

GeneReady Ultimate

Biological Sample Preparation System

User's Manual



Hangzhou Lifereal Biotechnology Co.,Ltd.

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Thanks for your selecting this kind of instrument.

Please read this manual carefully before operating the instrument!

Important Note

1 Conventions



NOTE

Please read it carefully, for there is important information in this column. Failure to follow the advice in this column will possibly result in damage to or the malfunctioning of the GeneReady Standard.



WARNING

This symbol means that you should be cautious when performing an operation/procedure. Failure to follow the requirements in this column may result in personal injury.



WARNING

Users should call to our service hot line or register the product in our company's official website to acquire the newest product information and after sales telephone visit.

2 Safety



Warning

This user manual doesn't cover all safety issues of using this machine. Before using this machine, the user is responsible for making plans of safety and health, and make the scope of application clearly.

During the operation, maintenance, or repair of the GenePro Instrument, the following safety measures should be taken. Otherwise, the guard provided by the Instrument is likely to be damaged, while the rated safety level to be reduced, and the rated operation conditions to be affected.

Lifereal shall not be in any way responsible for the consequences resulted from operators not following the requirements.

Note: This instrument complies with the following standards:

- Chinese safety requirements for electrical for measurement control and laboratory use: GB4793.1。
- EU safety requirements for electrical: EN61010-010:2003。
- EU EMC: EN61326:2006。
- Materials comply with ROHS requirement

1) Grounding Considerations

A.C. power's grounding should be grounded reliably for fear of an electric shock. The 3-pin plug with the Instrument's power line is a safety device that should be matched with a grounded socket. Never let the third ground pin floating. If the 3-pin plug cannot be inserted, it

is recommended to ask an electrician to install an appropriate power socket.

2) Keep Away from Electric Circuits

The operator is not allowed to open the Instrument. To changing components or adjust certain parameters inside the device must only be accomplished by the certificated professional maintenance personnel. Do not change elements while the power is still on.

3) Power supply

Before turn on the power, always check if the mains voltage is within the required A.C. (10% difference is allowed.) and whether the current rating of the power socket meet the required specification. To ensure safety, the phases of the instrument and socket should be coincident, that's L is phase line, N is null line, E is ground line.

4) Power line

As an accessory of the Instrument, the A.C. power line used should be a default one. If it is damaged, the A.C. power line may not be repaired, but could be replaced by a new one with same model and specification. The power line should be free of heavy objects during the Instrument's operation. Keep the power line away from the place where people gather regularly.

5) Connect the power line

While connect or disconnect the power line, you should hold the 3-pin plug with your hand. Insert the plug thoroughly to ensure good contact between the plug and socket. Pull the plug, but not the line, when you need to disconnect to the mains.

6) Requested Environments

Environment Temp.:10℃~30℃

Environment relative humidity:10%~70%

Atmospheric pressure:86~106 Kpa

Indoor use with good ventilation

Avoid direct sunshine exposition

Wind speed less than 0.3m/s

No observation dusts and corrosive gas

No evident vibration

No high magnetic fields around the instrument

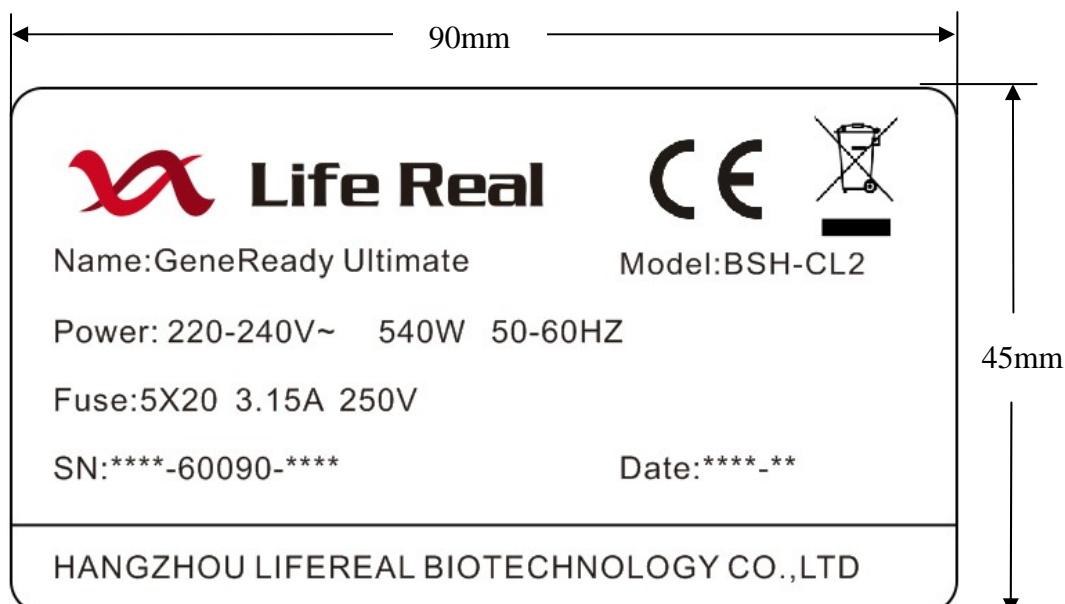
If the instrument is set aside for a long time, it is recommended to disconnect the power line to mains and cover the device with a piece of soft cloth or plastic to prevent dust from entering.

Note: Once one of the following events occurs, you are suggested to disconnect the power line with mains, and contact the distributor or ask a certificated maintenance personnel for help.

- Liquid into the device;

-
- The device sprinkled or drenched;
 - The device malfunctioning, giving off abnormal sound or odor;
 - The device falling onto the floor or its shell damaged;
-

3 Labels



4 Warranty and service information

a) Warranty period

Please refer to the warranty agreement with the distributor.

b) Warranty limitations

The above warranty is not applicable to defective devices with incorrect use, abnormal operating conditions, improper application, and unauthorized maintenance or alteration.

After the warranty comes due, Esco reserves the right to charge cost price for maintenance of a defective device and all related service charges.

Note: Once it is opened, the package should be checked according to the packing list. If the buyer finds any items to be missing or damaged, do not hesitate to contact the distributor.

After the acceptance check is passed, the buyer should fill out the check form and send its photocopy (or fax it) to the distributor. Lifereal establishes the archives and maintenance records with the returned form.

Please store the package and packing materials in a safe place in case of future device maintenance. The above warranty does not extend to goods damaged as

the result of cheesy package.

