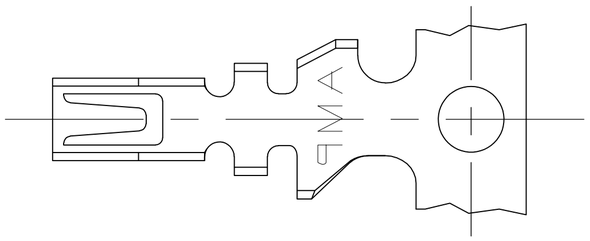
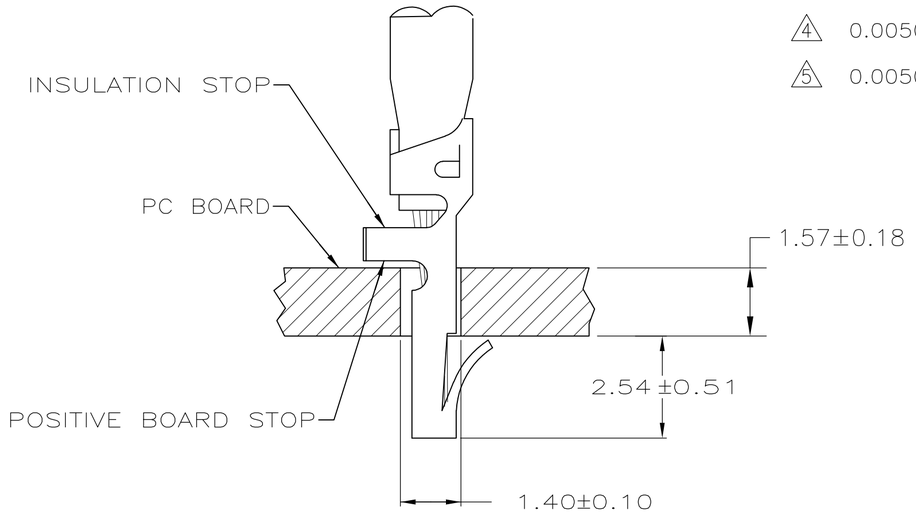
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LOC	DIST
CM	00

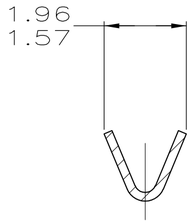
REVISIONS

P	LTR	DESCRIPTION	DATE	DWN	APVD
	D1	REV PER ECO 10-024400	01MAR11	JR	SM

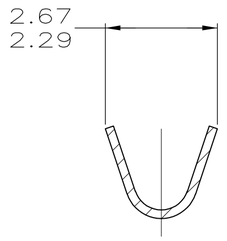




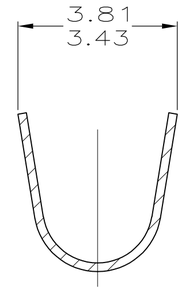
1. PARTS COMPLY WITH AMP SOLDERABILITY SPECIFICATION 109-11-2.
2. WIRE RANGE: 0.12 - 0.4 MM^2 (26 - 22 AWG).
3. INSULATION RANGE: 1.02 - 2.79
4. 0.00508 MIN BRIGHT TIN-LEAD.
5. 0.00508 MIN BRIGHT TIN.



SECTION A-A



SECTION B-B



SECTION C-C

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

0.51	.020	2.29	.090	4.88	.192	-	-
0.20	.008	1.96	.077	3.81	.150	-	-
0.18	.007	1.57	.062	3.43	.135	-	-
0.13	.005	1.40	.055	2.79	.110	-	-
0.10	.004	1.02	.040	2.67	.105	-	-
0.00508	.000200	0.76	.030	2.54	.100	7.04	.277
MM	IN	MM	IN	MM	IN	MM	IN
CONVERSION TABLE							

METRIC

OBSOLETE	5 / 3-794122-1
	4 / 794122-1
	FINISH / PART NO.

THIS DRAWING IS A CONTROLLED DOCUMENT.

