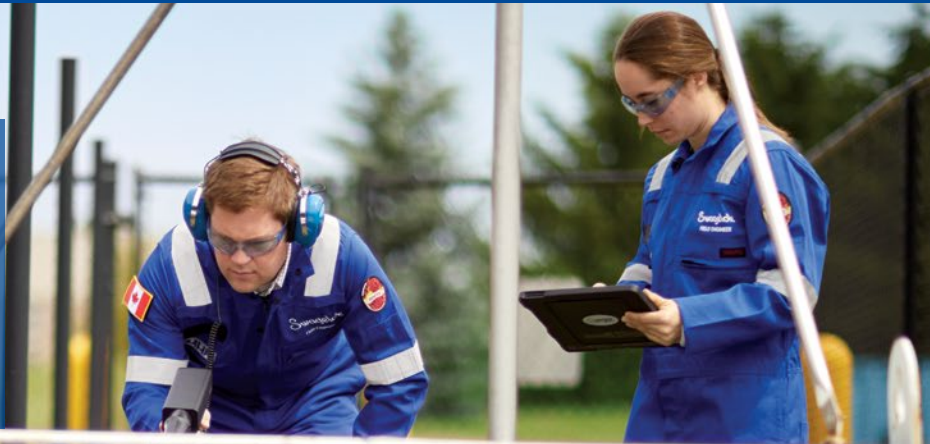


Nearer to Net Zero



Dynamic and static seals on valves, pumps, and flange connections are the usual culprits for fugitive emissions – with valves being responsible for a whopping 62% of total uncontrolled Volatile Organic Compound (VOC) releases at a typical facility.

The EPA helps companies comply with current environmental requirements... with the hope the firms will do so voluntarily. But, if not, the agency takes legal action, sometimes at a prohibitive cost to the offender.

One sure-fire remedy to avoid non-compliance penalties is to install Low-E Valves.

Swagelok models, which passed the American Petroleum Industry's rigid fugitive emissions tests **without design modification or special ordering instructions** – never leaking in excess of 100 ppm methane during thermal and pressure cycles, are offered as:



In addition, there are several operational best practices that we strongly suggest to decrease your likelihood of leakage and harmful emissions:



Make packing adjustments on preventative maintenance schedules. For example, frequent intervals are needed during cold temperatures.



Reduce the number of non-Low-E valves onsite to help eliminate incorrect installs during critical applications.



For ultimate safety, employ double block-and-bleed valves.



Implement lockout devices to prevent throttling or accidental actuation of bleed valves.



Replace versus repair valves, when possible, as new valves can be substantially cheaper when factoring in the labor and downtime associated with maintaining aging components.



Use bellow seals when handling light-end gases such as hydrogen.



Standardize on just a few Low-E model brands. Remember, products designed by one manufacturer are likely to perform better together than those from multiple suppliers.

Globally Trusted and Proven
DESIGN & BUILD EXPERTISE –
*Available **Locally***

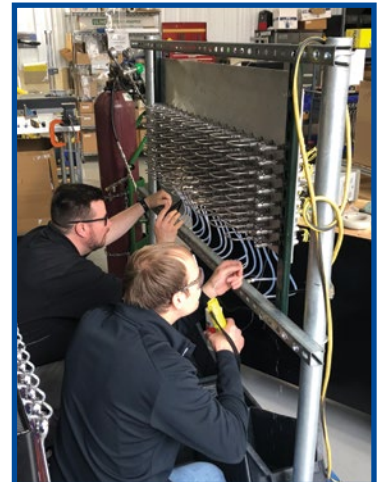
WHEN to Contact Us:

- ...if you need skilled technicians to help you get more quality work out the door faster
- ...if you have knowledge gaps due to recent retirements or worker attrition
- ...if you want to reduce overall engineering/scrap/rework/admin/inventory costs

WHY to Contact Us:

We can help you save time, money, and worry when your production schedule is tight.

