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 Grace Inertial (GI) 2.5 connector system includes Through hole header assembly and plug assembly used in the wire-to-board interconnections. The GI2.5 connector system is available in 3 through 7 positions for single row. Wire size ranges from 22AWG to 26AWG.

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

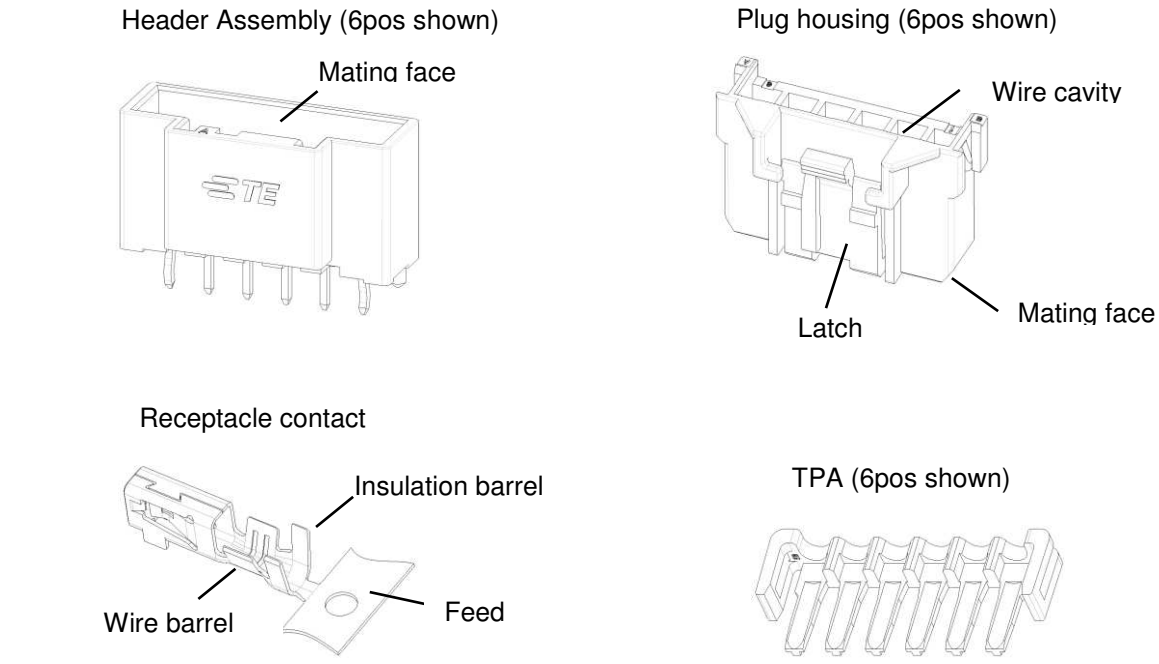


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

Initial release of application specification.

2.2. Customer Assistance

Reference Product Base Part numbers are stated in Figure 2. 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 page 1.

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GI 2.50 connector (Single Row)	
Product Type	Base Part Numbers
Header Assembly	2393116(full loaded) 2393792(selected loaded) 2393115(selected loaded)
Plug Housing	2379778
Receptacle contact	2374822 / 2374826
TPA	2377775

Figure 2

2.3. Drawings

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

2.4. Manuals

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

2.5. Specifications

Product Specification 108-106077 and Qualification Report 501-160164 provide 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. Storage

A. Ultraviolet Light

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

B. Shelf Life

The product should remain in the shipping containers until ready for use to prevent deformation to components. The product should be used on a first in, first out basis to avoid storage contamination that could adversely affect performance.

C. Reels

When using reeled receptacle contacts, store coil wound reels horizontally. When storing partial reeled receptacle contacts, the end of the strip should be secured to the flange using a wire tie or similar method.

D. Chemical Exposure

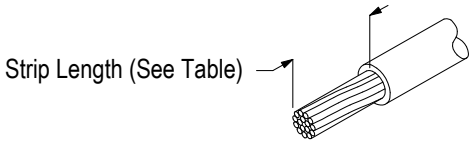
Do not store product near any chemical listed below as they may cause stress corrosion cracking in the material.

