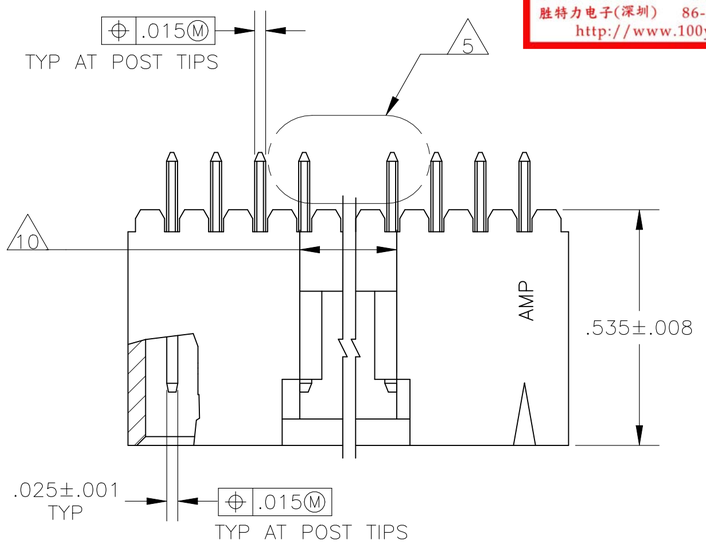
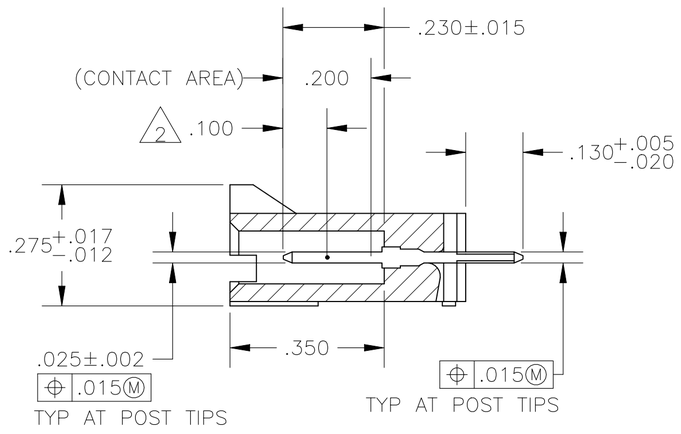
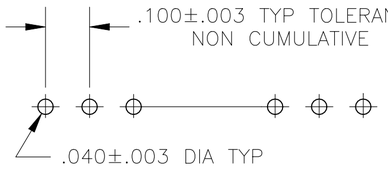
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勝特力電材超市-光復店 886-3-5729570
胜特力电子(上海) 86-21-34970699
胜特力电子(深圳) 86-755-83298787
http://www.100y.com.tw





SECTION X—X



RECOMMENDED HOLE LAYOUT



DETAIL Z
POST DETAIL TYP
2 POST MINIMUM

1. .000030 GOLD IN THE CONTACT AREA, .000100—.000200 MATTE TIN—LEAD ON THE SOLDER TAIL, ALL OVER .000050 NICKEL
2. POINT OF MEASUREMENT FOR PLATING THICKNESS
3. THESE DIMENSIONS APPLY WHERE THE POST INTERSECTS THE HOUSING
4. ON ASSEMBLIES WITH FOUR OR MORE POSITIONS, TWO POLARIZATION SLOTS.
   ON ASSEMBLIES WITH TWO OR THREE POSITIONS, ONE POLARIZATION SLOT.
5. SELECT POST TAILS FORMED TO PROVIDE CONNECTOR HOLD DOWN UNTIL SOLDERED. CONFIGURATION ACCEPTS .027—.080 THICK PRINTED CIRCUIT BOARD. (SEE DETAIL Z)
6. .000030 GOLD IN THE CONTACT AREA, .000100—.000200 MATTE TIN ON THE SOLDER TAIL, ALL OVER .000050 NICKEL
7. HIGH TEMPERATURE CONFIGURATION
8. STANDOFFS NOT PRESENT ON UNDERSIDE OF ASSEMBLY
9. OBSOLETE PARTS: OBSOLETE CIS STREAMLINING PER D.RENAUD/D.SINISI
10. .010 RECESS PERMISSIBLE IN THIS AREA FOR MOLD SHUT OFF

REVISIONS

P	LTR	DESCRIPTION	DATE	DWN	APVD
	R	REVISED PER ECO-17-002209	11APR2017	RS	MM
	S	REVISED PER ECO-20-001323	17JUN2020	SM	JO

REMARKS	PLATING	D	C	B	A	NO OF POSN	ASSEMBLY PART NUMBER
9	7 8	6	2.595	2.520	2.400	24	25	7-103908-4
9	7 8	6	2.495	2.420	2.300	23	24	7-103908-3
9	7 8	6	2.395	2.320	2.200	22	23	7-103908-2
9	7 8	6	2.295	2.220	2.100	21	22	7-103908-1
9	7 8	6	2.195	2.120	2.000	20	21	7-103908-0
	7 8	6	2.095	2.020	1.900	19	20	6-103908-9
9	7 8	6	1.995	1.920	1.800	18	19	6-103908-8
	7 8	6	1.895	1.820	1.700	17	18	6-103908-7
9	7 8	6	1.795	1.720	1.600	16	17	6-103908-6
	7 8	6	1.695	1.620	1.500	15	16	6-103908-5
	7 8	6	1.595	1.520	1.400	14	15	6-103908-4
	7 8	6	1.495	1.420	1.300	13	14	6-103908-3
	7 8	6	1.395	1.320	1.200	12	13	6-103908-2
	7 8	6	1.295	1.220	1.100	11	12	6-103908-1
	7 8	6	1.195	1.120	1.000	10	11	6-103908-0
	7 8	6	1.095	1.020	.900	9	10	5-103908-9
	7 8	6	.995	.920	.800	8	9	5-103908-8
	7 8	6	.895	.820	.700	7	8	5-103908-7
	7 8	6	.795	.720	.600	6	7	5-103908-6
	7 8	6	.695	.620	.500	5	6	5-103908-5
	7 8	6	.595	.520	.400	4	5	5-103908-4
	7 8	6	.495	.420	.300	3	4	5-103908-3
	7 8	6	.395	.320	.200	2	3	5-103908-2
	7 8	6	.295	.220	.100	1	2	5-103908-1
9	8	1	2.595	2.520	2.400	24	25	2-103908-4
	8	1	2.495	2.420	2.300	23	24	2-103908-3
9	8	1	2.395	2.320	2.200	22	23	2-103908-2
9	8	1	2.295	2.220	2.100	21	22	2-103908-1
9	8	1	2.195	2.120	2.000	20	21	2-103908-0
	8	1	2.095	2.020	1.900	19	20	1-103908-9
9	8	1	1.995	1.920	1.800	18	19	1-103908-8
	8	1	1.895	1.820	1.700	17	18	1-103908-7
9	8	1	1.795	1.720	1.600	16	17	1-103908-6
	8	1	1.695	1.620	1.500	15	16	1-103908-5
	8	1	1.595	1.520	1.400	14	15	1-103908-4
	8	1	1.495	1.420	1.300	13	14	1-103908-3
	8	1	1.395	1.320	1.200	12	13	1-103908-2
	8	1	1.295	1.220	1.100	11	12	1-103908-1
	8	1	1.195	1.120	1.000	10	11	1-103908-0
	8	1	1.095	1.020	.900	9	10	103908-9
	8	1	.995	.920	.800	8	9	103908-8
	8	1	.895	.820	.700	7	8	103908-7
	8	1	.795	.720	.600	6	7	103908-6
	8	1	.695	.620	.500	5	6	103908-5
	8	1	.595	.520	.400	4	5	103908-4
	8	1	.495	.420	.300	3	4	103908-3
	8	1	.395	.320	.200	2	3	103908-2
	8	1	.295	.220	.100	1	2	103908-1

THIS DRAWING IS A CONTROLLED DOCUMENT.

DIMENSIONS: INCHES

TOLERANCES UNLESS OTHERWISE SPECIFIED:
0 PLC ± -
1 PLC ± -
2 PLC ± -
3 PLC ± .005
4 PLC ± -
ANGLES ± -

MATERIAL HOUSING: FLAME RETARDENT LCP COLOR-BLACK
CONTACTS-BRASS
FINISH: SEE TABLE

DWN H MOLL 7-28-86
CHK PC deJONG 7-28-86
APVD PC deJONG 7-28-86
PRODUCT SPEC —
APPLICATION SPEC —
WEIGHT

TE Connectivity

NAME: HEADER ASSY, AMPMODU MTE, VERTICAL, SINGLE ROW, .100 CL, .025 SQ POSTS WITH LATCH & RETENTIVE POSTS

SIZE	CAGE CODE	DRAWING NO	RESTRICTED TO
A2	00779	C-103908	—

CUSTOMER DRAWING | SCALE 4:1 | SHEET 1 OF 1 | REV S

103908

1471-9 (1/15)

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 AMPMODU MTE Interconnection System. This system includes single row wire-to-board and wire-to-wire connectors using 0.64 mm [.025 in.] sq. post technology on 2.54 mm [.100 in.] centerlines. The plastic connector housings are available preloaded with insulation displacement contacts. You may also load your own empty housings using crimp snap-in-contacts. The housings are available in 2 through 25 positions. Accessories for coupling, stacking, latching, polarizing, and special mounting of the connectors are also available.

When corresponding with Tyco Electronics Representatives, use the terminology provided in this specification to facilitate your inquiry for information. Basic terms and features of the connectors and contacts are provided in Figure 1.

