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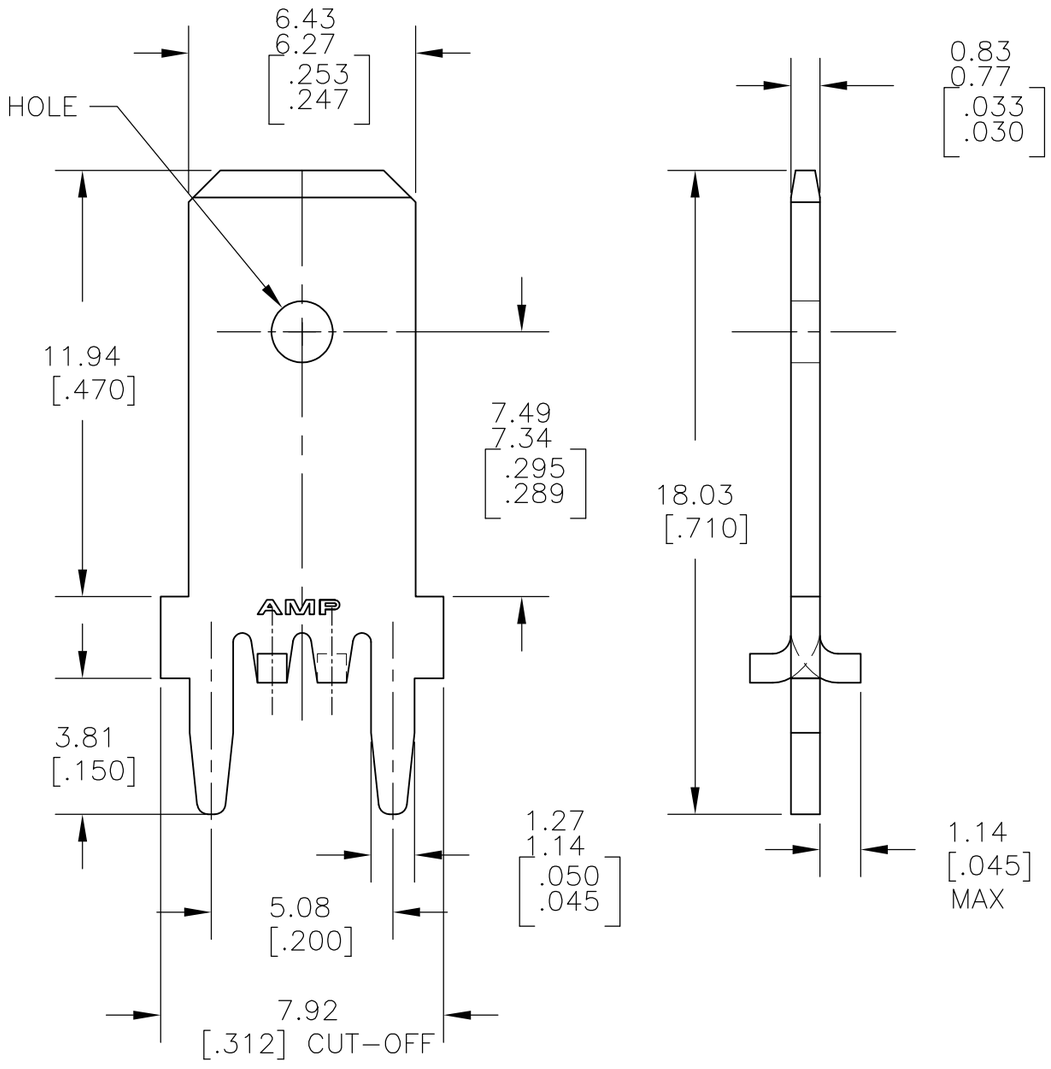
LOC	DIST
AF	50

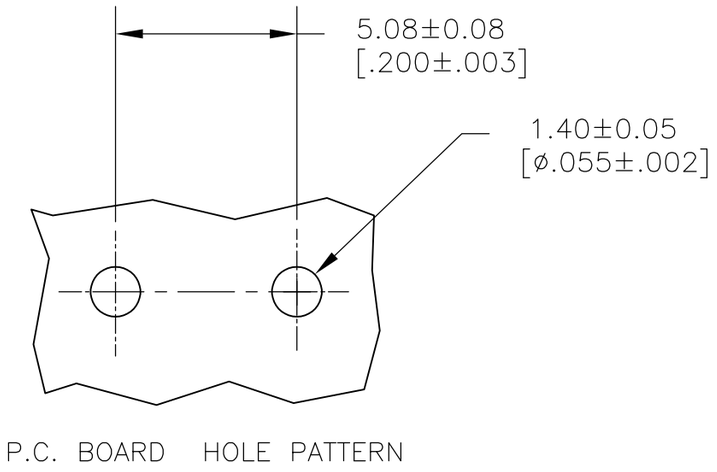
REVISIONS

P	LTR	DESCRIPTION	DATE	DWN	APVD
	D	REVISED PER ECR–13–001204	26JUN13	KH	PD

1 CONTINUOUS STRIP ON REELS.

△2 TIN PLATE 0.00381 [.000150] MIN OVER 0.00254 [.000100] MIN THK COPPER.





P.C. BOARD HOLE PATTERN

勝特力電材超市–龍山店 886-3-5773766
勝特力電材超市–光復店 886-3-5729570
胜特力电子(上海) 86-21-34970699
胜特力电子(深圳) 86-755-83298787
http://www.100y.com.tw

1217125–1
PART NO.

THIS DRAWING IS A CONTROLLED DOCUMENT.

DIMENSIONS: mm[INCHES]

TOLERANCES UNLESS OTHERWISE SPECIFIED:
0 PLC ± –
1 PLC ± –
2 PLC ± 0.25 [.010]
3 PLC ± –
4 PLC ± –
ANGLES ± –

MATERIAL: BRASS
FINISH: △2

DWN	JR RUTH	23MAR01
CHK	MS FEHER	23MAR01
APVD	N DEIBERT	23MAR01
PRODUCT SPEC	—	
APPLICATION SPEC	—	
WEIGHT	—	

TE Connectivity

NAME: TAB, FASTON, P.C.BOARD 6.35 [.250]

SIZE	CAGE CODE	DRAWING NO	RESTRICTED TO
A3	00779	C–1217125	—

CUSTOMER DRAWING | SCALE 6:1 | SHEET 1 OF 1 | REV D

1470–19 (3/11)

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 application of FASTON 110, 187, 205, 250, and 312 Series Tab Contacts for printed circuit (pc) board applications. The series designator is the width of the tab in hundredths of an inch. There are loose piece contacts for hand tool application and continuous strip contacts for automatic machine application.

Each tab has a tapered lead-in to ease insertion of mating receptacle contacts, a dimple or hole that helps retain the mating receptacle, and receptacle stops to prevent overinsertion of the mating receptacle contact. The pc board contacts are available with a variety of solder tines. Those with round barrel and double solder tines provide strength and stability for frequent connect/disconnect applications.

When corresponding with TE Connectivity Personnel, use the terminology provided on this specification to help facilitate your inquiry for information. Basic terms and features of the contacts are provided in Figure 1.

