

# 2018-08-24 - HPOxygen Server 4.6.21

Here you can find information about what is new in HPOxygen Server version 4.6.21.

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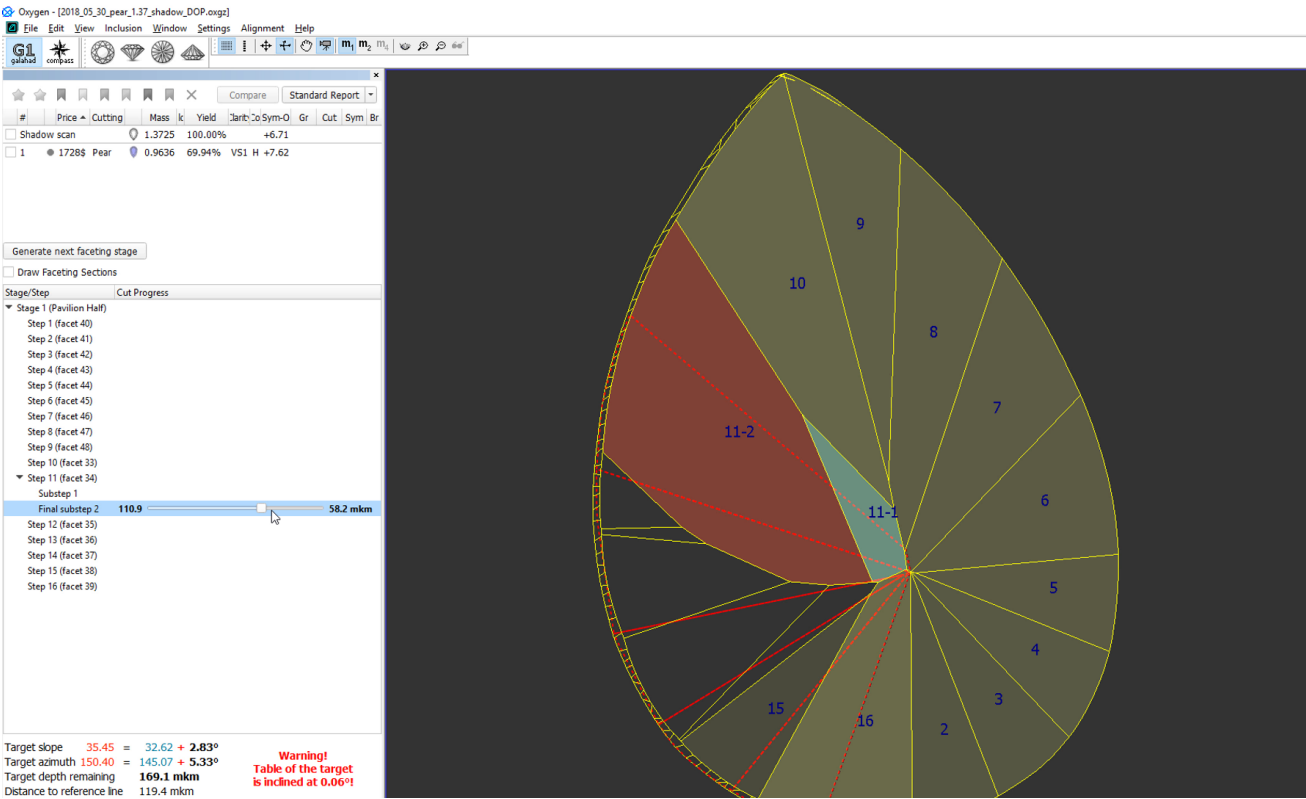
[Increased Holder Check Frequency](#)

