

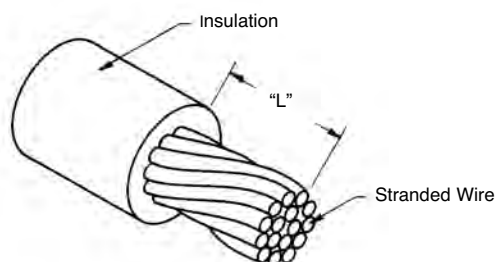


## CRIMPING INFORMATION FOR REMOVABLE CRIMP CONTACTS

USE INDICATED POSITRONIC TOOLS FOR BEST RESULTS

### STEP 1: STRIP WIRE TO INDICATED LENGTH.

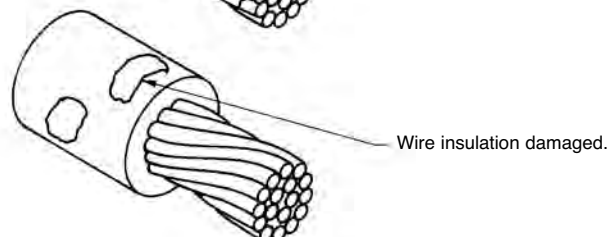
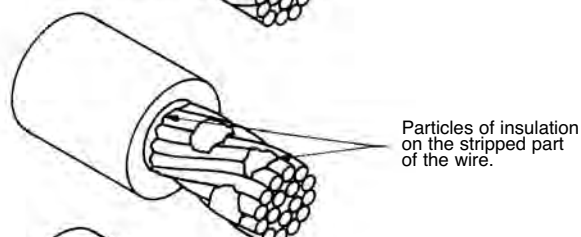
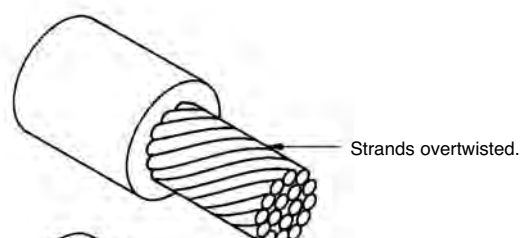
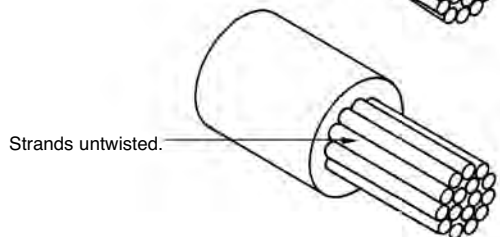
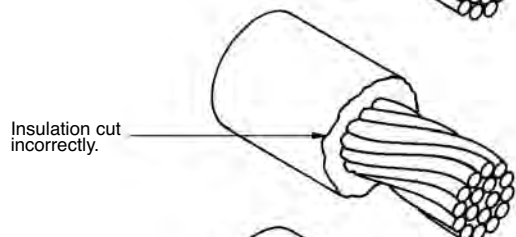
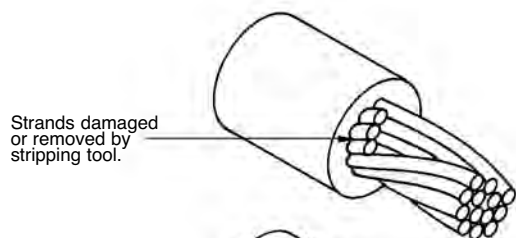
#### Correctly Stripped Wire



- Take Care Not To:
- Damage or remove strands.
  - Untwist or overtwist strands.
  - Leave insulation particles on strands.
  - Damage insulation.

CONTACT SIZE	CONTACT PART NUMBER		"L" ±0.020 [±0.51]
	FEMALE	MALE	
20	FC720N2	MC720N3	0.230 [5.84]
16	F*1**N2	M*1**N	0.230 [5.84]
16	FC112N2S	MC112NS	0.230 [5.84]
12	F*610N2	M*610N	0.230 [5.84]
12	-	M*610N-228.2	0.230 [5.84]
12	F*610N2S	M*610NS	0.235 [5.97]
12	-	M*610NS-228.2	0.235 [5.97]
12	F*612N2	M*612N	0.290 [7.37]
12	-	M*612N-228.2	0.290 [7.37]
<del>12</del>	<del>F*612N2S</del>	<del>M*612NS</del>	<del>0.290 [7.37]</del>
<del>12</del>	<del>-</del>	<del>M*612NS-228.2</del>	<del>0.290 [7.37]</del>
8	F*40**D	M*40**D	0.350 [8.89]
8	FC4008DS	MC4008DS	0.350 [8.89]
8	FS4*20D	MS4*20D	0.100 [2.54]

#### Examples of Stripping Faults



## CRIMPING INFORMATION FOR REMOVABLE CRIMP CONTACTS

USE INDICATED POSITRONIC TOOLS FOR BEST RESULTS

### STEP 2: CRIMP WIRE TO CONTACT.

- For Hand Crimp Tool:**
- Place contact into crimping tool.
  - Insert wire into contact.
  - Center contact by slowly closing the crimping tool until the crimp indenters make contact with the crimp barrel.
  - Complete the cycle of the crimping tool in one smooth motion.
  - Remove the crimped contact.

