3DXpert™ for SOLIDWORKS®

Adjust model for 3D Printing

Positioning - Consider Other Parts

14,0200,1599,1024(SP2)

3D SYSTEMS

In this exercise, we will learn about parts positioning, and in particular, about the option **Consider Other Parts.**

As we Position and Orientate parts on tray, we need to understand how each part is positioned in relation to other parts on tray.

In some cases we might want that a part will not share its foot print on the tray with the other parts. This means that we want to **Consider Other Parts**.

In some other cases, it might be that sharing space on tray is even desired. In this case we might want to ignore the other parts while placing a part, but, when doing so, we need to know that the part is not colliding into any other part.

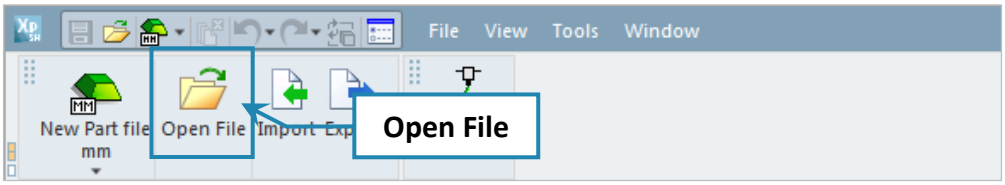
In the **Position Body** command it is possible to control the way we add parts on to the tray.

To use this command we need to follow few steps (guided):

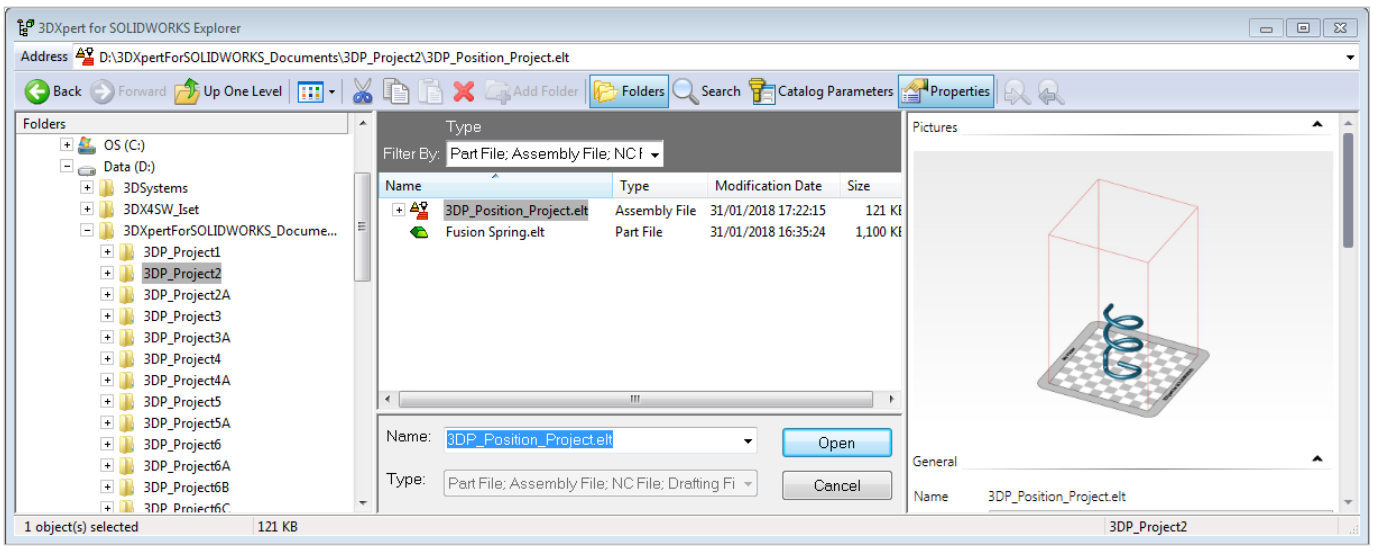
- Open downloaded **3D Printing Project** from the Initial screen.
- **Note that the** first **3DP Component already on tray**.
- **Add** Second **3DP Component** and use **Position Body** command.

