



Micro-hematocrit Centrifuge Model C-MH30



Operation Manual

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Description/ Intended Use:

The UNICO model C-MH30 is a specially designed high speed (11,000-12,000 RPM) centrifuge designed for the separation of microhematocrit samples.

Features:

- Twenty-four (24) place rotor with replaceable rubber ring and screw down metal lid.
- Dependable mechanical 5-minute timer with bell signal at end of run.
- Air-cooled, brush type AC motor.
- All metal housing for years of dependable use.
- Safety switch in lid shuts off motor when lid is lifted.
- Electric motor braking.
- Indicator light tells when unit is in use.

Construction:

The UNICO model C-MH30 is made of formed metal and has a baked paint application that is acid and reagent resistant. The lever type opening latch allows easy access and yet provides sure closing. A safety switch built into the handle assembly disconnects the power to the motor whenever the latch is lifted. The hematocrit tray is made of plastic composite material backed by an aluminum shell for durability and lighter weight. The brushed motor is mounted on rubber mounts to provide quieter running and less vibration.

Performance:

Nominal speed for the UNICO model C-MH30 is 11,500 RPM when the rotor contains 24 filled capillary tubes. Maximum speed depends on the number and fills volume of tubes.

Accessories:

Each UNICO model C-MH30 unit comes equipped with a 24 places, flat rotor with metal screw-down lid and replaceable rubber gasket. A plastic and brushed aluminum reader is included for customer convenience.

Installation:

Open the shipping container and unpack the centrifuge and reader. Inspect for any possible shipping damage. If you note any damage, please contact your distributor or you can call UNICO directly at (732) 274-1155. Save the original packaging. If it becomes necessary to return the instrument to us, we ask that it be returned in the original packaging.

Operation:

1. Set the timer control to “off”.
2. Plug the centrifuge into a 110 voltage power source.
3. Open the lid by lifting the latch lever on the front of the unit and unscrew the rotor cover.
4. Place the filled capillary tubes into the grooves of the rotor. The sealed end of the capillary tube should rest against the rubber gasket (cushion) on the inside of the rotor rim.
5. Screw the rotor lid down snugly.

Warning: If the rotor lid is not screwed down snugly, the tubes could break. Do not over-tighten the lid.

6. Close the lid and be sure that the latch lever is down and fully engaged.
7. Rotate the timer to the desired time. Always rotate the timer past the mark and rotate back for accurate setting.
8. After the centrifuge rotor has come to complete stop (following the end of the run bell), open the lid.

Reading of Hematocrit Results:

The Unico model C-MH30 comes with an adjustable reader (fig. 1) designed to make the hematocrit results reading fast, easy, and accurate.

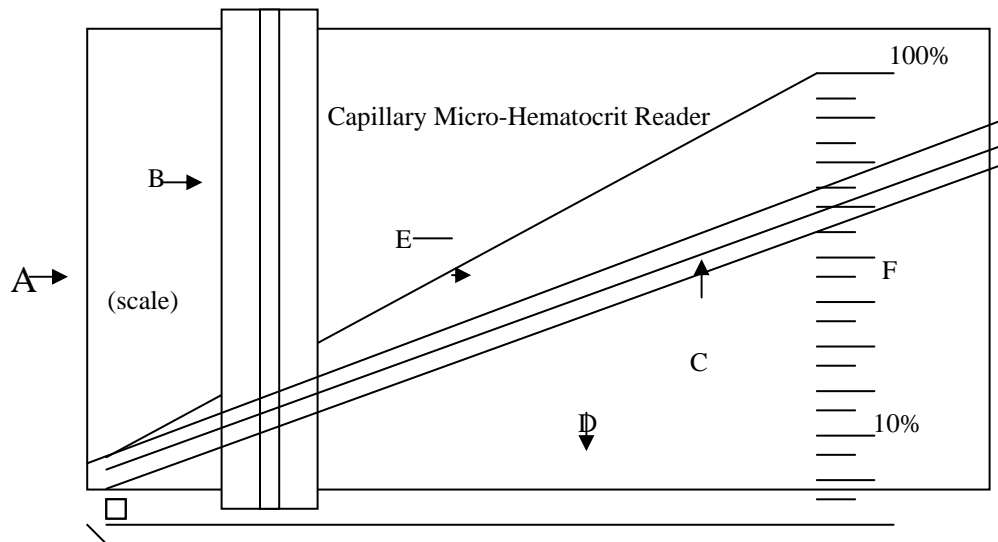


Figure 1 Capillary Micro-Hematocrit Reader

Key:

- A - Hematocrit reader.
- B - Capillary holder (slider moves from left to right).
- C - indicator (moves up and down across scale).
- D - Zero Line.
- E - 100% Line.
- F - Scale (from which you will derive your hematocrit result expressed as a percent (%)).

