PartDesigner Help & Instructions

Tip: To see the index of the document, please enable View > Show document outline.

Introduction

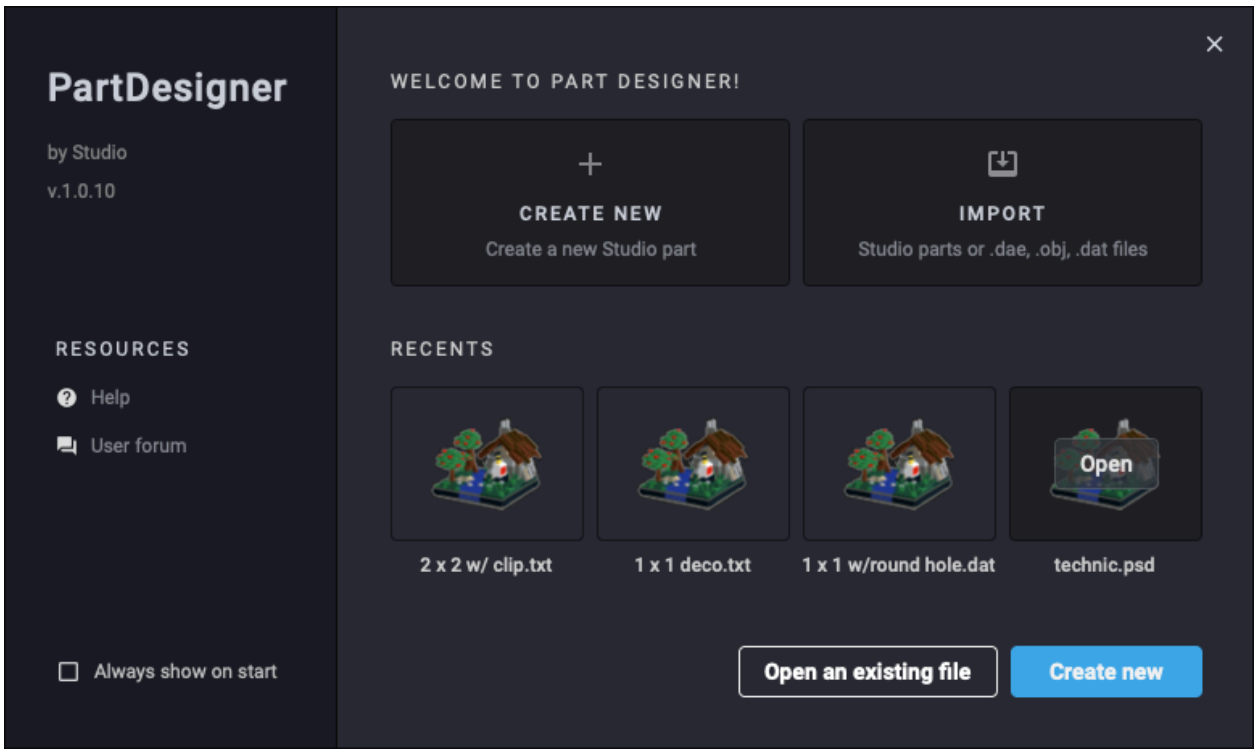
Welcome to PartDesigner! PartDesigner is a desktop application that allows you to create parts and connectivity info to use in Studio. You can also edit shapes of existing parts and connectivities. With PartDesigner, we hope that it can boost your creativity to its maximum level.

Essential controls

PartDesigner mostly follows essential rules of Studio for consistency and compatibility. Please refer to Studio's help pages for its essential controls. (For keyboard shortcuts, please go to the last page of this document.)

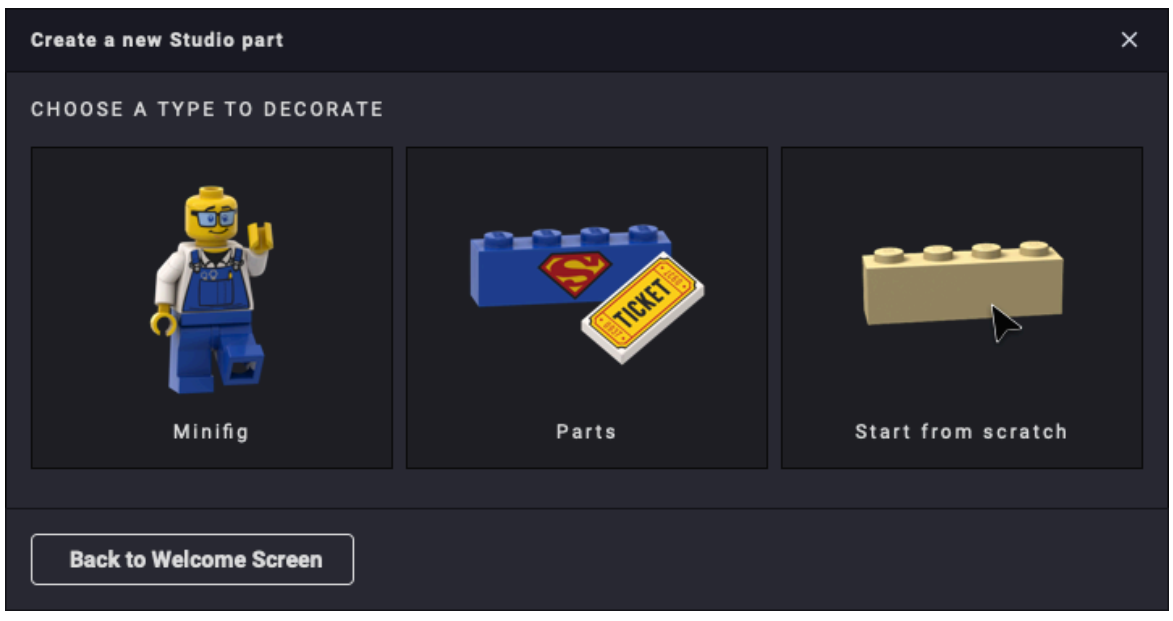
Starting a project

When launching PartDesigner, you will be greeted with a Welcome Screen. You can start to create a new part or choose to import 3D objects you created from other design tools. (supports .obj, .dat, .ldr file types). You can also import Studio parts to jumpstart editing existing parts.



