Shadow Scan

> ⓘ To use this feature, you must have the appropriate hardware: **Helium Shadow** scanner.

Shadow Scan is a technology that uses shadow imaging to use contours of shadow images for building the 3D model of the stone.

> ⚠ See also **Reflect Scan** to learn about the next-generation technology that uses reflection imaging to achieve greater precision.

Scanning

To scan a stone:

1. Mount the stone in the scanner.
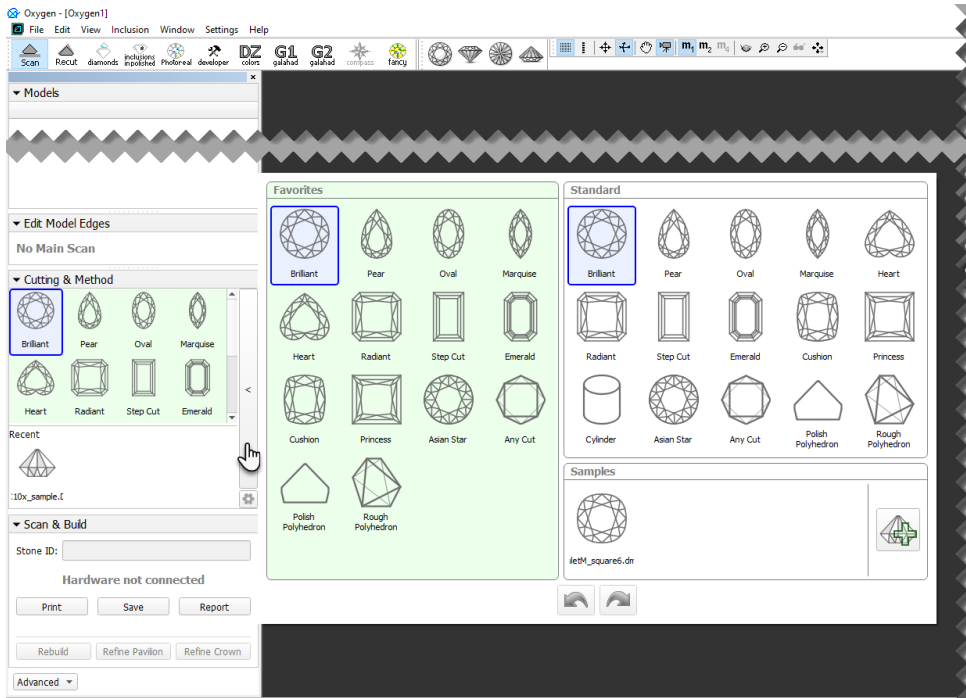2. Start **HP Oxygen**.
3. Use the ![Scan] mode. The left panel goes to the **Scan & Build** mode.
4. On the left panel, under **Cutting & Method**, do one of the following:

    a. select the appropriate cutting type from the predefined list

   b. select one of the previously loaded samples or load a new sample by clicking

> ⓘ A sample can be loaded from a file (`*.dmc`, `*.mme`, or `*.gem`). Once loaded, it remains in your list of models (see **Models management**) under the **Samples** section.

5. Under **Precision**, select the desired precision.
HPOxygen stores the most recent precision setting for each particular cutting type separately. The stored precision setting is applied automatically whenever the cutting type selection is changed. In a typical workflow, it is recommended to scan round brilliants with 400 contours and Princess cuts with 800 contours, since the latter cutting contains more facets with a nearly similar orientation which requires higher precision to resolve.
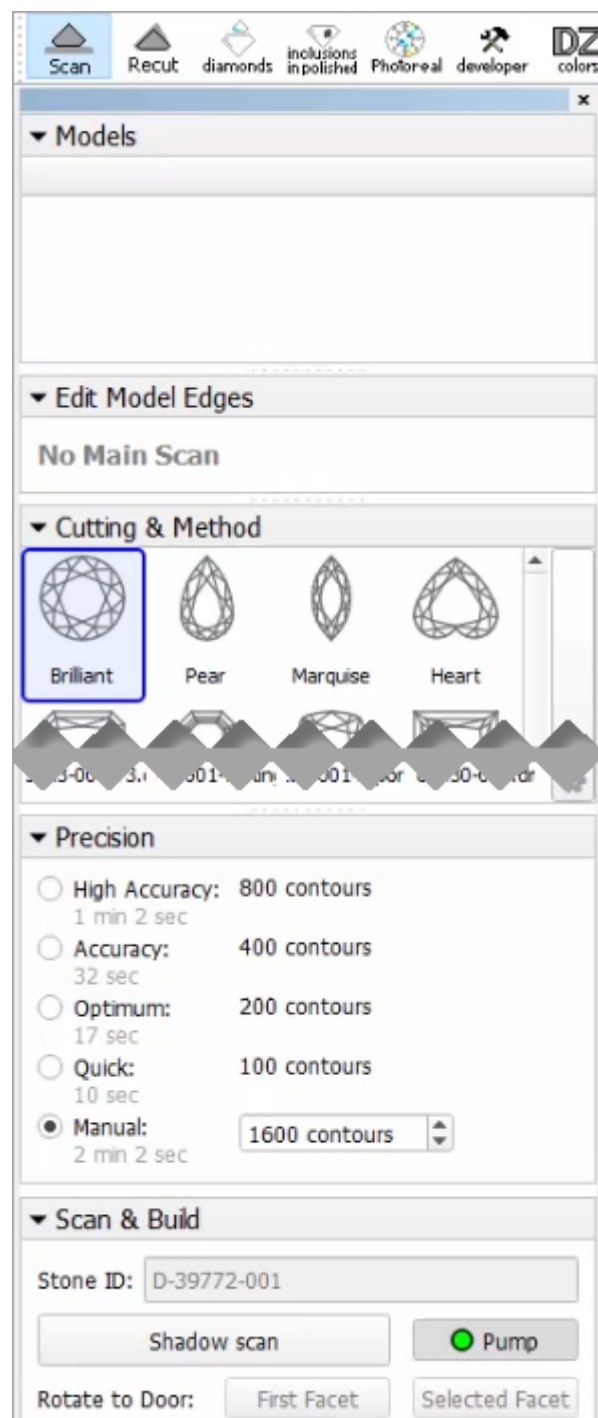
6. Click **Shadow scan** to start scanning. You may or may not be prompted to enter the Stone ID and Measured weight, depending on the settings (see **Entering Stone ID and Measured Weight** for more details). The following operations will proceed automatically:

   a. As the shadow scan progresses, the shadow photos of the model in different orientations are taken and displayed on the screen, together with overlaid contours and a progress bar.
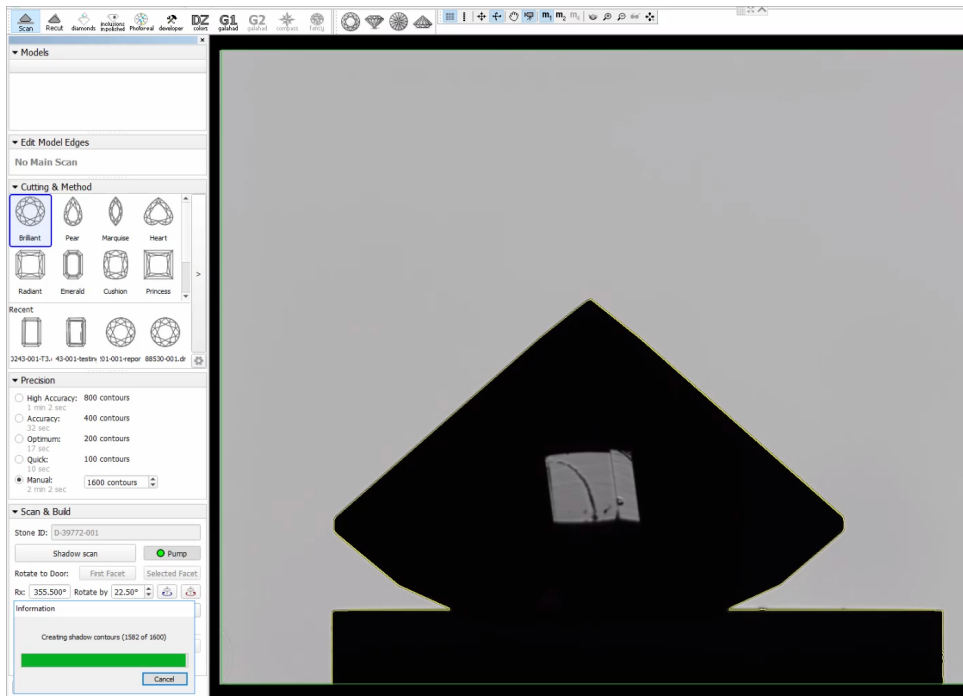
b. After the shadow scan is completed, the model is built based on the scanned contours.

