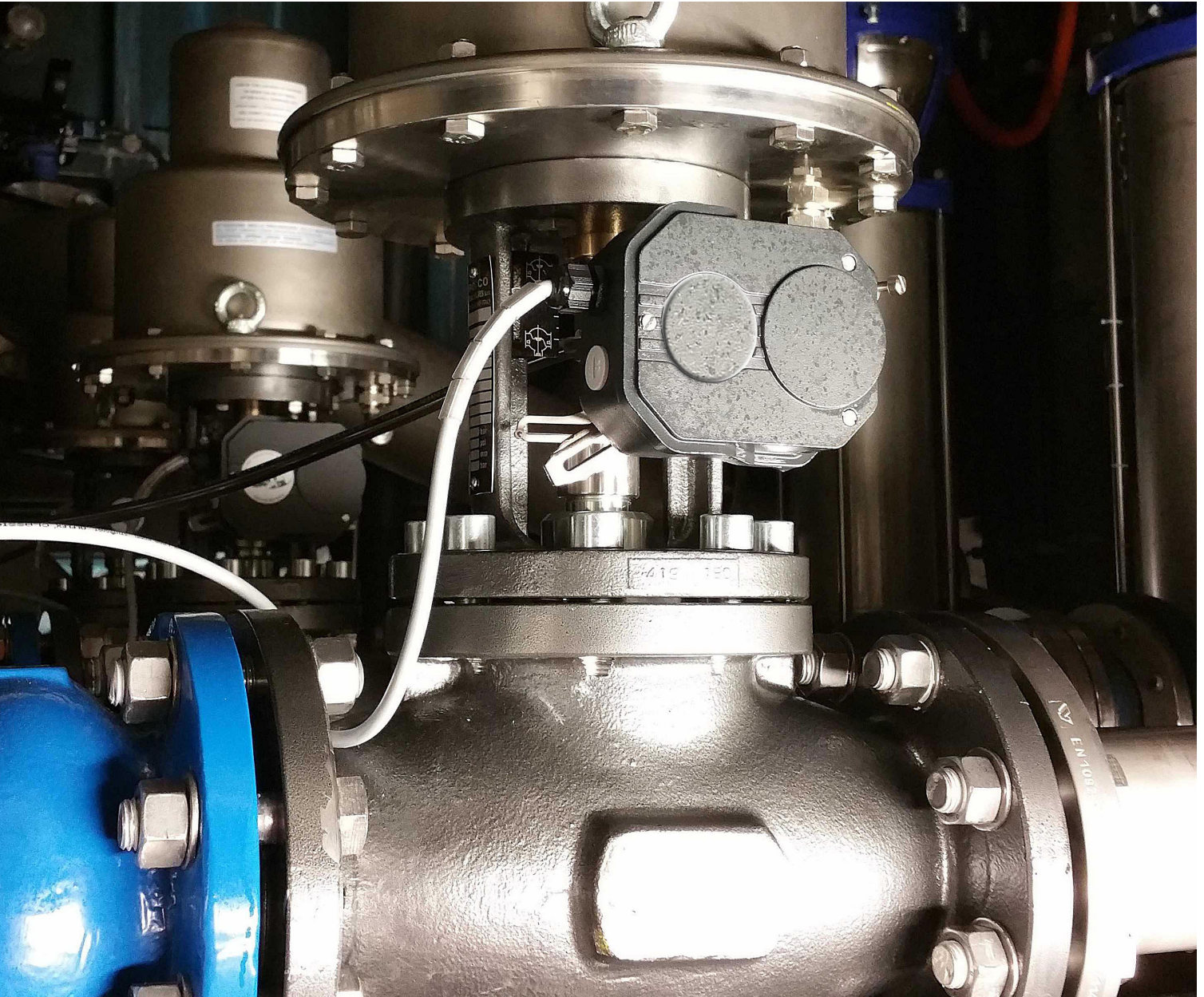


# BUROCCO INDUSTRIAL VALVES S.R.L.

OPTIMIZING INDUSTRIAL VALVE DESIGN PERFORMANCE  
WITH SOLIDWORKS FLOW SIMULATION



Burocco relies on SOLIDWORKS design, computational fluid dynamics (CFD) analysis, product data management (PDM), and technical communication solutions to develop some of the world's best-performing stainless steel industrial valves.

**BUROCCO**  
INDUSTRIAL VALVES srl

### Challenge:

Incorporate fluid-flow simulation studies during the development of industrial valves to calculate, predict, and optimize fluid flow within valves to improve performance without conducting costly rounds of physical prototyping.

### Solution:

Replace the prior 3D design solution with SOLIDWORKS design, SOLIDWORKS Flow Simulation computational fluid dynamics (CFD) analysis, SOLIDWORKS PDM Professional product data management (PDM), and SOLIDWORKS Composer technical communication software solutions.

### Benefits:

- Shortened design cycles by 25 percent
- Predicted fluid flows with 98 percent accuracy
- Increased design reuse by 50 percent
- Eliminated turbulence within valves without physical prototyping

Since 1954, Burocco Industrial Valves has designed and manufactured stainless steel industrial valves for regulating, shutting off, and turning on the flow of water and other fluids. The company's research and development effort has resulted in products of increasing quality, sophistication, and innovation. Today, Burocco produces some of the world's best-performing industrial valves, including control valves, pneumatic on/off valves, manual Y-type valves, ball valves, specialty valves, and accessories.

