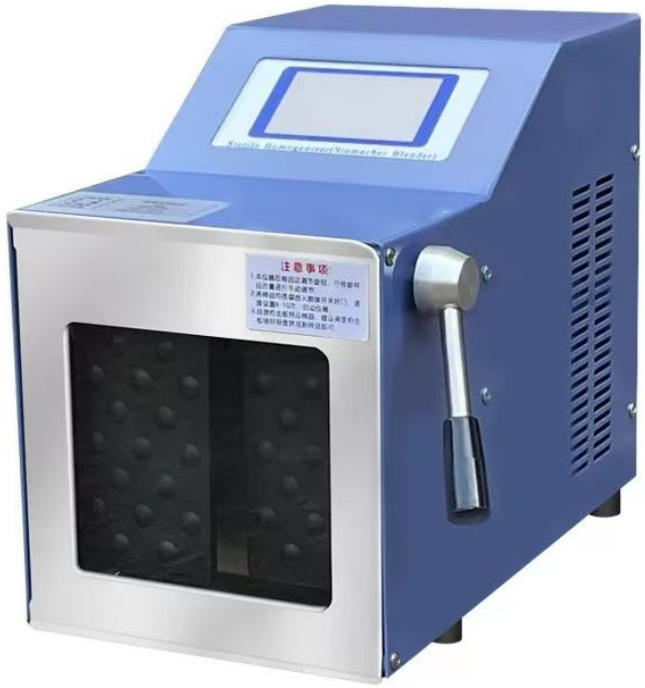
Paddle Blender



Working principle and applications

Microbial samples may be in their original state as lumps, pastes, powders, etc., and must be refined into a fine liquid sample to facilitate microbial analysis and inoculation. The working principle of this instrument is as follows: the original sample (larger samples need to be cut into approximately 10×10mm pieces) is placed in a homogenization bag with a certain liquid or solvent. The instrument's hammer plate repeatedly strikes the sample homogenization bag,

generating pressure, causing oscillation, accelerating mixing, and thus achieving a uniform distribution of microbial components in the solution. This instrument is suitable for homogenizing tissues such as brain, kidney, liver, and spleen, as well as microorganisms, and is widely used in food, pharmaceutical, clinical, molecular, toxin, and bacterial detection fields.Product Parameters

The homogenization bags, made of special materials and pre-treated (opened bags should be sterilized again to ensure proper homogenization), are sealed by a crossbar along the top edge of the homogenizer door to prevent spillage during impact. The homogenizer's impact plate continuously strikes the bag, generating pressure to break down and homogenize the sample. The homogenization speed is programmable, with each segment adjustable from 3 to 12 times per second. The homogenization time can be set from 1 second to 100 minutes or continuous operation. Users can select the appropriate setting based on the sample and solvent to achieve optimal homogenization results. For example, a timed setting of 3 minutes and a medium speed of 6-10 times per second is suitable for homogenizing mouse and rat livers.

Instrument Features

This instrument simplifies the extraction of bacteria and cellular tissues from solid samples. Simply add the sample and diluent to a dedicated sample bag, place it in the homogenizer, close the door, and after a simple setup, it

automatically begins homogenization and completes the sample processing. The device effectively separates particles contained within and on the surface of solid samples, ensuring a homogenized sample and representing its full potential. Operation is simple, convenient, and time-efficient. Disposable homogenization bags eliminate the need for tedious cleaning after use. Samples stored in disposable bags effectively prevent cross-contamination and protect operator safety.

Precautions for instrument use and maintenance

1. After opening the instrument packaging, install the included door handle. Align the screw end of the handle with the door opening knob on the instrument (located at the upper right front of the instrument) and tighten.

2. A black plastic adjustment knob is located on the back of the instrument. Adjust the pressing distance of the impact plate according to the actual sample volume. It is not recommended to adjust it too far forward; generally, adjust it until you can clearly see the sample being squeezed by the black impact plate during instrument impact.

3. After prolonged use, if the lubricating oil in the internal springs and nylon sleeves dries out, clean it promptly and add new grease. It is generally recommended to add grease every 6-10 months. If abnormal operating noise occurs, check whether the connecting bolts, springs, or impact plates are loose.

4. Cleaning the chamber: The stainless steel front door panel can be lifted upwards. After the groove under the door panel disengages from the fixing rod, lift the door panel upwards again and flip it backwards to expose the chamber for cleaning.

