

NOTE



All numerical values are in metric units [with U.S. customary units in brackets]. Dimensions are in millimeters. Unless otherwise specified, dimensions have a tolerance of ± 0.13 and angles have a tolerance of $\pm 2^\circ$. Figures and illustrations are for identification only and are not drawn to scale.

1. INTRODUCTION

This specification covers the requirements for application of Push-Pull Latch Medical Circular Plastic Connectors (M-CPC) for use in instrumentation and medical industries. The Push-Pull Latch M-CPCs consists of a cable plug assembly and a panel-mount receptacle assembly. The connectors are available in a shell size 1 (14.0 mm diameter) having various contact positions. Each connector contains solder cup contacts for individual wire termination. The connectors are available with an 80° or 0° keying orientation and with or without color coding. Keying and color coding aid in proper mating.

The cable plug assembly consists of a housing subassembly, an insert subassembly which contains male contacts, and a collet and collet nut that provides cable strain relief or a mid-piece and overmold nut to allow overmolding. The panel-mount receptacle assembly features a housing which contains female contacts, and a front nut and hex nut for panel mounting.

When the connectors are mated, the latches of the cable plug housing subassembly engage the notches of the receptacle assembly ensuring that the connectors are fully mated and cannot be unmated unless the cable plug housing subassembly is pulled which disengages the latches.

When corresponding with 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.