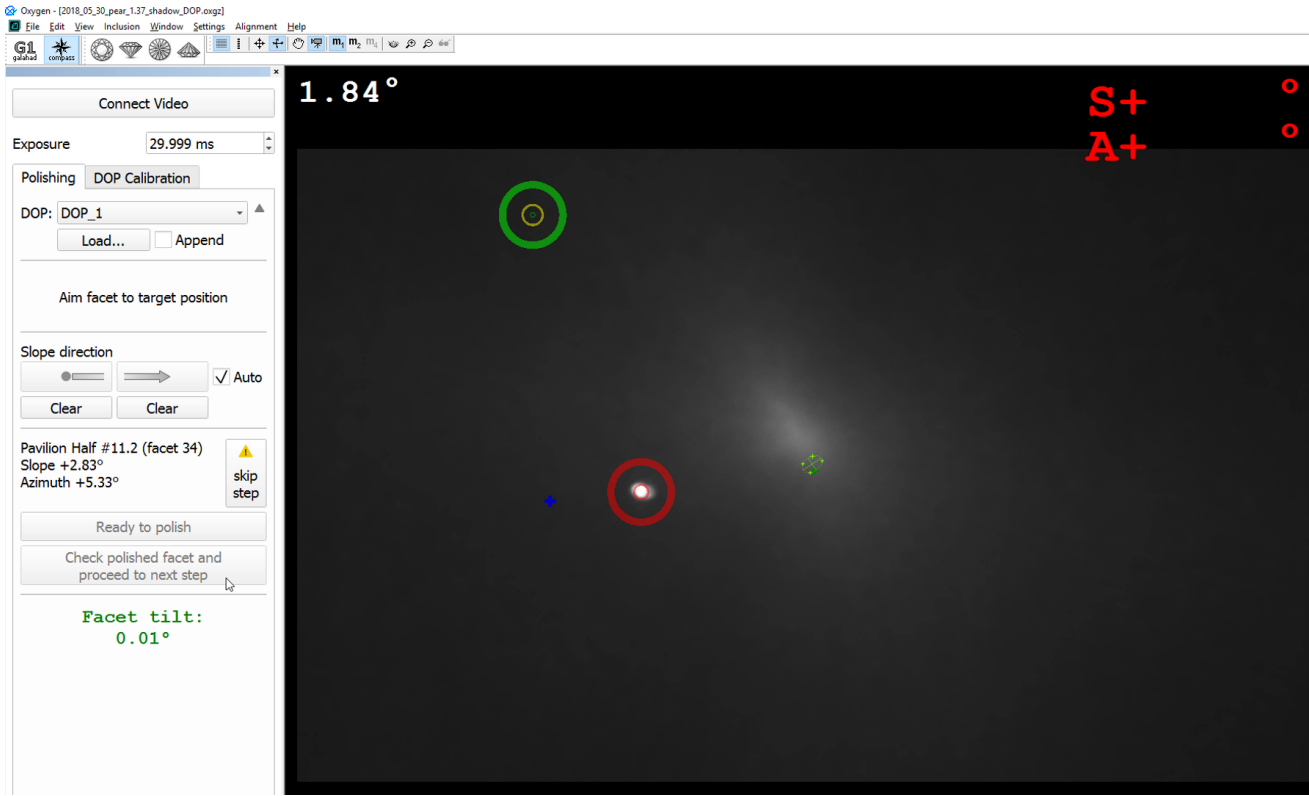
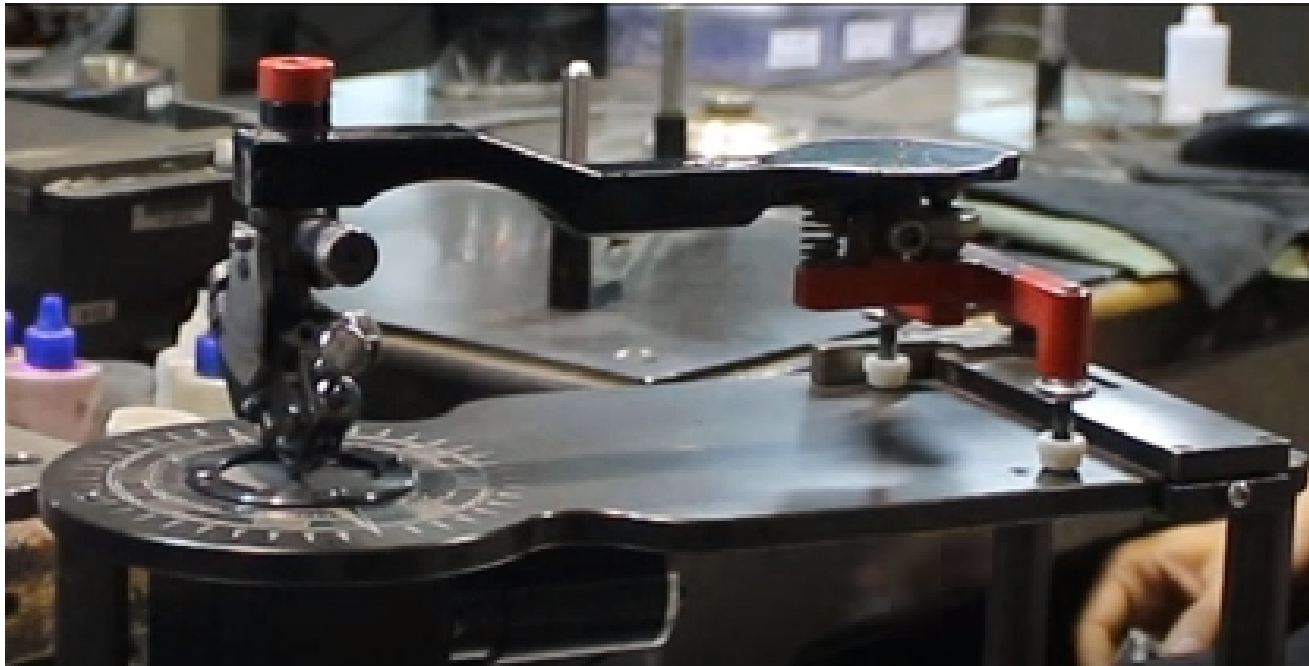
## Galahad Compass as Separate Software

