

# TECH TALK:

## Top 4 Common Fluid System Problems and How to Avoid Them

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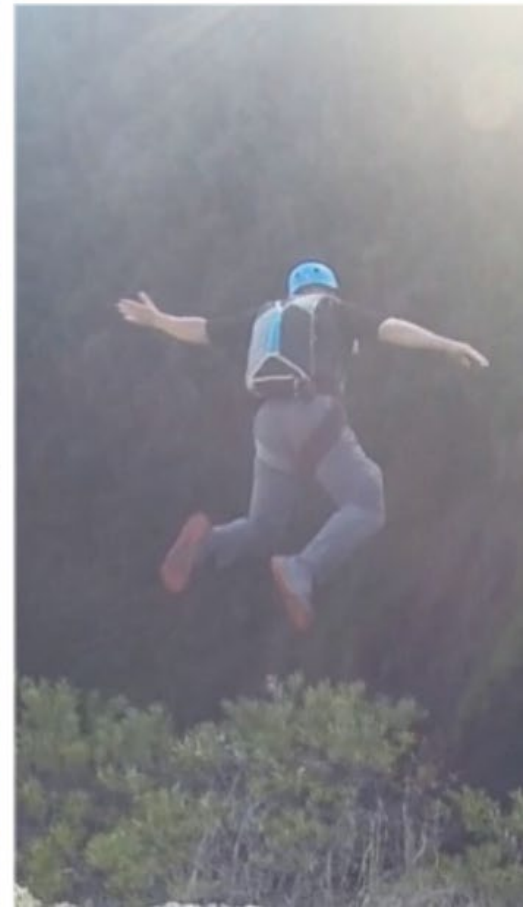
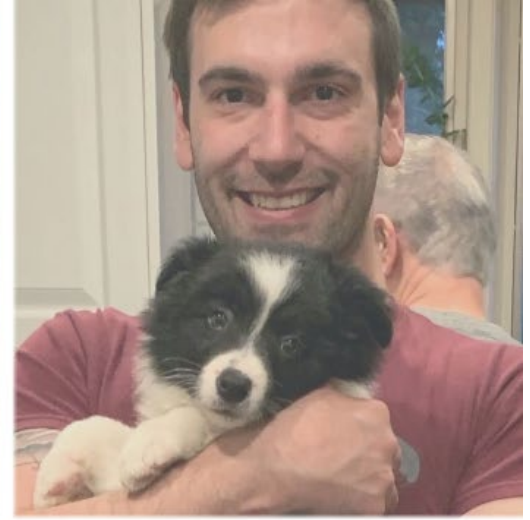
01/21/2021

**Swagelok®**  
Swagelok Northwest (US)

# Meet Your Field Engineers

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**Adam Ghannoum**  
Field Engineer

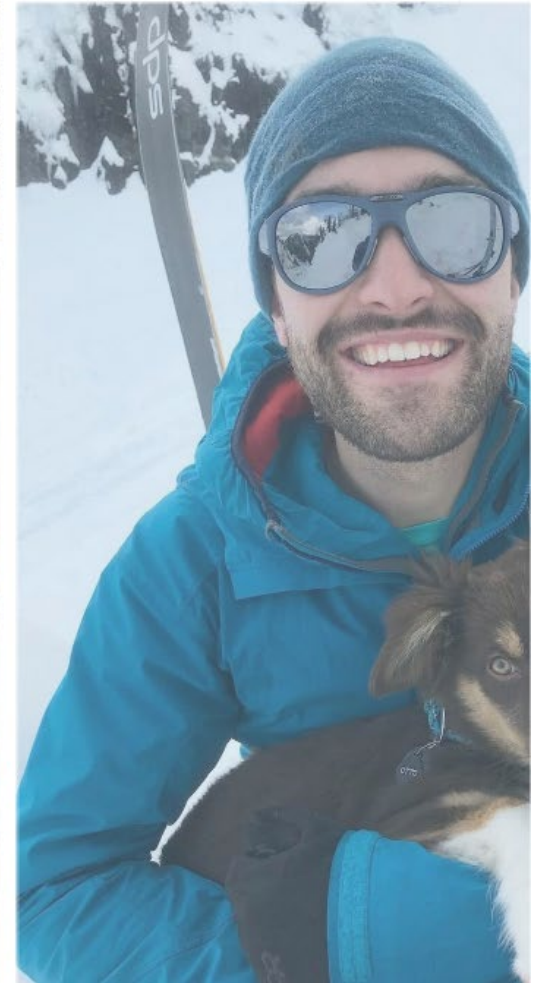




# Meet Your Field Engineers

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## Matt Hasenohr Field Engineer



