

Emissions Critical

Your Challenge:

Ongoing and complete compliance with increasingly strict environmental regulations. Your primary strategy, therefore, is to drastically reduce potentially harmful and costly – either via lost energy and/or penalties – leakage throughout your facility or worksite.

Let's first examine the **3 common causes for system leaks – most, by the way, due to human installation or tool selection errors, not faulty products:**

- 1 Unreliable Metal-to-Metal Seals.** Very difficult to keep secure over lengthy periods. Unfortunately, component manufacturer maintenance guidelines are often ignored.
- 2 Improperly Installed Tube Fittings.** Nothing could be more critical than to properly train your technicians how to pull up a fitting, including correct orientation of ferrules and applying a gap-inspection gauge to ensure optimum tightness.
- 3 Poor Tubing Choices, Handling, Preparation.** For example, tubing that's not compatible with your process fluid will be prone to corrosion, premature failure, and, of course, leaks. Unevenly cut or damaged tubing will also certainly compromise a fitting's sealing ability.

In addition, **LEAKS** – no matter how seemingly inconsequential – **COST**. A few facts:

- Millions of gallons of hydraulic fluid are wasted each year. At \$40 a gallon, that's a significant financial impact.
- Loss of fluid lubrication leads to major equipment damage, even equipment failure.
- Improper instrumentation calibration/operation due to leakage eventually negatively affects your end-product specifications. That means rework, lower selling prices, or scrap.
- Oil drips mean an unsafe work environment, with slips or falls likely.
- Serious noncompliance with regulations equals massive fines and other penalties.



YOUR
6 Swagelok
Solutions →

6 Swagelok Solutions...

1 Grab Sampling, Gas Distribution, and Mechanical Seal Support

We offer Grab Sampling Panels – plus those for Gas Distribution and Mechanical Seal Support – that ensure the safe, highly effective capture of a liquid or gas sample from a pipeline, tank, or system process for transportation to a lab for analysis. Chemical composition is always pristinely maintained.

Grab Sampling Panels

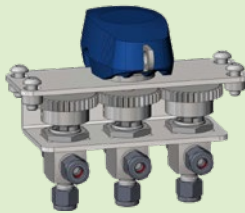
Standard Liquid Sampler without Purge

- Provides a sample that's fresh and extracted and held under the same process conditions that existed at the sample time (except temperature).
- Sampling vessel is docked in place, process fluid circulates continuously through it.
- Employs a pressure-containing metal cylinder.
- No waiting for lines to flush or bottles to fill.



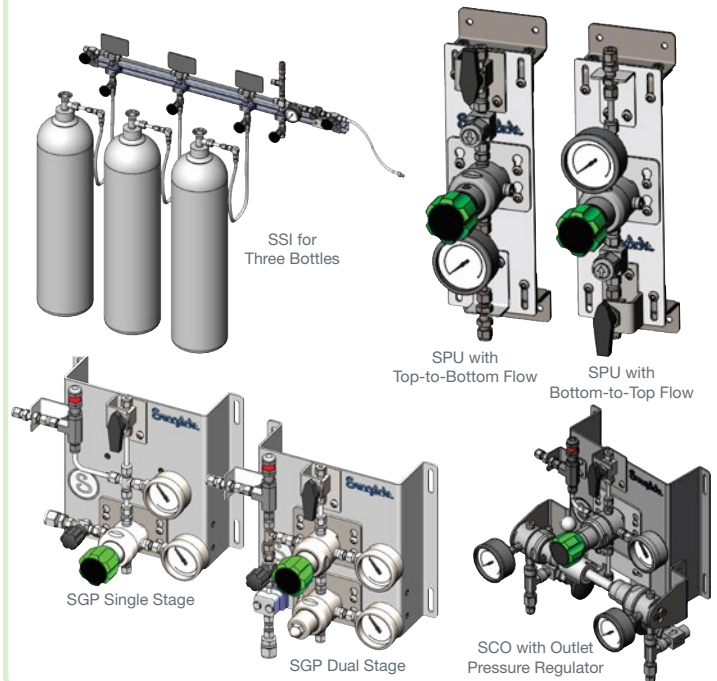
Swagelok's unique Gearing Valve Assembly...

