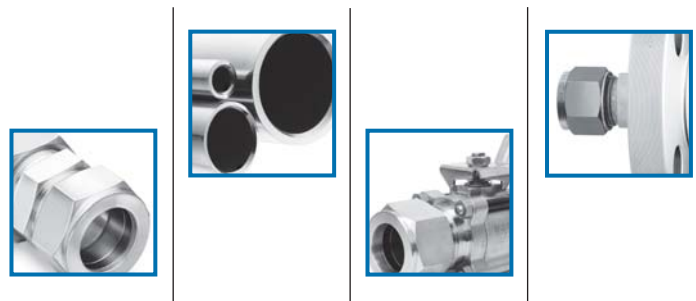
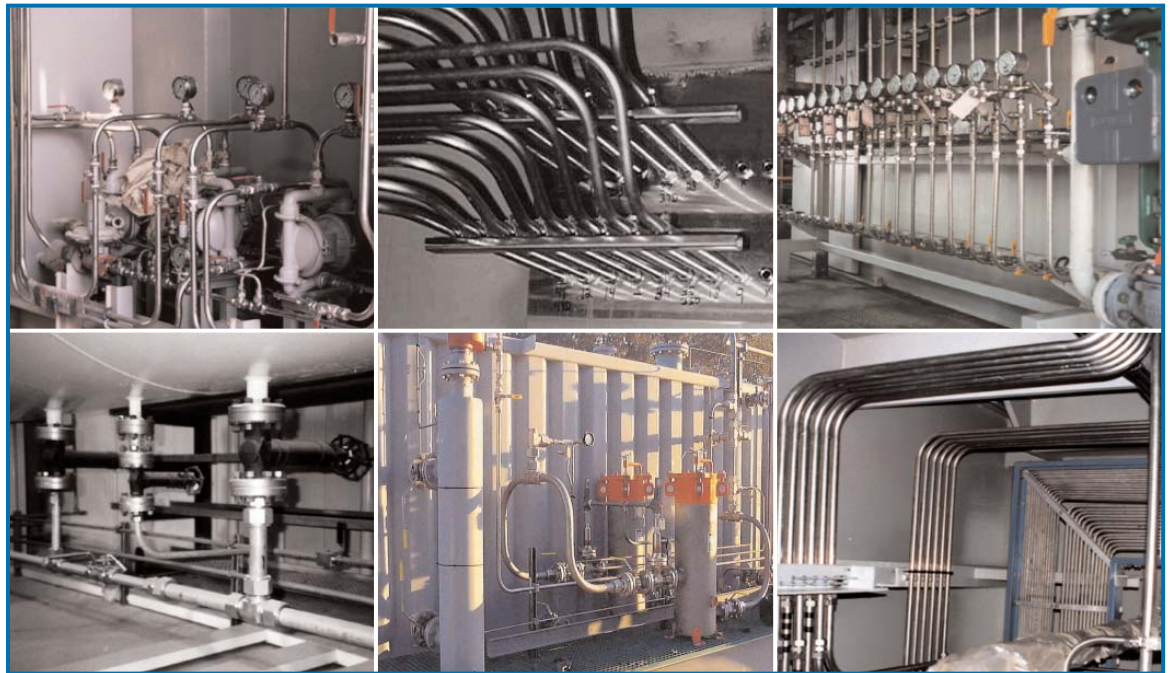


Small-Bore Piping Solutions

Simpler, Safer, Faster - more reliable connections



Unfailing reliability from people you rely on.™

Swagelok

Swagelok® small-bore piping solutions

How can a Swagelok small-bore piping system solution offer performance benefits along with a lower total installed cost? Your independent Swagelok sales and service representative has the answer—along with the training, tools, and support needed to make your next small-bore piping project simpler, safer, faster—and more reliable—than any you have completed before.

Reduce installation and operating costs.

Consider the requirements for a typical piping project: If it is threaded pipe, there are the pipe stands, dies, cutting oils, sealants, and tapes. Then there is the sequential assembly, testing, sequential disassembly, rework, and reassembly.

For a welding job, there is the need to obtain a qualified welder, welding equipment, and consumables. Then depending on the job, there can be the need for weld permits, air tests, firebox, tacking, weld quenching, finish welding, purging, passivation, and inspections.

