

# DD-4000 Floor Standing Low Speed Large Capacity Centrifuge

## Instruction

Thanks for using Sichuan SHUKE Centrifuge.

In order to play the best performance and security, please read this instruction carefully before you installing, using or mending this instrument.

Manufacturer:

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## CAUTION

Welcome to use SHUKE centrifuge, please read the below caution carefully before you use this machine to prevent any accident may occur.

1. When you are not going to use this machine in the near future or are ready to maintain it, make sure you have cut off the electricity and pulled the plug from the socket.
2. The power for this centrifuge is single-phase 220V, 50Hz, 15A. The power should have protective earth wire. Do not use zero line to instead of protective earth wire.
3. Strictly prohibit the imbalance of the rotor when you operate the centrifuge.
4. Strictly prohibit the speed of the rotor exceed the max speed which has been preset when you operate the centrifuge, otherwise accident may occur.
5. If there is any crack on the rotor, stop to use it, otherwise blast accident may occur.

## 1. Application

DD-4000 floor standing low speed large capacity centrifuge is a necessary instrument in biochemistry, agricultural science, radio-immunity, environmental protection and other research areas. This centrifuge has many different capacities of accessories to satisfying the small batch preparation in the experiment. Its Max speed reach 4000r/min, Max RCF reach 3580Xg, Max capacity is 4x1000ml. This centrifuge adopts variable frequency motor, micro-computer control, touch panel button, LCD and LED display, stainless steel shell and stainless steel centrifugal chamber. The operation is easy, convenient, and reliable.

## 2. Technical Parameters

### Centrifuge parameters

Max Speed	4 000 r/min
Max RCF	3 580 Xg
Max Capacity	4 x 1 000 ml (3 600 rpm)
Timer Range	1~99H59min/inching
Speed Accuracy	±10 r/min
Noise	≤60dB
Power	220V~50Hz 15A
Dimension	700×700×850(L x W x H)mm
Weight	Approx. 160 kg (not including the rotor)

## 3. Available accessories

Several kinds of rotors are available for your different require-

ment.

### Rotors parameters

Rotor	Capacity	Max Speed	Max RCF
NO.1 Swing-out Rotor	4 x 1 000 ml	3 600 rpm	3 280 Xg
NO. 2 Swing-out Rotor	6 x 500 ml	3 600 rpm	3 030 Xg
NO. 3 Swing-out Rotor	4 x 500 ml	4 000 rpm	3 400 Xg
NO. 4 Swing-out Rotor	6 x 250 ml	4 000 rpm	3 580 Xg
Other different capacities are available by use adapters			

#### 4. Remove the package (by users)

Users should check the package appearance when receiving the product. Severe impact, accumbency and upend etc. should not happen during transportation. The package appearance should be well. If the situation presented happens, please contact with the cargo agent and inform our company in time.

First, remove the top cover of the package; get out of the rotor and accessories. Second, get out of the centrifuge from the package. Last, properly deal with the package and packing, not to pollute the environment.

#### 5. Installation

##### 5.1. Installing environment demand:

The installing place of this centrifuge is indoors, should be place on a hard ground. No conductive dust, corrosive or damaging insulating air, and no powerful vibration source nearby, avoid direct

sunlight.

## 5.2. Installing space demand

The distance between the back side of this centrifuge and wall should be no less than 30 cm, make sure there is no other things are placed in this place when the machine is running.

## 5.3. Installing power demand

The power for this centrifuge is single-phase 220V, 50Hz, 15A. The power should have protective earth wire. Do not use zero line to instead of protective earth wire. The protective earth wire is longer than other two wires, make sure you have connected it correctly.

## 5.4. Emergency switch

Please installing emergency switch at the entrance of the door or outdoors, so that the operator can cut off the power when there is any out of control accident occur during the centrifugal process.

## 6. Operation

### 6.1. Open the lid

- Press Stop & Open key, after you hear a sound of unlock, lift up the lid.
- Emergency lid release, there is a line below the right front of the machine, which is used when power failure or something wrong

with the lock. It should not be used at ordinary time.

## 6.2. Installing the rotor

- Examine the rotor before every use, and make sure there is no any crack or corrosion spot on rotor, especially the hanger and the bottom of the carriers. Strictly prohibited use the rotor which has crack or corrosion pit on it, strictly prohibited use the rotor which is out of guarantee period (guarantee period are showed in table 3).
- Put the rotor on the spindle, screw the nut tightly by use the spanner equipped.
- Put the test solution in the test tube(for the angle rotor, the test solution is around 75% of the nominal), then weight it by mount pan balance, the weight error of each filled test tube should be  $\leq 1\text{g}$ , (when the solution is below 7ml, you just need to make sure it in balance by visual inspection will be ok).
- The test tube must be loaded on the rotor in even number, for swing-out rotor, all of the carriers and test tubes must be loaded in. Strictly prohibited imbalance running. There is serious accident may occur for imbalance running or not weigh the weight carefully, because these carelessness make the rotor stressed asymmetric.

