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 requirements for the application of Automotive Mini UHF Plastic Snap–Lock Coaxial Connectors. The connectors are available in in–line plug assembly and right–angle plug assembly. The connectors are applied to RG–58/U or RG–58LL shielded coaxial cable by crimping (in–line) and soldering (right–angle). The cable is not included with the connector.

NOTE

Termination and application information for the pin center contact used with these connectors is covered in Application Specification 114–13025.

When corresponding with Tyco Electronics 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.

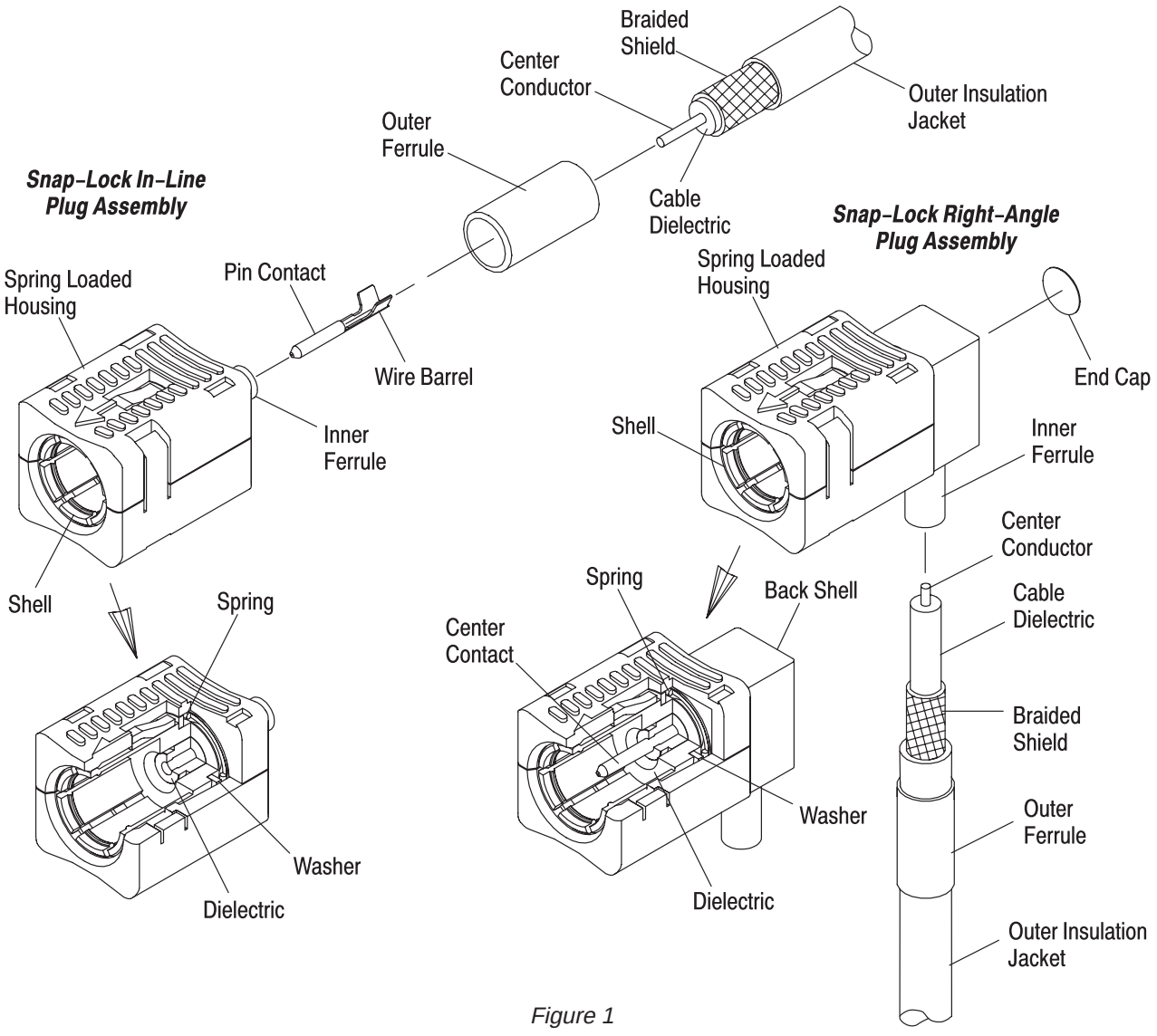


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

Revisions to this application specification per EC 0990–1067–03 include:

- Updated document to corporate requirements
- Added or changed text to Section 1, INTRODUCTION and Paragraph 2.2
- Added new wire to Figures 2, 5, and 9
- Deleted NOTE in Paragraph 3.4.3

2.2. Customer Assistance

Reference Product Base Part Number 1326887 and Product Code D956 are representative of automotive Mini UHF Plastic Snap–Lock Coaxial 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 Tyco Electronics Representative or, after purchase, by calling Product Information at the number at the bottom of page 1.

2.3. Drawings

Customer Drawings for product part numbers are available from the service network. If there is a conflict between the information contained in the Customer Drawings and this specification or with any other technical documentation supplied, call Product Information at the number at the bottom of page 1.

2.4. Specifications

Application Specification 114–13025 provides application requirements for the pin center contact used in these connectors.

Product Specification 108–1584 provides product performance requirements and test information.

2.5. 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. A checklist is included in the manual as a guide for information on soldering problems.

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 operation procedures. Documents available which pertain to this product are:

408–2498	Crimping Head Cross Reference for Pneumatic Tools
408–2786	Crimping Die Assemblies 220189–[ ]
408–4070	Pneumatic PRO–CRIMPER* Adapter 679304–1
408–4303	Pneumatic CERTI–CRIMP* Tool Holder Assemblies 356302–1 and 356303–1
408–7424	Checking Terminal Crimp Height or Gaging Die Closure
408–9140	PRO–CRIMPER Hand Crimping Tool 58433–1 with Die Assembly 58435–1
408–9614	Flameless Heat Gun 600655–2
408–9930	PRO–CRIMPER II Hand Crimping Tool Frame Assembly 354940–1
409–5862	626 Pneumatic Tooling Assemblies 189721–[ ] and 189722–[ ]

3. REQUIREMENTS

3.1. Storage

A. Ultraviolet Light

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

B. Shelf Life

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

C. Chemical Exposure

Do not store these connectors near any chemicals listed below, as stress corrosion cracking in the pin center contacts may occur.

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

NOTE

Where the above environmental conditions exist, phosphor–bronze contacts are recommended.

3.2. Special Characteristics

These connectors have a spring loaded housing. After the connectors are mated to standard Mini UHF Connectors, they can only be removed from the mated connectors by pulling back the spring loaded housing.

3.3. Cable Preparation

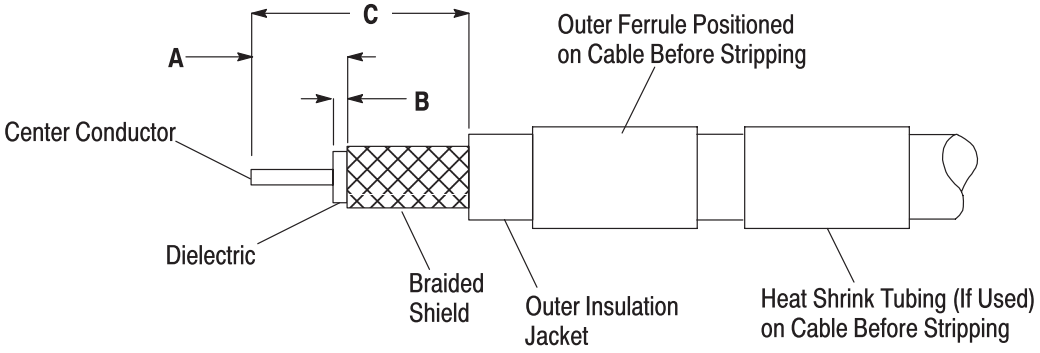
The following requirements must be adhered to when preparing the cable:

1. The heat shrink tubing (if used, refer to Paragraph 3.8) and outer ferrule must be positioned onto the cable *before* stripping the cable.