DIMENSIONS: MM

TOLERANCES UNLESS OTHERWISE SPECIFIED:
0 PLC ±
1 PLC ±
2 PLC ± 0.13
3 PLC ±
4 PLC ±
ANGLES ±

MATERIAL 0.20 PH BRZ
FINISH

DWN	S. CARPENTER 21AUG2003
CHK	J. ELLIS 21AUG2003
APVD	J. ELLIS 21AUG2003
PRODUCT SPEC	108-1081
APPLICATION SPEC	114-1016
WEIGHT	

CUSTOMER DRAWING

Tyco Electronics
Tyco Electronics Corporation
Harrisburg, PA 17105

NAME: TERMINAL MINI AMP-IN™ 2000

SIZE	CAGE CODE	DRAWING NO	RESTRICTED TO
A2	00779	C-794122	-

SCALE 10:1 SHEET 1 OF 1 REV D1

794122

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 application of miniature AMP-IN contacts and miniature AMP-IN 2000 contacts. These contacts are designed to hold the strands of wire together so that the wire can be inserted into holes in a printed circuit (pc) board.

Each contact features a wire barrel, insulation barrel, and locking lance(s). The miniature AMP-IN contact has a stabilizer barrel, which holds the contact steady during the soldering process, and the miniature AMP-IN 2000 contact has an insulation stop/positive board stop, which prevents the wire insulation from being inserted, and the contact from being over inserted, into the pc board hole. The locking lance(s) is designed to prevent the contact from backing out of the pc board hole.

These requirements are applicable to automatic termination machines.

Basic terms and features of this product are provided in Figure 1.

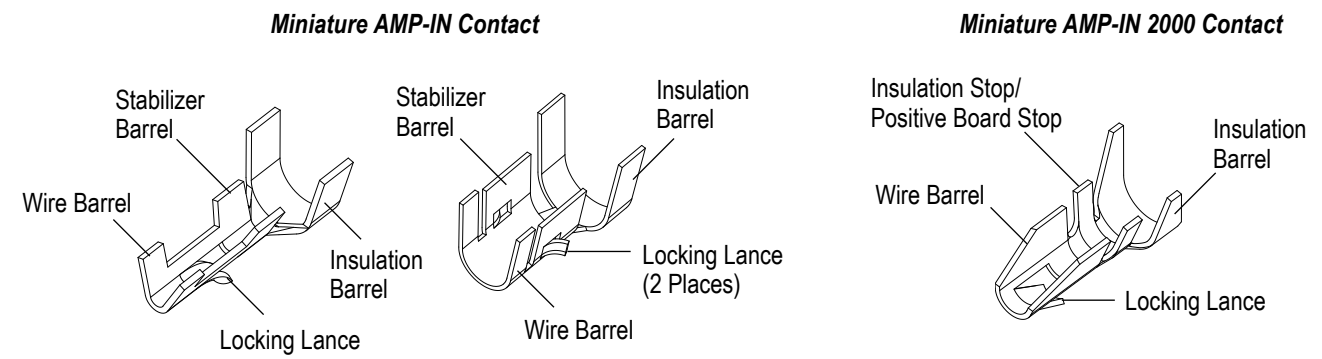


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

Revisions to this application specification include:

- Removed page 8.
- Updated paragraph 3.3.A and 5
- Updated Figure 3

2.2. Customer Assistance

Reference Product Base Part Numbers 640401 and 794121 and Product Code 1326 are representative of miniature AMP-IN contacts and miniature AMP-IN 2000 contacts. Use of these numbers will identify the product line and help you to obtain product and tooling information when visiting www.te.com or calling the number at the bottom of this page.

2.3. Drawings

Customer drawings for product part numbers are available from www.te.com. Information contained in the customer drawing takes priority.

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2.4. Manuals

Manual 402-40 can be used as a guide to soldering. This manual provides information on various flux types and characteristics with the commercial designation and flux removal procedures, and a checklist for information on soldering problems.

2.5. Specifications

Product Specification 108-1081 provides product performance and test results.

2.6. 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. Instructional material that pertain to this product are:

408-8040 Heavy Duty Miniature Quick-Change Applicators with Mechanical Feed System
408-9640 Crimp Quality Monitor (CQM) Applicators for Side-Feed and End-Feed Applications
408-10389 Ocean Side-Feed Applicators

3. REQUIREMENTS

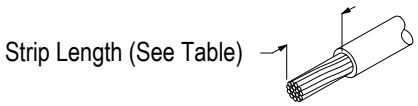
3.1. Safety

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

3.2. Wire Selection and Preparation

The contacts accept stranded wire sizes 26 to 10 AWG [0.13 – 5.3 mm²] with an insulation diameter range given in Figure 2. The wire must be stripped to the dimension given in Figure 2.

CAUTION
Care shall be taken during the stripping operation to ensure the conductor is not nicked, scraped, or cut.



