

UNICO®

PowerSpin™ HXV
Variable Horizontal Spin Centrifuge

(Model C8306 / C8308)

OPERATION MANUAL

(Version 2.0)

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— **CAUTION** —

Read this manual completely before operating the centrifuge

Introduction:

Thank you for purchasing a UNICO centrifuge. UNICO® is constantly working to improve our products with the latest technological innovations. UNICO® PowerSpin™ HXV horizontal centrifuges are designed with features to meet the safety and functionality needs in today's medical and health care industries.

Description/ Intended Use:

The UNICO® PowerSpin™ HXV centrifuge features a 0-99 minute electronic timer, digital time display and zero RPM safety lid latch system. The centrifuges are specially designed to run for years of demanding laboratory work in clinical labs, industrial or biological labs where separation for blood or other materials is desirable.

- HXV Horizontal spin gives a flat, horizontal separation in SST blood tubes.

Features:

- Push button keypad controls, easy to use while wearing gloves
- Horizontal spin rotor for use with standard 3 to 15 ml tubes
(Optional adapters may be required for tubes less than 10 ml or 100mm length)
- Variable speed 500- 3500rpm
- Electronic 1-99 minute timer with beep signal at end of Automatic time memory reset to the last run for repetitive protocols
- Memorized time and speed settings: The centrifuge will memorize the last time and speed settings when the unit is turned off. It will resume the previous time settings when the unit is turned on
- Safety: Zero RPM lid latch protection - The centrifuge lid cannot be opened until the unit stops spinning. It will not run unless the lid is properly closed.
- Suction cup rubber feet for stable bench top operation
- Power switch with indicator light tells when unit is powered on

Construction:

The enclosure of the PowerSpin HXV centrifuges are made of easy to clean and disinfect high impact plastic. The internal rotor chamber is made of stainless steel. A safety device is installed to prevent the lid from opening while the centrifuge is running. The motor is mounted on specially designed mounts to provide quiet running and less vibration. The Stainless Steel rotor chamber can be easily cleaned and disinfected.

Accessories:

Each PowerSpin HXV centrifuge comes equipped with 8-place horizontal spin rotor with pre-installed tube shields.

Unpacking and Installation:

The centrifuge is packed in cushioning Styrofoam in a box for maximum protection during shipping. Please examine the unit upon receiving and retain all packing until the unit has been tested. The warranty excludes any damage caused by shipping. Inspect for any possible shipping damage. If you note any damage, please contact your sales representative. Please save and store the original packaging. If it becomes necessary to return the instrument to us, we ask that it be returned in the original packaging.

Unpack the shipping carton carefully and verify that the shipment is complete. It should include the following items:

PowerSpin HXV centrifuges	1 unit
Power cord	1 pc.
Operation Manual	1 pc.

Follow simple procedures below to prepare the centrifuge for use:

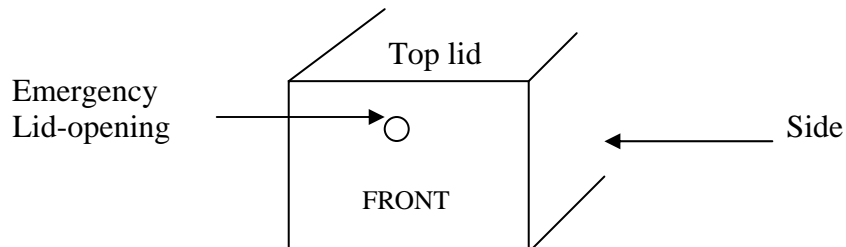
1. Remove the centrifuge from its packaging and place it on a sturdy flat, dry surface.
Do not turn on yet! The rotor is protected by packaging materials!

Special packing cushion foam is packed inside the rotor chamber of the centrifuge to protect the rotor and shields during shipping.

2. Turn on the centrifuge. Do not press START! Press OPEN to open the lid and remove the foam securing the rotor.

You may open the lid via the emergency lid-opening hole: Locate the small hole on the front center of the centrifuge. This is the Emergency lid latch manual override designed to open the electronically controlled lid latch in the event of a power loss. Using a small screw driver (or a rod); insert the tool into the emergency lid-opening hole as showed below. Push the tool down (by lifting the tool handle up) to release the safety lock and open the lid.