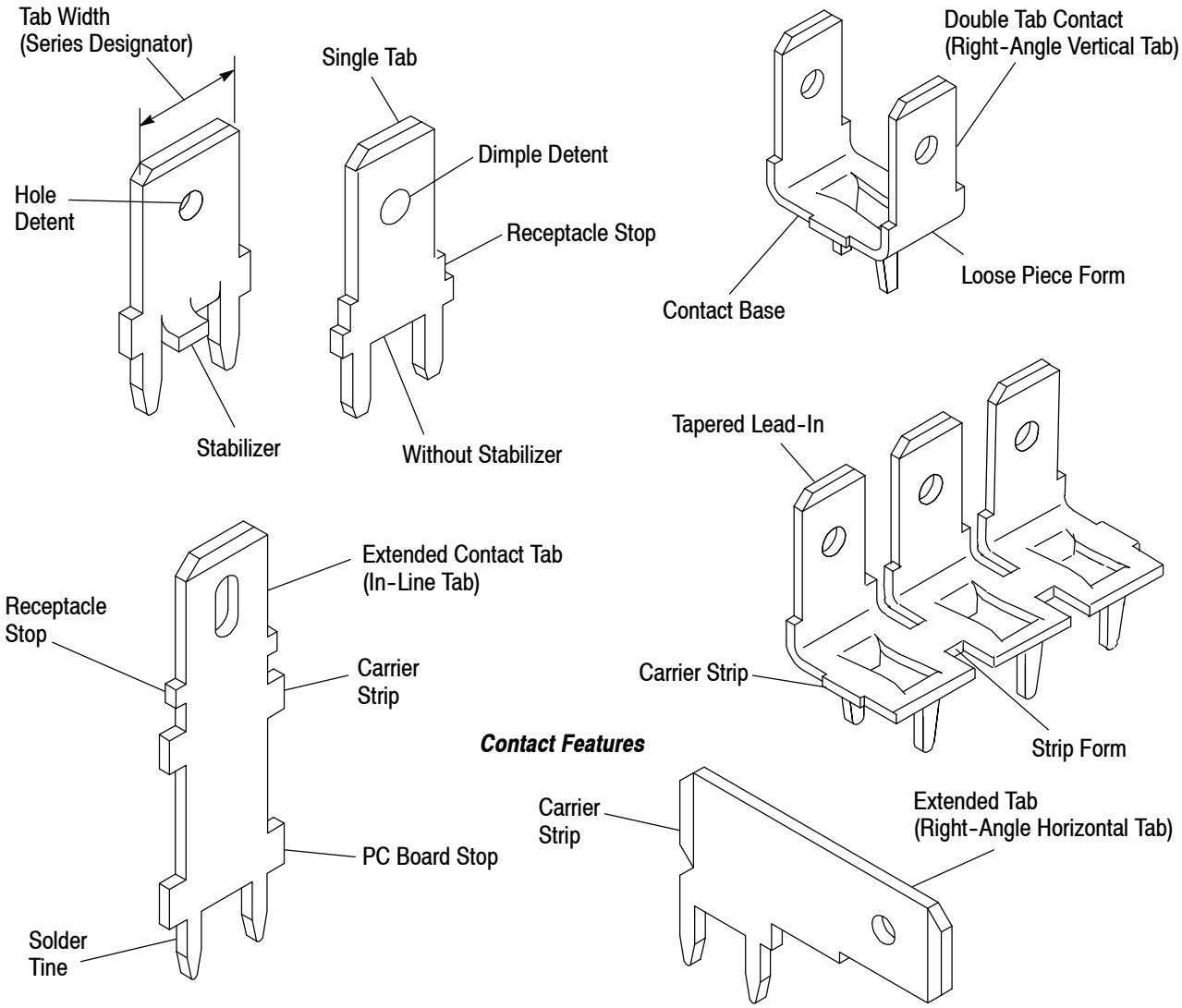


Figure 1 (cont'd)

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*Trademark

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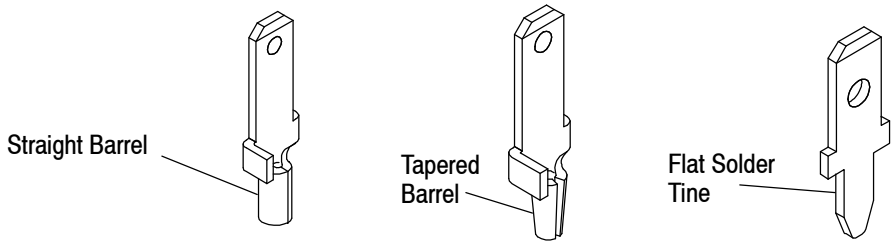
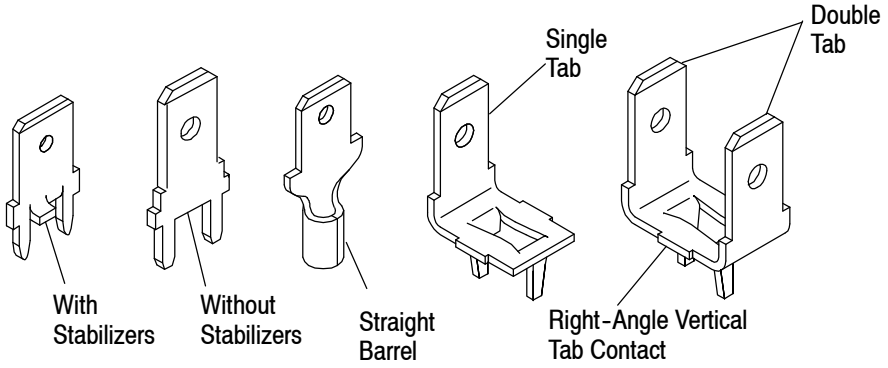
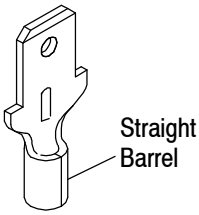


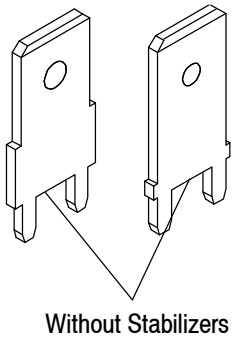
110 Series Contacts

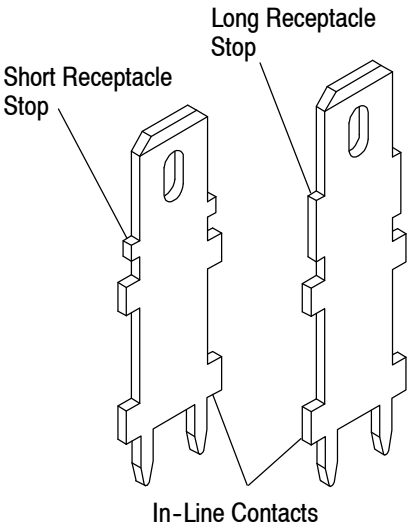


187 Series Contacts

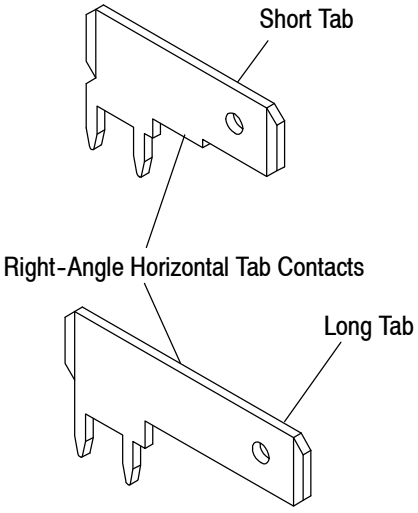


205 Series Contact

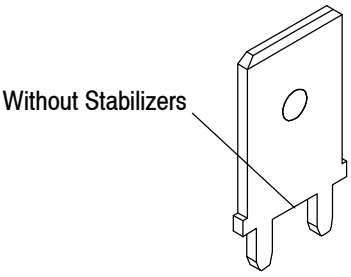




250 Series Contacts



Extended Tabs



312 Series Contacts

Figure 1 (end)

2. REFERENCE MATERIAL

2.1. Revision Summary

- Updated document to corporate requirements

2.2. Customer Assistance

Reference Part Number 63650 and Product Code 1100 are representative numbers of FASTON Tab Contacts. 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 TE Representative or, after purchase, by calling Tooling Assistance Center or Product Information Center number at the bottom of page 1.

2.3. Drawings

Customer Drawings for specific products 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 TE.

2.4. 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.

2.5. Specifications

Solderability Specification 109-11-1 provides detailed solder requirements.

2.6. Instructional Material

The following list includes available instruction sheet (408-Series) for hand tools, and customer manuals (409-series) for machines used to place contacts in pc boards.

A. Instruction Sheet

408-6635 for Hand Insertion Tool
408-8038 for Applicators

B. Customer Manuals

409-5174 for Insertion Machine Model “U”
409-5227 for Pin Inserter with Integral Inserters
409-5554 for 250 Series Cut and Transfer Machines
409-5872 for Modular Insertion System (MIS) with Fixed Head Insertion System (FHIS) Heads
409-5886 for Modular Insertion System (MIS) with Post/Tab Insertion Head

3. REQUIREMENTS

3.1. Material

All contacts are made of brass. They are available without any plating or with tin plating. The recommended maximum temperature for all contacts is 110° C [230° F].

