COAST

Global Consumer Goods Company

Smooth Recovery: COAST Systems Helps a Major Manufacturer Avoid Prolonged Lotion Dispenser Production Halt

This global consumer goods company and long-time customer of COAST Systems leads the personal care industry with powerful brands that require innovative plastic containers to enhance product functionality and improve user experience. Large-scale brand leaders owning thousands of plastic molds often outsource plastic container manufacturing to leverage specialized expertise, reduce costs, and scale production efficiently. Outsourcing container production to select contract manufacturers allows market leaders to focus on core business activities like product development and marketing while meeting the high demand for products quickly and consistently.

Unfortunately, our customer's contract manufacturer faced critical supply chain issues with a series of a complex molds used to produce finished lotion pump dispensers already ordered to ensure a steady stream to market. The plant manager estimated it would take four weeks to outsource the mold and fix the problem. The group of molds developed to manufacture the finished assembly was designed to produce more than 250,000 dispensers per day, so any halt to production would greatly disrupt the entire manufacturing process and increase operational costs – not to mention creating a bottleneck in the supply chain and significant financial losses. The customer sought immediate assistance from COAST to avoid extended production delays. A request for urgent onsite support came in late on a Thursday afternoon, asking for help in Mexico as soon as possible. COAST mobilized on Friday to be on the manufacturing floor by Saturday morning.

Client Challenges

- A four-week shutdown would disrupt the supply chain by delaying the delivery of millions of assembled liquid dispenser units, jeopardizing the ability to meet contracted product demand and maintain supplier relationships.
- The lotion dispenser molds did not belong to our customer but rather to a third-party contract manufacturer located in Mexico.
- A prolonged packaging production line shutdown would result in significant financial losses and threaten eroded market share.
- One particular 64-cavity mold, although inherently complex, did not have a capacity back-up tool. A problem in one part of the mold or mated injection press can have cascading effects on other areas, making it harder to isolate and identify root problems.

How COAST's expert diagnosis and swift intervention of critical machining issues saved a Fortune 500 company an estimated $1,000,000 in financial losses due to supply chain interruptions.

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COAST Solution

Leveraging COAST's years of engineering and manufacturing expertise in plastics, one of COAST's mold experts was invited to visit the plant in Mexico to investigate the problem. He was given access to machine data and thoroughly analyzed the mold's health, machine tonnage, injection pressures, operating speed, and other critical information. As it turns out, the mold was not being utilized to its total capacity. A malfunction in the hot runner system required freezing off affected cavities, leaving 35% of them inactive.

Knowing what to look for, COAST identified several problems that impacted quality and led to the shutdown:

1. Several gate locations were shutting off due to poor filling issues.
In response, the plant initially concluded that the hot half of the mold needed to be outsourced for repair and cleaning. COAST, however, recommended an alternative approach: they conducted onsite training to show how to split the hot runner while still in the press for closer inspection. All hot drop positions were activated, and each gate tip was removed and inspected individually. The inspection revealed that the tips were clogged with foreign material, including brass. Each gate tip was then thoroughly examined and either cleaned or replaced. After reassembly, all gates functioned as designed.

2. The mold was simultaneously experiencing both flashing and shorting issues.
The press tonnage settings were nearly triple the calculated requirement for the surface area, which crushed the remaining parting line vent system and led to short shots. The plant attempted to compensate by increasing injection speed and force, but this caused injection pressure to exceed clamp tonnage, resulting in parting line flash, while some cavities continued to short. By reducing the tonnage to meet minimal calculated requirements, shorting was eliminated in several cavity locations, resulting in a better-balanced shot across all 64 cavities.

3. The cavities were not balanced.
Balancing ensures uniform part quality, consistent fill time, even cooling, efficient cycle time, and optimized material usage. Failure to reprocess the cavity balance after specific locations were turned off (see bullet #1) led to an extremely imbalanced mold shot. The mold was rebalanced within 10% of a gram while still on the machine, allowing for real-time adjustments based on actual production conditions.

4. A gate freeze study revealed that parts were not filling out to design potential.
Conducting a proper gate freeze study and balancing the cavities resulted in a more controlled shot and improved pack-out, which sharpened the plastic geometry equally across all cavities. This correction also improved metrology results and the fit, form, and function of the finished product.

The Numbers

- Avoided potential downtime losses of $1,000,000
- $40,000 in repair costs prevented
- 600 hours of production time saved over a month due to rapid repair
- 750% decrease in downtime from 600 hours to just 8 hours
- 38% increase in production output after the mold was repaired and optimized
- No increase in cycle time required

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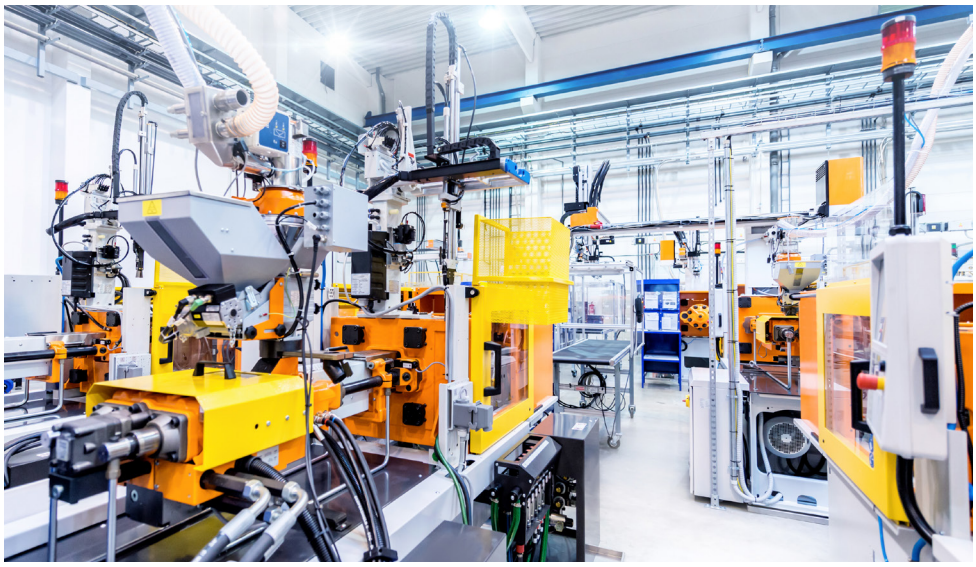
Results

COAST's expert identified the root cause of the manufacturing problem and made repairs within one day instead of the expected 30, restoring 23 previously inactive cavities for a total of 61 out of 64 in operation. Three cavities were re-frozen due to existing internal steel damage. This swift intervention restored the mold's functionality, enabling the contract manufacturer to resume full production quickly. As a result, our customer avoided significant downtime and the associated financial losses. The prompt resolution also eliminated the need for costly mold replacements or extensive repairs, delivering substantial savings and ensuring uninterrupted production.

COAST educated and trained the plant manager and machine operators on watchouts and what to do in the event of another problem. Ultimately, the consumer goods company received all of their lotion dispensers on time without any quality issues.



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