

From buttons to surgical aids...MRPC history as diverse as its parts

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Medical molder MRPC has a colorful 85-year history, and for much of that time, the color was black.

Formerly known as Molded Rubber and Plastic Corp., the company was a classic "black rubber" molder, said President Thomas Brunner. Rows of machines turned out industrial parts like spark plug boots and breather tubes for small engines. In the mid-1980s, the firm picked up a plastic injection molding operation next door in Butler that turned out football helmets, power tool housings and other parts.

The company dates back to 1921, when Unbreakable Button Co. developed buttons made of rubber, so they could be sent safely through a wringer washing machine.

Today, many of MRPC's parts make airtight seals during arthroscopic and endoscopic surgeries.

Officials made the pivotal change in the late 1980s - morphing into a medical molder. The 90-employee company touts its ability to run a range of materials, including rigid thermoplastics, flexible thermoplastic elastomers, thermoset rubber and both gum and liquid silicone rubber.

The black rubber days are history.

MRPC runs 15 injection presses, with clamping forces of 5-390 tons. Of those machines, 12 mold plastics and TPEs, and three do LSR molding.

Molded Rubber and Plastic Corp. shortened its name last year to simply MRPC, and updated its logo. Brunner said under the old name, customers were not picking up the fact that the company also molds plastics.

MRPC is housed in three buildings, measuring a total of about 83,000 square feet, at its headquarters in Butler, a Milwaukee suburb. Brunner declined to reveal sales.

Nine of the presses, plus an extruder, operate in a pair of clean rooms, one rated at Class 10,000 and the other at Class 100,000.

"We've continued to expand our clean room facilities as the medical business has grown. We've actually developed specialized materials for medical," he said.

At an in-house laboratory, two chemists formulate the new elastomers, do color matching, and also work to bond dissimilar materials of plastic, rubber and metal components. In one example - an ultrasonic surgical knife - the company bonds a silicone seal to a titanium substrate.

MRPC has its own rubber mill to make custom materials.

Today, medical accounts for 65 percent of sales, Brunner said. Many of the parts are used for minimally invasive operations, a growing area where the surgeon inserts instruments through a small slit in the body.

In the clean rooms, MRPC extrudes silicone tubing used for heart catheters. Injection molding machines mold rubber duckbill valves, which seal off the body cavity during surgery and allow medical instruments to pass through.

Since the duckbills are produced in high volumes, MRPC invested in equipment to automate the slitting of the tapered valves. MRPC also runs two programmable lasers. Initially, the company wanted the exotic devices to pierce small holes in rubber parts. But their role was expanded, to include flash trimming and the fabrication of parts.

Nonmedical markets include food-service equipment such as spatulas, ladles and parts for ketchup dispensers. Those heavy-duty products are designed for commercial use. A spatula highlights MRPC's ability to overmold the LSR scraper end onto a nylon handle.

MRPC also serves the process control market with valve seats, diaphragms, seals and hydraulic valves. A dedicated work cell makes switches, by molding the parts and doing final assembly.

Brunner said MRPC's investment decisions follow customer demand. As the new surgical techniques require ever-smaller medical parts, the company got into micromolding by adding a 5-ton press and a 20-tonner. Both are Toshibas.

“The parts just keep getting smaller, and I think the trend in medical is they want devices that will pass through your veins and arteries, so they'll pass it through the inside of your eyeball, or into your inner ear to do work,” he said. That will require tiny sealing devices - an MRPC strength.

Already, customers routinely design parts with shot sizes under 1 gram. “The industry is driving what the molders will provide,” Brunner said.

Talk of microscopic parts leads to the emerging field of nanocomposites. MRPC works closely with the University of Wisconsin-Milwaukee, where Brunner serves on the advisory council for the Mechanical Engineering Department.

Brunner was hired in 1988 as vice president of manufacturing. The following year he became president - right as MRPC was getting into medical.

“Just about that time, we looked at where we saw markets going and made a decision to look at what we call the higher-tech end of the business, primarily medical. And we started building our first clean room,” he said during an interview in Butler.

These days, molders are eyeing medical as a way to fend off competition from China and other low-cost countries. MRPC's experience shows that entering medical takes patience and a major commitment. Brunner said it took about four or five years before management considered MRPC a solid “medical molder.”

He said it's hard to crack into the business, given the strict approval system for medical devices. Medical customers, he said, “don't want to go and change their registry, if they go to a different molder. And so it's hard to displace somebody.”

Medical also requires persistence. “You might get involved in a new program, but then you've got this couple-of-years gestation period where you go through prototyping and you go through your clinicals, and make the modifications and retry things and get the bio-approvals. And so there might be a two-year time frame before you see your first real nickel of profit,” Brunner said.