

Swagelok® Grab Sampling Systems



Customer Success Stories

We Have Helped Customers:

Swagelok has developed standard grab sampling system designs to meet the needs of customers seeking safe, reliable, and representative sampling in a wide variety of applications.

Our standard grab sampling panel designs can be easily customized with additional instrumentation, enclosures, or stands. They can also be automated or assembled from exotic alloys as needed.

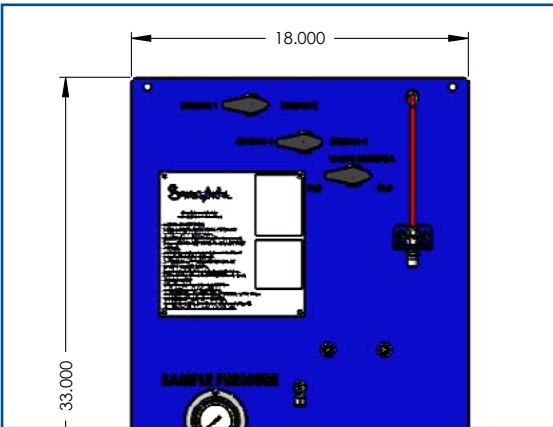
Our highly trained, certified engineers work with customers around the world to design, assemble, and support grab sampling solutions that bring consistency to their operations. Read on to learn how these customers have benefited.



Sample Different-Sized Bottles



Configure a Panel to Meet Unique Needs



Configure One Panel to Measure Multiple Caverns



Improve Efficiency and Protect Staff



Improve Sample Quality



Standardize Sample Points

What Customers Say About Our Solutions:



Configurable



Local



Reliable

We Can:



Assess



Recommend



Configure



Assemble



Train



Change Cylinders Safely Without Using Tools



Overcome Design Concerns



Meet Strict Environmental Regulations

Configurable. Local. Reliable.



Customized Sampling System Allows Safe Sampling of Multiple Cylinder Types

Customer Type: Gas Production

“How can we sample different bottle sizes?”

Challenge:

A gas production facility required low temperature (-43°C) propane sampling of various sizes of bottles. Operators were bubbling propane to the top of the cylinder to check for flow, which created a safety concern, as spillage resulted in freezing of protective gloves to the sampling cylinder.

Solution:

Swagelok sampling system specialists provided a custom-designed sample cylinder holder that accommodates both spun-type and cylinder-type sample vessels. The team also sourced a low-temperature sight glass that was trialled in the customer’s laboratory to safely verify flow rates were acceptable. It was incorporated into the panel, enabling lab personnel to know if there is flow through the cylinder.

Result:

Now samples of various types can be taken easily. Operators do not have to hold the sample bottle, significantly reducing risk of injury.





Local Assessment of Sampling Needs Results in Custom Solution for R&D Facility

Customer Type: Oil & Gas Refining

“How can we configure a panel to meet unique needs?”

Challenge:

An R&D facility focused on research to enable the company’s refineries to run more efficiently, consuming less water and energy in the face of changing environmental regulations, needed a continuous-flow, fixed-volume liquid sampler with purge capabilities. The location and high-viscosity fluid running through the system meant a standard grab sampling liquid (GSL) system with 1/4 in. tubing would not work.

