ETC® Service Note

Irideon® AR500™ Harness Retrofit

This service note provides instructions for retrofitting the power and data harness in your IRIDEON® AR500™ standard exterior luminaire. Additional instructions are provided for replacement of the 9pin CPC connector and contact pins if required.This retrofit requires you to open and work inside your AR500™ luminaire stanchion.

Parts Included in this Kit

Quantity	ETC Part Number	Description
1	7091B7032-1	AR500 Stanchion AC Power Harness
1	7091B7033	AR500 Control Plate AC Power Harness
1	7091B7034	AR500 Lamp Wire Assy, w/ male plug
1	7091B7035	AR500 Lamp Wire Assy, w/ female plug
1		Miscellaneous hardware

Tools Required

- #2 Phillips screwdriver
- 5/32 Allen wrench
- Diagonal cutter
- Amp pin extractor tool (provided by ETC)
- Waldom WHT1919 wire stripper/crimper (or equivalent)
- Heat Gun

WARNING: ***RISK OF ELECTRIC SHOCK! Disconnect the AR500 from electrical connections before starting this procedure or any time you plan to remove the cover of this equipment. Failure to do so could result in serious personal injury and even death.***

CAUTION: *You can damage the AR500 components if you do not take certain precautions. Electrostatic Discharge (ESD), is caused by static electricity. It can cause immediate or subtle damage to sensitive electronic parts.You can reduce the chances of ESD damage by doing the following:*

- *Disconnect power to the AR500 and wait several minutes before starting to work.*
- *Ground yourself by touching the case of the AR500.*
- *Touch only the items that must be replaced.*
- *Avoid walking around while replacing items inside the case, especially during conditions of low temperature and low humidity.*

By following these guidelines, you will greatly reduce the chances of ESD damage to your AR500.

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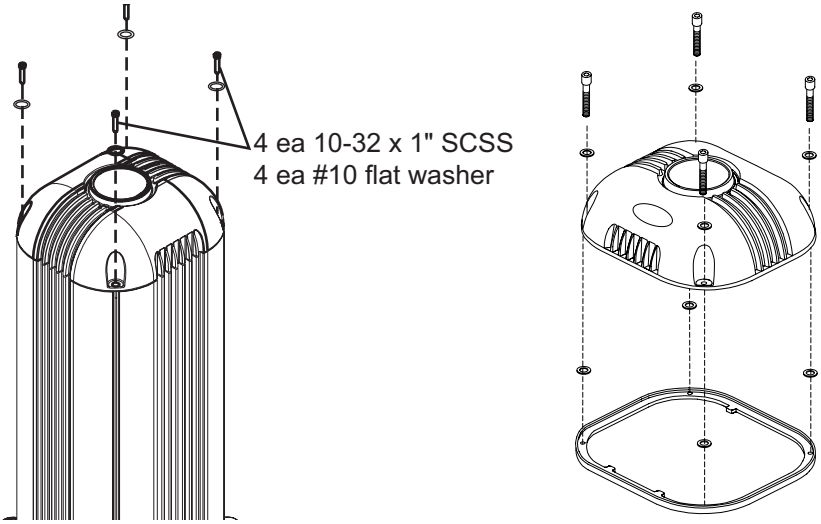
7091M3300 ■ Rev A ■ Released 12/2003

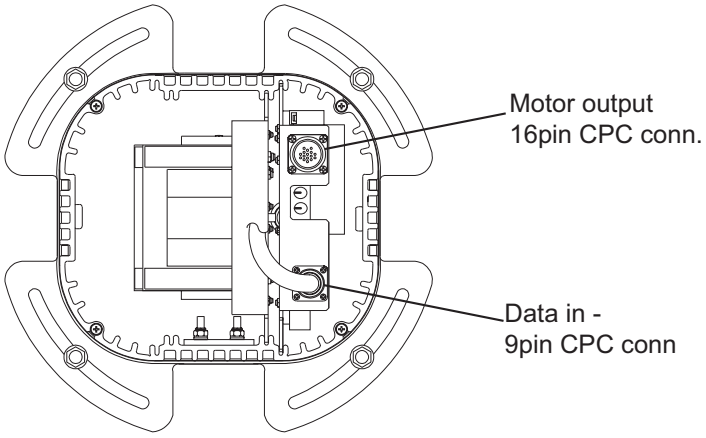
Procedure:

Step 1: Remove the AR500 stanchion cover by unscrewing the four Allen head screws. Remove the stanchion cap, gasket and all hardware.