CONTACT			WIRE	
TYPE	**BASE PART NUMBER**	**SIZE (AWG) [mm²]**	**INSULATION DIAMETER**	**STRIP LENGTH (±0.38 [±0.015])**
Miniature AMP-IN	42642	22-20 [0.32 – 0.52]	2.54 [.100] Max	2.00 [.079]
	350566	22-18 [0.32 – 0.82]	1.52-2.79 [.060-.110]	2.10 [.083]
	640108	26-22 [0.13 – 0.32]	1.52-2.54 [.060-.100]	
	640311	22-18 [0.32 – 0.82]	1.52-2.79 [.060-.110]	4.83 [.190]
	640401	26-22 [0.13 – 0.32]	1.02-2.54 [.040-.100]	
	640663	26-22 [0.13 – 0.32]	1.02-1.78 [.040-.070]	2.10 [.083]
	770060	18-14 [0.82 – 2.1]	2.29-3.81 [.090-.150]	5.21 [.205]
	770565	22-18 [0.32 – 0.82]	1.52-2.79 [.060-.110]	4.33 [.170]
	794013	12 [3.3]	2.29-3.81 [.090-.150]	5.21 [.205]
	794037	12-10 [3.3 – 5.3]	5.08 [.200] Max	
	925819	26-22 [0.13 – 0.32]	1.02-1.52 [.040-.060]	2.10 [.083]
	2455312	12 [3.3]	2.85-3.15 [.11-.12]	5.08 [.200]
Miniature AMP-IN 2000	794121	22-18 [0.32 – 0.82]	1.27-2.79 [.050-.110]	5.08 [.200]
	794122	26-22 [0.13 – 0.32]	1.27-2.79 [.050-.110]	
Miniature AMP-IN 2000	647334	18-14 [0.82 – 2.1]	2.29-3.81 [.090-.150]	5.21 [.205]

Figure 2

Crimp Requirements

The contacts must be crimped according to the instructions packaged with the machine.

CAUTION
Care shall be taken to ensure that the wire insulation is not cut or broken during the crimping operation.

A. Crimp Height and Width

The wire barrel, insulation barrel, and stabilizer barrel crimp height and width shall be crimped in accordance to the values listed in Figure 3.

B. Stabilizer Barrel

The stabilizer barrel must be crimped having an F-crimp or “O” crimp. The stabilizer barrel seam may be open only if the contact is crimped to wire sizes 12 or 10 AWG.

C. Insulation Stop/Positive Board Stop

The insulation stop/positive board stop must not be crimped; it must remain in the open U shape.

D. Wire Barrel Seam

The wire barrel seam can be closed or slightly open, but shall have no wire strands protruding from the seam.

