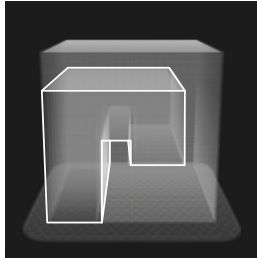


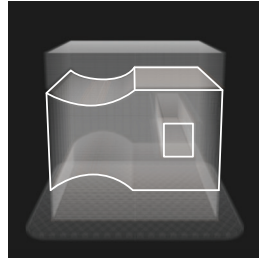
Alpha Support Structures Guide

Alpha Support Structures Workflow

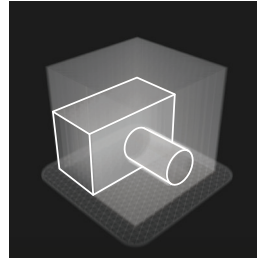
1. Upload your part into Eiger, select your intended printing orientation.
2. Save the part and go into Internal View.
3. Select Visibility and turn off all viewing options except Support Material.
4. What is the shape of the supports in your part? Look out for the following features:



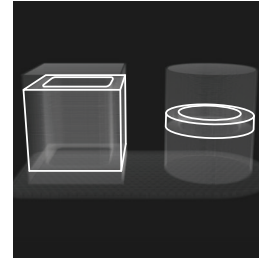
Hooks
A support with an extrusion constraining part features



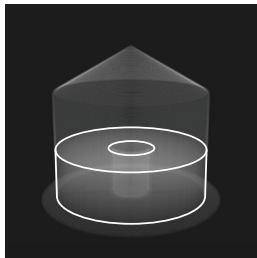
Bridges
Support passing over and under a feature



Outlet Holes
Holes with horizontal axes leading to other supported sections



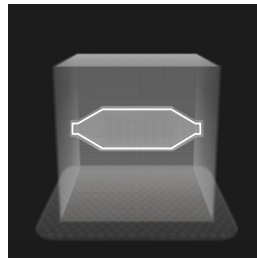
Rings
Tubes or rings of supports encircling post-like features



Ring Bases
Rings of supports attached to the raft surrounding a small column feature



Long Horizontal Holes
Long holes or threaded holes with horizontal axes



Cavities
Supports within a cavity that are too large to extract



Winding Trails
Long, winding segments supporting internal channels

5. Apply support settings as guided with the table below and the information on the next page. Make a plan for how each segment can be extracted based on its geometry.

Raft Release Layer: A separation layer between the raft and the supports of a part.

Horizontal Release Layer: A separation layer that can be inserted to separate supports into smaller vertical separations.

Vertical Separations: An overlaid grid or radial plot normal to the print bed that segments supports into smaller separations that are either cubic or radial.

	Hooks	Bridges	Outlet Holes	Rings	Ring Bases	Long Horizontal Holes	Cavities	Winding Trails
Raft Release Layer	Yes	Maybe	Maybe		Yes		Modify with tear-dropped channels to reduce or eliminate supports. Combine separation methods to create separations small enough to extract with a tool if needed.	
Other Release Layer	Yes	Yes						
Vertical Separations	Maybe	Maybe	Yes	Yes	Yes	Yes		

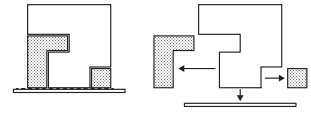
6. Review your supports before printing, both in Internal 3D view and then Internal 2D view. Inspect layers and features with support structures to ensure they will be removable.

Alpha Support Structures Guide

Using Raft Release Layers:

How to use: This turns on automatically with seperable supports. Change your support structure from default to activate it.

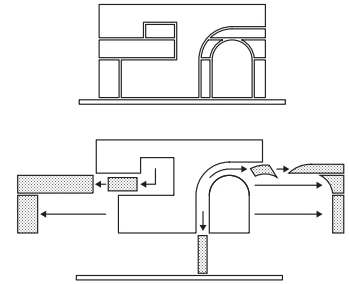
When to use: Use this on Hooks, Bridges, or Outlet Holes, where support structures can constrain the part to its raft. This also improves part removal if supports surround your part, like with Ring Bases.



Using Horizontal Release Layers:

How to Use: Go to Internal View and Select 2D View. Toggle "Insert Release Layer" in the upper left on a selected layer.

When to Use: Add a release layer where the geometry of the support changes from vertical to horizontal, like with Hooks and Bridges. For curved geometries, inspect the profile of the feature and split the support so that it can be extracted from the side.



Using Vertical Separations:

How to Use: In Part View, change your Support Structure to Cubic or Radial Separations.

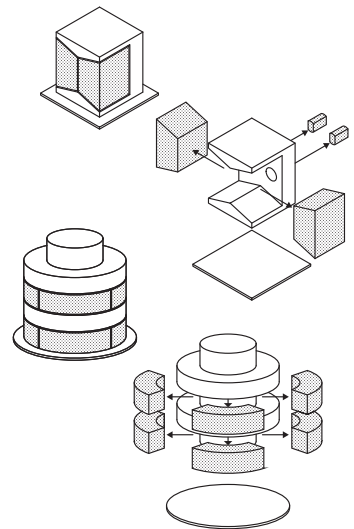
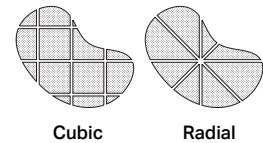
Cubic Separations separate the supports into a grid of cubic segments, and is best for general use. Adjust the size of the grid with Support Grid Size, and the placement and rotation of the grid with the Overlay Transform.

Radial Separations work best for cylindrical parts, and slice the supports like pizza slices. Specify the number of cuts with Support Radial Cuts, and the placement and rotation of the layout with Overlay Transform.

NOTE: Both Cubic and Radial Separations originate at the XY centroid of your part. To place where you want the origin of your support separation scheme, you may need to measure in CAD.

When to Use: Vertical Separations split support segments like Bridges, Rings, Ring Bases, Outlet Holes, or Horizontal Holes so that each segment can be removed from a different direction and isn't constrained by its own geometry.

1. Identify the ideal "separation plane" for your supports - usually at a geometry change like a specific wall or vertical feature. Align the grid so that one of its planes is coincident with the geometry change.
2. For vertical curved or round features, place a vertex of the grid at the centerpoint of the feature so that the supports split up like pizza slices.
3. For long horizontal-axis holes and threads, add at least one separation splitting the support crosswise into smaller sections to make extracting the supports more manageable.



NOTE: For multiple features requiring separations...

Horizontal Release Layers: You can add as many release layers as you need, but release layers less than 10 layers apart may result in poor sintering quality.

Vertical Separations: Find the "lowest common denominator" cubic separation size. Measure in CAD how far apart the multiple features requiring separation are, and use that number as your reference for separation size. The more features that require seperable supports, the smaller your separations will need to be.