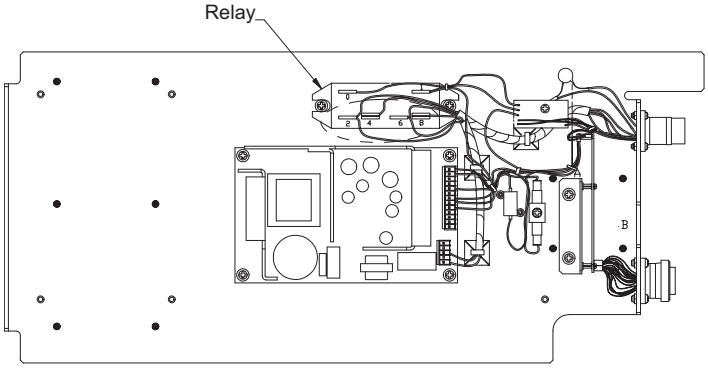


Note: *Do not discard these parts. All items will be re-installed after the retrofit is complete.*

Step 2: Disconnect the two CPC connectors, motor output and data input, from the control electronics tray.



Step 3: Remove the control electronics tray from the stanchion.



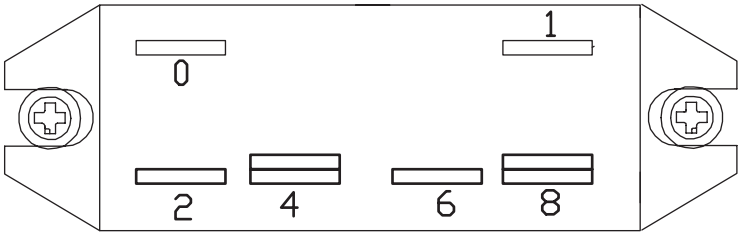
Step 4: Inspect the 9pin CPC connector on the electronics plate for charring or melting. If any damage is evident on this connector, please contact ETC Technical Services for instruction.

Step 5: Cut the three wire ties securing the spiral wrapped cables to the control electronics tray.

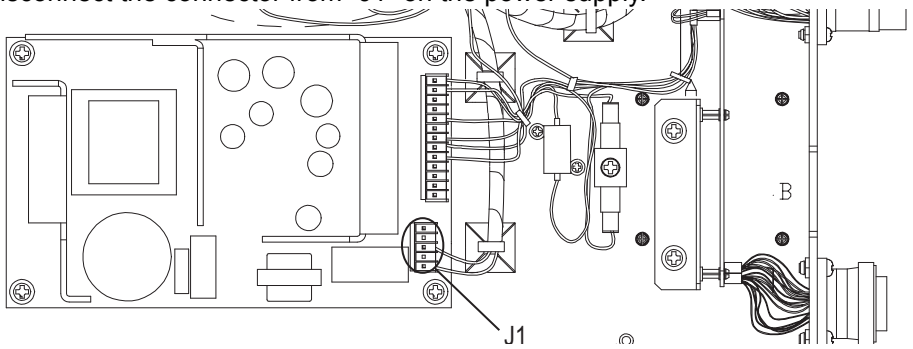
Step 6: Remove the spiral wrap from the cable assemblies.

Note: Do not discard this spiral wrap, it will be replaced later in the process.