3.2. Characteristics

The contacts are available in the 110, 187, 205, 250, and 312 series with 1 or 2 tabs. There are right-angle vertical tab contacts, right-angle horizontal tab contacts, and in-line tab contacts. Stock thickness for 110 and 205 series is 0.51 mm [.020 in.], for 187 series it is 0.51 mm [.020 in.] or 0.81 mm [.032 in.], and for 250 series it is 0.51 mm [.020 in.] or 0.81 mm [.032 in.]. There are contacts with round or flat solder tines. Flat solder tine contacts greater than 3.18 mm [.125 in.] in length may be clinched after insertion into the pc board for additional strength and stability. All contacts, except the 187 and 205 series round barrel loose piece contacts, feature a pc board stop to avoid overinsertion into the pc board. See Figure 1.

3.3. Mounting PC Board Contacts

A. 110 Series Tab Contacts

These contacts are available with a straight barrel, tapered barrel, or flat solder tine. Barrel type contacts require a close tolerance hole that helps retain the contact in the pc board during soldering. The edges of the flat solder tine contacts help retain the contact in the round hole during soldering. The pc board thickness and hole layout for each style of contact is provided in Figure 2.

110 Series Contacts

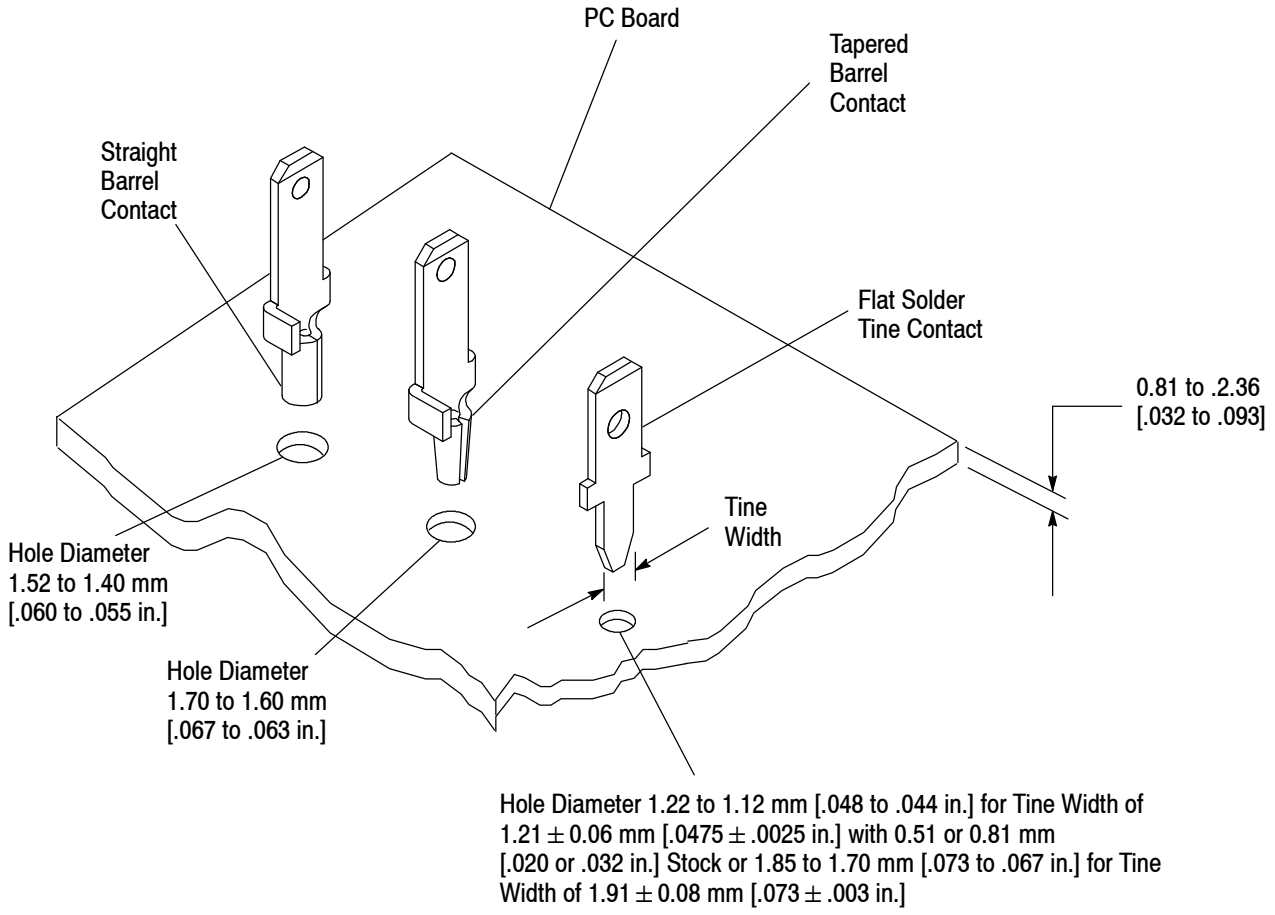


Figure 2

B. 187 Series Tab Contacts

These contacts are available as: single or double right-angle vertical tabs and double solder tines, a single in-line tab with a round barrel, or a single in-line tab with or without stabilizers and two solder tines. Contacts with right-angle vertical tabs require a rectangular hole through which the solder tines are inserted and are available with a standard length solder tines of 3.18 mm [.125 in.] or an extended length solder tines of 4.06 mm [.160 in.]. Those with extended tines are to be clinched against the pc board. All other contacts require a close tolerance round hole for retention. The pc board thickness and hole layout for each style of contact is provided in Figure 3.