# Agenda

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- Data Collection
- Trend Review
  - Particulates and Filtration
  - Proper Handling of VCR Components
  - Hose Selection and Install
  - Elastomer Selection
- How Does This Help You?
- Questions

# Data Collection

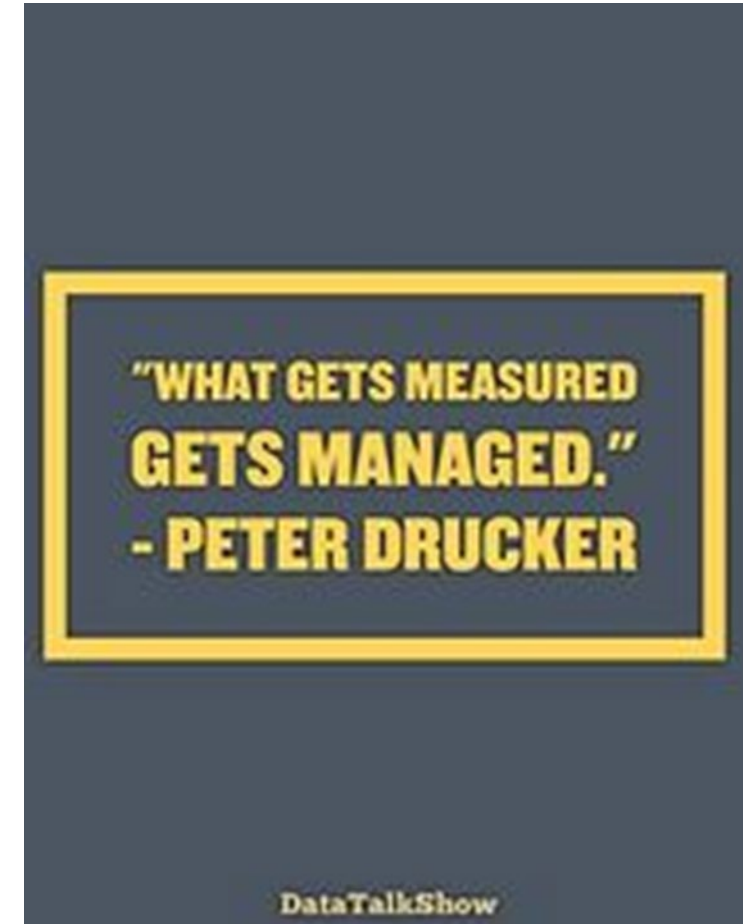
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## How Did We Collect This Data?

- Each time a customer returns an item:
  - Item is evaluated locally
  - Item returned to Swagelok Factory
  - Report completed describing findings
  - Entered into internal database to store findings

## Data Analysis

- After years of collection, we have been able to:
  - Parse data into recurring themes
  - Develop targeted training or education
  - Focus on reducing future returns or downtime



## Overview

- Particulates and Filtration
- Proper Handling of VCR Components
- Hose Selection and Installation
- Elastomer Selection