! Notice/ Remember		Left mouse button name is ***"pick"***
		Middle mouse button name is ***"Exit"***
		Right mouse button name is ***"Click"***

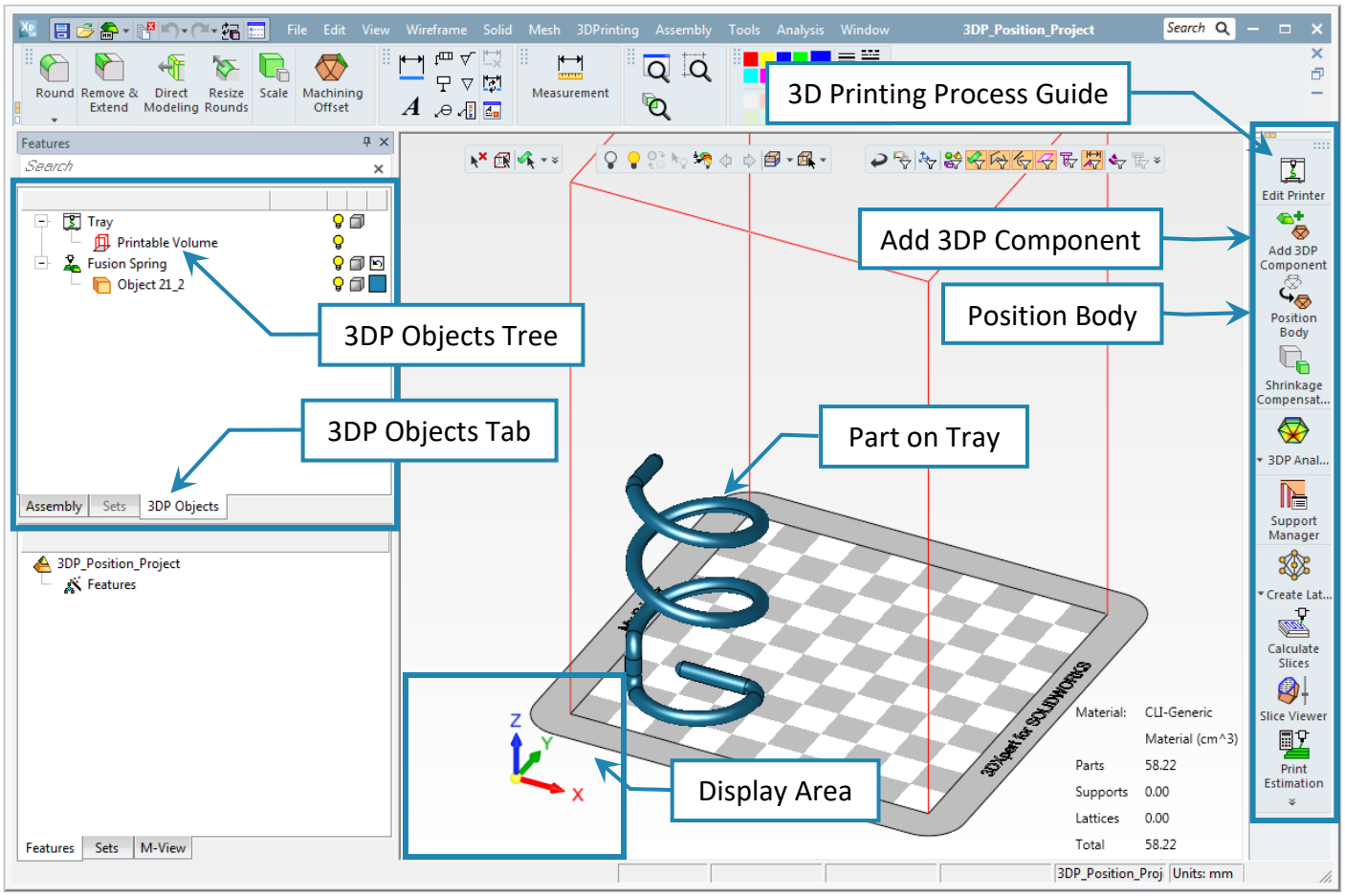
1. From the Initial screen ***pick*** **Open File**.