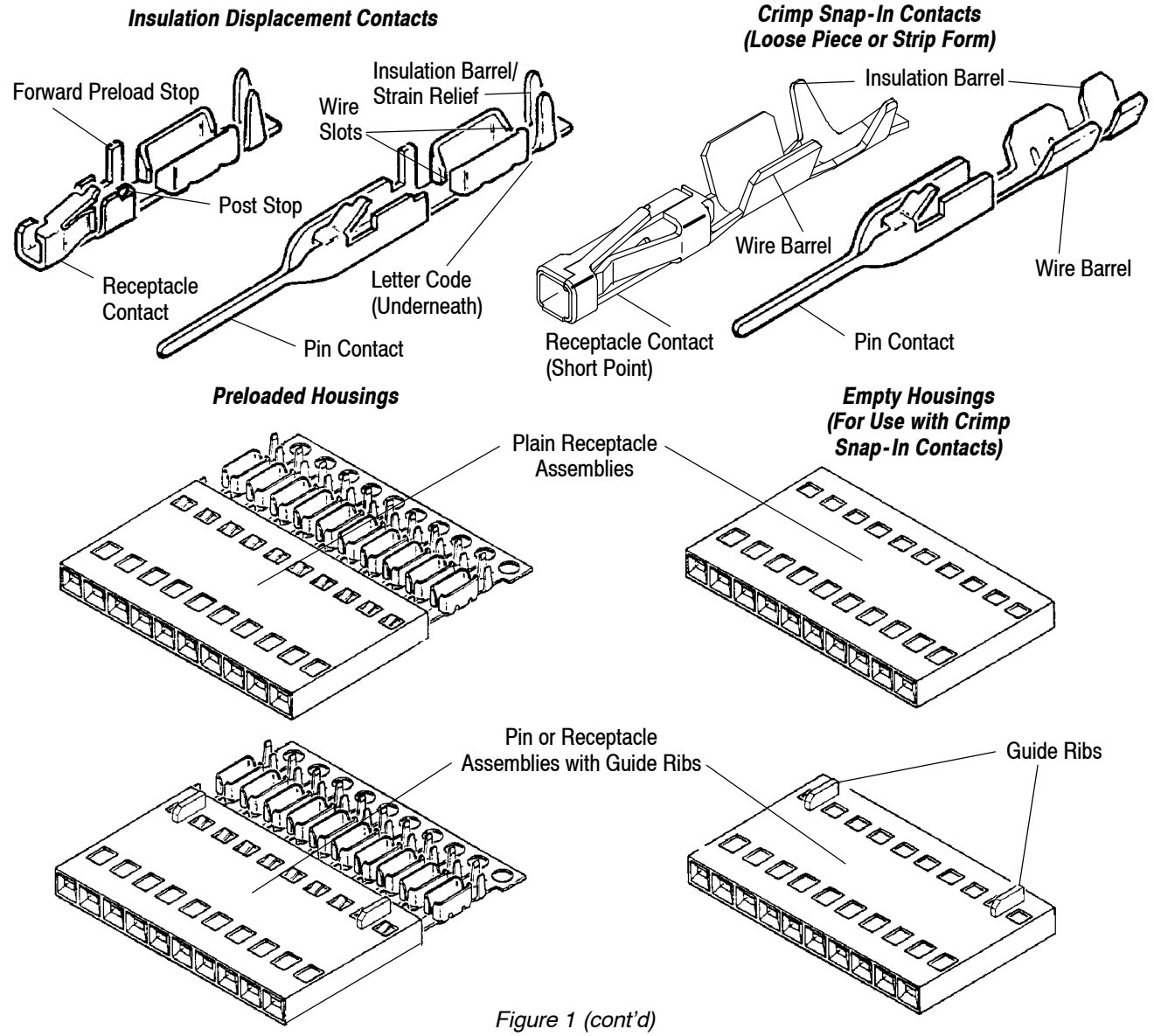


Figure 1 (cont'd)

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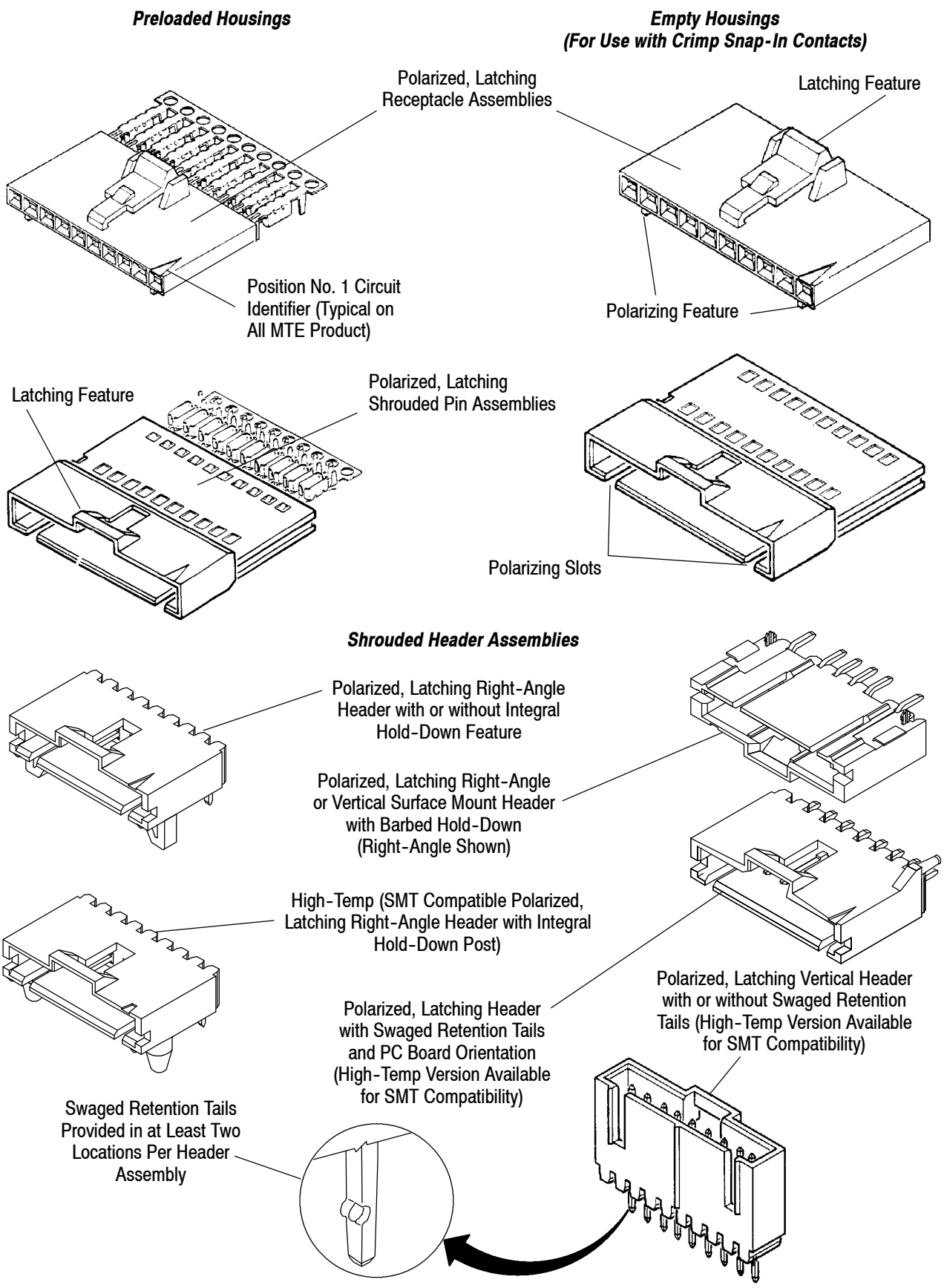

Preloaded Housings
Empty Housings
(For Use with Crimp Snap-In Contacts)
Polarized, Latching
Receptacle Assemblies
Latching Feature
Position No. 1 Circuit
Identifier (Typical on
All MTE Product)
Polarizing Feature
Latching Feature
Polarized, Latching
Shrouded Pin Assemblies
Polarizing Slots
Shrouded Header Assemblies
Polarized, Latching Right-Angle
Header with or without Integral
Hold-Down Feature
Polarized, Latching Right-Angle
or Vertical Surface Mount Header
with Barbed Hold-Down
(Right-Angle Shown)
High-Temp (SMT Compatible Polarized,
Latching Right-Angle Header with Integral
Hold-Down Post)
Polarized, Latching Vertical Header
with or without Swaged Retention
Tails (High-Temp Version Available
for SMT Compatibility)
Polarized, Latching Header
with Swaged Retention Tails
and PC Board Orientation
(High-Temp Version Available
for SMT Compatibility)
Swaged Retention Tails
Provided in at Least Two
Locations Per Header
Assembly

Figure 1 (end)

2. REFERENCE MATERIALS

2.1. Revision Summary

This paragraph is reserved for a revision summary of changes and additions made to this specification. The following changes were made for this revision.

- Updated document to corporate requirements
- Deleted obsolete document and tooling in Paragraph 2.6 and Section 5, TOOLING

2.2. Customer Assistance

Reference Part Number 103684 and Product Code 5470 are representative numbers that identify the AMPMODU MTE Interconnection System. These numbers are used in the network of customer service to access tooling and product application information. This service is provided by your local Tyco Electronics Representative or, after purchase, by calling the Tooling Assistance Center number at the bottom of page 1.

2.3. Drawings

Customer Drawings for specific products are available from the responsible Tyco Electronics 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 Tyco Electronics.

2.4. Specifications

The following Product Specifications (108-series) provide test and performance results, and Application Specifications (114-series) provide related application information:

Specification Number	Specification Title
108-25034	AMPMODU MTE Connector
114-25038	AMPMODU Short Point Contacts and Housings (Replacement Receptacle Contacts)

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.

2.6. Instructional Material

The following list includes available instruction sheets (408-series) that provide assembly procedures for product, operation, maintenance and repair of tooling, as well as setup and operation procedures of applicators; and customer manuals (409-series) that provide setup, operation, and maintenance of machines.

Document Number	Document Title
408-3295	Preparing Reel Of Contacts for Application Tooling
408-6789	Pistol Grip Pneumatic Handle Assembly 58075-1
408-6790	Pistol Grip Manual Hand Assembly 58074-1
408-6919	AMPMODU MTE Connectors
408-6923	Manual Arbor Frame Assembly 58024-1
408-7424	Checking Terminal Crimp Height or Gaging Die Closure
408-7763	Pneumatic Applicator Frame Assemblies 91112-2 and 91112-7
408-8059	General Preventative Maintenance for Applicators
408-9230	Keying Tool 91417-1
408-9359	Terminating Head 58336-1 for AMPMODU MTE Connectors
408-9393	Pneumatic Power Bench Assembly 58338-1
408-9407	Hand Crimping Tools 58342-1 and 58342-2 (Crimp Snap-In Pin Contact)
408-9453	Extraction/Lance Reset Tools 843477-[ ], and 843996-2, -3, -4, and -5
408-9515	Ribbon Cable Notcher 854449-[ ]
408-9590	Hand Crimping Tool 58438-1 (Short Point Receptacle Contact; 32-22 AWG)
408-9759	MTE Tube Feed Assembly 856675-1 for AMPMODU MTE Connectors
408-9816	Handling of Reeled Products

Document Number	Document Title
409-5128	Basic AMP-O-LECTRIC* Model "K" Terminating Machine 565435-5
409-5746	Electric Power Unit 931800-1
409-5832	MTE Ribbon Cable Terminator 856002-1
409-5842	AMP-O-LECTRIC Model "G" Terminating Machines 354500-[ ] and 1213127-[ ]
409-5843	2700-Lb Pneumatic Power Unit 312522-1

3. REQUIREMENTS

3.1. Storage

A. Ultraviolet Light

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

B. Reel Storage

When using reeled contacts, store coil wound reels horizontally and traverse wound reels vertically.

C. Shelf Life

Each connector is packaged and shipped in an individual antistatic tube container or tape and reel (SMT only). To prevent damage to the housings and contact solder tines, the connectors should remain in the container until ready for installation. Also, to prevent possible storage contamination and ensure maximum solderability, the connectors should be used on a first in, first out basis.