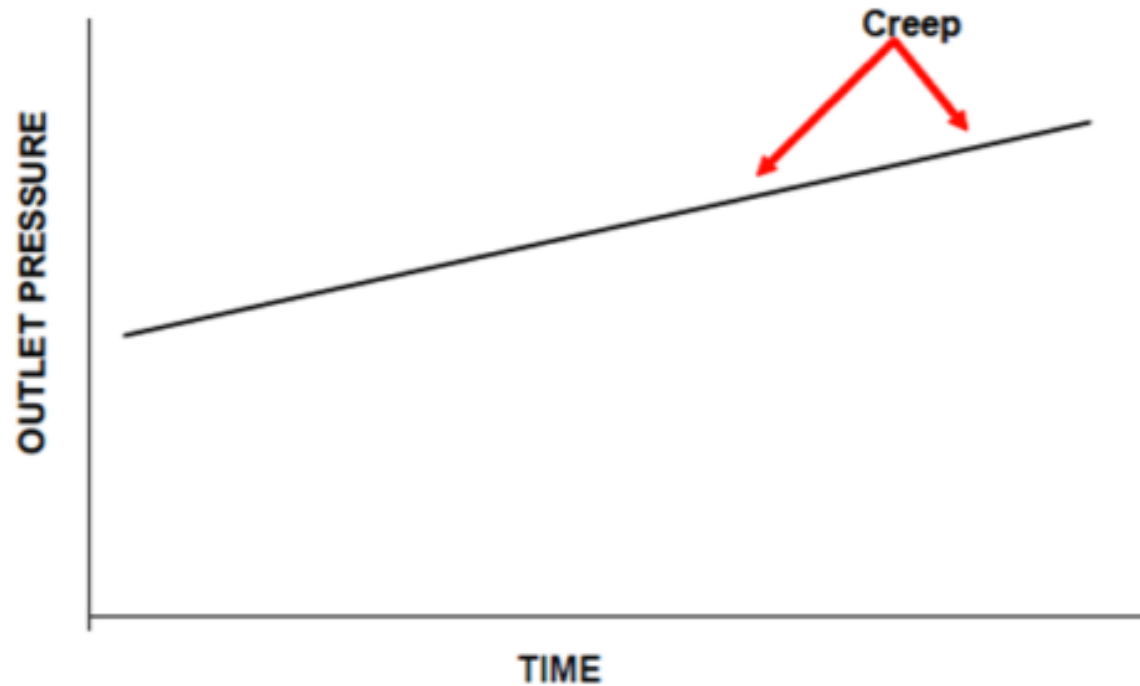
## Covered Content:

- Review of Returned Items
- Signs and Symptoms
- Best Practices



# Filtration and Particulates – Review of Returned Products

*“The customer reports the regulator cannot hold a set pressure.”*



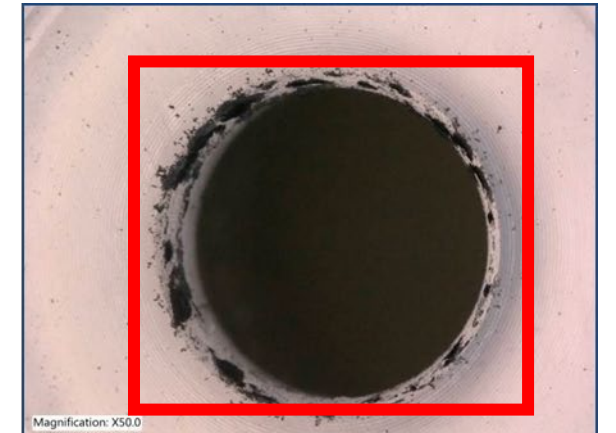
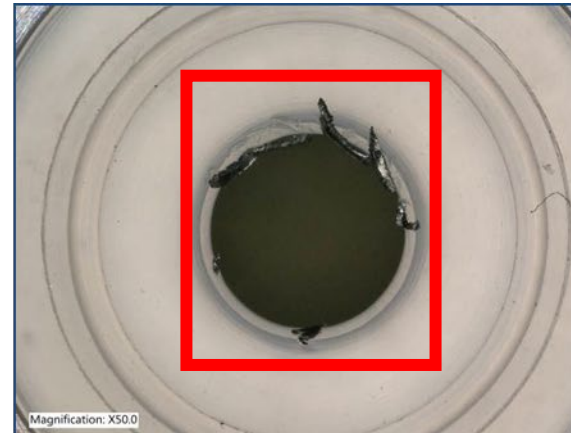
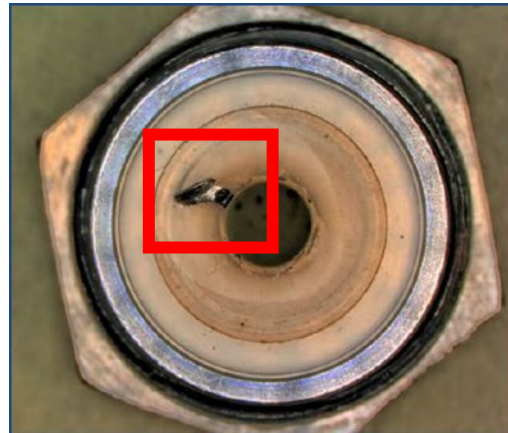