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

3.3. Wire Selection and Preparation

The receptacle contacts accept stranded wire sizes 22-26 AWG [0.382 – 0.121 mm^2] with an insulation diameter range given in Figure 3. The wire must be stripped to the dimension given in Figure 3.

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



CONTACT			WIRE	
TYPE	PART NUMBER	WIRE SIZE (AWG) [mm^2]	INSULATION DIAMETER	STRIP LENGTH (±0.2)
GI2.5 Receptacle Contact	2374822-1 2374826-1	22-26 [0.382 – 0.121]	1.20 – 1.60	2.0

Figure 3

3.4. Crimp Requirements

Receptacle contacts must be terminated according to the instructions packaged with the tooling.

A. Bellmouth

The rear bellmouth shall be evident and be within the dimensions given in Figure 4.

B. Cutoff Tab and Burr

The cutoff tab is the remaining portion of the carrier strip after the receptacle contact is cut from the strip. The cutoff tab and burr shall not exceed the dimension given in Figure 4.

C. Wire Barrel Flash

Wire barrel flash is the formation that may appear on both sides of the wire barrel as the result of the crimping process. The wire barrel flash shall not exceed the dimension given in Figure 4.

D. Wire Barrel Crimp

The crimp applied to the wire barrel portion of the receptacle contact is the most compressed area and is most critical in ensuring optimum electrical and mechanical performance of the crimped receptacle contact. The crimp must be centered on the closed wire barrel. The crimp must result in an “F” crimp where the wire barrel forms a closed seam with no evidence of loose wire strands or wire strands visible in the seam. The crimp height and width must be within the dimensions given in Figure 4.

E. Insulation Barrel Crimp

The crimp applied to the insulation barrel of the receptacle contact must result in an overlap crimp. The crimp height and width must be within the dimensions provided in Figure 4. Slight scratch is acceptable on insulation crimp.

F. Effective Crimp Length

Effective crimp length shall be defined as that portion of the wire barrel, excluding the rear bellmouth, fully formed by the crimping tool. Refer to Figure 4.

G. Wire Location

All conductors must be held firmly inside the wire barrel. No strands can be folded back over the wire insulation. The wire insulation must be inside the insulation barrel but must not enter the wire barrel. The wire insulation and conductors must be visible in the transition area between the wire barrel and insulation barrel. See Figure 4.

H. Wire Brush

The conductors may extend beyond the wire barrel within the dimensions given in Figure 4.

