

The sterile tube fuser ReeWelder® is a fully automated and validated device for connecting thermoplastic tubing in a sterile welding operation without the need of a laminar flow cabinet

ReeWelder® 3

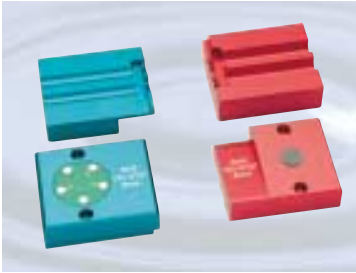
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Innovations in Biotechnology!

There are various ways to connect thermoplastic tubes in a sterile manner

One of the most efficient and economical is the ReeWelder® 3



Different interchangeable **holders** for each diameter allow a quick and easy exchange. The unit identifies each holder on an implemented chip. Holders are available for 1/4", 5/16", 3/8", 7/16", 1/2", 5/8" and 3/4" with standard parameters for C-flex®, Bioprene® and Pharmed®, customer specific hoses and customised diameters on request



Inserted tubes and blade before the process starts up



LCD-Programming display with keypads



Technical specifications:

- Dimensions 300 x 300 x 220 mm
- Requires 230 VAC / 115 VAC
- Weight 10.5 kg
- Stainless steel housing
- Welding cycle 60 to 90 sec (depending on tube dimension)



Citizen printer

- Inclusive software licence
- printer cable
- AC adapter
- paper roll and ribbon cassette



Rearside: printer interface for easy monitoring and data storing



Disposable cutting-blades:

- single use
- sets of 100 pcs available
- laser point for the duplicate accuracy of the temperature on each blade
- produced from a special alloy for this application

New ReeWelder® 3

The ReeWelder® impresses due to a 50% shorter welding process and handling time in comparing to his fore-runner. The measurement of temperature without contact largely prevents defects at the temperature sensor and therefore increases the safety of operation. The locking mechanism for the tube holders has been replaced by an eccentric lever and is now much more ergonomic. The dimensions of the stainless steel unit have been reduced to 300 x 300 x 220 mm, which offers more possibilities for placing the unit in a narrow room. To simplify recording of welding data, the ReeWelder® 3 is equipped with a printer interface that transmits data after each cycle. To simplify the validation, an optional calibration set is available and can be purchased.

Operating instructions

In this welding process the blade is kept sterile and endotoxin free throughout the whole process in accordance to the reaction equation and the Arrheniussatz through the use of constant time and temperature (Wallhäuser, the D-Value resistance indicator for bacillus subtilis, is less than 1 sec at 200°C dry heat). The inserted hoses will be cut by a blade and then fused together through the unit. The total process will take place under sterile conditions. The cycling process is completely automated and will only be released after a completed cycle.



Insert a new blade and the tubing to be connected into the ReeWelder®, close cover and the process will start

The hot blade cuts the tubing and the cut ends are held against the hot (200+°C) blade

The machine slides the cut tubing into alignment along the hot blade ensuring a sterile operation

The blade moves out and the tubing ends are fused together to form a welded connection

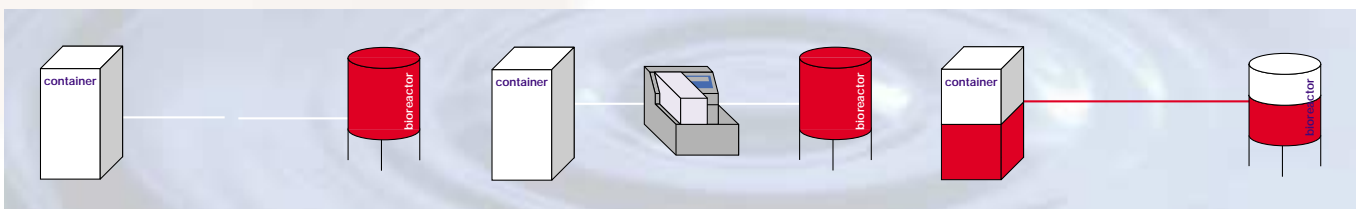
Adaptable hose sizes

Flow rate (l/min)	ID	OD
0.5	1/8" (3.2mm)	1/4" (6.4mm)
1.1	3/16" (4.8mm)	5/16" (8.0mm)
1.5	1/4" (6.4mm)	3/8" (9.5mm)
1.9	5/16" (8.0mm)	7/16" (11.1mm)
2.7	3/8" (9.5mm)	1/2" (12.7mm)
3.5	3/8" (9.5mm)	5/8" (15.9mm)
5.3	1/2" (12.7mm)	3/4" (19.0mm)

Large diameter tubing greatly increases the maximum flowrate that can be achieved making transfers of large volumes much quicker. The table shows the typical flowrates possible with a peristaltic pump using tubing from 1/4" to 3/4" OD.