Over the years, Burocco has collaborated with customers and partners to develop new valves to address varying customer requirements and specialized applications in the chemical, pharmaceutical, cryogenic, food-processing, textile, and iron and steel industries. Working with customers, the valve manufacturer combines its expertise with a thorough understanding of customer needs to develop valve products that integrate perfectly with its customers processes and perform reliably over the long term.

In keeping with the company's quality commitment, Burocco engineers increasingly need to understand fluid dynamics within new valve designs without incurring the delays and expense of iterative physical prototyping. According to Sales Manager Paolo Palestro, Burocco realized in 2015 that it could not conduct the types of fluid-flow simulations required for developing new products with its existing Autodesk® Inventor® and Fusion 360® 3D design tools, prompting the company to seek a better solution.

"We realized that we needed a fluid-flow simulation solution because the Inventor and Fusion 360 applications that we had been using were unable to do the types of flow simulations that we needed to accelerate development and production," Palestro recalls. "Our principal need was the ability to accurately calculate the flow of a fluid inside our valves."

After investigating available solutions, Burocco decided to standardize on the SOLIDWORKS® 3D design environment, implementing SOLIDWORKS design, SOLIDWORKS Flow Simulation computational fluid dynamics (CFD) analysis, SOLIDWORKS PDM Professional product data management (PDM), and SOLIDWORKS Composer™ technical communication software. The company chose SOLIDWORKS solutions because they are easy to use, are fully integrated with the SOLIDWORKS CAD system, and provide access to a wide range of integrated applications.

"For us, the value of SOLIDWORKS is in the integrated applications," Palestro stresses. "We view CAD systems as very similar, but the SOLIDWORKS platform gives us access to the integrated tools that we truly need."

### IMPROVING FLUID FLOW WITH SIMULATION

Since implementing SOLIDWORKS design and SOLIDWORKS Flow Simulation CFD analysis software, Burocco engineers are able to identify and resolve areas of turbulence within the fluid flows that its valves regulate — turbulence that can degrade valve performance. "We always have to keep in mind the possibility that the valve geometry can create turbulence, which makes the flow 'dirty'," Palestro notes.

"Using SOLIDWORKS and SOLIDWORKS Flow Simulation, we not only come to understand where areas of turbulence damage the clean flows that we need, but also determine how changes to the valve design can smooth the flow, reducing prototyping and machining costs," Palestro adds. "In just a few minutes, our engineers can use SOLIDWORKS Flow Simulation to calculate everything they need with an accuracy of 98 percent. This enables us to improve product performance."



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— Paolo Palestro, Sales Manager



## SAVING TIME, REUSING DESIGNS

In addition to relying on SOLIDWORKS design and SOLIDWORKS Flow Simulation analysis solutions to develop and produce high-quality industrial valves, Burocco discovered additional integrated SOLIDWORKS solutions that have had a positive effect on its design and manufacturing operations. The company acquired SOLIDWORKS PDM Professional to improve management of its product design data, and SOLIDWORKS Composer technical communication software to automate development of product documentation.

"With the SOLIDWORKS PDM system, we gained the ability to quickly search all of our prior design data electronically," Palestro notes. "Because it's so much easier to locate and reuse a prior 3D model than finding a 2D drawing and remodeling it, our design reuse has increased by 50 percent. With greater design reuse, our design cycles are shortened, saving us more than 25 percent in design time."

## REPLACING CABINET FULL OF DRAWINGS WITH PDM

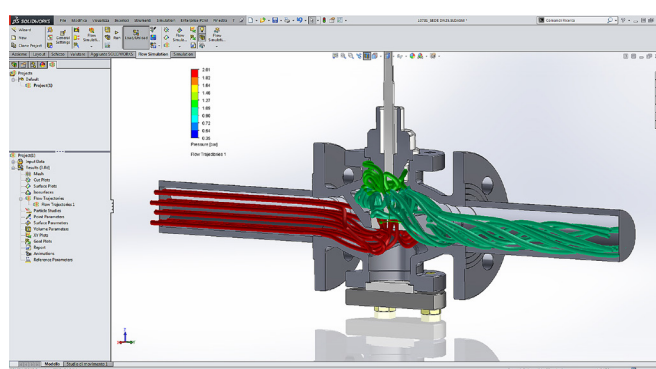
Prior to moving to the SOLIDWORKS platform, Burocco maintained all of its design drawings, user manuals, and parts catalogs as paper in cabinets and drawers, making data management a tedious, manual process. The valve manufacturer now enjoys the benefits of a completely paperless system.

"We used to store all of our design drawings and supporting documentation in cabinets containing a lot of paper," Palestro points out. "With SOLIDWORKS PDM and SOLIDWORKS Composer, we've simplified the entire process and now completely avoid the use of paper. In many ways, SOLIDWORKS is helping us become more efficient and effective."

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Burocco migrated to the SOLIDWORKS development platform to take advantage of SOLIDWORKS Flow Simulation software capabilities to accelerate and improve valve development by identifying and resolving areas of turbulence within fluid flows, enabling the valve manufacturer to increase product quality, sophistication, and innovation.

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