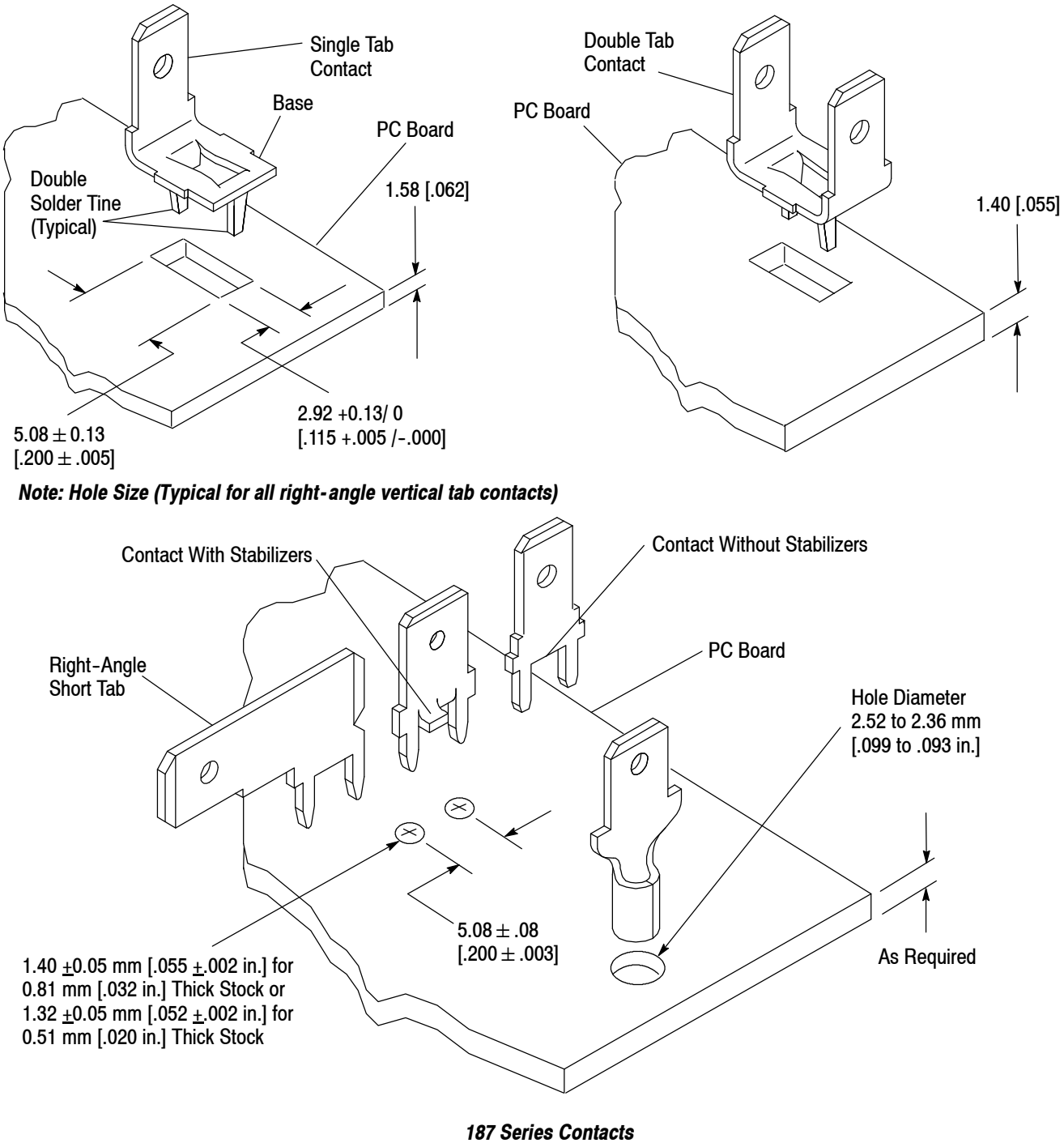


Figure 3

C. 205 Series Tab Contact

These contacts have a single tab and a round barrel solder tine. They are available in loose piece form only and do not have a pc board stop. The pc board thickness and hole diameter are provided in Figure 4.

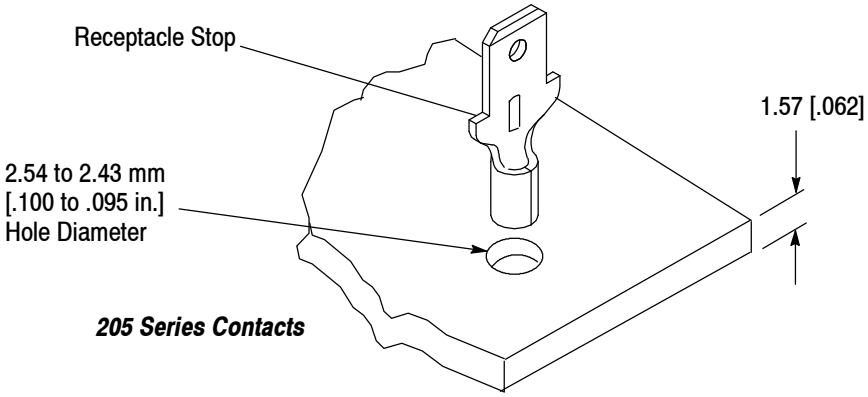


Figure 4

D. 250 and 312 Series Tab Contacts

These contacts are available with single tabs, double solder tines (with or without pc board stabilizers) and extended contacts with in-line and right-angle horizontal tabs. Contacts with double center solder tines that are 3.18 mm [.125 in.] long or longer may be clinched outward to help hold them in place. Contacts with outside solder tines require a close tolerance round hole. The pc board thickness and hole layout for each style of contact is provided in Figure 5.

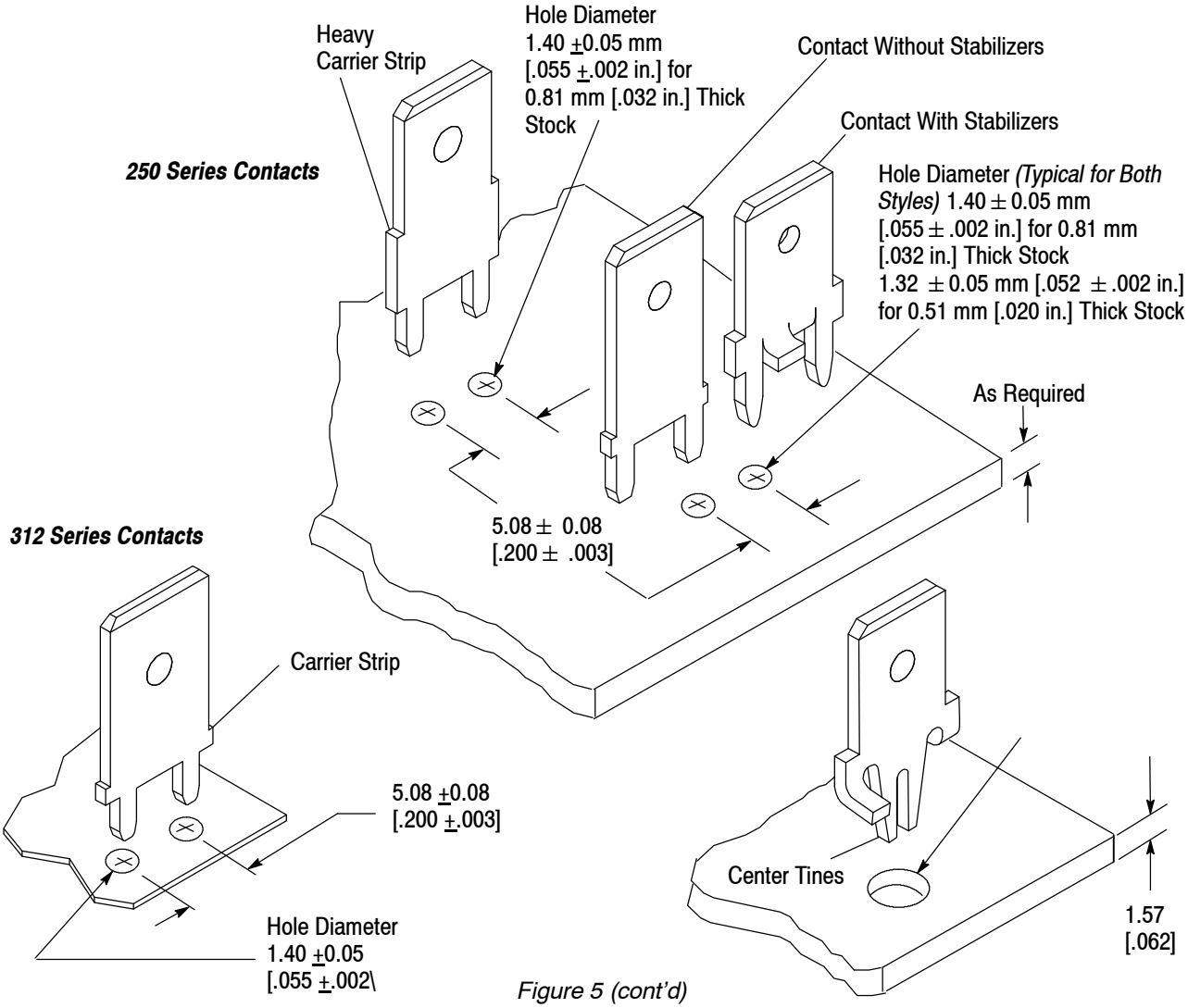


Figure 5 (cont'd)

