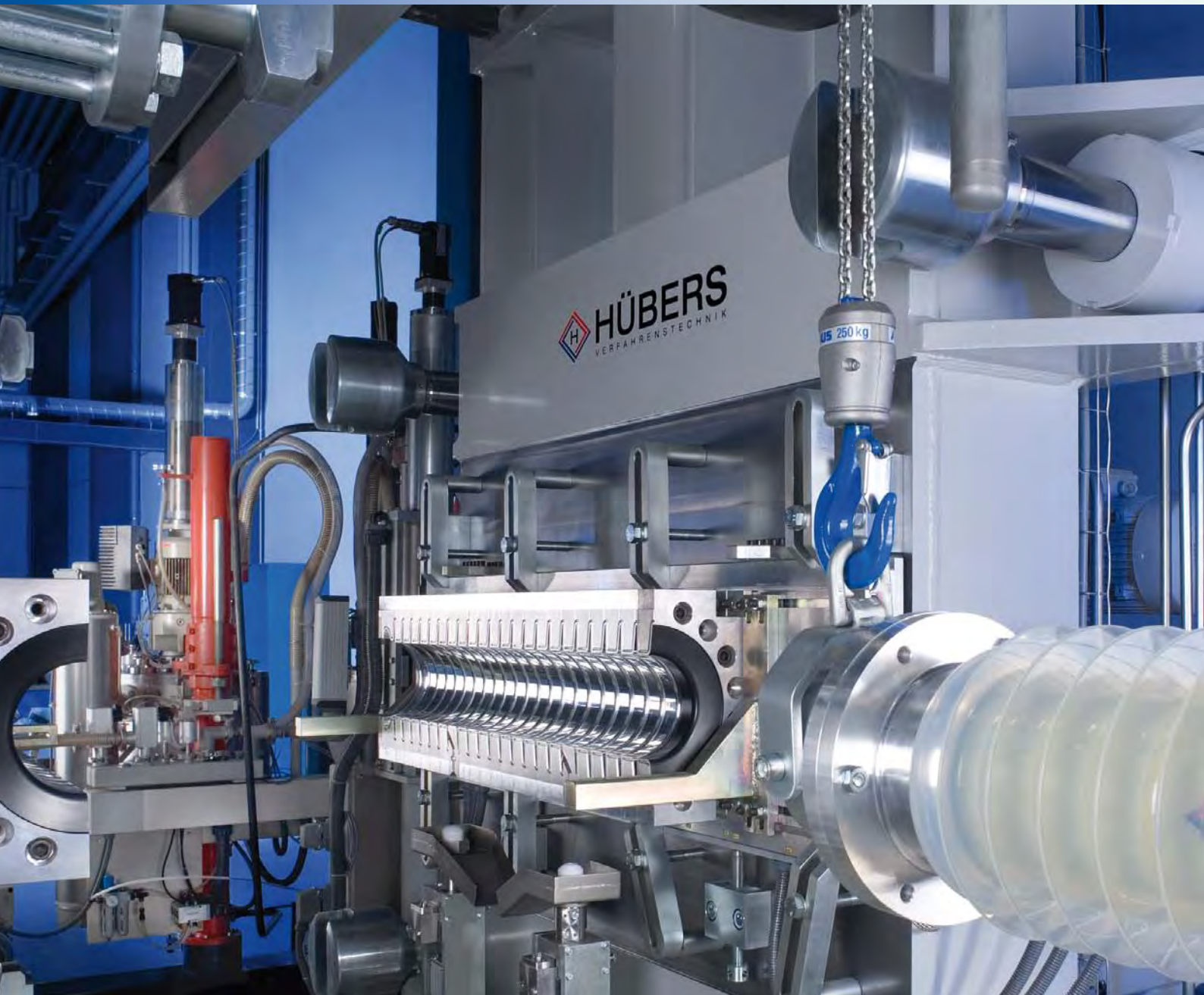
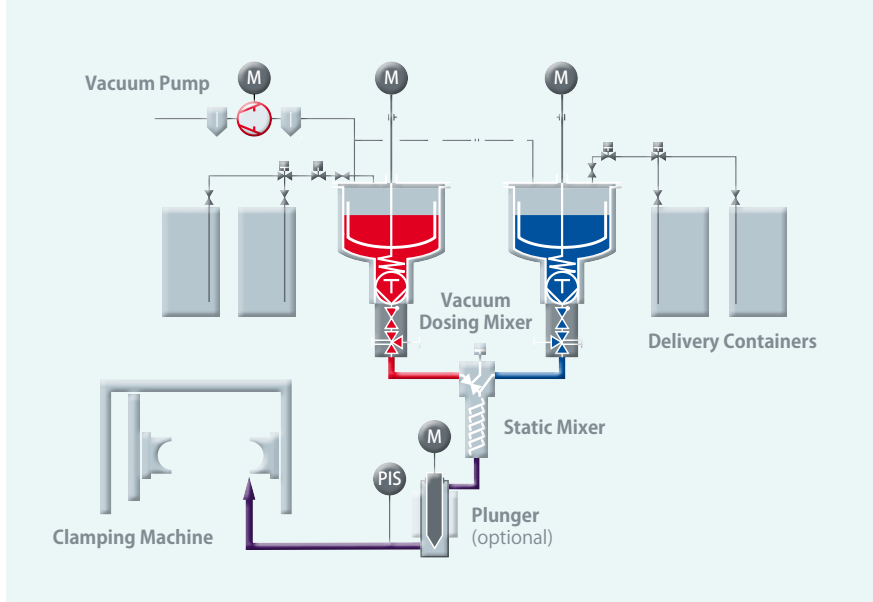


