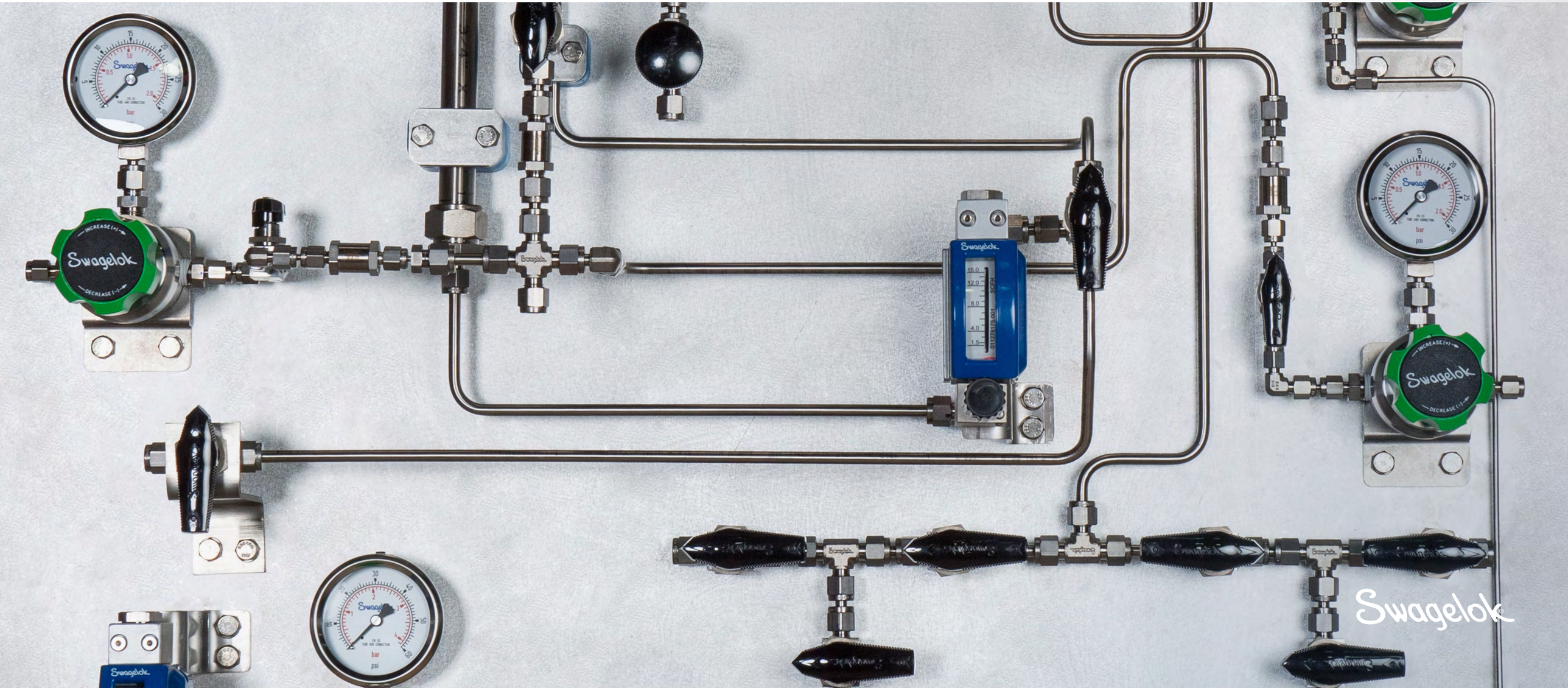
Mechanical Seal Support Systems

Configurable. Local. Reliable.





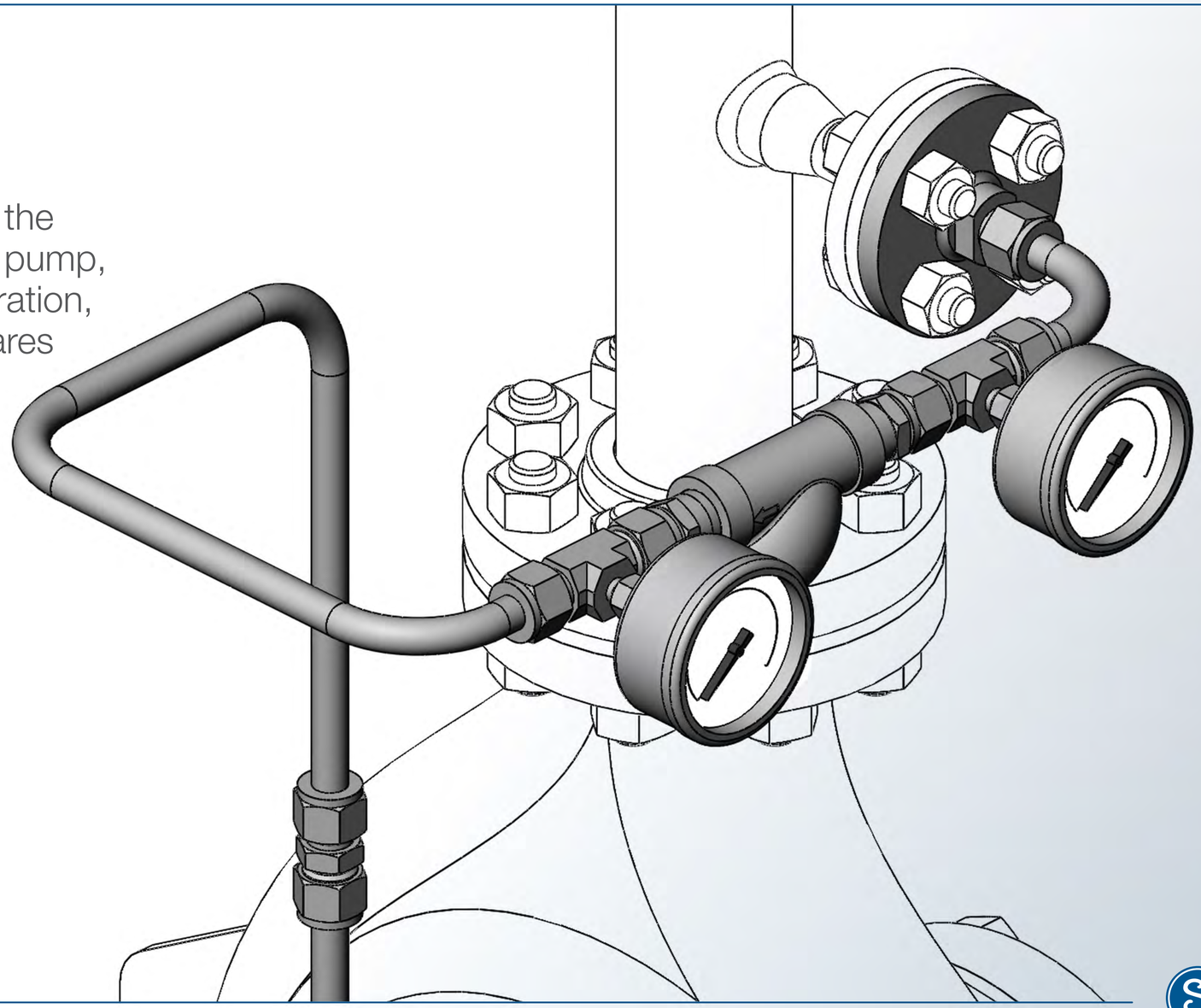
Swagelok® seal support systems are better by design.

Our easy-to-configure, locally built, and reliable solutions help you reduce costs, save time, and improve safety.

Better by Design

Because seal support systems are critical to the proper operation of the mechanical seal and pump, you need a system designed for reliable operation, easy maintenance, and access to critical spares when you need them. Swagelok mechanical seal support systems are designed and built by your local authorized sales and service center how you want them and when you need them.

- Reduced leak points
- Simplified installation and maintenance
- API 682 standard designs



Reduced Leak Points

Innovative use of components reduces threaded connections where costly leaks can occur.



Extended Male Connector



Thermowell Tee



Integral Orifice Flange Adapter



Orifice Union

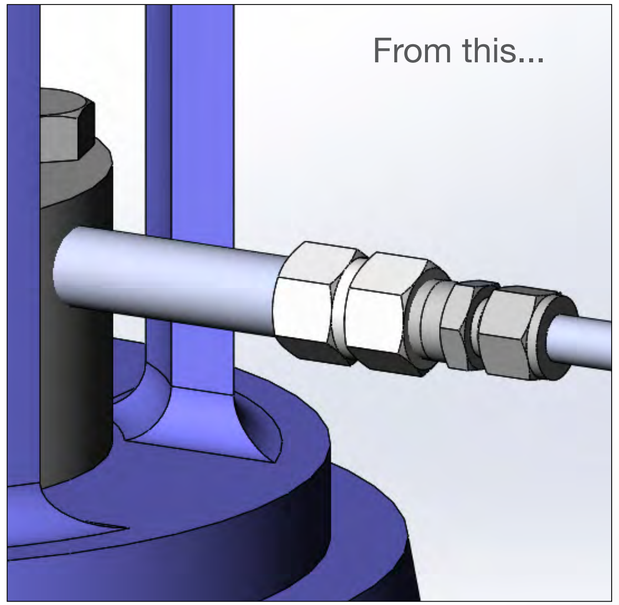
Save Money. Reduce Labor. Improve Safety.

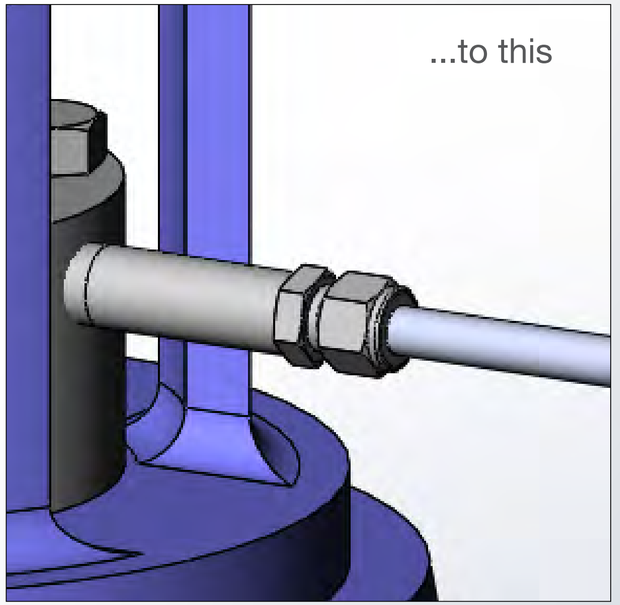
More about Reduced Leak Points

Reduced Leak Points

Extended Male Connector

- Single fitting eliminates multiple connections and extends tubing connection beyond pump shroud
- Larger body allows firm grip for ease of installation and access
- Machined shank allows better access for close-clearance pump housing





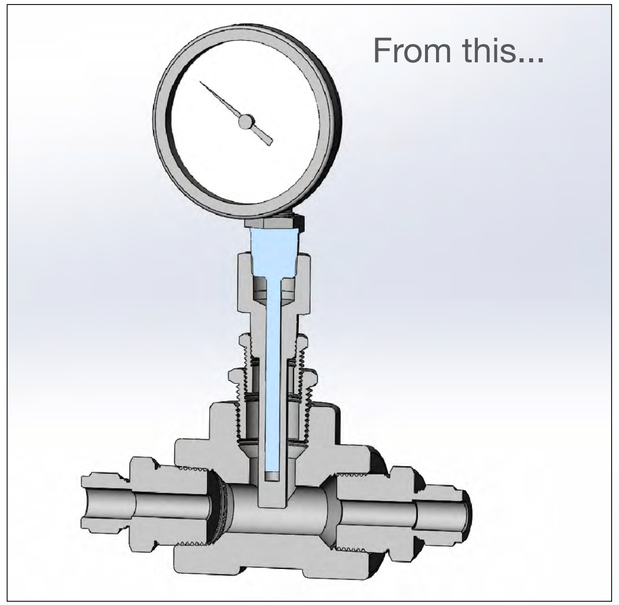
Save Money. Reduce Labor. Improve Safety.

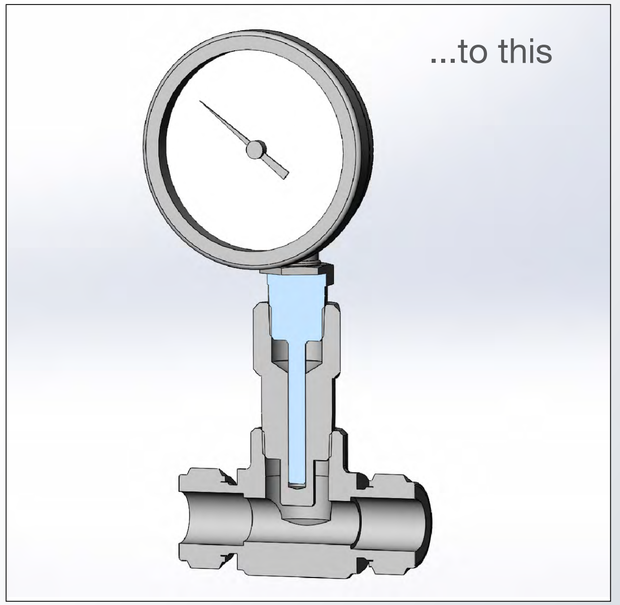
More about Reduced Leak Points

Reduced Leak Points

Thermowell Tee

- Welded thermowell eliminates multiple threaded pipe fittings, isolating process fluid for safer thermometer replacement
- Lighter weight eliminates need for additional support
- Accurate temperature measurement without blocking flow





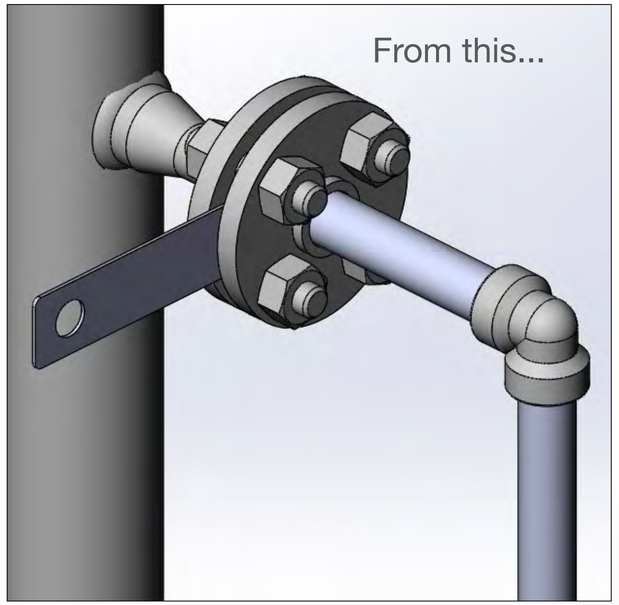
Save Money. Reduce Labor. Improve Safety.

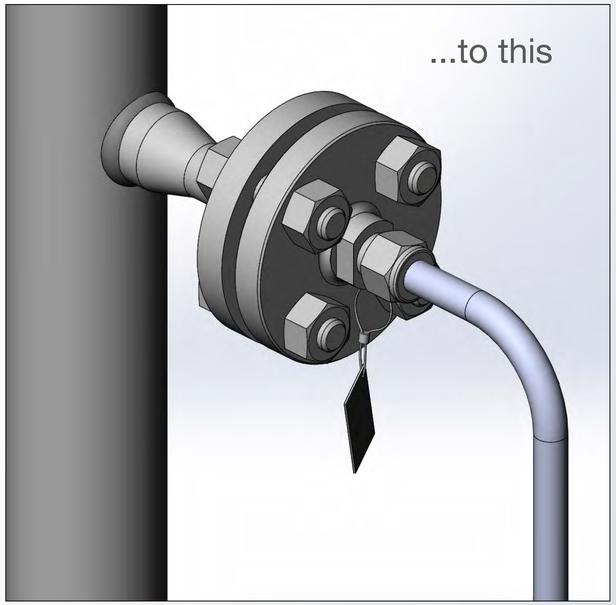
More about Reduced Leak Points

Reduced Leak Points

Integral Orifice Flange Adapter

- Reduces number of potential leak points and eliminates need to fabricate welded or threaded adapter
- Tagged as reduced orifice for safety
- Easy-to-install transition from pipe to tubing





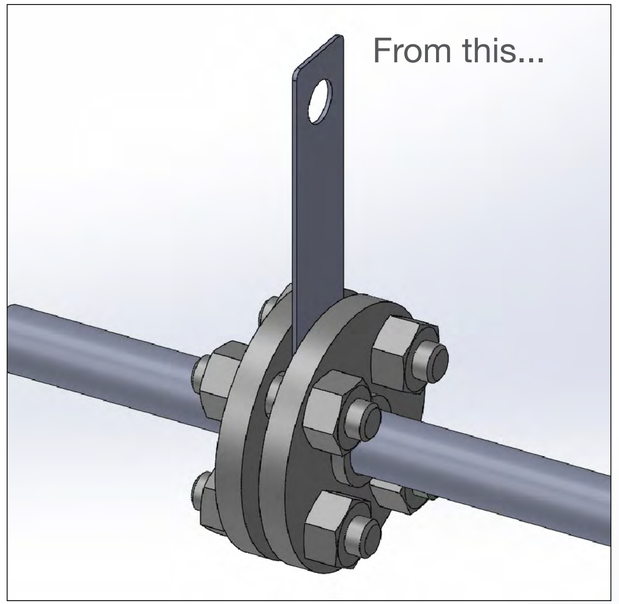
Save Money. Reduce Labor. Improve Safety.

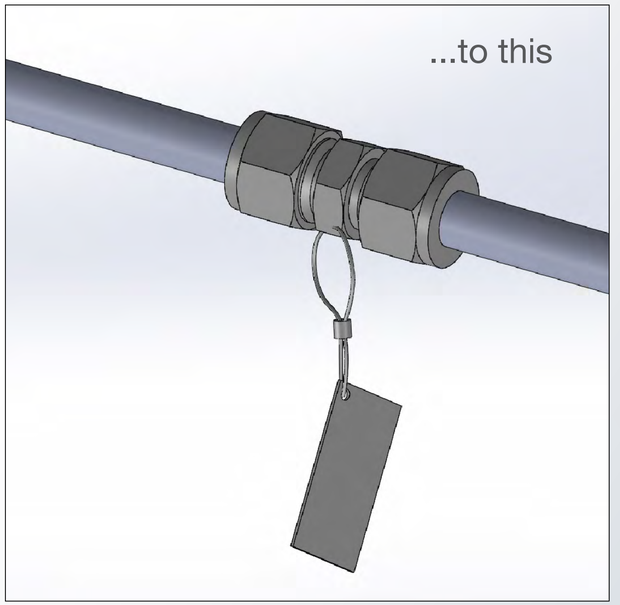
More about Reduced Leak Points

Reduced Leak Points

Orifice Union

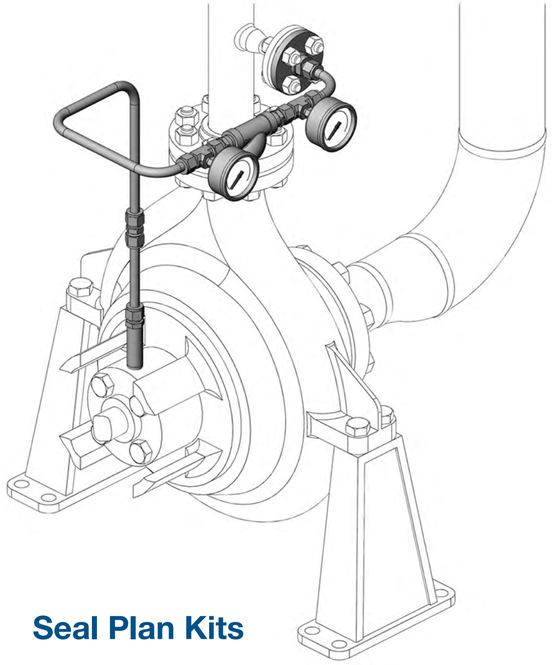
- Can be easily installed in tubing flush systems
- Eliminates the need for welding flanges
- Allows easy identification with attached tag, reducing installation errors



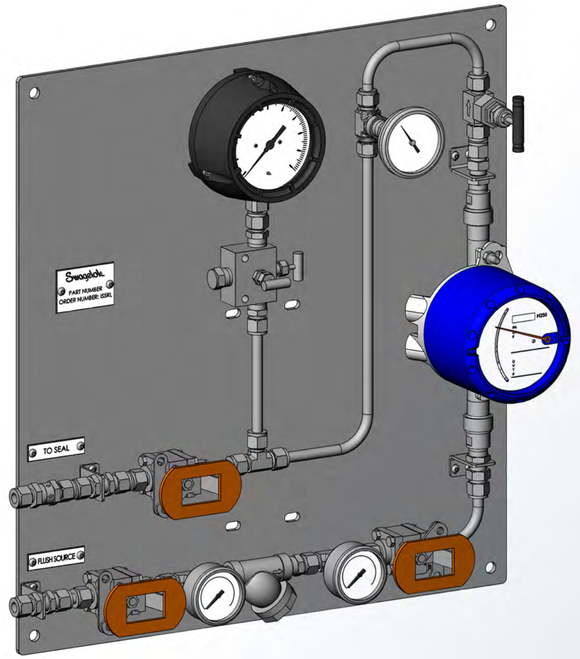


Simplified Installation and Maintenance

Swagelok seal support systems are available as assemblies, or, in some cases, kits, for easy assembly and reduced installation errors.