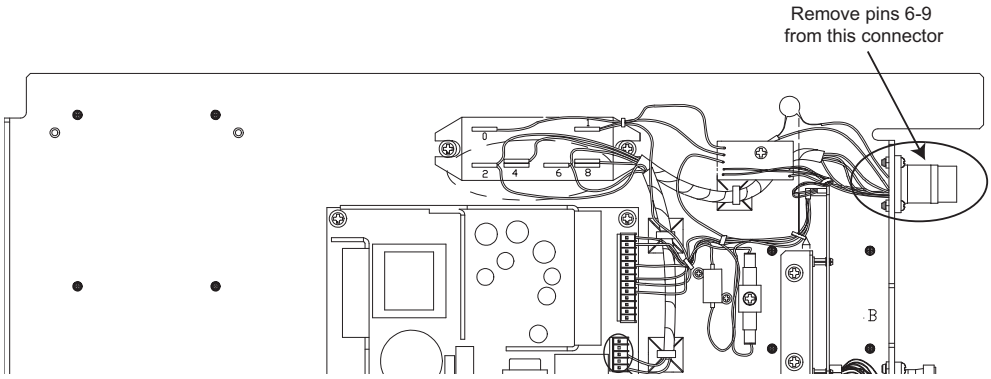
Step 7: Disconnect the terminal wires 2, 4, 6 and 8 from the relay.



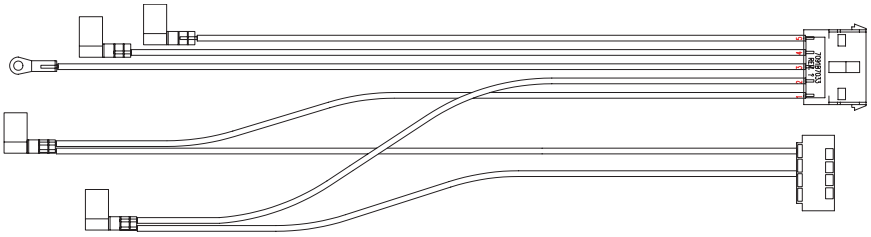
Step 8: Disconnect the connector from “J1” on the power supply.



Step 9: Using the pin extractor remove pins 6-9 from the 9pin CPC on the control electronics tray.

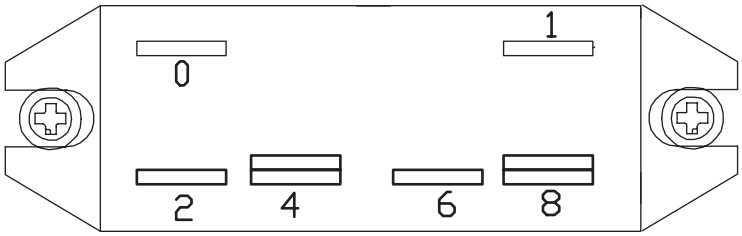


Step 10: At this point the old AC Power Harness will be free, you can discard this cable assembly and find the new Control Plate AC Power Harness (ETC Part Number 7091B7033) from the kit provided.



Step 11: Route the new AC Power Harness cable assembly similar to the cable assembly removed.

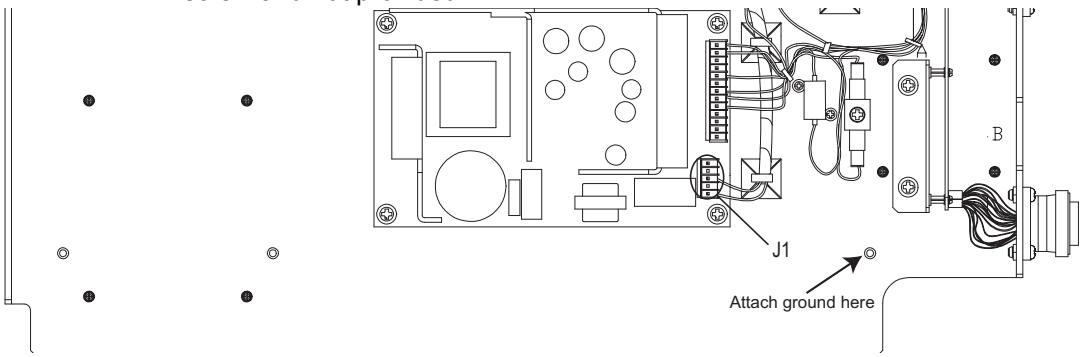
Step 12: Connect the new AC Power Harness (ETC Part Number 7091B7033) to the relay as follows:



Terminal	Wire
2	Two white crimped wires
4	Single White crimped wire
6	Two black crimped wires
8	Single black crimped wire

Step 13: Reconnect “J1” as previously removed.

