


USER MANUAL

CultureCoin®

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Rx only



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Esco reserves the right to make periodic minor design changes without obligation to notify any person or entity of such change.

Sentinel™ is a registered trademark of Esco.

Caution: Federal law restricts this device to sale by or on a licensed healthcare practitioner's order.

Only to be used by a trained and qualified professional. The device is sold under exemption 21 CFR 801 Subpart D.

"Material in this manual is provided for informational purposes only. The contents and the product described in this manual (including any appendix, addendum, attachment or inclusion) are subject to change without notice. Esco makes no representations or warranties as to the accuracy of the information contained in this manual. In no event shall Esco be held liable for any damages, direct or consequential, arising out of or related to the use of this manual."

Unpacking and Inspection

Follow standard receiving practices upon receipt of the instrument. Check the shipping carton for damage. If the damage is found, stop unpacking the instrument. Notify the freight carrier and ask for an agent to be present while the instrument is unpacked. There are no special unpacking instructions, but be careful not to damage the instrument when unpacking it. Inspect the instrument for physical damage such as bent or broken parts, dents, or scratches.

Claims

Our routine method of shipment is via common carrier. If physical damage is found, upon delivery, retain all packing materials in their original condition and immediately contact the carrier to file a claim.

If the instrument is delivered in good physical condition but does not operate within specifications, or if there are any other problems not caused by shipping damage, please contact your local sales representative or Esco Medical immediately.

Standard Terms and Conditions

Refunds & Credits

Please note only serialized products (products labeled with a distinct serial number) and accessories are eligible for a partial refund and/or credit. Non-serialized parts and accessory items (cables, carrying cases, auxiliary modules, etc.) are not eligible for return or refund. In order to receive a partial refund/credit, the product must not have been damaged. It must be returned complete (meaning all manuals, cables, accessories, etc.) within 30 days of original purchase, in “as new” and resalable condition. The *Return Procedure* must be followed.

Return Procedure

Every product returned for refund/credit must be accompanied by a Return Material Authorization (RMA) number, obtained from Esco Medical Customer Service. All items being returned must be sent *prepaid* (freight, duty, brokerage and taxes) to our factory location.

Restocking Charges

Products returned within 30 days of original purchase are subject to a minimum restocking fee of 20% of the list price. Additional charges for damage and/or missing parts and accessories will be applied to all returns. Products that are not in “as new” and resalable condition are not eligible for credit return and will be returned to the customer at their own expense.

Certification

This instrument has been thoroughly tested/inspected and found to meet Esco Medical’s manufacturing specifications when shipped from the factory. Calibration measurements and testing are traceable and done according to Esco Medicals ISO certification.

Warranty and Product Support

Esco Medical warrants this instrument to be free from defects in materials and workmanship under regular use and service for two (2) years from the original purchase date. The provided instrument is calibrated and maintained following this manual. During the warranty period, Esco Medical will, at our option, either repair or replace a

product that proves to be defective at no charge, provided you return the product (shipping, duty, brokerage and taxes prepaid) to Esco Medical. Any transportation charges incurred are the purchaser's responsibility and are not included within this warranty. This warranty extends only to the original purchaser. It does not cover damage from abuse, neglect, accident or misuse, or as the result of service or modification by parties other than Esco Medical.

IN NO EVENT SHALL ESCO MEDICAL LTD. BE LIABLE FOR CONSEQUENTIAL DAMAGES. No warranty shall apply when any of the following causes damage:

- Power failure, surges, or spikes
- Damage in transit or when moving the instrument
- An improper power supply such as low voltage, incorrect voltage, defective wiring or inadequate fuses
- Accident, alteration, abuse or misuse of the instrument
- Fire, water damage, theft, war, riot, hostility, acts of God such as hurricanes, floods, etc.

Only serialized products (those items bearing a distinct serial number tag) and their accessory items are covered under this warranty.

PHYSICAL DAMAGE CAUSED BY MISUSE OR PHYSICAL ABUSE IS NOT COVERED UNDER THE WARRANTY. Items such as cables and non-serialized modules are not covered under this warranty.

