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 312 Positive Lock Receptacle Contacts.

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

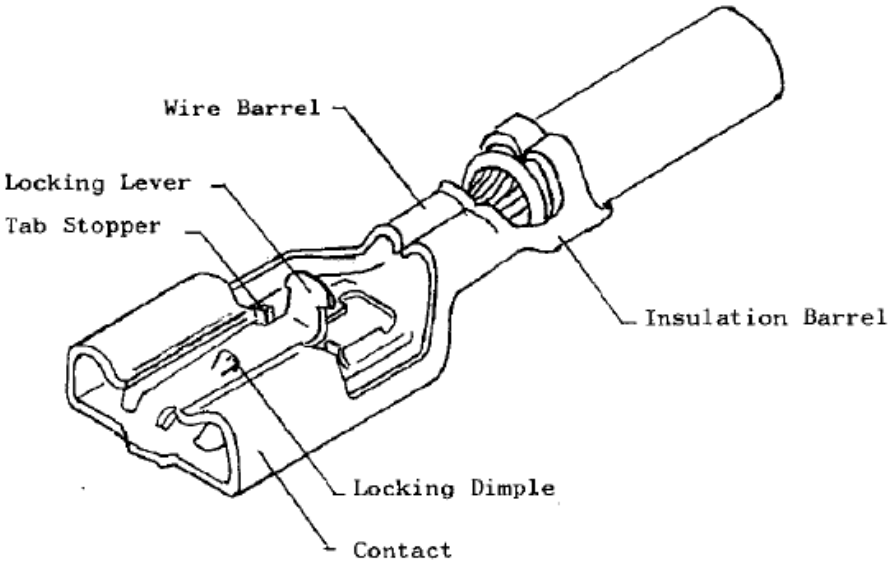


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

- Added reference to PN 2363927
- Updated format to corporate requirements

2.2. Customer Assistance

Reference Product Base Part Number 170381, 173603, 2363927 and Product Code 1113 are representative of 312 Series Positive Lock Receptacles. 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.

2.3. Drawings

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

170381	312 Series Positive Lock Receptacle
173603	312 Series Positive Lock Receptacle
2363927	312 Series Positive Lock Receptacle

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 contacts, store coil wound reels horizontally. When storing partial reeled 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

NOTE
Where the above environmental conditions exist, phosphor-bronze contacts are recommended instead of brass if available.

3.3. Wire Selection and Preparation

The contacts accept a single stranded copper wire sizes 10 AWG to 20 AWG or 2 stranded copper wire sizes 16 AWG to 20 AWG with an insulation diameter range on each wire of 2.2 to 4.58 mm. See Figure 3 for allowable wire sizes and composition. See Figure 4 for allowable wire size configurations with each terminal.

Each wire must be stripped to the dimension given in Figure 2.

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

Note: Not to Scale

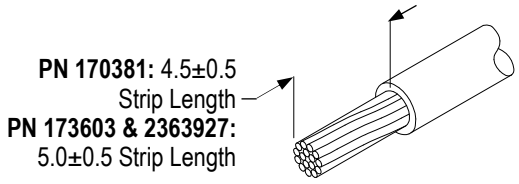


Figure 2

WIRE SIZE			STRAND COMPOSITION		Calculated Cross-Sectional Area (mm^2)	Insulation Diameter Nominal (mm)	Applicable Specification
CMA	AWG	mm^2	Number of Strands	Strand Diameter (mm)			
1111	20	0.5	7	0.32	0.56	2.2	JIS C 3406 Low Voltage Cables for Automobiles
1746	18	0.85	11	0.32	0.88	2.4	
2537	16	1.25	16	0.32	1.28	2.7	
4123	14	2.0	26	0.32	2.09	3.1	
6500	12	3.0	65	0.25	3.29	3.94	UL 1015
10500	10	5.5	105	0.25	5.32	4.58	UL 1015

Figure 3: Applicable Wire

3.4. Contact Crimp

A. Cutoff Tab

The cutoff tab is the remaining portion of the carrier strip after the contact is cut from the strip. The cutoff tab must not exceed the dimensions given in Figure 4.

B. Bellmouths

The front bellmouth and rear bellmouth shall conform to the dimensions given in Figure 4.

C. 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 conductors and insulation must be visible within the area between the wire barrel and insulation barrel as shown in Figure 4.

