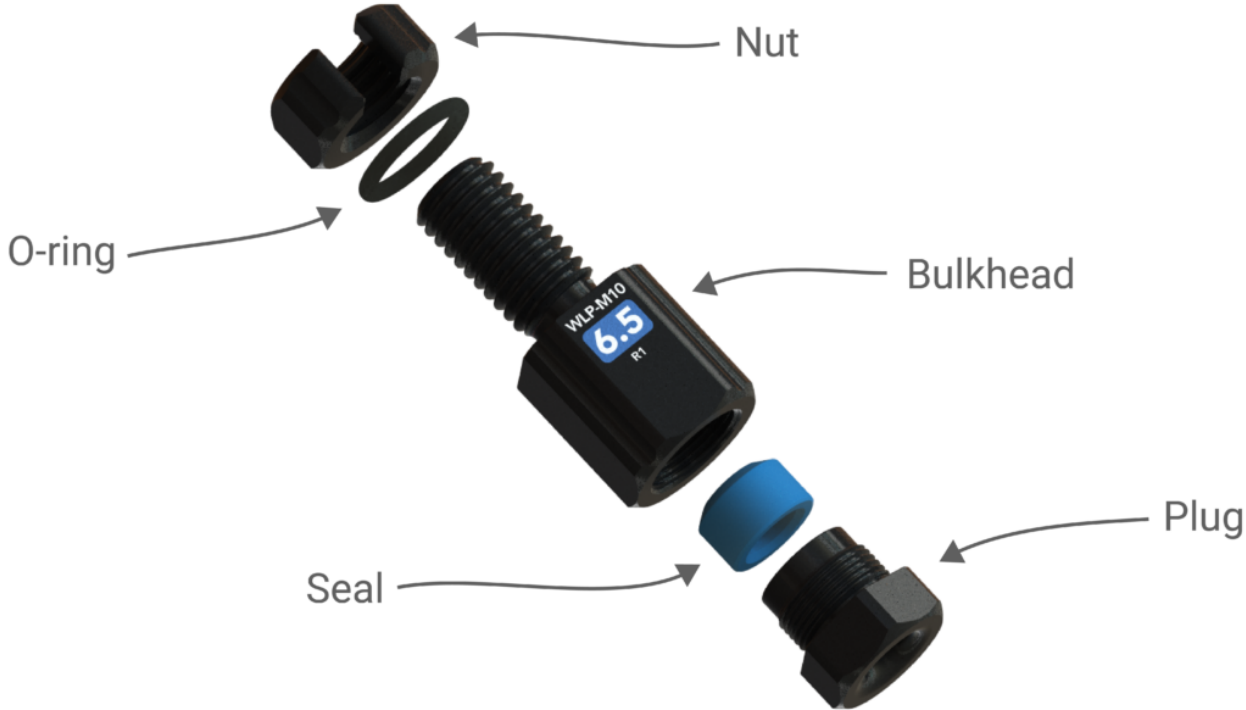# Introduction

The WetLink Penetrator (WLP) is our next-generation solution for low-cost, high pressure, high reliability sealing of electrical cables. The WetLink Penetrator is easy to assemble and doesn't require any adhesives, potting compounds, or rubber molding. Compared to previous penetrators, the WetLink Penetrator offers greater depth rating, is substantially more reliable, and offers improved performance in extreme conditions. The WetLink Penetrator is also fully backwards compatible and can be used just like our old M10 penetrators. This guide will show you how to assemble a WetLink Penetrator using our WLP assembly tools or common hand tools.

Anatomy of the WetLink Penetrator.