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1 Brief Introduction

GeneReady Ultimate is a refrigerated sample preparation system with features of open, rapid, high efficient and high throughput. It can process 24 samples in Max. at a time. By using different reagents, it can dispose samples from various sources (including soil, plant tissues/animal organs, bacteria, yeast, fungus, spore, paleontology specimen, etc...). It crushes cells of sample, rapidly release primitive DNA, RNA and proteins for extraction and purification in next step.

GeneReady Ultimate can be used in multiple research activities, including pharmaceutical, biochemistry, environmentology, geology, etc.

2 Basic parameters and performance

Model Specification	GeneReady Ultimate
Product Name	Biological Sample Preparation System
Function	Cooling and centrifugation
Sample Capacity	24×2ml
Vibration speed	2.0-6.5m/s,with step of 0.05m/s to increase
Smash Acceleration	To reach to the Maximum rotating speed within 2 sec.
Temp. control range	4~35℃
Centrifuge Speed	4000rpm in Max.
Accuracy of centrifuge speed	±50 r/min
Centrifuge Acceleration	To reach to the Maximum rotating speed within 2 sec.
Programs	10 in Max.
Cycles	99 in Max.
Max. Time of Single Running	99 min.59 sec.
Noise Level	≤58db
Display	5.7 inch Touch Screen
Data Interface	Yes
Input Voltage	220V 50/60Hz
Input Power	540W
Dimension	L×W×H: 510×370×360mm
Net Weight	34Kg
Warning	Malfunction intelligent diagnosis and warning

Lock of the lid	Function key for the lid lock or unlock
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NOTE: Be absolutely quiet in the case of Noise Level testing.

3 Structure Sketch

Figure 3.1 GeneReady Ultimate Whole Structure Sketch 1

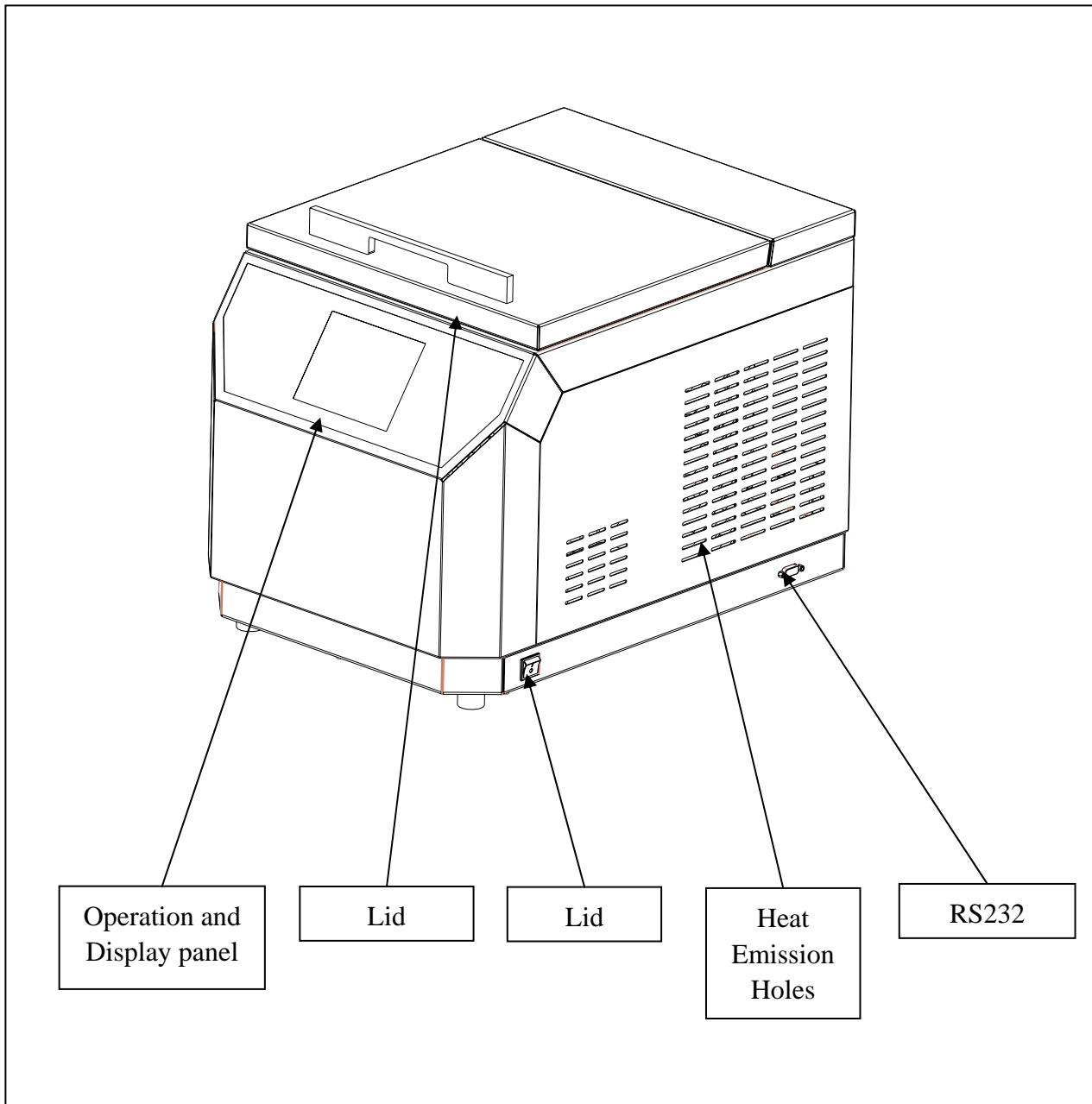
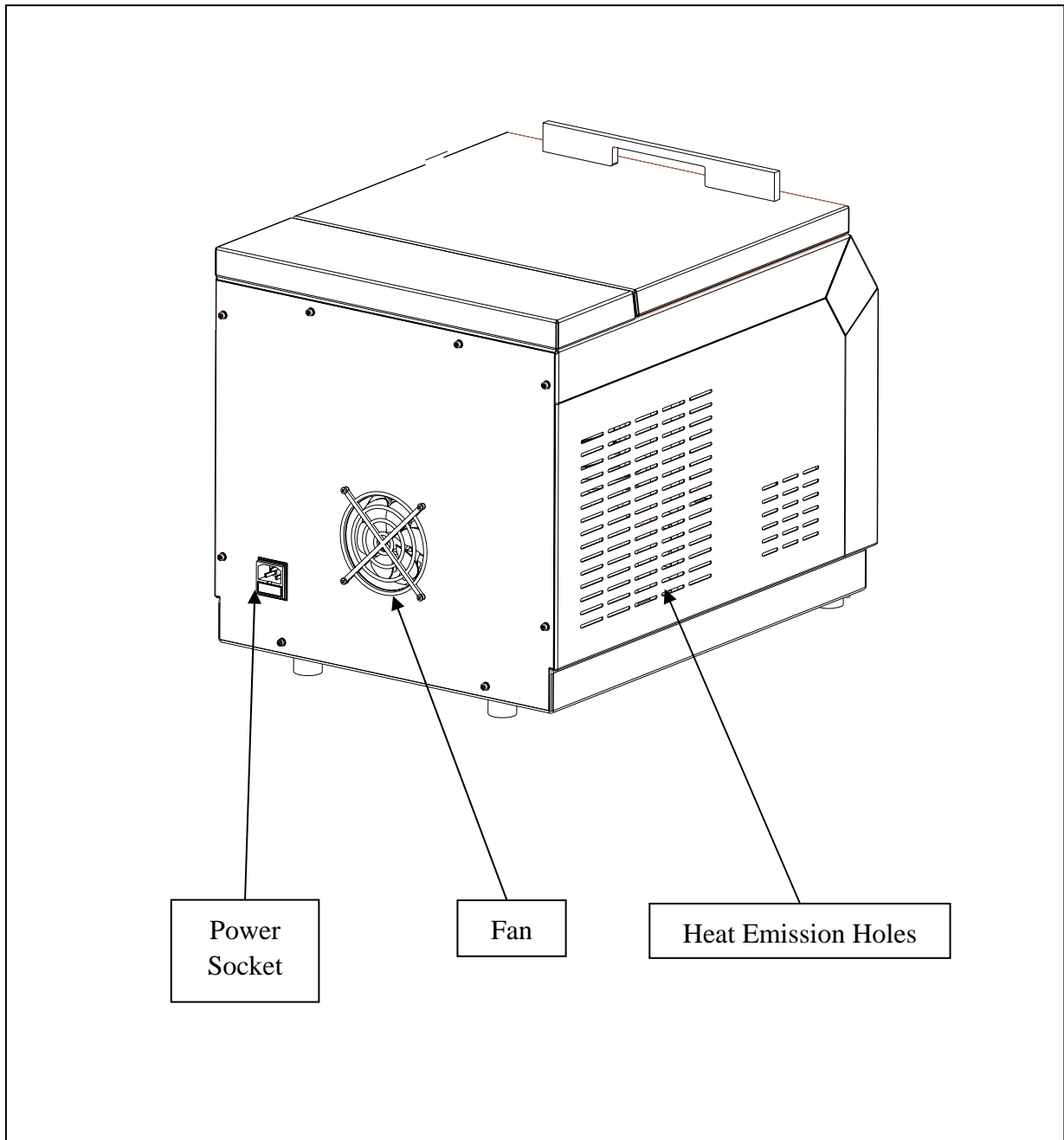


