OPERATIONS MANUAL

CE

SERVOspin *PLUS*

LOW SPEED BENCHTOP CENTRIFUGE REF **H7 800**

CONTENTS

FOREWORD

Thank you for purchasing our SERVOspin PLUS 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.

OPENING CHECK

Please check the Instrument and appendix with the packing list when you first open the instrument packing case. If you find there is something wrong with the instrument and the appendix, do contact the vendor or the producer.

1 INTRODUCTION

This centrifuge is suitable for 15 ml, 7,5 ml and 5 ml centrifuge, Blood Collection Tubes and 100 mm tube for centrifuging.

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

1.1 DELIVERY PACKAGE

SERVOspin PLUS centrifuge	1 unit
Rotor	1 unit
Centrifuge tube adapter	1 unit
Operations manual	1 unit

1.2 STRUCTURE DESCRIPTION

1. Cover lock
2. Mater rotor
3. Safety switch
4. Emergency door handle
5. Time setting (▲▼)
6. Speed setting (▲▼)
7. Lid open button
8. Short-Spin
9. Start/Stop
10. Power switch
11. Power connector

1.3 INSTALLING THE DEVICE

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

Insert the column connector of the adapter to power connector of the device ,and insert another connector of the adapter to mains power supply.

A safety distance of 30 cm should be observed around the centrifuge during operation. No objects which could cause additional damage in the event of a centrifuge crash should be positioned in this space.

Power on the main switch. The centrifuge is ready to operate when the display becomes visible. Place the rotor onto the rotor axle and tighten using the rotor nut.

Before starting up the centrifuge for the first time, make sure the rotor nut is securely fastened.

2 TECHNICAL DATA

Model	SERVOspin PLUS
Power supply	100 - 240 V ~ 50 - 60 Hz
Power	40 Watt
Max. speed	5000 U/min
Max. centrifugal force	3074 rcf
rpm/rcf	Ja
Time	10 sec. ~ 99 min.
Max. load	8 x 15 ml
Max. permitted density	1,2 g/ml
Acceleration time to max. speed	20 - 80 seconds
Braking time to max. speed	20 - 80 seconds
Ambient temperature	5 °C - 35 °C
Abmessungen (B xT x H)	35 x 40 x 32 cm
Gewicht mit Rotor	5 kg

3 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” key.

⚠ Do not use damaged rotors!

⚠ Do not move the centrifuge during the run!

PLACE THE TUBES

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

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

Close the test tube lids before centrifuging. Open lids can be ripped off during centrifuging and damage the centrifuge. Must load the test tubes symmetrically.

MAINTAIN OF ROTOR

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

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

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

4. OPERATION GUIDE

4.1 CONTROL ELEMENTS

START/STOP	for start or stop centrifugation
SHORT-SPIN	for reduced-time centrifugation
OPEN	to open the lid
▲▼	for setting the time and speed

4.2 ROTOR INSERTION AND REMOVAL

Fit the rotor onto the motor shaft, followed by the rotor nut. Tighten the rotor nut by turning clockwise. To release the rotor, turn the rotor nut counterclockwise.

Before each start, check that the rotor is firmly tightened!

4.3 LOADING THE ROTOR

Rotor must always be loaded symmetrically. Minimize differences in weight between the filled sample tubes-taring with a scale is recommended. This will reduce wear on the drive and cut running noise.

4.4 CENTRIFUGATION WITH A PRESET TIME

Turn on the mains switch, pressing “OPEN” to open the lid, load the rotor symmetrically. Fasten the rotor lid and close the centrifuge lid.

Pressing Time’s ▲▼ change the run time, the time can be pre-selected between 20 seconds and 99 minutes, and pressing speed’s ▲▼ to change the run speed the max. speed is 5000 rpm.

Pressing the first “START/STOP” to start the run. Pressing the second “START/STOP” to end the run prematurely. The remaining run time appears in the display.

After the run, the lid lock of centrifuge opens automatically.

The time setting and the rotational speed may be changed during the run. The remaining run time appears in the display.

SHORT-SPIN CENTRIFUGATION

Turn on the mains switch, pressing “OPEN” to open the lid, load the rotor symmetrically. Fasten the rotor lid and close the centrifuge lid.