- For Automatic Crimp Tool:**
- Insert the wire into the contact, positioned in the crimp tool by the plastic carrier.
  - Depress the activating device of the crimping tool to start the crimping cycle.
  - Remove the crimped contact.

Positronic Recommended Conductor Tensile Strength	
WIRE SIZE AWG/[mm <sup>2</sup> ]	AXIAL LOAD POUNDS/[N]
8 [10.0]	110 [489]
10 [5.3]	110 [489]
12 [4.0]	110 [489]
14 [2.5]	70 [311]
16 [1.5]	50 [222]
18 [1.0]	28 [125]
20 [0.5]	20 [89]
22 [0.3]	12 [53]
24 [0.25]	8 [36]

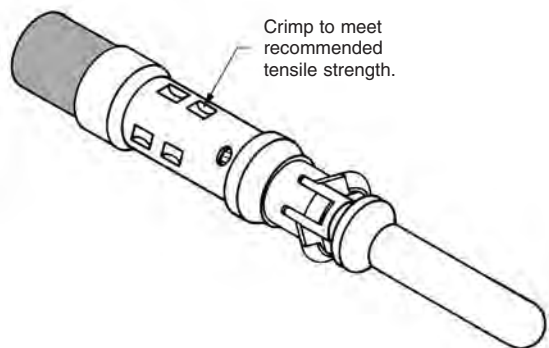
Conductor tensile strength values are derived using silver-tin plated copper wires.

Values may change depending upon what type of wire is used.

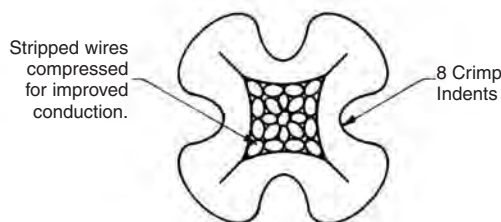
### STEP 3: INSPECT THE CRIMP.

- For All Tools:**
- Strands to be visible through the inspection hole.
  - Strands not to be visible beyond the insulation support.
  - Crimped contact to meet recommended conductor tensile force shown in chart.
  - Check for peeled gold and bent contacts.

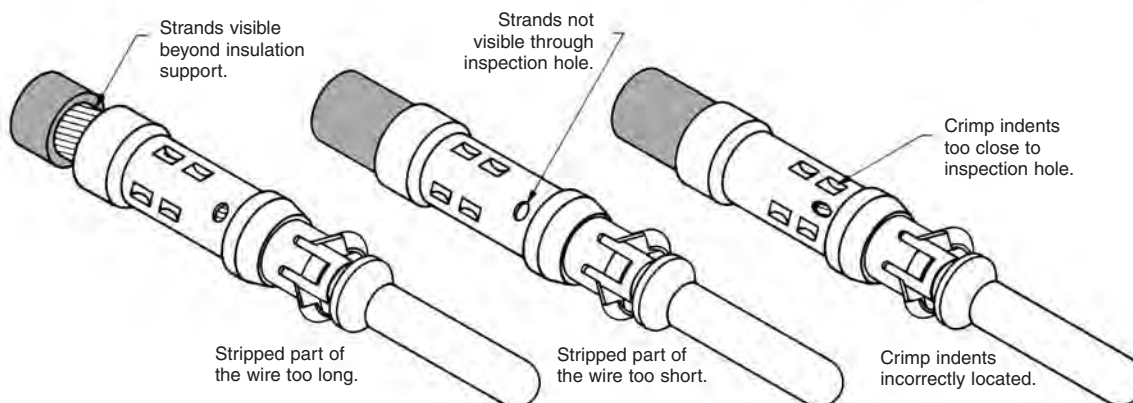
#### Correctly Crimped Contact



#### Cross Section of Correctly Crimped Contact



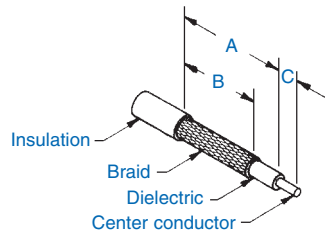
#### Examples of Crimping Faults





## SOLDERING AND CRIMPING INFORMATION FOR SHIELDED CONTACTS

### STEP 1: STRIP WIRE TO INDICATED LENGTH



#### TAKE CARE NOT TO:

- Damage or remove strands.
- Untwist or overtwist strands.
- Leave insulation particles on strands.
- Damage insulation.

### STEP 2: CRIMP WIRE TO CONTACT

- Trim cable.
- Slide ferrule over jacket. Insert dielectric and center conductor into barrel. Crimp center conductor into contact.
- Butt ferrule against shoulder. Crimp ferrule over braid.

### STEP 2: SOLDER WIRE TO CONTACT

- Trim cable. Tin center conductor.
- Slide ferrule over jacket. Insert dielectric and center conductor into barrel. Solder center conductor into contact.
- Butt ferrule against shoulder. Solder cable to barrel through hole in ferrule. Solder cap into body.

