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 Micro Interconnect Plug and Receptacle Connector Assemblies. This product line consist of contacts which are installed in 4- through 40-position plug connector housings. These housings mate with vertical and right-angle printed circuit (pc) board receptacle header assemblies for wire-to-board applications. The Surface Mount Technology (SMT) receptacle header assemblies come with pre-loaded contacts, and may be installed on the pc board manually, or automatically using robotic equipment. The plug contacts will accept 30-28 AWG wire. An optional strain relief is available for the discrete wire applied plug.

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

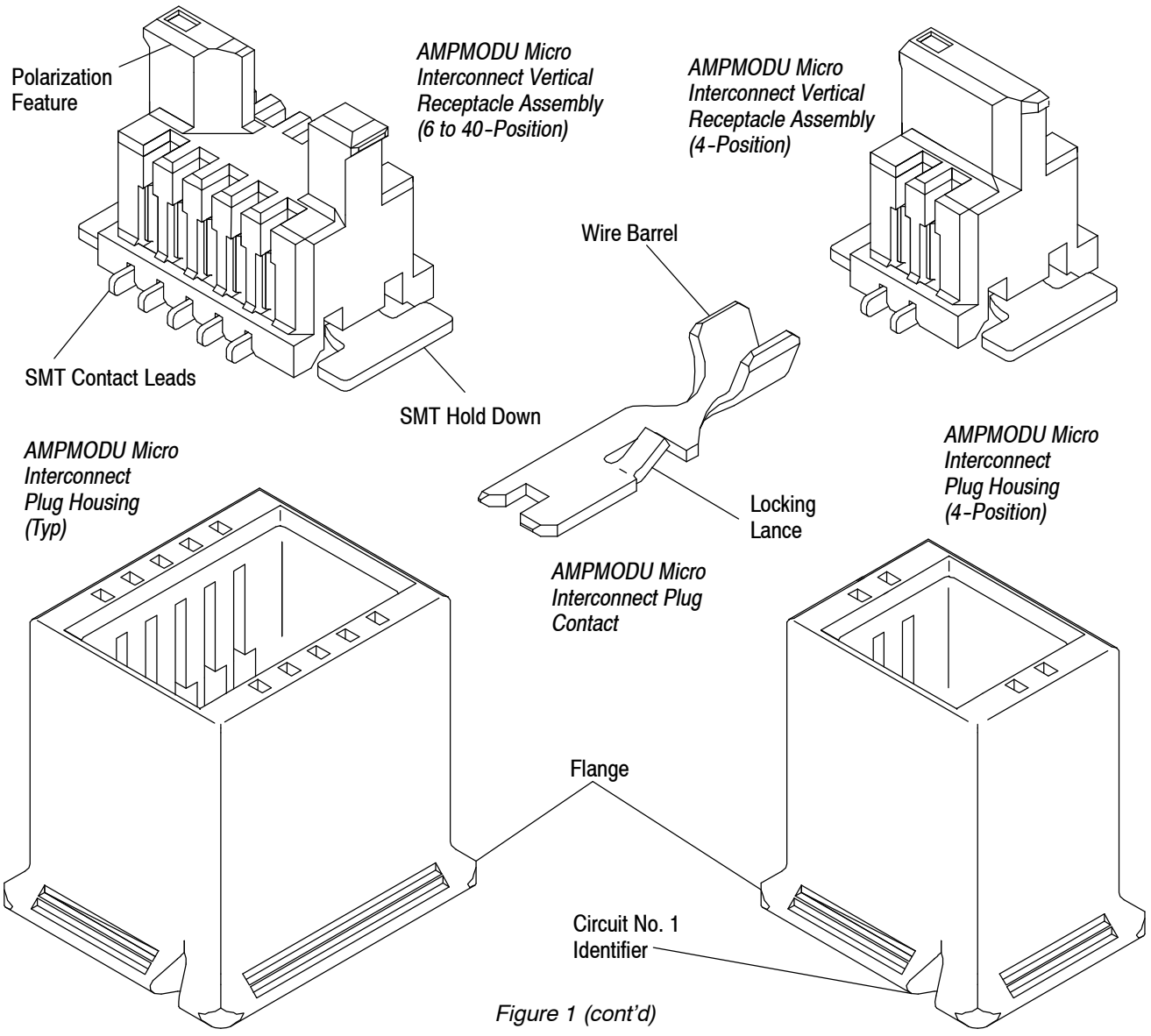


Figure 1 (cont'd)

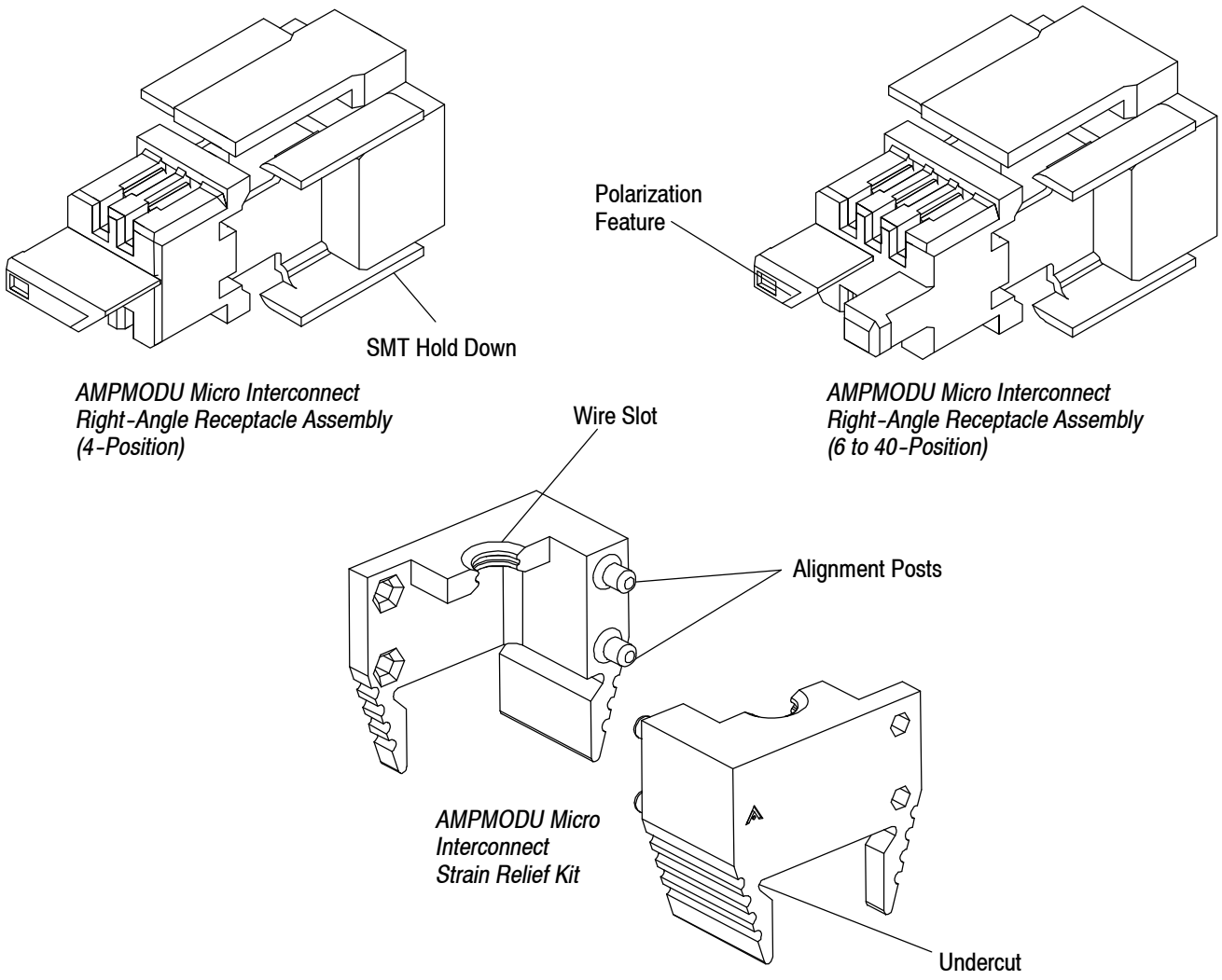


Figure 1 (end)

2. REFERENCE MATERIAL

2.1. Revision Summary

- Updated document to corporate requirements.

2.2. Customer Assistance

Reference Part Number 1375870 and Product Code G522 are representative numbers of AMPMODU Micro Interconnect 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 TE Representative or, after purchase, by calling the Tooling Assistance Center or the 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. Contact the Product Information Center number at the bottom of page 1 if such a conflict is encountered.

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

The following list includes available specifications that provides various information for results of testing, evaluation, and other requirements for the application of this product.

Document Number	Document Title
101-21	Solder Fillets of Surface Mounted Connectors
101-538	Micro Interconnect Crimping Operation
108-1955	AMPMODU Micro Interconnect Plug and Receptacle Connectors
109-11	Solderability Dip Test

2.6. Standards

Joint Industry Standard IPC/EIA J-STD-001C provides the Requirements for Soldered Electrical and Electronic Assemblies.

2.7. 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 procedures of machines.