Parts and Tools

You Will Need

- WetLink Penetrator ([WLP-M10-6.5MM-R1-RP](#))
- WetLink Penetrator Assembly Block ([WLP-ASSEMBLY-BLOCK-R1-RP](#))
- WetLink Penetrator Plug Wrench ([WLP-14MM-PLUG-WRENCH-R1-RP](#))

  You will also need:
- A 1/4 inch drive ratchet or torque wrench
- A vice or 2x 6mm bolts or 2x M6X1.0 thread bolts (for securing the WLP Assembly Block)

We highly recommend using the WLP tools for assembly. We've designed these tools for ease of assembly, especially if you'll be putting together more than a few. If the WLP tools are not available, assembly can also be completed using the following hand tools:

- 14mm open-ended wrench
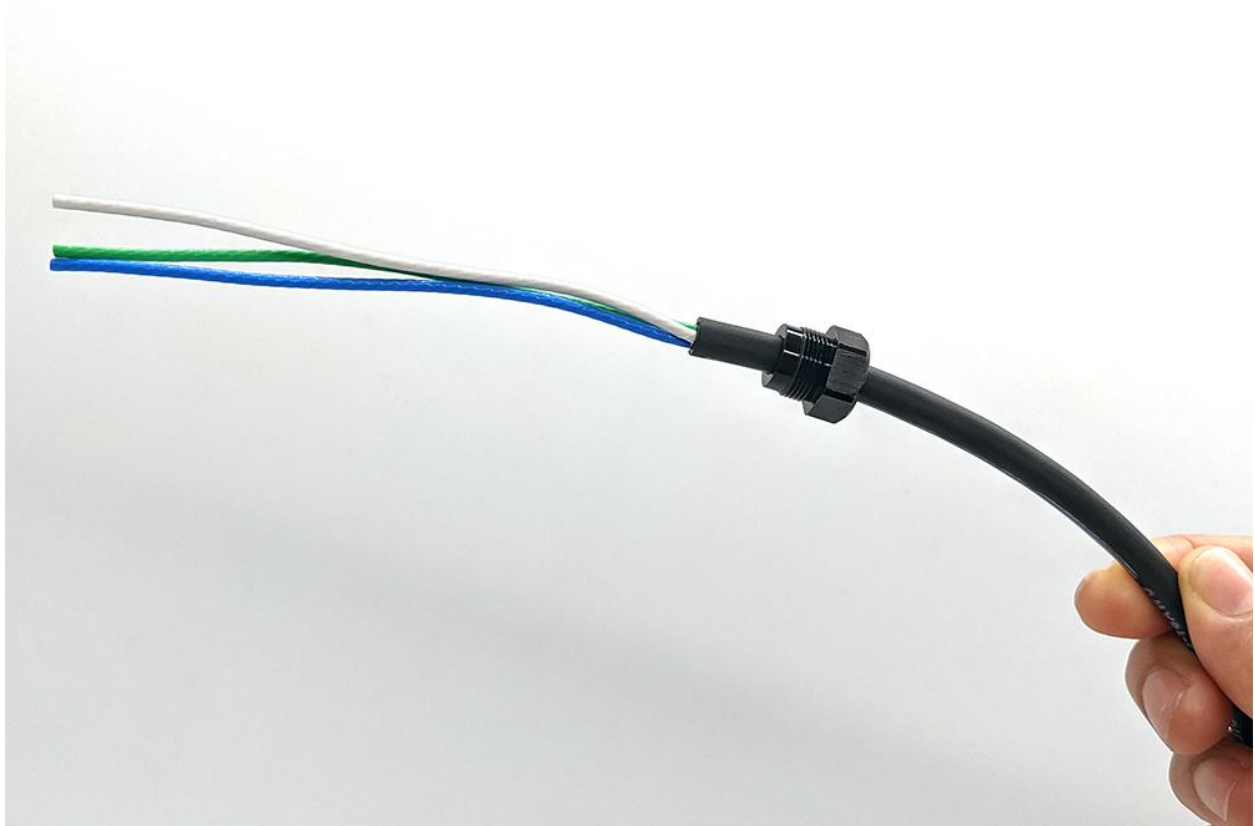- 16mm open-ended wrench