D. Chemical Exposure

Do not store contacts near any of the following chemicals as they may cause stress corrosion.

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

NOTE

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

3.2. Materials

AMPMODU MTE Receptacle and Header Connectors are constructed of black glass-filled thermoplastic, UL94V-0. The receptacle and header contacts are made of phosphor bronze with the mating interface of the contacts underplated with nickel and finished with gold or tin-lead plating. The MTE header's solder tines have a matte tin-lead plating on gold plated posts, and bright tin-lead plating on tin-lead plated posts.

3.3. Circuit Identification

AMPMODU MTE Connectors are marked with a V-shaped circuit number one identifier. See Figure 1.

3.4. Cable and Wire Selection and Preparation

Contact types, sizes, and tooling choices will effect the range of wire size available as shown in Figure 2. These values apply whether using discrete wire, jacketed cable, slit ribbon cable, or slit round conductor flat cable.

NOTE

Discrete wires require no preparation for termination, but insulation displacement contacts must be used. Do not cut the individual conductor insulation when stripping the outer cable jacket or braided shield.

CONTACT TYPE	WIRE SIZE RANGE, AWG (CODE)	WIRE AND CABLE SIZE			WIRE BARREL CRIMP			TOOLING TYPE
		DISCRETE INSUL. DIA	JACKETED CABLE STRIP LENGTH (c)	RIBBON CABLE SLIT LENGTH (c)	SPECIFIC WIRE SIZE	WIDTH	HEIGHT	
CRIMP SNAP-IN PIN	32-28	1.37-0.64 [.054-.025]	3.96-3.18 [.156-.125]	---	32	0.84 [.033]	0.56 ±0.03 [.022 ±.001]	HAND TOOL AND AUTOMATIC EQUIPMENT
					30			
					28			
	26-22	1.37-0.91 [.054-.036]	3.96-3.18 [.156-.125]	---	26	1.07 [.042]	0.76 ±0.05 [.030 ±.002]	
					24		0.76 ±0.05 [.030 ±.002] (e) 0.81 ±0.05 [.032 ±.002] (f)	
					22		0.76 ±0.05 [.030 ±.002] (e) 0.91 ±0.05 [.036 ±.002] (f)	
CRIMP SNAP-IN RCPT (SHORT POINT)	32-28	1.52-0.64 [.060-.025]	3.96-3.18 [.156-.125]	---	32	1.07 ±0.13 [.042 ±.005]	0.61 [.024]	
					30		0.61 [.024]	
					28		0.66 [.026]	
	26-22	1.52-0.64 [.060-.025]	3.96-3.18 [.156-.125]	---	26		0.76 [.030]	
					24		0.81 [.032]	
					22		0.91 [.036]	
	24-20	1.52-0.64 [.060-.025]	3.96-3.18 [.156-.125]	---	24		0.69 [.027]	
					22		0.79 [.031]	
					20		0.89 [.035]	
INSUL DISPL (Max. Insul Wall Thickness 0.38 [.015])	30-26 (A, G, C) (d)	1.37-0.76 [.054-.030]	50.8 [2.000] (g) 9.65 [.380] (h)	50.8 [2.000] (g) 9.65 [.380] (h)	---			TERMN HEAD W/MANUAL TOOL (a)
	26-22 (B, F, D) (d)	1.37-0.76 [.054-.030]	50.8 [2.000] (g) 9.65 [.380] (h)	50.8 [2.000] (g) 9.65 [.380] (h)				
INSUL DISPL (Max. Insul Wall Thickness 0.38 [.015])	30-26 (A, G, C) (d)	1.14-0.76 [.045-.030]	50.8 [2.000] (g) 9.65 [.380] (h)	50.8 [2.000] (g) 9.65 [.380] (h)	---			TERMN HEAD WITH PNEUMATIC TOOL (a)
	26-22 (B, F, D) (d)	1.14-0.76 [.045-.030]	50.8 [2.000] (g) 9.65 [.380] (h)	50.8 [2.000] (g) 9.65 [.380] (h)				
---	---	1.37 [.054] Max	101.6 [4.000]	101.6 [4.000]	---			SINGLE-LEAD BENCH MACHINE (a)
	---	1.37 [.054] Max	---	10.16 [.400]	---			TUBE FED RIBBON CABLE TERMINATOR (b)

(a) The head will not terminate *individual* housings of less than six positions, therefore strip form required. (b) The head will not terminate *individual* housings of less than thirteen positions, therefore strip form required. (c) Values are typical, actual lengths depend on connector size and wire dress for specific applications. (d) Letter codes A and B represent standard pressure receptacle contact; F and G represent high pressure receptacle contact; and C and D represent pin contact. (e) Hand tool dimension (f) Automatic equipment dimension (g) Terminating head 58336-1 (h) Terminating head 58540-1

Figure 2 (cont'd)

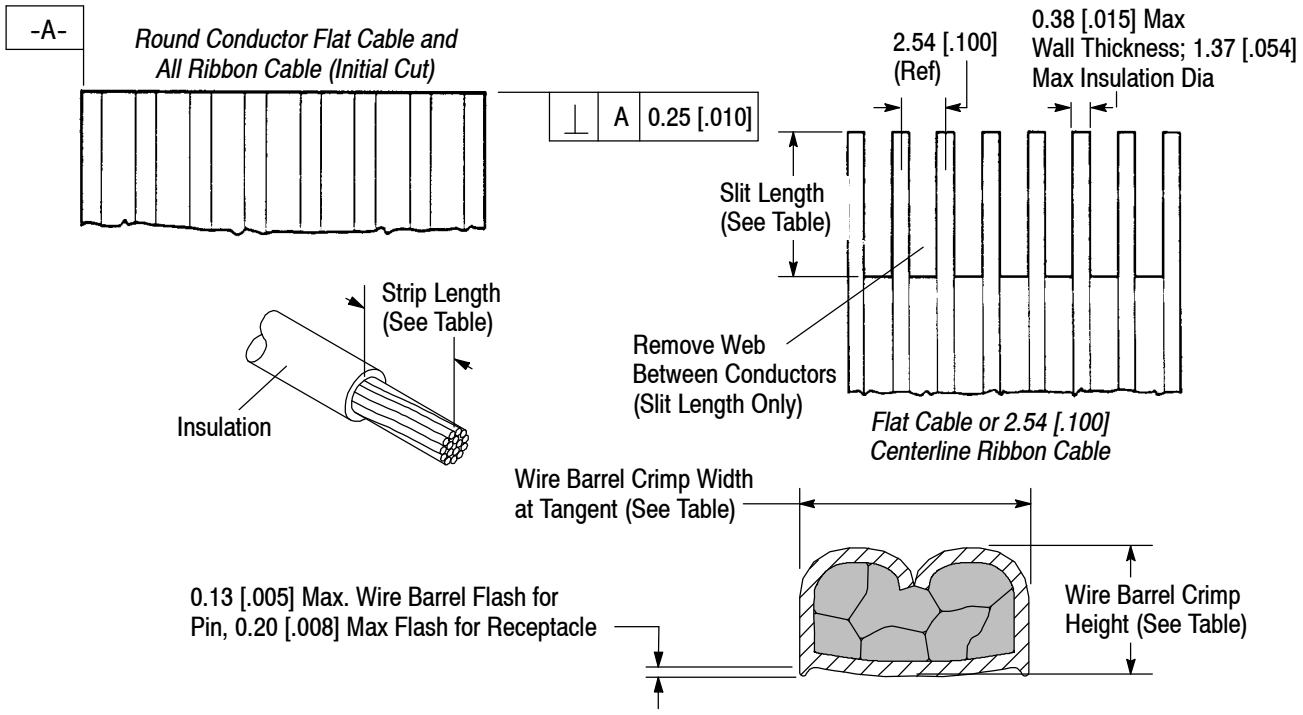


Figure 2 (end)

3.5. Contact Termination

Refer to the appropriate documentation for tooling operation and application procedures. The following special considerations apply to terminated contacts.

A. Terminating Head

In all tools except the terminating head used for the pistol-grip hand tool and pneumatic power assembly, final contact insertion is done automatically by the tooling. Using the terminating head requires manual removal of the carrier strip and manual contact insertion.

NOTE

Tyco Electronics recommends that contacts be inserted after carrier strip removal. However, when using 8-position or smaller housings, contacts may be mass inserted before removal of the carrier strip. See Figure 3.

