SCIENTZ-207B

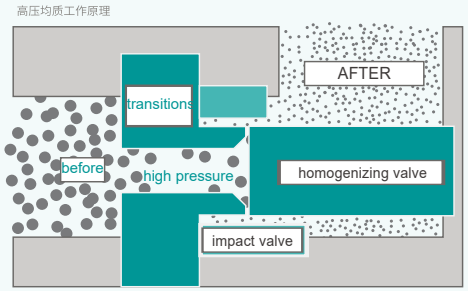
HIGH PRESSURE HOMOGENIZER

Description

The SCIENTZ-207B 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.



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

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

SCIENTZ-150
HIGH PRESSURE HOMOGENIZER

Description

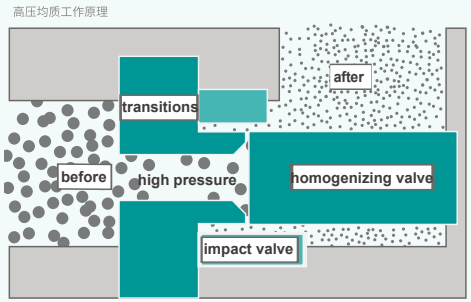
The High Pressure Homogenizer introduced by SCIENTZ Bio is a miniaturized bench-top biological sample processing unit. The instrument has a built-in cooling circulation system to directly cool the homogenizing head and optional homogenizing valves for different applications. It is characterized by high 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.



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