

Arcturus^{XT}™ Laser Capture Microdissection System

Petri Dish Stage Insert

Installation Guide



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1. About the Arcturus^{XT}™ Petri Dish Stage Insert

The Arcturus^{XT}™ Petri Dish Stage Insert allows the use of Petri dishes for the investigation of living cells in culture. The stage insert accommodates 50mm x 7mm dishes, and facilitates live cell imaging and live cell microdissection applications on the Arcturus^{XT} instrument.

The Petri Dish Stage Insert is compatible with both the TE2000U and Eclipse Ti-E microscope base Arcturus^{XT} systems.

Important Note: For instruments installed prior to November 2008, a mechanical adjustment may be required to accommodate Petri dishes. If you are unsure if your system has been configured correctly to accommodate this insert, please contact technical support for assistance: www.appliedbiosystems.com or 1-800-831-6844 option 5.

2. Instructions for Stage Insert Installation

Note: It is required that v.3.1 or higher of the Arcturus^{XT} operating software is installed prior initiating this procedure.

1. Remove the standard 3-position stage insert
 - a. Unlock the illumination tower. Locate the knob on the backside of the tower and loosen. Gently tilt the illumination tower backwards.
 - b. Using a 1.5mm hex driver, loosen the four screws located around the edges of the existing stage insert (Figure 1). Leave the loosened screws within the insert.

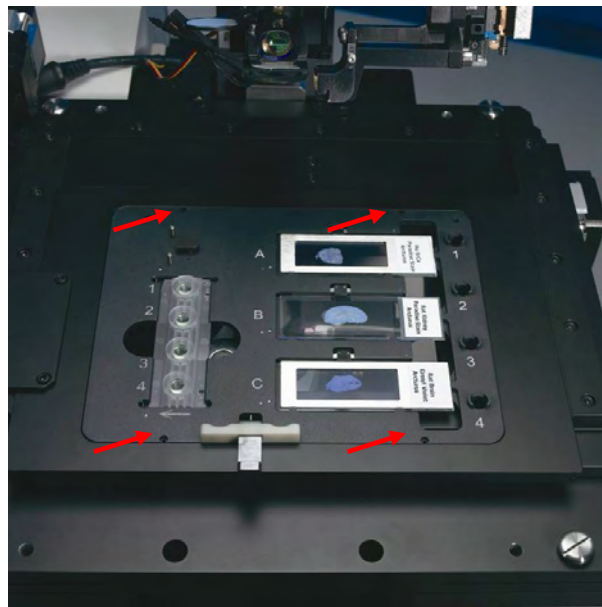


Figure 1. Standard Stage Insert set screws

- c. Using the finger holes in the slide slots, gently pull upward on the insert to remove it from the stage.
 - d. Slowly flip the insert over to remove the screws. Retain the screws for later use.
2. Install the Petri Dish Stage Insert
 - a. Place the 4 screws removed in step 1d into the Petri Dish Slide Stage Insert.
 - b. Place the Petri Dish Stage Insert into position on the Arcturus^{XT} stage. Slide the insert towards the spring loaded left front corner of the stage and then lower it into place.
 - c. Using a 1.5mm hex driver, tighten the 4 screws to attach the insert to the stage (Figure 2).

IMPORTANT NOTE: FINGER-TIGHTEN THE SCREWS. DO NOT OVER-TIGHTEN, AS THIS MAY RESULT IN DAMAGE TO THE INSERT.

- d. Proceed to Section 3 (Configuring the Arcturus^{XT} Software).