REMOVE THIS FOAM PRIOR TO OPERATION OF THE CENTRIFUGE.

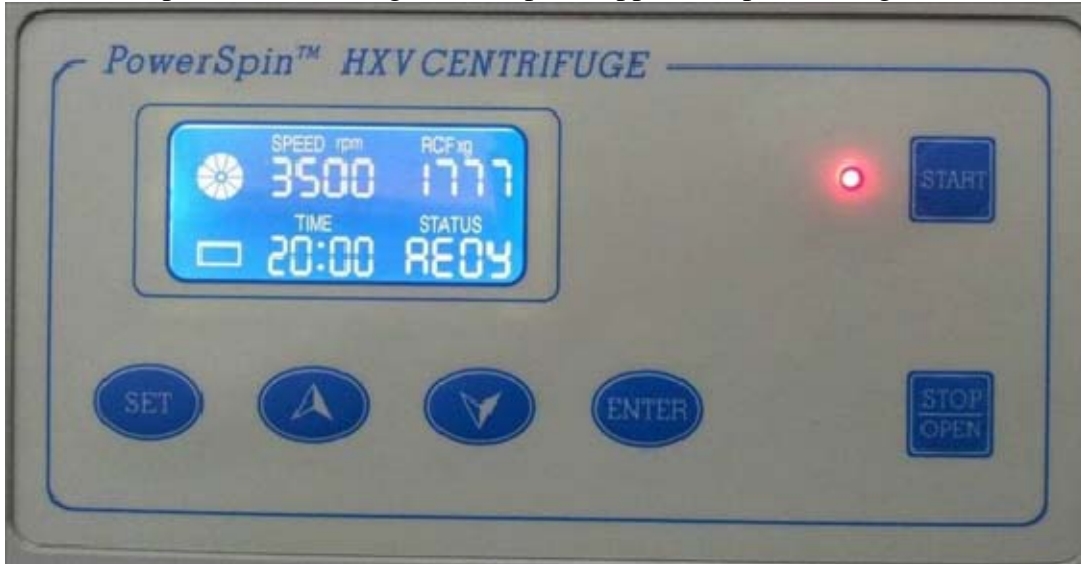


3. The centrifuge rotor is pre-installed. No rotor installation or calibration is required.
4. The power inlet is located in the back of the centrifuge. Plug in one end of the power cord to the inlet and the other end to an 115V power outlet.

Caution: Make sure the voltage of the power source matches the voltage input of centrifuge.

Control Panel and Key Pad Controls

The PowerSpin HXV centrifuge control panel appears as per the diagram below:



Timer Setting:

Press SET button until TIME flashes. Use the up or down arrow to preset the running time. The timer range is 1-99 minutes in 1 min. increments. While running, the display will show the timer count down in real time.

Speed Setting:

Press SET button until SPEED flashes. Use the up or down arrow to preset the running speed. The speed range is 500 -3500rpm.

Start Button:

When the lid is closed and the lid latched is engaged the displayed STATUS shows READY. Press Start button to spin sample. The centrifuge will not spin if the lid is not closed or not properly closed.

Note: Make sure the samples are balanced in the rotor!

Stop/Open Button:

Press STOP/OPEN button to stop the centrifuge at anytime. Press this button to open the lid when the rotor is not spinning.

Emergency Lid-opening:

The lid features an electronically controlled safety system to prevent it from being opened accidentally while the centrifuge is spinning. However, situations may arise when the lid needs to be opened manually (For example if you lose electrical power and samples are still in the centrifuge).

To open manually, locate the small hole on the front center of the centrifuge. Using a small screw driver (or a rod); insert the tool into the lid-opening hole;

push the tool down (by lifting the tool handle up) to release the safety lock and open the lid.

