

USER MANUAL

CH1345 Microhematocrit Centrifuge

Fixed-Speed Centrifuge for Packed Cell Volume Determination

Read all instructions carefully before operating this equipment.

1. Introduction

The CH1345 Microhematocrit Centrifuge is a fixed-speed benchtop centrifuge engineered for fast, reliable packed cell volume (PCV) determination in clinical, veterinary, and research laboratory environments. Operating at a fixed speed of 12,000 rpm, the CH1345 achieves rapid separation of blood components in standard microhematocrit capillary tubes, delivering consistent results in as little as one minute.

The instrument features an adjustable timer (1–7 minutes, with a 3-minute default) that accommodates both standardized clinical hematocrit protocols and operator-defined run requirements. Its compact benchtop footprint minimizes laboratory space usage while maintaining the performance required for high-volume diagnostic workflows.

This manual provides complete instructions for the safe installation, operation, maintenance, and troubleshooting of the CH1345. All personnel responsible for operating or maintaining this instrument must read this manual in full before use.

2. Intended Use

The CH1345 Microhematocrit Centrifuge is intended for the following applications in clinical, veterinary, and research laboratory settings:

- Packed cell volume (PCV) / hematocrit determination from whole blood samples
- Separation of blood components in microhematocrit capillary tubes
- Routine hematology screening in human clinical diagnostics
- Veterinary blood analysis and PCV measurement
- Research applications requiring rapid micro-scale centrifugation of capillary samples

NOTE

The CH1345 is designed exclusively for use with standard microhematocrit capillary tubes. It is not intended for use with microcentrifuge tubes, conical tubes, or other non-capillary formats.

3. Safety Precautions

Review all safety precautions before operating the CH1345. Failure to observe these warnings may result in personal injury, sample contamination, or instrument damage.

3.1 General Safety

WARNING

Never open the centrifuge lid while the rotor is in motion. The rotor reaches 12,000 rpm and presents a serious risk of injury if accessed during operation. Wait for the rotor to come to a complete stop before opening.

CAUTION

Always ensure capillary tubes are properly sealed before loading. Unsealed or cracked tubes may break during centrifugation, creating aerosol and biohazard exposure risk.

- Do not operate the centrifuge without a balanced load. Unbalanced loading causes excessive vibration and may damage the rotor or instrument.
- Always use capillary tubes rated for centrifugation at 12,000 rpm.
- Inspect capillary tubes for cracks or defects before loading. Do not use damaged tubes.
- Do not exceed the maximum tube capacity for the rotor.
- Keep the instrument on a stable, level surface during operation.
- Do not move or tilt the instrument during a centrifugation run.
- Allow the rotor to come to a full stop before opening the lid or removing samples.

3.2 Electrical Safety

- Connect only to a properly grounded power outlet with the correct voltage and frequency rating.
- Do not use extension cords or power strips unless rated for laboratory equipment.
- Disconnect power before cleaning or performing maintenance.
- Do not operate the instrument if the power cord is damaged. Contact your service representative immediately.
- Do not expose the instrument to liquids or operate in wet environments.

3.3 Biological Safety

- When processing biological samples, adhere to institutional biosafety protocols and all applicable regulatory requirements.
- Wear appropriate personal protective equipment (PPE): gloves, lab coat, and eye protection at minimum.
- Treat all blood and biological samples as potentially infectious. Follow universal precautions.
- Decontaminate the rotor chamber and any contacted surfaces after spills or after processing infectious samples.
- Dispose of used capillary tubes as sharps waste in accordance with institutional and local regulations.

WARNING

Capillary tube breakage during centrifugation may generate infectious aerosols. If breakage occurs, do not open the lid immediately. Wait at least 10 minutes before opening to allow aerosols to settle, then decontaminate the rotor chamber thoroughly before resuming use.