- Gas Purge Panels and Enclosures
- Distribution Manifolds
- Custom Flex Hose Assemblies
- High-Volume Bent Tubing Assemblies
- Sample Cylinder Assemblies
- Standard Instrumentation Mounting Kits
- Ultra-High-Purity Welded Manifolds
- Gas Delivery and Distribution Panels
- Gas and Liquid Grab Sampling Panels
- Mechanical Seal Support Systems
- Instrumentation and Transmitter Assemblies/Enclosures
- High-Pressure Test Stands
- Simple and Highly Complex Tube Bending
- Heat Exchanger Tubing Coils
- Gauge Block-and-Bleed Valve Assemblies
- Automated Ball Valve Assemblies
- Pre-Set Relief Valves
- Maintenance Programs for Sample Cylinders and Flexible Hoses
- CAD and P&ID Design Assistance
- ...and more!



- Dedicated Swaging, Bending, Coiling, Orbital Welding, Kitting, Packaging/Wrapping, Inspection, Testing, and Cleaning Stations
- Climate-Controlled Environment
- 5-ton Overhead Crane, with 18-foot clearance



SHOWTIME X2

Thanks for visiting us during the recent Eastern Gas Compression Roundtable at the David L. Lawrence Convention Center in Pittsburgh. The event gave us the opportunity to demonstrate and discuss the numerous solutions we offer to significantly boost your overall safety and productivity: genuine Swagelok leak-tight Componentry, industry-leading Grab Sampling, Gas Distribution, and Mechanical Seal Support Panels, renowned Safety Training Classes, and stringently maintained Tool Rentals.

We hope you also had the chance to participate in our Tube Bending Safety refresher, taught by our Technical Trainer and tube-bending expert, Mike Gagel.

Congratulations, too, to Nicole Headlee, Lead Supervisor for Field Operations for Equitrans Midstream, the winner of our specially customized Swagelok putter and golf ball set!

**DON'T
FORGET**

Register for the upcoming Appalachia Gas Measurement Short Course at Robert Morris University, Moon Campus,

AUGUST 5-7

Register at www.agmsc.org

We'll once again be exhibiting the same Swagelok Products and Services as at the EGCR – and teaching Tube Bending Safety on Wednesday, August 7, 2:35pm – 3:50pm, Room Hale 209.

GOOD READS

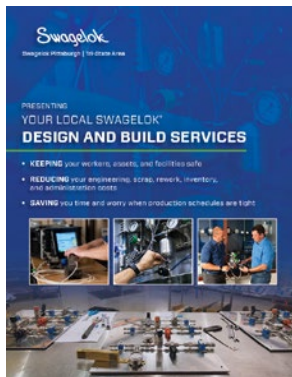
Now available for your digital or hard-copy Technical Resource library: Several new Swagelok Pittsburgh | Tri-State Area brochures, all loaded with detailed information on our latest product and service innovations to enable you to get more work done safely, faster, and economically:



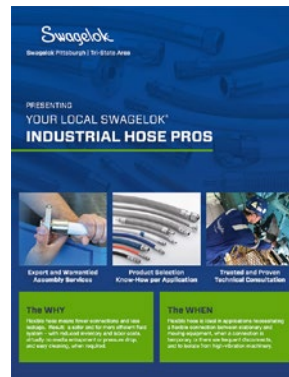
Fluid-System Solutions
All about all of our productivity boosters: Leak-Tight Componentry, Safety Training, Masterful Customized Fabrication, Connections and Hose Audits, even Tool Rentals.



Application Solutions
Learn how we can design and build panels that will optimize your Grab Sampling, Mechanical Seal Support, and Gas Distribution systems. Let us help you advance your safety, productivity, and profitability.



Design & Build Services
Showcases our trusted and proven expertise in sub-assembly, assembly, and complex work. When manpower is limited or specialized skills are required, we can help you get more out the door faster, with all work warranted by Swagelok Company.



Industrial Hose
Swagelok knows Hose: selection, routing, sizing, cleaning, and storage...for all industries and applications where/when a flexible connection is warranted. We have the know-how to help you avoid lengthy downtime, excess waste, and high repair/replace costs.



Safety Training
Read all about our various titles, *Tube Fitting Installation & Tube Bending*, *Advanced Tube Bending*, *Hose and Valve Essentials*, *Process Analyzer Sampling Systems*, *Sampling System Maintenance*, *Materials Science*, and *Orbital Welding*.