Document Number	Document Title
408-3295	Preparing Reel of Contacts for Applicator Tooling
408-7424	Checking Terminal Crimp Height or Gaging Die Closure
408-8040	Heavy Duty Miniature Quick-Change Applicators (Side-Feed Type)
408-8053	Conversion Guide for Miniature Quick Change Applicators
408-8059	General Preventive Maintenance for Applicators
408-8583	0.8 mm AMPMODU Micro Interconnect Insertion Tool 1490583-1
408-8584	0.8 mm AMPMODU Micro Interconnect Extraction Tool 1490584-1
408-8685	Unmating Tool 1583957-1
408-9816	Handling of Reeled Products
409-5842	AMP-O-LECTRIC* Model “G” Terminating Machine 354500-[ ]
409-10016	Entry Level Terminator (ELT) Machine 1338600-[ ]
409-10027	Stripping Modules 1490500 and 1490502
409-10029	Stripping Modules 1490501 and 1490503

3. REQUIREMENTS

3.1. Storage

A. Ultraviolet Light

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

B. Shelf Life

The connector assemblies and loose piece housings should remain in the shipping containers until ready for use to prevent damage. These products should be used on a first in, first out basis to avoid storage contamination.

C. Reeled Contacts

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

D. Chemical Exposure

Do not store housings or header assemblies near any chemicals listed below, as they may cause stress corrosion cracking in the components.

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

3.2. Special Characteristics

Due to the inherent size of the product, the 4-position header receptacle connector has a full length mating feature for easier mating. The plug housing assemblies contain a notch to identify circuit number (1). A flange has been designed on the bottom of the plug housing for ease of handling and mating and unmating.

3.3. Materials

The contacts are made of phosphor bronze and plated with nickel all over with gold plating in the mating area and tin-lead in the crimped area. The plug and receptacle housings are made of UL 94 V-O Rated LCP plastic natural color.

3.4. Wire Selection and Preparation

The contacts will accept a wire size range of 30-28 AWG, and are to be terminated to stranded wire. Figure 2 lists the insulation diameter range, strip length, and crimp height as determined by the wire size.

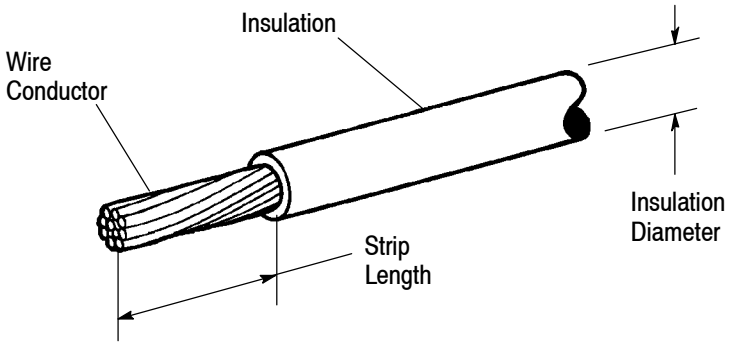
CAUTION

When stripping the wire, care must be taken to avoid scraping, nicking, or cutting the conductor. Care must also be used when handling the wire during stripping and crimping to prevent cracking or breaking of the conductor and insulation.

NOTE

Each crimp dimension represents the functional range of a wire/contact combination. There are tool designs available to meet various application requirements. The developed crimp configuration is unique for each tool design and is acceptable provided the crimp height is within the functional range. For crimp dimensions of a specific tool, refer to instruction sheet packaged with manual tools and applicator log packaged with power tools.

Note: Not to Scale



WIRE SIZE	INSULATION DIAMETER	STRIP LENGTH	WIRE BARREL CRIMP HEIGHT	TENSILE STRENGTH
30	0.60 [.024] Max.	1.70 ±0.38 [.068 ±.015]	0.510 +0.051/-0.025 [.020 +.002/-.001]	8.89 N [2.0 lbs]
28				14.23 N [3.2 lbs.]

Figure 2

3.5. Crimped Contact Requirements

The contact shall be located in desired tooling and crimped according to the instructions packaged with that tooling. See Section 5, TOOLING, of this document for details on tooling options and instructional materials. Also refer to Workmanship Specification 101-538 for AMPMODU Micro Interconnect Crimping Operation.

CAUTION

Wire insulation shall NOT be cut or broken during the crimping operation, nor shall the insulation be crimped into the contact wire barrel. Reasonable care should be taken by tooling operators to provide undamaged wire terminations.

A. Contact Crimp Features

Figure 3 shows a typical contact as it should appear after crimping.

1. *Crimp Location*

   For optimum crimp effectiveness, the crimp must be within the area shown and must meet the crimp requirements provided in Figure 3.

2. *Crimp Height*

The crimp applied to the wire barrel portion of the contact is the most compressed area and is most critical in ensuring optimum electrical and mechanical performance of the terminated contact. The contact wire barrel crimp height must be within the dimension provided in Figure 2.

3. *Effective Crimp Length*

Effective crimp length shall be defined as that portion of the wire barrel, excluding bellmouth(s), fully formed by the crimping tool. See Figure 3.

4. *Conductor Extension*

The conductor may extend beyond the wire barrel to the maximum shown in Figure 3.

5. *Wire Barrel Seam*

The wire barrel seam must be closed with no evidence of loose wire strands visible in the seam.

6. *Bellmouth*

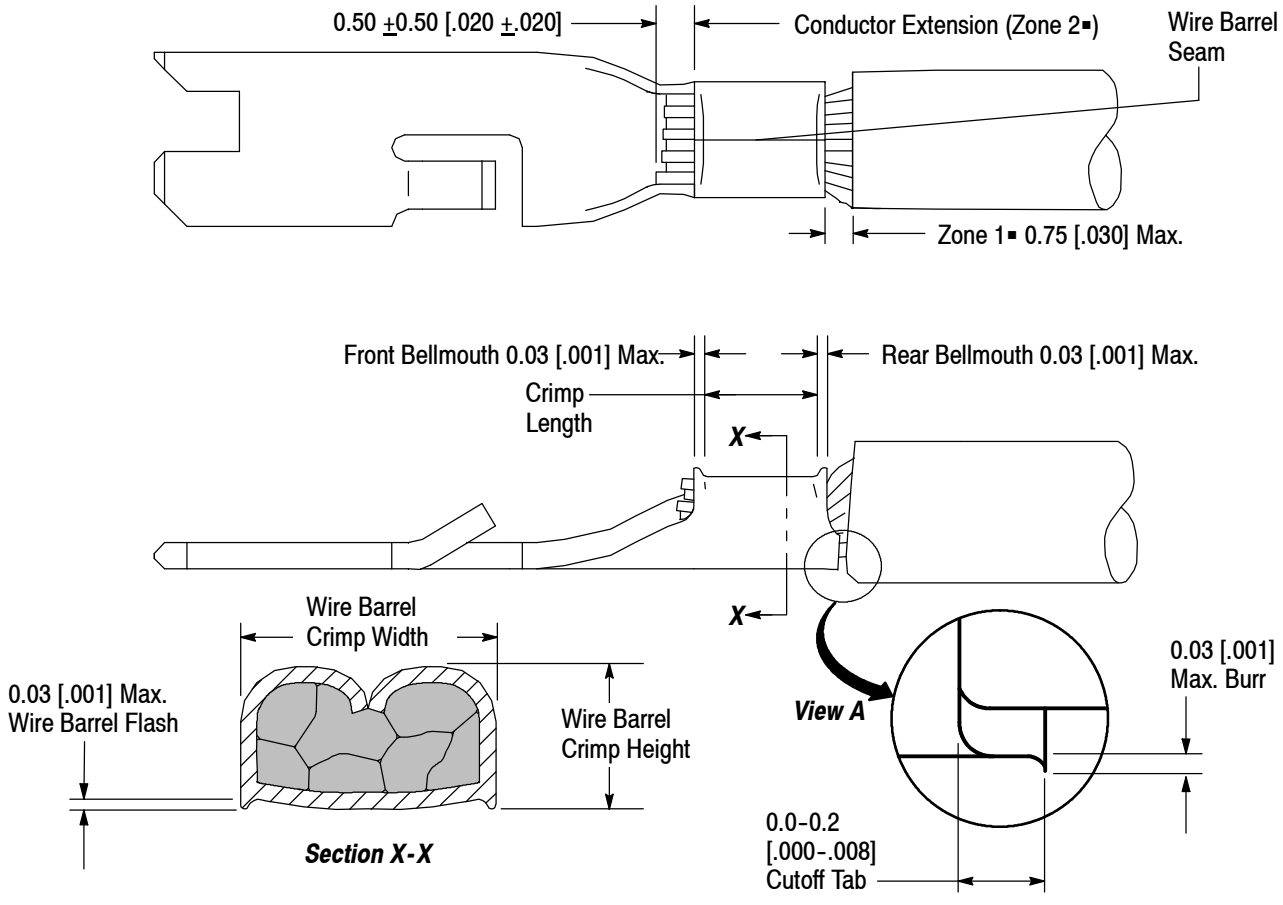
The front and rear bellmouths may be caused by the extrusion of metal during crimping, and must be controlled as shown in Figure 3.

7. *Cutoff Tab and Burr*

The cutoff tab and burr resulting from the contact being cut from the carrier strip must be within limits to allow the contact to be fully inserted and seated in the housing. See Figure 3.

8. *Flash*

The wire barrel flash at the bottom of the wire barrel results from applied crimp pressure and must be within the dimension provided in Section X–X of Figure 3.



▪***NOTE:*** The conductor strands must be visible in zones 1 and 2.

Figure 3

B. Twist and Roll

There shall be no twist, roll, deformation, or other damage to the mating portion of the crimped contact that will prevent proper mating. See Figure 4.

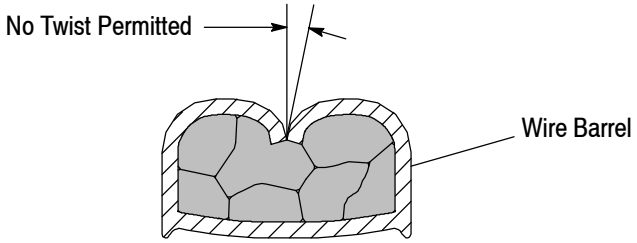


Figure 4

C. Straightness

The force applied during crimping may cause some bending between the crimped wire barrel and the mating portion of the contact. Such deformation is acceptable within the following limits.