I. Wire Barrel Seam

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

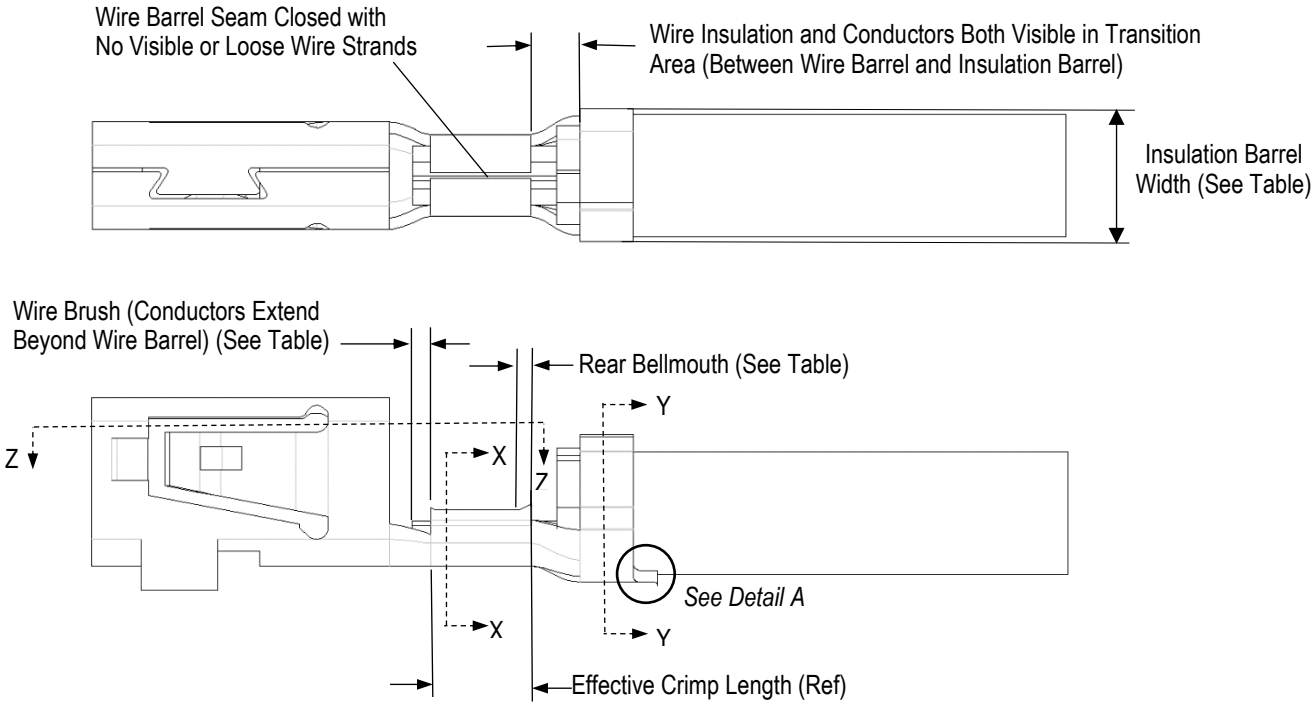
J. Terminal Gap

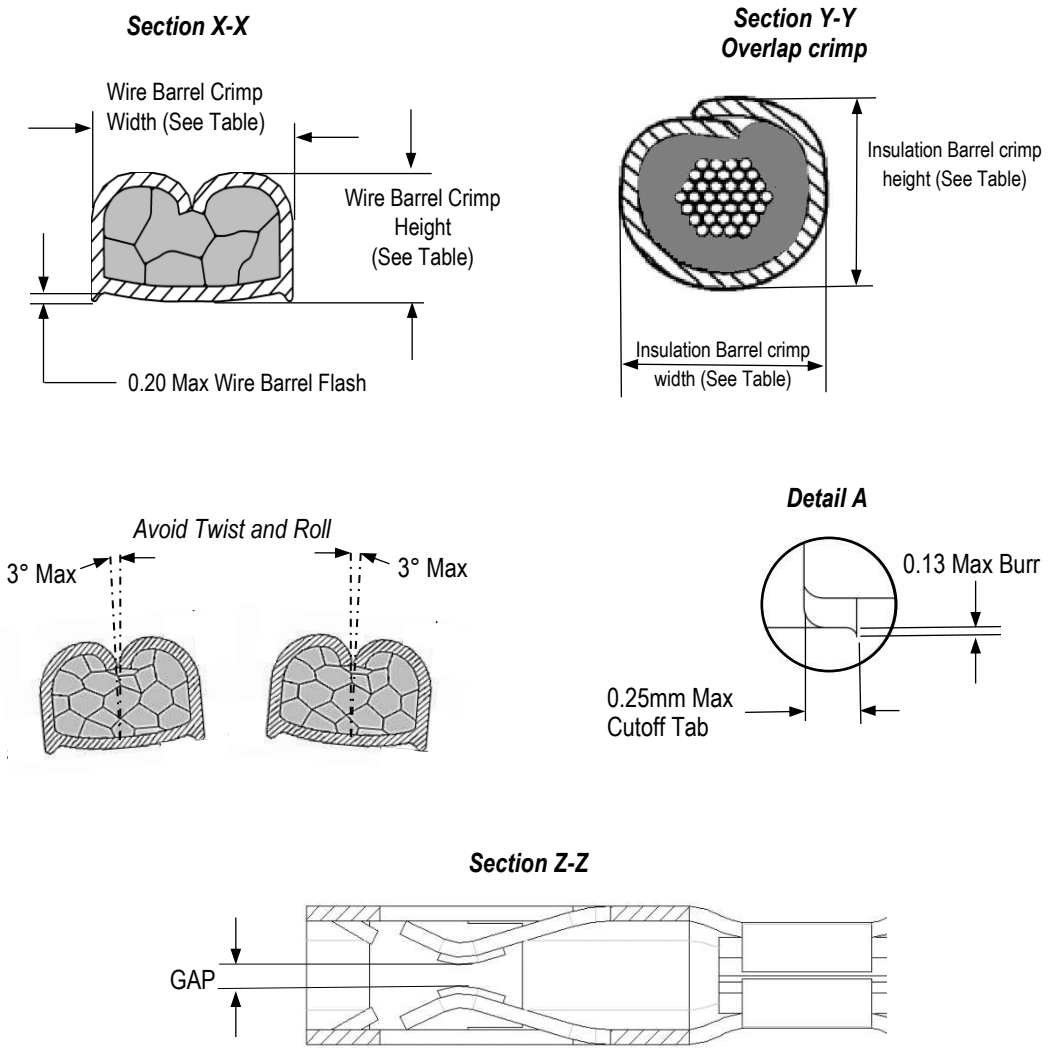
The gap after crimping should be within tolerance which shown in Figure4.