- ...features an **error-proof design** that simultaneously actuates your 2-way or 3-way valves to prevent accidental emissions or unwanted purge gas into your process.
- ...incorporates Swagelok 40-Series, third-party **certified Low-E valves**.
- ...means **safe and simple operation**: just one valve handle to actuate to perform a full sampling cycle.



Gas Distribution Panels

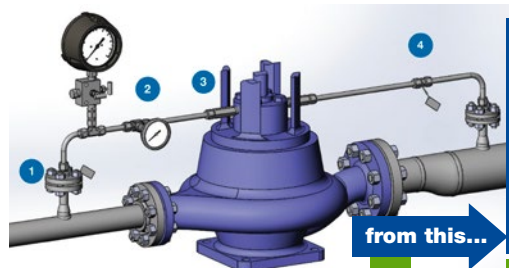
- Offered in 4 standard panel designs that safely, effectively, and efficiently get gases from a high-pressure source to where they need to go – at the required pressure and flow rate.



Mechanical Seal Support Panels

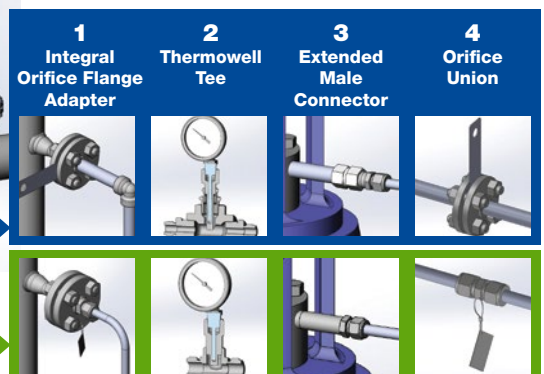
Offered as easy-to-install kits or assemblies – and available in multiple API Plan configurations, our designs feature the minimum arrangement of components as specified by API 682. Leakage is significantly minimized by our avoidance of pipe threads and limited number of overall connections.

- Available in **Seal Plan Kits** that use bent tubing and 2" and under Swagelok components versus leak-prone threaded connections.



from this...

...to this

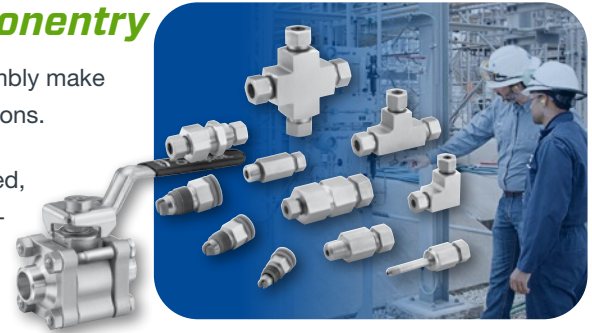


...to help prevent leakage and energy loss

2 Swagelok Premium-Quality, Leak-Tight Componentry

Their grip strength, overall performance, corrosion resistance, ductility, and ease of assembly make our world-renowned tube fittings superbly suited for even your most challenging applications.

Our third-party-API (624 and 641)-certified Low-E ball, needle, rising plug, block-and-bleed, bleed, manifolds, and monoflange valves deliver unparalleled productivity and efficiency – and required zero modifications when tested for leak rates below 100 PPM.



3 Swagelok Safety Training

- We offer an unparalleled array of pertinent and timely course titles.
- We can bring our training directly to your site or project location.
- All of our classes include a full money-back guarantee.
- All graduates receive a genuine Swagelok Certificate of Completion, plus several valuable take-home items.
- We supply all class materials – students just need to show up!

We also facilitate your enrollment in Swagelok-conducted multi-day Sampling System training events. Visit swagelok.com for a complete list of class titles, times, locations, and agendas.