Seal Plan Kits



Assemblies Fabricated by Your Authorized Sales and Service Center

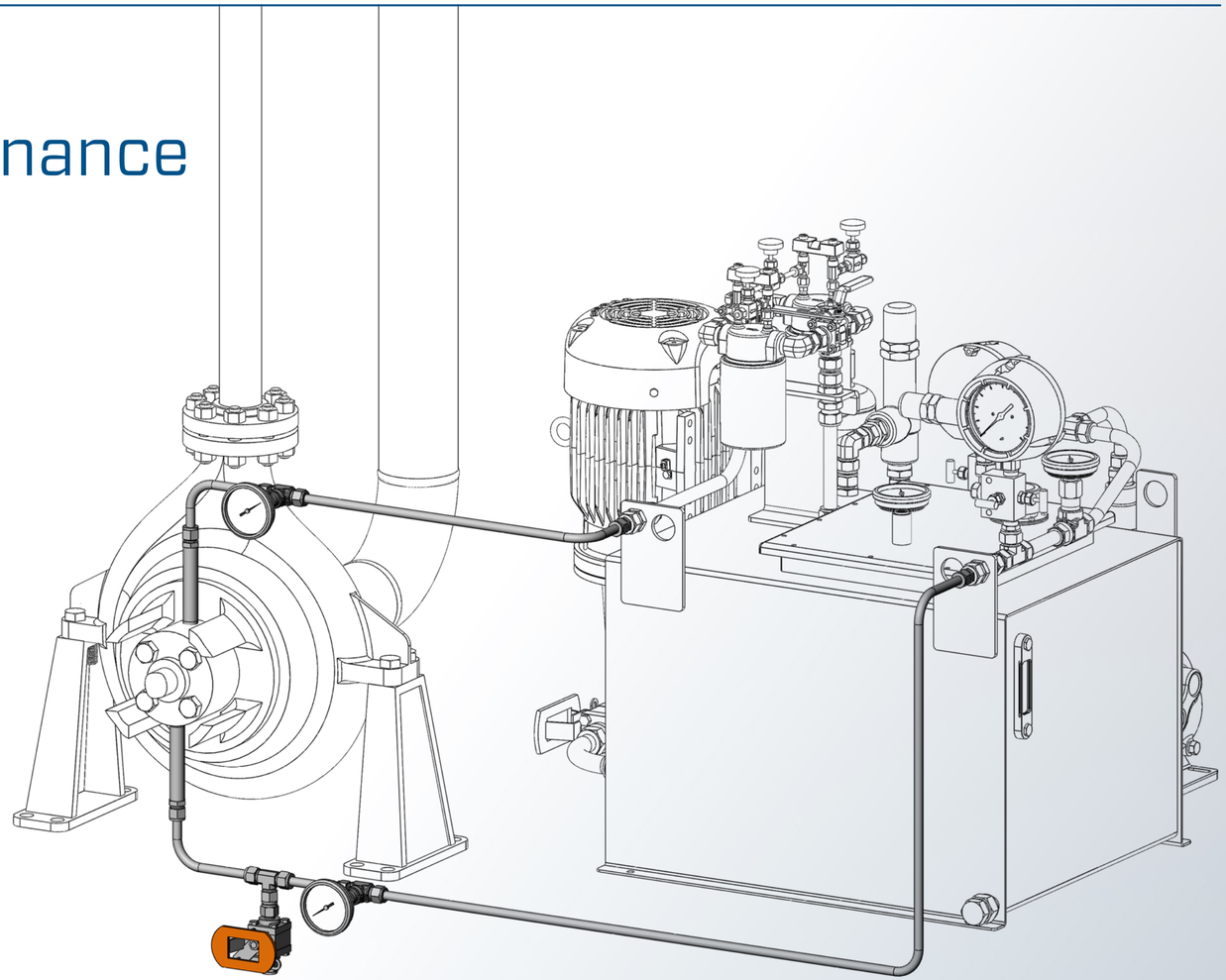
Reduce Labor.

More about Simplified Installation and Maintenance

Simplified Installation and Maintenance

Seal Plan Kits

- Reduce leak points by using bent tubing to eliminate threaded connections
- Standardize installation by providing installers with the components necessary to connect the support system to the pump
- Reduce installation errors and rework with kits designed to your specific site requirements
- Help ensure critical high-point vents and low-point drains are installed



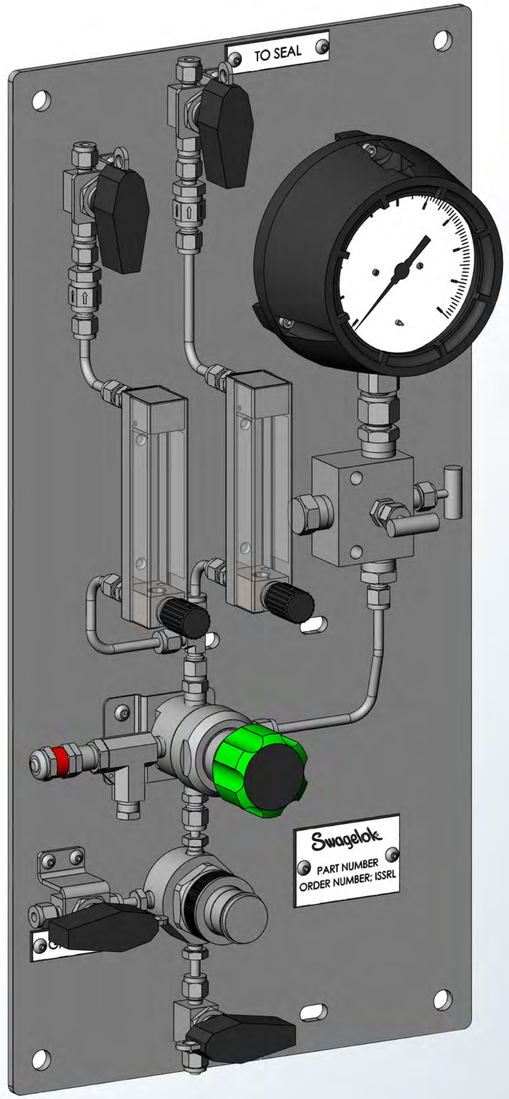
Reduce Labor.

More about Simplified Installation and Maintenance

Simplified Installation and Maintenance

Assemblies Fabricated by Your Authorized Sales and Service Center

- Customized assemblies designed to fit within your existing pump installation eliminate rework
- Locally designed and built so system is configured for ease of maintenance
- Improved inventory management of critical spares by your authorized Swagelok sales and service center



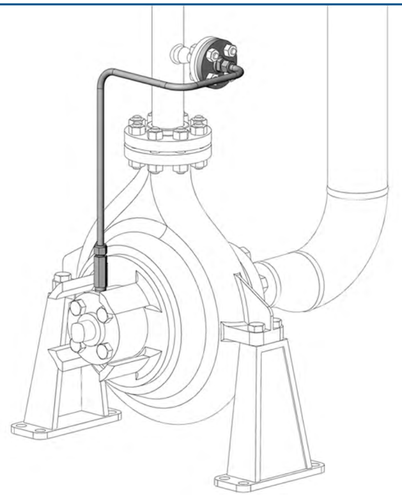
Reduce Labor.

API 682 Standard Designs

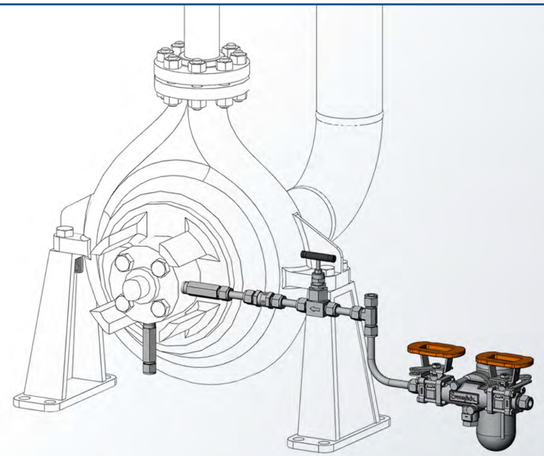
All our seal support plans are designed using API 682-recommended best practices. Combined with Swagelok's fluid systems expertise, each design can be customized to be easy to operate, easy to maintain, and safer to use.

- The use of tubing is recommended in many API 682 plans[1]
- Configurable designs are customized for your application

[1] Bloch, Heinz P., Consider Stainless Steel Tubing for Mechanical Seal Connections, Hydrocarbon Processing, March, 2018.



Process Side Plans



Atmospheric Side Plans

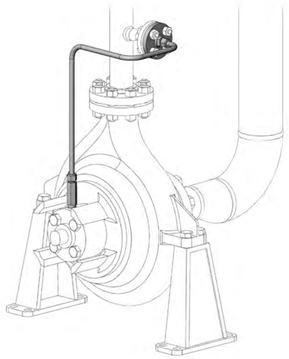


Between Seal Plans

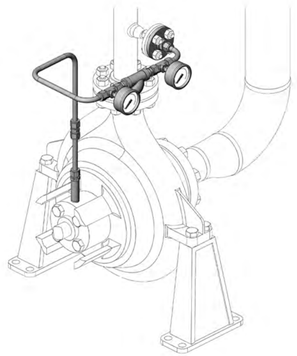
Adhere to Industry Best Practices.

More about API 682 Standard Designs

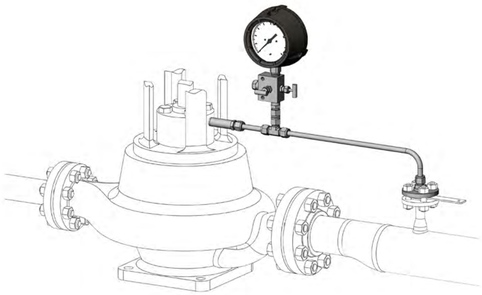
Process Side Plans



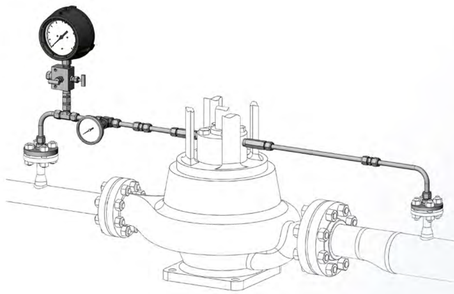
Plan 11



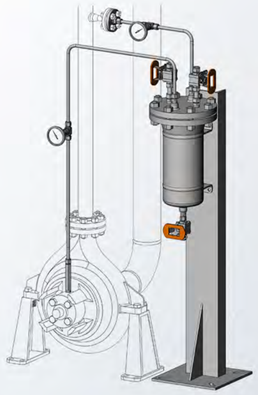
Plan 12



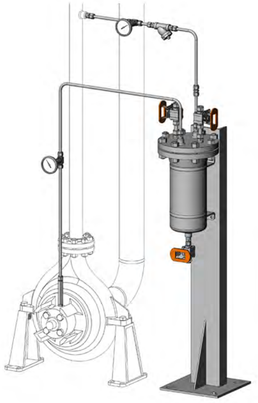
Plan 13



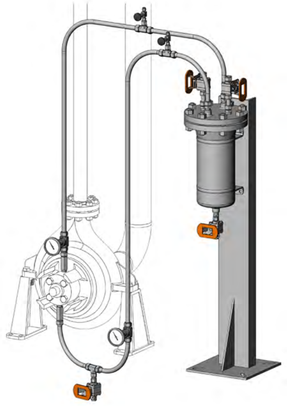
Plan 14



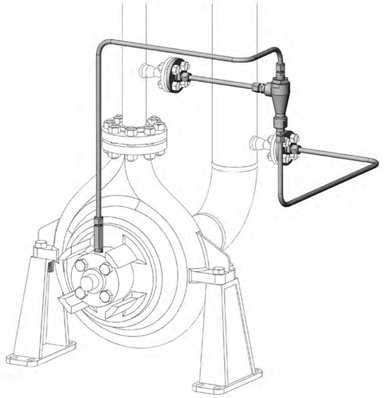
Plan 21



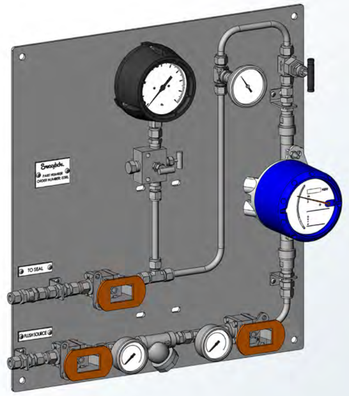
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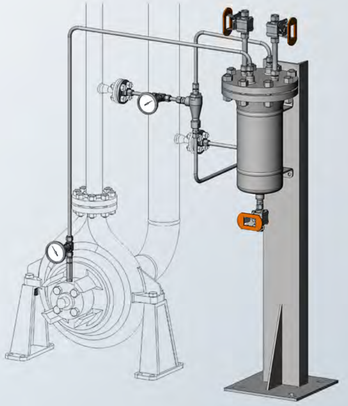
Plan 23



Plan 31



Plan 32



Plan 41

Adhere to Industry Best Practices.

More about API 682 Standard Designs

Between Seal Plans



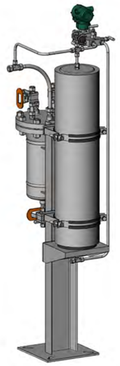
Plan 52



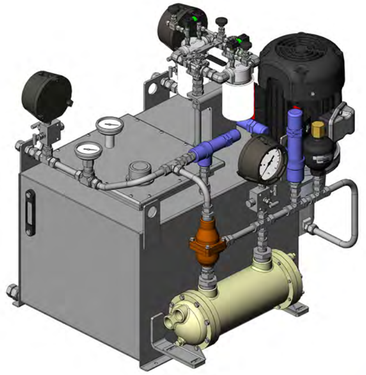
Plan 53A



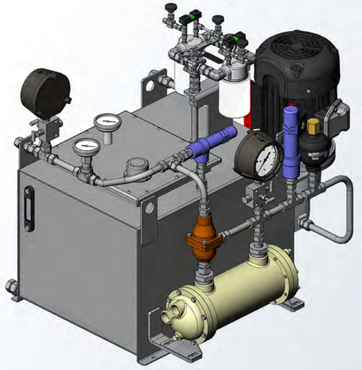
Plan 53B



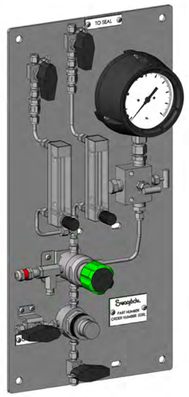
Plan 53C



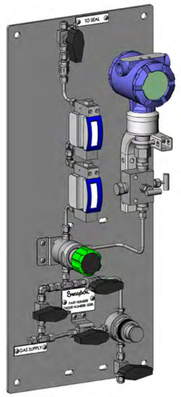
Plan 54



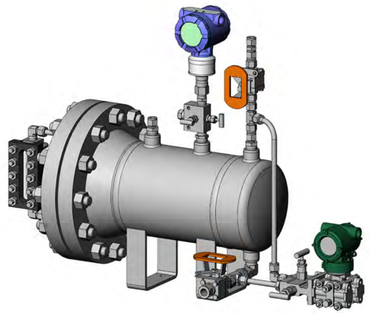
Plan 55



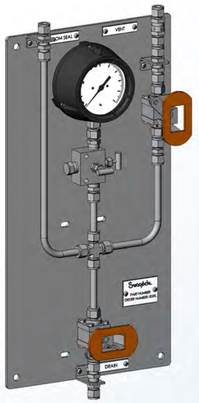
Plan 72



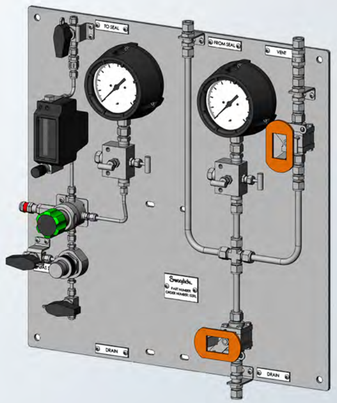
Plan 74



Plan 75



Plan 76

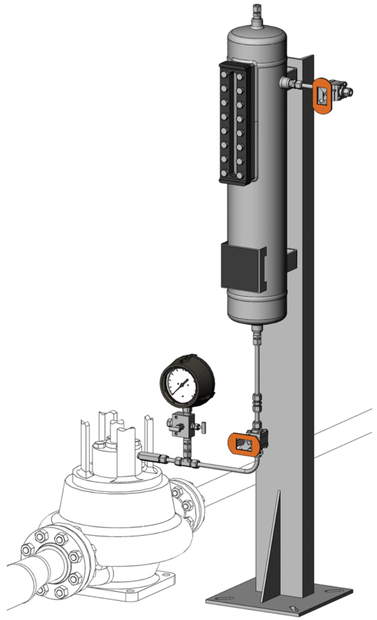


Plan 72/76

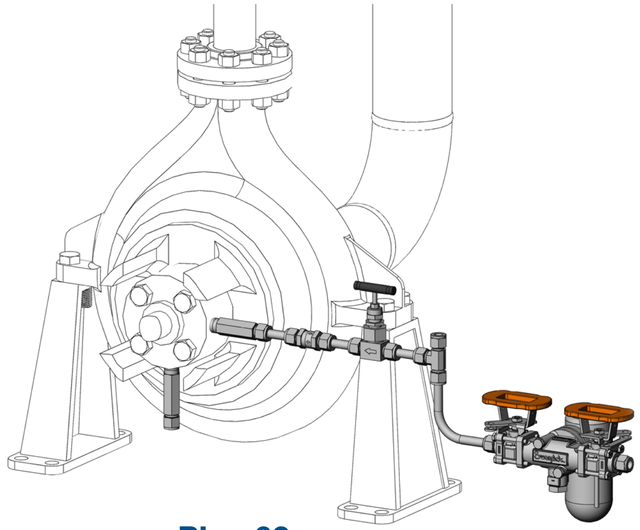
Adhere to Industry Best Practices.

More about API 682 Standard Designs

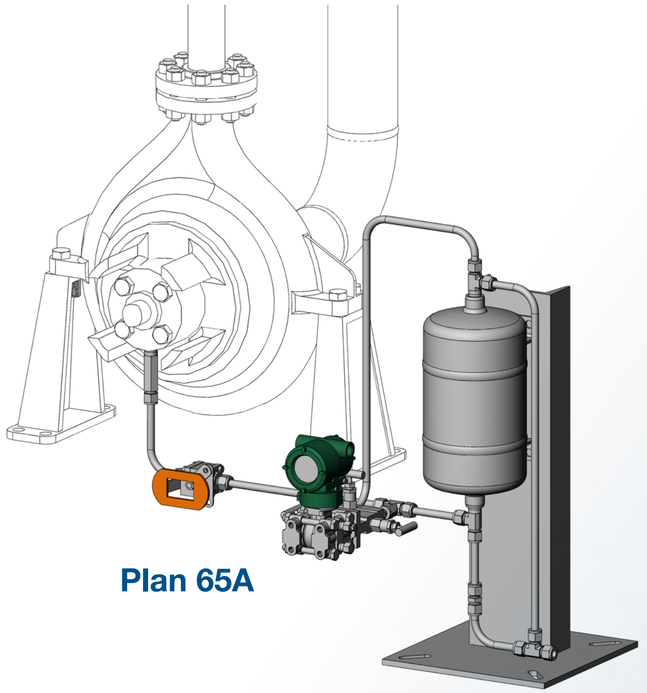
Atmospheric Side Plans



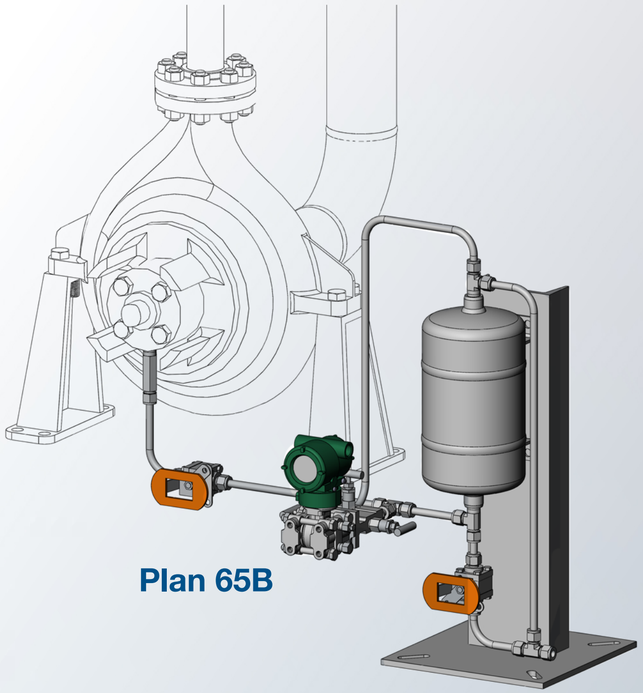
Plan 51



Plan 62



Plan 65A



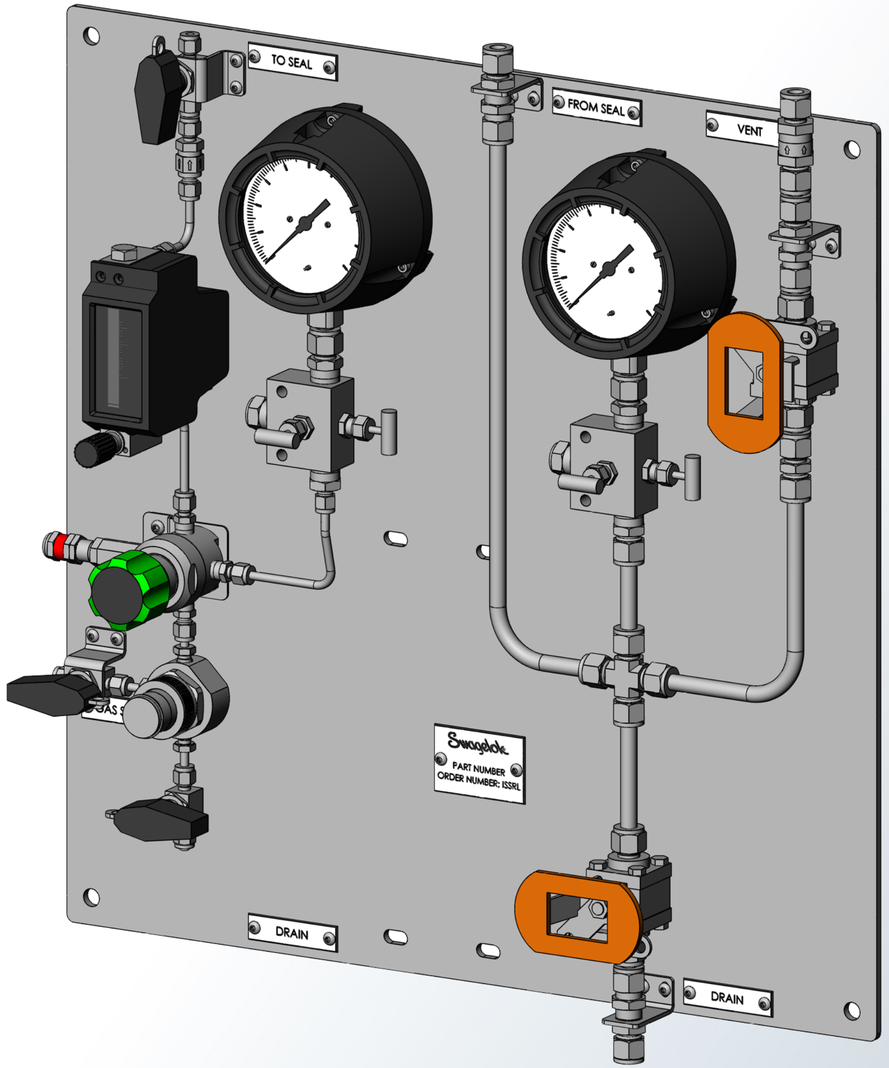
Plan 65B

Adhere to Industry Best Practices.

Configurable

Best practices, such as those found in API 682, detail minimum requirements for seal support systems. However, every site and situation are different and support systems often need to fit existing equipment, operating conditions, or environmental concerns.

Our local, customizable, and repeatable designs result in fast and efficient solutions to solve your seal support system needs.

