CASE STUDY

Valve Solution Combines Ergonomic and Efficient Design with Proven Field Experience

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Pure Performance

ASK AN ENGINEER

The Challenge

One of the largest chip manufacturers wanted to improve the safety and efficiency of its operator while working on its chemical distribution system. Prone to minor safety and efficiency issues, multi-turn, manual valves were causing a combination of pain points for the manufacturer. The first problem was that more turns were required to close the valves than were being applied and the second was the lack of a visual indicator to show the operator the valves were in a closed position.

Saint-Gobain Valves Combine Ergonomic and Efficient Design with Proven Field Performance

In order to develop a solution that could be applied across various systems due for maintenance or upgrades, the first step was to gather feedback from the operator. This critical input determined the need for:

- Fast and fail-safe actuation
- Preventing unwanted actuation
- Significantly visible position indicators

Furon CDV Manual 2-Way Toggle Valve

Central to both the customer's issues as well as Saint-Gobain's design solution was the need for fast and fail-safe actuation. Though quarter-turn valves would have been more appropriate, the customer was using only multi-turn valves. This is not an unusual practice in the semiconductor industry. In fact, multi-turn valves are used for even simple on/off operations. In large part this is due to the limited number of suppliers that offer quarter-turn valves.

This trend to install multi-turn valves has also impacted the successful use of quarter-turn valves. In great part because operators have become used to turning a valve a number of times to get it from an open position to a close one and then giving the valve an extra squeeze or turn to be sure that the valve is fully closed. Basically they are not comfortable with the quarter-turn actuation, instinct now tells them to turn more. For this specific reason, Saint-Gobain understood the solution needed to break this turning instinct. As a result, the Saint-Gobain engineering team developed a toggle design which not only eliminated an operator's turning instinct, it also offered the following efficiencies:

- Switching from a close to an open position with one, simple action
- Locking the toggle in an up or down position
- Providing a clear, observable indication that a is open or close (toggle being in the up or down position)

Given customers often have only a rather small window for maintenance and system improvements, the solution had to be implemented utilizing valves with proven field documentation. This would eliminate the need for time consuming validation testing. Saint-Gobain was able to deliver on this as well as the chip manufacturer's need for a variety of valve sizes and geometry. In fact, Saint-Gobain applied the same manual toggle solution across the Furon valve product line – from 1/8" to 2" - including: Furon HPV/HPVM Valves, Furon J-Valves, Furon Q-Valves and more.

Customer Experience

In the end, the customer implemented Saint-Gobain's Furon CDV Valve. This valve was chosen for its ease of installation, compact footprint and optimum use of limited space. Additionally, thanks to the proactive application of toggle valve designs across Furon valve products and positive feedback from the manufacturer's operators, Saint-Gobain toggle valves will be implemented on additional systems as maintenance/ upgrades are needed.

SAINT-GOBAIN

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