CAUTION

The cable center conductor or braided shield MUST NOT be nicked, cut, or scraped during the stripping operation.

2. The cable size and type must be stripped using the recommended strip length provided in Figure 2.



CABLE SIZE	CONNECTOR TYPE	CABLE STRIP LENGTH DIMENSION		
		A	B	C
RG–58/U RG–58LL	In–Line	4.75 ±0.40 [.187 ±.016]	0.81 ±0.40 [.032 ±.016]	12.52 ±0.40 [.493 ±.016]
	Right–Angle	2.00 ±0.30 [.079 ±.012]	9.70 ±0.30 [.382 ±.012]	18.75 ±0.30 [.738 ±.012]

Figure 2

3. The cable braided shield must be flared away from the dielectric.

A. In–Line Connector

1. The pin contact must be installed onto the cable center conductor and terminated according to the tooling instructional material and crimp requirements provided in Application Specification 114–13025.

2. The pin contact must be inserted into the inner ferrule of the plug assembly until the cable dielectric butts against the plug assembly dielectric. The flared braided shield must be outside the inner ferrule. See Figure 3.

3. The braided shield should not butt against the spring loaded housing. If it does, excess braided shield must be trimmed.

B. Right–Angle Connector

1. The cable center conductor and dielectric must be slid inside the inner ferrule until the center conductor is located within the slot of the center contact. The flared braided shield must be outside the inner ferrule. See Figure 3.

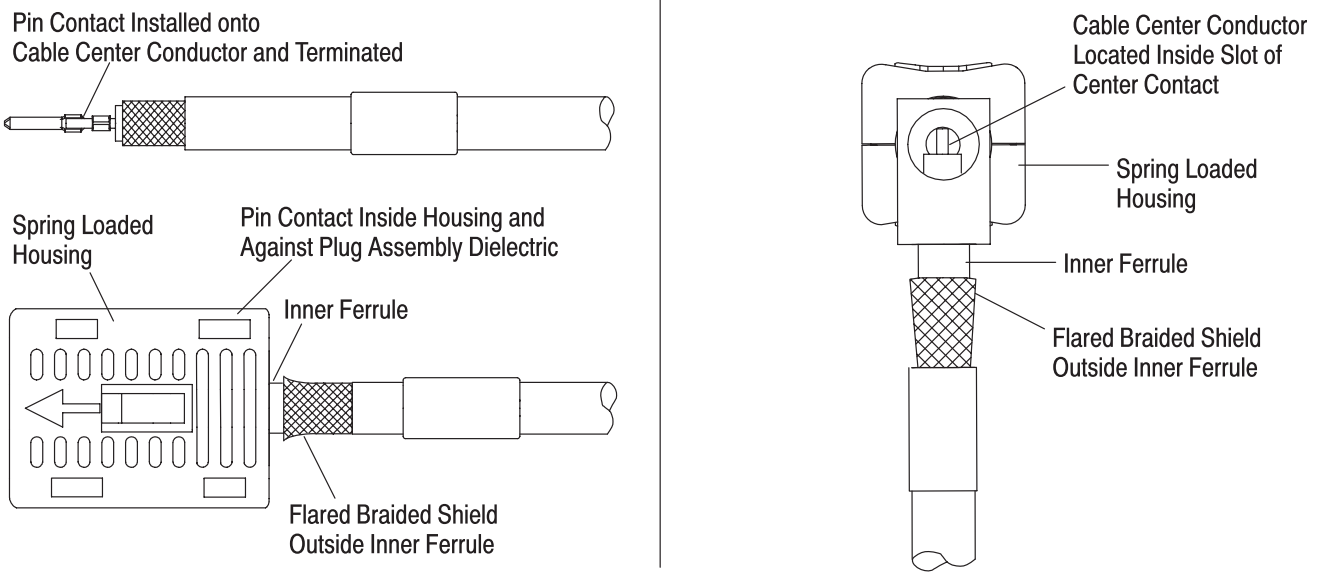


Figure 3

2. The braided shield should not butt against the spring loaded housing. If it does, excess braided shield must be trimmed.