Step 14: Feed the ground lead to the screw hole in the electronics plate and attach with the 6/32 screw and nut provided.

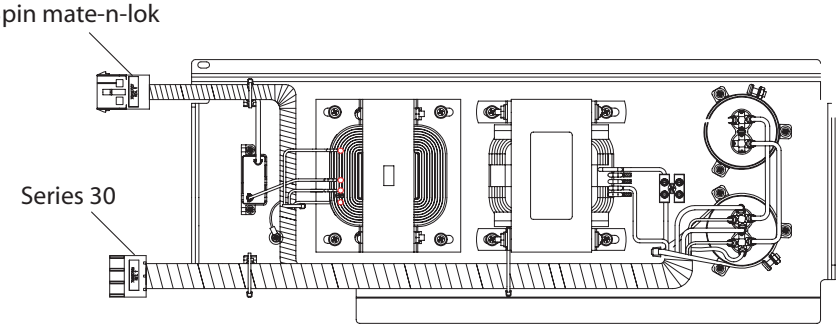


Step 15: Reinstall the spiral wrap around the cables as previously removed.

Step 16: Using the cable ties provided secure the new cables to the three cable tie anchors.

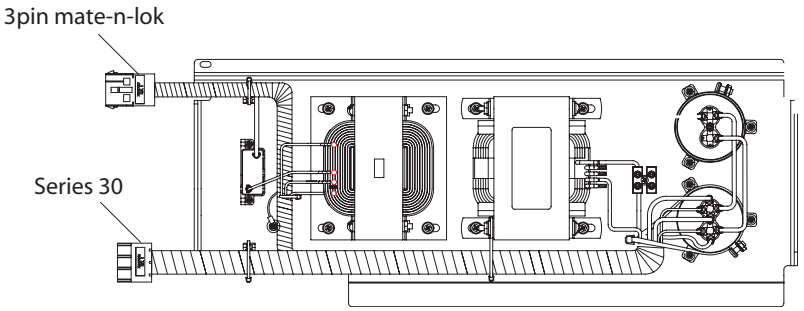
Ballast Tray retrofit

Step 1: Disconnect the 3pin mate-n-lok connector and the 3pin Series30 (lamp) connector from the ballast tray.



Step 2: Remove the ballast tray from the stanchion.

Step 3: Cut and remove the wire ties securing the Lamp Power Out cable assembly (Series 30) to the ballast tray.