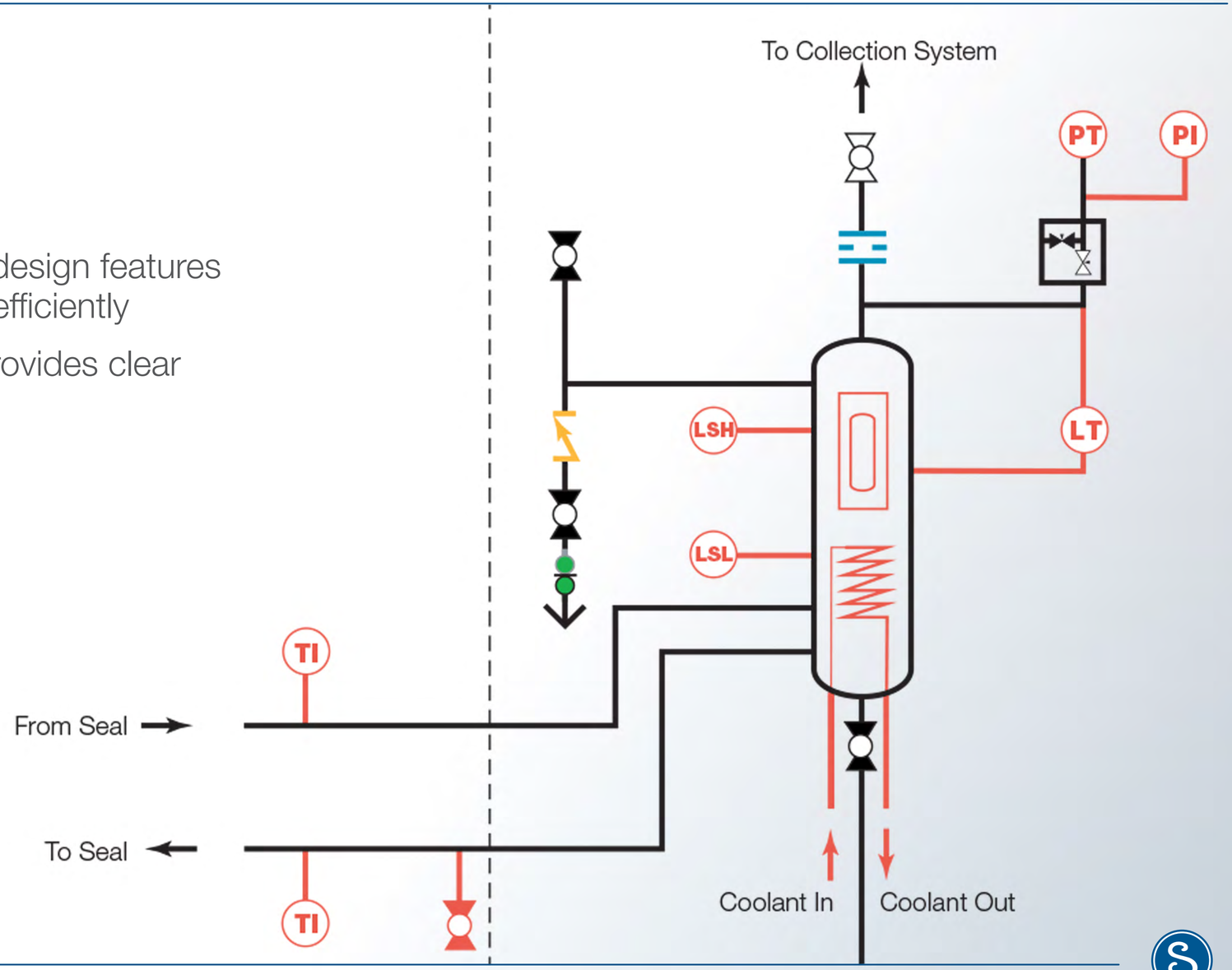


Reduce Labor. Reduce Design Time. Improve Safety.

More about Configurable

Easy to Operate

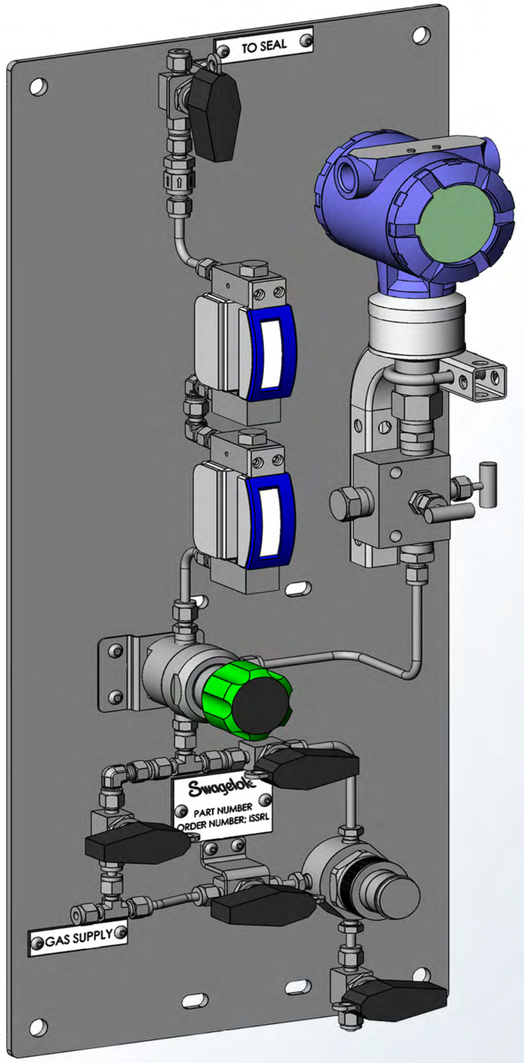
- We start with standard API 682 plans
- Our fluid systems expertise helps us design features to let you operate your system more efficiently
- Optional additional instrumentation provides clear indication of system performance



Reduce Labor. Improve Safety.

Easy to Maintain

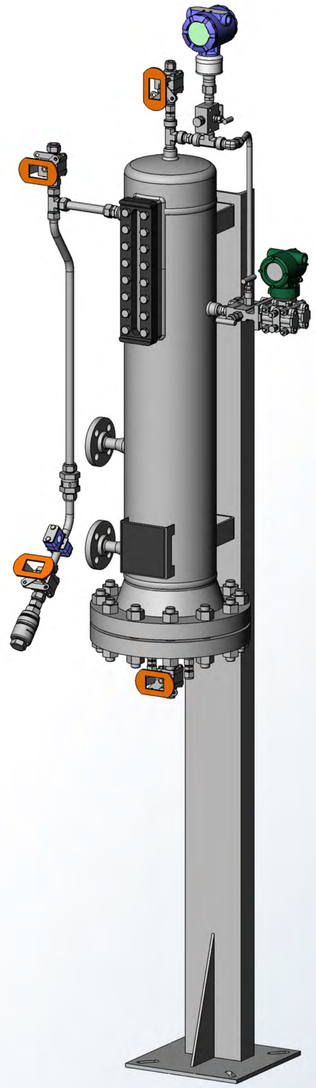
- Configurable CAD files allow us to incorporate design aspects that make the system easier to maintain
- Quick, convenient replacement of components such as gauges with tube end connections
- Minimized downtime with bypass options that let you maintain commonly serviced components



Reduce Labor. Minimize Downtime.

Safer to Use

- Designed to reduce human error
- Real-time feedback of system information such as pressure, temperature, and flow help diagnose problems and ensure safe operating conditions
- Engineered solutions such as the Safe-Fill-Assembly help users comply with API 682 and fill seal pots from ground level
- Panel wraps provide component information, operating parameters, and system warnings for safe use of seal support systems



Improve Safety.

Local

With our authorized sales and service center network, local support is always available—when and where you need it. From design consultation to panel fabrication and maintaining an inventory of critical spares, help is always nearby.

Being local helps us to respond quickly during turnarounds or major projects.

We can:

- Identify opportunities for improvement with on-site assessments
- Help optimize system design
- Enable quick system commissioning with comprehensive system drawings and bills of material
- Ensure rapid installation of customized API 682 seal support plans by providing local fabrication and assembly



Local

Discover the Possibilities With Swagelok

We provide localized service to our customers around the world through our strategically located network of authorized sales and service centers.

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info@swagelok.nl
nederland.swagelok.com

Swagelok Nederland

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Reliable

Swagelok's fluid system expertise leverages design practices that maximize your seal support system's operation and safe maintenance. Our plans take API 682 best practices further to help you keep your plant running smoothly and safely. And Swagelok products are backed by our Limited Lifetime Warranty.

- Get up and running faster with locally available resources
- Save labor and do more with locally built and fabricated systems
- Maximize availability with a single source for critical spares
- Enhance safety with superior materials of construction, engineered and tested for leak-tight performance



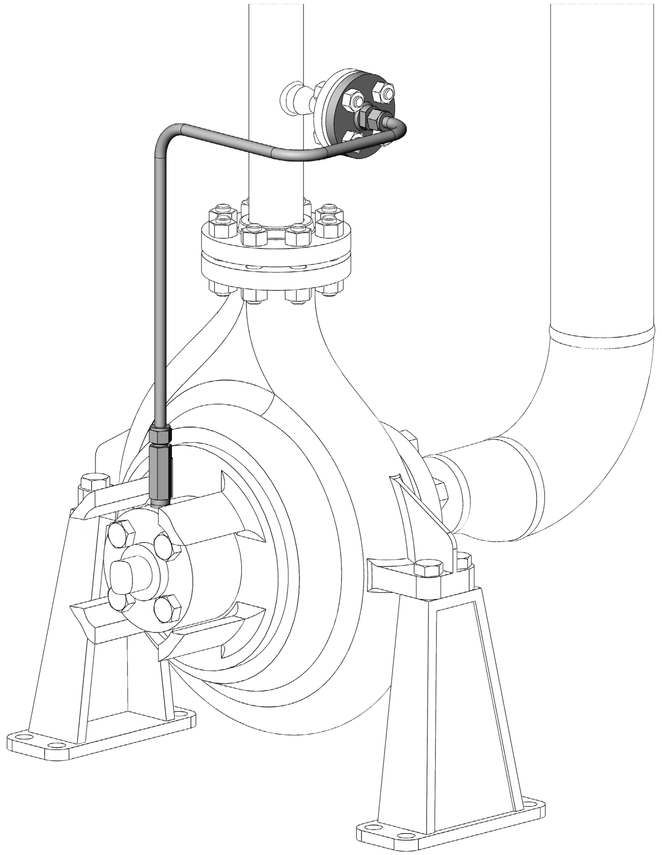
Reduce Labor. Improve Safety. Reduce Downtime. Reduce Costs.

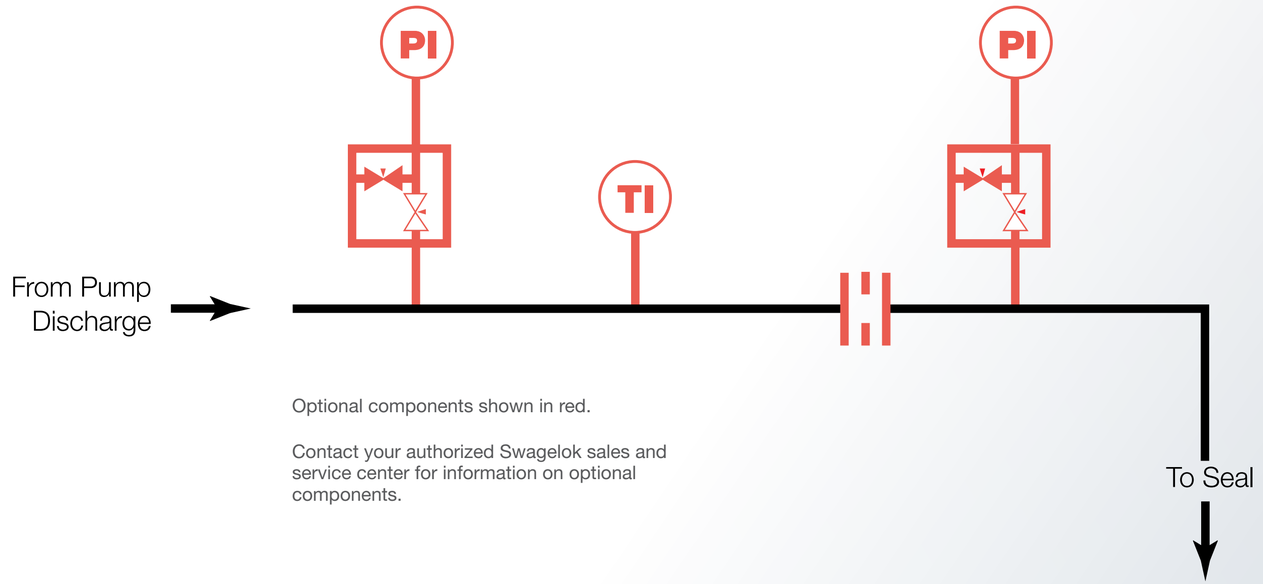
SAFE PRODUCT SELECTION

When selecting a product, the total system design must be considered to ensure safe, trouble-free performance. Function, material compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibilities of the system designer and user.

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Plan 11 Flush

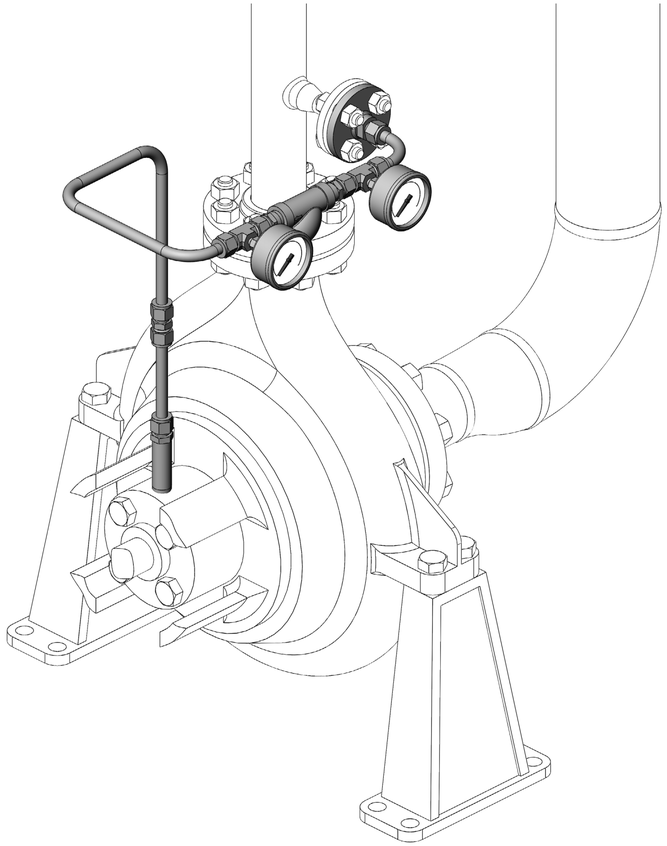


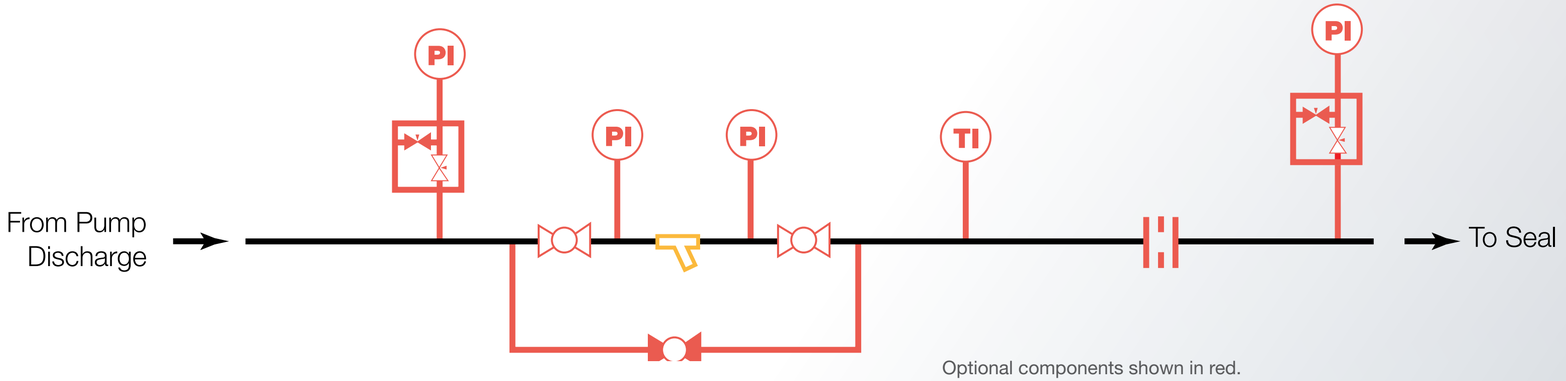


Optional components shown in red.

Contact your authorized Swagelok sales and service center for information on optional components.

Plan 12 Flush with Strainer

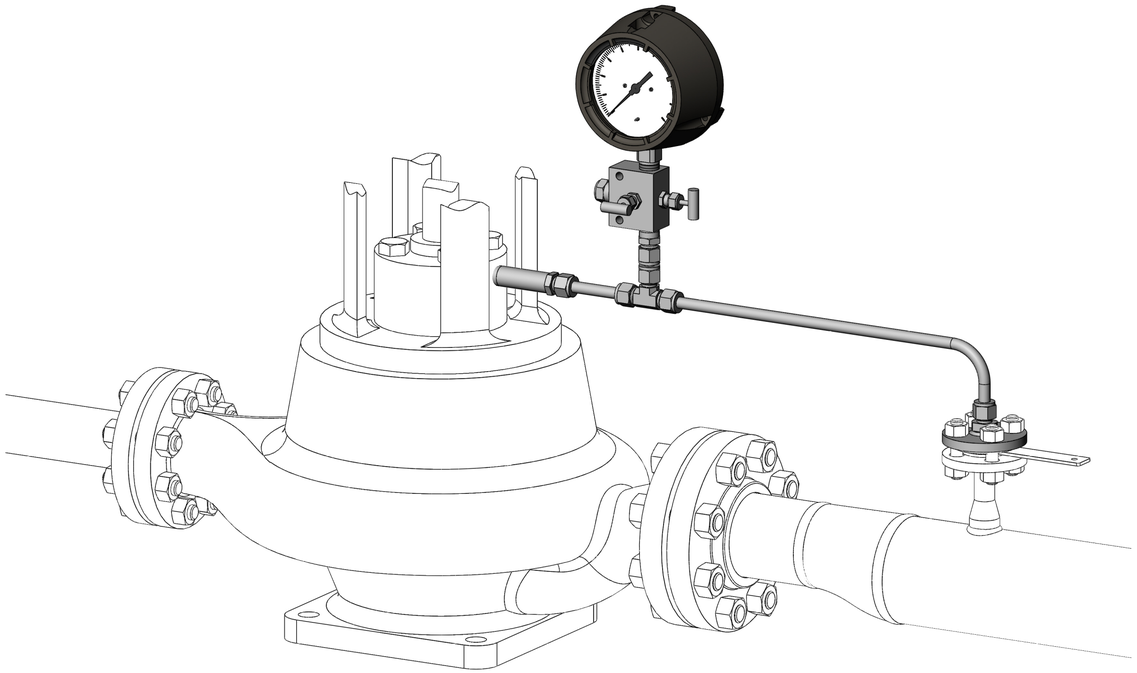


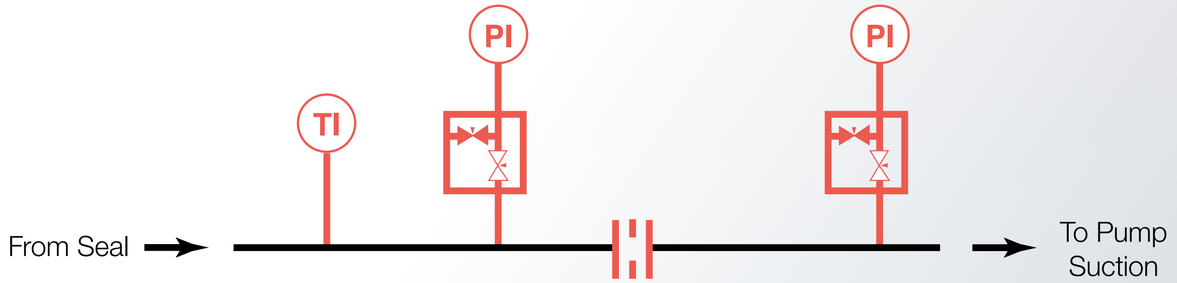


Optional components shown in red.

Contact your authorized Swagelok sales and service center for information on optional components.

Plan 13 Flush, from Chamber to Suction

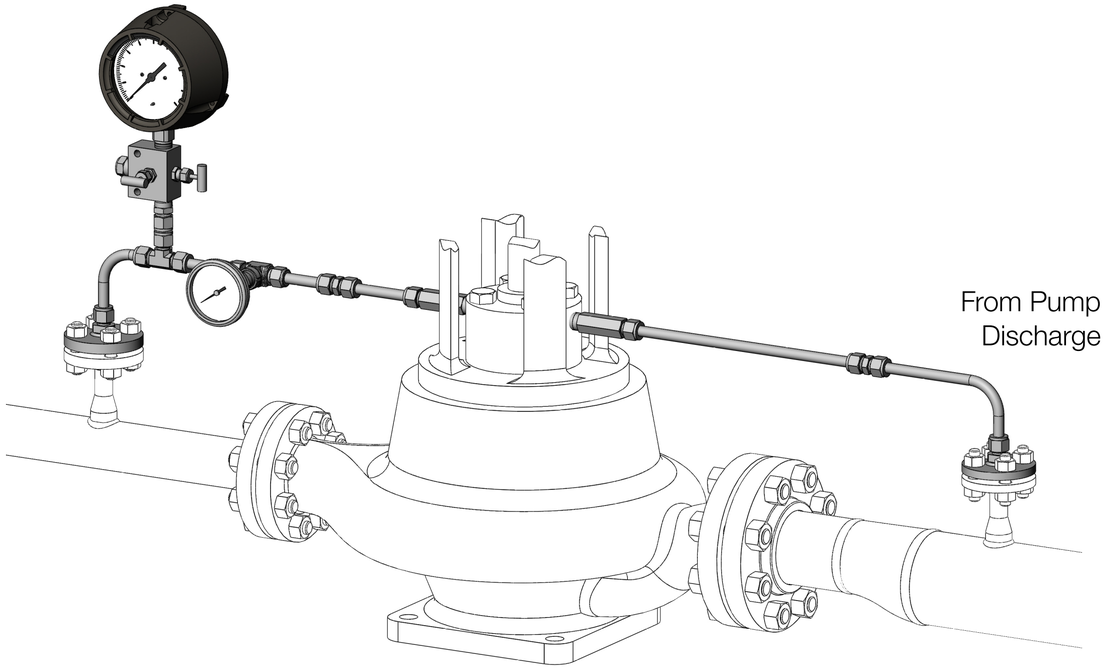


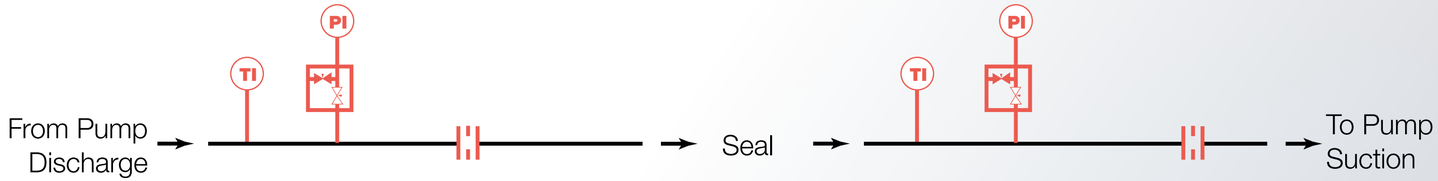


Optional components shown in red.

