

SmartPro

Mini Centrifuge

Operations Manual



Caution

In order to ensure the safety of using the machines, the centrifuge may be damaged by following factors : Chemical effects; Environmental impacts, including radiation of natural UV;The corrosion and abrasion and wear of shield and other security components.

Foreword

Thank you for purchasing our SmartPro centrifuge, This Manual for users contains function and operation of the Instrument. In order to use the instrument properly, please read this manual carefully before using the Instrument.

Safety Tips

- * Please read this manual carefully for the first-time using!
- * SmartPro Centrifuge can only be operated by trained or authorized persons;
- * The maintenance of the instrument can only be done by M T . or authorized dealers M T . ;
- * Please NEVER use the following materials in the centrifuge:
 - Inflammable and explosive materials;
 - Strengthen chemical materials;
 - Toxic or radioactive substances or pathogenic micro-organisms and so on.
- *Only qualified maintenance person using the appropriate tools can do operation on the system maintenance of SmartPro Centrifuge.
- *If encountered the cases not mentioned in the manual, please contact MT. or authorized dealers from M T . to ask the right approach.
- *Use the accessories supplied by M T as far as possible. If you want to use other accessories, M T . will not be responsible for the adverse consequences. However, users can submit an application to the MT. to verify compliance with the M T . equipment accessories requirements.
- *Inspections and maintenance of the SmartPro Centrifuge must be conducted at the specified time intervals.

Security Protections

- * Plug the power supply or switch power button with wet hand was strictly prohibited.
- Plug the power cable with power was strictly prohibited.
- * Maintain and scrub the machine with the power was strictly prohibited.
- * The sample over than tube volume 70% which the centrifugation was strictly prohibited.
- * Please check the rotor, reinsert and tighten it.

Product Certificate

Product Name :SmartPro MiniCentrifuge ;

Product Model : Smart Spin

Production Date : _____ ;

Manufacturer :

S/N :

Inspector (QC) :

Inspect Date :

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Introduction

SmartPro centrifuge active introduction of foreign designing and manufacturing technology, the overall contour structure compact, artistic, smooth and small in area , its high versatility and adaptability .

The SmartPro centrifuge suitable for micro-porous tube filter , faster-spinning , micro-blood cell separating, Microbial sample processing, PCR centrifueing, prohibit the centrifuge tube hanging wall .

Before starting up this centrifuge for the first time, please read the rest of this operations manual.

WARRANTY

Date of warranty will begin 18 months from the day user receive the product.Maintainer from TOPSCIEN. will provide free home repair service if the there is problem with the machine in the warranty period. If the component need be replace because of its quality but not improper use, we will replace it for free. Otherwise it should be paid, and Shell of the machine is not in the scope of warranty.

WARRANTY RANGE

Users should operate the machine as requirements of this manual.The operation of installation, commissioning, moving, adding accessories, maintenance etc should be designated by specialized or authorized staff of TOPSCIEN..

Routine maintenance should be operated regularly as this manual required.If it's damaged because of improper-use, TOPSCIEN.. will repair it but it's not free of charge. TOPSCIEN.. guarantee that if there's any problem with quality within 18 months after sales, we will repair for free. It's will be charged if the warranty period becomes due.

WARRANTY CARD

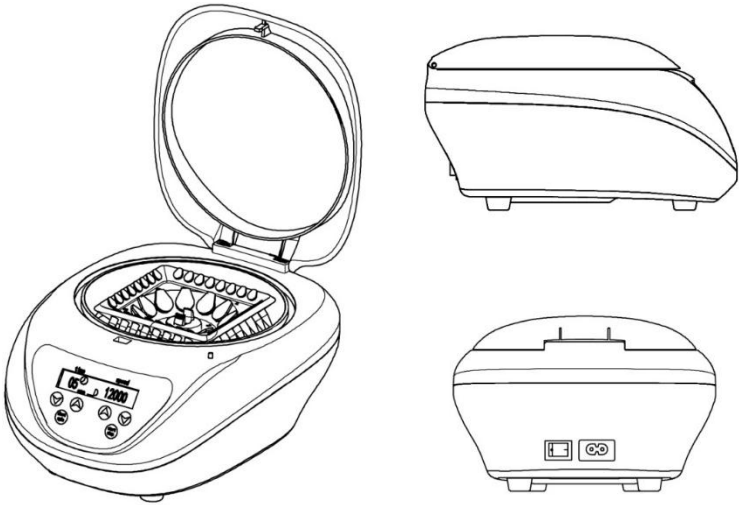
Dear customer:

Thank you very much for choose our SmartPro centrifuge .

