

# Sample Treatment

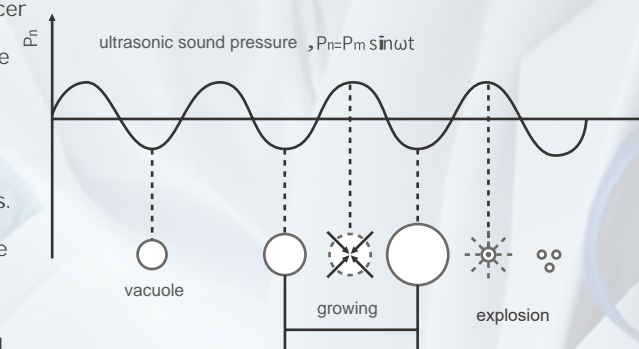
## -Homogenization/Dispersion/Crushing

### Description

These instruments use the cavitation effect of ultrasonic waves to process experimental samples, and can be used to break many kinds of cells, viruses, animal and plant tissues, and can be used for emulsifying, separating, homogenizing, extracting, defoaming, cleaning, preparation of nanomaterials, dispersing, and accelerating chemical reactions, etc.

### Working Principle

Based on the cavitation effect of ultrasound in liquids, the transducer transfers electrical energy through the amplitude-variable rod in the liquid at the top of the tool head to produce high-intensity shear force the formation of high-frequency alternating water pressure intensity so that the cavity expansion, explosion will be broken cells. in addition, the use of ultrasonic propagation in the liquid to produce violent perturbation effect, so that the particles produce a large acceleration. thus colliding with each other or collision with the wall to achieve the effect of crushing, emulsification and separation.



### Application



#### Bioengineering

Fragmentation of cells, bacteria, viruses, spores and other cellular structures.  
Preparation of DNA fragmentation in high-throughput sequencing and chromatin immunoprecipitation.  
Extraction of protein membranes (non-contact pulverization).



#### Pharmaceutical R&D

Dispersion of pharmaceutical substances for injection  
Dispersion and extraction of Chinese herbs



#### Foodstuffs Engineering

Ultrasonic homogenization of drinks  
Mellowing and aging technology for wine  
Accelerated dissolution, accelerated chemical reactions, e.g. in the processing of fats and oils



#### Environmental Project

Homogenized soil, rock samples.  
Study of the structural and physical characteristics of rocks



#### Cosmetic industry

Extracting the essence of the drug and micronizing the particles to achieve the effect of dispersion and emulsification.



#### Materials

Treatment of Silica Scale  
Ultrasonic industrial descaling  
Ultrasonic pipe decontamination  
Cracking, emulsification, homogenization and crushing of carbon nanotubes, rare earth materials and other particulate matter

## Soundproof box

Ultrasound homogenizer in the process of operation, ultrasonic cavitation caused by the friction between the water and the tank body will produce greater noise (ultrasonic noise itself can not be heard), may have a certain impact on the laboratory acoustic environment.

In order to reduce the noise during the operation of the instrument, SCIENTZ Bio launched a customized ultrasonic homogenizer soundproof box, in order to better meet customer needs, we have upgraded part of the series of soundproof, upgraded soundproof box with ultraviolet sterilization, box lighting, motorized lifting and other functions.

Intelligent lifting sterilized soundproof box



SCIENTZ-650E  
SCIENTZ-950E  
SCIENTZ-1200E

Box with transparent viewing window and light, operation process can be observed.

Motorized lifting table

UV sterilization

Intelligent lifting soundproof box



SCIENTZ-IID、JY88-IIN  
JY92-IIN、JY92-IIDN  
JY96-IIN、JY98-IIDN  
JY99-IIDN

Box with transparent viewing window and light, operation process can be observed.

Motorized lifting table

## How to choose tip

The selection of the tip is affected by the power of the host, the type of liquid and other factors, the following table is for reference only, please ask our sales for details.

### Tip list

Model	Frequency	Amplification	Capacity
Φ2 1/12"	20-25kHz	300μm	0.5-5ml
Φ3 1/8"	20-25kHz	250μm	3-10ml
Φ6 1/4"	20-25kHz	220μm	10-100ml
Φ10 5/12"	20-25kHz/19.5-20.5kHz	150μm	100-200ml
Φ12 1/2"	20-25kHz	150μm	100-200ml
Φ15 5/8"	20-25kHz/19.5-20.5kHz	145μm	200-500ml
Φ18 3/4"	20-25kHz	100μm	200-500ml
Φ20 3/4"	19.5-20.5kHz	60μm	500-1000ml
Φ25 1"	19.5-20.5k Hz	40μm	500-1200ml



Tip



Speicaled Broken bottle

Cell Breaking Beads

# SCIENTZ-IID ULTRASONIC HOMOGENIZER

CE Patent number: ZL200920122245.6(8362\8364)

## Features

- It adopts a PWM control switch power supply and the power is continuously adjustable
- It adopts 7 inches TFT touch screen display and high resolution
- 20 programs can be stored and created
- Central microcomputer centralized control
- Ultrasonic time, power arbitrary setting
- Sample temperature detection display, power display, microcomputer tracking, automatic fault alarm
- Sound Abating trap adopts sheet metal, spray plastic, ABS material, with lock function
- Intelligent lifting soundproof box

## Main Technical Parameters

<b>Model</b>	SCIENTZ-IID	<b>Temperature Alarm</b>	0 ~ 99.9°C
<b>Frequency</b>	20-25KHZ automatic tracking	<b>Alarm</b>	Time, Overload, Temperature
<b>Power</b>	1000W (20-1000W adjustable)	<b>Timing</b>	1-999 min
<b>Display</b>	7 inches TFT touch screen	<b>Storage Data</b>	20 groups
<b>Tip</b>	6 mm	<b>Working Mode</b>	Gap/Continuity
<b>Optional</b>	2,3 ,10,15 mm	<b>Power Supply</b>	220/110V 50Hz/60Hz
<b>Volume</b>	100µl-600 ml	<b>Power Box Size</b>	430*245*300 mm
<b>Duty Ratio</b>	0.1-99.9 %	<b>Main Box Size</b>	345*345*535 mm

Note: Standard with titanium alloy transducer, titanium alloy transducer compared to the general transducer with high energy conversion rate, stable and durable, suitable for long time work and other advantages.



## Selected articles published using the SCIENTZ Ultrasonic Cell Pulverizer:

- [1] ABBAD S, WANG C, WADDAD A Y, et al. Preparation, in vitro and in vivo evaluation of polymeric nanoparticles based on hyaluronic acid-poly (butyl cyanoacrylate) and D-alpha-tocopheryl polyethylene glycol 1000 succinate for tumor-targeted delivery of morin hydrate [J]. International journal of nanomedicine, 2015, 10 (305-20).
- [2] CHEN W, LI Q, CAO J, et al. Revealing the structures of cellulose nanofiber bundles obtained by mechanical nanofiber via TEM observation [J]. Carbohydrate polymers, 2015, 117 (950-6).
- [3] ULUKO H, ZHANG S, LIU L, et al. Effects of thermal, microwave, and ultrasound pretreatments on antioxidative capacity of enzymatic milk protein concentrate hydrolysates [J]. Journal of Functional Foods, 2015, 18 (1138-46).
- [4] WANG K, QI J, WENG T, et al. Enhancement of oral bioavailability of cyclosporine A: comparison of various nanoscale drugdelivery systems [J]. International journal of nanomedicine, 2014, 9 (4991-9).

# JY-N ULTRASONIC HOMOGENIZER

CE Patent number: ZL200920122245(8362\8364)



## Features

- With new software and central microcomputer centralized control
- It adopts 7 inches TFT touch screen display
- Ultrasonic power step with 1% continuous adjustable
- With pulse and continuous operation and with test function
- Ultrasonic time, gap time, and total time can be accurate to 0.1 seconds
- With overload and time alarm function;
- TC4 Titanium Transducer (JY98-IIIDN、JY99-IIDN) ;
- Equipped with a smart lifting soundproof box.

## Main Technical Parameters

### For small volume samples

Model	JY96-IIN	JY88-IIN	JY92-IIN	JY92-IIDN
Frequency	20-25 kHz	20-25 kHz	20-25 kHz	20-25 kHz
Display	7 inches TFT touch screen	7 inches TFT touch screen	7 inches TFT touch screen	7 inches TFT touch screen
Adjustable Power	150 W (1%-100%)	250 W (1%-100%)	650 W (1%-100%)	900 W (1%-100%)
Tip (Φ)	6 mm	6 mm	6 mm	6 mm
Optional (Φ)	3 mm	3 mm	2、3、10mm	2、3、10、12、15 mm
Processing Volume	10-100 ml	10-200 ml	100μl-500 ml	100μl-600 ml
Duty Ratio	0.1-99.9 %	0.1-99.9 %	0.1-99.9%	0.1-99.9%
Temperature Alarm	0-99.9°C	0-99.9°C	0-99.9°C	0-99.9°C
Alarm	time, temp、 overload	time, temp、 overload	time, temp、 overload	time, temp、 overload
Size of Power Supply Chassis (mm)	430*245*300	430*245*300	430*245*300	430*245*300
Weight	8.4 Kg	8.5 Kg	9.5 Kg	9.6 Kg
Soundproof Box Size	345*345*535mm	345*345*535	345*345*535mm	345*345*535mm

Note: When using 10mm, 12mm, 15mm transducer, it is strongly recommended to use titanium alloy transducer, which has the advantages of high energy conversion rate, stability and durability, and suitable for long time work compared with general transducer.

### For large volume samples

Model	JY98-IIIDN	JY99-IIDN
Frequency	19.5-20.5 kHz	19.5-20.5kHz
Display	7 inches TFT touch screen	7 inches TFT touch screen
Adjustable Power range	1200 W (1%-100%)	1800 W (1%-100%)
Accompany tip (Φ)	20mm	25mm
Optional tip (Φ)	15、25 mm	20、28 mm
Processing Volume	50-1000 ml	50-1200 ml
Duty Ratio	0.1-99.9%	0.1-99.9%
Temperature Alarm	0-99.9°C	0-99.9°C
Alarm	time, temp、 overload	time, temp、 overload
Size of Power Supply Chassis (mm)	430*245*300mm	430*245*300mm
Weight	11.6kg	11.8kg
Soundproof Box Size	345*345*535mm	345*345*535mm

# SCIENTZ-J

## INTEGRATED ULTRASONIC HOMOGENIZER

### Features

- Integrated all-in-one design saves lab space
- Transducer built into the case, motorized lifting and lowering
- Centralized control using software
- Ultrasonic power step with 1% continuous adjustable
- With pulse and continuous operation and with test function
- Ultrasonic time, gap time, and total time can be accurate to 0.1 seconds
- With overload, over-temperature, and time alarm functions;
- TC4 Military Grade Titanium Transducer

Note: Standard with titanium alloy transducer, titanium alloy transducer compared to the general transducer with high energy conversion rate, stable and durable, suitable for long time work and other advantages.



### Main Technical Parameters

Model	SCIENTZ-1000J	SCIENTZ-650J
Frequency	20-25KHz	20-25KHz
Display	7 inches touch screen	7 inches touch screen
Power	1000W(1%-100%)	650W(1%-100%)
Accompany	6 mm	6 mm
Optional Tip	2mm、3mm、8mm、10mm	2mm、3mm、8mm
Processing Volume	100μl-200ml	100μl-250ml
Duty Ratio	0.1-99.9%	0.1-99.9%
Temperature Alarm	0-99.9°C	0-99.9°C
Size	320*355*633mm	312*334*510mm
Transducer Lifting Method	Electric powered	Electric powered(option:remote control)
Interior Lighting	Support	Support
Interior Sterilization	*	Support

# SCIENTZ-E

## ULTRASONIC HOMOGENIZER



### Description

SCIENTZ-E series of ultrasonic homogenizer in the conventional model based on the upgrading of a push with a number of new features of the ultrasonic homogenizer. Can realize the communication with the upper computer, network control and remote printing. Is widely used in:

-Bacteria, viruses, spores and other cell structure lysis, crushing, leaching, extraction of plant and animal cells DNA, protein extraction, trimming DNA / RNA, chromatin immunoprecipitation technology.