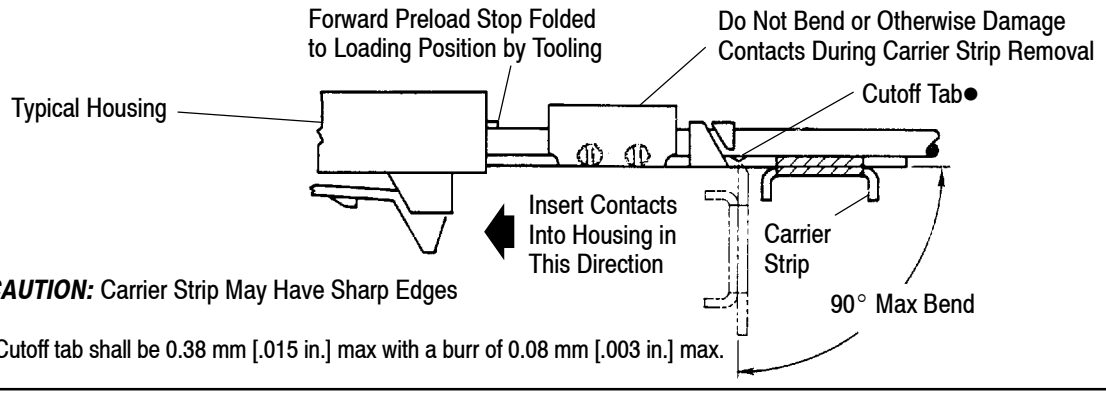


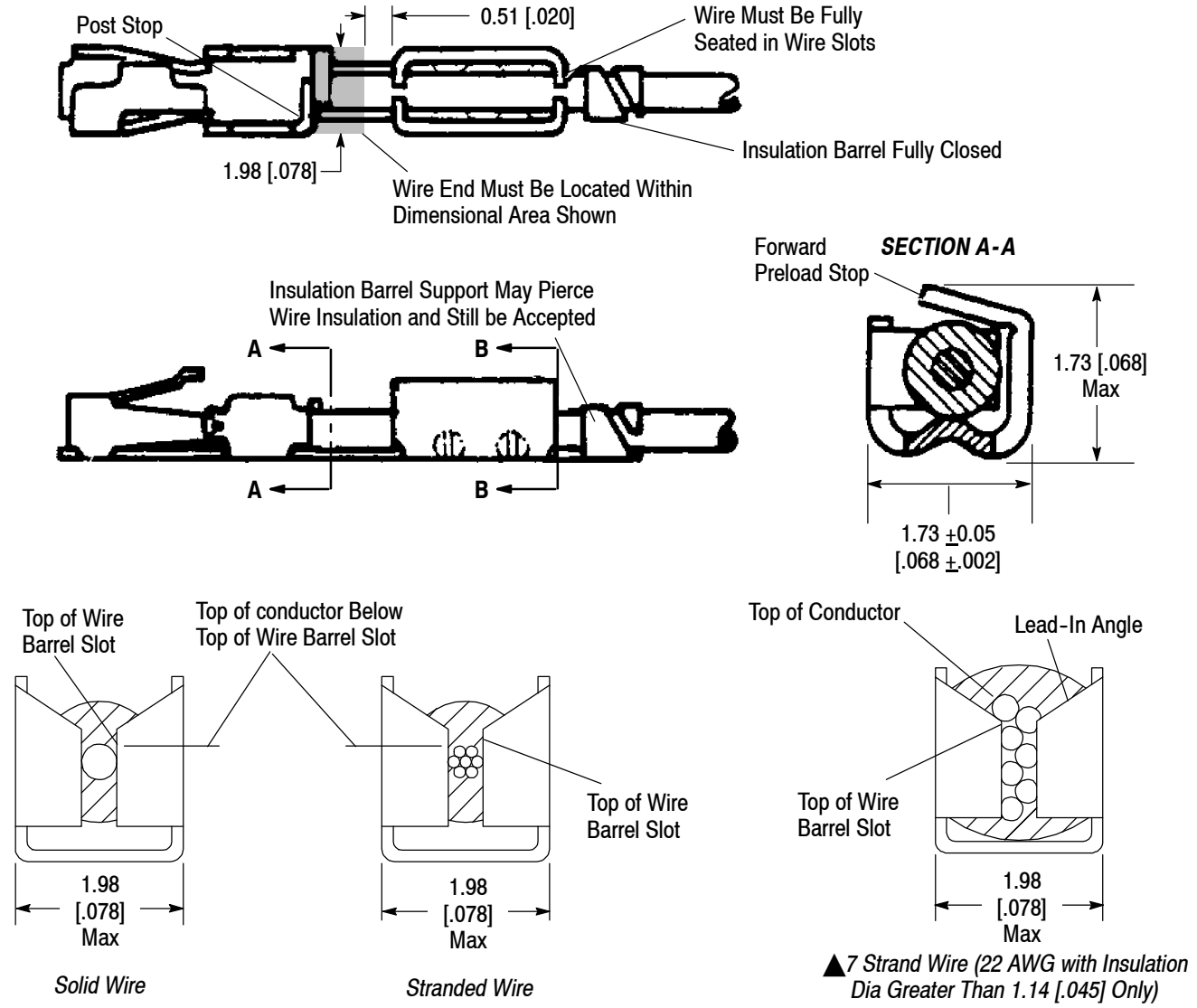
Figure 3

B. Insulation Displacement Contact Requirements

Figure 4 provides the requirements for insulation displacement contact requirements.

NOTE

There may not be any damage to the wire slots after termination. The primary function of the insulation barrel is to prevent the conductor from lifting out of the wire slots. It must be closed adequately to confine conductor insulation.



▲*5 strands minimum must be captured in IDC slot. Remaining strands may not be above lead-in angle.*

Figure 4

C. Crimp Snap Contact

This contact is terminated by crimping through the use of hand or automated tooling, then snapped into the connector housing. Instruction material which is packaged with specific tooling, contains information on crimp procedures and tool maintenance and inspection. Refer to Section 5, TOOLING.

3.6. Contact Insertion

The contacts shall be fully inserted into the housing as shown in Figure 5. Pull back lightly on each wire to verify that the contact is locked into place.

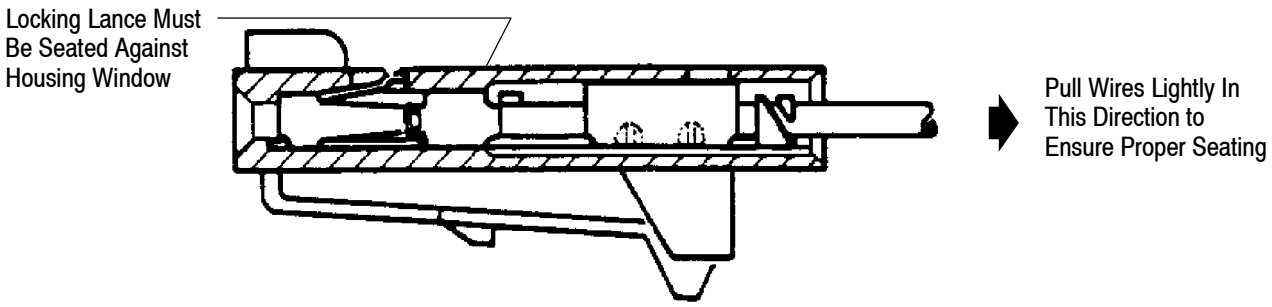


Figure 5

3.7. PC Board Requirements

A. Material and Thickness

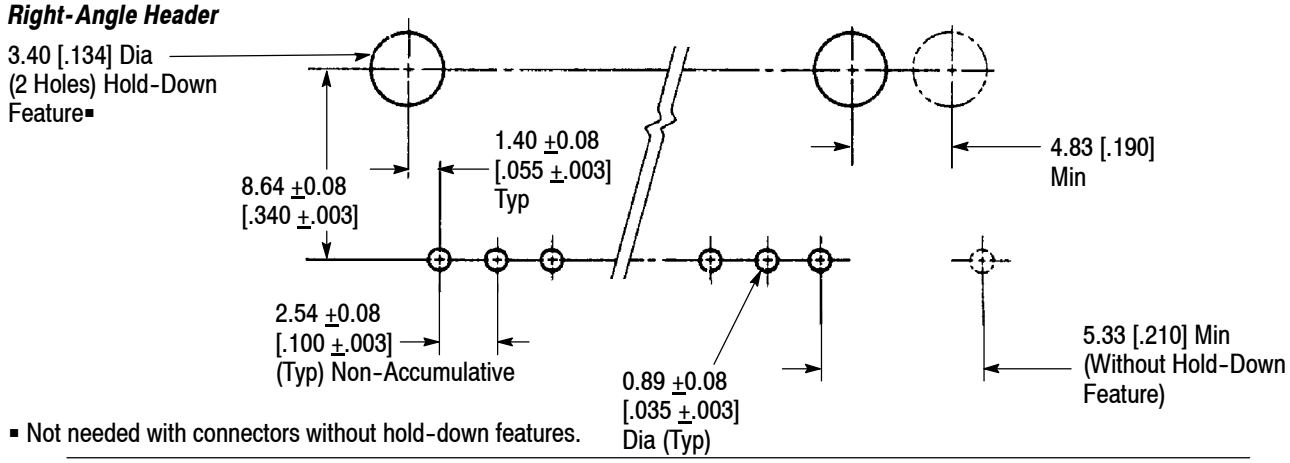
PC board material shall be glass epoxy (FR-4 or G-10). Thickness of the pc board should be 1.57 ±0.18 mm [.062 ±.007 in.] thick to ensure retention and stability for which the hold-downs are designed.

B. PC Board Layouts (Through-Hole)

NOTE

*Figure 6 represents **typical** pc board (Through-Hole) layout for this product. For dimensions and hole pattern layout for specific product, obtain the appropriate customer drawing through your Tyco Electronics Representative or refer to the telephone numbers at the bottom of page 1.*

Right-Angle Header



▪ Not needed with connectors without hold-down features.

Vertical Header

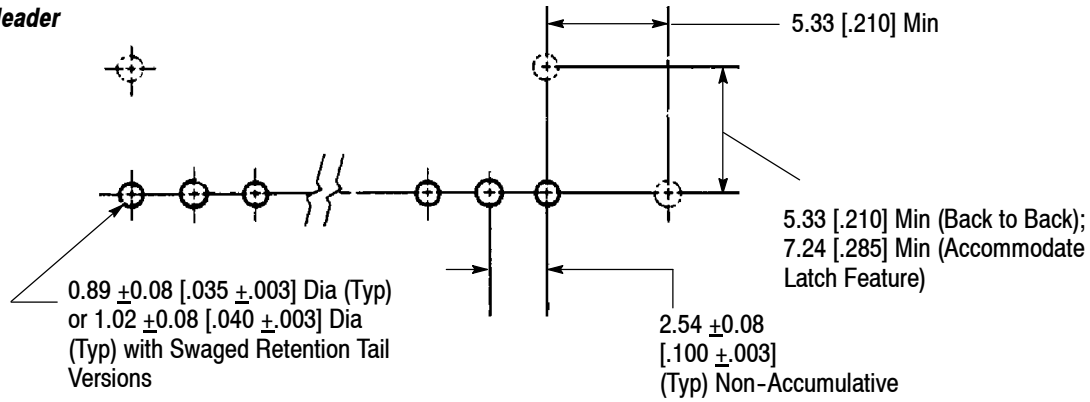
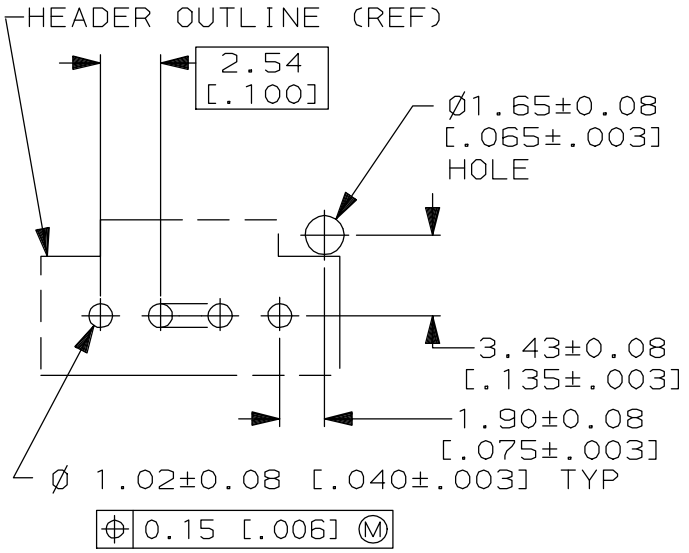
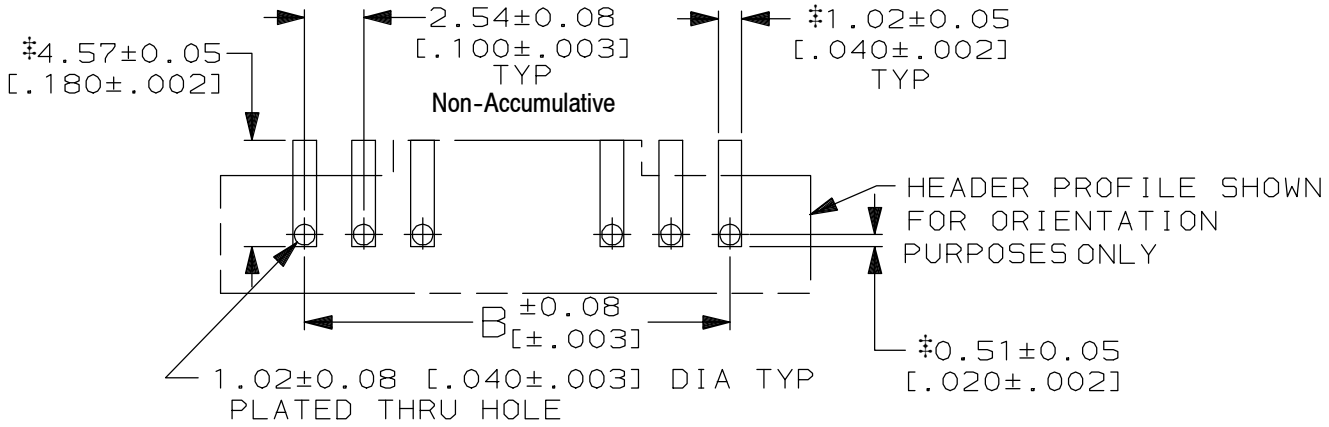


