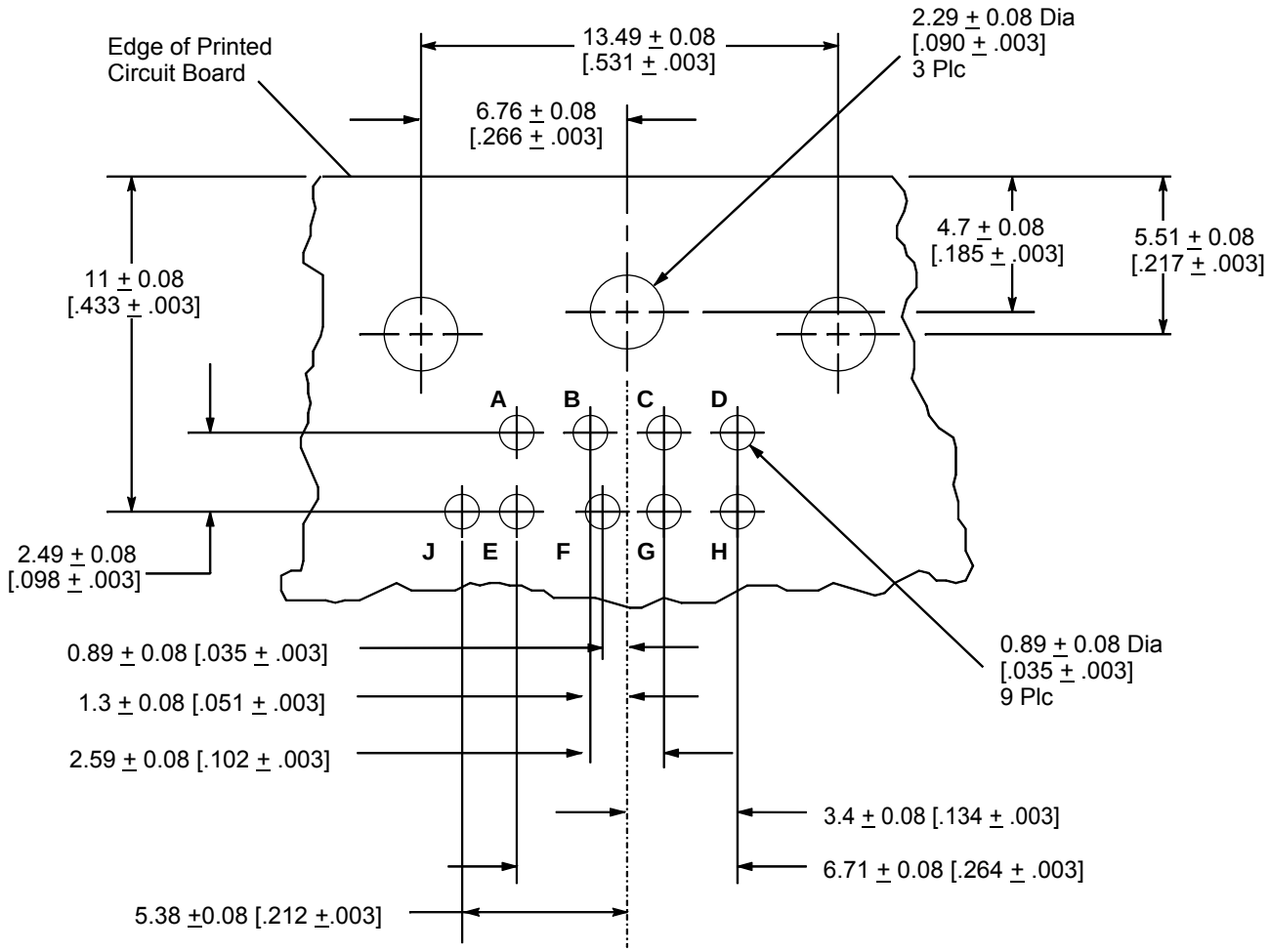


Figure 2B

PC Board Layout for Vertical Connector
(Bottom Side of PC Board)

