



# ASSEMBLY, INSTALLATION, AND REMOVAL OF CONTACTS AND MODULES

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MICRO POWER

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RECEIVER CONTACT ASSEMBLY

PART # 610142101 / 910101102 / 910101103 / 910104145



CRIMP TOOL SETUP

- 1. Set up the Crimp Tool, Part # 910101102 (**Figure A**), by loosening the contact retainer latch assembly using the locking screw (turn counter-clockwise to loosen). Remove any previously used locator.
- 2. Insert the open end of the Locator, Part # 910104145 (**Figure B**), into the contact retainer assembly.
- 3. Slide the crimp tool retaining latch to the locator until the locator is securely held in place and tighten the latch locking screw.

CRIMP TOOL ADJUSTMENT AND WIRE PREPARATION

- 1. Using **Table 1**, determine the appropriate crimp tool setting and wire strip length according to the wire gauge being used.
- 2. Pull and turn the microcrimp adjusting knob (clockwise to increase, counter-clockwise to decrease settings) to adjust the crimp tool until the appropriate setting is achieved (**Table 1**). Verify with gauge pin. See calibration instructions for Part # 910101102/103 for gauge pin verification steps in the Calibration Manual located at vpc.com.
- 3. Strip wire to the appropriate length (**Table 1**).

CONTACT SETUP AND CRIMPING

- 1. Insert the contact into the crimp tool.  
*NOTE: Contact will drop completely into the crimp tool.*
- 2. Once the contact is properly inserted into the crimp tool, insert the stripped wire fully into the contact and squeeze the crimp tool handle fully until reaching a positive stop.

*NOTE: Crimp tool will automatically release and return to open position when crimp is complete.*

- 3. Remove the crimped contact (**Figure C**).

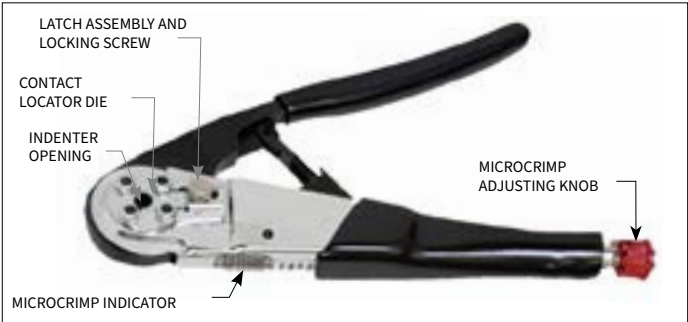


Figure A. Crimp Tool, Part # 910101102.



Figure B. Locator, Part # 910104145.



Figure C. Correctly assembled contact.

Table 1.

WIRE GAUGE	STRIP LENGTH (IN [MM])	CRIMP SETTING (IN [MM])		PULLOUT FORCE (LB [N])
		MAX	MIN	
12 (Stranded)	0.20 [5.08]	0.075 [1.91]	0.074 [1.88]	50 [222.4]
14 (Stranded)	0.20 [5.08]	0.070 [1.78]	0.069 [1.75]	50 [222.4]

*NOTE: 12 and 14 AWG wire can be crimped or soldered. Smaller wire should be soldered only.*



**OBSERVE PRECISION RATCHET ACTION BY OPENING AND CLOSING CRIMP TOOL FULLY SEVERAL TIMES. NOTE THAT TOOL CANNOT BE OPENED WITHOUT COMPLETING A CYCLE. NEVER ATTEMPT TO DISASSEMBLE TOOL. NEVER TIGHTEN OR LOOSEN STOP NUTS ON BACK OF TOOL.**

## RECEIVER CONTACT INSTALLATION AND REMOVAL FOR 90 SERIES MODULES

PART # 610142101 / 610142102 / 510104267 / 910112123

### CONTACT INSTALLATION INSTRUCTIONS

1. Assemble the contact to the respective wire.

*NOTE: For more information concerning the contact assembly process, see contact assembly instructions in this User Manual.*

2. Insert the terminated contact into the back of the assembled module. The contact can only go into one side. Once in place, pull the wire slightly to ensure that the contact is seated.

