

Standard Machines

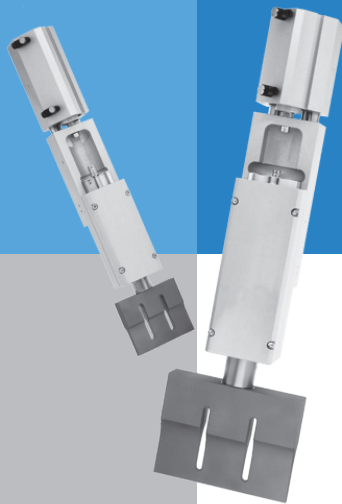
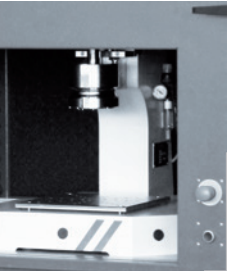
Ultrasonic Welders

Microprocessor Controllers

Actuators

Handheld Ultrasonic Welding Guns

Ultrasonic Generators



SONOTRONIC
ULTRASONICS TECHNOLOGY

Ultrasonic Welders Type ECO 35 and ECO 20

The standard machines for universal use

The ECO 35 and ECO 20 standard machines are universally outstanding for joining and separating thermoplastics.

The particularly robust design of our ultrasonic welders prevents the machines from bending under high working pressures and maintains a uniform contact between the sonotrode and the work-piece surface. The guide carriage for lifting motion is pneumatically driven and runs along a precision roller guide, which guarantees optimum precision and long life.

Applications:

- Ultrasonic welding, ultrasonic cutting, ultrasonic punching, ultrasonic riveting and ultrasonic embossing
- Thermoplastics
- Ranges of application in all sectors

Characteristics and advantages:

- Very long life
- No machine bending owing to great mechanical strength
- Even contact between the sonotrode and the work-piece

- Fast retooling as a result of:
 - Split converter fixture
 - Adjustable mechanical stop
 - Electronic depth sensor
 - Digital depth measurement system with glass scale
 - Rocking table with central ball
- Tried and tested microprocessor controllers Type STG 150 and STG 200
- Can be integrated in an acoustic protection booth

Technical data:

Type	ECO 35	ECO 20
Frequency [kHz]	35	20
Stroke [mm]	80	100
Force [N]	70-700	170-1700
Tool clamping surface [mm]	250 x 250	300 x 300
Height adjustment [mm]	95	200
Compressed air max. [bar]	10	10
Ultrasonic output [W]	400-1200	1000-4000
Approved two-hand safety relay	+	+
Dimensions (W x H x D) [mm]	310 x 425 x 830	370 x 520 x 1050
Weight [kg]	ca. 38	ca. 60
Colour (structural paint)	RAL 5009 + 7035	RAL 5009 + 7035



Microprocessor Controllers Type STG 150 and STG 200

Process monitoring for maximum reliability



Our STG 150 and STG 200 microprocessor controllers monitor the ultrasonic welding process for maximum safety.

Many functions of the STG 150 and STG 200 systems can be monitored, in order to provide safe operation. If these safety measures are breached,

the welding process will be immediately stopped. A corresponding error message in plain text will also be displayed for rapid removal of the cause of the fault.

Applications:

- As microprocessor controllers for the ultrasonic welders type ECO 35 and ECO 20

Characteristics and advantages:

- Operating modes: Setting up and automatic
- Locking of the automatic operating mode by key switch
- Interruption of the working process in the event of a fault detected by the constant monitoring

Technical data:

Function	STG 150	STG 200
Menu assisted input	+	+
Plain text dialogue	+	+
Machine setup (up/down)	+	+
Frequency display	+	+
Generator monitoring	+	+
Sensor monitoring	+	+
Adjustable welding time	+	+
Adjustable hold time	+	+
Part counter with automatic stop	+	+
Ultrasonic depth cut-out	+	+
Ultrasonic time cut-out	+	+
Ultrasonic position cut-out	-	+
Glass scale	-	+
Setting the working pressure	manually	control valve
Trigger pressure adjustment	-	+
Energy monitoring and shut-off (with generator type ...)	...MD	...MD
Logging (printer or PC)	-	+
Date/time	-	+
Data memory	5	20