# Filtration and Particulates – Signs and Symptoms

***“Foreign contamination on the seat sealing surface would not allow the regulator to create a full seal.”***

## Inability to seal

- Particulates interrupting sealing surface
- Damage to sealing surface
- Common during start up
- Common in systems with high particulate load





# Filtration and Particulates – Best Practices

## Use Filtration Upstream of Sensitive Equipment

- Example: Regulators

## Ensure filter element is suitable for particulate size

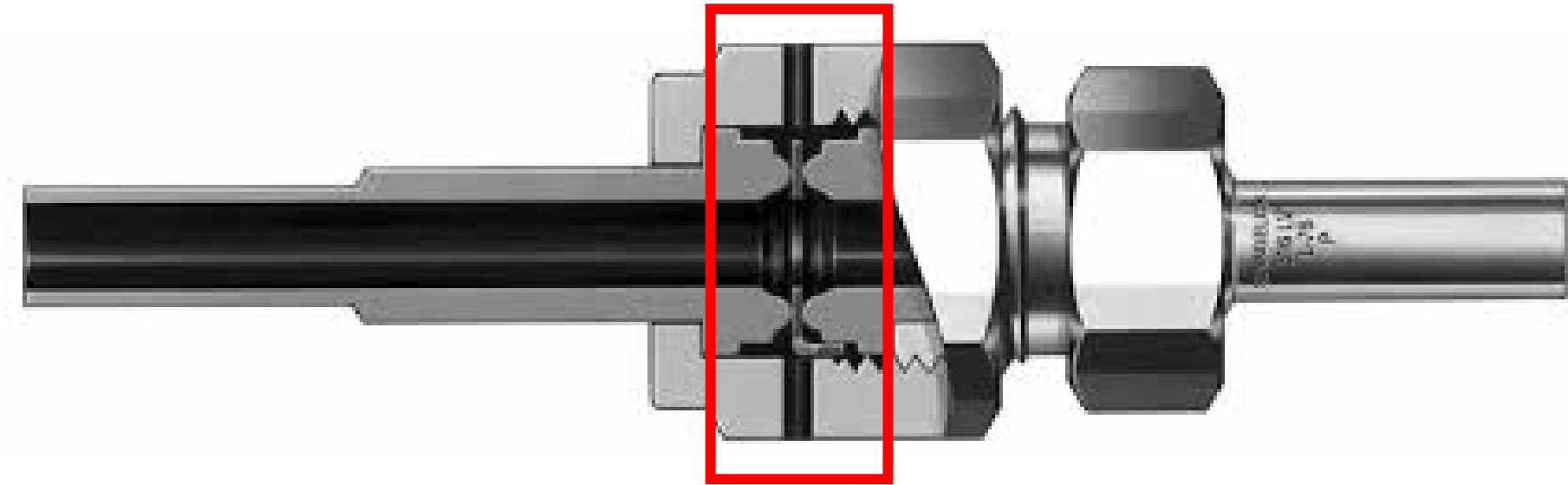
## Removal of captured particulate if possible

