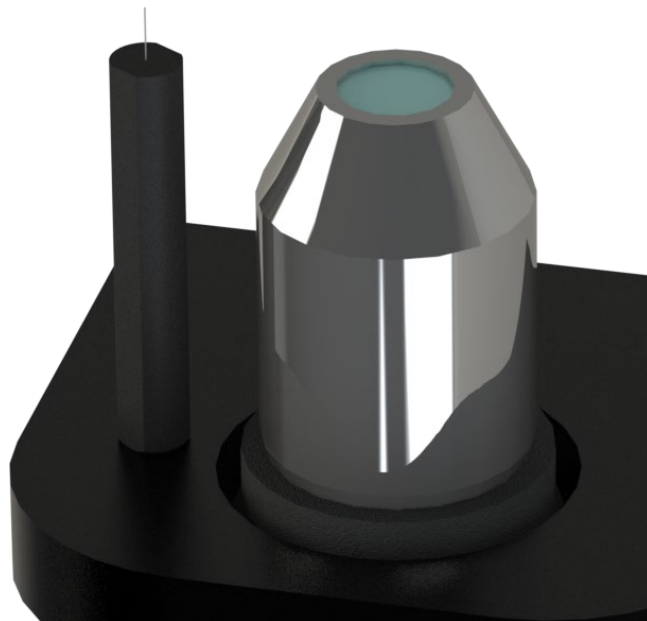


**CELL**  
Microsystems®



# Release Needle Replacement

**User Instructions**

## Important Safety Instructions

- The tapered needle tip is not readily visible to the naked eye. As a result, it is easily damaged by inadvertent contact.
- Wear gloves cleaned with  $\geq 70\%$  ethanol.
- If you drop anything down into the AIR System or break a component inside the machine, DO NOT continue. Immediately power off the AIR System and contact Cell Microsystems Support at [support@cellmicrosystems.com](mailto:support@cellmicrosystems.com).

## Before You Begin

- Remove any CellRaft® Array, array adapter plate, collection plate, and collection wand from the AIR System.
- Avoid touching the optical window of the microscope objective during the replacement process.
- Needle replacement and AIR System recalibration take approximately 20 minutes and require no tools other than a prepared CellRaft® Calibration Array.

## Software Initialization

1. Power on the AIR System.
2. Within a File Explorer window on the AIR System computer, navigate to the *C:\CMS\ReleaseX* directory (where X corresponds to the current software version) and double-click on *NeedleReplacement*.
3. After AIR System initialization, load any existing data record on the AIR System computer.
4. Select the “Isolation Plate Maps” tab, then the “Needle Calibration” button, followed by the “Open needle replacement menu” button.
5. Confirm removal of any CellRaft Array, array adapter plate, collection plate, and collection wand from AIR System.  
**NOTE: We recommend not selecting “Park gantry to the right” option unless you need more space to work.**

## Needle Replacement

1. Remove the spare needle cover (**Figure 1, right**) from the needle replacement kit. Orient the needle cover with its inset screw on the top and cover the damaged needle as shown in **Figure 1**.
2. Next, grip the needle mount close to the bottom. Using minimal force, unscrew the needle mount counter-clockwise. Remove from the AIR System and set aside.

**CAUTION:** It is normal for the needle mount threads to be “stuck” at first. Handle carefully to avoid breaking the needle mount.

**DISPOSAL:** The damaged release needle assembly should go in the appropriate red-bag sharps container based on the experiments run with the AIR System. The needle cover and packaging material can be thrown away.



Figure 1

3. Remove the new needle assembly (**Figure 2**) from the needle replacement kit. The needle cover is tightly secured to the needle mount for shipping. As shown in **Figure 2**, hold the needle mount and cover to loosen the thumbscrew, then lightly re-tighten it.
4. Gripping the needle cover with the thumbscrew facing you, begin to screw the needle mount clockwise into the hole to the left of the objective (**Figure 3**). Before the thumbscrew hits the objective, ensure the needle mount is partially threaded into its hole (to avoid falling into the AIR System), then loosen the thumb screw to allow the needle mount to freely spin within the cover.
5. Now gripping the needle mount near its base, continue threading it into its hole. **STOP** turning when the needle mount starts to tighten and its bottom shoulder is visibly flush with the surface of the black bracket, as high force risks breaking the plastic needle mount.
6. Carefully remove the needle cover as vertically as possible from the mount to avoid contact with the release needle (**Figure 4**).
7. Close the AIR System door, and in the software, select the "Return Home After Closing Door" button to exit.
8. When the software returns to the Home screen, exit the software and turn off the AIR System.

**STERILIZATION:** After needle replacement, it is recommended to sterilize the surface of the AIR System stage with 70% ethanol.

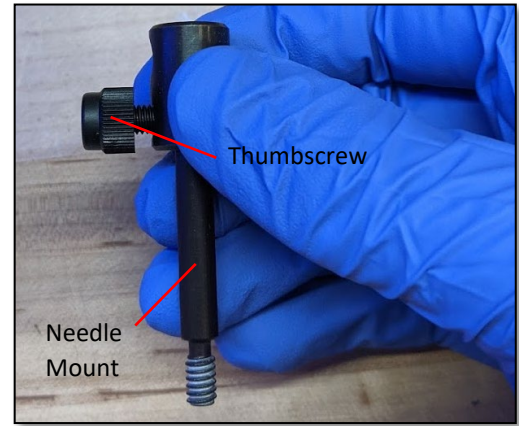


Figure 2

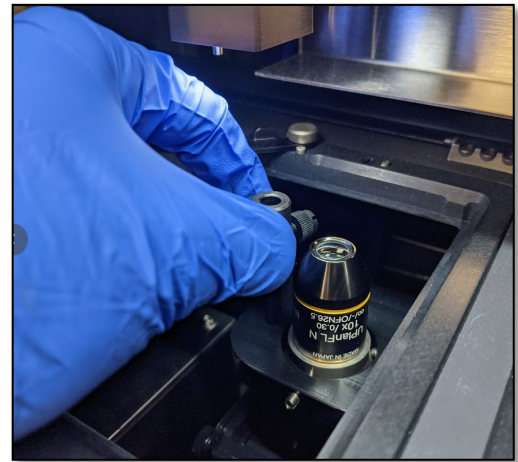


Figure 3

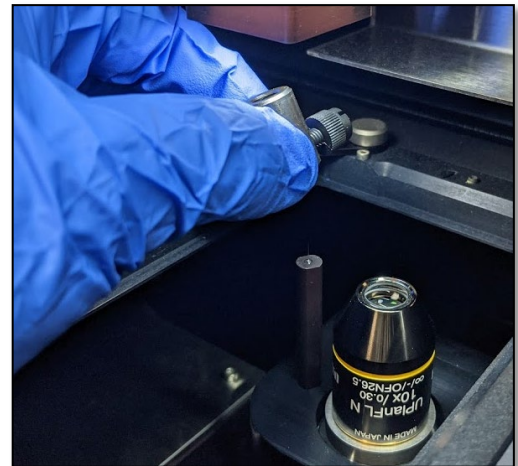
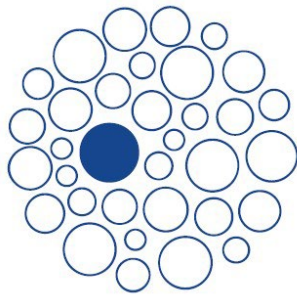


Figure 4

## Recalibration

After needle replacement, the AIR System must be re-calibrated for a needle replacement before performing CellRaft isolations. The re-calibration procedure is outlined in the AIR System Calibration Instructions.



**CELL**  
Microsystems®