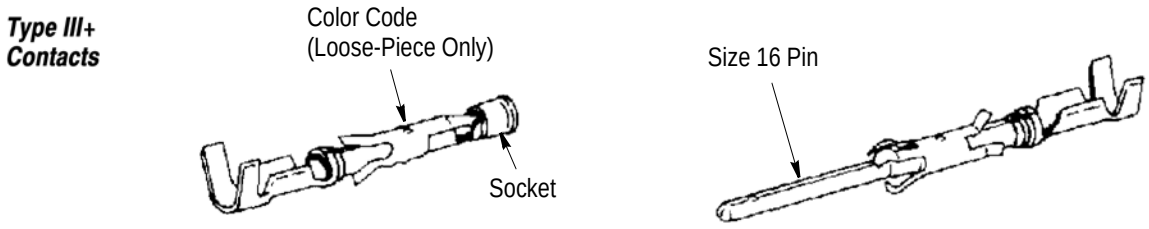
# Selection of Multimate Pin and Socket Contacts




| WIRE | | TYPE III+ CONTACTS | | | | | COLOR DOT | HAND CRIMPING TOOL (Instruction Sheet Reference for Crimping Procedures) |
|---|---|---|---|---|---|---|---|---|
| SIZE (AWG) | INSUL DIA | CONT SIZE | LOOSE PIECE | | STRIIP | | | |
| | | | PIN | SOCKET | PIN | SOCKET | | |
| 30 to 26 | 0.36-0.76 [.014-.030] | 16 | 66406 | 66405 | 66393 | 66394 | Brown | 90225-2 (408-7414) |
| | 1.02-1.52 [.040-.060] | | 66429 | 66428 | 66425 | 66424 | | -- |
| 26 to 24 | 0.89-1.40 [.035-.055] | | 66107 | 66109 | 66106 | 66108 | | 58495-1 (408-9819)• 90066-7 (408-6610) |
| 24 to 20 | 1.02-2.03 [.040-.080] | | 66103 | 66105 | 66102 | 66104 | Yellow | 58495-1 (408-9819)• 90067-4 (408-6613) |
| 24 to 20 | 2.03-2.54 [.080-.100] | | 66400 | 66399 | 66332 | 66331 | | 90225-2 (408-7414) 90067-5 (408-6614) |
| | 1.52-3.05 [.060-.120]{ | | 66566 | 66565 | 66564 | 66563 | | 90331-1 (408-7773) |
| 18 to 16 | 2.03-2.54 [.080-.100] | | 66099 | 66101 | 66098 | 66100 | Blue | 90067-4 (408-6613) 90067-5 (408-6614) 90310-3 (408-9387) 58495-1 (408-9819)• |
| 18 to 14 | 2.03-3.81 [.080-.150]† | | 66602 | 66601 | 66597 | 66598 | -- | 90310-2 (408-7942) |
| | 2.03-2.54 [.080-.100] | | 66361 | 66360 | 66359 | 66358 | Violet | 90067-4 (408-6613) 90310-3 (408-9387) |

• Economy hand tool for field repair only.

† Restricted housing use. Consult your local TE representative for details.

*NOTE:* Consult your local Tyco representative for assistance in selection of the machine and applicator that best suits your needs.

*Figure 1*

## 1. INTRODUCTION

This instruction sheet provides the recommended procedures for selecting the proper Type III+, Type II, Type VI, and Subminiature COAXICON* Contacts for use in "G" and "M" Series Connectors; Circular Plastic Connectors (CPC); Metrimate Connectors; and Econoseal Connectors.

Read these instructions thoroughly to make certain the selected contacts are compatible with the specified connector type, and the selected wire and application tooling are compatible with the contacts.

Reasons for reissue of this instruction sheet are provided in Section 7, REVISION SUMMARY.

## 2. CONTACT DESCRIPTION

### 2.1. Type III+ (Figure 1)

Pin and socket contacts are available in size 16 (.062-in. pin diameter). On loose-piece contacts, a color dot appears on the contact spring which designates the applicable wire size and matches the color dot above the hand tool crimping section.

Loose-piece contacts are designed for hand tool applications. Continuous strip-form contacts are designed for automatic or semi-automatic machine applications.

### 2.2. Type II (Figure 2)

Pin and socket contacts are available in size 20 (.040-in. pin diameter), and size 16 (.062-in. pin diameter). There are four pin lengths - standard, long, long-long (grounding pin), and special long shoulder. Mating socket contacts accept all pin lengths. Two color bands appear on each contact.

The shoulder color band identifies the applicable tooling by matching the colored handles of the hand tool or colored holding screws of the die assembly. The insulation barrel or wire barrel color band designates the applicable wire size and matches the color dot above the crimping section on the hand tool or die assembly.

