Swagelok
Swagelok Pittsburgh | Tri-State Area

FLOW
Volume 11.3 | Fall 2025

Put Our Team Alongside Yours

NEW TIPS
to Tame Old Man Winter

Unfortunately, unless you're a skier, the brutally cold winds, snow, and ice will soon dominate our weather. That means possible damage to your external impulse, process, and sampling lines. But we are your proven and trusted resource for solutions to keep your media flowing, as required:

ELECTRIC-TRACED BUNDLE

- Maintains uniform temperatures (up to 250°F) in long, continuous impulse and sample lines
- Self-regulating Raychem® tracer lowers heat output as bundle gets warmer
- Tinned, copper-braided shield

LIGHT STEAM-TRACED BUNDLE

- Superior freeze protection of impulse and analyzer transport lines
- Ideal for maintaining temperatures (50°F to 200°F) in small-diameter process lines
- Individually wrapped process and tracer tubes reduce heat transfer

HEAVY STEAM-TRACED BUNDLE

- Yields optimal high process temperatures (200°F to 400°F) and/or viscosity control
- Maximum high heat transfer due to direct contact of process and tracer tubes
- Effective alternative when electrification is not possible

- **Available in an array of configurations**
- **Insulated with non-wicking, fibrous glass**
- **Covered with a PVC or urethane jacket for exceptional chemical/abrasion resistance**
- **Quickly and easily installed for a more consistent thermal performance versus field-traced and insulated systems**
- **All tubes bend together for pain-free routing and field connections**

Just Another Ex(Sample)

Genuine Swagelok Sample Cylinder expertise:

Choose the "right" one:

- Does it employ easily operable quick-connects for safe and efficient connecting/disconnecting from your sampling point?
- Does it have a smooth internal neck transition to help eliminate trapped fluid and enable easy cleaning?
- Will it provide adequate overpressure protection for optimum operator safety?
- Is it of the correct material composition and finish for the dangerous gases and/or liquids being sampled?
- Are bypass lines incorporated for purging toxic sample remnants?
- Is it designed and built to last, especially when samples must be transported long distances?

To safely and properly fill it:

- Use a vertical orientation
- For volatile liquids, fill from the bottom to the top; use an outage tube
- For gases, fill from the top down so any accumulated line condensation can be flushed out through the bottom

To ideally maintain it:

- Inspect and pressure test at least once per year
- Recertify every five years
- Are any key system components leaking to cause cylinder damage?
- Are there signs of corrosion due to compatibility issues with your sample?
- Are any internal surface conditions present... such as absorption?
- Is all overall system componentry properly installed?

PUT TO THE TEST – BY US

Swagelok Tube Fittings are unsurpassed for ultra-reliable performance, particularly in the most challenging Oil-and-Gas, Chemical, Power, General Industrial, Steel, and Research-and-Development applications.

To substantiate that claim, we routinely and rigorously test thousands of random samples every year – subjecting them to extreme burn, shock impact, and other relevant conditions.

KEY RESULTS:

TUBE GRIP TEST REPORTS

Hydrostatic Pressure Test

Tubing Size	Working Pressure	Samples Tested	Samples Passed
¼" x 0.065	10200	168	168
⅜" x 0.083	7500	144	144
¼" x 0.083	6700	120	120
⅝" x 0.095	6000	108	108
¼" x 0.109	5800	120	120
⅞" x 0.109	4800	60	60
1" x 0.120	4700	120	120

Tensile Pull Test

Tubing Size	Calculated Tensile Load	Samples Tested	Samples Passed
¼" x 0.065	1237 lbs	24	24
⅜" x 0.065	2079 lbs	24	24
¼" x 0.083	3560 lbs	20	20
⅝" x 0.095	4745 lbs	12	12
¼" x 0.109	6585 lbs	12	12
⅞" x 0.109	7869 lbs	12	12
1" x 0.120	9130 lbs	12	12

