Name:	Leica EG1150 H&C Paraffin Embedder and Cold Plate Procedure	**Created:**	September 10, 2025
Number:	Histo-3	**Revised:**	
Category:	Instrument Operation	**Author(s):**	Katie Tooley

1.0 Purpose

The purpose of this SOP is to describe the proper procedure of use of the Leica EG1150 H&C embedder and cold plate located in the histology core, Bertelsmeyer 220.

2.0 Policy

2.1 The use of all histology equipment in the histology core lab at Missouri S&T is currently managed by the Center for Biomedical Research (CBR) staff.

2.2 All personnel working in the histology core are required to complete general laboratory safety and BSL-2 training through EHS.

- 2.2.1 More training may be required in the future. Please check with CBR staff before beginning work to ensure all required training is complete.

2.3 Eating or drinking is not permitted in the lab.

2.4 PPE is required for all users. This includes, at minimum, gloves and a lab coat. A mask and/or goggles should also be worn if working with noxious chemicals (i.e. xylene) or chemicals with the potential to splash.

2.5 Bertelsmeyer 220 is a shared lab space, therefore all users must be familiar with the supplies and equipment available to them before keycard access to the lab will be granted.

2.6 All samples should be labeled with your name, date, and sample identification. **Any samples not labeled will be thrown out.**

2.7 Each user is required to sign in and out of each equipment logbook while working in the histology core.

- 2.7.1 Please also schedule all equipment use through the online Outlook calendar for the Histology Users – MST Outlook group.
  - 2.7.1.1 Please view the Outlook calendar instructions pdf sent with the Outlook group invite for further information.

2.8 Each person working in the lab is responsible for cleaning work surfaces, such as benches, and any used equipment before leaving.

- 2.8.1 Cleaning tasks must be documented daily on the provided checklist.

2.9 Each person leaving the lab, including temporary visitors, is required to wash their hands before leaving.

2.10 No user fee is currently being charged, however, a list of supplies to be provided by users is outlined in the Supplies section below.

2.11 The operator is responsible for carefully following all steps outlined in this SOP, performing the required cleaning after each use, and immediately reporting any equipment malfunctions, damage, or safety concerns to the lab supervisor.

2.12 Please contact Anna Chernatynskaya or Katie Tooley if you have any questions.

3.0 Procedure

3.1 Turn on the tissue embedder at least 3 hours before you anticipate using it. This allows time for the paraffin inside the reservoir to melt.

3.1.1 To turn on the embedder, flip the switch located on the front of the instrument (#8 in the figure below) and press the ON button on the righthand side of the console (#20). The instrument will start heating automatically.

3.1.1.1 **Do NOT** adjust any of the settings on the front console.

3.2 Before starting, sign in to the embedder/stainer logbook located in the drawer underneath the embedder.

3.3 Gather all your processed samples and required tissue molds.

3.4 Once the embedder has been heating for at least 3 hours or the paraffin in the reservoir is fully melted, you can begin.

3.5 Remove your sample from the cassette.

3.5.1 The thin top portion of the cassette can be thrown away, but **do NOT** throw away the bottom of the cassette where the tissue sits. You will need this later.

3.6 Figure out the best orientation for your sample before embedding. This will depend on the type of sample you have and what you are looking for in analysis, but generally, you will want the area of interest facing the bottom of the mold.

