



# Labware Creator

## Instructions

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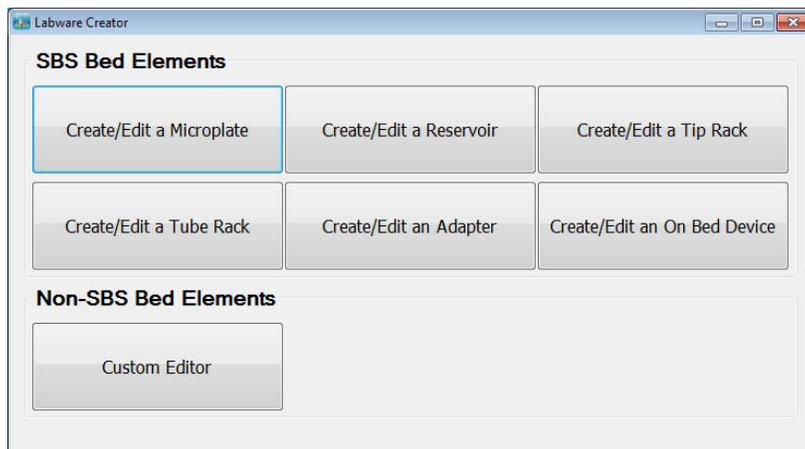
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# SBS Bed Elements

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The Labware Creator is used to create the following bed elements that fit in an SBS (standard microplate) footprint:

- [Microplate](#)
- [Tube Rack](#)
- [Reservoir](#)
- [Tip Rack](#)
- [Adapter](#)
- [On Bed Device](#)



**Figure 1:** Labware Creator Main Screen

This document describes the parameters required when creating a bed element in Labware Creator.

After creating new bed elements, test the new bed elements.

## **Gilson Recommends**

### **Measure Labware**

Always measure labware as some manufacturer's specifications may be incomplete or may not translate well into Labware Creator.

### **Test New Bed Elements**

After creating a new bed element in Labware Creator, be sure to test it thoroughly before using it in an application protocol.

Before testing a bed element, ensure that the PIPETMAX is aligned and then, if necessary, run the Alignment Protocol with the alignment head installed.

When testing a bed element:

- Check more than one example of the bed element.
- Test in a position with clips to ensure that it is secure and at the front of the bed so that it is easier to see.

# Start the Software

- 1 Start TRILUTION® micro.
  - Windows® 7 - Click the Start button and then select All Programs > Gilson Applications > TRILUTION micro > TRILUTION micro x.x.
  - Windows® 10 - Click the Start button and then select (All apps) > Gilson Applications > TRILUTION micro x.x.
- 2 Log in. When prompted, enter the "User name" and "Password" and then select **Accept**.
- 3 Select **Start utility**.
- 4 Select **Labware Creator** and then select **Accept**.

## Microplate

Labware Creator is a software tool for managing labware, including microplates.

Labware Creator can be used to:

- Create a microplate.
- Create a microplate from an existing microplate.
  - A Gilson-supplied microplate cannot be modified and saved with the same name, but can be modified and saved with a unique name.
  - Gilson-supplied microplates are identified by an asterisk (\*).
- Modify an existing, user-created microplate.
  - Modify the microplate (number of microplate wells, offset, etc.)
  - Replace the wells used in the microplate with a different microplate well.
  - Create a new microplate well and use it in the microplate; refer to [Create/Edit a Microplate Well Type](#).

# Create/Edit a Microplate

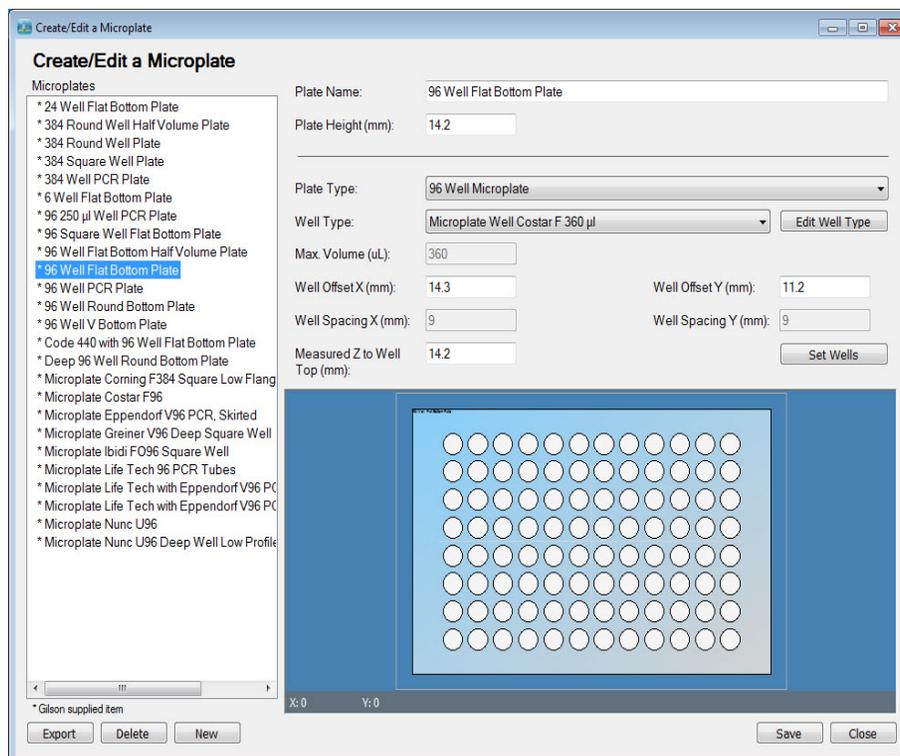


Figure 2: Create/Edit a Microplate Screen

## Gilson Recommends

### Measure Labware

Always measure labware as some manufacturer's specifications may be incomplete or may not translate well into Labware Creator.

### Test New Bed Elements

After creating a new bed element in Labware Creator, be sure to test it thoroughly before using it in an application protocol.

Before testing a bed element, ensure that the PIPETMAX is aligned and then, if necessary, run the Alignment Protocol with the alignment head installed.

When testing a bed element:

- Check more than one example of the bed element.
- Test in a position with clips to ensure that it is secure and at the front of the bed so that it is easier to see.

- 1 Click **Create/Edit a Microplate** on the Labware Creator main screen.
- 2 Do one of the following:
  - Create a new microplate. Enter a unique **Plate Name** to identify the microplate.
  - Edit an existing microplate. Click on the name of the microplate in the listing of Microplates on the left. Gilson-supplied microplates, which are identified by an asterisk (\*), cannot be edited.
  - Create a microplate based on an existing microplate.
    - 1) Click on the name of the microplate in the listing of Microplates on the left.
    - 2) Enter a unique **Plate Name** to identify the microplate.

**Note:** If creating a non-standard microplate, create it as a tube rack with tubes. For instructions, refer to [Create/Edit a Tube Rack](#).

- 3 Enter a value for **Plate Height (mm)**.
  - The default **Plate Height (mm)** is 14.35 mm, which is standard for most microplates.
  - Plate Height is the distance from the bottom of the microplate to the top of the microplate, but does not include the height added by microplate wells that extend past the top of the microplate.
- 4 Select a **Plate Type** (number of wells) from the drop-down list.
  - **Well Spacing X (mm)** and **Well Spacing Y (mm)** are automatically calculated and the values are not editable.
- 5 Select a **Well Type** from the drop-down list of Gilson-supplied wells and user-created wells. All wells in a microplate must be identical. If the well type desired is not listed, create a new one. Refer to [Create/Edit a Microplate Well Type](#) for instructions.
  - **Max. Volume (uL)** is automatically filled in, based on the selected well type. The value is not editable.
  - To view the properties of a well, select it from the **Well Type** drop-down list and then click **Edit Well Type**, or click on the well in the preview, right-click, and then select **Well Properties**. The [Create/Edit a Microplate Well Type](#) screen opens and displays the saved values for the selected microplate well.
- 6 Enter a value for **Well Offset X (mm)** and a value for **Well Offset Y (mm)**.
  - **Well Offset X (mm)** is the distance from the left edge of the microplate to the X position of the first well in the microplate.
  - **Well Offset Y (mm)** is the distance from the top edge of the microplate to the Y position of the first well in the microplate.
- 7 Enter a value for **Measured Z to Well Top (mm)**, which is the height from the bottom of the microplate to the top of the wells.
  - For flush wells, enter the same value as specified for **Plate Height (mm)**.
  - For wells that extend above the top of the microplate, this value will be higher than the value specified for **Plate Height (mm)**.
- 8 Click **Set Wells** to update the preview with selections or changes and to accept the values.
 

**Note:** Well names are alphanumeric. Rows are named from top to bottom using alpha characters and columns are named from left to right numerically.
- 9 Remove microplate wells, if necessary:
  - a) Click and drag over blocks of wells or hold **CTRL** and then click on individual wells in the preview to select the wells.
  - b) Right-click, and then select **Remove** to remove the wells.
- 10 Click **Save** to save the microplate. The microplate name appears in the list on the left of the screen.
- 11 Do any of the following:
  - Click **Export** to export the microplate for use in protocol development; refer to [Export Microplates](#).
  - Click **Close** to return to the main screen.
  - Click **New** to create a microplate.
  - Click on the name of a microplate to view or begin editing it.

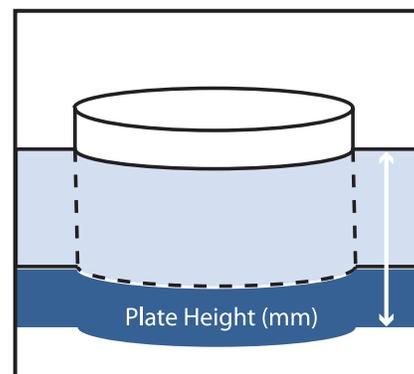


Figure 3: Plate Height

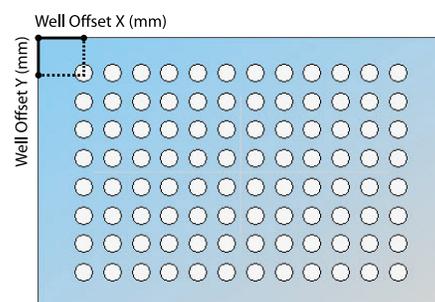


Figure 4: Well Offsets

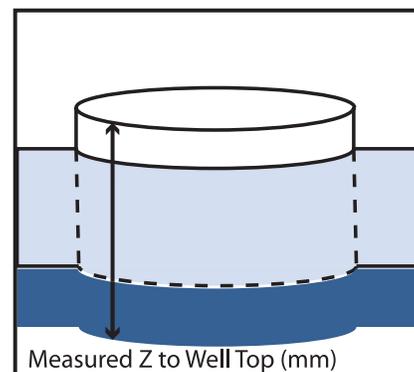


Figure 5: Measured Z to Well Top

## Export Microplates

To use a microplate created in Labware Creator for protocol development, the microplate must be exported.