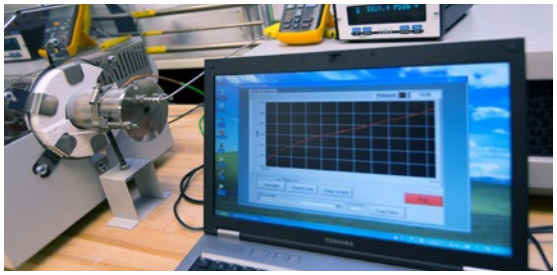
VIBRATION RESISTANCE TEST REPORTS

Rotary Flexure Test

Nominal Alternating Bending Stress	Samples Tested	Samples Passed
20000	154	154
15000	154	154
10000	154	154

Seismic Intensity Analysis

No tube fitting leakage was detected before OR after any vibration exposure. No tube fitting leakage was found during repeated shock test exposure.



GAS SEAL TEST REPORTS

Chloride Stress Corrosion Cracking Test

- All 64 samples successfully passed 720 hours in the salt spray chamber – without pressure loss.
- All samples successfully passed the pre- and post-salt spray nitrogen gas pressure tests – without leakage.
- Liquid penetrant evaluation of the sample components found no evidence of crack formation.
- No evidence of CSCC crack initiation and propagation beyond surface structures of the sample components was observed.

Nitrogen Gas Seal Test

Tubing Size	Working Pressure	Test Pressure	Samples Tested	Samples Passed
⅝" x 0.065	4000	5000	24	24
⅝" x 0.095	6000	7500	12	12
¾" x 0.065	3300	4125	24	24
¾" x 0.109	5800	7250	12	12
⅞" x 0.083	3600	4500	24	24
⅞" x 0.109	4800	6000	12	12
1" x 0.083	3100	3900	12	12
1" x 0.120	4700	5900	12	12

Nitrogen Gas Test

Tubing Size	Working Pressure	Samples Tested	Samples Passed
¼" x 0.028	4000	192	192
⅜" x 0.035	3300	144	144
½" x 0.065	3700	132	132
⅝" x 0.109	4000	108	108
¾" x 0.083	3300	120	120
⅞" x 0.109	3600	60	59
1" x 0.083	3100	144	143

Nitrogen Gas Seal Test with Repeated Reassemblies

Tubing Size	Working Pressure	Samples Tested	Samples Passed
¼" x 0.028	4000	16	16
5/16" x 0.035	4000	16	16
⅜" x 0.035	3300	16	16
½" x 0.049	3700	16	16

Swagelok Tube Fittings are uniquely and distinctly different – in proprietary design, safety, and performance; in materials of construction and metallurgical chemistry; in how they're made, tested, and warrantied.

BEYOND MECHANICAL SKILLS

We now offer customer technical training courses that are product-specific and feature numerous real-world situational exercises. Cost-effective and each only a half-day, these titles are an ideal means to learn the industry's latest Best Practices for site and project safety and optimization:

VALVE ESSENTIALS
(HALF-DAY)

You will graduate knowing:

- Valve Types and Functions
- Expert Installation Guidelines
- Key Design Considerations
- How to Maintain and Troubleshoot Valves
- Primary Reasons for Valve Failure
- How to Extend Service Life
- How to Select the Appropriate Valve per Application/Operating Parameters
- Why Materials of Construction and Chemical Compatibility are Crucial
- How to Set Up a Preventative Maintenance Schedule
- How to Choose the Right End Connections per Use
- How to Interpret Pressure/Temperature Tables
- Lock Out/Tag Out, Cv Calculations, Filters….and SO much more!

