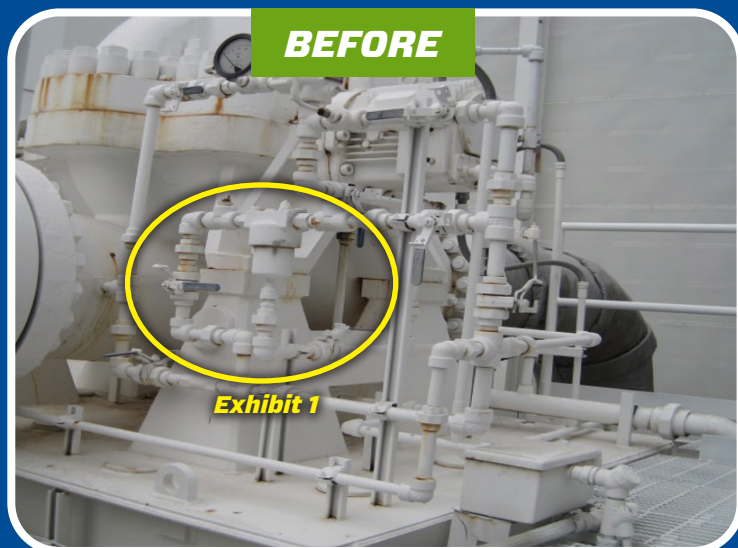


Swagelok Pittsburgh | Tri-State Area

Your Local Swagelok® Fluid-System Solutions Provider

An Oil & Gas customer needed to substantially improve the effectiveness and efficiency of its Pipeline Pump's bearing lubrication and seal flush system.



Your Challenge

OEM design employed 1" carbon steel pipe with threaded fittings. But the severe vibration caused by the weight of the system, combined with more than 50 connections, meant extreme – and costly – leakage. Other obstacles leading to excessive downtime and lost productivity:

- Bearing seal access was difficult
- Bearing seal service required 40 man-hours to disassemble/reassemble pipe connections
- To prevent corrosion, the pipe and plumbing needed to be repainted after each re-assembly
- Small filter necessitated frequent changes – resulting in total system shutdowns (see [Exhibit 1](#))



Your Solution

Swagelok re-engineered the system with ¾" stainless steel bent tubing and tube fittings – mounting all components directly on the pump, thus greatly minimizing vibration and leakage. System reliability was also enhanced due to 70% fewer fittings used. Other improvements leading to significantly superior performance and profitability:

- Pump plumbing created safer/easier bearing seal access
- Bearing seal service time was reduced 85% -- just 4 nuts and portable candy canes involved (see [Exhibit 2](#))
- No painting required; corrosion no longer an issue
- Filter bypass was added to eliminate system shutdowns due to filter changes (see [Exhibit 3](#))
- Larger filter size meant fewer filter changes

Outcome: Swagelok delivered a seal flush system that:

- Vibrates in tandem with the pump at a far less severe rate
- Requires a fraction of its former maintenance labor and cost
- Enables a service schedule of 2 pumps per day versus 2 pumps per week

Plus, after initial Swagelok prototypes proved successful, our pre-fabricated kits further reduced installation time at the customer's other pump locations.

Your Bottom Line

1 Swagelok Mechanical Seal Support System, incorporating tubing and tube fittings, saved customer valuable operational time, money, and safety concerns.

2 New Swagelok system solved customer's vibration and leakage issues.

3 New Swagelok system, according to our customer, is far safer, easier, and "cleaner" to service.

PUMP UP YOUR ROTATING EQUIPMENT PERFORMANCE

with Swagelok's Mechanical Seal Support API 682 Plan Kits or Assemblies!

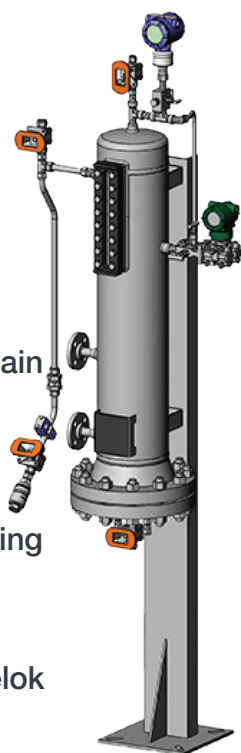


- Proven to dramatically reduce pump vibration and overall leakage.
- Easily configurable.
- Expertly designed and built – locally.
- Simple installation.
- Ultra-reliable.
- Minimal maintenance required.

Swagelok

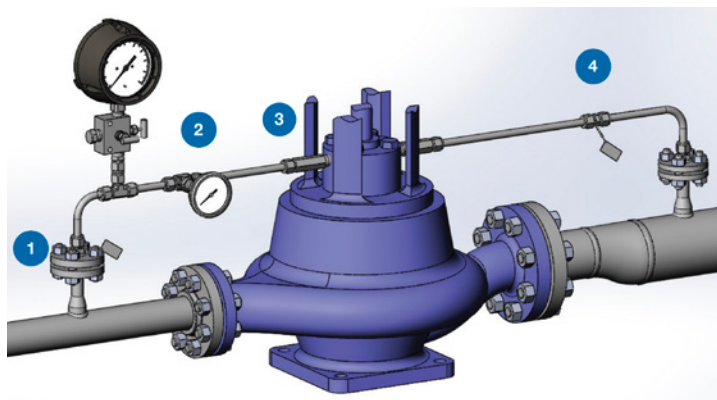
API 682 Seal Plan Assemblies are:

- ... easy-to-configure
- ... highly customizable for your specific application
- ... simple to install and maintain
- ... your reliable and trusted choice for ultimate pressure containing, leak-tight, emission-reducing Rotating Equipment performance
- ... fully backed by the Swagelok Limited Lifetime Warranty



Replace traditional threaded and/or welded pipe connections with **bent tubing and 2" and under Swagelok components.**

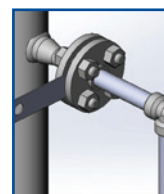
Here's an example:



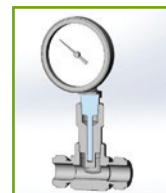
From this...

...to this.

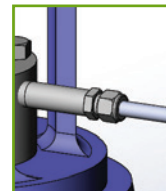
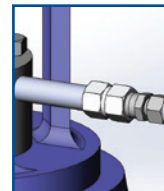
1. Eliminate one of two welded flanges by installing our **Integral Orifice Flange Adapter**. This also nullifies the need for a paddle orifice between the two flanges.



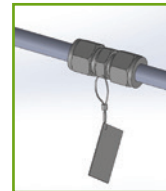
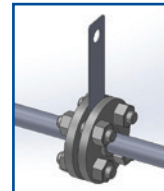
2. A Swagelok **Thermowell Tee** eliminates numerous threaded pipe fittings and isolates process fluid for safer thermometer replacement.



3. Our **Extended Male Connector** means one fitting can replace multiple connections. It also extends your tubing connection beyond the pump shroud.



4. Our **Orifice Union** nixes the need for welding flanges. Tags can also be added for easy identification and to minimize installation errors.



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