3.4. Crimping Outer Ferrule

1. The outer ferrule must be slid over the cable braided shield and against the spring loaded housing. See Figure 4.

CAUTION

When crimping the ferrule, there must be nothing on the tool or die assembly that could interfere with the spring loaded housing. This will cause bending or breaking of the crimped portion of the outer ferrule.

2. A maximum gap of 0.25 is permitted between the ferrule and spring loaded housing.

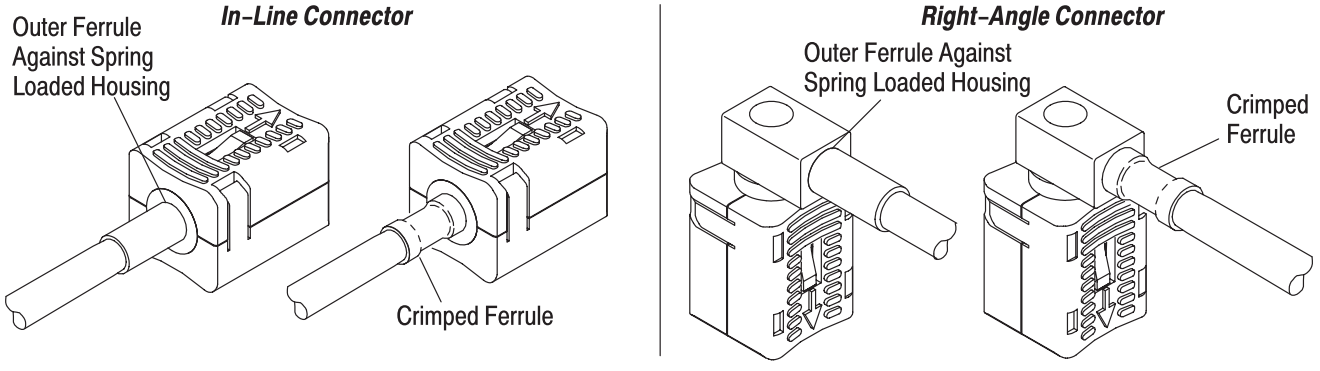
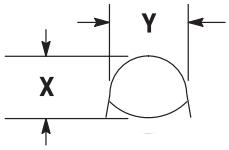


Figure 4

3. The crimp height must be measured across the lowest point of the crimped outer ferrule as shown in Figure 5.



WIRE	X	Y
RG–58	5.64 ±0.10 [.222 ±.004]	5.54 ±0.10 [.218 ±.004]
RG–58LL	5.79 ±0.10 [.228 ±.004]	5.77 ±0.10 [.227 ±.004]

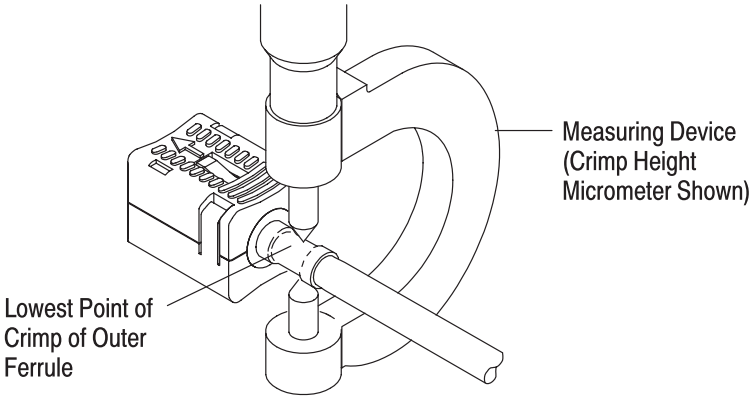


Figure 5

3.5. Soldering (Right–Angle Connectors Only)

The center conductor of the cable must be soldered to the center contact. The solder must not extend above the top of the center contact. The solder joint must be fluxed and cleaned using the following information.