This warranty gives you specific legal rights and you may have other rights, which vary from province to province, state to state, or country to country. This warranty is limited to repairing the instrument per Esco Medical's specifications.

When you return an instrument to Esco Medical for service, repair or calibration, we recommend shipment using the original shipping foam and container. If the original packing materials are not available, we recommend the following guide for repackaging:

- Use a double-walled carton of sufficient strength for the weight being shipped
- Use heavy paper or cardboard to protect all instrument surfaces. Use non-abrasive material around all projecting parts
- Use at least four inches of tightly packed, industrial-approved, shock-absorbent material all around the instrument

Esco Medical will not be responsible for lost shipments or instruments received in damaged condition due to improper packaging or handling. All warranty claim shipments must be made on a prepaid basis (freight, duty, brokerage, and taxes). No returns will be accepted without a Return Materials Authorization ("RMA") number. Please contact Esco

Medical to obtain an RMA number and receive help with shipping/customs documentation.

Re-calibration of instruments, which have a recommended annual calibration frequency, is not covered under warranty.

Warranty Disclaimer

If your instrument is serviced and/or calibrated by someone other than Esco Medical Ltd. and their representatives, please be advised that the original warranty covering your product becomes void when the tamper-resistant Quality Seal is removed or broken without proper factory authorization.

In all cases, breaking the tamper-resistant Quality Seal should be avoided at all cost, as this seal is key to your original instrument warranty. In an event where the seal must be broken to gain internal access to the instrument, you must first contact Esco Medical Ltd.

You will be required to provide us with the serial number for your instrument, as well as a valid reason for breaking the Quality Seal. It would be best if you broke this seal only after you have received factory authorization. Please do not break the Quality Seal before you have contacted us! Following these steps will help ensure that you will retain the original warranty on your instrument without interruption.

WARNING

Unauthorized user modifications or applications beyond the published specifications may result in an electrical shock hazard or improper operation. Esco Medical will not be responsible for any injury sustained due to unauthorized equipment modifications.

ESCO MEDICAL LTD. DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR APPLICATION.

THIS PRODUCT CONTAINS NO USER-SERVICEABLE COMPONENTS.

UNAUTHORIZED REMOVAL OF THE INSTRUMENT COVER SHALL VOID THIS AND ALL OTHER EXPRESSED OR IMPLIED WARRANTIES.

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1 How to use this manual

The manual is intended to be read from start to finish.

2 Safety warning

- Anyone working with, on or around this equipment should read this manual. Failure to read, understand, and follow the instructions given in this documentation may result in damage to the unit, injury to operating personnel, and/or poor equipment performance.
- The use of any hazardous materials in this equipment must be monitored by an industrial hygienist, safety officer or other suitably qualified individuals.
- In this manual, important safety-related points will be marked with the following symbols:



NOTE

It is used to direct attention to a specific item.



WARNING

Use caution.

- If the equipment is used in a manner not specified by this manual, the protection provided by this equipment may be impaired.

3 Indication for use

Preparing, storing and transferring human embryos. To be used only with the MIRI® TL device.

4 About the product

The Esco Medical CultureCoin® is a sterile, single-use culture vessel specifically developed for use in IVF. The dish holds up to 14 embryos in the centrally placed line of culture wells. The culture well features a 300µ, optically clear area where the embryo is situated. The area is optimized for microscopy. A clear circle is present around the culture area for the purpose of making it easy for an automatic focus algorithm to find the area under microscopic image acquisition. The culture wells are numbered (1 – 14) for easy location of each well by the user. Each culture well has two washing wells for cell manipulations, washing media or replacement media.

The lid is mounted inside the circumference of the dish covering the culture area completely – the user will only grab the dish during handling and not risk losing the dish by holding on to the lid only – as can be the case on all traditionally designed dishes. A

large well is provided outside the culture are for pH measuring without affecting the cultured samples. The dish has a flat bottom, so it is ideal for heat transfer from below.

Model Code: MRI-CC.

The device is manufactured under a full EU certified 13485 ISO quality management system.