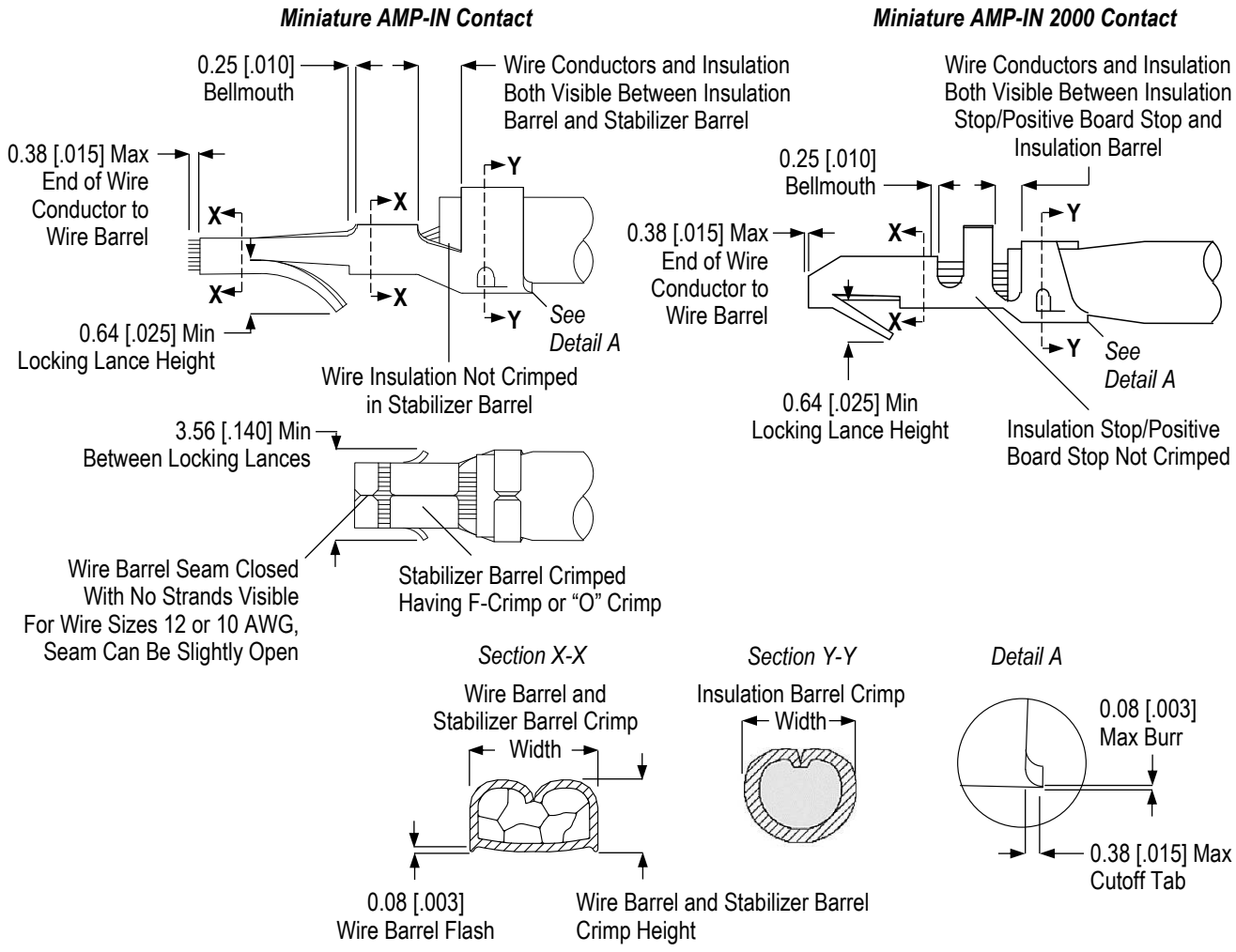


Figure 3 (Continued)

CONTACT		WIRE SIZE (AWG) [mm²]	CONTACT				
			WIRE BARREL CRIMP		STABILIZER BARREL CRIMP		INSULATION BARREL CRIMP WIDTH (REF)
TYPE	BASE PART NUMBER		HEIGHT (±0.05 [±.002])	WIDTH (REF)	HEIGHT	WIDTH (REF)	
Miniature AMP-IN	42624	22 [0.32]	0.81 [.032]	1.78 [.070]	---	---	2.54 [.100]
		20 [0.52]	0.89 [.035]				
	350566	22 – 18 [0.32 – 0.82]	1.07 [.042]	1.57 [.062]	—	—	2.79 [.110]
	640108	26 [0.13]	0.81 [.032]	1.07 [.042]	—	—	
		24 [0.20]	0.86 [.034]				
		22 [0.32]	0.96 [.038]				
	640311	22 – 20 [0.32 – 0.52]	0.76 [.030]	1.57 [.062]	1.40±0.05 [.055±.002]	1.57 [.062]	
		18 [0.82]	0.94 [.037]				
	640401	26 – 24 [0.13 – 0.20]	0.74 [.029]	1.07 [.042]	1.02±0.05 [.040±.002]	1.07 [.042]	
		22 [0.32]	0.89 [.035]				
	640663 925819	26 [0.13]	0.81 [.032]	1.07 [.042]	—	—	1.78 [.070]
		24 [0.20]	0.86 [.034]				
		22 [0.32]	0.96 [.038]				
	770060	18 – 16 [0.82 – 1.31]	1.09 [.043]	2.79 [.110]	2.75±0.10 [.108±.004]	2.79+0.13/-0.00 [.110+.005/-.000]	3.94 [.155]
		14 [2.08]	1.40 [.055]		2.75±0.10 [.108±.004]		
	770565	22 [0.32]	0.81 [.032]	1.57 [.062]	—	—	2.79 [.110]
		20 [0.52]	0.91 [.036]				
		18 [0.82]	1.07 [.042]				
	794013	12 [3.31]	2.16 [.085]	2.79 [.110]	2.79±0.05 [.110±.002]	2.79 [.110]	3.94 [.155]
	2455312	12 [3.31]	2.16 [.085]	2.79 [.110]	2.79±0.05 [.110±.002]	2.79 [.110]	3.94 [.155]
	794037	12 [3.31]	2.41 [.095]	2.79 [.110]	2.79+0.05 [.110+.002]	2.79 [.110]	5.33 [.210]
		10 [5.26]	2.74 [.108]	3.56 [.140]		3.56 [.140]	
Miniature AMP-IN 2000	794121	22 [0.32]	0.76 [.030]	1.57 [.062]	—	—	3.30 [.130]
		20 [0.52]	0.86 [.034]				
		18 [0.82]	0.91 [.036]				
	794122	26 [0.13]	0.71 [.028]	0.99 [.039]	—	—	
		24 [0.20]	0.79 [.031]				
		22 [0.32]	0.86 [.034]				
	647334	18-16 [0.82 – 1.31]	1.1 [.043]	2.79 [.110]	2.79+0.13/-0.00 [.110+.005/-.000]	2.79 [.110]	3.94 [.155]
		14 [2.08]	1.40 [.055]				

