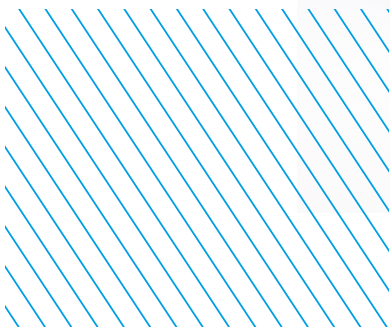


ULTRASONIC WELDING & CUTTING FOR INDUSTRY





The generators and transducers developed by SinapTec are today distributed worldwide. These have been sophisticated through our experiences with our client's processes to reach their present proven and unmatched levels of performance and reliability."

-
-
- EXPERIENCE
- FLEXIBILITY
- LISTENING TO THE NEEDS

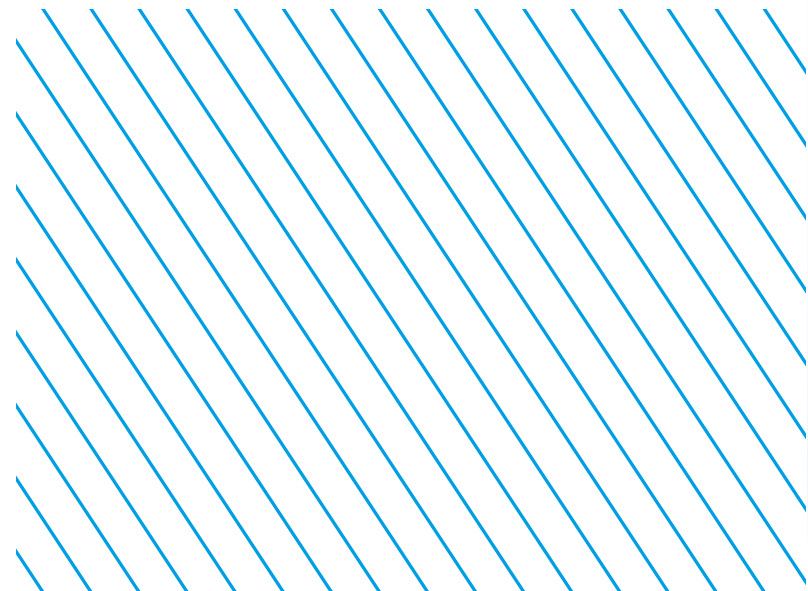
ULTRASONIC WELDING & CUTTING FOR INDUSTRY

- + RESEARCH AND DEVELOPMENT
- PERFORMANCE AND RELIABILITY
- STATE OF THE ART ENGINEERING
- DEMANDING APPLICATIONS
- PATENTED TECHNOLOGY

ULTRASOUNDS AND INDUSTRIES

Our long-time practice acquired in industry, combined with our research on ultrasound production technology, enabled us to develop the patented NexTgen technology.

This technology is the result of the close cooperation between our electronics and software engineers, our ultrasound experts, our customers and partners. Implementation of the latest signal processor technologies and our technicians' daily work to ensure the quality of ultrasonic results enabled optimizing the performances of our products at the highest level.



“ « An excellent understanding of the physical mechanism of ultrasounds, as well as the implementation of equipment in a large number of industrial applications, enable us today to understand multiple market situations and to match your requirements by offering solutions adapted to the industrial environment. » ”

NEXTGEN ULTRASONIC GENERATORS

This innovative equipment delivers the best technology thanks to the integration of a signal processor similar to the kind used in smartphones. Every millisecond, this processor ensures that the energy transferred to the media treated is mastered and realised in the best conditions, whatever its complexity. This equipment offers precision and high reactivity to frequency changes induced by the slightest trial conditions modifications.

The PC board, driven by algorithms developed by our engineers, is all the more reliable and robust. The generator maximum power has been designed for high levels and provides an instantaneous intensity permitting to meet the transducer and probe most important requirements.

“ Connected to the world ”

Our NexTgen technology is part of the world of connected objects. Indeed, it creates an information flow between the generator and the local (or distant) information systems which enables to ensure traceability, the monitoring of the process, preventive maintenance, the reconfiguring of the ultrasonic equipment,...

This technological advance enables our support team to keep direct contact with our customers making possible the remote management of the equipment owing to our software tools. Communication is easily established via field networks or at a distance by an Ethernet connection (Bluetooth connection in certain cases).

OUR KNOW-HOW AND OUR SERVICES

SinapTec's expert teams provide support at every stage of your project. This includes from weldability or materials cutting tests, optimization of ultrasonic processes to guarantee an optimal production rate, advices for integration of the equipment, up to on-site support during the commissioning phase. Cost-effectiveness of processes is always our priority.



- ✓ Feasibility study on client's sample
- ✓ SolidWorks design
- ✓ Finite Elements calculation under COMSOL
- ✓ Prototyping



- ✓ Machining and assembly in our workshops
- ✓ Control and frequency setting
- ✓ Test and validation
- ✓ Product traceability



- ✓ Installation and commissioning
- ✓ Timely intervention and remote maintenance
- ✓ Training
- ✓ After Sale Service



EXPERTISE
PROCESS MASTERING
RAPID INTERVENTION
SAVING TIME AND MONEY

EQUIPMENTS

SinapTec designs, modelizes and produces the transducers and ultrasonic transmitters which perfectly combine with the generators of the NexTgen range.

+ THE GENERATOR



The NexTgen **INSIDE generator** is designed to be integrated in automated production lines and special machines to control ultrasonic converters. Providing power up to 3000W for frequencies from 20 to 65kHz, our NexTgen generators range is designed to meet many industrial needs in the field of welding and cutting.

+ THE CONVERTER

The piezoelectric **converter** (or transducer) transforms the frequency and electrical amplitude into mechanical vibrations of same frequency and proportional amplitude.