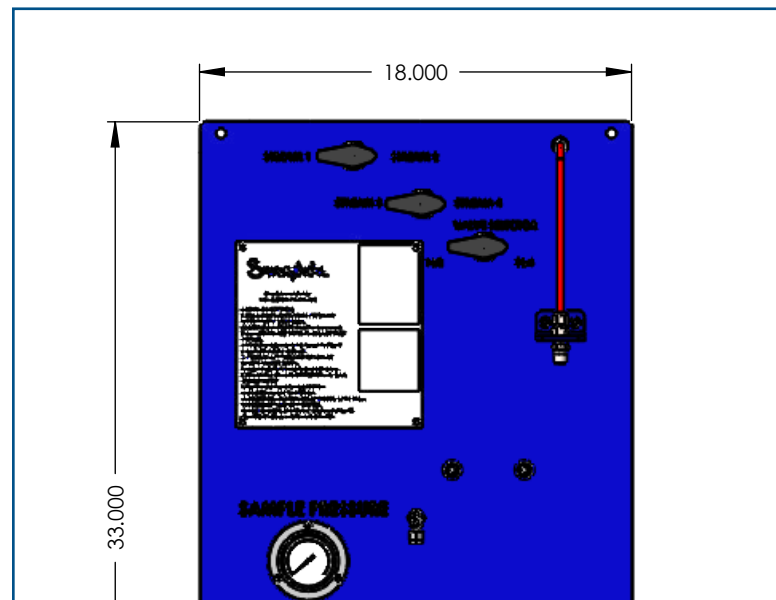
Solution:

Swagelok engineers designed a GSL panel to incorporate the customer’s need to fit in a small space using only components available regionally. The team used straight-run 3/4 in. tubing to allow continuous flow, even with the high-viscosity fluid.

Result:

Thanks to Swagelok’s local ability to assess and recommend a grab sampling solution, the customer received a panel configured to their unique needs.





Local Panel Customization Allows for Sampling From Five Separate Caverns

Customer Type: Midstream Natural Gas Processor

“How can we configure one panel to measure multiple caverns?”

Challenge:

The customer used a rail-based terminal to bring in NGL mix for fractionation into finished products for distribution and sale. The customer needed a grab sampling panel capable of handling product from as many as five different high-pressure caverns used to store finished product.

Solution:

A series of 3 three-way Swagelok® H83 trunnion ball valves were used to allow fluid from any cavern to be distributed into one grab sampling module (GSM) panel. The H83 valves accommodated the high-pressure and temperature requirements of the fluid. Each panel was hydrotested and delivered with a detailed certificate to help the customer feel confident they would experience long-term safe and proper operation within their system parameters.

Result:

The ability of local Swagelok associates to deliver a customizable, standardized, plug-and-play offering in a timely matter differentiated Swagelok and impressed the customer. The customer has ordered three additional grab sample panels customized to their specific application requirements. All three will be assembled with SilcoNert® fittings, tubing, and valves.





Customized Sampling Cabinet Minimizes Safety Risks While Simplifying Sampling

Customer Type: Chemical Company

“How can we improve efficiency and protect our staff?”

Challenge:

The customer required nonpressurized liquid samples to be taken according to a specific process to ensure a representative sample. No electrical components could be used in the sampling process to avoid static potential and fire risks, and operators could not come in contact with the sample.

Solution:

Swagelok engineers assisted with the design support and fabrication of a sampling cabinet that isolated the system media from the user during the sampling process by using a door to create a separate enclosed area. The operator had access to the switches needed for each step, minimizing potential for errors and making the system easier to operate.

Result:

The customer now receives more reliable and accurate samples much faster than before, with increased safety.





Result of Sample System Analysis Allows Refinery to Demonstrate Environmental Compliance

Customer Type: Refinery

“How do we improve our sample quality?”

Challenge:

The customer had been experiencing problems with “wet” gas sampling for years, with condensable liquids such as off-gas and fuel gas falling out of the gas stream. The liquids created issues with pressure regulators and other components in the grab sampling panel, and despite numerous expensive investigative and troubleshooting efforts, problems persisted. The daily requirement for compliance samples could only be met by operators collecting samples at open-to-atmosphere sample points, which is both dangerous and not permitted by environmental groups.

Solution:

A team of Swagelok sampling specialists worked with the refinery’s unit operators and process engineers to develop a solution. The gas samples were shown to have liquids that were carryover from another part of the facility and were unnecessary to the gas sample itself. Once this was determined, the condensate was removed using a knockout pot within the grab sample system without affecting the composition makeup of the sample stream.

Result:

The use of the knockout pot kept samples dry and allowed the refinery to operate within environmental compliance limits.