A. Flux Selection

The cable center conductor and slot of the center contact solder shall be fluxed prior to soldering with a mildly active, rosin base flux. Flux must be compatible with manufacturing, health, and safety requirements. Call Product Information at the number at the bottom of page 1 for consideration of other types of flux. Flux that is compatible with these connectors is provided in Figure 6.

FLUX TYPE	ACTIVITY	RESIDUE	COMMERCIAL DESIGNATION	
			KESTER	ALPHA
RMA	Mild	Noncorrosive	186	611

Figure 6

B. Cleaning

After soldering, removal of flux, residue, and activator is necessary. Consult with the supplier of the solder and flux for recommended cleaning solvents. Common cleaning solvents that will not affect these connectors are listed in Figure 7.

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.

CLEANER		TIME (Minutes)	TEMPERATURE (Maximum)
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	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]
Terpene Solvent	Solvent	5	100°C [212°F]

Figure 7

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

When drying cleaned assemblies, make certain that temperature limitations of –20°C to 105°C [–4°F to 222°F] are not exceeded. Excessive temperatures may cause connector degradation.

3.6. Positioning the End Cap (Right–Angle Connectors Only)

The end cap (with convex side out) must be positioned into the counterbore of the backshell and pressed into place using a punch tool. A properly installed end cap will show a slight indentation. See Figure 8.