### CONTACT REMOVAL INSTRUCTIONS

1. Remove the module from the receiver frame.

*NOTE: For more information concerning the process of removing the module from the receiver frame, see module installation and removal instructions in this User Manual.*

2. Use a Phillips Head screwdriver to remove the two 2-56 screws located at the top and bottom of the module. (Phillips head screwdriver for iCon modules.)
3. Grasp the module halves and apply force in opposite directions, rocking the ends of the module while slightly pulling the top of the module away from the mating bottom section, until separated. Be sure to open both sides of the module simultaneously or contacts could be damaged.
4. Place the Micro Power Receiver/ITA Extraction Tool (**Figure A**) over the contact to be removed/replaced. Use care to keep the tool perpendicular to the surface of the module, otherwise the tool or contact could be damaged.
5. Once the extraction tool is seated and the retaining tabs on the retaining ring are compressed (**Figure B**), push the plunger. The contact will be pushed out of the rear of the module.

**DO NOT DEPRESS THE PLUNGER ON THE BACK OF THE EXTRACTION TOOL UNTIL THE TIP OF THE EXTRACTION TOOL HAS FULLY SEATED INTO THE MODULE AND COMPRESSED THE RETAINING RING TABS ON THE CONTACT. OTHERWISE THE RETAINING RING COULD BE DAMAGED.**



6. Replace the module top half using both hands to push the separated halves together. Replace and tighten the module flat head screws to a maximum torque of 1.5 in-lbs [0.169 Nm].

*NOTE: The process shown here uses standard/90 series modules. The same process is used for modules from other series.*

*NOTE: If you are using a hybrid module, you may need to reference the User Manual for the other contact type for extraction instructions.*



Figure A. Ensure that the tool is kept perpendicular to the module face to avoid damage to the contact or tool.

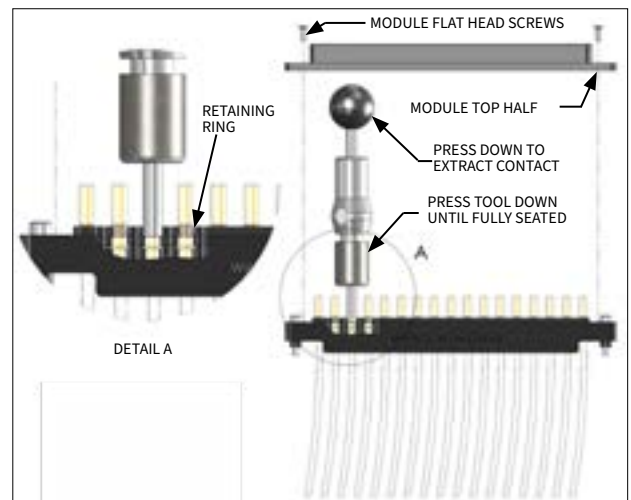


Figure B. Push the plunger only after the retaining tabs are compressed.

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## RECEIVER CONTACT INSTALLATION AND REMOVAL FOR ICON MODULES

PART # 610142101 / 610142102 / 510104270 / 910112123

### TOOLS REQUIRED

3/64 Allen Wrench  
Phillips Head Screwdriver (for iCon modules)

### CONTACT INSTALLATION INSTRUCTIONS

1. Assemble the contact to the respective wire.

*NOTE: For more information concerning the contact assembly process please see contact assembly instructions in this User Manual.*

2. Insert the terminated contact into the back (wiring side) of the assembled module. The contact can only go into one side. Once in place, pull the wire slightly to ensure that the contact is seated.

### CONTACT REMOVAL INSTRUCTIONS

1. Remove the module from the receiver frame.

*NOTE: For more information concerning the process of removing the module from the receiver frame, see module installation and removal instructions in this User Manual.*

2. Use a 3/64 Allen wrench to remove the 0-80 screws (**Figure A**).
3. Grasp the module halves and apply force in opposite directions, rocking the ends of the module while slightly pulling the top of the module away from the mating bottom section, until separated. Be sure to open both sides of the module simultaneously or contacts could be damaged.
4. Place the Micro Coax/Power Receiver/ITA Extraction Tool, part # 910112123 (**Figure A**), over the contact to be removed/replaced. Use care to keep the tool perpendicular to the surface of the module, otherwise the tool or contact could be bent.
5. Once the extraction tool is seated and the retaining tabs on the retaining ring are compressed (Figure B), push the plunger. The contact will be pushed out of the rear of the module.