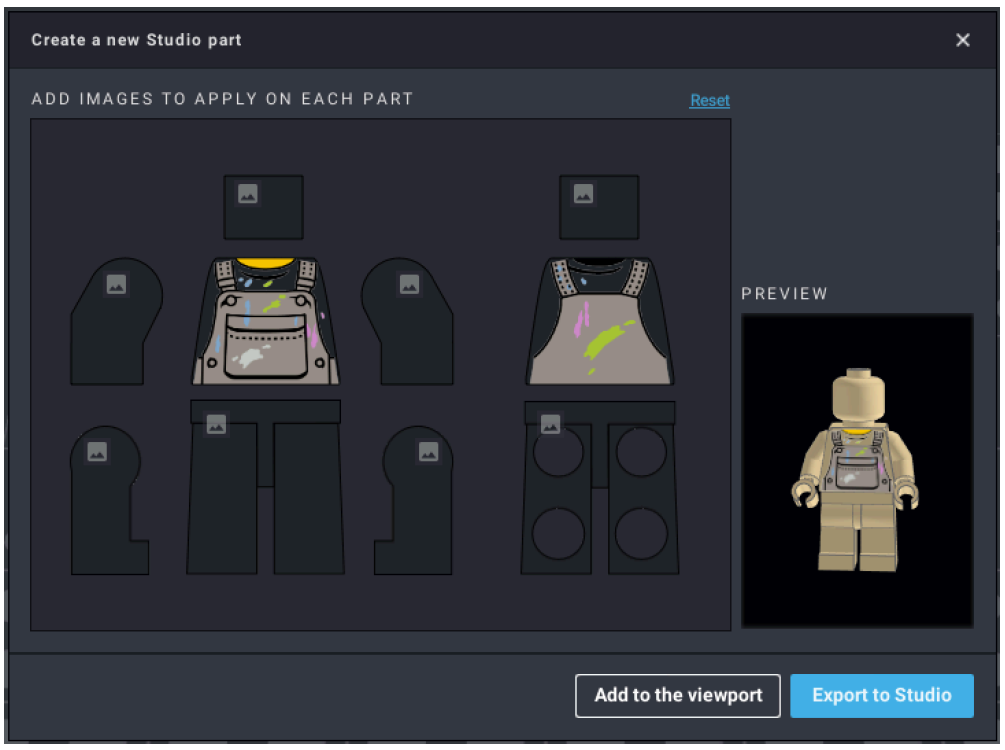
Create New > new parts wizard

Upon selecting "Create New", you'll get to see a wizard that will help you to easily create decorated minifigs and parts. If you don't wish to do any of those, select "Start from scratch" or close the dialog.



Creating a decorated minifig

On selecting “Minifig”, you can create a decorated minifig. Add images (.png file type only) that you wish to decorate, skip other parts. The preview on the right will give you an idea of what it will look like. Once done decorating, you can either add it to the viewport or directly export each part to Studio.



Tips. Minifig decal design guide

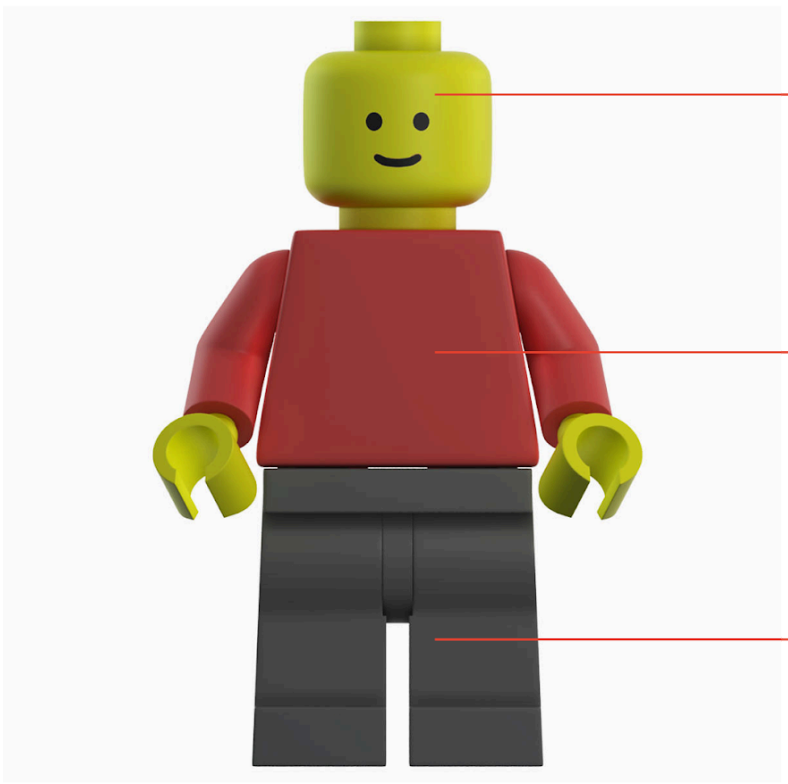
Depending on their facial expressions, minifig heads have different features. Note that the guide below is as a reference, not the definite design guideline.