Figure 3.2 GeneReady Ultimate Whole Structure Sketch 2



4 Operation Instruction

1) Samples installation

1.1) open the lid , the internal instrument will be shown, as shown in the figure 4.1.

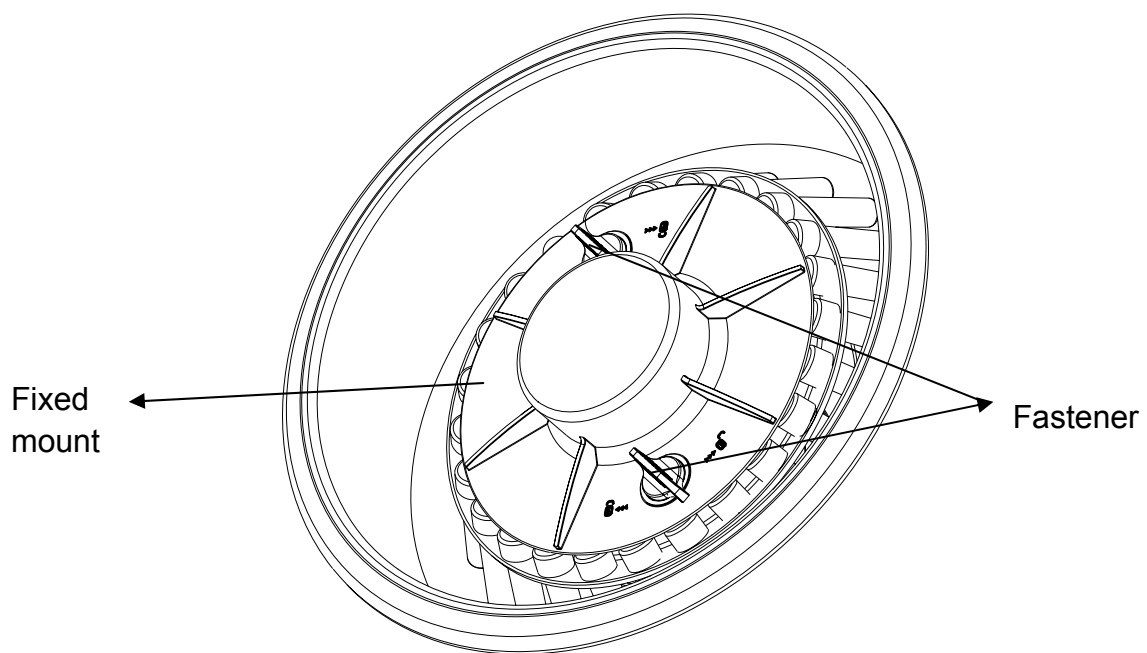


Figure 4.1 the internal instrument **sketch**

1.2) please remove the Fixed mount before install the test tube, rotate the Fastener as shown in the figure 4.1 , then hold the Fixed mount with both hands, lift it up softly. the disassembly drawing as shown in the figure 4.2.