- 1 Click **Create/Edit a Microplate** on the Labware Creator main screen.
- 2 Click **Export**. The Export screen appears.
- 3 Select one or more microplates to export.
- 4 Do either of the following:
  - Accept the default location of C:\Users\OS User Name\Documents\Labware Creator\Export.
  - Type a new location or select a different location:
    - 1) Click the browse icon. The Browse For Folder window appears.
    - 2) On the Browse For Folder window, select a folder to which the microplates will be exported, and then click **OK**.
- 5 Click **Export**. On completion of the export operation, the microplates are saved in the specified folder with a .LHR (Rack) extension.
- 6 When the export success/fail dialog appears, click **OK**.

## Delete a Microplate

Gilson-supplied microplates, which are identified by an asterisk (\*), cannot be deleted.

- 1 Click **Create/Edit a Microplate** on the Labware Creator main screen.
- 2 Click on the microplate name in the listing of Microplates on the left.
- 3 Click **Delete**.
- 4 When asked to confirm if you are sure that you want to delete the microplate, click **Yes**, or click **No** to cancel the deletion.

# Create/Edit a Microplate Well Type

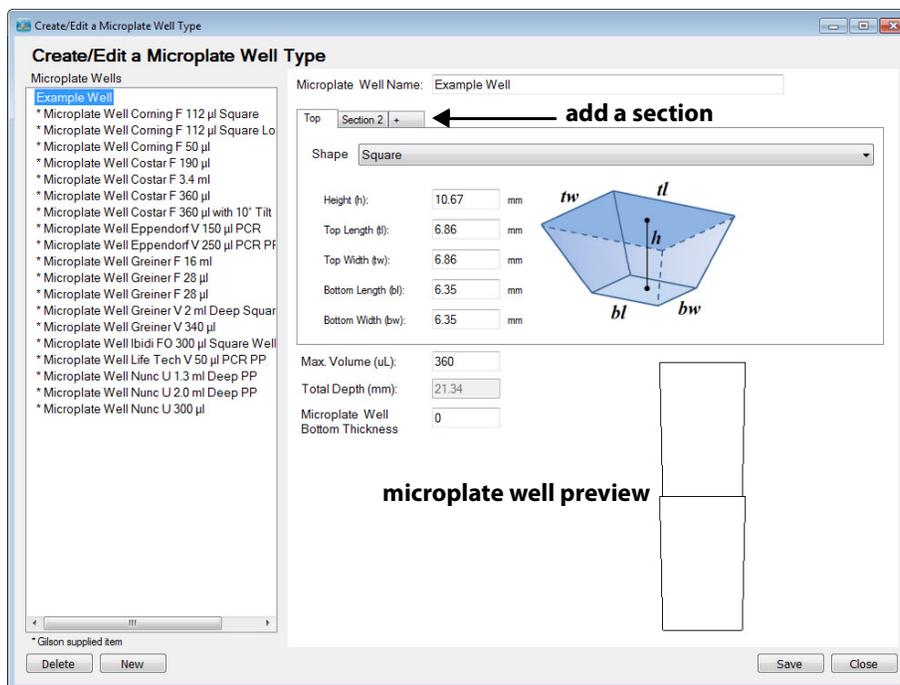


Figure 6: Create/Edit a Microplate Well Type Screen

## Gilson Recommends Measure Labware

Always measure labware as some manufacturer's specifications may be incomplete or may not translate well into Labware Creator.

### Test New Bed Elements

After creating a new bed element in Labware Creator, be sure to test it thoroughly before using it in an application protocol.

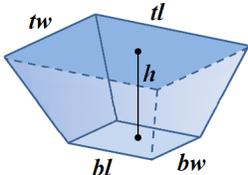
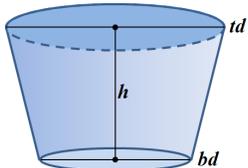
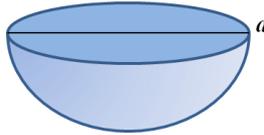
Before testing a bed element, ensure that the PIPETMAX is aligned and then, if necessary, run the Alignment Protocol with the alignment head installed.

When testing a bed element:

- Check more than one example of the bed element.
- Test in a position with clips to ensure that it is secure and at the front of the bed so that it is easier to see.

- 1 Click **Create/Edit a Microplate** on the Labware Creator main screen.
- 2 Click **Edit Well Type**.
- 3 Do one of the following:
  - Create a new microplate well. Enter a unique **Microplate Well Name** to identify the microplate well.
  - Edit an existing microplate well. Click on the name of the microplate well in the listing of Microplate Wells on the left. Gilson-supplied microplate wells, which are identified by an asterisk (\*), cannot be edited.
  - Create a microplate well based on an existing microplate well. Gilson-supplied microplate wells, which are identified by an asterisk (\*), cannot be saved (neither with the same name nor a unique name).
    - 1) Click on the name of the microplate well in the listing of Microplate Wells on the left.
    - 2) Enter a unique **Microplate Well Name** to identify the microplate well.

- 4 Select the well **Shape** from the drop-down list. The parameters change based on the shape selected. If creating a complex shape (for example, the top of the well is not the same shape as the bottom of the well), click the + tab once or repeatedly to define additional sections of the well (from top to bottom and left to right). To remove a section, right-click on the tab, and then select **Delete**. The preview updates as values are changed.

<p>If the <b>Shape</b> is <b>Square</b>, enter values (in millimeters) for:</p> <p><b>Height (h)</b>, which is the inside measurement of the square from top to bottom.</p> <p><b>Top Length (tl)</b>, which is the length of the top of the square.</p> <p><b>Top Width (tw)</b>, which is the width of the top of the square.</p> <p><b>Bottom Length (bl)</b>, which is the length of the bottom of the square.</p> <p><b>Bottom Width (bw)</b>, which is the width of the bottom of the square.</p>	 <p><b>Figure 7:</b> Square Shape Parameters</p>
<p>If the <b>Shape</b> is <b>Cylinder</b>, enter values (in millimeters) for:</p> <p><b>Height (h)</b>, which is the inside measurement of the cylinder from top to bottom.</p> <p><b>Top Diameter (td)</b>, which is the diameter of the top of the cylinder.</p> <p><b>Bottom Diameter (bd)</b>, which is the diameter of the bottom of the cylinder.</p>	 <p><b>Figure 8:</b> Cylinder Shape Parameters</p>
<p>If the <b>Shape</b> is <b>Round</b>, enter the value (in millimeters) for:</p> <p><b>Diameter (d)</b>, which is the inner diameter of the shape.</p>	 <p><b>Figure 9:</b> Round Shape Parameters</p>

- 5 Enter the **Max. Volume (uL)**, which is the well volume.
- 6 The **Total Depth (mm)** is the calculated depth of the well based on the sum of all defined shape heights. The value is not editable.
- 7 Enter a value for the **Well Bottom Thickness (mm)**, which is essential for calculating the Z position when moving inside the well. This value is used to find the Z height to the inside bottom of the well.
- 8 Click **Save** to save the well. The well name appears in the list on the left of the screen.

To use the microplate well that was just created or modified, follow the steps to [Create/Edit a Microplate](#), including selecting or reselecting the microplate well from the Well Type drop-down list, setting wells, and saving the microplate.

## Delete a Well

Gilson-supplied wells, which are identified by an asterisk (\*), cannot be deleted.

- 1 Click **Create/Edit a Microplate** on the Labware Creator main screen.
- 2 Click **Edit Well Type**.
- 3 Select the well name in the listing of Wells on the left.
- 4 Click **Delete**.
- 5 When asked to confirm if you are sure that you want to delete the well, click **Yes**, or click **No** to cancel the deletion.

# Tube Rack

Labware Creator is a software tool for managing labware, including tube racks.

Labware Creator can be used to:

- Create a tube rack.
- Create a tube rack from an existing tube rack.
  - A Gilson-supplied tube rack cannot be modified and saved with the same name, but can be modified and saved with a unique name.
  - Gilson-supplied tube racks are identified by an asterisk (\*).
- Modify an existing, user-created tube rack.
  - Modify the rack by deleting or adding tube positions.
  - Replace one or more tubes used in the rack with one or more different tubes.
  - Create a new tube and use it in the rack; refer to [Create/Edit a Tube Well Type](#).

# Create/Edit a Tube Rack

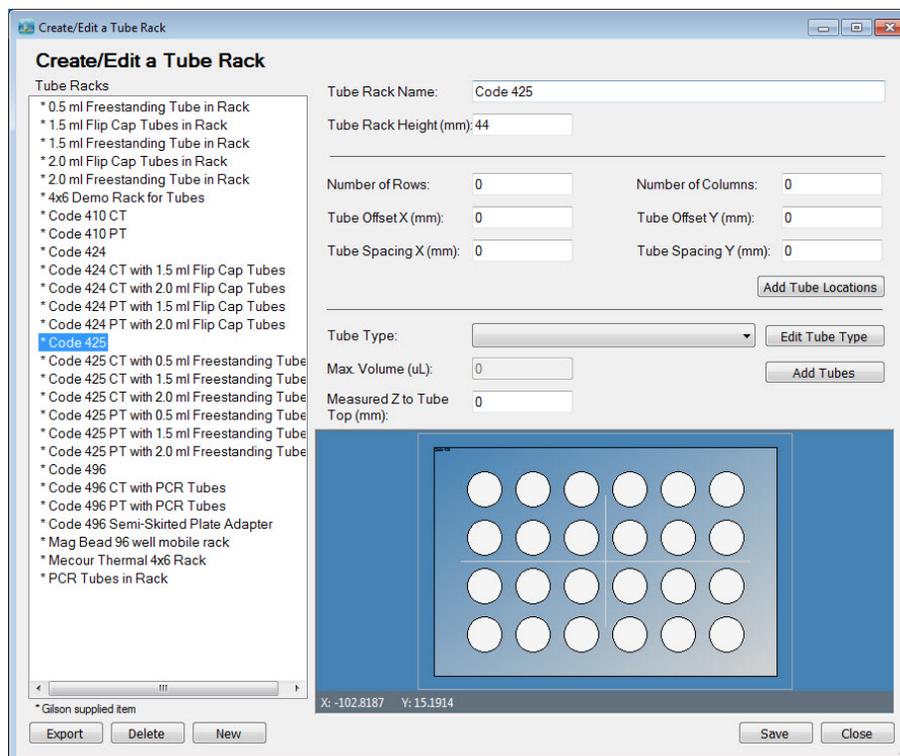


Figure 10: Create/Edit a Tube Rack Screen

## Gilson Recommends Measure Labware

Always measure labware as some manufacturer's specifications may be incomplete or may not translate well into Labware Creator.

### Test New Bed Elements

After creating a new bed element in Labware Creator, be sure to test it thoroughly before using it in an application protocol.

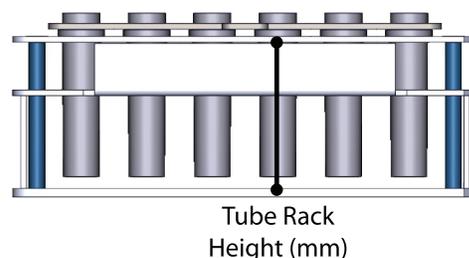
Before testing a bed element, ensure that the PIPETMAX is aligned and then, if necessary, run the Alignment Protocol with the alignment head installed.