Contact your authorized Swagelok sales and service center for information on optional components.

Plan 14 Flush, Combination of Plans 11 and 13

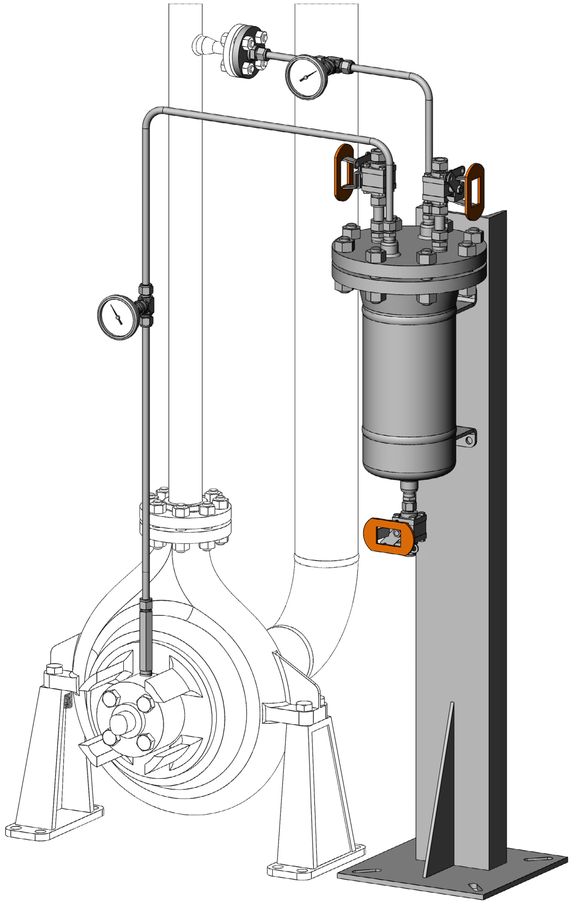


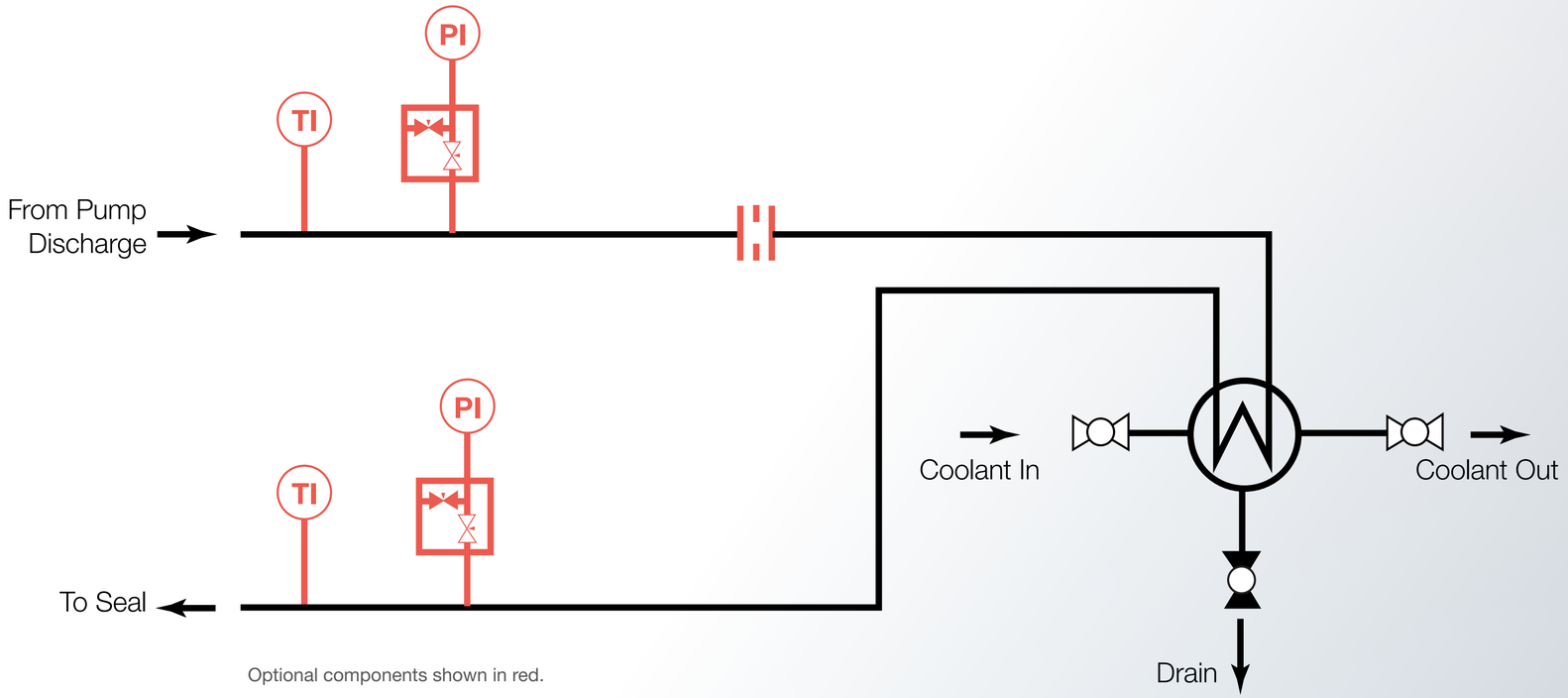


Optional components shown in red.

Contact your authorized Swagelok sales and service center for information on optional components.

Plan 21 Cooled Flush

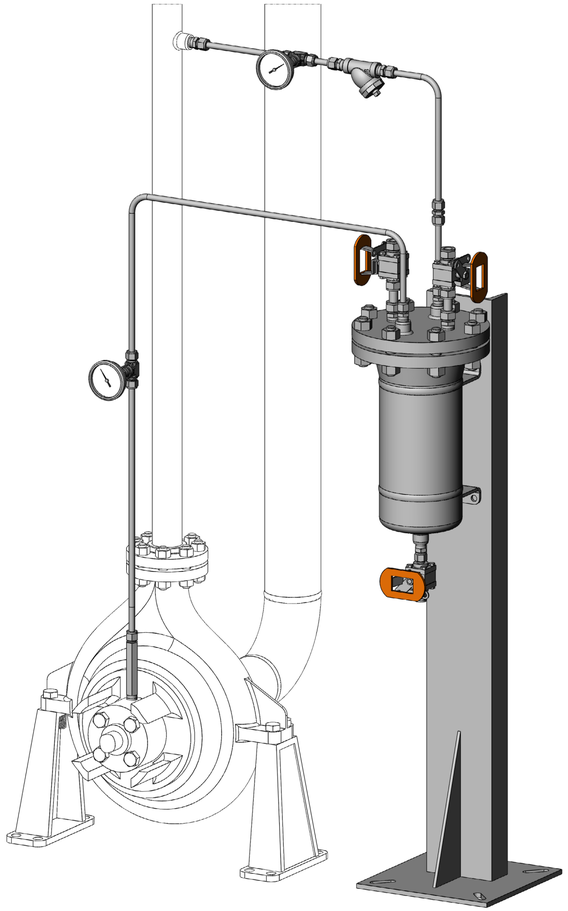


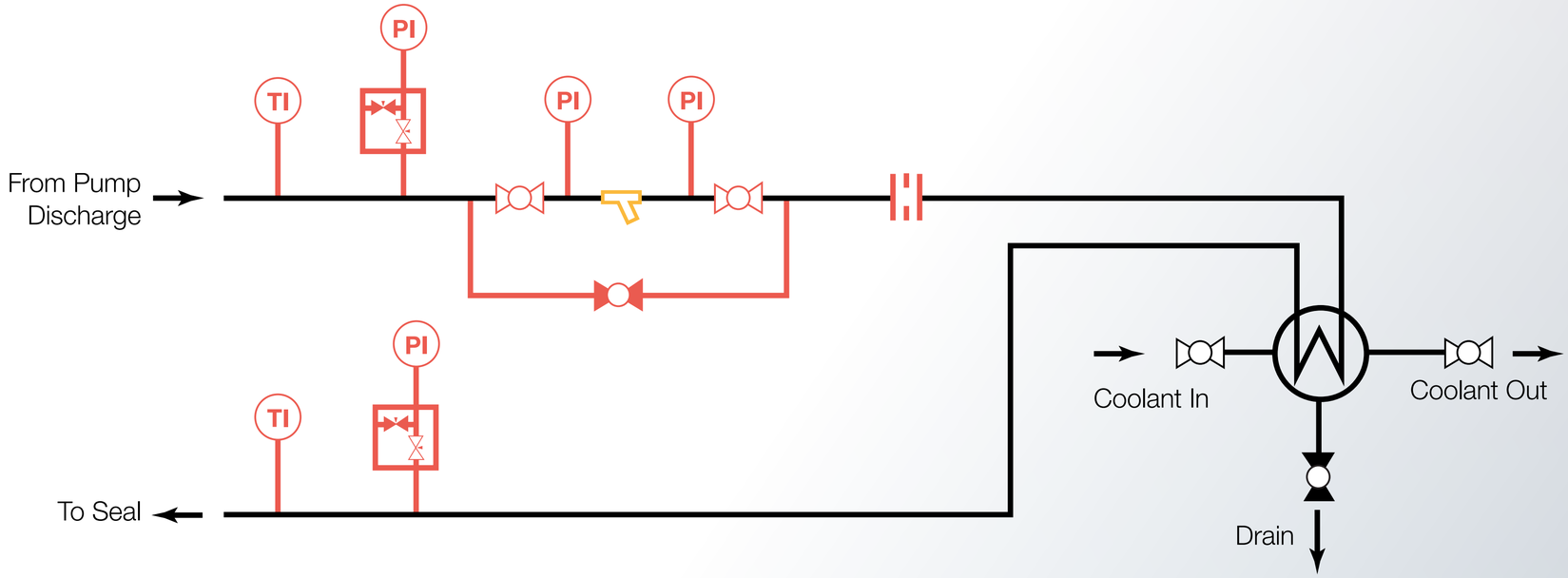


Optional components shown in red.

Contact your authorized Swagelok sales and service center for information on optional components.

Plan 22 Cooled Flush with Strainer

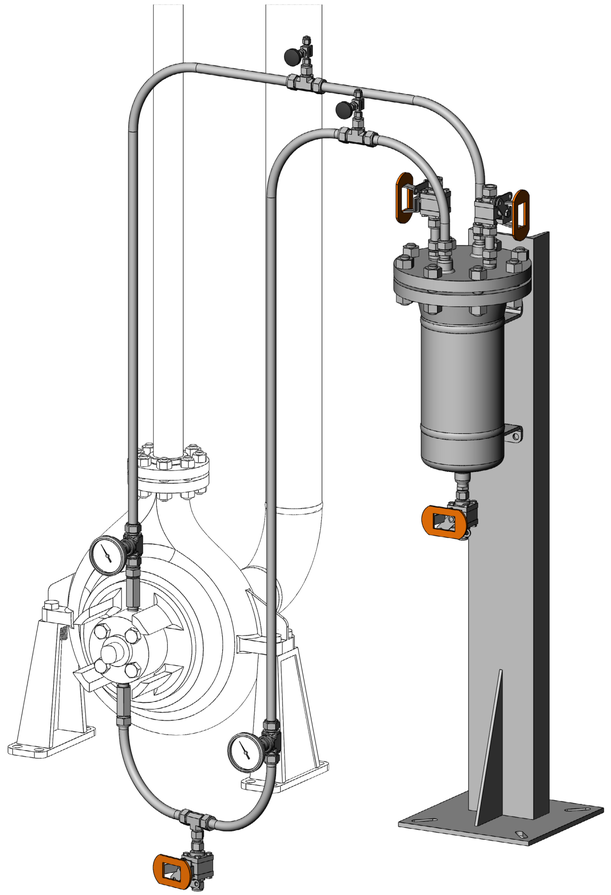


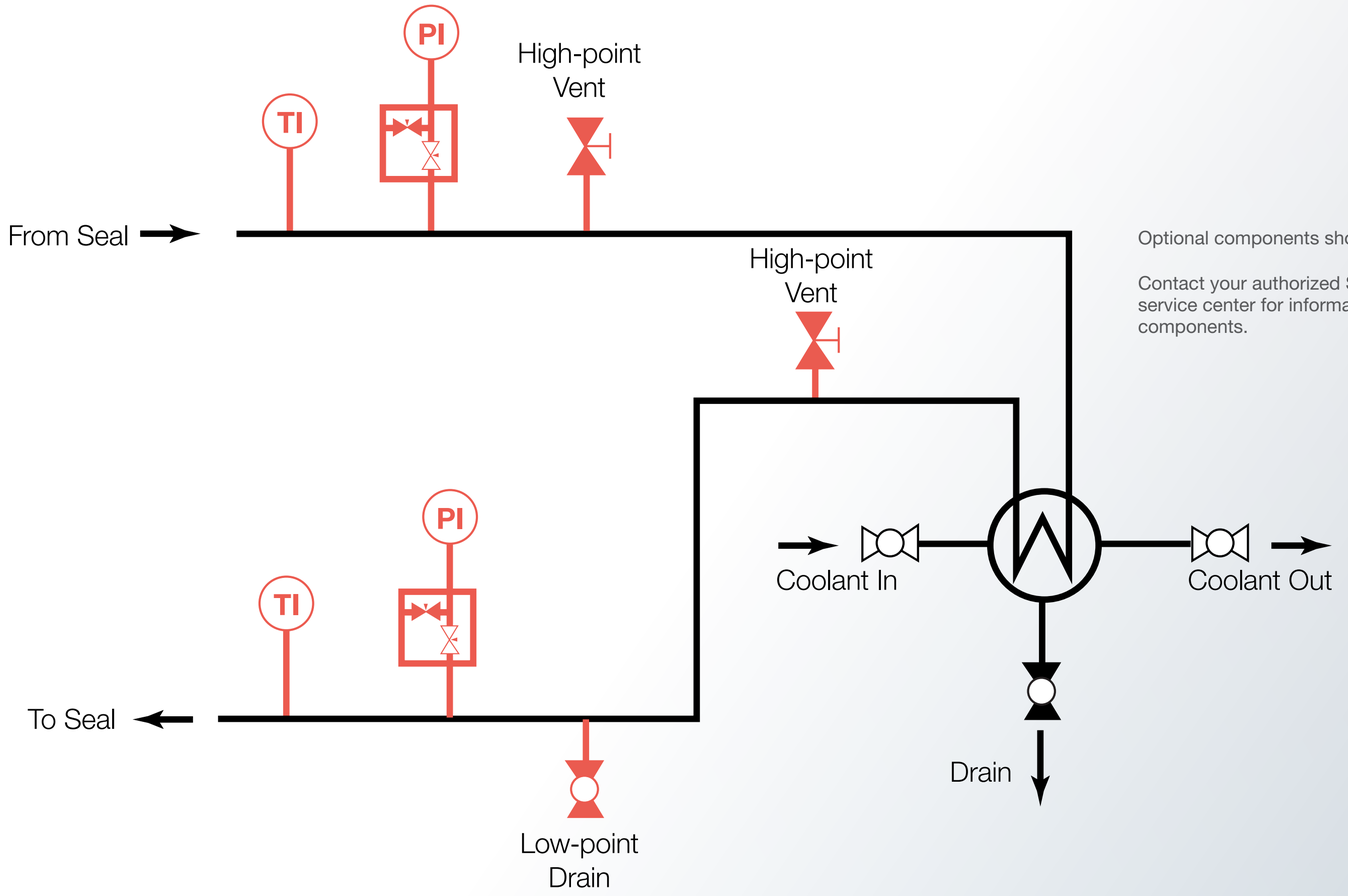


Optional components shown in red.

Contact your authorized Swagelok sales and service center for information on optional components.

Plan 23 Cooled Flush, Recirculated through Seal Chamber

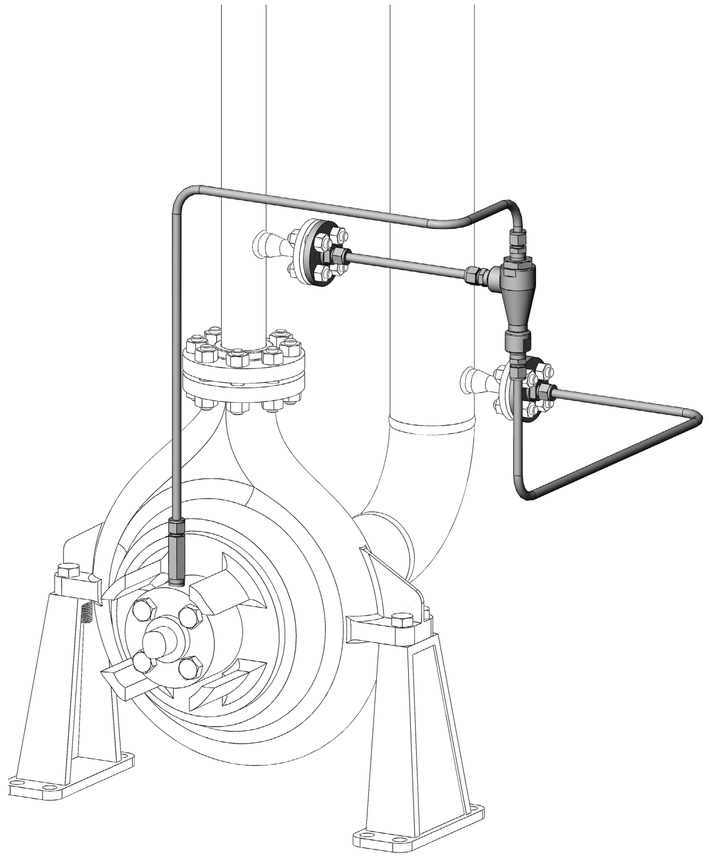


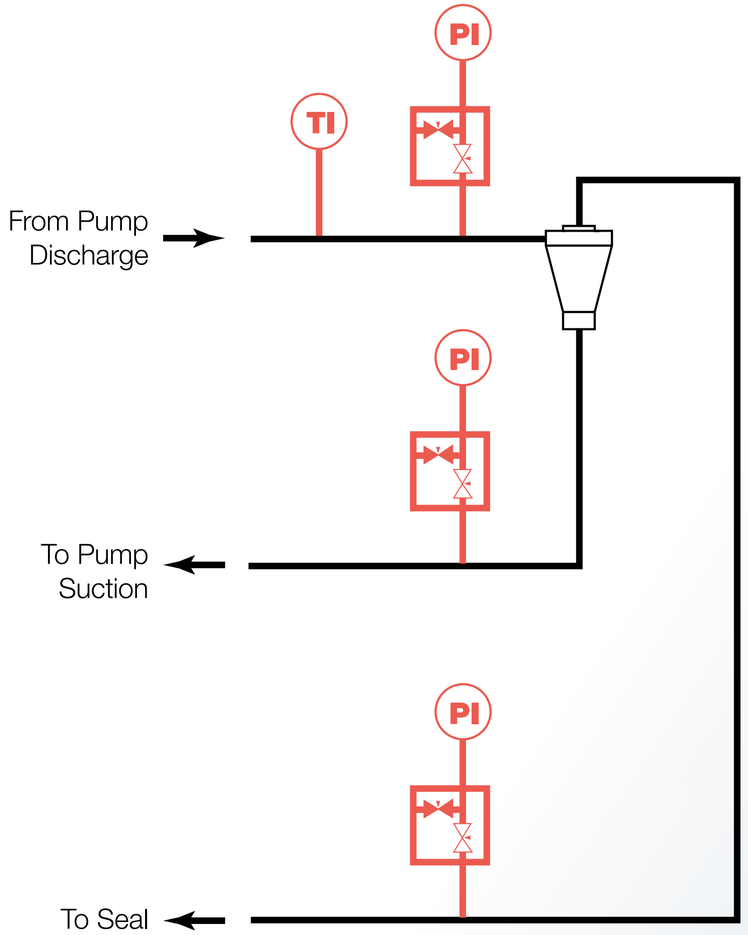


Optional components shown in red.

Contact your authorized Swagelok sales and service center for information on optional components.