Swagelok Sampling System Training Leads to Successful Grab Sampling Optimization Engagement

Customer Type: Refinery

“How can we standardize our sample points?”

Challenge:

One of the largest refineries in the UK needed to standardize their grab sample panels across their operations, replacing simple tap-off filter sample connections with a safer, better-quality sampling process.

Solution:

After attending Swagelok® Process Analyzer Sampling System (PASS) training, the customer invited a Swagelok field engineer to educate them on how to implement their standardization initiative. The engineer used animated flow diagrams to demonstrate the suggested solution, which required a slight variation to the switching design of their grab sampling panels.

Result:

Swagelok grab sampling panels provided a standardized, easy-to-use solution for upgrading the customer’s obsolete sampling systems. Replacing the panels improved the customer’s ability to safely capture representative samples. The support Swagelok provided has led to additional product support through the refinery, including sample probes, tubing bundles, and Swagelok® KEV heated regulator assemblies.





Sampling System Customization Increases Safety and Efficiency for Operators

Customer Type: Oil and Gas Company

“How can we change cylinders safely without using tools?”

Challenge:

A customer was finding it troublesome and inconvenient to insert and remove sampling cylinders from grab sampling panels. Tools had to be used to uncouple cylinder holders, slowing down the sampling process and creating potential for vital equipment to be dropped, potentially damaging equipment and injuring the operator.

Solution:

A team of Swagelok sampling specialists created a sampling panel that allows easy changing of cylinders without tools by integrating a specialized toggle handle into the design.

Result:

The customer can now quickly and effortlessly change cylinders without using tools, increasing safety and efficiency of the operators.





Engineering Firm Works With Swagelok to Optimize a Competitor's Panel Design for a Customer

Customer Type: Midstream Oil and Gas Company

"How can we overcome design concerns?"

Challenge:

A midstream oil and gas company was adding Merox™ capabilities to their facility, allowing the removal of mercaptans from LPGs, propanes, and butanes, but the engineering firm handling the project expressed concerns about the design of the panel specified for an atmospheric liquid grab sample system. A GSL 1 had been specified, but they needed a purge option without the purge.

Solution:

Swagelok associates found a solution to the design concerns by fitting the GSL 1 with an educator on the vent line to minimize the footprint and maximize safety. The panel was heated and enclosed due to the caustic nature of the liquids involved as well. The Swagelok team streamlined communication between the third-party engineering firm and the customer, resulting in a better design that suited their application well.

Result:

Having on-site presence and continuing dialogue with the customer's engineering, operations, and lab personnel during the bid process differentiated Swagelok, and we are now working with this customer on other grab sample applications.





New Closed-Loop Sampling System Helps Petrochemical Company Reduce Emissions

Customer Type: Petrochemical Facility

“How can we meet strict environmental regulations?”

Challenge:

The customer was facing pressure from government and environmental groups to reduce emissions of volatile organic compounds (VOCs). Because grab sampling often requires venting to atmosphere, the customer sought help designing a closed-loop sampling system to reduce emissions.

Solution:

Swagelok associates leveraged their experience with sampling systems to provide design and technical support, as well as training for the petrochemical company’s engineers. The team developed a cabinet to protect the closed-loop sampling system for 163 sampling points across the plant. Sample cylinder subassemblies were also supplied to standardize the sampling vessel.

Result:

The customer now complies with strict environmental regulations and has found that the new sampling system speeds up the sampling process while reducing emissions.



Voice of the Customer - Read what customers have had to say about how they have benefited from Swagelok grab sampling systems and supporting services.



Swagelok grab sampling
systems and services are...

Configurable

“...the basic layouts the Swagelok experts have designed were really helpful in narrowing down what we needed—and then we were able to make the proper modifications to meet our precise needs.”

- Lab Lead, Chemical and Refining (US)

“...we needed to reengineer our old design, and the Swagelok field engineer coordinated with our engineering team to uncover our needs.”