When testing a bed element:

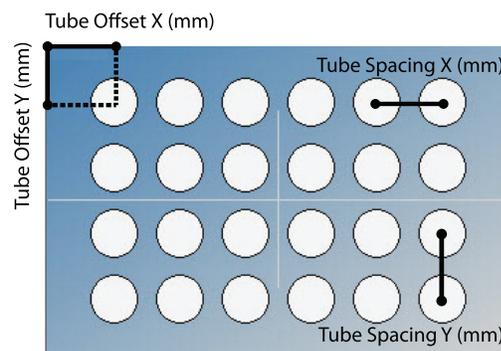
- Check more than one example of the bed element.
- Test in a position with clips to ensure that it is secure and at the front of the bed so that it is easier to see.

- 1 Click **Create/Edit a Tube Rack** on the Labware Creator main screen.
- 2 Do one of the following:
  - Create a new tube rack. Enter a unique **Tube Rack Name** to identify the tube rack.
  - Edit an existing tube rack. Click on the name of the tube rack in the listing of Tube Racks on the left. Gilson-supplied tube racks, which are identified by an asterisk (\*), cannot be edited.
  - Create a tube rack based on an existing tube rack.
    - 1) Click on the name of the tube rack in the listing of Tube Racks on the left.
    - 2) Enter a unique **Tube Rack Name** to identify the tube rack.

- 3 Enter a value for **Tube Rack Height (mm)**, which is the distance from the bottom of the rack to the top of the rack, but does not include the height added by tubes that extend past the top of the rack.
- 4 If creating from an existing or editing an existing tube rack, remove tubes (and tube locations), if necessary:
  - a) Click and drag over blocks of tubes or hold **CTRL** and then click on individual tubes in the preview to select.
  - b) Right-click, and then select **Remove**.

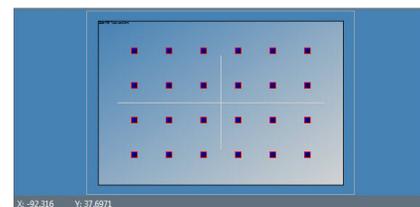


- 5 Enter a value for **Number of Rows** and a value for **Number of Columns**. These values will be used when adding tube locations to the rack.
- 6 Enter a value for **Tube Offset X (mm)** and a value for **Tube Offset Y (mm)**.
  - **Tube Offset X (mm)** is the distance from the left edge of the rack to the X position of the first tube in the new group on the rack.
  - **Tube Offset Y (mm)** is the distance from the top edge of the rack to the Y position of the first tube in the new group on the rack.



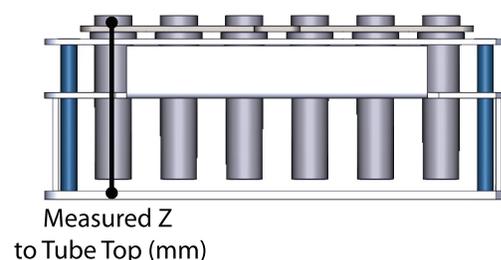
**Figure 11: Tube Offsets and Tube Spacing**

- 7 Enter a value for **Tube Spacing X (mm)** and a value for **Tube Spacing Y (mm)**.
  - **Tube Spacing X (mm)** is the X spacing between two adjacent tubes.
  - **Tube Spacing Y (mm)** is the Y spacing between two adjacent tubes.
- 8 Click **Add Tube Locations** to update the preview with selections and to accept the values.
- 9 To add another group of tube locations with different spacing, repeat steps 5–8.
- 10 Select a **Tube Type** from the drop-down list of Gilson-supplied tubes and user-created tubes. If the tube type desired is not listed, create a new one. Refer to [Create/Edit a Tube Well Type](#) for instructions.



**Figure 12: Tube Locations**

- **Max. Volume (uL)** is automatically filled in, based on the selected tube type. The value is not editable.
  - To view the properties of a tube, select it from the **Tube Type** drop-down list and then click **Edit Tube Type**, or click on the tube in the preview, right-click, and then select **Tube Properties**. The [Create/Edit a Tube Well Type](#) screen opens and displays the saved values for the selected tube.
- 11 Enter a value for **Measured Z to Tube Top (mm)**, which is the height from the bottom of the rack to the top of the tallest tube.
    - For flush tubes, enter the same value as specified for **Tube Rack Height (mm)**.
    - For tubes that extend above the top of the rack, this value will be higher than the value specified for **Tube Rack Height (mm)**.



**Figure 13: Measured Z to Tube Top**

- 12 Add tubes to tube locations:
  - a) Click and drag over blocks of tube locations or hold **CTRL** and then click on individual tube locations in the preview to select. Tubes in the tube rack are numbered from top to bottom and left to right beginning in the top left.
  - b) Click **Add Tubes** to use the specified tube type in the selected location(s).
- 13 Repeat steps 10–12 to select and then add more or different tubes.
- 14 Click **Save** to save the tube rack. The tube rack name appears in the list on the left of the screen.
- 15 Do any of the following:
  - Click **Export** to export the tube rack for use in protocol development; refer to [Export Tube Racks](#).
  - Click **Close** to return to the main screen.
  - Click **New** to create a tube rack.
  - Click on the name of a tube rack to view or begin editing it.

## Export Tube Racks

To use a tube rack created in Labware Creator for protocol development, the tube rack must be exported.

- 1 Click **Create/Edit a Tube Rack** on the Labware Creator main screen.
- 2 Click **Export**. The Export screen appears.
- 3 Select one or more tube racks to export.
- 4 Do either of the following:
  - Accept the default location of C:\Users\OS User Name\Documents\Labware Creator\Export.
  - Type a new location or select a different location:
    - 1) Click the browse icon. The Browse For Folder window appears.
    - 2) On the Browse For Folder window, select a folder to which the tube racks will be exported, and then click **OK**.
- 5 Click **Export**. On completion of the export operation, the tube racks are saved in the specified folder with a .LHR (Rack) extension.
- 6 When the export success/fail dialog appears, click **OK**.

## Delete a Tube Rack

Gilson-supplied tube racks, which are identified by an asterisk (\*), cannot be deleted.

- 1 Click **Create/Edit a Tube Rack** on the Labware Creator main screen.
- 2 Click on the tube rack name in the listing of Tube Racks on the left.
- 3 Click **Delete**.
- 4 When asked to confirm if you are sure that you want to delete the tube rack, click **Yes**, or click **No** to cancel the deletion.

# Create/Edit a Tube Well Type

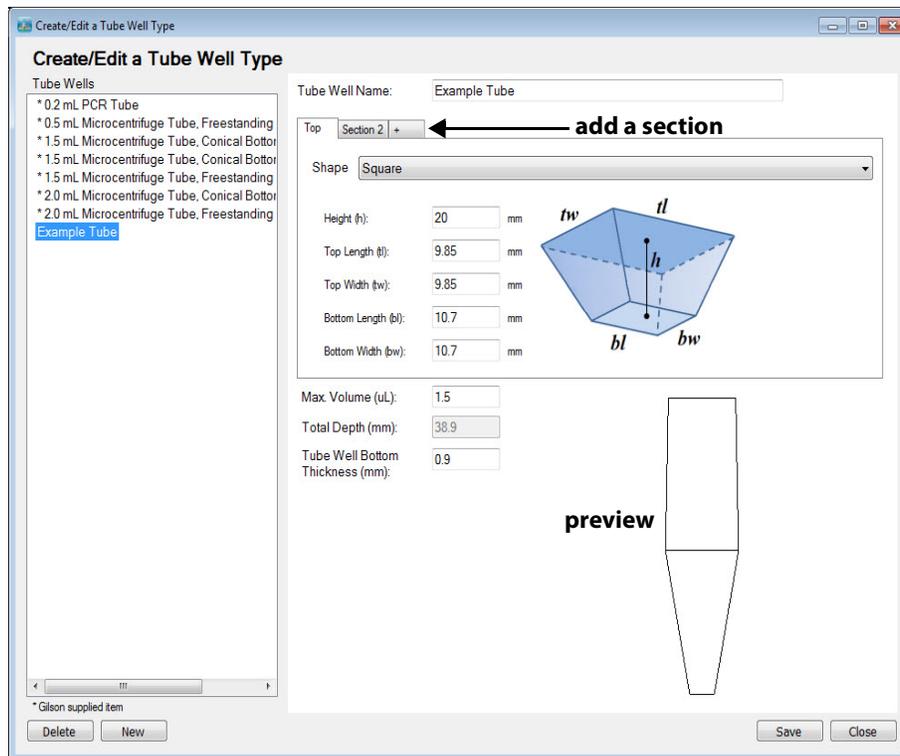


Figure 14: Create/Edit a Tube Well Type Screen

## Gilson Recommends Measure Labware

Always measure labware as some manufacturer's specifications may be incomplete or may not translate well into Labware Creator.

### Test New Bed Elements

After creating a new bed element in Labware Creator, be sure to test it thoroughly before using it in an application protocol.

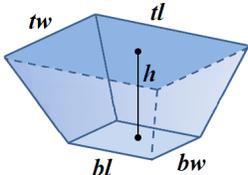
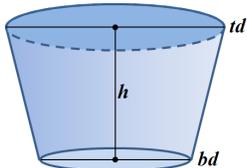
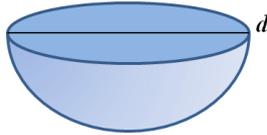
Before testing a bed element, ensure that the PIPETMAX is aligned and then, if necessary, run the Alignment Protocol with the alignment head installed.

When testing a bed element:

- Check more than one example of the bed element.
- Test in a position with clips to ensure that it is secure and at the front of the bed so that it is easier to see.

- 1 Click **Create/Edit a Tube Rack** on the Labware Creator main screen.
- 2 Click **Edit Tube Type**.
- 3 Do one of the following:
  - Create a new tube. Enter a unique **Tube Well Name** to identify the tube.
  - Edit an existing tube. Click on the name of the tube in the listing of Tube Wells on the left. Gilson-supplied tubes, which are identified by an asterisk (\*), cannot be edited.
  - Create a tube based on an existing tube. Gilson-supplied tubes, which are identified by an asterisk (\*), cannot be saved (neither with the same name nor a unique name).
    - 1) Click on the name of the tube in the listing of Tube Wells on the left.
    - 2) Enter a unique **Tube Well Name** to identify the tube.

- Select the tube **Shape** from the drop-down list. The parameters change based on the shape selected.  
If creating a complex shape (for example, the top of the tube is not the same shape as the bottom of the tube), click the + tab once or repeatedly to define additional sections of the tube (from top to bottom and left to right).  
To remove a section, right-click on the tab, and then select **Delete**.  
The preview updates as values are changed.