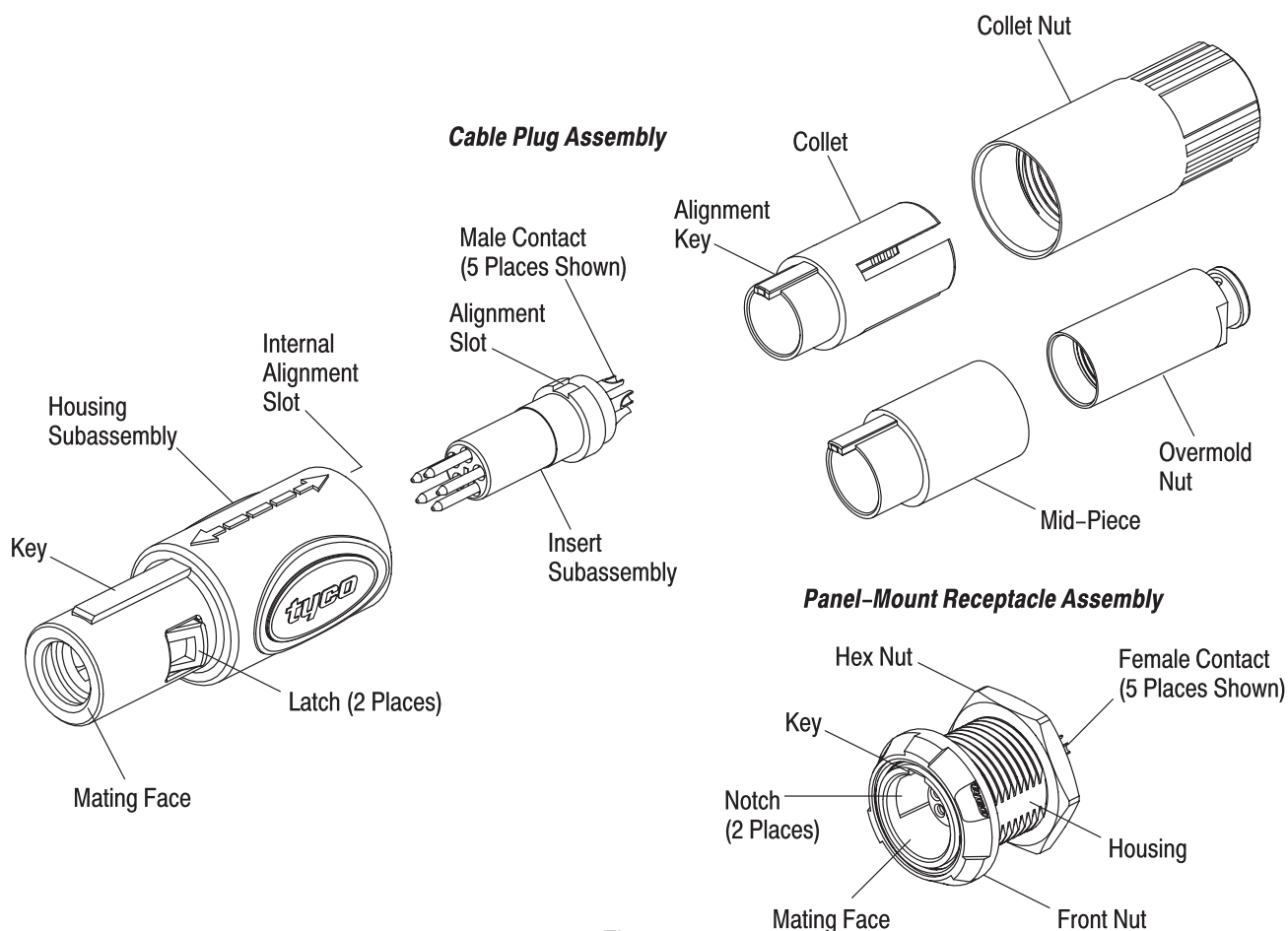


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

- Updated document to corporate requirements
- Changed product name in all instances

2.2. Customer Assistance

Reference Product Base Part Number 1877066 and Product Code K437 are representative numbers of the Push-Pull Latch M-CPCs. 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. Standards and Publications

Association of Connecting Electronics Industries (IPC)–S–815, “General Requirements for Soldering Electronic Interconnections,” provides guidelines for establishing quality soldering for solder cup contacts.

2.5. Specifications

Design Objective 108–2249 provides expected product performance and test information for these connectors.

2.6. Instructional Material

There is no instructional material available for this product.

3. REQUIREMENTS

3.1. Special Features

The thermoplastic components of these connectors are capable of withstanding exposure to the following sterilization methods: autoclave pressurized devices, STERRAD heat sterilization units, CIDEX disinfecting sterilizing trays, ethylene oxide gas (EtO) sterilizer units.

3.2. Safety

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

3.3. Storage

A. Ultraviolet Light

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

B. Shelf Life

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

C. Chemical Exposure

Do not store product near any chemical 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

3.4. Cable Selection and Preparation

A. Selection

The contacts will accept individual solid or stranded wire with a maximum size of 22 AWG. The strain relief components will accommodate cable having an insulation diameter range of 2.7 mm through 6.5 mm.

B. Preparation

The collet or mid-piece and the collet nut or overmold nut must be slid onto the cable. Proper strip length is necessary to obtain quality connections and cable strain relief. The strip length of the wire is shown in Figure 2.



Reasonable care must be taken not to nick, scrape, or cut any part of the wire during the stripping operation.

Cable Preparation

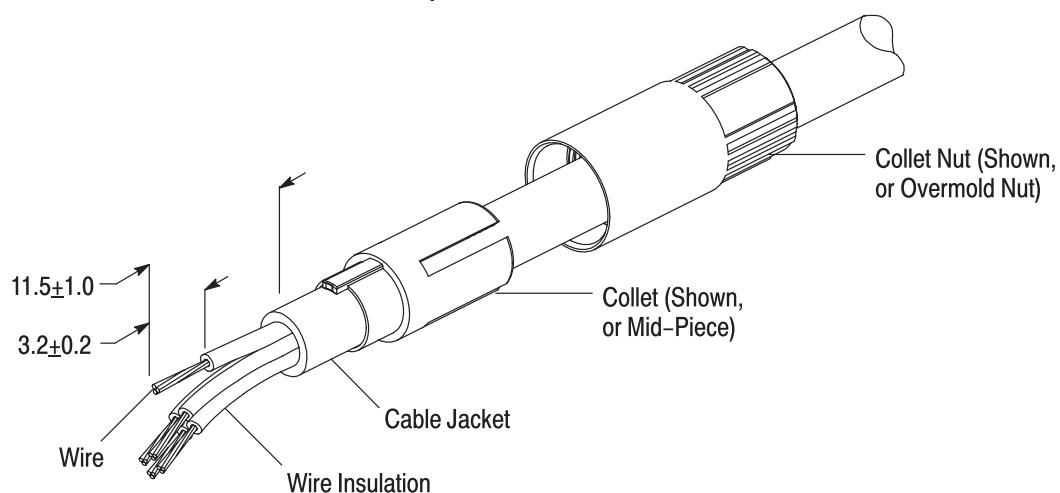


Figure 2

3.5. Soldering

Solder all wire leads to contacts according to the following:

1. The soldering surface must be clean and free of any contaminants.
2. Wire lead and interior of the contact solder cup must be fluxed prior to soldering using a mildly active rosin. Flux must be compatible with manufacturing, safety, and health guidelines.
3. The solder cup must be full with the solder contained inside the cup. Refer to Figure 3.
4. Soldered connections must be cleaned with a suitable alcohol-water rinse to remove flux and solder residue.

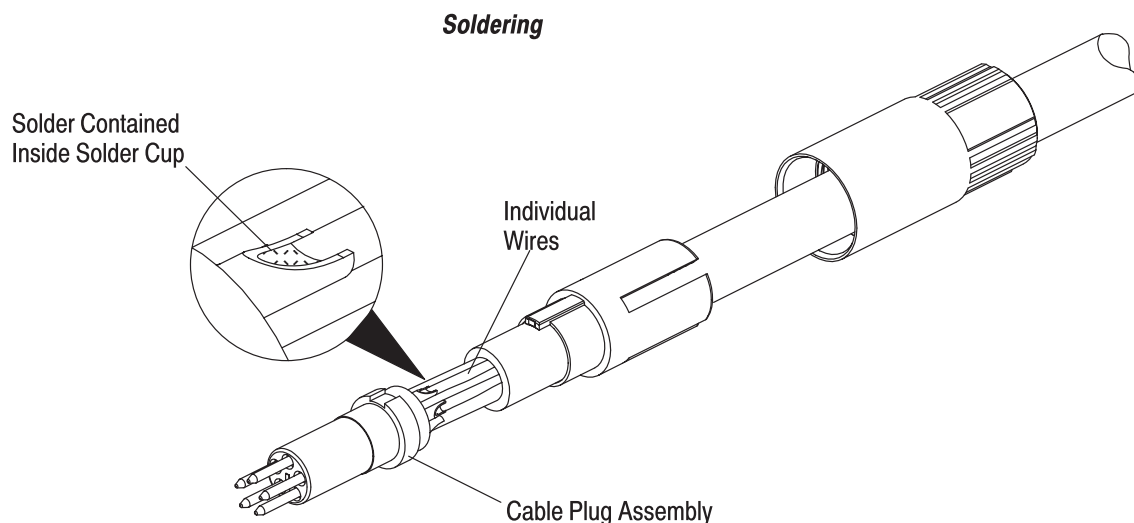


Figure 3

3.6. Assembly

The cable plug assembly must be assembled in the following order:

1. The alignment key of the collet or mid-piece must be aligned with the alignment slot of the insert subassembly, then the collet or mid-piece must be slid over the insert subassembly until it bottoms. See Figure 4, Detail A.
2. The alignment key of the collet or mid-piece must be aligned with the internal alignment slot of the housing subassembly, then the insert subassembly (with the collet or mid-piece) must be inserted into the housing subassembly until it bottoms. See Figure 4, Detail B.
3. The collet nut or overmold nut must be slid onto the cable and into the housing subassembly. See Figure 4, Detail C. The collet nut or overmold nut must be tightened until secure. See Figure 4, Detail D.

