



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  $\pm 0.13$  [ $\pm 0.005$ ] 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 Commercial MATE-N-LOK Pin and Socket Contacts. These requirements are applicable to hand or automatic machine crimping tools. For specific wire and insulation ranges relative to the products covered in this specification, see Figures 4 and 5.

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.

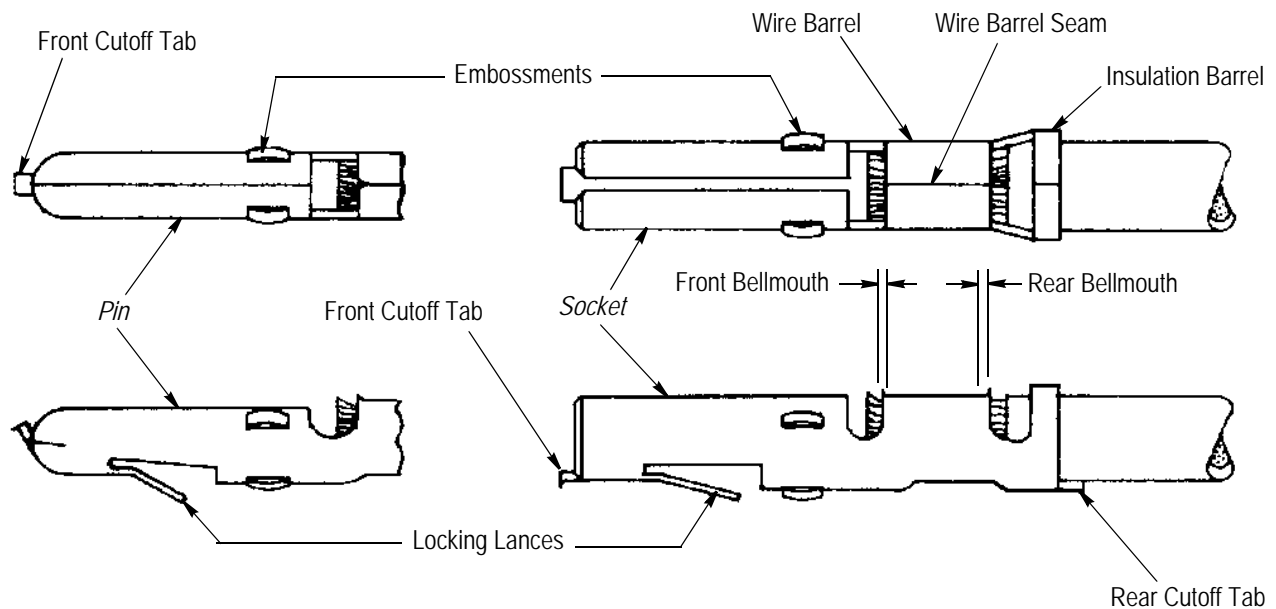


Figure 1

## 2. REFERENCE MATERIAL

### 2.1. Revision Summary

- Updated document to corporate requirements
- New logo

### 2.2. Customer Assistance

Reference Product Part Numbers 61091 and 60909 and Product Code 1340 are representative of Commercial MATE-N-LOK Pin and Socket Contacts. 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 PRODUCT INFORMATION at the number at the bottom of this page.

### 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 this page.

## 2.4. Specifications

Refer to Product Specification 108-1000 for product performance and test information.

## 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 contacts.

#### B. Shelf Life

The contacts should remain in the shipping containers until ready for use to prevent deformation to the contacts. The contacts 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 contacts near any chemical listed below as they may cause stress corrosion cracking in the contacts.

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

### 3.3. Wire Preparation

#### A. Strip Length

Insulation shall be stripped as indicated in Figures 4 and 5.

#### B. Workmanship

Reasonable care shall be taken not to nick, scrape, or cut any strands or the solid wire during the stripping process.

### 3.4. Carrier Cutoff Tab

Front cutoff tab shall not exceed 0.20 mm [.008 in.] and shall be wiped upward toward the centerline on pin contacts. Rear cutoff tab shall not exceed 0.38 mm [.015 in.].

### 3.5. Wire Barrel Crimp

#### A. Crimp Dimensions and Type

Crimp height, width and type shall be as shown in Figures 4 and 5.