This product conforms to the requirements of the Regulation (EU) 2017/745 concerning medical devices and is classified as a Class IIa device under rule II.

Personal Protective Equipment (89/686/EEC) and Machine Directive (2006/42/EC) is not applicable for the CultureCoin®. Also, the CultureCoin® do not contain or incorporates: a medical substance, including a human blood or plasma derivate; tissues or cells, or their derivatives, of human origin; or tissues or cells of animal origin, or their derivatives, as referred to in Regulation (EU) NO. 722/2012.

5 Safety symbols and labels

There are several user labels on the surfaces of the CultureCoin® to guide the user. User labels are shown below.

Table 5.1 Labels

Description	Image
<p>Packaging box and bag label:</p> <ol style="list-style-type: none"> 1. Model. 2. Ref No. 3. Lot No. 4. Use – by date. 5. Manufacturer’s address and country of origin. 6. CE mark. 7. Consult instruction for use. 8. Prescription only. 9. WEEE wheeled bin. 10. Single use. 11. Do not re-use. 12. Keep dry. 13. Keep away from direct sunlight. 14. Temperature limitation. 15. Do not use if the package is damaged. 16. The method of sterilization. 	

6 Important safety instructions and warnings

6.1 Pre-use

1. Do not use the product if the package is damaged. Contact Esco Medical or the local representative.
2. Read the user manual thoroughly before use.
3. Always keep these instructions at hand.

6.2 During use

1. Use only for the purpose listed under intended use.
2. The dishes are single-use only. Please do not attempt to clean and reuse them.
3. Only for the use of water-based culture media and mineral oil.
4. Do not use this product at temperatures exceeding 40 °C.

6.3 Post use

1. Discard the dishes according to the proper procedures.

7 The Culture mode

The CultureCoin® can be used only for culturing with culture media filled into the wells and oil overlay. They cannot be used for open culture.

8 Overview

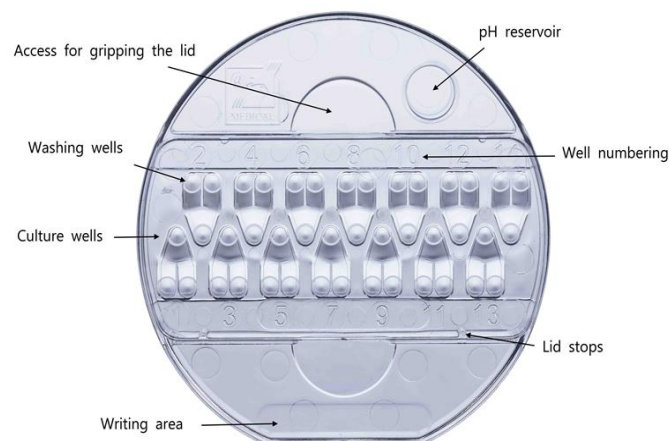


Figure 8.1 CultureCoin®

9 Use

1. Unpack both the lid and dish in an aseptic environment.

2. Leave the dishes with the lids on for off-gassing in the aseptic environment for 12 hours.
3. Warm the dishes on a heated stage or an incubator before filling them with media.
4. Fill all the wells with the app. 25 μ l of precultured equilibrated culture media in an aseptic environment. Filling of the washing wells is optional. They can contain approximately 23 μ l each.
5. Check under a microscope for any visible air bubbles and remove them with a stripper tip.
6. Fill the oil area with a confluent layer of suitable mineral or paraffin oil to cover the culture media. Do not overfill.
7. Put the lid on the dish and leave it for 4 hours of equilibration in the CO₂ incubator.
8. Check for air bubbles in the culture wells after the equilibration. Remove any bubbles with a stripper tip.
9. Load the embryos in the wells. Make sure the embryos are located very precisely in the center of the culturing well and not on the side slope.
10. Optionally fill the pH reservoir and insert the silicone plug.
11. Incubate the CultureCoin[®] in the MIRI[®] TL.