Prepping the Cable

The cable jacket must be stripped prior to assembly. For tips on how to strip Blue Robotics cable, please follow our Cable Jacket Stripping Tutorial. You'll want to ensure that the cut in the cable jacket is straight across, perpendicular to the cable and the jacket and conductors are free from damage.
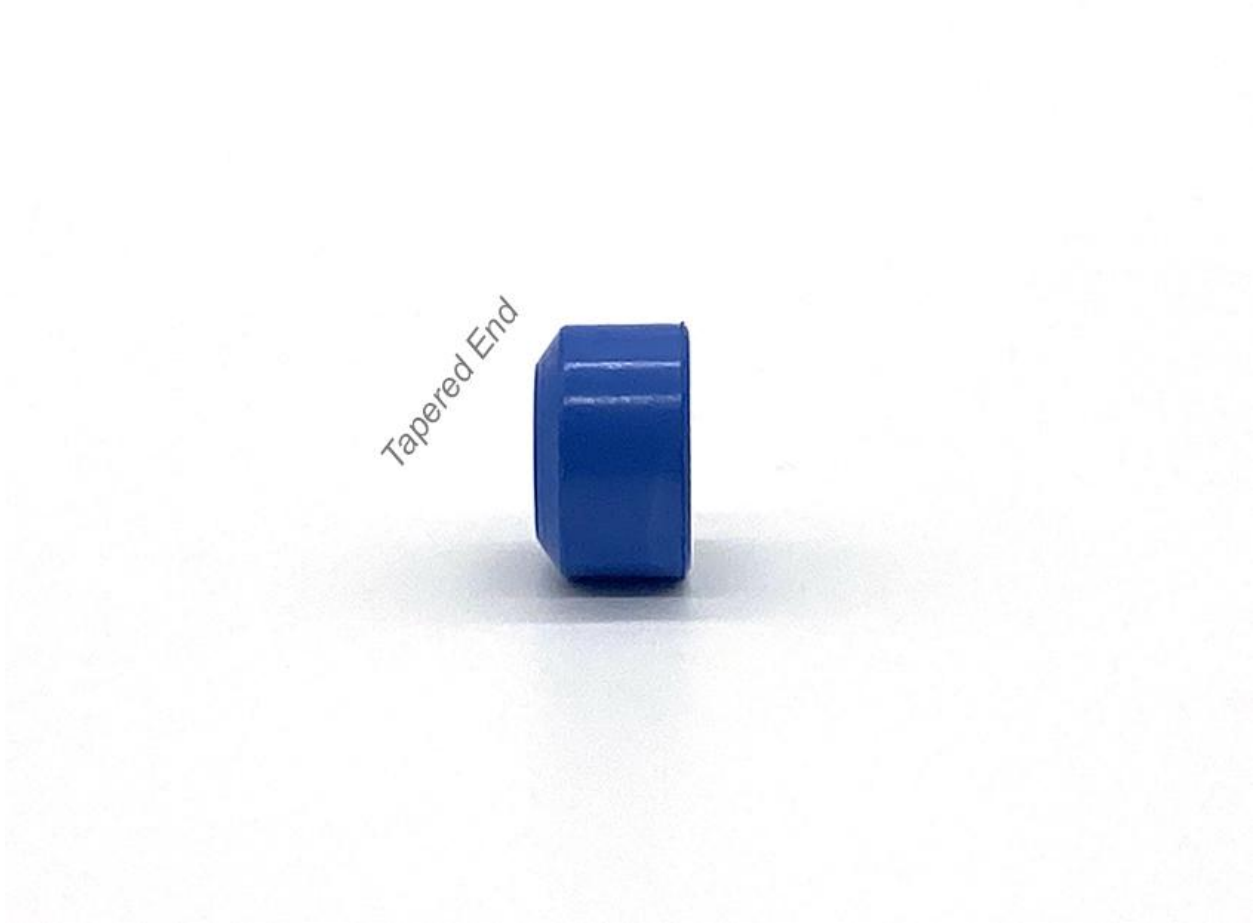
Assembly

