



Precision plastic components with outstanding surface quality

We encounter items with functional hollow sections every day. They are used in toys, household appliances, automotive parts and more - and the demand for plastic components in all shapes and sizes is higher than ever before. To ensure that the end product has the specified dimensions as well as excellent surface quality, manufacturers of plastic parts are turning more and more often to gas-assist injection molding.

This process is used in the plastics industry when there is a need for maximum productivity in high quantities. The first step in gas injection molding is to fill the appropriate mold cavity with plastic material. An inert gas - usually nitrogen - is then injected into the liquid material with uniform pressure to create the hollow section. This presses the plastic material against the interior of the mold until it hardens into its intended shape.

Compared to standard injection molding, gas injection is more cost-



Distribution panels coordinate with the injection molding machine to control and monitor nitrogen injection.

efficient. It uses less molding material and produces parts with less weight, while also reducing the molding time per part. Customers benefit not only from more freedom in designing sections of varying thickness, but the application of uniform pressure also improves overall surface quality and produces higher stiffness.

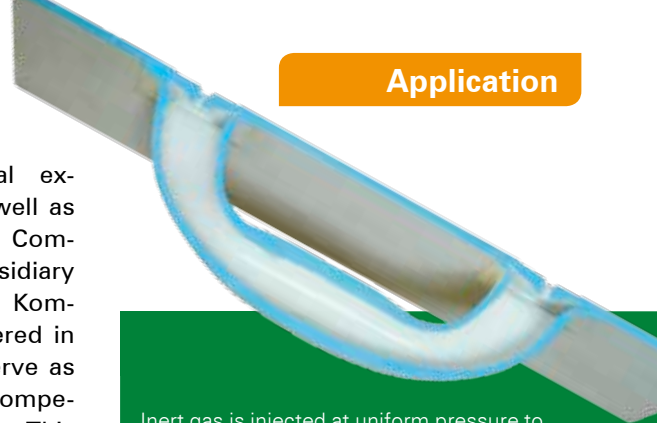
Europe's gas injection experts

Compared to conventional injection molding, the gas injection process

requires additional technical expertise for handling gas, as well as additional machinery. BAUER Compresseurs is the French subsidiary of the well-known BAUER Kompressoren Group. Headquartered in Aix-les-Bains, France, they serve as BAUER's plastics injection competence center for all of Europe. This is where BAUER Compresseurs develops and produces all of its gas injectors and injection distribution panels. Well-known companies such as the toy manufacturer Smoby and automotive components suppliers Valeo, Faurecia, Visteon and Mecaplast are currently working closely with BAUER Compresseurs.

Maximum precision for the process

Injection distribution panels are essential components in the gas handling system. They are responsible for controlling and monitoring nitrogen injection and work in close coordination with the injection molding machine. Their purpose is to generate time and pressure profiles in a range of 5 to 400 bar. They also monitor nitrogen consumption and maintain error logs for the entire injection process. Equipped with a Power Panel 420 for control and operation, as well as compact X20 I/O modules, the distribution panels are able to meet the highest demands



Inert gas is injected at uniform pressure to create a hollow section in the component.

for precision gas injection. Cycle times below 1 ms ensure repeatability of the control loop, and therefore high-precision processing. The ability to save process data on a USB flash drive or on a higher level network simplifies data handling for the customer. The modularity of the X20 I/O devices allows BAUER to handle machine options more easily.

Simple programming for complex processes

The ability to program and configure all automation components with a single software tool was a decisive factor for project manager Sébastien Grandry: "The user-friendly software tool Automation Studio enabled us to develop the whole application, including control and visualization, in only three months. Besides operation and application development, this has also made maintenance much easier." ■



BAUER Compresseurs:



Founded: 1985

Employees: 30

Location: Aix-les-Bains (FR)

Products & Services: Development and manufacture of high-pressure gas containers and distributors for gas-assist injection molding machines

www.bauer-kompressoren.de