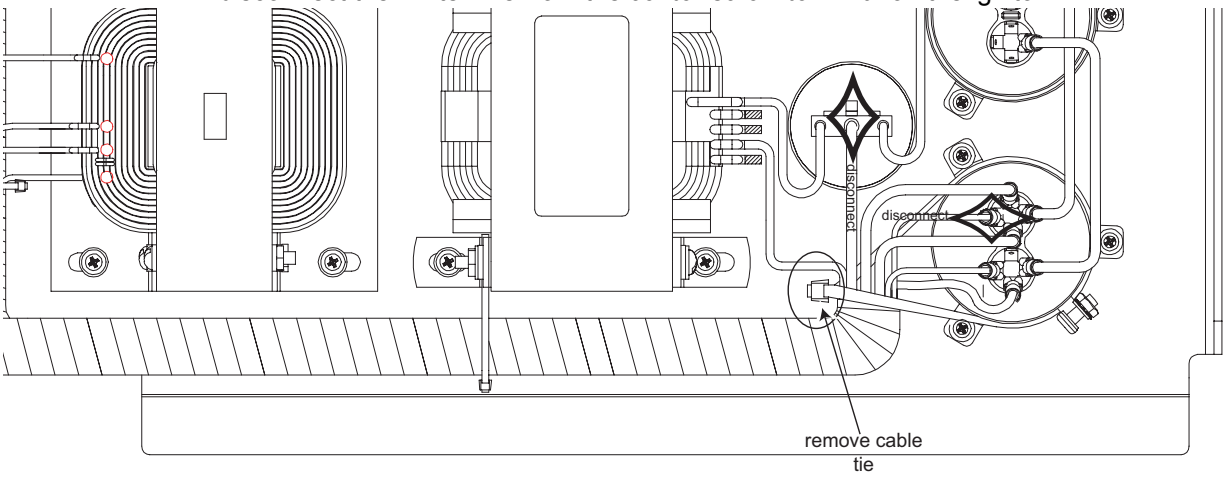


Step 4: Remove the spiral wrap from this cable assembly.

Note: *Do not discard this spiral wrap, it will be replaced later in the process.*

Step 5: Cut and remove the cable ties on the white wires near the capacitor.

Step 6: Disconnect the female spade connector from the capacitor, as shown below, and disconnect the white wire from the *center screw terminal* on the ignitor.



Step 7: At this point the lamp power out cable will be free, remove and discard this cable assembly.

Step 8: Find the new lamp wire assembly w/ male plug (ETC Part Number 7091B7034) from the kit provided.

Step 9: Reconnect the female spade connector to the capacitor in the same position the previous one was removed.

Step 10: Reconnect the white wire into the *center screw terminal* of the ignitor.

Step 11: Reinstall the spiral wrap around the cable assembly.

Step 12: Dress the cables neatly and re-attach new cable ties.

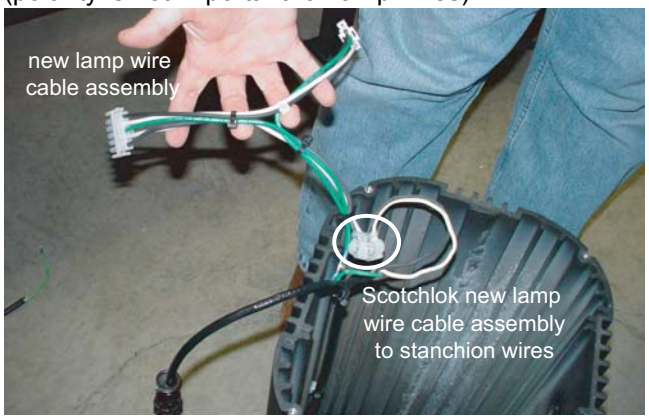
Stanchion retrofit

Step 1: Find the white Series 30 connector on the lamp wire cable leading into the head assembly. Cut the wires as close to the Series 30 connector as possible. Ensure that these wires are secured against retracting into the head assembly.

Step 2: Find the new lamp wire cable assembly w/ female plug (ETC Part Number 7091B7035) from the kit provided.

Step 3: Assuming that the leads to the lamp socket do not need to be replaced, shorten the bare end of this harness to the desired length (approximately 6”). If the lamp wires do need replacing refer to the *Irideon AR500 Owners manual, section 6.2.6 Replacing Lamp Wire Assembly (Standard Version).*

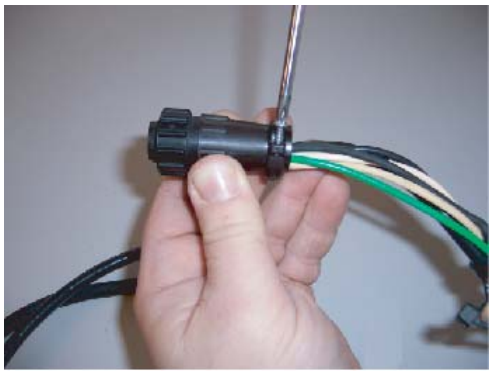
Step 4: Using the scotchlok wire connector provided (ETC Part Number J4166) attach the new cable assembly (ETC Part Number 7091B7035) to the white lamp wires in the stanchion (polarity is not important for lamp wires).



Step 5: Find and remove all wire ties binding the cable assembly leading to the 9pin CPC connector.

Step 6: Inspect the 9pin CPC connector and contact pins for damage or charring. If the connector and/or contact pins show signs of damage, follow the procedure for *Replacement of 9pin CPC connector and contact pins on page 11*. If there are no signs of damage proceed with Step 7.

