

# Miniature Seals Provide Low Torque Performance

## Challenge

### Background

A company specializing in medical devices builds swivel systems used for infusion and blood sampling in laboratory research. The system must allow 360° rotation and exhibit low torque. The fluid connections are 20 gauge or smaller with the swivel body less than 1/4" diameter. Seals for these swivels must be leak tight, low friction, and miniature.

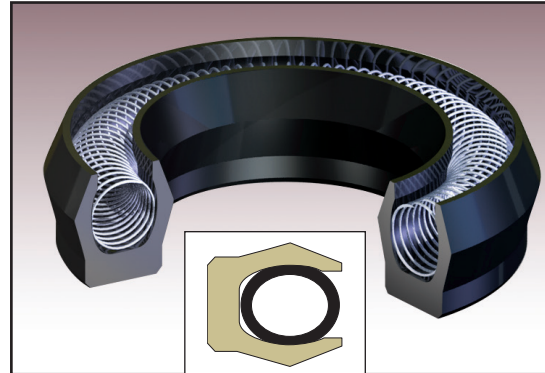


Infusion and blood sampling swivel.

## Solution

### Product

A **Chesterton Series 200 - Elliptical Spring-Energized Seal** was designed for this application. Since the seal was sized for a gland less than 0.050" in cross-section and low friction was a requirement, an elliptical spring was fabricated as it could be made in a miniature profile with low spring force. The seal jacket was made from Virgin PTFE and spring from 300 stainless steel.



Chesterton Series 200 - Elliptical Spring-Energized Seal.

## Results

Seal performance was verified through functional trials, where Chesterton also assisted in the creation of seal installation tools and guidelines. The **Chesterton Series 200 - Elliptical Spring-Energized Seal** provided successful low torque sealing per the customer's test regime and acceptance criteria, ongoing factory acceptance testing, and subsequent performance in the field.



Medical research.