Actuators Type VE 35 and VE 20

The versatile ones for special machine building



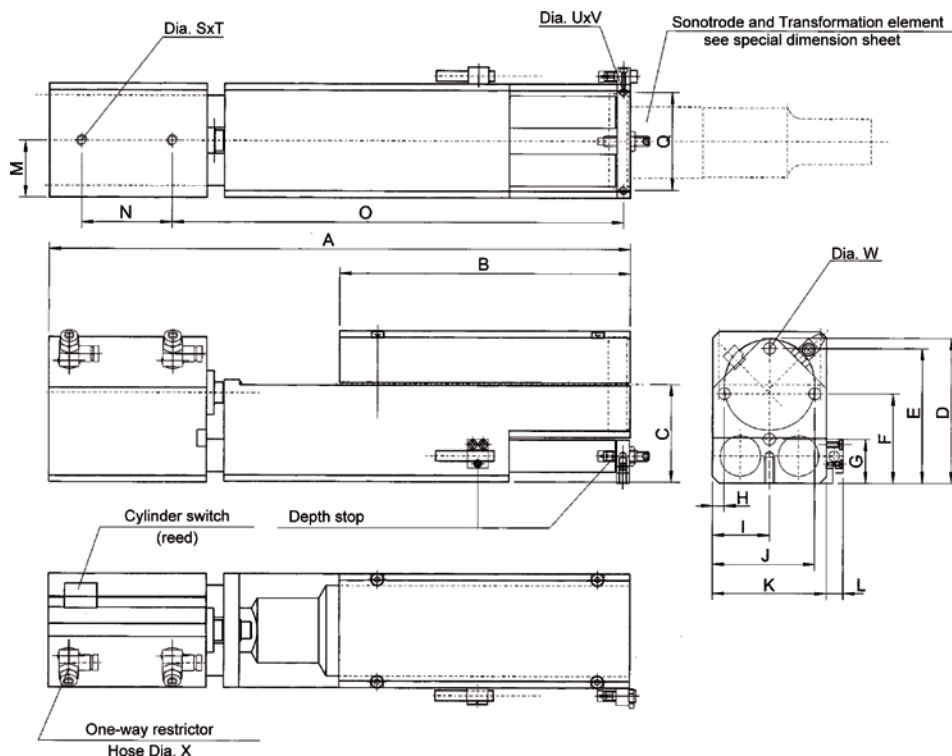
The type VE 35 and VE 20 actuators are mainly used for special machine building. Outstanding finish and precision guides are the criteria for their longevity. The actuators can easily be integrated for various applications into existing machine concepts.

Applications:

- Ultrasonic welding, ultrasonic cutting, ultrasonic punching, ultrasonic riveting and ultrasonic embossing for special machine building

Characteristics and advantages:

- Depth cut-out through an inductive depth switch or analogue metering system
- Limit position scan using reed switch with LED
- Max. operating pressure of 10 bar
- Piston with magnetic ring
- Hardened guide shafts
- Ball feed bushes
- Anodized housing (natural aluminium)



	VE 35					VE 20	
Cyl.-Ø	32					50	63
Stroke ^a	40	60	80	100	125	80	100
A	315	335	335	375	400	449	572
B	130	130	130	130	130	224,5	245
C	49,5	49,5	49,5	49,5	49,5	75,5	75,5
D	75,5	75,5	75,5	75,5	75,5	114	114
E	65	65	65	65	65	104	-
F	42,5	42,5	42,5	42,5	42,5	69	69
G	20	20	20	20	20	34	27
H	6,5	6,5	6,5	6,5	6,5	9	8
I	29	29	29	29	29	44	51
J	51,5	51,5	51,5	51,5	51,5	79	94
K	58	58	58	58	58	88	102

	VE 35					VE 20	
Cyl.-Ø	32					50	63
Stroke ^a	40	60	80	100	125	80	100
L	13	13	13	13	13	13	13
M	29	29	29	29	29	44	44
N	60	60	60	60	60	70	77
O	196	216	236	256	281	348	457
Q	46	46	46	46	46	76	76
S	M6	M6	M6	M6	M6	M8	M8
T	20	20	20	20	20	20	30
U	M6	M6	M6	M6	M6	M6	M6
V	15	15	15	15	15	15	15
W	6,4	6,4	6,4	6,4	6,4	9	9
X	4	4	4	4	4	6	10

Handheld Ultrasonic Welding Guns Type DNP

The handy ones for mobile welding applications

Our practical DNP handheld ultrasonic welding guns enable mobile welding for single applications. They are convincing because of the outstanding practical handling and solid welding results.