Install the Plug and Seal Onto Cable

1. Slide the plug onto the cable with the threads pointed towards the stripped end of the cable.
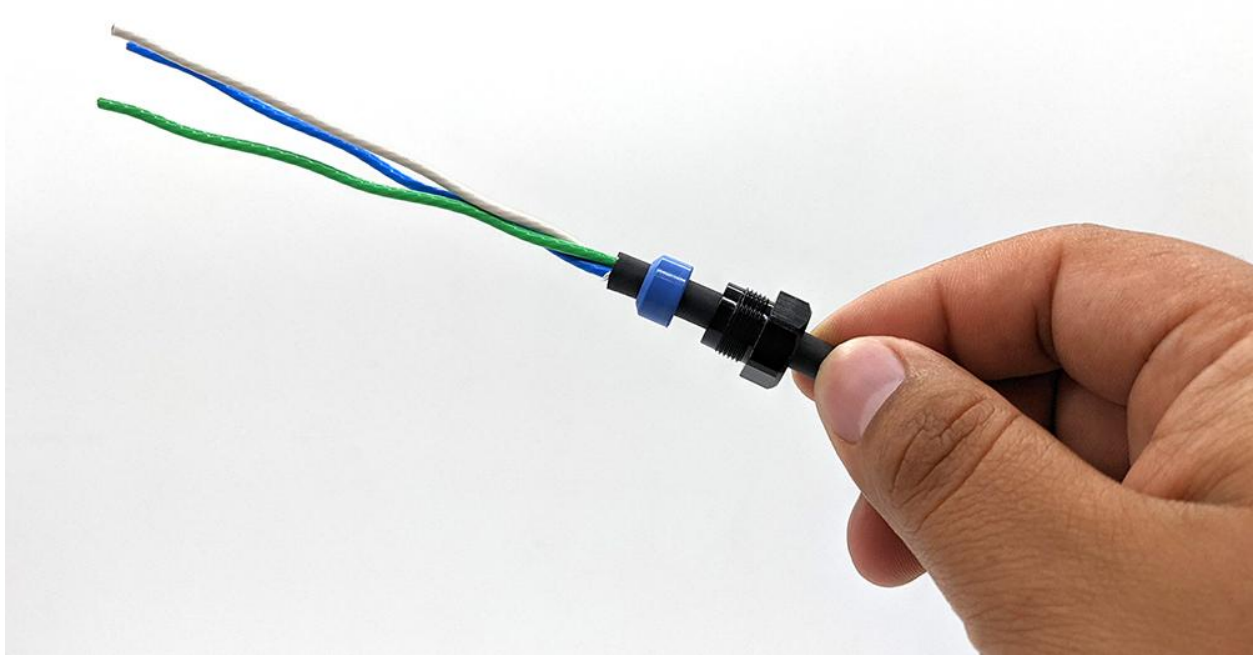
Plug installed on the cable.