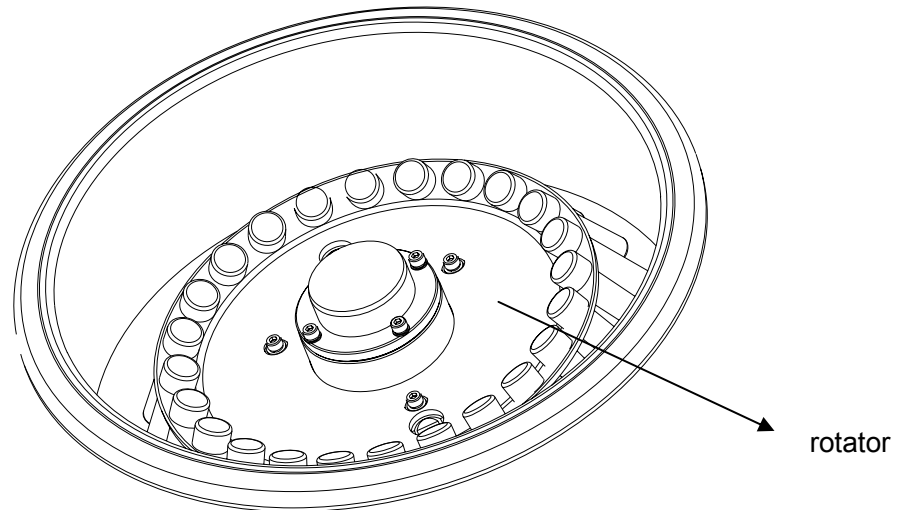


Figure 4.2 the disassembly sketch

1.3) then install the test tube on the rotator as shown in the figure 4.2.. Upon proper alignment of mounting holes, the test tube should be installed symmetrical. In particular, this two mounting holes must be installed or install four test tubes on both sides symmetrical, as shown in the figure 4.3.

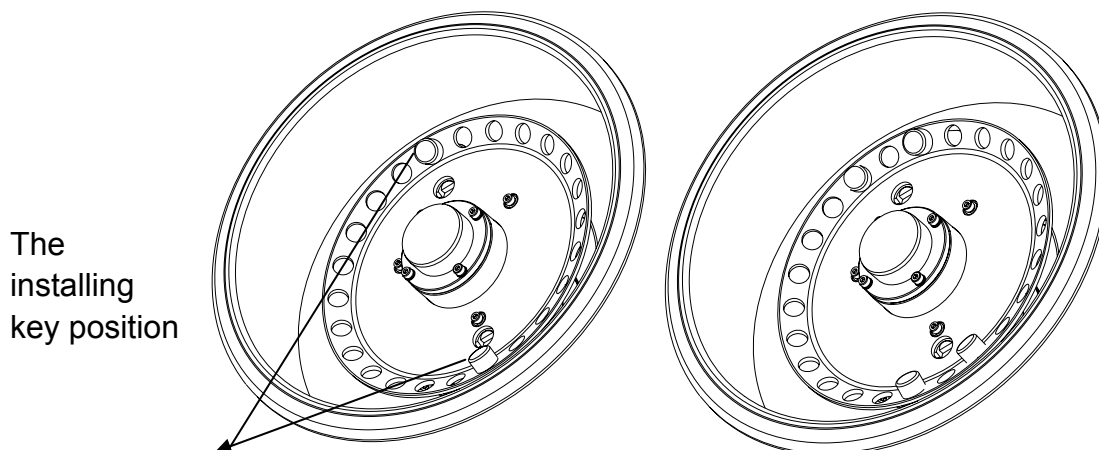


Figure 4.3. the test tube installing sketch

After installing finished, install the Fixed mount and then , lock the Fastener. At last, lift the Fixed mount up softly check for the Fixed mount is fastened.

2) Start up

Open the power switch on the bottom right corner of instrument. The software will automatically load the program, as shown in the figure 4.4.

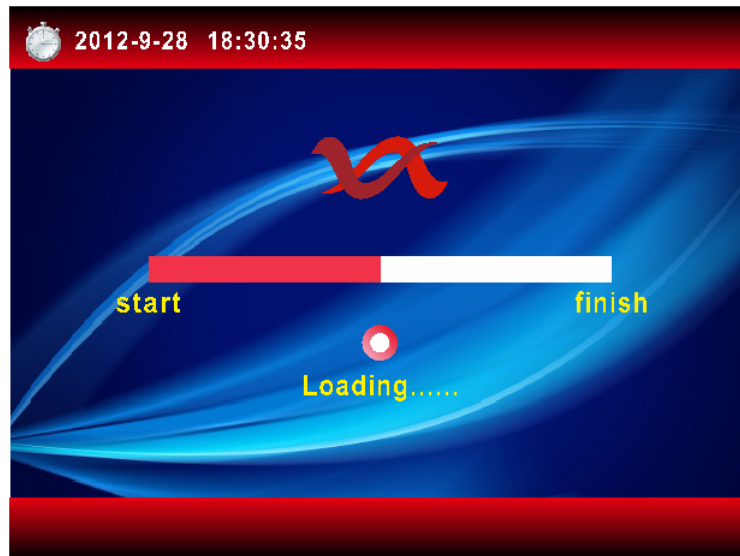


Figure 4.4 Loading interface

Note: GeneReady Ultimate includes a compressor and then the machine has the compressor protection function, so that the compressor will start to work after the machine powered in three minutes.

3) Main Interface

The system directly goes to the main interface after loading, as shown in the figure 4.2. It includes "Run", "Open lid", "File", "System set", and you can choose your next operation.



Figure 4.5 Main interface



- | | |
|----------------------|-----------------|
| ◆ 2012-9-28 18:30:35 | Current time |
| ◆ Run | Run menu |
| ◆ Open lid | Open lid button |
| ◆ File | File set |
| ◆ System set | System set |

4) System setting

4.1) Press “System setting” on the main interface into the system parameter setting interface, as shown in the figure 4.6.



Figure 4.6 System setting interface

◆ Date:	2012-09-28	show system date	2012-09-28
◆ Time:	18:30:35	show system time	18:30:25
◆ Alarm:		show alarm	on
◆ Key Tones:		show key tones	off

4.2) Set the system time, press the date or time into setting interface as shown in the figure 4.7. Press “Save” to complete and return to the previous interface.



Figure 4.7 Time setting interface

4.3) Press “Default Temp” to set default temperature , thus keeping constant temperature in no operation , as shown in the figure 4.8, Press “Save” to complete and return to the previous interface.

