



**iSONIC ECO**  
Standard machine  
with pneumatic drive

# iSONIC ECO: intelligent welding

The standard machine for universal use

The iSONIC ECO standard machine gives ultrasonic welding a new dimension: it combines high-performance ultrasonic components with high-quality construction and up-to-date control solutions. Compared with its predecessors the functionality of the iSONIC ECO has been improved and handling simplified.

A persuasive argument in favor of the iSONIC ECO is its intuitive operation and user guidance. Even without expert knowledge and in-depth training, the user will be able to achieve top-quality welding results across a wide range of different components.

In the iSONIC ECO, SONOTRONIC is offering a brilliant all-round solution from amongst pneumatic welding machines. It guarantees extremely good production reliability and quality and pays for itself within a short period of time.

## Pneumatic features

- Compressed air conditioning using automatic condensate separator and analogue pressure monitoring
- Proportional directional valves for precise welding force control
- Two-channel safety valve to prevent inadvertent start-up and reversal of movement
- Integral trigger sensor for referencing
- Depth measuring system using magnetic tape length measuring system
- Welding head designed as a compact pneumatic feed unit

## Mechanical features

- Welding head with adjustable, mechanical end stop
- Workpiece clamping plate designed as a swivelling plate, for rapidly establishing plane parallelism from pick-up to sonotrode
- Rigid, powder-coated column housing made from special cast aluminum (RAL 9022), switch cabinet module (RAL 7035)

## Advantages

- Ultrasonic welding, sealing, cutting, stamping, riveting and embossing of thermoplastics
- Universal applications in all industries
- Intuitive touchscreen control
- Possible to exchange ultrasonic components and change application frequencies
- Extremely high degree of process reliability and quality

## iSONIC ECO

- 1 Rigid column housing
- 2 Height adjustable feed unit with ultrasonic welding stack
- 3 Holding tool (application specific)
- 4 Clamping plate
- 5 Ergonomic 2-handed control
- 6 Switch cabinet
- 7 Touchscreen control
- 8 ON/OFF control switch
- 9 USB 2.0 interface (for data import/export)
- 10 Slot for extensions





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# iSONIC ECO: Operation and control

Many functions for optimum welding results and  
user-friendly operation via touchscreen

The iSONIC ECO has various operating modes and monitoring functions, which make it a reliable all-rounder amongst pneumatic welding machines. All operating modes can be simply monitored by inputting min. or max. values. The “amplitude”, “welding force” and “feed rate” parameters can likewise be set at the control panel. Control of the new iSONIC ECO ultrasonic standard machine is intelligently incorporated into the control concept.

## Basic operating modes

- **Time welding**  
Welding to a defined preset time
- **Absolute path**  
Welding to a defined size
- **Relative path**  
Welding a relative preset path once a triggered reference point is reached
- **Energy**  
Welding to an energy value firmly determined in advance

## Selectable options

- **Pre-ultrasonics**  
Approach part whilst oscillating
- **Post-ultrasonics**  
Retract part whilst oscillating
- **Pre-joining**  
Pre-joining without application of ultrasonics
- **Contact shut-off (with additional equipment)**  
Welding shut-off on contact with metal

## Monitoring functions

- **Time welding**  
energy and path monitoring
- **Path welding**  
energy and time monitoring
- **Energy welding**  
path and time monitoring

## Machine mode

- Password-protected user levels (operator / setter)

## Special setting mode function for convenient setting

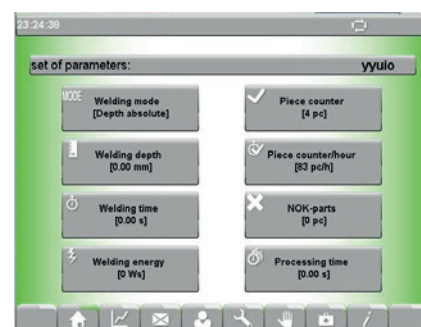
- Program for machine aided tool parameterization
- Automatic calibration function for tool changes: the setter is guided through the process by plain text instructions
- Optional teaching of the relevant welding parameter using the two-hand buttons

## Process control features

- Automatic frequency tuning to each welding stack used (no frequency teaching required)
- Automatic frequency tuning before starting each weld
- Automatic amplitude stabilization throughout the operation
- Operating modes: Setting and automatic mode (password protection >> user level)
- “Welding force”, “amplitude”, “time”, “welding depth” and “monitoring value” parameters input via the touchscreen display
- Data storage for 100 freely nameable parameter sets
- Data output via Ethernet and USB interfaces
- Permanent monitoring of work process with fault abort

## Technical features of machine control

- Operation and display via 7“ VGA color touchscreen with integral PC (256 MB, DRAM 232 kB SRAM)
- 1 RJ-45-Ethernet connection 10/100MBit
- 1 RJ-45-POWERLINK connection 10/100MBit
- 1 Interface slot for the maintenance of the field bus
- 2 USB interfaces
- Two hand safety start
- Emergency stop button
- Safety control via X20 save module
- Connection of safety signals via distributed X20 save module
- Distributed digital and analogue X20 I/O modules
- Open control concept that can be expanded (by digital and analogue I/O modules) at any time via distributed bus coupler
- Language selection





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# Technical data and intelligent accessories

Practical accessories to meet every requirement

Technical data				
Type / operating frequencies* [kHz]	20		30	35
Output [W]	1,000 / 1,500 / 2,000	3,000 / 4,000	2,000	400 / 800 / 1,200
Electrical connection [V AC]	230 + PE	3 x 400 + N + PE	230 + PE	230 + PE
Mains frequency [Hz]	50	50	50	50
Power consumption [A]	4.3 / 6.5 / 8.7	4.3 / 5.7	8.7	1.7 / 3.5 / 5.2
Short circuit current [kA]	2.9			
Compressed air connection [bar]	8			
Welding force [N]	150 – 1,646 / 2,464		100 – 498	100 – 498
Welding head operating stroke [mm]	100			
Height adjustment of welding unit [mm]	200			
Clamping plate [mm]	300 x 300 x 12			
Weight [kg]	130			
Dimensions (WxHxD) [mm]	650 x 1.200 x 770			

Subject to technical modifications.

\*Optional resetting of operating frequencies by exchanging ultrasonic components

## Acoustic protection hood



## Film feed unit



## Sliding table



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