10 CultureCoin[®] placement in the compartment

Before starting the time-lapse, it is essential to place the CultureCoin[®] in the compartment properly. To ensure the correct position of the CultureCoin[®] (so that the camera can identify all the wells), place the CultureCoin[®] in its place and secure its position by pushing it **downwards and towards you**, then to the **left edge**.

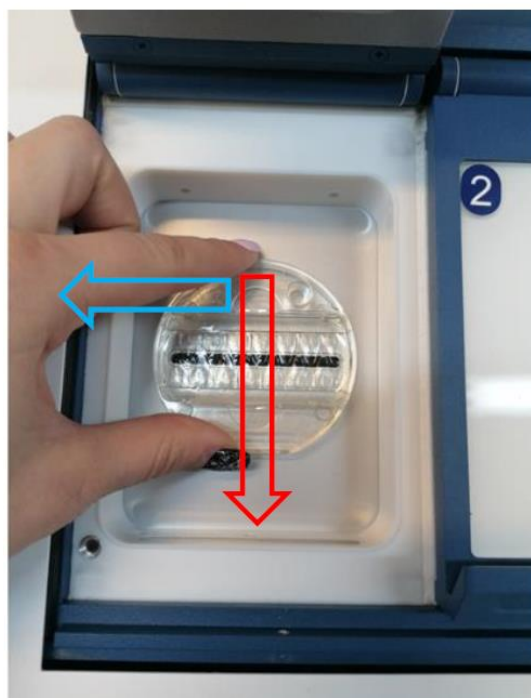


Figure 10.1 Positioning CultureCoin[®] in the compartment

11 Removing the CultureCoin® lid

CultureCoin® lid does not have a lot of free movement on the dish while it is closed, but the lid may move slightly during transportation. The lid can rotate a bit on the CultureCoin® and get stuck on the dish edges. As a result, it may be harder to open it.

In such a case, there is a specific technique for the CultureCoin® lid opening. **Hold the dish** and **lift the lid from the cut edge**.

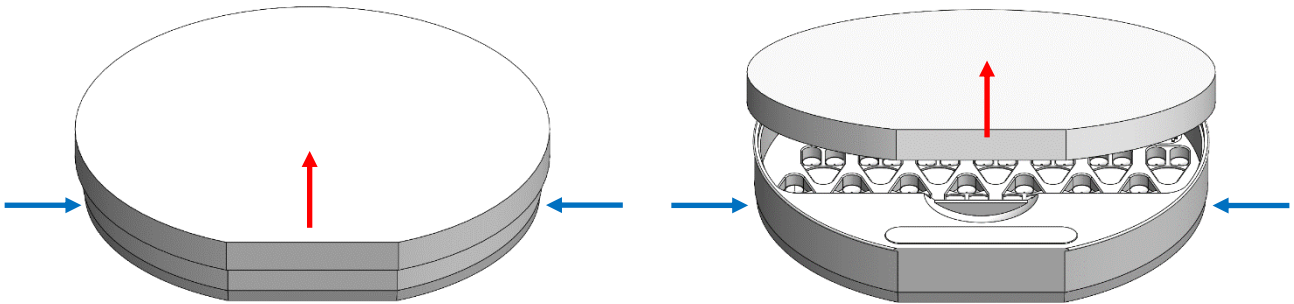


Figure 11.1 CultureCoin® lid opening

 Please do not twist the lid of the CultureCoin®, because it will be locked, and it will be even harder to open it.