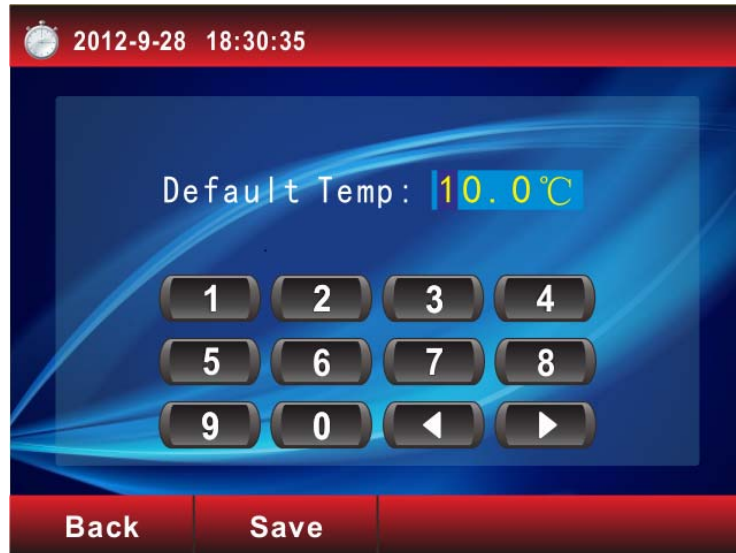


Figure 4.8 system default temperature setting interface

5) File Setting

5.1) Press "File" on the main interface, the software will go to the file setting interface, as shown in the figure 4.9.



Figure 4.9 File setting interface

5.2) The parameters setting will appear as shown in the figure 4.10



Figure 4.10 Parameters setting interface

◆ Shake	01:00	set shake time	1 min
◆ Hold	01:00	set circular waiting time	1 min
◆ TEMP	17	set shake temperature	17 °C
◆ Speed	4.00	set speed	4.00 m/s
◆ Cycle	02	set cycle	02
◆ Centrifuge	01:00	set centrifuge	1 min
◆ TEMP	17	set centrifuge temperature	17 °C
◆ rpm	4000	set RPM	4000 r/m
◆ RCF	1433	set RCF	1433 Xg

5. 3) Click the item below the shake , you can enter the specific parameters as shown in the figure 4.11.



Figure 4.11 Parameters setting interface

Note: The minimum holding time is 1 minutes.
The cycle's minimum value is once.
The centrifuge's maximum speed is 4000 rpm.

5.4) If you continue to modify other parameters as above. After completion of all parameter, press "Save", as shown in the figure 4.12. Press "YES" to enter into the file name interface as shown in the figure 4.13. Please enter the file name and then press "Save" to complete.

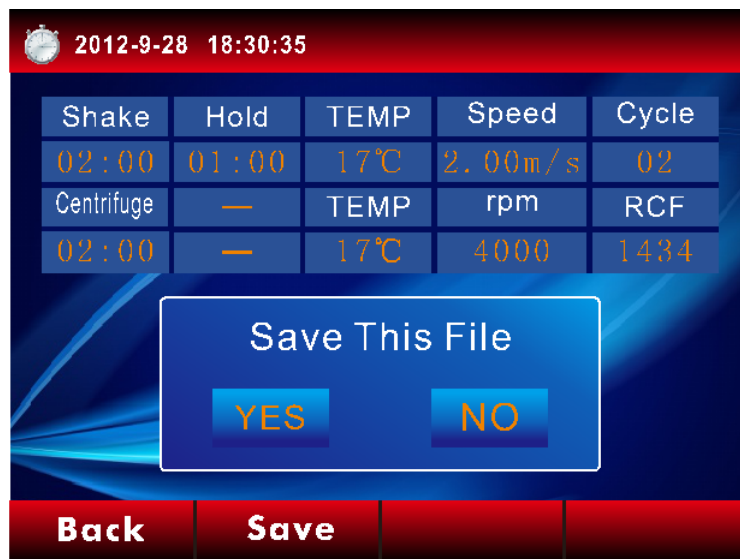


Figure4.12 Parameter setting interface

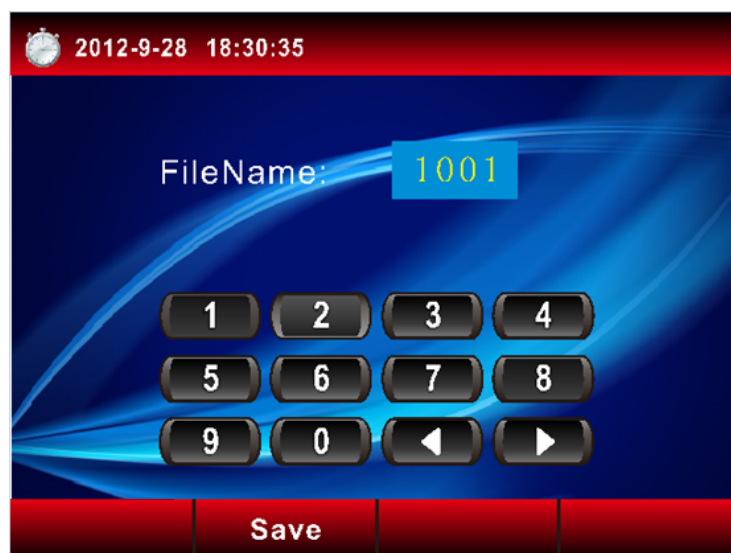


Figure 4.13 File Name interface

5.5) if a filename already exists, the "Duplicate filename warning interface" will be shown, as shown in the figure 4.14, please rename the file, Press "YES" to enter into the file setting interface, as shown in the figure 4.15. If the number of custom files is full, the "File is full interface" will be shown, as shown in the figure 4.16, you could delete the

needless files or clear all files.

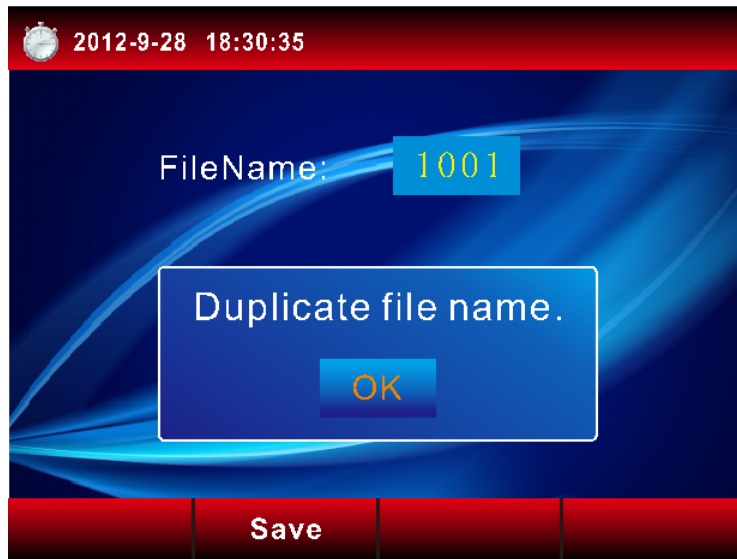


Figure4.14 Duplicate filename warning interface



Figure4.15 File setting interface



Figure4.16 File is full interface

5.6) if you want to clear all files (the standard files could not be deleted), press "yes", as shown in the figure 4.17.



