



# ASSEMBLY, INSTALLATION, AND REMOVAL OF CONTACTS AND MODULES

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FOR TRIPADDLE SIGNAL CONTACTS AND MODULES

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For the most current information available, visit [vpc.com](http://vpc.com).*

# RECEIVER CONTACT CRIMP TOOL SETUP, ADJUSTMENT, & WIRE PREP

RECEIVER PART # 610 110 101/ 610 110 125/ 610 110 167/ 610 110 171/ 610 110 177/ 610 110 128

## TOOLS REQUIRED

Crimp Tool, Part # 910 101 103, 910 101 102

Locator, Part # 910 104 127, 910 104 146

*Locator Part #910 104 107 can be substituted for 910 104 127; however, VPC recommends the use of Part # 910 104 127.*

## CRIMP TOOL SETUP

1. Set up the Crimp Tool, (**Figure A**), by loosening the latch-locking screw (turn counter-clockwise to loosen). Remove any previously used locator.
2. Insert the open end of the Locator, (**Figure B**), into the crimp tool locator retainer (expect a tight tolerance fit).
3. Slide the retaining latch toward the locator until the locator is securely locked into place. Tighten the latch-locking screw.

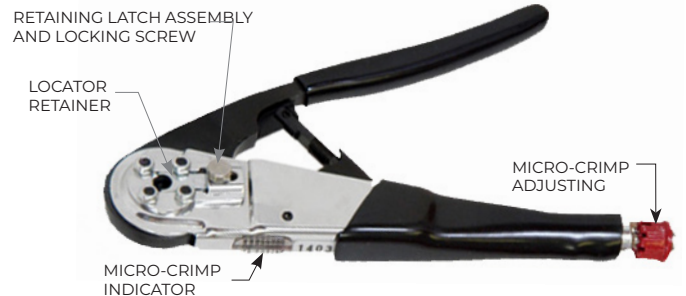


Figure A. Crimp Tool, Part # 910 101 103.

## CRIMP TOOL ADJUSTMENT AND WIRE PREP

1. Adjust the crimp tool setting by pulling the micro-crimp adjusting knob and turning it at the same time (clockwise increases, counter-clockwise decreases setting) until the desired setting is achieved on the micro-crimp indicator (**Table 1, Page 2**). Verify with pin gauge. See calibration instructions for Part # 910 101 103 for pin gauge verification instructions.
2. Determine the strip length according to wire gauge (**Table 1, Page 2**).
3. Strip wire.

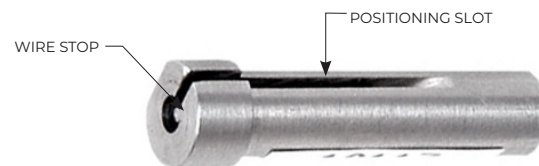


Figure B. Locator positioning slot and wire stop only found on Part # 910 104 127.

4. Hold the crimp tool parallel to the floor (**Figure C**). Insert the contact into the crimp tool. For contacts using the crimp contact locator, Part # 910 104 127, align the contact retaining tab (**Figure D**) with the positioning slot in the crimp contact locator and insert the contact into the crimp tool.

*NOTE: The contact will drop completely into the crimp tool if properly positioned. If the contact does not drop completely into the crimp tool, remove the contact, ensure that the contact retaining tab is properly aligned with the contact crimp locator, and re-insert the contact into the crimp tool. Do not force the contact into the crimp tool, as contact damage will occur.*

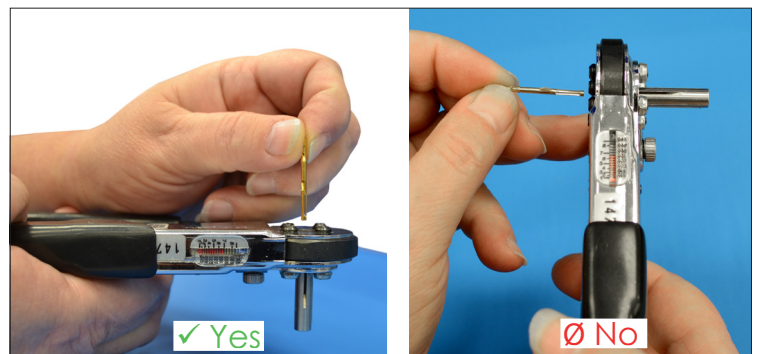


Figure C. Appropriate method for inserting contact into crimp tool.

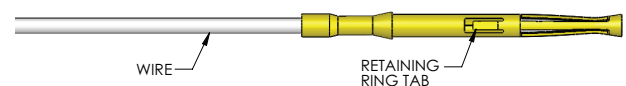


Figure D. Contact retaining tab must be aligned with the contact locator positioning slot.

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Table 1.