## 6.3. Closed the lid

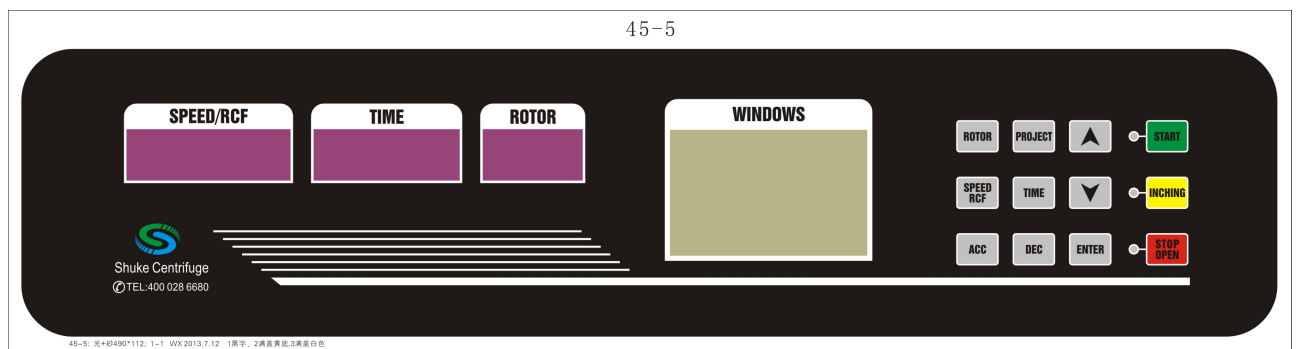
Press the lid down, the lid was locked after you hear a sound.

## 6.4 Connect the power

Make sure the power with an earth wire before you start connect the power, then switch on the power button.

## 6.5. Parameters setting

There are 12 buttons on the control panel (as showed below).



When you press the button, the corresponding parameter will flicker, then you can press the  $\triangle$  or  $\nabla$  to set the parameter, press the SET bottom to save it after you finish it. For a better observation of the parameter, this centrifuge is LCD and LED displayed, the LCD window displayed the pre-set parameter, the LED displayed the Real-time parameter.

## 6.6. Start

Press Start key, when the indicator light is on, the centrifuge begins to start. Reaching the given speed, the instrument starts to count down.

- Acceleration and deceleration setting

Press ACC/DEC button, when there is letter "A 1" flicker in the display screen, its ACC setting status now, press  $\triangle$  or  $\nabla$  to adjust the letter, 1 is fastest, 40 is the slowest, 40 levels in total, after you choose it, press the "ENTER" button to store it.

Press ACC/DEC button, when there is letter "D 1" flicker in the display screen, its DEC setting status now, press  $\triangle$  or  $\nabla$  to adjust the letter, 1 is fastest, 40 is the slowest, 40 levels in total, after you choose it, press the "ENTER" button to store it.



- Procedure store

For a more convenient use, there are 12 procedure memories storable for repeated routine operation.



Procedure store: set the parameters first, such as the number of the rotor, rotate speed, time, acceleration, deceleration, etc, then press the "PROJECT" button twice, there will be letter "C 01" displayed on the screen, press  $\triangle$  or  $\nabla$  can change the parameters which displayed behind letter "C", after all is ok, press "ENTER" button to store it. (note: the parameters behind letter "C" is the procedure serial number which you are going to store.)

For example, if you are going to store procedure 04 for



rotor NO.1, 3 000 rpm, 20 minutes, ACC levels 4, DEC level 5. Now set the rotor to 1, then press “ENTER” button, set the rotate speed to 3 000, then press the “ENTER” button, set the time to 20 minutes, then press the “ENTER” button, set the ACC to 4, then press the “ENTER” button, set the DEC to 5, then press the “ENTER” button. Press “PROJECT” twice, when there is letter “C 01” displayed on the screen, press  or  button to set the number to “C 04”, then press the “ENTER” button, now the procedure is stored.

- Procedure recall

Press “PROJECT” once when the speed display screen displayed “P 01”, press the  or  button to choose the procedure you needed, then press “ENTER” button to recall this procedure. (note: the number behind the letter “P” is the procedure number you are going to recall.)

## 6.7. Stop

- When it is working, the centrifugal time decelerates to zero; the centrifuge will speed down according to the parameters. When the rotors stop working totally, and hearing the alarm, people can open the lid. If you want to stop the centrifuge during its working, press Stop & Open button, the

instrument will stop according to the above processes.

- When the instrument gives out a fault alarm, press the “stop & open” key to clear.

## 7. Function

7.1. In order to use our centrifuge safely, we have restricted the Max speed of all the rotors in the procedure, make sure the number of the rotor are correspond with the rotor No. which has been displayed.

7.2. The procedure set is mainly based on the rotate speed. When you want to know the RCF during the operation, press the “speed” key and then the “enter” key to convert it freely.