**DO NOT DEPRESS THE PLUNGER ON THE BACK OF THE EXTRACTION TOOL UNTIL THE TIP OF THE EXTRACTION TOOL HAS FULLY SEATED INTO THE MODULE AND COMPRESSED THE RETAINING RING TABS ON THE CONTACT, OTHERWISE THE RETAINING RING COULD BE DAMAGED.**

6. Replace the module cap using both hands to push the separated halves together. Replace and tighten the module retaining screws to a maximum torque of .875 in-lbs [0.10 Nm].

*NOTE: If you are using a hybrid module, you may need to reference the User Manual for the other contact type for extraction instructions.*



Figure A. The Micro Power module has six 0-80 screws to be removed. Ensure that the tool is kept perpendicular to the module face to avoid damage to the contact or tool.

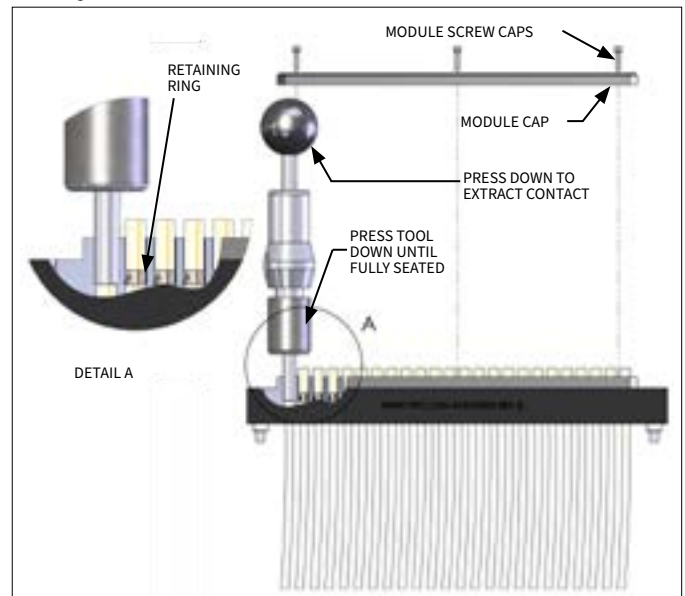


Figure B. Fully seat the extraction tool before depressing.

## ITA CONTACT ASSEMBLY

PART # 610143101 / 910101102 / 910101103 / 910104144



### CRIMP TOOL SETUP

1. Set up the Crimp Tool, Part # 910101102 (**Figure A**), by loosening the contact retainer latch assembly using the locking screw (turn counter-clockwise to loosen). Remove any previously used locator.
2. Insert the open end of the Locator, Part # 910104144 (**Figure B**), into the contact retainer assembly.
3. Slide the crimp tool retaining latch to the locator until the locator is securely held in place and tighten the latch locking screw.

### CRIMP TOOL ADJUSTMENT AND WIRE PREPARATION

1. Using **Table 1**, determine the appropriate crimp tool setting and wire strip length according to the wire gauge being used.
2. Pull and turn the microcrimp adjusting knob (clockwise to increase, counter-clockwise to decrease settings) to adjust the crimp tool until the appropriate setting is achieved (**Table 1**). Verify with gauge pin. See calibration instructions for Part # 910101102/103 for gauge pin verification steps in the Calibration Manual located at vpc.com.
3. Strip wire to the appropriate length (**Table 1**).

### CONTACT SETUP AND CRIMPING

1. Insert the contact into the crimp tool.

*NOTE: Contact will drop completely into the crimp tool.*

2. Once the contact is properly inserted into the crimp tool, insert the stripped wire fully into the contact and squeeze the crimp tool handle fully until reaching a positive stop.

*NOTE: Crimp tool will automatically release and return to open position when crimp is complete.*

3. Remove the crimped contact (**Figure C**).

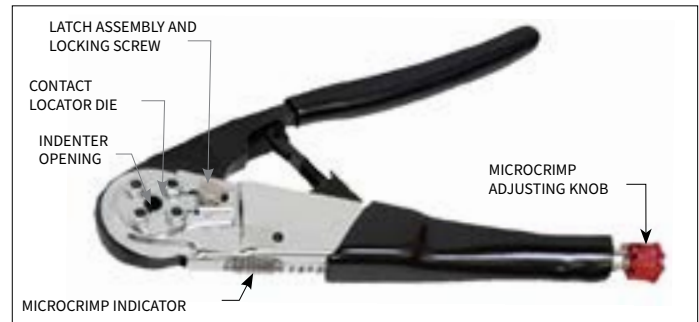


Figure A. Crimp Tool, Part # 910101102.