Products	Centrifuge
Name	SmartPro
Code No.	
Order Date	

Purchase Company	
Purchase name	
Purchase address	
Customer TEL	
Customer FAX	
POST CODE	
E-mail	

2. FUNCTION, APPEARANCE INTRODUCING

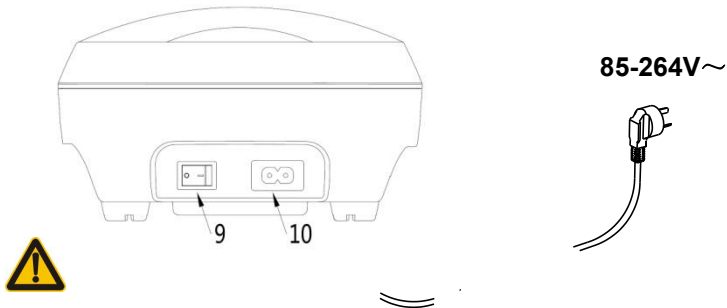


- 1.TRANSPARENT LID.
- 2.UPPER BASE.
- 3.TOTOR.
- 4.CONTROL PANEL.
- 5.BOTTOM BASE.
6. ANTISLIP FOOT PAD.
7. LOCK
8. LID BAR
- 9.POWER SWITCH.
- 10.AC85-264V power plug

3 Installing the device

3.1 Place the centrifuge onto a level , horizontal surface. Make sure that the ventilation slits are not blocked.

3.2 Insert the column connector of the adapter to power connector of the device ,and insert another connector of the adapter to mains power supply100-240V。



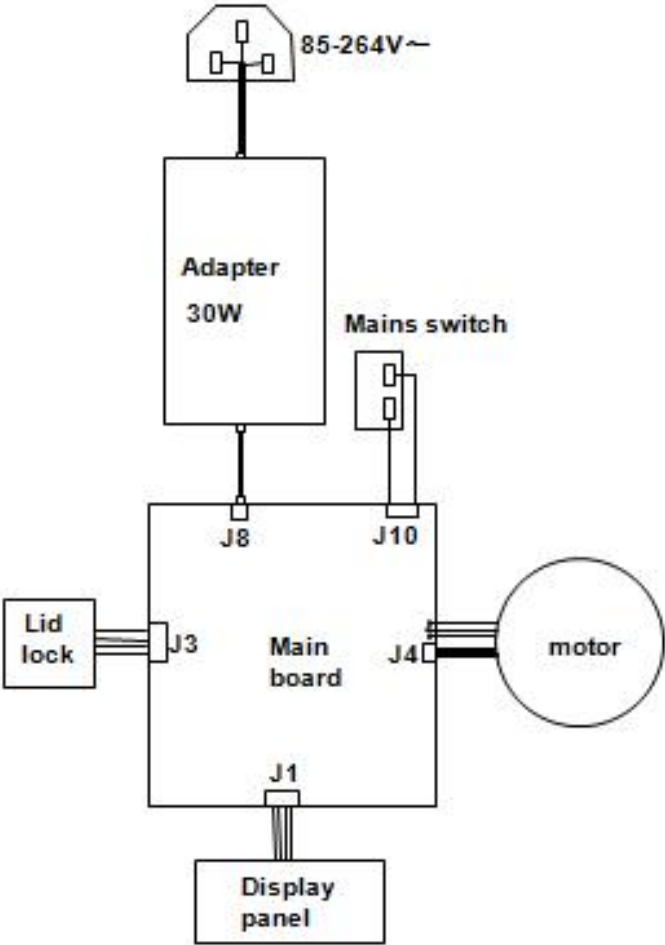
Take care:

- * Check the appearance before operate the machine whether the plastic enclosure was damaged or not.
- * Press to open the transparent lid automatically, open easily without abnormal sound.
- * Check the transparent lid bar if have the loosing phenomenon .
- * Check the power cable and switch if connection is fixed ?