- Blowback



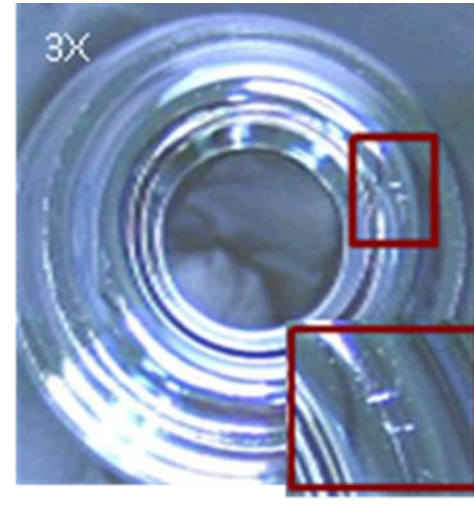
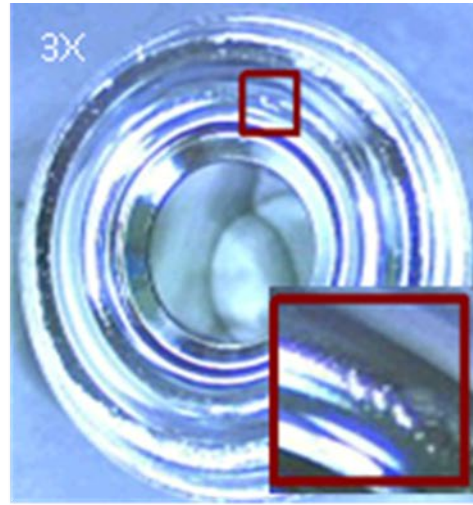
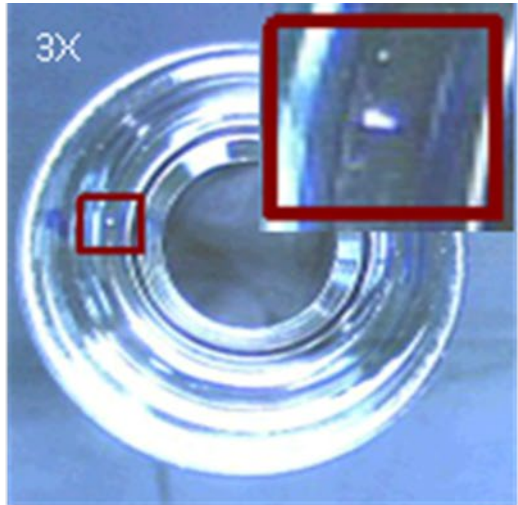
# Proper Handling of VCR Components – Review of Returned Products

*“The customer reported the valve failed their CDA leak test.”*



# VCR Handling and Installation – Signs and Symptoms

*“Damage was observed on the VCR bead of the outlet port.”*



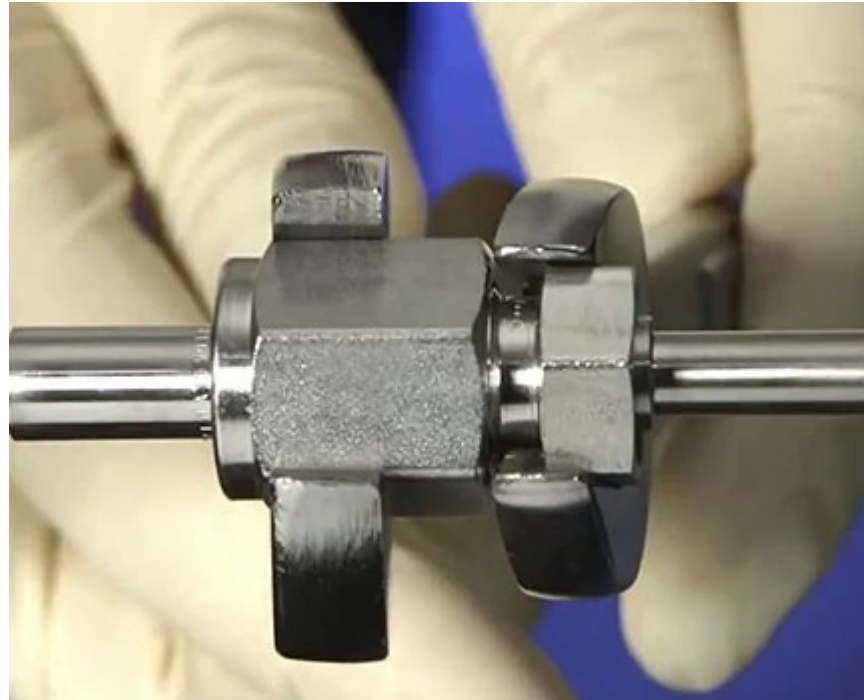
## Commonly caused by:

- Visual Damage to Gland
- Mis-Handling During Install
- Mis-Handling Prior to Install

# VCR Handling and Installation - Best Practices

**Precautions should be taken to protect the seal surface of the VCR end connections:**

- Assembling caps when waiting for installation
- Proper Training to Align with Installation Procedure
- Use of New Gaskets during remake





