UPGRADE
YOUR OFFERING

UPGRADING THE VENTED OPTO-MATIC TO A CLOSED SYSTEM OPTO-MATIC

Opto-Matic Types

VENTED OPTO-MATIC

External Air Exchange

CLOSED SYSTEM OPTO-MATIC

Check Valve for Exchange of Clean/Dry Air

Pressure Balancing Line

Opto-Matic Types

VENTED OPTO-MATIC

Introduced in 1939. Providing Constant Level Lubrication for many industries.

- Became an industry specification in API 610 40+ years ago.
- Continues to be the preferred constant level oiler by OEM's and MRO's.

CLOSED SYSTEM OPTO-MATIC

Introduced in 1995. Providing Improved Constant Level Lubrication for many industries.

- **Closed the external passages** of air exchange on the oiler. Meets API standards.
- **Provides Clean/Dry air** in exchange conditions.
- Significantly reduces external contamination therefore extending bearing life up to 40% longer

Opto-Matic Types

VENTED OPTO-MATIC

External Air Exchange

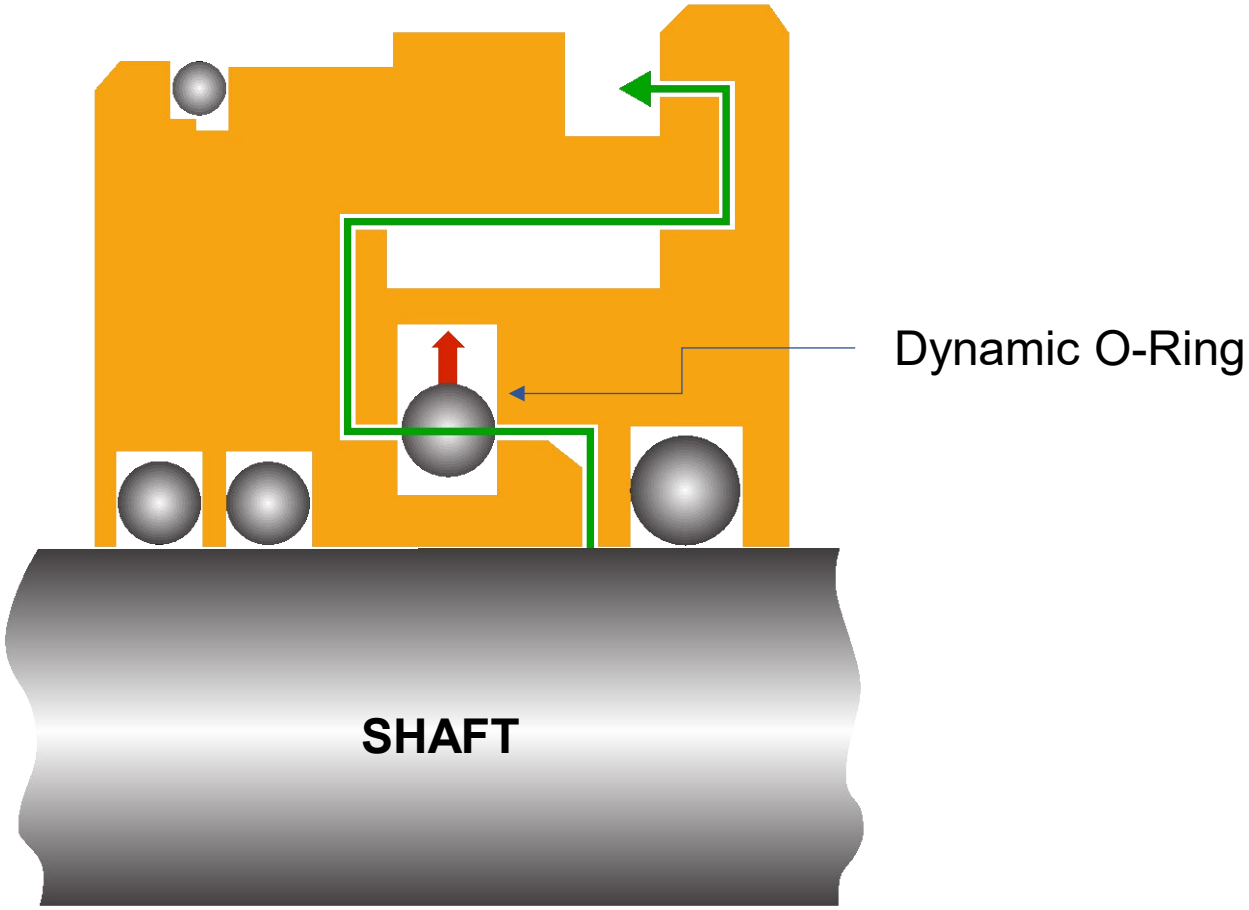
CLOSED SYSTEM OPTO-MATIC

Visual Level Gauge and oil level equal to the lower edge of the adjusting collar

Pressure Balancing Line

Vented Opto-Matic/Shaft Seal Misconception

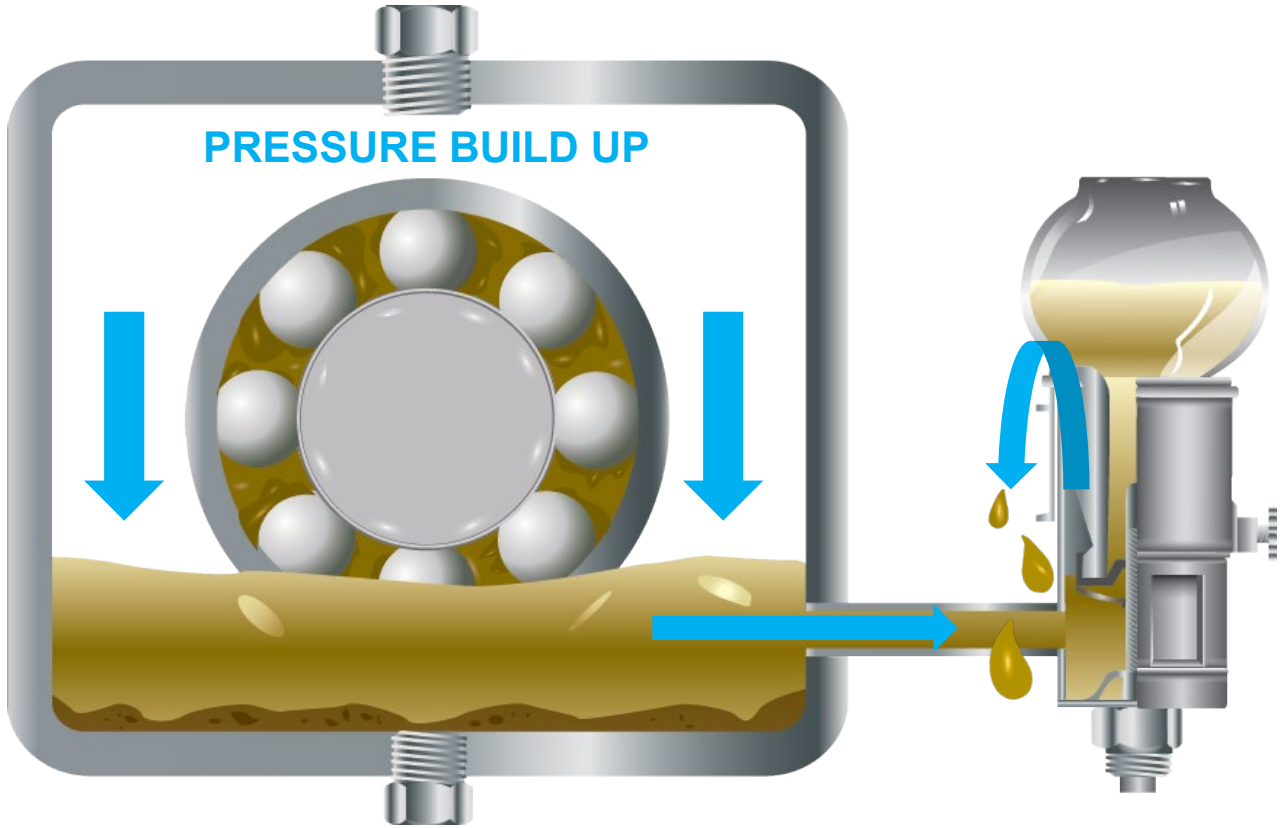
Some shaft seals are supposed to allow the bearing housing to breathe. A dynamic O-ring is designed to rise by centrifugal force to open an air path. However, that doesn't always happen due to temperature or swelling.



Vented Opto-Matic/Shaft Seal Misconception

If the air can't vent out of the housing, the pressure rises inside, forcing fluid back out of the vented oiler.