#### B. Tensile Strength

Crimp tensile strength shall be as shown in Figure 4.

#### C. Wire Barrel Seam

The wire barrel seam shall be closed adequately to confine all strands of the wire. There shall be no loose wire strands embedded in the outside of the wire barrel.

#### D. Bellmouth

Rear bellmouth length shall be 0.13-0.76 mm [.005-.030 in.]; and front bellmouth length shall be 0.25 mm [.010 in.] maximum.

#### E. Conductor Location

End of the wire shall be flush with the front end of the wire barrel or extend 1.19 mm [.047 in.] maximum after crimping.

Both insulation and conductor shall be visible between the insulation barrel and wire barrel. Care shall be taken not to allow insulation to be crimped in the wire barrel.

### 3.6. Insulation Barrel Crimp

#### A. Crimp Dimensions and Type

Crimp width and type shall be as shown in Figures 4 and 5.

#### B. Workmanship

Reasonable care shall be taken not to cut or break the insulation during the crimping operation.

### 3.7. Locking Lance

Locking lance shall not be deformed.

### 3.8. Embossments

Embossments on pin contact shall pass through a 2.87 mm [.113 in.] maximum diameter circle and a 3.68 mm [.145 in.] maximum diameter circle for socket contacts.

### 3.9. Alignment

#### A. Axial Concentricity

Crimped insulation barrel shall fall into an area defined by a 4.06 mm [.160 in.] diameter circle whose center is the centerline of the contact as shown in Figure 2, except part number 60989 which shall fall within a 5.08 mm [.200 in.] diameter circle.

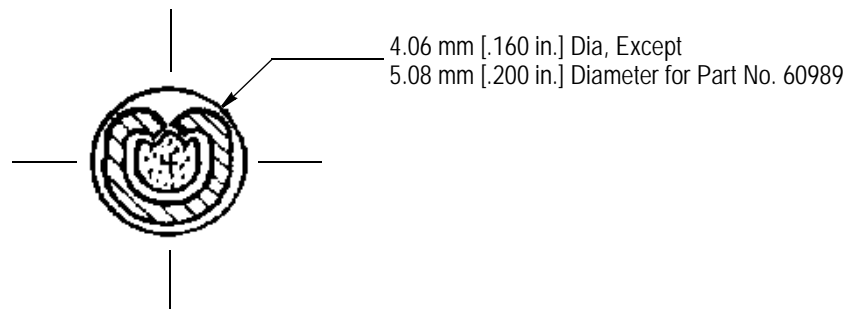


Figure 2

Crimped insulation barrel of two conductor crimped contacts shall fall into an area defined by a 5.33 x 3.94 mm [.210 x .155 in.] rectangle whose vertical center is the centerline of the contact and whose horizontal center is 0.76 mm [.030 in.] above the centerline of the contact as shown in Figure 3.

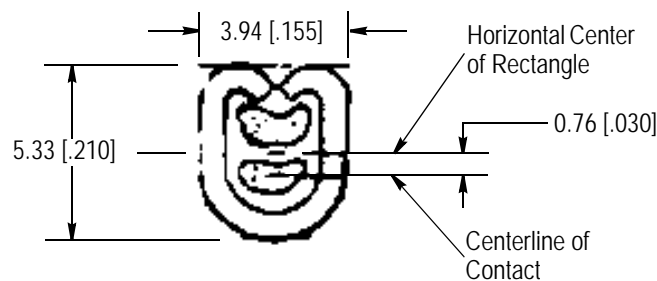


Figure 3

#### B. Twist or Roll

There shall be no twist or roll in crimped portion that will impair usage of the contact.