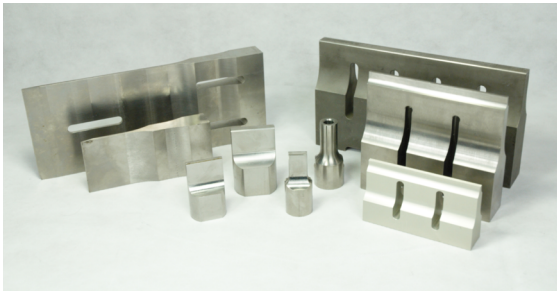


+ THE BOOSTER



The **booster** or amplitude modifier makes it possible to increase or reduce the vibration amplitude produced by the converter. The amplification or reduction of the amplitude is obtained by the means of some design features or to the booster geometric shape.

The **probe** is the active part of the system. It is in contact with the product and acts as a hammer against an anvil (counter-tool). At this point of contact, vibrations involve fibers heating, which are frozen as soon as vibrations stop.



+ THE PROBE

TECHNICAL FEATURES

NexTgen Generators							
Frequency* (kHz)	20 (±1000 Hz)			35 (±1500 Hz)			65 (±2000 Hz)
Power (W)	1000	2000	3000	300	600	1000	30
Supply (V)	230Vac (L, N, PE) / 50-60Hz						24Vdc
Dimensions (L x l x p)(mm)	320x175x100	320x175x160		320x175x100		170x65x70	
Weight (kg)	3,4	4,1		3,4		0,35	
Ethernet / RS485 (Modbus)	●	●	●	●	●	●	○
Analog / digital I/O	●	●	●	●	●	●	—
Default output (relay)	●	●	●	●	●	●	●
Amplitude setpoint	Asnalog or digital						Digital

Ultrasonic converters						
Frequency* (kHz)	20		35		65	
Max. amplitude (µmcc)	30		20		9	
Cover	●		—	●		—
Air input	●		—	●		—
HF cable	Cable gland / RG58 / L=5m	LEMO socket on case	2 silicone cables 0,75mm2 / L=1m	Cable gland / RG58 / L=5m	LEMO socket on case	RG174 / L=1m
Stud	UNF 1/2 - 28mm		M8 - 20mm		M4 - 15mm	

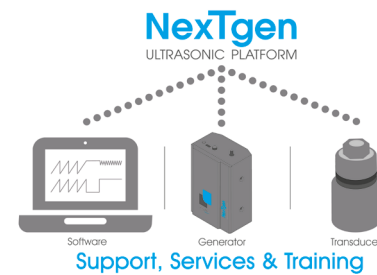
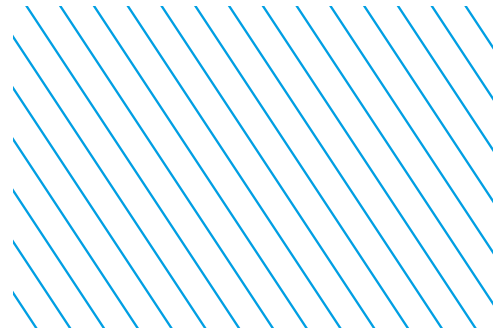
Boosters	
Frequency* (kHz)	20 35
Amplification factor	1:0,5 / 1:1 / 1:1,5 / 1:2 / 1:2,5 / 1:3
Material	Aluminum or titanium
Holding ring	○

Welding probe	
Field of application	Plastic/ Composite / Packaging / Textile
Material	Aluminum, Steel ou Titanium

Cutting probe (20kHz)		
Field of application	Food	Composite / Textile
Material	Food grade titanium (Food contact certificate)	Titanium / Steel
Model	V-Blade, Y-Blade, I-Blade	According to application
Height	λ/2 or λ	According to application
Cutting width (mm)	100 to 360 (depending on model)	—
Cutting angle (°)	8 to 15 (depending on model)	—

* Other frequencies available ●:Included ○:Option

Master your process with NEXTGEN SOFTWARE



Our PC software is designed for intuitive adaptation of the generator control mode and parameters to each application. It is thus possible to optimize some parameters and to master the ultrasonic process.

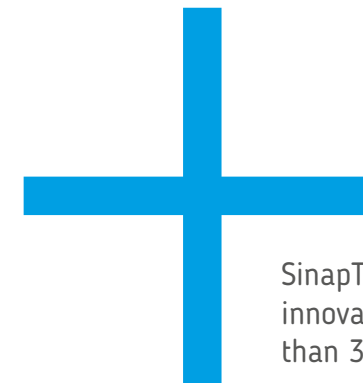
NexTgen is also an innovative tool for the ultrasonic system diagnostics. The NexTgen software is available in two versions adapted to the desired use:

- For first-level access, the Start version gives users the current operating information and the basic settings (amplitude and operating cycles) via a simplified interface.

- The version under licence is dedicated to users and partners who need to adjust the generator parameters and access advanced functions ensuring perfect mastering and traceability of their ultrasonic system.

BENEFITS

- Process control and verification
- Analysis of proper functioning of the ultrasonic equipment
- Remote access
- Remote technical support
- History, exporting, traceability and measures saving
- RJ45 connection between PC and generator



SinapTec specializes in the field of the development of innovative ultrasonic solutions for the industry for more than 35 years.

From the beginning in 1984, we made it a point of honor to work in close cooperation with our customers for the development of tailor-made new solutions as well as for the conception of new products.

Today, this collaborative spirit, the know-how of our expert engineer team, a total mastering of the technology and the use of specific software tools and materials enable us to guarantee optimum and adapted solutions to our customers.

Alexis de La Fontaine

Business unit Welding & Cutting Manager

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