Arcturus\textsuperscript{XT\textsuperscript{TM}} Laser Capture Microdissection System
Large Format Slide Stage Insert
Installation Guide
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1. **About the Arcturus\textsuperscript{XT}™ Large Format Slide Stage Insert**

   The Arcturus\textsuperscript{XT}™ Large Format Slide Stage Insert is configurable and allows the use of multiple microscope slide formats, including the larger slides typical of neurological tissue preparations. The following slide sizes may be used with the Large Format Slide Stage Insert:

   - 75 mm x 25 mm (3.0” x 1.0”)
   - 75 mm x 38 mm (3.0” x 1.5”)
   - 75 mm x 50 mm (3.0” x 2.0”)

   **Note:** For the remainder of this document, the slide formats will be referred to by the width only (25mm, 38mm and 50mm).

   The Large Format Slide Stage Insert is compatible with both the TE2000U and Eclipse Ti-E microscope base Arcturus\textsuperscript{XT} Systems.

   Adapters are used to configure the stage insert, and depending on the position of the adapters, several combinations of slide formats are possible.

   - **50-38** holds one 50mm (2.0”) and one 38mm (1.5”) slide
   - **50-25** holds one 50mm (2.0”) and one 25mm (1.0”) slide
   - **38-38** holds two 38mm (1.5”) slides
   - **25-38** holds one 25mm (1.0”) and one 38mm (1.5”) slide
   - **25-25** holds two 25mm (1.0”) slides

2. **Instructions for Installation**

   These instructions are applicable for both the Nikon\textsuperscript{®} TE2000U and Ti-E microscope base Arcturus\textsuperscript{XT} LCM Systems.

   **Note:** It is required that v.3.1 or higher of the Arcturus\textsuperscript{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.
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 Large Format Slide Stage Insert
   a. Place the 4 screws removed in step 1d into the Large Format Slide Stage Insert.
   b. Place the Large Format Slide Stage Insert into position on the Arcturus™ XT instrument 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. If you need to configure the slide holder:
   i. Proceed to Section 3 (Configuring the Slide Holder).
e. If the slide holder is already configured to the desired slide formats,
   i. Gently tilt the illumination tower forward, and tighten the knob on the backside of the tower to lock it into place.
   ii. Proceed to Section 4 (Configuring the Arcturus\textsuperscript{XT} Software).

3. Configuring the Slide Holder
   Adapter bars can be used to configure the stage insert to accommodate slides of different sizes:

<table>
<thead>
<tr>
<th>Slide Position A</th>
<th>Slide Position B</th>
<th>Position A Adapter</th>
<th>Position B Adapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>50mm (2.0&quot;)</td>
<td>38mm (1.5&quot;)</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>50mm (2.0&quot;)</td>
<td>25mm (1.0&quot;)</td>
<td>None</td>
<td>Small</td>
</tr>
<tr>
<td>38mm (1.5&quot;)</td>
<td>38mm (1.5&quot;)</td>
<td>Small</td>
<td>None</td>
</tr>
<tr>
<td>25mm (1.0&quot;)</td>
<td>38mm (1.5&quot;)</td>
<td>Large</td>
<td>None</td>
</tr>
<tr>
<td>25mm (1.0&quot;)</td>
<td>25mm (1.0&quot;)</td>
<td>Large</td>
<td>Small</td>
</tr>
</tbody>
</table>

   **Note:** Use only the provided custom adapter(s). They are specially designed to hold the slides securely in place.

1. Unlock the illumination tower by loosening the knob on the backside of the tower. Gently tilt the illumination tower backwards.
2. Remove the adapter if present by removing the two screws, using the screwdriver provided (Figure 3). Retain the two screws.
3. Lift the adapter straight up.
4. Mount the desired adapter to the selected slide slot and/or position.
5. Align the pins on the right and left side of the adapter with the holes in the appropriate slide slot. (Note: smaller holes are for the pins and larger holes are for the screws)

Figure 3. Large Slide Stage Insert Adapter
6. While holding the adapter in place, tighten the two screws that were removed in step 3c. **Note:** Do not over tighten the screws.

7. Gently tilt the illumination tower forward to put it back into place. Tighten the knob on the backside of the tower to lock it into place.

8. Proceed to Section 4 (Configure the Arcturus™ XT operating software).

### 4. 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 4). **Note:** You will be required to log in as an Administrator to access the HW Configurator.

![Figure 4. Hardware Configurator](image)

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

4. In the Select Stage Insert field, select “Wide Slide X2” (Figure 5), Slide C position will be grayed out and only positions A and B will remain available.

![Figure 5. Large Slide Stage Insert Configuration.](image)
5. In the fields for Slide A and Slide B, select the appropriate slide sizes, as configured on your Large Slide stage insert.

**Note:** The HW Configurator refers to width and height, whereas the width is the horizontal length of the slide when facing the stage. The width will remain constant at 76 mm (3.156 on the HW Configurator screen).

**HW Configurator Measurements:**

<table>
<thead>
<tr>
<th>Width</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.156</td>
<td>1.078 = 25 mm slide (1.0&quot;)</td>
</tr>
<tr>
<td></td>
<td>1.59 = 38 mm slide (1.5&quot;)</td>
</tr>
<tr>
<td></td>
<td>2.063 = 50 mm (2.0)</td>
</tr>
</tbody>
</table>

6. 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.

7. Initiate the Arcturus XT operating software.

8. 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 with the Large Format Slide Stage Insert.

a. 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.

b. 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.

c. 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.

9. Repeat Step 4 upon replacement of the original 3-slide insert and whenever the Large Format Slide stage insert is again used, ensuring proper performance of the Arcturus XT LCM System.

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 LCM Systems.

1. Remove the Large Format Slide 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\textsuperscript{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 OVER-TIGHTEN, AS THIS MAY RESULT IN DAMAGE TO THE INSERT.**

3. Configure the Arcturus\textsuperscript{XT} Operating Software

a. The Arcturus\textsuperscript{XT} operating software should be closed prior to completing this operation.

b. Open the Arcturus\textsuperscript{XT} Hardware (HW) Configurator by double clicking on the shortcut found on the desktop. **Note:** You will be required to log in as 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\textsuperscript{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\textsuperscript{XT} LCM System.**

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: Parts List

Arcturus<sup>XT</sup> Large Format Slide Stage Insert assembly (p/n 0310-5408)
Adapter 1 (small) (p/n 2300-3215)
Adapter 2 (large) (p/n 2300-3216)
Adapter screws, (p/n 1000-2042)
Screwdriver, Philips #00 (p/n 9100-0098)

B. Appendix: Sample Preparation and Recommended Slides

The Arcturus<sup>XT</sup> Large Format Slide Stage insert can be used with plain glass and membrane slides. Sample preparation for microdissection should follow the same guidelines as for microdissection from standard microscope slides. For information regarding sample preparation, please refer to the Arcturus<sup>XT</sup> LCM System User Manual.

Recommended Large Format Slides:
- Plain Glass Slide:
  - 75mm x 50mm; Fisher Scientific #12-550C or VWR #48382-179
  - 75mm x 38mm; Fisher Scientific #12-550B or VWR #48303-001
- PEN Membrane Glass Slide:
  - 75mm x 50mm; Microdissect GMBH, # MDO3P40W
Technical Resources and Support

For the latest technical resources and support information for all locations, please refer to our Web site at www.appliedbiosystems.com/support

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Part Number 5000313 Rev. C 07/2010