Objet Studio Quick Start

Insert Model to the Tray

Models that are saved in a CAD program as .STL files may be inserted into the Objet Studio tray.

To insert a model to the tray use the **Insert Model** button

Or by *right-mouse-click* menu by right mouse clicking anywhere on the tray.

Place and Orient a Model on the Tray

Select **Automatic Placement**

Or use the manual placement tools

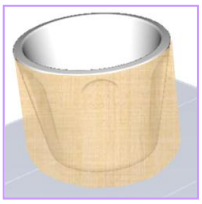
Relative Transform Tab

Plane Alignment Tool

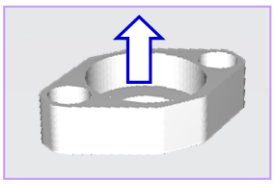
Free Translate and Rotate

Manually place and orient a model according to your personal printing preferences using the following guidelines:

To print a model with a glossy finish, place it so that glossy sides are not surrounded by support material.



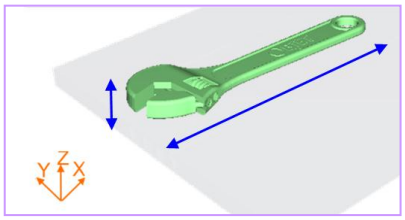
To use minimum support material when printing, Place a model with holes and hollows facing up

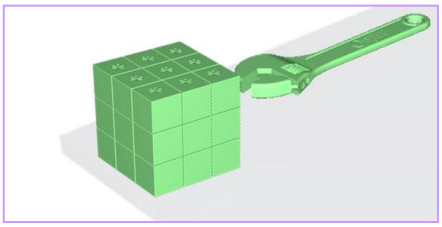


Place model sides with fine details facing up and select glossy printing to create smooth finish for the fine details

To minimize printing time:

- Place the longest dimension of a model along the X-axis,
- Place the smallest dimension of a model along the Z-axis,
- Place the tallest model on the left of the tray.





After manual placement, use the **Tray Validation tool** to ensure that a tray is printable

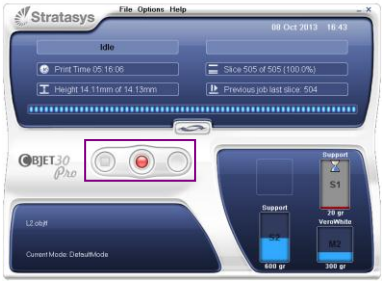
Use the **Estimate Tool** to estimate the amount resources required to print a tray.

Save the tray and send to print

When you're ready to print the tray, press the **Build Tray** button to save the tray as an *Objet Tray File* (.objtf) and send the tray to the Job Manager Server for slicing and printing.

If you do not have network connectivity to the printer export your tray to an *Objet Zip File* (.objzf) to transfer the tray file to an alternative computer or to the Printer Server.

Be sure to set the printer to On-Line after sending the job to print.



Objet Studio Exercises

Exercise 1 – Inserting Models

Task 1.1 - Place a model on the build tray

- Right-click on the build tray, and select **Insert**. The Insert dialog box appears.
- In ***Look in***, display the appropriate folder. You may open Objet Studio/Samples/STL Files directory
- In ***File of type***, select the file types to display.
- Select the desired file, and make sure that it appears in the ***File name*** field.
- Select **Units** of measure—millimeters or inches

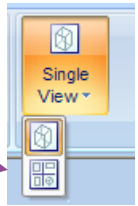
The 3-D file contains the model's proportions, but not the units of measure. Therefore, make sure to correctly select either millimeters or inches when inserting a model. Otherwise, the size of the model on the build tray will be either much too large or much too small.

- Select 2 as **Number of copies** to place on the build tray
- Select the **Preview** checkbox (for STL files only)
- Select the **Arrange models** checkbox, to automatically position the model(s) on the build tray for efficient model building
- Click **Open**. The dialog box closes and Objet Studio places the model(s) on the build tray.
- Place another model on the build tray by repeating this procedure.

Exercise 2 – Display Options

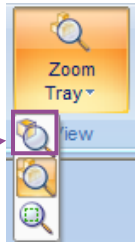
Task 2.1 – Change the default screen layout

- From the **Tray Settings ribbon**, select **View**
- Change the screen layout to **4 Views**.

