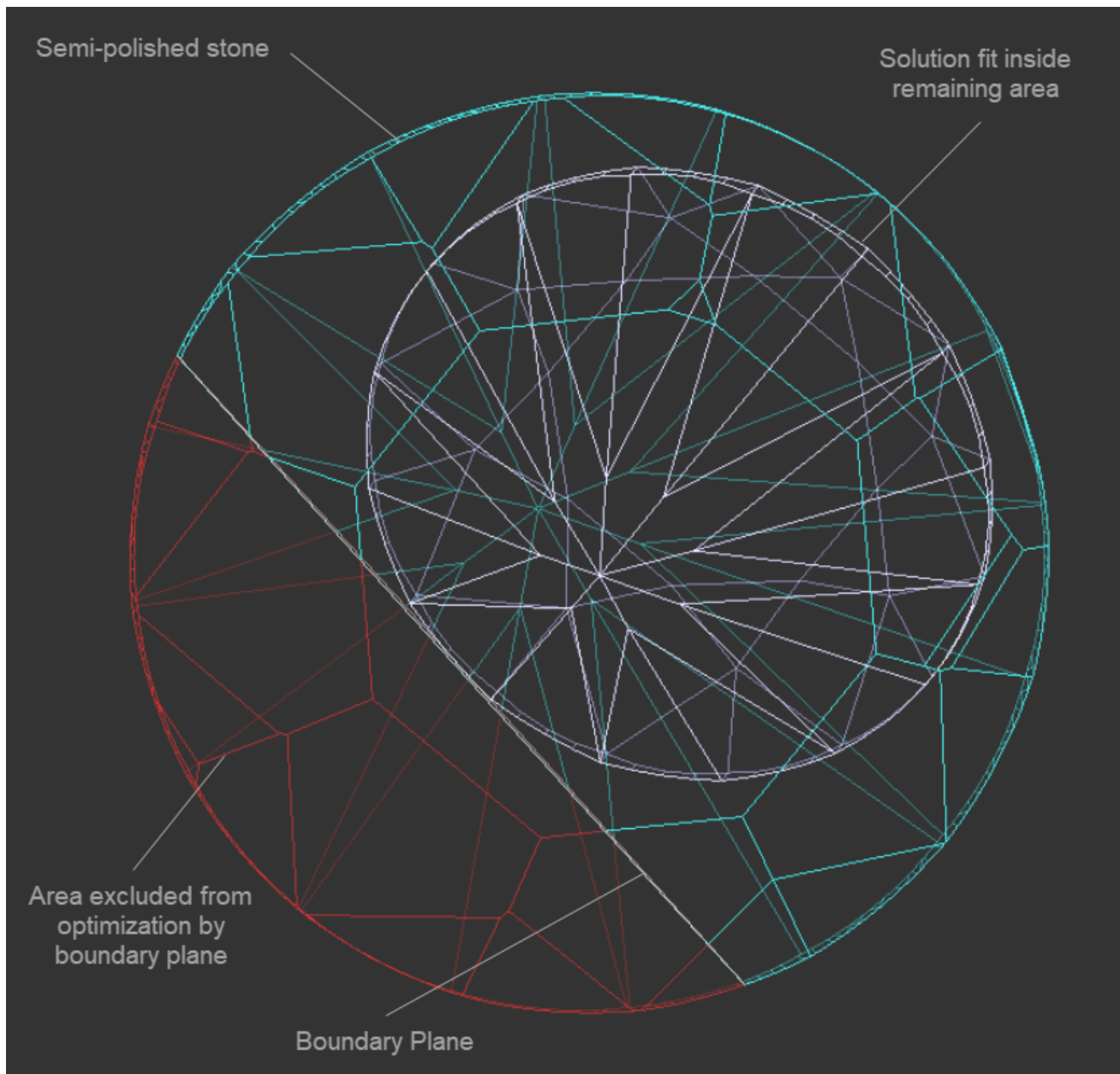# Boundary Plane Tool

On this page:

Overview

You can add boundary planes to exclude some parts of the stone from the optimization.
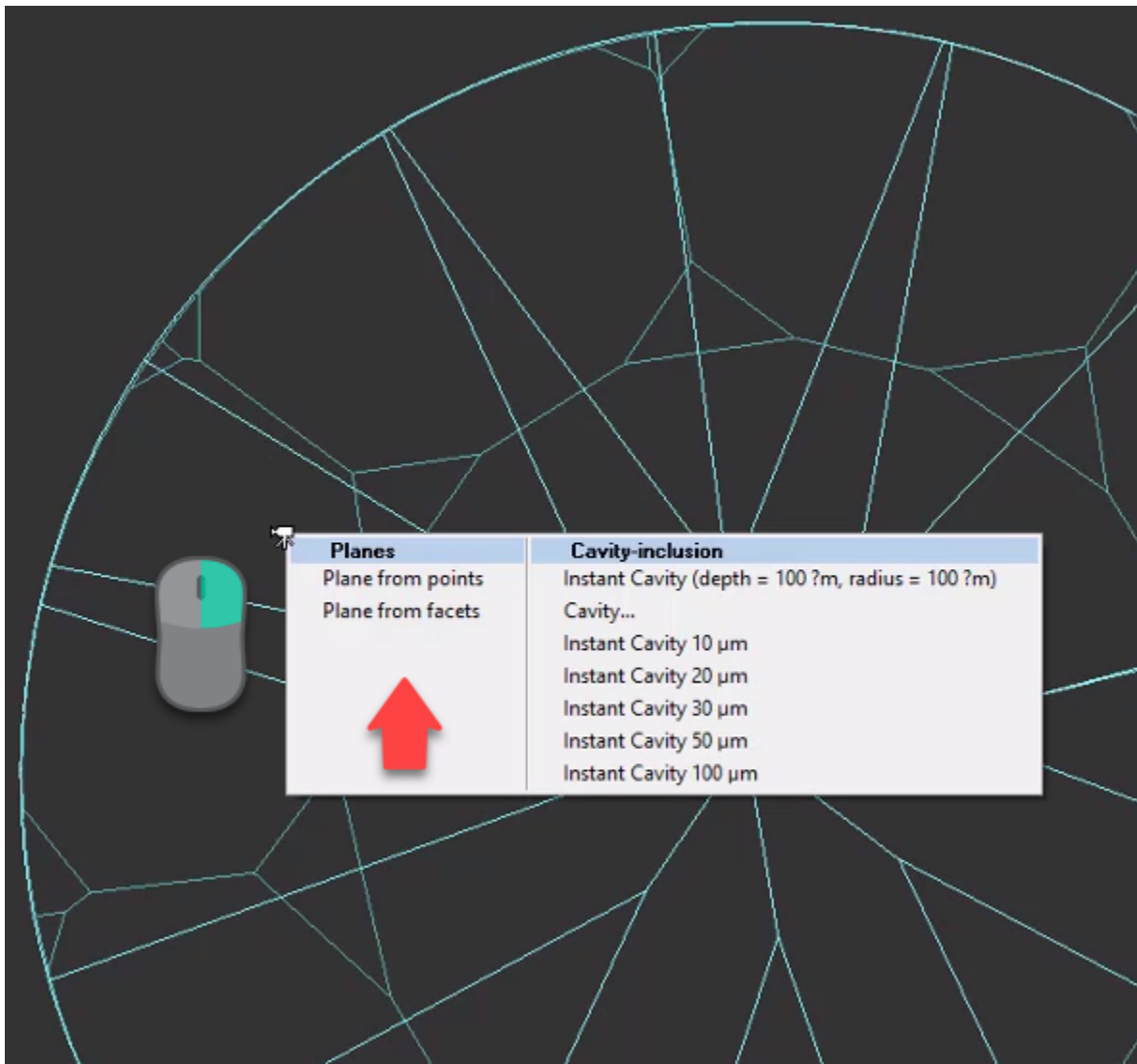
This can be useful when:

- You see one or several cavities is some area of the stone and want to exclude this area from optimization by cutting it off by plane.
- You need to set the offset of the round cavity with the help of an auxiliary plane (the plane is later deleted).
- Merge back into one facet what was wrongly split by the algorithm into several facets.

The **Boundary Plane Tool** allows placing the plane which virtually cuts off the part of the semi-polished stone to exclude this part from optimization.