Loose-piece contacts are designed for hand tool or pneumatic tool applications. Tape-mounted contacts are designed for pneumatic tool or semi-automatic machine applications.

### 2.3. Type VI (Figure 3)

Pin and socket contacts are available in a size 16 (.062-in. pin diameter) only. A wire size marking appears on the underside of each contact insulation barrel. This marking designates the applicable wire size and matches the wire size marking above the hand tool crimping section.

Loose-piece contacts are designed for hand tool applications. Continuous strip-form contacts are designed for automatic or semi-automatic machine applications.

### 2.4. Subminiature COAXICON Contacts (Figure 4)

Pin contacts are available in a short length, a long length, and a medium length (Multimate pin). Mating socket contacts accept all pin lengths.

Loose-piece contacts are designed for hand tool and pneumatic tool applications. Consult your local Tyco representative concerning tooling for continuous strip-form contacts.

## 3. CONNECTORS

Determine the connector type to be assembled. Refer to the listing of compatible contacts under the appropriate connector heading and select the desired contact type and recommended size.

### 3.1. "M" Series Shallow Mating (M-SM) Connectors

These connectors accept the following pin contacts only:

— Type II - Sizes 20 and 16 (standard length) from Figure 2.

— Subminiature COAXICON Contacts - Short pins from Figure 4.

### 3.2. "M" Series Deep Mating (M-DM), "G" Series, CPC, Metrimate, and Econoseal Connectors

These connectors accept the following pin and mating socket contacts:

— Type II - Size 16 (long, grounding pin, and special long shoulder length) from Figure 2.

— Type III+ - size 16 from Figure 1.

— Type VI - Size 16 from Figure 3.

— Subminiature COAXICON Contacts - Multimate and long pins from Figure 4.

## 4. CONTACT SELECTION

### 4.1. Type III+ (Figure 1)

1. Locate appropriate contact size in column 3 as determined by Section 3, CONNECTORS.

2. Determine wire size to be used (column 1). Make certain wire insulation diameter is within range specified in column 2.

3. Columns 4, 5, 6, and 7 indicate appropriate loose-piece and strip-form pin and socket contacts for selected wire size. Check that these contact base part numbers correspond with those on package or reel.

4. A color dot which appears on contact spring is referenced in column 8.

### 4.2. Type II (Figure 2)

1. Locate appropriate contact size and pin length in columns 3 and 4, as determined by Section 3, CONNECTORS.

2. Determine wire size to be used (column 1). Make certain wire insulation diameter is within range specified in column 2.

3. Columns 5 and 6 indicate appropriate pin and socket contact for selected wire size. Check that these base part numbers correspond with those on package or reel.

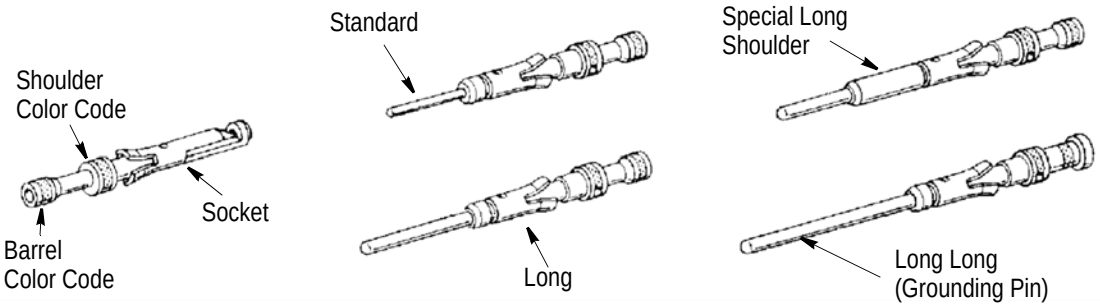
4. Color bands which appear on contact shoulder and barrel are referenced in columns 7 and 8.

### 4.3. Type VI (Figure 3)

1. Determine wire size to be used (column 1). Make certain wire insulation diameter is within range specified in column 2.

2. Columns 4, 5, 6, and 7 indicate appropriate loose-piece and strip-form pin and socket contacts for selected wire size. Check that these contact base part numbers correspond with those on package or reel.