Figure 6 (cont'd)

Vertical Header with PC Board Orientation

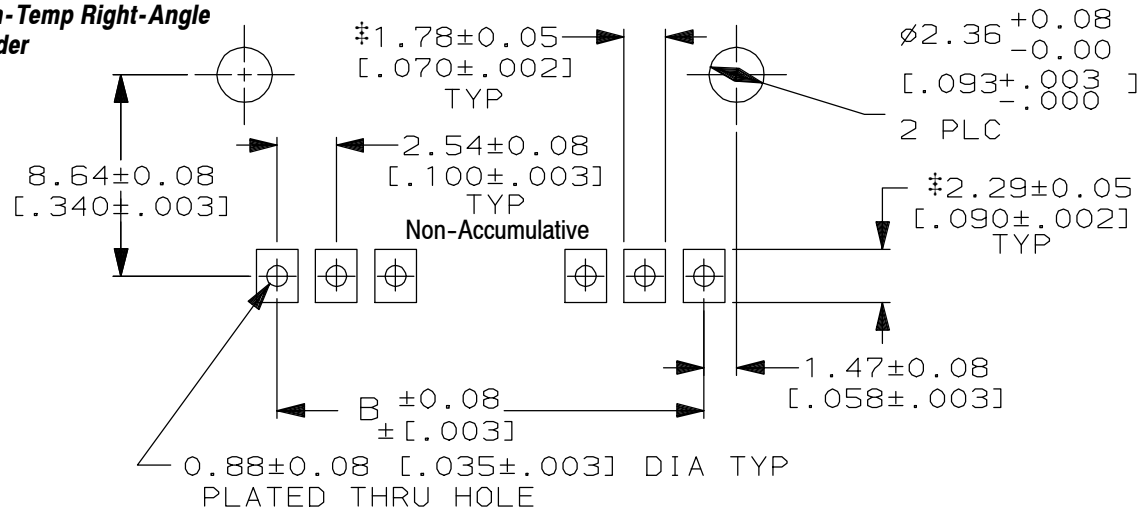


High-Temp Vertical Header



‡Stencil layout shown is for 0.25 mm [.010 in.] thick stencil.

High-Temp Right-Angle Header



‡Stencil layout shown is for 0.25 mm [.010 in.] thick stencil.

Figure 6 (end)

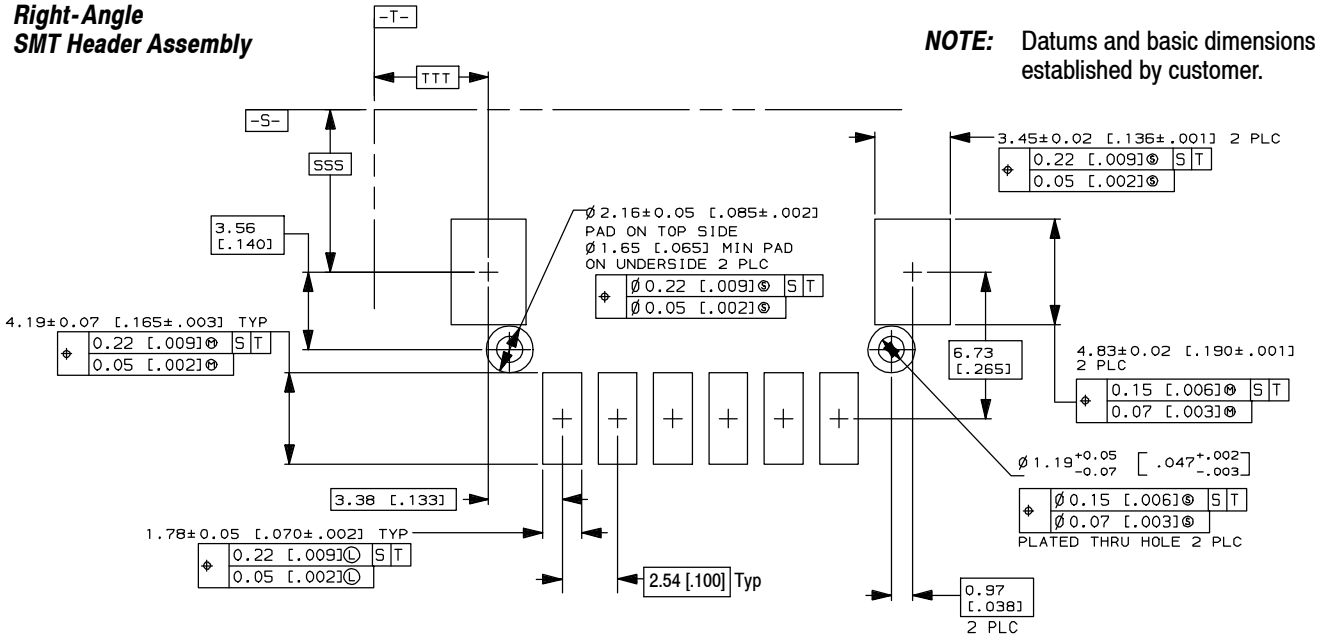
C. PC Board Layout (Surface Mount)

NOTE

Figure 7 represents a typical right-angle pc board (Surface Mount) layout for this product. For dimensions on specific position sizes, obtain the appropriate customer drawing through your Tyco Electronics Representative or refer to the telephone numbers at the bottom of page 1.

Right-Angle SMT Header Assembly

NOTE: Datums and basic dimensions established by customer.



Vertical SMT Header Assembly

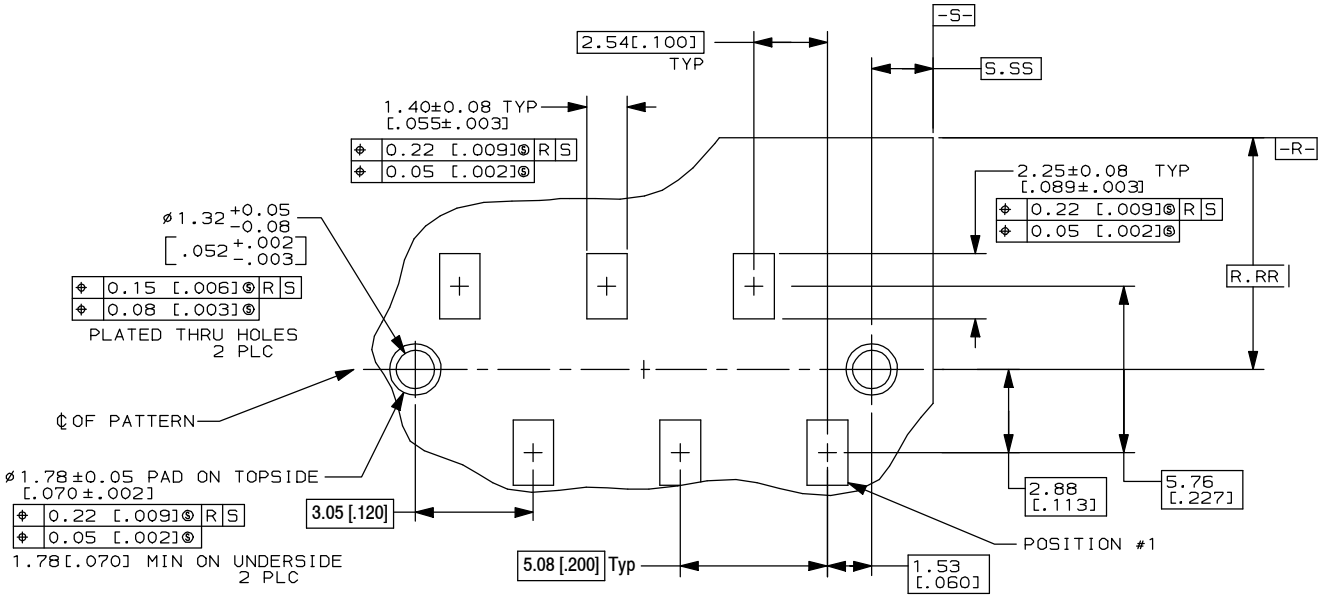


Figure 7

D. Connector Spacing

Figure 8 provides information on connector clearance zones and spacing that must be considered regarding the placement of the connectors on a pc board.

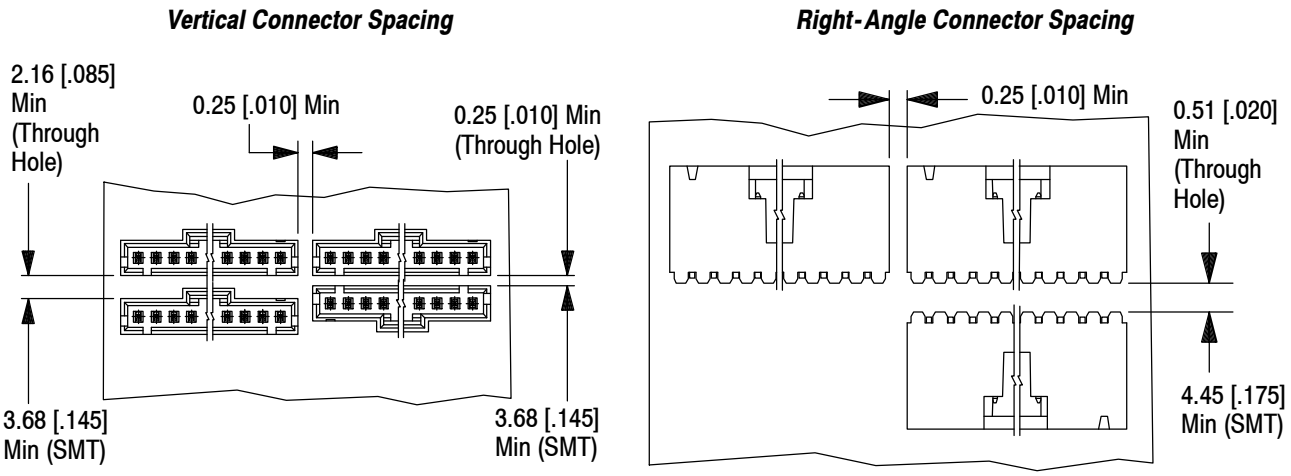


Figure 8

3.8. Connector Placement for Through-Hole Configurations

CAUTION

Connectors should be handled only by the housing to avoid deformation, contamination, or damage to the contact tines.

