

GO-TO STRATEGIES FOR MAXIMIZING THE EFFICIENCY OF YOUR PLANT'S FLUID SYSTEMS

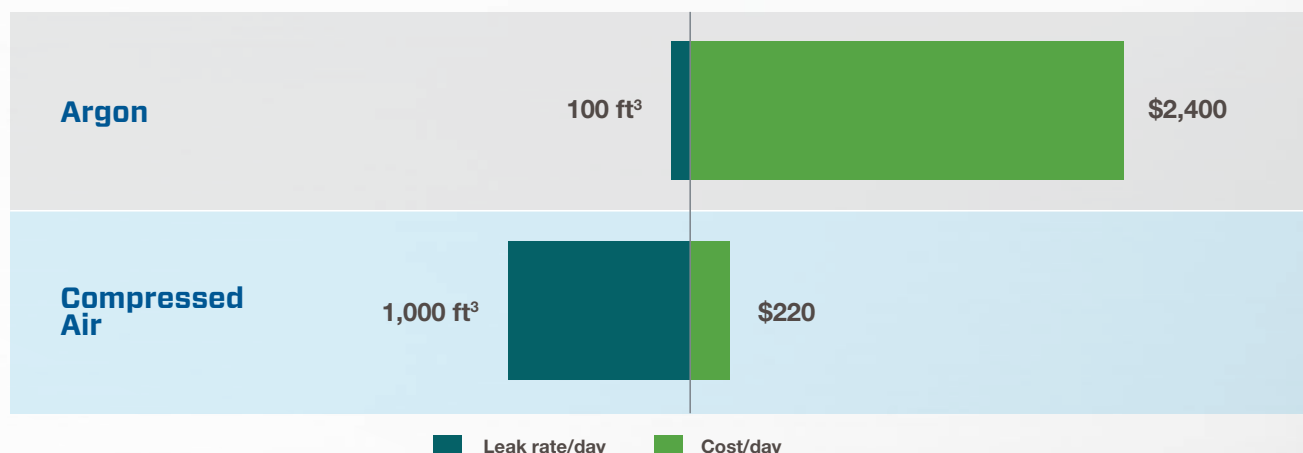
You have a lot of responsibilities – running your plant safely and efficiently, maximizing throughput, reducing costs, and avoiding downtime. Like most plant managers and engineers, you may not have all the resources you need to manage these responsibilities and address new challenges as they arise.

When Swagelok field engineers are on-site with customers, they often discuss a few go-to strategies we find effective for uncovering additional fluid system efficiencies (without adding a lot of extra work).

PICK YOUR BATTLES AGAINST LEAKS

If leaks are a common occurrence in your facility, you are not alone. We find leaks in the majority of plants we visit – and they can be a major drain on plant efficiency. Every hiss of compressed air escaping from lines or steam leaking from end connections reduces profitability and increases maintenance costs. It may not be feasible, however, to address every leak in your plant at once.

Instead, **create a roadmap that helps eliminate leaks over time** by prioritizing them based on factors such as size of the leak, rate of loss, and the process fluid. For example, compressed air costs far less than argon. Even if your plant is losing 1,000 ft³ of compressed air per day compared to only 100 ft³ of argon per day, prioritizing the argon leaks could save you thousands of dollars more. A site audit that includes a root cause analysis and a detailed assessment of your plant's fluid systems and components can help identify and prioritize areas of improvement to help you realize cost savings.



In this hypothetical example, the argon leak would take priority – even though the compressed air leak is bigger.

INCREASE COMPONENT LIFE EXPECTANCY

The longer a component performs reliably in service, the less time your maintenance staff will need to spend making repairs. Consider a ball valve used for on-off control in an instrumentation line. If that valve leaks persistently, maintenance technicians may need to adjust or repair the valve, taking them away from other duties. If the valve fails, they may need to shut down the entire process to replace it. Now a single valve has become a significant strain on your resources and productivity.



Why Is This Happening?

When a component requires frequent repairs or replacement, Swagelok field engineers often discover it's not the right product for the application. This could be due to a number of reasons:

- The component is not designed for its intended function.
- The component is not made with the right materials.
- The component does not have the service life potential required for the design specifications.

All operating conditions of your fluid system should be taken into account when selecting a component, including temperature, pressure, ambient conditions, process fluids, and vibration. **Specifying the right component at the outset** – or making a strategic change later based on your operational history – can save you a lot of maintenance hours while increasing uptime.

SIMPLIFY THE DESIGN

Choosing fully fabricated fluid system assemblies instead of individual components can also bring efficiency to your plant by simplifying your design and assembly operations. This also helps create a fully documented system, making it easier to acquire and assemble parts, as well as ensure consistency across facilities.

Here is a simple example:

A plant's staff needs to assemble a standard sampling system with 135 different part numbers, requiring about 54 hours of assembly time.	 135 PART NUMBERS	 54 HOURS
Building the same system with preassembled modules would only require 17 part numbers and about 6 hours of assembly time.	 17 PART NUMBERS	 6 HOURS

The result of this simple adjustment? A nearly 90% reduction in assembly time. And, almost 48 hours of resources that can be directed to other critical tasks.

BE PREPARED (AS MUCH AS POSSIBLE)

Even with the right components, equipment failure can happen, leading to downtime at your plant. Because even a small delay will reduce a plant's efficiency, you need to be ready. That's why it's a good idea to **keep an inventory of spare parts on-site**, including parts that are critical to a process and to safety, as well as specialty components with long lead times. A vendor managed inventory program can also bring peace of mind. Asking your supplier to organize, stock, and maintain your spare parts inventory means one less task for your team, which can now focus more of its time on maintaining productivity.

By prioritizing leaks, specifying the right component, simplifying your design and assembly operations, and preparing to minimize downtime, you can set your plant up to optimize efficiency. The strategies are reasonably simple and cost-effective, but the rewards may be significant.

Having the right components (right when you need them) can play a big role in plant efficiency. For help with fluid system assemblies, product selection, or vendor managed inventory, contact your [Swagelok sales and service center](#).