

WASHED DOWN WITHOUT BEING WASHED UP



Case History: How one pump trial in an Iowa frozen-foods plant led to a new strategy for reducing maintenance.

At food processing plants, maintenance teams keep foods, frozen foods, and sauces flowing to consumers every day. Unfortunately, the cleaning solutions and equipment teardowns that are essential for food safety on the line are also hard on processing equipment. At one Iowa plant, every line gets wet-washed daily. Any equipment that cannot take that punishment gets ruined, and for years, some of this plant's product-transfer pumps sat firmly in the disposable category.

The transfer pumps in the plant kitchens were low-cost lobe pumps. Nobody rebuilt them. They ran about a year, failed, and got swapped out. The maintenance manager described the mindset that came with them: "They were treated as cheap, disposable pumps. When one failed, you didn't put much effort into it. You switched it out and moved on."

The bigger problem was what the pumps did to food safety. The lobe pump design, with its many parts, was not adequately hygienic enough and could not be cleaned to the plant's high standards. Microbial counts occasionally came back over threshold after the overnight cleaning cycle. When a swab failed, teams replaced the pump, and the line then had to be cleaned for three days straight.

Other failures kept recurring. A set of air-operated double-diaphragm (AODD) pumps needed seal replacements every couple of weeks, persistent maintenance hours the team could not get back. The team reported that the AODD pumps were difficult to reassemble. Sometimes crews even resorted to rubber mallets to seat housings that would not line up.

Pumps that create time-consuming work during teardown and reassembly carry a real and rising cost. The plant draws from a rural-Midwest labor pool. Experienced hands were retiring, increasing demands on those who remained.

The Pump Demo that Fits in a Suitcase

The maintenance manager did not go shopping for a new pump. It came through the plant's existing distributor, who regularly introduced managers to new technology. He brought in the Flotronic® One-Nut® AODD+™ Pump from Unibloc® Hygienic Technologies (UHT) for them to consider as a solution.

A group of maintenance managers and supervisors came into the MRO manager's office and immediately saw a small "suitcase" demo unit. The pump was unlike any AODD pump they had seen. Instead of routing fluid through piping on the outside of the pump, the Flotronic One-Nut AODD+ pump routed fluid through the center of the pump, which uses the diaphragms on the outside where they are easily accessible.

What's more, the entire pump assembly was secured with just a single, large nut. The distributor pointed out that disassembly, maintenance, and reassembly take only 15 minutes with this one-nut design versus the two hours needed for a traditional AODD pump.

The plant's in-house technical lead stayed behind after the demo and liked what he saw. He then walked the facility looking for the application where the pump would earn its keep.



From Curiosity to Commitment

The interest was there, but getting a more expensive pump onto a purchase order would not be easy. The lobe pumps in place cost just one-tenth as much as a Flotronic pump. They were so inexpensive they were considered nearly disposable, even though the team was beginning to realize the long-term hidden costs in extra maintenance time.

The team also began to consider another cost factor: stocking unneeded spare parts. This had been a real pain point with the inexpensive incumbent lobe pumps, which required stocking far more spare parts than the Flotronic unit would require. In addition, the plant struggled with increasingly long lead times for the incumbent lobe pump's replacement parts.

A few months after that initial suitcase demo, an electric-pump trial ended, which reopened the conversation between the distributor and Unibloc Hygienic Technologies. A second Flotronic AODD+ pump demo followed.

Encouraged by the MRO manager and driven by the technical lead's enthusiasm, plant managers committed to installing a single Flotronic One-Nut pump for a test.

Putting Claims to the Test



One thing that the team evaluated was the pump's foreign-material risk. The company must trace any foreign material that enters the food stream back through the entire system, so any new components that introduce foreign-material risk get scrutinized.

The maintenance team flagged the Flotronic pump's check valve, which uses a PTFE ball. The plant runs abrasive product, and the team had to be sure that PTFE would not wear into the product. One of the company's sauces carries a parsley-type solid that one manager said can feel abrasive on your fingers, so the team was concerned that abrasiveness would cause wear on the PTFE material.

The team ran the AODD+ pump, then tore it down around the 10-month mark to check the check valve for wear. They saw no wear, alleviating concerns about foreign material risk.

The manager did not take Unibloc Hygienic Technologies' longevity claims on faith. He bought a seal replacement kit so he could tear the pump down and observe real wear against real runtime. His goal was to quantify "this amount of runtime equals this amount of wear." At roughly the one-year mark, the team reported that the pump showed no wear.

