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※Please note that specifications are subject to change without notice.

2022.10.300

SONOFILE®

ULTRASONIC CUTTER

DJK Europe GmbH

SONOFILE®

The ultrasonic cutter is a safe and clean processing machine that does not discharge cutting chips, polluted water, noise or smoke. The cutting blade performs expansion and contraction movements at an ultrafast speed of 20,000 times or over per second with the amplitude of up to 70 microns.
As a result, it can cut the materials that are usually hard to cut easily and beautifully.
The SONOFILE ultrasonic cutter, utilizing ultrasonic vibrations of a specialized processing machine manufacturer SONOTEC features excellent durability and smooth operability as well by employing our own blade holding system.

※CE UKCA marked products (except for SF-30II)

The technological capabilities of Sonotec, a long-established company of ultrasonic processing machine that celebrates its 40th anniversary

High quality

Consistent production system at our Japanese factory

Safety

Approved of
"Industrialfacilities emitting radio waves "
"CE Standard"

Reliability

SONOTEC founded in 1982 is the manufacturer has substantial experience, specializing in ultrasonic processing machine

Industrial facilities emitting radio waves

High-frequency equipment of 10kHz or higher and 50W or higher is required by the Radio Law to apply for high-frequency equipment to the general communication station in the area where it will be used before installing the equipment, and to use it after obtaining permission. However, individual permission is not required for the type-specified equipment.

We will test-cut free of charge if a work sample is provided.

We will choose the combination of the oscillator and the transducer, which are optimum for the intended material and the cutting conditions. With our knowledge and experience accumulated for a long period, we will propose the ultrasonic cutters that best fit the customer. Check the sharpness of our cutter through the test cutting.

SONOFILE SH-3510 SF-3441

SH-3510

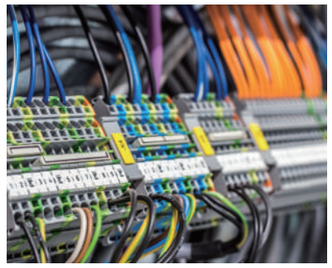
SF-3441

Applicable Materials

◎plate, sheet, film, and laminated material
◎carbon fibers(CFRP)
◎polyethylene fiber, molded articles containing carbon or glass fibers(GFRP)
◎vulcanized latex, non-vulcanized latex, sheeting material, and tube

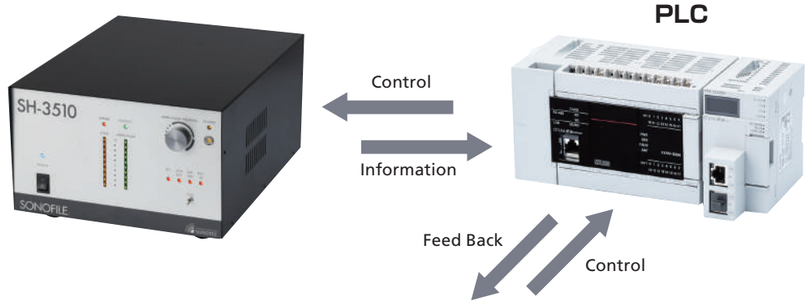
Upgraded: Connection with PLC is now available

Factory improvement through DX/IoT requires connection with various controllers and connection with PLC is now available besides the conventional relay control by ON/OFF switching. Standard installation of analog signal output for the load/amplitude and additional digital signals for each oscillation frequency/error type allow outputting more detailed data now. Moreover, receiving overloads/operation logs (is) now available by connecting with our options, this allows us to check the points to be concerned or the details of a problem using the connected PC(Telecommunications standard: CC-Link IE or Profinet)



Function : Oscillator (single device)

Signal	Input / Output	Function	Explanation
D	Input	Oscillator ON/OFF	Oscillation ON/OFF is controllable by external device
A	Input	Amplitude adjustment	Amplitude is controllable by 0V to 10V with PLC (conventional / 3 switching only)
A	Output	DC analog output	Amplitude and load can be output and measured to external devices at 0 to 10V
D	Output	Frequency pulse output	Frequency pulse output can be measured by external equipment
D	Output	Load threshold warning	Warning output when predetermined load amount is reached
D	Output	Power supply status monitor	Power supply ON/OFF can be checked
D	Output	Error detection	Warning output when detecting overload, over heat, and cable disconnection
D	Input	Error recovery	Error recovery is controllable by external device