1. *Up and Down*

   The crimped contact, including cutoff tab and burr, shall not be bent above or below the datum line more than the amount shown in Figure 5.

2. *Side to Side*

   The side-to-side bending of the contact may not exceed the limits provided in Figure 5.

NOTE

Periodic inspections must be made to ensure crimped contact formation is consistent as referenced.

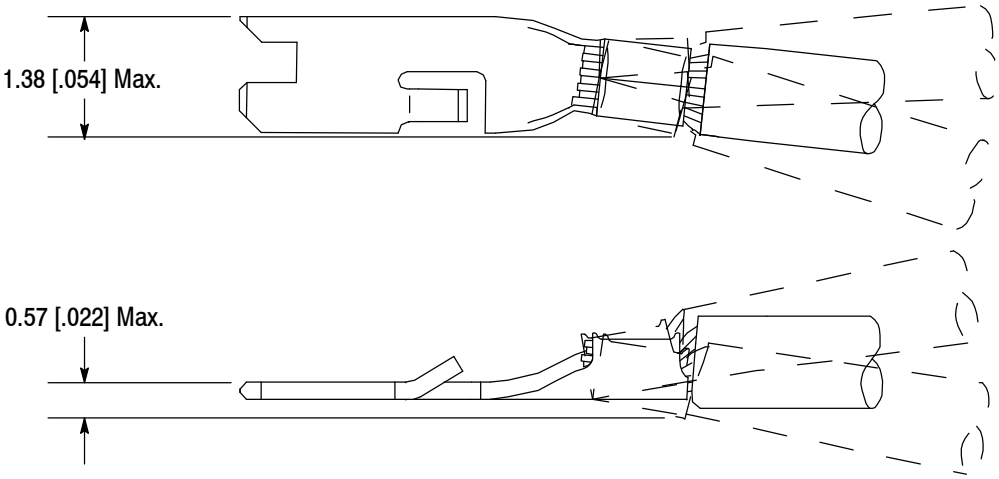


Figure 5

3.6. Placement of Crimped Contact in Housing

NOTE

Refer to Instruction Sheet 408-8583 for instructions on using insertion tool 1490583-1 to load crimped contacts into the housing. Instruction Sheet 408-8584 describes the extraction procedure using tool 1490584-1 if a contact must be removed from the housing.

The contact must be inserted in the back of the housing and snapped into place. When fully inserted, the locking lances will engage the housing and prevent backing out during mating of the connector. Refer to Instruction Sheet 408-8583 for use of insertion tool 1490583-[ ]. After inserting contact into housing, pull back lightly on the wire to ensure contact is fully seated. See Figure 6.

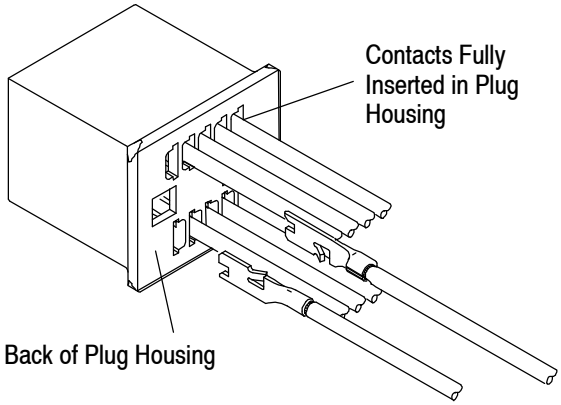


Figure 6

3.7. Wire Bend Radius

If required, wires can be bundled together and supported with fixed cable clamps. Wires must not be stretched or confined in any way that would put any undue stress on the contacts in the connector. Therefore, the wires must remain perpendicular to the connector, and avoid an excessively sharp bend radius. The minimum bend radius of a wire bundle should be ten times the diameter of the wire.

3.8. Strain Relief (Optional)

The optional strain relief protects the terminated contacts in the plug assembly from dislodging from the housing or the wires from pulling out of the contacts. Two hermaphroditic strain relief halves are required. The flange of the plug housing fits into the undercuts of the strain relief halves. The alignment posts are then press–fit into their corresponding cavities. The individual wires are to be contained in the wire slot.
See Figure 7.

CAUTION

Keep the wires in the slot to prevent pinched wires.

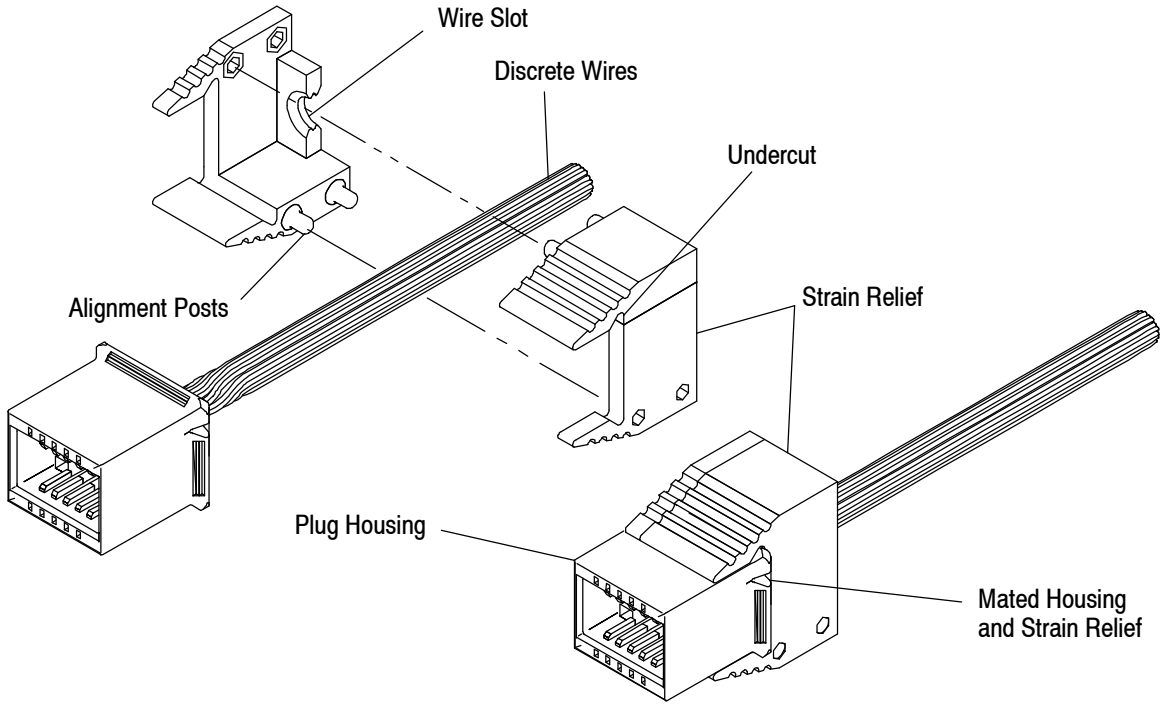
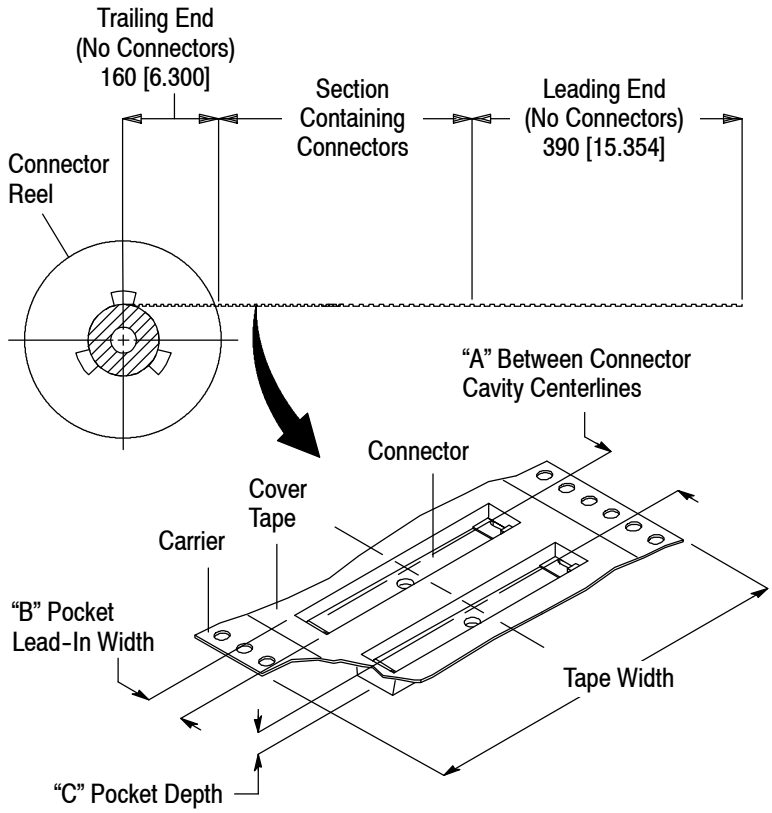


Figure 7

3.9. Receptacle Header Assemblies

Receptacle header assemblies are packaged and shipped in boxed reels of embossed tape packaging that conforms to Electronic Industries Association (EIA) 481 Packaging Standards. Each reel begins with a leader consisting of an empty strip of carrier which may or may not include cover tape. The trailing end consists of empty carrier strip with cover tape that will unwind freely when the reel empties. See Figure 8.