<p>If the <b>Shape</b> is <b>Square</b>, enter values (in millimeters) for:</p> <p><b>Height (h)</b>, which is the inside measurement of the square from top to bottom.</p> <p><b>Top Length (tl)</b>, which is the length of the top of the square.</p> <p><b>Top Width (tw)</b>, which is the width of the top of the square.</p> <p><b>Bottom Length (bl)</b>, which is the length of the bottom of the square.</p> <p><b>Bottom Width (bw)</b>, which is the width of the bottom of the square.</p>	 <p><b>Figure 15:</b> Square Shape Parameters</p>
<p>If the <b>Shape</b> is <b>Cylinder</b>, enter values (in millimeters) for:</p> <p><b>Height (h)</b>, which is the inside measurement of the cylinder from top to bottom.</p> <p><b>Top Diameter (td)</b>, which is the diameter of the top of the cylinder.</p> <p><b>Bottom Diameter (bd)</b>, which is the diameter of the bottom of the cylinder.</p>	 <p><b>Figure 16:</b> Cylinder Shape Parameters</p>
<p>If the <b>Shape</b> is <b>Round</b>, enter the value (in millimeters) for:</p> <p><b>Diameter (d)</b>, which is the inner diameter of the shape.</p>	 <p><b>Figure 17:</b> Round Shape Parameters</p>

- Enter the **Max. Volume (uL)**, which is the tube volume.
- The **Total Depth (mm)** is the calculated depth of the tube based on the sum of all defined shape heights. The value is not editable.
- Enter a value for the **Tube Bottom Thickness (mm)**, which is essential for calculating the Z position when moving inside the tube. This value is used to find the Z height to the inside bottom of the tube.
- Click **Save** to save the tube. The tube name appears in the list on the left of the screen.

To use the tube that was just created or modified, follow the steps to [Create/Edit a Tube Rack](#), including removing tubes and tube locations (if necessary), selecting the tube from the Tube Type drop-down list, setting tube locations, adding tubes, and saving the tube rack.

## Delete a Tube

Gilson-supplied tubes, which are identified by an asterisk (\*), cannot be deleted.

- Click **Create/Edit a Tube Rack** on the Labware Creator main screen.
- Click **Edit Tube Type**.
- Select the tube name in the listing of tubes on the left.
- Click **Delete**.
- When asked to confirm if you are sure that you want to delete the tube, click **Yes**, or click **No** to cancel the deletion.

# Reservoir

Labware Creator is a software tool for managing labware, including reservoirs.

Labware Creator can be used to:

- Create a reservoir.
- Create a reservoir from an existing reservoir.
  - A Gilson-supplied reservoir cannot be modified and saved with the same name, but can be modified and saved with a unique name.
  - Gilson-supplied reservoirs are identified by an asterisk (\*).
- Modify an existing, user-created reservoir.
  - Modify the reservoir (number of reservoir wells, offset, etc.)
  - Replace the wells used in the reservoir with a different reservoir well.
  - Create a new reservoir well and use it in the reservoir; refer to [Create/Edit a Reservoir Well Type](#).

# Create/Edit a Reservoir

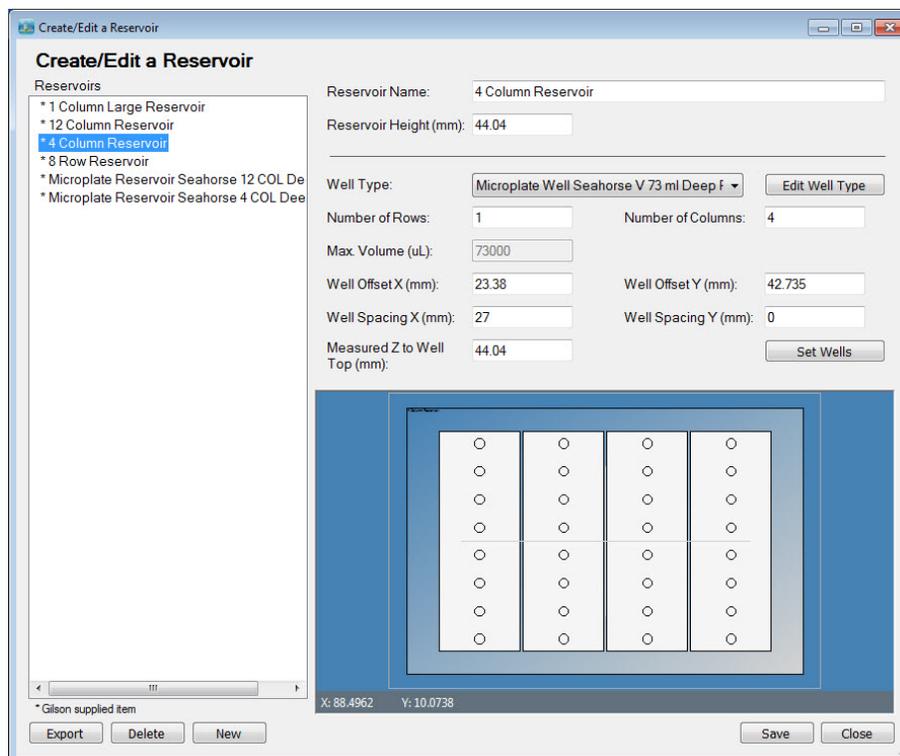


Figure 18: Create/Edit a Reservoir Screen

## Gilson Recommends Measure Labware

Always measure labware as some manufacturer's specifications may be incomplete or may not translate well into Labware Creator.

### Test New Bed Elements

After creating a new bed element in Labware Creator, be sure to test it thoroughly before using it in an application protocol.

Before testing a bed element, ensure that the PIPETMAX is aligned and then, if necessary, run the Alignment Protocol with the alignment head installed.

When testing a bed element:

- Check more than one example of the bed element.
- Test in a position with clips to ensure that it is secure and at the front of the bed so that it is easier to see.

- 1 Click **Create/Edit a Reservoir** on the Labware Creator main screen.
- 2 Do one of the following:
  - Create a new reservoir. Enter a unique **Reservoir Name** to identify the reservoir.
  - Edit an existing reservoir. Click on the name of the reservoir in the listing of Reservoirs on the left. Gilson-supplied reservoirs, which are identified by an asterisk (\*), cannot be edited.
  - Create a reservoir based on an existing reservoir.
    - 1) Click on the name of the reservoir in the listing of Reservoirs on the left.
    - 2) Enter a unique **Reservoir Name** to identify the reservoir.
- 3 Enter a value for the **Reservoir Height (mm)**, which is the distance from the bottom of the reservoir to the top of the reservoir, but does not include the height added by wells that extend past the top of the reservoir.

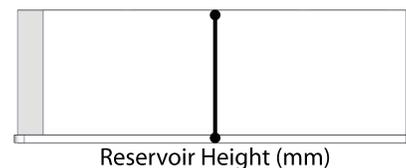
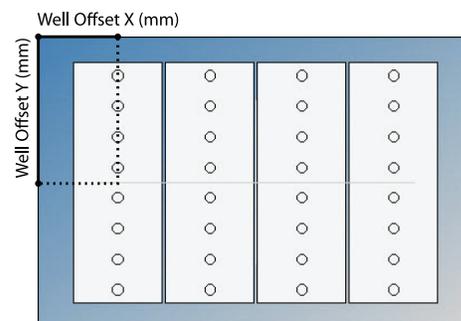


Figure 19: Reservoir Height

- 4 Select a **Well Type** from the drop-down list of Gilson-supplied reservoir wells and user-created reservoir wells. All wells in a reservoir must be identical. If the well type desired is not listed, create a new one. Refer to [Create/Edit a Reservoir Well Type](#) for instructions.
  - **Max. Volume (uL)** is automatically filled in, based on the selected well type. The value is not editable.
  - To view the properties of a well, select it from the **Well Type** drop-down list and then click **Edit Well Type**, or click on the well in the preview, right-click, and then select **Well Properties**. The [Create/Edit a Reservoir Well Type](#) screen opens and displays the saved values for the selected reservoir well.
- 5 Enter a value for **Number of Rows** and a value for **Number of Columns**.
- 6 Enter a value for **Well Offset X (mm)** and a value for **Well Offset Y (mm)**.
  - **Well Offset X (mm)** is the distance from the left edge of the reservoir to the X position of the first well in the reservoir.
  - **Well Offset Y (mm)** is the distance from the top edge of the reservoir to the Y position of the first well in the reservoir.
- 7 Enter a value for **Well Spacing X (mm)** and a value for **Well Spacing Y (mm)**.
  - **Well Spacing X (mm)** is the X spacing between two adjacent wells.
  - **Well Spacing Y (mm)** is the Y spacing between two adjacent wells.
- 8 Enter a value for **Measured Z to Well Top (mm)**, which is the height from the bottom of the reservoir to the top of the wells.
  - For flush wells, enter the same value as specified for **Reservoir Height (mm)**.
  - For wells that extend above the top of the reservoir, this value will be higher than the value specified for **Reservoir Height (mm)**.
- 9 Click **Set Wells** to update the preview with selections and to accept the values.
- 10 If the reservoir wells with targets (circles) appear in the preview, skip to step 11.  
If the reservoir wells appear, but targets (circles) do not appear in the preview:
  - a) With the well selected in the drop-down list, click **Edit Well Type**.
  - b) Check the values for **Total Depth (mm)** and **Reservoir Bottom Thickness (mm)**. For more information about these parameters, refer to [Create/Edit a Reservoir Well Type](#).
    - If the values are not correct:
      - 1) Enter the correct values.
      - 2) Click **Close** to return to the [Create/Edit a Reservoir](#) screen.
      - 3) Click **Set Wells** to update the preview with selections and to accept the values.
      - 4) If the reservoir wells with targets in the wells appear in the preview, continue to step 11. If the reservoir wells appear, but targets in the well do not appear in the preview, continue to the next bullet.
    - If the values are correct:
      - 1) Add the value for **Total Depth (mm)** to the value for **Reservoir Bottom Thickness (mm)**. Note or remember this sum.
      - 2) Click **Close** to return to the [Create/Edit a Reservoir](#) screen.
      - 3) Enter the sum of **Total Depth (mm) + Reservoir Bottom Thickness (mm)** as the value for **Measured Z to Well Top (mm)**.
      - 4) Click **Set Wells** to update the preview with selections and to accept the values.
- 11 Remove reservoir wells, if necessary:
  - a) Click and drag over blocks of wells or hold **CTRL** and then click on individual wells in the preview.
  - b) Right-click, and then select **Remove**.
- 12 Click **Save** to save the reservoir. The reservoir name appears in the list on the left of the screen.
- 13 Do any of the following:
  - Click **Export** to export the reservoir for use in protocol development; refer to [Export Reservoirs](#).
  - Click **Close** to return to the main screen.
  - Click **New** to create a reservoir.
  - Click on the name of a reservoir to view or begin editing it.



**Figure 20:** Reservoir Well Offsets

## Export Reservoirs

To use a reservoir created in Labware Creator for protocol development, it must be exported.

- 1 Click **Create/Edit a Reservoir** on the Labware Creator main screen.
- 2 Click **Export**. The Export screen appears.
- 3 Select one or more reservoirs to export.
- 4 Do either of the following:
  - Accept the default location of C:\Users\OS User Name\Documents\Labware Creator\Export.
  - Type a new location or select a different location:
    - 1) Click the browse icon. The Browse For Folder window appears.
    - 2) On the Browse For Folder window, select a folder to which the reservoirs will be exported, and then click **OK**.
- 5 Click **Export**. On completion of the export operation, the reservoirs are saved in the specified folder with a .LHR (Rack) extension.
- 6 When the export success/fail dialog appears, click **OK**.