2. Slide the seal onto the cable. The seal has a flat end and a tapered end, make sure the tapered end is pointing towards the stripped end of the cable.
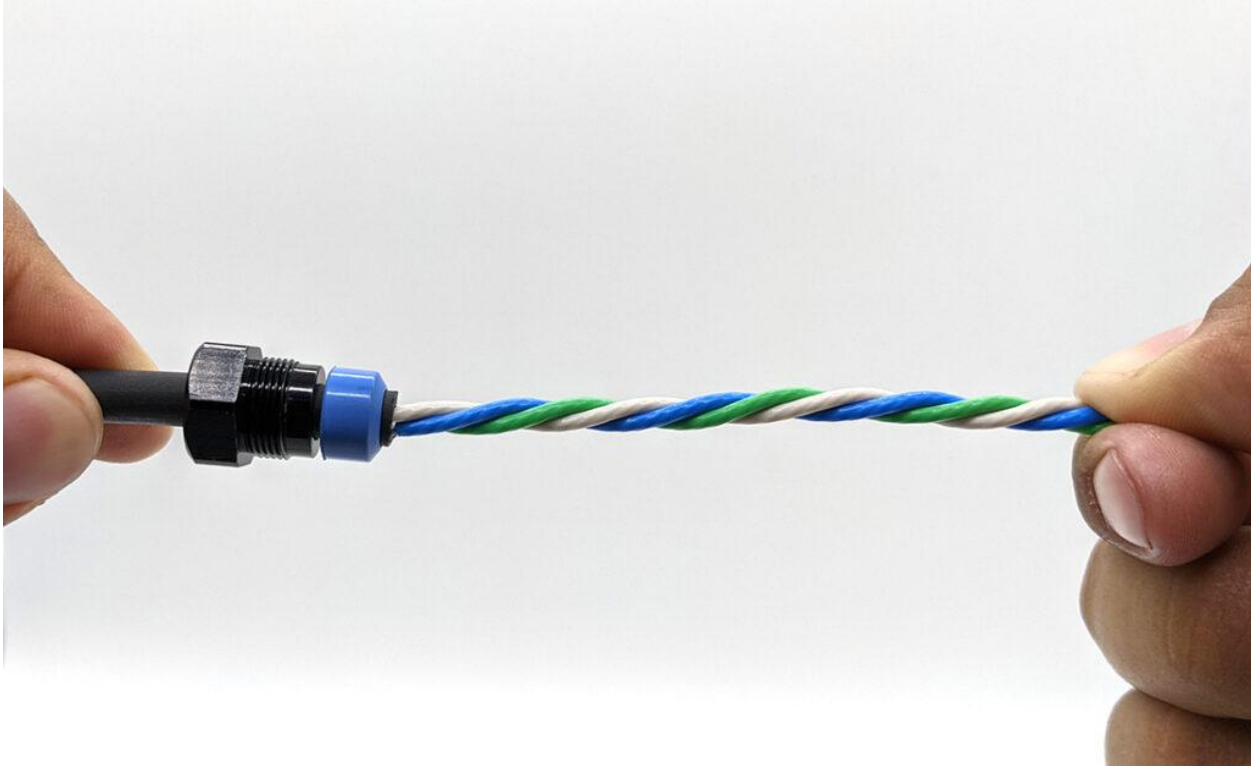
Tapered End

Plug tapered end.

Plug and seal installed on the cable.

Prepping the Wires

1. Twist the wires so they form a tight, neat bundle. It is very important to twist the wires before inserting them into the penetrator.

Damage to the wire insulation or conductors may occur if the wires are inserted without twisting first.

Twisting the wires.