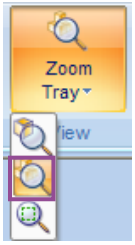


Task 2.2 – Change the Zoom level

- Zoom Object-
  - Select an object on the tray.
  - From the **Tray Settings ribbon,** select the **Zoom** option button
  - From the opened menu select **Zoom in**



- Zoom Tray
  - Click on the tray
  - From the **Tray Settings ribbon,** select the **Zoom** option button
  - From the opened menu select **Zoom out**



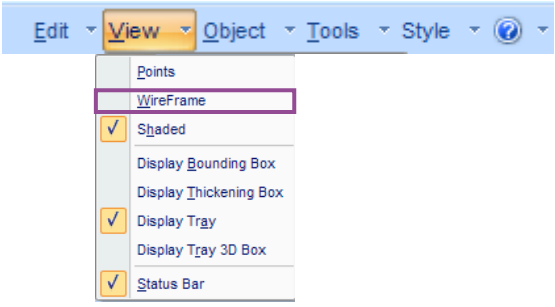
Task 2.3 - Change the perspective of the active viewing pane

- From the **Tray Settings ribbon**, select **Isometric**
- Click any of the viewing icons:

Task 2.4 - Display the build tray in *wire frame* view

- Select **View → WireFrame**
- Select **View → Shaded**,

  to revert to the *shaded* view



Task 2.5 - Display models as boxes, showing their maximum dimensions

- Select View → Display Bounding Box.

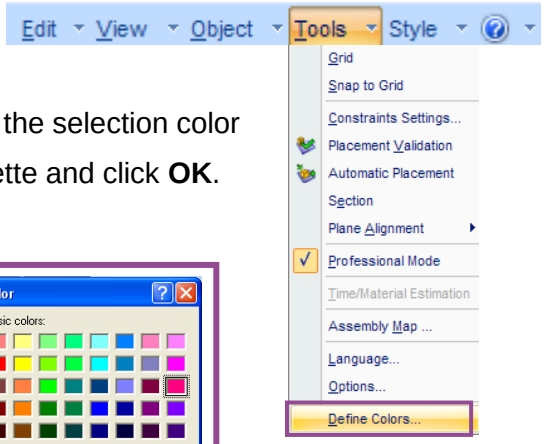
Task 2.6 - Display the area around models needed for support material

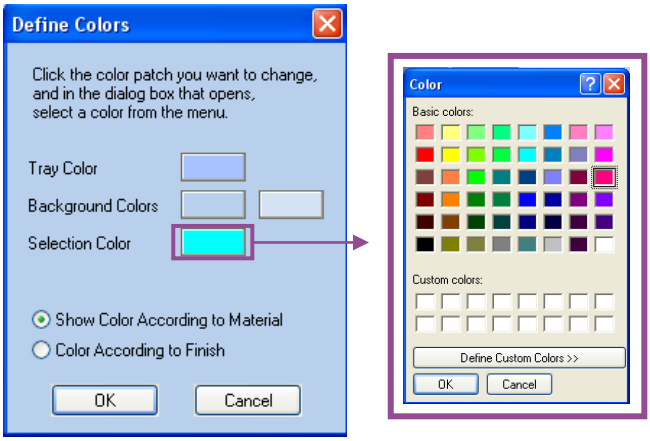
- Select View → Display Thickening Box.

Task 2.7 - Change the display color of a model

- Select the model. It's color changes to blue, indicating that the model has been selected.
- From the Standart Toolbar,

  select **Tools→ Define Colors**
- From the popup window click on the selection color
- Select a color from the color palette and click **OK**.





Exercise 3 - Positioning Models on the Build Tray

Task 3.1 – Arrange models

- Insert a model and select the **Orient Automatically** checkbox
- Insert another model and uncheck the **Orient Automatically** checkbox

What are the results of selecting the **Orient Automatically** checkbox when inserting a model?

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Task 3.2 – Automatic Placement

- Place several models on the build tray. Make sure the **Orient Automatically** checkbox is checked.
- After placing several models on the build tray, select **Tools → Automatic Placement**.