Figure4.17 clear all files interface

5.7) if you want to modify or delete the customize document (the standard files could not be deleted or modified), click the corresponding file into the customize document setting interface as shown in the figure 4.18.



Figure4.18 customize document setting interface

if you want to delete this file, press "delete",as shown in the figure 4.19



Figure4.19 File deleting interface

If you continue to modify other parameters as 5.3.After completion of all parameter, press "Save",If you continue to modify the parameters of file1002.,set the shake time to 11mins. Press "save" as shown in the figure 4.20.and then press "yes" back to the File setting interface to complete as shown in the figure 4.21

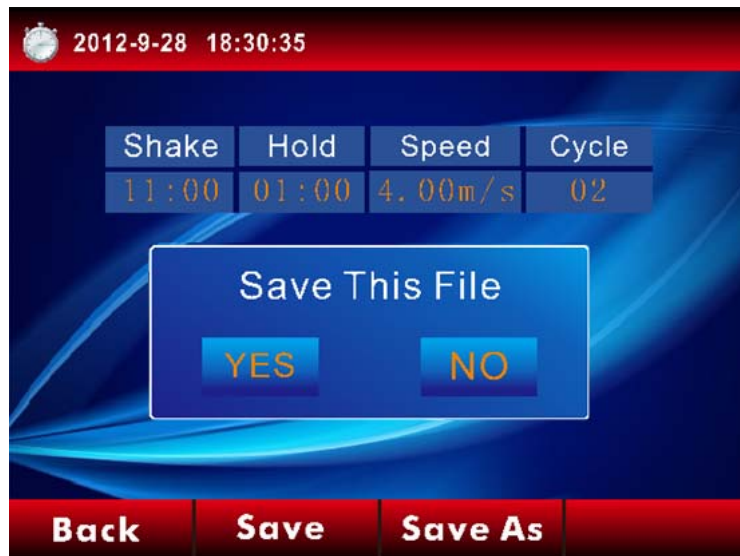


Figure4.20 File saving interface



Figure4.21 File setting interface

6) Open lid

When the instrument lid is open, "open lid" icon will be in grey and the instrument can not vibrate or centrifuge as shown in the figure 4.22



Figure 4.22 Main interface

So please close the lid, and then "open lid" icon becomes lighted, and then you can run for the next step of vibrating or centrifuge. And certainly, you can press this button to open the lid after running. So that you can remove or add the sample tubes to the instrument, as shown in the figure 4.23.



Figure4.23 Main interface

7) RUN

7.1) Press "Run" on the main interface and then the software will show the file for run, as shown in the figure 4.24.



Figure 4.24 File interface

7.2) Please choose the configure file, and the run interface appears as shown in the figure 4.25.



Figure 4.25 Run interface

◆ Shake time	01:00	show shake time:	1	min
◆ Hold time	01:00	show circular waiting time:	1	min
◆ Temperature	17.0	show temperature:	17.0	°C
◆ Speed	4.00	show speed:	4.00	r/m
◆ Cycle	02	show cycle:	02	

7.3) Please make sure the lid is closed and the operating parameters is correct, then press "Run", and the temperature interface will appear as shown in the figure 4.26. When the temperature reaches to the setting temperature, the instrument begins to vibrating operation as shown in the figure 4.27.



Figure 4.26 Temperature interface



Figure 4.27 Shaking interface

If the lid is not closed well or the lid is open by accident, the instrument will stop immediately but not run and show a "Warning" interface as shown in the figure 4.28. Please close the lid, then press "OK" and press "Run" . The machine will keep working.



Figure 4.28 The open lid alarm interface

If the temperature is anomalies when the program is running, the strument will stop immediately but not run and show a “Warning” interface as shown in the figure 4.29. Rerun the program, If the “Warning” interface is shown again as shown in the figure 4.30 Please call customer service for prompt service.



Figure 4.29 Temperature anomalies interface



Figure 4.30 Temperature anomalies interface

7.4) when running the separate operation, the program is terminal after the operation completed, as shown in the figure 4.31. If not, after the program is terminal, the instrument begins the centrifuge process as shown in the figure 4.32.



Figure 4.31 Operation complete interface

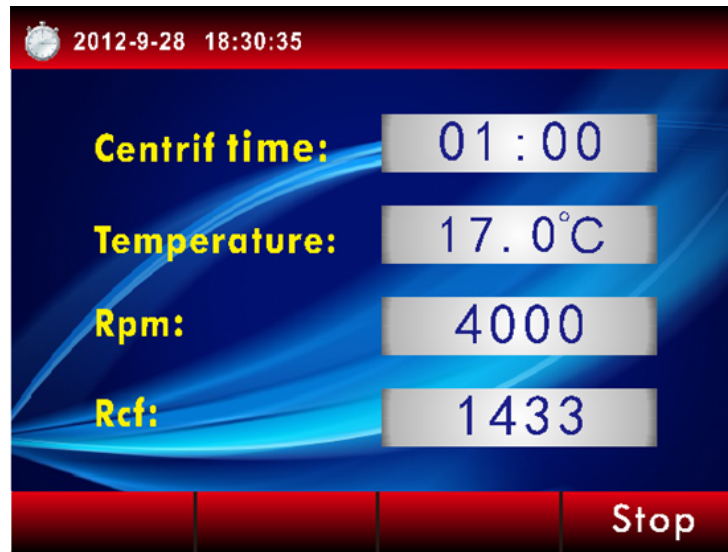


Figure 4.32 Centrifuge Running interface

◆ Centrif time	01:00	show centrifuge time	1	min
◆ Temperature	17.0	show current temp.	17.0	°C
◆ Rpm	4000	show current speed	4000	rpm
◆ Rcf	1433	show centrifuge force	1433	Xg

7.5) If necessary, you can press "Stop" as wish, when the program is running. The stop interface appears, then please choose the desired step, as shown in the figure 33. Press "YES", and then return to the main interface.



Figure 4.33 Stop interface



Figure 4.34 Stop interface

7.6) When all operation is complete, the complete interface appears, as shown in the figure 4.35. Press "OK" and return to the main interface.



Figure 4.35 Running Complete interface

7.7) When running the separate operation, please choose the configure file, and the initialization interface appears as shown in the figure 4.36. After the program is initialized, the centrifuge running interface appears as shown in the figure 4.37.