NUMBER OF POSITIONS	TAPE WIDTH	
	VERTICAL	RIGHT-ANGLE
4	24 [.945]	▲
6		16 [.630]
8		▲
10		24 [.945]
12		
14		
16		
18		
20		
22	32 [1.260]	
24		
26		▲
28		
30		
32		32 [1.260]
34		▲
36		
38		
40		
Dim "A"	12 [.472]	16 [.630]
Dim "B"	9.36 [.369]	13.1 [.516]
Dim "C"	5.26 [.207]	5 [.197]

▲Not available at time of publication. Contact the Product Information phone number at the bottom of page 1.

Figure 8

3.10. PC Board

A. Material

The pc board material shall be glass epoxy (FR-4 or G-10). Call the Product Information phone number at the bottom of page 1 for suitability of other materials.

B. Tolerance

Maximum allowable bow of the pc board shall be 0.05 mm [.002 in.] over the length of the connector.

C. Layout

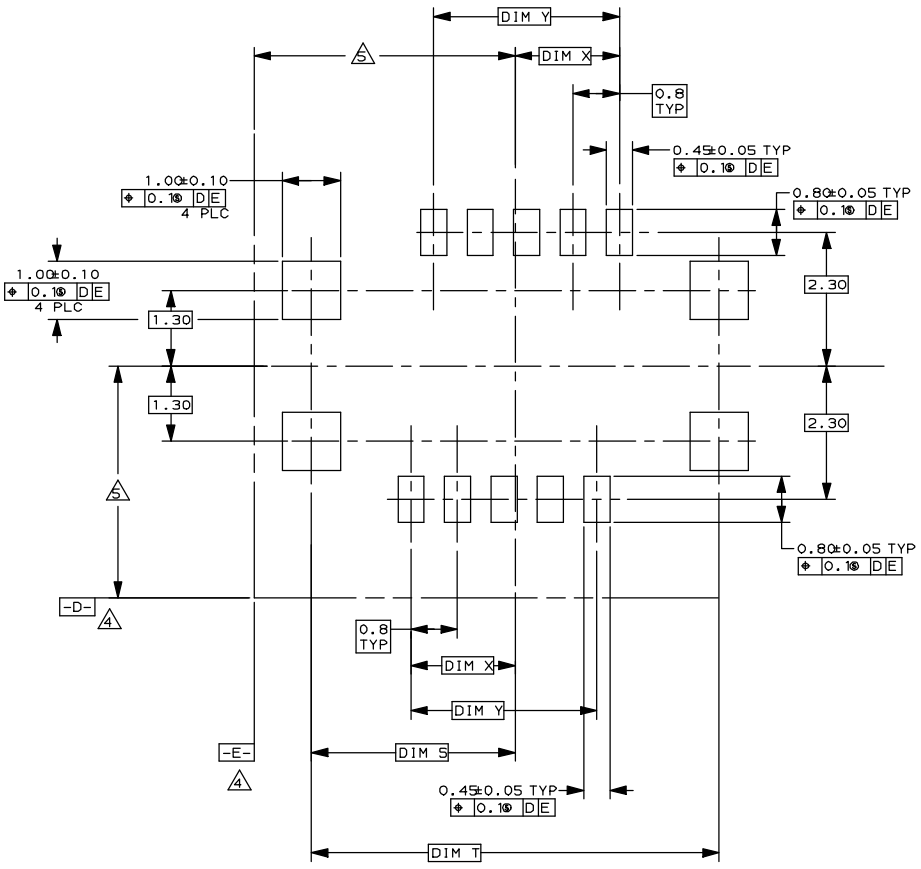
NOTE

*Figure 9 represents **typical** pc board vertical and right-angle layouts for this product. For dimensions and hole pattern layout for specific product, obtain the appropriate customer drawing through your TE Representative or refer to the telephone numbers at the bottom of page 1. The layout is viewed from the connector side.*

NOTE

Non-dimensional and variable position dimensional information for the pc board layouts may be found on the specific customer drawings.

Vertical Receptacle PC Board Layout



Right-Angle Receptacle PC Board Layout

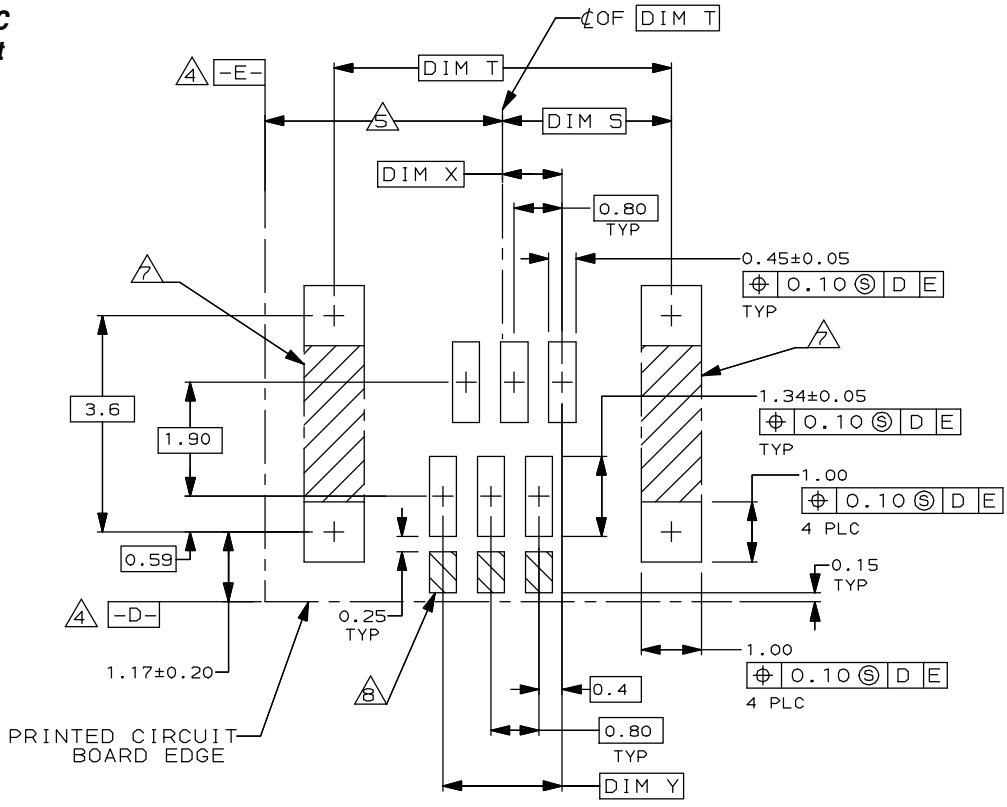


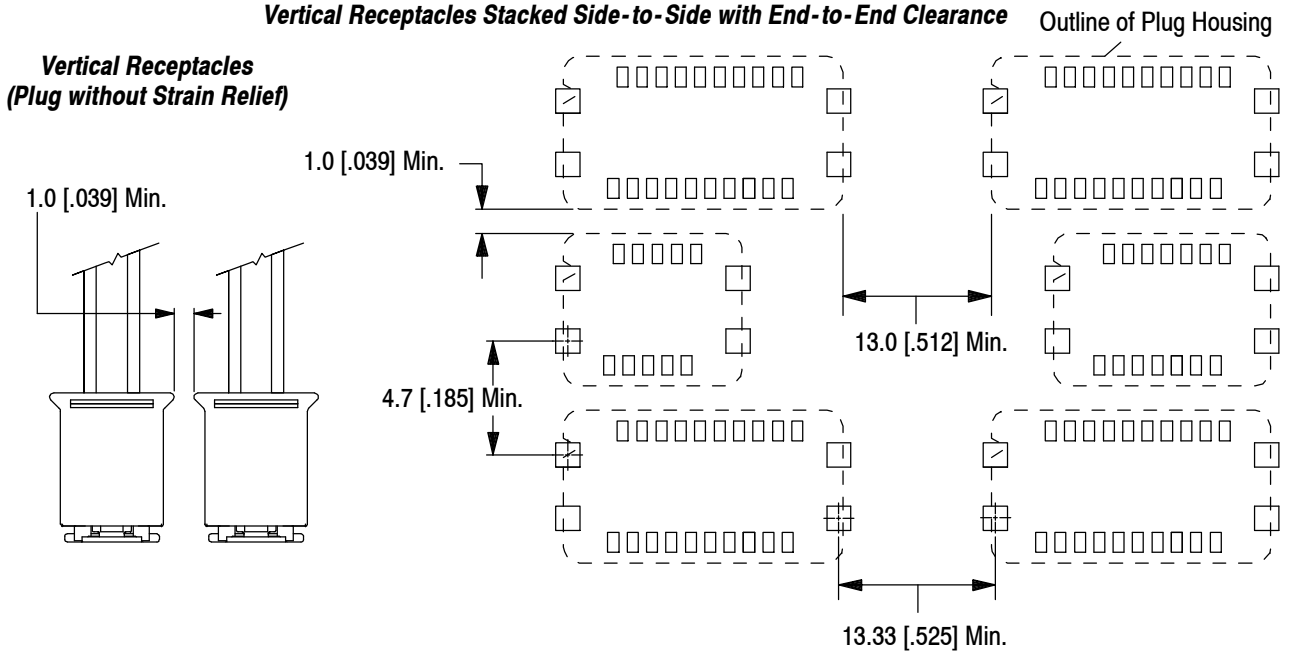
Figure 9

D. Spacing

Care must be used to avoid interference between adjacent connectors and other components. The minimum allowable distance between the pc board pin headers to ensure proper mating and unmating is provided in Figure 10.

NOTE

The information provided is for manual placement of pin headers. If robotic equipment is used, other space allowances will be required for grippers. Other fixed components should not be too close to prevent access for mating or unmating.