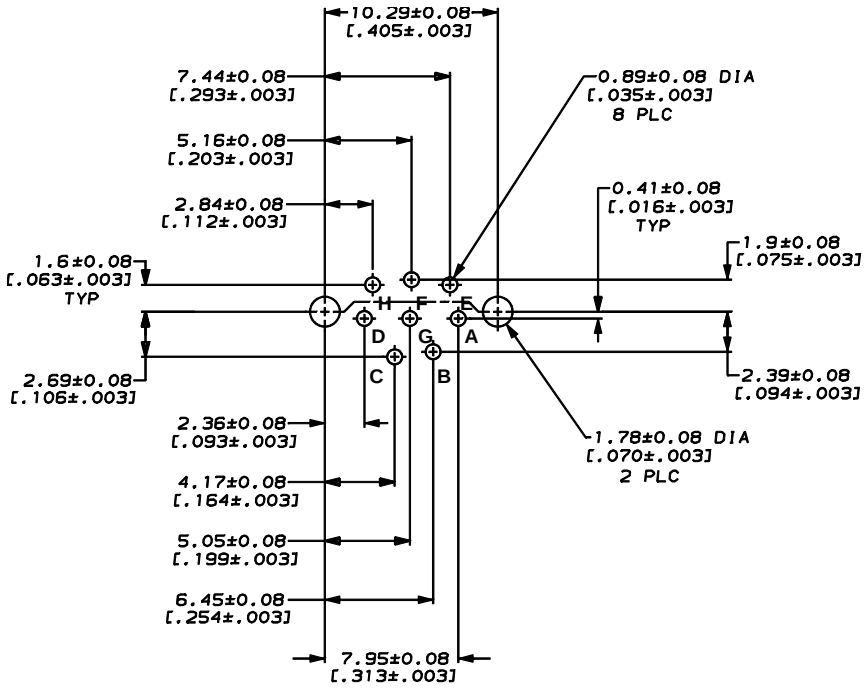


Figure 2C

PC Board Layout for Right-Angle Stacked Connector
(9 Posn Over 9 Posn)

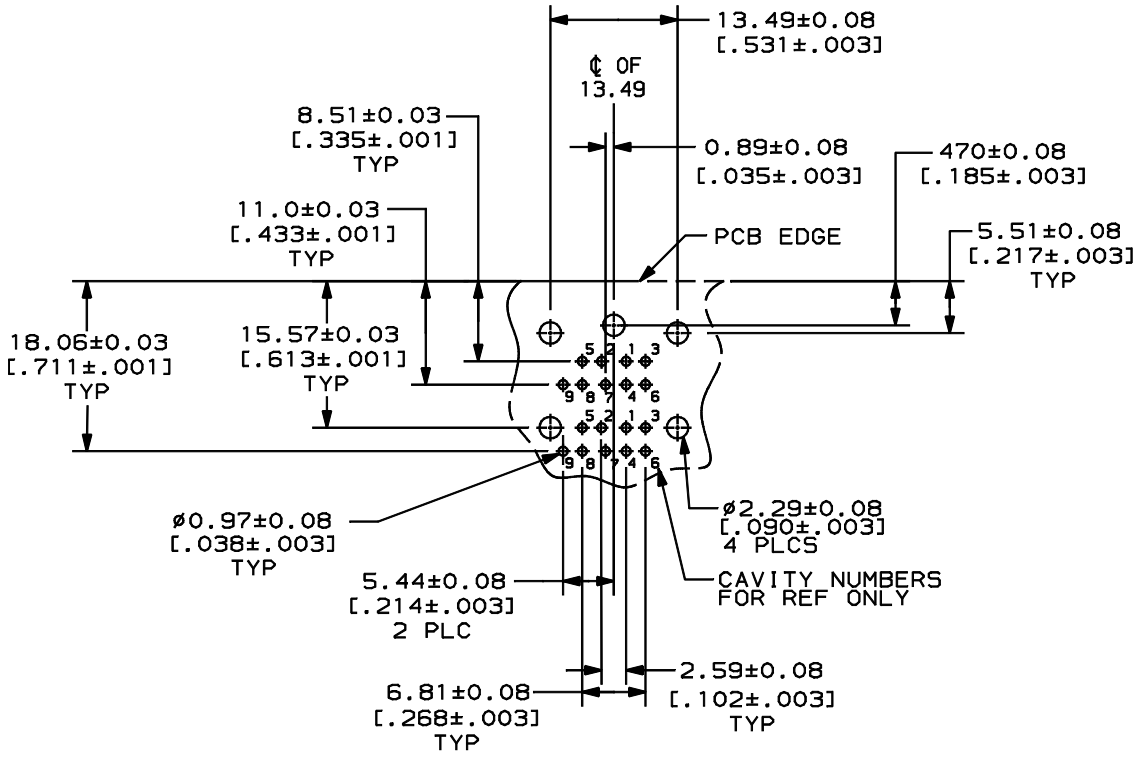


Figure 2D

PC Board Layout for Right-Angle Stacked Connector
(6 Posn Over 6 Posn)