Step 7: Release the strain relief and remove the backshell from the 9pin CPC connector.



Step 8: Using a pin extractor remove pins 1, 6-9 from the 9pin CPC connector.

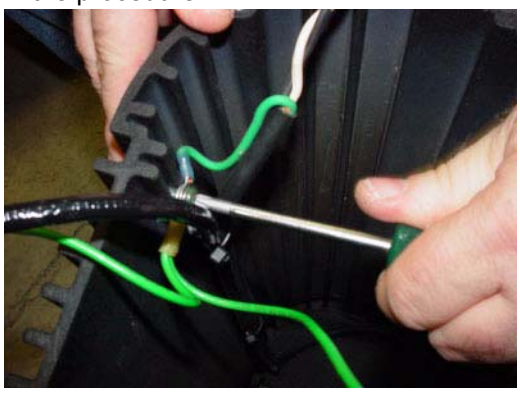
Step 9: Remove the loosened cables from the connector leaving only the data wires in the connector.

Step 10: Re-assemble the backshell to the CPC connector.

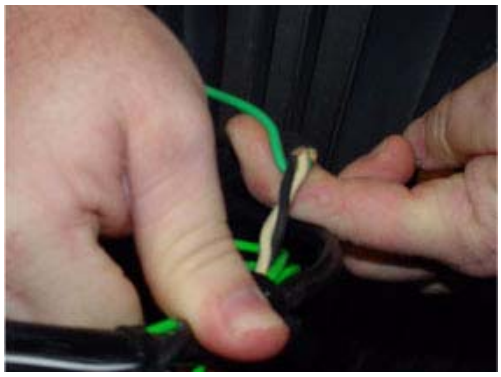
Step 11: Invert the strain relief and secure with the two screws provided until snug.

Note: *Do not overtighten the strain relief.*

Step 12: Remove the ground screw from the side of the stanchion. Save this screw for reuse later in the procedure.

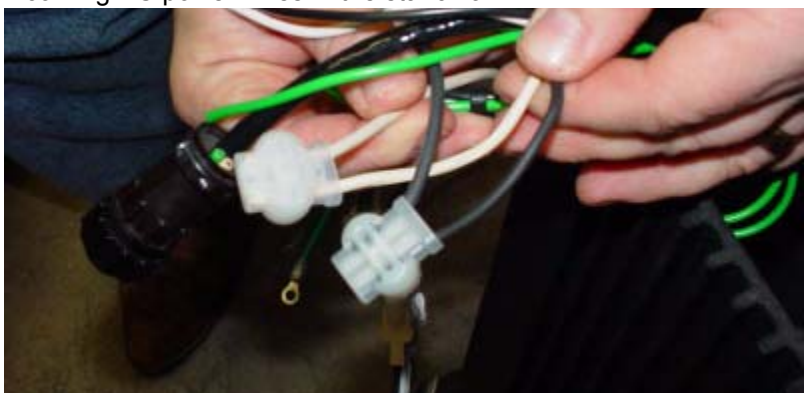


Step 13: Cut the black and white incoming AC wires two inches from the outer jacket of the AC cable.



Step 14: Find the Stanchion AC Power Harness (ETC Part Number 7091B7032-1) from the kit provided.

Step 15: Using two scotchlok wire connectors (ETC Part Number J4166) provided, attach the black and white AC wires from the stanchion AC power harness to the black and white incoming AC power wires in the stanchion.



Step 16: Find the three ground wires with the ring terminals and attach them to the inside of the stanchion using the ground screw previously removed.

Step 17: Dress cables neatly and secure with cable ties provided.

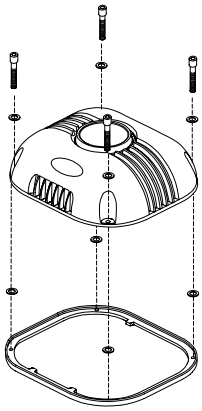
Power Up

Step 1: Reinstall the ballast and control electronics tray into the stanchion.