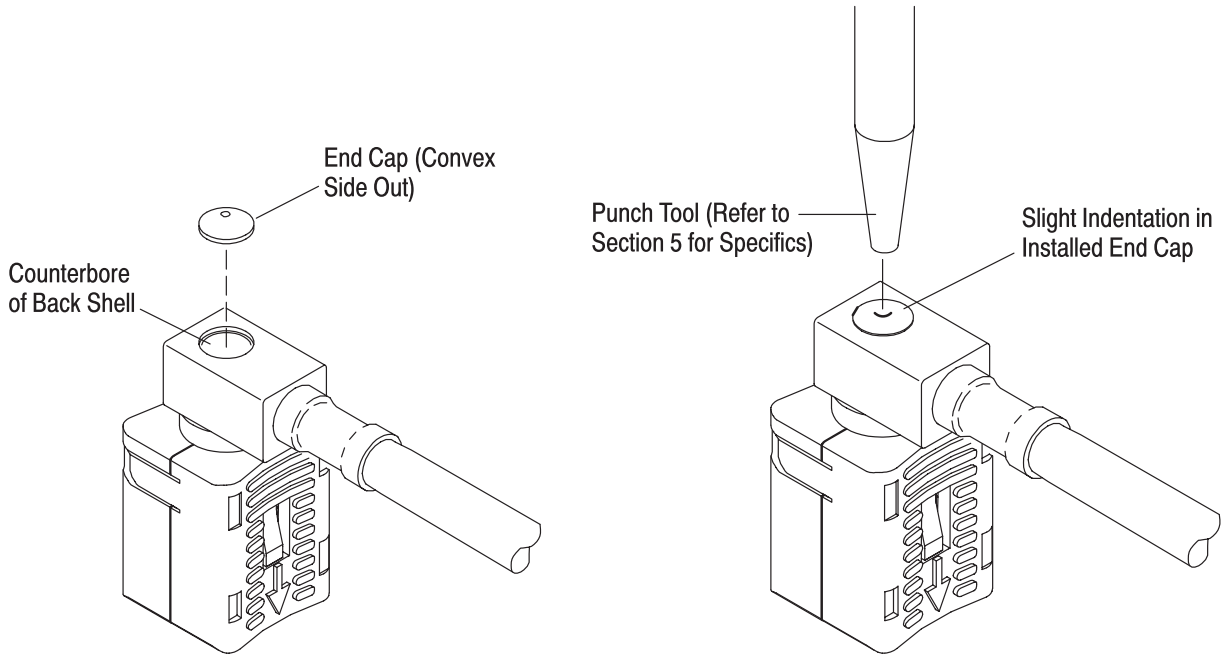


Figure 8

3.7. Wire Bend Radius

It is important not to restrict the center contacts in any way that may adversely affect the wire dress of the cable. It is recommended that individual cables be dressed to a bend radius of *at least* ten times the cable outside diameter. Likewise, cable bundles should be dressed to a bend radius of *at least* ten times the diameter of the bundle.

3.8. Strain Relief (Heat Shrink Tubing)

In applications where the strain relief is necessary due to high torque or severe or repeated flexing of the cable, use of heat shrink tubing is recommended. Call Product Information at the number at the bottom of page 1 for information regarding available heat shrink tubing. The tubing is available pre–cut to desired length.

NOTE

If used, the heat shrink tubing must be placed onto the cable before the stripping operation is performed.

To shrink the tubing, exposed–flame heat sources may be used in applications where flammable materials are not present. However, the flameless heat gun is the *recommended* heat source. Call Tooling Assistance at the number on page 1 for information on other acceptable heat guns.

4. QUALIFICATIONS

Automotive Mini UHF Plastic Snap–Lock Coaxial Connectors are not required to be agency approved.

5. TOOLING

Tooling part numbers and instructional material packaged with the tooling are shown in Figure 9.

NOTE

Tooling information for crimping the pin contact is provided in Application Specification 114–13025.