Cable Plug Assembly

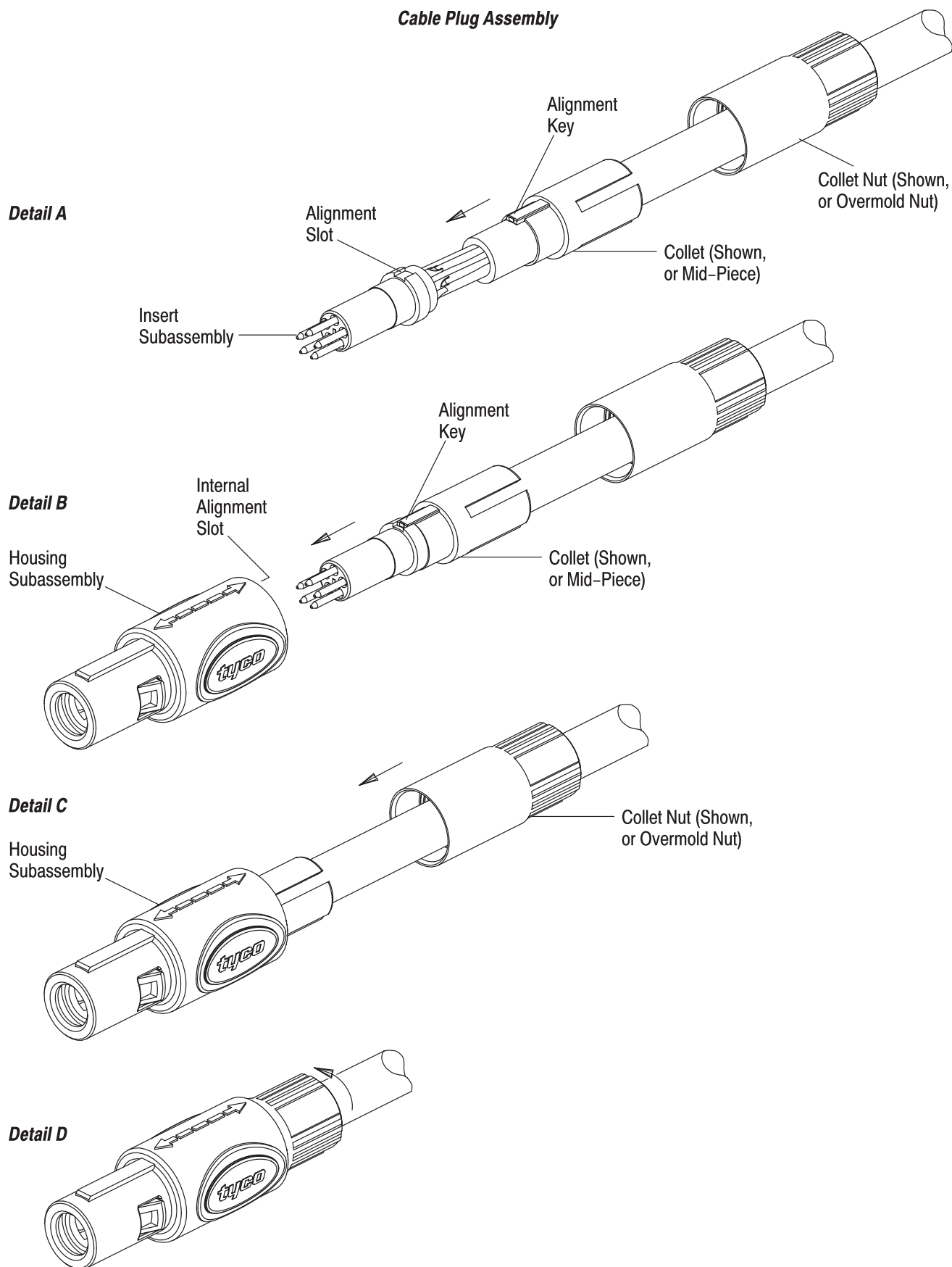


Figure 4

3.7. Panel

A. Cutout

The maximum panel thickness shall be 10. The panel must be cut using the dimensions provided in Figure 5.

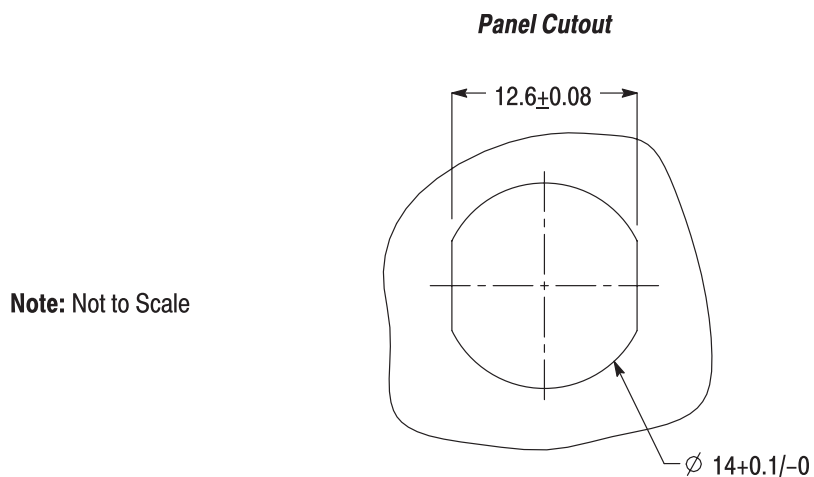


Figure 5

B. Mounting

The receptacle assembly can be front or rear panel mounted. The front nut of the receptacle assembly must be tightened until it is flat against the panel, and the hex nut must be tightened until it is flat against the opposite side of the panel. See Figure 6.