Step 2: Connect all data and power cables to the appropriate receptacles.

Step 3: Apply power to the luminaire, ensure that the lamp strikes and the calibration process begins.

Step 4: Re install the stanchion cap ensuring that the gasket, gasket spacers and flat washers are properly aligned.



Step 5: Secure the stanchion cap by tightening the four screws in an alternating cross pattern.

The retrofit process is now complete. If you are experiencing any difficulty completeing this procedure or the luminaire is not functioning properly after this procedure, please contact ETC Technical Services.

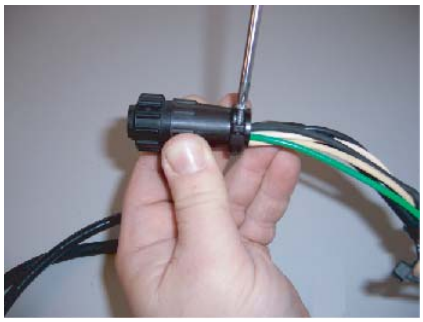
Replacement of 9pin CPC connector and contact pins

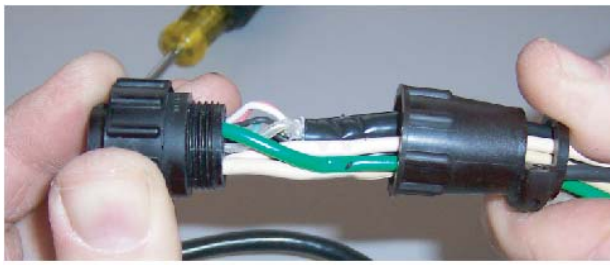
Follow this procedure only if there was damage to the 9pin CPC connector and/or contact pins as determined in *Step 6: Stanchion retrofit on page 6*.

CPC connector replacement

Follow this procedure if damage is limited only to the CPC plug.

Step 1: Release the strain relief and backshell from the 9pin CPC connector.





Step 2: Using a pin extractor, remove all contact pins from this connector.

Step 3: Discard the damaged connector and separate the lamp and ground wires from the data cable. The lamp and ground wires will be addressed in the ***Stanchion retrofit*** procedure after the damaged CPC has been replaced.

Step 4: Find the new CPC connector (ETC Part Number J770) from the retrofit kit.

Step 5: Insert **only the data** contact pins into the replacement 9pin CPC connector following the pinout below.

PIN #	Wire type
5	Shield (w/ heat shrink)
3	Data + (red/white)
2	Data - (green/black)

Note: *The contact pin is properly inserted when you feel a click.*

Step 6: Reinstall the backshell on the ***data cable*** only.

Note: *Do not thread the lamp and ground wires into the backshell.*

Step 7: Invert the strain relief and secure with the two screws provided until snug.

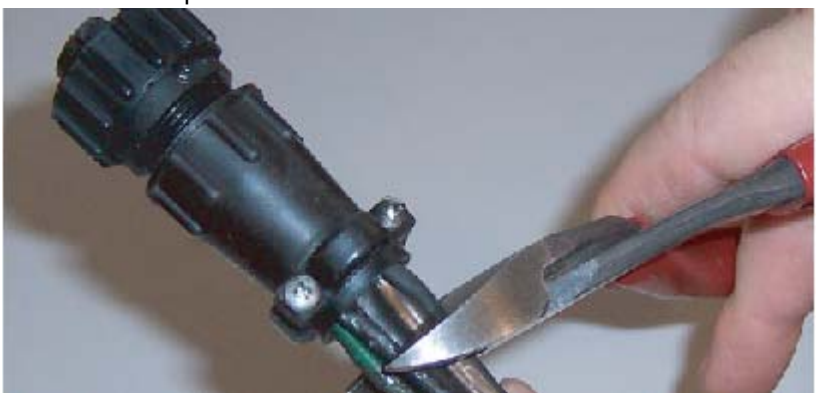
Note: *Do not overtighten the strain relief.*

CPC replacement is complete, return to Stanchion Retrofit *Step 12: on page 8*.