K. Twist and Roll

There should be no twist or roll of the wire barrel or mating portion of the crimped receptacle contact that would cause overstress or impair usage. See Figure 4 for allowable limits.

NOTE
The effective crimp length depends on the crimping dies used and should not be measured for inspection purposes.





RECEPTACLE CONTACT	WIRE SIZE		WIRE BARREL CRIMP		INSULATION BARREL CRIMP		WIRE BRUSH	REAR BELLMOUTH	GAP
	mm²	AWG	HEIGHT ±0.03	WIDTH	WIDTH	HEIGHT			
2374826-1 2374822-1	0.321~0.355	22	0.74	1.07REF F shape	1.45 REF OV shape	2.0mm Max.	0.0 - 0.45	0.15-0.35	0.3mm max.
	0.197~0.241	24	0.65						
	0.127~0.154	26	0.59						

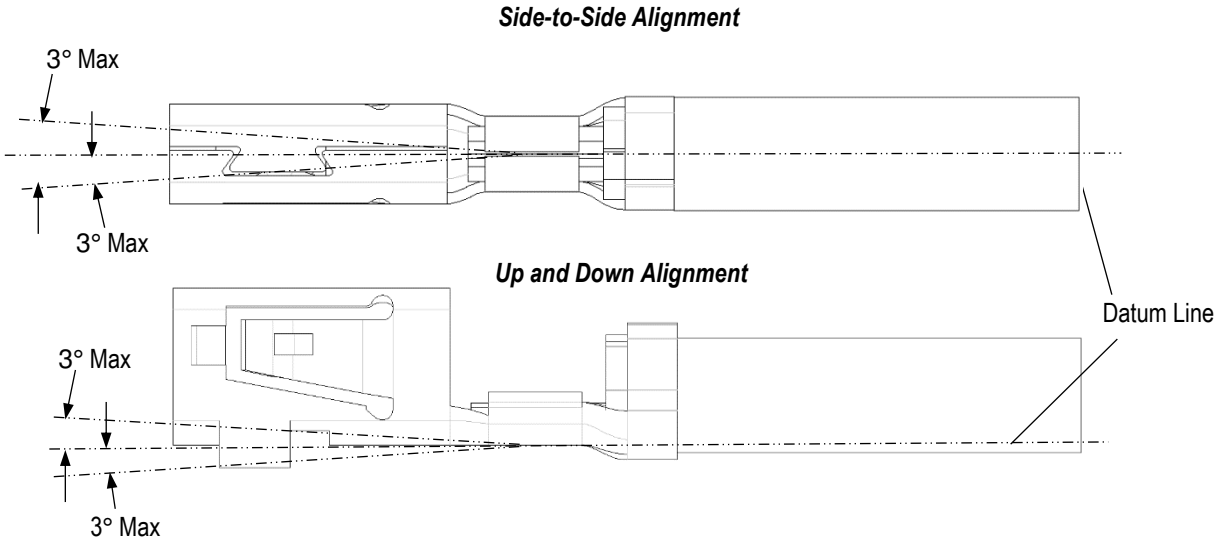
Figure 4

L. 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:

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

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



NOTE: Angles are drawn for clarification only and are not to scale.