Galahad Compass is now implemented and released as a separate software. This is a software-hardware bundle which includes Compass Unit and DOP hardware and Galahad Compass software itself. The solution helps to set the correct angles for the diamond in the DOP with high precision before polishing the facet, as well as control stages and steps of the polishing. Stages combine steps for polishing facets of the same type. The system has two different modes: Galahad 1 and Compass. In the Galahad 1 mode, the user can view and manage planned stages and underlying steps. In the Compass mode, for the selected step, the slope and azimuth angles are set and then, after polishing, the results are controlled before going to the next step.

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See also Galahad Compass introduction [here](#).

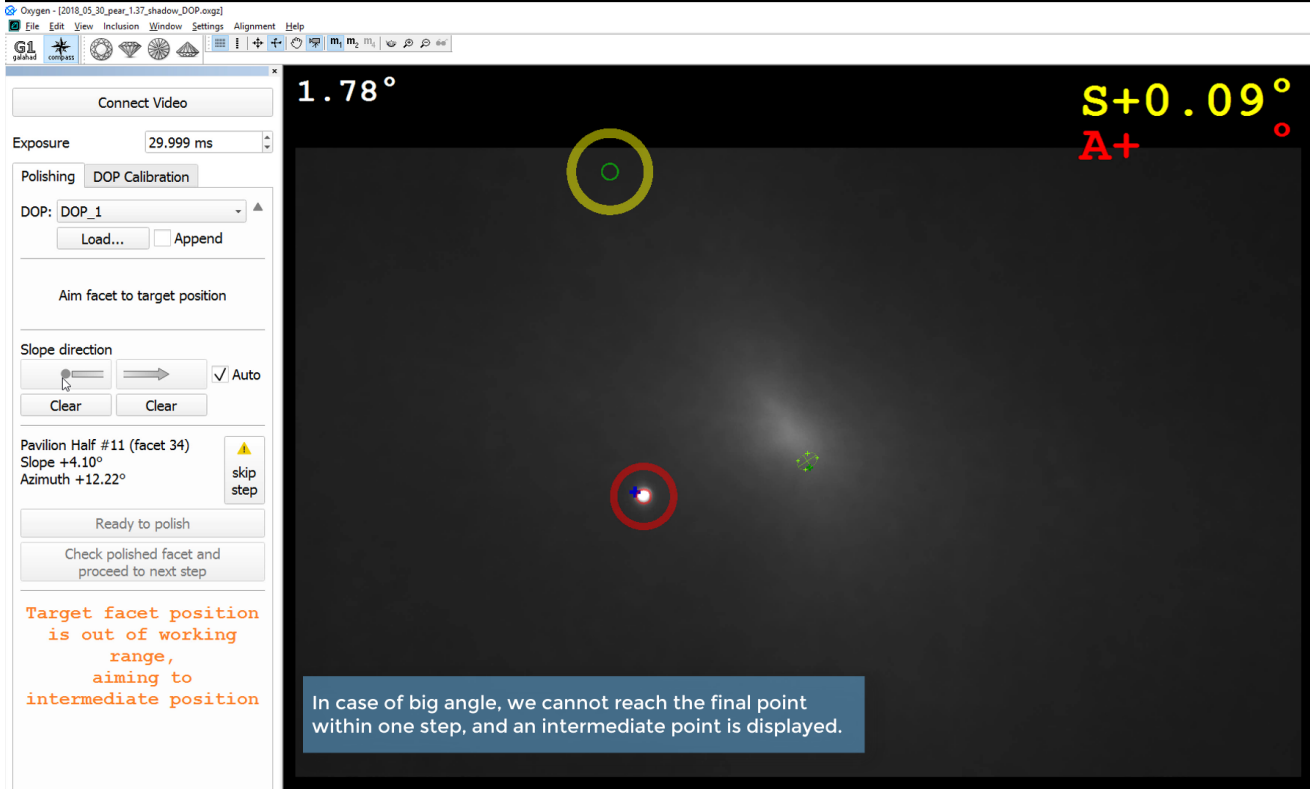
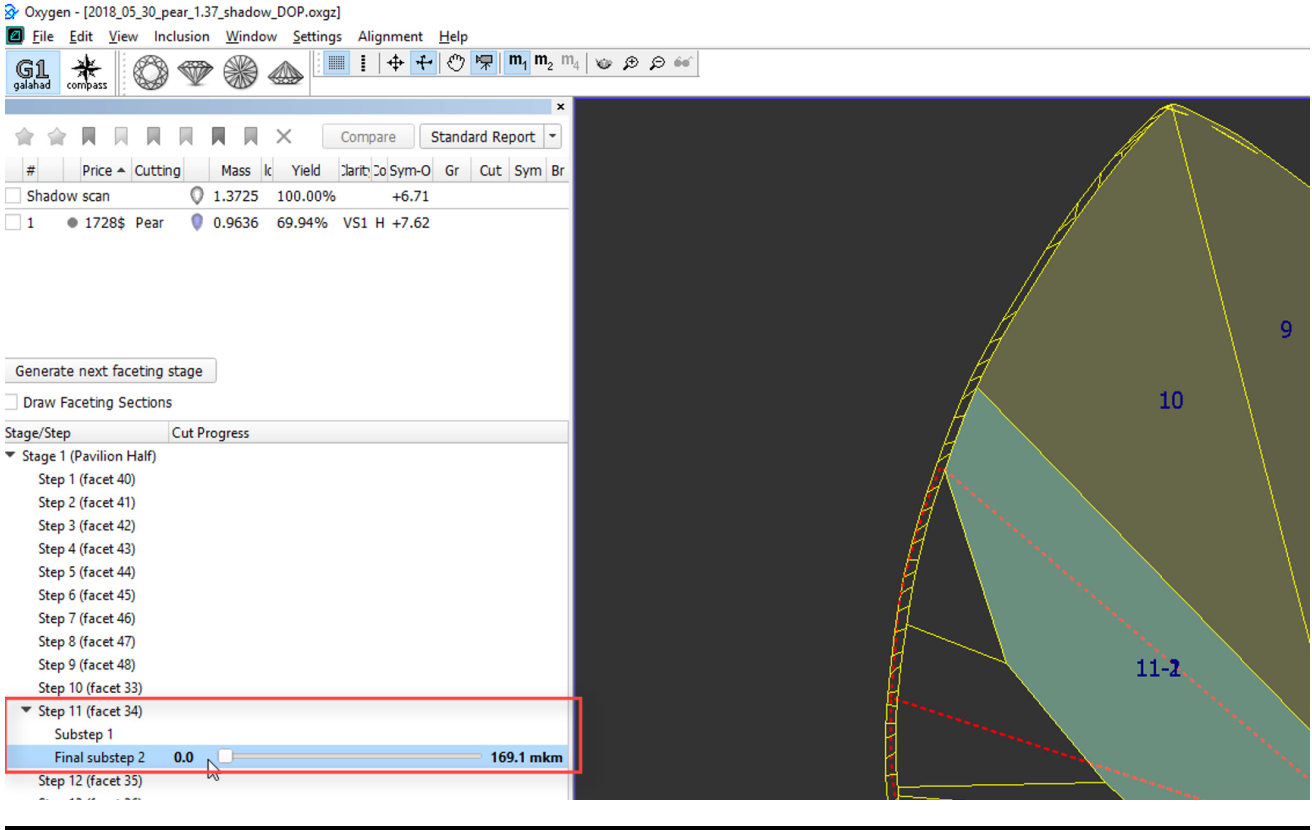