SVT® Systems for the Processing of LSR and RTV Silicones



 **SVT**®
SILICONE VACUUM TREATMENT

 **HÜBERS**



SVT® – Assured Quality for Your Products

Air voids and cavities in electrical components represent very significant problems. They reduce the life of the components, but above all they mean shortcomings in terms of their functionality, because they reduce the dielectric strength and thus the insulating value. In most cases, the main cause of bubbles and cavities is the air contained in the casting materials.

In the manufacture of components intended for higher voltages and field loads, almost all current insulating materials are degassed before being processed. Yet silicones are often still processed without pre-degassing. In most cases barrel pump systems are used to feed silicone directly from the delivery containers into the mixing and casting process. Instead of degassing, attempts are made to crush the air bubbles in the material during molding. However, this is only partially successful, since the air remains in the material – products free of defects and bubbles are therefore a lucky hit, and the rejection rates are high.

The Silicone Vacuum Treatment SVT® developed by HÜBERS ensures that the components are absolutely free of voids and cavities. Due to the thorough degassing of the material components, bubbles are already prevented during material preparation.

 **SVT**[®]
SILICONE VACUUM TREATMENT

The Process

The material components are sucked into separate preparation mixers and degassed under vacuum.

- Therefore, the use of all types and sizes of delivery containers is possible. Even dented barrels can be used.
- The filling of the mixer vessels and the treatment and degassing of the material takes place continuously. The vessels remain continuously under vacuum. There is no limit to the filling quantity of the parts to be produced.
- For particularly high material throughputs several delivery containers can be coupled for each component in order to avoid production interruptions by changing containers.

Optionally, the material can already be pre-heated in the mixer vessels.

- Thereby the cycle time in the mold is shortened.
- The expansion of the material in the hot mold is reduced and thus the inner pressure on the mold is greatly reduced.

Dosing pumps control the flow of the material into the mold via a static mixer. The filling of the mold and the subsequent vulcanisation of the material is carried out under low pressure.

- The required clamping forces are much lower. Depending on the application, a clamping machine can even be completely omitted.
- Specially configured venting channels in the mold prevent the re-accumulation of air in the material. Optionally, the air in the mold can be evacuated in order to ensure a complete filling even with complex geometric shapes.

The pressure control in the mold is achieved via the dosing pumps. Optionally, a plunger can be used between the static mixer and the mold.

- This allows a continuous filling of the mold even in very large quantities and an even more precise regulation of the pressure in the mold.
- The use of plungers also allows the central material supply of several molding stations with only one mixing and dosing system.



Lower Pressure – Lower Costs

Compared to methods without pre-degassing of the material, SVT® offers a very high quality of manufactured products as well as a significant advantage in production costs.

In processes without pre-degassing, very high pressures must be applied in the mold to crush the existing bubbles. Pressures of more than 200 bar are possible. On the one hand this requires large clamping forces and the use of steel molds, and on the other hand even more pronounced cast skins („flash“) emerge due to the high pressure between the mold halves.

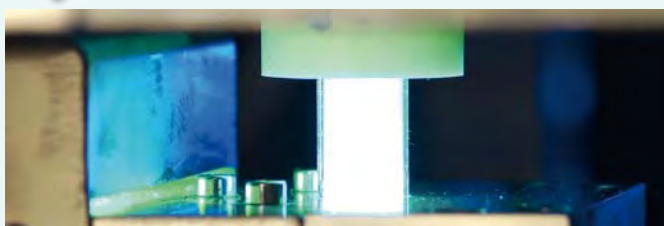
With the SVT® method 2 to 6 bar in the mold is sufficient, thereby enabling the use of aluminum molds and avoiding the formation of cast skins almost completely.

Use of Aluminum Instead of Steel Molds

- lower price (lower material costs and easier machining)
- simple electrical heating instead of complex water heating

Avoidance of „Flash“

- elimination of manual refinishing for the removal of the cast skins from the finished parts
- no loss of material during molding



Another innovation of HÜBERS is the procedure for the **processing of UV-silicones**. In this case the material is exposed to UV light and thereby activated before the injection into the mold. After activation, the vulcanization of these special silicones is greatly accelerated. For certain components the cycle times in the form could be reduced by up to 65% .





The **product range of HÜBERS** for the production of silicone components with the SVT® method covers the entire process chain:

- preparation, mixing and dosing systems
- clamping machines
- molds

Examples of products which can be manufactured with the SVT®-process

- hollow core insulators
- long-rod insulators
- reclosers
- supporting insulators
- surge arresters
- sensors
- power semiconductors
- cable accessories



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