Figure B. Locator, Part # 910104144.



Figure C. Correctly assembled contact.



**OBSERVE PRECISION RATCHET ACTION BY OPENING AND CLOSING CRIMP TOOL FULLY SEVERAL TIMES. NOTE THAT TOOL CANNOT BE OPENED WITHOUT COMPLETING A CYCLE. NEVER ATTEMPT TO DISASSEMBLE TOOL. NEVER TIGHTEN OR LOOSEN STOP NUTS ON BACK OF TOOL.**

Table 1.

WIRE GAUGE	STRIP LENGTH (IN [MM])	CRIMP SETTING (IN [MM])		PULLOUT FORCE (LB [N])
		MAX	MIN	
12 (Stranded)	0.20 [5.08]	0.075 [1.91]	0.074 [1.88]	50 [222.4]
14 (Stranded)	0.20 [5.08]	0.070 [1.78]	0.069 [1.75]	50 [222.4]

*NOTE: 12 and 14 AWG wire can be crimped or soldered. Smaller wire should be soldered only.*

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## ITA CONTACT INSTALLATION AND REMOVAL

PART # 610143101 / 910112123

### CONTACT INSTALLATION INSTRUCTIONS

1. Assemble the contact to the respective wire.

*NOTE: For more information concerning the contact assembly process please see contact assembly instructions in this User Manual.*

2. Insert the assembled contact into the back (wiring side) of the module. Push the contact forward until the crimp is inside the module housing. Once in place, pull the wire slightly to ensure the contact is seated.

### CONTACT REMOVAL INSTRUCTIONS

1. Remove the module from the ITA frame.

*NOTE: For more information concerning the process of removing the module from the receiver frame, see module installation and removal instructions in this User Manual.*

2. Place the Micro Coax/Power Receiver/ITA Extraction Tool, part # 910112123 (**Figure A**), over the contact to be removed/ replaced. Use care to keep the tool perpendicular to the surface of the module as not to bend the tool or the contact to be removed. Rotate the tool slightly while pushing it into the counter bore on the mating side of the module.
3. Once the extraction tool is seated properly and the tabs on the retaining ring are compressed (**Figure B**), push the plunger. The contact will be pushed out of the rear of the module.



**DO NOT DEPRESS THE PLUNGER ON THE BACK OF THE EXTRACTION TOOL UNTIL THE TIP OF THE EXTRACTION TOOL HAS BEEN FULLY SEATED INTO THE MODULE AND COMPRESSED THE RETAINING RING TABS ON THE CONTACT, OTHERWISE THE RETAINING RING COULD BE DAMAGED.**

*NOTE: The process shown here uses standard/90 series modules. The same process is used for modules from other series.*

*NOTE: If you are using a hybrid module, you may need to reference the User Manual for the other contact type for extraction instructions.*

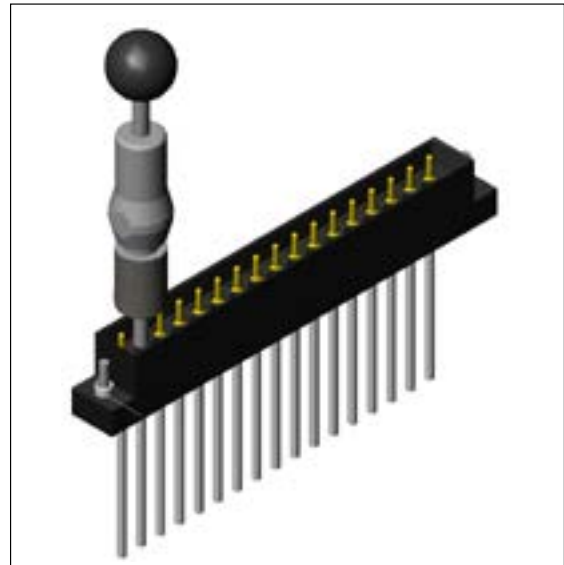


Figure A. Extraction tool, Part # 910112123.