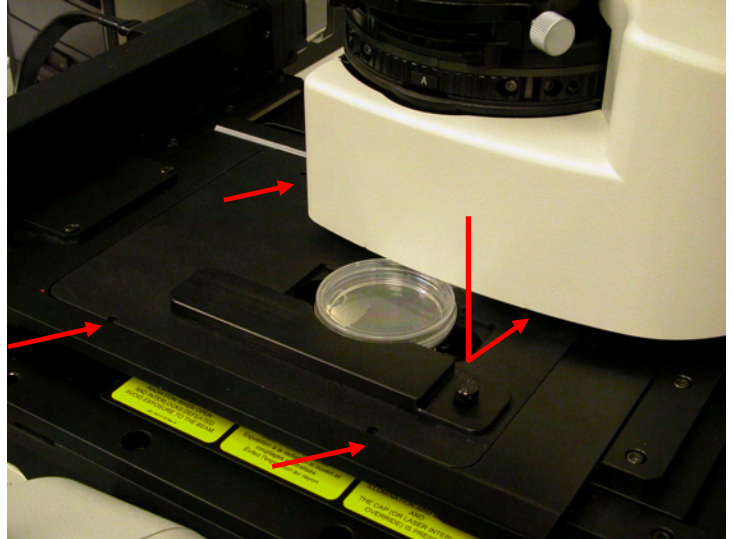


Figure 2. Petri Dish Stage Insert set screws

3. Configuring the Arcturus^{XT} Operating Software

1. The Arcturus^{XT} operating software should be closed prior to completing this operation.
2. Open the Arcturus^{XT} Hardware (HW) Configurator by double clicking on the shortcut found on the desktop (Figure 3).

Note: You will be required to log in an Administrator to access the HW Configurator.

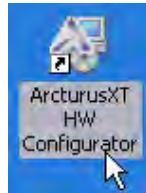


Figure 3. Hardware Configurator

3. Click on the “Continue” tab in the pop-up window.

- In the Select Stage Insert field, select “Petri” (Figure 5A). Slide B and C positions will be grayed out and only position A will remain available (Figure 5B).

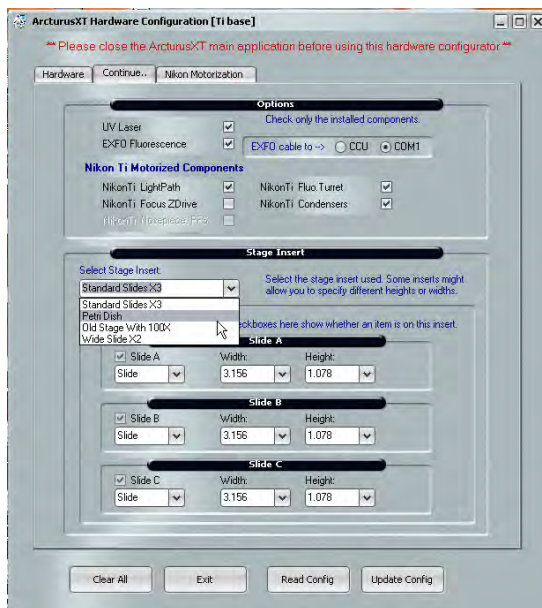


Figure 5A. Hardware Configurator.

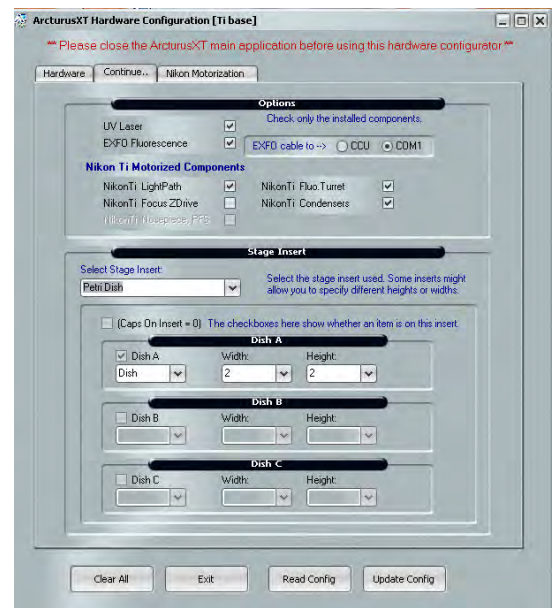


Figure 5B. Petri Dish stage configuration.