Figure 3 (End)

E. Wire Location

The wire conductor end shall be flush with the front end of the contact wire barrel or extend past the end of the wire barrel no more than the dimension given in Figure 3.

The wire conductor and insulation should be visible between the insulation barrel and the stabilizer barrel or insulation stop/positive board stop. The wire insulation should not be crimped into the stabilizer barrel.

F. Wire Barrel Flash

The wire barrel flash must be no more than the dimension given in Figure 3.

G. Cutoff Tab and Burr

The carrier strip cutoff tab and burr must be no more than the dimensions given in Figure 3.

H. Bellmouth

The bellmouth length must be no more than the dimension given in Figure 3.

I. Locking Lance(s)

The locking lance(s) shall be set within limits given in Figure 3.

3.3. PC Board

The PC Board thickness for 2455312 shall be 2.4±0.25 [.094±.009] and for other listed parts, the pc board thickness shall be 1.57±0.18 [.062±.007]. The pc board hole size for the contact should be within the tolerances specified in Figure 4.

CONTACT		WIRE SIZE (AWG)	PC BOARD HOLE SIZE
TYPE	BASE PART NUMBER		
Miniature AMP-IN	42642	22 – 20 [0.32 – 0.52]	1.83±0.05 [.072±.002]
	350566	22 – 20 [0.32 – 0.52]	1.83±0.08 [.072±.003]
		18 [0.82]	1.96±0.08 [.077±.003]
	640108	26 – 22 [0.13 – 0.32]	1.40±0.10 [.055±.004]
	640311	22 – 20 [0.32 – 0.52]	1.83±0.08 [.072±.003]
		18 [0.82]	1.96±0.08 [.077±.003]
	640401	26 – 22 [0.13 – 0.32]	1.40±0.10 [.055±.004]
	640663	26 – 22 [0.13 – 0.32]	1.40±0.10 [.055±.004]
	770060	18 – 14 [0.82 – 2.1]	3.18±0.08 [.125±.003]
		14 [2.1]	(1) 3.38±0.08 [.133±.003]
	770565	22 – 20 [0.32 – 0.52]	1.83±0.08 [.072±.003]
		18 [0.82]	1.96±0.08 [.077±.003]
	794013	12 [3.3]	3.18±0.08 [.125±.003]
	2455312	12 [3.3]	3.18±0.08 [.125±.003]
	794037	12 [3.3]	3.18±0.08 [.125±.003] (1) 3.38±0.08 [.133±.003]
		10 [5.3]	3.76±0.08 [.148±.003]
	925819	26 – 22 [0.13 – 0.32]	1.28±0.08 [.050±.003]
Miniature AMP-IN 2000	794121	22 – 20 [0.32 – 0.52]	1.83±0.08 [.072±.003]
		18 [0.82]	1.96±0.08 [.077±.003]
	794122	26 – 22 [0.13 – 0.32]	1.40±0.10 [.055±.004]
	647334	18-16 [0.82 – 1.31]	3.18±0.08 [.125±.003]
		14 [2.08]	3.18±0.08 [.125±.003]

Figure 4

(1) This spec is only valid for restricted customer.

3.4. Inserting Contact into PC Board Hole

The contact must be inserted into the pc board hole until the locking lance(s) are through the pc board hole. For the miniature AMP-IN 2000 contacts, the insulation stop/positive board stop prevents the contact from being over inserted in the hole. See Figure 5.