Option : PLC unit
Mitsubishi Electric:FX5U-32MR/DS
(Communication standard : CC-Link IE)
Siemens:CPU 1214C (Communication standard:PROFINET)
The following functions are incorporated when you buy PLC unit from us

When connecting option

Frequency error output	Error output when the oscillation frequency is out of the specified range
Interlock	Restart is not available without signal input due to interlock circuit
Log	Each log of amplitude, load, and frequency can be saved
Slow start	Designed to restrain a sudden load generated at the start/time of oscillation
web server software (Specifically design)	"Graph display of oscillation ON/OFF, amplitude, load, and frequency Error messages and power supply status can be checked on PC *Right figure The lamp turns on when power supply is OFF and an Error is detected. The lamp turns off when power supply is ON and the error is corrected"

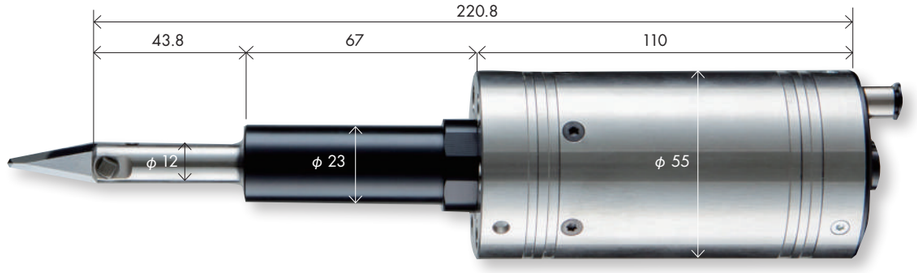
	SH-3510	SF-3441
Frequency adjustment	Automatic tracking type	
Maximum output	500W	300W
Output adjustment	Step-less continuouslyvariable type	
Power requirement	Single phase 100 VAC, 50/60 Hz	
Power consumption	1000VA	500VA
Outer dimensions	300W×400D ×200H	235W×340D ×175H
Weight	11kg	7.2kg

for SH-3510

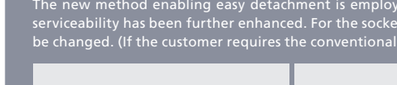
HP-8701

The transducer generates powerful and stable vibrations even for cutting that requires high power, and the profile is designed to endure long-term use.

(unit mm)



Tool example



FB-4221-9

FB-0231-6L

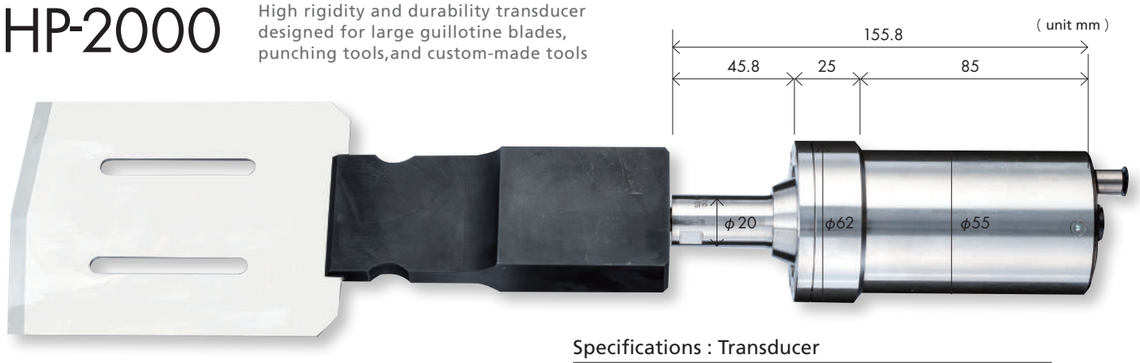
Specifications : Transducer

Frequency	24kHz
Cord length	Up to 10 m
Housing material	SUS303 / Resin (Duracon)
Outer dimensions	ϕ12/ϕ23/ϕ55×221L(mm)
Weight	1300g
Blade thickness	1.0mm

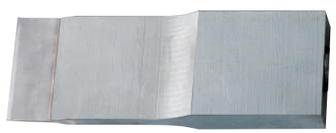
HP-2000

High rigidity and durability transducer designed for large guillotine blades, punching tools,and custom-made tools

(unit mm)



Tool example



Specifications : Transducer

Frequency	24kHz
Cord length	Up to 10 m
Housing material	SUS303
Outer dimensions	ϕ20/ϕ62/ϕ55×155L(mm)
Weight	1400g
Blade thickness	The thickness depends on the specifications.