-Dispersion and cracking of nanomaterials such as carbon nanotubes and graphene, cracking, emulsification, homogenization and crushing of homogeneous soil, rock samples, non-ferrous metals, rare earths and other particles.

-It can be used for dispersion and extraction of Chinese herbal medicine. -Bacteria, viruses, spores and other cellular materials -Can be used for dispersing, emulsifying, homogenizing and accelerating the reaction process of other samples, and is also suitable for pre-treatment of samples in the fields of chemical industry, medical treatment, archaeology, geology, oceanography, and so on.

### Features

- -External transparent front door, built-in LED light;
- -Can create and store up to 20 sets of operating procedures;
- -Up and down stacking design, saving laboratory space;
- -Ultrasonic time, power continuously adjustable, good stability;
- -The upper computer is equipped with a remote monitoring communication interface, which can realize the function of network control;
- -The position of the base can be adjusted by up and down buttons, and it can be lifted and lowered electrically, eliminating tedious manual operations;
- -With over-temperature, overload and time alarm functions;
- -With user password protection function, UV sterilization and door lock function;
- -Different models of instruments can be applied to the needs of different customers, with a crushing volume of 0.5-1200ml;

### Main Technical Parameters

Model	SCIENTZ-650E (For small volume samples)	SCIENTZ-950E (For small volume samples)	SCIENTZ-1200E (For large volume samples)
<b>Power Range</b>	5 ~ 650W adjustable	5 ~ 950W adjustable	50 ~ 1200W adjustable
<b>Frequency</b>	20-25kHz self-adaptive	20-25kHz self-adaptive	20-25kHz self-adaptive
<b>Processing Volume</b>	100μl ~ 500ml	100μl ~ 600ml	50 ~ 1200ml
<b>Timing</b>	1 ~ 999min	1 ~ 999min	1 ~ 999min
<b>Temperature Alarm</b>	0°C~ 99°C	0°C~ 99°C	0°C~ 99°C
<b>Display</b>	Amplitude, power, temperature, time	Amplitude, power, temperature, time	Amplitude, power, temperature, time
<b>Alarm</b>	Temperature, time, fault	Temperature, time, fault	Temperature, time, fault
<b>Soundproof Box</b>	322*285*526mm	322*285*526mm	322*285*526mm
<b>Standard</b>	1 main unit, 1 transducer, 1 tip, 1 set of software	1 main unit, 1 transducer, 1 tip, 1 set of software	1 main unit, 1 transducer, 1 tip, 1 set of software
<b>Optional</b>	Φ2, Φ3, Φ10, Φ12	Φ2, Φ3, Φ10, Φ12, Φ15	Φ15, Φ25
<b>Optional Cooling Cup</b>	30ml, 100ml, 400ml	30ml, 100ml, 400ml	100ml, 400ml

# NON-TOUCH ULTRASONIC HOMOGENIZER

## Description

Non-Touch ultrasonic homogenizer is used to aseptically crush cells, interrupting chromosomes and crushing cells across the centrifuge tube. Tailored for second-generation sequencing DNA samples and chromatin immunoprecipitation experiments sample pre-treatment, compared with the traditional probe contact ultrasonic cell crusher, non-contact samples can be crushed under closed containers, does not produce infectious aerosols, ultrasonic probes and samples do not come into contact with the sample to avoid cross-contamination. Non-Touch ultrasonic homogenizer can obtain the quality, efficiency and safety of the traditional ultrasound method is unparalleled.

Multiple samples can be tested at the same time at a time, high experimental efficiency; no wear and tear, slag phenomenon. Optional cooling water circulation system to facilitate the sample in the 4 °C water bath ultrasound, so that the energy distribution is uniform, ultrasound effect is complete; ultrasound parameter setting flexibility, standardization of experimental steps, experimental repeatability, high reliability of the results. It has gradually become an indispensable standardized tool for ChIP (Chromatin Immunoprecipitation) and DNA shearing research platform.

## Features

- Zero sample contamination: Non-contact eliminates the risk of cross-contamination and wear and tear of traditional probes.
- Safe and Reliable: Enclosed environment enhances biosafety (e.g. mycobacteria, viruses, etc.).
- Low sample loss: can be used for micro-volume samples down to 5µl.
- Wide range of applications: suitable for a wide range of standard containers to handle a wide range of samples.
- Repeatability: Adjustable parameters for precise control of the sample process and high reproducibility of results.
- Isothermal processing: optional cooling water circulation system to avoid high temperature damage to samples.
- Rotating stand: automatic continuous rotation of the centrifuge tube makes the ultrasonic energy distribution more uniform.



SCIENTZ08-II、 III

SCIENTZ08-IIIC

## Main Technical Parameters

Model	SCIENTZ08-IIIC	SCIENTZ08-II	SCIENTZ08-III
Frequency	20KHz (±0.5KHz)	40kHz	40 kHz
Power	1800W	1800W	2200W
Power Adjust	1%-100%	1-99%	1-99%
Timing	1-999min	1-999min	1-999min
Duty Ratio	0.1 -99.9%	0.1-99.9%	0.1-99.9%
Capacity	900ml	1.5L	3L
Temp. Display	Support	Support	Support
Holder	0.5ml*12 wells、 2ml*12 wells、 0.2ml*12 wells、 support 5ml-50ml	1-2ml*16 wells、 5ml*8 wells、 10-15ml*8 wells	1-2ml*32 wells、 5ml*20 wells、 10-15ml*17 wells
Power Supply	220V±0.5 50Hz	220/110V±0.5 50Hz/60Hz	220/110V±0.5 50Hz/60Hz
Chiller	Support	/	/

# DNU-1020

## DRY NON-CONTACT ULTRASONICATOR



### Description

SICENTZ Dry Non-Contact Ultrasonic homogenizer is designed for the pre-processing of micro-volume samples in rapid testing scenarios. It solves the pain points of classic probe-based ultrasonic breaking without contacting the samples, and without complex installation and operation, it can realize the rapid processing of samples.

The product through the bottom of the ultrasound module, realize non-contact ultrasound in the closed sample tube, using semiconductor refrigeration module for the whole process of low-temperature control to ensure that part of the target material activity, suitable for a variety of cells, bacteria, small volume of wall / membrane experiments, in order to obtain the proteins, nucleic acids and intracellular functional substances, the processed samples can be used directly for nucleic acid amplification, probe hybridization and other experiments.

### Features

- High extraction rate: special mechanical design, more efficient energy transfer
- Ensure the activity of biological samples: semiconductor refrigeration, the whole low-temperature operation
- Fast processing speed: appropriate samples within two minutes to achieve the desired results
- High safety: non-contact and non-destructive operation, no risk of mist spreading.
- Portable and easy to use: the device is miniaturized and simple to operate.
- Adaptability: Samples can be used for amplification, purification, probe detection and other experiments.

### Application Areas

- Designed for rapid, on-site testing;
- Fragmentation of cells, bacteria, viruses, spores and other cellular structures;
- Extraction of membrane proteins, intronic proteins, nucleic acids and active ingredients;
- Research and processing of pathogenic bacteria and viruses;
- Small volume liposome preparation, small volume emulsification and small volume extraction.



### Main Technical Parameters

<b>Model</b>	DNU-1020	<b>Temp. Range</b>	8-12°C
<b>Sample Channel</b>	1	<b>Operational Control</b>	Physical button
<b>Capacity</b>	500-1000ul	<b>Display</b>	LCD
<b>Consumables</b>	2.0ml Ultrasonic Sample Tubes	<b>Storage Data</b>	99 groups
<b>Frequency</b>	20KHZ	<b>Power Supply</b>	200-240V/50-60Hz
<b>Power</b>	MAX 30W (10 Speed adjust)	<b>Environment</b>	15-30°C, humidity level ≤ 70%
<b>Timing</b>	1-900S	<b>Power</b>	80W
<b>Temperature control</b>	Semiconductor cooling	<b>Size、 Weight</b>	155*208*193mm、 2.6kg

# MULTICHANNEL ULTRASONIC HOMOGENIZER

## Description

The Multi-Channel Ultrasonic homogenizer is an ultrasonic homogenizer developed to meet the needs of customers who need to process a large number of samples in a short period of time. Depending on the amount of samples to be processed at one time, up to 96 throughput models can be selected, which can directly process the samples in 96 deep-well plates, greatly improving the efficiency. This product is particularly suitable for experiments where multiple samples are processed at one time and where consistency is required under the same operation.

## Main Technical Parameters

Model	SCIENTZ-4TD	SCIENTZ-6TD	SCIENTZ-8TD	SCIENTZ-16TD	SCIENTZ-24TD	SCIENTZ-48TD	SCIENTZ-96TD
Power	2400W	2400W	2400W	2400W	2400W	2400W	2400W
Frequency	20kHz±0.5	20kHz±0.5	20kHz±0.5	20kHz±0.5	20kHz±0.5	20kHz±0.5	20kHz±0.5
Horn NO.	4pcs	6pcs	8pcs	16pcs	24pcs	48pcs	96pcs
Capacity	1-20ml	1-50ml	1-20ml	1-20ml	100µl-5ml	100µl-4ml	100µl-0.5ml
Power Adjust	1-100%	1-100%	1-100%	1-100%	1-100%	1-100%	1-100%
Horn Φ	Φ6	Φ6	Φ6	Φ6	Φ3	Φ3	Φ3
Working Mode	Gap / Continuous						
Impulse	0.1-99.9s adjustable (gap/working)						
Temperature Sensor	Yes						
Operating Method	Touch control						
Display	7-inch TFT						
Display Content	7 displays for temperature, power and pulse mode and time						
Protective Function	Self-diagnostic function, program automatic error correction, overload protection, over-temperature protection display						
Storage Of Data	20 groups						
Soundproof Box	Yes						



SCIENTZ-8TD

## Features

- High throughput: process multiple samples at once, fast, efficient and consistent
- Selectable modes: Gap or continuous pulse mode can be chosen.
- Flexible parameters: continuously adjustable ultrasound time and power, good stability.
- Intelligent storage: can create and store up to 20 groups of operating programs.
- High safety: self-diagnostic function, automatic error correction, overload and over-temperature protection display.

# HANDHOLD PORTABLE ULTRASONIC HOMOGENIZER

## Description

Portable ultrasonic homogenizer is a portable, multi-purpose sample pretreatment instrument, compared with the traditional ultrasonic homogenizer, portable ultrasonic homogenizer with flexible, efficient, portable and many other advantages, suitable for small volume, large volume samples (such as 96-well enzyme label plate or small test tube samples) emulsifying, dispersing, homogenizing, extracting, defoaming, cleaning, nanomaterials preparation and accelerated chemical reactions. It is a must for environmental protection and food safety monitoring vehicles. It is a necessary sample pretreatment instrument for environmental protection and food safety monitoring vehicle.

The instrument adopts liquid crystal display, automatic and manual (foot pedal) two working modes, ultrasonic time, power set arbitrarily, sample temperature detection display, automatic frequency tracking and other functions. Ultrasonic cell pulverizer suitable for small volume sample processing.