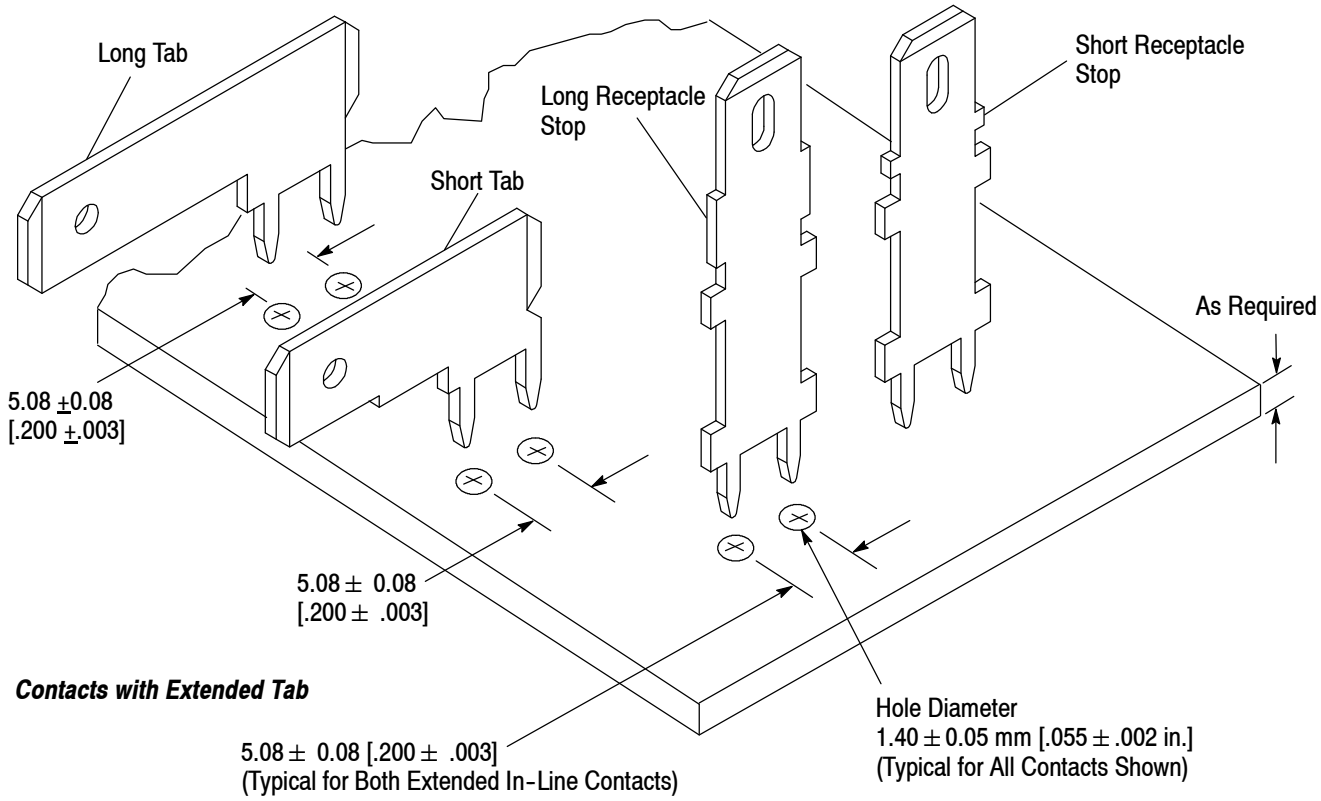


Figure 5 (end)

3.4. Tab Cutoff

The tab cutoff length and the burr resulting from strip contacts being cut from the carrier strip must be within specific limits. The cutoff length will vary from one contact type to another depending on contact and carrier strip designs.

A. 110 Series Cutoff Length

Barrel type contacts have an end carrier strip. Flat type contacts are available with end or side carrier strips. For cutoff dimensions, see Figure 6.

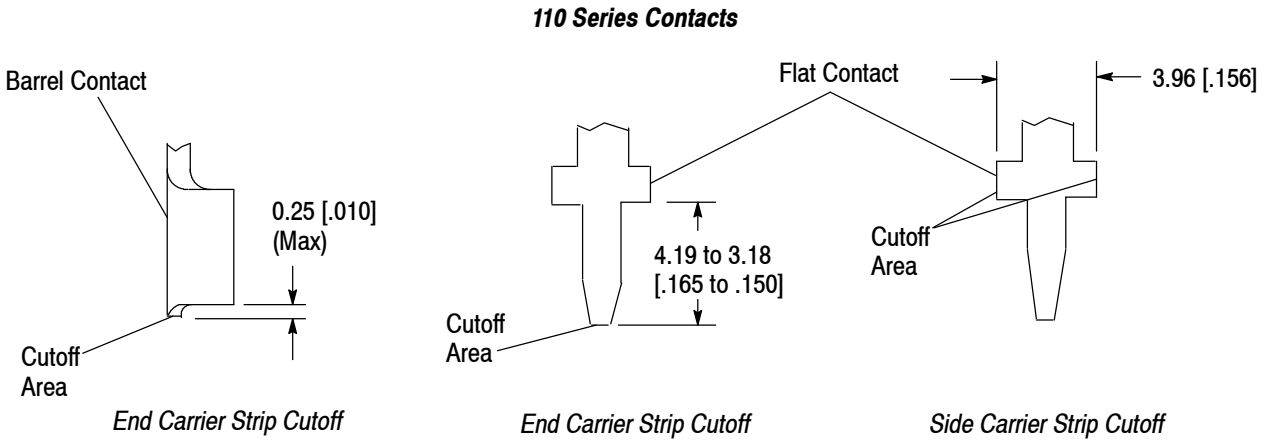


Figure 6

B. 187 Series Cutoff Length

Barrel type contacts have an end carrier strip. Single and double right-angle tab contacts have a side carrier strip. Single tab in-line contacts with and without stabilizers have a side carrier strip. For cutoff dimensions, see Figure 7.

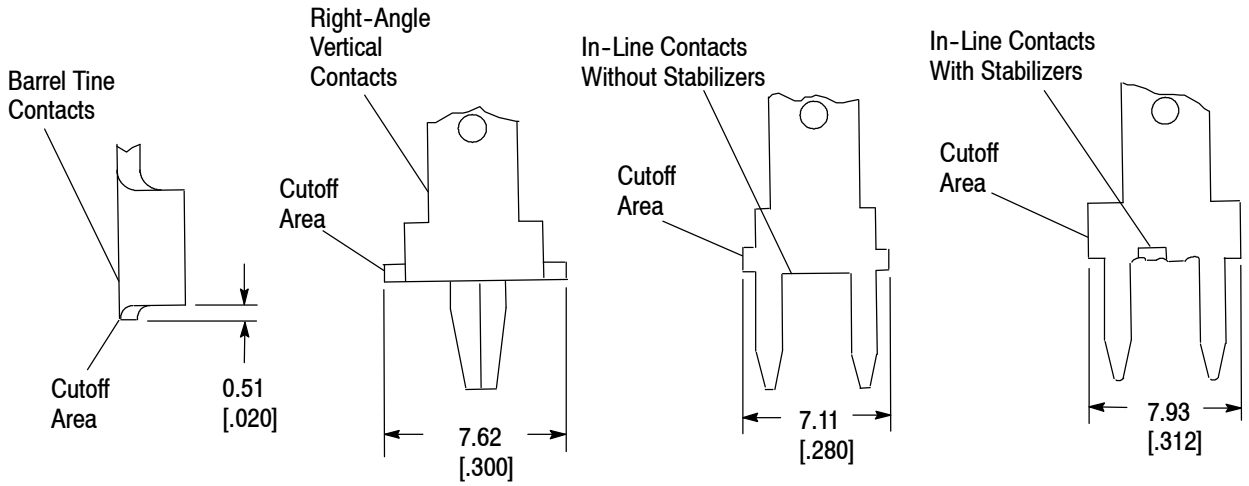


Figure 7

C. 205 Series Contacts

These contacts are supplied in loose piece form only. No cutoff dimension is required for customer application.

D. 250 and 312 Series Cutoff Length

Large carrier strip contacts have the carrier strip on the side. Medium carrier strip contacts have a stabilizer with the carrier strip on the side. Small carrier strip contacts have no stabilizers with the carrier strip on the side. For cutoff dimension, see Figure 8.