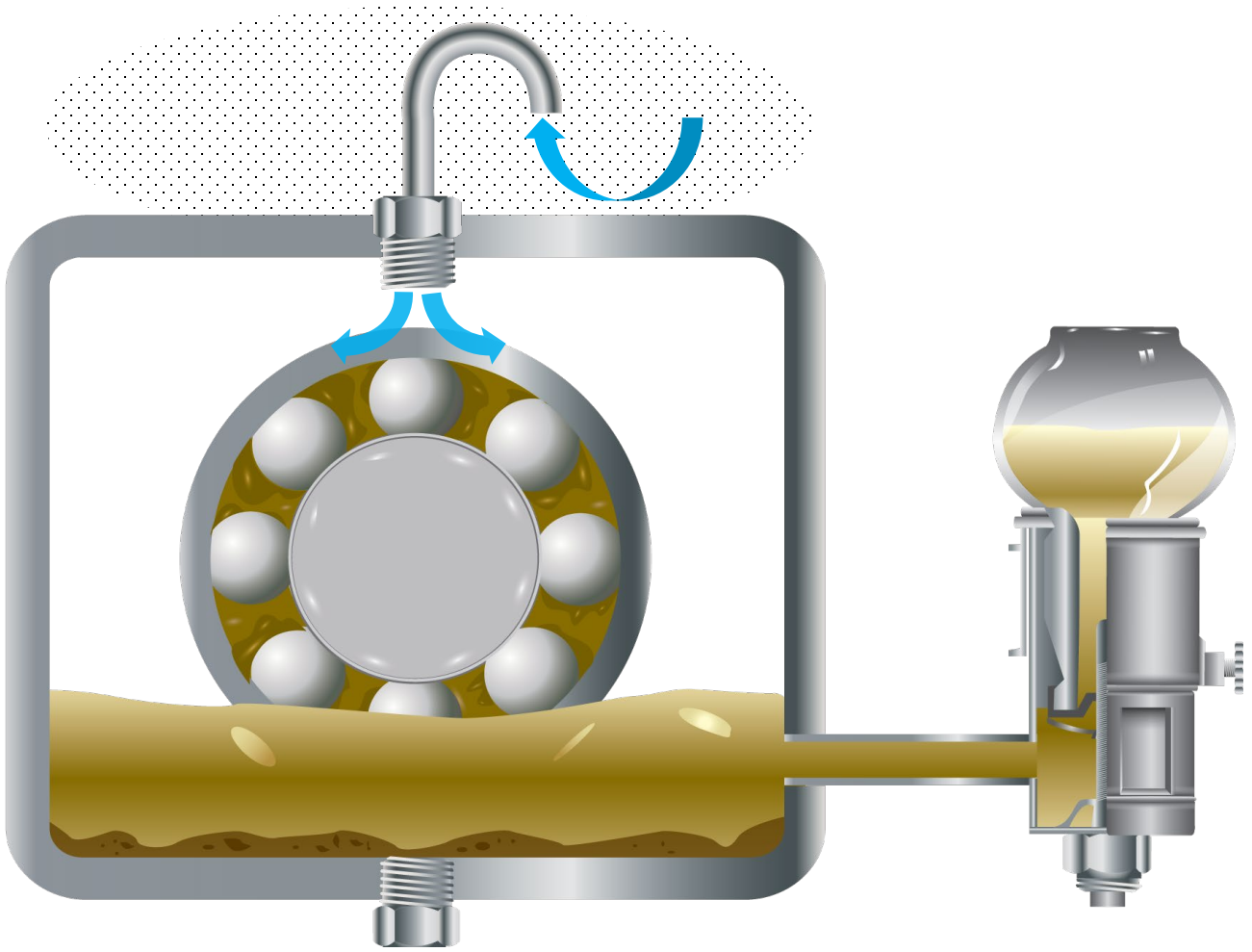
The most common recommendation from seal distributors is to take the oiler off – even though the real problem is the O-ring. To prevent this issue, add a desiccant breather for best case air exchange.