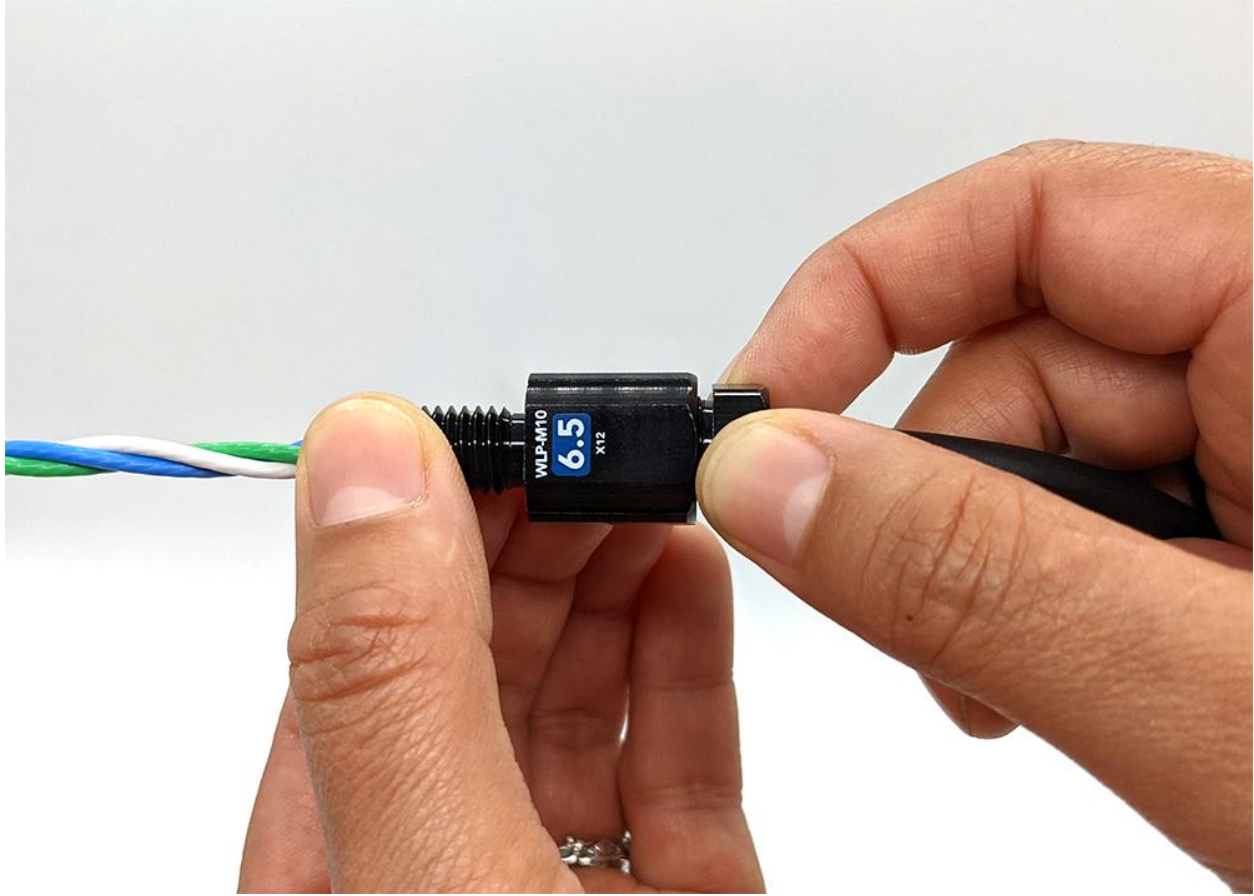# Installing into the Bulkhead

1. Insert the wires and cable into the penetrator bulkhead. Make sure the cable jacket sits firmly and fully into the bulkhead.

Cable inside bulkhead.

2. Slide the seal and plug down and insert them into the penetrator bulkhead. Use your fingers to thread the plug into the bulkhead. Make sure the cable jacket stays firmly seated against the cable jacket step while doing so. Tighten until finger tight.

Plug and seal installed in bulkhead.

Completing the Assembly

The rest of the assembly process can be completed using either the recommended WLP Tools or with common hand tools:

Using WLP Tools

For this step you will need:

- 14mm Plug Wrench
- 1/4 inch drive ratchet or torque wrench
- WLP Assembly Block
- A vice or 2x 6mm diameter bolts or 2x M6X1.0 thread bolts

1. Secure the WLP Assembly Block to a table or work surface using a vice.

The WLP Assembly Block can also be secured using 6mm bolts with the side-mounting through holes.

Or with M6X1.0 thread bolts into the underside threaded mounting holes.

WLP Assembly Block underside mounting holes.

2. Insert the bulkhead with installed cable, plug, and seal into the appropriate space in the Assembly Block. The spaces are labeled according to the bulkhead size. The wires extending from the bulkhead should feed through and come out of the bottom of the Assembly Block.

Bulkhead in Assembly Block.

3. Attach the Plug Wrench onto a 1/4 inch drive ratchet or torque wrench.

Plug wrench on ratchet.

4. Tighten the plug using the Plug Wrench and ratchet until it sits flush with the bulkhead, then turn an additional 1/16th of a turn. If using a torque wrench, tighten to 14 Nm (10.33 ft-lb).

Tightening the plug with Plug Wrench and ratchet.