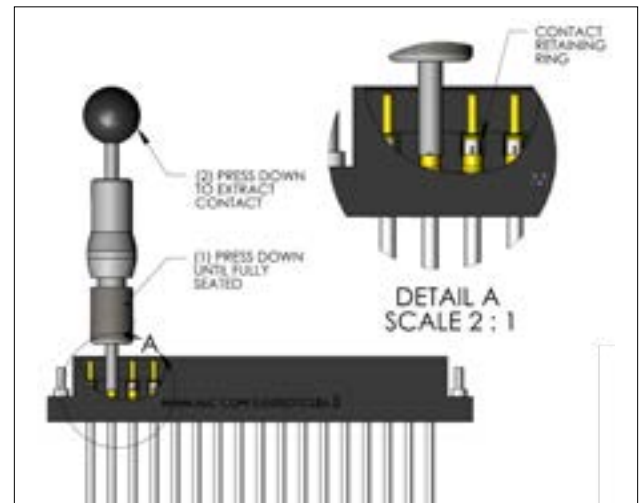


Figure B. Fully seat the extraction tool before depressing.

## 90 SERIES MODULE INSTALLATION AND REMOVAL

PART # 510108262/ 510108263/ 510104267/ 510104270

### TOOLS REQUIRED

3/32 Allen Wrench

### INSTALLATION INSTRUCTIONS

1. Place the module in the receiver or ITA until the upper and lower module screws touch the mating holes in the inner frame. Ensure that Position 1 is located at the top for systems in which the modules are oriented vertically or to the left for systems in which the modules are oriented horizontally.
2. Using a 3/32 Allen wrench, tighten the top screw 1 to 2 full revolutions, while pushing lightly against the face of the module.
3. Maintain this pressure while tightening the bottom screw 1 to 2 full revolutions.
4. Repeat this sequence until the module is seated. Torque the screw to 4 in-lbs [0.45 Nm].

### REMOVAL INSTRUCTIONS

1. To remove, loosen the top screw 1 to 2 full revolutions. Loosen bottom screw 1 to 2 full revolutions.
2. Repeat this sequence until the module is separated from the receiver or ITA.

*NOTE: For optimum performance and system longevity, distribute the contact load evenly throughout the module.*

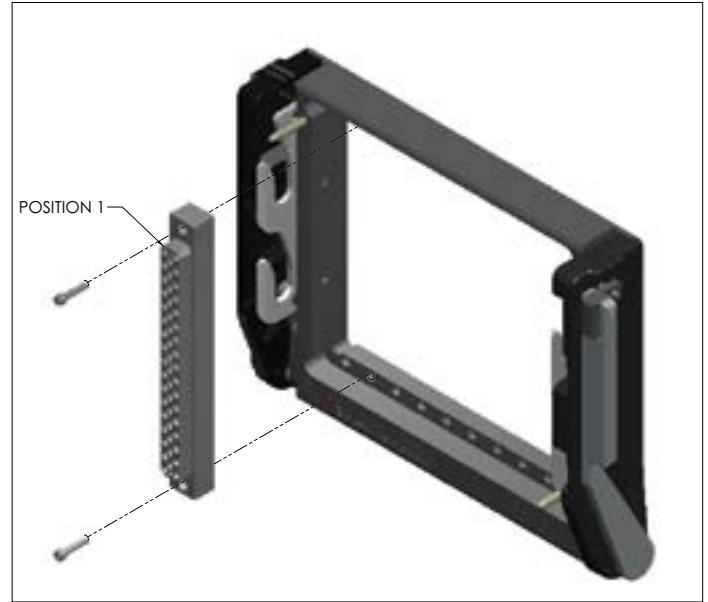


Figure A. Receiver Module.



Figure B. ITA Module.