7.3. Except the rotor No. displayed in the control panel can't be modified, all of other parameters can be modified during the operation. Press the “enter” key after you change the parameters, then the centrifuge will operate based on the new parameters which you have just set.

## 8. Maintenance and the notice

8.1 When you are not going to use this machine in the near future or are ready to maintain it, make sure you have pulled the plug from the socket. Because if you just switch off the power button but not pull the plug from the socket, the machine is still with electricity,

under these circumstances, the accident may occur, especially when the machine is under maintenance.

8.2. In order to prevent the spindle from being bent, please be gentle when you install or remove the rotor from the spindle. Unscrew the bolt, then you can take out the rotor.

8.3. After taking out the rotor from the centrifugal chamber, clean it with neutral cleaning solution in time, dry it with clean cloth, preventing chemical corrosion, storing in a dry and ventilated place. Do not use non-neutral detergent to clean rotor, do not use electric hair drier to dry the rotor. The center hole of rotor should have a little grease for protection.

8.4. Make sure the rotor No. displayed on the control panel is in accordance with the rotor which you loaded on the spindle. If the rotor No. was set wrong, you may overspeed the rotor or make the rotation speed can't reach the RPM you required, especially the overspeed of the rotor is dangerous because an explosion accident may occur.

8.5. Strictly prohibit running the centrifuge without the rotor.

8.6. The centrifuge tube should be replaced regularly, strictly prohibit using the tube which is about to burst.

8.7. Polypropylene (PP) tube (bottle) cannot be used with concentrated nitric acid (95%), aqua regia, toluene, benzene, gasoline, kerosene. Polycarbonate (PC) centrifuge tube (bottle) can

not come with hydrofluoric acid, hydrochloric acid (30%, 50%), sulfuric acid (10%), nitric acid nitric acid (95%), aqua regia, potassium hydroxide, magnesium hydroxide, ammonium hydroxide, aluminum fluoride, ammonium sulfide, ammonium acetate, ammonium carbonate, sodium nitrate, chromic acid (50%), toluene, benzene, gasoline, acetaldehyde, acetone, ethanol, isobutanol, ethyl ether, cresol, and others to use together. Polyethylene (PE) centrifuge tube (bottle) can not come with sulfuric acid (50%, 75%), benzene, gasoline, kerosene.

8.8. Clear the centrifugal chamber every time after you use it.

8.9. The operator can't lean on the centrifuge.

## 9. Warranty

9.1. The warranty period of the centrifuge mainframe is 18 months from the date of buying day.

9.2. In condition of using correctly, the guarantee period and the service life of the rotor is as showed in the table below (table 3).

Rotor style	Guarantee period	Usage Counter	accumulated use time
Angle rotor	5 years	1000 times	2000 hours
Swing-out rotor	3 years	1000 times	2000 hours

In order to run the rotor safely, the user should record the running status of the rotor carefully, including the solution, rotate speed, time, temperature, and the inspection record, any of that reach the

service life above table mentioned, the rotor should be scrap.

9.3 If any rotor accident is caused by the below reason, the user will take its responsibility.

- Use the rotor which has any crack or corrosion spot on it.
- Use the rotor which beyond the warranty period or exceed the service life.
- Overspeed the rotor or running the rotor imbalance.

**DD-4000 Floor Standing Low Speed Large  
Capacity Centrifuge  
Packing List**

Serial number	Name	Quantity	Remarks
1	DD-4000 centrifuge mainframe	1 set	
2	4 x 1 000 ml swing-out rotor	1 set	
3	500ml adapter	1 unit	
4	250ml adapter	1 unit	
5	100ml adapter	1 unit	
6	50ml adapter	1 unit	
7	Operation instruction	1 pc	
8	Certificate of Compliance	1 pc	
9	Special spanner	1 set	
7	Power line	1 pc	
8	Product warranty card	1 pc	
9	PP Centrifuge tubes/bottles 1000 m	40 pcs	
10	PP Centrifuge tubes/bottles 500 m	40 pcs	
11	PP Centrifuge tubes/bottles 250 m	40 pcs	
12	PP Centrifuge tubes/bottles 100 ml	40 pcs	
13	PP Centrifuge tubes/bottles 50 ml conical bottom	40 pcs	
14	PP Centrifuge tubes/bottles 50 ml conical round bottom	40 pcs	

**Sichuan Shuke Instrument Co.,Ltd**

**Sep., 2014**

# Certificate of Compliance

Product Name: Floor Standing Low Speed  
Large Capacity Centrifuge

Product Model: DD-4000

Factory Number: 14091205

This product is permitted to leave the factory after inspection.

Inspector: \_\_\_\_\_

Date: sep.26, 2014

# Product warranty card

(Maintained this card within the warranty period.)

Product Name	Tabletop Low Speed Centrifuge		
Model	DD-4000	Product number	14091205
Date of production	2014/09	Purchase date	
Name of user and Department(stamped)			
Address:		Contact:	
Tel:	Fax:	E-mail:	
Comments and Suggestions to our products:			

Manufacturer: :

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