The total length varies depending on the mounting tool.

New method enabling easy detachment employed

The new method enabling easy detachment is employed. As a result, wiring of the cable becomes easier when mounting the transducer on robots, and the serviceability has been further enhanced. For the socket profile, choose either of the straight type or the angle type. The standard cord length is 5 m, which can be changed. (If the customer requires the conventional type, we will manufacture it on the custom-order basis.)

Straight type

Angle type

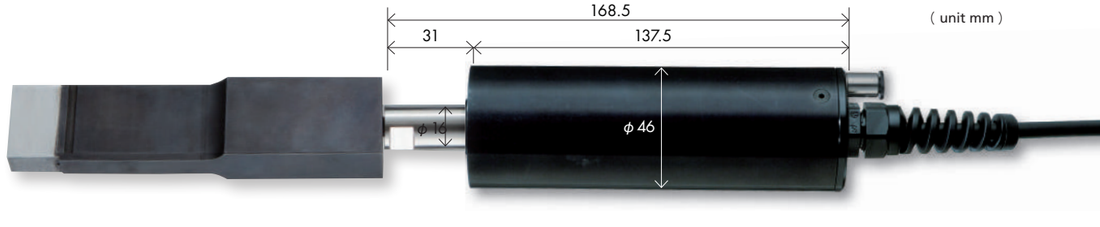
※The tools can be chosen out of our abundant product lineups according to the intended use. We also design and manufacture custom-order tools. Specifications are subject to change without prior notice for continual improvements. Please confirm when placing your order.

for SH-3510 SF-3441

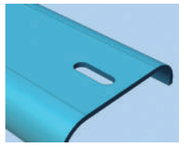
SF-3110

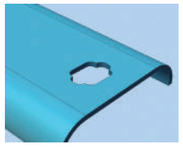
The main body of the transducer is a cylindrical duralumin case that is easy for mounting on automated machinery. The blade width can be selected according to applications, which enables to design the blade that fits the profile of the article to be machined. Particularly, the transducer is best fit to up-and-down push cutting (guillotine system) and punching.

(unit mm)



Punching Sample





＊ We can make various types of customorder punching tools.

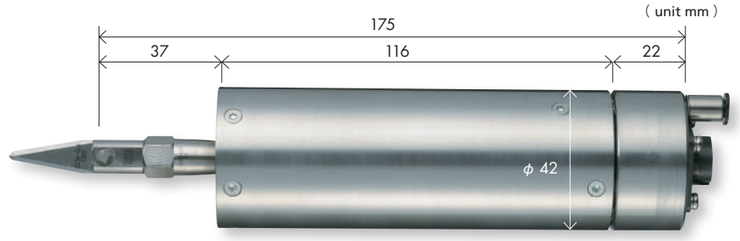
Specifications : Transducer

Frequency	20kHz
Cord length	Up to 10 m
Housing material	Aluminum alloy
Outer dimensions	ϕ116/ϕ46×168.5L(mm)
Weight	600g (excluding the cord)
Blade thickness	The thickness depends on the specifications.

SF-8500RR

This is a large amplitude type where the blade vibration amplitude is made larger than conventional models. With a 42 mm diameter cylindrical shape, the model is easy to be mounted on automated machinery, industrial robots and plotters. It is best suited for cutting and punching processing of 3D parts by mounting on industrial robots, in addition to processing of sheets and punching.