Plan 31 Flush with Cyclone Separator

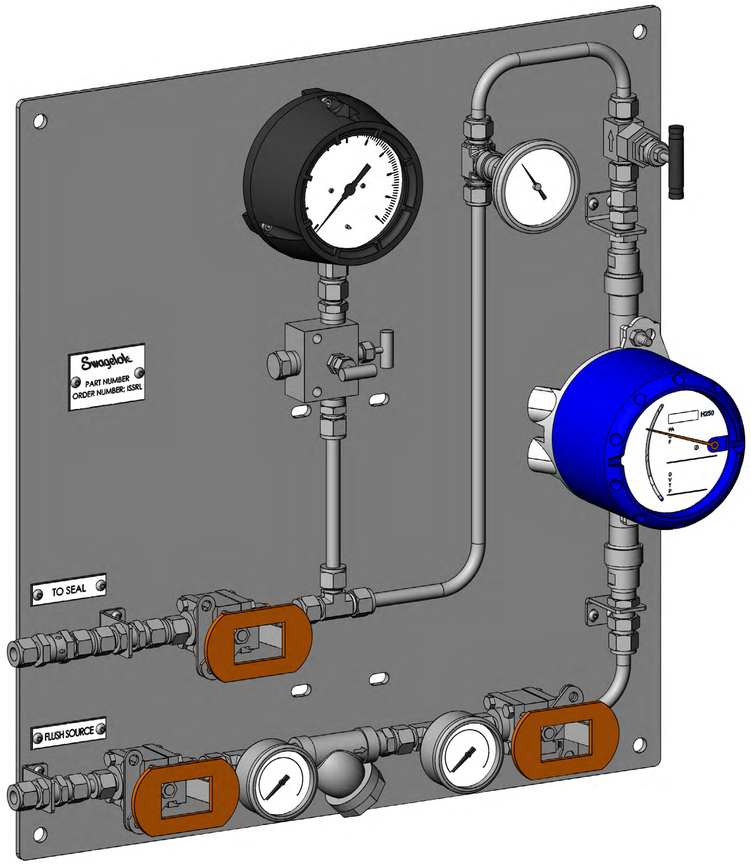


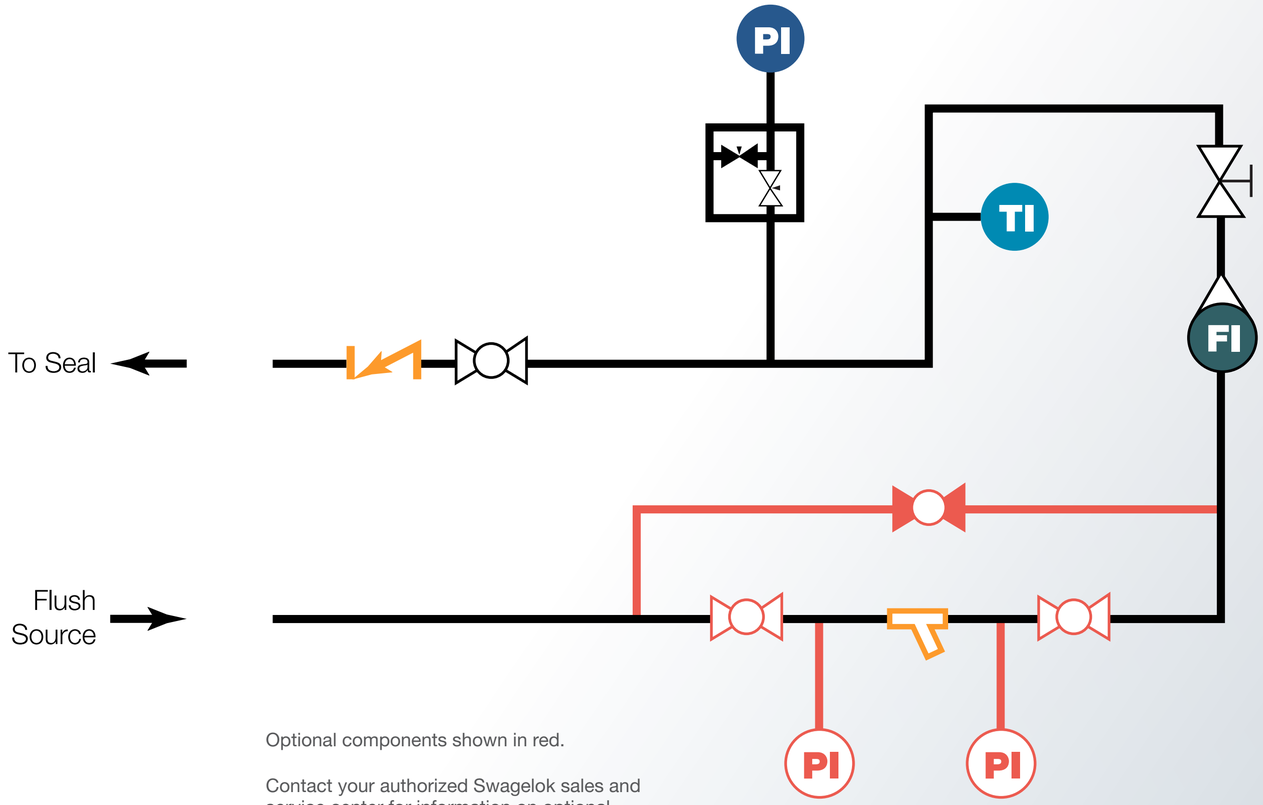


Optional components shown in red.

Contact your authorized Swagelok sales and service center for information on optional components.

Plan 32 External Flush

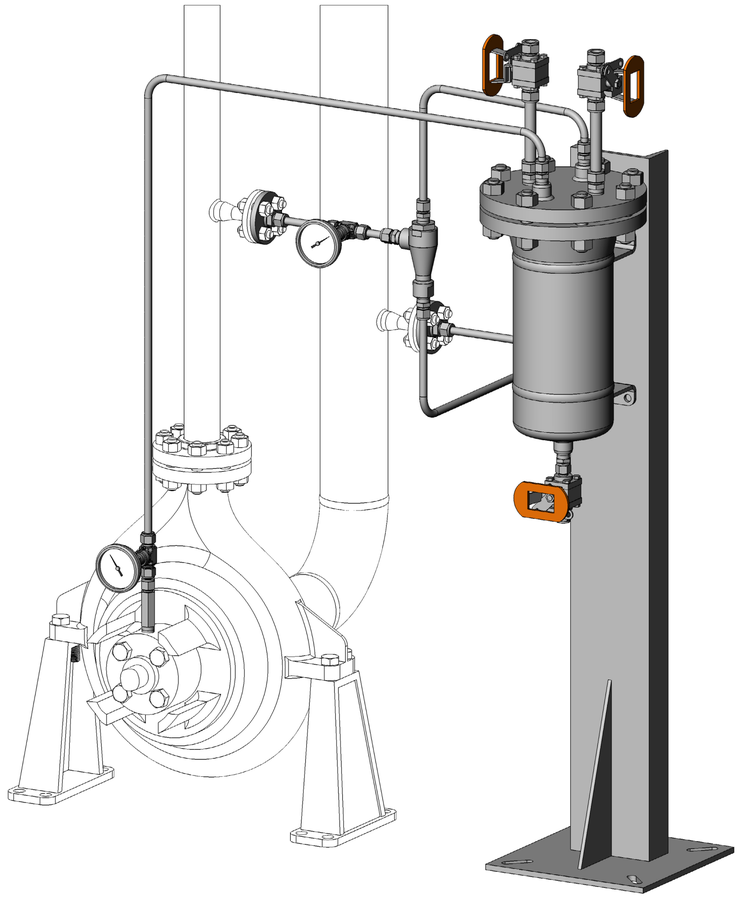


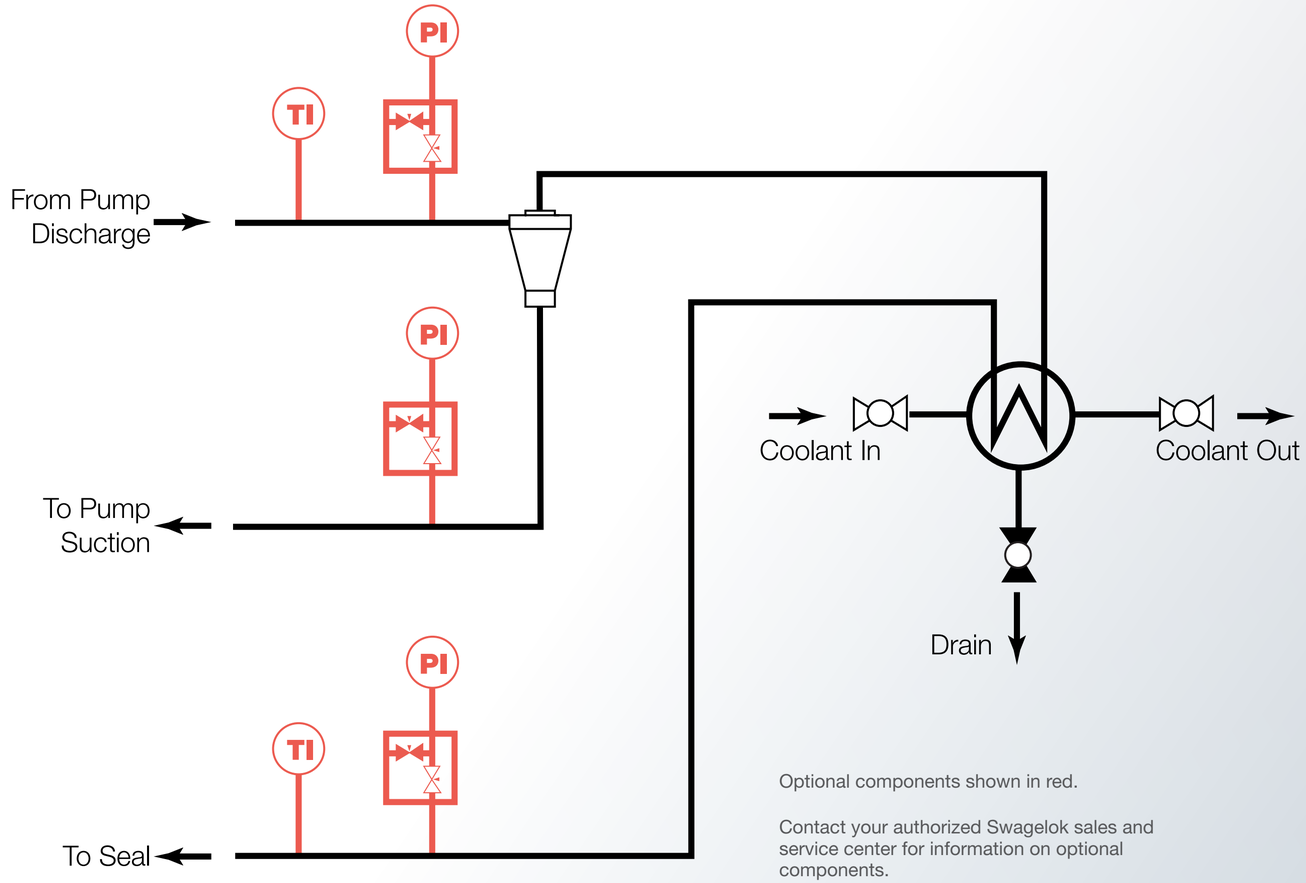


Optional components shown in red.

Contact your authorized Swagelok sales and service center for information on optional components.

Plan 41 Cooled Flush with Cyclone Separator

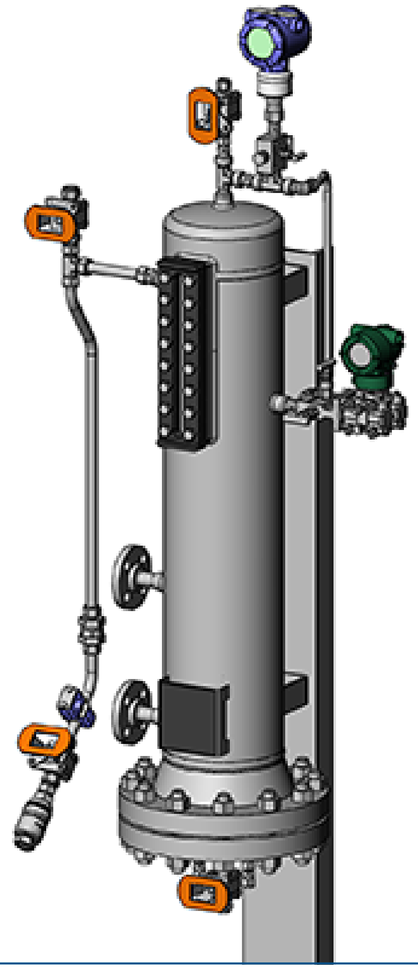


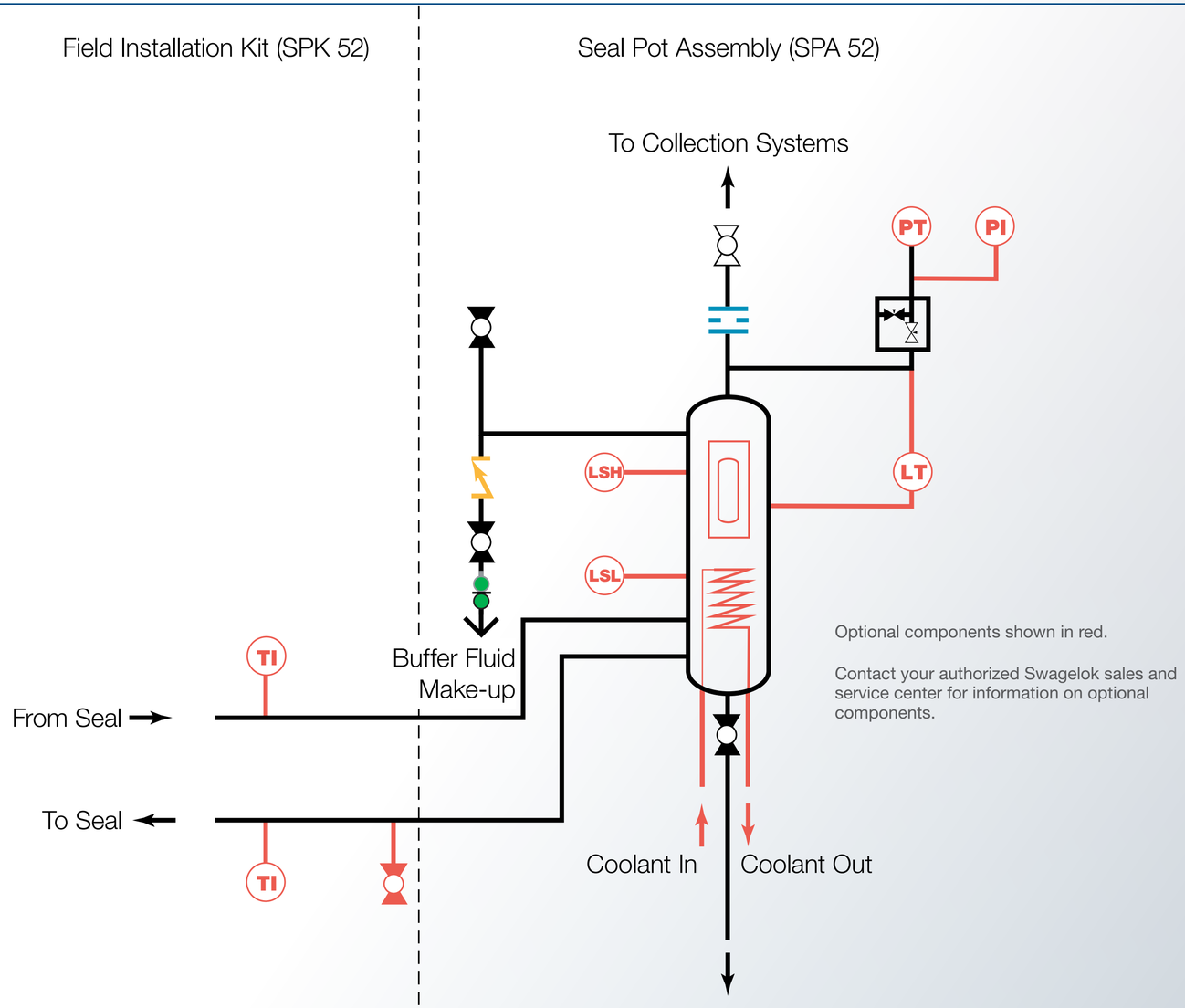


Optional components shown in red.

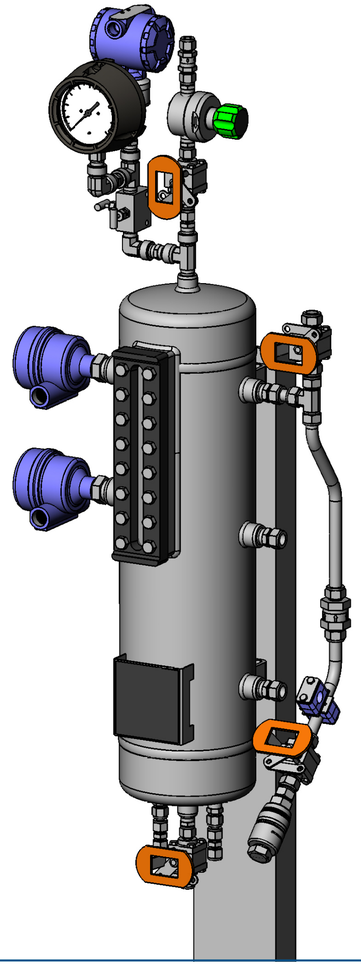
Contact your authorized Swagelok sales and service center for information on optional components.

Plan 52 Buffer Liquid Seal Pot



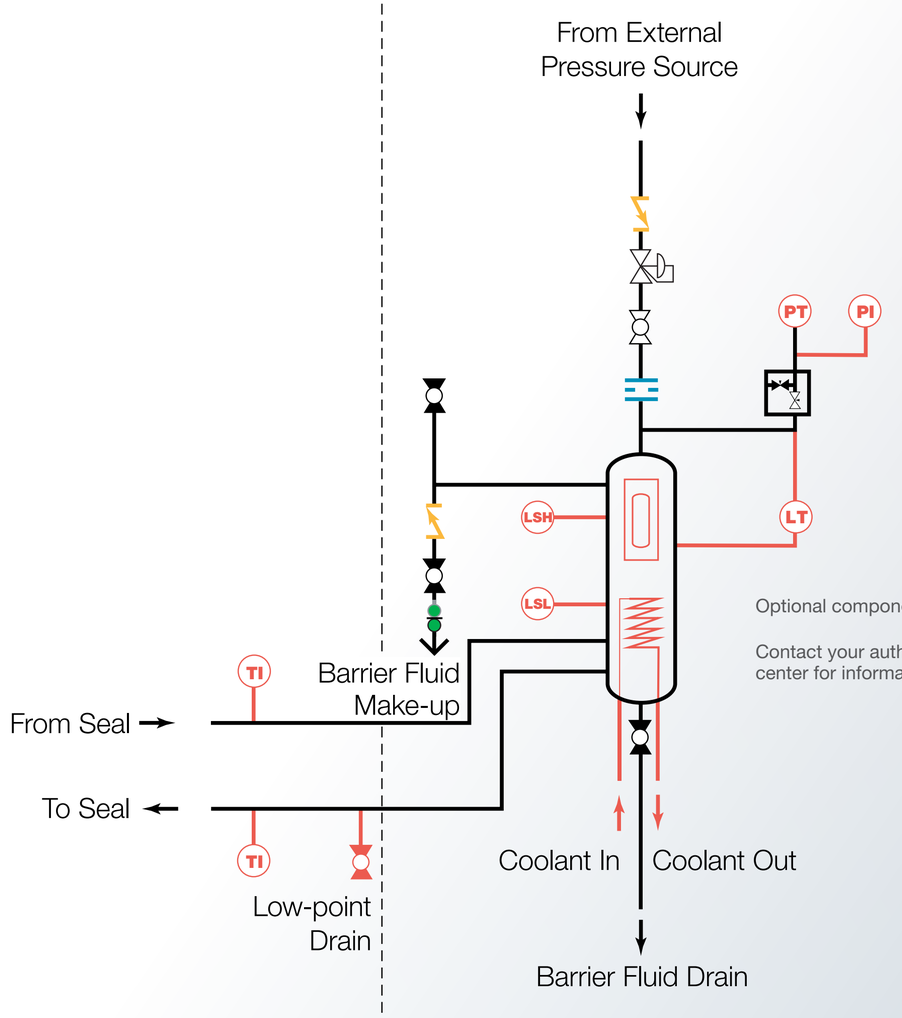


Plan 53A Barrier Liquid Seal Pot Pressurized by Nitrogen



Field Installation Kit (SPK 53A)

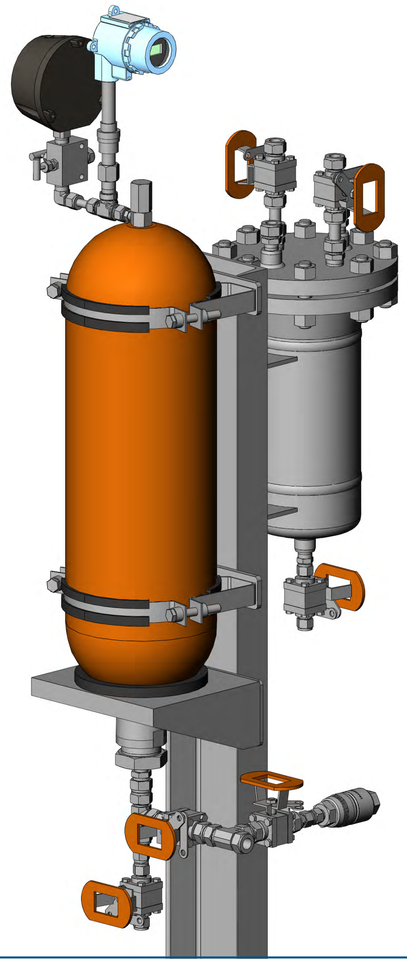
Seal Pot Assembly (SPA 53A)

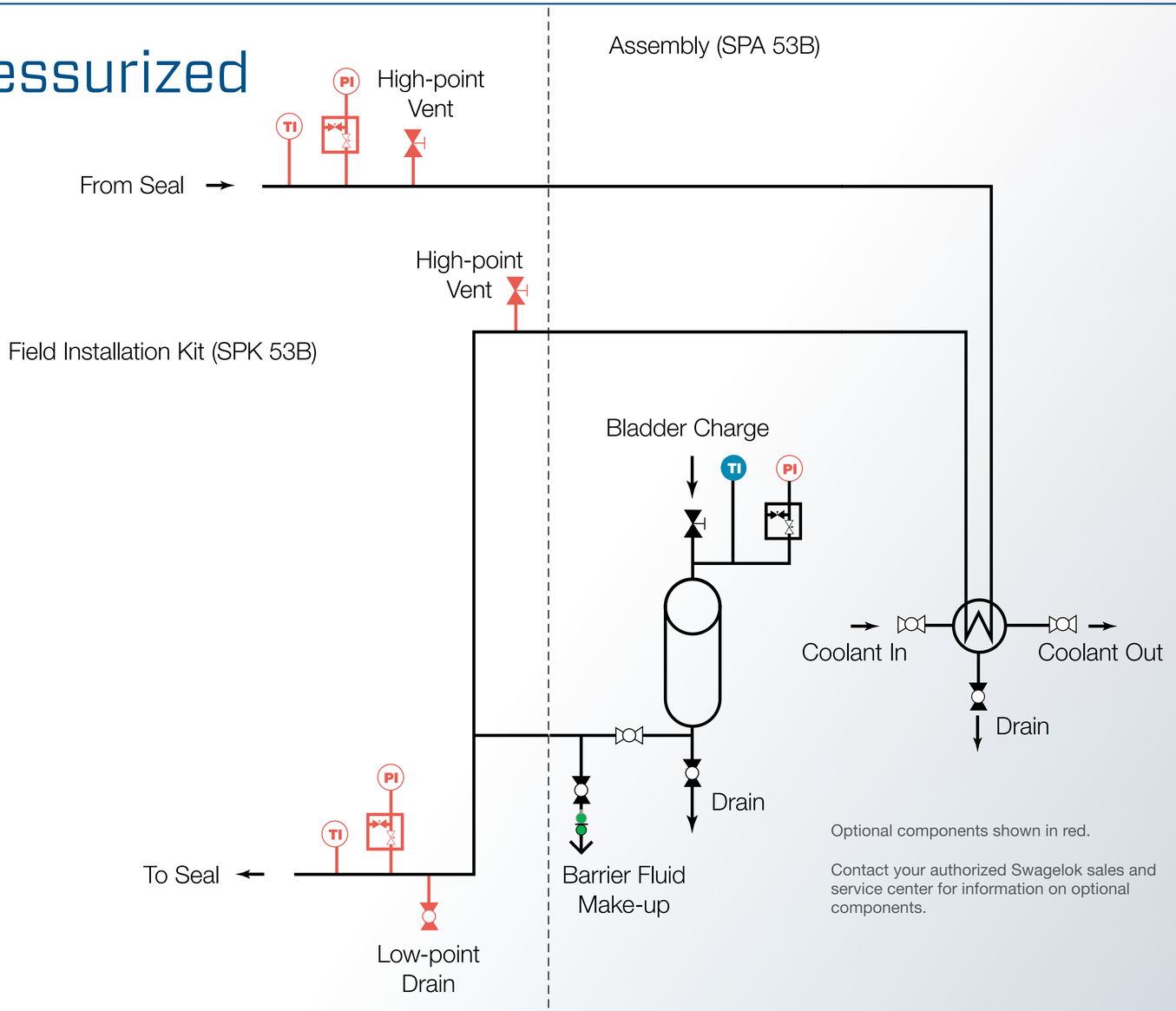


Optional components shown in red.