## Delete a Reservoir

Gilson-supplied reservoirs, which are identified by an asterisk (\*), cannot be deleted.

- 1 Click **Create/Edit a Reservoir**.
- 2 Click on the reservoir name in the listing of Reservoirs on the left.
- 3 Click **Delete**.
- 4 When asked to confirm if you are sure that you want to delete the reservoir, click **Yes**, or click **No** to cancel the deletion.

## Create/Edit a Reservoir Well Type

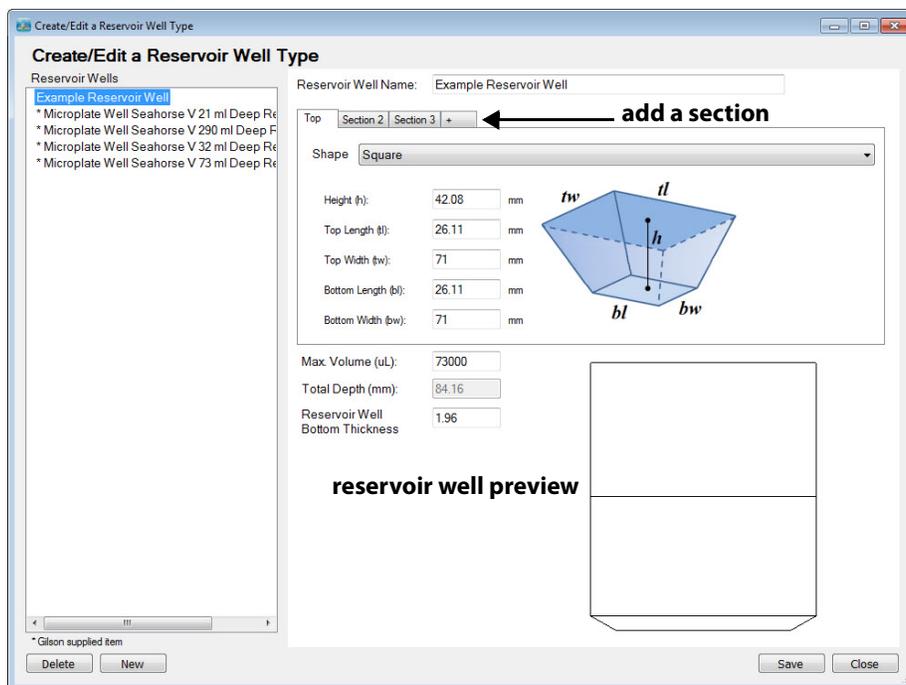


Figure 21: Create/Edit a Reservoir Well Type Screen

### Gilson Recommends Measure Labware

Always measure labware as some manufacturer's specifications may be incomplete or may not translate well into Labware Creator.

### Test New Bed Elements

After creating a new bed element in Labware Creator, be sure to test it thoroughly before using it in an application protocol.

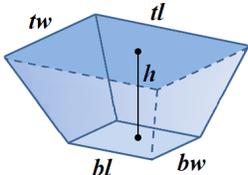
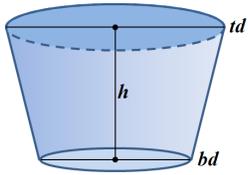
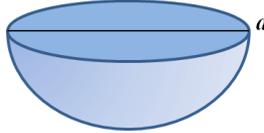
Before testing a bed element, ensure that the PIPETMAX is aligned and then, if necessary, run the Alignment Protocol with the alignment head installed.

When testing a bed element:

- Check more than one example of the bed element.
- Test in a position with clips to ensure that it is secure and at the front of the bed so that it is easier to see.

- 1 Click **Create/Edit a Reservoir** on the Labware Creator main screen.
- 2 Click **Edit Well Type**.
- 3 Do one of the following:
  - Create a new reservoir well. Enter a unique **Reservoir Well Name** to identify the reservoir well.
  - Edit an existing reservoir well. Click on the name of the reservoir well in the listing of Reservoir Wells on the left. Gilson-supplied reservoir wells, which are identified by an asterisk (\*), cannot be edited.
  - Create a reservoir well based on an existing reservoir well. Gilson-supplied reservoir wells, which are identified by an asterisk (\*), cannot be saved (neither with the same name nor a unique name).
    - 1) Click on the name of the reservoir well in the listing of Reservoir Wells on the left.
    - 2) Enter a unique **Reservoir Well Name** to identify the reservoir well.

- 4 Select the well **Shape** from the drop-down list. The parameters change based on the shape selected.  
 If creating a complex shape (for example, the top of the well is not the same shape as the bottom of the well), click the + tab once or repeatedly to define additional sections of the well (from top to bottom and left to right).  
 To remove a section, right-click on the tab, and then select **Delete**.  
 The preview updates as values are changed.

<p>If the <b>Shape</b> is <b>Square</b>, enter values (in millimeters) for:</p> <p><b>Height (h)</b>, which is the inside measurement of the square from top to bottom.</p> <p><b>Top Length (tl)</b>, which is the length of the top of the square.</p> <p><b>Top Width (tw)</b>, which is the width of the top of the square.</p> <p><b>Bottom Length (bl)</b>, which is the length of the bottom of the square.</p> <p><b>Bottom Width (bw)</b>, which is the width of the bottom of the square.</p>	 <p><b>Figure 22:</b> Square Shape Parameters</p>
<p>If the <b>Shape</b> is <b>Cylinder</b>, enter values (in millimeters) for:</p> <p><b>Height (h)</b>, which is the inside measurement of the cylinder from top to bottom.</p> <p><b>Top Diameter (td)</b>, which is the diameter of the top of the cylinder.</p> <p><b>Bottom Diameter (bd)</b>, which is the diameter of the bottom of the cylinder.</p>	 <p><b>Figure 23:</b> Cylinder Shape Parameters</p>
<p>If the <b>Shape</b> is <b>Round</b>, enter the value (in millimeters) for:</p> <p><b>Diameter (d)</b>, which is the inner diameter of the shape.</p>	 <p><b>Figure 24:</b> Round Shape Parameters</p>

- 5 Enter the **Max. Volume (uL)**, which is the well volume.
- 6 The **Total Depth (mm)** is the calculated depth of the well based on the sum of all defined shape heights. The value is not editable.
- 7 Enter a value for the **Well Bottom Thickness (mm)**, which is essential for calculating the Z position when moving inside the well. This value is used to find the Z height to the inside bottom of the well.
- 8 Click **Save** to save the well. The well name appears in the list on the left of the screen.

To use the reservoir well that was just created or modified, follow the steps to [Create/Edit a Reservoir](#), including selecting or reselecting the reservoir well from the Well Type drop-down list, setting wells, and saving the reservoir.

## Delete a Well

Gilson-supplied wells, which are identified by an asterisk (\*), cannot be deleted.

- 1 Click **Create/Edit a Reservoir** on the Labware Creator main screen.
- 2 Click **Edit Well Type**.
- 3 Select the reservoir well name in the listing on the left.
- 4 Click **Delete**.
- 5 When asked to confirm if you are sure that you want to delete the well, click **Yes**, or click **No** to cancel the deletion.

# Tip Rack

Labware Creator is a software tool for managing labware, including tip racks.

Labware Creator can be used to:

- Create a tip rack.
- Create a tip rack from an existing tip rack.
  - A Gilson-supplied tip rack cannot be modified and saved with the same name, but can be modified and saved with a unique name.
  - Gilson-supplied tip racks are identified by an asterisk (\*).
- Modify an existing, user-created tip rack.
  - Modify the tip rack.
  - Replace the tips used in the rack with a different tip.
  - Create a new tip and use it in the rack; refer to [Create/Edit a Tip Type](#).

# Create/Edit a Tip Rack

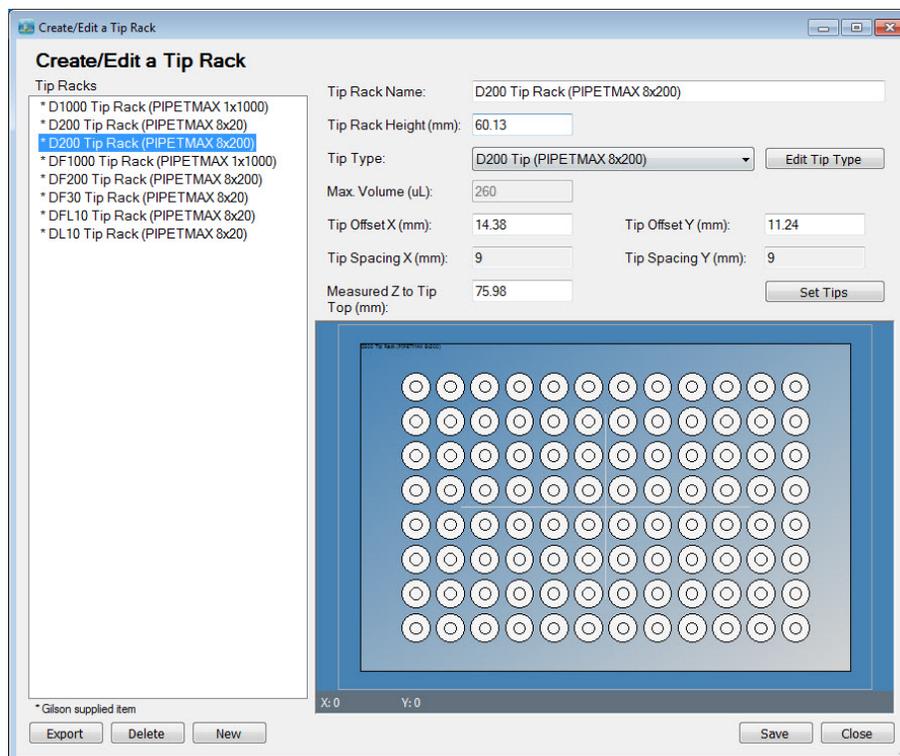


Figure 25: Create Edit a Tip Rack Screen

## Gilson Recommends Measure Labware

Always measure labware as some manufacturer's specifications may be incomplete or may not translate well into Labware Creator.

### Test New Bed Elements

After creating a new bed element in Labware Creator, be sure to test it thoroughly before using it in an application protocol.

Before testing a bed element, ensure that the PIPETMAX is aligned and then, if necessary, run the Alignment Protocol with the alignment head installed.

When testing a bed element:

- Check more than one example of the bed element.
- Test in a position with clips to ensure that it is secure and at the front of the bed so that it is easier to see.

- 1 Click **Create/Edit a Tip Rack** on the Labware Creator main screen.
- 2 Do one of the following:
  - Create a new tip rack. Enter a unique **Tip Rack Name** to identify the tip rack.
  - Edit an existing tip rack. Click on the name of the tip rack in the listing of Tip Racks on the left. Gilson-supplied tip racks, which are identified by an asterisk (\*), cannot be edited.
  - Create a tip rack based on an existing tip rack.
    - 1) Click on the name of the tip rack in the listing of Tip Racks on the left.
    - 2) Enter a unique **Tip Rack Name** to identify the tip rack.
- 3 Enter a value for the **Tip Rack Height (mm)**, which is the distance from the bottom of the tip rack to the top of the tip rack, but does not include the height added by tips that extend past the top of the tip rack.