## ICON MODULE INSTALLATION AND REMOVAL

PART # 510161106/ 510161107/ 510161111/ 510160106/  
510160107/ 510160111/ 510160112/ 510160113

### TOOLS REQUIRED

Phillips Head Screwdriver

### INSTALLATION INSTRUCTIONS

*NOTE: The receiver strain relief plate or the ITA cover may need to be removed prior to installing or removing an iCon module. Please refer to the appropriate User Manual for instructions on how to perform these steps.*

1. Place the module in the receiver or ITA until the upper and lower module screws touch the mating holes in the inner frame. Install modules such that Position 1 is located at the top of the ITA/receiver frame.
2. Using a Phillips head screwdriver, tighten the top screw 1 to 2 full revolutions, while pushing lightly against the face of the module.
3. Maintain this pressure while tightening the bottom screw 1 to 2 full revolutions.
4. Repeat this sequence until the module is seated. Torque the screw to 1.5 in-lbs [0.16 Nm].

### REMOVAL INSTRUCTIONS

1. To remove, loosen the top screw 1 to 2 full revolutions. Loosen bottom screw 1 to 2 full revolutions.
2. Repeat this sequence until the module is separated from the receiver or ITA.

*NOTE: For optimum performance and system longevity, distribute the contact load evenly throughout the module.*

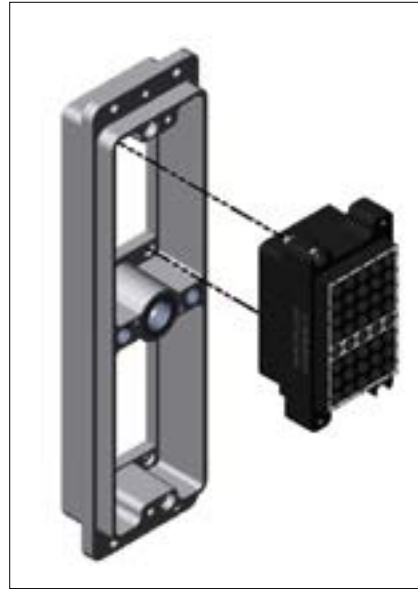


Figure A. Receiver Module.

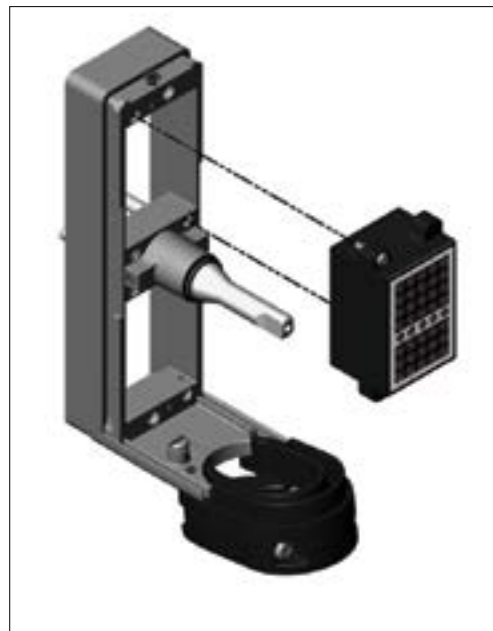


Figure B. ITA Module.



## CROSS REFERENCE TABLES

RECEIVER CONTACTS	STANDARD/ 90 SERIES RECEIVER MODULES		ICON RECEIVER MODULES					CRIMP TOOL	LOCATOR	EXTRACTION
	510104267	510104270	510160106	510160107	510160111	510160112	510160113	910101102	910104145	910112123
610142101	X	X	X	X	X	X	X	X	X	X
610142102	X	X	X	X	X	X	X			X

ITA CONTACT	STANDARD/ 90 SERIES ITA MODULES		ICON ITA MODULES			CRIMP TOOL	LOCATOR	EXTRACTION
	510108262	510108263	510161106	510161107	510161111	910101102	910104144	910112123
610143101	X	X	X	X	X	X	X	X

## CONTACT PERFORMANCE SPECIFICATIONS

PART # 610142101 / 610143101

### Electrical Specifications

<b>CURRENT RATING</b>	21 AMP Continuous
<b>DIELECTRIC WITHSTANDING VOLTAGE (DWV)</b>	1500 VDC Min.
<b>CONTACT RESISTANCE</b>	1.5 mOhms Max.

### Mechanical Characteristics

<b>CYCLE LIFE</b>	10,000
<b>MATING FORCE</b>	2.0 lbs max [0.91 kg]

### Material

<b>CONTACT BODY</b>	Brass per ASTM - B-16 / .000015 Min." Au over .000100" Ni
<b>RETAINING RING</b>	BeCu per ASTM - B-196 / .000100" Ni