# Hose Selection and Installation - Review of Returned Products

## *“The Hose Leaks”*



# Hose Selection and Installation – Signs and Symptoms

***“Mechanical damage was likely caused by the stainless steel over braid puncturing the inner core tube.”***

## Commonly caused by:

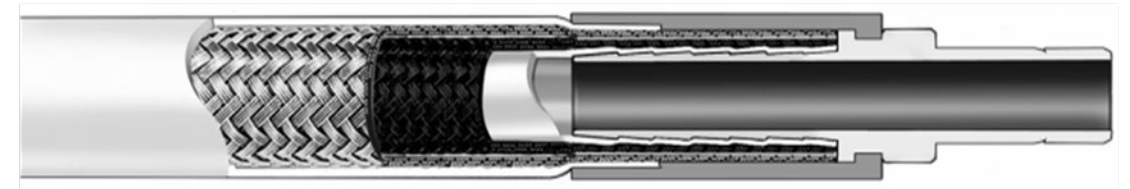
- Excessive bending during install
- Vibration
- Incorrect Length



# Hose Selection and Installation - Best Practices

## Clearly determine application details

- Static vs Dynamic
- Media
- Temperature and Pressure
- Proper Working Length
- Bend Radius Requirement





# Elastomer Selection – Review of Returned Products

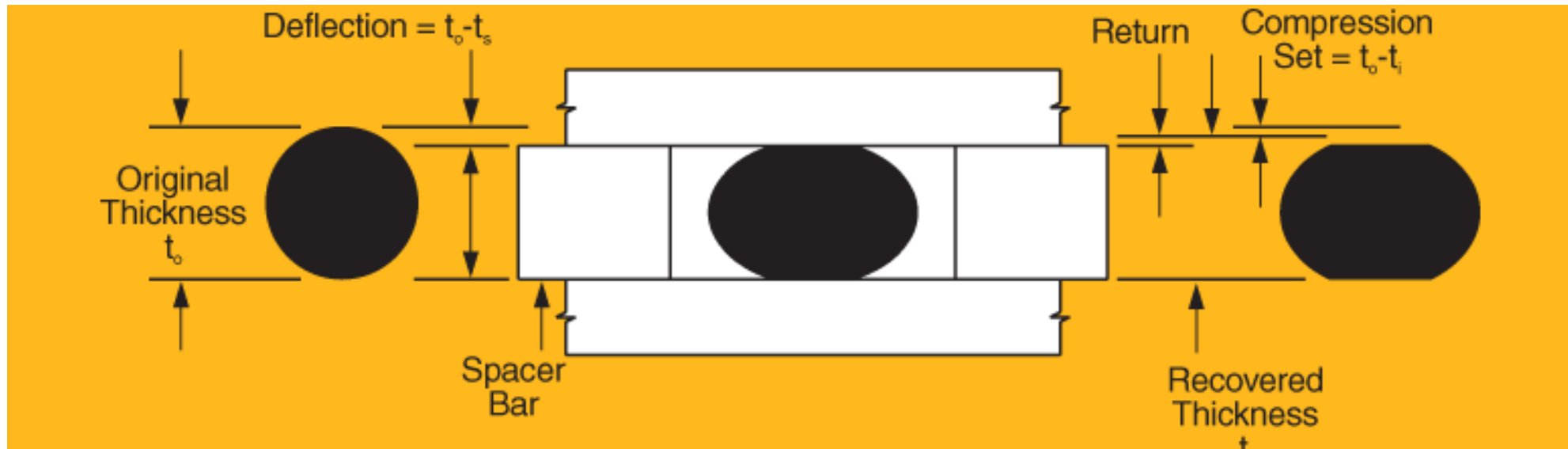
*“The customer reported CDA was leaking from the actuators.”*





# Elastomer Selection - Signs and Symptoms

*“The leakage was caused by compression set of the O-rings in both actuators.”*



# Elastomer Selection – Best Practices

## Application Information:

- Temperature
- Pressure
- Interaction with Media



## Example Specific:

- System temperature is higher than the catalog rated temperature of 65°C.
- Consider using a valve with an actuator assembled with FKM O-rings.

# How Does This Help You?

Identifying areas of common failure allows us to address the root causes

## Results:

- Decreased Downtime
- Decreased Maintenance Cost
- Improved System Design
- Improved System Confidence



# Get In Touch

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