### STEP 2: SOLDER/CRIMP WIRE TO CONTACT

- Trim cable. Tin center conductor.
- Slide ferrule over jacket. Insert dielectric and center conductor into barrel. Solder center conductor into contact.
- Butt ferrule against shoulder. Crimp ferrule over braid. Solder cap into body.



#### Shielded Contact Hand Crimp Tool

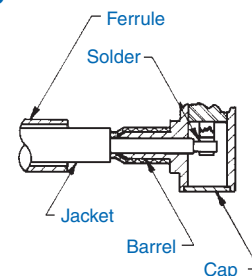
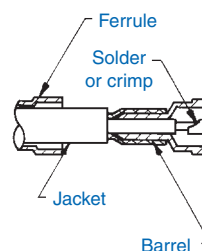
For crimp tool part numbers, see Contact Application Tools Cross Reference Chart on pages 58 & 59.



	CONTACT SIZE	PART NUMBER	RG CABLE NUMBER	A	B	C
PCS SERIES	16	MCS126N	178 B/U	0.190 [4.83]	0.160 [4.06]	0.175 [4.45]
		FC126N2	196 A/U			
		MCS226N	179 B/U			
		FCS226N2	316 A/U			
PCS MIXED DENSITY SERIES	8	*C4101D	178 B/U	0.281 [7.14]	0.250 [6.35]	0.078 [1.98]
		*S4101D				
		*C4102D	179 B/U 316 /U	0.281 [7.14]	0.250 [6.35]	0.078 [1.98]
		*S4102D				
		*C4103D	180 B/U	0.375 [9.53]	0.312 [7.92]	0.078 [1.98]
		*S4103D				
		*C4104D	58 B/U	0.375 [9.53]	0.312 [7.92]	0.078 [1.98]
		*S4104D				
		*CC4101D	178 B/U	0.281 [7.14]	0.250 [6.35]	0.120 [3.05]
		*CC4102D	179 B/U 316 /U			
		*CC4103D	180 B/U	0.375 [9.53]	0.312 [7.92]	0.120 [3.05]
		*CC4104D	58 B/U			

\*Contact gender is designated by M for male contacts and F for female contacts.

#### Typical Part Number: FC4101D

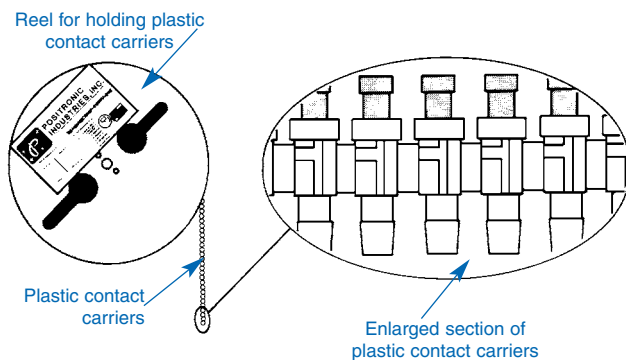




**AUTOMATIC CRIMP TOOL,  
PNEUMATICALLY ACTUATED  
(SHOWN FOR REFERENCE ONLY)**

This fast cycling automatic crimp tool produces a four double-indent crimp on wire sizes. For use with size 8, 12, 16 and 20 contacts. Contacts must be ordered on reels. Foot control valve is supplied as a standard accessory.

For complete automatic crimp tool selection part numbers, see Contact Application Tools Cross Reference Chart on pages 58 & 59.



**CONTACT REELS FOR  
AUTOMATIC PNEUMATIC CRIMP TOOLS**

Contacts may be supplied in plastic carriers, packaged in reels holding 2,000 contacts for use with the automatic pneumatic crimp tools, catalog part numbers 9550-0 and 9550-1; packaged in reels holding 1,000 contacts for use with the automatic pneumatic crimp tools, catalog part number 9555-0-2. The same type carrier is used for both male and female contacts.

All male and female crimp contacts can be ordered in reels by adding letter "R" after the contact part number, such as MC6020DR for a male contact and FC6026DR for a female contact.

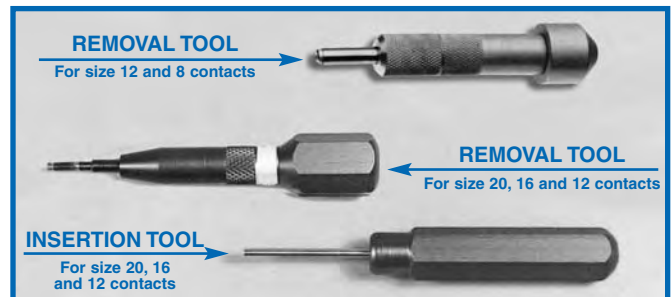


**CYCLE-CONTROLLED HAND CRIMP TOOLS  
(SHOWN FOR REFERENCE ONLY)**

The hand crimp tool, pictured at the top of the image uses 8 AWG wire with produces a hex shaped crimp.