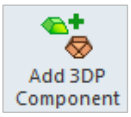
2. This command will open the **3DXpert for SOLIDWORKS Explorer**.
   Load project file **3DP_Position_Project.elt** from the same folder where the downloaded files exist.



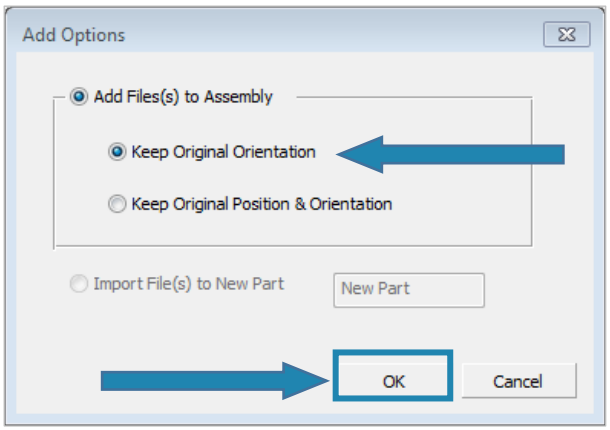
After the file is open, the screen will look like this:



3. From the **3DP Objects Tree** hide the Printable Volume (***pick*** the yellow bulb alongside to hide it). This hides the red wireframe which represents the printing volume. Although we hid the framework, placing parts on the tray still fills the boundaries.

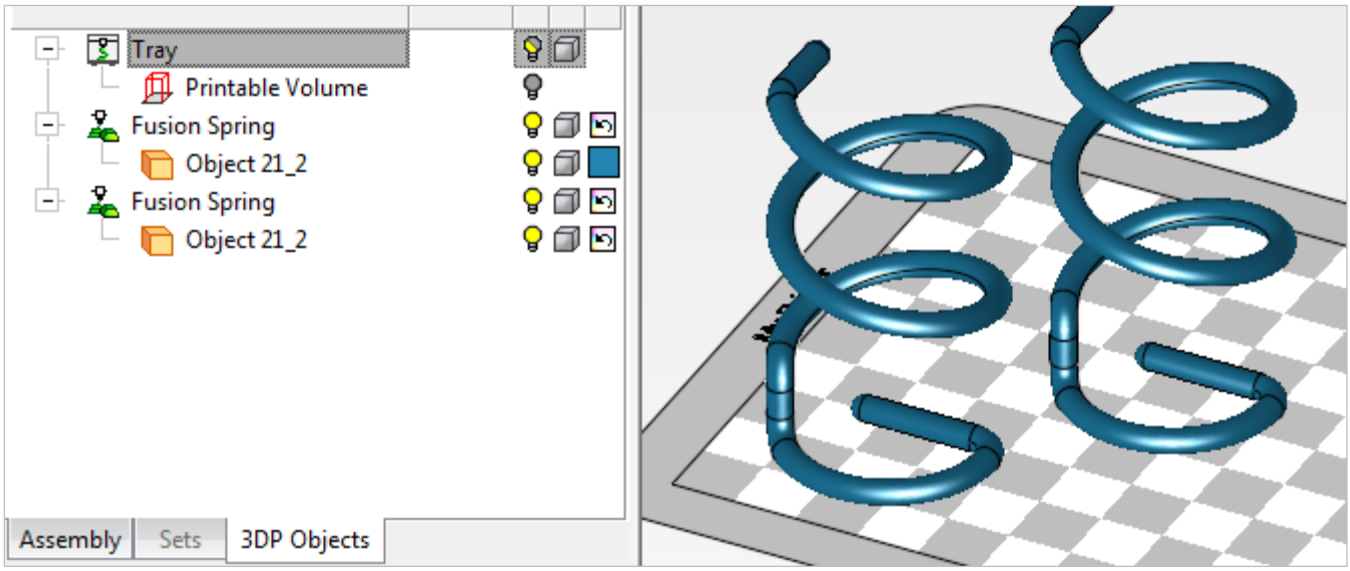
4. From the 3D Printing Process Guide access **Add 3DP Component** 

command.
This command will open the **3DXpert for SOLIDWORKS Explorer**.
Load the project file **Fusion Spring.elt** from the same folder where the downloaded files exist.
Note that the loaded part is the same as the one loaded already on the tray.