- Technician, Midstream Facility (Canada)

“... Swagelok’s... ability to shape and customize our grab sampling system to meet the exact needs of our application and meet EPA regulations is essential.”

- Lab Technician, Refinery (US)



Voice of the Customer - Read what customers have had to say about how they have benefited from Swagelok grab sampling systems and supporting services.



Swagelok grab sampling
systems and services are...

Local

"...Swagelok's local team was able to provide expertise towards sample handling and design parameters adhering to best practice. A collaborative approach from concept to commissioning was key."

- Project Engineer, Refining (Australia)

"...we have the ability to change, customize, and rework a system when needed, just by picking up the phone."

- Lab Manager, Oil-Crude Refining (US)

"...they facilitated our technical and sampling method review leading up to the implemented design. Local support and after-sales service is a huge advantage Swagelok offers."

- Senior Mechanical Engineer, Refinery (Australia)



Voice of the Customer - Read what customers have had to say about how they have benefited from Swagelok grab sampling systems and supporting services.



Swagelok grab sampling
systems and services are...

Reliable

"...our goal was to have universal parts available for all our sites and build a local inventory program. Now that we have standardized our grab sampling system configuration, replacement parts and panel reorders are painless."

- Lab Supervisor, Refinery (US)

"...the key to our system was safety and reliability, as mercury was involved. We cannot accept a loss of containment or component failure."

- Lab Manager, Onshore Refining (Australia)

"...rely on Swagelok for product knowledge and application support. The Swagelok team had experience with similar LNG applications and was able to share grab sampling best practices. We now have a standardized design that we can implement throughout our facility."

- Technician, Midstream Facility (Canada)



Swagelok® Grab Sampling Systems

Local Solutions. Global Support.

Accessible Grab Sampling Support

We will work with you to determine the type of panel and the proper configuration to meet your sample system needs. Then, each grab sample panel will be built to your specifications by experienced fluid systems technicians. We will:



Assess

Our team of highly trained and certified technicians and engineers will evaluate your current sampling system and assess your needs to help you receive repeatable, representative samples quickly and cost-effectively. If you would like deeper analysis of your sampling systems and practices, our grab sampling evaluation and advisory services team can visit your facilities to help you:

- Improve operational performance
- Eliminate potential safety and environmental concerns
- Achieve more representative samples on a regular basis



Recommend

Our team will take you through a checklist of details to ensure you receive a sampling panel that meets your needs. Based on the established parameters, a certified Swagelok engineer will review your information and recommend the right panel for you. We evaluate criteria including:

- Temperature
- Pressure
- Phase
- Compatibility
- Container type
- Materials of construction
- Installation location



Configure

Using our standard panel designs as a platform, we can work with your team to customize your solution:

- Substitute comparable Swagelok and non-Swagelok products
- Add valves, flowmeters, and other products within the existing schematics
- Make changes in layout and structural changes/additions
- Convert to larger/smaller tube size (or metric)
- Suggest alternative materials of construction
- Discuss flow/pressure drop calculations
- Suggest sizing of sample coolers/heaters and enclosure heaters



Assemble

We take the work of sampling system assembly off your team, fabricating the system and testing for reliability. Every local Swagelok technician undergoes comprehensive training and certification to ensure your sample panel adheres to strict guidelines and to your specifications, and our certified engineers will monitor each step of the process.

- Every Swagelok GSM and GSL is shell tested at the selected gauge pressure
- Additional testing is available upon request
- All Swagelok products are backed by the Swagelok Limited Lifetime Warranty



Train

Swagelok is committed to helping you work safer and smarter. Upon completion of your grab sample panels, a representative from your local Swagelok sales and service center can provide hands-on training to your technicians on proper use and maintenance.

For a more in-depth look at industrial sampling systems, consider Swagelok® sampling system training. Our hands-on sampling system instruction will help your team prevent, diagnose, and ultimately eliminate issues that result in costly inefficiencies or safety hazards.

