

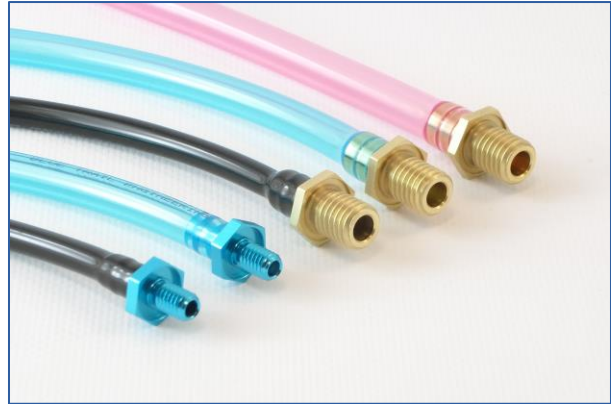
Simple Penetrator SPN-110X

Instructions

The Simple Penetrator is intended to be used in conjunction with Blue Trail polyurethane tubing to create a waterproof connection to an enclosure or device.

Install the polyurethane tubing onto the Simple Penetrator

The end of the tubing needs to expand to fit over the barbed portion of the Simple Penetrator. This requires heating the end of the tubing either by dipping in boiling water or heating with a heat gun. The boiling water technique is shown here because it gives better control over the temperature, but using a heat gun may be quicker. If using a heat gun, experiment to find the correct temperature. The goal is to soften the tubing without melting it. Whether using a boiling water or a heat gun, wear gloves and exercise caution to avoid burns.



1. Prepare a clean work space. Lint, hair, or other contaminants can compromise the waterproof O-ring seal between the Simple Penetrator and the enclosure/device.
2. Cut the polyurethane tubing to the desired length.
3. Gently heat one end of the tubing by dipping in boiling water for 20 seconds. Alternatively, use a hair dryer or heat gun to soften the tubing. Experiment with a spare piece of tubing to find the right temperature (avoid melting the end of the tubing).

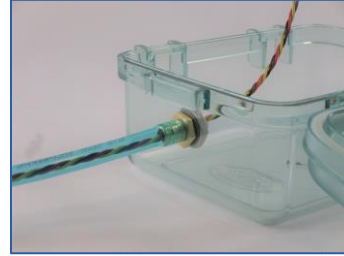


4. While the tubing is still hot, push the tubing all the way onto the Simple Penetrator. It may be necessary to push the tubing on at an angle to get it "started."

Install the Simple Penetrator on the enclosure/device

1. Mark the desired location on the enclosure/device for the Simple Penetrator. The surface of the enclosure/device must be flat and smooth at this location.
2. Drill a 6-mm or 10-mm hole (depending on the size of Simple Penetrator) in the desired location on the enclosure, or alternatively, drill and tap the hole with the appropriate size of tap.
3. Ensure that the area surrounding the hole is completely free of scratches and contamination.
4. Ensure that the O-ring (included) is completely free of tears and contamination.

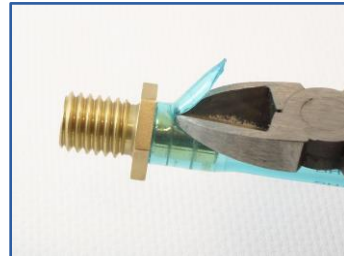
5. Install the O-ring in the groove on the Simple Penetrator. It is recommended to lubricate the O-ring with a lubricant such as Dow Molykote 111 before installation.
6. Install the Simple Penetrator onto the enclosure using either the included nut or by screwing the Simple Penetrator into the tapped hole in the enclosure. Use threadlocker if desired. Do not overtighten.
7. Thread your cable or wire through the tubing.



Removing tubing from the Simple Penetrator

Removing tubing from the Simple Penetrator requires a pair of wire cutters with flush-cutting jaws. The goal is to cut the tubing without allowing the wire cutters to make contact with the Simple Penetrator. If contact is made, it's possible to scratch the surface of the Simple Penetrator and cause a leak.

1. Pinch the tubing with the wire cutters as shown. The jaws of the wire cutters should NOT be on the centerline of the tubing, but rather above the centerline. As you pinch the tubing, the wire cutters should slide upwards, further away from the tubing centerline. Continue squeezing to cut through the tubing, without the jaws of the wire cutters touching the Simple Penetrator.



2. There may be a portion of un-cut tubing remaining. If so, make a second cut to completely remove the tubing.