(unit mm)



Tool example

FB-3136-6L4

FB-3296-1

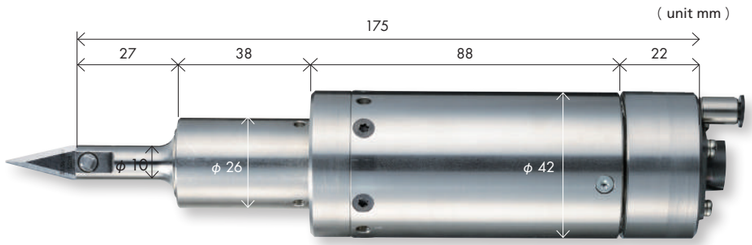
Specifications : Transducer

Frequency	22kHz
Cord length	Up to 10 m
Housing material	SUS 303
Outer dimensions	Hexagonal 11 / ϕ42 x 175L (mm)
Weight	650g
Blade thickness	The thickness depends on the specifications of holder (0.4mm / 0.6mm / 1.0mm)

SF-8541RR

The transducer features compact size, but powerful performance thanks to the high frequency drive, thereby ensuring sharp cutting. The user-friendly design of shape enables to fully utilize the robot's operation area. A forced air-cooling system and extended continuous use have been realized by featuring the air inlet.

(unit mm)



Tool example

FB-3136-5H

Specifications : Transducer

Frequency	40kHz
Cord length	Up to 10 m
Housing material	SUS 303
Outer dimensions	ϕ10/ϕ26/ϕ42×175L(mm)
Weight	650g
Blade thickness	0.6 mm

SONOFILE SF-653

HP-653

Our unique power circuit and the use of cooling air have enabled the continuous long-hour use.

Oscillator

SF-653

Applicable Materials

◎Rubber (vulcanized latex, non-vulcanized latex, sheeting materials, sealing materials and tubes) and leather(natural and artificial)
◎Thermoplastics (boards, sheeting materials, films, laminated materials, flooring materials)
◎Fabric materials, nonwoven fabrics, and paper (speciallytreated paper and coated paper)

Specifications:Oscillator

Frequency adjustment	Automatic tracking type
Maximum output	100W
Output adjustment	Step-less continuouslyvariable type
Power requirement	Single phase 100 VAC, 50/60 Hz
Power consumption	00VA
Outer dimensions	224W × 230D × 135H (mm)
Weight	4.1 kg
External device connection function	Oscillation ON/OFF, Detection of high load, Warning of error stop, Recovery from error

Transducer

HP-653

Tool example

FB-3136-5H

Specifications : Transducer

Frequency	40kHz
Cord length	Up to 10 m
Housing material	SUS 303
Outer dimensions	ϕ10/ϕ30×139.5L(mm)
Weight	300g (excluding the cord)
Blade thickness	The thickness depends on the specifications of holder (0.4 mm / 0.5 mm / 0.6 mm)

This is a high-frequency cutter featuring the 40 kHz (40,000 vibrations per second) vibration frequency of tool with the amplitude of 30 microns. It maximizes the effect of ultrasonic high-speed micro vibrations. A wide range of materials, including newly developed composite materials, rubber and leather, can be cut at will with low processing pressure, sharp cutting surface and little cutting chips. The power control circuit specially developed by us and the cooling air inlet suppress the heat generation of transducer even for large amplitude, thus enabling extended continuous use. (For a long-time operation without air cooling, contact us.)

Features

◎Stable vibrations with a maximum amplitude of 30 microns ensure remarkable cutting performance.
◎Our unique technologies suppress the heat generation of transducers, thus enabling extended continuous use.
◎Adoption of the exclusive square-head screws and the screwdriver ensures easy and robust mounting of tools.

SONOFILE SF-3400Ⅱ

SF-7400 / SF-3140

High-output cutter for manual operation: Assisting manual operations with clear cutting

Oscillator

SF-3400Ⅱ

Applicable Materials

◎Plastics (boards, sheets, films, laminated materials)
◎Various types of prepregs (single sheet cutting,overlapped cutting)
◎Leather (natural and artificial)
◎Rubber (vulcanized latex, non-vulcanized latex)
◎ Fabric materials, nonwoven fabrics
◎Paper and cardboards

Specifications:Oscillator

Frequency adjustment	Automatic tracking type
Maximum output	220W
Output adjustment	Step-less continuouslyvariable type
Power requirement	Single phase 100 VAC, 50/60 Hz
Power consumption	500VA
Outer dimensions	143W × 294D × 210H (mm) (260 (H) including the handle)
Weight	4.7 kg

Transducer

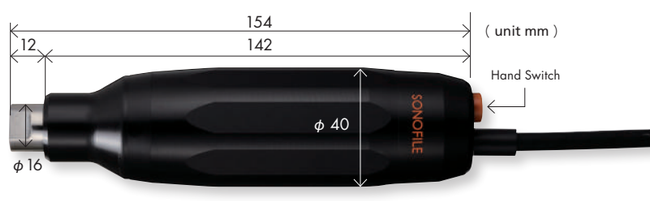
SF-7400

Tool option

Welding Tool

Scraper

This is a manual-operation type transducer that allows the use of large tools, such as of the chisel type and knife type to assist high power manual operations, including stripping exterior building walls and rust removal.



