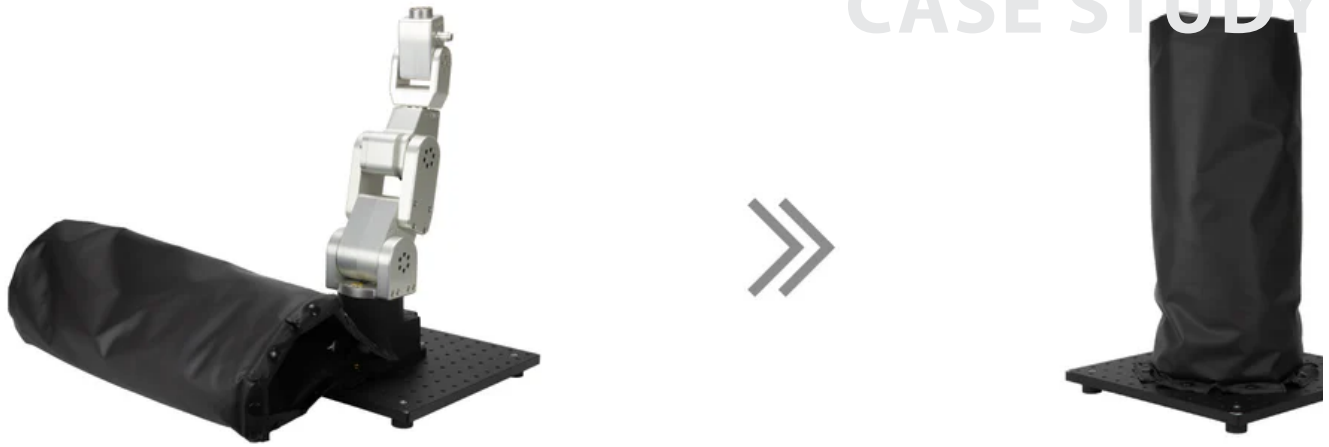




Custom Insulating Robot Cover

PROBLEM:

A company that designs and manufactures safety systems for the automotive and mobility industry was expanding their capability to automate their testing. One of the tests they needed to perform required manipulation of their system under extremely low temperatures, below what their current robot arms could operate in.

REQUIREMENTS:

The cold temperature testing needed to be performed at temps as low as -67°F (-55°C) and required the robot arm to manipulate their system. The robot arm and the protection for it would need to withstand that extreme low temperature and also be able to move and operate. This company also wanted to minimize modifications to their robotic system to maintain uniformity and minimize alterations that would take time to set up or become approved for use.



SOLUTION:

Custom PFR-10 Cover with Insulation

Zippertubing provided a custom fitted insulating cover, sized to fit over their existing Mecademic six-axis robotic arms. The outer and inner layers were made with ZT's PFR-10 polyurethane material which is extremely flexible and pliable, even at low temperatures. Safely secured inside the PFR layers was a fiber insulation layer that would help keep the robot arm at temperatures within its operational limits. The thin and flexible PFR cover was sized to cover the entire robot but not restrict the range of motion it would need to maneuver during the testing operations.

CONCLUSION:

Zippertubing design engineers were able to work with this company's test engineers to specify the custom mounting configuration at the base of the robot cover. This allowed for an easy and solid installation of the cover to their base-plate including openings for their cabling and air lines. Additionally, the end of the cover was fabricated with mounting holes perfectly matching the mounting configuration at the end of the robot arm. This allowed the test team to utilize their current end effectors without needing to modify their other hardware.