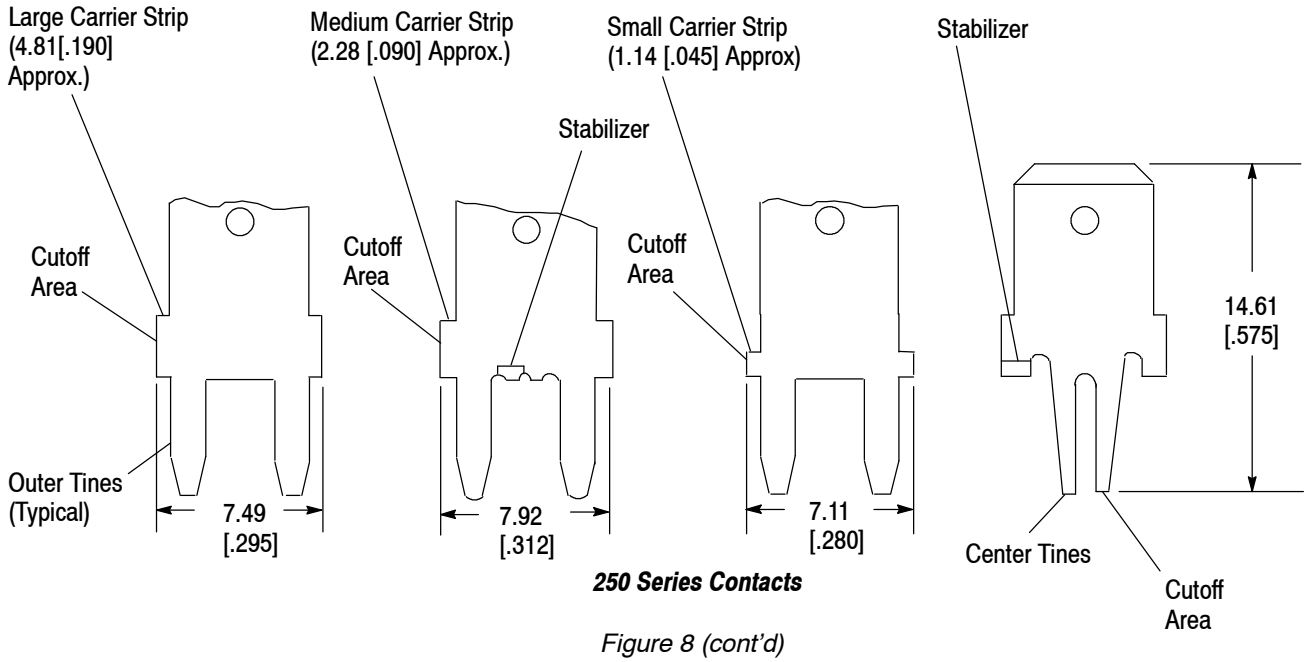


Figure 8 (cont'd)

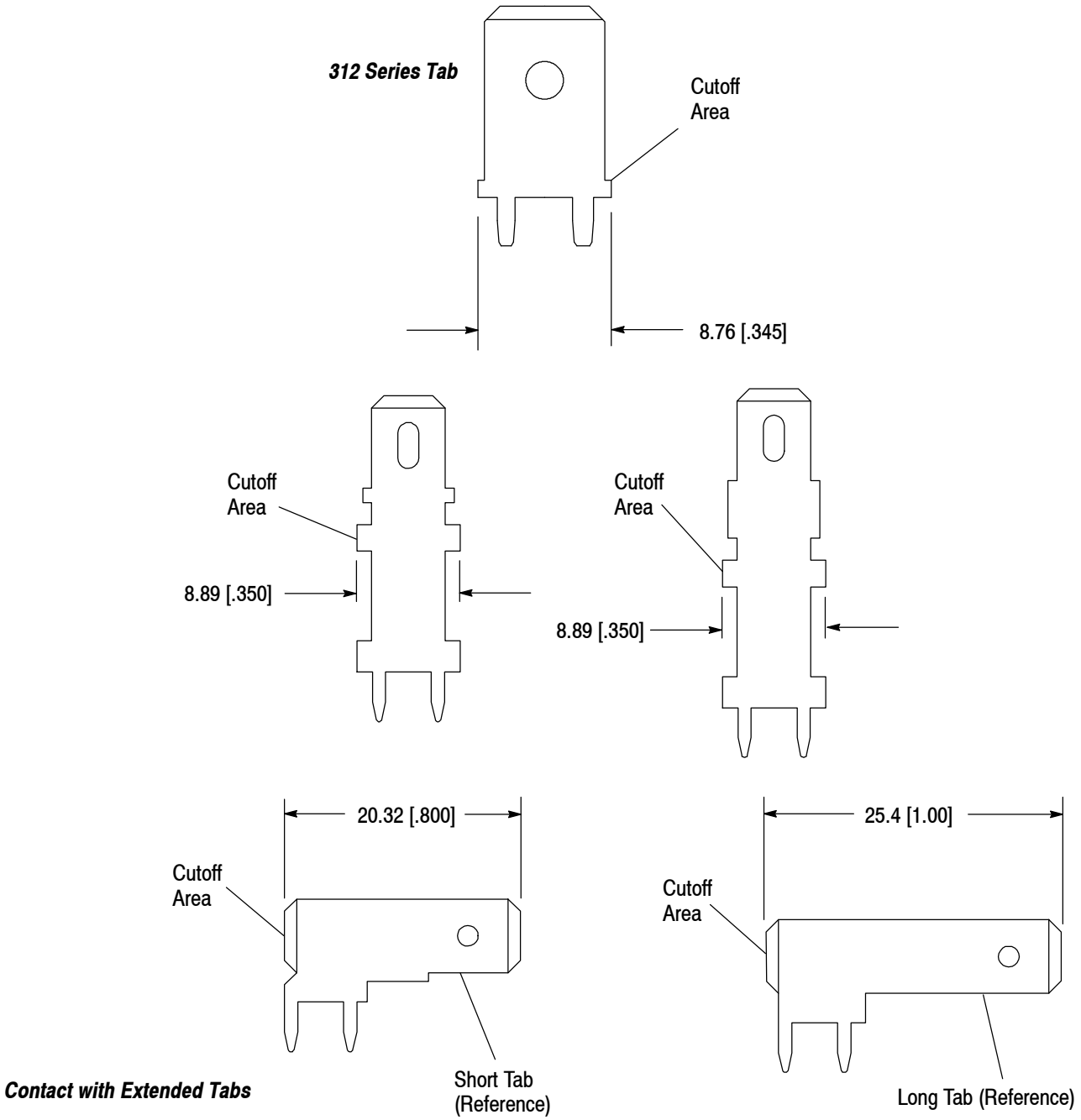


Figure 8 (end)

E. Burr Allowance

The burr allowance on the carrier resulting from the cutting action is the same for all contacts and is provided in Figure 9.

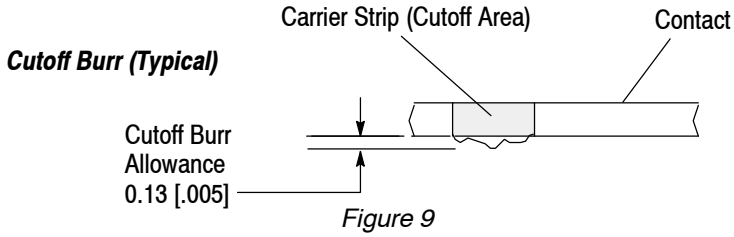
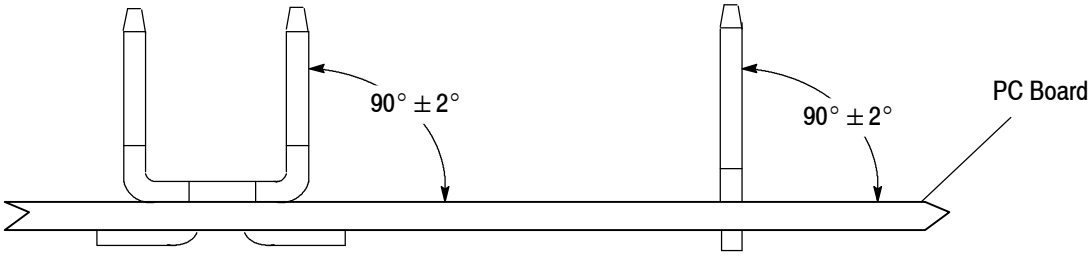


Figure 9

3.5. Straightness

The contact tabs must be perpendicular to the pc board within the tolerance provided in Figure 10.



Right-Angle and In-Line Contacts

Figure 10

3.6. Clinching Tines

Double solder tines contacts that extend more than 1.65 mm [.065 in.] beyond the pc board, and contacts with center tines, are designed to be clinched in the pc board. The extended and center tine contacts are designed to be used without solder, however, they may be soldered to the pc board for added stability. Clinched contact tines must be formed within specified limits. See Figure11.