Swagelok Safety Training Courses

- Tube Fitting Installation & Tube Bending
- Tube Fitting Inspection
- Hose Essentials
- Valve Essentials
- Advanced Tube Bending
- Sampling System Maintenance
- Process Analyzer Sampling Systems



Mike Gagel
Strategic Services Specialist

4 Design & Build Custom Fabrication Services

- State-of-the-art, 5,000-square-foot working and staging area.
- 5-ton overhead crane, with 18-foot clearance.
- Climate-controlled environment.
- Dedicated swaging, bending, coiling, orbital welding, and kitting stations.
- Complete testing, inspection, cleaning, and packaging stations.



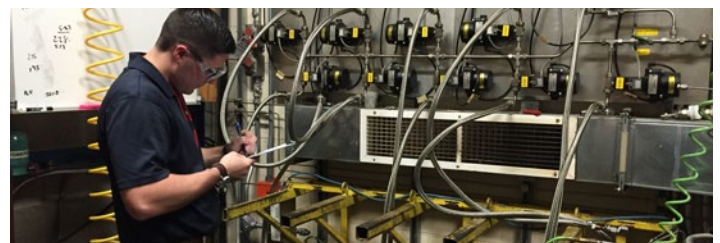
5 Energy-Loss Surveys

Our **Energy Management Specialists** will conduct an on-site survey to identify and tag the leaking tube fitting, pipe, and valve connections that put your workers, equipment, end product, and overall profitability at substantial risk.



6 Industrial Hose Advisories

Our certified **Hose Advisors** will closely audit your current hose usage to determine if your hose types, lengths, and end connections are ideally suited to your specific applications.



YOUR MULTI-FACETED SOLUTIONS PARTNER

WE CAN TEACH YOU
(HOW TO DO IT)

WE CAN LOAN YOU
(THE TOOLS TO DO IT)

WE CAN HELP YOU
(GET MORE OUT OF THE DOOR)



Swagelok Pittsburgh | Tri-State Area is your local resource for just about anything you need to get your fluid-system project done safely, quickly, and cost-effectively. For example, we offer a wide variety of industry-best Training courses, including:

- Tube Fitting Installation & Tube Bending Safety Essentials: **1 day**
- Tube Fitting Inspection & Installation Safety Essentials: **1 day**
- Valve Selection & Maintenance Essentials: **½ day**
- Hose Selection, Sizing, & Maintenance Essentials: **½ day**
- Advanced Tube Bending: **3.5 days**
- Sampling Systems Maintenance: **2 days**
- Process Analyzer Sampling Systems: **5 days**
- Orbital Welding: **5 days**



Most classes can be conducted at your facility or at our leading-edge Training Center in Pittsburgh. We supply all training materials for each session; you simply need to show up where and when. Each graduate receives an official Swagelok Certificate of Completion for each title undertaken.

OR, we have a full arsenal of pristinely maintained Rental Tools, including Hydraulic Swaging Units, Orbital Welder packages (power supply, heads, facing tools, fixturing blocks, and more), and Benchtop Benders, both manual and electric. All tools come in heavy-duty cases, with all peripherals inside. So, why buy new when you only need a piece of gear for a one-time or short-term job?

OR, we can assist with your workload when manpower is short or unique skills are required. Our state-of-the-art Fabrication Shop can design and build subassemblies to highly complex and large skids and enclosures. We also specialize in custom-made instrumentation panels: Gas and Liquid Grab Sampling, Gas Distribution, and Mechanical Seal Support, just to name a few. Call us for large-diameter tube bending and to preset relief valves, too.

However you need us – for whatever and whenever you need us – we're ready and able to support your toughest assignments and deadlines!