## Features

- High safety: with temperature detection display, over-temperature alarm function
- Selectable modes: automatic and manual (foot pedal) two working modes
- Simple operation: handheld pointing control ultrasound
- Flexible parameters: power, ultrasound time flexible adjustable
- Portable design: easy to move and carry
- Wide range of applications: support for enzyme plates, test tubes in the direct treatment of samples



## Main Technical Parameters

Model	UP-250	UP-250S
MAX Power	250W	250W
Size	270*245*116mm	122*252*200mm
Operating Mode	Automatic, manual switchable (optional foot switch)	
Pulser	0.1-99s	0.1-99 s
Frequency Range	19-25kHz	19-25 kHz
Time Setting	0.1-99min	0.1-99 min
Tip	3mm	3mm
Processing Capacity	100µl-10ml	100µl-10 ml
Power Supply	220V/50Hz	2A/12V Charger (built-in 12V/1000mAH lithium battery)
Display	4.3-inch touch screen	4.3-inch touch screen

# INDUSTRIAL ULTRASONIC HOMOGENIZER OF MANUFACTURE

Industrial ultrasonic homogenizer of manufacture can carry out experiments such as preparation of nanomaterials, high intensity ultrasonic cleaning and treatment of animal and plant cell tissues. The equipment adopts double excitation transducer technology, with the advantages of large ultrasonic power and long continuous processing time, which is the most ideal ultrasonic microcrushing equipment for various production enterprises.

## Features

- High safety: with overload protection, it can work for a long time and adapt to the needs of industrial production.
- High strength: high crushing strength, small crushed material diameter (20-100µm)
- Intelligent: the control circuit adopts microcomputer, arbitrary control of various functions
- High efficiency: 1 liter of sample volume can be completed in 15min.
- Simple operation: each system has the ability to operate independently, convenient for maintenance operations
- Customized service: Customers with temperature requirements can choose to configure the coolant circulator.

## Application Areas

- Chemical industry: ultrasonic gel liquefaction, resin defoaming
- Cosmetic industry: cosmetic particle refinement
- Material engineering: non-ferrous metals, nano-materials, rare earth materials and other particle production
- Biological industry: essential oils, natural elements, polysaccharides, flavonoids and other substances extraction
- Environmental engineering: degradation of polluted water

## Main Technical Parameters

Operating Voltage	220V、50Hz
Frequency	15kHz
Power	2400W
Duty Ratio	1%-99%
Capacity	1-5L/ time
Time Setting	Ultrasound time setting:1-99s Gap time setting: 1-99s Full time setting: 1-99min
Tip	38mm
Display	Pointer / Digitizer



# Polymerization Constant Temperature ultrasonic homogenizer



## Description

This is a new type of ultrasonic extraction and extraction device which applies ultrasonic technology and combines with intelligent low temperature constant temperature system. The ultrasonic effect of this instrument is more conducive to the full mixing and smooth reaction of the reactants than the general catalytic and mechanical stirring, and it can also meet the requirements of different customers for the reaction temperature. Ultrasonic technology is as a physical catalytic means gradually into the chemical laboratory, is now widely used in the pharmaceutical industry, chemical industry, colleges and universities and scientific research laboratories and so on.

## Features

- High efficiency: ultrasonic technology combined with thermostatic control system to make the reaction more complete
- Intelligent storage: can set data, store data and control the working status
- Intelligent: according to the reaction environment, through the frequency automatic tracking, can automatically achieve the best ultrasonic effect
- Flexible parameters: ultrasonic power, time and reaction temperature can be adjusted.
- Selectable modes: High-power ultrasound and thermostat systems can be used in combination or separately.
- High safety: self-diagnostic and alarm function.
- Simple operation: Specialized multi-port reaction bottle can be filled with various gases to participate in the reaction, and can also be continuously dosed.

## Main Technical Parameters

Model	SCIENTZ-1000C	SCIENTZ-500C	SCIENTZ-250C
<b>Power Max</b>	1800W	900W	650W
<b>Reaction Bottle</b>	1000ml	500ml	250ml
<b>Tip</b>	Φ20mm	Φ10mm	Φ6mm
<b>Power Adjust</b>	30%-100%	15%-100%	5%-100%
<b>Frequency</b>	20±1kHz	22±1kHz	22±1kHz
<b>Time Setting</b>	1-999min		
<b>Ultrasound Time</b>	1-99s		
<b>Gap Time</b>	1-99s		
<b>Compressor Power</b>	500W		
<b>Heating Power</b>	1000W		
<b>Temperature Control</b>	PID automatic temperature control		
<b>Temperature Measurement</b>	Dual-channel real-time temperature measurement to monitor the reaction system and thermostat tank.		
<b>Temperature Range</b>	0-99°C		
<b>Temp Control Precision</b>	≤ ±1°C		
<b>Capacity</b>	6L		
<b>Abnormal Alarms</b>	Support, the equipment has fault self-diagnosis and alarm prompt function		
<b>Storage Data</b>	Recording of temperature and other parameters during operation.		
<b>Device Control</b>	7-inch TFT touchscreen with integrated microcontroller control.		
<b>Operating Method</b>	Touch screen operation, set temperature, power, time and other parameters		
<b>Connector</b>	The device comes with a USB communication port, which supports USB flash disk data transfer.		
<b>PC Connection</b>	Optional		
<b>Reaction Bottle</b>	Regularly available in four-necked bottles, optional five-necked bottles are available.		

# MICROWAVE-LIGHT WAVE-ULTRASONIC HOMOGENIZER

## Description

Microwave Light Wave Ultrasonic homogenizer is a comprehensive laboratory instrument, can be arbitrarily selected microwave, ultrasonic, light wave, ultraviolet light, magnetic stirring a variety of combinations, the real realization of a multi-purpose machine. It is the best choice for the research of chemical reaction, chemical synthesis, material preparation, analytical chemistry sample pre-treatment and other methods and mechanisms, and is widely used in major universities and scientific research units.

## Features

- Large capacity: up to 1000mL, effectively improving the analytical sensitivity.
- Flexible parameters: adjustable time, temperature, power and speed.
- Wide range of applications: can be widely used in inorganic, organic and biological analysis and other sample pretreatment
- Safety and reliability: microwave leakage meets the national standard; user, administrator two passwords; with ultra-temperature and sensor anomaly protection.
- Selectable modes: microwave, ultrasonic, light wave, ultraviolet, magnetic stirring can be selected at will in a variety of combinations.
- Intuitive process: with a reaction monitor, integrated screen with real-time video window to monitor the sample reaction status
- Intelligent storage: 200 groups of preset programs, computer storage, can be set up, modified and called directly
- High efficiency: ultrasonic oscillation energy acts directly on the sample in the container, high acoustic vibration efficiency, low energy consumption and good results.

## Application sample

<b>Food</b>	Seasonings, pecans, mango
<b>Plants</b>	Bamboo pieces, camellias, trees
<b>Environments</b>	Soil, coal, wastewater
<b>Herbs</b>	Chinese herbal medicine
<b>Organic</b>	Phthalates, PCBs
<b>Nanomaterials</b>	$\alpha$ -MoO <sub>3</sub> nanoribbons, nanoscale lithium iron phosphate



## Main Technical Parameters

<b>Model</b>	SCIENTZ-IIDM
<b>Power</b>	1000W (1%-100%)
<b>Frequency</b>	2450 MHz
<b>Time Setting</b>	0-999s
<b>Working Mode</b>	Pulsed continuous heating
<b>Power / Wavelength</b>	0-800W/ infrared segment
<b>Working Time</b>	0-999s
<b>UV Power / Wavelength</b>	50W/365nm
<b>Hron Diameter</b>	Φ8mm
<b>Ultrasonic Power / Frequency</b>	10-1000W/20-25 kHz
<b>Ultrasound Mode</b>	Immersion transducer in direct contact with the material, efficiency close to 100%.
<b>Magnetic Stirring</b>	50-300r/min
<b>Program Control</b>	200 programs can be preset, each program can be preset time (0-999s), microwave, light wave, ultrasonic power, ultraviolet (on / off), stirring and other control parameters
<b>Temp Control</b>	Non-contact infrared temperature measurement. Temperature control range, room temperature ~300 C (± 1 C )
<b>Operating Method</b>	Touch Screen, Industrial Microcomputer PLC Programmable Controller
<b>PIN Management</b>	Users, administrators
<b>Reflective Monitor</b>	Video window for real-time monitoring of sample reaction status
<b>LED Power / Color Temperature</b>	24W/6200K
<b>Network Interface</b>	RJ45
<b>Sample Volume</b>	Standard 500, 1000mL (customizable)
<b>Protection</b>	Temperature protection, door opening and closing protection
<b>Material</b>	Stainless steel inner shell
<b>Volume</b>	25L
<b>Power Supply</b>	220 V±10% AC, 50 Hz; power : 3000W
Microwave leakage meets national standards	

# SCIENTZ-T

## ULTRASONIC EXTRACTOR

### Description

Ultrasonic extractor is a kind of equipment that uses strong ultrasound to produce cavitation, crushing and emulsification in solid and liquid, and extracts substances by adding various reactants according to the reaction conditions to the material cells under temperature control and stirring condition. Ultrasonic extraction machine is widely used in biochemistry, microbiology, medicinal chemistry, surface chemistry, physics, zoology, agronomy, medicine, pharmaceuticals and other fields of teaching, scientific research, production.



### Features

- Intelligent: combined with microcomputer control, frequency selection, temperature measurement, protection and other hardware and software technology
- Flexible parameters: ultrasonic time, power and stirring speed can be set arbitrarily.
- Wide range of applications: configured with different models of reactors to meet the needs of all laboratories.
- Precise temperature control: with temperature measurement function, precise temperature control.

### Selected articles published using scientz ultrasonic cell pulverizer:

[1] CAI X. Optimization of Ultrasound-Assisted Extraction of Gardenia Fruit Oil with Bioactive Components, and their Identification and Quantification by HPLC-DADESI-MS2 [J]. Food &Function, 2015.

[2] ABID M, JABBAR S, WU T, et al. Effect of ultrasound on different quality parameters of apple juice [J]. Ultrasonics sonochemistry, 2013, 20(5): 1182-7.

[3] WANG J, LIU B, CHANG Y. Optimization of supercritical fluid extraction of geniposidic acid from plantain seeds using response surface methodology [J]. Green Chemistry Letters and Reviews, 2014, 7(3): 309-16.

[4] WANG W, ZHU H, CUI S, et al. Ultrasound-assisted dispersive liquid-liquid microextraction based on solidification of floating organic droplets coupled with gas chromatography for the determination of pesticide residues in water samples [J]. Analytical Methods, 2014, 6(10): 3388.

[5] WU Z, LI H, YANG Y, et al. Ultrasonic extraction optimization of L. macranthoides polysaccharides and its physicochemical properties [J]. International journal of biological macromolecules, 2015, 74:224-31.