CONTACT	CRIMP TOOL	LOCATOR DIE	STRIP LENGTH (IN [MM])	WIRE GAUGE	CRIMP SETTING (IN [MM])		PULLOUT FORCE (LBS [N])
					MAX	MIN	
610110101 & 610110125	910101103	910104127	If Insulation Dia. <0.058" [1.47]. Strip Length = 0.20" [5.08] If Insulation Dia. >0.058" [1.47], Strip Length = .28" [7.11]**	20	0.037 [0.94]	0.033 [0.84]	10 [44.5]
				22	0.033 [0.84]	0.029 [0.74]	
				24	0.028 [0.71]	0.025 [0.64]	8 [35.6]
			0.28" [7.11]**	2-24*	0.036 [0.91]	0.033 [0.84]	8* 35.6]*
			0.28" [7.11]**	2-26*	0.034 [0.86]	0.032 [0.81]	4* [17.8]*
				3-26*	0.037 [0.94]	0.035 [0.89]	
610110167 & 610110171			If Insulation Dia. <0.037" [0.94]. Strip Length = 0.20" [5.08] If Insulation Dia. >0.037" [.94], Strip Length = .28" [7.11]**	26	0.028 [0.71]	0.024 [0.61]	4 [17.8]
				28	0.024 [0.61]	0.021 [0.53]	2* [8.9]*
			0.28" [6.35]**	2-28*	0.028 [0.71]	0.026 [0.66]	1.0* [4.4]*
			If Insulation Dia. <0.037" [0.94]. Strip Length = 0.20" [5.08] If Insulation Dia. >0.037" [.94], Strip Length = .28" [7.11]**	30	0.022 [0.56]	0.020 [0.51]	
				0.28" [6.35]**	2-30*	0.026 [0.66]	
			610110128 & 610110177	910101102	910104146	If Insulation Dia. <0.072" [1.47]. Strip Length = 0.26" [6.60] If Insulation Dia. >0.072" [1.47], Strip Length = .30" [7.62]**	
16	0.048	0.044					
18	0.042	0.040					
0.30" [7.62]**	2-20	0.044				0.040	
	2-22	0.035				0.031	

\*Pullout force is for individual wires

\*\*For strip lengths of 0.28" [7.11] and 0.30" [7.62], shrink tubing is recommended for strain relief at the rear of the contact. Tubing should not cover the inspection hole at the rear of the contact.

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## CRIMPING INSTRUCTIONS FOR RECEIVER CONTACTS

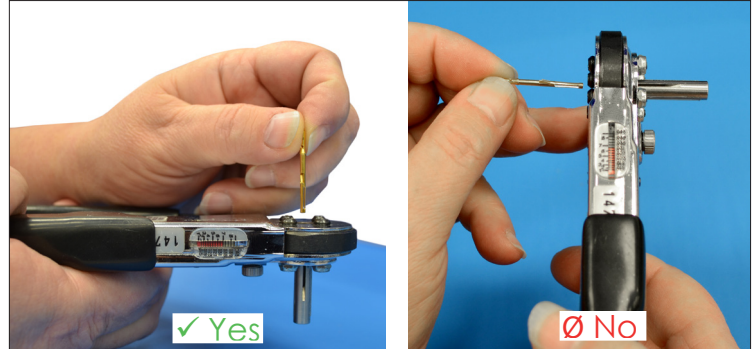
RECEIVER PART # 610 110 177/ 610 110 128/ 610 110 101/ 610 110 167/ 610 110 171

### TOOLS REQUIRED

Crimp Tool, Part # 910 101 102/ 910 104 146

### CRIMP TOOL ADJUSTMENT AND WIRE PREP

1. Determine the strip length according to wire gauge (**Table 1, Page 2.**)
2. Strip wire.
3. Hold the crimp tool parallel to the floor (**Figure C**). Insert the contact into the crimp tool. For contacts using the crimp contact locator, Part # 910 104 146, align the contact retaining tab (**Figure D**) with the positioning slot in the crimp contact locator and insert the contact into the crimp tool.



**NOTE:** The contact will drop completely into the crimp tool if properly positioned. If the contact does not drop completely into the crimp tool, remove the contact, ensure that the contact retaining tab is properly aligned with the contact crimp locator, and re-insert the contact into the crimp tool. Do not force the contact into the crimp tool, as contact damage will occur.

Figure C. Appropriate method for inserting contact into crimp tool.

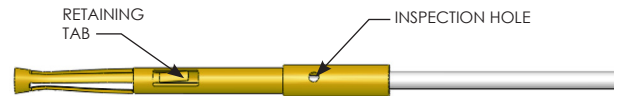


Figure D. Contact retaining tab must be aligned with the contact locator positioning slot. Shrink tubing only on Part # 610 110 174.

### CONTACT SETUP AND CRIMPING

1. Insert stripped wire fully into the contact and squeeze the crimp tool handle until a positive stop is reached. The tool will release and return into a fully "open" position. Remove crimped contact and wire.

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

### ACCEPTABLE CRIMP CRITERIA

1. Follow the instructions for tool setup to ensure the tool is ready for use.
2. Crimp the contact onto the respective wire according to the contact assembly instructions. Ensure that the crimp minimum is measured with an approved gauge pin.
3. The crimp must be between the inspection hole and the end of the contact to be acceptable. The crimp creates two distinctive indentions on four sides of the contact creating a square appearance. This is an acceptable result (**Figure E**).
4. Inspect the crimp to ensure none of the indentions are connected to the inspection hole (**Figure F**). If the indentions make contact with, or are above the inspection hole, the crimp is unacceptable.
5. Inspect the crimp to ensure none of the indentions are connected to the end of the contact. If the indentions make contact with the end of the contact, the crimp is unacceptable.

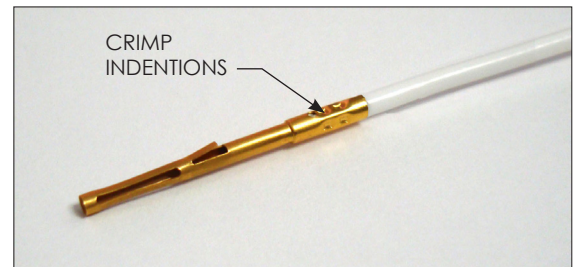


Figure E. Correct location of the crimp divots.

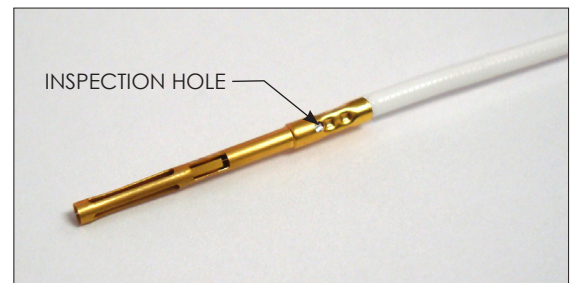


Figure F. The crimp region is between the inspection hole and the end.