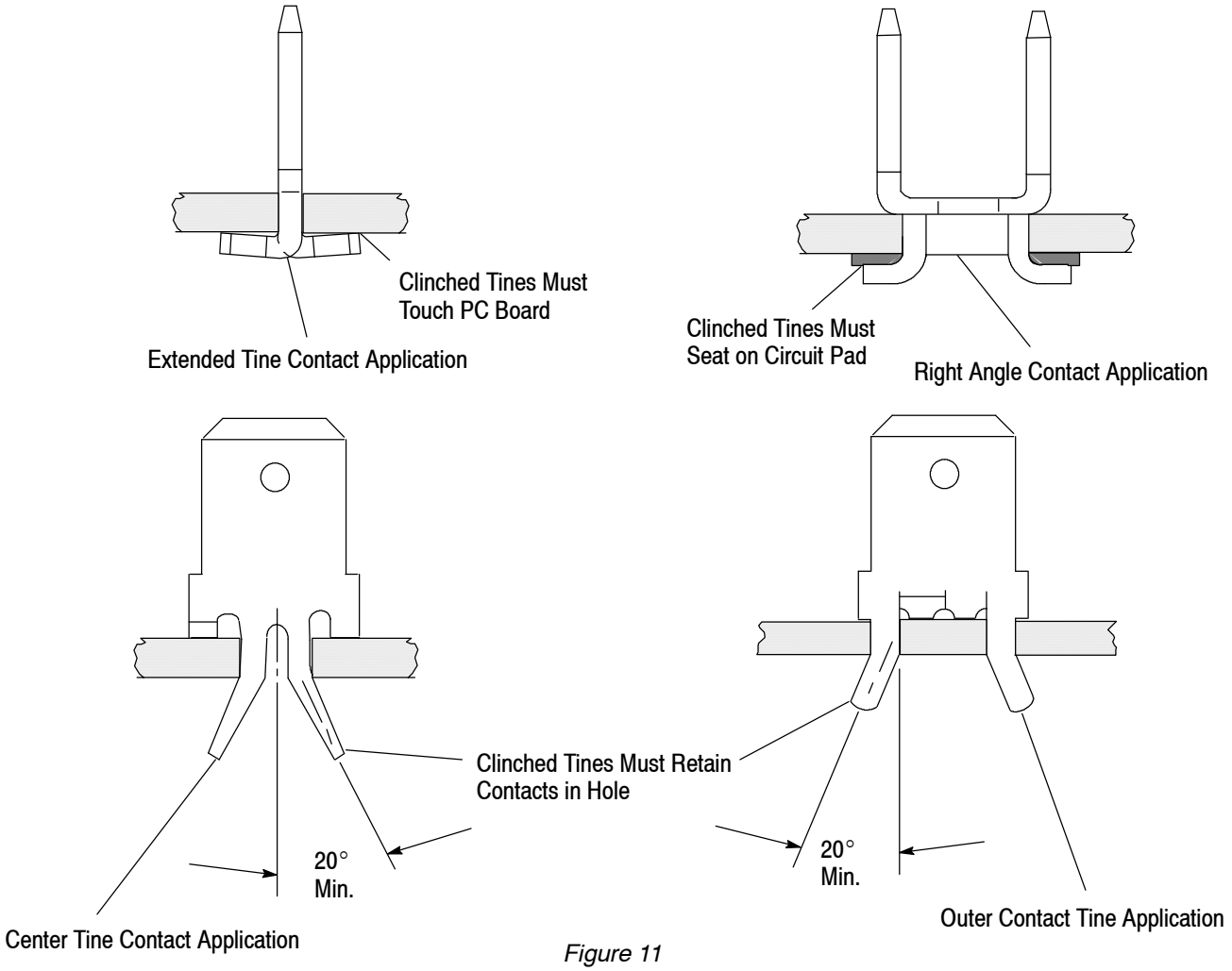


Figure 11

3.7. Soldering PC Board Contacts

NOTE

Manual 402-40 is available to assist in describing soldering variables, solderability problems, and solderability shelf life for tin or tin/lead solder/plates. It also provides a check list for data needed to assist in solving soldering problems.

The contact solder tines must be fluxed with a rosin base, aqueous, or suitable no-clean flux before soldering. Selection of flux will depend on the type of pc board material and other components mounted on the pc board. Additionally, the flux must be compatible with the wave solder line, manufacturing, health, and safety requirements. Call one of the phone numbers listed at the bottom of page 1 for consideration of types of flux.

The contacts may be wave or hand soldered to the pc board.

3.8. Cleaning

After soldering, removal of fluxes, residues, and activators is necessary. Contact the supplier of the solder paste and flux for recommended cleaning solvents.

Figure 12 provides a list of common cleaning solvents that will not affect the contacts. If you have a particular solvent that is not listed, consult an TE Representative before using it.

CLEANER		TIME (Minutes)	TEMPERATURES (Max)	
NAME	TYPE		CELSIUS	FAHRENHEIT
ALPHA 2110	Aqueous	1	132	270
BIOACT EC-7	Solvent	5	100	212
CARBITOL	Solvent	1	Room Ambience	
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

Figure 12

DANGER

Consideration must be given to toxicity and other safety requirements recommended in the Material Safety Data Sheet supplied by the solvent manufacturer.

3.9. Inspection

The following criteria will assist in assuring quality terminations. For illustrations and dimensional requirements, see Figure 13.

- The contacts must be firmly secured to the mounting surface. Contacts with clinch tines may be soldered to the pc board.
- There shall be no deformation of the contact tab that will hinder mating and unmating of receptacle contacts or otherwise affect the performance of the contact or other components.
- Soldered contact tines must have an even solder fillet (see Solderability Specification 109-11-1).
- The finish surface of the tab must not be scraped, gouged, or heavily marked. Light tooling marks are permissible.

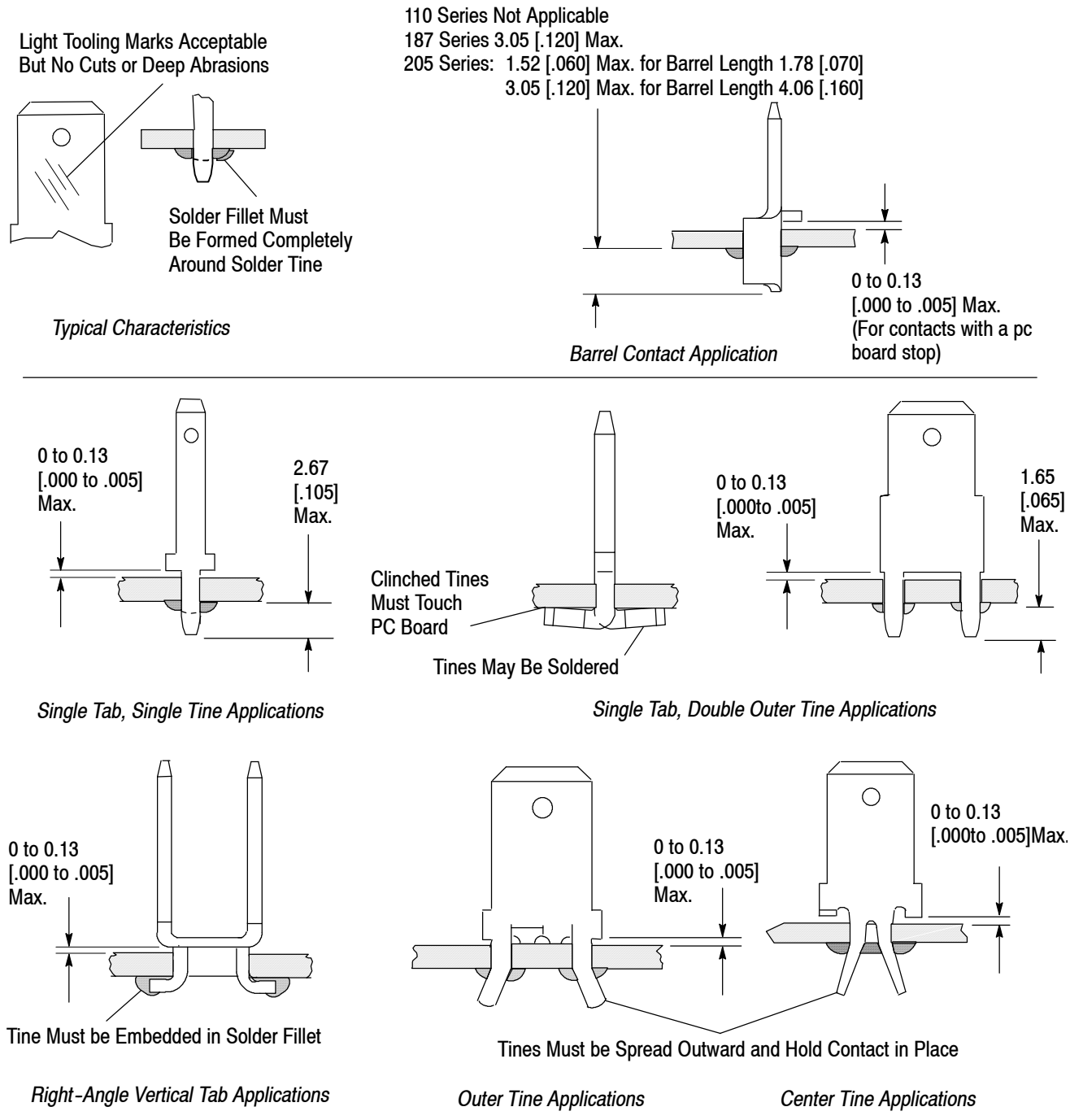


Figure 13

3.10. Repair

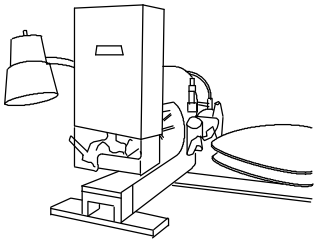
A damaged contact must be removed and replaced with a new one. Solder must be removed from soldered tines and clinched tines must be straightened before removal. Care must be used to prevent damage to the mounting surface and surrounding components.