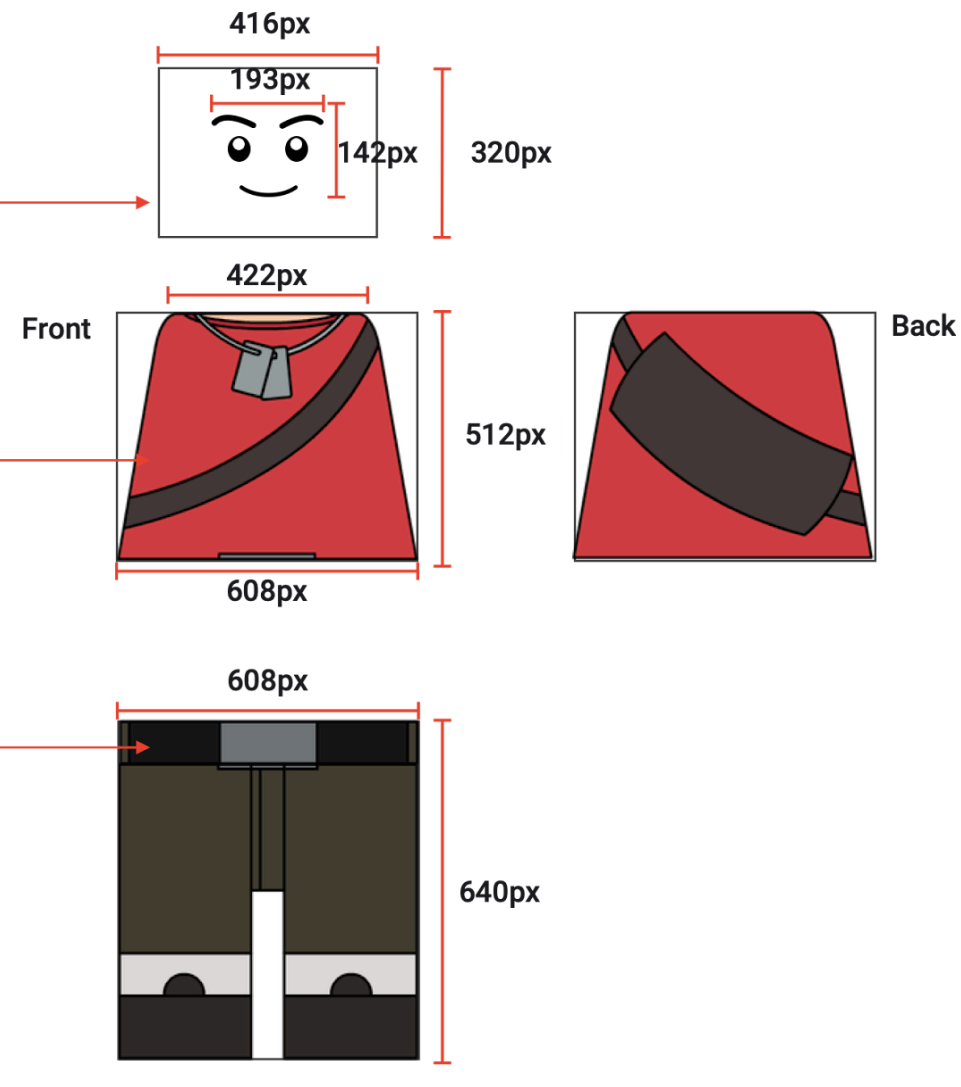
Specs.

1) **File type**: png.
2) **Sizes (WxH), Minifig head :** 416 x 320px, **face features**: 193 x 142px (note: it should NOT include the skin color)

Torso (front and back): 608 x 512px
Legs: 608 x 640px
http://forum.bricklink.com/viewtopic.php?f=3&t=2524&p=7266&hilit=template&sid=43acfd955b202072da778893c1111eb6#p7266

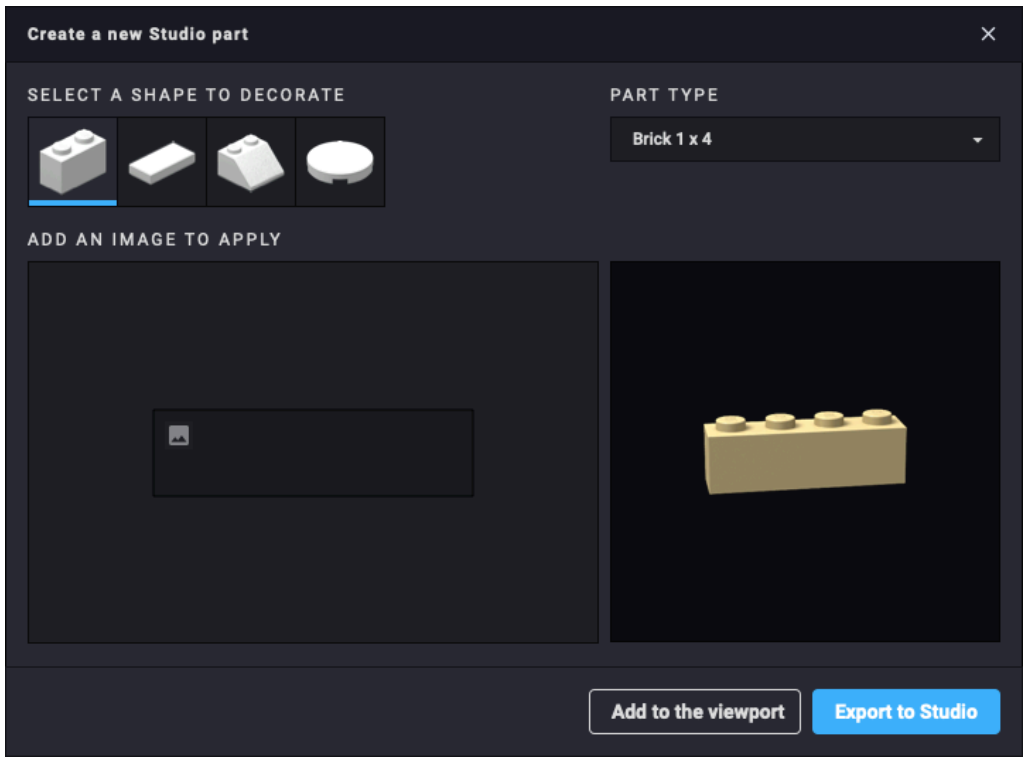
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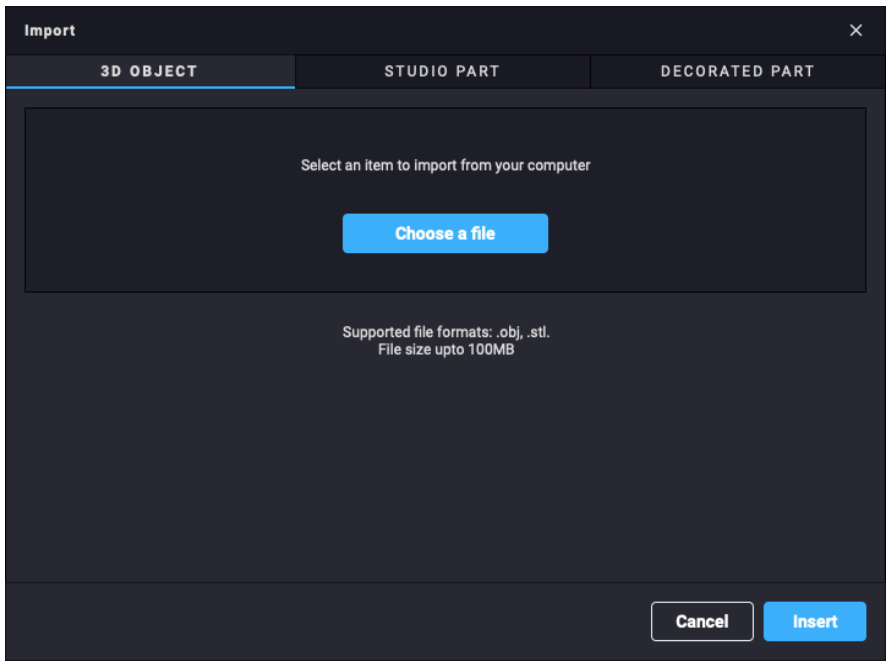
Creating a decorated part

