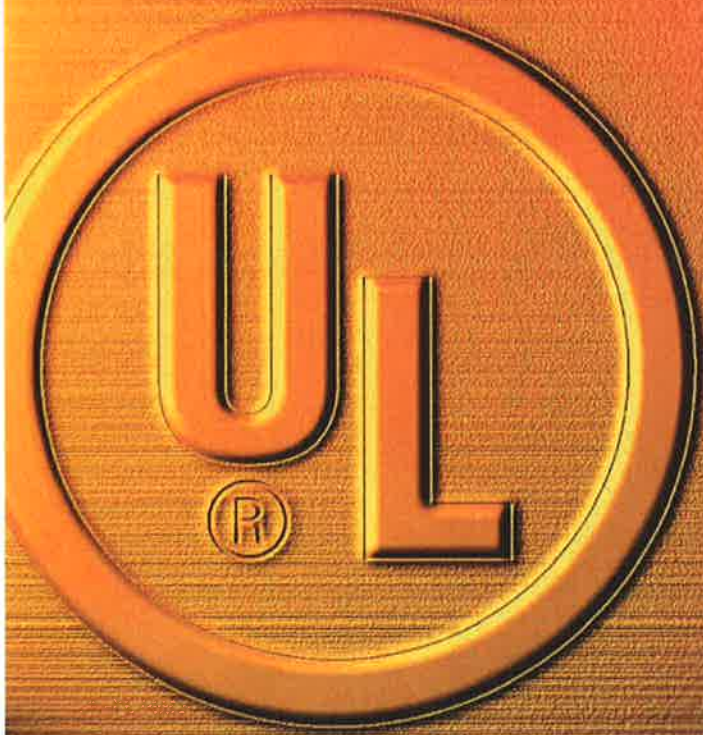


Switching technology for the US market



Thermoplastics are softened by heating and pulled over the tool by a vacuum

UL approval of switching technology simplifies export of vacuum-forming machines

Seal of Quality for America

Geiss AG has long had a reputation as a technology leader in vacuum-forming machines. Every year about 120 machines for thermoforming and postprocessing leave the factory in SeBlach, Germany. The company has recently focused its attention on exporting its products to the United States.

To implement his export strategy, Manfred Geiss, managing director of Geiss AG, works closely with Siemens. The example of a recently delivered vacuum-forming machine for thermoplastics shows how decisive low-voltage switchgear with UL approval is for success in the US market.

Plastic instead of painting

Vacuum forming is attractive to the automotive industry – Geiss's latest order comes from Ford. What was previously painted at great expense, because it could not be injection molded, is now vacuum formed. In a closed chamber, heated plastic plates are pulled over the tool by a vacuum, enabling complex parts to be made in any size.

Those who supply machines to the United States must ensure that all devices are UL approved for switching electric motors. "For this reason, we chose the fuseless motor branches from the Sirius system," says Johannes Ludwig, electrical designer at Geiss. Six 3RV circuit breakers with corresponding contactors are installed in the machine, where they control the drive motors. Other 3RF-type semiconductor contactors were chosen for their high switching frequency and reliability when switching electric heaters.

Heart of the plant: The heating

The heart of the machine (controlled by a Simatic S7-300) is the heating. Its control greatly influences the forming process and the finished product. For the Ford machine,

new tool heating was designed, in addition to the upper and lower heating control developed years ago together with Siemens.

The control of the vacuum chamber is also an essential component. The chamber size is set by trapezoidal thread spindles. Thereby, a BERO proximity switch measures the distance, and positioning is performed by a specially developed positioning control.

The upper heating moves analogously. A Micromaster frequency converter in connection with an asynchronous motor and the BERO-based distance measuring system provides the movement.

Safety features are also controlled by Siemens technology. Two 3RT10 contactors are in the machine's emergency stop circuit, and three others are connected directly to the light curtains. These contactors are permanently active and enable instant switch off when the operator breaks the light curtain.

"Efficient total solutions are one of our most important keys for unlocking global markets," says Geiss. "Our success is based on offering highly innovative technology and supplying complete solutions. Siemens is therefore an important partner." ■

More information:
www.siemens.com/sirius