Note: Hematocrit results should be read at once. Delay will cause an error in the readout and values expected.

1. Set the hematocrit reader (Fig. 1) on a flat level surface with the words “Capillary Micro-Hematocrit Reader” facing you.
2. Make sure the Indicator lever (C) is at the bottom of the reader even with the zero line and that the capillary Holder (B) is at the extreme left of the reader.

3. Place the capillary tube to be read in the groove of the capillary holder (B) with the clay-sealed end toward the bottom of the groove. Using your index finger, slide the capillary up until the juncture (interface) of the packed red cells and the clay is directly over the Zero Line D).
4. Locate the top of the fill volume of the tube, move the capillary holder to the right so that the 100% line bisects (cuts across) the meniscus (top) of the straw colored fluid (plasma).
5. Move the Indicator lever so that the back line on the lever is directly over the separation between the packed red cells and plasma.
6. Look at the scale on the right of the reader (F). Where the black line of the indicator crosses over one of the scale numbers that is the hematocrit value for that sample.

Correlation and controls:

Although the UNICOC-MH30 is an excellent instrument with accurate, repeatable results, it cannot be expected to correlate exactly with every method for performing hematocrits. Automated hematocrits as part of a C.B.C. will not generally correlate with hematocrits that are centrifuged. This is due to the very nature of how the hematocrit is determined in the two methods. More information regarding correlation between spun and automated values can be found in various laboratory reference manuals as well as C.L.I.A. information. When using commercial controls with the UNICO C-MH30, be sure to refer to the values section for spun hematocrits.

Maintenance:

This centrifuge is designed to be relatively maintenance-free. The motor has permanently sealed bearings so oiling is not necessary. The drive motor does use brushes although the brush replacement interval is very long. Brushes are available from UNCO and are easily accessible by removing the screws on the bottom of the unit. Please make sure the unit is unplugged and that the authorization from the manufacturer is obtained before attempting to replace the brushes. A surface cleaner such as 409 can be used to clean the outside of the instrument. Care should be used to make sure that cleaning fluids do not

enter the inside of the instrument. The rotor chamber and cover can be disinfected with a weak solution of bleach or other disinfecting liquid and allowed to dry. Do not drench or immerse the unit in any liquid! Be sure to disconnect the power before attempting to clean.

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.

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 month. The timer is a mechanical one and designed to be accurate to 5min \pm 30sec. The speed should fall within the range of 11,500 \pm 600rpm.

Safety:

Your UNICO centrifuge is a carefully designed and built instrument. When operated properly, it presents no safety hazards, however, please take note of these safety precautions.

Lid:

NEVER OPEN THE LID UNTIL THE ROTOR HAS COME TO COMPLETE STOP! Your centrifuge is equipped with a lid safety switch that prevents operation when the lid is open. Do not attempt to defeat this feature. If you suspect that the lid safety switch or other component of this instrument is not working properly, do not attempt to operate the unit. Call UNICO customer service.

Rotor, Rotor Cover and Gasket:

Rotor is pre-installed and calibrated. Unbalanced rotor may cause vibrations and damage to samples or even the centrifuge. Do not run if the rotor is unbalanced or has noticeable damage.

Gasket is applied at the edge of the rotor to form a cushion between the capillary tube and the rotor edge. The gasket is cut so that minor shrink due to temperature change will not pull it off

Rotor cover must be threaded on securely. Screw the rotor lid down so that the rotor lid covers the rotor and leave no gap in between.

Warning: If the rotor lid is not screwed down snugly, the tubes could break. Do not over-tighten the lid.

Load Balance:

Always make sure that the load is balanced before operating the unit. If the centrifuge is not balanced properly, it could suffer damage. If excessive noise or vibration is noted during the run, discontinue the run and check balance.

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, CLIA, etc.

Service:

If you feel that your centrifuge needs factory service, please call us and speak to a customer service representative to determine the nature of the problem. Simple problems may be resolvable over the telephone. If the instrument needs to be returned to UNICO a 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:

- Centrifuge does not start
 - a) Check to determine if centrifuge is plugged in.
 - b) Check that timer has been set (2-5 min.)
 - c) Check that lid is closed and latched.
- Excessive noise when running. (hematocrit centrifuges are inherently more noisy than tube centrifuges), but if the noise is irregular or different in tone, be sure that there is no paper or debris in the rotor or rotor chamber.
- Indicator light fails to light.
 - a) Unit is not on.
 - b) Lamp needs replacing.
- Intermittent motor operation or no operation.
Check and replace the brush in the motor.

Specifications:

Speed_____11,500 RPM

Width_____9 inches (229 mm)

Depth_____10 inches (254 mm)

Height_____9 inches (229 mm)

Weight_____18 lbs (8.2 kgs)

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 failed because of an 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 expresses 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.