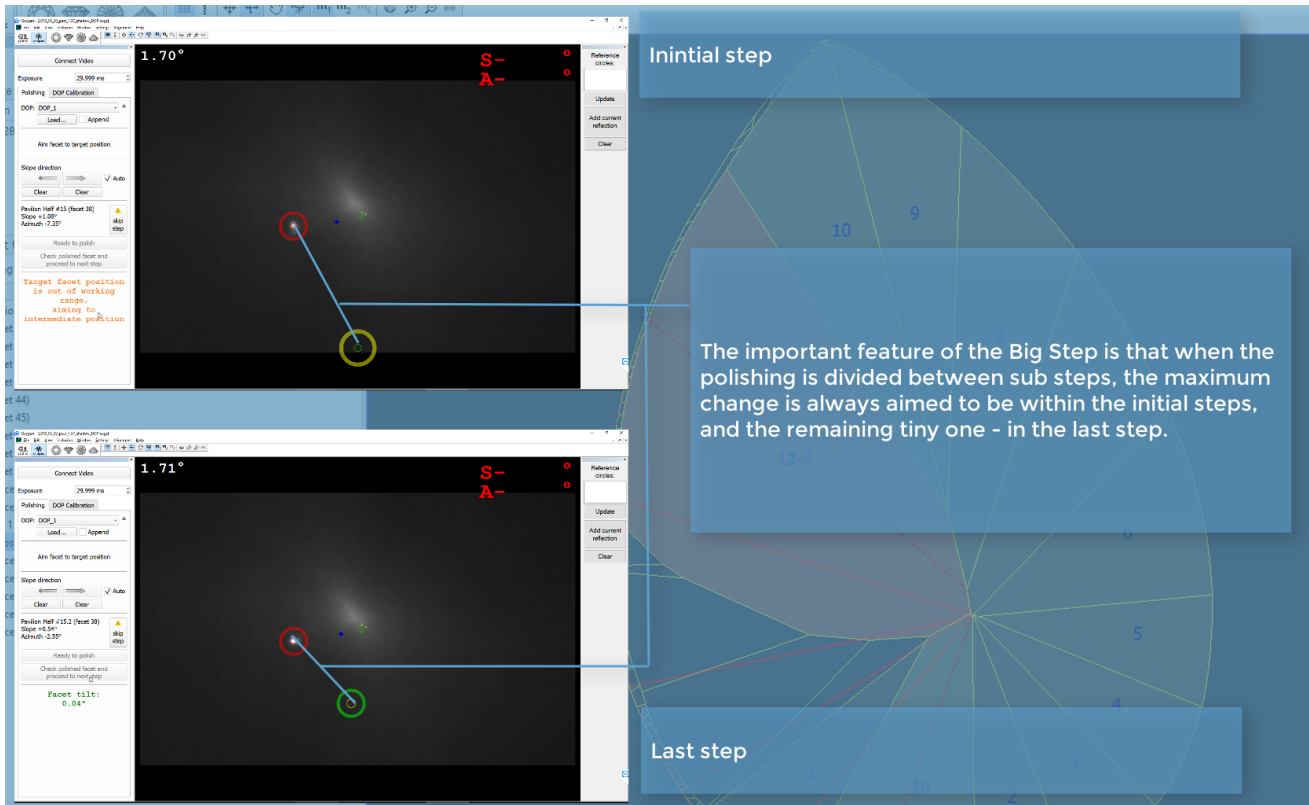
## Galahad Compass - Big Step Feature

In Galahad Compass, the field of view is limited. Because of this limitation, sometimes it is impossible to polish the facet to the target state within 1 step. In this case, the system automatically builds intermediate facets which allow polishing all the facets even if the initial semipolished stone has only one big facet.