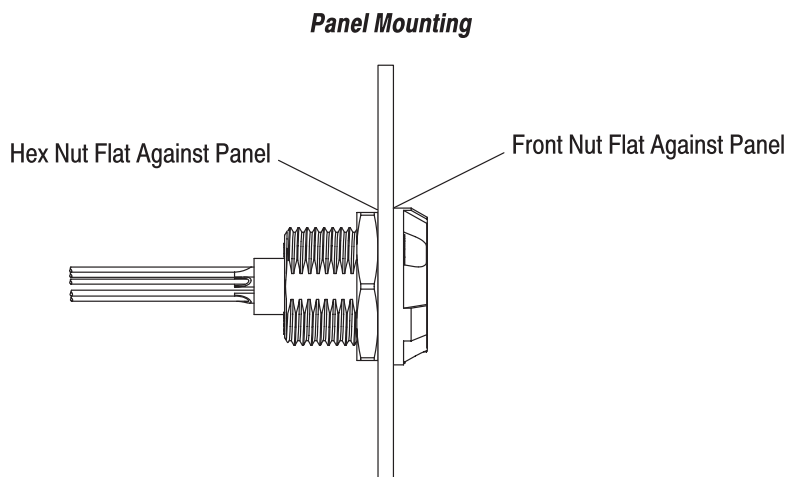


Figure 6

3.8. Keying

Assurance of proper mating is provided by keying. The key(s) of the cable plug assembly must align with the key(s) of the receptacle assembly. The collet nut (component of cable plug assembly) and front nut (component of receptacle assembly) are also available with color coding to provide additional aid in proper mating. See Figure 7.