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## RECEIVER CONTACT INSTALLATION & REMOVAL

RECEIVER PART # 610 110 101/ 610 110 125/ 610 110 167/ 610 110 171/ 610 110 177/ 610 110 128

### TOOLS REQUIRED

$\frac{5}{64}$  Allen Wrench  
Phillips Head Screwdriver (for Part # 510 104 149 and iCon Modules)  
TriPaddle Receiver/ITA Extraction Tool, Part # 910 110 102

### RECEIVER CONTACT INSTALLATION INSTRUCTIONS

1. Assemble the contact to the respective wire. **(See pages 1-4 of this User Manual)**
2. Insert the assembled contact into the back (wiring side) of the assembled module **(Figure A)**. The contact can only go into one side. Push the contact forward. Once in place, pull the wire slightly to ensure that the contact is seated.

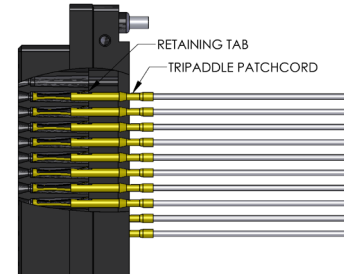


Figure A. Contacts inserted into the module.

### RECEIVER CONTACT REMOVAL INSTRUCTIONS

1. Remove the module from the receiver frame. **(See Instructions for Module Installation & Removal on page 10)**
2. Use a  $\frac{5}{64}$  Allen wrench or Phillips head screwdriver to remove the two 2-56 screws located at the top and bottom of the module **(Figure B)**.
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 bottom section. Be sure to open both sides of the module simultaneously or contacts could be damaged.
4. Place the TriPaddle Receiver/ITA Extraction Tool, Part # 910 110 102 **(Figure C)**, over the contact to be removed/ replaced. Use care to keep the tool perpendicular to the surface of the module, otherwise the tool or the contact could be bent.
5. Once the extraction tool is seated and the retaining tab on the contact are compressed, press the tool into the module. The contact will be pushed out of the rear of the module.

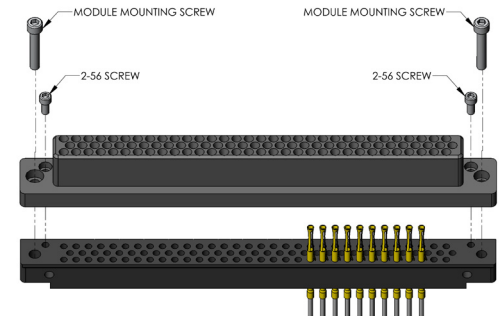


Figure B. Open both sides of the module simultaneously or pins could be damaged.

**DO NOT PRESS THE TOOL INTO THE MODULE UNTIL THE TIP OF THE EXTRACTION TOOL HAS FULLY SEATED INTO THE MODULE AND COMPRESSED THE RETAINING RING TAB ON THE CONTACT.**

6. On the opposite side of the module from the extraction tool, grasp the contact and hold it while removing the extraction tool. This will prevent the contact from being pulled back into the module while the tool is being removed.
7. 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 1.5 in-lbs [0.16 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 each respective contact type and its extraction instructions.*

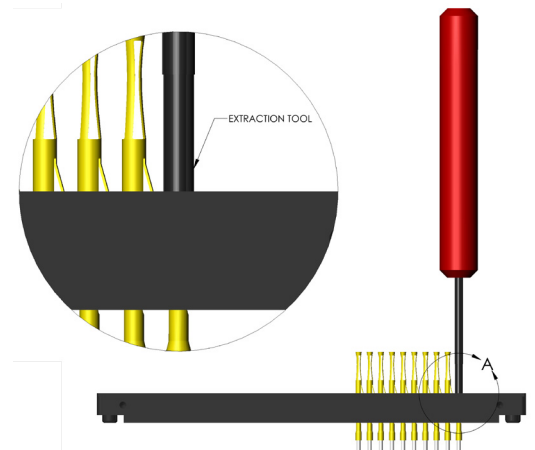


Figure C. Ensure that the tool is kept perpendicular to the module face to avoid damage to the contact or tool.

## ITA CONTACT CRIMP TOOL SETUP, ADJUSTMENT, & WIRE PREP

ITA PART # 610 110 108/ 610 110 146/ 610 110 169

### TOOLS REQUIRED

Crimp Tool, Part # 910 101 103

Locator, Part # 910 104 107

### ITA CONTACT CRIMP TOOL SETUP

1. Set up Crimp Tool, Part # 910 101 103 (**Figure A**), by loosening the latch locking screw (counter-clockwise, until turning stops). Remove any previously used locator.
2. Insert the open end of Locator, Part # 910 104 107 (**Figure B**), into the crimp tool locator retainer.
3. Slide the retaining latch toward the locator until the locator is securely locked into place. Tighten the latch locking screw.