Quick Look
This 12-page portfolio from Swagelok provides the key bullet points on specifically why Swagelok componentry has been the industry standard for ultimate safety and performance, no matter how challenging the application, for almost 80 years.

Added Strength



An industrial hose's core can handle only very low pressures. But a reinforcement layer gives the core tube axial and longitudinal muscle to withstand the demands of any application. Thus, choosing a hose with such strong support is critical, especially when it's a fact that not all reinforcements are the same.

STYLES

COILED

Usually not as strong as Braided models. Also tends to untwist itself, tearing at the core and cover, when pressurized. That means a short service life, particularly at high pressures. **And the very reason Swagelok does not offer this style.**

BRAIDED

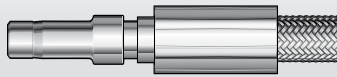
Combines the reinforcement wires in a powerful and resilient configuration so there's no twisting when the hose is pressurized. Result: superior longevity and performance. And that means, ultimately, a more cost-effective solution.

CORE TYPES

All-Metal



Fluoropolymer



Thermoplastic/Nylon



Rubber



The WHY

Flexible hose means fewer connections and less leakage. Result: a safer and far more efficient fluid system – with reduced inventory, labor costs, virtually no media entrapment or pressure drop, and easy cleaning, when required.

The WHEN

Flexible hose is ideal in applications necessitating a flexible connection between stationary and moving equipment, when a connection is temporary or there are frequent disconnects, and to isolate from high-vibration machinery.

Swagelok Industrial Hose usage means fewer connections and less leakage – resulting in a safer and far more efficient and effective fluid system. You'll also realize reduced overall inventory and labor costs, virtually no media entrapment or pressure drop, and, when necessary, easy cleaning and maintenance.

So why continue to employ materials that need to be installed straight, perpendicular, or at angles cut perfectly and to exact lengths for your application?

DON'T.

Because Swagelok Hose enables convenient bending and routing, you can design a system that eliminates many of your previously needed connectors. Plus, hose compensates for slight dimensional mismatches between connection points and can even fit within sterilization units.

Customer Challenge:

A major Petrochemical customer was employing sample cylinders to collect gas samples from its plant for truck transport to a lab for testing and analysis. One style of Swagelok Quick-Connects was used for such process – but the valve stem tips were routinely getting bent or damaged.



Our Solution:

Swagelok product-line experts were brought onsite to audit the current collection methodology, working collaboratively with the site's maintenance personnel. Quickly, the true problem was exposed: The stem tips were getting unintentionally jammed, with no alignment, into the Quick-Connect bodies. In addition, the integrity of some samples was jeopardized – due to falls or bounces – while being hauled. **Remedy:** a switch to a more durable Swagelok QTM2 offering with a recessed stem that would eliminate any potential for accidental harm.



Bottom Line:

The component swap not only solved the issue, but enabled our key account to gain a larger flow capacity that resulted in vastly improved sample collection effectiveness and efficiency.

WHOA!

*To optimize your Gas Sampling System design, **NEVER:***

- **Transport a gas at its dew point temperature** – as the gas is saturated and could condense at any moment.
- **Assume the insulation will keep a gas line warm** – use heat tracing to ensure uniform heating along the line.
- **Have an unheated line upstream of a pressure drop if you heat the downstream side** – there's too great a potential for condensation.
- **Fail to heat a regulator dropping more than 20 bar** – it could ice over due to drastic pressure and temperature losses.
- **Run unheated tubes in an air-conditioned shelter when the outside lines are heat-traced** – the rapid temperature drop will result in the high potential for condensation and a reduction in pressure.



*To design the most effective Liquid Sampling System, **NEVER:***

- **Transport a liquid at its bubble point temperature** – try to keep the pressure as high as possible the entire route through the analyzer.
- **Drop liquid pressure at the tap** – goal is to maintain enough pressure from the tap through any intermediate componentry to the analyzer.
- **Install a needle valve before an analyzer or flowmeter** – goal is to keep the pressure high and the temperature low to avoid bubbling.
- **Install a needle valve before a vaporizer** – doing so only slows the analyzer response time.