When placing through hole connectors on the pc board, make sure the contact solder tines are aligned and started into the matching holes before seating the housing on the pc board.

3.9. Soldering Through-Hole Connectors

A. Flux Selection

Contact solder tines must be fluxed prior to soldering with a mildly active, 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 Product Information phone number at the bottom of page 1 for consideration of other types of flux. Some fluxes that are compatible with these connectors are provided in Figure 9.

FLUX TYPE	ACTIVITY	RESIDUE	COMMERCIAL DESIGNATION	
			KESTER	ALPHA
Type RMA (Mildly Activated)	Mild	Noncorrosive	186	611

Figure 9

B. Cleaning

After soldering, removal of fluxes, residues, and activators is necessary. Consult with the supplier of the solder and flux for recommended cleaning solvents. The following is a listing of common cleaning solvents that will not affect the connectors for the time and temperature specified. See Figure 10.

DANGER

Consideration must be given to toxicity and other safety requirements recommended by the solvent manufacturer. Refer to the manufacturer's Material Safety Data Sheet (MSDS) for characteristics and handling of cleaners. Trichloroethylene and Methylene Chloride can be used with no harmful affect to the connectors; however Tyco Electronics does not recommend them because of the harmful occupational and environmental effects. Both are carcinogenic (cancer-causing) and Trichloroethylene is harmful to the earth's ozone layer.

NOTE

If you have a particular solvent that is not listed, contact the Tooling Assistance Center or Product Information number at the bottom of page 1.

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 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 10

C. Drying

When drying cleaned assemblies and printed circuit boards, make certain that temperature limitations are not exceeded: -65° to 105°C [-83° to 221°F] for standard temperature products. Excessive temperatures may cause connector degradation.

D. Soldering Guidelines

AMPMODU MTE Connectors can be soldered using wave or equivalent soldering techniques. The temperatures and exposure time shall be within the ranges specified in Figure 11. We recommend using SN60 or SN62 solder for the header assemblies.

NOTE

Manual 402-40 provides some guidelines for establishing soldering practices. Refer to Paragraph 2.5, Manuals.

SOLDERING PROCESS	TEMPERATURE		TIME (At Max Temperature)
	CELSIUS	FAHRENHEIT	
WAVE SOLDERING	260❋	500❋	5 Seconds

❋ Wave Temperature

Figure 11

3.10. Checking Installed Connector

All solder joints should conform to those specified in Test Specification 109-11 and all other requirements specified in this document. The connector must be seated on the pc board to the dimensions shown in Figure 12.

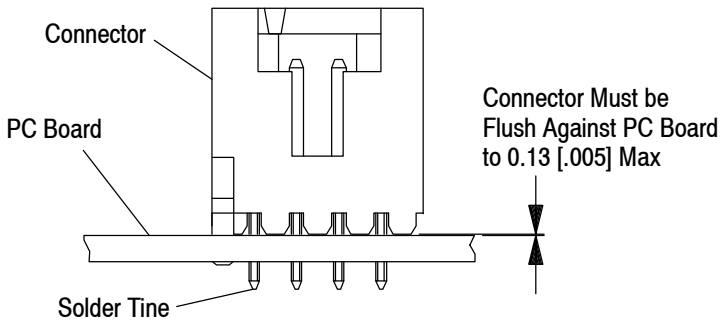


Figure 12

3.11. Soldering Surface Mount Connectors

The pc board pads must be solderable in accordance with Test Specification 109-11-1.

A. Typical Solder Paste Characteristics

1. Alloy type shall be either 63 Sn/37 Pb or 60 Sn/40 Pb.
2. Flux shall be RMA type.
3. Solids by weight shall be 85% minimum.
4. Mesh designation -200 to +325 (74 to 44 square micron openings, respectively).
5. Minimum viscosity of screen print shall be 5 x 10% cp (centipoise).
6. Minimum viscosity of stencil print shall be 7.5 x 10% cp (centipoise).

B. Solder Volume

Solder volume for each component shall be:

Right-Angle Header . . . . . 1.11 mm^3 [.0000682 $in.^3$] per contact

Right-Angle Hold-Down Barb . . . . 1.50 mm^3 [.0000914 $in.^3$] per right-angle header hold-down

Right-Angle Hold-Down Pad . . . . . 3.06 mm^3 [.0001867 $in.^3$] per right-angle header hold-down

Vertical Header . . . . . 1.09 mm^3 [.000067 $in.^3$] per contact

Vertical Hold Down . . . . . 1.34 mm^3 [.000082 $in.^3$] per vertical header hold-down

NOTE

Solder volume may vary depending on solder paste composition.

C. Stencil

Stencil aperture will be determined by the thickness of the stencil being used. Generally, the thinner stencils will have a larger aperture to maintain a given volume of solder paste. Solder deposition should be within the pad area of the contact solder tines. A typical aperture opening is provided in Figure 13.

CAUTION

All traces must be covered by solder mask in the solder deposit area. Exposed traces could cause bridging and create a short, or wick solder away from the solder tines, producing a weak solder joint.

CAUTION

If a hold-down aperture is required other than that specified, the design must ensure that the connector housing will not sit on the solder deposit.

NOTE

The recommended aperture width is 0.064 mm [.025 in.] , It may be wider, however, care must be given to ensure against solder bridging.

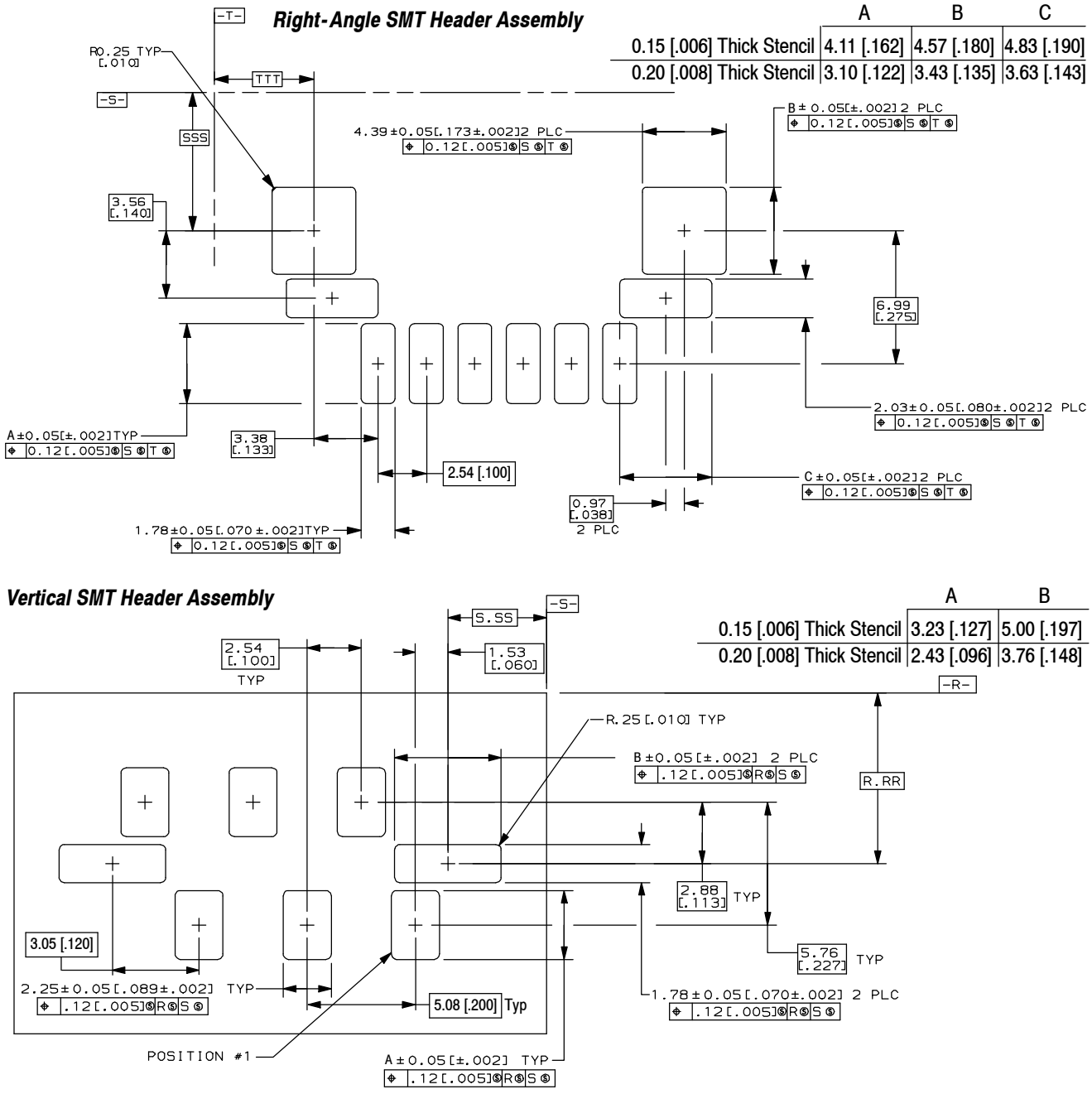


Figure 13

D. Solder Screen

Generally, we do not recommend screen application of solder paste because of the limited volume of paste that can be deposited. If a screen application is required, we recommend removal of all screen from the solder tine and hold-down pad areas. Consult your supplier for compatibility of screen and paste, and for application techniques.

E. Solder Mask

Solder mask is recommended between all pads. If a trace is run between adjacent pads on the solder side of the pc board, a solder mask must be applied over the trace to prevent bridging and wicking of solder away from the contact solder tines. Additionally, there should be solder mask covering any traces in the area of the hold-down solder deposit. Liquid photo imageable or dry film solder masks are recommended.

F. Connector Placement

SMT header connectors can be placed on the pc board by hand or by pick and place equipment. If doing so by hand, grip the connector at the ends of the housing without touching the contact to prevent contamination and deformation of the solder tines. See Figure 14.

At the time of connector placement, the coplanarity of the pad pattern must be held to 0.05 mm [.002 in.] maximum. Tyco Electronics recommends a solder mask to minimize solder bridging between pads. The mask must not exceed the height of the pad by more than 0.05 mm [.002 in.].