Centrifuge Operation:

1. Plug the centrifuge into a grounded outlet. Make sure the voltage is correct
2. Turn the power switch on the rear panel of the unit “On”
3. Open the lid by pressing the Open button on the front control panel
4. Load your specimen tubes into the tube shields of the horizontal rotor

**** CAUTION ****

Make sure that the specimen tubes are balanced.
Always balance rotor with tubes of equal size, fill and weight!
(See safety section below)

5. Close the lid firmly
6. Set the timer and the speed following the instruction.
7. Press the Start button to start.
8. After the centrifuge rotor has come to a complete stop (three beep sounds), the lid safety latch will automatically be released. It is now safe to open the lid and remove your specimens

Note: When the centrifuge spinning is complete, the timer and the speed will be automatically reset to the last timer and speed settings for the next run.

Safety:

PowerSpin HXV centrifuges are carefully designed and built instruments. Please take note of the following safety precautions.

Lid with zero rpm lid latch (electronically operated):

NEVER ATTEMPT TO OPEN THE LID UNTIL THE ROTOR HAS COME TO COMPLETE STOP!

Load Balance:

Always make sure that the load is balanced before operating the instrument.

It is **very important** that tubes with equal loads are placed opposite each other in the rotor. Also, when spinning a single specimen tube, another specimen tube of the same size filled with water (or an equal volume of another liquid) must be in-place directly opposite from the specimen tube to maintain balance. If the centrifuge is not properly balanced, damage could occur.

CAUTION: If excessive noise or vibration is noticed during a run, immediately press “Stop” to turn off the centrifuge and recheck the balance.

Maintenance:

Be sure to disconnect the power cord before attempting to clean the centrifuge.

This centrifuge is designed to be relatively maintenance free. The motor is a brushless type and has permanently sealed bearings so oiling is not necessary. A surface cleaner

such as Formula 409 can be used to clean the outside of the instrument. The rotor chamber and cover can be disinfected with a mild solution of bleach or other disinfecting liquid and allowed to dry. Do not drench or immerse the unit in any liquid!

CAUTION: Do not use any cleaning “**SOLVENTS**” on any part of the centrifuge as the chemicals can cause damage to the instrument.

Periodic Rotor and Tube Holders inspection and replacement

Rotors and Tube Holders should be removed and inspected for defects at least every 6 months or each time the rotor is removed for cleaning. The rotors and tube shields should be replaced every 3 years.

Calibration:

According to Code of Federal Regulations Title 21, centrifuges require verification or calibration as follows:

1) Before initial use; 2) after repair or adjustments; and 3) 6 month after use. The centrifuge timer, however, should be checked for accuracy at least every 3 months. The timer is an electronic timer is designed to be accurate to $5\text{min} \pm 10\text{sec}$. The speed should fall within $\pm 100\text{rpm}$ at 3500rpm

Electrical Shock Hazard:

Do not attempt to operate this instrument near water or liquid spill. Unplug the unit before cleaning or repairing. Periodically check the condition of the power cord for cuts or damage. Do not operate with a damaged cord.

Biohazard:

If a tube breaks, a biological hazard may exist. Unplug the instrument. Clean using approved laboratory procedures. Always wear the proper protective clothing and gloves. Use a suitable disinfectant and dispose of the sample properly. Refer to the guidelines set forth by OSHA, etc.

Centrifuge Service:

If you feel that your centrifuge needs factory service, please contact the UNICO customer service department for assistance. Simple problems may be resolved over the telephone. If the instrument needs to be returned to UNICO, an R.G.A. (return goods authorization) number will be issued. Please reference the R.G.A. number on the paperwork packed with the instrument and on the outside of the carton.

REPAIRS OR MODIFICATIONS MADE TO THE CENTRIFUGE BY AN UNAUTHORIZED PARTY WILL VOID THE WARRANTY.

Problem Solving / Trouble shooting:

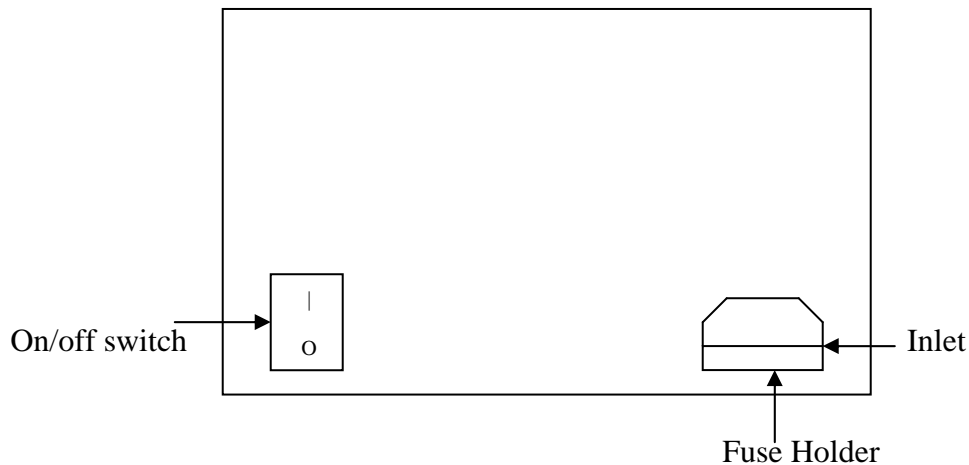
1. Centrifuge does not start:
 - a) Check to determine if centrifuge is plugged in.
 - b) Check that lid is properly closed.

- d) Check that Power switch in the back of unit is in the “on” position.
 - e) Check that the power indicator light (with the switch) is lit. A failure of the power light to illuminate could indicate a need for a new fuse when the unit is properly plugged in, switch is turned on and the lid is closed.
- 2. Excessive noise when running. If the noise is irregular or different in tone, be sure that there is no paper or debris in the rotor or rotor chamber. Make sure the load is balanced in the rotor.
 - 3. Indicator light fails to light:
 - a) Unit is not turned on or no power supply.
 - b) Fuse is blown.
 - 4. Fuse Replacement:

Caution: DISCONNECT THE POWER CORD BEFORE REPLACING FUSE.

Follow the procedures below to replace the fuse:

- a) Unplug the power cord. Turn the on/off switch to “off”
- b) Remove the power cord from the power inlet on the back of the centrifuge.
- c) Locate the fuse holder. The fuse holder is a part of the power inlet.



- d) Use a Philip type screwdriver to take the snap-in type holder cover off. Remove the blown fuse and replace it with the same type and rating fuse which is:
250V 4A
- e) Put the snap-in fuse holder back.

5. Intermittent motor operation or no operation:
Contact your representative for possible motor replacement.

Specifications:

Speed:	500 - 3,500 RPM
Speed accuracy:	+/- 100 RPM
Timer:	1-99 min.(Digital)
Rotor:	6 (C8306) or 8 (C8308) place Horizontal
Capacity:	8 x 10ml
Dimension (L x W x H):	400 x 324 x 260mm (16 x 13 x 10 ¼ inch)
Net Weight:	12Kg (26 lbs.)

Warranty:

This instrument is warranted against defects in materials and workmanship for a period of one (1) year from the date of shipment to the customer. This warranty is limited to the repair and replacement of parts, which prove to be defective during the warranty period. This warranty is not valid for parts damaged, lost, or which fail because of accident, fire, theft, acts of nature, negligence, or the use of chemicals, which have a deleterious effect. This warranty is conditioned upon the manufacturer retaining the option of replacing parts up to and including the entire instrument.

Note: This warranty will not extend to any repairs or modifications made to the instrument by some party other than the manufacturer or a party authorized by Unico. Also, this warranty shall be in effect only upon the notice of the defect to the manufacturer or it's authorized distributor, or dealer, within five (5) days after the occurrence of said defect. No other warranty of any kind is made express or implied. The warranty described above shall be the sole and exclusive remedy available to the purchaser. Correction of defects, in the manner and for the period of time described above, shall constitute complete fulfillment of all liabilities and responsibilities of the manufacturer to the purchaser with respect to the product, and shall constitute full satisfaction of all claims, whether based on contract, negligence, strict liability or otherwise. In no event shall the manufacturer be liable, or in any way responsible for any damages or defects in the product that were caused by repairs or attempted repairs performed by anyone other than the manufacturer's dealer or station, nor shall the manufacturer be liable or in any way responsible for any incidental or consequential economic or property damages. Some states do not allow the exclusion of incidental or consequential damage, so the above exclusion may not apply to you.

PowerSpin™ HXV Centrifuges

Parts and Nomenclature



**HXV (with 8-place rotor shown)
Horizontal Spin Centrifuge**