Contact your authorized Swagelok and service center for information on optional components.

Plan 53B Barrier Liquid Pressurized by Bladder Accumulator

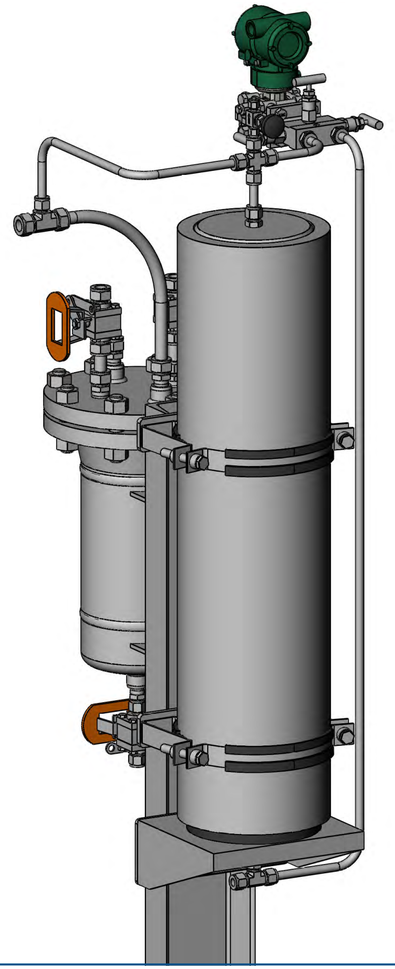


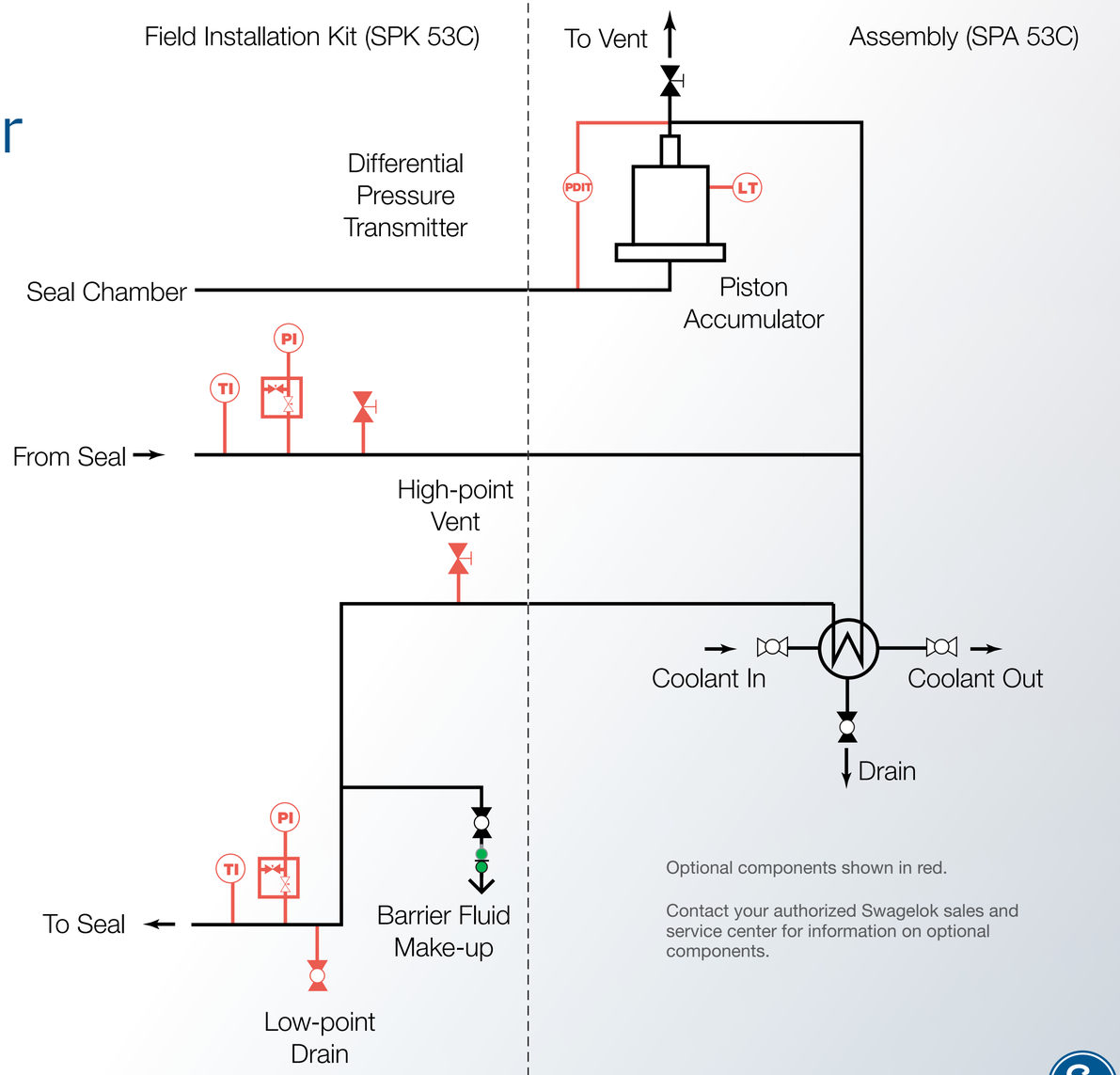


Optional components shown in red.

Contact your authorized Swagelok sales and service center for information on optional components.

Plan 53C Barrier Liquid Pressurized by Piston Accumulator

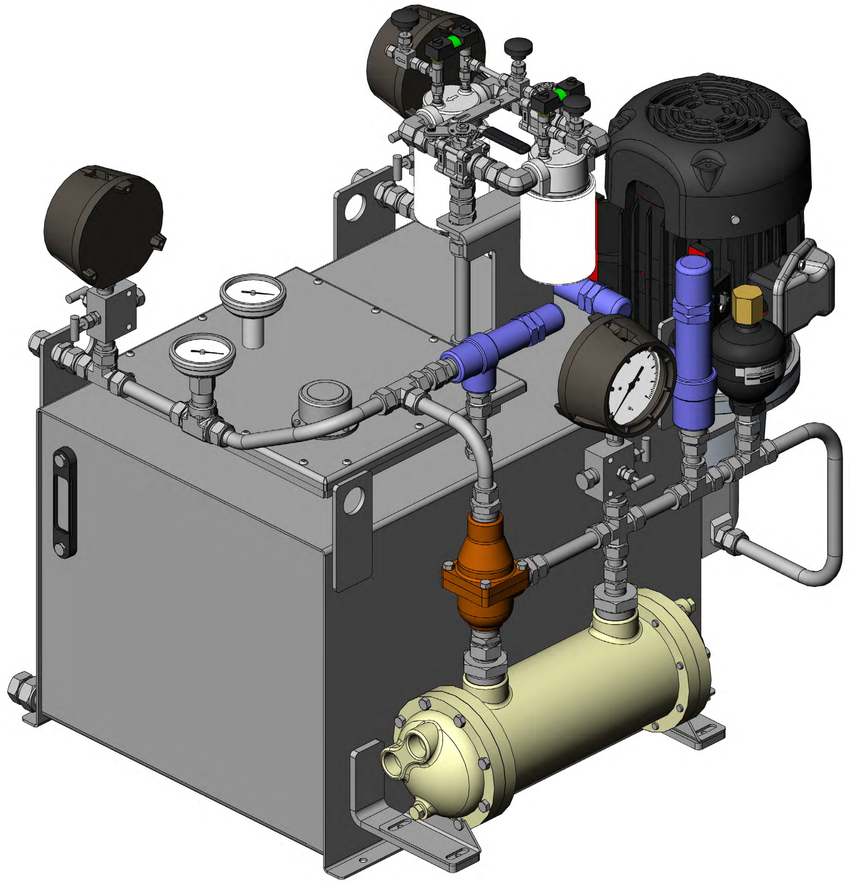


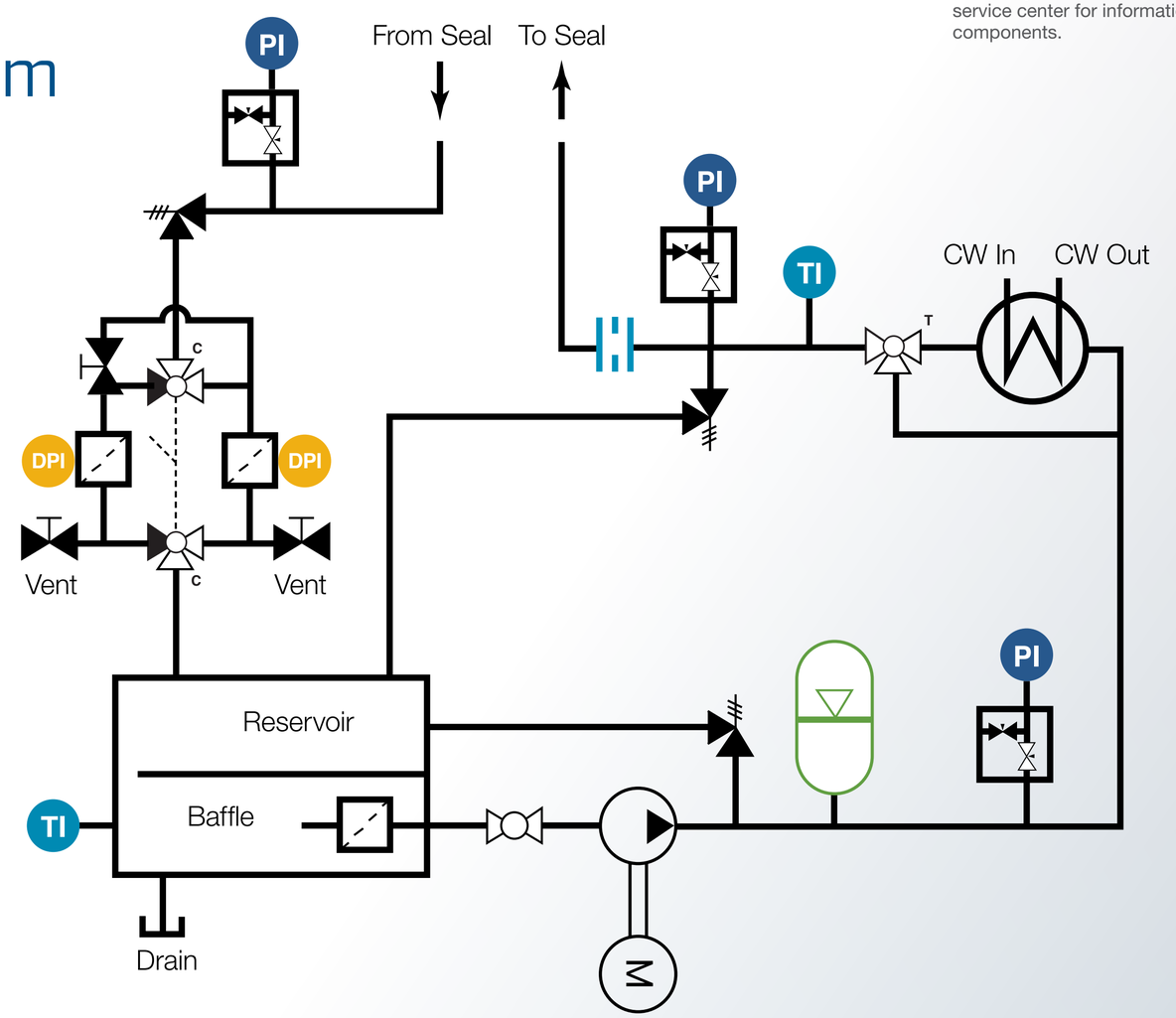


Optional components shown in red.

Contact your authorized Swagelok sales and service center for information on optional components.

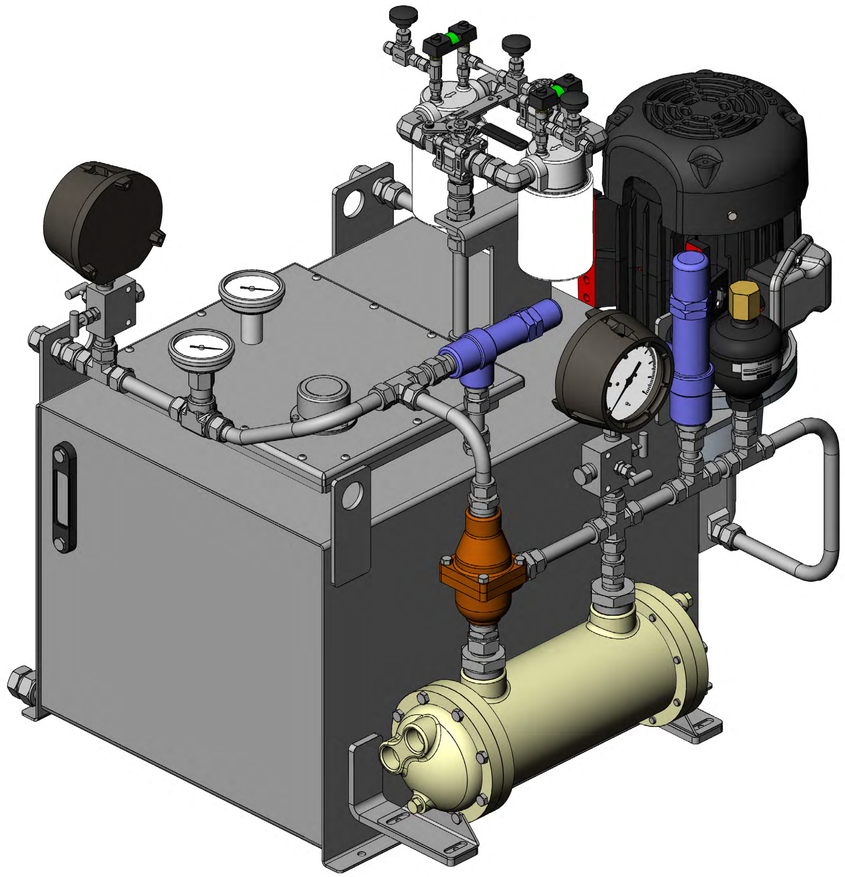
Plan 54 Barrier Liquid Pressurized by External System

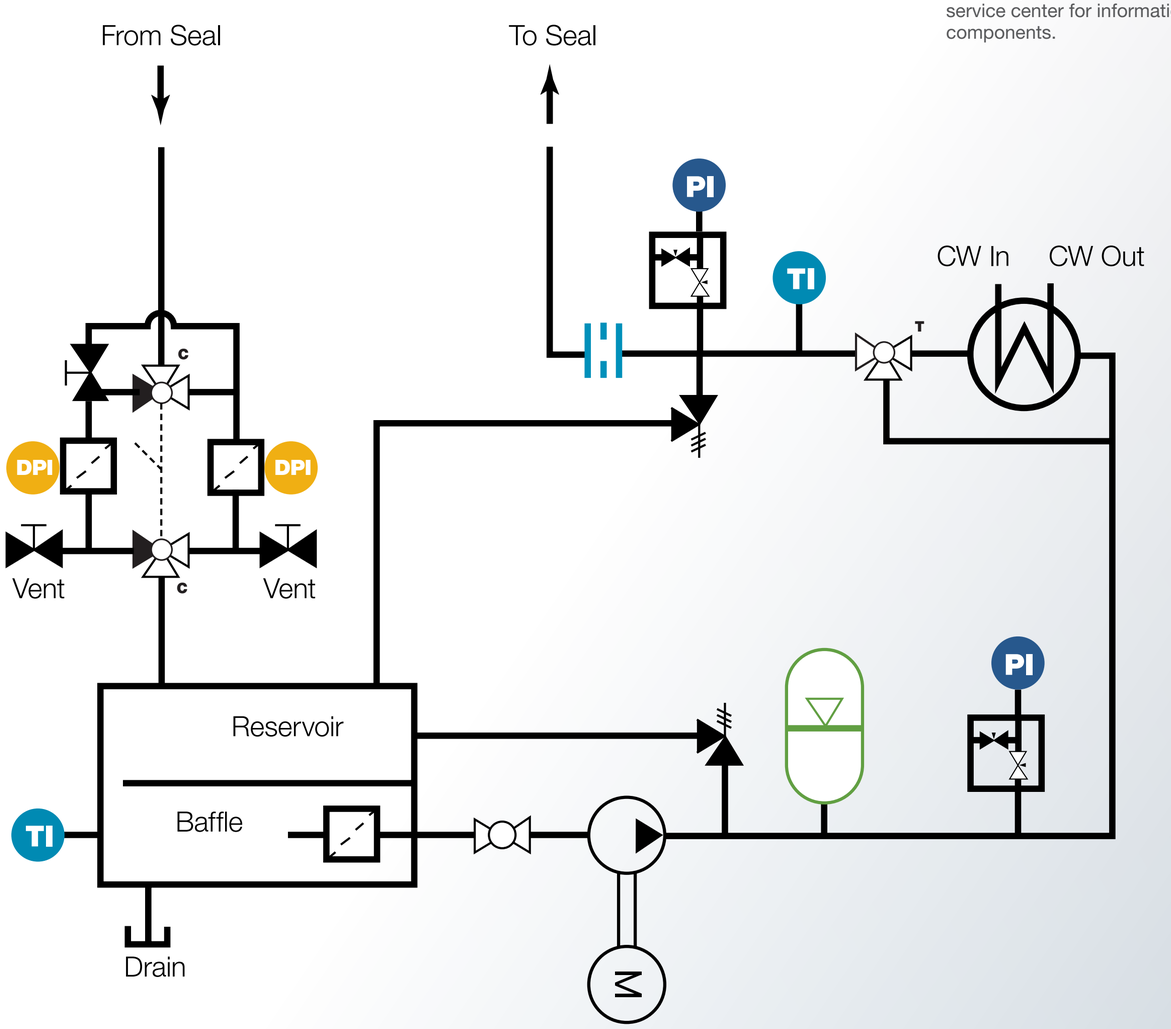




Contact your authorized Swagelok sales and service center for information on optional components.

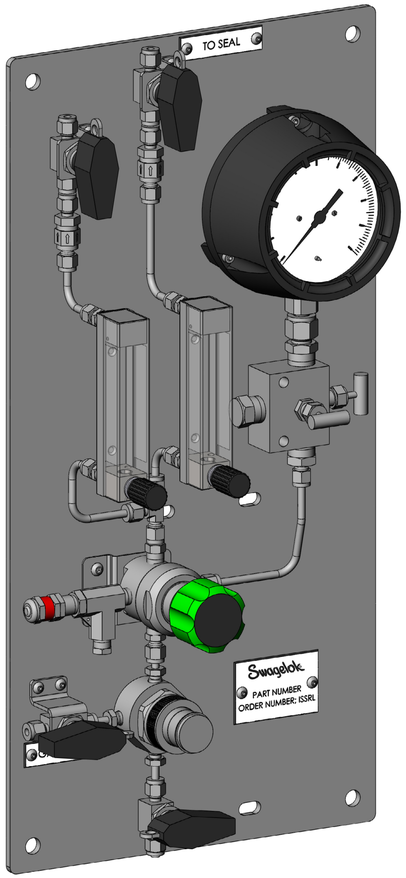
Plan 55 Buffer Liquid Circulated by External System





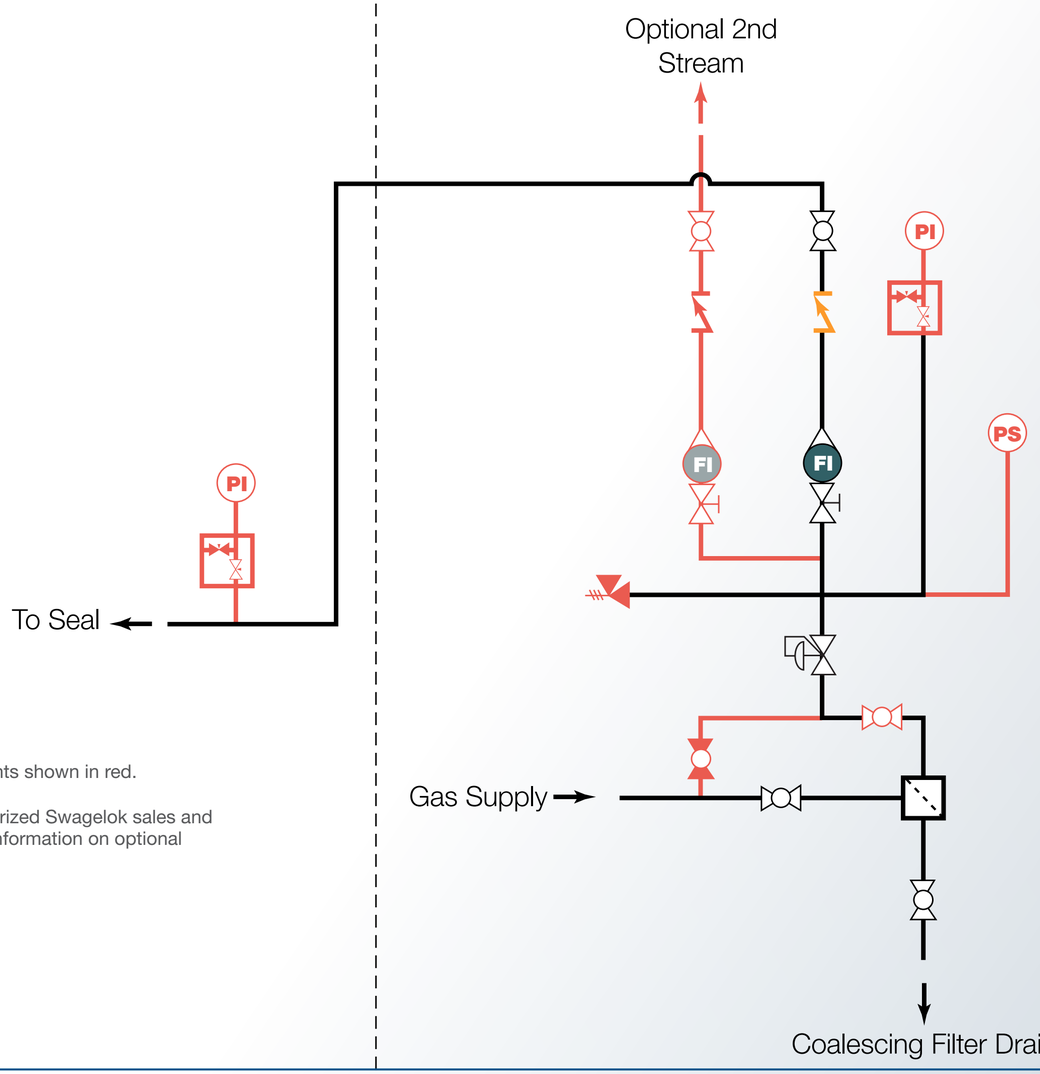
Contact your authorized Swagelok sales and service center for information on optional components.