Flow rates are approximate – calculated at:
0 psig inlet, 0.5 psig outlet; water @ 20°C

Typical application



The ReeWelder® 3 can connect bags, media tanks and process equipment in minutes

Anywhere on the process floor.
No laminar flow cabinet is needed

The sterile connection is ready for immediate use. The large 3/4" OD tubing capability enables the rapid transfer of hundreds of liters

Wave Biotech AG – the company

The economic alternative in bioprocess technology

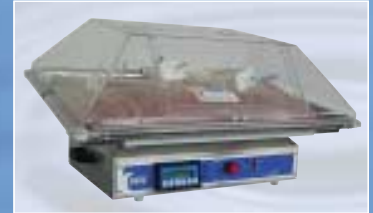
Wave Biotech AG, Switzerland, has proved itself to be a reliable partner for product formation and liquid handling systems for the pharmaceutical and biotech industries within the context of the global trend towards the "disposable lab".

Founded in Switzerland in 1999, the company manufactures and designs the worldwide established disposable BioWave® based on wave agitation. Savings in investment, time and manpower, the revolutionary innovation fully meets the specific requirements of biotech laboratories.

We provide comprehensive support from equipment set-up to validation, as well as in-house equipment servicing. Our close collaboration with universities and industry partners enables us to adapt and further develop our products to reflect new or customer-specific requirements. With the opening of our new building in February 2003 our range of services has been expanded with manufacturing capabilities in a cleanroom class of 10'000 as well as fully equipped laboratories for internal tests.

Cleanroom

Using our own manufacturing facilities in a class 10,000 and 100,000 cleanroom, we design and produce standard, prototypes and customer-specific Wave Bags® in all sizes and models. To enable us to achieve the highest quality standards, special welding equipment is available, as well as a modern cutting plotter.



Further information also available at: www.reewelder.com

Distributed in:
Europe, India, Malaysia, USA



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Make permanent and
consistent leak free seals
using thermoplastic tubing.



ReeSealer®

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The **ReeSealer®** is a fully automated device, designed to make permanent and consistent leak free seals using thermoplastic tubing. There is no laminar flow cabinet or similar environmental control device needed to guarantee sterility. The machine is useful to disconnect tubing between process containers and equipment or simply sealing tubes, of single use bags. The unit is sealing up to 19 mm or 3/4" OD tubing, enabling the easy handling to disconnect thermoplastic tubing such as C-Flex®, Sani Pure® and Pharmed® with the for the specific tube quality adjusted programs. Major uses are in bio processing and aseptic pharmaceutical applications.

Principle of operation:

The ReeSealer® is used to seal a leak free section in between a thermoplastic tubing so that the sealed section can be disconnected with scissors by cutting through the middle. The resulting two tubing pieces are sterile and permanent sealed.

The tube will be compressed and heated between two ceramic heating elements. The heat and the compression force will fuse the tube to a homogeneous section. The temperature used for the fusing process will be 120°C – 160°C during 10 to 40 sec, depending on size and tubing quality.

Technical specifications:

- Dimensions 220 x 150 x 210 mm
- Requires 230 / 115 VAC
- Weight 3.0kg
- Stainless steel housing
- Aluminum anodised compression head
- Tubing types: Soft thermoplastics, as C-Flex®, Pharmed® or SaniPure®
- Ingress protection rating: IP42
- CE certified

Handling:

Simply insert the empty or liquid filled hose into the compression head. Close the head with the excenter bar. The liquid will be evacuated from the internal tube section. The ReeSealer is now ready for the automated sealing process. The full sealing process (heating and cooling) will take one to three minutes, depending on tube size and quality.

Sealable dimensions and types:

Two units for different wall thickness are available

- wall 1.6 mm to 2.4 mm with hose OD up to 11.1 mm (7/16")
- wall 3.2 mm with hose OD 12.7 mm to 19 mm (1/2" to 3/4")

Programmable for all thermoplastic tubings (such as C-flex®, SaniPure®, Pharmed®...)

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