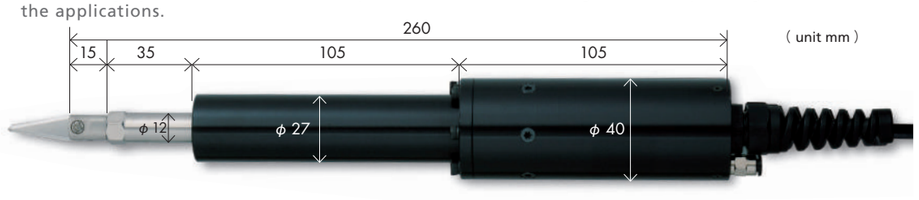
Transducer

SF-3140

Tool example

FB-3136-6L4

This is a highly versatile hand tool compatible with small and large blades depending on the applications.



Specifications : Transducer

Frequency	22kHz
Cord length	Up to 10 m
Housing material	Resin (Duracon)
Outer dimensions	ϕ16/ϕ40/×154L(mm)
Weight	340 g (excluding the cord)
Hand switch	Pushbutton type

Specifications : Transducer

Frequency	20kHz
Cord length	Up to 10 m
Housing material	Aluminum alloy
Outer dimensions	Hexagonal 12 / ϕ 27/ ϕ 40 x 260L (mm)
Weight	640 g (excluding the cord)
Blade thickness	0.6mm

This is a high-power ultrasonic cutter featuring the ultrasonic power output of 220 W. The tool's ultrasonic vibrations at a frequency of 22 kHz(22,000 vibrations per second) drastically reduce the cutting resistance. Varieties of materials can be cut even more rapidly and cleanly with a lower processing pressure. A function to enable constant monitoring of loads during cutting was added anew, thereby ensuring added safety and user friendliness.

Features

◎The output adjustment can be done in step-less and continuous manner from the minimum to the maximum levels.
◎The constant amplitude circuit always keeps vibrations at stable amplitude.
◎The overload protection circuit is featured.
◎Force air cooling is possible by installing the air inlet(SF-3140).

※ The tools can be chosen out of our abundant product lineups according to the intended use. We also design and manufacture custom-order tools. Specifications are subject to change without prior notice for continual improvements. Please confirm when placing your order.

SONOFILE SF-0102

HP-2200

Versatile manual-type ultrasonic cutter

Oscillator

SF-0102

SF-0102 comes with the dedicated storage rack.

Applicable Materials

◎Carbon prepregs with thickness up to t10
◎Thermoplastics
◎Rubber
◎Fabrics

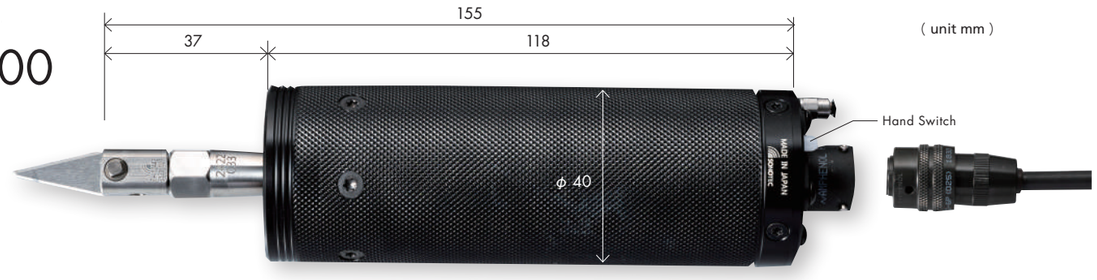
Specifications:Oscillator

Frequency adjustment	Automatic tracking type
Maximum output	100W
Output adjustment	Step-less continuouslyvariable type
Power requirement	Single phase 100 VAC, 50/60 Hz
Power consumption	300VA
Outer dimensions	224W × 230D × 135H (mm)
Weight	4.8 kg (5.7 kg including the storage rack)
External device connection function	Oscillation from transducer ON/OFF While oscillation is activated, the lamp on the transducer illuminates and sound is generated from the oscillator.