### ITA CONTACT CRIMP TOOL ADJUSTMENT AND WIRE PREPARATION

1. Adjust the crimp tool setting by pulling the micro-crimp adjusting knob and turning it at the same time (clockwise increases, counter-clockwise decreases setting) until the desired setting is achieved on the micro-crimp indicator (**Table 2**). Verify with pin gauge. See calibration instructions for Part # 910 101 103 for pin gauge verification instructions.
2. Strip wire. (See Table 2 on next page for respective strip length)

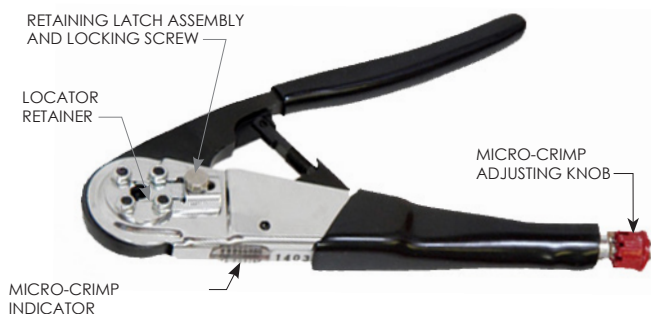


Figure A. Crimp Tool, Part # 910 101 103.

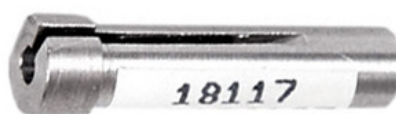


Figure B. Locator Part # 910 104 107.

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Table 2.

CONTACT	CRIMP TOOL	LOCATOR DIE	STRIP LENGTH (IN [MM])	WIRE	CRIMP SETTING (IN [MM])		PULLOUT FORCE (LBS [N])
					MAX	MIN	
610110108 & 610110146	910101103	910104107	If Insulation Dia. <0.065" [1.65]. Strip Length = 0.20" [5.08] If Insulation Dia. >0.065" [1.65], Strip Length = .28" [7.11]**	20	0.037 [0.94]	0.033 [0.84]	10 [44.5]
				22	0.033 [0.84]	0.029 [0.74]	
				24	0.029 [0.74]	0.025 [0.64]	8 [35.6]
			0.28" [7.11]**	2-24*	0.037 [0.94]	0.033 [0.84]	8* [35.6]*
				2-26*	0.033 [0.84]	0.029 [0.74]	4* [17.8]*
				3-26*	0.037 [0.94]	0.033 [0.84]	
				2-28*	0.026 [0.66]	0.024 [0.61]	2* [8.9]*
610110169			If Insulation Dia. <0.065" [0.94]. Strip Length = 0.20" [5.08] If Insulation Dia. >0.065" [1.65], Strip Length = .28" [7.11]**	26	0.028 [0.71]	0.026 [0.66]	4 [17.8]
				28	0.024 [0.61]	0.023 [0.58]	2* [8.9]*
				30	0.022 [0.56]	0.020 [0.51]	1.0* [4.4]*
			0.28" [6.35]**	2-30*	0.026 [0.66]	0.025 [0.63]	

\*Pullout force is for individual wires

\*\*For strip lengths of 0.28" [7.11] and 0.30" [7.62], shrink tubing is recommended for strain relief at the rear of the contact. Tubing should not cover the inspection hole at the rear of the contact.

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## ITA CONTACT SETUP, CRIMPING & ACCEPTABLE CRIMP CRITERIA

ITA PART # 610 110 108/ 610 110 146/ 610 110 169

### CONTACT SETUP AND CRIMPING

1. Insert the contact into the crimp tool.
2. Insert stripped wire fully into the contact and squeeze the crimp tool handle until a positive stop is reached. The tool will release and return into a fully “open” position. Remove crimped contact and wire.

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

### ACCEPTABLE CRIMP CRITERIA

1. Follow the instructions for tool setup to ensure the tool is ready for use.
2. Crimp the contact onto the respective wire according to the contact assembly instructions. Ensure that the crimp minimum is measured with an approved gauge pin.
3. The crimp must be between the inspection hole and the end of the contact to be acceptable. The crimp creates two distinctive indentions on four sides of the contact creating a square appearance. This is an acceptable result (**Figure D**).
4. Inspect the crimp to ensure none of the indentions are connected to the inspection hole (**Figure E**). If the indentions make contact with, or are above the inspection hole, the crimp is unacceptable.
5. Inspect the crimp to ensure none of the indentions are connected to the end of the contact. If the indentions make contact with the end of the contact, the crimp is unacceptable.



FIGURE D. Correct location of the crimp divots.



FIGURE E. The crimp region is between the inspection hole and the end of the contact.

NOTE: Pictures show TriPaddle contacts crimped to 14 AWG wire



## ITA CONTACT CRIMP TOOL SETUP, ADJUSTMENT, & WIRE PREP

ITA PART # 610 110 129/ 610 110 147/ 610 110 172/ 610 110 173

### TOOLS REQUIRED

Crimp Tool, Part # 910 101 102

Locator, Part # 910 104 118

### ITA CONTACT CRIMP TOOL SETUP

1. Set up Crimp Tool, Part # 910 101 102 (**Figure A**), by loosening the latch locking screw (counter-clockwise, until turning stops). Remove any previously used locator.
2. Insert the open end of Locator, Part # 910 104 118 (**Figure B**), into the crimp tool locator retainer.
3. Slide the retaining latch toward the locator until the locator is securely locked into place. Tighten the latch locking screw.

### ITA CONTACT CRIMP TOOL ADJUSTMENT AND WIRE PREP

1. Adjust the crimp tool setting by pulling the microcrimp adjusting knob and turning it at the same time (clockwise increases, counter-clockwise decreases setting) until the desired setting is achieved on the microcrimp indicator (**Table 3**). Verify with pin gauge. See calibration instructions for Part # 910 101 102 for pin gauge verification instructions.
2. Determine the strip length according to wire gauge (**Table 3**). Strip wire.