Figure 5

3.5. Inserting Contact into Housing

Grasp the wire directly behind the receptacle contact insulation barrel and push the receptacle contact straight into the cavity until it touches the bottom (there should be an audible click). Be aware that the receptacle contact must be installed in correct orientation as specified below. Pull back lightly on the wire to be sure the receptacle contact is locked in place. Refer to Figure 6

Single Row

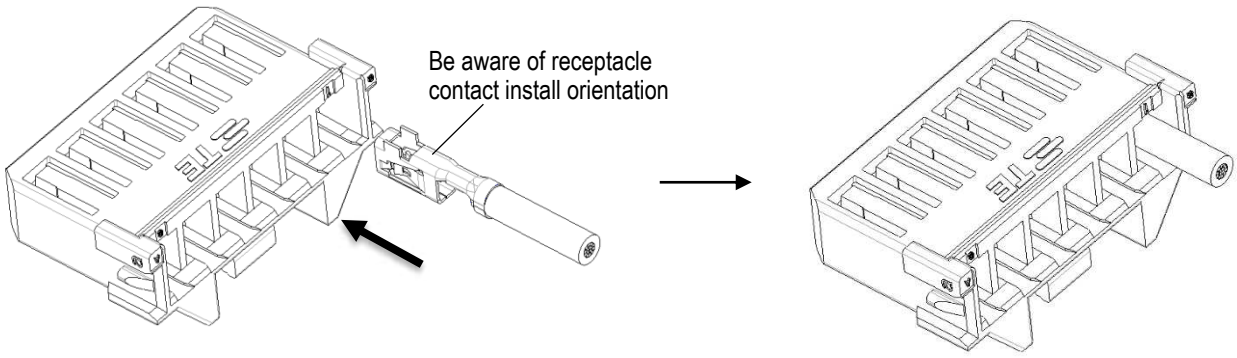


Figure 6

3.6. Installing TPA

Grasp the TPA and push it straight into the housing until it touches the bottom (there should be an audible click). Pull back lightly to be sure the TPA is locked in place. See Figure 7.

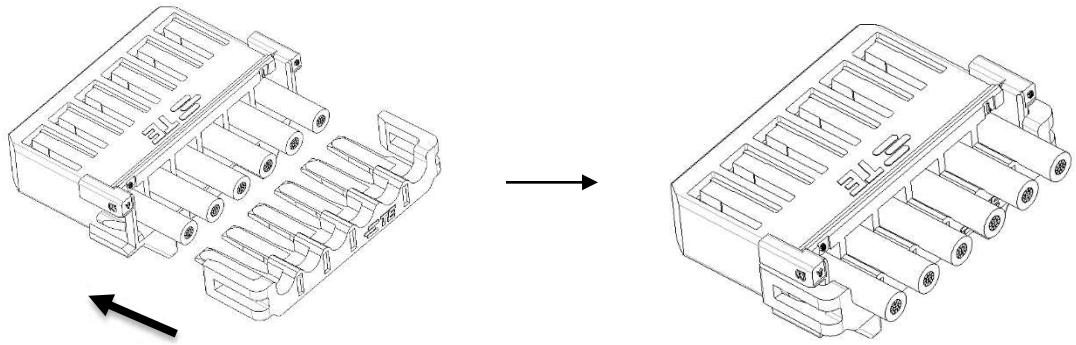


Figure 7

3.7. Un-installing TPA

Use special tool (like sharp object) to lift the tip of TPA latch at both sides carefully and then remove the TPA from plug housing. Be careful not to damage TPA during the operation. See Figure 8.