Semi-polished stone

Solution fit inside remaining area

Area excluded from optimization by boundary plane

Boundary Plane

To add a new boundary plane, in the Scene, right-click the model, in the displayed context menu, in the **Planes** section, select one of the options:

- Plane from points
- Plane from facets

Planes	Cavity-inclusion
Plane from points	Instant Cavity (depth = 100 ?m, radius = 100 ?m)
Plane from facets	Cavity...
	Instant Cavity 10 µm
	Instant Cavity 20 µm
	Instant Cavity 30 µm
	Instant Cavity 50 µm
	Instant Cavity 100 µm

Plane from points

A new boundary plane can be plotted via specifying the set of points on the stone surface through which the plane should pass.

When using this option, you need to click the model to specify the points:

- The first click sets the vertical plane normal to the screen
- The second click changes the direction of the plane
- More clicks add additional points and set the plane closest to all the points added
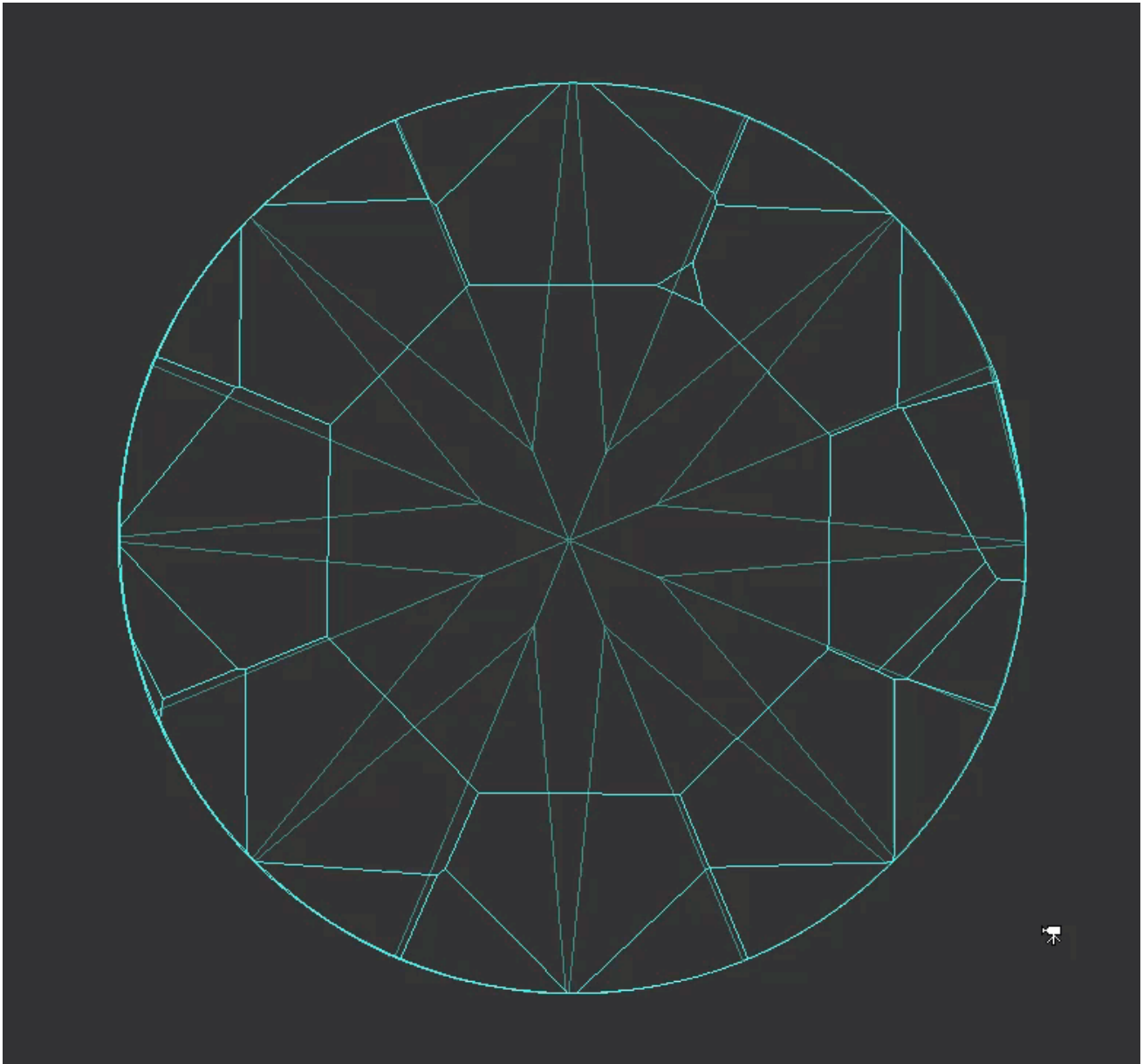
As soon as you set the plane, you may set the offset depth, then apply the changes.