※ Manufacturing of the 200 V type is also possible.

Transducer

HP-2200



Tool example

FB-3234 FB-3294-2

Specifications : Transducer

Frequency	22kHz
Cord length	3 m
Housing material	Resin (Duracon)
Outer dimensions	Hexagonal 11 / ϕ 40 x 155L (mm)
Weight	350 g
Blade thickness	0.4mm

This is a manual type ultrasonic cutter, which daringly pursued nice user-friendliness. It is provided with a portable handle and storage rack for use at various jobsites. It is best fitted for a wide range of applications including carbon prepregs, resins, rubber, and fabrics. For safety measures, the activation of ultrasonic vibration is reported with illumination and sound. The product complies with the CE Standard.

Features

◎An ultrasonic cutter featuring the size convenient for carrying around.
◎The transducer is provided with a hand switch and the activation of operation is notified with illumination and sound
◎The cutter can also be used as a versatile machine for cutting various materials.

SONOFILE SF-30Ⅱ

HP-660

The effect of ultrasonic high-speed micro vibrations realized cutting of materials at will.

Oscillator

SF-30Ⅱ

Applicable Materials

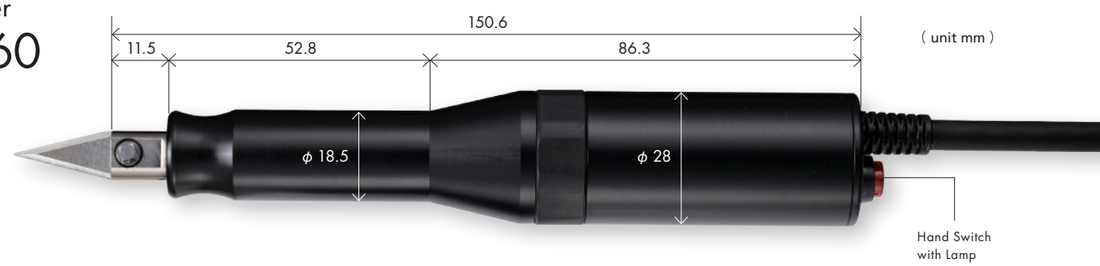
◎Rubber (vulcanized latex, non-vulcanized latex, sheeting materials, sealing materials and tubes) and leather (natural and artificial)
◎Thermoplastics (boards, sheeting materials, films, laminated materials, flooring materials)
◎Fabric materials, nonwoven fabrics and paper(specially treated paper and coated paper)

Specifications:Oscillator

Frequency adjustment	Automatic tracking type
Maximum output	45W
Output adjustment	Two-step continuouslyvariable type
Power requirement	Single phase 100 VAC, 50/60 Hz
Power consumption	100VA
Outer dimensions	180W × 2000D × 78H(mm)
Weight	1.1 kg

Transducer

HP-660



Tool example

FB-3134 FB-3294-2

Specifications : Transducer

Frequency	40kHz
Cord length	4 m
Housing material	Resin (Duracon)
Outer dimensions	ϕ 10/ ϕ 18.5/ ϕ 28×150.6L(mm)
Weight	150 g (excluding the cord)
Blade thickness	Dedicated for use with a 0.4 mm blade

This is a high-frequency cutter featuring the 40 kHz (40,000 vibrations per second) vibration frequency of tools with an amplitude of 30 microns. It maximizes the effect of ultrasonic high-speed micro vibrations. A wide range of materials, including newly developed composite materials, rubber, and leather, can be cut at will with low processing pressure, sharp cutting surfaces, and little cutting chips.

Features

◎Stable vibrations with a maximum amplitude of 30 microns ensure remarkable cutting performance.
◎Light in weight and easy-to-hold transducer (150 g)where much greater importance is attached to its operating performance.
◎Output adjustment changed to stepless variable type, load indication level added

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