### Main Technical Parameters

Model	SCIENTZ-5T	SCIENTZ-10T	SCIENTZ-15T	SCIENTZ-30T	SCIENTZ-50T
Frequency	20-25kHz	20-25kHz	20-25kHz	20-25kHz	20-25kHz
Power	20-1000 (W)	20-1200(W)	200-1500(W)	200-1800(W)	250-2400(W)
Reactor Capacity	5L	10L	15L	30L	50L
Hron Diameter	Φ30	Φ30	Φ30	Φ50	Φ50
Working Voltage	220V	220V	220V	220V	220V
Ultrasonic Time	0.1-99.9s	0.1-99.9s	0.1-99.9s	/	/
Gap Time	0.1-99.9s	0.1-99.9s	0.1-99.9s	/	/
Working Time	1-999min	1-999min	1-999min	1s-59min59s	1s-59min59s
Power Setting	1-99%	1-99%	1-99%	1-99%	1-99%
Duty Ratio	0.1-99.9%	0.1-99.9%	0.1-99.9%	/	/
Thermometer	Yes	Yes	Yes	Yes	Yes
Mixing Power	60W	60W	90W	120W	120W
Stirring Speed	10-600r/min	10-600r/min	10-600r/min	10-600r/min	10-600r/min
Rack	Stainless steels	Stainless steels	Stainless steels	Stainless steels	stainless steels
Additive Containers	Yes	Yes	Yes	Yes	Yes
Liquid Filling And Draining Ports	Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes
Refrigeration Equipment	DLK-5003	DLK-5007	DLK-5010	DLK-5010	DLK-5010

# SCIENTZ-CHF

## ULTRASONIC TWO-DIMENSIONAL MATERIAL STRIPPER

### Description

SCIENTZ-CHF Ultrasonic 2D Material Stripper's unique ultrasonic stirring function can provide more perfect stripping treatment for related materials without destroying the crystal shape and lattice. The instrument is characterized by full functions, new appearance and reliable performance. The instrument adopts large screen liquid crystal display, centralized control of the central microcomputer, with man-machine dialogue interface, ultrasonic time, power, temperature in the tank can be set arbitrarily and have data preservation.

### Working Principle

Graphene separation and preparation, for example, high-frequency ultrasound, so that the graphite slurry to produce high-frequency oscillation, and because of the difference in the frequency of oscillation, the formation of a multi-layer in the container, continuous graphite into graphene, and from the bottom layer gradually to the upper layer of graphite gradual peeling, and finally in the upper layer of continuous separation of graphene.



### Main Technical Parameters

Model	SCIENTZ-CHF-5A	SCIENTZ-CHF-5B
Voltage	220V	220V
Capacity	5L	5L
Reactor Shape	Hexagonal type	Hexagonal type
Containers Ultrasonic	Beakers or flasks up to 1.5L	
Power Ultrasonic	360W( Adjustable 40-99%)720W( Adjustable 40-99%)	
Frequency	40kHz	40kHz
Adjustable Temp.	RT -80°C	RT -80°C
Time Set	1-999min	1-999min
Mixing Speed	50-1500r/min	50-1500r/min
Water Circulation System	YES	YES
Water Pipe Connector	YES	YES



### Features

- High safety: with parameter power failure memory, over-temperature, over-voltage, over-current automatic stop and other functions
- Digital display screen: large screen liquid crystal display, real-time display of reaction temperature.
- Sample integrity: no damage to the crystalline form of the relevant materials prepared by the product, lattice integrity
- Flexible parameters: computer timing, ultrasonic power, temperature adjustable
- Ultrasonic stirring: ultrasound and stirring at the same time, can make the material more uniform force, peeling effect is more perfect.
- Strong universality: MoS<sub>2</sub>, WS<sub>2</sub>, bulk graphite and hexagonal boron nitride have passed the experiments and the effect is excellent.

### Application sample

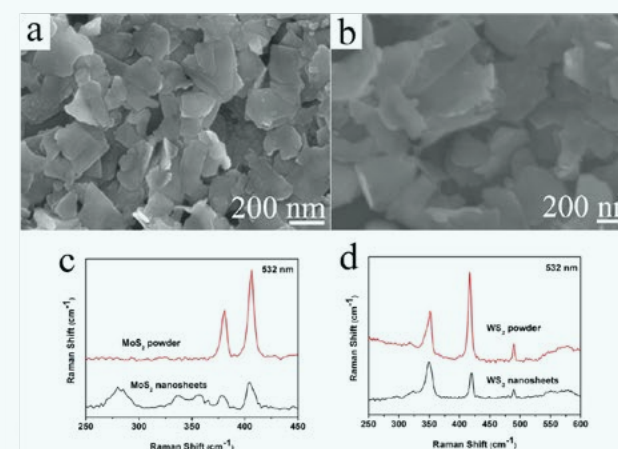
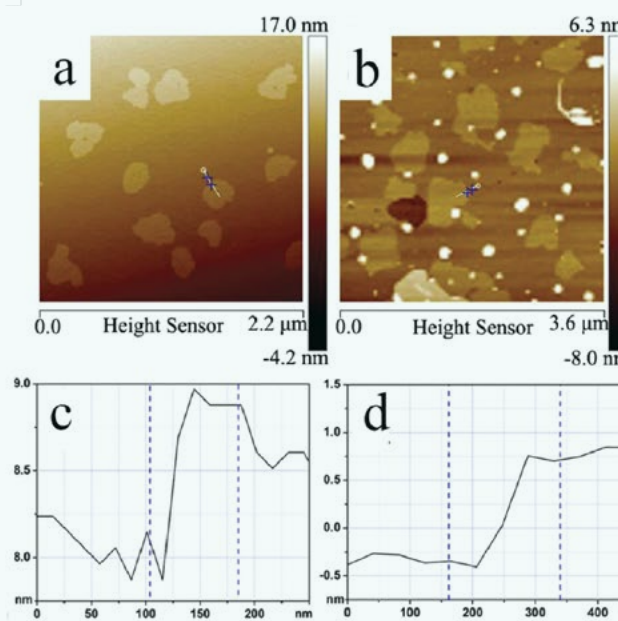
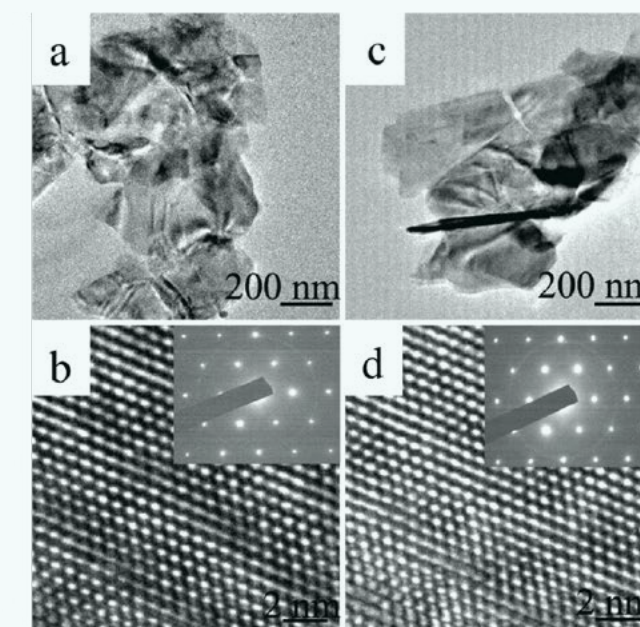


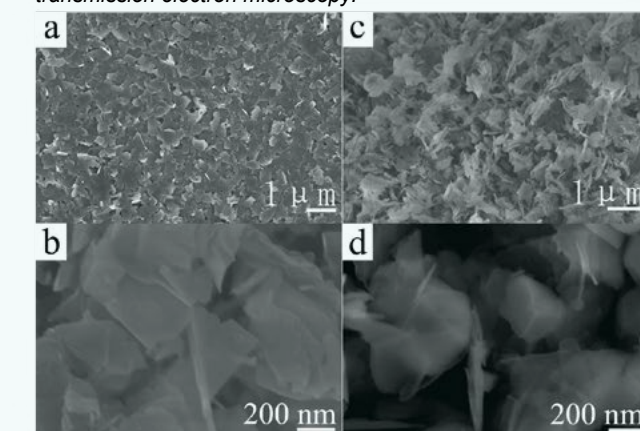
Fig. a, Sweep electron microscopy of MoS<sub>2</sub>  
Fig. b, swept electron micrograph of WS<sub>2</sub>  
Figures c and d show the Raman spectra of the nanosheets with their raw materials



结论: 通过AFM和相对厚度分析可知, 所制备的纳米片的厚度均在1nm以下: MoS<sub>2</sub> (0.6nm) 和WS<sub>2</sub> (0.8nm), 抛去制样时, 纳米片与云母片间的层间距, 我们可以认为得出的纳米片为单原子层MoS<sub>2</sub>和WS<sub>2</sub>。  
Conclusion: The thickness of the prepared nanosheets is below 1 nm by AFM and relative thickness analysis: MoS<sub>2</sub> (0.6 nm) and WS<sub>2</sub> (0.8 nm). Discarding the layer spacing between the nanosheets and the mica flakes at the time of sampling, we can assume that the resulting nanosheets are mono-atomic layers of MoS<sub>2</sub>; and WS<sub>2</sub>.



通过透射电镜测试, 这种方法制备的MoS<sub>2</sub>和WS<sub>2</sub>纳米片, 晶型没有破坏, 晶格完整。  
The MoS<sub>2</sub> and WS<sub>2</sub> nanosheets prepared by this method had undamaged crystalline patterns and intact lattices as tested by transmission electron microscopy.



剥离块体石墨和六方氮化硼的实验结果  
Experimental results on stripping of bulk graphite and hexagonal boron nitride

# CSCB-2GL

## ULTRASONIC GRAPHENE TREATMENT EQUIPMENT

### Description

SCIENTZ ultrasonic graphene treatment equipment adopts advanced automation control means, ultrasonic generator, transducer and other core components of the modular assembly, is specially used for graphene preparation process. The instrument's single or multi-machine online working mode, so that the product can be adapted to different stages of the test requirements

### Working Principle

Using ultrasonic stripping method, when the ultrasonic waves propagate in the liquid, the graphite slurry produces high-frequency oscillations, and cavitation bubbles are formed in the liquid phase. Due to the fact that the size of the graphite is much larger than that of the cavitation bubbles, the collapse of the cavitation bubbles in the vicinity of the graphite is asymmetric, which generates a high-speed micro-jet directed at the surface of the graphite to produce a localized damage to its surface. The high-frequency ultrasound, which produces high-frequency oscillations in the graphite slurry and, due to the difference in oscillation frequency, forms multiple layers in the container, successively exfoliating the graphite into graphene.

### Features

- High efficiency: high working intensity, high speed, small finished material diameter, support long working hours
- Customized service: according to the user's processing capacity and flexible customization of single or multi-machine online model
- Sample integrity: through the product preparation of the relevant material crystalline form is not damaged, lattice integrity
- Flexible parameters: working time can be set arbitrarily and ultrasonic power can be adjusted.
- High-quality materials: the core components are made of high-performance corrosion-resistant materials, adapting to complex environments.
- Liquid crystal display: LCD large screen display, all data at a glance

### Application Areas

- Dispersion and homogenization of materials such as graphene and carbon nanotubes.
- Disintegration, emulsification, homogenization, and crushing of granular materials such as soil, rock samples, non-ferrous metals, and rare earths.