After Scanning

Alternative Building Results

For some cuttings, there are several applicable methods. If so, they all are applied and the system then automatically selects the primary one and shows its built model. The alternative models are hidden by default. Now you can view the alternative models. To do that, in the context menu of the shadow scan model, select **Show alternative shadow building results**. For the displayed secondary models you can set the main one. To do so, for the displayed secondary shadow scan model, from the context menu, select **Set model as best shadow result**.
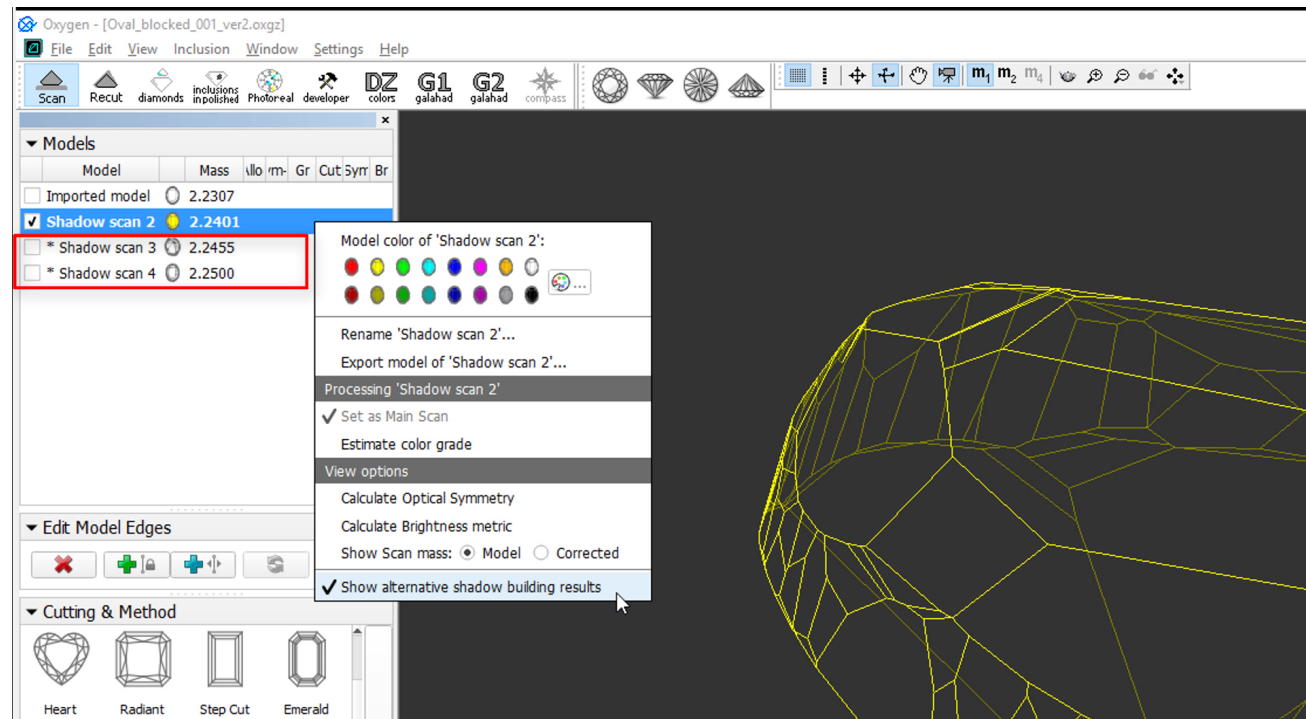
Post Scan Operations

Some post-scan operations may be initiated via the **Scan & Build** section. Switch between **Basic** and **Advanced** set of operations using the button at the bottom of the section.

Scan & Build

Stone ID: D-39852-001

Shadow scan | ⬤ Pump

Rotate to Door: First Facet | Selected Facet

Rx: 358.425° | Rotate by 22.50°

Print | Save | Report

Rebuild | Refine Pavilion | Refine Crown

Check Holder Offset

Advanced ▾

Button	Usage
Rotate to Door: **First Facet**	Orients the stone in the scanner so as to face the operator with the first facet, i.e. the one which is set to zero azimuth in the Polish report, thus facilitating further operations (marking the facet, etc). The button is initially inactive and becomes enabled after scanning. The same action can be set up to be performed automatically after scanning (see **Automatic actions**).
Rotate to Door: **Selected Facet**	Orients the stone in the scanner so as to face the operator with the facet currently selected in the Scene.
Rx	Current stone rotation against the scanner camera. It can be changed using **Rotate by** controls.
Rotate by ...	Rotates the holder with the stone to the specified number of degrees, clockwise and counterclockwise. Changes the stone **Rx**.
Print **Save** **Report**	"Quick buttons" for reporting purposes. You can assign one or several actions performed on a button click in **Settings** > **General Settings** > **Reports** > **Report Buttons**. **Notes** • The configuration is made separately for different cuttings. First select **Cutting** from the list, then configure buttons for it. • The **Print** button immediately sends output to your default printer.
Rebuild	Adds new Shadow model to the list basing on the Shadow contours stored in the project.
Refine Pavilion	Uses the currently selected model and the Pavilion Reflect contours* stored in the project to build the new model and add it to the list. * If the current project does not contain the Pavilion Reflect contours, the button will be inactive.

Refine Crown	Uses the currently selected model and the Crown Reflect contours* stored in the project to build the new model and add it to the list. * If the current project does not contain the Crown Reflect contours, the button will be inactive.
Check Holder Offset	Normally an offset check is done automatically, so this button is not needed. Use it if you want to run an extra check.