12 The use illustrated

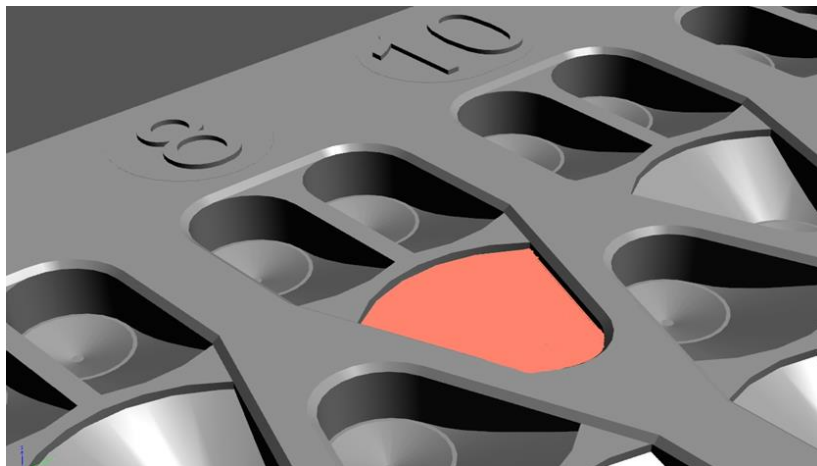


Figure 12.1 The wells

Each of the 14 wells is filled with approximately 25 μ l culture medium. The washing wells can also be filled, but it is not a requirement. The embryo is placed at the bottom of the culturing area.

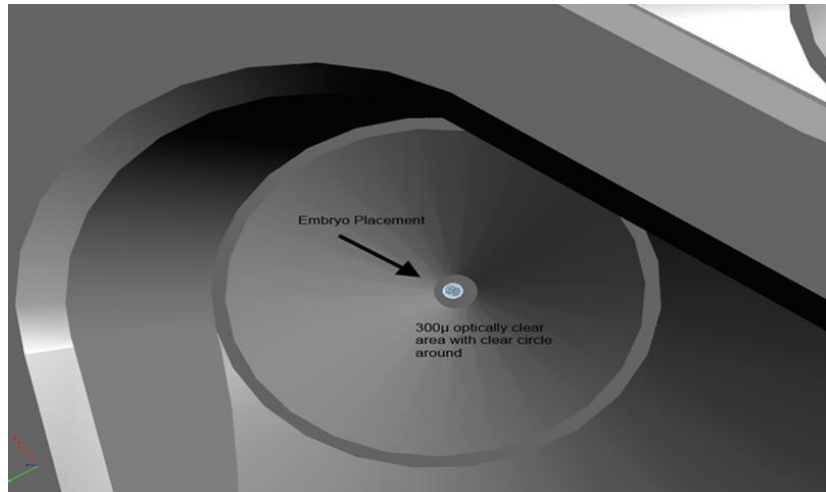


Figure 12.2 Embryo Placement in detail on the 300µ optically clear area



Figure 12.3 The culture wells are covered with a mineral oil layer and the lid is put on

13 pH measuring

Validating the pH of the culture media should be a standard procedure. The CultureCoin® is equipped with a reservoir that is located outside the culturing area. It makes it possible to safely and conveniently make spot checks on the pH level.

Remove the silicone plug and measure with a calibrated pH probe in the reservoir. Adjust the CO₂ level if necessary.

When choosing an electrode (probe), it is necessary to consider the probe's size, as measurements will be made on either a 4-well dish or a droplet.

14 Writing area on the CultureCoin® and lid



Figure 14.1 Always mark both the lid and the dish

15 User troubleshooting

Table 15.1 Heating system

Symptom	Cause	Action
Embryos drift to the side of the well.	The placement of the embryo is not done with enough accuracy.	Practice correct placement.
Air bubbles appear during culturing.	Temperature differences during loading or incorrect procedure for bubble removal.	Avoid temperature differences and follow the correct procedure. Practice proper bubble removal.
Oil overflows during the handling of the dish.	Too much oil in the reservoir.	Decrease the oil volume.

16 Specifications

Table 16.1 CultureCoin® specifications

Technical specifications	CultureCoin®
Overall dimensions (Diameter x Height)	Ø 71 x 10 mm
Weight empty	0.5 gram
Material	Styrolution PS 158 N
Temperature range	25 – 40 °C
CO ₂ range	1.9 – 10.0%
O ₂ range	4.9 – 20.0%
Sterilization method	Gamma beam
Lifetime	1 year
Toxicity tested	Embryotoxicity tested with thawed 1 cell mouse embryos. Expanded Blastocyst rate after 96 hours > 80 % (n=150), 0.6 bar (8.70 PSI)