Disassembly/Assembly Instructions For Modified XLR Connector

Standard on S1eX-M10

When panel-mounting the S1eX-M10, cable routing is impeded by the fact that the XLR connector is much larger than the mounting hole or nut. This is solved by a modification to the connector wherein the user can easily disassemble the connector with no tools and only be required to feed the contact pins through any mounting fixture, conduit or hardware.

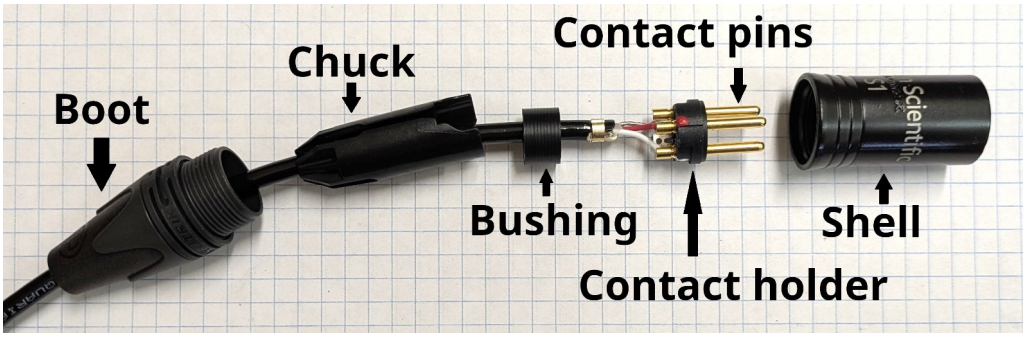

Figure 1: Exploded View - Part Identification

The stock Neutrik NC3-MXX connector includes a contact assembly with pins permanently pressed into the holder. Aquarian separates the three contact pins from the contact holder and enlarges the holes so that the pins can slide in and out of the holder with little effort. Wires are soldered to the contact pins such that they exit the sides of the pin, then we add a bushing to the assembly to press on the end of those pins and secure them in place while assembled.

Disassembly

The modified XLR connector is shipped fully assembled on the hydrophone and looks identical to a standard connector. When cable routing is necessary, simply unscrew the boot from the shell and push the remaining parts out of the shell from the contact side. Carefully examine the assembly before separating the individual parts. This will be helpful during reassembly after cable routing.

Slide the boot, chuck and bushing up the cable, then push the contact pins out of their holder. With the pins free of their holder, you can slide the remaining parts off of the cable.

Figure 2: Fully Disassembled

Cable routing precautions

- Be careful to retain all parts, as they are easy to loose, especially in the field or at sea.
- Try to work with dry hands. All conductors are tin plated, as is standard with marine wire, but seawater will accelerate corrosion.
- Minimize flexing of the wires at their solder joint. The pins are likely to break off of the wires, or strands will break that can cause short circuits in the connector after reassembly. Inspect the integrity of these solder joints before reassembly. If a wire is broken and needs resoldering, use a rosin-based or no-clean flux-cored solder and position the wire so that it exits the contact pin to the side, rather than directly out of the end. If routing the cable through a long conduit, where it will need to be pushed or pulled, tape the contacts together to stabilize them during routing.

Assembly

Take note of the order of the assembly in *figure 1* above.

1. Slide the boot, chuck and bushing onto the cable in that order.
2. Insert contact pins into the contact holder. Note that each contact position is numbered on each side of the holder. Hole 1 is signal ground and holds the pin connected to the bare shield wire. Hole 2 is "hot" in a balanced audio line and will hold the pin connected to the white wire. Hole 3 is "cold" and holds the remaining pin that is connected to the red wire. We apply red and white paint marks to the holder to make this more obvious (*figure 3)*. If the red and white wires are reversed, you will not be able to hear a difference, but the signal will have an inverted polarity. If the shield contact is placed in the 2 or 3 position, the hydrophone could be damaged. Please be careful with alignment! Also be sure to insert pins from the painted side of the holder (same side as the raised shell-grounding tab).
3. Though not critical, it may be easier to assemble the connectors if the wires exit the pins towards the center of the holder.
4. Push the pins fully into the holder and slide the bushing over the ends to make contact. Ensure that all three pins are at the same height from the back of the contact holder.
5. Slide the chuck over the assembly, noting that there are tabs on the chuck that fit into contact holder next to pins 1 and 2 (*figure 4)*.
6. Insert the contact assembly with bushing and chuck into the shell. This is keyed. The red mark on pin 3 will align with the "S1" marking on the shell. Or, if this modification is applied to other hydrophones, the shell-grounding tab will align with the engraved "NEUTRIK" mark on the shell.
7. Screw the boot back into the shell until you feel a solid resistance. There should be no gap between the collapsible plastic bushing on the boot and the end of the shell (*figure 5)*.

Additional images, notes and links next page

For use in buoys or camera enclosures where there may not be space for the assembled connector, the pins can typically be inserted directly into the mic connector without using the shell and without the system being susceptible to additional noise. Use the contact pin holder to identify correct positioning. You will no longer have a positive lock between connectors, so secure cable as needed to avoid pins disconnecting over time where any vibration or tension may exists on the connection.

Figure 3: Match Colors

Figure 4: Chuck Alignment

Figure 5: Fully Closed

See Also

S1 hydrophone: https://www.aquarianaudio.com/s1-hydrophone.html
CA-xx Hydrophone Cables: https://www.aquarianaudio.com/accessories/connections/cables/
M10 Panel-Mount Kit Tech Tips: https://www.aquarianaudio.com/AqAudDocs/M10_panel_mounting.pdf

Search "NC3MXX assembly video" on the Internet for various videos. These will NOT include the removable pins modification, but can show general assembly technique.

Additional Applications

This connector modification is standard on any S1eX-M10 hydrophone. It my be beneficial for other hydrophones with XLR output where the cable is routed through a conduit, waterproof cable gland or other similar orifice. Aquarian will charge a small additional fee to make this modification. If interested in adding this to other hydrophones, ask us about the NC3MXX-MOD.

AQUARIAN HYDROPHONES

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