4. Technical Specifications

Parameter	Specification
Model	CH1345
Instrument Type	Microhematocrit Centrifuge
Speed	12,000 rpm (fixed)
Timer Range	1–7 minutes
Default Timer Setting	3 minutes
Rotor Type	Microhematocrit rotor (capillary tubes)
Certification	CE
Country of Origin	China
Warranty	1 Year Limited
Barcode (UPC)	00850084643309

4.1 Compatible Capillary Tube Formats

The CH1345 is compatible with standard microhematocrit capillary tubes. The following tube types are commonly used:

- Heparinized capillary tubes (for whole blood / non-anticoagulated blood)
- Plain (non-heparinized) capillary tubes (for use with anticoagulated blood samples)
- Standard 75 mm x 1.1–1.2 mm bore microhematocrit capillary tubes

NOTE

Always confirm that capillary tubes are rated for centrifugation at 12,000 rpm before use. Non-rated tubes may fracture during operation.

5. Unpacking and Inspection

5.1 Package Contents

Verify that the following items are present upon unpacking:

- CH1345 Microhematocrit Centrifuge unit (1x)
- Rotor assembly (pre-installed or included separately)
- Sealing putty or rubber sealing disc for capillary tubes (1x)
- Power cord with appropriate plug (1x)
- User Manual (this document) (1x)
- Warranty registration card (1x)

5.2 Inspection Procedure

1. Remove the instrument and all accessories from the packaging carefully.

2. Inspect the outer casing, rotor, and lid for any visible damage that may have occurred during shipping.
3. Verify that all components listed in Section 5.1 are present and undamaged.
4. Check that the rotor spins freely by hand (with the instrument unpowered).
5. If any damage or missing components are identified, do not operate the instrument. Contact your supplier or authorized distributor immediately and retain all original packaging for claims processing.

6. Installation and Setup

6.1 Environmental Requirements

Parameter	Specification
Operating Temperature	15°C to 35°C (59°F to 95°F)
Relative Humidity	20% to 80%, non-condensing
Altitude	Up to 2,000 m (6,562 ft)
Installation Category	II
Pollution Degree	2

6.2 Placement

- Place the instrument on a stable, flat, level benchtop surface capable of supporting its weight with a loaded rotor.
- Ensure a minimum clearance of 15 cm (6 inches) on all sides and above the instrument for adequate ventilation and safe lid operation.
- Do not place the instrument in direct sunlight, near heat sources, or in environments with excessive dust or humidity.
- Ensure the surface is free from vibration sources that could affect centrifuge balance during operation.

6.3 Power Connection

6. Verify that the local power supply matches the instrument's rated electrical requirements.
7. Connect the power cord to the instrument power inlet at the rear of the unit.
8. Plug the power cord into a grounded electrical outlet.
9. The instrument is now ready for operation.

7. Operating Instructions

7.1 Preparing Capillary Tubes

10. Collect the blood sample into the appropriate capillary tube type (heparinized for non-anticoagulated blood; plain for EDTA or other anticoagulated samples).
11. Fill the capillary tube to approximately two-thirds to three-quarters of its length.
12. Seal one end of the tube using sealing putty or a rubber sealing disc. Ensure a complete, leak-free seal.
13. Wipe the exterior of the tube with a clean, lint-free cloth to remove any blood residue before loading.

7.2 Loading the Rotor

CAUTION Always power off the instrument before loading or unloading capillary tubes.

14. Ensure the instrument is powered OFF.
15. Open the centrifuge lid by pressing or releasing the lid latch as applicable.
16. Place capillary tubes into the rotor slots with the sealed end oriented toward the outer edge of the rotor (away from the center).
17. Load tubes in balanced pairs — each tube must have a counterpart placed in the diametrically opposite slot. If an odd number of samples is required, use a blank (sealed, empty) capillary tube in the opposing slot.
18. Ensure all tubes are fully seated in their slots and that no tube protrudes above the rotor surface.
19. Close and latch the centrifuge lid securely before starting the run.