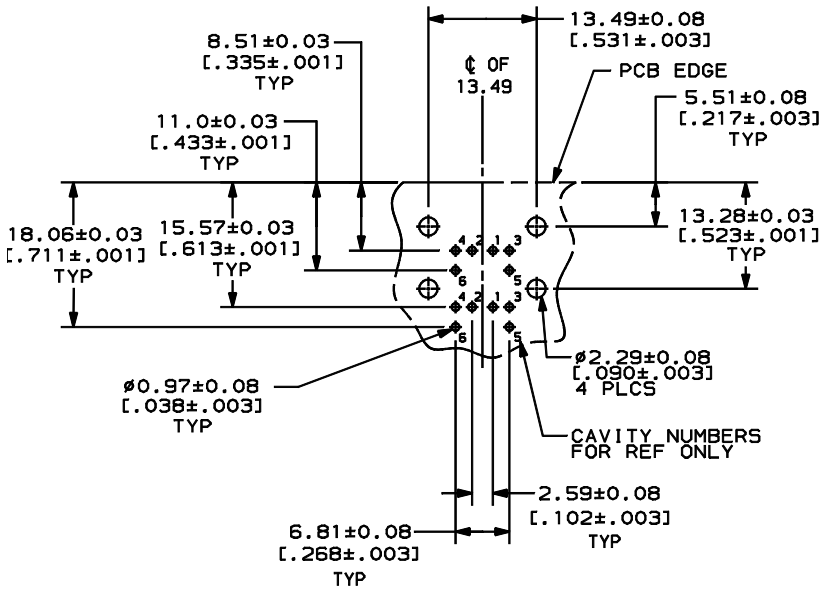
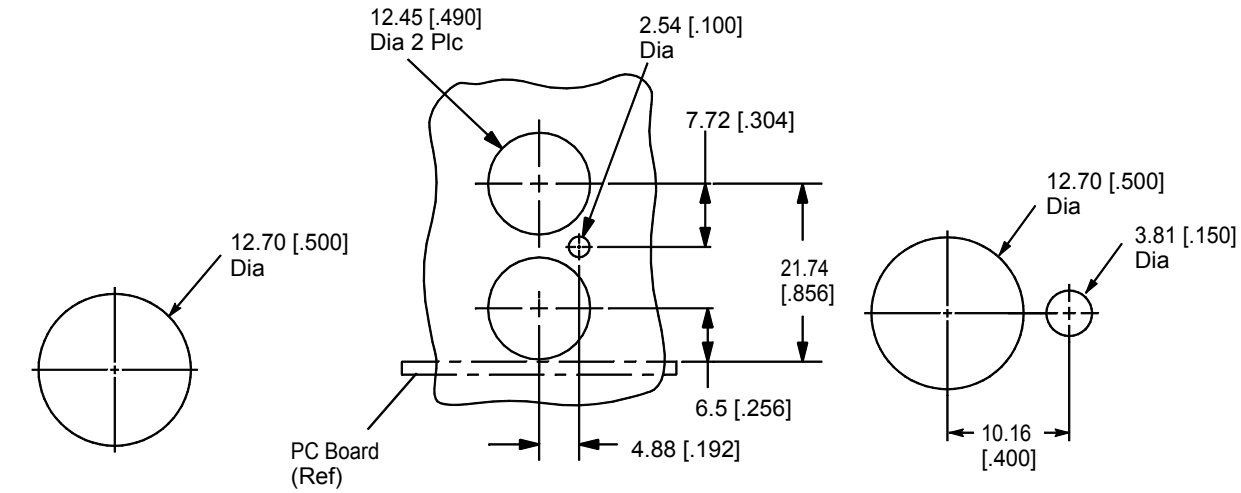


Figure 2E



Right-Angle and Standard Vertical Connectors

Right-Angle Stackable Vertical Connectors with Screw-Down Option

Vertical Connectors with Screw-Down Option

NOTE: *Panel cutout dimensions are for rear panel mount only.*

Figure 2F

3.3. Mating Connectors

Miniature Circular DIN Shielded Right Angle receptacle connectors will mate with compatible free hanging cable connectors. The pin tip configuration of the cable connector should have an 0.20 mm [.008 in.] (max.) flat and a 0.38 ± 0.13 mm [.015 ± .005 in.] chamfer length to effectively engage socket contacts of the receptacle connector. See Figure 3.