Plan 72 Buffer Gas



Field Installation Kit (SPA 72)

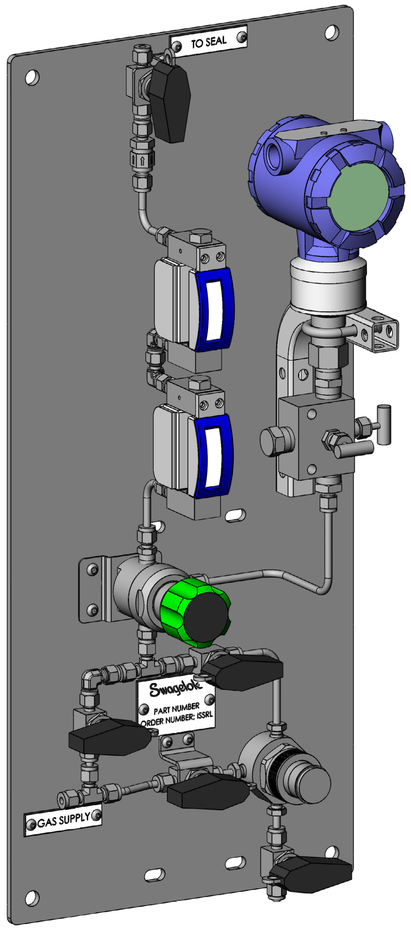
Panel (SPA 72)

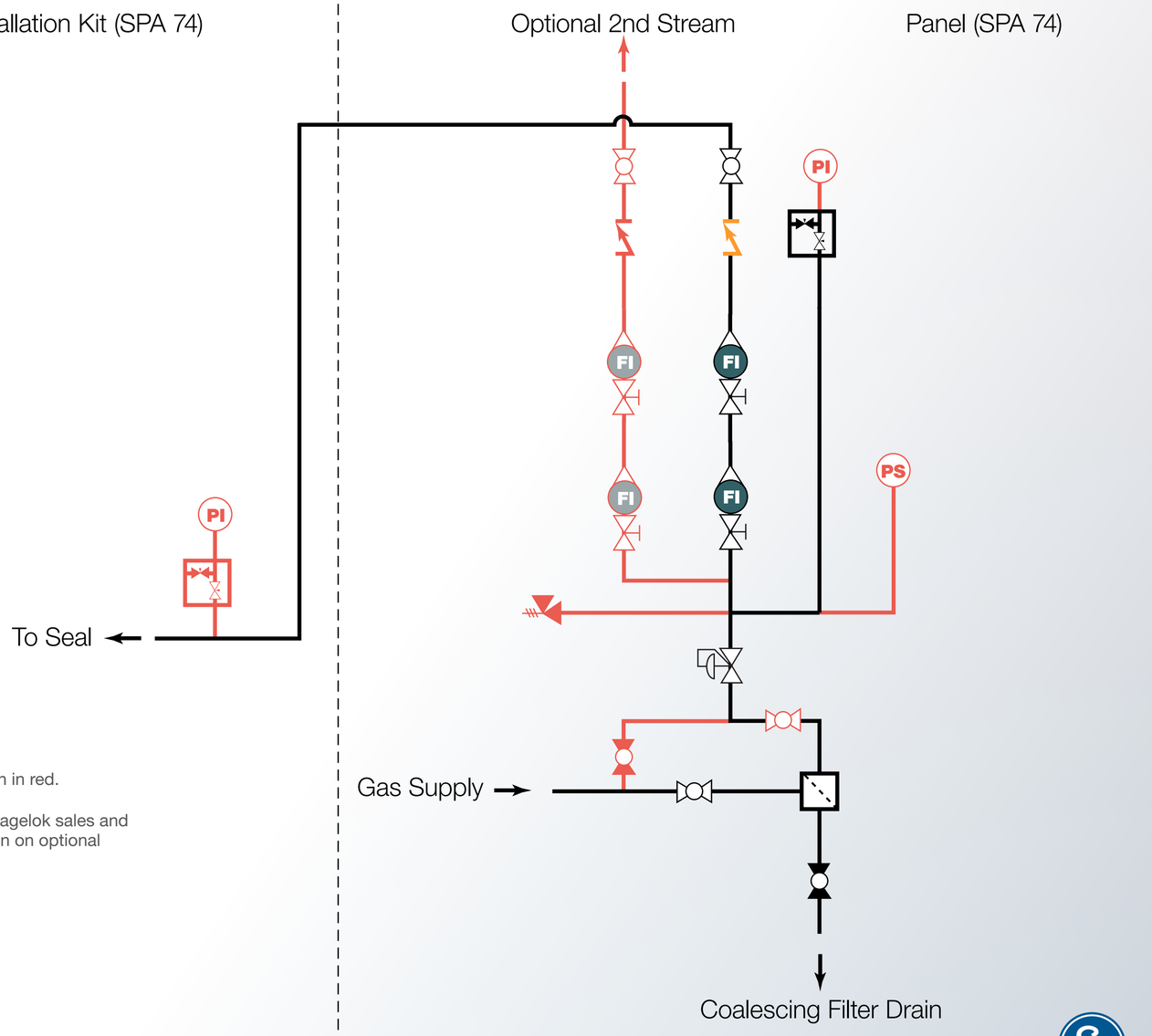


Optional components shown in red.

Contact your authorized Swagelok sales and service center for information on optional components.

Plan 74 Barrier Gas

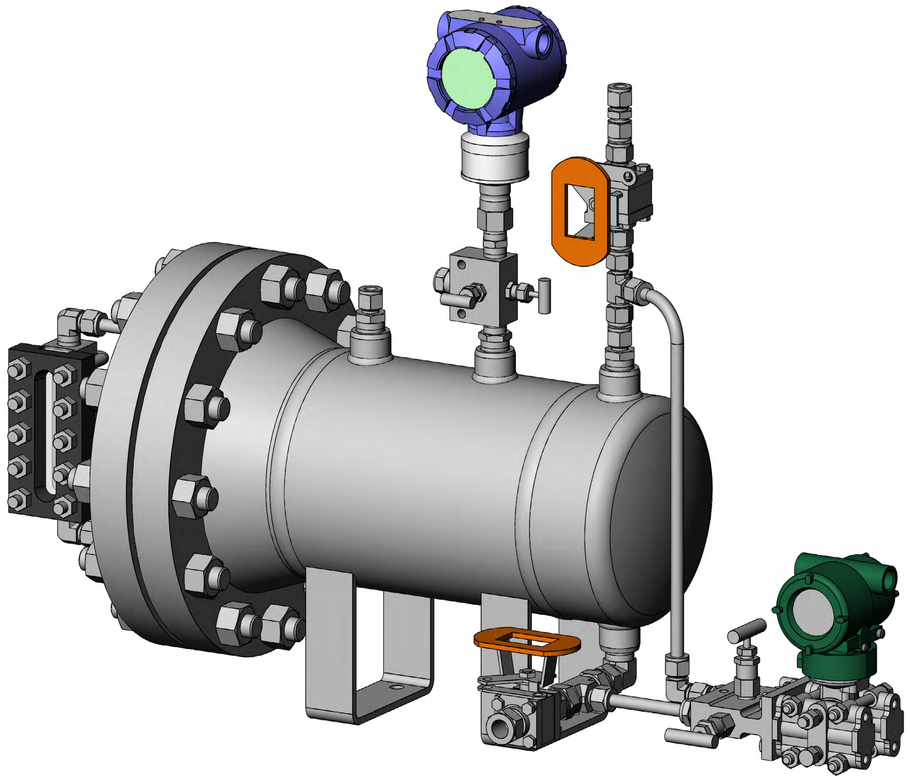


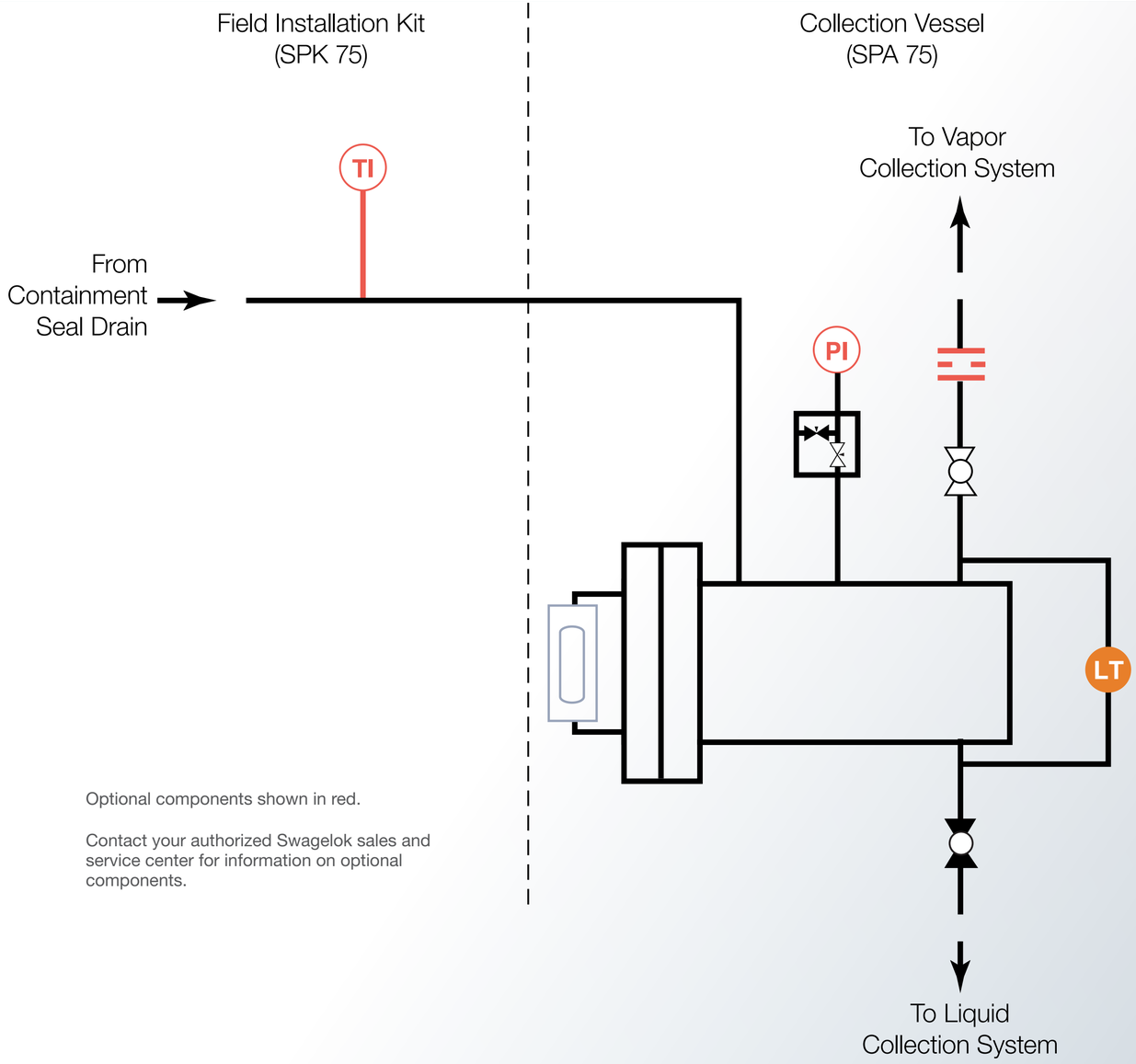


Optional components shown in red.

Contact your authorized Swagelok sales and service center for information on optional components.

Plan 75 Condensing Leakage Collection

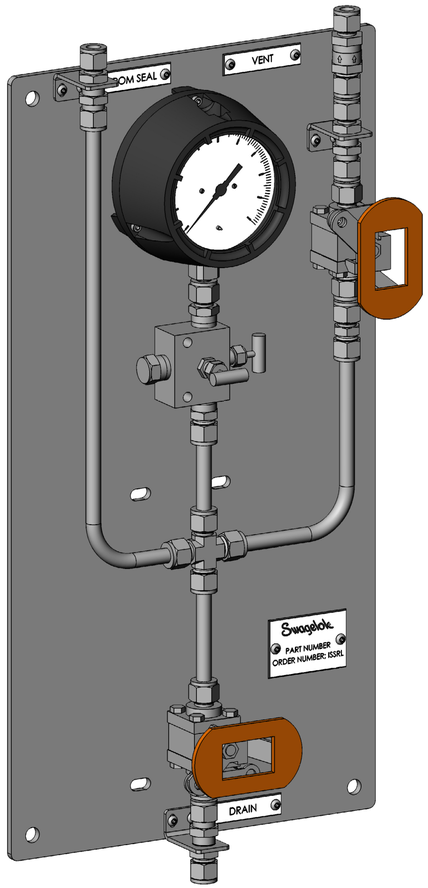


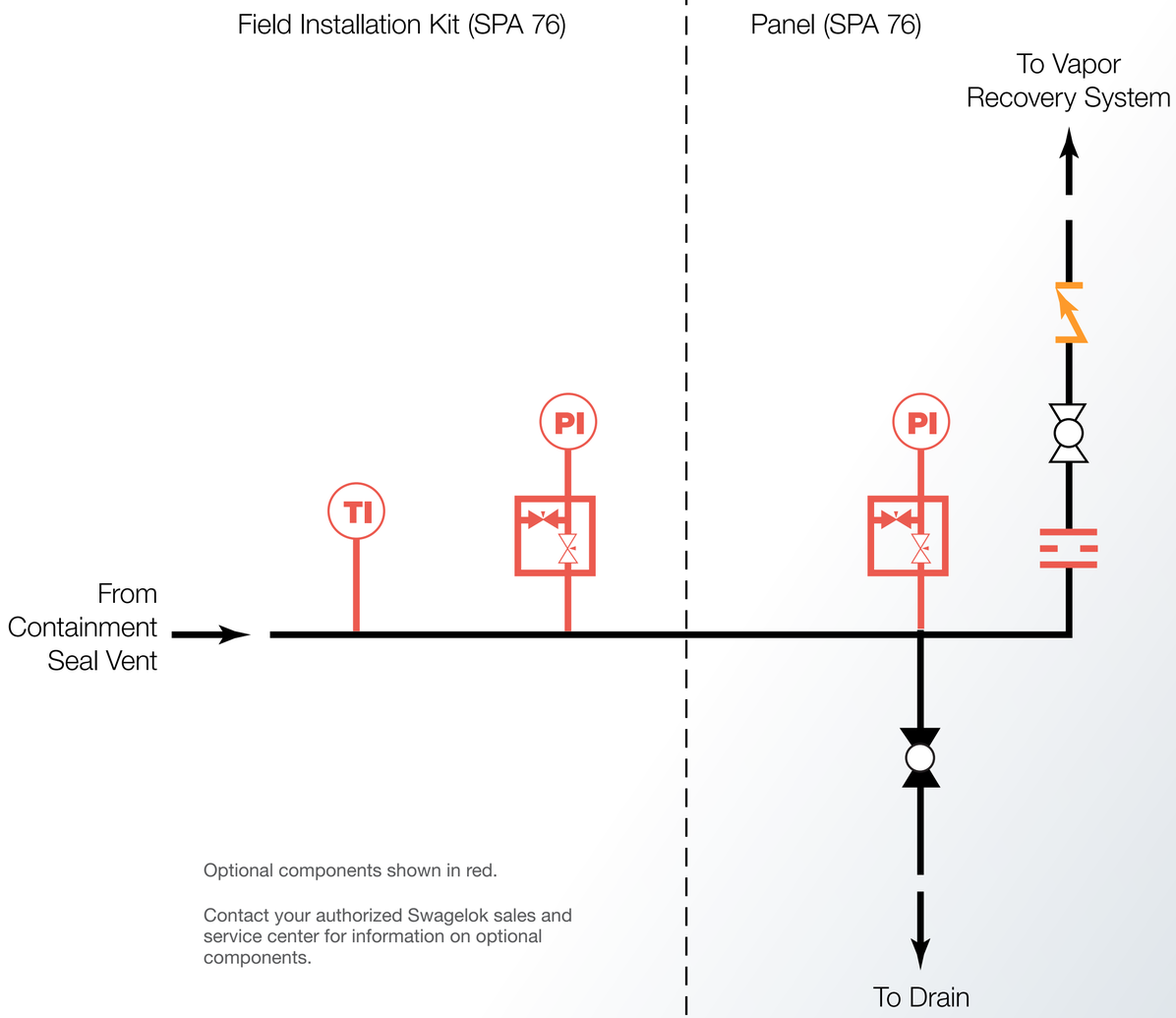


Optional components shown in red.

Contact your authorized Swagelok sales and service center for information on optional components.

Plan 76 Noncondensing Leakage Collection

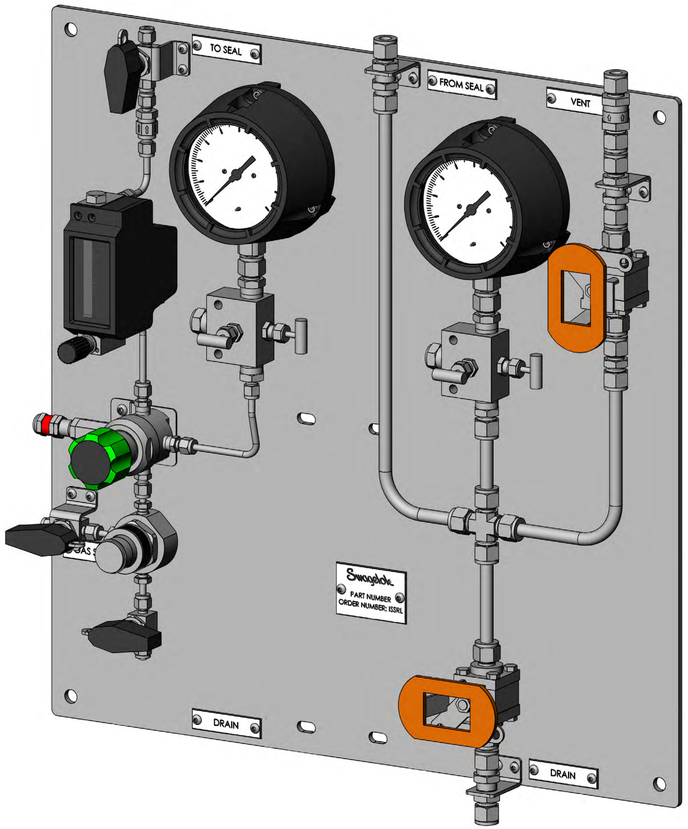


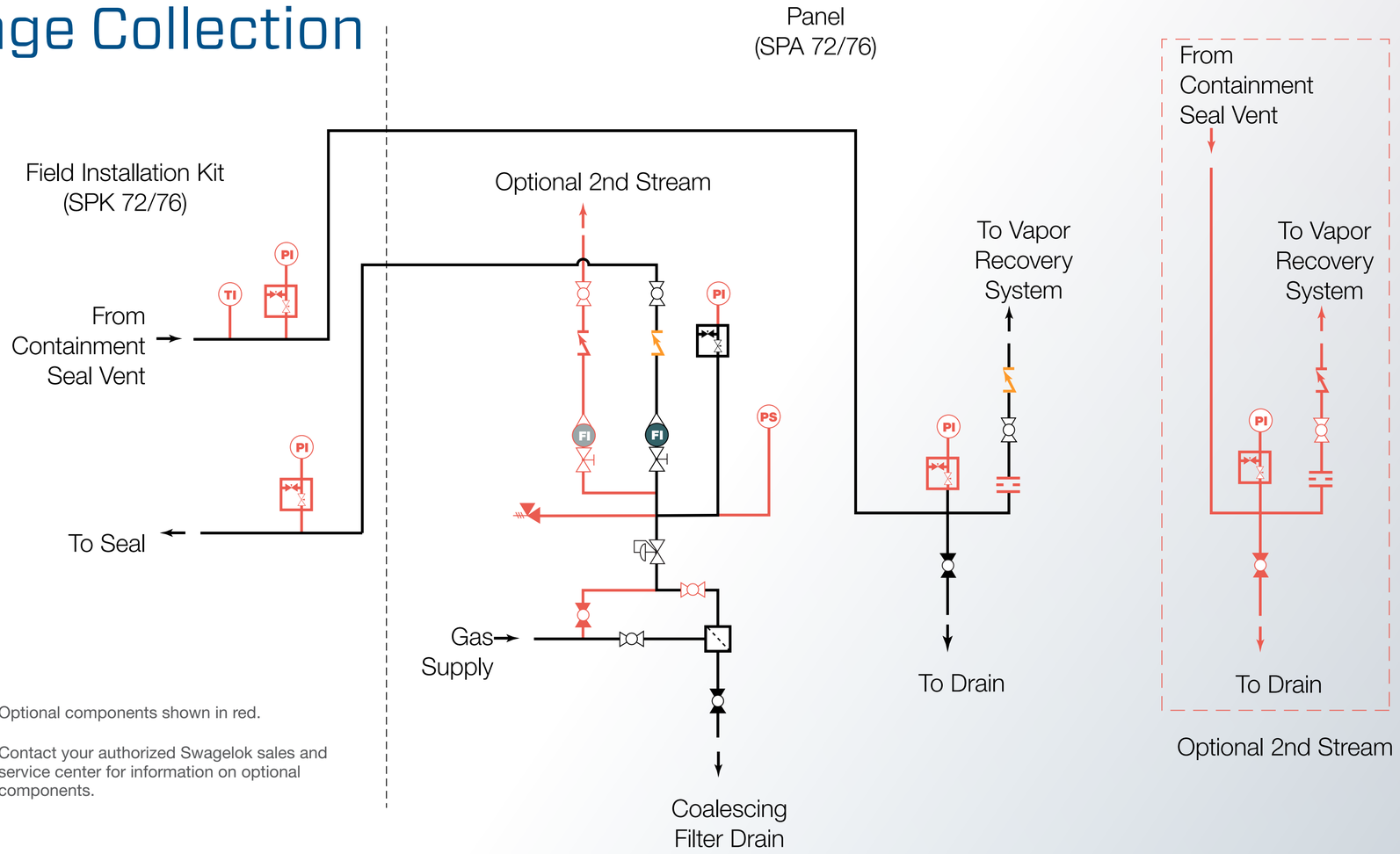


Optional components shown in red.