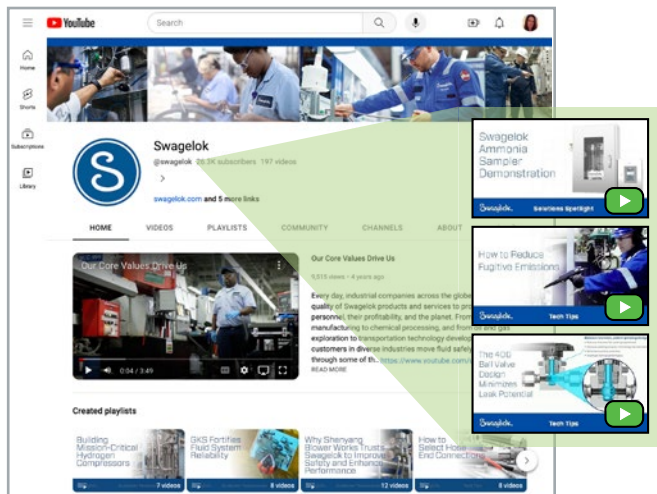


MUST-SEE VIEWING

Two places you can go to see for yourself why Swagelok premium-quality products and strategic support services are the fluid-system industry's most potent mix of trusted and proven solutions for leak-tight, consistent, dependable performance, job after job after job:

*Swagelok Company's
YouTube Channel*

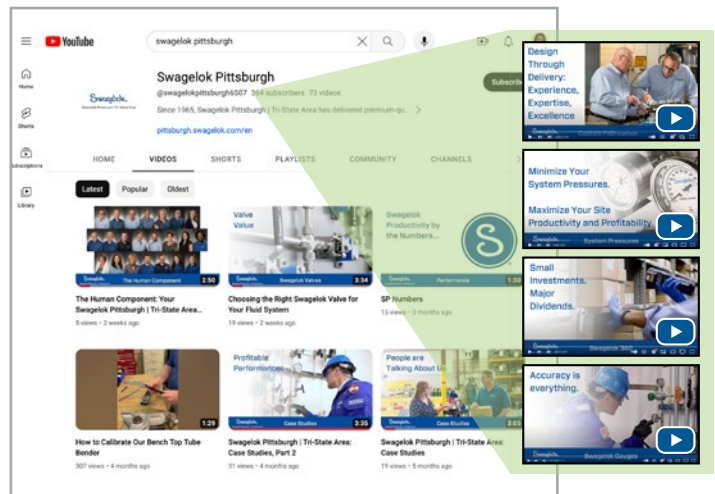
youtube.com/@swagelok



Here you can watch how Swagelok Field Engineers continually deliver truly difference-making results around the globe; how to reduce costly and dangerous fugitive emissions; how to operate Swagelok Benchtop Benders and Hydraulic Swagers; how Swagelok products and services are positively impacting the ever-expanding-and-critical Clean Energy Market; and so much more.

*Swagelok Pittsburgh | Tri-State Area's
YouTube Channel*

youtube.com/@swagelokpittsburgh6507



You'll be in the right place to see how we deliver major productivity and profitability improvements for local Oil and Gas, Steel, Chemical, Petrochemical, Refining, and Research-and-Development customers – whether dispensing trusted and proven technical application expertise, designing and building Swagelok-warranted panels, conducting safety training classes to keep technicians up to speed with best installment and tube-bending practices, and more.

Our channels are your sites to see – for safety and performance tips to enable you to do more with less, no matter what your fluid-handling task.

FINEST IN THE FIELD

(NINTH IN A SERIES)

Customer Challenge:

A major manufacturer of specialty diaphragm gas compressors for the global alternative energy market, especially hydrogen fuel production for cars, buses, trucks, forklifts, drones, trains, and, soon, heavy-duty construction vehicles, cannot afford lapses in the high quality standards set by its ever-demanding customers. In other words, uptime is the only acceptable deliverable for those transitioning to hydrogen-powered, zero-emissions electric sources versus previously used internal combustion engines.



Our Solution:

First, partner with a true solutions supplier who can provide not only premium components to make your products, but a company you can depend on for more than leak-tight, ultra-reliable, cost-effective Tube Fittings and accessories. That's why this OEM, since its founding, has counted on Swagelok for not only existing trusted and proven tools, but for design expertise to essentially eliminate potential failure points in its compressor production. All to meet the overall objective of lowering the hydrogen cost-per-kilogram for the end user.