Vented Opto-Matic/Shaft Seal Misconception

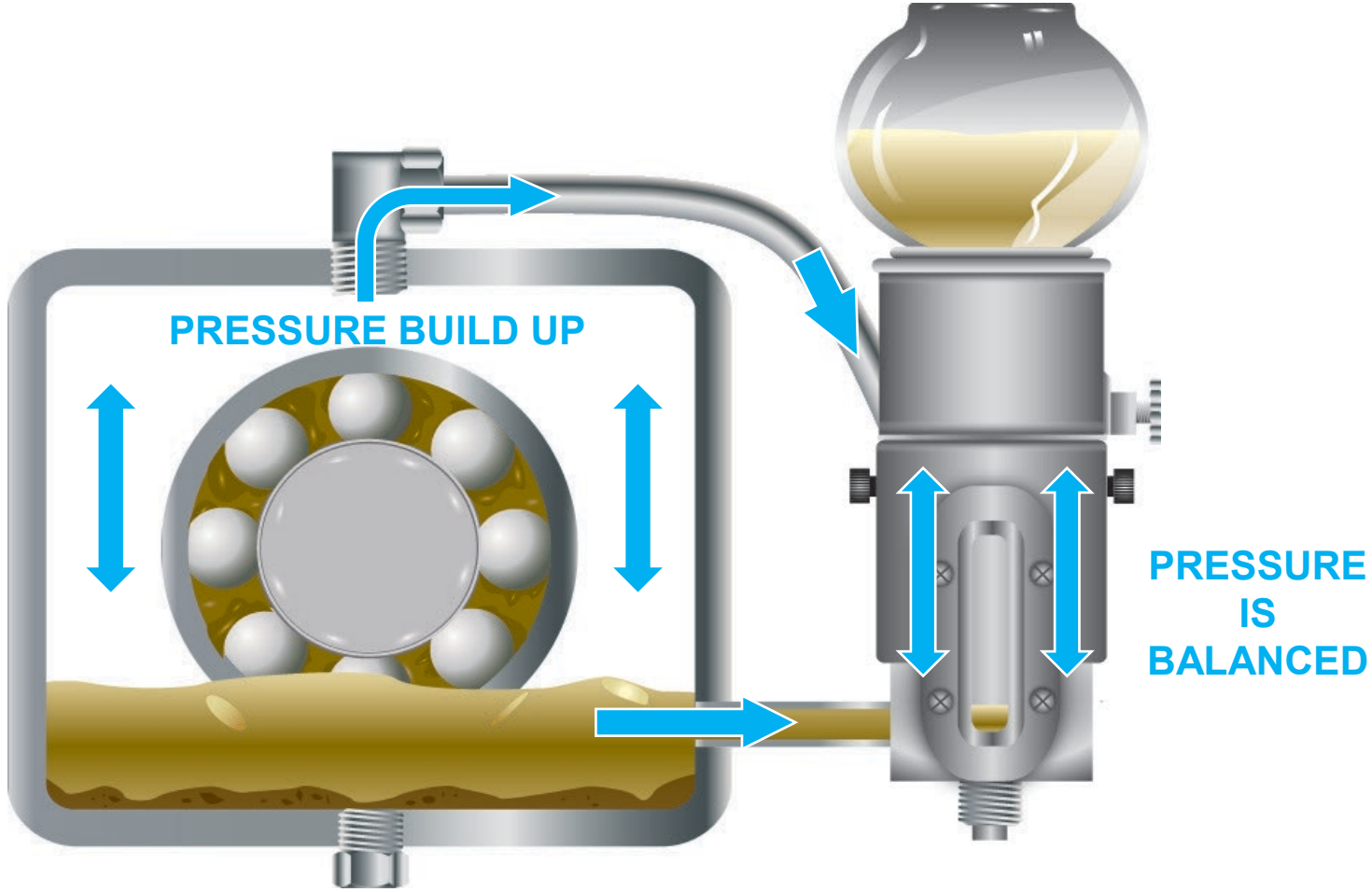
Even if the shaft seal is working properly, the O-ring closes the air path upon shutdown, trapping hot air in the housing. The air contracts as it cools, pulling in more air – as well as surrounding contaminants – through the vent or J-tube.

Use a Desiccant Breather instead.



Vented Opto-Matic/Shaft Seal Misconception

A closed system oiler setup will allow the bearing housing and the oiler to equalize pressure, eliminating the chance of the oiler misfeeding, regardless of whether the seal is working properly or not. The addition of a desiccant breather will allow clean, dry air to enter.



API Standard 610

Centrifugal Pumps for Petroleum, Petrochemical, and Natural Gas Industries

5.1 Basic Design

“Oil Reservoirs and housings that enclose moving lubricated parts such as bearings, shaft seals, highly polished parts, instruments, and control elements shall be designed to minimize contamination by moisture, dust, and other foreign matter during periods of operation and idleness.”

5.10 Bearings and Bearing Housings

“The housings shall be equipped with constant level sight feed oilers at least 12dl (4 fl oz) in volume, with a positive level positioner (not an external screw), heat resistant glass containers, and protective wire cages….”