All other wire are eight step adjustable hand crimping tool produces a four double-indent crimp configuration. Each positioner is equipped with a data plate which gives the correct crimp-depth setting for each wire size.

For complete crimp tool and positioner selection part numbers, see Contact Application Tools Cross Reference Chart on pages 58 & 59.



**INSERTION AND REMOVAL TOOLS  
(SHOWN FOR REFERENCE ONLY)**

An easy-to-use contact insertion tool used for rear insertion of contacts into connector, see illustration below.

The contact removal tool is spring-loaded to simplify the extraction of removable contacts from the connector insulators. For contact removal, simply insert the hollow tool tip over the male or female contact from the front face of the insulator, rotate the tool slightly while increasing the pushing force against the butt of the extraction tool. The contact will be released from the insulator retention system and will "pop out" of the rear face of the insulator.

For insertion and removal tool selection part numbers, see Contact Application Tools Cross Reference Chart on pages 58 & 59.

## CONTACT INSERTION



## CONTACT REMOVAL





Positronic Industries  
connectpositronic.com



# CONTACT APPLICATION TOOLS CROSS REFERENCE LIST

Power  
Connection  
Systems

## CONTACT APPLICATION TOOLS CROSS REFERENCE LIST

USE INDICATED POSITRONIC TOOLS FOR BEST RESULTS

		SAFETY SHROUD & POWER INPUT SERIES													
		SIZE 12 CONTACTS													
Postitronic Contact P/N	Handle & Positioner P/N	Hand Crimp Tool P/N	Mfg. Cross	Mill Equip	Positioner	Mfg. Cross	Mill Equip	Insertion Tool	Mfg. Cross	Mill Equip	Removal Tool	Mfg. Cross	Mill Equip	Automatic Crimp Tool	
FC610N2S	9509-6-0-0	9509-6-1-0	GS223		9509-6-2-0	TP-1386		9099-3-0-0	ITP 1168		2711-0-0-0	P+		9555-0-2-0	
FC612N2		9501-0-0-0	AF8	M22520/1-01	9502-19-0-0	TP-1199		9099-3-0-0	ITP 1168		2711-0-0-0	P+		9555-0-2-0	
FS610N2S								9099-3-0-0	ITP 1168		2711-0-0-0	P+			
FS612N2								9099-3-0-0	ITP 1168		2711-0-0-0	P+			
MC610NS	9509-6-0-0	9509-6-1-0	GS223		9509-6-2-0	TP-1386		9099-3-0-0	ITP 1168		2711-0-0-0	P+		9550-0-0-0	
MC610NS-228.2	9509-6-0-0	9509-6-1-0	GS223		9509-6-2-0	TP-1386		9099-3-0-0	ITP 1168		2711-0-0-0	P+		9550-0-0-0	
MC612N		9501-0-0-0	AF8	M22520/1-01	9502-19-0-0	TP1199		9099-3-0-0	ITP 1168		2711-0-0-0	P+		9550-0-0-0	
MC612N-228.2		9501-0-0-0	AF8	M22520/1-01	9502-19-0-0	TP1199		9099-3-0-0	ITP 1168		2711-0-0-0	P+		9550-0-0-0	
MS610NS								9099-3-0-0	ITP 1168		2711-0-0-0	P+			
MS610NS-228.2								9099-3-0-0	ITP 1168		2711-0-0-0	P+			
MS612N								9099-3-0-0	ITP 1168		2711-0-0-0	P+			
MS612N-228.2								9099-3-0-0	ITP 1168		2711-0-0-0	P+			
FST612N2								9099-3-0-0	ITP 1168		2711-0-0-0	P+			
FC111N2		9501-0-0-0	AF8	M22520/1-01	9502-1-0-0	TH4	M22520/1-03	9099-0-0-0	ITH 1094	M81969/18-01	9081-0-0-0	RTG 2103	M81969/20-01	9550-0-0-0	
FC112N2S	9509-3-0-0	9509-4-0-0	GS222		9509-5-0-0	TP-1366		9099-0-0-0	ITH 1094	M81969/18-01	9081-0-0-0	RTG 2103	M81969/20-01	9550-0-0-0	
FC120N2		9501-0-0-0	AF8	M22520/1-01	9502-1-0-0	TH4	M22520/1-03	9099-0-0-0	ITH 1094	M81969/18-01	9081-0-0-0	RTG 2103	M81969/20-01	9550-0-0-0	
FCS26N2	9506-0-0-0	9506-1-0-0	HX3		9506-2-0-0	X530		9099-0-0-0	ITH 1094	M81969/18-01	9081-0-0-0	RTG 2103	M81969/20-01		
FS111N2								9099-0-0-0	ITH 1094	M81969/18-01	9081-0-0-0	RTG 2103	M81969/20-01		
FS112N2S								9099-0-0-0	ITH 1094	M81969/18-01	9081-0-0-0	RTG 2103	M81969/20-01		
FS120N2								9099-0-0-0	ITH 1094	M81969/18-01	9081-0-0-0	RTG 2103	M81969/20-01		
MC111N		9501-0-0-0	AF8	M22520/1-01	9502-1-0-0	TH4	M22520/1-03	9099-0-0-0	ITH 1094	M81969/18-01	9081-0-0-0	RTG 2103	M81969/20-01	9550-0-0-0	
MC111N-133.*		9501-0-0-0	AF8	M22520/1-01	9502-17-0-0	TP1110		9099-0-0-0	ITH 1094	M81969/18-01	9081-0-0-0	RTG 2103	M81969/20-01	9550-0-0-0	
MC112NS	9509-3-0-0	9509-4-0-0	GS222		9509-5-0-0	TP-1366		9099-0-0-0	ITH 1094	M81969/18-01	9081-0-0-0	RTG 2103	M81969/20-01	9550-0-0-0	
MC120N		9501-0-0-0	AF8	M22520/1-01	9502-1-0-0	TH4	M22520/1-03	9099-0-0-0	ITH 1094	M81969/18-01	9081-0-0-0	RTG 2103	M81969/20-01	9550-0-0-0	
MCS26N	9506-0-0-0	9506-1-0-0	HX3		9506-2-0-0	X530		9099-0-0-0	ITH 1094	M81969/18-01	9081-0-0-0	RTG 2103	M81969/20-01		
MS111N								9099-0-0-0	ITH 1094	M81969/18-01	9081-0-0-0	RTG 2103	M81969/20-01		
MS112NS								9099-0-0-0	ITH 1094	M81969/18-01	9081-0-0-0	RTG 2103	M81969/20-01		
MS120N								9099-0-0-0	ITH 1094	M81969/18-01	9081-0-0-0	RTG 2103	M81969/20-01		