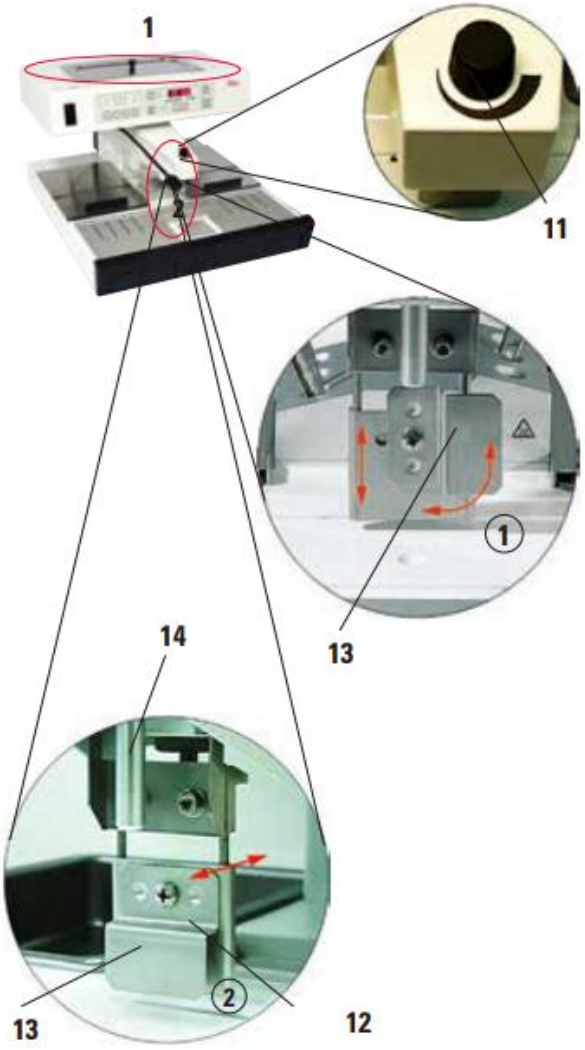
3.6.1 This may also require cutting the tissue to further expose an area of interest.

3.6.2 Further recommendations for tissue orientation can be found online.

3.7 When you are ready to embed, place the mold directly underneath the dispenser (#14 in the figure below).

3.8 Press the mold against the pressure clip (#13 in the figure below) to release paraffin into the mold.

3.8.1 More pressure = faster paraffin flow. You can also adjust the flow using the knob above the dispenser (#11 in the figure below).



3.9 Once you have a thin layer of paraffin in the bottom of the mold, briefly place the mold on the small cooling spot in front of the dispenser and orient your tissue in the mold the way you want with the forceps provided at the workstation.

3.9.1 Colder forceps may allow for greater tissue control and less sticking of the sample.

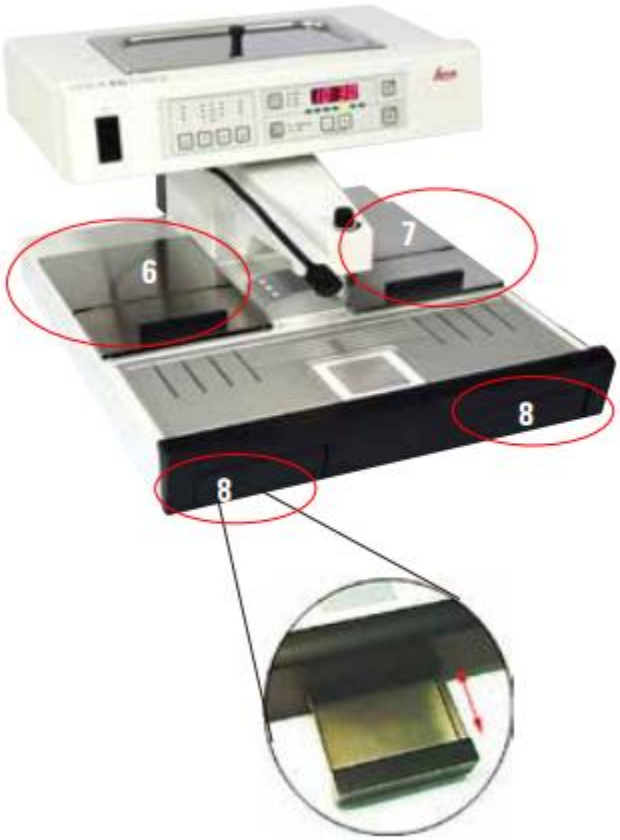
3.9.2 Place your tissue as close to the bottom of the mold without touching the mold. If the tissue touches the mold, paraffin will not be able to solidify around the tissue and sectioning will be difficult.

3.10 Finish filling in the mold with paraffin.

3.11 Once the paraffin level in the mold reached the top of the mold, place the bottom of the processing cassette on the top of the mold with the bottom facing the tissue and the hollow portion facing up.

3.12 Fill in the mold and cassette with a bit more paraffin to set the cassette firmly in place.

3.12.1 **Do NOT** overfill the mold. If this happens, the embedded tissue will be difficult to remove once it has hardened. Pour out excess paraffin in the lower excess paraffin trays (#8 in the figure below) if needed.