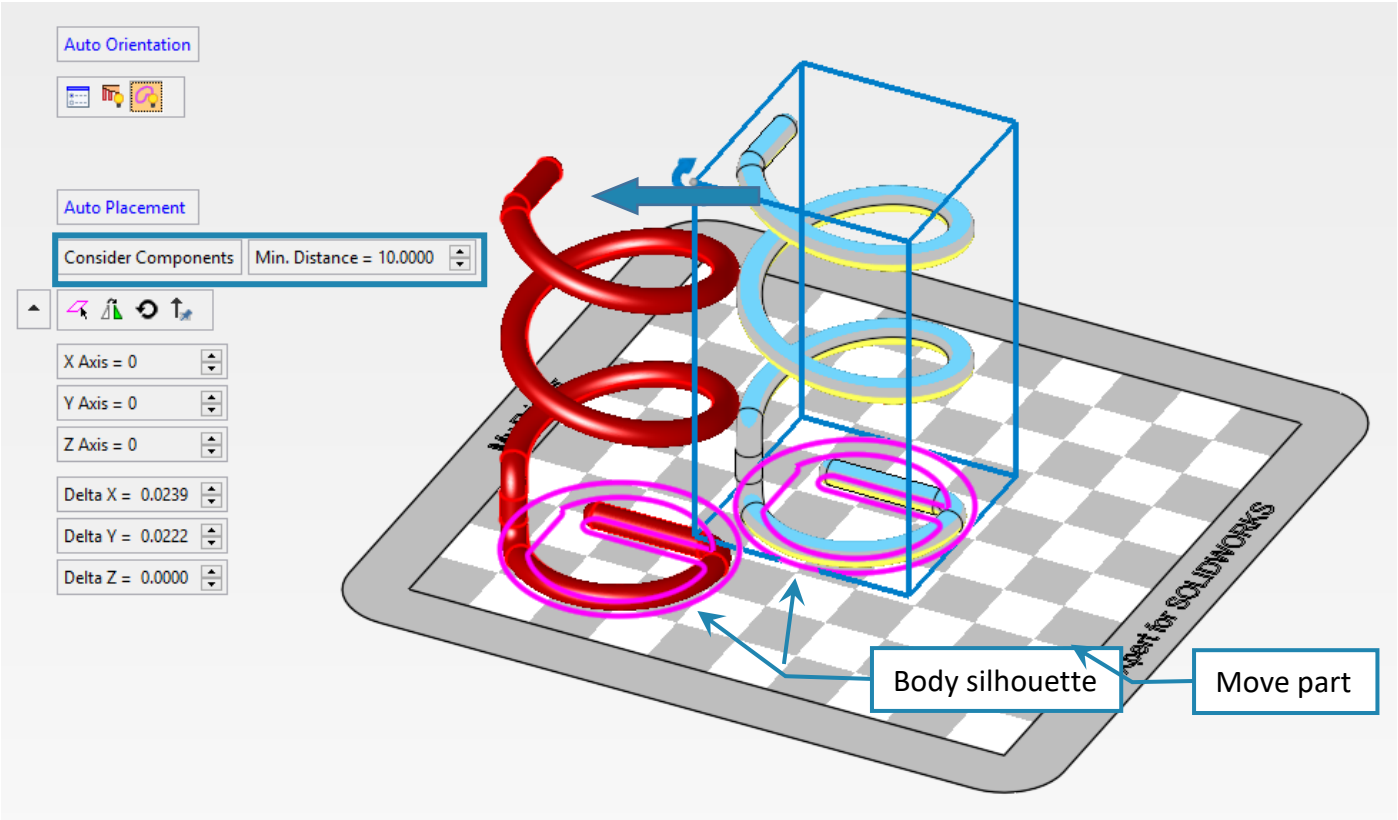
Use **Keep Original Orientation** and then **OK**.