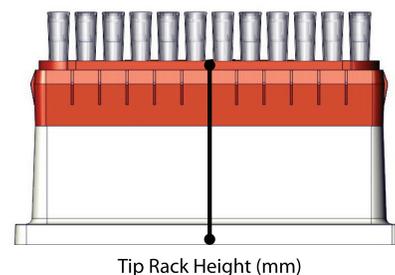


Figure 26: Tip Rack Height

- 4 Select a **Tip Type** from the drop-down list of Gilson-supplied tips and user-created tips. All tips in a tip rack must be identical. If the tip type desired is not listed, create a new one. Refer to [Create/Edit a Tip Type](#) for instructions.
  - **Max. Volume (uL)** is automatically filled in, based on the selected tip type. The value is not editable.
  - To view the properties of a tip, select it from the **Tip Type** drop-down list and then click **Edit Tip Type**, or click on the tip in the preview, right-click, and then select **Tip Properties**. The [Create/Edit a Tip Type](#) screen opens and displays the saved values for the selected tip.
- 5 Enter a value for **Tip Offset X (mm)** and a value for **Tip Offset Y (mm)**.
  - **Tip Offset X (mm)** is the distance from the left edge of the tip rack to the X position of the first tip in the tip rack.
  - **Tip Offset Y (mm)** is the distance from the top edge of the tip rack to the Y position of the first tip in the tip rack.
- 6 **Tip Spacing X (mm)** and **Tip Spacing Y (mm)** are automatically calculated and the values are not editable.
- 7 Enter a value for **Measured Z to Tip Top (mm)**, which is the height from the bottom of the tip rack to the top of the tips.
- 8 Click **Set Tips** to update the preview with selections and to accept the values.
- 9 Remove tips, if necessary:
  - a) Click and drag over blocks of tips or hold **CTRL** and then click on individual tips in the preview.
  - b) Right-click, and then select **Remove**.
- 10 Click **Save** to save the tip rack. The tip rack name appears in the list on the left of the screen.
- 11 Do any of the following:
  - Click **Export** to export the tip rack for use in protocol development; refer to [Export Tip Racks](#).
  - Click **Close** to return to the main screen.
  - Click **New** to create a tip rack.
  - Click on the name of a tip rack to view or begin editing it.

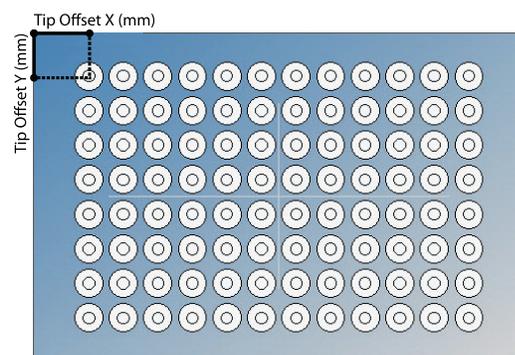


Figure 27: Tip Offsets

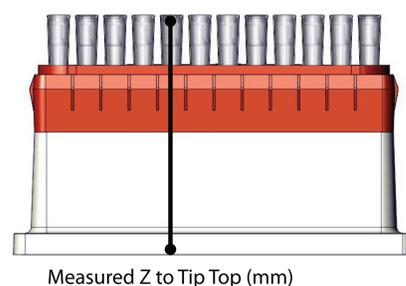


Figure 28: Measured Z to Tip Top

## Export Tip Racks

To use a tip rack created in Labware Creator for protocol development, the tip rack must be exported.

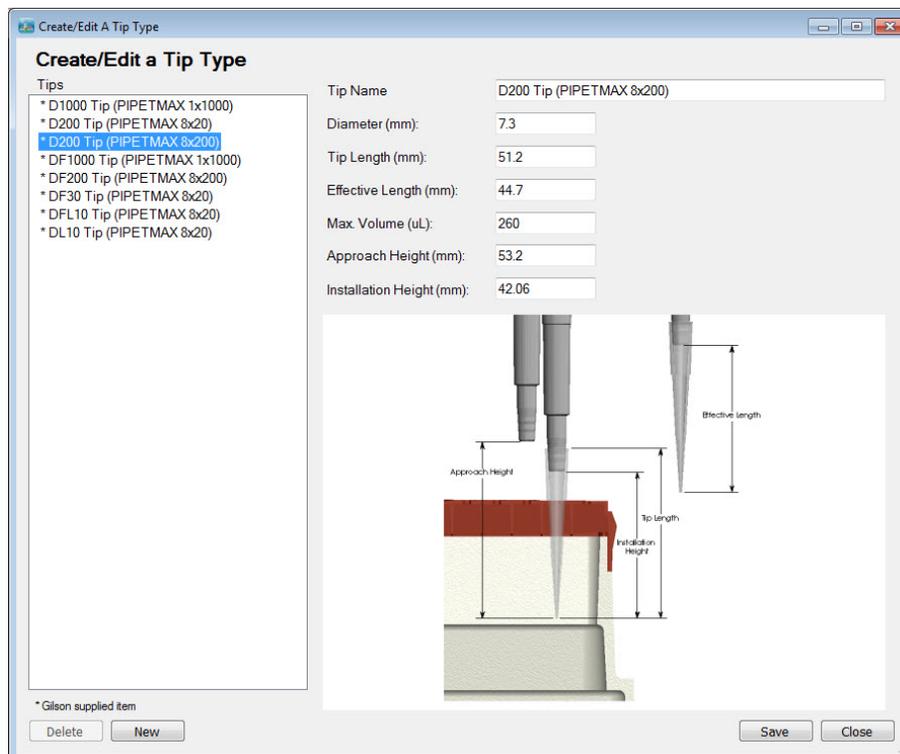
- 1 Click **Create/Edit a Tip Rack** on the Labware Creator main screen.
- 2 Click **Export**. The Export screen appears.
- 3 Select one or more tip racks to export.
- 4 Do either of the following:
  - Accept the default location of C:\Users\OS User Name\Documents\Labware Creator\Export.
  - Type a new location or select a different location:
    - 1) Click the browse icon. The Browse For Folder window appears.
    - 2) On the Browse For Folder window, select a folder to which the tip racks will be exported, and then click **OK**.
- 5 Click **Export**. On completion of the export operation, the tip racks are saved in the specified folder with a .LHR (Rack) extension.
- 6 When the export success/fail dialog appears, click **OK**.

## Delete a Tip Rack

Gilson-supplied tip racks, which are identified by an asterisk (\*), cannot be deleted.

- 1 Click **Create/Edit a Tip Rack** on the Labware Creator main screen.
- 2 Click on the tip rack name in the listing of Tip Racks on the left.
- 3 Click **Delete**.
- 4 When asked to confirm if you are sure that you want to delete the tip rack, click **Yes**, or click **No** to cancel the deletion.

## Create/Edit a Tip Type



**Figure 29:** Create/Edit a Tip Type Screen

### Gilson Recommends **Measure Labware**

Always measure labware as some manufacturer's specifications may be incomplete or may not translate well into Labware Creator.

### **Test New Bed Elements**

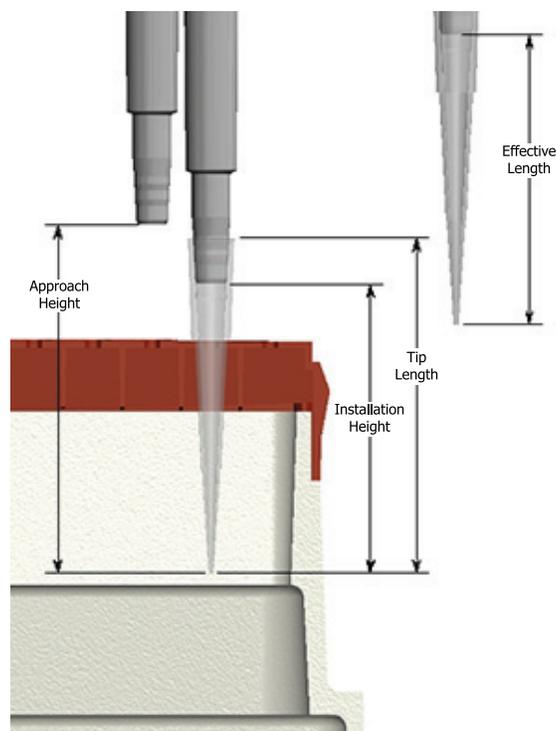
After creating a new bed element in Labware Creator, be sure to test it thoroughly before using it in an application protocol.

Before testing a bed element, ensure that the PIPETMAX is aligned and then, if necessary, run the Alignment Protocol with the alignment head installed.

When testing a bed element:

- Check more than one example of the bed element.
- Test in a position with clips to ensure that it is secure and at the front of the bed so that it is easier to see.e.

- 1 Click **Create/Edit a Tip Rack** on the Labware Creator main screen.
- 2 Click **Edit Tip Type**.
- 3 Do one of the following:
  - Create a new tip. Enter a unique **Tip Name** to identify the tip.
  - Edit an existing tip. Click on the name of the tip in the listing of Tips on the left. Gilson-supplied tips, which are identified by an asterisk (\*), cannot be edited.
  - Create a tip based on an existing tip.
    - 1) Click on the name of the tip in the listing of Tips on the left.
    - 2) Enter a unique **Tip Name** to identify the tip.
- 4 Refer to the on-screen diagram (or the diagram at right) when entering values for the following parameters:
  - Enter a value for the **Diameter (mm)** for the top of the tip.
  - Enter a value for the **Tip Length (mm)**, which is the distance from the bottom of the tip to the top of the tip.
  - Enter a value for the **Effective Length (mm)**, which is the distance between the end of the tip holder and the bottom of the tip when the tip is fully installed.
  - Enter a value for the **Approach Height (mm)**, which is the distance between the end of the tip holder at its initial position and the bottom of the tip.
  - Enter a value for the **Installation Height (mm)**, which is the distance between the end of the tip holder and the bottom of the tip when the tip is installed. This will be less than the **Effective Length (mm)** value because the tips and tip rack are expected to deflect during installation and this value will have to compensate in order to achieve good attachment and seal.
- 5 Enter the **Max. Volume (uL)**, which is the tip volume.
- 6 Click **Save** to save the tip. The tip name appears in the list on the left of the screen.



**Figure 30: Tip Parameters**

To use the tip that was just created or modified, follow the steps to [Create/Edit a Tip Rack](#), including selecting or reselecting the tip from the Tip Type drop-down list, setting tips, and saving the tip rack.

## Delete a Tip

Gilson-supplied tips, which are identified by an asterisk (\*), cannot be deleted.

- 1 Click **Create/Edit a Tip Rack** on the Labware Creator main screen.
- 2 Click **Edit Tip Type**.
- 3 Select the tip name in the listing of Tips on the left.
- 4 Click **Delete**.
- 5 When asked to confirm if you are sure that you want to delete the tip, click **Yes**, or click **No** to cancel the deletion.

