1. Product's description

1.1 General information

We wish to thank for this microhematocrit centrifuge purchase and we invite you to follow carefully the instructions' manual attached. When used correctly, your centrifuge will last long, avoiding dangerous situations in particular circumstances. This product is a 6 places portable microhematocrit centrifuge. Thanks to its reduced size and weight, this instrument can be easily used in every circumstance with precise results in only 3 minutes. The operation is possible through an internal chargeable battery, or plugging the charger in, supplied with the instrument. The cable must be less than one meter long, with conformity to 89/33 CEE directive.

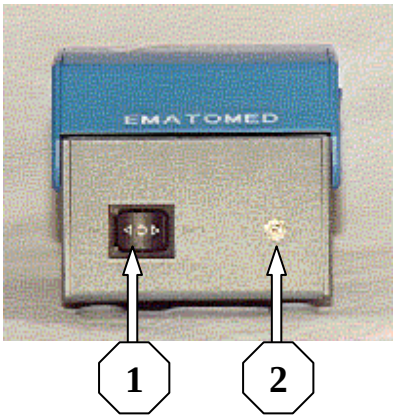
1.2 Package's content

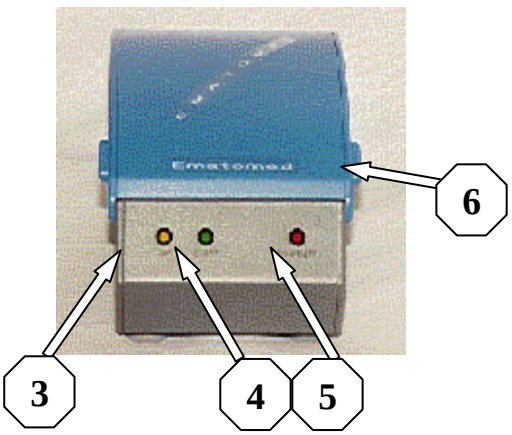
In the package you'll find:

- N. 1 microhematocrit centrifuge
- N. 1 universal transformer
- N. 1 tweezers for capillary tubes handling
- N. 1 instructions' manual

1.3 Centrifuge's details

1. On/Off switch
2. Transformer's plug
3. Orange led (on)
4. Green led (start)
5. Red led (empty battery)
6. Opening lid lever





1.4 Technical information

Dimensions:	136 mm (length) x 215 mm (width) x 122 mm (height)
Weight:	approximately 1.2 kg.
Sample:	one blood's drop
Storage:	from 1 to 6 capillary tubes
Speed:	11.500 RPM
Power:	12 vdc
Absorption:	0,4 A

2. Conformity's rules

Ematomed centrifuge has been manufactured in accordance with 98/79/CE regulation, in regard to vitro diagnostics, and therefore displays obligatory CE mark.

3. Ematomed's use

4.1 Instrument's set -up

GIMA is not responsible for any centrifuge's damages, occurred during transport.
Ematomed centrifuge doesn't need any particular requirements concerning the set-up area. The best working temperature is between +14°C/+33°C. With lower temperatures, the centrifuge might be louder.
Microhematocrit centrifuge Ematomed must be not used in presence of chemical and explosive material. When manufactured, Ematomed is perfectly set up, in respect of all safety's rules. To keep such features and to guarantee a safe use, all the instructions in this manual have to be followed carefully.

4.2 Safety

Ematomed is equipped with a safety's device, preventing engine's activation, when the lid is open. This protection's device is activated by an electrical switch which does not supply a/c power with open lid.

WARNING: never attempt to run the centrifuge, when the lid is open. This action could represent a serious danger, with a possible capillary tube or disc itself break or separation. Because of high angular speed, you might be seriously injured by fragments.

In sampling and handling blood's sample, and in every action related to microhematocrit centrifuge Ematomed running, all the safety guide-lines must be followed against biological risks related to human blood manipulation.

4.3 Instructions for a proper use

When Ematomed is used for the first time, the battery has to be fully charged. This centrifuge can work through its internal battery, or linked to electric power supply.

- Pull one capillary tube out and sample one blood-drop, making sure that the tube is filled completely.
- To pull a capillary tube out, help yourself with the special tweezers, supplied in the package.
- Press lightly on the central pole of the rotor, so to separate it from its natural position.
- Place the capillary tube on the rotor, leaning it on the black rubber bearing and on the central pole special groove. The rotor can centrifuge from 1 to 6 capillary tubes, if centrifuging only one sample, a counterbalance capillary doesn't have to be placed on the opposite side.
- Press lightly the central pole down, till to place it in its natural position.
- Switch the centrifuge on (yellow led on).
- Close the lid, the green led is on and the centrifuge will spin for about 3 minutes.
- After this time you'll hear an acoustic signal (beep) to indicate the test is completed.
- Open the lid, at least after 30 seconds, so to be sure that the centrifuge has fully stopped. The acoustic signal will be over, so it's possible checking the result on the rotor.
- After centrifugation it's possible to read results on the reading scale, placed besides capillary tubes, eventually with the help of a magnifying lens. In this way you'll get hematocrit's percentage in the blood.
- To remove the capillary tubes press again on the rotor's central pole.
- If determinations are now over, you may switch the centrifuge OFF and close the lid.