After the file is open, the screen will look like this:



5. From the 3D Printing Process Guide access **Position Body** 

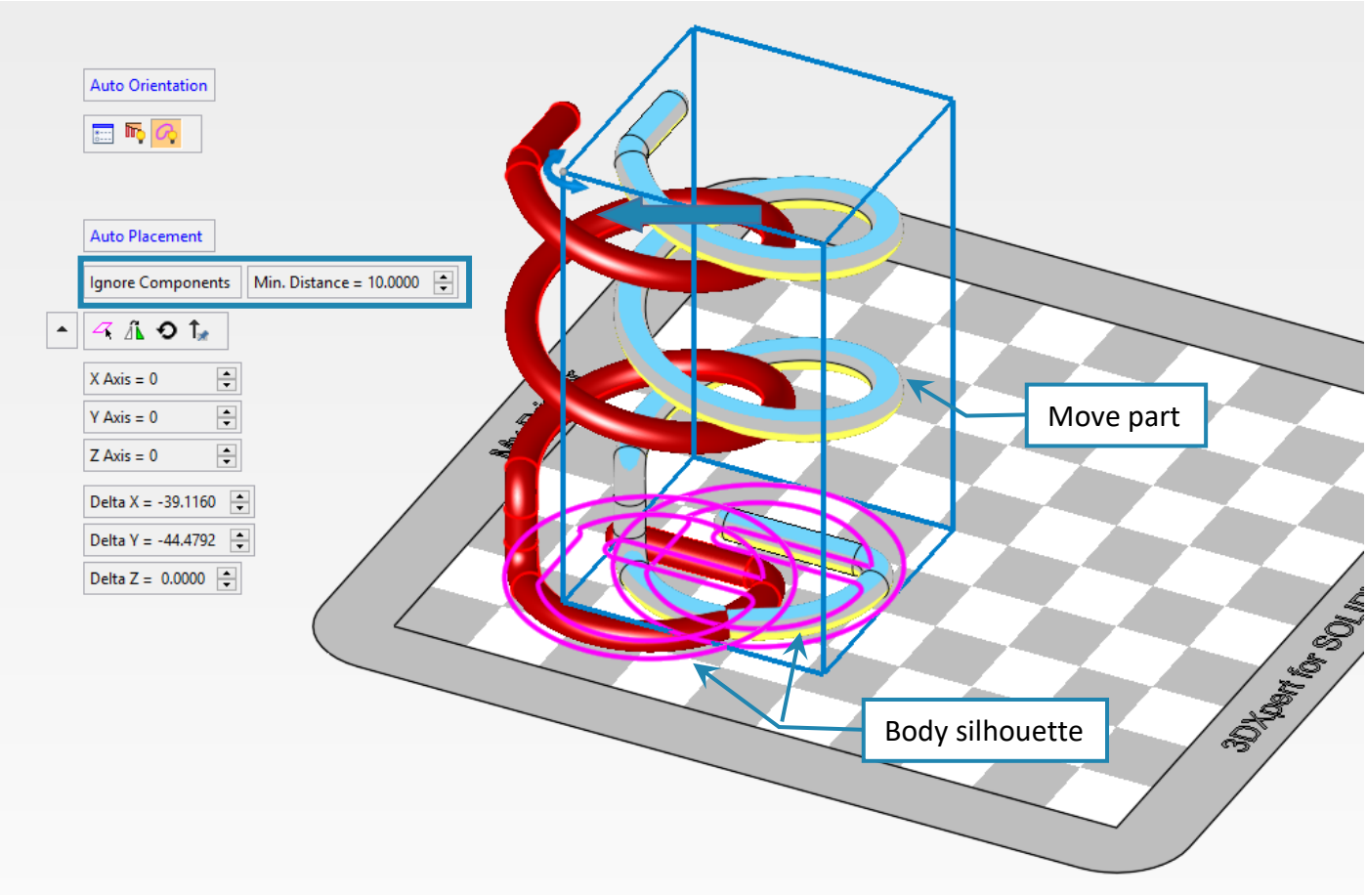
command.
Pick the second part just added, after ***pick***ing the part the screen parameters pop up.
Notice the body silhouette (in pink) displayed on the tray.
Set the parameters **Consider Components** and **Minimum Distance=10.00**.
Place the cursor over the part and drag it toward the other part (arrow direction).