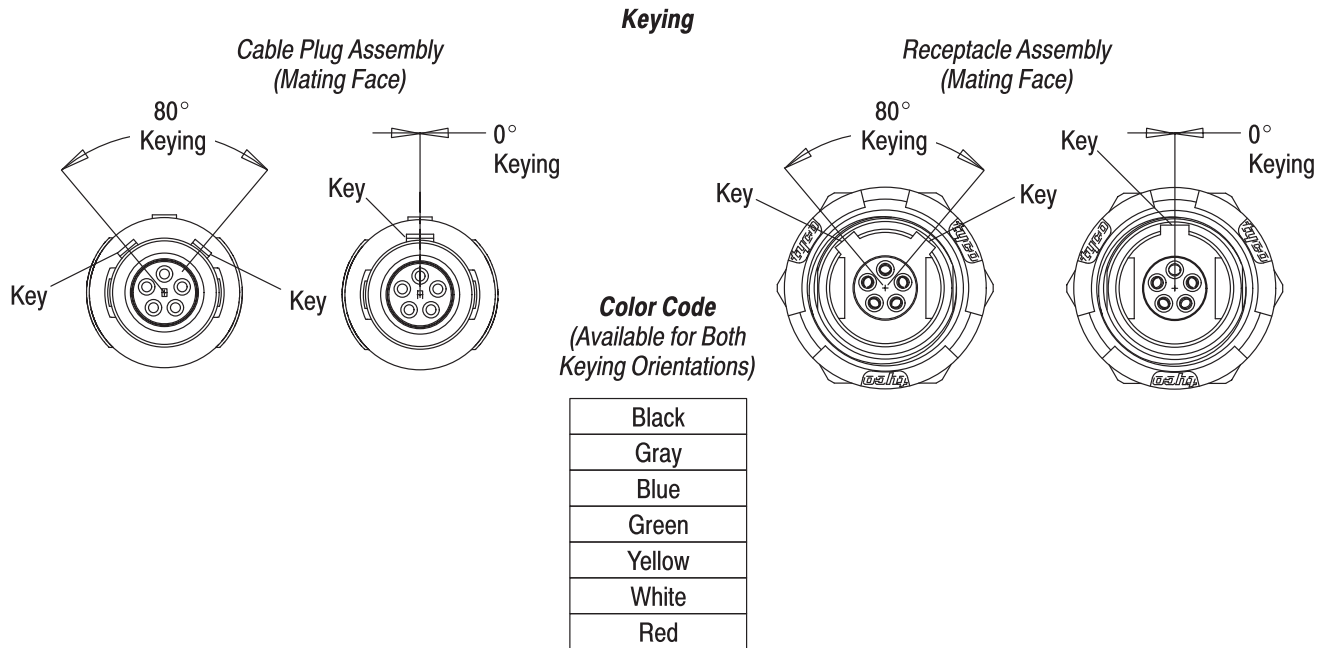


Figure 7

3.9. Mating Connectors

The cable plug assembly must be properly aligned with the receptacle assembly, then inserted until the latches engage the receptacle assembly. To ensure proper mating, there must be an audible “click”. Refer to Figure 8.

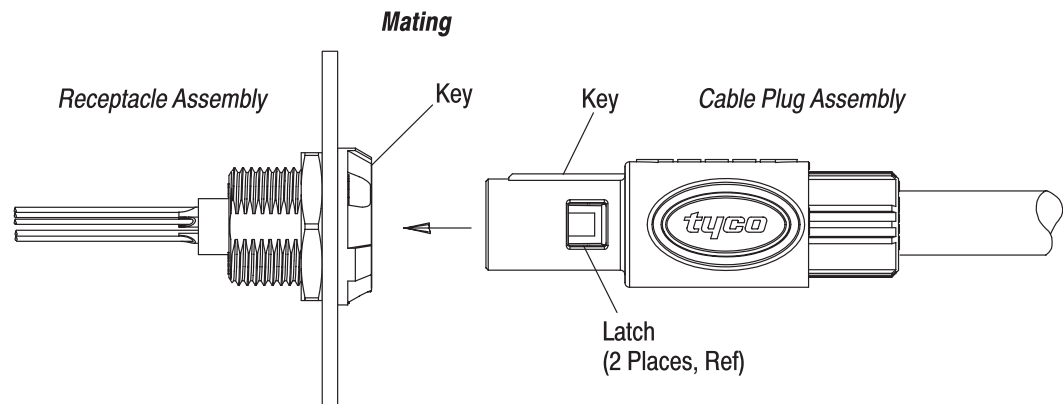


Figure 8

3.10. Disassembly

The connectors must be unmated by pulling the housing subassembly away from the receptacle assembly. To avoid potential damage to the soldered connections, DO NOT pull the cable. Refer to Figure 9.

The connector can be disassembled by the reverse of assembly for rework of wiring.

Disassembly

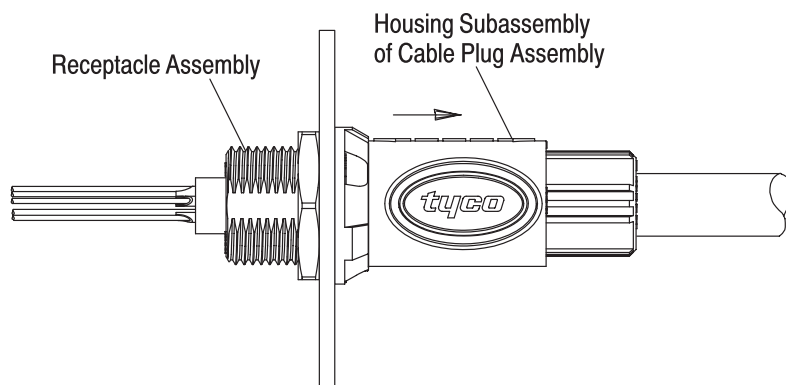


Figure 9

3.11. Repair



Defective or damaged components must not be used. A terminated insert subassembly must not be re-used by removing the wires.

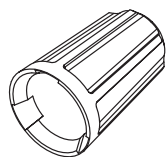
4. QUALIFICATION

Push-Pull Latch M-CPCs do not require agency approval.