Packing List

No.	Item	Type	QTY
1	Mini centrifuge	SmartPro	1unit
2	Rotor		1unit
3	Centrifuge tube adapter		1set
4	Rotor lid		1unit
5	Operations manual		1unit

Annex 1 Wiring Diagram for centrifuge

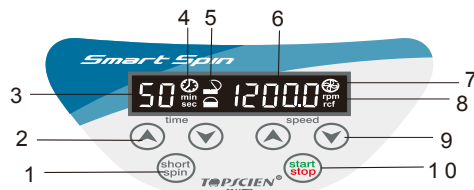


4 Technical data

Model	SmartPro
Power supply	85-264 V~ 50-60Hz
Power	45W
Max. speed	500-12000 rpm 500-7000rpm
Max. centrifugal force	9660 rcf
Motor	DC24V/DC PM motor
Timer	1-99min./1-59sec.
Max. load	6/8×15/5ml tubes
Max. permitted density	1.2g/ml
Acceleration time to max. speed	≤12s
Braking time from max. speed	≤16s
Ambient temperature	5℃ ~ 40℃/80%
Dimensions (W×D×H)	194mm×229mm×120mm
Weight (with rotor)	2kg

5 . Operation guide

5.1 Operation button



- 1.Short spin button 2.Time setting button (min./sec.);3.Timer display;
4.Timer display (min./sec.); 5.Lid indication 6. Speed display button; 7.
Operation indication ; 8.RCF RPM indication ;
9. Speed setting button ; 10. Start / stop button

5.2 【Open / Close Lid】

【Open Lid】

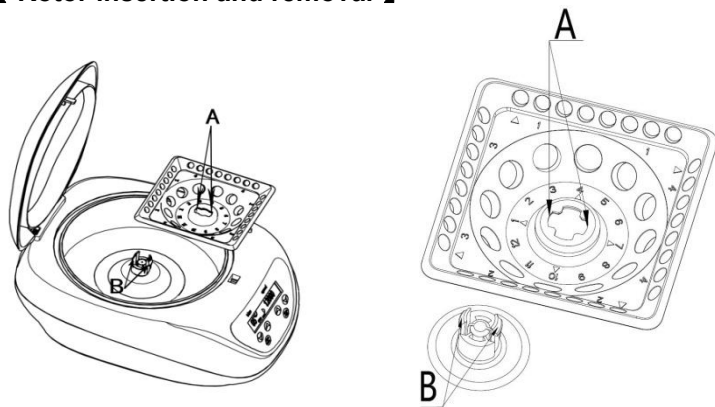
The centrifuge lid will be open automatically once press the lid .

【Close Lid 】 Press centrifuge lid, it will be closed

5.3 【 Power On / Power Off switch】

As the picture showing Power button , tune on “ I ” means Power On,
tune on “ O ” means Power Off;

5.4 【 Rotor insertion and removal 】



8. Safety precautions



The rotor and the rotor lid must always be securely fastened. If the centrifuge makes unusual noises when started , the rotor or rotor lid is not fastened correctly. Switch the device off immediately by pressing “START/STOP” button.



Do not use damaged rotors!



Do not move the centrifuge during the run!

8.1 Place the tubes

8.2 A liquid density of 1.2g/ml must not be exceeded at the max. speed.

8.3 Damaged tubes can not be centrifuged. This is because broken tubes can, in addition to sample loss, result in further damage to the centrifuge.

8.4 Close the test tube lids before centrifuging. Open lids can be ripped off during centrifuging and damage the centrifuge.