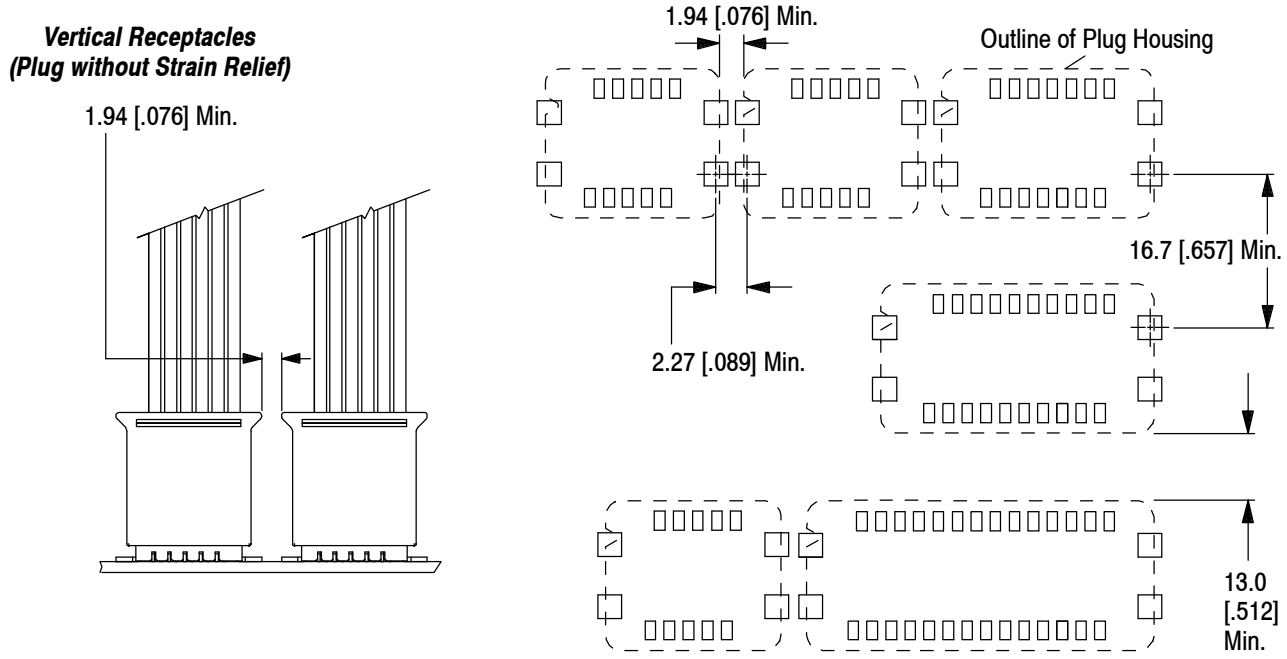
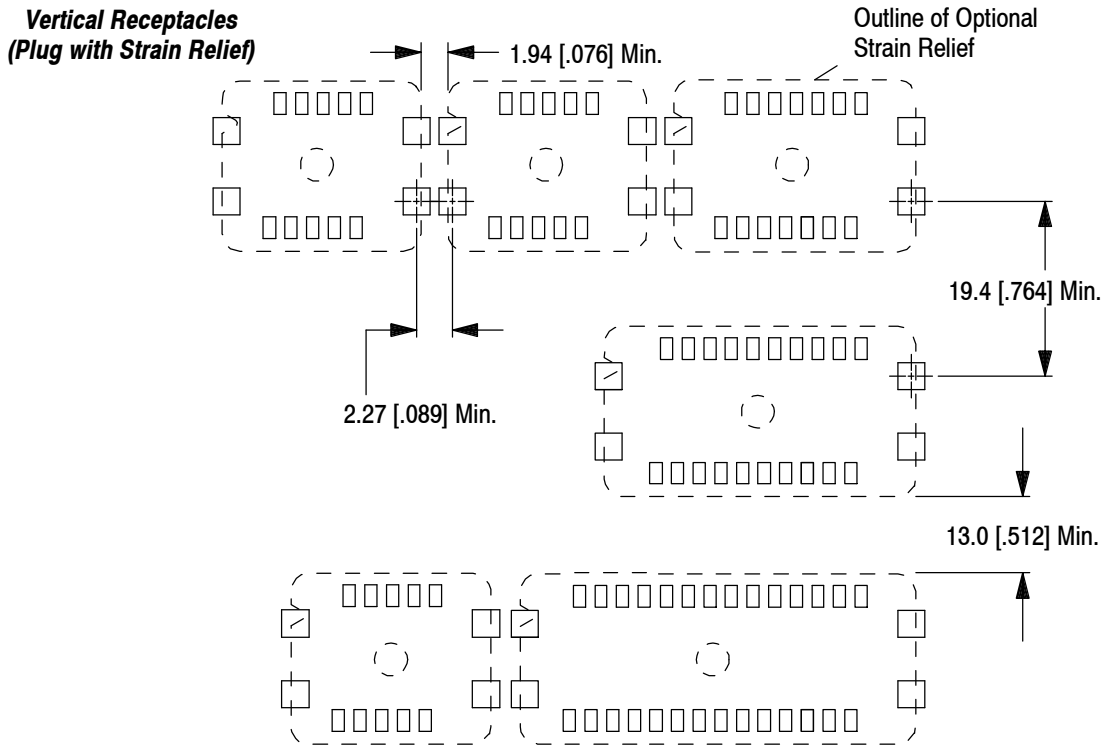
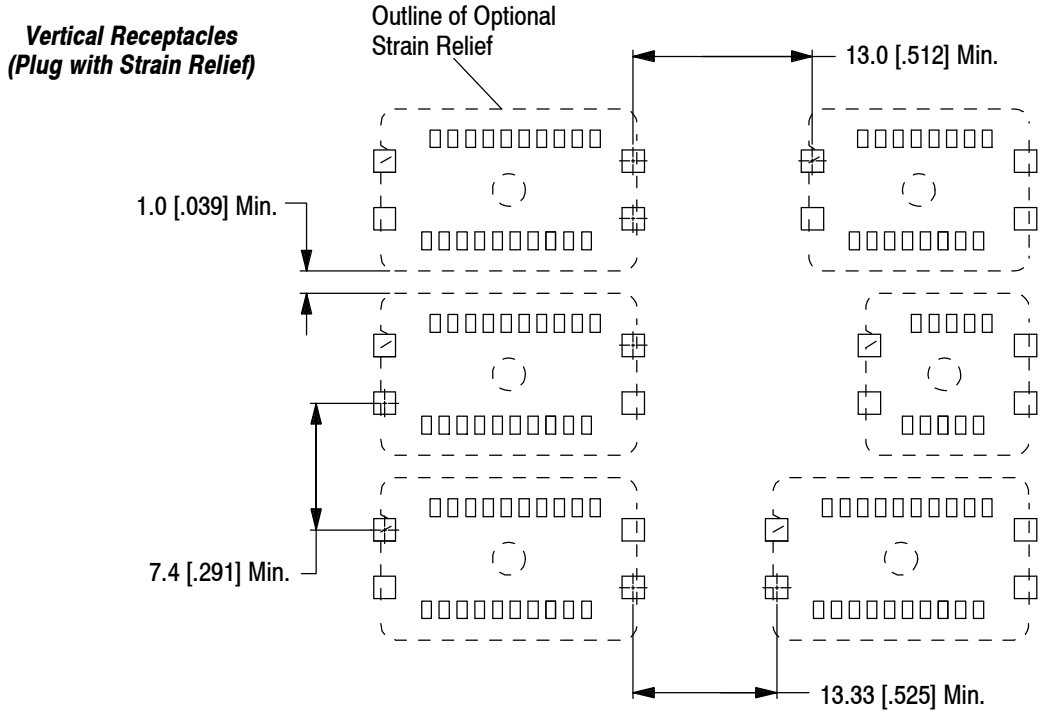


Figure 10 (cont'd)

Vertical Receptacles Stacked End-to-End with Side-to-Side Clearance



Vertical Receptacles Stacked Side-to-Side with End-to-End Clearance



CAUTION: *If manually mating or unmating the connector from the pc board, then the minimum 1.0 mm [.039 in.] side-to-side clearance is acceptable. However, if Unmating Tool 1583957-1 is used, then a side-to-side clearance of 6.0 mm [.236 in.] must be maintained to prevent damage to the connectors.*

Figure 10 (cont'd)

Right-Angle Receptacles Stacked End-to-End Along A PC Board Edge

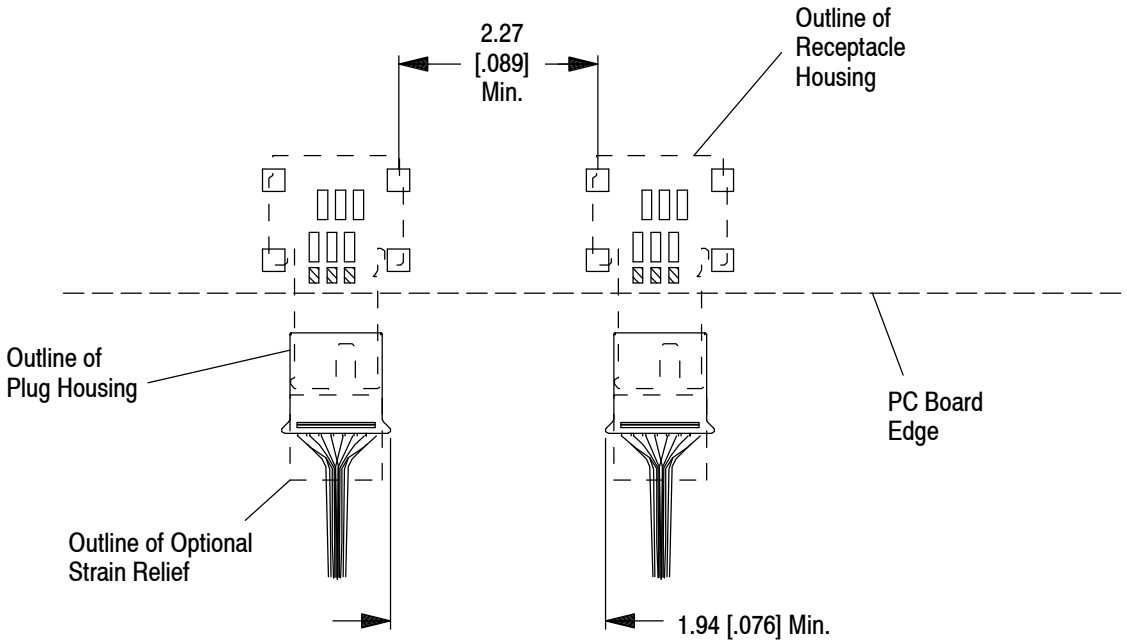


Figure 10 (end)

3.11. Special Handling

Connectors must be handled by the housing only and not by the solder leads. They must not be used as mechanical supports within the system.