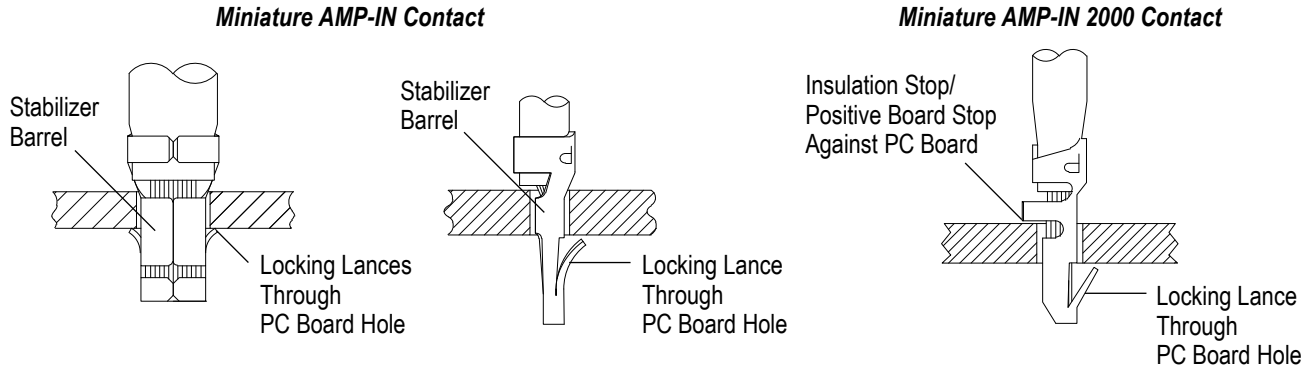


Figure 5

3.5. Soldering

A. Process

The contacts can be soldered using wave soldering or equivalent soldering techniques. Temperature and exposure time shall be as specified in Figure 6.

SOLDERING PROCESS	TEMPERATURE	TIME (At Max Temperature)
Wave	260°C [500°F] (Wave Temperature)	5 Seconds
Vapor Phase	215°C [419°F]	5 Minutes
Infrared Reflow	230°C [446°F]	5 Minutes

Figure 6

B. Flux Selection

The contact wire barrel must be fluxed prior to soldering with a rosin base flux. Selection of the flux will depend on the type of pc board and other components mounted on the board. Additionally, the flux must be compatible with the wave solder line, manufacturing, health, and safety requirements. Call the number at the bottom of page 1 for consideration of other types of flux. Flux that is compatible with these connectors are provided in Figure 7.

TYPE	ACTIVITY	RESIDUE	COMMERCIAL DESIGNATION	
			ALPHA	KESTER
RMA	Mild	Noncorrosive	611	186/197
Center (Activated)	Medium	Corrosive or Noncorrosive	711, 809, 811	1544, 1545, 1547

Figure 7

C. Cleaning

After soldering, removal of fluxes, residues, and activators is necessary. Consult with the supplier of the solder and flux for recommended cleaning solvents. Cleaners must be free of dissolved flux and other contaminants. It is recommended that cleaning takes place with the pc board on its edge. If using an aqueous cleaner, it is recommended using standard equipment, such as a soak tank or automatic in-line machine. Common cleaning solvents with times and temperatures that will not affect these contacts is specified in Figure 8.

NOTE
For solvents not listed, call the number on the bottom of page 1 for recommendations.

CLEANER		TIME (Minutes)	TEMPERATURE (Max)
NAME	TYPE		
ALPHA 2110	Aqueous	1	132°C [270°F]
BIOACT EC-7	Solvent	5	100°C [212°F]
Butyl CARBITOL	Solvent	1	Ambient Room
Isopropyl Alcohol	Solvent	5	100°C [212°F]
KESTER 5778	Aqueous		
KESTER 5779	Aqueous		
LONCOTERGE 520	Aqueous		
LONCOTERGE 530	Aqueous		
Terpene	Solvent		

Figure 8

D. Drying

When drying cleaned contacts and pc boards, temperature limitations must not be exceeded: -55° to 105°C [-67° to 221°F]. Excessive temperatures may cause contact degradation.

4. QUALIFICATION

Miniature AMP-IN contacts and miniature AMP-IN 2000 contacts are not required to have outside agency approval.