What are the results?

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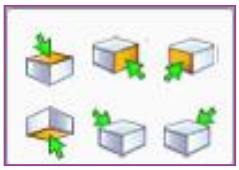
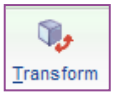
Task 3.3 - Change the Model's Orientation

- Select the model
- From the **Model setting ribbon** click on **Plane** icon.

- Select an object's plane make sure to select a flat surface.
- Click the appropriate align icon to re-align the model, relative to the selected plane on the model: 

Task 3.5 – Change the model dimensions from the Properties dialog box

- To make precise changes to the model on the build tray, select the model
- From the **Model setting ribbon** click on **Transform** icon 

- The properties displayed in the Transform panel of the Entities Properties are *absolute values*, representing the actual position of the model on the build tray.
    - Change the dimensions of the model in the dialog box.

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Task 3.6 - Freeze the model's orientation

- If you change the model orientation manually, you may with to lock his orientation. To do so:
- Select a model on the build tray.
- From the **Model setting ribbon** click on **Lock** icon

- Perform Automatic Placement.

What are the results of the Automatic Placement? Does the model orientation change?

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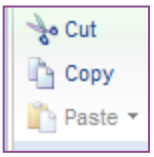
Exercise 4 – Copy & Paste

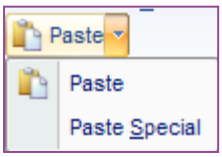
Task 4.1 – Copy and paste a model on the tray

- Select a model by clicking it on the tray. Notice that the model's image on the build tray changes color (to light blue) and its name is highlighted in the model tree pane.
- From the **Model setting ribbon** click on **Copy**
- Click **Paste**

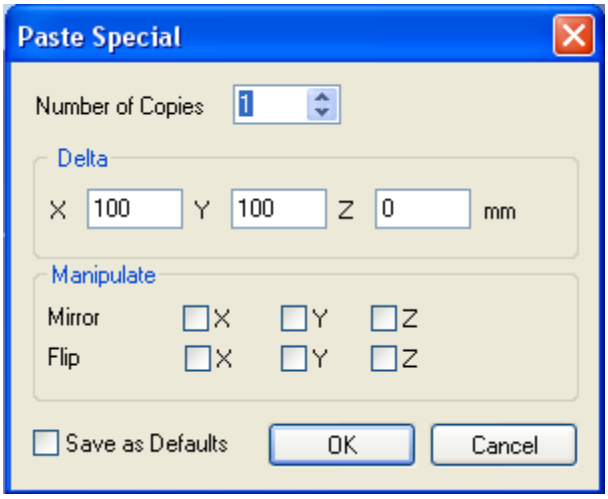


Task 4.2 – Use the Paste Special option

- Select a model by clicking it, either on the tray or in the tray model tree pane. Notice that the model's image on the build tray changes color (to light blue) and its name is highlighted in the model tree pane.
- From the **Model setting ribbon** click on **Copy**
- Click on the small arrow to open the dropdown list and select **Paste Special**
- Specify the number of duplicates to place on the build tray at once.
- Set the distance, on each axis, between the duplicate models.
- Place mirror images of the original model.



- Repeat this procedure selecting different options of the Paste Special



What should you do in order to change the position of one model located on the tray?

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Exercise 5 – Surface Finish

Models can be produced with a matte or glossy finish. To produce a matte finish, the model is completely surrounded by support material.

Task 5.1 - Choose the finish type for a model

- Select the model.
- From the **Model setting ribbon** click on **Matte** or **Glossy** icon

OR —

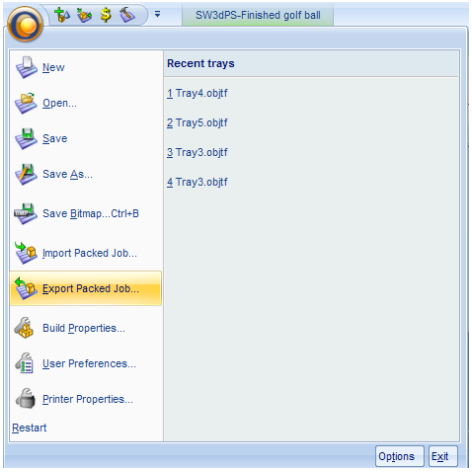
- Select the model and from the flyout toolbar select **Matte** or **Glossy finish**