## AUTOMATIC MACHINE WIRE CRIMP DIMENSIONS

PART NUMBERS		WIRES		INSUL DIA (MAX)	STRIP LENGTH	WIRE BARREL CRIMP (F CRIMP)			INSULATION BARREL CRIMP	
PIN	SKT	QTY	SIZE			WIDTH	HEIGHT $\pm 0.05$ [.002]	TENSILE STRENGTH N [lbf]	WIDTH	TYPE CRIMPER
61091 60910 350079	60909 350078 350178	1	30	1.90 [.075]	4.75-3.96 [.187-.156]	1.40 [.055]	0.79 [.031]	8.90 [2]	2.29 [.090]	F or O
		1	28				0.81 [.032]	13.34 [3]		
		1	26				0.84 [.033]	31.14 [7]		
		1	24				0.89 [.035]	44.48 [10]		
		1	22				0.94 [.037]	66.72 [15]		
60907 60511 61116	60964 60510 61115 61314	1	24	2.54 [.100]	4.75-3.96 [.187-.156]	1.78 [.070]	0.97 [.038]	44.48 [10]	2.54 [.100]	F or O
		1	22				1.02 [.040]	66.72 [15]		
		1	20				1.09 [.043]	88.96 [20]		
		1	28				1.22 [.048]	133.44 [30]		
61010	61009	1	24	3.30 [.130]	4.75-3.96 [.187-.156]	1.78 [.070]	0.97 [.038]	44.48 [10]	3.30 [.130]	F
		1	22				1.02 [.040]	66.72 [15]		
		1	20				1.09 [.043]	88.96 [20]		
		1	18				1.22 [.048]	133.44 [30]		
60528 61118	60527 61117	1	20	3.30 [.130]	4.75-3.96 [.187-.156]	2.29 [.090]	1.19 [.047]	88.96 [20]	3.30 [.130]	F or O
		1	18				1.32 [.052]	133.44 [30]		
		1	16				1.50 [.059]	133.44 [30]		
		1	14				1.75 [.069]	155.68 [35]		
---	60989	1	18	4.57 [.180]	4.75-3.96 [.187-.156]	2.29 [.090]	1.32 [.052]	133.44 [30]	4.32 [.170]	F
		1	16				1.50 [.059]	133.44 [30]		
		1	14				1.75 [.069]	155.68 [35]		
---	61036	1	22	2.54 [.100]	4.75-3.96 [.187-.156]	1.57 [.062]	0.91 [.036]	66.72 [15]	2.54 [.100]	F
		1	20				1.02 [.040]	88.96 [20]		
		1	18				1.17 [.046]	133.44 [30]		
60497 60958 350558	60496 350557	2	18	2.92 [.115]	4.75-3.96 [.187-.156]	2.29 [.090]	1.57 [.062]	133.44 [30]	3.30 [.130]	F
		1	18				1.78 [.070]	155.68 [35]		
		1	16				1.78 [.070]	155.68 [35]		

Figure 4

## HAND TOOL WIRE CRIMP DIMENSIONS

PART NUMBERS		WIRES		INSUL DIA	STRIP LENGTH ±0.38 [.015]	WIRE BARREL CRIMP (F CRIMP)		INSULATION BARREL CRIMP		HAND TOOL
PIN	SKT	QTY	SIZE			WIDTH	HEIGHT ±0.05 [.002]	WIDTH	TYPE CRIMPER	
61174	61173 350182	1	30	1.02-1.90 [.040-.075]	4.75 [.187]	1.40 [.055]	0.851 ±0.051 [.0335 ±.0020]	1.78 [.070]	O	90066-5
		1	28							
		1	26							
		1	24							
		1	22							
60618	60617 61473	1	24	1.52-2.54 [.060-.100]	4.75 [.187]	2.03 [.080]	0.978 ±0.051 [.0385 ±.0020]	2.54 [.100]	F	90123-2†
		1	22				1.24 ±0.05 [.049 ±.002]			
		1	20							
		1	18							
61109	61108	1	24	2.54-3.30 [.100-.130]	4.75 [.187]	1.78 [.070]	0.978 ±0.051 [.0385 ±.0020]	3.30 [.130]	F	90123-4
		1	22				1.24 ±0.05 [.049 ±.002]			
		1	20							
		1	18							
60620	60619	1	20	2.54-3.30 [.100-.130]	4.75 [.187]	2.29 [.090]	1.35 ±0.05 [.053 ±.002]	3.30 [.130]	F	90124-2
		1	18							
		1	16							
		1	14							
350639	350638	2	18	2.92 [.115] Max	4.75 [.187]	2.29 [.090]	1.63 ±0.08 [.064 ±.003]	3.30 [.130]	F	90124-2
		1	18							
		1	16							

†90123-5 for 1.09-1.90 mm [.043-.075 in.] insulation diameter.

Figure 5