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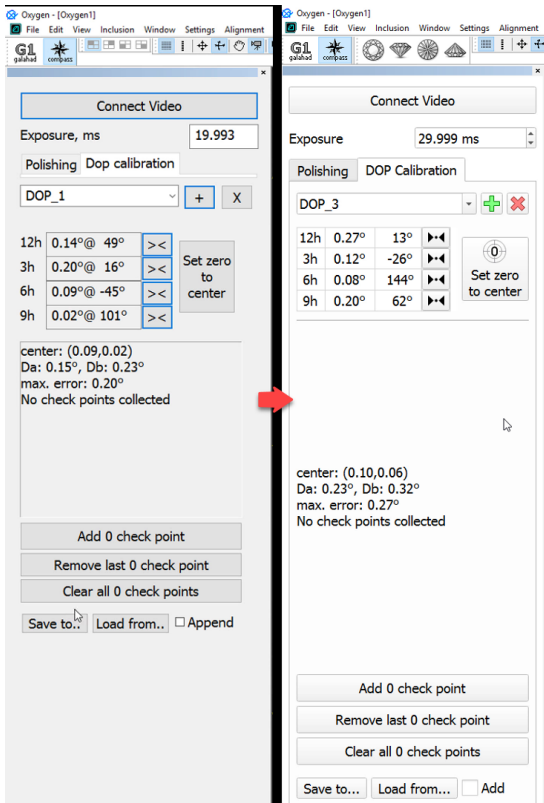


For the big step, two or more sub-steps can be created if necessary. When the polishing is divided between sub-steps, the maximum change is always aimed to be within the initial steps, and the remaining tiny one - in the last step.



## Galahad Compass - New Look & Feel for DOP Calibration

In Galahad Compass, the **DOP Calibration** tab now has the new look and feel.



## Faceting Report - Reference Line Calculation

For the Faceting Report, the reference line calculation algorithm is changed. For the pavilion, the reference line calculation now considers all the facets of the pavilion excluding extra facets. The line is drawn in parallel to the table on the lowest point of the lowest facet of the pavilion. In the Faceting Report, the reference line is displayed for all groups of facets of the pavilion. In the upper part of Faceting Report, the **Reference line height** (mm) is displayed which is the distance to the table.

Step 1 of 8

Location

Shape

Parameters

	Target	Current	Difference (Δ)
Azimuth, °	359.99	0.00	359.99
Slope, °	40.77	40.70	0.07
Slope allowance		0.00°	
Depth allowance		0 μm	
Distance to reference line		59 μm	

Processing depth	Width, mm	Height, mm	Ratio (W/H)	
5 %	0.7 μm	0.131	0.660	0.198
30 %	4 μm	0.570	3.952	0.144
50 %	7 μm	0.609	4.625	0.132
70 %	10 μm	0.648	4.631	0.140
100 %	14 μm	0.706	4.640	0.152

Step 2 of 8

Also, for each facet of the pavilion, the **Distance to reference line** (μm) is displayed.

Step 1 of 8

Location

Shape

Parameters

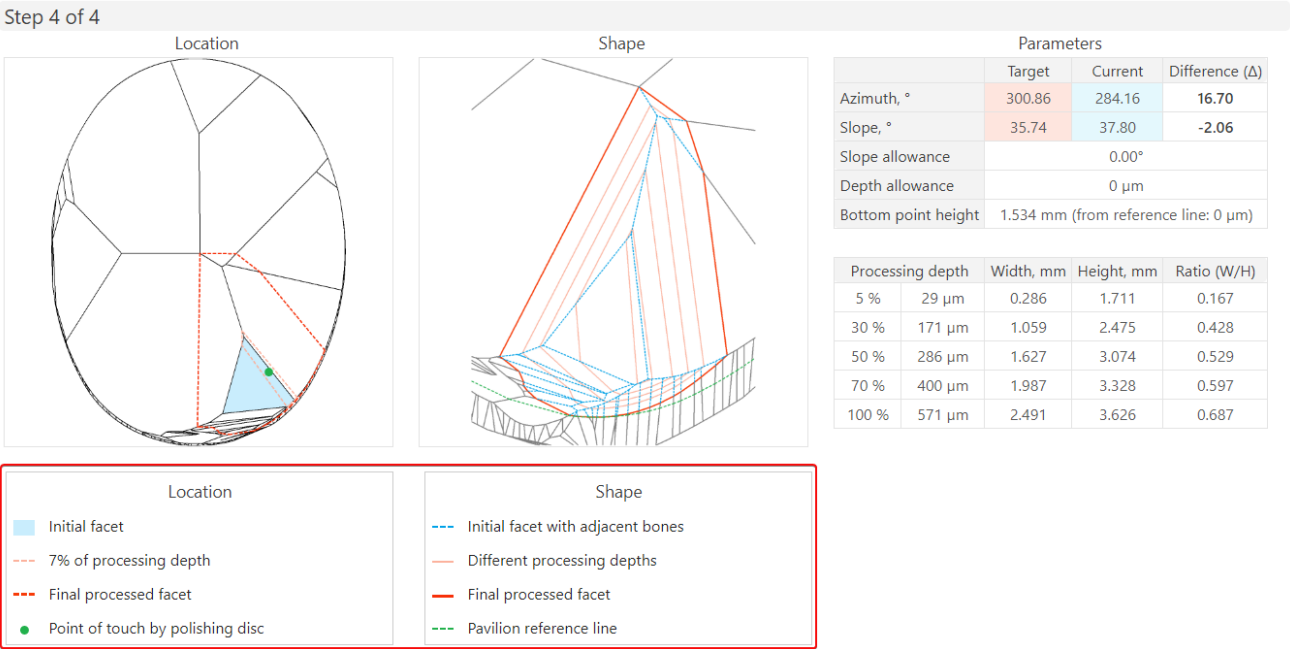
	Target	Current	Difference (Δ)
Azimuth, °	359.99	0.00	359.99
Slope, °	40.77	40.70	0.07
Slope allowance		0.00°	
Depth allowance		0 μm	
Distance to reference line		59 μm	