While **Consider Components** is on, the nearest distance between the two body silhouettes is **Minimum Distance, 10.00** mm in this case. It is not possible to position the part closer than that.

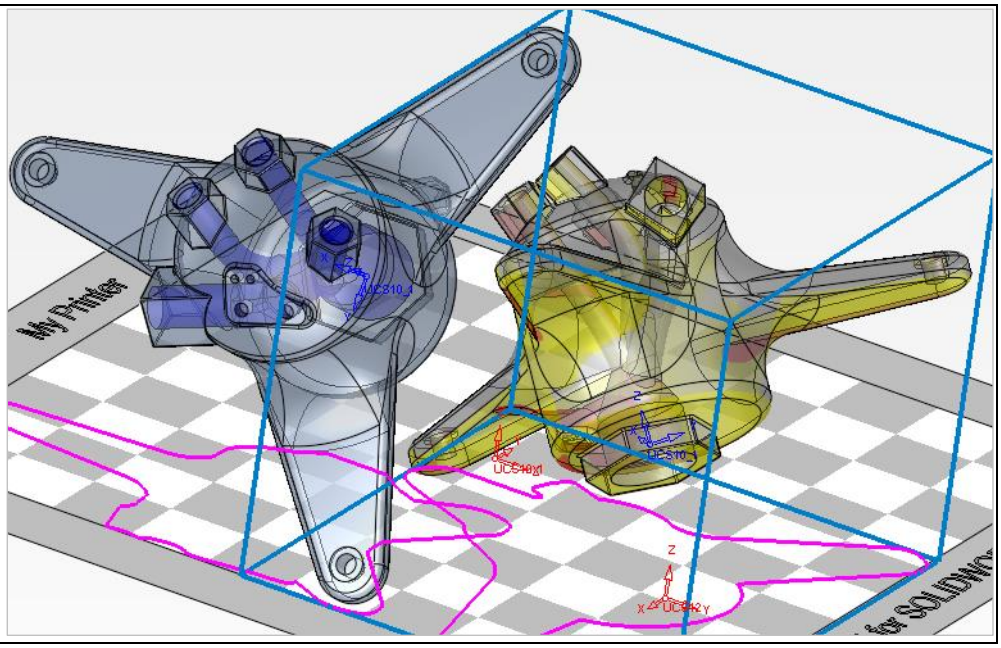
6. Change **Consider Components** to **Ignore Components** and keep **Minimum Distance=10.00**.

Place the cursor over the body and drag it toward the other body (arrow direction).