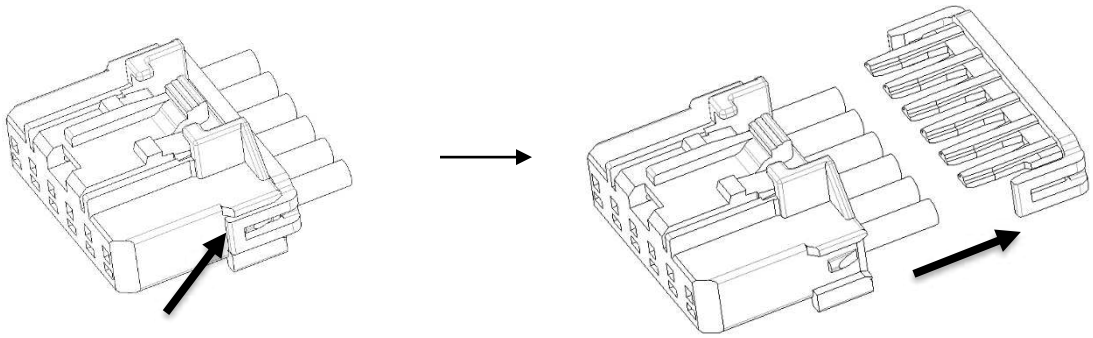


Figure 8

3.8. Mating Connectors

Ensure that the mating connectors have identical number of circuits and a pin contact mating with a receptacle contact. Align the mating faces of the connectors and push them together until the locking latch fully engages the locking tab. Pull back to ensure proper engagement and to prevent any deformation of the locking mechanism. See Figure 9.

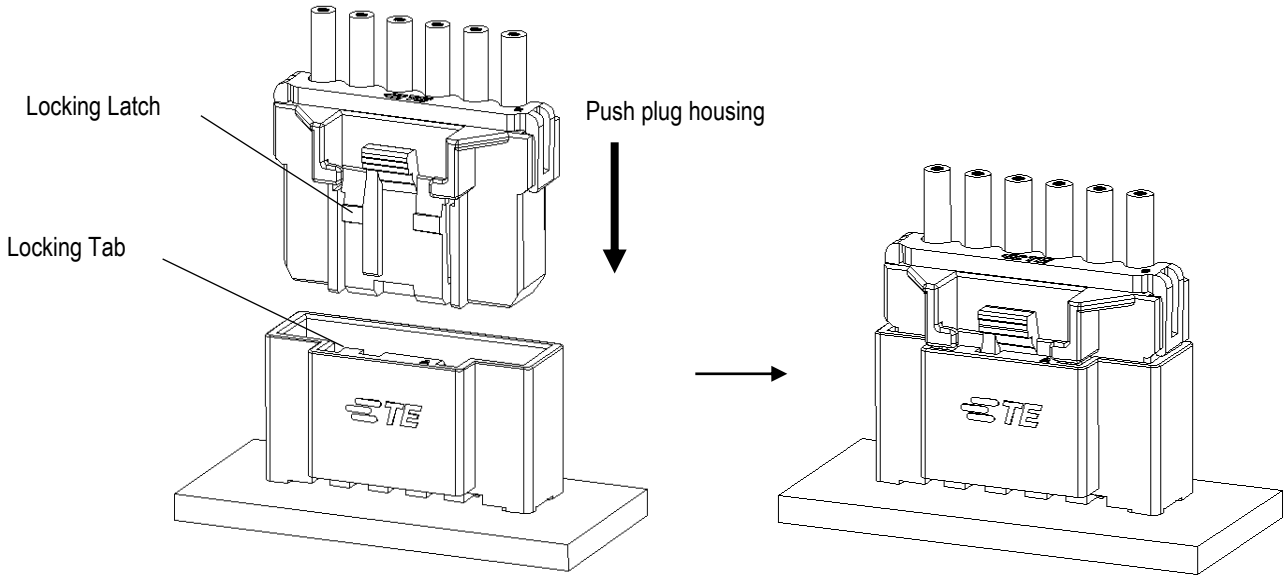


Figure 9

3.9. Unmating Connectors

To disengage mating connectors, depress latch of plug housing with thumbnail, and pull the connectors apart. Refer to Figure 10.