Figure 4.36 Centrifuge initialization interface

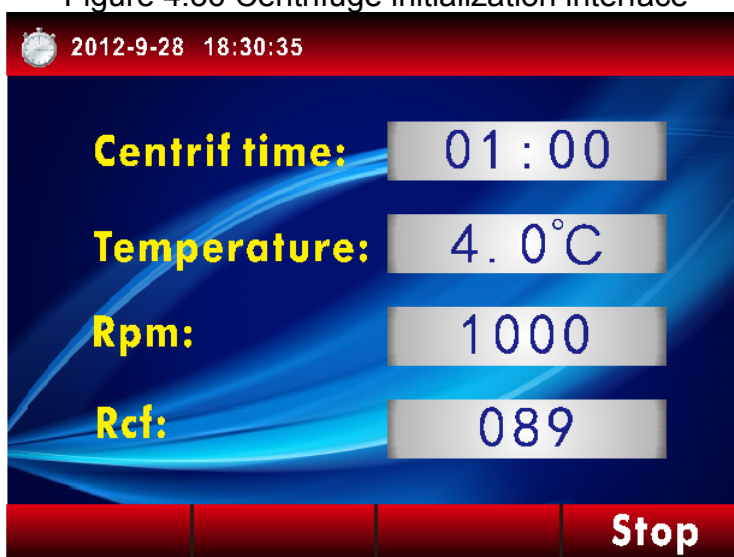


Figure 4.37 Centrifuge Running interface

If the lid is not closed well or the lid is open by accident, the instrument will stop immediately but not run and show a "Warning" interface as shown in the figure 4.28. Please close the lid, then press "OK" and press "Run" . The machine will keep working.

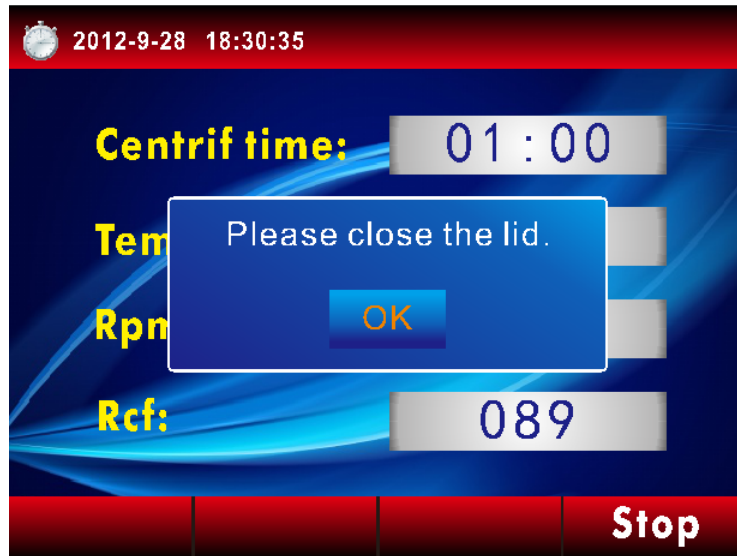


Figure 4.38 The open lid alarm interface

If the temperature is anomalies when the program is running,the strument will stop immediately but not run and show a “Warning” interface as shown in the figure 4.29.Rerun the program,If the “Warning” interface is shown again as shown in the figure 4.30Please call customer service for prompt service.



Figure 4.39 Temperature anomalies interface



Figure 4.40 Temperature anomalies interface

if you want to stop the program, press "stop", as shown in the figure 4.41, and then press "yes" back to the main interface; if you want to cancel the operating, please press "no".



Figure 4.41 stop interface

then press "ok" back to the Running Complete interface to complete as shown in the figure 4.42



Figure 4.42 Running Complete interface

5 Trouble shootings

Fault	Cause	Remedy
After power on, no power indicated.	Power supply failed	Check power plugs
	Bad connection between the machine and power cord	Re-connect the power cord to the machine
	Power switch has not been turned on	Turn on the power switch
	Power cord damage	Call service hot line
	Fuse breaks down	Change the fuse
Temperature anomaly	Compressor damage	Call service hot line
	Thermistor and its circuits anomaly	Call service hot line
Noise anomaly	Internal parts fall off	Call service hot line
Message on the screen: Please close the lid	The lid is open	Please check the lid and close it
Others		Call service hot line

Please contact manufacturer timely for the faults out of the above table, to solve the problems a.s.a.p.

6 Use and Maintenance

1. trimcover disassemble illustration

trimcover disassemble is necessary after being used for a period of time. At first, open the lid as shown in the figure 6.1, and strike the rotator, rotate the Fastener as shown in the figure 6.1, then hold the Fixed mount with both hands, lift it up softly. the disassembly drawing as shown in the figure 6.2