If during centrifugation with battery power the red led is on, battery is running out. Then it's necessary to interrupt the test (as it is not reliable) and proceed to recharge the battery; this operation will take at least 5 hours.
To fully recharge the battery the transformer has to plugged in, to the rear's socket centrifuge and to a power supply. Set the main switch to BATT, the yellow led is on and the battery start to charge.
WARNING: never interrupt a test's determination and restart it (only in extreme conditions, like empty battery). All the interrupted tests have to be considered nil and not reliable.

4.4 Scale's reading

The scale is graduated from 1 to 100 and must be read in percentage. For example, in case the blood values correspond to the number 40, the sample has a 40% hematocrit.

4.5 Results' reading

Equipment could generate anomalous results. Considered that it happens rarely, this eventuality is nevertheless possible and has to be taken into consideration.
Therefore the user must not adopt a stance, so to correct the obtained result.

4.6 Blood sampling

Blood samples to be used in the test have to be sampled correctly, to not show any clots. Sampling can be done through syringe or finger-pricking. In case it's done through finger-pricking, proceed massaging and warming up the patient's finger, so to increase perfusion. Disinfect the finger's tip and let it dry; prick then the finger's tip with a special lancet, drying the first drop with a sterile gauze. Massage the finger from the base to the tip and sample the blood, leaning the capillary on the blood-drop, making sure there is no presence of air within the capillary tubes.

As these capillary tubes contain blood sample, they must be considered as special waste and disposed to avoid any contacts with persons or animals.

5. Use limits

Tests' results with microhematocrit centrifuge Ematomed are conditioned by using a proper technique in blood sampling, and in dropping it in the capillary tubes. Tests' accuracy depend mainly on blood-sample quality; at the same time this quality derives from precise techniques in blood sampling and dropping that in the capillary. Tests can be conditioned by the following factors:

- Air bubbles in the sample
- Emolisys
- Blood partially or completely coagulated

Tests' results with Ematomed have always to be analyzed, considering every single patient's clinical conditions. In case a tests seems to be incompatible with the patient's clinical conditions, the test has to be repeated, or integrated with further diagnostic exams.

6. Waste disposal

Once capillary tubes have been used, they have to be considered potentially infected. Therefore they must be disposed according to special protocols fixed by different hospital structures.

7. Maintenance

When needed, check and clean up the capillary tubes' slots on the rotor.
Remove any eventual traces of dry blood or any other foreign bodies, using water dampened cotton swabs. Dry eventual wet surfaces with dry cotton swabs. For a disinfection on blood contaminated surfaces please use a 0.5% sodium ipocloritum solution.
Do not make use of any strong solvents or detergents, as centrifuge's plastic parts could be damaged. Apart from cleansing, none periodic maintenance is required.
To optimise battery's life, we recommend to run Ematomed through its battery during day time, and nightly plugging your centrifuge to power supply, for a recharge of the battery itself. In this way the lead battery's life is optimised. A fully charged battery can provide up to 30 tests' determinations. With empty battery the centrifuge can not run properly a test; at this stage Ematomed hast to be connected to a power supply, to charge the battery. Once connected, the centrifuge can be used immediately.

8. Failure

In case of any centrifuge's failure, please contact immediately your dealer or the manufacturer. Results reliability depend on the instrument's perfect running.

9. GIMA warranty conditions

Congratulations for purchasing a GIMA product. This product meets high qualitative standards both as regards the material and the production. The warranty is valid for 12 months from the date of supply of GIMA. During the period of validity of the warranty, GIMA will repair and/or replace free of charge all the defected parts due to production reasons. Labor costs and personnel traveling expenses and packaging not included. All components subject to wear are not included in the warranty. The repair or replacement performed during the warranty period shall not extend the warranty. The warranty is void in the following cases: repairs performed by unauthorized personnel or with non-original spare parts, defects caused by negligence or incorrect use. GIMA cannot be held responsible for malfunctioning on electronic devices or software due to outside agents such as: voltage changes, electro-magnetic fields, radio interferences, etc.
The warranty is void if the above regulations are not observed and if the serial code (if available) has been removed, cancelled or changed. The defected products must be returned only to the dealer the product was purchased from. Products sent to GIMA will be rejected.

10. Normal values

The hematocrit **(**Ht**)** or packed cell volume **(**PCV**)** is the proportion of blood that is occupied by red blood cells. It is normally between 0.35 and 0.52, and slightly higher on average in males. The packed cell volume can be determined by centrifuging the blood in a capillary tube, which forces the cells to one end. The length of the tube containing blood cells, divided by the length containing cells or plasma gives the PCV.

At birth: 56% (average) with increasing reduction after 2 years old age
Children: 35-40%
Men: 43-49% (average 46%)
Women: 40-45% (average 42%)

	Red blood cells	**Hb**	**Hct**
Men	4.500.000	13	40
	5.800.000	17	52
Women	4.200.000	12.5	37
	5.200.000	16	47

Disposal: The product must not be disposed of along with other domestic waste. The users must dispose of this equipment by bringing it to a specific recycling point for electric and electronic equipment.
For further information on recycling points contact the local authorities, the local recycling center or the shop where the product was purchased. If the equipment is not disposed of correctly, fines or penalties may be applied in accordance with the national legislation and regulations.