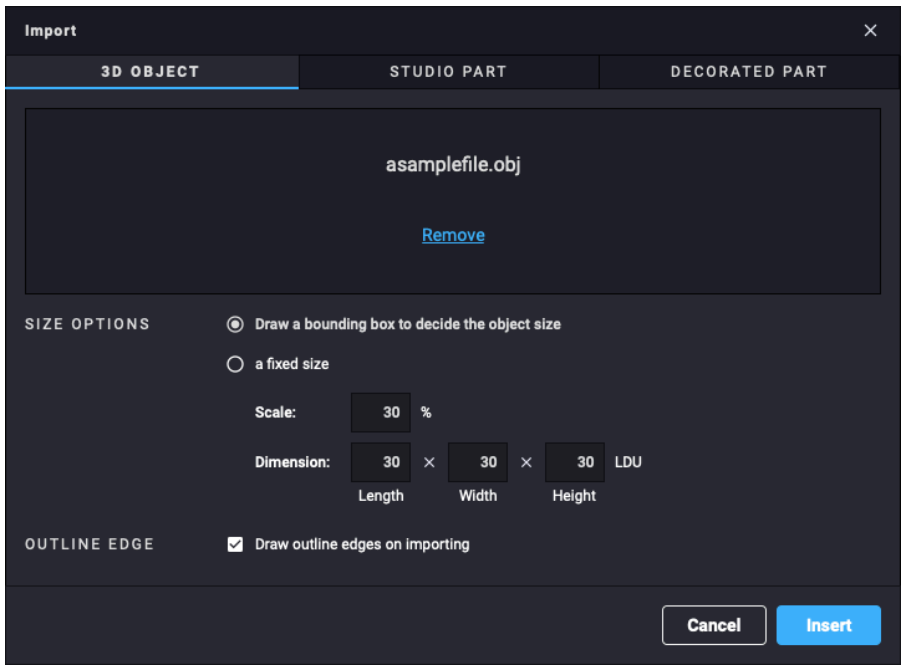
Similar to creating decorated minifig, you can easily apply image files (.png file type only) to a selected part. It currently supports 28 parts and will keep expanding its coverage.
Once done applying and adjusting an image, choose either to add to the viewport or export it to Studio.