CAUTION

Since the connector housings may rest on top of the solder mask, an excessively high mask will allow too much space between the solder tine and pad for a good solder joint. A solder joint under these conditions would be weak, and would not provide long term performance for the connector.

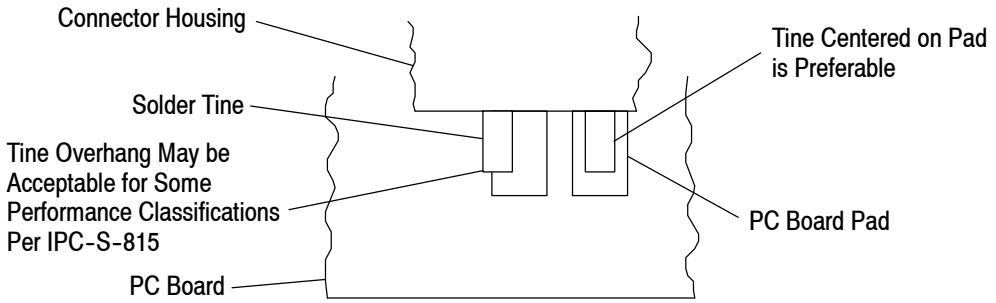


Figure 14

G. Solder

1. Fluxing Selection

Refer to Paragraph 3.9.A for flux selections.

2. Techniques

It is recommended that the connector be soldered using convection, vapor phase (VPR), double sided non-focused infrared (IR), or equivalent soldering technique provided the temperatures and exposure time are within the ranges specified in Figure 15. Higher temperatures can be withstood for short periods of time as indicated in Figure 15 for the IR reflow. Tyco Electronics recommends using a Corpane Batch Vapor Phase (Model VVP 10 BU) and Vitronics IR (Model SMD 718) equipment.

SOLDERING PROCESS	TEMPERATURE		TIME (At Max Temp)
	CELSIUS	FAHRENHEIT	
VAPOR PHASE SOLDERING	215	419	5 Minutes
INFRARED SOLDERING	230	446	5 Minutes
CONVECTION	230	446	5 Minutes

Figure 15

3. Reflow Parameters

Due to the many variables involved with the reflow process (ie, component density, orientation, etc), we recommend that the user conduct trial runs under actual manufacturing conditions to ensure product and process compatibility.

H. Cleaning

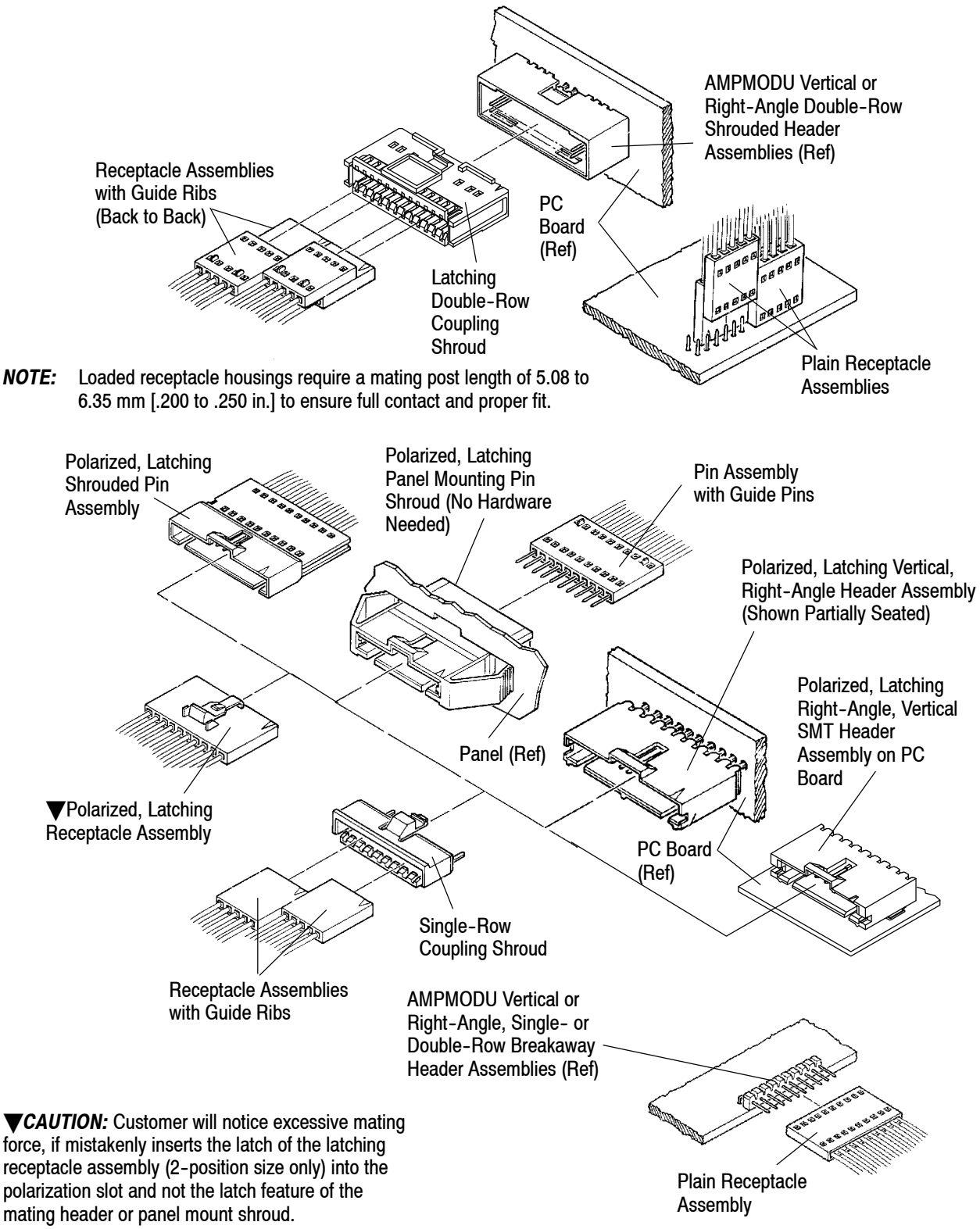
Refer to Paragraph 3.9.B for cleaning information.

I. Drying

Air drying of cleaned connectors is recommended. Temperature for the connectors should not exceed -65°C to 105°C [-83°F to 221°F]. Degradation of the housings could result from extreme temperatures.

3.12. Mating Configurations

Housings fully loaded with terminated contacts can be used as is, or can be combined and accessorized to provide a large variety of mounting and mating options. Figure 16 shows a sample size of each accessory viewed in typical applications.



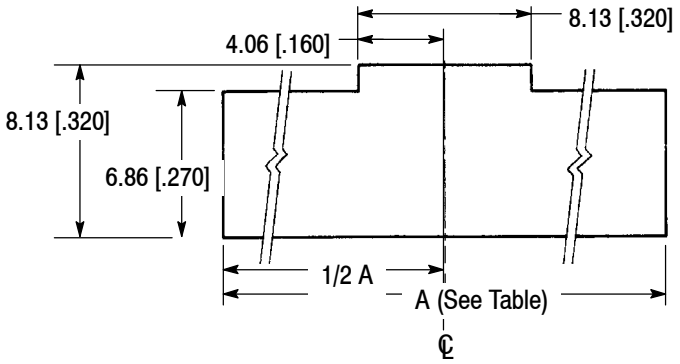
NOTE: Loaded receptacle housings require a mating post length of 5.08 to 6.35 mm [.200 to .250 in.] to ensure full contact and proper fit.

▼***CAUTION:*** Customer will notice excessive mating force, if mistakenly inserts the latch of the latching receptacle assembly (2-position size only) into the polarization slot and not the latch feature of the mating header or panel mount shroud.

Figure 16

3.13. Panel Layout for Panel Mount Pin Shrouds

Panels for mounting panel-mount pin shrouds shall be a thickness of 0.76 to 3.18 mm [.030 to .125 in.] . Recommended panel cutout dimensions are provided in Figure 17.



No. of Posn	2	3	4	5	6	7	8	9	10	11	12	13
Dim "A"	15.88 [.625]	18.42 [.725]	20.96 [.825]	23.50 [.925]	26.04 [1.025]	28.58 [1.125]	31.12 [1.225]	33.66 [1.325]	36.20 [1.425]	38.74 [1.525]	41.28 [1.625]	43.82 [1.725]
No. of Posn	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**
Dim "A"	46.36 [1.825]	48.90 [1.925]	51.44 [2.025]	53.98 [2.125]	56.52 [2.225]	59.06 [2.325]	61.60 [2.425]	64.14 [2.525]	66.68 [2.625]	69.22 [2.725]	71.76 [2.825]	74.30 [2.925]

Figure 17

3.14. Keying Plugs

Keying plugs are available to selectively close receptacle cavities for polarizing a housing. Plugs are supplied 10 per strip as part number 104072-1. Refer to Instruction Sheet 408-6919 for assembly procedures.

Respective mating posts in the pin header must be removed to accommodate the keying plugs. To accomplish the task, use Keying Tool 91417-1. Tooling procedures can be found in Instruction Sheet 408-9230.

3.15. Repair/Removal

Headers may be removed from the pc board by standard de-soldering methods. Damaged headers must be replaced. Extraction/Lance Reset Tools 843477-[ ] and 843996-[ ] (408-9453) are used to remove individual receptacle contacts from housings for repair or relocation to another housing cavity. The tools also are used to reset overly depressed receptacle contact locking lances.

NOTE

It is best to reset the lance of any removed contact before reinsertion into a housing.

CAUTION

DO NOT reuse damaged contacts. Replace them with crimp snap-in type contacts. For crimp tooling information, refer to Section 5, TOOLING.

4. QUALIFICATIONS

AMPMODU MTE Connectors are Component Recognized by Underwriters Laboratories Inc. (UL) in File E28476 and Certified by CSA International in File LR7189.

5. TOOLING

This section provides a selection of tools for various application requirements. They include hand tools for manual application of loose piece form contacts, and semi-automatic and automatic machines for power assist application of strip form contacts. Modified designs and additional tooling concepts may be available to meet other application requirements. For additional information, contact one of the service groups at the bottom of page 1. The following tools are recommended for termination of the AMPMODU MTE Interconnection System. See Figure 18.