- Click on “Update Config” and then “Exit” to close this window.

Note: Do not use the “X” in the upper right corner to close the window.
- Initiate the Arcturus^{XT} operating software.
- Place a Petri Dish onto the stage insert.
- Verify Parcentricity prior to use of the stage insert.

Important Note: Do not skip this step; it is critical to the proper performance of the Arcturus^{XT} instrument with the Petri Dish stage insert.

 - Go to highest objective (60x or lower, do not use the 100x objective) and focus the image. If you do not have the 60x objective, use 40x.
 - Center a feature in the live image that will be recognizable at all magnifications.
 - Change to the next lower magnification.
 - The selected feature should remain in the center of the live image.
 - Repeat this process for all lower magnifications.

If this verification fails, please contact technical support (www.appliedbiosystems.com or 1-800-831-6844 option 5) for further instructions.

- Repeat Step 7 upon replacement of the original 3-slide insert and whenever the Petri dish stage insert is again used, ensuring proper performance of the Arcturus^{XT} instrument.

4. Using the Petri Dish Stage Insert

To visualize live cells in a Petri dish format:

1. Ensure the Petri Dish Stage Insert has been installed (Section 2) and that the Arcturus^{XT} software has been properly configured (Section 3).
2. Place the Petri dish into position on the stage insert.
 - a. Pull back on the lever located to the right of the Petri dish holder.
 - b. Gently place the Petri dish into the slot.
 - c. Release the lever to secure the dish into position.



Figure 6. Inserting a Petri dish.

3. Positions B and C will be unavailable when using the Petri dish stage insert. An overview image can be taken of the Petri dish if desired, and will consist of a tiled image.

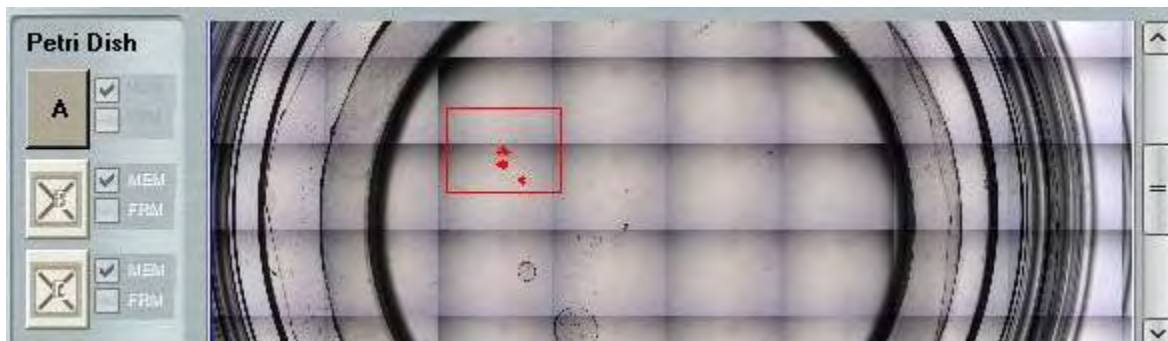


Figure 7. Arcturus^{XT} slide access when using Petri dish

4. The Petri dish may be visualized using the standard Arcturus^{XT} operating software.

Note: The Petri dish bottom is a coverglass with thickness of 0.17mm. Adjust the objective correction collar as needed for optimal visualization. Standard glass slides used on the Arcturus^{XT} instrument are 1mm in thickness.

5. Re-Installing to Standard Slide Stage Insert

Follow these instructions to re-install the Standard Slide 3-position Arcturus^{XT} stage insert. These instructions apply to the Nikon TE2000U and Ti-E microscope base Arcturus^{XT} platforms.

