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BLACKSTONE-NEY ULTRASONICS



multiSONIK 3



Neptune D

Ultrasonic Generators



sweepSONIK 3
40 kHz



sweepSONIK 3
72 kHz



sweepSONIK 3
104 kHz

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Neptune D, sweepSONIK 3 and multiSONIK 3
Ultrasonic Generators

A new generation of ultrasonic generators – each capable of powering multiple ultrasonic cleaning devices with precise frequency, power and waveform.

The need for more powerful, and flexible, ultrasonic components has grown considerably in recent years. Until now, the only solution has been to increase the size and number of both ultrasonic transducer arrays and ultrasonic generators. Blackstone-NEY Ultrasonics now offers a much more effective, and cost-efficient alternative with a new line of variable power, multiple-mode ultrasonic generators – each capable of powering multiple cleaning tanks and/or immersible transducers.

Models.

- **Neptune D** – Single frequency 25kHz (with N25B transducers) or 40kHz (with U1B transducers)
- **sweepSONIK 3** – Single frequency 40kHz, 72kHz or 104kHz (with U1N transducers)
- **multiSONIK 3** – Selectable frequency 40kHz, 72kHz or 104kHz (with U1N transducers)

Standard features.

- Feedback controlled constant generator power output
- On-board capability to link multiple generators to provide up to 500,000 watts combined output with a single control input
- Standard dualSWEEP and upSWEEP synchronized in multiple generator installations
- A wide range of supply power options
- Standardized generator package with on-board diagnostics
- Single or multiple frequency capability

Ultrasonic power.

The ultrasonic output of the Neptune D and sweepSONIK 3 generators can be split between two transducer arrays (operating at the same power and frequency) using multiple output connectors on the generator. The two transducer arrays can be in the same or different tanks. One switch controls the operation of both transducer arrays connected to a single generator. Ultrasonic power can be varied from 10 to 100% of the total rated power using a power control knob on the generator.

Multiple configuration.

Each of the new generators is designed for stand-alone operation by just connecting a power source and ultrasonic transducer array. Alternate control scenarios can be readily adapted using on-board access.

All of the power is controlled by a single control panel on the first generator or via a PLC or other controls connected to a DB15 connector of the first generator.

All of the interface options are included as standard. The generator detects which cables are connected and automatically changes to the correct mode to simplify I/O connections.

Power leveling.

The new generator monitors the power being delivered to the ultrasonic transducers. A feedback system adjusts the generator power output to maintain constant power to the transducers.

Waveform.

All generators now feature patented Blackstone-NEY Ultrasonics technologies previously available only in select generators. These include full time dual sweep and up sweep operation to minimize the risk of damage and enhance cleaning.



BLACKSTONE-NEY ULTRASONICS

Power supply.
Generators can be configured to operate from power sources ranging from 100 to 240 volts (single phase). Each single frequency generator is capable of providing a maximum ultrasonic output power of 1,000 watts with an input voltage of 120 volts or 2,000 watts with an input voltage of 240 volts. The multiple frequency multiSONIK 3 provides a maximum of 1,000 watts output with any input voltage.

Footprint.
The compact size of the new generators is a distinct benefit. Each is 11.25" wide by 15" front to back by 6.125" high and weighs less than 15 pounds. A uniform generator package simplifies the task of upgrading or re-configuration of ultrasonic systems.

Data logging.
Data acquisition and documentation are increasingly a part of critical cleaning processes. Each of the new generators is equipped with a data port providing easy access to data critical for process monitoring and documentation including ultrasonic frequency and power output.

Diagnostics.
An indicator light on the front panel of each ultrasonic generator, is illuminated when all generator functions are ready to operate. Power supplies, input and output connections, cooling, and all other functions necessary for generator operation are indicated by this single indicator light.



In the event that any of the parameters listed above are out of tolerance, diagnostic circuitry in the generator identifies the problem and makes three attempts (in approximately three seconds) to restore operation. If generator operation is not restored automatically after three attempts, the generator output remains off and the light continues to flash the code for the fault until the fault is corrected and the generator power switch is turned off and back on. If operation is restored automatically, the light remains on to indicate proper generator operation but the event is logged within the generator. More than 2 re-starts within a 20 minute period (even though successful) will result in generator output being locked off until all parameters are within tolerance and the generator is restarted by turning the power switch off and back on. If no further fault is logged within 20 minutes, the event counter resets to 0.

When there are multiple generators, the indicator lights on each generator can be used to verify generator function and as an aid to identifying the faulty generator.

Flexibility.
In generators provided with dual output connections, a second transducer that is a duplicate of the first can be added at any time by just plugging it in. This is an advantage in situations where the amount of ultrasonic power for an application has not been established.

Remote control capability.
Each generator is provided with ports that allow control from a remote source such as a PLC or custom designed external control.

Cooling.
Each generator is provided with an internal cooling fan. Multiple sensors automatically interrupt the generator's ultrasonic output in the event of either a safe ambient temperature or a safe output device operating temperature is exceeded. In the case of an over-temperature fault, the fan continues to operate in an attempt to restore a safe operating temperature. Once temperatures are within allowable limits, the ultrasonic output will continue.

FCC compliance.
All generators are FCC compliant when used as intended with matching transducers or other equipment supplied by Blackstone-NEY Ultrasonics.

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Neptune D, sweepSONIK 3 and multiSONIK 3
Ultrasonic Generators

Specifications

General Specifications

Dimensions	11.25" w x 15" d x 6.125" h
Weight	13.5 lbs.
Max Distance to Transducers (Cable length)	50 ft.

Electrical Specifications

Power Supply	
Voltage	100 to 240 Volts depending on configuration
Current	12.5 Amps (max)
Frequency	50/60Hz
Center Frequency	
25kHz	when driving an 11 gauge 316L SST diaphragm
40kHz	when driving an 14 gauge 316L SST diaphragm
72kHz	when driving an 14 gauge 316L SST diaphragm
104kHz	when driving an 14 gauge 316L SST diaphragm
Power Control	
Varies maximum amplitude, duty cycle, and average power	
As the control is rotated counterclockwise the power varies from 100% to 10%	
Sweep Rate	827Hz - 380Hz to 530Hz - upSWEEP
Bandwidth	
25kHz	2.00kHz
40kHz	2.00kHz - Neptune D, 4.00kHz - sweepSONIK
72kHz	4.00kHz
104kHz	5.70kHz
dual**SWEEP® RATE**	37Hz
dual**SWEEP® BANDWIDTH**	150Hz

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CLEANING TECHNOLOGIES GROUP

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