Exercise 6 – Support Strength

Task 6.1 - Change the support strength of the material used when printing a model

- Select a model on the build tray.
- From the **Model setting ribbon,** click **Advanced**.
- In the *Grid Style* section, choose the support strength suitable for the selected model

Exercise 7 - Exporting and Importing Objet Build Trays



Task 7.1 - Create an *objzf* file

- From the Command menu, select **Export Packed Job…**
- Select the appropriate folder and change the file name (if necessary).
- Click **Save**.

Task 7.2 - Open an *objzf* file

- From the Command menu, select **Import Packed Job…**
- In the Open dialog box, display the appropriate folder and select the file.
- In the Browse for Folder dialog box, display the folder in which you want Objet Studio to unpack the compressed file, and click **OK**. The *objtf* file and associated *stl* files are expanded and placed in the selected folder, and the tray is displayed in Objet Studio.

What is the difference between saving the build tray as OBJTF and exporting the build tray into OBJZF?

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Exercise 8 - Handling Completed Trays

Task 8.1 – Check that the tray is "valid"

- Move the model to be outside the tray
- Click the Tray Validation button.

What are the results?

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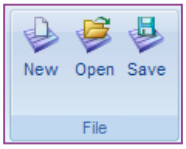
- Try to fix the problem and click the Tray Validation icon again

Task 8.2 – Change the Tray Validation color settings

- From the Standard toolbar, select **Tools** > **Constraints Settings**.
- Click the current color displayed in the Constraints Settings dialog box.
- From the color palette that opens, select a color and click **OK**.

Task 8.3 - Save the Tray File

- From the Tray Setting ribbon click **Save**



What the file format used for saving the tray?

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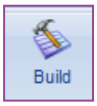
Task 8.4 - Save the Screen Display as an Image File

- From the Command menu, select **Save Bitmap…**
- At the top of the dialog box, select the appropriate folder.
- At the bottom of the dialog box, enter a file name.
- Open the *Save as type* pull-down menu, and select the file format.
- Click **Save**.

Task 8.5 - Print the Tray File

- From the **Tray setting ribbon** click **Build**



Describe the next occurrences on your screen

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Job Manager Exercises

Prior to performing the following exercises, send at list 3 jobs to print. At this stage, do not connect your client/server workstation to the printer.

Exercise 1 - Job Manipulation

Task 1.1 - Inspect and edit the build tray:

- Select a job that is not in building process.
- Click the Job View icon to display the selected tray and view the tray from different angles.
- Click the Edit Job icon or select Edit from the menu. Objet Studio opens, in which you can edit the tray.

On what condition you can edit the tray after sending a tray to the 3-D printer?

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Task 1.2 – Restart a job (server only)

- Select a job from the queue
- Click the Restart icon

What are the results of restarting a job from the printing queue?

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Task 1.3 – Stop and resume a job (server only)

- Select a job from the queue

- Click the Stop icon
- While the job is selected, click the Resume icon

What are the results of resuming a job that was stopped?

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What is the difference between restarting a job and resuming a job?

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How can you see the last layer that was printed?

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Task 1.4 (server only) – Remove a job from the print queue

- Select a job from the queue
- Click the Delete icon or select Delete from the Job menu.

Task 1.5 (server only) – Remove a job from the history

- Select a job from the history
- Click the Delete icon or select Delete from the Job menu.

What is the difference when deleting a job from the printing queue and history?

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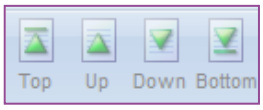
Task 1.6 (server only) - Change the order of jobs in the queue

- Select a job from the queue
- Click the Step Up and Step Down icons



Rearranging the order of jobs in the queue is useful to group jobs for printing with the same type of model material.

Task 1.7 (server only) - Move a job from History to the print Queue

- Select the job in History.
- Click the Restart icon. The job moves from History to the end of the job queue.
- Drag a job from History to Job's Queue