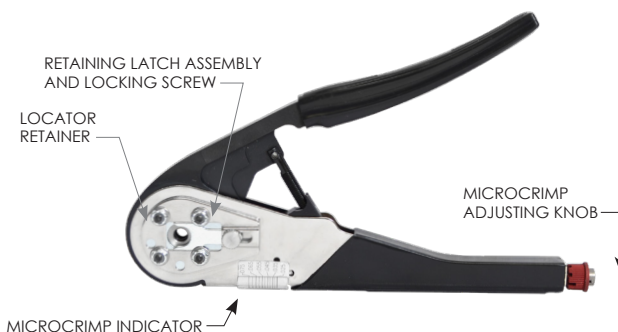


Figure A. Crimp Tool, Part # 910 101 102.



Figure B. Locator Part # 910 104 118.

Table 3.

CONTACT	CRIMP TOOL	LOCATOR DIE	STRIP LENGTH (IN [MM])	WIRE	CRIMP SETTING (IN [MM])		PULLOUT FORCE (LBS [N])		
					MAX	MIN			
610110129 & 610110147	910101102	910104118	If Insulation Dia. <0.072” [1.47], Strip Length = 0.26” [6.60]. If Insulation Dia. >0.072” [1.47], Strip Length = .30” [7.62]**	14	0.063” [1.60]	0.059” [1.50]	10* [44.5]*		
				16	0.055” [1.39]	0.051” [1.29]			
				18	0.049” [1.24]	0.045” [1.14]			
			0.30” [7.62]	2-20*	0.048” [1.21]	0.044” [1.11]			
				2-22*	0.044” [1.11]	0.040” [1.01]			
610110172 & 610110173					If Insulation Dia. <0.072” [1.47], Strip Length = 0.26” [6.60]. If Insulation Dia. >0.072” [1.47], Strip Length = .30” [7.62]**	14		0.063” [1.60]	0.059” [1.45]
						16		0.059” [1.49]	0.055” [1.39]
						18		0.055” [1.39]	0.051” [1.29]
					2-20*	0.050” [1.27]			
					0.20” [5.08]	2-22*		0.044” [1.11]	0.040” [1.01]

\*Pullout force is for individual wires

\*\*For strip lengths of 0.28" [7.11] and 0.30" [7.62], shrink tubing is recommended for strain relief at the rear of the contact. Tubing should not cover the inspection hole at the rear of the contact.

## ITA CONTACT SETUP, CRIMPING & ACCEPTABLE CRIMP CRITERIA

ITA PART # 610 110 129/ 610 110 147/ 610 110 172/ 610 110 173

### CONTACT SETUP AND CRIMPING

1. Insert the contact into the crimp tool.
2. Insert stripped wire fully into the contact and squeeze the crimp tool handle until a positive stop is reached. The tool will release and return into a fully “open” position. Remove crimped contact and wire.

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

### ACCEPTABLE CRIMP CRITERIA

1. Follow the instructions for tool setup to ensure the tool is ready for use.
2. Crimp the contact onto the respective wire according to the contact assembly instructions. Ensure that the crimp minimum is measured with an approved gauge pin.
3. The crimp must be between the inspection hole and the end of the contact to be acceptable. The crimp creates two distinctive indentions on four sides of the contact creating a square appearance. This is an acceptable result (**Figure D**).
4. Inspect the crimp to ensure none of the indentions are connected to the inspection hole (**Figure E**). If the indentions make contact with, or are above the inspection hole, the crimp is unacceptable.
5. Inspect the crimp to ensure none of the indentions are connected to the end of the contact. If the indentions make contact with the end of the contact, the crimp is unacceptable.



FIGURE D. Correct location of the crimp divots.



FIGURE E. The crimp region is between the inspection hole and the end of the contact.

## ITA CONTACT INSTALLATION & REMOVAL

ITA PART # 610 110 108/ 610 110 113/ 610 110 129/ 610 110 145/ 610 110 146/ 610 110 147/  
610 110 169/ 610 110 172/ 610 110 173

### TOOLS REQUIRED

- <sup>5</sup>/<sub>64</sub> Allen Wrench
- Phillips Head Screwdriver (for Part # 510 104 149 and iCon Modules)
- TriPaddle Receiver/ITA Extraction Tool, Part # 910 110 102

### ITA CONTACT INSTALLATION INSTRUCTIONS

1. Assemble the contact to the respective wire. (See pages 6-10 of this User Manual)
2. Insert the assembled contact into the back (wiring side) of the assembled module (**Figure A**). The contact can only go into one side. Push the contact forward. Once in place, pull the wire slightly to ensure that the contact is seated.

### ITA CONTACT REMOVAL INSTRUCTIONS

1. Remove the module from the ITA frame. (See Instructions for Module Installation & Removal on page 10)
2. Place the TriPaddle Receiver/ITA Extraction Tool, Part # 910 110 102 (**Figure B**), over the contact to be removed/ replaced. Use care to keep the tool perpendicular to the surface of the module, otherwise the tool or the contact could be bent.
3. Once the extraction tool is seated and the retaining tab on the contact are compressed, press the tool into the module. The contact will be pushed out of the rear of the module.

**DO NOT PRESS THE TOOL INTO THE MODULE UNTIL THE TIP OF THE EXTRACTION TOOL HAS FULLY SEATED INTO THE MODULE AND COMPRESSED THE RETAINING RING TAB ON THE CONTACT.**

4. On the opposite side of the module from the extraction tool, grasp the contact and hold it while removing the extraction tool. This will prevent the contact from being pulled back into the module while the tool is being removed.

