Catheter Manufacturing With Ultrasonic Welder

The manufacture of catheters and introducers present several challenges due to their shape and long length. Herrmann Ultrasonics has developed a uniquely configured, semi automated machine, to meet the challenges of ultrasonic welding this particular type of medical product.
A tall rotary table is used to fixture the catheters upright, so that they hang from a small dial indexing plate. The machine has a small footprint 800 x 900 mm, and can be operated by a single individual.

The load and unload are accomplished at the operator station. The operator loads the parts to be assembled in a fixture. The introducer hub nests in the fixture with the rest of the part hanging down. The dial plate rotates to the weld station where the cap is ultrasonically welded onto the hub.

The welding station includes a 1,000 watt, 35 kHz, Herrmann Ultrasonics DIALOG digital control ultrasonic welder, which is ideally suited for medical device assembly. Built in to the 12 in. color touch screen controller is an industrial computer, running Windows XP, which facilities the welding process control. All welding processes are electronically controlled and programmed through the DIALOG controller.

Users have the choice to collect weld data through an Ethernet, USB, or serial port. Standard software for data acquisition can be used, or DATARecorder from Herrmann Ultrasonics can be integrated. Another optional software package is the

FDA Systems Component (FSC), which is an application containing the necessary technical requirements for the welding validation to be compliant to 21 CFR part 11.

The optional subsequent station on the dial plate places a precisely measured amount of lubricant into the hub, and the finished assembly is rotated around to the operator for unload.

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