- **Hand Tools**
  For crimp snap-in pin contacts, use Hand Crimping Tools 58342-1 for 26-22 AWG wire and 58342-2 for 32-28 AWG wire using Instruction Sheet (408-9407). For Short Point Receptacle Contacts, use Hand Tool 58438-1 (408-9590) for 32-22 AWG wire.
- **Terminating Heads**
  Terminating Head 58336-1 (408-9359) terminates manually-fed wires one at a time, each time indexing to the next position. The head can be used with the Pistol-Grip Manual Handle Assembly 58074-1 (408-6790) which accommodates the head for economical tooling or the Manual Pneumatic Handle 58075-1 (408-6789). For hands free operation, use Pneumatic Power Assembly Bench Machine 58338-1 (408-9393).
- **Tube Feed Assembly**
  The AMPMODU MTE Tube Feed Assembly 856675-1 (408-9759) terminates unstripped wire in the shrouded pin and receptacle contacts of AMPMODU MTE housings and then seats the contacts within the housing. This assembly is used in conjunction with Electric Power Unit 931800-1 (409-5746).
- **Electric Power Unit**
  Electric Power Unit 931800-1 (409-5746) is designed to accept interchangeable terminating heads, feed track assemblies, and feed tube assemblies which terminate unstripped wire in connectors using the IDC Terminating technique. The unit is footswitch actuated to provide the 534 N [120-pound-force] maximum force necessary for terminating wires to contacts.
- **Ribbon Cable Terminating Machine**
  The AMPMODU MTE Ribbon Cable Terminator Machine 856002-1 (409-5832) terminates connectors onto end-notched ribbon cable. The connectors should be in strip form and in plastic tubes. This machine is designed for bench application and is pneumatically operated and controlled by a foot pedal. The seating station is manually operated and seats the connector housings onto the terminated contacts.
- **Ribbon Cable Notcher**
  Ribbon Cable Notcher 854449-[ ] (408-9515) is used to notch cable for contact termination. It may be used with a variety of power units.
- **Power Units**
  Power units are automatic or semi-automatic machines used to assist in the application of a product. The following power units are used in conjunction with the ribbon cable notcher: Manual Arbor Frame Assembly 58024-1 (408-6923), Pneumatic Frame Assembly 91112-2 (408-7763), 2700-lb Pneumatic Power Unit 312522-1 (409-5843), AMP-O-LECTRIC Model “K” Terminating Machine 565435-5 (409-5128), or the AMP-O-LECTRIC Model “G” Terminating Machine 354500-1 (409-5842).



The Model “K” AMP-O-LECTRIC Terminating Machine PN 565435-5 has been superseded by the Model “G” Terminating Machine PN 354500-1 for new applications. For existing applications, the Model “K” is still recommended because of the large number of installed machines.

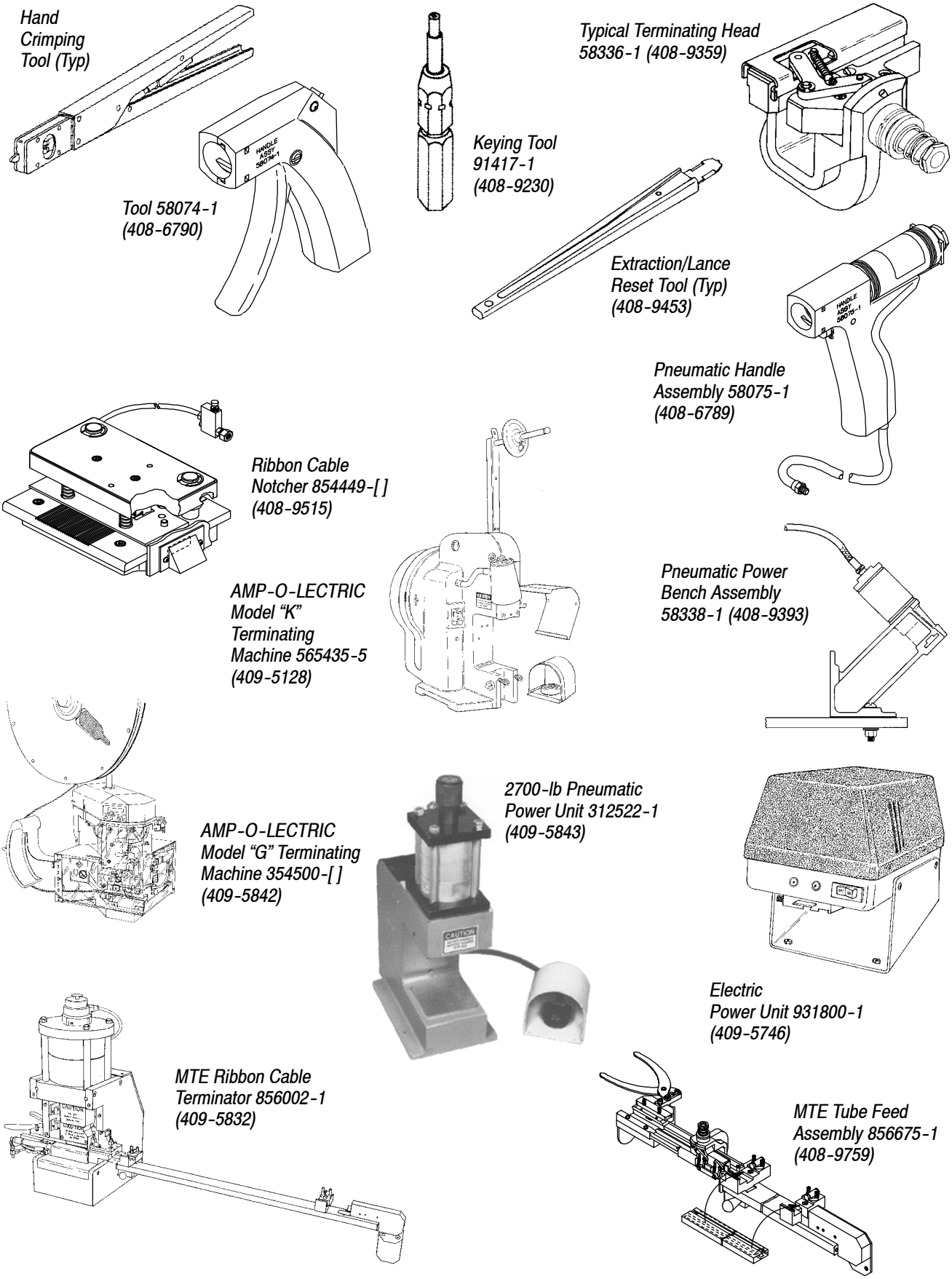

Hand Crimping Tool (Typ)
Tool 58074-1 (408-6790)
Keying Tool 91417-1 (408-9230)
Typical Terminating Head 58336-1 (408-9359)
Extraction/Lance Reset Tool (Typ) (408-9453)
Pneumatic Handle Assembly 58075-1 (408-6789)
Ribbon Cable Notcher 854449-[ ] (408-9515)
AMP-O-LECTRIC Model "K" Terminating Machine 565435-5 (409-5128)
Pneumatic Power Bench Assembly 58338-1 (408-9393)
AMP-O-LECTRIC Model "G" Terminating Machine 354500-[ ] (409-5842)
2700-lb Pneumatic Power Unit 312522-1 (409-5843)
Electric Power Unit 931800-1 (409-5746)
MTE Ribbon Cable Terminator 856002-1 (409-5832)
MTE Tube Feed Assembly 856675-1 (408-9759)

Figure 18

6. VISUAL AID

Figure 19 shows a typical application of an AMPMODU MTE Interconnection System. 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.

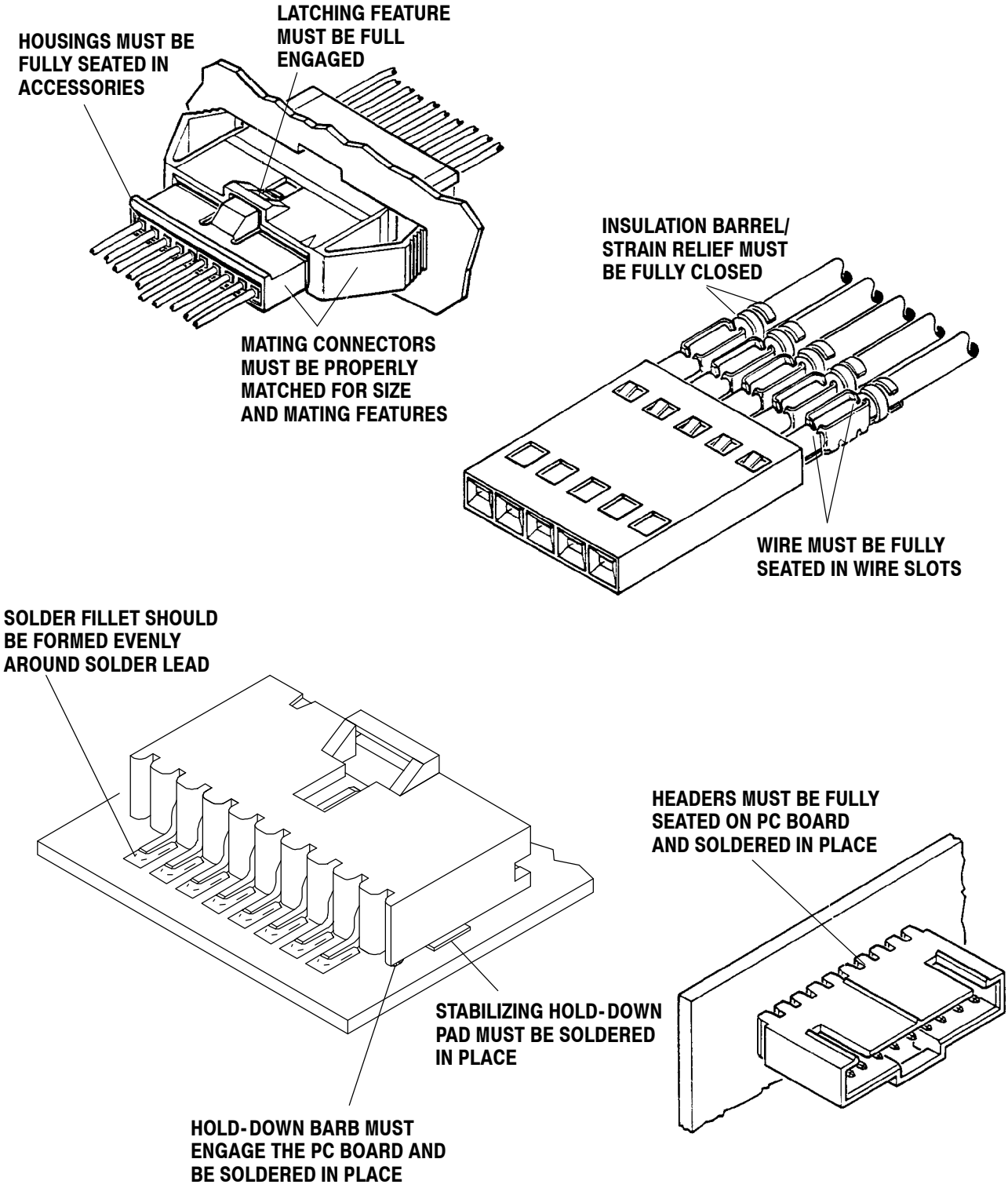


FIGURE 19. VISUAL AID