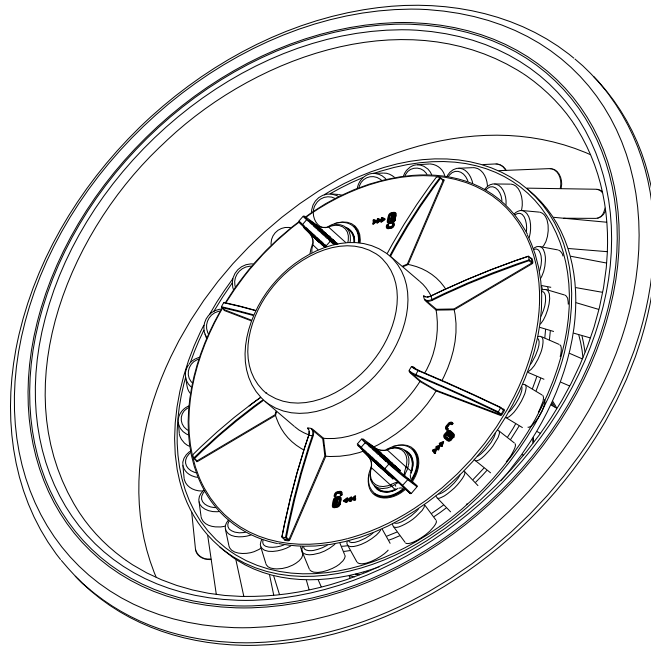


Figure 6.1 the internal instrument sketch

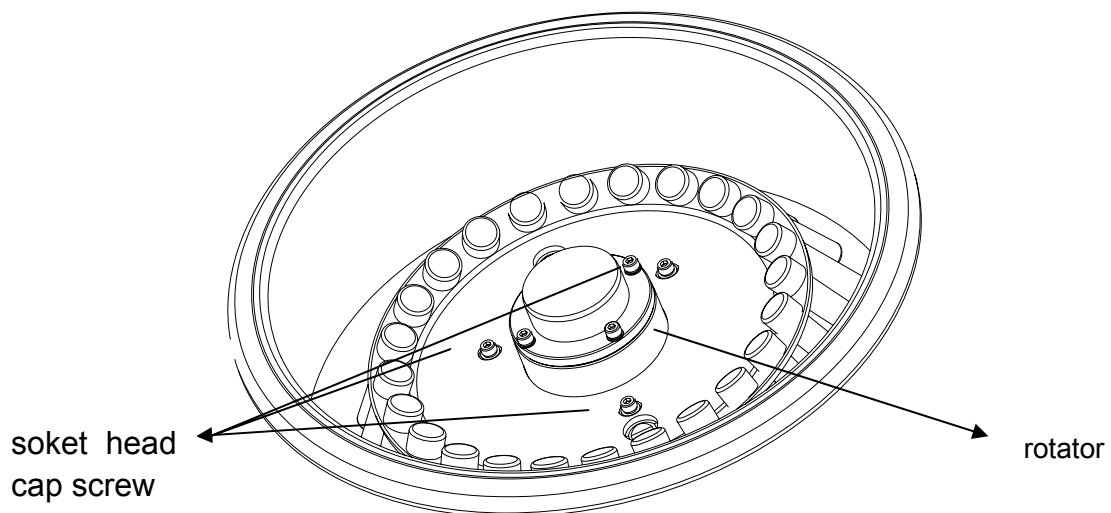


Figure 6.2 the disassembly sketch

2) Strike this three rotators with allen wrench as shown in the figure 6.2. meanwhile, please hold the vibration frame to avoid rotating as shown in the figure 6.3.

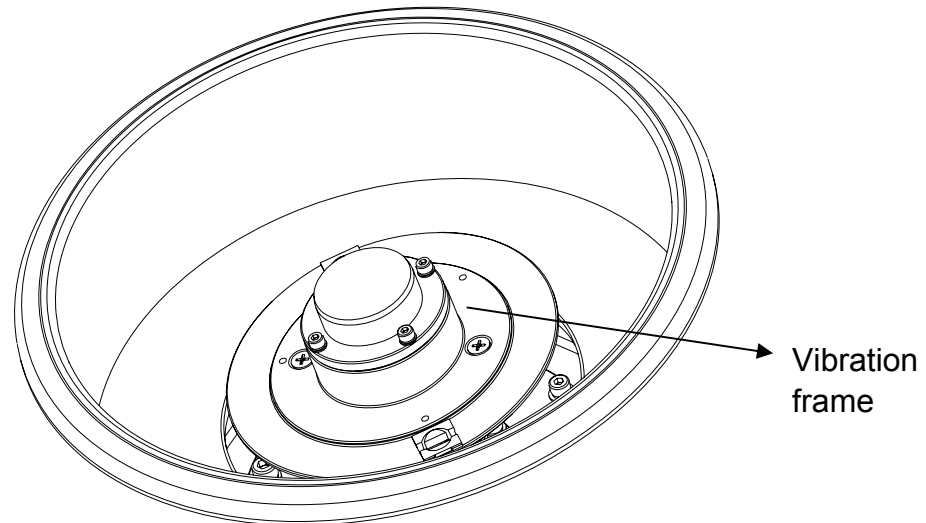


Figure 6.3 Vibration frame sketch

3) After strike the rotatro, cling to the trimcover inwall with your hand, then lift it up as shown in the figure 6.4

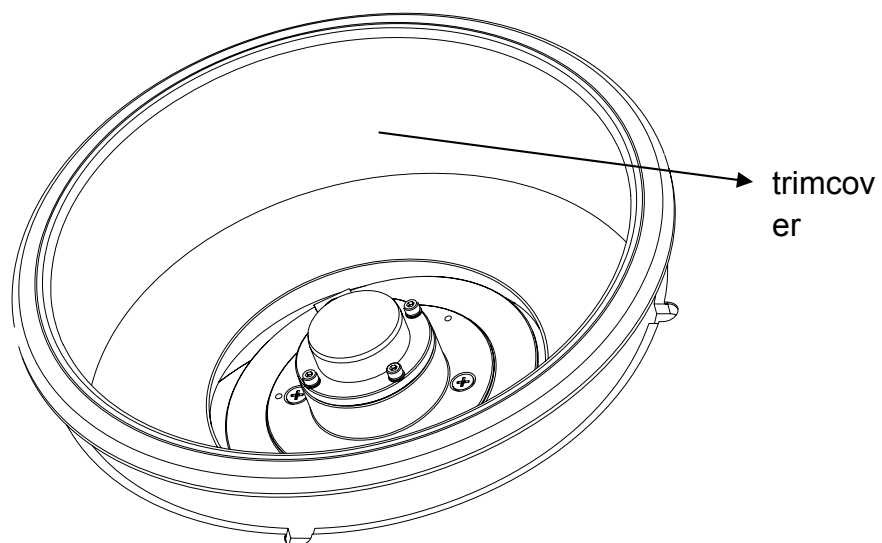


Figure 6.4 trimcover sketch

4) the trimcover installing process is counter to the disassemble process. Align the bolts with the setscrew holes, then tightened all the bolts up.

5) install the Fixed mount, cover with the lid to access to the basic interface.

2 notice

- a) Read the users manual carefully before use the machine
- b) Check the validity of electric leakage protection for the first time use and every 6

months

- c) For long time stop using, please pull up power cord and cover plastic films on outside to protect machine from dusts
- d) Avoid direct sunshine. And avoid variation in environment temperature which effects accuracy of machine.
- e) Avoid to use machine in humid environment.
- f) Use soft cloth to clean the machine , but it's forbidden to use caustic cleanser.
- g) Please record process and appearance in details and contact manufacturer timely, when abnormal conditions occur.



Contact details:

Sole Global Sales Partner:



Stars Biotech International Limited

Add: MHZ2217, RM B, 1/F, LA BLDG., 66 CORPORATION, OAD, GRANGETOWN,
CARDIFF, WALES, CF11 7AW, UK

E-mail: starsbiotech@hotmail.com

Manufacturer: Hangzhou Lifereal Biotechnology Co., Ltd.

Address: ROOM106-107, Building B, Science & Technology Park of Zhejiang University, NO. 525
XiXi Rd., Hangzhou, China. 310013

TEL: +86-571-28030326 FAX: +86-571-28030327