### Main Technical Parameters

<b>Material Handling Capacity (L)</b>	10L--50L(MAX)
<b>Nature Of Material</b>	Liquid, aqueous or organic solution, concentration less than 20%
<b>Cooling Tank Capacity (L)</b>	50L
<b>Dimensions</b>	1230mm*600mm*1550mm
<b>Power Supply</b>	AC220V/50Hz
<b>Power</b>	3000W
<b>Time Setting</b>	1-99min

### Main Ultrasound Parameters

<b>Ultrasound Frequency</b>	15KHz
<b>Recall Accuracy</b>	0.1Hz
<b>Amplitude Range</b>	5%-100%
<b>Tool Head End Diameter</b>	38mm
<b>Tool Head Material</b>	Aluminum alloy
<b>Amplitude Repeatability</b>	> 95%
<b>Input Power Factor</b>	> 75%
<b>Ultrasonic Power</b>	2400W (MAX)

### Secondary Ultrasound Parameters

<b>Amplitude Range</b>	0--100%
<b>Tool Head End Diameter</b>	50mm
<b>Tool Head Material</b>	Aluminum alloy
<b>Input Power Factor</b>	> 75%
<b>Amplitude Repeatability</b>	> 95%
<b>Transducer Structure</b>	Dual incentive push-pull (patented technology)
<b>Ultrasonic Power</b>	2400W

### High-Speed Shear Disperser (Emulsifying pump) Parameters

<b>Motor Rated Power</b>	1.5KW
<b>Voltage And Frequency</b>	AC220V, 50Hz
<b>Maximum Speed</b>	2880 rpm
<b>Maximum Flow Rate</b>	0.5T/H

### Stirring Motor Parameters

<b>Voltage And Frequency</b>	AC220V, 50Hz
<b>Motor Power</b>	120W
<b>Adjustable Speed Range</b>	0-300r/min

# SCIENTZ-F

## ULTRASONIC DISPERSER



### Description

SCIENTZ F series ultrasonic disperser can make liquid-liquid, solid-liquid and gas-liquid systems to achieve dispersion effect by using liquid cavitation effect. Compared with the traditional dispersing method, it has the advantages of strong power output and better dispersing effect, which can be used for dispersing various materials, especially for the dispersing of nano-materials (e.g., carbon nanotubes, graphene, silicon dioxide, etc.) with good effect. It is widely used in biochemistry, microbiology, food science, pharmaceutical chemistry and zoology.

### Features

- High safety: with time, temperature, overload alarm function
- Flexible parameters: ultrasonic time and power continuously adjustable, good stability
- Good stability: uniform particle size of dispersed particles and slow settling rate
- Selectable modes: pulsed and continuous operation with test function.
- Omni-directional wave generation: unique gourd-shaped dispersing parts, transverse and longitudinal wave generation.

### Application Areas

- Dispersion of raw materials for sauce manufacturing
- Dispersion of fluorescent materials for coating of picture tubes
- Dispersion of photographic materials
- Dispersion of fuel into melted paraffin wax
- Dispersion of pharmaceutical substances for injection
- Preparation of suspending agents
- Preparation of vaccines
- Dispersion of emulsifiable powders
- Emulsification of ghee to prepare high grade lactose.
- Dispersion of titanium oxide, iron oxide, and carbolic acid in water or solvents.
- Emulsification of waxes, paraffins, etc. to make detergents, shampoos, lotions, etc. - Dispersion of microparticles of oils

### Main Technical Parameters

Model	SCIENTZ-750F	SCIENTZ-1500F	SCIENTZ-2400F	SCIENTZ-3000F
<b>Frequency</b>	20.0KHz±0.5KHz	20.0KHz±0.5KHz	20.0KHz±0.5KHz	20.0KHz±0.5KHz
<b>Display</b>	7-inch touch screen	7-inch touch screen	7-inch touch screen	digital display
<b>Time Setting</b>	1-999min	1-999min	1-999min	1-999min
<b>Power</b>	750W(1%-100%)	1500W(1%-100%)	2400W(1%-100%)	3000W(20%-100%)
<b>Tip</b>	10mm	18mm	25mm	38mm
<b>Capacity</b>	10-700ml	100-1500ml	500-2000ml	1000—5000ml
<b>Duty Ratio</b>	0.1-99.9%	0.1-99.9%	0.1-99.9%	Sweep Gap Work or No Gap Work
<b>Alarm Function</b>	Timing, temperature, overload			Timing, Overload
<b>Size</b>	416*244*300 (mm)	416*244*300 (mm)	416*244*300 (mm)	355*390*142 (mm)
<b>Standard Configuration</b>	One mainframe, one horn, one soundproof box			
<b>Power Supply</b>	AC220V/50Hz	AC220V/50Hz	AC220V/50Hz	AC220V/50Hz

# XHF-DY

## VARIABLE SPEED DISPENSE

### Description

This instrument is controlled by electronic speed control to manipulate the miniature high-speed motor drives stainless steel inside and outside the plum blossom type crushing knife to work. Stator-rotor configuration, after the high-speed rotation of the internal cutter, thus homogenizing, emulsifying, crushing of various substances. Used for sewage sample processing, laboratory rapid homogenization and other sample processing and sample preparation.

The machine is compact in design, adopts high speed AC motor, removable internal cutting knives, easy to sterilize.



blade

### Features

- Flexible parameters: speed 2800-28000 r/min, stepless variable speed, support online speed regulation
- Flexible and simple structure: the distance between the tool and the table can be adjusted arbitrarily, which is convenient for better contact with the samples.
- Parameter memory function: parameter settings can be automatically memorized and quickly accessed for easy viewing and change.

### Main Technical Parameters

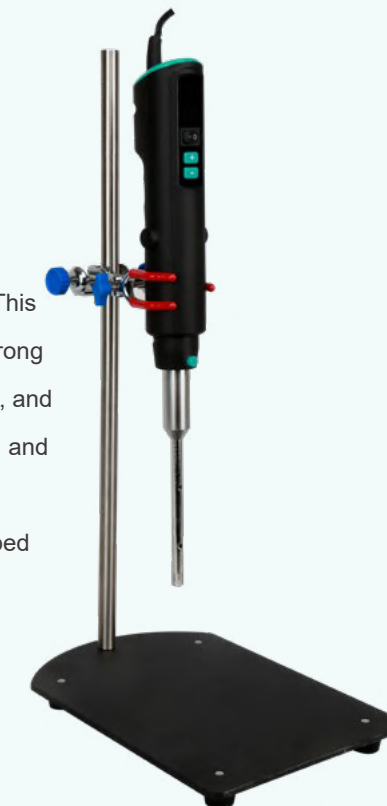
<b>Model</b>	XHF-DY	<b>Ambient Temperature</b>	-10°C -40°C
<b>Power Supply</b>	220V	<b>Display</b>	LCD
<b>Power</b>	360W	<b>Dimensions</b>	330×235×522mm
<b>Adjustable Range</b>	2800-28000r/min	<b>Net Weight</b>	8kg
<b>Timing Range</b>	1-9.9min	<b>Capacity</b>	3ml-2000ml
<b>The Size Of Blade</b>	Φ10mm processing volume:3-200ml; Φ14mm processing volume:50-500ml; Φ18mm processing; volume:50-1000ml; Φ25mm processing volume:100-2000ml		

# S10 PORTABLE

## VARIABLE SPEED DISPENSE

### Description

S10 portable high-speed disperser (alias: masher, homogenizer) is suitable for mixing, emulsifying and homogenizing liquids with each other, dispersing and homogenizing solid powder in liquid, mashing and homogenizing animal tissues. This machine is driven by the motor to rotate the knife at a high speed, generating a strong liquid shear effect, so that the material is sucked in from the lower end of the rotor, and sprayed out through the stator to disperse, emulsify and homogenize the material, and the shape is in line with ergonomics, suitable for hand-held operation, and can be moved at will. The minimum handling capacity can be up to 1ml, specially developed for tissue crushing, medical diagnosis, quality supervision and testing, micro-dispersion, emulsification, homogenization and homogenization, it is the ideal equipment for pre-treatment of micro samples.



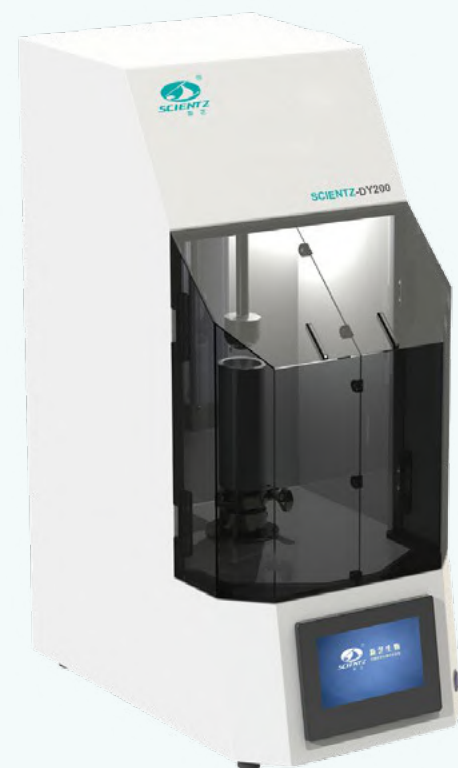
### Features

- High efficiency: about 4 times more efficient than ordinary mixers
- Flexible parameters: Infinitely adjustable speed, maximum speed 35000r/min.
- High safety: double protection and insulation, give you safety and security
- Simple disassembly: easy to load and unload the knife head, easy to clean
- Humanized design: handheld design, flexible operation, light weight (1Kg)

### Main Technical Parameters

<b>Model</b>	S10	<b>Speed Mode</b>	28 levels adjustment
<b>Power</b>	160 W	<b>Processing Volume</b>	1ml-120ml
<b>Power Supply</b>	220V 50/60Hz	<b>Net Weight</b>	1 kg
<b>Speed</b>	8000-35000r/min	<b>Cutter Reference</b>	standard Φ10mm capacity 30-120ml
<b>Display</b>	OLED		optional Φ8mm: 2-50ml; Φ6mm: 1-10ml

# SCIENTZ-DY200 PROCESSOR CELLPRESS



## Description

SCIENTZ-DY200 PROCESSOR CELLPRESS is a soft homogenization process for plant and animal tissues by using grinding mechanism to obtain cell pulp and mitochondria needed for experiments. Soft homogenization is one of the most effective contemporary methods to obtain small organelles and biologically active proteins in tissue cells. The machine adopts automated grinding method, the grinding process does not require manual intervention, truly freeing the hands of experimental workers. The homogenizing rod and the homogenizing jar are made of wear-resistant PTFE material, which can prevent metal contamination and is not easy to break.

## Working Principle

The processor cellpress controls the rotational speed and precise positioning of the motor through automated means, simulating the manual grinding method, to softly homogenize plant and animal tissues, and obtain the cell pulp and mitochondria required for experiments.

## Features

- Less sample damage: less damage to the intracellular organelle membrane structure.
- Highly adaptable: homogenizing bottles of different volumes are available to meet the diverse needs of our customers.
- High efficiency: faster and safer homogenization of tissue cells compared to manual homogenizers.
- High accessibility: high accessibility and soft homogenization compared to vane homogenizers
- Reliability: Homogenizing rods and tanks are made of PTFE, which is free of metal contamination, wear-resistant and unbreakable.
- Intelligent: high degree of automation, no manual intervention during the grinding process
- Safety: the machine is equipped with overload, over-travel and other stopping alarm functions, which can be displayed on the screen in real time.
- Convenience: 7-inch touch screen with a key to start and stop, spare parts can be quickly installed and dismantled

## Application Areas

- Food Sample Pre-treatment
- Biological Sample Pre-treatment
- Pre-treatment of environmental microorganisms

## Main Technical Parameters

<b>Speed</b>	5-1500RPM	<b>Lifting Speed</b>	0-500mm/min	<b>Power</b>	280W
<b>Cup Material</b>	PTFE	<b>Control</b>	Touch screen + PLC	<b>Dimension</b>	300*500*820mm
<b>Cup Volume</b>	Standard 100ml, optional 50ml、150ml	<b>Max. Torque</b>	45kg/cm	<b>Lighting</b>	Yes
<b>Lifting Stroke</b>	200mm				

**Features** The homogenizing cup of this machine is made of PTFE, two kinds of volume can be replaced conveniently, the automatic lifting stroke 0-200mm can be set at will, the lifting speed is adjustable, the homogenizing lever is lowered to the lowest position with the protection function, and the maximum 50 sets of program parameters can be saved.