NOTE
DO NOT pull the connectors by the wires.

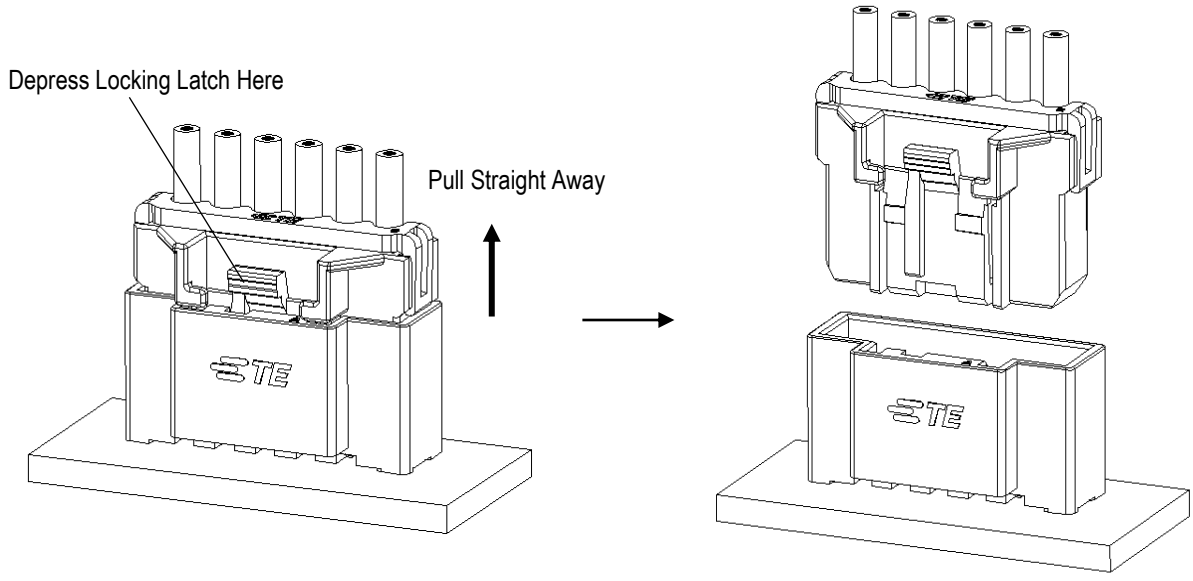


Figure 10

3.10. Replacement and Repair

Do not use defective or damaged product. These products cannot be repaired. For replacement information, call the number at the bottom of page 1.

4. TOOLING

Applicators contain the tooling for feeding and crimping strip-form terminals. Automatic machines provide the power to operate the applicator. See Figure 11 for representative images.

Tooling information for product part numbers is available from www.te.com or by calling the Product Information Center at the number at the bottom of page 1.

Applicators for product part numbers are available from the Applicator Search Portal on www.te.com or by calling the Product Information Center at the bottom of page 1.



Ocean Applicator
Part number: 2396170



Semi Automatic Machine

Figure 11

5. VISUAL AID

The illustration below shows a typical application of this product. 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.