Pump Envy on the Plant Floor



The maintenance team quickly learned to appreciate the Flotronic pump's Clean-in-Place (CIP) capability. Unique among AODD pumps, the Flotronic One-Nut AODD+ pump can be fitted with reinforced diaphragms that handle high inlet pressure (7 bar/105 psi), enabling in-place cleaning. Without removing the pump from the line, the pump cleans faster and more easily, saving labor.

Best of all, the microbial-count failures that plagued the old pump stopped after teams switched to a CIP-capable AODD+ pump.

The run-dry tolerance of AODD pumps was a bonus. Staff cannot always watch a tote unload, and a lobe pump burned up the one time it ran dry unattended. Like other AODD pumps, the AODD+ pump can run dry with no damage.

"As a product pump for the uses we're using it for, they work very well. They're reliable, and they can take the abuse the production team gives them."

The strongest approval signal came from the plant floor. Line 1 got the AODD+ pump, and the crew raved about it. When that crew stepped away, someone from Line 2 came over and "commandeered" it. With workers competing for the pump, orders for a second and third Flotronic pump followed, then a dozen more.

The original pump has been running for about two years, shrugging off daily washdowns. It has not failed and seldom needs a seal replacement.

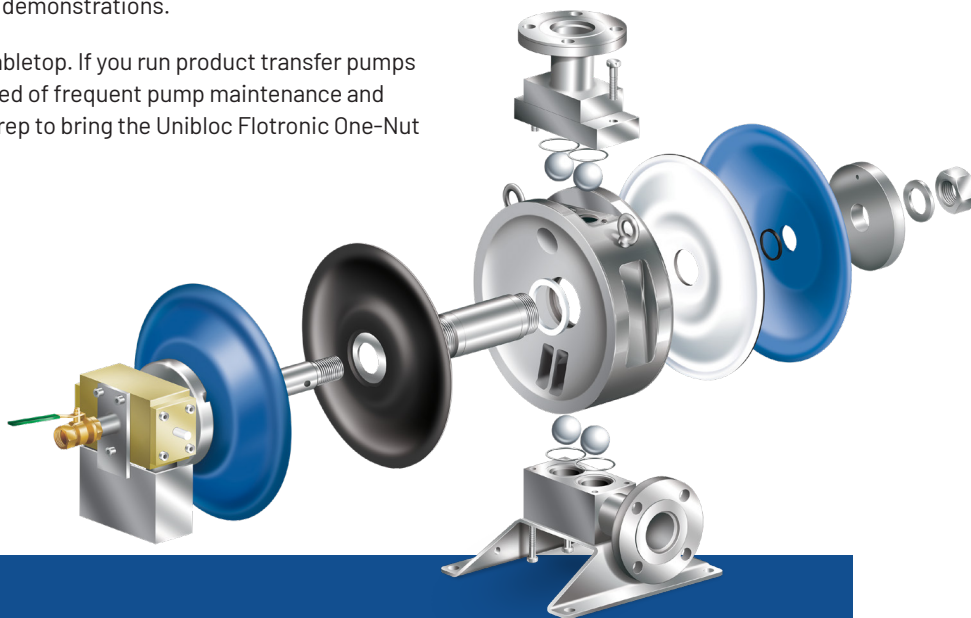


Good Experience Worth Sharing

The plant is not done buying. "I just bought 13 more," the maintenance manager said, on a track to reach 25 to 30 pumps by year-end.

As part of the company's best-practice-sharing habit, he walked managers at five sister plants through what his plant is doing and why. He pushed to get the Flotronic pump onto the agenda at an upcoming maintenance leadership meeting. Several sister plants have already asked for pump demonstrations.

The demo that started it all sets up on a tabletop. If you run product transfer pumps through a daily wash-down and you are tired of frequent pump maintenance and replacement, ask your distributor or UHT rep to bring the Unibloc Flotronic One-Nut AODD+ pump demo to your plant.



About Unibloc® Hygienic Technologies

Unibloc® Hygienic Technologies is an industry leader in precision-engineered positive displacement pumps, air-operated double-diaphragm pumps, and drum pumps, as well as valves, strainers, bubble traps, oil coolers, and sight glasses, under the Unibloc, Flotronic®, Hygienitec™, and Standard Pump product lines. Its products focus on reducing the total cost of ownership through safe, efficient, easy-to-maintain products that outperform, outlast and cost less to operate and maintain even in the world's toughest process applications. Learn more at unibloctech.com.

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