*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 each respective contact type and its extraction instructions.*

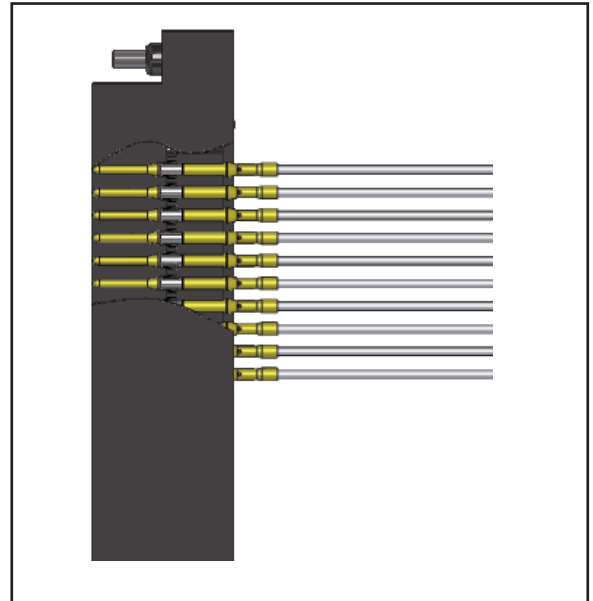


Figure A. Contacts inserted into the module.

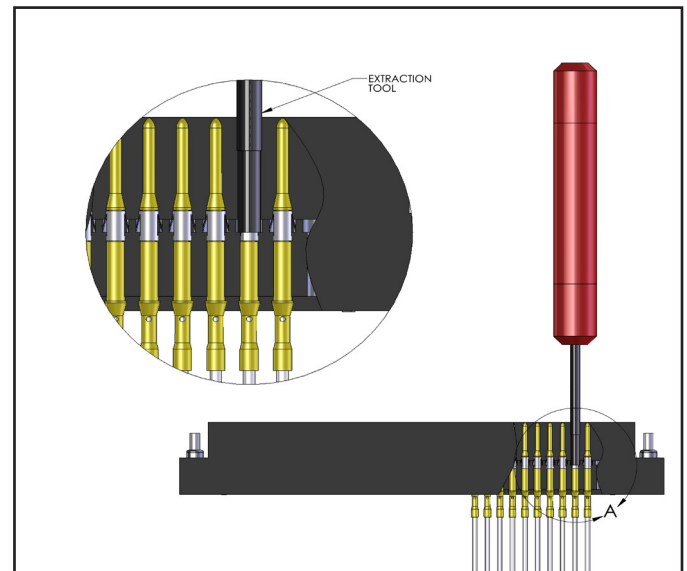


Figure B. Ensure that the tool is kept perpendicular to the module face to avoid damage to either the contact or tool

## 90 SERIES MODULE INSTALLATION AND REMOVAL

RECEIVER PART # 510 104 134/ 510 104 136/ 510 104 149/ 510 104 206/

510 104 243/ 510 104 261/ 510 104 306/ 510 104 307

ITA PART # 510 108 101/ 510 108 126/ 510 108 131/ 510 108 178/ 510 108 210/ 510 108 245

### TOOLS REQUIRED

$\frac{3}{32}$  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  $\frac{3}{32}$  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: Push or pull the module evenly from the top and bottom to prevent damage to the module.*

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



Figure A. Receiver Module.

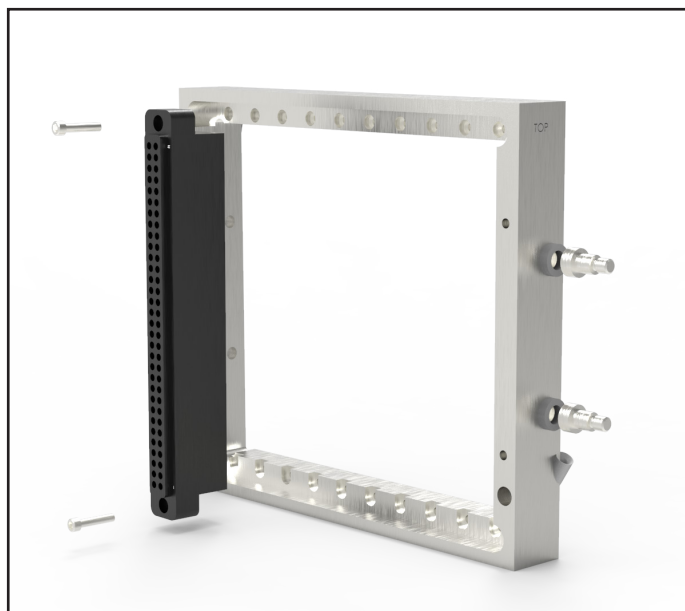


Figure B. ITA Module.

## ICON MODULE INSTALLATION AND REMOVAL

RECEIVER MODULE # 510 160 103/ 510 160 108/ 510 160 109/ 510 160 111/ 510 160 115

ITA MODULE # 510 161 103/ 510 161 108/ 510 161 109/ 510 161 111/ 510 161 115

ICON RECEIVER # 310 123 101/ 310 123 102

ICON ITA # 410 123 101/ 410 123 102

### 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].

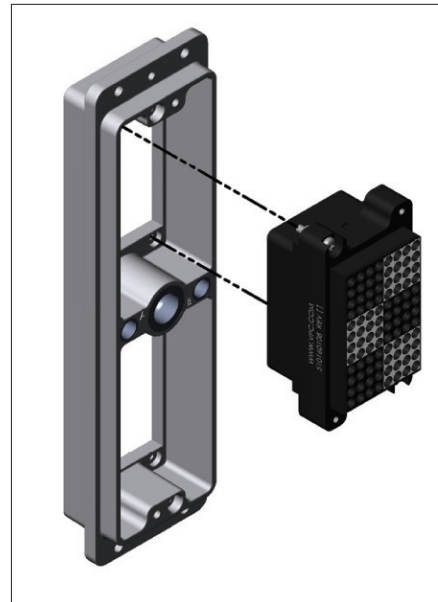


Figure A. Receiver Module.