7.3 Setting the Timer

20. Locate the timer control on the instrument front panel.
21. The timer is preset to a default of 3 minutes, which is the standard duration for most clinical hematocrit protocols.
22. To adjust the run time, turn the timer dial to the desired setting within the 1–7 minute range.
23. For standard clinical PCV determination, the 3-minute default is recommended.

NOTE

For veterinary applications or samples with elevated viscosity, a longer run time (up to 7 minutes) may be required to achieve complete packing. Consult your protocol guidelines.

7.4 Running the Centrifuge

24. Confirm the lid is fully closed and latched.
25. Switch the power ON. The rotor will begin accelerating to 12,000 rpm.
26. The centrifuge will run for the duration set on the timer and then automatically stop.
27. Wait for the rotor to come to a complete stop before opening the lid. Do not force the rotor to stop manually.
28. Open the lid and carefully remove the capillary tubes using appropriate handling technique.

7.5 Reading Hematocrit Values

29. Remove the centrifuged capillary tube carefully from the rotor.
30. Place the tube on a calibrated microhematocrit reading chart or reader device.
31. Align the bottom of the packed red cell column with the zero line on the chart.
32. Read the packed cell volume (PCV) as a percentage by identifying the level of the top of the packed red cell layer against the scale.
33. Record the result per your laboratory's documentation protocol.

NOTE

A microhematocrit reading chart or card (not included) is required for result interpretation. Ensure the reading card is appropriate for the capillary tube dimensions used.

7.6 Typical Run Parameters by Application

Application	Recommended Run Time	Notes
Human clinical PCV (adults)	3 minutes	Standard protocol default
Human clinical PCV (neonates)	3–5 minutes	Higher cell concentration may require longer spin
Veterinary — canine / feline	5 minutes	Confirm with veterinary protocol
Veterinary — avian / exotic	5–7 minutes	Nucleated RBCs require longer separation
Research micro-separation	1–7 minutes	Operator-defined per protocol

8. Cleaning and Maintenance

8.1 Routine Cleaning

34. Power off and unplug the instrument before any cleaning procedure.
35. Wipe exterior surfaces with a lint-free cloth dampened with 70% isopropyl alcohol or a mild laboratory-grade detergent solution.
36. Clean the rotor surface and slots with a soft brush or damp cloth, removing any residual sample material or debris.
37. Clean the interior lid surface and rotor chamber with a damp cloth.
38. Allow all surfaces to dry completely before reconnecting power.

8.2 Decontamination After Biohazardous Spill or Tube Breakage

WARNING

In the event of capillary tube breakage inside the centrifuge, do not open the lid immediately. Wait at least 10 minutes for aerosols to settle, then proceed with full decontamination.

39. Don appropriate PPE: gloves, eye protection, and face mask.
40. Carefully open the lid and remove all intact tubes and any tube fragments using forceps. Place sharps in a designated sharps waste container.
41. Apply a 10% sodium hypochlorite (bleach) solution or equivalent disinfectant to all contaminated surfaces in the rotor chamber.
42. Allow the disinfectant to remain in contact for the time specified by the manufacturer (typically 10–30 minutes).
43. Wipe down all surfaces with a clean, damp cloth and allow to air dry.
44. Dispose of all contaminated materials in accordance with institutional and regulatory biohazard waste requirements.
45. Document the incident per your laboratory's safety reporting protocol.

CAUTION

Do not use abrasive cleaners, acetone, or bleach concentrations above 10%. These may damage instrument surfaces, markings, or the rotor material.

8.3 Preventive Maintenance Schedule

Frequency	Task	Responsible
After each use	Clean rotor and exterior surfaces	Operator
After biohazardous use	Full decontamination per Section 8.2	Operator
Weekly	Inspect power cord and plug for damage	Operator
Weekly	Inspect rotor slots for cracks or wear	Operator
Monthly	Inspect lid latch and hinge mechanism	Operator / Technician
Monthly	Verify timer accuracy against a reference timer	Operator / Technician
Annually	Full performance and safety inspection	Qualified Technician