### Description

The High-Throughput Tissue lyser is a new generation of fast, efficient and safe grinding system. It supports the extraction and purification of raw DNA, RNA and proteins from soil, plant and animal tissues/organs, bacteria, yeast, fungi, spores, paleontological specimens and more. Supports dry, wet and mixed grinding and homogenization. It can effectively improve the grinding efficiency and quality, reduce labor cost, reduce the error of manual operation, and at the same time can avoid the risk of using liquid nitrogen and other external freezing methods. It is an alternative to manual grinding in the laboratory.

In order to meet the requirements of different customers, SCIENTZ Bio has launched 12, 24, 48, 192 throughput tissue mills, and for heat-sensitive samples, a frozen high-throughput tissue mill is also available.

### Working Principle

SCIENTZ series of high-throughput tissue lyser adopts high-frequency vertical oscillation, choose different grinding beads for different traits of the sample in the centrifugal tube directly on the sample grinding, grinding tube samples and grinding balls collide with each other, and the grinding shear force and impact force generated by the tissue is completely broken, so as to effectively separate the extraction of the original DNA, RNA. the product can also be effective in crushing the ultrasonic high-pressure The product can also effectively crush ultrasonic high-pressure cells that are difficult to crush, and use high-density small steel beads or zirconia beads to rapidly disperse the sample.

### Features

- Simple operation: supports direct placement of centrifuge tubes in the adapter and direct pre-freezing of centrifuge tubes
- Low noise: silent design to minimize interference with the surrounding environment
- Zero sample contamination: the grinding process is completely closed, and the samples move independently of each other to avoid cross-contamination.
- High safety: Equipped with a safety door lock, with open cover and stop protection function, high safety.
- Flexible parameters: built-in program controller, simple and convenient parameter setting.
- Good stability: vertical oscillation, grinding more fully, the same sample multiple grinding consistency is excellent.
- High throughput: rapid grinding of 12, 24, 48 or 4\*96 samples in a short time.

### Examples of selected samples

- Plant tissues: roots, stems, leaves, flowers, fruits, seeds, etc.
- Animal tissues: brain, heart, lungs, stomach, liver, thymus, kidneys, intestines, lymph nodes, muscles, bones, hair, etc.
- Microorganisms: yeast, E. coli, etc.
- Food and drug: all kinds of food, tablets, etc.
- Volatile samples: coal, oil shale, wax products, etc.
- Plastics and polymers: PE, PS, textiles, resins, etc.
- Environmental samples: soil, sediment, sludge, feces, etc.

### Wear parts material reference

Materials	Hardness	Densities	Conductivity	Durability	Possible contamination
Stainless	48-52 HRC( approx 550HV)	7.8g/cm <sup>3</sup>	A	A	Fe, Cr
Stainless2	58-63 HRC( approx 750HV)	7.85g/cm <sup>3</sup>	A	A	Fe, Cr, C
Tungsten carbide	1200HV	14.8g/cm <sup>3</sup>	S	S	WC
Cornelian	Hard and brittle,6.5-7Mohs,approx1000HV	2.65g/cm <sup>3</sup>	D	A	SiO <sub>2</sub>
Corundum	Hard and brittle,8-8.5Mohs,approx1750HV	3.9g/cm <sup>3</sup>	C	A	Al <sub>2</sub> O <sub>3</sub> ,SiO <sub>2</sub> ,
Zirconia	Hard and brittle,7.5Mohs,approx 1200HV	5.9g/cm <sup>3</sup>	B	S	ZrO <sub>2</sub> , Y <sub>2</sub> O <sub>3</sub>
Teflon	Elastic, hard D56	2.1g/cm <sup>3</sup>	D	S	F, C

### Applied Literature

- (1) 张娜, 陈洪生 . 低胆固醇发酵香肠配方研究 [J]. 农产品加工 , 2011
- (2) 许玲玲, 杨晓东 . 白鲜皮提取物抑制皮肤癣菌活性研究 [J]. 现代中药研究与实践 , 2014
- (3) JUNMING GUO .Detection of cytokeratin 20 mRNA in the peripheral blood of patients with colorectal cancer by immunomagnetic bead enrichment and real-time reverse transcriptase [J].Journal of Gastroenterology and Hepatology 2013.
- (4) GUO J, XIAO B, ZHANG X, et al. Combined use of positive and negative immunomagnetic isolation followed by real-time RT-PCR for detection of the circulating tumor cells in patients with colorectal cancers [J]. Journal of molecular medicine, 2004, 82(11): 768-74.

# SCIENTZ

## HIGH-THROUGHPUT TISSUELYSER



SCIENTZ-12



SCIENTZ-24



SCIENTZ-48



SCIENTZ-96



SCIENTZ-192

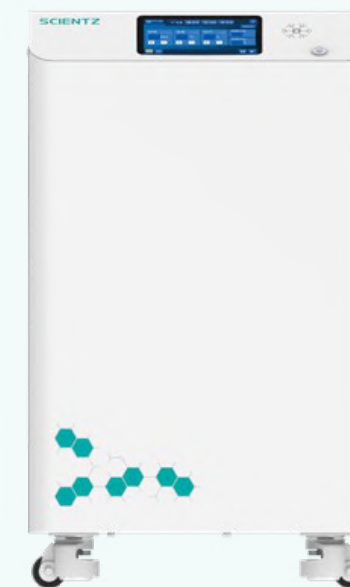
### Main Technical Parameters

Model	SCIENTZ-12	SCIENTZ-24	SCIENTZ-48	SCIENTZ-96	SCIENTZ-192
Power supply	220v/50Hz	220v/50Hz	220v/50Hz	220v/50Hz	220v/50Hz
Power	100W	80W	80W	80W	375W
Time setting	1-9999s	1-9999s	1-9999s	1-9999s	1-35999s, settable
Speed/Frequency setting	300-2100 r/min (10-70HZ)	300-2100 r/min (10-70HZ)	300-2100 r/min (10-70HZ)	300-2100 r/min (10-70HZ)	270-2000 r/min (5-35HZ)
Storage of data	50 groups	50 groups	50 groups	50 groups	-
Clamp stroke	40mm (vertical)	34mm(vertical)	34mm(vertical)	34mm(vertical)	30mm(vertical)
Sample capacity	Standard: 2 ml adapter 12-well; Optional: 5 ml adapter 6-well Optional: 10/15/25 ml grinding jar Optional: freezer adapter	Standard: 2 ml adapter 24-well; Optional: 5 ml adapter 12-well Optional: 10/15/25/50 ml grinding jar Optional: freezer adapter	Standard: 2ml adapter 48-well; 5ml adapter 12-well; Optional: 5ml adapter 24-well; 2ml adapter 24-well; Optional: 10/15/25/50ml grinding jar Optional: freezer adapter	96 Deep Well Plate Adapter	Standard: 1ml-2ml 2*48 wells; Optional: 0.2ml-0.5ml 2*96 wells; 5ml 2*24 wells; Optional: 10/15/25/50/100ml grinding jar Optional: freezer adapter
Grinding method	Wet grinding, dry grinding, pre-frozen grinding	Wet grinding, dry grinding, pre-frozen grinding	Wet grinding, dry grinding, pre-frozen grinding	Wet grinding, dry grinding, pre-frozen grinding	Wet grinding, dry grinding, pre-frozen grinding
Grinding ball	Standard $\phi$ 3mm stainless steel balls (1000pcs) and $\phi$ 6mm stainless steel balls (1000pcs) Zirconia balls are optional.	Standard $\phi$ 3mm stainless steel balls (1000pcs) and $\phi$ 6mm stainless steel balls (1000pcs) Zirconia balls are optional.	Standard $\phi$ 3mm stainless steel balls (1000pcs) and $\phi$ 6mm stainless steel balls (1000pcs) Zirconia balls are optional.	Standard $\phi$ 3mm stainless steel balls (1000pcs) and $\phi$ 6mm stainless steel balls (1000pcs) Zirconia balls are optional.	Standard $\phi$ 3mm stainless steel balls(1000pcs) and $\phi$ 6mm stainless steel balls (1000pcs) Zirconia balls are optional.
Display	4.3-inch TFT Touch screen	4.3-inch TFT Touch screen	7-inch TFT Touch screen	7-inch TFT Touch screen	Button + Number
Protection	Open cover protection, emergency breaking	Open cover protection, emergency breaking	Open cover protection, emergency breaking	Open cover protection, emergency breaking	With safety door and safety lock; with self-check function
Dimensions	L225*W275*H390mm	L360*W320*H500mm	L360*W320*H500mm	L360*W320*H550mm	L514*W380*H520mm
Weight	≤12KG	≤29KG	≤ 29KG	≤ 35KG	≤ 60KG

# SCIENTZ FROZEN SERIE HIGH-THROUGHPUT TISSUELYSER



SCIENTZ-48LT



SCIENTZ-48L

## Benefits

### 1、 Protect the sample components

Tissue grinding can effectively protect biological samples from damage or decomposition during the grinding process. This is because the low temperature environment can reduce the activity of enzymes and proteins in the biological samples, thus delaying the degradation and decomposition of biological samples.

### 2、 Provide grinding efficiency

Typically, tissue grinding provides higher efficiency compared to traditional room temperature grinding. Because the low temperature environment can reduce the friction and heat in the grinding process, thus reducing the damage and loss in the sample.

### 3、 Improve sample quality

Tissue grinding can effectively avoid impurities and contaminants in the sample, thus improving the purity of the sample. At the same time, the low temperature environment can reduce the oxidation and hydrolysis reaction in the sample, thus ensuring the stability and purity of the sample.

## Main Technical Parameters

Model	SCIENTZ-48L	SCIENTZ-48LT
Power supply	220V/50Hz	220V/50Hz
Power	375W	375W
Time setting	1~9999s	1~9999s
Speed/Frequency setting	600~2100 r/ min (20-70Hz)	600~2100 r/ min (20-70Hz)
Storage of data	48 groups	48 groups
Clamp stroke	34mm (vertical)	34mm (vertical)
Sample capacity	Standard: Aluminum adapter 5ml 12 wells, 2ml 48 wells; Optional: aluminum adapter 2ml 24 wells ; 10/15/25/50/100ml grinding jar	Standard: Aluminum adapter 5ml 12 wells ,2ml 48 wells; Optional: aluminum adapter 2ml 24 wells ; 10/15/25/50/100ml grinding jar
Grinding method	Wet grinding, dry grinding, pre-frozen grinding	Wet grinding, dry grinding, pre-frozen grinding
Grinding ball	Standard φ3mm stainless steel balls (1000 pcs.) and φ6mm stainless steel balls (1000 pcs.) Zirconia balls are optional.	Standard φ3mm stainless steel balls (1000 pcs.) and φ6mm stainless steel balls (1000 pcs.) Zirconia balls are optional.
Display	7-inch TFT touch screen	7-inch TFT touch screen
Protection	Open cover protection, emergency breaking	Open cover protection, emergency breaking
Cooling range	-50°C -25°C	-50°C -25°C
Opening method	Electric door	Electric door
Voice prompt function	Supply	Supply
Insulation function after grinding	Supply	Supply
Dimensions	465*520*840mm	590*505*520mm

# SCIENTZ-207A

## HIGH PRESSURE HOMOGENIZER

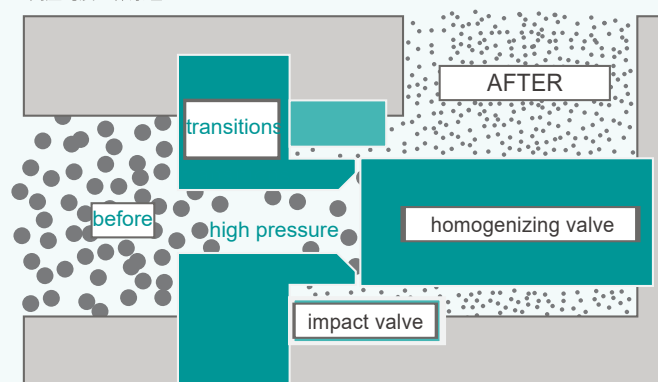
### Description

The SCIENTZ-207A High-Pressure Homogenizer is a miniaturized bench-top biological sample processing unit for cell pulverization or material homogenization in biological laboratories and small-scale production. Different samples are crushed, emulsified and dispersed by controlling pressure, flow, cavitation, impact, shear and process duration. It is also equipped with a cooling circulation system interface, with a thermostatic tank to effectively control the temperature and enhance the homogenization effect. It can be adapted to the R&D laboratories of universities, research institutes and enterprises in the fields of pharmaceuticals, biotechnology, cosmetics, food and beverage, graphene and so on.