### 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: Push or pull the module evenly from the top and bottom to prevent damage to the module.*

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

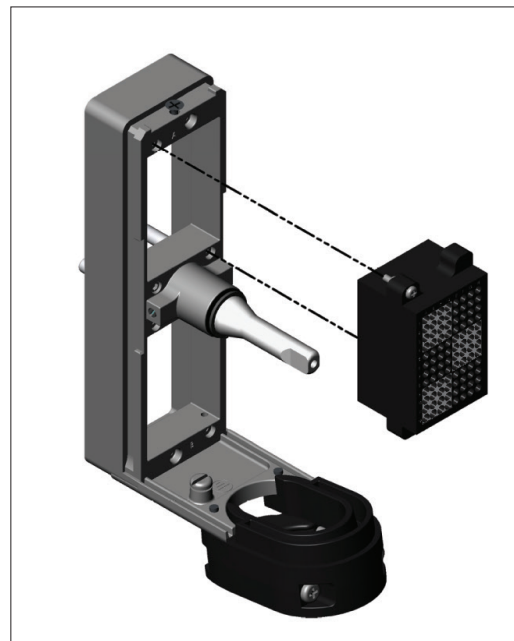


Figure B. ITA Module.



## RECEIVER PCB ADAPTER INSTALLATION AND REMOVAL

PART # 510 104 135 / 510 104 187

### TOOLS REQUIRED

$\frac{3}{32}$  Allen Wrench

### PCB ADAPTER INSTALLATION INSTRUCTIONS

1. Solder the header to the PCB (IPC-A-610 standard recommended for PCB design). The PCB must be manufactured with header installation area complying with the recommended PCB layout (**Figure A** or **B**).
2. Place the module in the receiver 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.
3. Using a  $\frac{3}{32}$  Allen wrench, tighten the top screw 1 to 2 full revolutions, while pushing lightly against the face of the module.
4. Maintain this pressure while tightening the bottom screw 1 to 2 full revolutions.
5. Repeat this sequence until the module is seated. Torque the screws 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.

Dimensions shown: [millimeters]  
inches

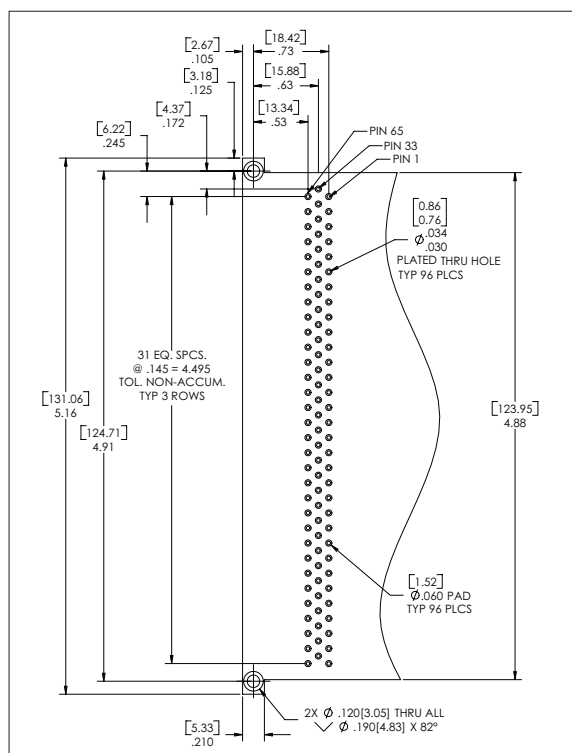


Figure A. Part # 510 104 135 Recommended Board Layout. Solder Side Shown.

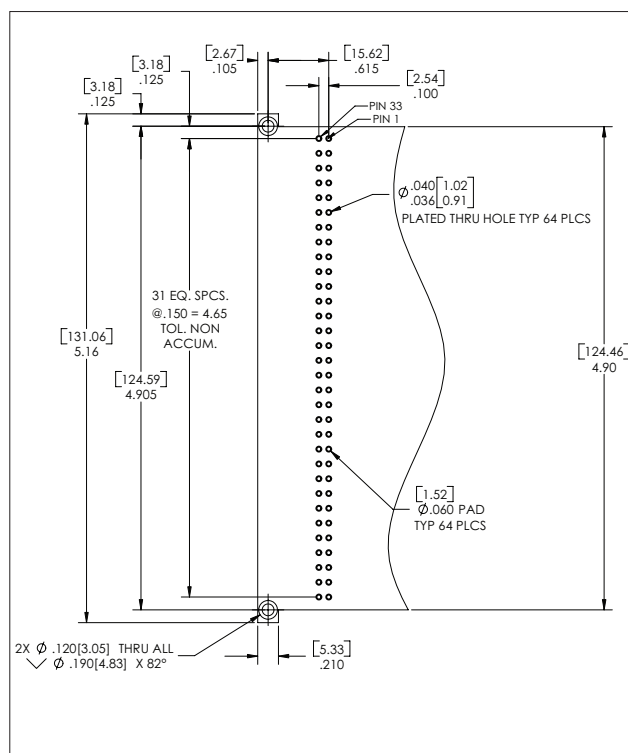


Figure B. Part # 510 104 187 Recommended Board Layout. Solder Side Shown.