D. Wire End Extrusion Length

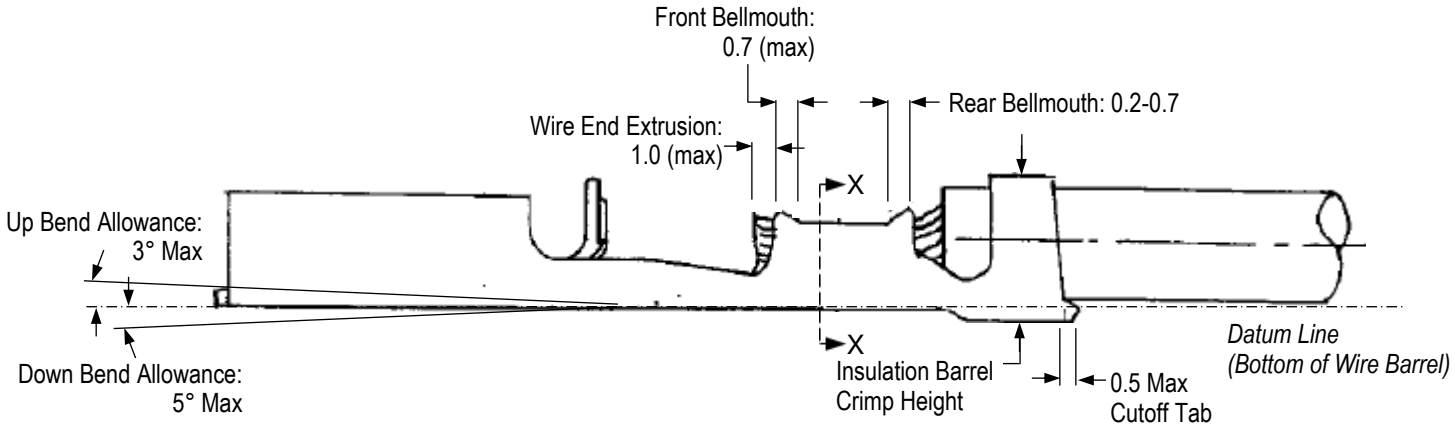
The wire conductor ends must extend beyond the end of the wire barrel within the dimensions given in Figure 4.

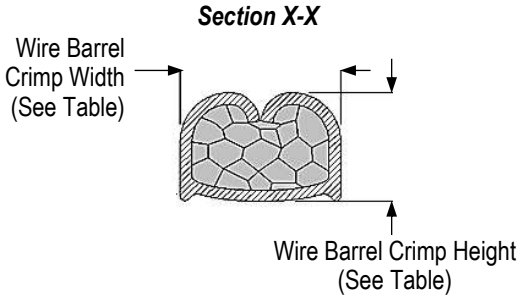
E. Twist and Roll

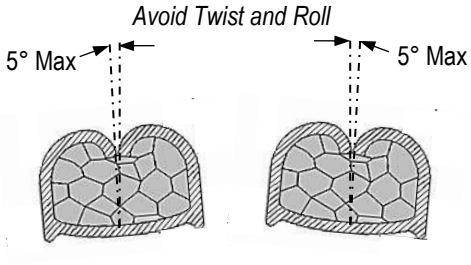
There should be no twist or roll of the wire barrel or mating portion of the crimped contact that would cause overstress or impair usage. See Figure 4 for allowable limits.

F. Bend Allowance

Then bend allowance between the wire barrel and the cable is acceptable within the limits given in Figure 4.







Base Number	Applicator Number	Wire Size (mm²)	WIRE BARREL CRIMP			INSULATION BARREL CRIMP			Crimp Tensile Strength	
			Width (mm)	Height (mm [inch])	Disc Letter	Width (mm)	Height (mm)	Disc Letter (Ref.)	N [kg]	lbs
170381	722786	0.5	2.29 "F"	1.31 [.052]	D	3.3 "F"	Adjustable according to the wire insulation diameter	3	9 [88]	——
		0.85		1.43 [.056]	C			3	13 [127]	——
		1.25		1.57 [.062]	B			3	18 [177]	——
		2		1.86 [.073]	A			4	27 [265]	——
		0.5 + 0.85 †		1.57 [.062]	B			——	9 [88]	——
		0.5 + 0.5 †		1.57 [.062]	B			——	9 [88]	——
		0.5 + 1.25 †		1.86 [.073]	A			——	9 [88]	——
		0.85 + 0.85 †		1.86 [.073]	A			——	13 [127]	——
		0.85 + 1.25 †		1.86 [.073]	A			——	13 [127]	——
173603	755771	2.0	3.3 "F"	1.57 [.062]	B	4.57 "F"		4	27 [265]	——
		3.0		1.88 [.074]	A			4	30 [294]	——
2363927	——	3.0	3.68 "F"	1.96 [.077]	——	5.33 "F"		——	31.7 [311]	70
		5.5		2.39 [.094]	——			——	36.3 [356]	80

† When making a two-wire crimp in the same wire barrel, place thin wire first and stack the other one upon it, as shown in Figure 5.

Figure 4

G. Wire Placement

When making a two wire crimp in the same barrel, stack the wires as shown in Figure 5.

Figure 5

4. TOOLING

Applicators contain the tooling for feeding and crimping strip-form terminals. Automatic machines provide the power to operate the applicator. See Figure 6 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.

4.1. Machine (Power Unit)

The machine provides the force required to drive an applicator for crimping the contacts. These machines can be set up to automatically measure, cut, strip and terminate wire.

4.2. Applicator

Applicators for product part numbers are available in Figure 6 and from the Applicator Search Portal on www.te.com or by calling the Product Information Center at the bottom of page 1.

Ocean Applicator

Automatic Machine

Figure 6