## CONTACT APPLICATION TOOLS CROSS REFERENCE LIST

USE INDICATED POSITRONIC TOOLS FOR BEST RESULTS

P C S M I X E D D E N S I T Y S E R I E S													
SIZE 8 CONTACTS													SIZE 20
Postitronic Contact P/N	Handle & Positioner P/N	Hand Crimp Tool P/N	Mfg. Cross	Mil Equiv	Positioner	Mfg. Cross	Mil Equiv	Insertion Tool	Mfg. Cross	Mil Equiv	Removal Tool	Mfg. Cross	Automatic Crimp Tool
FC720N2		9507-0-0-0	AFM8	M22520/2-01	9502-22-0-0	K1196		9089-4-0-0	ITP1076		9081-2-0-0	RNG2103	9550-1-0-0
MC720N3		9507-0-0-0	AFM8	M22520/2-01	9502-27-0-0	K1506		9089-4-0-0	ITP1076		9081-2-0-0	RNG2103	9550-1-0-0
*C4008D	9504-19-0-0	9504-1-0-0	HX4		9504-19-1-0	Y524		N/A			4311-0-0-0	P+	9555-0-2-0
*C4008DS	9504-19-0-0	9504-1-0-0	HX4		9504-19-1-0	Y524		N/A			4311-0-0-0	P+	9555-0-2-0
*C4010D	9509-0-0-0	9509-1-0-0	M310		9509-2-0-0	TP-974		N/A			4311-0-0-0	P+	9555-0-2-0
*C4012D	9509-0-0-0	9509-1-0-0	M310		9509-2-0-0	TP-974		N/A			4311-0-0-0	P+	9555-0-2-0
*C4016D	9509-0-0-0	9509-1-0-0	M310		9509-2-0-0	TP-974		N/A			4311-0-0-0	P+	9555-0-2-0
*S40**D								N/A			4311-0-0-0	P+	
*S4120D								N/A			4311-0-0-0	P+	
*C4101D	9504-0-0-0	9504-1-0-0	HX4	M22520/5-01	9504-2-0-0	Y322		N/A			4311-0-0-0	P+	
*C4102D	9504-0-0-0	9504-1-0-0	HX4	M22520/5-01	9504-2-0-0	Y322		N/A			4311-0-0-0	P+	
*C4103D	9504-0-0-0	9504-1-0-0	HX4	M22520/5-01	9504-2-0-0	Y322		N/A			4311-0-0-0	P+	
*C4104D	9504-0-0-0	9504-1-0-0	HX4	M22520/5-01	9504-2-0-0	Y322		N/A			4311-0-0-0	P+	
*S4101D								N/A			4311-0-0-0	P+	
*S4102D								N/A			4311-0-0-0	P+	
*S4103D								N/A			4311-0-0-0	P+	
*S4104D								N/A			4311-0-0-0	P+	
*CC4101D	9504-14-0-0	9504-1-0-0	HX4	M22520/5-01	9504-14-1-0	Y878		N/A			4311-0-0-0	P+	
*CC4102D	9504-13-0-0	9504-1-0-0	HX4	M22520/5-01	9504-13-1-0	Y937		N/A			4311-0-0-0	P+	
*CC4103D	9504-15-0-0	9504-1-0-0	HX4	M22520/5-01	9504-15-1-0	Y877		N/A			4311-0-0-0	P+	
*CC4104D	9504-15-0-0	9504-1-0-0	HX4	M22520/5-01	9504-15-1-0	Y877		N/A			4311-0-0-0	P+	

DIMENSIONS ARE IN INCHES [MILLIMETERS].  
ALL DIMENSIONS ARE SUBJECT TO CHANGE.