4. QUALIFICATION

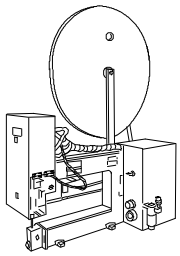
All contacts are Recognized by Underwriters Laboratories Inc. (UL) in File Number E66717 and have been Certified by CSA International in File Number LR7189.

5. TOOLING

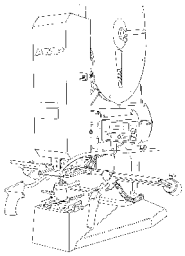
Reeled strip contacts can be installed with power units designed for a variety of applications using tooling assemblies designed specifically for a contact type, or with power units containing integral tooling. Loose piece contacts are designed to be installed by hand or with the use of a hand tool. For assistance in selecting the tooling that will best suit your application requirements, contact the Tooling Assistance Center by calling the number at the bottom of page 1. Recommended tooling and applicable instructions are provided in Figure 14.



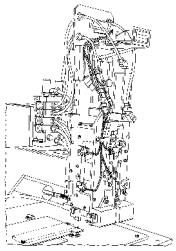
Pin Inserter - Typical (409-5227)



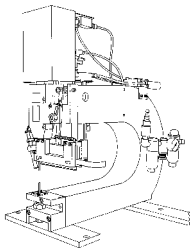
Cut and Transfer Machine 806992-1 (409-5554)



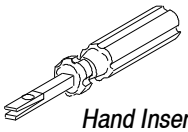
Modular Insertion System (MIS) Bench Machine 217600-3 for Fixed Head Insertion Systems (FHIS) Heads (409-5872)



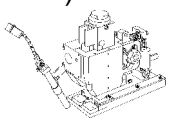
Insertion Head



Insertion Machine Module "U" 691679-1 for Applicators (409-5174)



Hand Insertion Tool 274282-1 (408-6635)



Applicator - Typical (408-8038)

CONTACT		TOOLING AND APPLICABLE POWER UNIT			POWER UNIT W/INTEGRAL TOOLING	
SERIES	DESCRIPTION (All tabs In-Line except as noted)	TOOLING		POWER UNITS	DESCRIPTION	NUMBER
		DESCRIPTION	NUMBER			
110	Single Tab, W/Tapered Barrel Tine	---	---	---	Pin Inserter	1-453973-2
	Single Tab, Flat Single Tine	Insertion Head	2-813959-7	---		1-453973-1 or 1-453973-5
187	Right-Angle, Single Tab, Double Tines	Applicator	687398-4	691679-1	---	---
	Right-Angle, Double Tabs, Double Tines	Applicator	467322-1 or 687398-4	691679-1	---	---
	Single Tab, W/O Stabilizers, Double Tines	Insertion Head	813959-2	---	---	---
	Single Tab, W/Stabilizers, Double Tines	---	---	---	Fixed Head Insertion System	3-813959-8 or 3-813959-3
250 and 312	Single Tab, W/O Stabilizers, Outer Tines	Hand Tool	274282-1	---	---	---
	Single Tab, W/Stabilizers, Center Tines	---	---	---	Cut and Transfer	806992-1
	Single Tab, W/Stabilizers, Outer Tines	Insertion Head	904500-1	---	---	---
	Extended Tab Contacts	---	---	---	---	---

Figure 14

6. VISUAL AID

Figure 15 shows a typical application of FASTON PC Board Tab Contacts. 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.

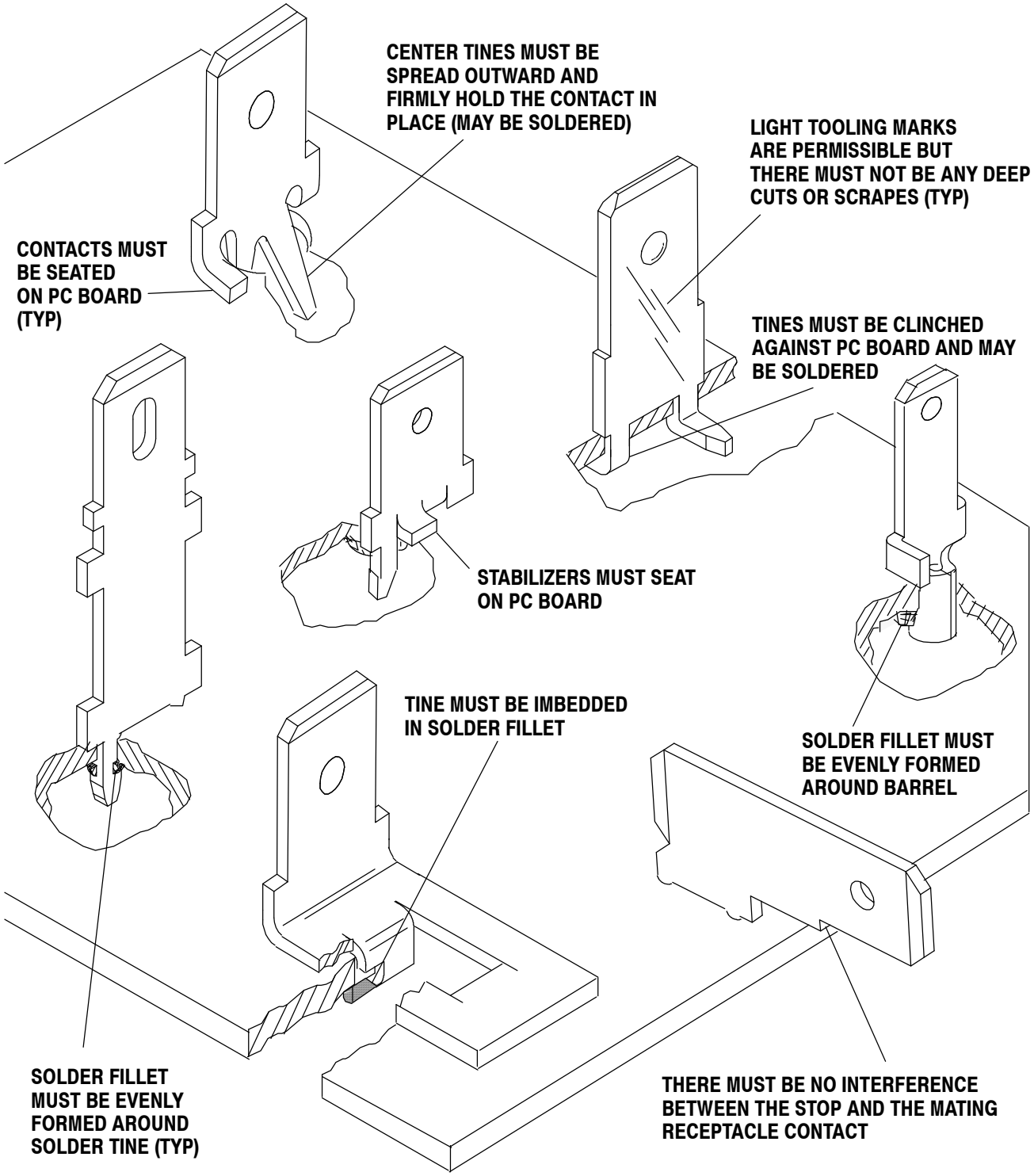


FIGURE 15. VISUAL AID