***Type II Contacts***



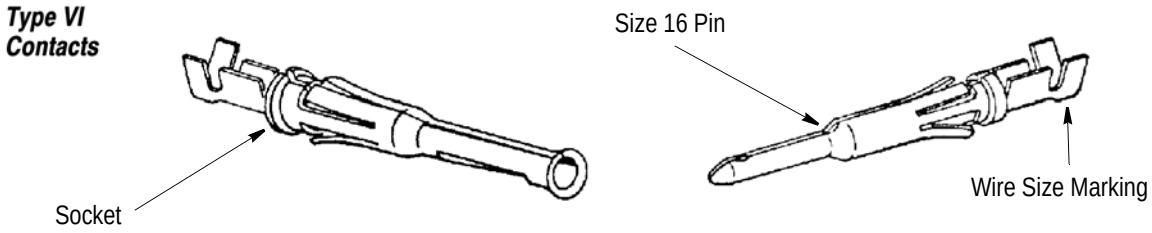

| WIRE | | TYPE II CONTACTS | | | | COLOR BAND | | HAND CRIMPING TOOL■ | CRIMPING DIES FOR | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | AMP-TAPETRONIC* |
| SIZE (AWG) | INSUL DIA | SIZE | PIN LENGTH | PIN | SOCKET | BARREL | SHD | | PNEU TOOLS (408-7420) | MACH 69875 (409-1993) |
| 28 to 24 | 0.89-1.40 [.035-.055] | 20 | Standard | 201607 | 201609 | Red | Red | 58305-1<br>601967-1■■ | 90230-1 | 90249-2 |
| 24 to 20 | 1.02-1.57 [.040-.062] | | | 201582 | 201584 | Yellow | | 58305-1<br>58541-1<br>601967-1■■ | | |
| | 1.40-1.91 [.055-.075] | | | 200334 | 200331 | | | | | |
| 18 to 16 | No Insul Barrel | | | — | 201589 | Blue | Blue | 45098<br>58541-1<br>601967-1■■ | 90231-2 | 90250-1 |
| 32 to 30 | 0.76-1.22 [.030-.048] | 16 | Long | 201555 | 201554 | White | Red | 58305-1 | 90230-1 | — |
| 28 to 24 | 0.89-1.40 [.035-.055] | | Long | 201611 | 201613 | Red | | 58305-1<br>601967-1■■ | | 90249-2 |
| | 1.22-1.65 [.048-.065] | | | 201334 | 201332 | | | | | |
| 24 to 20 | 1.02-1.57 [.040-.062] | | Long | 201578 | 201580 | Yellow | | 58305-1<br>58541-1 | | |
| | 1.40-2.16 [.055-.085] | | Standard | 200679 | 201328 | | | 58305-1<br>58541-1<br>601967-1■■ | | |
| | | | Long | 201330 | | | | | | |
| | | | Sp Long | 204188 | | | | 58305-1<br>58541-1 | | |
| (2) 18 | No Insul Barrel | | Long | 202725 | 202726 | — | Blue | 45098<br>58541-1 | 90231-2 | — |
| 18 to 16 | | | Standard | — | 200333 | Blue | | 45098<br>58541-1<br>601967-1■■ | | 90250-1 |
| | | | | 200681 | | | | 45098<br>58541-1 | | |
| | | | Long | 200336 | | | | 45098<br>58541-1<br>601967-1■■ | | |
| | | | Sp Long | 204274 | | | | 45098<br>58541-1 | | |
| | | | L Long | 204219 | — | | | 45098 | | 90250-3 |
| | 2.03-2.67 [.080-.105] | | Long | 202507 | 202508 | — | — | 90136-1 | — | — |
| 14 | No Insul Barrel | | Long | 201570 | 201568 | Violet | Blue | 45098<br>58541-1 | 90231-2 | 90250-1 |
| | | | Standard | 201645 | 201568 | | | | | |
| | | | Long Long | 212618-1 | — | — | — | | | — |

■ Refer to the following instruction sheet numbers for specific crimping procedures - for Hand Tools 58305-1 and 45098 (408-1786), 58541-1 (408-4051), 601967-1 (408-7516), and 90136-1 (408-7267).

■■ Use Turret 1-601967-5 on 601967-1 for pins. Use Turret 1-601967-6 on 601967-1 for sockets.

**NOTE:** Hand Tool 58541-1 is for field use only.

*Figure 2*




| WIRE | | TYPE VI CONTACTS | | | | | HAND CRIMPING TOOL (Instruction Sheet Reference for Crimping Procedures) |
|---|---|---|---|---|---|---|---|
| SIZE (AWG) | INSUL DIA | CONT SIZE | LOOSE PIECE | | STRIP | | |
| | | | PIN | SOCKET | PIN | SOCKET | |
| 28 to 24 | 0.89-1.40 [.035-.055] | 16 | --- | --- | 66585 | 66586 | 90066-7 (408-6610)<br>58495-1 (408-9819)‡ |
| 24 to 20 | 1.02-2.03 [.040-.080] | | 66593 | 66594 | 66583 | 66584 | 90067-4 (408-6613)<br>90067-7 (408-6610)<br>58495-1 (408-9819)‡ |
| 22 to 18 | 1.27-2.79 [.050-.110] | | 66591 | 66592 | 66581 | 66582 | 90327-1 (408-7716) |
| 18 to 16 | 2.03-2.54 [.080-.100] | | 66589 | 66590 | 66579 | 66580 | 90067-4 (408-6613)<br>90310-3 (408-9387)<br>58495-1 (408-9819‡ |
| 18 to 14 | 2.03-3.43 [.080-.135] | | 66587 | 66588 | 66577 | 66578 | 90310-1 (408-7680) |

‡ Economy hand tool for field repair only.