3.12. Stencil

We recommend using a solder stencil to minimize solder bridging between lands. 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 leads and hold-downs. Typical aperture openings are shown in Figure 11.

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

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 leads, producing a weak solder joint.

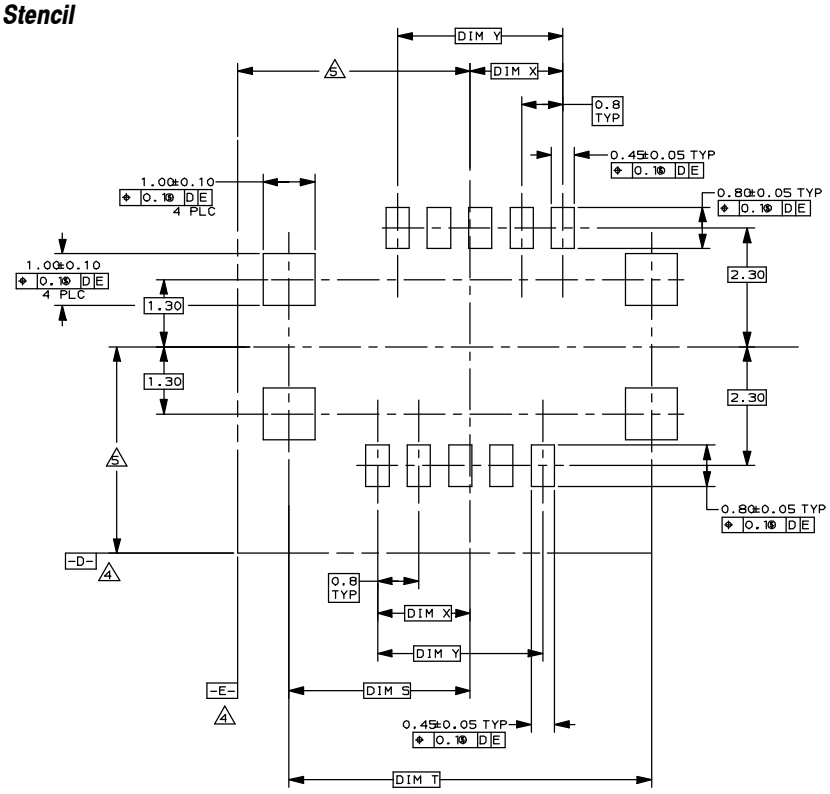
NOTE

The recommended aperture width is 0.45 ±0.05 mm [.018 ±.002 in.] for the contact leads. It may be wider; however, care must be given to ensure against solder bridging during processing.

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).

Vertical Receptacle Stencil



Right-Angle Receptacle Stencil

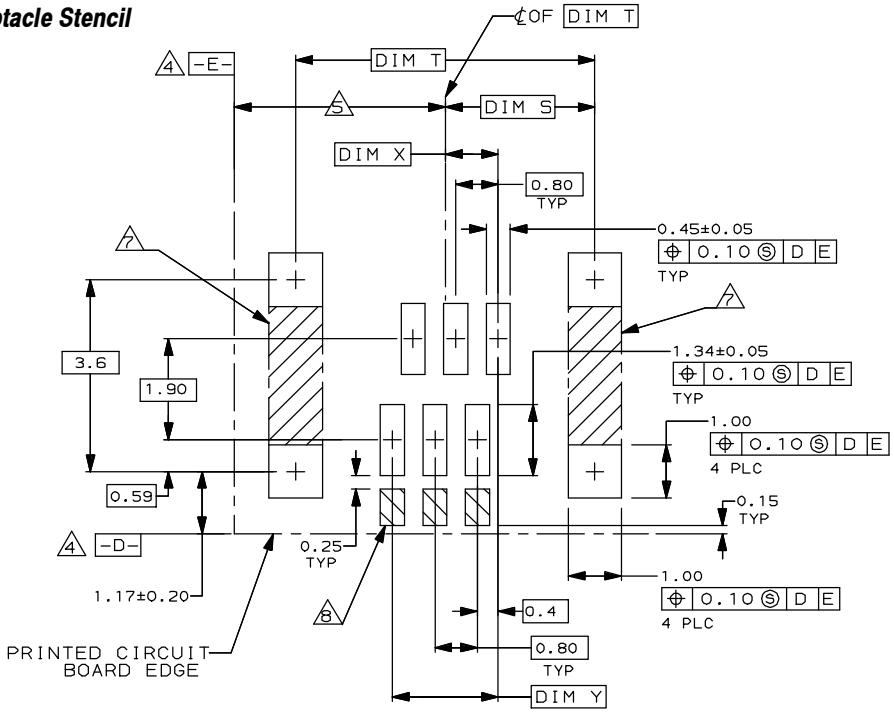


Figure 11

B. Solder Volume

Solder volume for the header assemblies shall be as follows:

1. Recommended solder paste volume deposit (wet paste per solder pad) shall be 0.054 mm^3 [$3.3x10^{-6}$ $in.^3$] per contact for the vertical receptacle contacts and 0.090 mm^3 [$5.7x10^{-6}$ $in.^3$] per contact for the right-angle receptacle contacts.

2. Recommended solder paste volume deposit shall be 0.300 mm^3 [$1.8x10^{-5}$ $in.^3$] per hold-down for the vertical and right-angle receptacles.

NOTE

Non-dimensional and variable position dimensional information for the stencil layouts may be found on the specific customer drawings.

3.13. 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, it is recommended to remove all screen from the solder tine and hold-down pad areas. Consult your supplier for compatibility of screen and paste, and for application techniques.

3.14. Solder Mask

Solder mask is recommended between all pads when soldering connectors to minimize solder bridging between 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 leads. Additionally, there should be solder mask covering any traces in the area of the hold-down solder deposit. Those most suitable are liquid photo imageable and dry film.

CAUTION

Since the connector housings may rest on top of the solder mask, an excessively thick mask will allow too much space between the lead 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.

3.15. Connector Placement

Machine placement of the connector is recommended due to the inherent difficulty of manually placing fine-pitch connectors. The top surface of the connector housing has a flat area in the center to facilitate vacuum pick-up and handling. To avoid damage, the connectors should be picked up directly out of the embossed-tape packaging by the pick-up device. The placement machine is used to position the connectors to minimize the possibilities of damage that could result from improper handling.

CAUTION

Placement of the connectors may be done by hand; however, extreme caution must be used when handling connectors to prevent deformation and contamination of the solder tines and hold-downs.

3.16. Coplanarity and Alignment

Optimally, the connector contact solder leads should be centered on the pc board pads. However, misregistration is permissible for some performance classifications. At time of connector placement, coplanarity of the pad pattern must be held to 0.05 mm [.002 in.] maximum. See Figure 12.

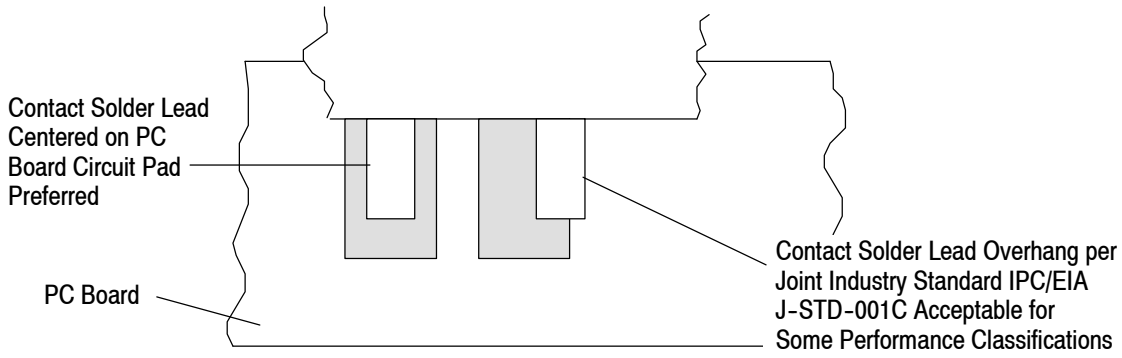


Figure 12

3.17. Soldering

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

A. Process

The connectors should be soldered using non–focused infrared (IR), or equivalent convection soldering technique provided the temperatures and exposure time are within the ranges specified in Figure 13.

NOTE

It is recommended using equipment such as Vitronics IR (Model SMD 718) for electronically controlled apparatus for thermal processing using non-contact, non-focused infrared energy equipment.

SOLDERING PROCESS	TEMPERATURE (Max)	TIME (At Max Temp)
Infrared Reflow (IR)	230°C [446°F]	5 Minutes

Figure 13

Due to the many variables involved with the reflow process (i.e., component density, orientation, etc.), it is recommended that the user conduct trial runs under actual manufacturing conditions to ensure product and process compatibility. Process temperatures and times are listed in Figure 14.