### Working Principle

The material is transferred from the material cup through a one-way valve into a high-pressure chamber. Pressure is applied by the plunger to adjust and control the sample to the desired high pressure. Instantaneous release through a specific-width throttling gap forms microjets that impact and strike against the valve of an impactor or homogenizer. Sequentially, through the actions of cavitation, impact, and shear, it achieves the purposes of emulsifying dispersion of materials and cell pulverization.

高压均质工作原理

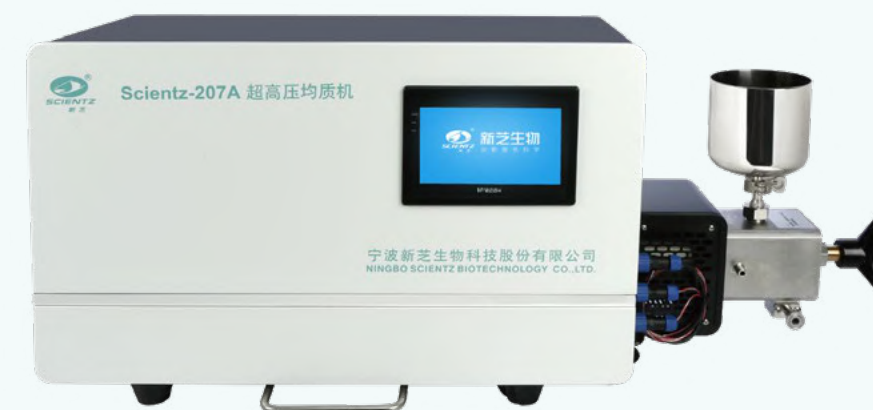


### Application Areas

- Research on the Integration of Chinese Medicine Extracts and Modern Pharmaceutical New Technology
- Application in ultrafine crushing processing of pigment dyes
- Application of non-heat sterilization technology in liquid foodstuffs
- Handling of microbial samples and fragmentation of algal cells
- Optimization of processes for cosmetics (nanoparticle emulsions, liposomes)
- Study of the effect of different homogenization conditions on the physicochemical properties of food and beverages
- Study of the effect of different homogenization conditions on the functionality of vegetable proteins.
- Optimization of active pharmaceutical ingredients (fat emulsions, nanosuspensions, lipid nanoparticles,
- Optimization of the extraction and preparation of active pharmaceutical ingredients (fat emulsions, nanosuspensions, lipid nanoparticles, liposomes, flavonoids).

### Features

- Homogenizing pressure 0~180Mpa can be adjusted arbitrarily to meet the needs of nano pharmaceutical customers.
- The host power is powered by original imported servo motor, which is stable and reliable with long service life.
- The material contact area is made of 316L stainless steel, and the pipeline is mirror polished to meet the food and drug requirements.
- Automatic sampling, continuous work
- Online exhausting, after exhausting, the pressure is automatically restored.
- Adopt physical homogenization method, no material residue.
- Equipped with special tools for seal removal, easy to replace.
- Simple operation, more convenient maintenance service, cost-effective.



### Main Technical Parameters

<b>Model</b>	SCIENTZ-207A
<b>Max. Design Pressure</b>	2070bar/207MPa/30015psi
<b>Max. Working Pressure</b>	1800bar/180MPa/26100psi
<b>Maximum Sample Capacity</b>	15L/h
<b>Minimum Processing Capacity</b>	15ml
<b>Material Residue</b>	0ml
<b>Motor Power</b>	3.0kW/220V/50Hz
<b>Max. Feed Particles</b>	<500 micron
<b>Flow Control</b>	Freely adjust the flow
<b>Sensor</b>	high precision sensor
<b>Cooler Configuration</b>	Equipped with cooling water channel, no material consumption, and control of homogenization temperature
<b>Exhaust Method</b>	In-line venting, automatic pressure adjustment
<b>Electrical Control</b>	Industrial PLC Controller
<b>Screens &amp; Displays</b>	7-inch touchscreen + pressure-temperature digital display + pressure curves
<b>Weight</b>	95kg
<b>Dimension</b>	1100*310*460mm
<b>Accessories</b>	Standard chiller

# SCIENTZ-150

## HIGH PRESSURE HOMOGENIZER

### Description

The High Pressure Homogenizer introduced by SCIENTZ Bio is a miniaturized bench-top biological sample processing unit. The instrument has a built-in cooling circulation system to directly cool the homogenizing head and optional homogenizing valves for different applications. It is characterized by high pressure, small size, easy operation, high processing efficiency and large sample output. It is the standard equipment for R&D and production in bioengineering and biopharmaceutical industries.

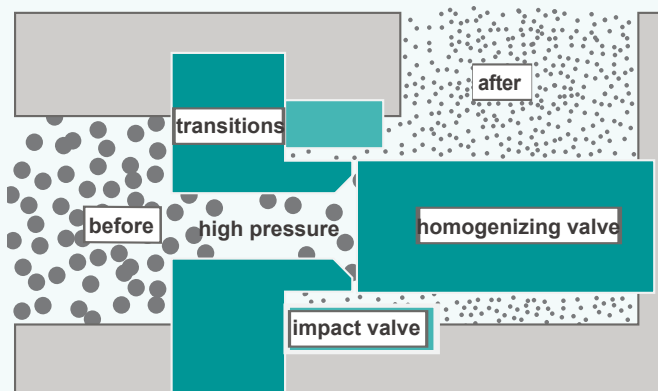
### Features

- Invention patent: built-in cooler structure design
- High crushing efficiency: the particle size of the material can be uniformly refined to less than 100nm, the crushing rate is more than 95%.
- High sanitary level: 316L stainless steel material in line with food and drug requirements.
- Versatile options: diamond crushing valve or Staley emulsification valve
- Adjustable pressure: Designed homogenizing pressure is adjustable from 0 to 150MPa.
- Controllable temperature: the inlet and outlet of the cooling connector are connected with the constant temperature tank, which can effectively control the temperature rise of homogenized materials.
- Adjustable flow rate: frequency conversion flow control system, the flow rate can be adjusted according to the need.
- Online exhaust: after exhausting, the adjusted pressure is automatically restored, easy to operate.

### Working Principle

The material is transferred from the material cup through a one-way valve into a high-pressure chamber. Pressure is applied by the plunger to adjust and control the sample to the desired high pressure. Instantaneous release through a specific-width throttling gap forms microjets that impact and strike against the valve of an impactor or homogenizer. Sequentially, through the actions of cavitation, impact, and shear, it achieves the purposes of emulsifying dispersion of materials and cell pulverization.

高压均质工作原理



### Application Areas

#### Shock Valve (R)

Typically used for crushing of samples, e.g., E. coli, yeast, algae, etc;

#### Ball valves (PS)

Typically used in the preparation of emulsions, e.g.: wax emulsions, vitamin emulsions, intravenous emulsions.

Food and Beverage: flavors, fruit and vegetable juices, vegetable protein drinks.

Dairy products: milk, ice cream, cream, flavored or fortified milk, yogurt.



### Main Technical Parameters

Model	SCIENTZ-150(150PS)	SCIENTZ-150A(150APS)
Power Supply	220V/50Hz	three-phase four-wire 380V/50Hz
Flow	6-12 L / hour	12-25 L / hour
Suction Times/Minutes	approx 140 times	approx 140 times
Max. Working Pressure	1500bar	1500bar
Max. Product Viscosity	2000cP	2000cP
Motor Power	1.5KW Level 8	3.0KW Level 8
Dimension	L800*W460*H450mm	L840*W620*H540mm
Max. Product Temp	90°C	90°C
Max. Steam Temp	121°C	121°C
Max. Feed Particles	<500 micron	<500 micron

### Partial sample case

Plant proteins: soy protein, peanut protein, sweet potato protein, etc.

Plant tissues: psyllium spores, hawthorn leaves, loquat leaves, ginger plant rhizomes, etc.

Algae cells: Spirulina cells, Candida cells, Chlorella cells, etc. Microorganisms: yeast, E. coli, Schizosaccharomyces cerevisiae, etc.

Liquid food: food and beverage, dairy products, jelly, etc.

Paint color paste: carbon black paint color paste, phthalocyanine green paint color paste, phthalocyanine blue paint color paste, purple 23 paint color paste, etc. c

# MEDIUM TEST TYPE HIGH PRESSURE HOMOGENIZER



## Description

SCIENTZ pilot-type high-pressure homogenizer launched processing capacity covers 50L/H - 500L/H a variety of instruments can be used for bioengineering, pharmaceutical engineering, food and other industries, research and development and small pilot production of various stages of the requirements, with easy to operate, processing efficiency and high characteristics.



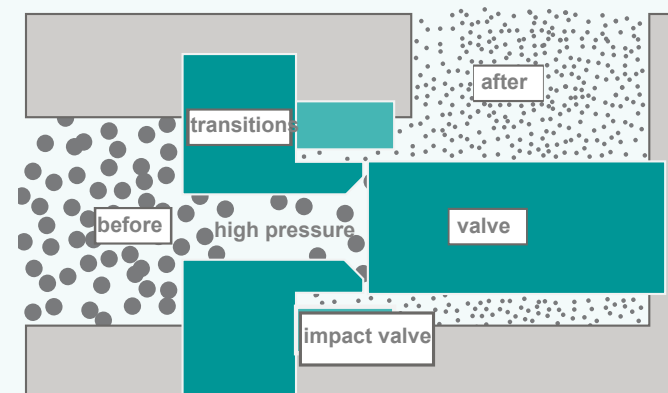
## Working Principle

The material is transferred from the material cup through a one-way valve into a high-pressure chamber. Pressure is applied by the plunger to adjust and control the sample to the desired high pressure. Instantaneous release through a specific-width throttling gap forms microjets that impact and strike against the valve of an impactor or homogenizer. Sequentially, through the actions of cavitation, impact, and shear, it achieves the purposes of emulsifying dispersion of materials and cell pulverization.

## Features

- Corrosion-resistant: seals are made of corrosion-resistant materials
- High crushing efficiency: the particle size of the material can be uniformly refined to less than 100nm, the crushing rate is more than 95%.
- High sanitation level: the use of food and drug requirements in line with the 316L stainless steel materials
- Zero Residue: Built-in empty valve structure can empty the material.
- Adjustable pressure: the homogenizing pressure is adjustable from 0 to 150MPa.
- Controllable temperature: the inlet and outlet of the cooling connector are connected with the thermostatic tank, which can effectively control the rising temperature of homogenized materials.
- Adjustable flow rate: frequency conversion flow control system, according to the need to adjust the size of the flow rate
- Wear-resistant: the valve body is made of diamond material.
- Safe and reliable: mechanical safety valve, overload shutdown.