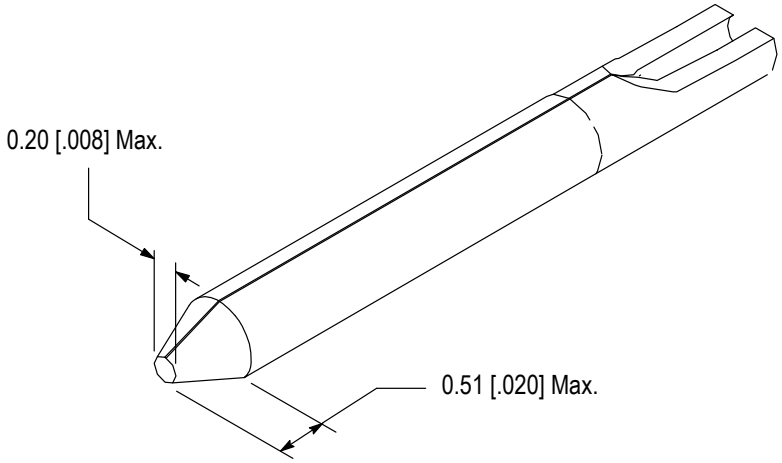


Figure 3

3.4. Soldering

A. Flux Selection

Solder tines and pc board attaching hardware must be fluxed prior to soldering. Selection of the flux will depend on the type of pc board used and other components that may be mounted on the board. Also, the choice will have to be compatible with the wave solder line, manufacturing, and safety requirements.

B. Cleaning

Fluxes, residues, and activators must be removed. Cleaning procedures depend on the type of flux used on the solder line. The following cleaning compounds and chemicals may be used to clean the connectors without adverse affect on the housings and contacts. See Figure 4.

CLEANER		TIME (Minutes)	TEMPERATURES (Maximum)	
NAME	TYPE		CELSIUS	FAHRENHEIT
Alpha 2110■	Aqueous	1	132	270
Bioact EC-7♦	Solvent	5	100	212
Butyl Carbitol•	Solvent	1	Room Ambient	
Isopropyl Alcohol	Solvent	5	100	212
Kester 5778▲	Aqueous	5	100	212
Kester 5779▲	Aqueous	5	100	212
Loncoterge 520•	Aqueous	5	100	212
Loncoterge 530•	Aqueous	5	100	212
Terpene Solvent	Solvent	5	100	212

■Product of Fry's Metals, Inc. ♦Product of Petroferm, Inc. • Product of Union Carbide Corp. ▲ Product of Litton Systems, Inc.

Figure 4

DANGER

Consideration must be given to toxicity and safety requirements recommended on the Material Safety Data Sheet furnished by the solvent manufacturer.

NOTE

If you have a particular solvent that is not listed, consult a Tyco Electronics Representative before using it on these connectors.

C. Drying

When drying cleaned components and pc boards, make certain the temperature limitations of -55_ to 105_C [-67° to 222°F] are not exceeded.

D. Soldering Guidelines
Refer to Paragraph 2.5 of this specification for information that is available for establishing soldering guidelines.

3.5. Repair/Replacement

Connectors may be removed from the pc board by standard de-soldering methods. Damaged connectors must be replaced.

4. QUALIFICATION

Miniature Circular DIN Shielded Receptacle Connectors are Listed by Underwriters Laboratories Inc. (UL) in File No. E28476, and Certified to CSA International in File No. LR7189.

5. TOOLING

Miniature Circular DIN Shielded Receptacle Connectors may be applied manually or by robotic equipment. See Figure 5.

- **Robotic Equipment -** The robotic equipment must have a true position accuracy tolerance of 0.25 mm [.010 in.] to properly locate the connectors for insertion. This includes gripper and fixture tolerances as well as equipment repeatability.
- **PC Board Support -** A pc board support must be used to prevent bowing of the pc board during the placement of a connector on the board. It should have flat surfaces with holes or a channel wide enough and deep enough to receive the contact solder tines or other attaching hardware during installation of the connector on the board.