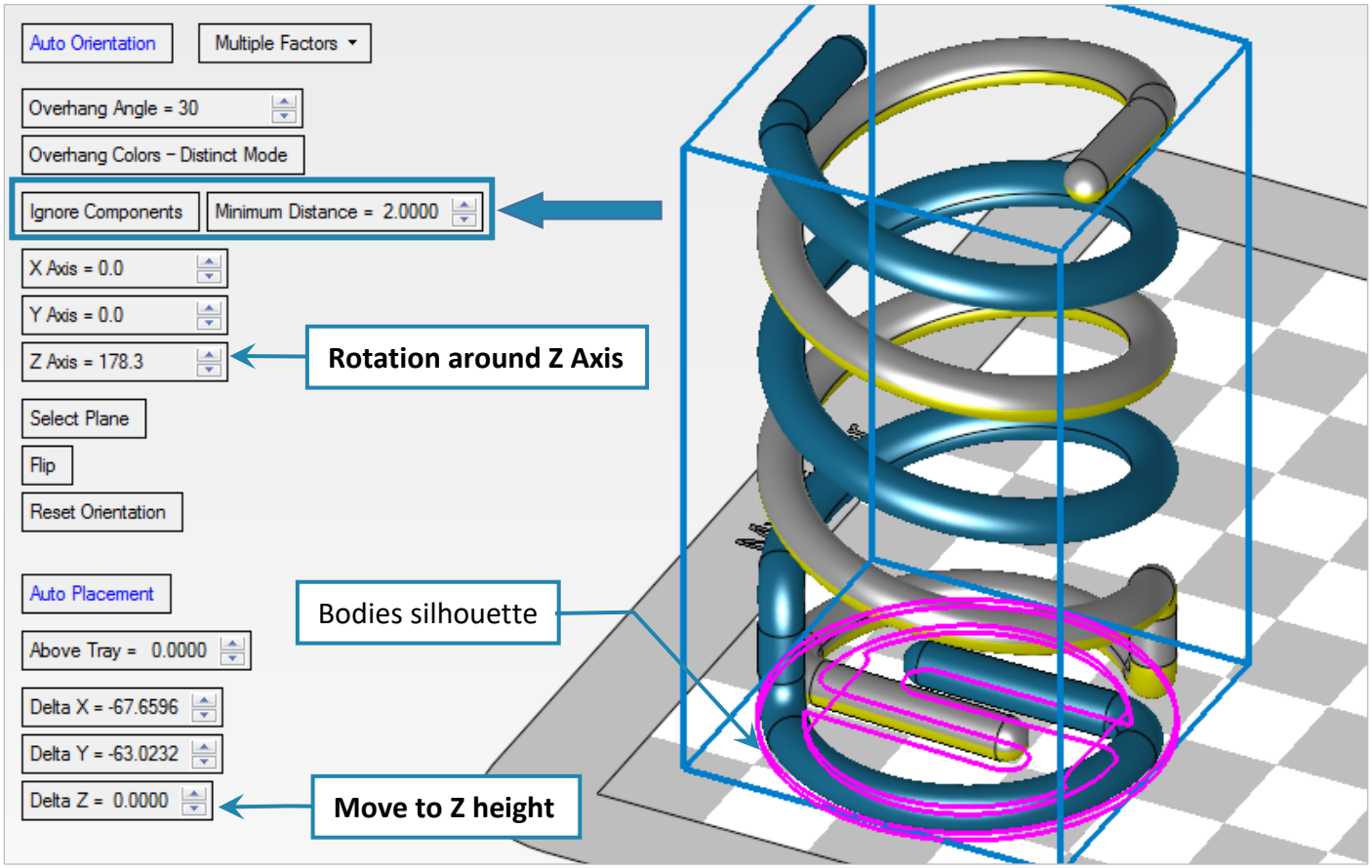
While **Ignore Components** is on, the two bodies can be placed within any distance (if any) between them. However, the **Minimum Distance, 10.00** mm in this case, checks for the real distance between the two bodies (not the body silhouette).
If the distance between the two bodies is less than the **Minimum Distance,** the static body(s) turn red.

The use of placing parts while sharing space allows to insert additional parts and thus saves time and money.
In some cases, sharing space can reduce and improve the supporting of many parts on tray.



7. Keep **Ignore Components** and **set Minimum Distance=2.00**.
   Rotate the body approximately 180° around any of the vertical edges of the part bounding box or insert the rotation value to **Z Axis=180 (°)**.

Place the cursor over the body and drag it toward the other body direction until they share approximately the same "foot print" of two bodies silhouettes.
Notice that while moving the part, it might go under the tray, in this case use set **Delta Z=0.00**



End of Exercise.