Either way, planning and managing a project to be on time and on budget is complicated and time consuming. If you are an engineer, manager, pipe fitter, plant professional or contractor who is feeling the squeeze of tight budgets, short staff and increasing workloads as you strive to provide the fluid system your organization needs, Swagelok has three words for you.

Simpler

In minutes, anybody in your plant can learn to assemble and install Swagelok tube fittings correctly the first time. Swagelok small-bore solutions eliminate the oils, sealants, dies, complicated equipment, fire boxes, and air tests. Sequential assembly and fitting alignment issues are eliminated. Properly installed Swagelok tube fittings can eliminate leakage. This means rework and clean up are minimized.

Safer

Swagelok tube fittings will provide vibration-tolerant, leak-tight seals to the working pressure of the tubing. Because small-bore piping systems use no heat or weld gases and are so simple and fast to install, they are well suited for installation in hazardous areas and confined spaces.

Faster

Using Swagelok small-bore solutions can dramatically improve productivity. Tube fittings are fast to install. Bending tubing reduces the number of connections in the system. Remakeable Swagelok fittings reduce the time to maintain or modify systems. This means that you can install more system in less time.





Fluid system components

Fittings and tubing

- Tube fittings and tubing—The Swagelok tube fitting is the original two-ferrule fitting and the benchmark to which all other tube fittings are compared. Swagelok tube fittings are available in a wide range of shapes, materials, and sizes up to 2 inch (50.8 mm), along with a complementary line of tubing for use in your small-bore fluid systems.
- Swagelok VCO® face seal fittings—Zero clearance fittings—O-ring face seal for rapid make-up of terminal end connections.
- Clamp-style fittings—Swagelok Kwik-Clamp sanitary fittings are used in heavy solids applications; simple disassembly and reassembly makes cleaning easy.

Ball valves

- 60 series three-piece ball valves—up to 2 inch (50.8 mm); on-off and 3-way switching service; manually, pneumatically, or electrically actuated. Options are available for steam, fire, and chlorine service.

Tools and more

- Installation tools—Manual and electric tube benders and hydraulic swaging units reduce installation time and effort.
- Orbital welding system—For outside diameters up to 4 inches or 104 mm, the Swagelok welding system provides cost-effective, automated gas tungsten arc welds—even in confined areas.
- Flange adapters—Flanges with integral Swagelok tube fitting connections allow easy transition from flanged connections in piping systems to tube systems. Available in ANSI, DIN, EN and JIS configurations.
- Weld adapters—Convenient transition from welded piping systems to tube.
- Tube supports—Ensure sturdy mounting of your tubing system.
- Pressure gauges—Available with Swagelok tube adapter connections for easy, leak-tight installation in any position.
- Hose and quick connects—For flexibility in your fluid system.



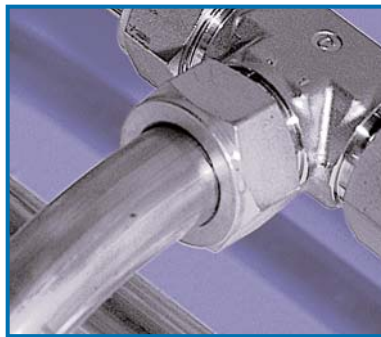


A small-bore piping solution from Swagelok can provide:

Simple three-step installation—



1 Pre-swage the Swagelok nut and ferrules onto the tube using the hydraulic swaging unit;



2 align and insert the tube into the Swagelok fitting;



3 turn the nut hand-tight, then tighten one half turn with a wrench.



Swagelok tube benders make routing easier. They bend tubing to any angle up to 180 degrees. 45 and 90 degree fittings are replaced by tubing bent exactly as you need it. Routing can be more precise. Offsets and odd angles are no longer a problem. The flow improves and space is conserved.



Compared to a piping system of comparable strength, tubing systems are substantially lighter. This means that tube systems are easier to install and to support.



Headquartered in Solon, Ohio, U.S.A., Swagelok Company is a major developer and manufacturer of fluid system component technologies for the research, analytical instrumentation, process instrumentation, pharmaceutical, oil and gas, power, petrochemical, and semiconductor industries. Swagelok products are delivered through one of the world's largest manufacturing and industrial distribution networks. More than 25 Swagelok manufacturing, research, technical support, and distribution facilities support a global network of more than 200 independent, local sales and service centers on 6 continents. For more information about Swagelok, visit the company's Web site at www.swagelok.com.