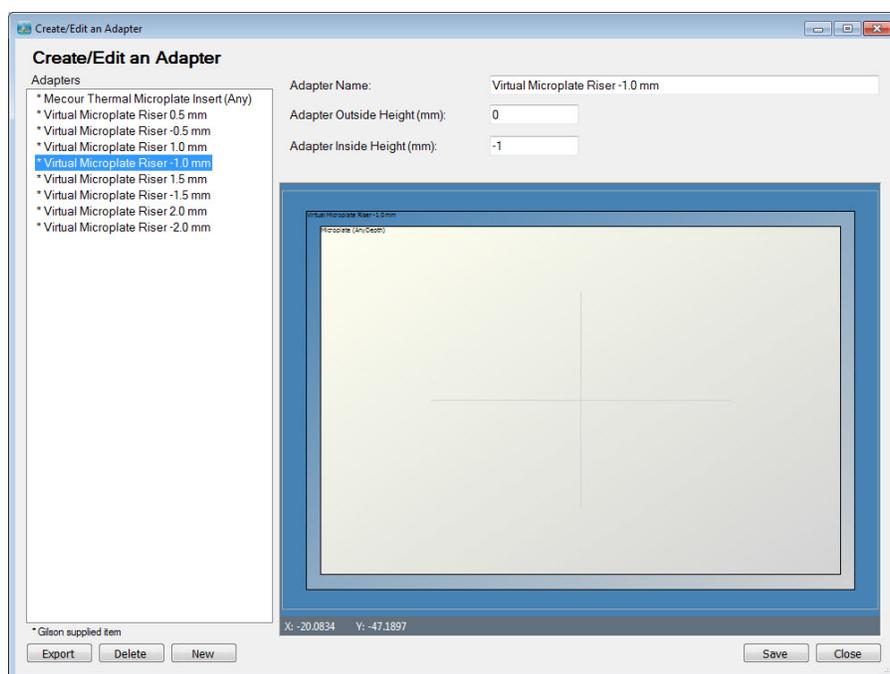
# Adapter

Labware Creator is a software tool for managing labware, including adapters (risers, for example).

Labware Creator can be used to:

- Create an adapter.
- Create an adapter from an existing adapter.
  - A Gilson-supplied adapter cannot be modified and saved with the same name, but can be modified and saved with a unique name.
  - Gilson-supplied adapters are identified by an asterisk (\*).
- Modify an existing, user-created adapter.

## Create/Edit an Adapter



**Figure 31:** Create/Edit an Adapter Screen

### Gilson Recommends

#### Measure Labware

Always measure labware as some manufacturer's specifications may be incomplete or may not translate well into Labware Creator.

#### Test New Bed Elements

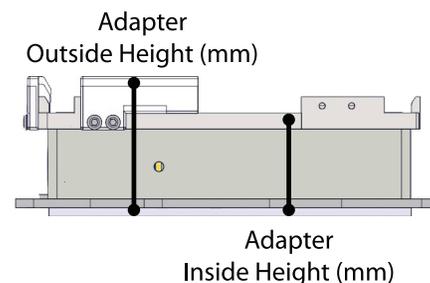
After creating a new bed element in Labware Creator, be sure to test it thoroughly before using it in an application protocol.

Before testing a bed element, ensure that the PIPETMAX is aligned and then, if necessary, run the Alignment Protocol with the alignment head installed.

When testing a bed element:

- Check more than one example of the bed element.
- Test in a position with clips to ensure that it is secure and at the front of the bed so that it is easier to see.

- 1 Click **Create/Edit an Adapter** on the Labware Creator main screen.
- 2 Do one of the following:
  - Create a new adapter. Enter a unique **Adapter Name** to identify the adapter.
  - Edit an existing adapter. Click on the name of the adapter in the listing of Adapters on the left. Gilson-supplied adapters, which are identified by an asterisk (\*), cannot be edited.
  - Create an adapter based on an existing adapter.
    - 1) Click on the name of the adapter in the listing of Adapters on the left.
    - 2) Enter a unique **Adapter Name** to identify the adapter.
- 3 Enter a value for the **Adapter Outside Height (mm)**, which is the distance from the bed to the top of the adapter.
- 4 Enter a value for the **Adapter Inside Height (mm)**, which is the distance from the bed to the surface on which the bed element (microplate, tube rack, etc.) is placed.
- 5 Click **Save** to save the adapter. The adapter name appears in the list on the left of the screen.
- 6 Do any of the following:
  - Click **Export** to export the adapter for use in protocol development; refer to [Export Adapters](#).
  - Click **Close** to return to the main screen.
  - Click **New** to create an adapter.
  - Click on the name of an adapter to view or begin editing it.



**Figure 32: Adapter Heights**

## Export Adapters

To use an adapter created in Labware Creator for protocol development, the adapter must be exported.

- 1 Click **Create/Edit an Adapter** on the Labware Creator main screen.
- 2 Click **Export**. The Export screen appears.
- 3 Select one or more adapters to export.
- 4 Do either of the following:
  - Accept the default location of C:\Users\OS User Name\Documents\Labware Creator\Export.
  - Type a new location or select a different location:
    - 1) Click the browse icon. The Browse For Folder window appears.
    - 2) On the Browse For Folder window, select a folder to which the adapters will be exported, and then click **OK**.
- 5 Click **Export**. On completion of the export operation, the adapters are saved in the specified folder with a .LHR (Rack) extension.
- 6 When the export success/fail dialog appears, click **OK**.

## Delete an Adapter

Gilson-supplied adapters, which are identified by an asterisk (\*), cannot be deleted.

- 1 Click **Create/Edit an Adapter** on the Labware Creator main screen.
- 2 Click on the adapter name in the listing of Adapters on the left.
- 3 Click **Delete**.
- 4 When asked to confirm if you are sure that you want to delete the adapter, click **Yes**, or click **No** to cancel the deletion.

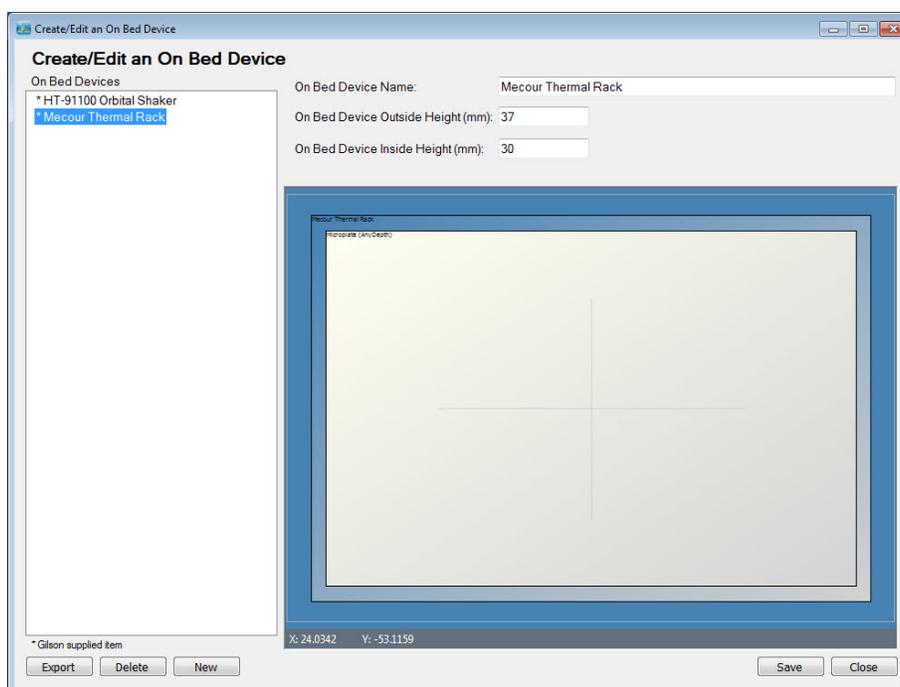
# On Bed Device

Labware Creator is a software tool for managing labware, including on-bed devices.

Labware Creator can be used to:

- Create an on-bed device.
- Create an on-bed device from an existing on-bed device.
  - A Gilson-supplied on-bed device cannot be modified and saved with the same name, but can be modified and saved with a unique name.
  - Gilson-supplied on-bed devices are identified by an asterisk (\*).
- Modify an existing on bed, user-created device.

## Create/Edit an On Bed Device



**Figure 33:** Create/Edit an On Bed Device

### **Gilson Recommends** Measure Labware

Always measure labware as some manufacturer's specifications may be incomplete or may not translate well into Labware Creator.

#### **Test New Bed Elements**

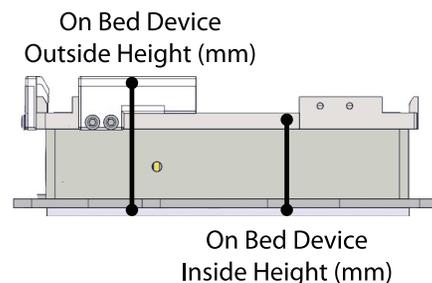
After creating a new bed element in Labware Creator, be sure to test it thoroughly before using it in an application protocol.

Before testing a bed element, ensure that the PIPETMAX is aligned and then, if necessary, run the Alignment Protocol with the alignment head installed.

When testing a bed element:

- Check more than one example of the bed element.
- Test in a position with clips to ensure that it is secure and at the front of the bed so that it is easier to see.

- 1 Click **Create/Edit an On Bed Device** on the Labware Creator main screen.
- 2 Do one of the following:
  - Create a new on-bed device. Enter a unique **On Bed Device Name** to identify the on-bed device.
  - Edit an existing on-bed device. Click on the name of the on-bed device in the listing of On Bed Devices on the left. Gilson-supplied on-bed devices, which are identified by an asterisk (\*), cannot be edited.
  - Create an on-bed device based on an existing on-bed device.
    - 1) Click on the name of the on-bed device in the listing of On Bed Devices on the left.
    - 2) Enter a unique **On Bed Device Name** to identify the on-bed device.
- 3 Enter a value for the **On Bed Device Outside Height (mm)**, which is the distance from the bed to the top of the on-bed device.
- 4 Enter a value for the **On Bed Device Inside Height (mm)**, which is the distance from the bed to the surface on which the bed element (microplate, tube rack, etc.) is placed.
- 5 Click **Save** to save the on-bed device. The on-bed device name appears in the list on the left of the screen.
- 6 Do any of the following:
  - Click **Export** to export the on-bed device for use in protocol development; refer to [Export On Bed Devices](#).
  - Click **Close** to return to the main screen.
  - Click **New** to create an on-bed device.
  - Click on the name of an on-bed device to view or begin editing it.



**Figure 34:** On Bed Device Heights

## Export On Bed Devices

To use an on-bed device created in Labware Creator for protocol development, the on-bed device must be exported.

- 1 Click **Create/Edit an On Bed Device** on the Labware Creator main screen.
- 2 Click **Export**. The Export screen appears.
- 3 Select one or more on-bed devices to export.
- 4 Do either of the following:
  - Accept the default location of C:\Users\OS User Name\Documents\Labware Creator\Export.
  - Type a new location or select a different location:
    - 1) Click the browse icon. The Browse For Folder window appears.
    - 2) On the Browse For Folder window, select a folder to which the on-bed devices will be exported, and then click **OK**.
- 5 Click **Export**. On completion of the export operation, the on-bed devices are saved in the specified folder with a .LHR (Rack) extension.
- 6 When the export success/fail dialog appears, click **OK**.