Product Specification Model	Standard Type	Sterilization Type	Heating & Sterilization Type
Control Mode + Parameter Storage	Microcomputer control + 8-stage combined programming	Microcomputer control + 8-stage combined programming	Microcomputer control + 8-stage combined programming
Display Mode	4.3-inch touch display	4.3-inch touch display	4.3-inch touch display
Panel Operation Mode	Touch mode	Touch mode	Touch mode
Paddle Time	0.1-99 min 59 sec or continuous operation	0.1-99 min 59 sec or continuous operation	0.1-99 min 59 sec or continuous operation
Paddle Plate Material	Stainless steel + black special extrusion protective sleeve	Stainless steel + black special extrusion protective sleeve	Stainless steel + black special extrusion protective sleeve
Paddle Speed	3-12 times/sec	3-12 times/sec	3-12 times/sec
Heating Function	None	None	Yes
Temperature Control Range	None	None	Ambient temperature ~ 60°C

Product Specification Model	Standard Type	Sterilization Type	Heating & Sterilization Type
Disinfection Function	None	Yes, disinfection wavelength 253.7nm	Yes, disinfection wavelength 253.7nm
Effective Volume	3-400ml	3-400ml	3-400ml
Sterile Bag Size	17*30cm	17*30cm	17*30cm
Paddle Chamber	Stainless steel + anti-corrosion spray molding	Stainless steel + anti-corrosion spray molding	Stainless steel + anti-corrosion spray molding
Paddle Gap	0-50mm adjustable	0-50mm adjustable	0-50mm adjustable
Startup Mode	Gentle start	Gentle start	Gentle start
Pause Function	Yes	Yes	Yes
Power Supply/Power	220V·300W	220V·350W	220V·500W

Product Specification Model	Standard Type	Sterilization Type	Heating & Sterilization Type
Anti-pinch Function	With automatic stop anti-pinch function	With automatic stop anti-pinch function	With automatic stop anti-pinch function
Others	Removable viewing window + tempered glass safety door	Removable viewing window + tempered glass safety door	Removable viewing window + tempered glass safety door
Voice Prompt Function	Yes	Yes	Yes
Instrument Dimensions (D*W*H)	420*230*330mm	420*230*330mm	420*230*330mm
Instrument Net Weight	19KG	18.5KG	18.5KG
Outer Packaging Dimensions (L*W*H	540*310*410mm	540*310*410mm	540*310*410mm

Product Specification Model	Standard Type	Sterilization Type	Heating & Sterilization Type
mm)			

Instrument Mode Selection & Setting

In standby mode, click the project indicator light or enter the project number in the upper left corner to select working mode M0-M7. If you need to combine two modes, you can click the indicator lights in the multi-project operation mode: MO, M1, and so on. Up to 8 modes can be combined.

Packing list

No.	Item Name	Unit	Quantity
1	Main Unit	set	1
2	Power Cord	pc	1
3	Standard Sterile Homogenizer Bags (50 pcs/pack)	pack	1
4	Manual (including Warranty Card)	copy	1

No.	Item Name	Unit	Quantity
5	Certificate of Conformity	copy	1
6	3A Fuse	pc	2
7	Door Opening Handle	pc	1
8	Black Rubber Plate (pre-installed in the machine)	pc	2

Examples of test reports for granular traditional Chinese medicine (for reference only):

Option 1:

1. Soak two granules in boiling water for 10 minutes, then place them, along with the water, in a homogenization bag. Place another homogenization bag over the soaking bag.

2. Finally, place the granules from both bags onto a homogenizer and beat them for two and a half minutes until homogenization is complete.

3. Use a homogenization rate of 6-8 beats per second.

Result: No leakage from either homogenization bag.

Option 2:

1. Soak two granules in cold water for 10 minutes, then place them, along with the water, in a homogenization bag, and then place another homogenization bag over it.

2. Finally, place the granules in both bags onto a homogenizer and beat them for 3 minutes until homogenization is complete.

3. Use a speed of 6-8 beats per second.

Result: The inner bag broke, the outer bag did not leak, but the surface became uneven.

Comparison of homogenization effects: The first group, due to soaking in boiling water, had a slightly darker color than the second group.

Conclusion: Soaking in cold water for 10 minutes and using two homogenization bags is sufficient to achieve homogenization.

An example illustrating how to obtain a large number of single cells using a homogenizer (for reference only):

Tumor tissue (such as gastric cancer, colorectal cancer, or breast cancer) removed during surgery is placed in a petri dish and washed with physiological saline containing 100 U/ml gentamicin to remove bacteria adhering to the tissue.

After washing three times, 10 ml of physiological saline is added at a ratio of 2g to 10g of tissue. The tissue is then cut into small pieces, as small as possible (2-5mm square), and placed in a homogenizer bag.

The homogenizer is operated according to the instruction manual. The technical parameters are 10 times/second for 5-10 minutes, with a 1-minute pause every minute. The total time may vary slightly depending on the tissue. The processed tissue mixture is then aspirated into a test tube and allowed to stand for 3-5 minutes. A clear cell suspension containing a large number of dispersed monocellular cells is collected and centrifuged at 1000 rpm for 5 minutes. Culture medium containing 20% fetal bovine serum is added, and the cells can be cultured directly. The cell count can be adjusted to approximately 2×10^5 ml. The total cell count may vary depending on the size of the tissue piece, but there will be enough cells for culture.

The single round cells in the image represent the desired dispersed single cells, including glandular cells and epithelial cells. The irregular spindle-shaped cells are broken-up myofiber cells, also dispersed single cells. All exhibit complete, rounded cell morphology and good activity.

Product Structure

PRODUCT DISPLAY