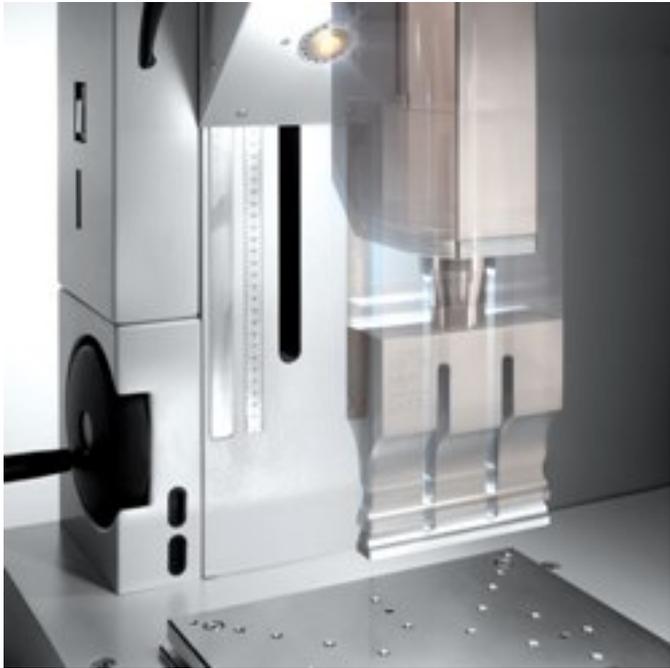


Ultrasonic Welding of Thermoplastics



Herrmann Ultrasonics has been setting technical benchmarks in the ultrasonic welding of thermoplastics for 50 years. The company developed a completely new generation of machines – flexible and energy-efficient. Because every welding application is different, the HiQ line adapts to all requirements with modular flexibility.

Ultrasonic welding of plastics is an intricate task. Each application is different and places different requirements on the complex interplay of factors. Acoustic waves – or ultrasound – are converted into mechanical vibrations to generate molecular heat. The weld process is controlled by sophisticated control software and must be adapted to the geometry and condition of the welded parts, which are made from amorphous or semi-crystalline polymers. Each welding tool, the sonotrode, is unique, as it is adapted to the application at hand.

The new HiQ generation of machines from Herrmann Ultrasonics adapts perfectly to this complexity. The product line addresses various customer requirements like never before and clients will find the right machine to suit their application, market and budget. Thanks to intelligent output and equipment classifications the HiQ offers a wealth of options and variants in both the machine environment and the software. Users can now configure welding applications in a more targeted and individual manner. Every one of the new HiQ machines satisfies Herrmann's defined standard of reproducible high-quality welding with a stable and robust machine.

Ultrasonic welding uses 75% less energy than other thermal joining processes. This is due to the fact that the welding tools remain cold and have a low energy requirement. The ultrasonic vibrations are specifically applied to the joint area for only a matter of milliseconds during welding. Our new, redesigned and smallest

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ultrasonic generator works with an extremely high degree of efficiency (over 80 %) when powered with up to 6000W. The new HMC (Hybrid Motion Control) flexible drive concept (on DIALOG) helps the user realize faster production.

HiQ DIALOG: Force profiling with four weld forces, extended memory and weld process graphics. The 1000 weld memories each store 300 welds, including all the relevant graphics – making full use of historical monitoring. The new force profiling feature makes it possible to achieve the strongest joints for the most demanding applications. In the user interface, the EasySelect mode eliminates all but the most important primary functions for better usability. The user can revert to expert mode, with all functions activated, at the touch of a button. With the new QCS (Quick Change System, no tools needed), the ultrasonic stack can be mounted without the need for hand tools.

HiQ VARIO: Proven proportional valve technology and digital high-performance generators. A range of pneumatic drive units with various stroke and cylinder diameters are available, all of which feature Herrmann's proven proportional valve technology. Graphic visualization of the joining process aid the operator when programming process parameters and recording quality during production. When selecting a generator, users can choose between 3 frequencies and several power outputs up to 6000 W. Standard equipment includes multiple USB high speed interfaces, printer and Ethernet connections.

HiQ LOGIC: Even in the entry-level class, a travel measuring system and proportional valve technology form part of the basic equipment. A password protection feature and volume counter also come as standard, as do the five operating modes: time, power, energy, depth RPN and absolute distance. A clear 5.7" touch screen allows the operator to parameterize and check the weld process with ease. The universal structure of the operator interface makes it extremely easy to switch to all other Herrmann Ultrasonics welding machines.

HiQ SOLID: The essentials are simple. This machine is characterized by its simplicity yet does not compromise on Herrmann Ultrasonics proven standards. Proportional valve technology and digital high-performance generators are included in every machine. A solid machine concept with precision guiding and proven drive components lay the foundation for quality and reproducible welding. Depending on the application, Herrmann Ultrasonics offers two choices for this machine type. STE is the basic model, which features two welding modes, Time and Energy. There is also the optional SDM component with additional distance modes for improved monitoring of weld process.

VE SLIM LINE: Actuator Systems that fit. One of the features of the new VE SLIM LINE series is the smallest, most powerful generator on the market. The generator output is available with up to 6000W. The actuator widths are extremely narrow and the electronics were designed for an easy integration in electrical cabinets. The VE SLIM LINE VARIO is equipped with a compact 5.7" color touchscreen controller and data acquisition for all critical weld parameters is possible.

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