## Delete an On Bed Device

Gilson-supplied on-bed devices, which are identified by an asterisk (\*), cannot be deleted.

- 1 Click **Create/Edit an On Bed Device** on the Labware Creator main screen.
- 2 Click on the on-bed device name in the listing of On Bed Devices on the left.
- 3 Click **Delete**.
- 4 When asked to confirm if you are sure that you want to delete the on-bed device, click **Yes**, or click **No** to cancel the deletion.

# Close Labware Creator

Click  in the upper right corner to close the software.

# Non-SBS Bed Elements

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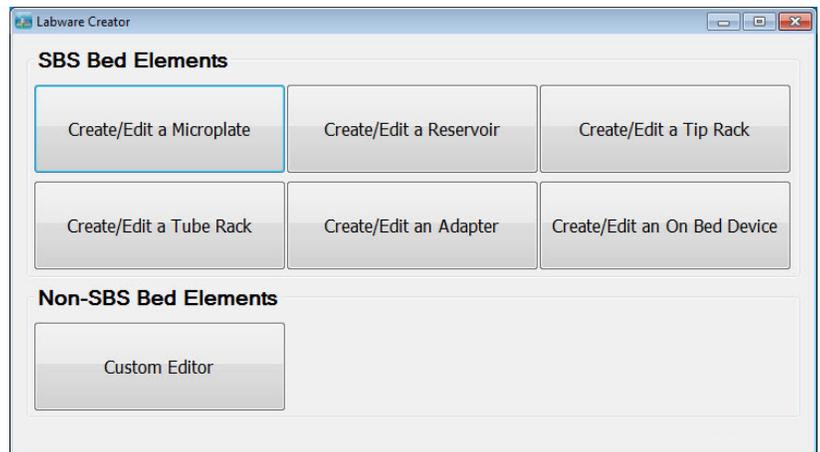
**Important!**

**DO NOT use the Custom Editor to create microplates or elements that will be used in protocols that use liquid level following (LLF).**

This chapter explains how to use the Custom Editor to:

- [Create a Template](#)
- [Export Templates](#)
- [Import Racks and Templates](#)

After creating new bed elements, test the new bed elements.



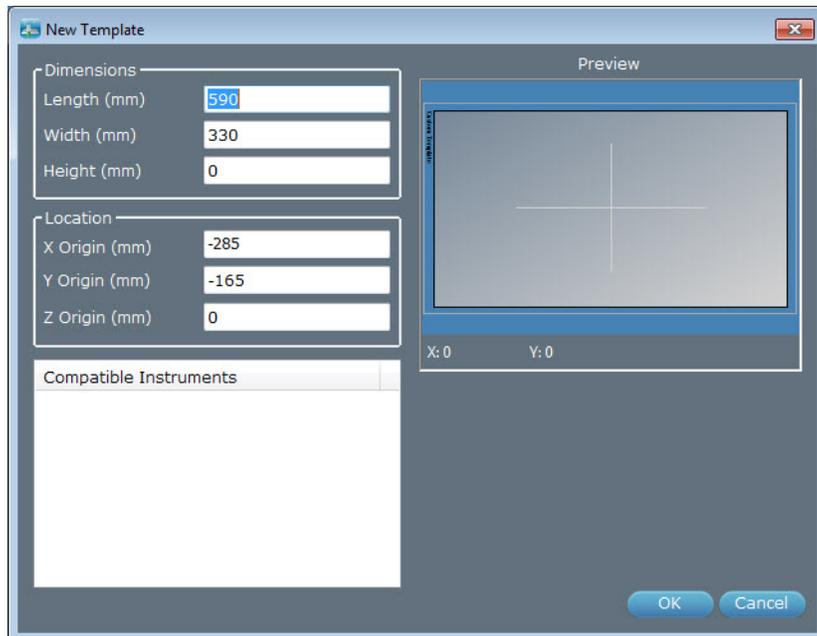
**Figure 35:** Labware Creator Main Screen

# Custom Templates

The Custom Editor in Labware Creator allows for using pre-defined templates or creating a custom template with footprints. When creating a custom template, the software requires information about the physical dimensions of the template and the location of the origin (where 0,0,0 is).

## Create a Template

- 1 Click **New Template**. The New Template window appears.
- 2 Enter the template dimensions and location (Origin).
- 3 Click **OK**.
- 4 Add, or create and then add, rack footprints to the template. For more information, refer to [Add Existing Rack Footprints to Template](#) or [Create a Rack Footprint](#).
- 5 Click **Save As**. The Save As Template window appears.
- 6 Enter the template name, short description, and long description in the Save As Template window.
- 7 Click **OK**.



**Figure 36:** New Template Screen

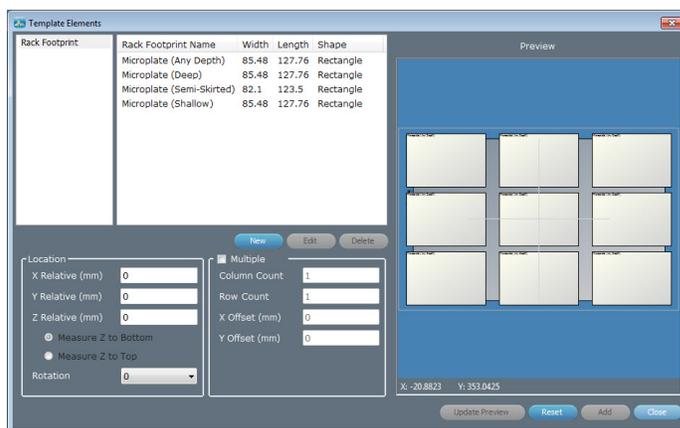
# Add Existing Rack Footprints to Template

A rack footprint is an area that accepts racks. Use Gilson-supplied rack footprints or create custom rack footprints.

## Add a Single Rack Footprint

To add a single rack footprint to a template:

- 1 Click on the template. It highlights in red.
- 2 Do either of the following:
  - Click **Add Elements**.
  - Right-click and then select **Add Elements...**
 The Template Elements dialog appears.
- 3 Select a Rack Footprint.
- 4 Enter the X, Y, and Z Relative positions.  
The position is calculated with respect to the origin.  
When  $X = 0$  and  $Y = 0$ , the center of the footprint is positioned over the origin.  
When  $Z = 0$ , the bottom of the footprint is placed at the same level as the top of the template.
- 5 Optionally, select a value from the Rotation drop-down. The default is  $0^\circ$ . (Rotation values:  $90^\circ$ ,  $180^\circ$ , and  $270^\circ$ )
- 6 Click **Update Preview**. Make modifications, if necessary. Click **Reset** to clear the footprint from the preview, if necessary.
- 7 Click **Add**.
- 8 Click **Close** to return to the template.



**Figure 37:** Template Elements Screen

## Add Multiple Rack Footprints

To add an array of identical rack footprints to a template:

- 1 Click on the template. It highlights in red.
- 2 Do either of the following:
  - Click **Add Elements**.
  - Right-click, and then select **Add Elements...**
 The Template Elements dialog appears.
- 3 Select the Rack Footprint to add as an array.
- 4 Select the **Multiple** check box to enable the necessary fields.
- 5 Enter the X, Y, and Z Relative positions for the center of the element in column 1, row 1.  
The position is calculated with respect to the origin.  
When  $X = 0$  and  $Y = 0$ , the footprint in column 1, row 1 is centered over the center of the origin.
- 6 Specify the number of columns and the number of rows.
- 7 Specify the distance between footprints within a column (X Offset) and the distance between wells within a row (Y Offset).
- 8 Select a value from the Rotation drop-down. The default is  $0^\circ$ . (Rotation values:  $90^\circ$ ,  $180^\circ$ , and  $270^\circ$ )
- 9 Click **Update Preview**. Make modifications, if necessary. Click **Reset** to clear the footprints from the preview, if necessary.
- 10 Click **Add**.
- 11 Click **Close** to return to the template.

## Create a Rack Footprint

- 1 Click on the rack or template. It highlights in red.
- 2 Do either of the following:
  - Click **Add Elements**.
  - Right-click, and then select **Add Elements....**
- 3 Click **Rack Footprint**, and then click **New**.
- 4 Enter a Footprint Name for the rack footprint.
- 5 Select the Shape: Rectangle or Circle.
  - a) For a rectangle, enter the Length and Width.
  - b) For a circle, enter the Diameter.
- 6 Click **OK**.

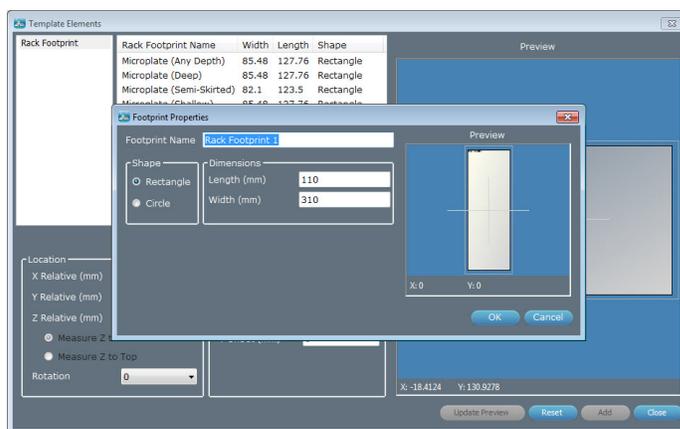


Figure 38: Footprint Properties Screen

To add the new rack footprint to a template, refer to [Add Existing Rack Footprints to Template](#).

## Delete a Template

Gilson-supplied templates cannot be deleted.

To delete user-created templates:

- 1 Click **Delete Template** to delete a template. The Delete Template window appears.
- 2 Select the template to be deleted and then click **Delete**. All versions of the template are deleted.  
To delete a specific version, select **Show Versions**, select the version to delete, and then click **Delete**.

## Modify a Template

To make changes to the properties of a template:

- 1 Select the template.
- 2 Right-click, and then select **Properties**.
- 3 Make desired changes to the properties, and then click **OK**.
- 4 Save the template.

## Delete Rack Footprint from Template

To delete a rack element from a rack or a rack footprint from a template, select the element or rack footprint, and then do either of the following:

- Right-click and then select **Delete**.
- Press the **DELETE** key.

# Export Templates

- 1 Click **Export**.
- 2 Select the Template List option button.
- 3 Select a template.
- 4 Click the browse icon. The Browse For Folder window is displayed.
- 5 On the Browse For Folder window, select a folder to which the rack or template will be exported, and then click **OK**.
- 6 Click **OK**. On completion of the export operation, the template is saved in the specified folder with a .LHT (Template) extension.
- 7 When the export success/fail dialog appears:
  - Click **Details** to view the log information of the export operation.
  - Click **OK**.

# Import Racks and Templates

- 1 Click **Import**. The Import window appears.
- 2 From the Import window:
  - a) Browse for and select the Rack or Template Exported Files.
  - b) Click **Open**.
- 3 When the import success/fail dialog appears:
  - Click **Details** to view the log information of the import operation.
  - Click **OK**.

# Close Labware Creator

Click  in the upper right corner to close the software.