## PRESS-FIT USER INFORMATION

When properly used, Positronic Industries' Bi-Spring Power Press-Fit terminations provide reliable service even under severe conditions.

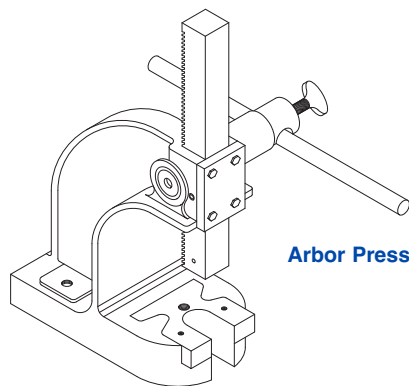
**Connectors utilizing this leading technology press-fit contact are easy to install:**

1. Choose the proper tooling. Inexpensive insertion tooling and single contact repair tooling are available from Positronic.
2. Insert the connector into the P.C. board or backplane and seat connector fully.
3. Secure the connector to the P.C. board or backplane using two self-tapping screws. The screws should be #2 self-tapping screws for plastic.

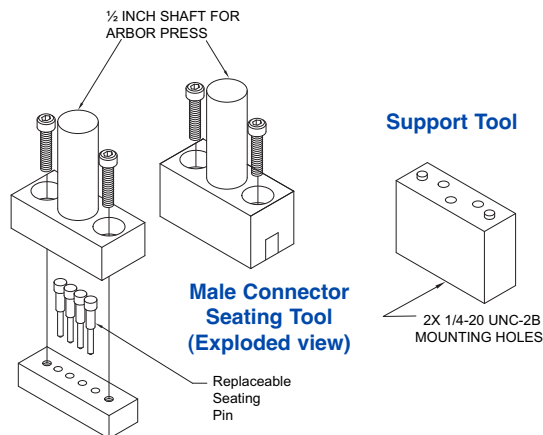
***Need to repair a single contact because of damage in manufacturing, testing, or field use?***

- 1. Choose the proper contact extraction tool.***
- 2. Push the contact out with a firm, steady force. Remember, excessive force is not required.***
- 3. Install a new contact with the proper contact insertion tool. You are finished. Replacing a single contact instead of an entire connector can allow considerable cost savings. This is particularly true when considering the risk of damage to P.C. boards and backplanes that can occur if the entire connector must be replaced.***

## COMPLIANT TERMINATION PRESS-FIT CONNECTOR INSTALLATION TOOLS



Arbor Press



Male Connector  
Seating Tool  
(Exploded view)




Female Connector  
Seating Tool  
(Exploded view)

Support Tool

2X 1/4-20 UNC-2B  
MOUNTING HOLES

Replaceable  
Seating  
Pin

### POSITRONIC RECOMMENDED TOOLS

CONNECTOR VARIANT	CONNECTOR SEATING TOOL WITH ARBOR PRESS SHAFT		CONNECTOR SEATING TOOL WITHOUT ARBOR PRESS SHAFT	
	MALE	FEMALE	MALE	FEMALE
PLA03	9513-1-0-41	9513-13-0-41	—	—
PLA04	9513-2-0-41	9513-14-0-41	—	—
PLA06	9513-3-0-41	9513-15-0-41	—	—
PLA08	9513-4-0-41	9513-16-0-41	—	—
PLB06	9513-5-0-41	9513-17-0-41	—	—
PLB08	9513-6-0-41	9513-18-0-41	—	—
 PLB10W2	9513-7-0-41	9513-30-0-41	—	—
PLB12	9513-7-0-41	9513-19-0-41	—	—
PLB16	9513-8-0-41	9513-20-0-41	—	—
 PLB20	9513-33-0-41	9513-34-0-41	—	—
PLB3W3	9513-6-0-41	9513-18-1-41	9513-6-10-41	9513-18-11-41
PLC09	9513-9-0-41	9513-21-0-41	—	—
PLC12	9513-10-0-41	9513-22-0-41	—	—
 PLC16W4	9513-11-0-41	9513-31-0-41	—	—
PLC18	9513-11-0-41	9513-23-0-41	—	—
PLC24	9513-12-0-41	9513-24-0-41	—	—
PLC30	9513-25-0-41	9513-26-0-41	—	—
Arbor press for connector seating tools: 9530-1-0-0 1 ton capacity 4 inch throat				
Replacement pins for connector seating tool	PCS Mixed Density Series Size 20		855-347-18-41	
	PCS Series Size 16		855-658-1-41 (female)	
	PLB3W3 Series Size 12		855-347-11-41 (female)	
	PCS Mixed Density Series Size 8		855-347-19-41	
Support tool for PLB3W3: 9513-401-6-41				



## SUGGESTED PRINTED BOARD HOLE SIZES FOR COMPLIANT PRESS-FIT CONNECTORS

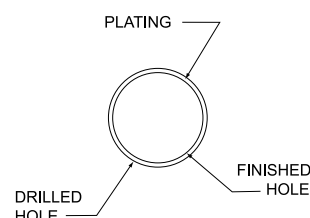
Traditionally, tin-lead has been a popular plating for PBC holes. However, many PCB hole platings must now be RoHS Compliant. Positronic is pleased to offer **PCB HOLE SIZE FOR RoHS** PCB plating as shown below.