Contact your authorized Swagelok sales and service center for information on optional components.

Plan 72/76 Buffer Gas and Noncondensing Leakage Collection

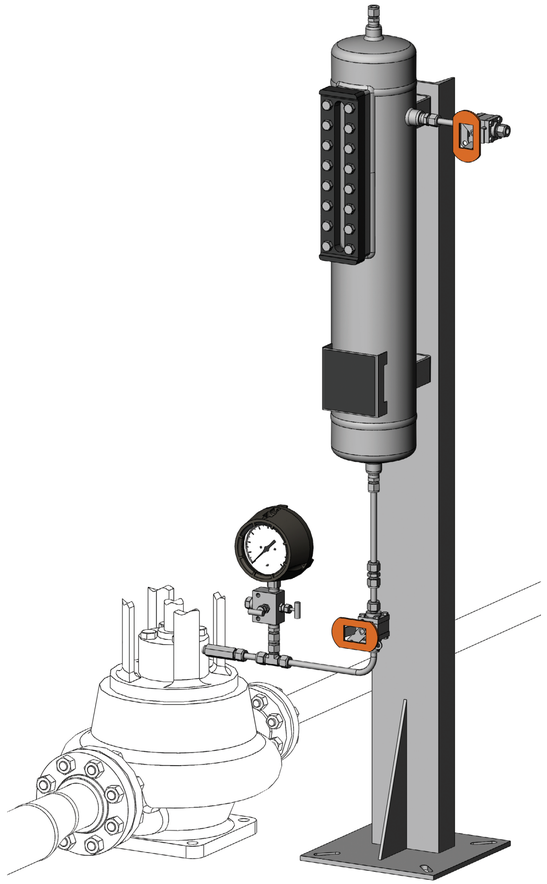


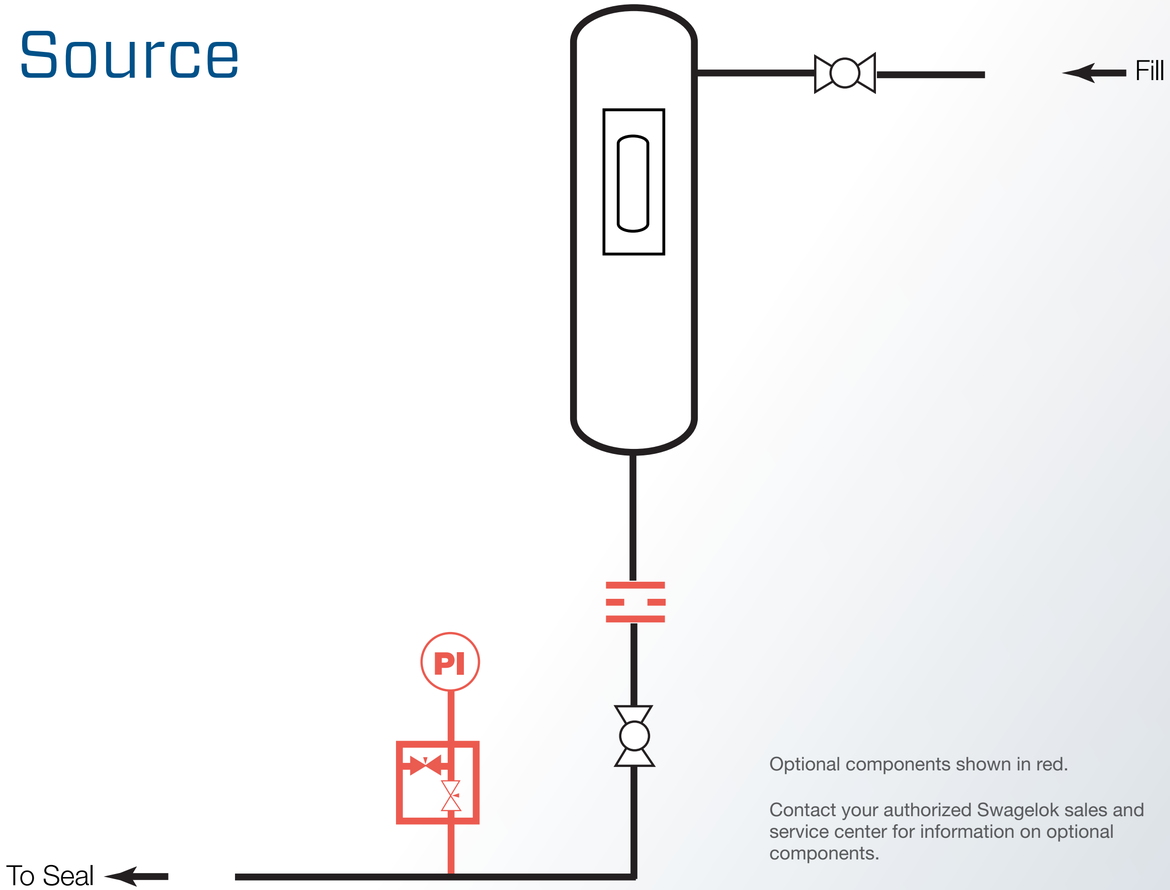


Optional components shown in red.

Contact your authorized Swagelok sales and service center for information on optional components.

Plan 51 Quench from External Source

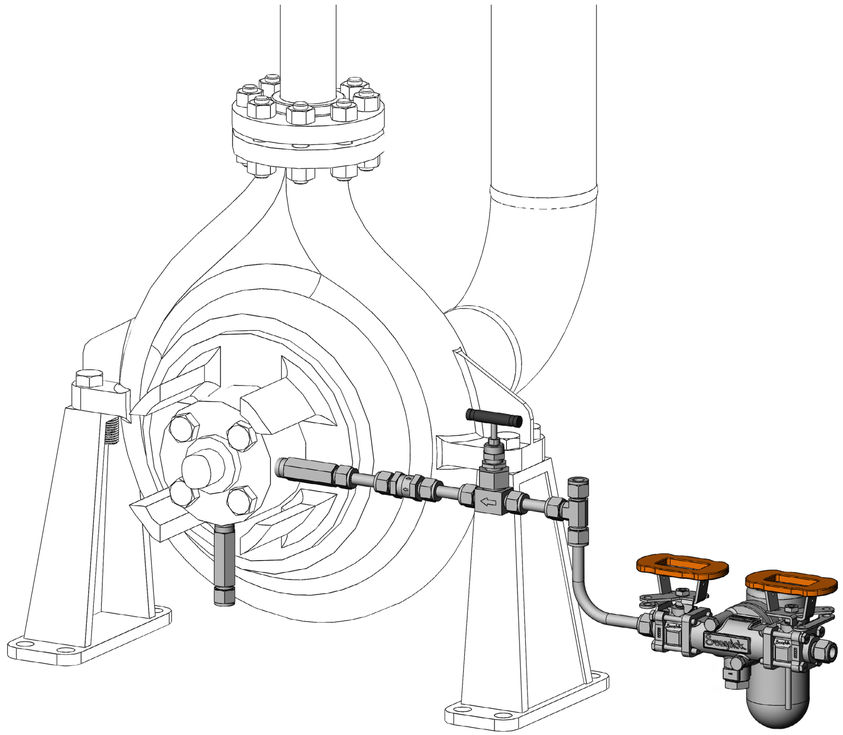


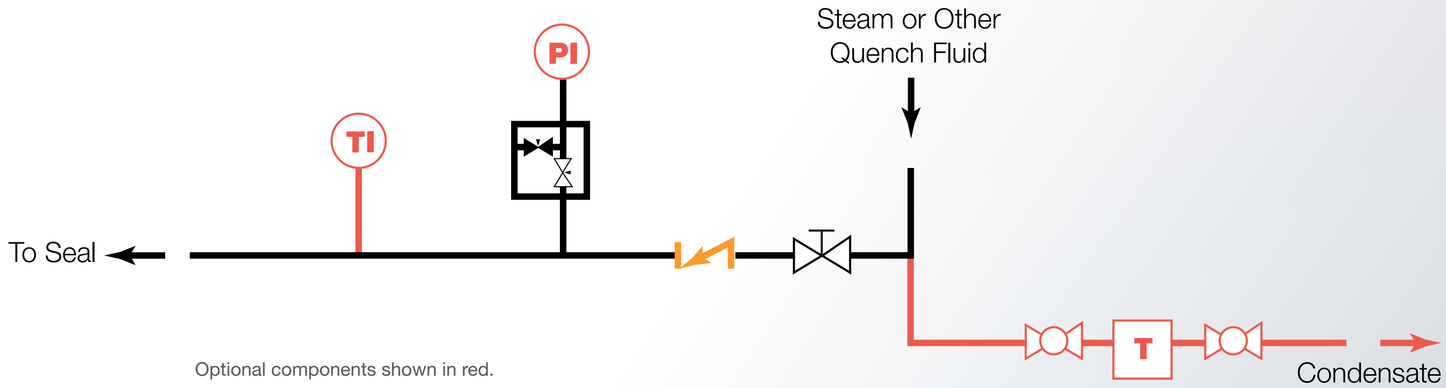


Optional components shown in red.

Contact your authorized Swagelok sales and service center for information on optional components.

Plan 62 Quench from External Source

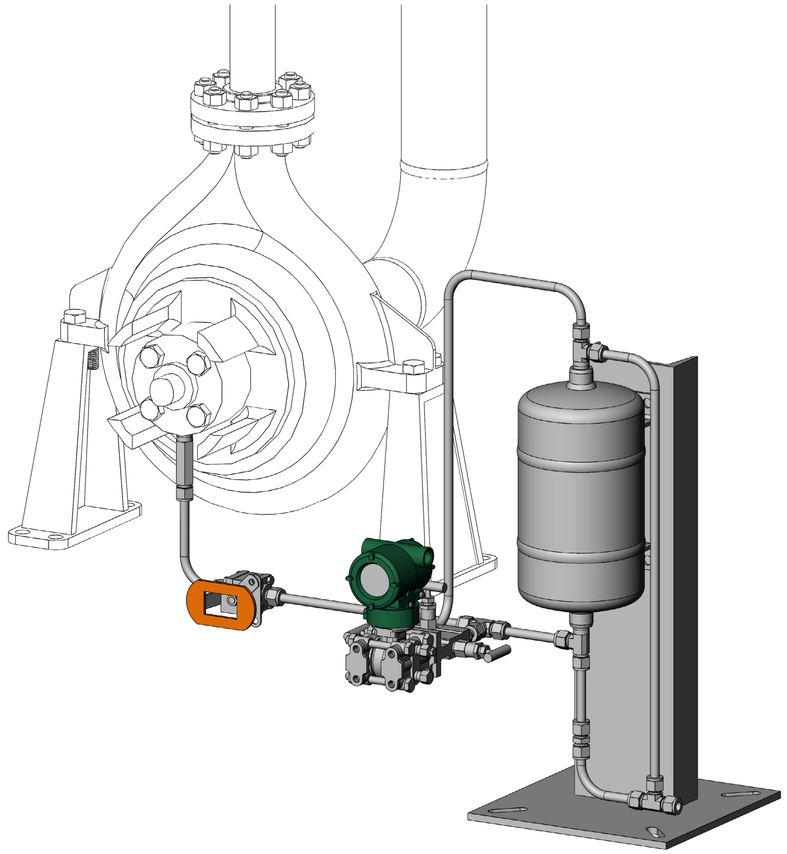


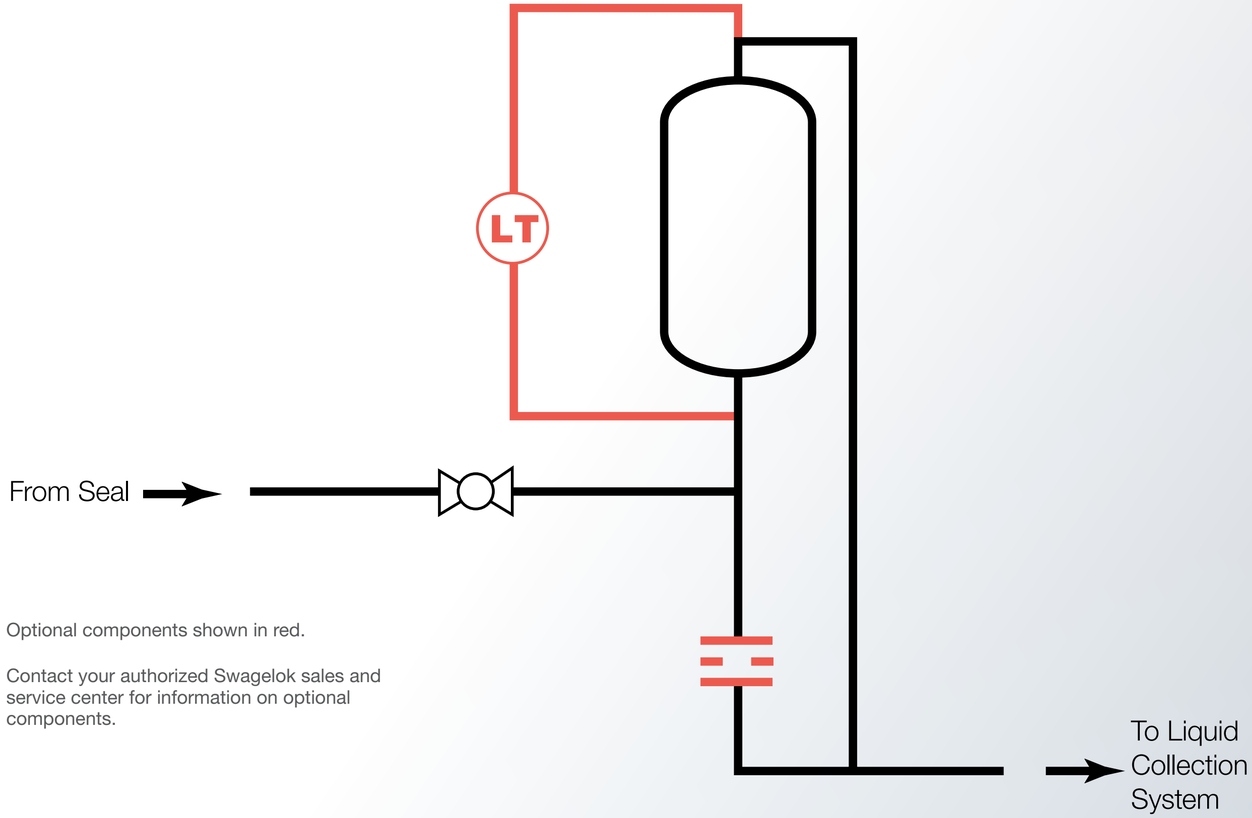


Optional components shown in red.

Contact your authorized Swagelok sales and service center for information on optional components.

Plan 65A Leakage Collection with Reservoir

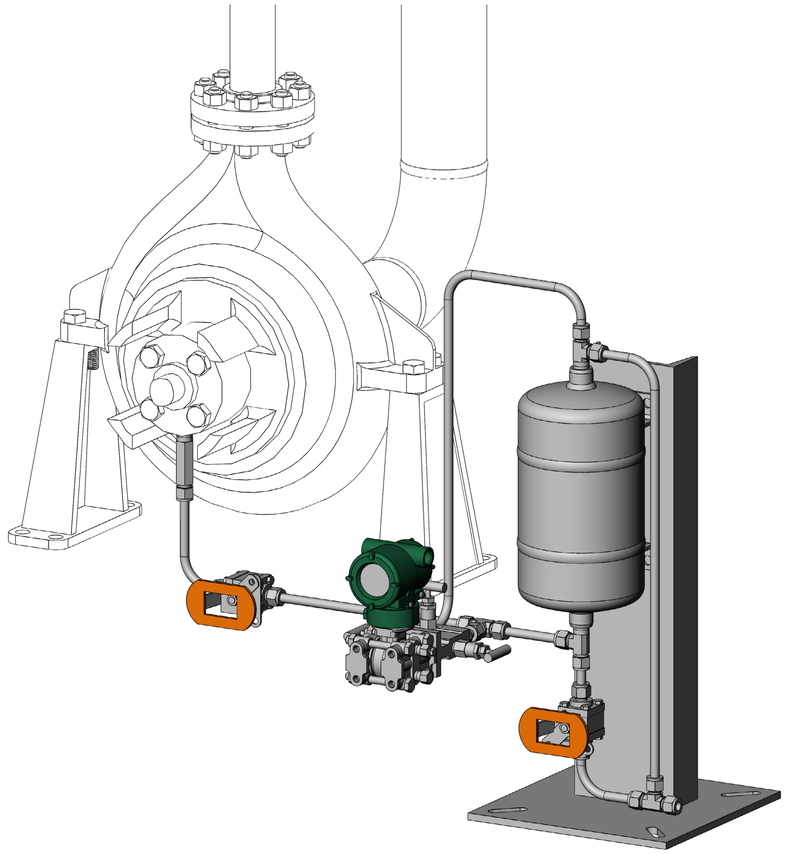


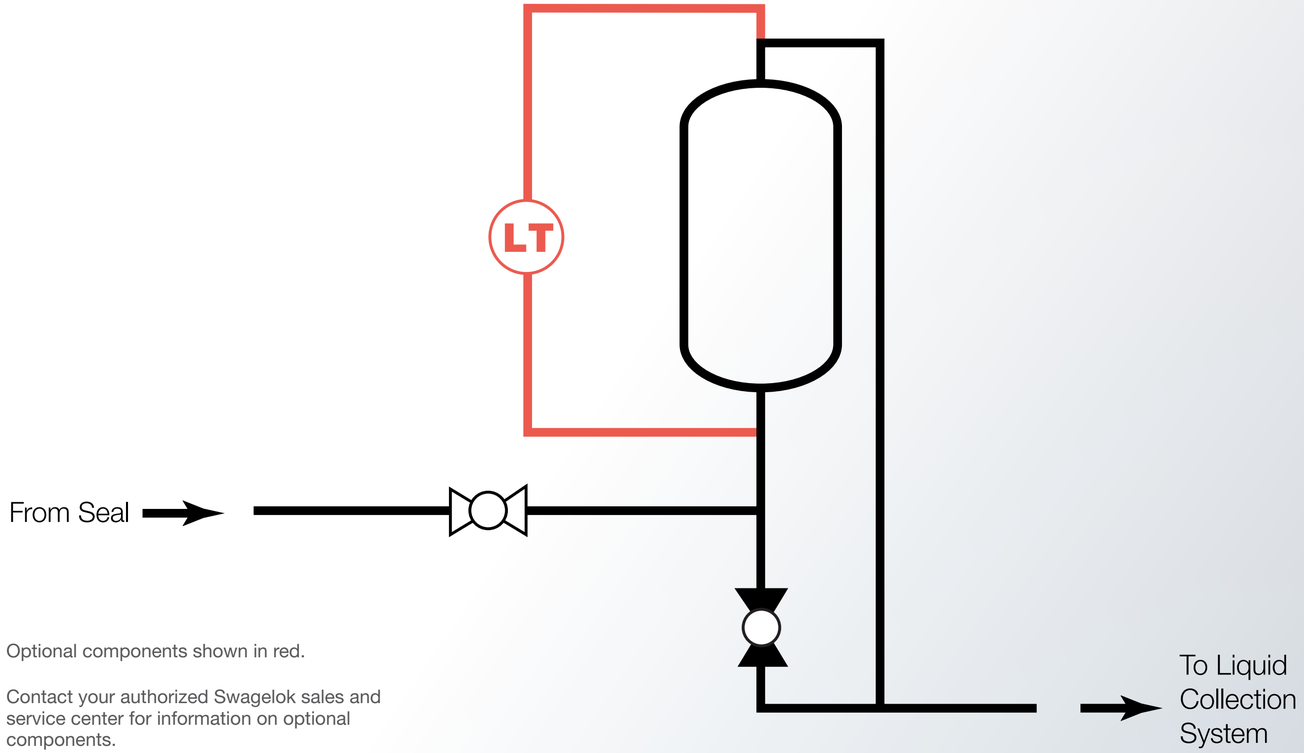


Optional components shown in red.

Contact your authorized Swagelok sales and service center for information on optional components.

Plan 65B Leakage Collection with Reservoir





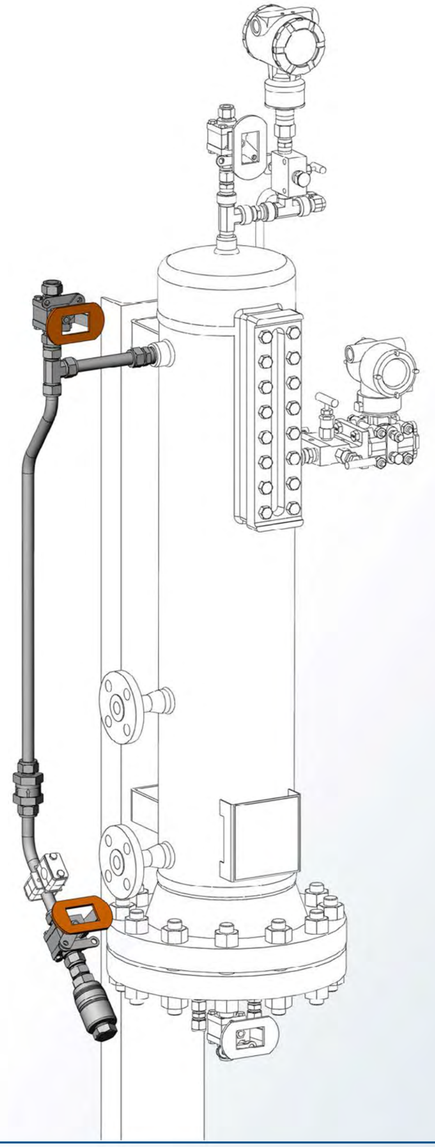
Optional components shown in red.

Contact your authorized Swagelok sales and service center for information on optional components.

Safe-Fill-Assembly

API 682[1], 8.1.9 Unless otherwise specified fill and vent of seal auxiliary systems shall be accomplished from grade.

Systems that require the use of a ladder or step or that require climbing on the baseplate or piping are not acceptable.



[1] API Standard 682 Pumps—Shaft Sealing Systems for Centrifugal and Rotary Pumps, fourth edition, May 2014.