Applications:

- Mainly ultrasonic welding, ultrasonic riveting, ultrasonic punching and ultrasonic cutting of thermoplastics
- Small series, manual work stations, repairs and finishing operations

Characteristics and advantages:

- Rapid sonotrode exchange without the need to dismantle the converters.

- Ergonomic design:
 - High quality aluminium housing
 - Dirt repellent and scratch proof powder-coating
 - High frequency and control cable to the ultrasound generator are in a strong and highly flexible braided plastic sheath
- A rigid type, heavy-duty converter with a four-fold piezo ceramic stack on a titanium base and strong stainless steel housing.
- Option: Timer-controlled air cooling
- Matching DN 35 M high-quality ultrasonic generators with a power range from 400 to 1200 W.



Technical data:

Type	DNP
Frequency [kHz]	35
Power [W]	400-1200
Weight of the welding gun [kg]	ca. 0,95
Weight of the generator with housing [kg]	6,5

Ultrasonic Generators Type DN 35 M/MD and DN 20 M/MD

Generator modules for individual machine concepts



The DN 35 M/MD and DN 20 M/MD ultrasonic generators in the power range from 400 to 4000 W are designed for the more stringent requirements of high-performance ultrasonic applications. The generators transform energy from the electrical supply network into a high-frequency sinusoidal oscillation of 35 or 20 kHz. Optimum regulating processes generate optimum ultrasonic oscillations. The design of our 19" generator modules (4HE) and our different versions of generator housings enables us to incorporate our generators in practically any machine design.

Applications:

- Generation of ultrasonic frequency for various technologies such as:
 - Welding (thermoplastics, strands, contacts, metals)
 - Punching (thermoplastics, textiles)
 - Cutting (textiles, foods, foils, rubber)
 - Drilling (jewels, drawing dies)
 - Eroding (gems, cameos (glass, stones, jewels))
 - Cleaning, emulsifying, dispersing (in liquids)

Characteristics and advantages:

- Fully automatic ultrasonic generator
- Outstanding performance
- Gentle oscillation build-up of the ultrasonic units by an automatic frequency fine tuning whilst maintaining a constant amplitude
- Automatic frequency tuning
- Amplitude adjustment from 50 % to 100 % on the front panel
 - Binary in 16 steps
 - Analogue with a voltage of 5 to 10 V
- Constant working process as a result of extensive electronic control, monitoring and analysis systems
- Electronic fuses to protect the ultrasonic components against undefined operating conditions
- Operating state diagnosis system:
 - Display of error messages on the front panel, if the machine is not operating within the permitted operating range, e.g. as a result of undervoltage, overload operation, excess temperature or short circuit
 - Simultaneous forwarding of the operating conditions to the 25-pole Sub-D socket on the rear of the generator, for external detection
- Power display of the current generator output

- Analogue outputs at the Sub-D socket:
 - Amplitude output
 - Active power (0-10 V)

Options:

The MD version with LCD display can also be fitted with the following options:

- Timer:
 - A timer incorporated into the generator for defined system-switch off
- Power control:
 - Continuous control of the output power of the generator with immediate system shutdown if the set power limit is exceeded
- Energy:
 - Energy monitoring: energy monitoring according to a pre-defined range for quality control
 - Energy shutdown: generator shutdown once a pre-defined energy value is reached
- RS485 Serial interface:
 - Transfer of all default input parameters to the generator and retrieving the actual values from the generator
- Profibus (DP):
 - Complete remote control via profibus
 - Transfer of all default input parameters to the generator and retrieving the actual values from the generator
 - Adjustable address range from 1 to 126, automatic baud rate recognition up to 12 MBaud
 - Facility to change the amplitude even during ultrasound emission

Warning:

This is a class A device and determined for industrial use. It may cause radio interference in a living area.



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