OMEGA & BI-SPRING COMPLIANT PRESS-FIT CONTACT HOLE				
BOARD TYPE	CONTACT SIZE / TYPE	RECOMMENDED DRILL HOLE SIZE	RECOMMENDED PLATING	FINISHED HOLE SIZES
TIN-LEAD SOLDER PCB	20 OMEGA	$\phi 0.0453 \pm 0.0010$ [ $\phi 1.150 \pm 0.025$ ]	0.0006 [15 $\mu$ ] minimum solder over 0.0010 [25 $\mu$ ] min. copper	$\phi 0.0394 \pm 0.0035 - 0.0024$ [ $\phi 1.000 \pm 0.090 - 0.060$ ]
	16 BI-SPRING	$\phi 0.069 \pm 0.001$ [ $\phi 1.750 \pm 0.025$ ]		$\phi 0.0630 \pm 0.0035 - 0.0024$ [ $\phi 1.600 \pm 0.090 - 0.060$ ]
	12 BI-SPRING	$\phi 0.102 \pm 0.001$ [ $\phi 2.59 \pm 0.025$ ]		$\phi 0.096 \pm 0.002$ [ $\phi 2.44 \pm 0.05$ ]
	8 BI-SPRING	$\phi 0.125 \pm 0.001$ [ $\phi 3.180 \pm 0.025$ ]		$\phi 0.119 \pm 0.002$ [ $\phi 3.02 \pm 0.05$ ]
RoHS PCB PLATING OPTIONS				
COPPER PCB	20 OMEGA	$\phi 0.047 \pm 0.001$ [ $\phi 1.19 \pm 0.025$ ]	0.0010 [25 $\mu$ ] min. copper	$\phi 0.043 \pm 0.002$ [ $\phi 1.09 \pm 0.05$ ]
	16 BI-SPRING	$\phi 0.069 \pm 0.001$ [ $\phi 1.750 \pm 0.025$ ]		$\phi 0.0630 \pm 0.0035 - 0.0024$ [ $\phi 1.600 \pm 0.090 - 0.060$ ]
	12 BI-SPRING	$\phi 0.102 \pm 0.001$ [ $\phi 2.59 \pm 0.025$ ]		$\phi 0.096 \pm 0.002$ [ $\phi 2.44 \pm 0.05$ ]
	8 BI-SPRING	$\phi 0.125 \pm 0.001$ [ $\phi 3.180 \pm 0.025$ ]		$\phi 0.119 \pm 0.002$ [ $\phi 3.02 \pm 0.05$ ]
IMMERSION TIN PCB	20 OMEGA	$\phi 0.047 \pm 0.001$ [ $\phi 1.19 \pm 0.025$ ]	0.000033 $\pm$ 0.000006 [0.85 $\pm$ 0.15 $\mu$ ] immersion tin over 0.0010 [25 $\mu$ ] min. copper	$\phi 0.043 \pm 0.002$ [ $\phi 1.09 \pm 0.05$ ]
	16 BI-SPRING	$\phi 0.069 \pm 0.001$ [ $\phi 1.750 \pm 0.025$ ]		$\phi 0.0630 \pm 0.0035 - 0.0024$ [ $\phi 1.600 \pm 0.090 - 0.060$ ]
	12 BI-SPRING	$\phi 0.102 \pm 0.001$ [ $\phi 2.59 \pm 0.025$ ]		$\phi 0.096 \pm 0.002$ [ $\phi 2.44 \pm 0.05$ ]
	8 BI-SPRING	$\phi 0.125 \pm 0.001$ [ $\phi 3.180 \pm 0.025$ ]		$\phi 0.119 \pm 0.002$ [ $\phi 3.02 \pm 0.05$ ]
IMMERSION SILVER PCB	20 OMEGA	$\phi 0.047 \pm 0.001$ [ $\phi 1.19 \pm 0.025$ ]	0.000013 $\pm$ 0.000007 [0.34 $\pm$ 0.17 $\mu$ ] immersion silver over 0.0010 [25 $\mu$ ] min. copper	$\phi 0.043 \pm 0.002$ [ $\phi 1.09 \pm 0.05$ ]
	16 BI-SPRING	$\phi 0.069 \pm 0.001$ [ $\phi 1.750 \pm 0.025$ ]		$\phi 0.0630 \pm 0.0035 - 0.0024$ [ $\phi 1.600 \pm 0.090 - 0.060$ ]
	12 BI-SPRING	$\phi 0.102 \pm 0.001$ [ $\phi 2.59 \pm 0.025$ ]		$\phi 0.096 \pm 0.002$ [ $\phi 2.44 \pm 0.05$ ]
	8 BI-SPRING	$\phi 0.125 \pm 0.001$ [ $\phi 3.18 \pm 0.025$ ]		$\phi 0.119 \pm 0.002$ [ $\phi 3.02 \pm 0.05$ ]
ELECTROLESS NICKEL / IMMERSION GOLD PCB	20 OMEGA	$\phi 0.047 \pm 0.001$ [ $\phi 1.19 \pm 0.025$ ]	0.000002 [0.05 $\mu$ ] min. immersion gold over 0.000177 $\pm$ 0.000059 [4.5 $\pm$ 1.5 $\mu$ ] electroless nickel per IPC-4552 over 0.0010 [25 $\mu$ ] min. copper	$\phi 0.043 \pm 0.002$ [ $\phi 1.09 \pm 0.05$ ]
	16 BI-SPRING	$\phi 0.069 \pm 0.001$ [ $\phi 1.750 \pm 0.025$ ]		$\phi 0.0630 \pm 0.0035 - 0.0024$ [ $\phi 1.600 \pm 0.090 - 0.060$ ]
	12 BI-SPRING	$\phi 0.102 \pm 0.001$ [ $\phi 2.59 \pm 0.025$ ]		$\phi 0.096 \pm 0.002$ [ $\phi 2.44 \pm 0.05$ ]
	8 BI-SPRING	$\phi 0.125 \pm 0.001$ [ $\phi 3.180 \pm 0.025$ ]		$\phi 0.119 \pm 0.002$ [ $\phi 3.02 \pm 0.05$ ]