Processing depth	Width, mm	Height, mm	Ratio (W/H)	
5 %	0.7 μm	0.131	0.660	0.198
30 %	4 μm	0.570	3.952	0.144
50 %	7 μm	0.609	4.625	0.132
70 %	10 μm	0.648	4.631	0.140
100 %	14 μm	0.706	4.640	0.152

In the same way, the reference line for the crown is calculated. The reference line calculation now considers all the facets of the crown.

## Faceting Report - Legend

For the Faceting Report, the legend is added.

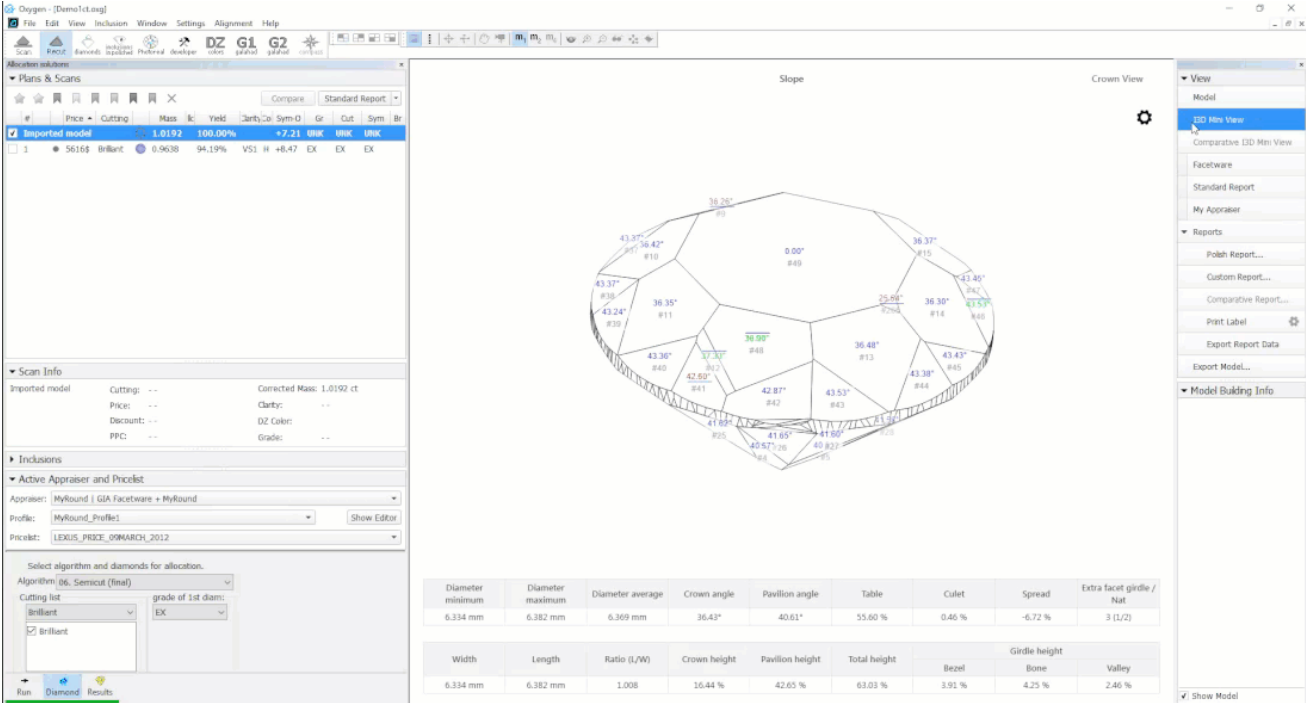


## Improvements in I3D Mini Views

In I3D Mini View and Comparative I3D Mini View, the new **Sync with scene** option is presented. If the option is enabled, the position of the current model in I3D Mini View and Comparative I3D Mini View will match to the position of the model in the Oxygen scene.