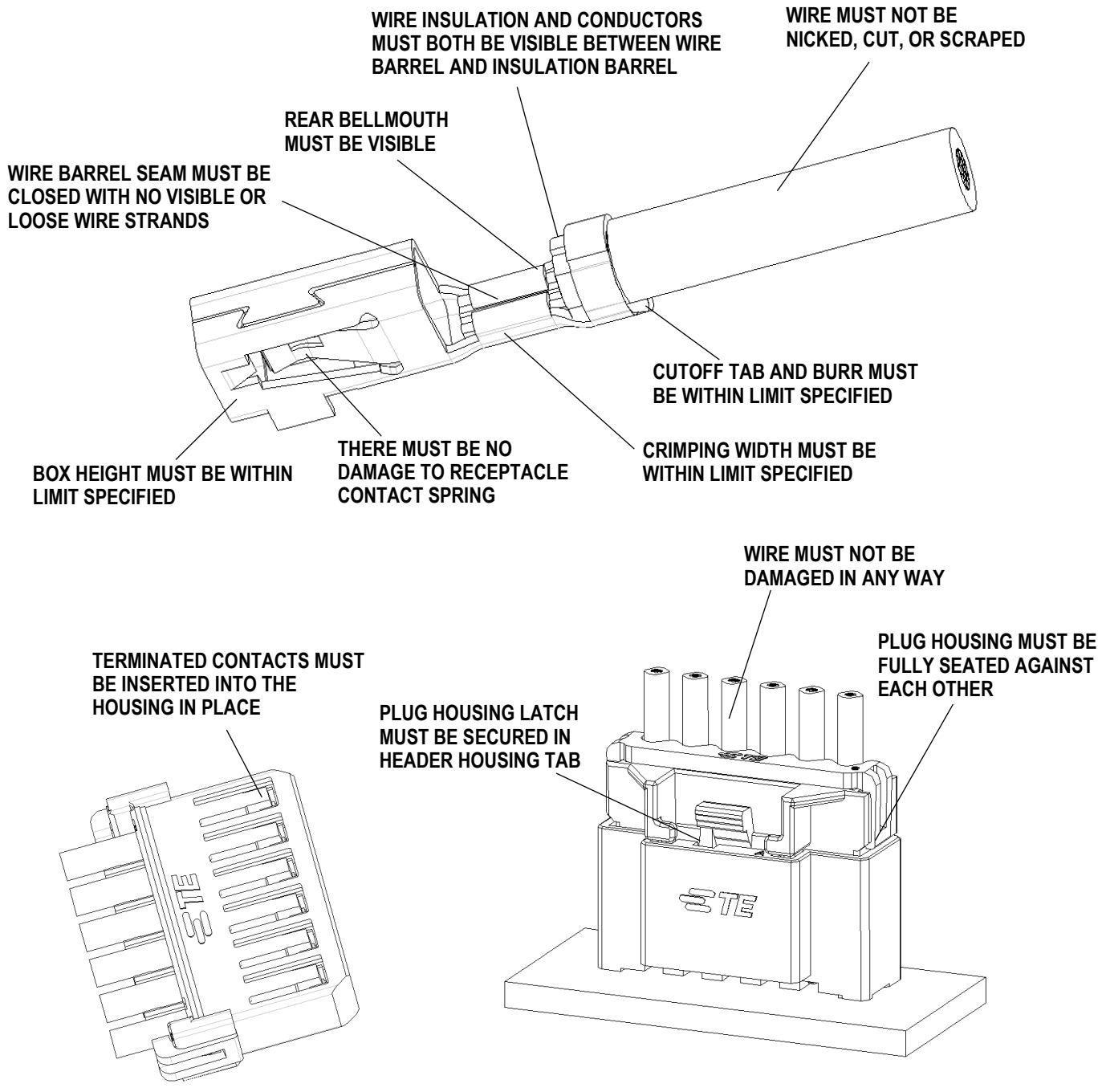


Figure 12 Visual Aid

Unikeyic Electronics

Global Electronic Components Distributor

Click to view pricing, inventory, delivery, and lifecycle information:

TE Connectivity:

936348-1 TE50BR39J 1-794222-0 1743455-2 175977-2 2377783-2 650075-000 2834055-1 CPF0402B37K4E1 CRGCQ2010J3K3 MPT100C18RF U5254-000005-030PA 2-292161-3 2310537-1 141991-2 3-1393225-0 SMW73R0JT 1393431-1 2005330-1 3430B2F51RTDF 917696-1 RH73H2A40MKTN SBCHE154R7K 2380312-2 1-962915-1 1903112-2 1969656-1 3631B101LL ROX05SJ18R SBCHE64R7K