Importing a 3d object

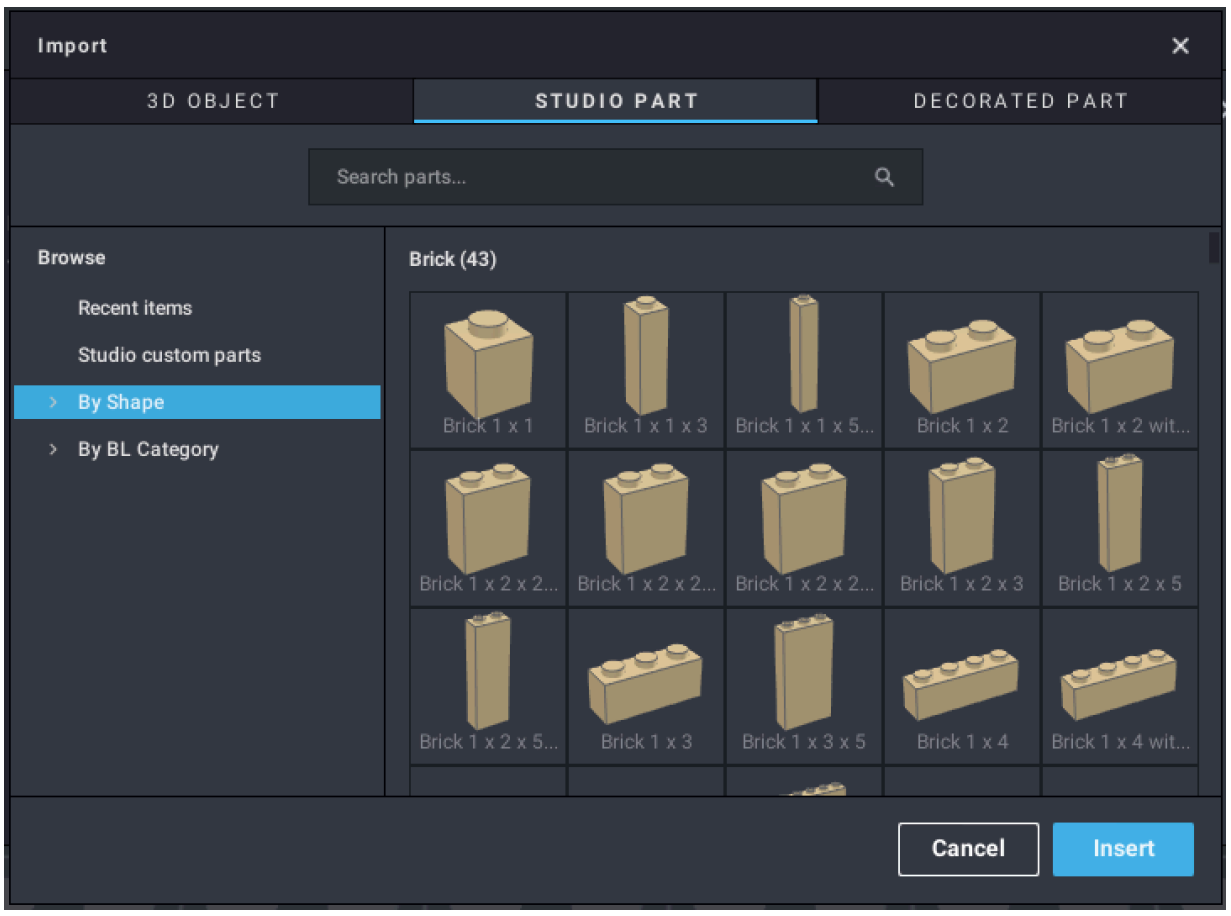
If you have a 3d object that you wish to add to Studio, tweak to optimize to use in Studio, Import is the right choice. Select a 3d file (.obj, .stl file types supported) and decide a size option. If you are unsure how big it will appear, select “Draw a bounding box to decide the object size” option. You can decide an imported object’s size as you draw a bounding box. You can also import it to the viewport as a fixed size.





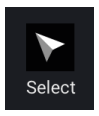
Importing Studio custom parts

When you want to jumpstart tweaking Studio parts, select the second tab “Studio Part”. It will give you a full list of Studio parts including your own custom parts. Note that because it’s imported, even if you tweak any Studio parts, it will not override official Studio parts.



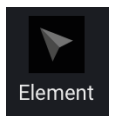
Tools

Selection tool

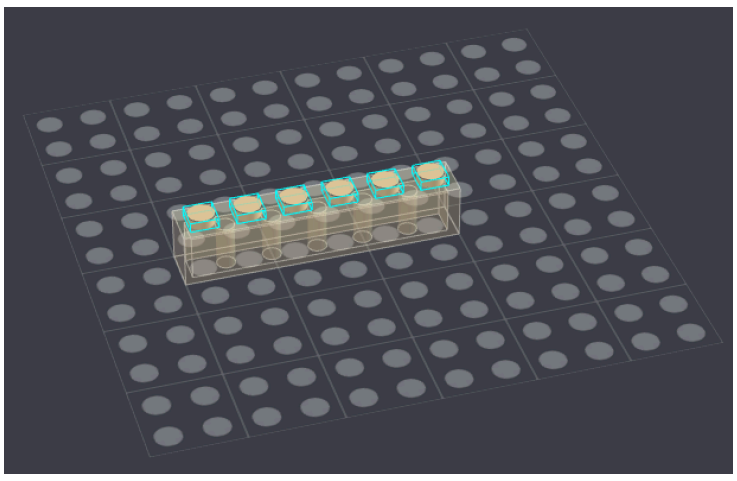


Like the select tool of Studio, it’s selected by default and to select, move parts. By double-clicking a certain component, you can select a child component of a selected part.

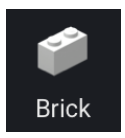
Element selection tool



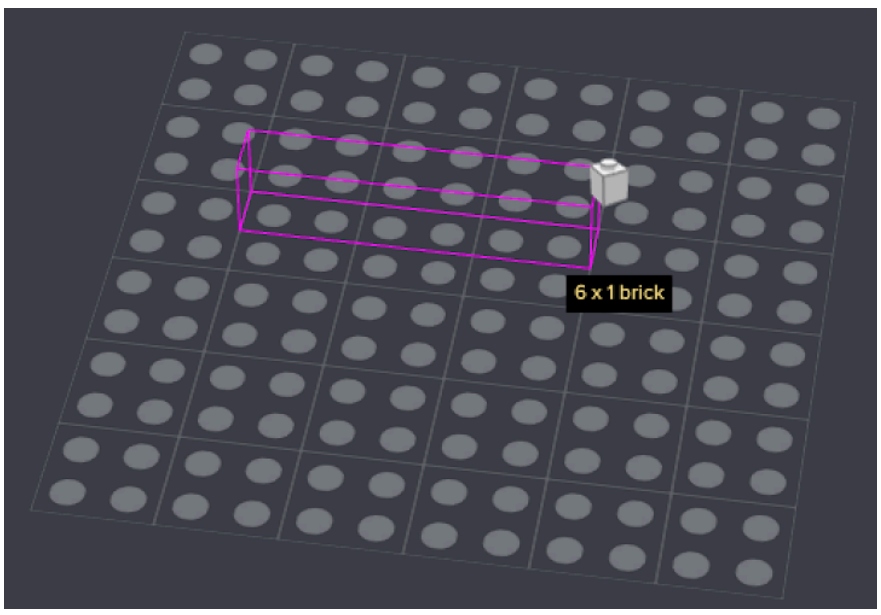
The element selection tool is to select a specific type of component. By default, the Stud selection tool is enabled. You can also choose the bottom tube and accessories.