3.13 Turn on the cold plate using the power switch on the front.
3.14 Set the completed mold on the cold plate to harden. Depending on how deep the mold is, hardening may take anywhere from 30 minutes to multiple hours.
3.15 Repeat the process with your remaining samples.
3.16 Once all the samples have been embedded, turn off the embedder using the power switch.
3.17 Wipe any excess paraffin off the embedder workstation, taking care not to burn your hands.
3.18 Empty the excess paraffin trays in the trash.
    3.18.1 If there is a lot of paraffin in the trays, place a trash bag in a cardboard box and empty the trays in the bag. Allow the paraffin to harden and then dispose in the trash.
3.19 Once your samples have hardened, pop them out of the molds, and shut off the cold plate.
3.20 Clean off any excess paraffin from the molds using the orange plastic spatula and return them to the drawer underneath the embedder. The plastic spatula can also be used to scrape off any paraffin that may have dripped onto the cold plate surface.
    3.20.1 **DO NOT use xylene to clean any part of the embedder, cold plate, or molds!** Xylene is flammable and should not be used around heat sources!
3.21 Check off all completed cleaning tasks in the Histology Maintenance Logbook located in the drawer underneath the embedder.
3.22 Sign out of the tissue embedder/stainer logbook.
3.23 **Do NOT** leave your samples out or throw them in a drawer. All embedded

samples should be kept in a box or tray when not in use. Contact Anna Chernatynskaya or Katie Tooley for further information.

4.0 Supplies provided by users:

4.1 **Blades for microtome and cryostat**: Epredia HP35 Ultra microtome blades (please stick with this exact product, our microtome is set up for easy change-outs of these specific blades) - $289.09 for a pack of 50, Catalog #31-537-35, https://www.fishersci.com/shop/products/thermo-scientific-ultra-disposable-microtome-blades-2/3153735?searchHijack=true&searchTerm=thermo-scientific-ultra-disposable-microtome-blades-2&searchType=Rapid&matchedCatNo=3153735

4.2 **Camel hair brushes, small** (links include what we use, but feel free to shop around, must be camel hair) - $70.75 for a pack of 12, Catalog #1910, https://www.fishersci.com/shop/products/cryotome-cryostat-accessories-camel-hair-brush/1910#?keyword=1910%20brush

4.3 **Camel hair brushes, large** - $26.28 each, Catalog #03-661, https://www.fishersci.com/shop/products/fisherbrand-long-handled-camel-s-hair-brush/03661#?keyword=03661

4.4 **1 gallon of Fisher histological grade ethanol** (only needed if you'll be processing more than 50 samples) - $113.10, Catalog #A405F-1GAL, https://www.fishersci.com/shop/products/ethanol-anhydrous-histological-fisher-chemical-3/A405F1GAL?searchHijack=true&searchTerm=ethanol-anhydrous-histological-fisher-chemical-3&searchType=Rapid&matchedCatNo=A405F1GAL

4.5 **Glass microscope slides** (charged slides are best for tissue retention during staining) – Fisherbrand Superfrost Plus Microscope Slides, $47.66 for pack of 144 slides, Catalog # 22-034979, https://www.fishersci.com/shop/products/fisherbrand-superfrost-plus-stain-slides/22034979?searchHijack=true&searchTerm=fisherbrand-superfrost-plus-stain-slides&searchType=Rapid&matchedCatNo=22034979

4.6 **Glass cover slips** (personal preference, but this is what we use) - Epredia Signature Series Cover Glass, $83.55 for a pack of 10 boxes, Catalog #22-050-232, https://www.fishersci.com/shop/products/signature-series-cover-glass-24-x-50mm/22050232#?keyword=22050232

4.7 **Microscope slide box** (feel free to shop around, item linked is an example) – Fisherbrand Microscope Slide Box, 100 slots, $9.58, Catalog #03-446, https://www.fishersci.com/shop/products/fisherbrand-microscope-slide-boxes-numbered-slots-3/03446#?keyword=03-446

5.0 References

5.1 Midwest Lab Equipment Leica EG1150 H Paraffin Embedding Station Manual

https://www.midwestlabequipment.com/wp-content/uploads/2024/03/Leica_EG1150H_IFU_2v6I_en.pdf

5.2 Midwest Lab Equipment Leica EG1150 C Cold Plate Manual https://www.midwestlabequipment.com/wp-content/uploads/2024/03/Leica_EG1150C_IFU_2v6H_en.pdf

SOP REVISION HISTORY

VERSION #	APPROVED	DETAILS
1	9/10/25	Created
2		