



Universal Robots Cable-Management Sleeve

PROBLEM:

A customer needed an inexpensive, universal robots cable-management solution for electrical and pneumatic lines that run from the base of a 6-Axis, collaborative, robotic arm to the tool head. The robotic arm range of motion, as well as the size and quantity of control lines running to the tool head, were variable, so a comprehensive solution was needed.

REQUIREMENTS:

An ideal material would be durable enough to survive in an industrial production setting with thousands of cycles a day. The solution must be able to accommodate multiple different wire and tubing sizes and support a wide range of robotic applications. The major benefit of collaborative robotics is the ability to quickly and easily reassign tasks. The cable management solution must allow for easy re-entry to add or remove lines as needed. The captive control lines must stay in place during normal operation and also allow for the line to slide if snagged by an operator or nearby obstacle.

SOLUTION:

The Zippertubing® Company utilized its durable polyurethane material known as PFR-10. Hook-and-loop strips were sewn to the PFR-10 film to create a set of wraps that are specifically sized for the robot model. Strips of Hook and Loop were spaced out to create open channels through which the electrical and pneumatic lines were run. This system created an easily accessible and highly reliable method for containing control lines. The PFR-10 material held the air and electrical lines in place but still allowed for movement if the lines were to be pulled on. This feature is key in avoiding damage to the tool head or control lines.