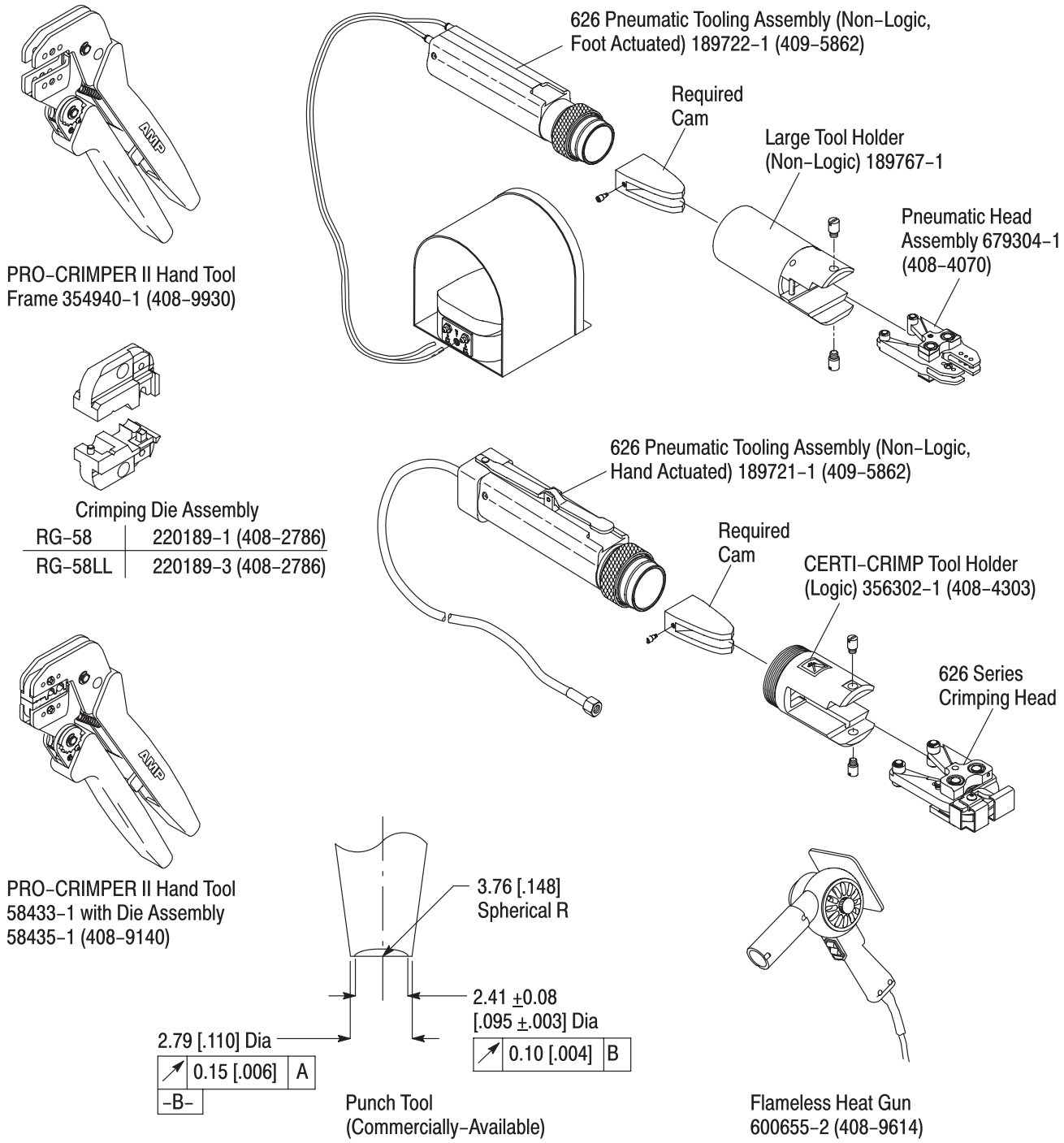
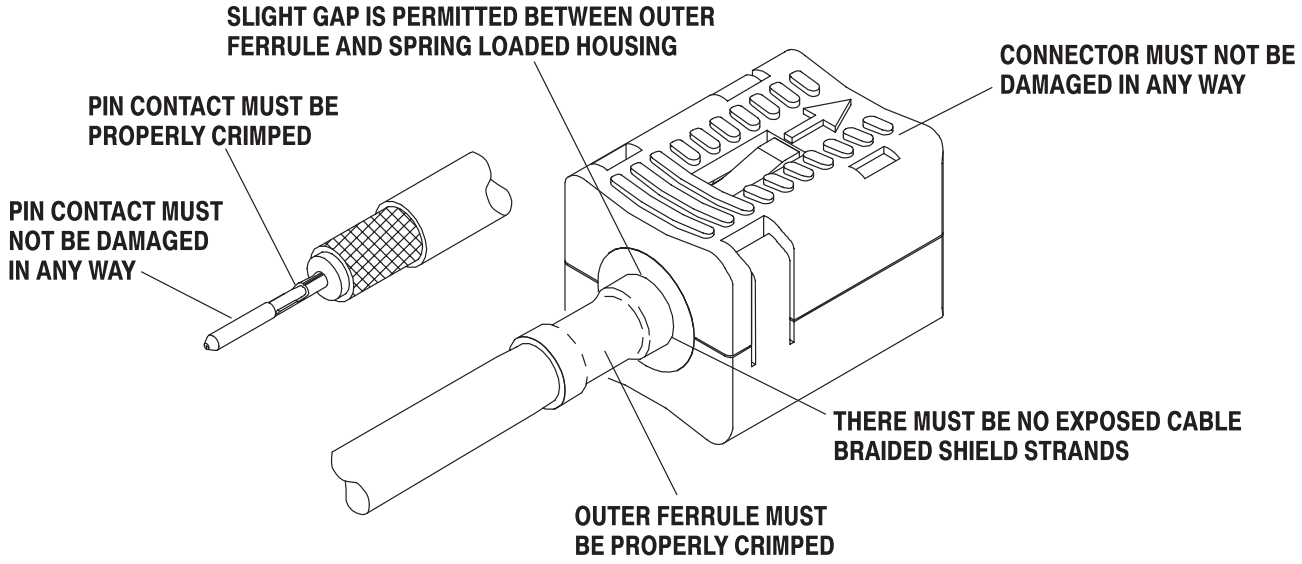


Figure 9

6. VISUAL AID

The illustration below shows a typical application of automotive Mini UHF Plastic Snap–Lock Coaxial 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.