NOTE

Connectors will withstand the maximum temperature time limits specified in Figure 13. Higher temperatures can be withstood for short periods of time for IR as indicated in Figure 14.

REFLOW TEMPERATURE (Preheat 350°C [662°F])			IR
ZONE 1	ZONE 2	ZONE 3	CONVEYOR SPEED
285°C [545°F]	265°C [509°F]	310°C [590°F]	635 [25] or 381 [15] per Minute

Figure 14

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. Cleaners must be free of dissolved flux and other contaminants. It is recommended cleaning with the pc board on its edge. If using an aqueous cleaner, standard equipment such as a soak–tank or an automatic in–line machine should be used. The following is a list of common cleaning solvents that will not the affect connectors for the time and temperature specified. See Figure 15.

CAUTION

Even when using "no clean" solder paste, it is imperative that the contact interface be kept clean of flux and residue, since it acts as an insulator. Flux may migrate under certain conditions with elevated temperatures and, therefore, cleaning is necessary.

CLEANER		TIME (Minutes)	TEMPERATURE (Maximum)
NAME	TYPE		
ALPHA 2110	Aqueous	1	132°C [270°F]
Isopropyl Alcohol	Solvent	5	100°C [212°F]
KESTER 5778	Aqueous	5	100°C [212°F]
KESTER 5779	Aqueous	5	100°C [212°F]
LONCOTERGE 520	Aqueous	5	100°C [212°F]
LONCOTERGE 530	Aqueous	5	100°C [212°F]

Figure 15

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. It is recommend to not use Trichloroethylene and Methylene Chloride because of harmful occupational and environmental effects. Both are carcinogenic (cancer-causing).

NOTE

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

C. Drying

Air drying of cleaned connectors is recommended. Temperature for the connectors should not exceed -55 to 85°C [-67 to 185°F]. Degradation of the housings could result from extreme temperatures.

3.18. Checking Installed Connector

All solder joints should conform to those specified in Workmanship Specification 101-21. The housing must visually seat on the pc board as shown in Figure 16.

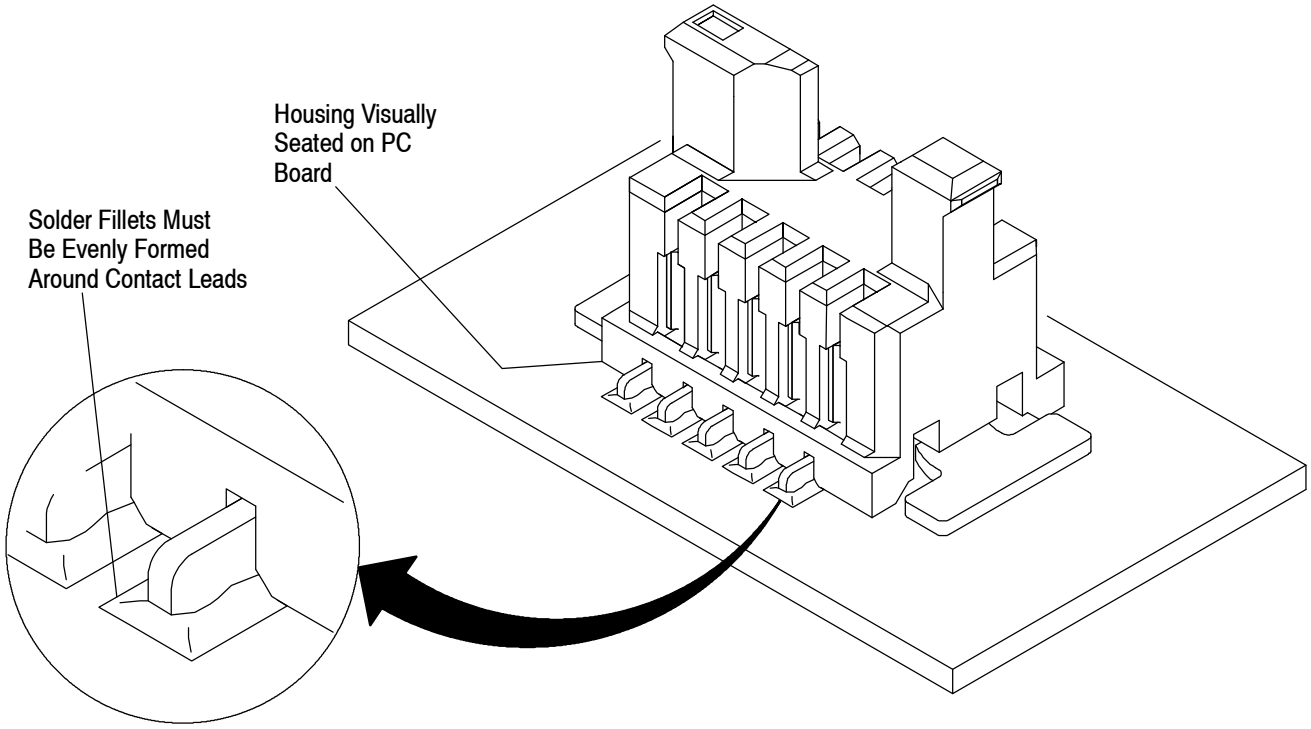


Figure 16

3.19. Mating and Unmating

CAUTION

The use of uneven or off-angle forces during mating and unmating of the connectors could cause over-stress and damage to the contacts and/or housings. Do NOT use the "peel-back" method of unmating one end and pulling it until the other end is unmated. Also, do NOT use a severe side-to-side rocking motion to unmate connectors.

Connectors must be pushed straight in when mating and pulled straight out when unmating. A slight side-to-side motion may be used to start extraction, but it must not continue through full extraction cycle. See Figure 17.

The mated connectors must be bottomed as shown in Figure 17.

Miniaturization is a design feature of these connectors and the systems in which they are used. Component density, connector location, and pc board size may make it difficult to hold one connector in place while extracting the other. Use the flange on the bottom of the plug housing for gripping during mating and unmating. Do not pull on the wire to separate connectors.

Tool part number 1583957-1 may be used to unmate the plug from the receptacle connector. Refer to Instruction Sheet 408-8685 for proper procedures.

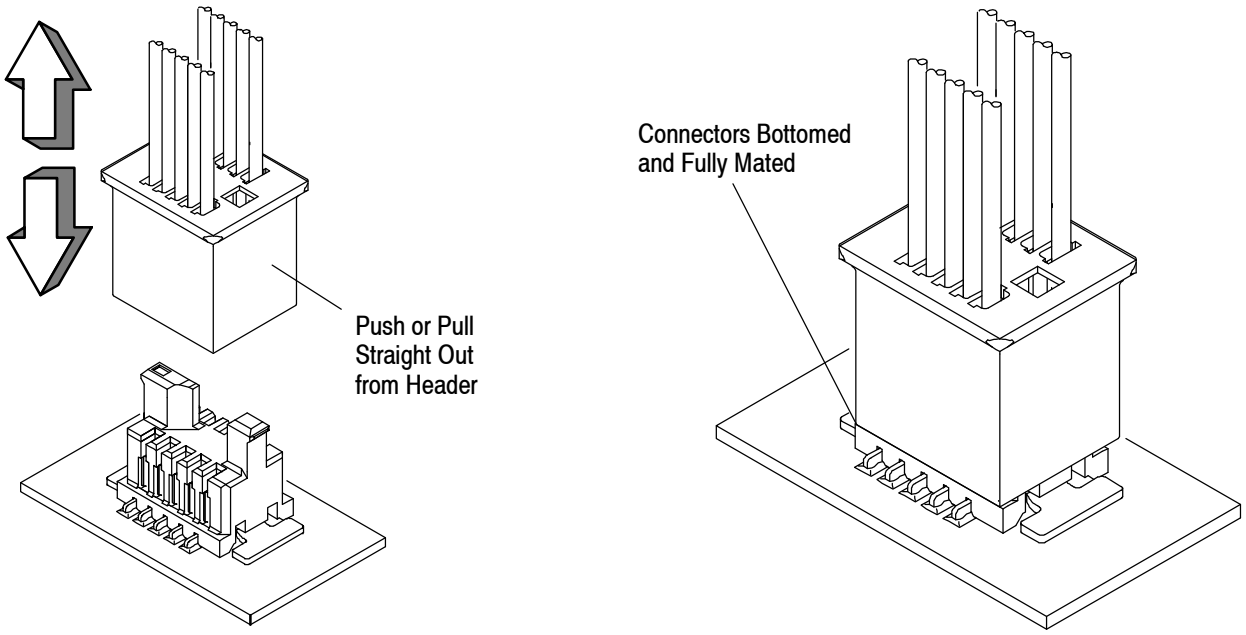


Figure 17

3.20. Repair and Replacement

Damaged contacts must be removed, discarded and replaced with new ones. Refer to Instruction Sheet 408-8584 for use of extraction tool 1490584-1. Damaged plug housings must be removed and replaced. Damaged header assemblies must be removed from the pc board by standard de-soldering methods and replaced with new ones.

4. QUALIFICATIONS

AMPMODU Micro Interconnect Connectors are Component Recognized by Underwriters Laboratories Inc. (UL); and Recognized to the Canadian Safety Requirements in File No. E28476.

5. TOOLING

A listing of tooling recommendations covering the full wire size range is provided in Figure 18. The listing includes semi-automatic and automatic machines for power assisted 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.

NOTE

TE Tool Engineers have designed machines for a variety of application requirements. For assistance in setting up prototype and production line equipment, contact Tool Engineering through your local TE Representative or call the Tooling Assistance Center number at the bottom of page 1.

- **Applicators**
  Applicators are designed for the full wire size range of strip-fed, precision formed contacts, and provide for high volume, heavy duty production requirements. The applicators can be used in bench or floor model power units.