HOSE ESSENTIALS
(HALF-DAY)

You will graduate knowing:

- When and Why to Use Hose
- How to Maximize Hose Service Life
- How to Properly Inspect Hose
- Expert Tips for Hose Routing
- How to Effectively Clean and Store Hose
- How to Determine Length per Use
- How to Expertly Install Hose
- All Critical Hose Peripherals: Cores, Reinforcements, Covers, End Connections
- Our Field-Tested STAMPED Methodology for Best Choice per Application
- How to Quickly Spot Typical Hose Issues…and SO much more!

We offer a vast variety of classes – all can be conducted at your facility, come with a money-back guarantee, and count toward Continuing Education credits. Plus, we supply ALL course materials, including several valuable take-home items!

- *Tube Fitting Installation and Tube Bending*
- *Tube Fitting Inspection and Tube Bending*
- *Advanced Tube Bending*
- *Process Analyzer Sampling Systems*
- *Hose Essentials*
- *Valve Essentials*
- *Materials Science*
- *Orbital Welding*
- *Analyzer Technician Essentials*
- *Steam and Condensate Essentials*
- *Sampling System Problem-Solving and Maintenance*

TO SCHEDULE YOUR TRAINING EVENT, TEXT OR CALL

412.439.1706

JUST A REMINDER... *Now you can take multiple Swagelok courses in just one week:*

MONDAY: ***Tube Fitting Installation & Tube Bending Essentials***
TUESDAY: ***Hose Essentials & Valve Essentials***
WEDNESDAY-FRIDAY: ***Advanced Tube Bending***

Give us five days – and your maintenance technicians and/or system engineers will be far safer, more productive, and more efficient…with drastically reduced costly and potentially dangerous media leakage at your facility or project site!

Call or text 412.439.1706 to schedule your Swagelok Training event today.

Making Our Case(s)

A few additional examples of how **Swagelok Energy-Loss Evaluations** helped stop media leaks to improve safety and productivity:

Challenge

A Chemical account's compressed air distribution system was negatively affecting the plant's ability to control its production processes. Resultant end products far too often failed to meet quality standards...and that meant scrap/waste. In addition, the site's product-bagging equipment was also leaking, further compounding delivery issues.

Solution

Swagelok's team was brought in to find and evaluate the site's numerous leaks. Most importantly, our engineers determined the root causes of the problem, particularly related to the overall system design. We worked with plant personnel to create new design standards for multiple aging systems. Lastly, we trained the maintenance technicians on how to safely and properly install tube fittings and bend tubing. ***Result: Our customer saved over $65,000 in air losses.***

Challenge

A Specialty Chemical manufacturer was losing valuable argon and nitrogen from its gas storage and delivery systems. That meant extremely high process efficiency and utility costs. The accuracy of the site's experiments was in dire jeopardy, too.

Solution

Swagelok's team applied its ultrasonic detection equipment and expertise to precisely locate the leak points. In addition, we issued a comprehensive report that detailed specific costs associated with each leak. In all, 13 major leaks were found to be most responsible for lost revenues. These were then repaired, ***resulting in an estimated $10,000 savings and ensuring lab experiment integrity.***

Challenge

A Power-Generation customer had to decrease expenses to stay competitive as cost per kilowatt hour steadily increased, but the amount of energy generated remained the same. However, the site had a limited budget to find the root causes of rising utility usage.

Solution

Swagelok's team came onsite to survey the account's compressed air and hydrogen systems. After an extensive review, we provided a lengthy report that not only showcased the problem areas but also prioritized repairs by potential impact to the company's Bottom Line health. We located almost $50,000 worth of compressed air and $6,100 worth of hydrogen losses. ***These findings helped to eliminate another $15,000 worth of annual air losses in the site's emissions control system.***

PRODUCTIVITY BOOSTERS

Swagelok leak-tight, premium-quality Components deliver superior safety and performance, no matter how difficult your job or operating conditions!

PRESSURE REGULATORS

Our Pressure Regulators reliably maintain levels in your systems to ensure that media is safely, properly, and economically contained under ideal pressures to protect you, your processes, equipment, and end products.