5. TOOLING

An applicator is designed to crimp contacts onto pre-stripped wire and provide for high volume, heavy duty production. To identify the proper application for a specific terminal part number, visit the TE Applicator Look-Up tool on http://www.te.com.

NOTE
Crimp may not comply to IPC-620 by design.

ALPHA, BIOACT, CARBITOL, KESTER, and LONCOTERGE are trademarks of their respective owners.

6. VISUAL AID

The illustration below shows a typical application of miniature AMP-IN contacts and miniature AMP-IN 2000 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.

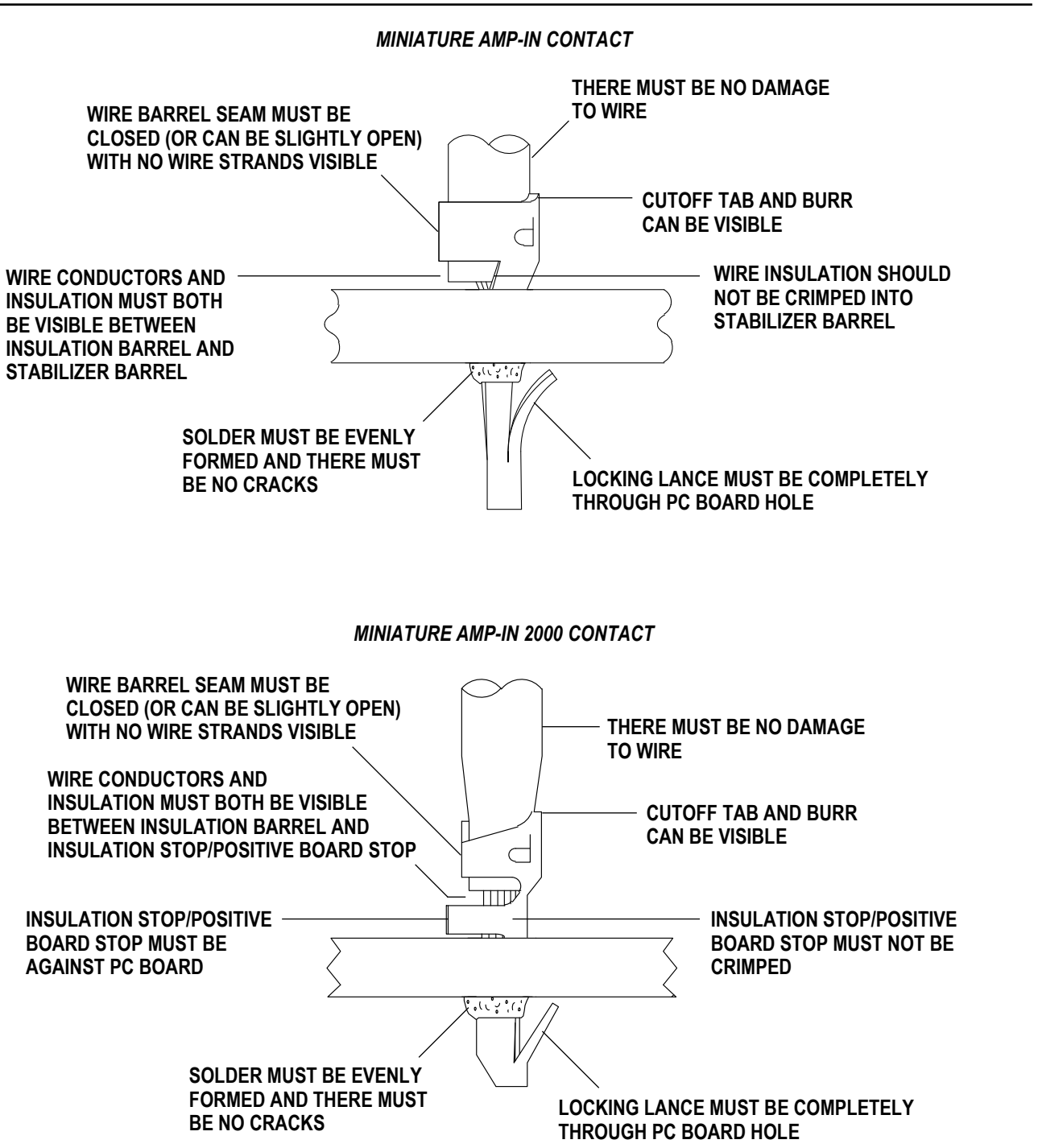


FIGURE 9. VISUAL AID