9. Troubleshooting

Symptom	Possible Cause	Corrective Action
Instrument does not power on	No power connection; faulty outlet; damaged cord	Check all power connections; test outlet; inspect cord for damage

Excessive vibration during run	Unbalanced rotor load; uneven surface	Redistribute tubes symmetrically; place on level surface
Unusual noise during operation	Foreign material in rotor chamber; tube fragment present	Power off; inspect rotor chamber; remove debris before restarting
Lid will not open after run	Rotor still in motion; lid safety lock engaged	Wait for rotor to stop fully; do not force lid open
Capillary tube breakage	Tube defect; incorrect tube type; overfilling	Inspect tubes prior to use; use only rated capillary tubes; do not overfill
Incomplete cell packing (poor separation)	Insufficient run time; incorrect tube type	Increase run time; verify tube type is appropriate for sample
Timer not advancing or inaccurate	Mechanical fault in timer	Verify with external reference timer; contact service if issue persists
Instrument stops before timer completes	Power interruption; overheating	Check power supply stability; allow instrument to cool and restart

NOTE

If the issue cannot be resolved using the troubleshooting guide above, do not attempt to disassemble or internally repair the instrument. Contact your authorized service representative.

10. Warranty and Service

10.1 Limited Warranty

The CH1345 Microhematocrit Centrifuge is covered by a 1-year limited warranty from the date of original purchase, covering defects in materials and workmanship under normal use and service conditions.

The warranty does not cover:

- Damage caused by misuse, neglect, accident, or unauthorized modification
- Damage resulting from operation outside specified environmental or electrical conditions
- Normal wear and tear of consumable or mechanical components
- Damage caused by capillary tube breakage or biological contamination events
- Instruments serviced or repaired by unauthorized personnel

10.2 Obtaining Service

To request warranty service or technical support, contact your authorized distributor or supplier with the following information ready:

- Model number: CH1345
- Serial number (located on the instrument identification label)
- Proof and date of purchase
- Detailed description of the problem and the conditions under which it occurs

11. Regulatory Information

11.1 CE Declaration

The CH1345 Microhematocrit Centrifuge bears the CE marking, indicating conformity with applicable European Union directives and harmonized standards for laboratory centrifuge equipment. The full Declaration of Conformity is available upon request from the manufacturer or authorized distributor.

11.2 Disposal (WEEE)

This instrument must be disposed of in accordance with local, national, and regional environmental regulations governing electrical and electronic equipment (WEEE Directive in the EU). Do not dispose of as unsorted municipal waste. Contact your local waste management authority or authorized distributor for guidance on compliant disposal or take-back programs.

11.3 Biohazardous Waste

Used capillary tubes and materials contaminated with biological samples must be segregated and disposed of as biohazardous sharps waste in accordance with institutional biosafety protocols and applicable local and national regulations.

12. Accessories and Compatible Consumables

The following consumable items and accessories are compatible with the CH1345. Contact your authorized distributor to order:

Part Number	Description
BLA77705-AU / BLA77705U	Microhematocrit capillary tubes, heparinized
BLA63211U	Capillary tube, plain (non-heparinized)
BLA77910U	Capillary tube sealing putty / wax
BLA63352U / BLA63351U	Microhematocrit reading chart / card
BLAD1003U / BLAD1001U	Capillary tube sealing caps, standard

BLAP10201AU / BLAP10201U	Sample collection capillary, Type A
BLAP10205U / BLAP10207U	Specialty capillary tube formats
BLAP20604U / BLAP20605U	Capillary tube racks and storage trays
BLAUNCFBR01-PK/12U	Centrifuge brush cleaning kit (12-pack)
BLACENTFG1U	Centrifuge maintenance / service kit
BLAUNMCNTF-4U	Microhematocrit rotor assembly (replacement)

For a complete and current list of compatible consumables and accessories, contact your authorized distributor or refer to the product catalog.

Document Revision History

Version	Date	Author	Summary
1.0	April 2026	Technical Documentation	Initial release

CH1345 User Manual v1.0 — All rights reserved.