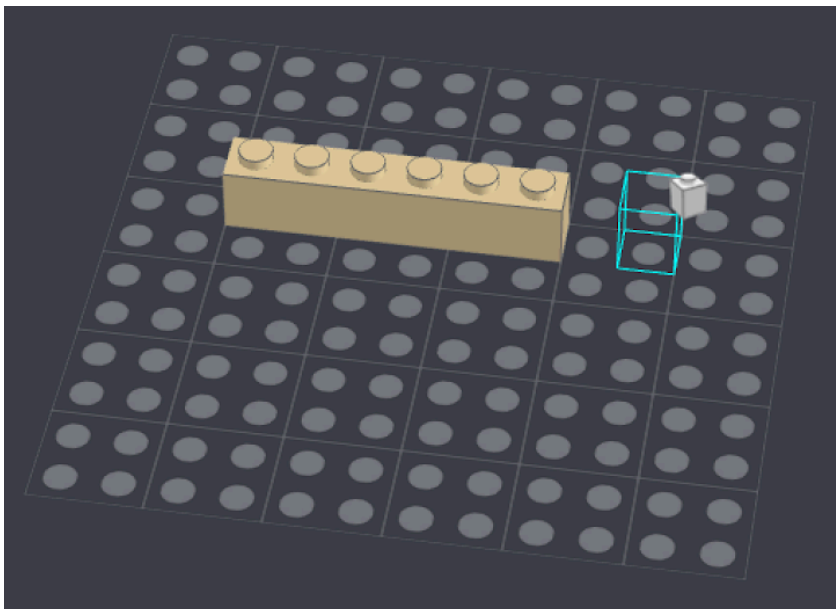


Drawing bricks, plates

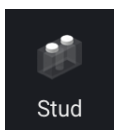


With the draw brick tool, you can create basic rectangular brick parts (brick, plate, and tile) as you draw a bounding box. Click, drag and hold off of the click at a dimension that you wish to create. You can repeat to create as many parts as you want.

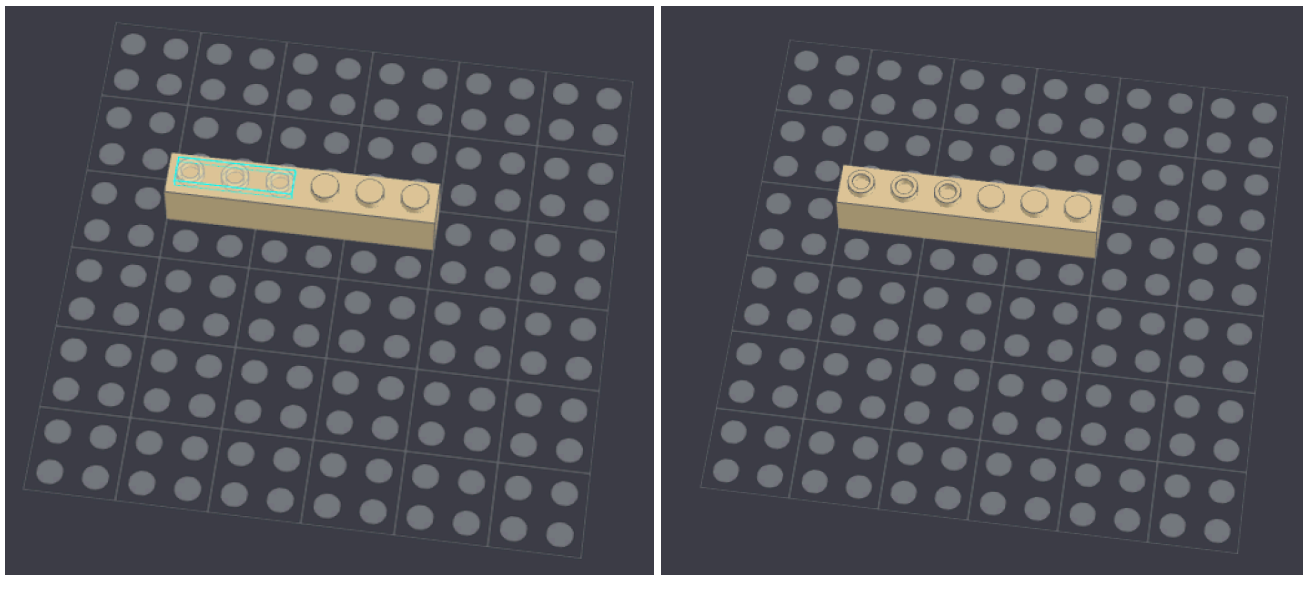




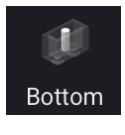
Drawing and replacing studs



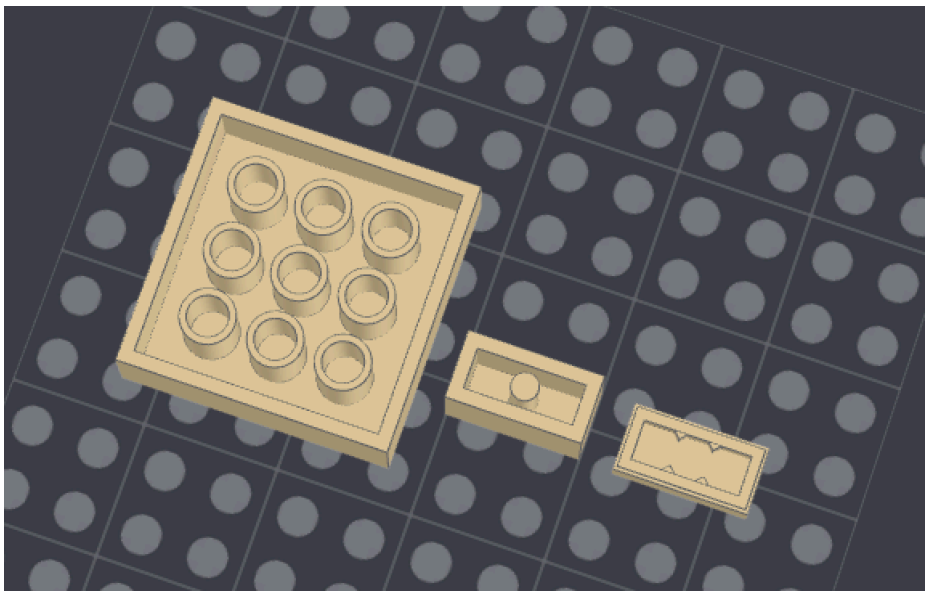
Draw stud tool is convenient when you want to add studs onto imported 3d object or replace solid studs to hollow studs. Locate a stud you wish to attach and click to place it. You can also add multiple studs by dragging them in a direction. Note that all studs you draw with the tool include connectivity info to be able to snap in Studio.