Pressing “SHORT-SPIN”. Short-spin centrifugation is possible for as long as this key is held down. The maximum rpm is 5000

4.6 SWITCHING TO THE RCF DISPLAY

Pressing speed’s ▲▼ simultaneously the display switches from rpm to rcf. Also pressing speed’s ▲▼ simultaneously again, the display switches from rcf to rpm.

You can calculate with the following formula:

rcf = 1118 * 10-5 * n2 * rmax

n: rotational speed in 1/min

rmax = 6 cm, max. centrifuging radius in cm

4.7 OPEN THE CENTRIFUGE IN THE EVENT OF A POWER FAILURE

Disconnect the centrifuge from the mains supply. Wait until the rotor has come to a standstill, Then left up the device, remove the lock pole to right , the lid lock will be opened.

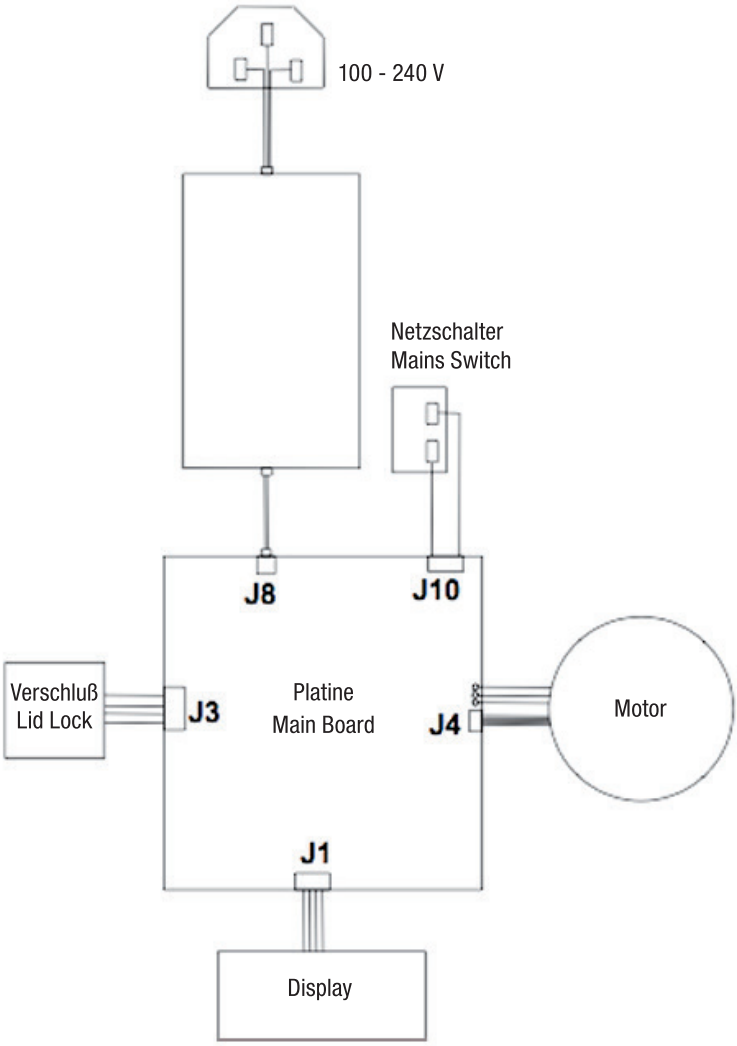
5. MAINTENANCE AND CLEANING

⚠ 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 tighten the rotor nut.

6 TROUBLE SHOOTING

Error	Cause	Solution
No display	No main power connection, Power failure	Plug in mains cable both sides, check mains fuse
Lid can´t be opened	Power failure Rotor is still spinng. Lid lock failure	Emergency lid release (4.7) Stop centrifuge, Contact service
Centrifuge shaked during acceleration	Rotor not loaded symmetrically	Stop centrifuge and load centrifuge symmetrically
Er=01	Open lock failure	Contact service
Er=02	Close lock failure	Contact service
Er=08	Motor failure	Contact service


100 - 240 V
Netzschalter
Mains Switch
J8
J10
Verschluß
Lid Lock
J3
Platine
Main Board
J4
Motor
J1
Display

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