9pin CPC connector and contact pin replacement

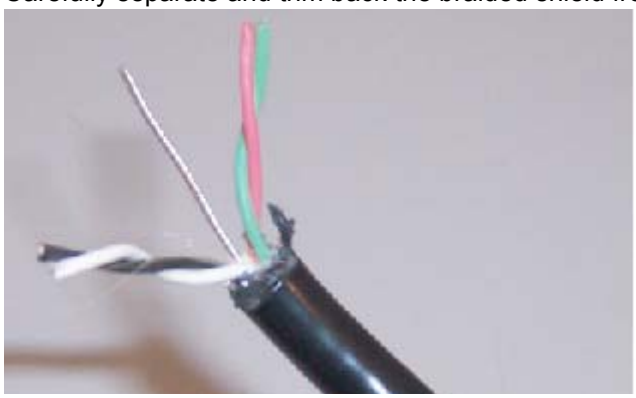
Follow this procedure only if damage is evident on both the CPC plug and contact pins.

Step 1: Cut the entire 9pin CPC connector off the cable.



Step 2: Using wire strippers, strip the outer jacket of the data cable back 1”.

Step 3: Carefully separate and trim back the braided shield from the wires.



Step 4: Install the clear heat shrink, provided, around the shield wire.

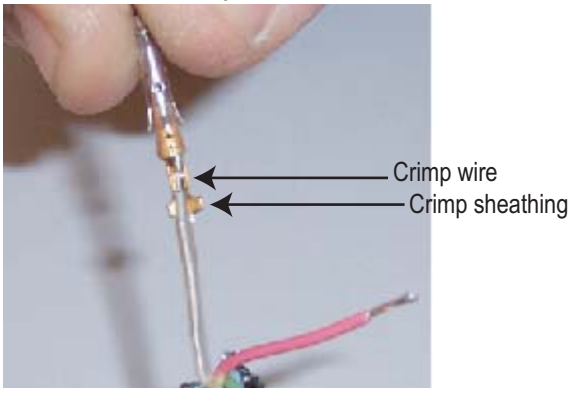
Step 5: Using a heat gun, secure the heat shrink to the shield wire.

Step 6: Strip each wire back 1/8” inch.

Step 7: Find the replacement gold contact pins (ETC Part Number J6569) provided in the retrofit kit.

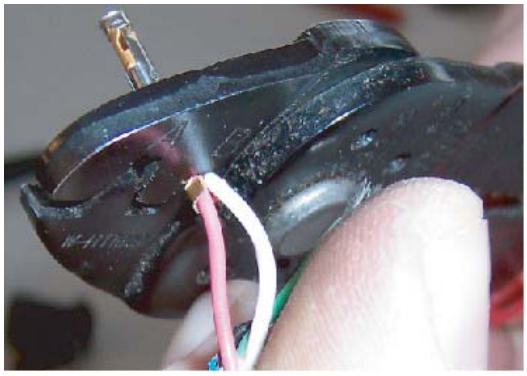
Note: *Only 3 of the 5 contact pins are required for this procedure. Extra’s have been sent for convenience.*

Step 8: Insert one contact pin around the *shield* wire and crimp until secure.



Step 9: Crimp the strain relief around the shield wire sheathing.

Step 10: Twist the Red and White **bare wire** together and insert one contact pin around the wire pair.



Step 11: Crimp until secure.

Step 12: Crimp the strain relief around the wire sheathing.

Step 13: Twist the Green and Black bare wire together and insert one contact pin around the wire pair.

Step 14: Crimp until secure.

Step 15: Crimp the strain relief around the wire sheathing.

Step 16: Insert the data contact pins into the new 9pin CPC connector following the pin out below.

PIN #	Wire type
5	Shield (w/ heat shrink)
3	Data + (red/white)
2	Data - (green/black)

Step 17: Reinstall the backshell to the new connector.

Step 18: Invert the strain relief and secure with the two screws provided until snug.

Note: *Do not overtighten the strain relief.*

CPC and contact pin replacement is complete, return to ***Stanchion retrofit***, *Step 12: on page 8* to complete the retrofit.