LEISTER
PROCESS HEAT

Success Story
06 / 2016

Process Heat

Smoothing and Deflashing with Leister Hot-Air Blowers

Eliminating Gate Vestige and Problematic Stringing

Modern plastics have become a part of our everyday lives. One can even go as far to say plastics consumption is a benchmark for measuring how developed a country is. According to *Plastics – the Facts 2014/2015*, a report published by Plastics*Europe,* "...plastics materials have been key enablers for innovation and have contributed to the development and progress of society."


Caps and closures.

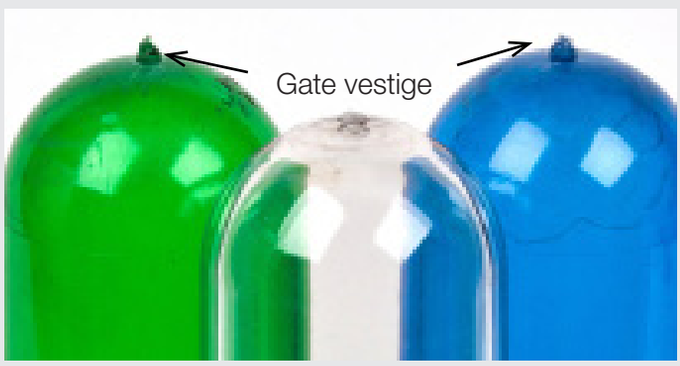
Plastic parts, manufactured using the injection molding process, can be realized in essentially every industry in many different ways. In an extremely competitive market where there are over 16,000 injection molding and plastics manufacturing facilities in the U.S. alone; part quality, appearance and especially consumer safety are at the top of the list to even be considered a viable candidate to produce these everyday items used throughout the world.

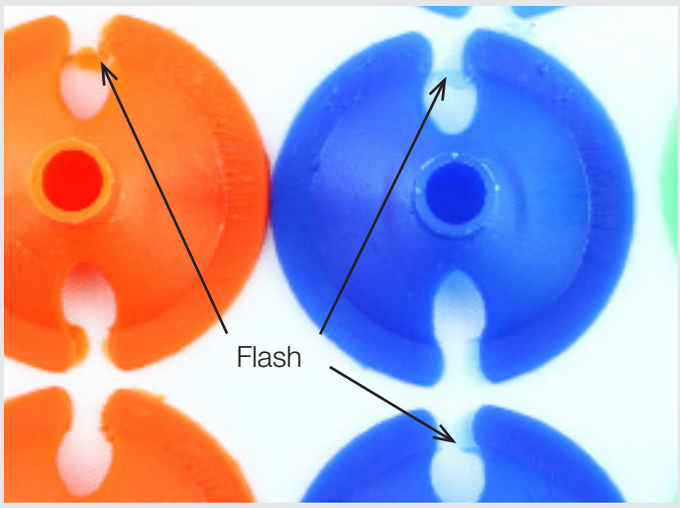
> "By setting the MISTRAL to the proper temperature and required cfm...the gate vestige or stringing... are easily melted or smoothed over."

One of the largest markets for injection molding would be the packaging and containers industry that includes dispensing systems for caps and bottles. These products are used in the beauty, personal care, home care, prescription drug, consumer health care, injectables, food and beverage markets.

Gate Vestige, Stringing and Flashing

Because these markets are highly driven by appearance, aesthetic imperfection is an understandable pain point. One of the most common headaches while producing these parts is the left over gate vestige caused by poor gate quality and tool wear over time. The gate vestige is a byproduct created when molten





Unsightly flash remains on parts produced by injection molding.

plastic is injected into the mold to fill the desired plastic part. The gate vestige is produced where the gate separates from the runner. There are strict specifications from end users on what is considered an acceptable gate vestige to satisfy aesthetics, quality and safety requirements. Acquiring the perfect gate vestige and avoiding stringing is much easier said than done. Fortunately, Leister Techologies has a solution.

A Simple Solution

The Leister MISTRAL hot air blower, with integrated temperature control—up to 1200 degrees F—and adjustable blower speed, has proven to be a solution to these problematic issues. By setting the MISTRAL to the proper temperature and required cfm for the specific type of plastic resin being used, the gate vestige, or stringing, deemed unacceptable, are easily melted or smoothed over without warping or disturbing the integrity of the part.

A large, U.S.-based global supplier of a broad range of innovative dispensing systems for the beauty, personal care, home care, prescription drug, consumer health care, injectables, food and beverage markets recently has chosen to utilize Leister Technologies and the benefits of the MISTRAL System hot air blower. The MISTRAL has been integrated into the post molding automation line for a variety of their different caps and closure production lines, to specifically target parts with an unacceptable gate vestige or stringing.

Each part will pass under the MISTRAL for a set period of time—"less than one second" in most cases—to ensure the part meets requirements. Clearly with mass production of parts it is unreasonable to cut or shape each indvidually by hand. Previously, the company was able to achieve the desired results by mounting a generic hot air gun to the automation line. However, this was not a feasible long-term solution, as the heat guns were unable to handle the continuous 24/7 operational demand as well as the harsh environmental conditions.

The Swiss made Leister heater, with integrated adjustable blower and temperature control, has proven to be a perfect fit as it is robustly built for constant use and can also accept a replaceable filter on the air intake in order to prevent dust and particles from entering the heater.

This successful industry leader, who consistantly seeks to improve quality and efficiency, has done just that, once again. They now have a proven process in place, thanks to the Leister MISTRAL hot-air blower, they can be confident the parts they produce will consistently surpass customer expectations.


Leister MISTRAL hot-air blower installed in a production system.

Regardless of whether a new mold with a new hot runner is having any of these issues, the fact of the matter is that at some point these problems are bound to occur and a solution is ready through Leister. Ideally, a newly built tool can be optimized to avoid gating issues. But if the particular part is going to be mass produced and the mold will be cycled over a long period of time, the gate in the tool steel and the hot tip of the hot runner nozzle will begin to wear. The same will happen with a valve gated system. The more cycles run—to produce any part—means the more times the valve pin will be opening and closing within the gate, which also creates wear on the tool steel. As this occurs, an unappealing gate vestige or cold slug will begin to appear that will need to be eliminated.

Rather than the costly unplanned downtime needed to remove the mold from the press to re-weld the gate, replace a tip and/or replace a valve pin; utilizing the technology and reliability of Leister Technologies will give injection molding and plastics manufacturing facilities the piece-of-mind that they can continually produce a quality product.

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Leister tools in use

Hot-Air Blower

MISTRAL System