8.5 Must load the test tubes symmetrically.

8.6 Maintain of rotor

8.6.1 Even slight scratches and tears of the rotor can lead to serious internal material damage.

8.6.2 Avoid damage caused by aggressive chemicals, including among others: strong and weak alkali, strong acids.

8.6.3 In the event of contamination caused by aggressive agents, The rotor must be cleaned immediately using a neutral cleaning liquid.

6 Maintenance and cleaning



The rotor and the outside of centrifuge should be cleaned regularly with a moist cloth. Disconnect the centrifuge from the mains supply, remove the rotor and clean it separately. Only neutral agents may be used for cleaning.



Please check the rotor and especially the rotor bores regularly for deposits or damage, then reinsert the rotor and tight it.

6 Troubleshooting

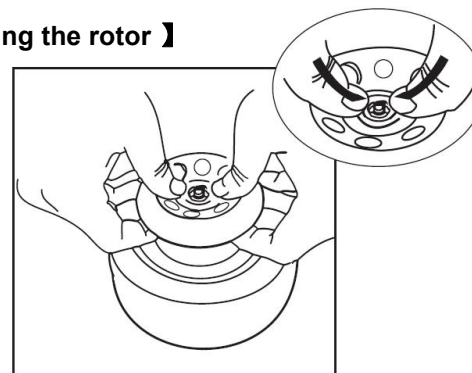
Error.	Cause	Solution
E01	1.Check the transparent lid is tightly covered, or if the lock is worn and the lid is not tight, it will automatically spring open. 2.The door cover switch is in poor contact.	1.Re-Connect the power, cover the lid 2. Contact the manufacturer
E02	1.The lid is opened during operation. 2.The lid switch is in poor contact	1.Power Off and waiting 1minute and restart. 2. Contact the manufacturer
E10	1. Motor damaged. 2. Motor test failure.	1.Power Off and waiting 1minute and restart. 2. Contact the manufacturer
Lid can't opened.	1.Check something was below the pressing plate. 2.Check the lid triangle button damaged or not .	1.Remove the foreign matter 2.Replace the transparent lid 3. Contact the manufacturer
Larger noise	1.Check the rotor if was tightly locked? 2.Check the loading if was symmetrical balance	1.Fixed the rotor 2.Loading should be symmetrical balance placed 3. Contact the manufacturer
LCD window not lighting	1 No power	1.Re-Connect the power or contact the manufacturer

5.5 【 Loading the rotor 】

As the picture “A””B” point showing and make sure the “A””B” shape of positioning is same , both hands hold the rotor symmetrically then straight down moving, heard the “ka” means the rotor was locked completely .

Please note: all kinds of rotor which the loading way is same .

5.6 【 Disassembling the rotor 】



According the schematic diagram showing both of two thumb extruded inside and pick up the rotor slowly .

Please note: all kinds of rotor which the disassembling way is same .



1. Prohibit Pull out the rotor mandatory will damage the motor and rotor .
2. The rotor which printing the digital No. Please keep this side with front side , it also will damage the rotor if installed backward .

5.7 【Correct methods for placing the tube】



12 tubes, 8 tubes, 6 tubes, 4 tubes, 2 tubes asymmetrical balance placed

5.8 【Start /Stop machine】

example application

【Start machine】

Open the transparent lid → Loading the rotor → placed tube with asymmetrical and balance → Power on → Closed the transparent lid

Example application: Set the speed at 12000rpm for 10mins operation

Press speed setting button to adjust the required speed 12000rpm

Press timer setting button to adjust the required 10mins

Finish the setting as below :



Press  to start machine, it will be according setting countdown stops.

A buzzer alarm indicates that the centrifugation is complete.

Press both of speed setting buttons hold for 3 seconds ,
RPM and RCF switched

The machine will be stop operation when countdown finish

Buzzer Alarm means finish the centrifuge this time .



It will be large noise for the carbon brush ,because brushes was static for long time ,and will vibrates in transit .

Please keep the operation for 2-3mins , the motor will be normally ,no need worry the quality .

【Stop machine】

Press  button

Open the transparent lid →take off the sample →Power off



(If no need to use the centrifuge again, please close the lid cover