# Lab-scale nano high pressure homogenizer manufacturer

Lab-scale nano high pressure homogenizer is an ultra-high pressure fluid processing equipment designed for the research development stage, which is suitable for the high requirements of dispersing nanoparticles, cell breaking, emulsification, homogenization and other key processes.

## Lab-Scale Nano High Pressure Homogenizer Overview

Lab-scale nano high pressure homogenizer is widely used in pharmaceutical, biotechnology, food, cosmetics, new materials and many other industries in small batch sample processing and process optimization research.

## Core Features

- Structural precision: single rod ceramic plunger design, drive stability, to ensure accurate and controllable flow rate of the material, can be added with a lubrication system to extend the service life of the seals.
- High pressure capability: equipment rated working pressure up to 1800bar, design pressure up to 2000bar, to ensure that to meet the needs of nanoscale processing.
- Ultra-low sample demand: processing volume of only 15ml, zero sample residue design, suitable for high-value or scarce sample processing, automatic suction, without external pumping system.
- Hygienic materials: material contact parts are made of FDA and GMP-certified high-clean materials, supporting CIP online cleaning, to meet the requirements of pharmaceutical-grade cleanliness.
- Advanced homogenizing valve technology: the core valve components are made of zirconia, diamond, hard alloy, such as tungsten steel, stellite and other highly wear-resistant materials, double-sided use design, the service life is twice as long as that of the conventional materials. the secondary valve structure enhances the uniformity of dispersion and emulsification.
- Energy saving and high efficiency: the introduction of frequency conversion control system, with international brand key components, not only to enhance the stability, but also reduce energy consumption, improve the overall operating efficiency of the equipment.

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- Wide range of temperature control: support the feed temperature of 90 °C, can meet the processing needs of most heat-sensitive materials.
- Multiple pressure monitoring: equipped with pointer and digital dual display system to ensure real-time visualization of the pressure during operation and safety control. Equipped with sanitary imported digital diaphragm pressure gauge to realize accurate monitoring.
- Product process viscosity: less than 2000cps
- Feed particle size: less than 300um

## Working Principle

The lab-scale nano high pressure homogenizer pushes the material strongly into the homogenizing valve system through the plunger, when the material passes through the micro-gap valve opening, it will experience the intense shear force, cavitation, impact and pressure gradient, which will rapidly break up the agglomerates, break up the particles, refine the droplet size, and realize the emulsification and homogenization effect. Emulsification and homogenization effect. After two-stage valve structure, the particle size of the material is further refined to nano level, and the distribution is more uniform and stable.

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| **Model** | **HH10-5** | **HH10-10** | **HH10-20** |
|---|---|---|---|
| Design flow | 3 to 5L per hour | 10L per hour | 20L per hour |
| Processing Capacity | more or equal than 15ml | | |
| Feed particle size | less than 300um | | |
| Product Process Viscosity | less than 2000cps | | |
| Working Pressure Display | Digital, Pointer Pressure Gauge | | |
| Control mode | manual operation | | |
| Product feed temperature | less or equal than 90°C | | |
| Max working pressure | 1800bar, 26100psi | 1800bar, 26100psi | 1500bar, 21750psi |
| Design max pressure | 2000bar, 29000psi | 2000bar, 29000psi | 1800bar, 26100psi |
| Number of plungers | 1 | | |

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| **Model** | **HH10-5** | **HH10-10** | **HH10-20** |
|---|---|---|---|
| Power supply | 380Vac, 50Hz | | |
| Power | 1.5kw | 1.5kw | 2.2kw |
| Note | In order to meet the needs of our users, we offer customized | | |