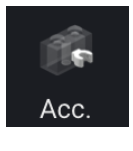
Drawing bottom tubes



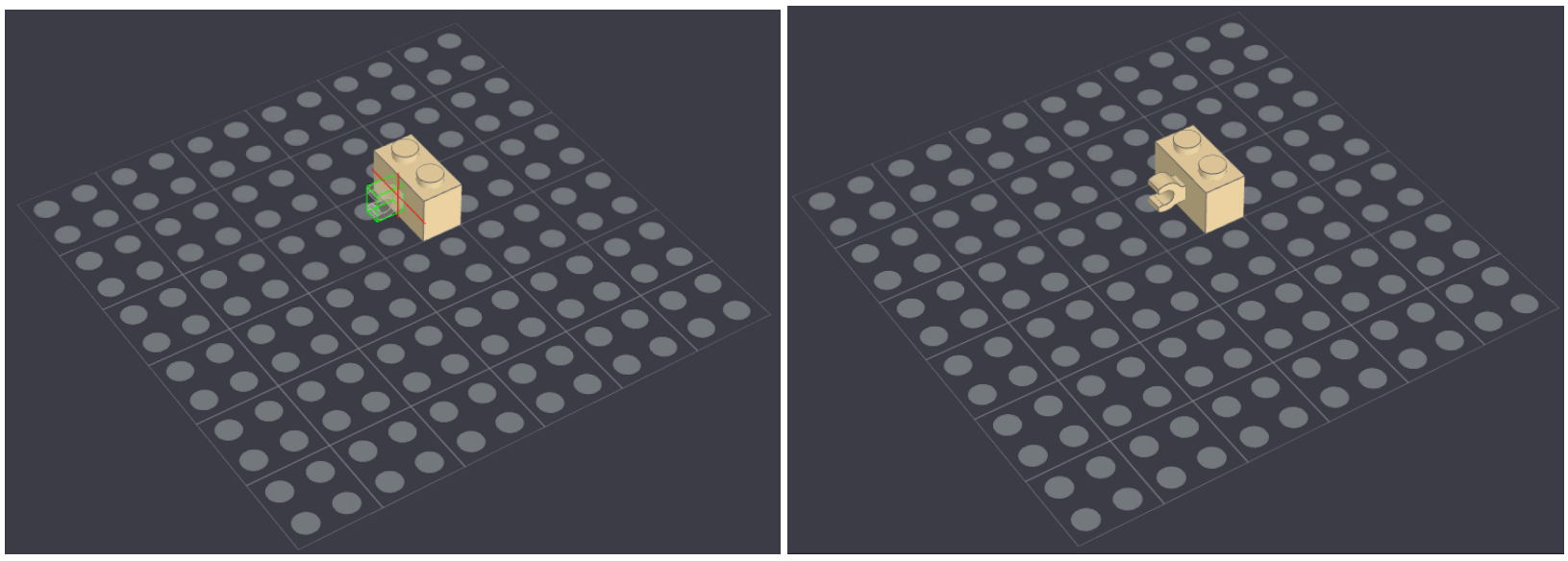
With the draw bottom tool, you can add a bottom tube. It supports 3 different types of bottom tubes; tube (for 2x2 module parts), post (for 1x2 module parts), tooth.



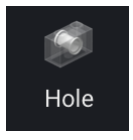
Adding accessories



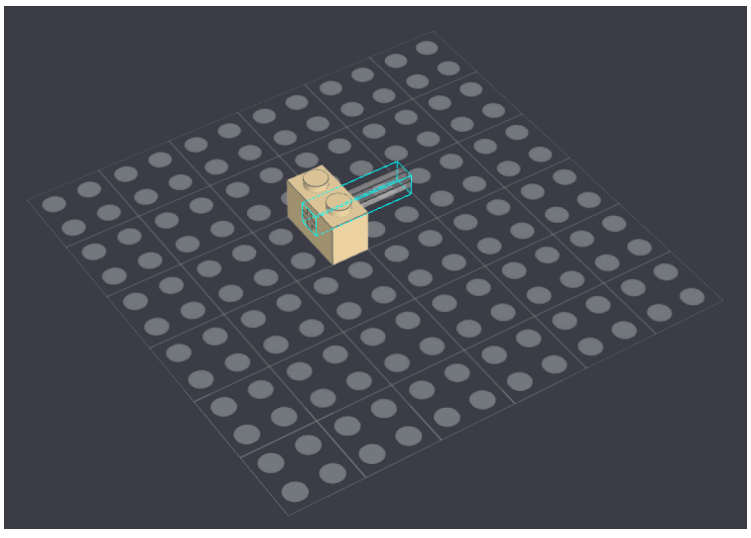
Same as like other draw tools, you can attach a selected accessory to parts. It supports almost all types of accessories. Click “More” to find out available accessory types.



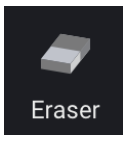
Cutting holes to parts



<Coming soon> Single click will cut a hole with wall thickness. If you wish to cut a hole throughout a part, drag it to a direction you want to and hold off at a point you want to stop.