Our ultra-reliable components are made of corrosion-resistant alloys and built to withstand even the harshest conditions and most daunting fluids, minimizing any chance of degradation.

All models can accommodate working pressures up to 6000 psig and perform exceptionally well in temperatures from -49° F to 356° F and are available with multiple 1/2” to 1-1/2” end connections.

QUICK-CONNECTS

Swagelok Quick-Connects – due to an innovative push-to-connect coupling action – enable quick and easy connections without twisting, turning, or wrenching! Available in a vast array of configurations, stem and body connectors, and end connections. We offer single-end and double-end shutoff models, as well as full-flow, instrumentation, miniature, and PTFE-sealed designs.

YOU NEED TO KNOW WHY

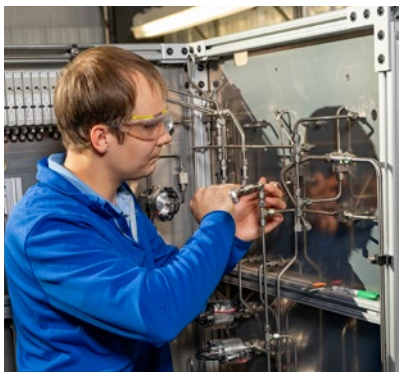
...OUR COMPONENTS?

Made of the finest raw materials and to exacting tolerances, expertly designed, readily available, and fully backed by the Swagelok Limited Lifetime Warranty.

...OUR ASSEMBLY SERVICES?

We're your first choice if your current fabrication processes are taking too long, costing too much, creating too much waste, or are placing you at significant risk.

Our master technicians are Swagelok trained-and-certified in panel design, building, testing, and inspection – the simplest sub-assemblies to large, complex skids.



...OUR SAFETY TRAINING?

Simply, we provide an unequaled level of timely and customizable leading-edge content.

Our classes are highly hands-on…so you'll graduate knowing precisely how to safely and properly pull up a tube fitting, bend tubing of various materials and diameters, and understand how to reduce overall site/line leakage. Our place or yours!

Customized Advantage

Swagelok Pittsburgh | Tri-State Area

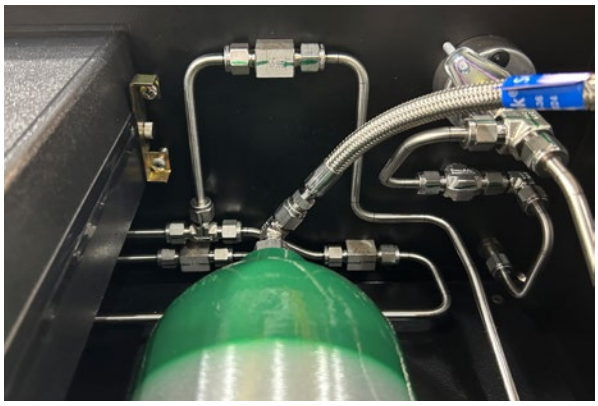
Design & Build Services

encourages – and thrives on – pre-work collaborations with customers. Such was the case with a recent request to modify an in-place layout to better accommodate calibration computer removal in the field. Our fabrication team had to critique and then optimize the assembly's tube routing to conform to the available space within the enclosure.

Result: We created an entirely new tubing run (complete with detailed schematics) to enable future repeatability of this type of work.

We can help you get more out the door safely, quickly, and cost-effectively when production schedules are tight…so that you can dedicate your staff to more pressing needs.

Call 412.761.3212 today to speak to our Fabrication Technicians.



Luck(iest) of the Draw

Congratulations to

JASON SCHUBERT,

a Measurement Technician at the Williams Company –

winner of our special Hunting & Fishing Prize Package at the recent Appalachian Gas Measurement Short Course at Robert Morris University!

SWAGELOK PITTSBURGH | TRI-STATE AREA

YOUR LOCAL FLUID-SYSTEM EXPERTS

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