Plane from facets

When using this option, you need to select the facets which will be used to calculate the combined facet (1), then set the offset depth (2), then apply the changes (3).
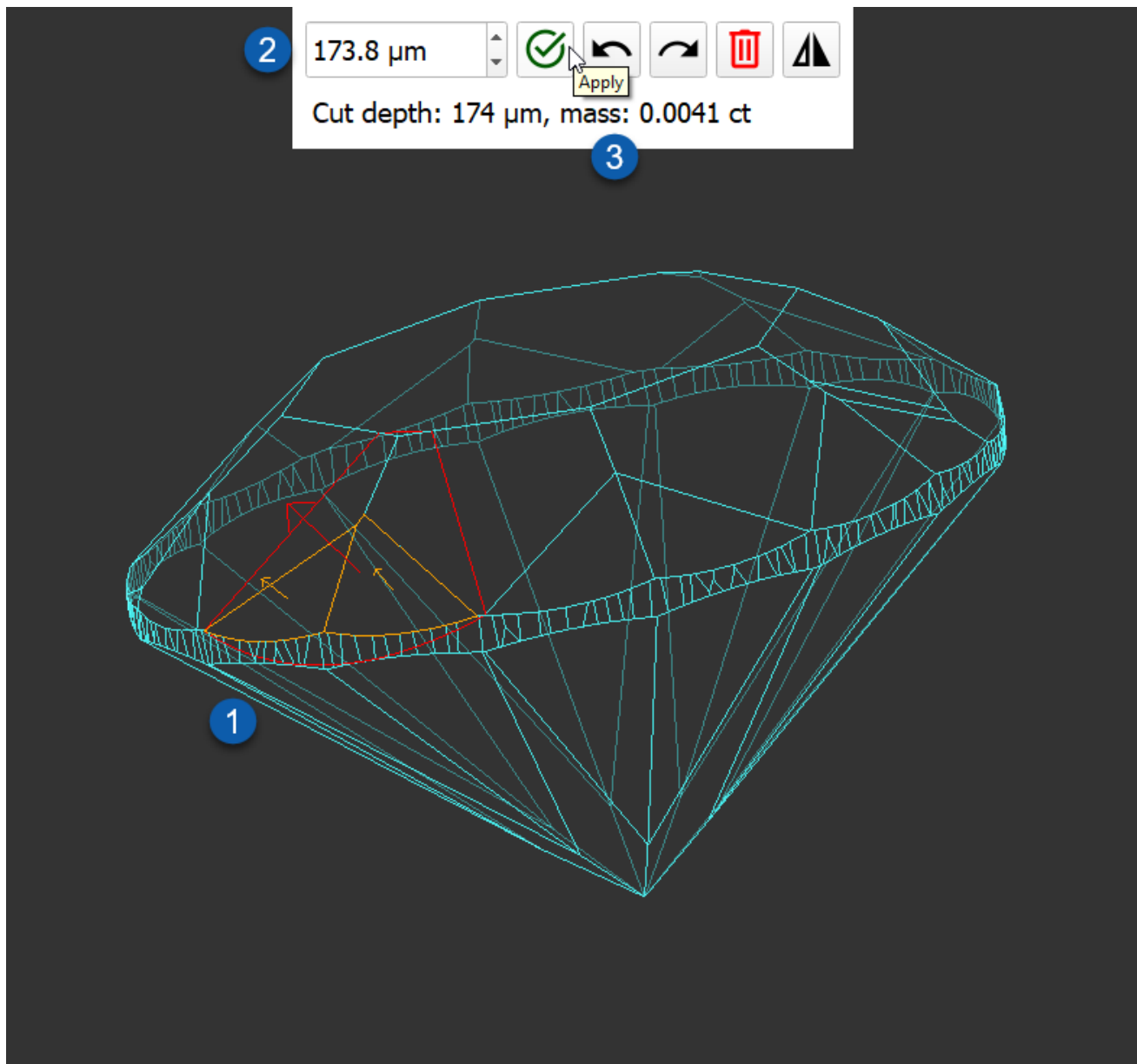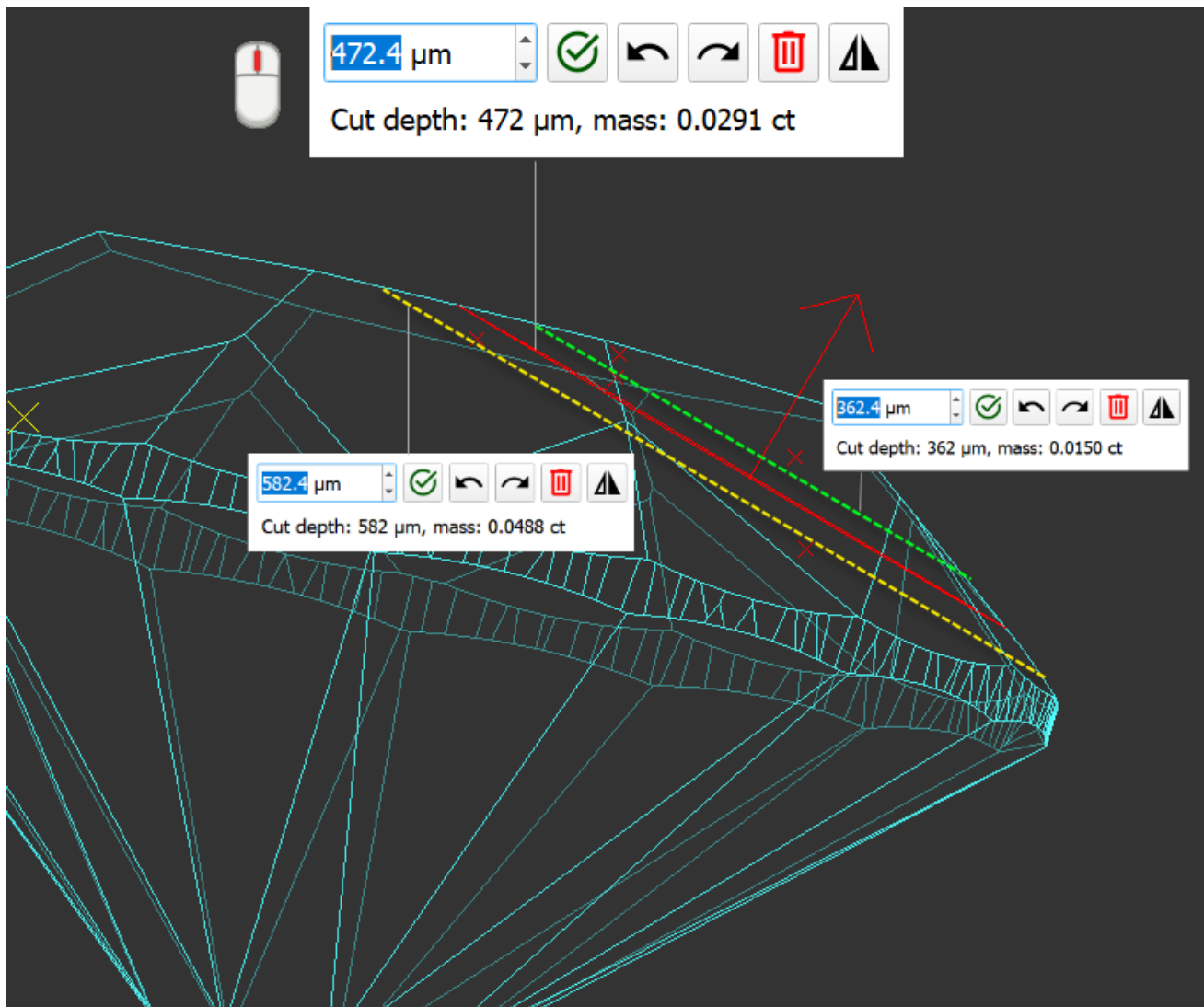
Offset Depth

Whether you create a boundary plane from points or from facets, after creating the plane, you can increase on decrease its depth by specifying the offset.

> ⓘ You can type in the offset depth directly or use arrows or scroll the mouse button.

Editing Planes

You can create several boundary planes one by one. Any created plane can be edited or deleted at any moment. To edit the specified planes, in the Scene, right-click the model, in the displayed context menu, in the **Planes** section, select **Edit planes**. Select the plane, then edit it by:

- Adding points or facets
- Changing offset depth

To delete the plane, click .