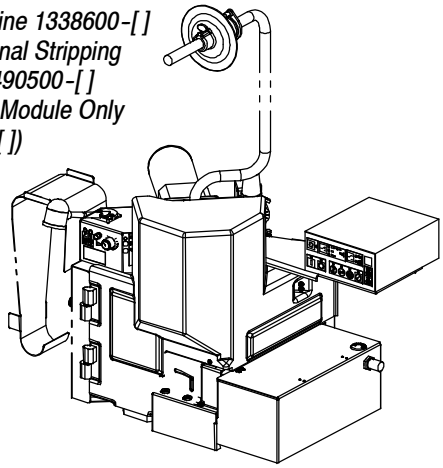
NOTE

Each applicator is shipped with a metal identification tag attached. DO NOT remove this tag or disregard the information on it. Also, a packet of associated paperwork is included in each applicator shipment. This information should be read before using the applicator; then it should be stored in a clean, dry area near the applicator for future reference. Some changes may have to be made to the applicators to run in all related power units. Contact the Tooling Assistance Center number at the bottom of page 1 for specific changes.

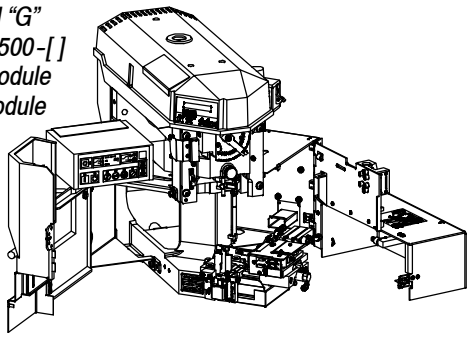
- **Power Units**
  A power unit is an automatic or semi-automatic device used to assist in the application of a product. Power unit includes the power source used to supply the force or power to an applicator.

- **Robotic Equipment**
  Robotic equipment for placement of the connector assemblies on a pc board must have a true position accuracy of 0.25 mm [.010 in.] to ensure proper location and insertion of the solder tines. This includes gripper and fixture tolerances (for vacuum only), as well as equipment repeatability. It must use the assembly datum surface to ensure reliable connector placement.
- **Insertion Tooling**
  Insertion Tools are designed for contacts crimped to small fragile wire. They are designed to stabilize the contact during insertion.
- **Extraction Tooling**
  Extraction Tools are designed to release the locking lance inside the connector housing without damaging the housing or contacts.

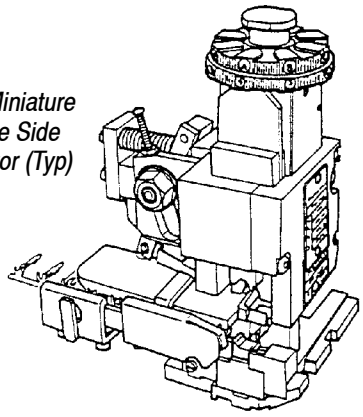
ELT Machine 1338600-[ ] with Optional Stripping Module 1490500-[ ] (Stripping Module Only 1490502-[ ])



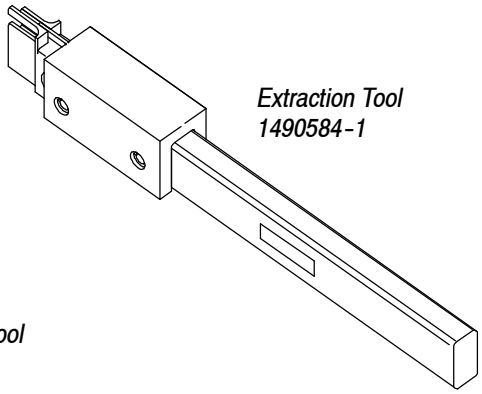
AMP-O-LECTRIC Model "G" Terminating Machine 354500-[ ] with Optional Stripping Module 1490501-[ ] (Stripping Module Only 1490503-[ ])



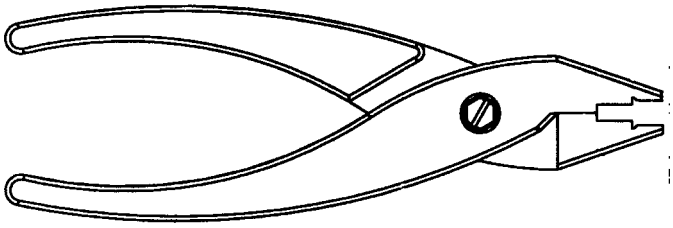
Heavy Duty Miniature Quick-Change Side Feed Applicator (Typ)



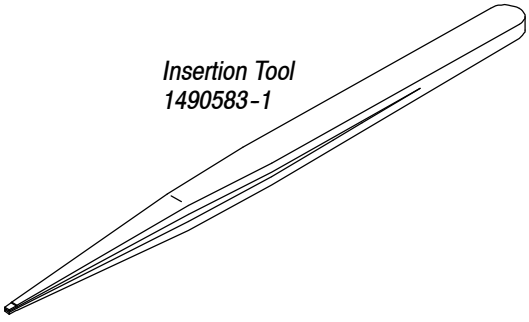
Extraction Tool 1490584-1



Unmating Tool 1583957-1



Insertion Tool 1490583-1



WIRE SIZE	INSUL DIA	UNMATING TOOL (DOCUMENT)	INSERTION TOOL (DOCUMENT)	EXTRACTION TOOL (DOCUMENT)	APPLICATOR (DOCUMENT)	POWER UNIT (DOCUMENT)	STRIPPING MODULE
30-28	0.60 [.024] Max.	1583957-1 (408-8685)	1490583-1 (408-8583)	1490584-1 (408-8584)	1385161-2, -3 (408-8040)	354500-1 (409-5842)	1490501-[ ]
						1338600-[ ] (409-10016)	1490500-[ ]

Figure 18

6. VISUAL AID

Figure 19 shows a typical application of AMPMODU Micro Interconnect Connectors. 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.

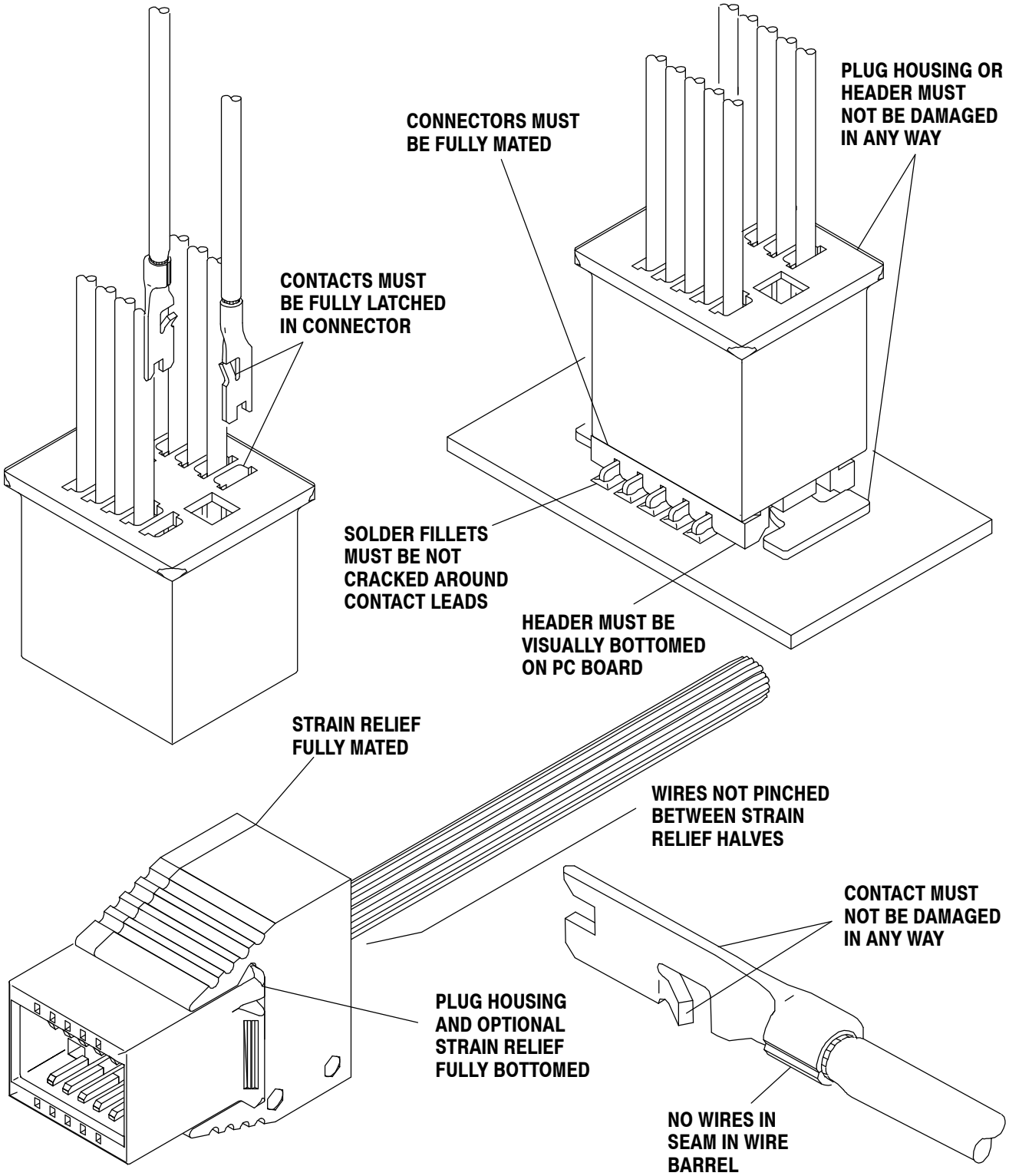


FIGURE 19. VISUAL AID