1. Remove the Petri Dish stage insert
 - a. Unlock the illumination tower. Locate the knob on the backside of the tower and loosen. Gently tilt the illumination tower backwards.
 - b. Using a 1.5mm hex driver, loosen the four screws located around the edges of the existing stage insert. Leave the loosened screws within the insert.
 - e. Using the finger holes in the slide slots, gently pull upward on the insert to remove it from the stage.
 - f. Slowly flip the insert over to remove the screws. Retain the screws for later use.
2. Install the Standard 3-Position Stage Insert
 - a. Place the 4 screws removed in step 1d into the Standard Slide Stage Insert.
 - b. Place the Standard Slide Stage Insert into position on the Arcturus^{XT} stage. Slide the insert towards the spring loaded left front corner of the stage and then lower it into place.
 - c. Using a 1.5mm hex driver, tighten the 4 screws to attach the insert to the stage.

IMPORTANT NOTE: FINGER-TIGHTEN THE SCREWS. DO NOT OVERTIGHTEN, AS THIS MAY RESULT IN DAMAGE TO THE INSERT.

3. Configure the Arcturus^{XT} Software
 - a. The Arcturus^{XT} operating software should be closed prior to completing this operation.
 - b. Open the Arcturus^{XT} Hardware (HW) Configurator by double clicking on the shortcut found on the desktop. **Note:** You will be required to log in an Administrator to access the HW Configurator.
 - c. Click on the “Continue” tab in the pop-up window.
 - d. In the Select Stage Insert field, select “Standard Slide X3”.
 - e. Click on “Update Config” and then “Exit” to close this window.
Note: Do not use the “X” in the upper right corner to close the window.
 - f. Initiate the Arcturus^{XT} operating software. All slide positions (A, B and C) will again be available.
 - g. Verify the following operations prior to use of the stage insert.
Important Note: Do not skip any steps; they are critical to the proper performance of the Arcturus^{XT} instrument.

- i. Go to highest objective (60x or lower, do not use the 100x objective) and focus the image. Center a feature that will be recognizable at all magnifications. Change to the next lower magnification. The selected feature should remain in the center of the live image. Repeat this process for all lower magnifications.
- ii. At 2x magnification, right click on one of the QC/Offload stations and select "View Cap". The image of the QC station should be centered within the live image.
- iii. At 2x, place a cap onto a slide from the load station. The cap should be centered within the live image.

If any of these verifications fail, please contact technical support (www.appliedbiosystems.com or 1-800-831-6844 option 5) for further instructions.

A. Appendix: Recommended Petri Dishes

The Arcturus^{XT} Petri Dish Stage Insert is intended for use with specific Petri dishes. Please use the following Petri dishes for live cell imaging and live cell microdissection applications on the instrument:

Live Cell Microdissection

- AXT Live Cell Growth Chambers, Sterile
PN: 5000300 (6 chambers)
- AXT Microdissection Petri Dishes, Sterile
PN: 5000301 (6 dishes)

Live Cell Imaging

- Glass bottom Petri Dish:
 - 50mm (diameter) x 7mm (height)
 - 40mm (diameter) workable area of dish bottom
- Manufacturer: WillCo, The Netherlands www.willcowells.com
 - PN: GWSt-5040 (individually packaged)
 - HBSt-5040 (sleeve of 20)
 - US Distributors
 - Bioscience Tools San Diego, CA www.biosciencetools.com
 - Ted Pella, Inc. Redding, CA www.tedpella.com
 - Warner Instruments Hamden, CT www.warneronline.com
 - EMS, Inc Fort Washington, PA www.wmsdiasum.com
 - Bellco Glass Vineland, NJ www.bellcoglass.com

Important Note: The Arcturus^{XT} instrument is configured to handle the specific height of the Petri dishes mentioned here. Deviation from the format listed above may result in damage to the Arcturus^{XT} instrument.

If you have any questions regarding the recommended Petri dishes, or the use of the Arcturus^{XT} Petri Dish Stage Insert, please contact technical support (www.appliedbiosystems.com or 1-800-831-6844 option 5).

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