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## ITA PCB ADAPTER INSTALLATION AND REMOVAL

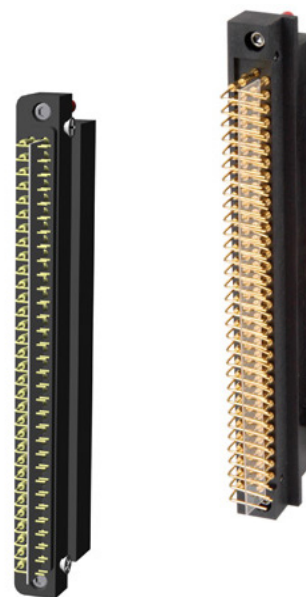
PART # 510 108 112 / 510 108 125

### TOOLS REQUIRED

$\frac{3}{32}$  Allen Wrench

### PCB ADAPTER INSTALLATION INSTRUCTIONS

1. Solder the header to the PCB (IPC-A-610 standard recommended for PCB design). The PCB must be manufactured with header installation area complying with the recommended PCB layout (**Figure A or B**).
2. Place the module in the 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.
3. Using a  $\frac{3}{32}$  Allen wrench, tighten the top screw 1 to 2 full revolutions, while pushing lightly against the face of the module.
4. Maintain this pressure while tightening the bottom screw 1 to 2 full revolutions.
5. Repeat this sequence until the module is seated. Torque the screws 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 ITA.

Dimensions shown: [millimeters]  
inches

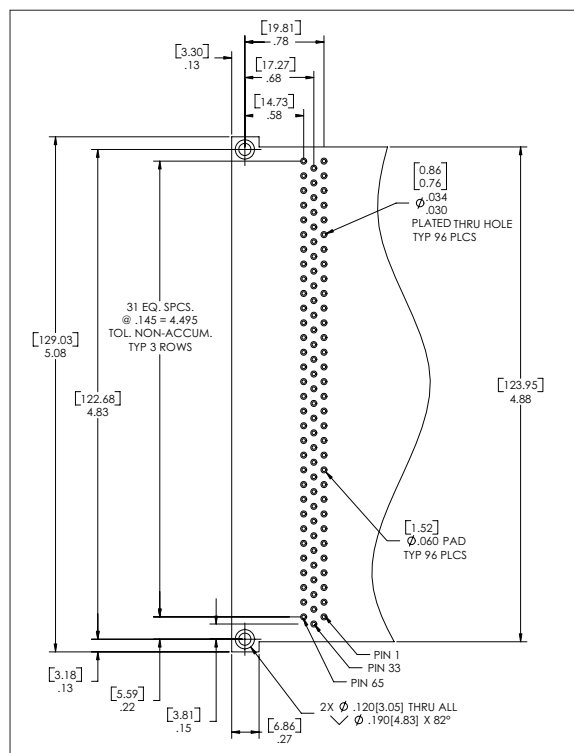


Figure A. Part # 510 108 125 Recommended Board Layout. Solder Side Shown.

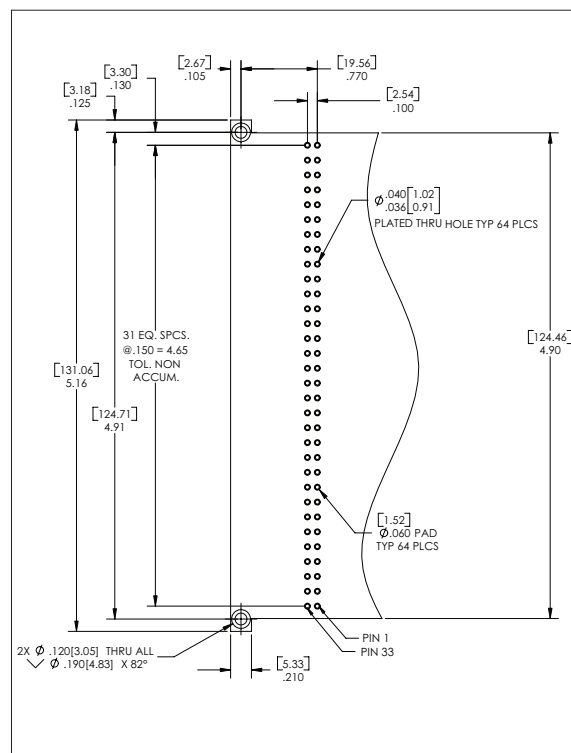


Figure B. Part # 510 108 112 Recommended Board Layout. Solder Side Shown.

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## CROSS REFERENCE TABLES

RECEIVER CONTACTS	STANDARD/ 90 SERIES MODULES						CASS/ 80 SERIES MODULES		ICON MODULES					CRIMP TOOLS		LOCATORS			EXTRACTION
	510 104 134	510 104 136	510 104 149	510 104 206	510 104 243	510 104 261	510 113 120	510 113 125	510 160 103	510 160 108	510 160 109	510 160 111	510 160 115	910 101 102	910 101 103	910 104 116	910 104 127	910 104 146	910 110 102
610 110 101	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X		X
610 110 104	X	X	X	X	X	X	X	X	X	X	X	X	X						X
610 110 125	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X		X
610 110 128	X	X	X	X	X	X			X	X	X	X	X	X				X	X
610 110 167	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X		X
610 110 171	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X		X
610 110 177	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X	X

ITA CONTACTS	STANDARD/ 90 SERIES MODULES						CASS/ 80 SERIES MODULES		ICON MODULES					CRIMP TOOLS		LOCATORS		EXTRACTION
	510 108 101	510 108 126	510 108 131	510 108 178	510 108 210	510 108 245	510 114 106	510 114 107	510 161 103	510 161 108	510 161 109	510 161 111	510 161 115	910 101 102	910 101 103	910 104 107	910 104 118	910 110 102
610 110 108	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X
610 110 113	X	X	X	X	X	X	X	X	X	X	X	X	X					X
610 110 129	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X
610 110 145	X	X	X	X	X	X	X	X	X	X	X	X	X					X
610 110 146	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X
610 110 147	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X
610 110 169	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X
610 110 172	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X
610 110 173	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X

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