Environments to consider:

Common Reactions

No - This is just what's spec'd in:

- In some cases, the vented system is an Inferior Spec for the technology available.
- Closing your system up is the most straight forward, common sense, thing to do.
- Water and particulate contamination = bearing/equipment failures ... and here's an easy opportunity right in front of you to reduce contamination.

No - Too big of a headache to change the spec:

- The work it takes to change a spec is minor compared to the work you could be creating by not changing.
  - Filtering/Replacing Oil
  - Repairing Components because of contaminants
  - Cost of Downtime to Repair

Common Reactions

The cost is an issue:

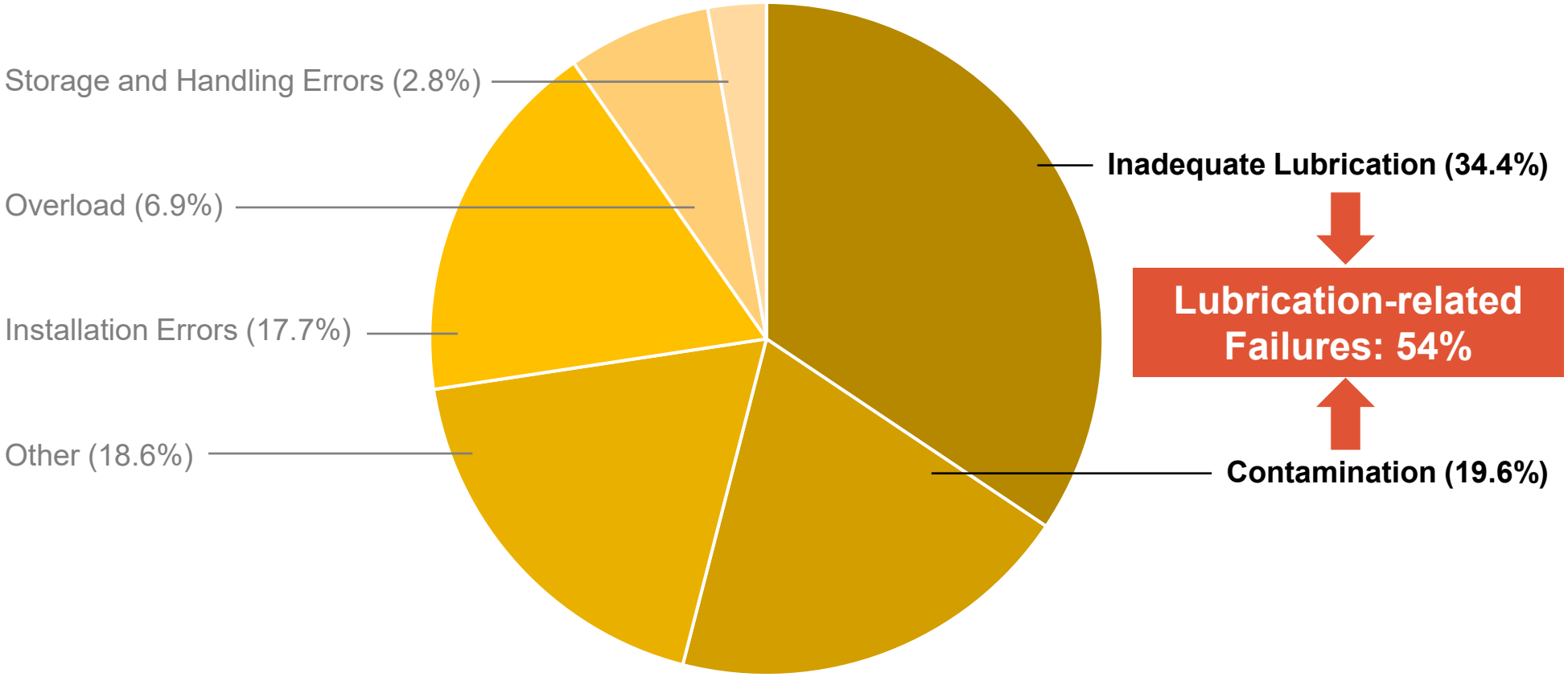
- Take into account the cost of a lost bearing and the downtime/labor associated with repair.
- The minimal initial investment is nothing compared to the cost of filtering/replacing oil time after time.

Do I need new ports?:

- No – the closed system can be installed in the same ¼” NPT ports.
- The pressure balancing line will need to be added – ideally with a desiccant breather that can be piped into the fill port on top.

Why Bearings Fail

In a study conducted by SKF, **over 50% of bearing failures are the result of improper lubrication.**



Make the Transition:

for extended bearing life and ultimately, extended MTBF on your Equipment