高压均质工作原理



## Application Areas

### Bioengineering

- Handling of microbial samples and fragmentation of algal cells.
- Studies on the functional effects of plant proteins under different homogenization conditions.

### Materials engineering

- Application in pigment dye ultrafine powder processing treatment
- Optimization of cosmetic (nanoparticle emulsion, liposome) processes

### Food industry

- Study of the effects of different homogenization conditions on the physicochemical properties of food and beverages
- Non-Heat Sterilization Techniques in Liquid Foods

### Biopharmaceutical

- Optimization of extraction and preparation of active pharmaceutical ingredients (fat emulsions, nanosuspensions, lipid nanoparticles, liposomes, flavonoids)
- Research on the Integration of Chinese Medicine Extracts with Modern Pharmaceutical New Technology.

## Partial sample case

- Plant proteins: soy protein, peanut protein, sweet potato protein, etc.
- Plant tissues: psyllium spores, hawthorn leaves, loquat leaves, ginger plant rhizomes, etc.
- Algae cells: Spirulina cells, Candida cells, Chlorella cells, etc.
- Microorganisms: yeast, E. coli, Schizosaccharomyces cerevisiae, etc.
- Liquid food: food and beverage, dairy products, jelly, etc.
- Paint color paste: carbon black paint color paste, phthalocyanine green paint color paste, phthalocyanine blue paint color paste, purple 23 paint color paste, etc.

## Main Technical Parameters

Model	PHA-060I	PHA-100I	PHA-200I	PHA-300I	PHA-400II	PHA-500I
Capacity (L/H)	60	100	200	300	400	500
Plunger number	2	3		3		
Transmission	Pulleys		Pulleys		Gearboxes	
Motor Power	7.5kW Level 8		15kW Level 8		37kW Level 6	
Max. Working Pressure	1500bar					
Flow Control	Frequency converter regulates flow rate					
Pressure Gauge	High Precision Pressure Sensor + Digital Pressure Gauge					
Homogeneous Grade	first class					
Residuals	0					
Pressure Method	Manual Pressure Regulation / Pneumatic Pressure Regulation					
Cooling Method	Plunger Cooling					

# SCIENTZ-32

## AUTOMATIC HOMOGENIZER

### Description

The SCIENTZ-32 automatic homogenizer combines three functions: sample homogenization, cutter head cleaning and sterilization. The SCIENTZ-32 is a multi-tasking, high throughput homogenizer that can handle up to 32 samples at a time, which greatly improves the efficiency of sample pre-processing. For laboratories that process multiple samples per day, it offers the advantages of high throughput, low residue, fast homogenization and high safety. It can be widely used in food safety and biomedical applications.

### Working Principle

By electronic speed control to manipulate the miniature high-speed motor drive 316 stainless steel plum type crushing tool to work. Stator-rotor configuration, through the high-speed rotation of the internal cutter, thus homogenizing, emulsifying, crushing of various substances. Up to 32 samples can be processed at one time, which greatly improves the efficiency of sample pretreatment, especially suitable for laboratories that need to process multiple samples in a short time. The compact design of this instrument adopts a high-speed silent motor, the noise is less than 60 dB, removable internal cutting tool, easy to disinfect.



SCIENTZ-32

### Features

- Large capacity: 10ml-200ml sample tubes, adapt to the customer's various applications.
- Low Noise: High-speed silent motor, noise less than 60dB.
- High throughput: industrial-grade high-precision servo motion system can process 8 to 32 samples in one cycle.
- Remote monitoring: WiFi connection, you can use a computer, cell phone, tablet to control the equipment operation remotely.
- Intelligent storage: Hundreds of homogenization parameters can be stored and the data can be viewed on the instrument display.
- Self-cleaning: selectable cleaning modes (water, organic solution, ultrasonic cleaning spray) and time, effectively preventing cross-contamination.
- High safety: Built-in exhaust system can instantly extract volatile and hazardous gases to protect the health of experimental personnel Automatic shutdown alarm for temperature and speed abnormality.

### Main Technical Parameters

<b>Power</b>	<1000W
<b>Capacity</b>	10 ~ 200ml
<b>Max. Channel</b>	32pcs
<b>Maximum Viscosity</b>	5000mPa·s
<b>Homogenizing Speed</b>	3000 ~ 36000rpm adjustable
<b>RPM Deviation</b>	1%
<b>Cleaning Method</b>	Organic solvent Water Ultrasonic cleaning spray
<b>Observation Window</b>	LED light inside to visualize the whole experiment process
<b>Sample Volume And Specifications</b>	Standard 10ml 32 wells; 50ml 16 wells; 100ml 10 wells Optional 30ml 16 wells; 150ml 10 wells; 200ml 8 wells
<b>Accessibility</b>	Active Exhaust System (AES)
<b>Optional Stand</b>	Can be assembled with various test tube and centrifuge tube holders
<b>Cutterhead Specification</b>	10x195mm Flat-bottom mechanical cutterhead 19x195mm Flat-bottom mechanical cutterhead
<b>Position Adjustment</b>	The cutter head automatically adjusts the distance to enhance the homogenizing
<b>Sample Tray</b>	Effect. Carousel type sample trays to reduce the risk of cross-contamination
<b>Protection</b>	With free protection, adjustment and alarm functions
<b>Display</b>	7 Inch industrial grade touch screen

# SCIENTZ

## LAB BLENDERS



**SCIENTZ-04**

### Description

Lab blenders, also known as Tapping / Slapping Homogenizer, can make the process of extracting bacteria from solid samples very simple. Simply add the sample and diluent into the sterile sample bag (maximum sample volume up to 400ml), and then put the sample bag into the tapping homogenizer to complete the sample processing. Our products are widely used in microbiological testing of food and drugs, animal tissues and biological samples, and are widely used in hospitals, CDC, commodity inspection, quality inspection, environment, cosmetics and animal husbandry and veterinary systems.

### Working Principle

After the original sample (block, solid, leaf, powder, etc.) is simply sheared, it is put into a sterile homogenizing bag together with the corresponding diluent or solvent, and then repeatedly hammered on the sample bag by the hammering plate of the lab blenders (i.e., clapper-type homogenizer), which generates pressure, causes oscillation, and accelerates the mixing, so as to make the microbial components of the solution in a uniformly distributed state, which is suitable for the homogenization of brain, kidney, liver, spleen, and other tissues and microorganisms. It is suitable for homogenization of brain, kidney, liver, spleen and other tissues and microorganisms.

### Application Areas

- Biological engineering: homogenization of animal and plant tissues (liver, intestine, stomach, etc.)
- Food engineering: homogenization of meat, fish, vegetables, fruits, cookies, etc.
- Clinical medicine: bulk single-cell acquisition of tumor tissues; pharmaceutical microbiology, etc.

### Main Technical Parameters

Model	SCIENTZ-04	SCIENTZ-09	SCIENTZ-11
Display	5-inch touch screen	5-inch touch screen	5-inch touch screen
Time Setting	30s、180s、600s or ∞	0-8 hour	0-8 hour
Batting Speed	6-9 time/ s	3-12time/s	3-12time/s
UV Sterilization	No	No	Yes
Temp Control	No	No	RT -50°C
Storage Data	No	10 groups	10 groups
Leakage Protection	Yes	Yes	Yes
Stroke Adjustment	0-20mm	0-20mm	0-20mm
Quick Release	Support	Support	Support
Volume		3-400ML	
Power	150W	150W	300W
Dimension		430*245*280 (L*W*H)	
Power Supply		220V/50Hz	

### Selected articles published using the Shinchii series of sterile homogenizers:

- [1] 解秋菊, 许静, 王秀娟. 水产品中氯霉素的残留状况 [J]. 食品研究与开发, 2012.
- [2] 房晓, 齐沙沙, 范维江. 贮藏期间菠菜微生物生长动力学模型的研究 [J]. 科技与应用, 2014.
- [3] 侯小刚, 刘书亮. 四川部分地区猪肉产业链中沙门氏菌的分离及其鉴定 [J]. 食品科学, 2013.



# SCIENTZ-60

## FOUR-CHANNEL HIGH-SPEED DISPERSION HOMOGENIZER

### Description

With the development of food safety and biomedical fields, the use of homogenizers is becoming more and more widespread, including pre-treatment of agricultural and livestock products, meat, eggs and milk, and the detection of pesticide or veterinary drug residues in feed, etc. The SCIENTZ-60 4-Channel High-Speed Dispersion Homogenizer is a multitasking, high-throughput homogenizer and disperser that can process up to 60 samples at a time, greatly improving the efficiency of sample pre-treatment.

The SCIENTZ-60 four-channel high-speed dispersion homogenizer can handle a wide range of sample types. Applications include: pharmaceutical, food, agricultural, feed and beverage industries.

### Features

- LED industrial grade operation display, resistive touch operation
- PLC control of homogenization and cleaning of cutter head.
- Four-channel simultaneous homogenization, shortening the waiting time for processing samples.
- A variety of standard homogenization programs to choose from, easy and fast operation.
- Customized user program to set the workflow and time of each step.
- Matrix visualization of workflow settings for quick and easy setup.
- Matrix setup with one-key initialization function
- The whole process state prompts, operation prompts, equipment use more safety
- Customize the start-stop working state of the cutterhead to avoid the damage of the cutterhead idling.
- The cutter head can be moved up and down during homogenization to enhance the homogenization effect.
- The knife head can be moved up and down during homogenization to enhance the homogenization effect.
- The equipment comes with a sample cooling system, can be connected to the cooling thermostat tank temperature control
- Fully automatic cleaning of the cutterhead with tap water, organic solvents and ultrasonic waves.
- Four separate organic solvent cleaning tanks for the cutterhead to avoid cross contamination.
- Fault information and beeping alert function
- Ultrasonic start without water protection and prompt function
- One-key liquid change, one-key cleaning, one-key start function
- Equipment with emergency stop switch function
- The equipment is equipped with USB data download, upload port
- Equipment with software upgrade interface



### Main Technical Parameters

<b>Sample Throughput</b>	60 pcs/lot (10/15ml round bottom centrifuge tube) (optional)
	44 pcs/lot (50ml free standing centrifuge tubes) (standard)
	32 pcs/lot (100ml rotary centrifuge tube with scale) (optional)
	24 pcs/lot (200/250ml plastic centrifuge bottle) (optional)
<b>Liquid Filling Method</b>	Peristaltic pump filling
<b>Drainage Method</b>	Motorized Ball Valve Drain
<b>Pump Flow</b>	1.7L/min
<b>Motion Mechanism Drives</b>	86 Closed Loop Stepper Drives
<b>Motion Mechanism Motor</b>	Stepper motor type 86
<b>Equipment Controls</b>	7-inch industrial-grade touchscreen + PLC control
<b>Homogenizing Motor</b>	300W, Maximum speed 36000r/min
<b>Motor Speed Control Mode</b>	Variable frequency speed control
<b>Motor Speed Range</b>	10000-36000r/min
<b>Motor Cooling Method</b>	water cooling
<b>Homogenizing Tool Specifications</b>	10×195mm or 19×195mm
<b>Alarm</b>	Screen Alerts and Beeps
<b>Data Ports</b>	USB
<b>Emergency Equipment Stop</b>	emergency stop switch
<b>Software Upgrade Method</b>	USB download
<b>Maximum Viscosity</b>	5000mPas
<b>Power Supply</b>	AC220V/50Hz
<b>Power</b>	2000W