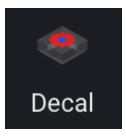


Eraser - removing unnecessary portions of parts.

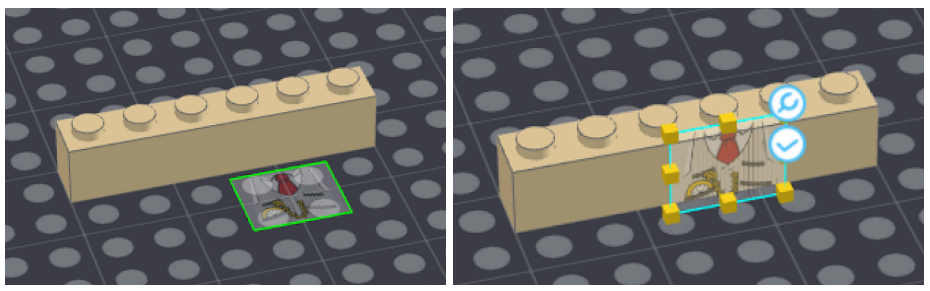


With the eraser tool, you can remove unnecessary portions of a part. You can remove shape, outline or applied decal image. Also, when removing a shape, you can change the size of the eraser.

Adding a decal to a part

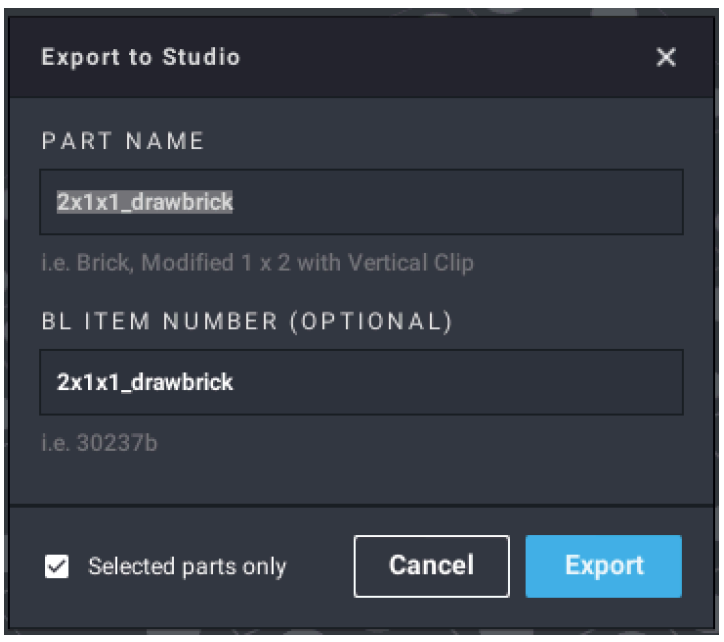


Decal tool is to apply an inserted image to any part in the viewport. Select an image file and insert it to the viewport. After adjusting its location where you want it to be, click the check button to complete applying the image.



Export to Studio

Once you are satisfied with the parts that you created, you can export them to Studio. Click the “Export to Studio” button right top. An export dialog will show up to fill out essential information. You can find exported parts in **Custom Parts** palette of Studio.



Submit parts to Studio parts admins

If you wish to add parts you created as official Studio parts, submit those to Studio parts admins. After a proper verification process, the Studio team will add submissions to new parts on each monthly update. Hit the paper plane button to send parts. Note that only official shaped parts can be added to Studio.

Keyboard shortcuts

Command	Shortcuts (Default)
Escape current tool / Select tool	Escape
Select all parts	CMD+A
Move left	LEFT ARROW
Move right	RIGHT ARROW
Move forward	UP ARROW
Move backward	DOWN ARROW
Rotate forward	W
Rotate backward	S
Rotate left	A
Rotate right	D
Rotate forward 45'	SHIFT + W
Rotate backward 45'	SHIFT + S
Rotate left 45'	SHIFT + A
Rotate right 45'	SHIFT + D
Translation manual mode	T
Rotation manual mode	R
Ignore grid	
Snap to secondary grid	
Place parts on a global axis when drawing	
Move parts along to the global grid	
Coarse grid	
Medium grid	
Fine grid	
New	CMD+N
Open	CMD+O
Save	CMD+S
Save as	SHIFT+CMD+S
Quit	CMD+Q
Import	
Export to Studio	
Undo	CMD+Z
Redo	SHIFT+CMD+Z
Cut	CMD+X
Copy	CMD+C
Delete	DELETE
Paste	CMD+V
Group	CMD+G
Ungroup	CMD+U
Generate outline	
Zoom in	CMD+PLUS
Zoom out	CMD+MINUS
Zoom to fit	CMD+ALPHA0
Enter fullscreen	SHIFT+CMD+F
Hide the bottom grid	CMD+B
Perspective projection	BACK QUOTE (`)
Front view	KEYPAD1
Back view	KEYPAD2
Left view	KEYPAD3
Right view	KEYPAD4
Top view	KEYPAD5
Bottom view	KEYPAD6
Isometric projection	KEYPAD7

Shape Edit mode	
Connectivity Edit mode	
Toggle between two modes	TAB
Select tool	V
Select studs only	
Select bottom tubes only	
Select accessories only	
Draw brick tool	M
Draw stud tool	O
Draw bottom tube tool	
Draw accessories tool	
Cut holes tool	H
Snap to grid	SHIFT+CMD+QUOTE(')
Open preferences window	

Adding and editing connectivity info

Stud connectivity

<Instruction coming soon>

Bottom connectivity

<Instruction coming soon>

Acc connectivity

<Instruction coming soon>

Hole connectivity

<Instruction coming soon>

Custom connectivity

<Instruction coming soon>

Toggling between absolute and relative position

<Instruction coming soon>

Advanced features

Generating outlines

<Instruction coming soon>

Merging parts

<Instruction coming soon>

Exporting connectivity info only

<Instruction coming soon>