Proven and Trusted Local Support

Swagelok Pittsburgh | Tri-State Area can expertly design and/or build safe, extremely reliable, leak-tight Grab Sampling Systems – with bottles or cylinders – that will deliver ultimate performance in even the most challenging applications and operating conditions. Our panels are masterfully constructed with genuine Swagelok componentry, are fully warranted by Swagelok Company, and are delivered as one part number.

JUST ONE LOOK

We've made it far easier for you to quickly find all the crucial Swagelok Pittsburgh | Tri-State Area marketing information on our website! In fact, your search for the fluid-system industry's most respected answers to the most difficult application/operation challenges, is as simple as:

1 START ON OUR REVAMPED HOME PAGE

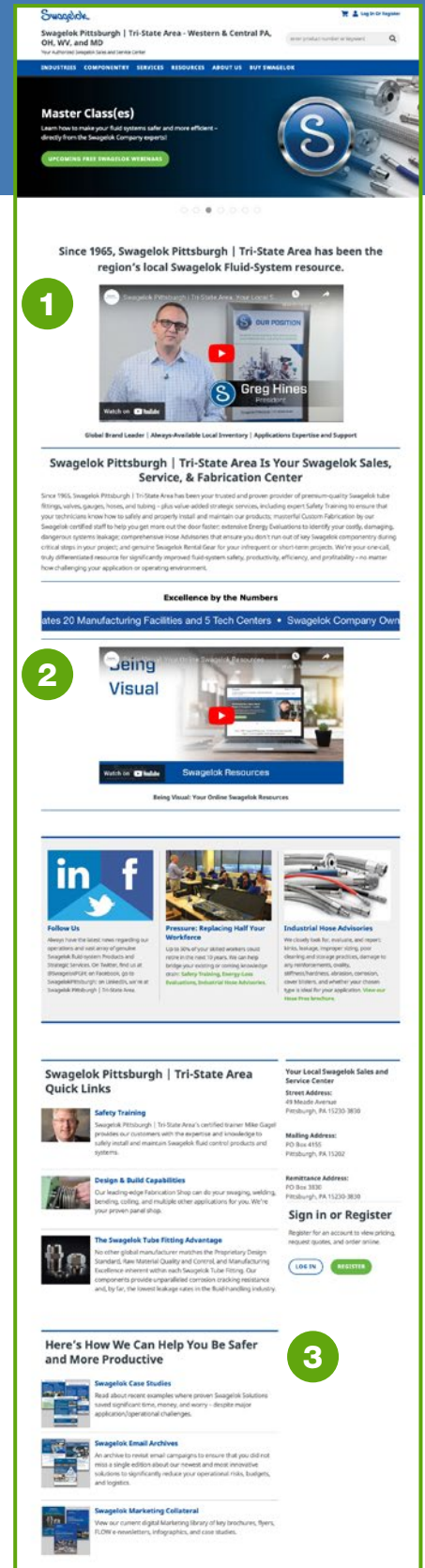
Watch our brief *Capabilities* Overview video to hear Greg Hines, our President, and Jim Kasperik, our Operations & Quality Director, detail our ongoing commitment to always deliver the premium-quality, leak-tight products and supplemental strategic offerings – component selection expertise, safety training, masterful and warranted custom fabrication, pristine rental tools, comprehensive energy-loss evaluations and industrial hose advisories – to help you exceed internal and external expectations, job after job after job.

2 WATCH OUR NEW BEING VISUAL VIDEO...

...that walks you through all the updated easy-to-access Marketing resources that we've added to our site – from the latest Swagelok Company materials to our own localized library of free, helpful assets – to help you better serve your customers...as you get more out the door on-time, on-plan, and on-budget.

3 PERUSE OUR VAST COLLECTION...

...of Swagelok case studies, recent email blasts, FLOW quarterly newsletters, and other timely literature – all in pdf format – that showcase exactly how we can help you bridge the expansive knowledge gap created by retiring workers, conform to rigid and ever-increasing regulations, address overall operational time, money, worry, and risk concerns.....and so much more.



CONTACT US

412.761.3212 OR 412.439.1706
PITTSBURGH.SWAGelok.COM

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