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**Level:** Beginner

**Download:** None

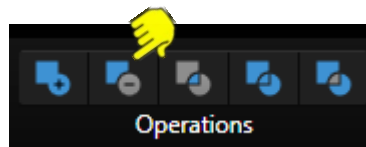
**Version:** 1.5

In this tutorial, you will learn how to subtract parts of an image from another image using the Subtract operation. You will also be introduced to the Transform panel which is useful when a specific size is needed.

## THE SUBTRACT OPERATION

### LET'S GET STARTED

Affinity Designer has some excellent **Operations** tools that allow you to add objects together, subtract parts from objects, divide objects and more. The **Operations** tools are located on the **Context** toolbar. They are active when you have objects where you can use these tools. We will take a look at the **Subtract Operation** in this basic tutorial.



### NEW DOCUMENT

Select **File\New** on the top menu and create a new document in a size of your choice. 600 by 600px works well. You may work on either a white or transparent background.

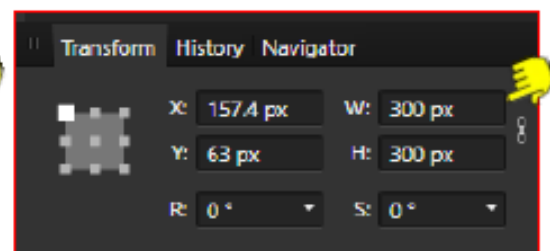
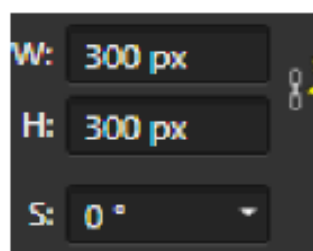
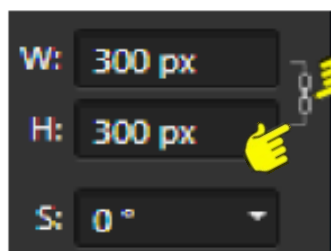
### THE TRANSFORM PANEL

Before we start, let's take a quick look at the **Transform** panel located on the lower right side of the screen. If you do not see the panel, select **View\Studio** on the top menu, then select the **Transform** panel from the fly-out menu.

Notice the tiny icon on the far right side of the panel. This is a link that allows you to control the width and height of an object individually or together. Click the link to toggle between locked and unlocked.

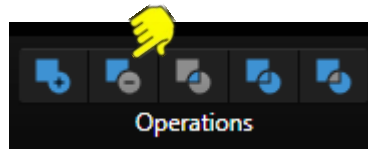
When the **Width** and **Height** are linked as indicated by the link in the first image (shorted extended lines), if you change one value, the other will change proportionately. In the second image, notice the extended lines on the link are gone. This indicates that the values are not linked and each value can be changed independently.

This is a great tool to use when you need to make an object a specific size. Instead of trying to drag it to the correct size, click the link/unlink icon to unlink the values and type in the desired width and height.

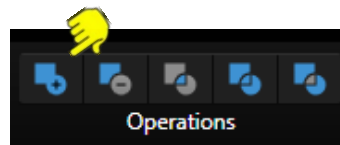


## THE SUBTRACT OPERATION

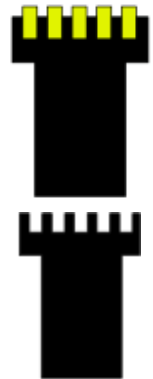
The **Subtract** operation allows you to subtract one object from another. The object on the top layer will always be subtracted from the object on the layer below it. Let's see this in action.



1. Use the **Rectangle** tool to draw out a box 100w x 150H - any color.
2. Draw a second rectangle 150w x 50h. Arrange them as shown. If you know how to use the **Alignment** tools, center the two objects.
3. Use the **Move** tool to drag a box around both objects. On the **Context** toolbar, select the **ADD** operation to combine the objects into one.



4. Draw a small vertical rectangle in a different color and duplicate it 4 times. Arrange those rectangles like the yellow rectangles shown here. Again, if you are familiar with the **Alignment** tools, align the small squares at the top and space them evenly across, otherwise, just do your best to get them even.
5. Select all of the smaller rectangles and use the **Add** operation to combine them into a single image and place above the first image as shown.
6. Next, use the **Move** tool to drag a box around both objects and select the Subtract option. Remember, the objects on the top layer will be removed from the one on the layer below it. You should have a nice little start on a castle tower.

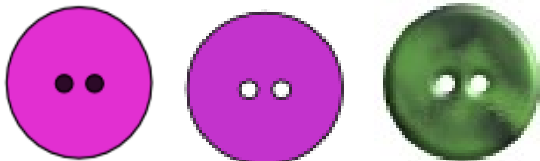


## BONUS PROJECT

Now that you understand how the **Subtract** operation works, let's have some fun with it. See what you can do using shapes to cut out areas to make it into something else. **Note:** The colors do not need to be different colors to subtract one from the other. We used different colors here so you had a better visual of what was happening.

### Button

Draw an ellipse, then add two smaller ellipses inside the larger one. Select the two smaller ellipses and **ADD** them together. Select the larger ellipse and the small ones and **Subtract**. You now have a button that you can play with and color to suit yourself.



### Frame

Draw out the Cloud shape from the tools and give it 12 points. Draw an ellipse using a different color and center it over the cloud shape. Select both objects and **Subtract**. This will remove the center leaving a nice frame. Apply some effects to suit yourself.



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