IN–LINE CONNECTOR



RIGHT–ANGLE CONNECTOR

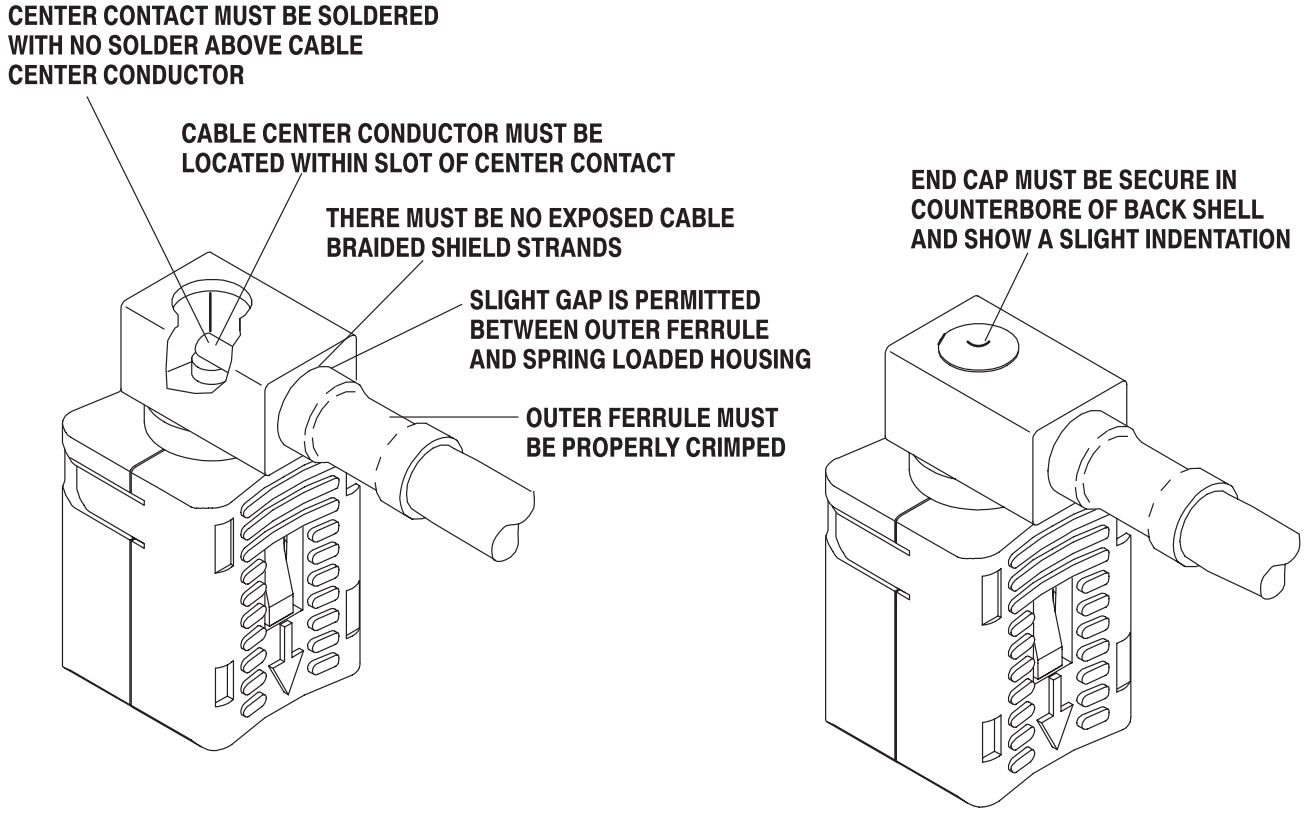


FIGURE 10. VISUAL AID