## “Omega” Termination



## “Bi-Spring” Termination

COMPLIANT  
PRESS-FIT TERMINATION  
CONTACT HOLE

**NOTE:** For PCB plating compositions not shown, consult Technical Sales.

## POSITRONIC PRODUCTS

### Power

**Contact Sizes:** 0, 8, 12, 16, 20 and 22  
**Current Ratings:** To 100 amperes  
**Terminations:** Crimp, wire solder, straight solder, right angle solder, straight press-fit and right angle (90°) press-fit  
**Configurations:** Multiple variants in a variety of package sizes  
**Compliance:** PICMG 2.11, PICMG 3.0, VITA 41



**FEATURES:** Hot swap capability • AC/DC operation in a single connector • Signal contacts for hardware management • Blind mating • Sequential mating • Large surface area contact mating system • Wide variety of accessories • Customer specified contact arrangements

### D-subminiature

**Contact Sizes:** 8, 20 and 22  
**Current Ratings:** To 40 amperes nominal  
**Terminations:** Crimp, wire solder, straight solder, right angle (90°) solder and straight press-fit  
**Configurations:** Multiple variants in both standard and high densities  
**Qualifications:** MIL-DTL-24308, Goddard Space Flight S-311-P, SAE AS 39029, IP65, IP67



**FEATURES:** Three performance levels available: professional quality, military quality and space-flight quality provide multiple performance-to-cost choices • Options include thermocouple contacts, air coupling, environmentally sealed and dual port package including mixed density • Broad selection of accessories

### Rectangular

**Contact Sizes:** 16, 20 and 22  
**Current Ratings:** To 13 amperes  
**Terminations:** Crimp, wire solder, straight solder and right angle (90°) solder  
**Configurations:** Multiple variants in both standard and high densities  
**Qualifications:** MIL-DTL-28748, SAE AS 39029, CCITT V.35



**FEATURES:** Two performance levels available: industrial quality and military quality provide two performance to cost choices • Large surface area contact mating system • A wide variety of accessories • Broad selection of contact variants and package sizes

### Circular

**Contact Sizes:** 12, 16, 20 and 22  
**Current Ratings:** To 25 amperes nominal  
**Terminations:** Crimp, wire solder, straight solder and right angle (90°) solder  
**Configurations:** Multiple variants  
**Qualifications:** Environmental protection to IP67



**FEATURES:** Non-corrodible / lightweight composite construction • EMI/RFI shielded versions • Thermocouple contacts • Environmentally sealed versions • Rear insertion/front release of removable contacts • Two level sequential mating • Overmolding available on full assemblies

### Cable

All Positronic connector products can be supplied as part of cable assemblies whose technical characteristics would reflect those of the connectors being used within the assembly.



**FEATURES:** Shorten the supply chain and reduce additional costs and delays by "cabling" • Overmolding available • Shielded and environmentally sealed versions available • Power cables and access boxes which meet the SAE J2496 specification

### Hermetic

**Contact Sizes:** 8, 12, 16, 20 and 22  
**Current Ratings:** To 40 amperes nominal  
**Terminations:** Feedthrough is standard; flying leads and board mount available upon request  
**Configurations:** See D-subminiature and circular configurations above  
**Qualifications:** Space-D32



**FEATURES:** Intended for use as an electrical feedthrough in high vacuum applications • Leakage rate:  $5 \times 10^{-9}$  mbar.l/s @ vacuum  $1.5 \times 10^{-5}$  atm • Signal, power, coax and high voltage versions available • Connectors can be mounted on flange assembly per customer specification

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