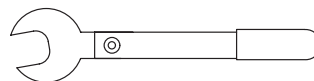
5. TOOLING

Recommended tooling for application of these connectors is given in Figure 10.

The wrench is used to tighten the front nut and the standard open-end wrench is used to tighten the hex nut of the receptacle assembly.



Wrench 1954571-1



Standard $\frac{11}{16}$ -in.
Open-End Wrench

Figure 10

6. VISUAL AID

Figure 11 shows a typical application of the Push-Pull Latch M-CPC. 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.

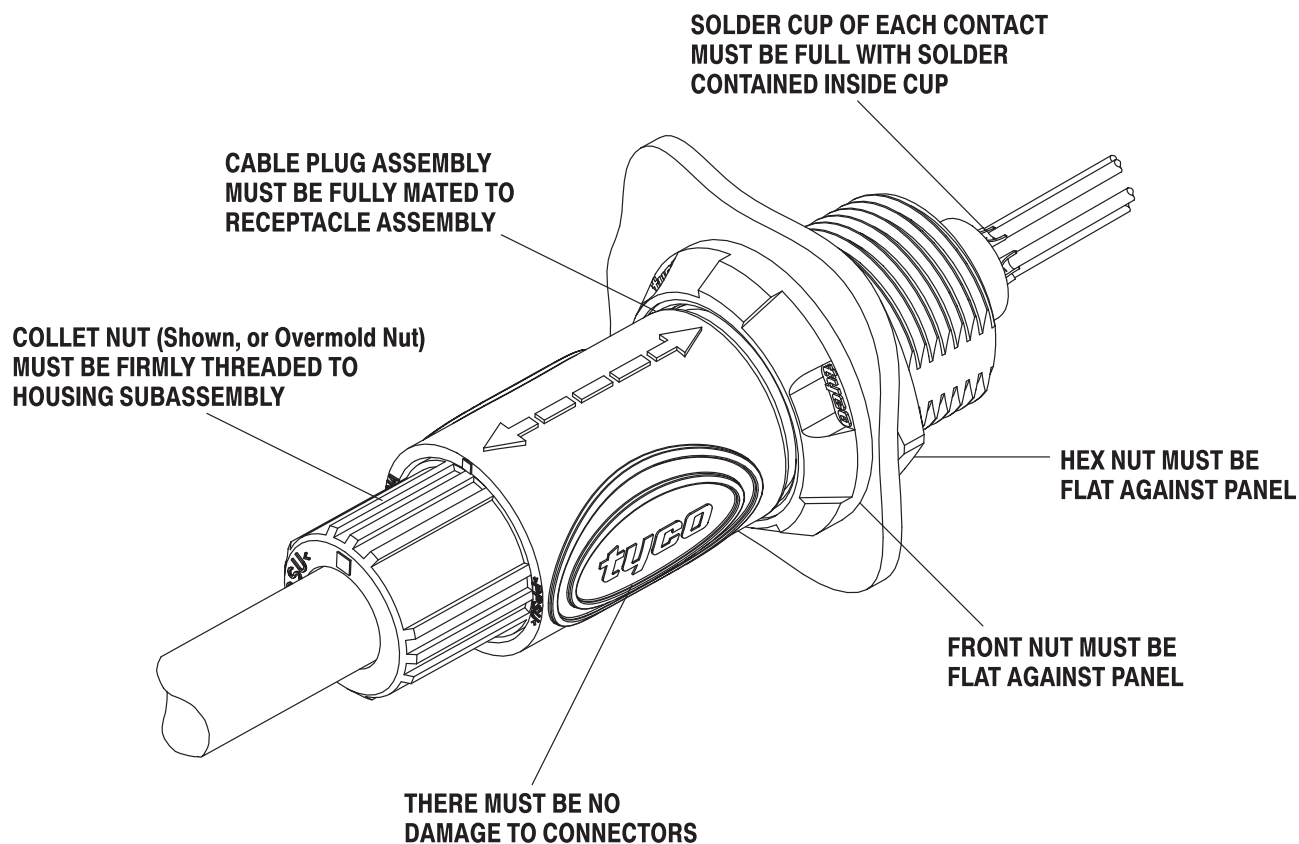


FIGURE 11. VISUAL AID