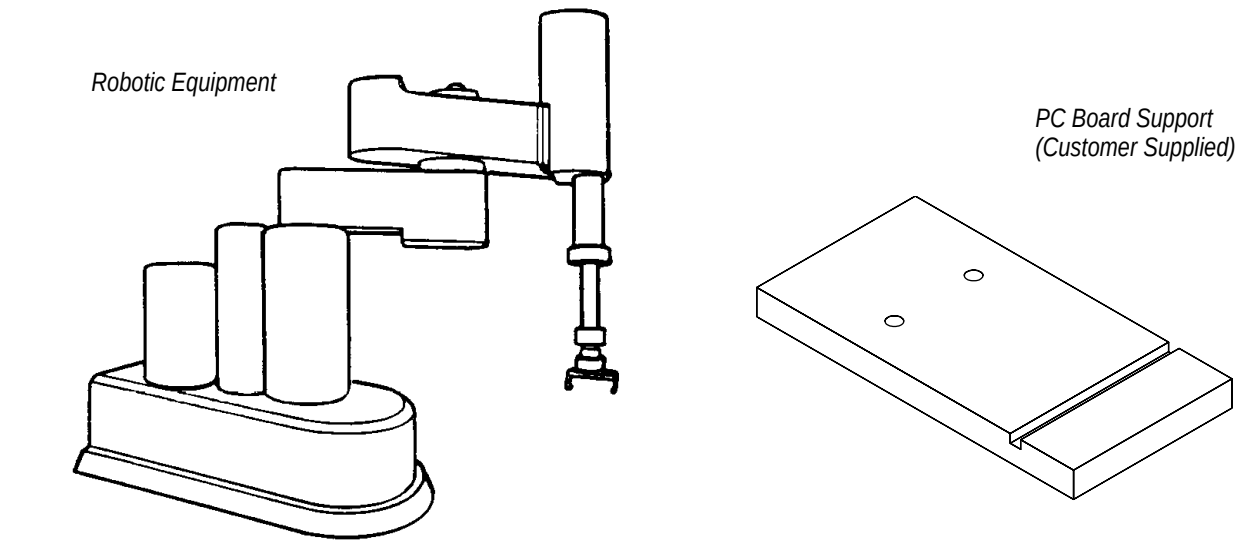


Figure 5

6. VISUAL AID

Figure 6 shows a typical application of Miniature Circular DIN Shielded Receptacle Connectors. This illustration should be used by production personnel to visually ensure suitable applications. Installations which appear visually incorrect should be inspected using the dimensional information given in the preceding pages of this application specification.

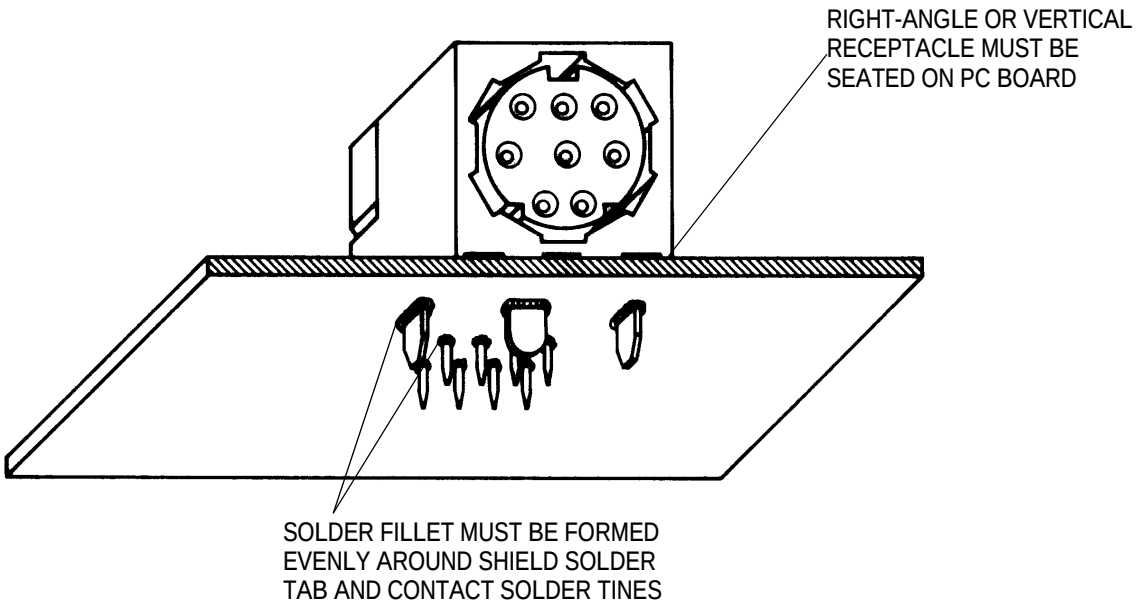


FIGURE 6 VISUAL AID