Bottom Line: For more than 75 years, Swagelok has been a world leader in the design, manufacture, and supply of top-quality, high-performance Tube Fittings, Valves, Gauges, Hoses, Regulators, Tubing, and fully customized Instrumentation Panels, Grab Sampling Systems, Gas Distribution Systems, and Mechanical Seal Support Systems. In addition, we now offer a vast array of unparalleled strategic support services, including nearby and warrantied Design & Build capabilities, Safety Training, Energy-Loss Evaluations, Hose Advisories, and Tool Rentals for short-term or infrequent projects.



VALUABLE

Valve Safety Practices



Properly Install

- Always follow the manufacturer's instructions to the letter.
- Read accompanying manuals; attend training sessions; watch videos.
- Learn how to assemble/disassemble and to detect leaks.
- Know your system's capabilities and operating parameters.
- Place valves in easily accessible locations for fast, simple maintenance.
- Mount valves to fixed area; add tubing on both sides to minimize vibration.
- Ensure media flows in intended direction.
- Add filters to remove system particulates and contaminants.



Establish a Preventative Maintenance Schedule

- Base your plan on the pressure, temperature, fluid chemistry, and on/off cycles each valve will encounter over a certain timeframe.



Watch for Leakage

- If you smell or hear a leak, especially gas, repair it immediately before far greater issues arise.
- Find whether your problem was caused by unreliable seals, system contaminants, poorly installed connections, or ineffective tubing selection/preparation.



Employ Troubleshooting Techniques to Determine Repair/Replace Actions

- First, test the valve: Where's the leak's origin?
- Second, inspect the valve: seats, O-rings, stem tips... Worn? Damaged?
- Third, repair the valve: Can you just replace seats, packing, stems...? Or total overhaul needed?
- Fourth, perhaps readjust your maintenance timeframe, and possibly add tags?
- Fifth, if you observe excessive corrosion, contamination, or end connection damage, REPLACE.



MINIMIZE

DANGEROUS EXPOSURE

ELIMINATE

SAMPLE TRANSFERS

Our new **AMMONIA SAMPLER**

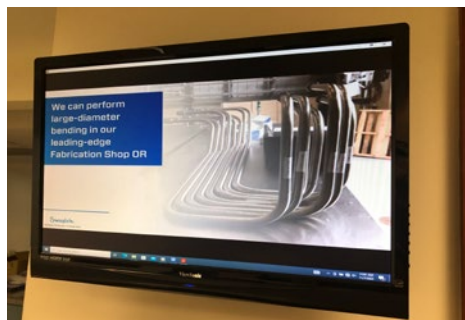
employs a closed-sampling fixture, pre-chills the residue tube, semi-automates how the tube is filled, and controls the heating cycle.



- Operation is simplified by a **single-handle control** that also minimizes any chance of sampling errors.
- A **filling cold bath** clears the supply line of older ammonia, ensuring the continuous collection of a fresh sample.
- A **pre-chilled residue tube** enables superior accuracy while also preventing aggressive ammonia boiling.
- **Residue tube cap assembly** eliminates any chance for overfills, keeping your sample sizes uniform.

WHILE YOU WAIT

Next time you visit our Will Call area, check out our latest company videos on the monitor to your immediate right. There you'll learn about the newest Swagelok componentry and services innovations that will keep your Bottom Line healthy, your crews safe, and your business growing.



And, while there, grab your copies of our brand-new Swagelok literature, including:

- **Swagelok Thread and End Connection Identification Guide**
- **An Installer's Pocket Guide for VCR Metal Gasket Face Seal Fittings and Micro-Fit Weld Fittings**
- **An Installer's Pocket Guide for Swagelok Hoses**
- **We Deliver Swagelok Fluid System Solutions**
- **Your Local Swagelok Industrial Hose Pros**
- **Your Local Swagelok Design & Build Services**
- **Swagelok Safety/Technical Training Courses**
- **...and more!**



Your local Swagelok Account Representative has your 2024 Swagelok Pittsburgh | Tri-State Area wall calendar!



Or, email Rudy Frank at rudy.frank@swagelok.com for your copy.

We genuinely appreciate your ongoing safety and productivity investments with us!

CONTACT US

412.761.3212 OR 412.439.1706
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