

DATA SHEET

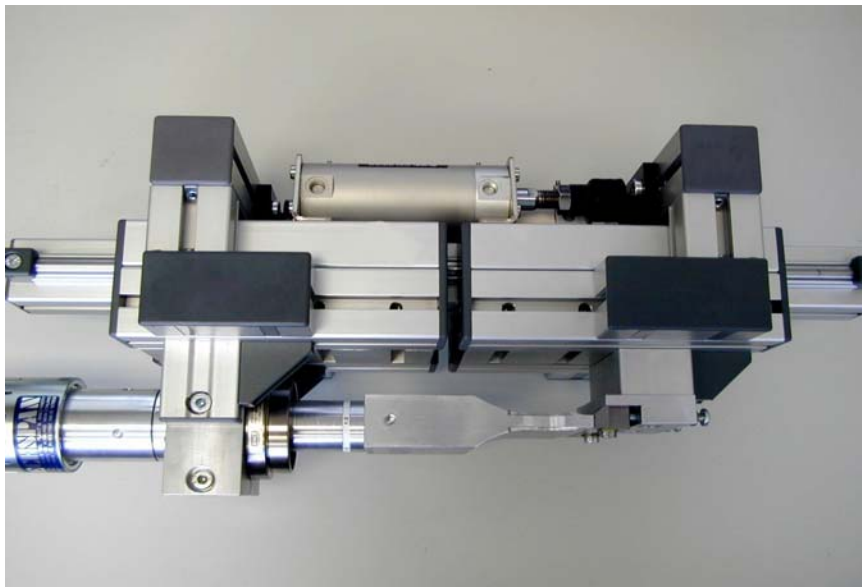
ULTRASONIC TUBE WELDER

Ultrasonic systems for welding plastic and laminate tubes

Modular system with all equipment for installation into new or existing tube filling machines

Ultrasonic components for building into self-engineered equipment.

Integrated alpha/numeric coding or contactless Inkjet coding system.



Techspan TTS35 Ultrasonic Tube Sealer

The Ultrasonic Welding Process

Ultrasonic technology is a proven and reliable method of welding thermoplastics. Our ultrasonic generators are proven in the field for 25 years. The ultrasound generator system generates the ultrasonic frequency. This is then converted from electrical to mechanical energy by the ultrasonic converter. The ultrasonic energy is then amplified through a tuned 'Booster' which in turn is transmitted to the sonotrode or Horn. The Sonotrode is a precision tuned acoustic tool, which applies the ultrasonic energy directly to the tubes. The ultrasonics travels through the tube material to the material interface, at which point the ultrasonic energy melts the thermoplastic and the two faces are welded together. During the welding cycle, the Sonotrode is moved towards the plastic or laminate tube, against an opposing Anvil. The ultrasound

is triggered, followed by a short "hold" time to allow the welded material to cool. High quality materials ensure reliability and the longest possible tool life.

High Speed

The ultrasonic process is very fast - with weld times usually less than one second, depending on the size of the tube and on the material. There is no warm up time, and the tubes can be welded instantly - on demand. Laminate and plastic tubes can be welded. Most product residue and contaminants from the filling process are instantly dispersed from the weld area by the ultrasonics. Techspan ultrasonic tube welding systems incorporate state-of-the-art solid state ultrasonic generators with microprocessor control.

Energy Efficient

Techspan ultrasonic tube welding systems are energy efficient. Power is only consumed during the actual welding of the tube, and power consumption between welds is

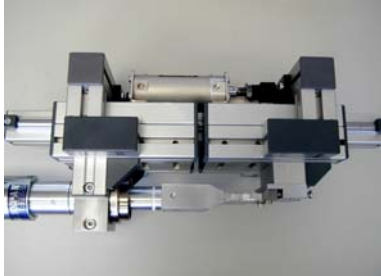
negligible. The process does not use direct heat, high frequency, hot air or other energy hungry processes. Because the ultrasonic welding process is essentially a "cool" process, with no warm up time, tubes can be welded intermittently, without inconsistency problems due to temperature variations.

Compact

Techspan ultrasonic actuators and generators require minimal space, and can be fitted to most tube filling machines. An optional stand, with dual safety start buttons and emergency stop is available for manual stand-alone operation. For machine builders, we also supply individual ultrasonic components and tooling for custom applications.

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SPECIFICATIONS



TTS35-900

Application:	Collapsible Tubes, laminate or plastic
Actuator:	Techspan TTS35
Stroke:	2 x 50mm
Converter:	C35-10, 35kHz
Booster:	Rigid mount, 1:1.5
Sonotrode:	Special Aluminium Alloy Precision tuned 90 x 7.5mm fine knurl
Anvil:	Tool Steel 90 x 7.5mm fine knurl
Coding:	Optional: Integrated alpha/numeric 2.0 x 2.0mm up to 14 x Optional: Contactless inkjet
Weld Area:	90mm x 7.5mm (max.)
Generator:	RL35 Weld-Time and Hold-Time adjustable in milliseconds
Power:	900 Watts.
Frequency:	35.0 kHz.
Electric:	230V / 1ph / 50Hz
Air:	5 bar clean dry air

The TTS35-900 Ultrasonic Actuator is designed for welding laminate or plastic squeeze tubes. The RL35 solid-state ultrasonic generator provides a simple user-friendly operator interface. The SL35 microprocessor generator provides advanced features.



Welded laminate tubes



Specially designed Tube-Seal Sonotrode



Tube-Seal Anvil with integrated coding

Techspan tube sealing equipment incorporates proven high quality ultrasonic systems and precision engineering. Our precision tuned acoustic tooling is manufactured from special high grade alloys for ultimate reliability and wear resistance. Laminate and plastic collapsible tubes can be welded. Standard weld pattern is a fine diamond knurl. Other patterns can be supplied as an option. We offer a choice of coding systems: coding in the weld area, with easily changeable hard codes (alpha/numeric); or a fully programmable non-contact inkjet system.

Further information is available from www.techspanonline.com.



Finished seal with fine knurl pattern



RL35 35kHz 900W solid state ultrasonic generator is standard equipment with our ultrasonic tube sealing systems.



Optional SL35 microprocessor ultrasonic generator with LCD display and on-screen amplitude adjustment.

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