*NOTE:* Consult your local TE representative for assistance in selection of the machine and applicator that best suits your needs.

*Figure 3*

### 4.4. Subminiature COAXICON Contacts (Figure 4)

1. Determine cable size to be used (column 1).

2. Locate appropriate pin length (multimate, long, or short) in chart heading, as determined by Section 3, CONNECTORS.

3. Columns 2 through 9 indicate appropriate strip-form and loose-piece (LP) pin and socket contacts for selected cable size. Check that these contact part numbers correspond with those on package or reel.

## 5. CONTACT INSERTION

Insertion Tools 91002 and 200893 are recommended for inserting Type II, Type III+, and Type VI contacts if wire bundle is large or if wire is fragile.

Refer to instruction sheet 408-1817 (packaged with tool 200893) or 408-7347 (packaged with tool 91002), for proper insertion procedures.

To insert a contact, grip wire insulation directly behind contact insulation barrel. Align contact with BACK of desired cavity. Insert contact straight into cavity until it bottoms. Pull back lightly on wire to be sure contact is locked in place.

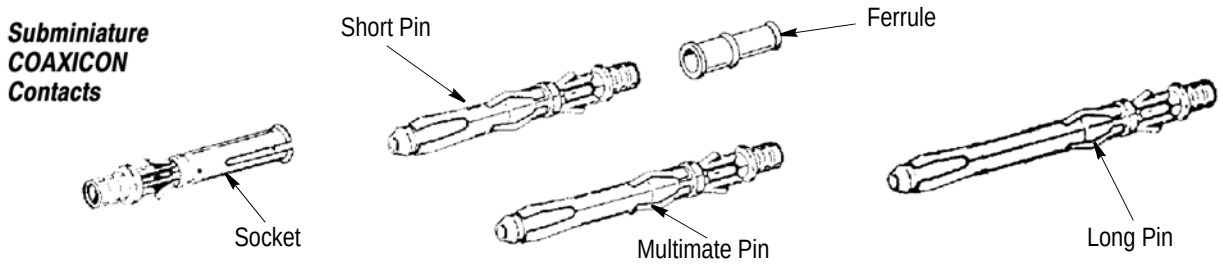
## 6. CONTACT EXTRACTION

Extraction Tool 305183 is recommended for extracting Type II, Type III+, Type VI, and Subminiature COAXICON pin and socket contacts from their connectors.

Refer to instruction sheet 408-1216 (packaged with tool 305183), for proper extraction procedures.

## 7. REVISION SUMMARY

Since the previous release of this sheet, the new company logo has been applied.




| CABLE SIZE | SUBMINIATURE COAXICON CONTACTS | | | | FERRULE | HAND CRIMPING TOOL (408-2024-2) | CRIMPING DIES‡ (408-2024-3) |
|---|---|---|---|---|---|---|---|
| | MULTIMATE PIN (Loose Piece) | LONG PIN (Loose Piece) | SHORT PIN (Loose Piece) | SOCKET (Loose Piece) | | | |
| RG-174, 188, 316 | 226537-1 | 226537-1<br>226537-4 | 51563-1 | 51565-1<br>51565-4 | 1-332056-0 | 69656 | 69690 |
| RG-174 Double Braid | | | | | 225088-3 | 69656-7 | --- |
| RG-179, 187 | | | | | 1-322056-0 | 69656-1 | 69690-1 |
| RG-187 Double Braid | | | | | 225088-1 | 69656-8 | --- |
| RG-161 | | | | | 1-332056-0 | --- | --- |
| 26 AWG Shielded .075 Max OD | | | | | 1-332057-0 | 69656-3 | 69690-3 |
| RG-178, 196 | 226537-2 | 226537-2 | 51563-2 | 51565-2<br>51565-5 | 1-332057-0 | 69656-2 | 69690-2 |
| RG-196 Double Braid | | | | | 225088-1 | 69656-9 | --- |
| 26 AWG Tw Pr Solid or 7 Str .0063 Dia | 226537-3 | 226537-3 | 51563-3 | 51565-3 | 1-332057-0 | 69656 | 69690 |
| 28 AWG Tw Pr Solid | | | | | | | |
| 28 AWG Tw Pr 7 Str .005 Dia | | | | | | 69656-1 or 69656-2 | 69690-1 or 69690-2 |
| 30 AWG Tw Pr Solid | | | | | | 69656-2 | 69690-2 |

‡ Used with Hand Crimping Tool 69710-1 (408-2095).

*Figure 4*