Alternatively, the Plug Wrench can be turned by hand using the included lever bar.
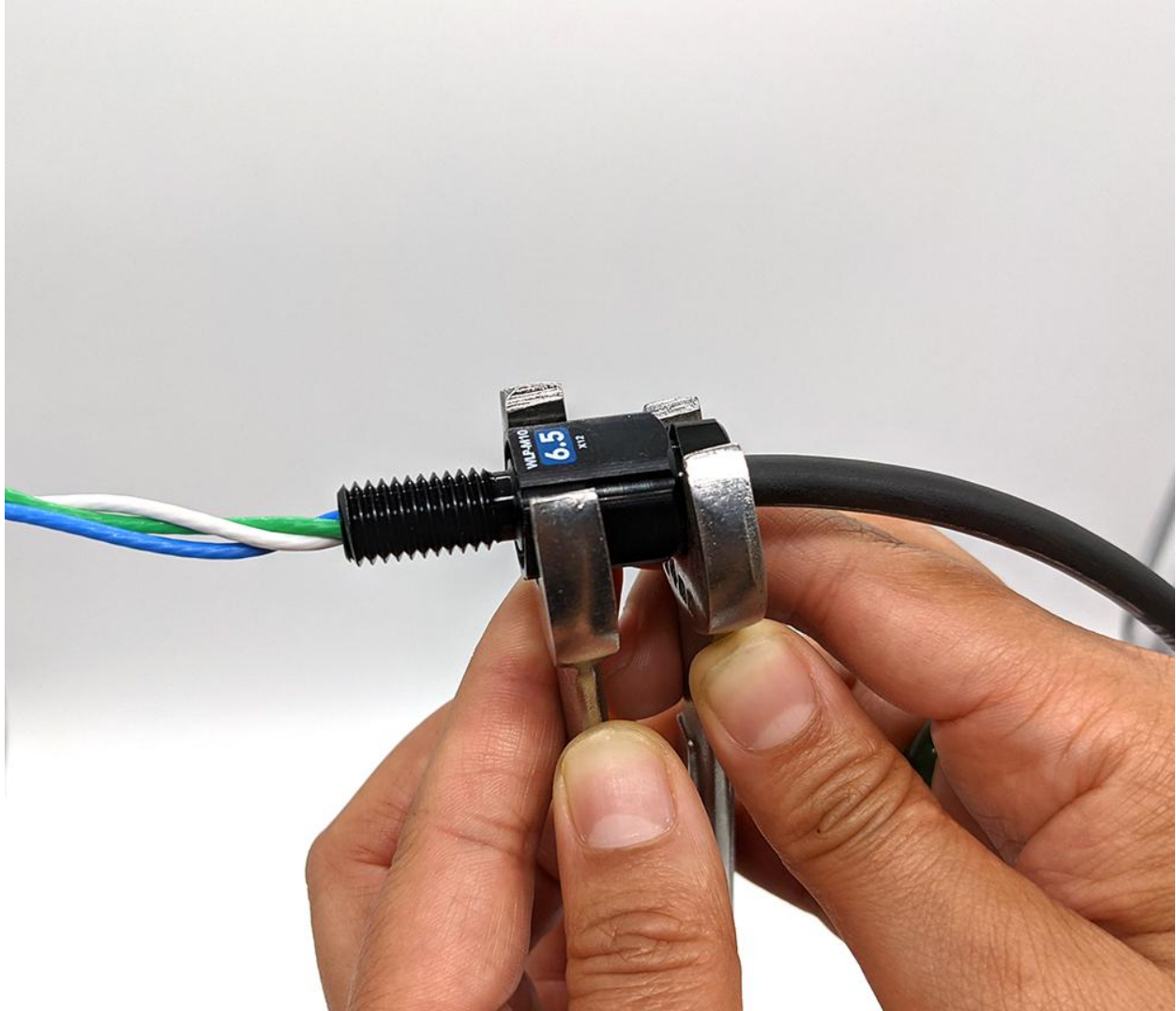
M06   M10   M14

Using Hand Tools

For this step you will need:

- 14mm open-ended wrench
- 16mm open-ended wrench

1. Use a 16mm wrench to hold the penetrator bulkhead while tightening the plug.

2. Use a 14mm open-ended wrench to tighten the plug. Tighten the plug until it sits flush with the bulkhead, then turn an additional 1/16th of a turn.

Using hand tools.

Reusing a WetLink Penetrator

WetLink Penetrators are also reusable! We recommend the Wetlink Penetrator Bulkhead and Plug be reused no more than 3 times to maintain performance.

When reinstalling a Wetlink Penetrator onto a cable, the seal must be replaced and the penetrator should be installed on a previously uncompressed section of cable jacket. Replacement WLP Seals are available here.