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Also, for I3D Mini View now the positions of the model and all solutions are synchronized which makes comparing model and different solutions more convenient.



## Scanning - Improvements in Model Building

The process of building the stone model is improved.

The HP Oxygen team provides support for all cases related to the model building. If you have any troubles or questions related to HP Pacor and HP Oxygen model building, please collect the test data and send it to the HP Oxygen team. The detailed instruction on how to collect and send test data can be found in the video:

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## Facetware Report - Estimating GIA Cut Grades using Standard Values



In the Facetware Report, previously the **Intermediate GIA Cut Grade** and **Final GIA Cut Grade** could not be estimated in the case if measured values for some parameters (for example, **Star Length (%)**) were not available - this can often occur for the semipolished stones for which not all the facets required for calculation are set. Now the system allows approximate estimation of a diamond. In case if measured values for some parameters are absent, the system will automatically substitute them with standard values. The estimation for the cut grades for the separate parameters and for the **Intermediate GIA Cut Grade** and **Final GIA Cut Grade** will be calculated basing on these standard values so that we'll never get "Unknown" value for them.

1.0192100.00%+7.21UNKUNKUNK

Cutting: --Model Mass: 1.0192 ct

Price: --Clarity: --

Discount: --DZ Color: --

PPC: --Grade: --

and Pricelist

GIA Facetware + MyRound

offe1Show Editor

E\_09MARCH\_2012

and diamonds for allocation.

icut (final)

grade of 1st diam:  
EX

Parameters	Min	Measured value	Max	Dev	Avg	Rounded value	Estimated Cut Grade	Estimated Symmetry Grade	Estimated Polish Grade
Shape	-	-	-	-	Brilliant	-	-	-	-
Estimated Weight (Ct)	-	-	-	-	1.0192	-	-	-	-
Diameter (mm)	6.33	6.38	0.05	6.36	-	-	VG	-	-
Table Size (%)	55.1	56.3	1.2	55.7	56	-	VG	-	-
Crown Angle (°)	36.30	36.90	0.60	36.45	36.5	-	EX	-	-
Pavilion Angle (°)	40.50	40.70	0.20	40.61	40.6	-	Unknown	EX	-
Star Length (%)	N/A	N/A	N/A	N/A	N/A	-	-	-	-
Lower Half (%)	78.7	79.6	0.9	79.2	80	-	EX	EX: 0.00 to 4.80	-
Girdle Bezel Thickness (%)	3.29	4.22	0.93	3.92	4.0	-	EX	-	-
Star Angle (°)	N/A	N/A	N/A	N/A	N/A	-	-	-	-
Upper Angle (°)	42.6	43.5	0.9	43.3	43.3	-	EX	-	-
Lower Angle (°)	41.5	41.8	0.3	41.7	41.7	-	EX	-	-
Girdle Valley Minimum (%) *	-	-	-	1.93	MED	EX	-	-	-
Girdle Valley Maximum (%) *	-	-	-	2.86	STK	EX	-	-	-
Culet Size (%) *	-	-	-	0.46	NON	EX	-	-	-
Crown Height (%)	15.98	16.94	0.96	16.47	16.5	-	EX	-	-
Pavilion Depth (%)	42.48	42.94	0.46	42.72	42.5	-	EX	-	-
Total Depth (%)	-	-	-	63.13	63.1	-	-	-	-
Table offset (%)	-	-	-	0.645	-	-	VG	-	-
Culet offset (%)	-	-	-	0.456	-	-	EX	-	-
Table-Culet (%)	-	-	-	1.054	-	-	VG	-	-
Crown Painting (°)	-0.63	5.29	5.92	0.64	0.6	EX	-	-	-
Pavilion Painting (°)	-0.32	0.27	0.59	0.04	0.0	EX	-	-	-
Sum Painting (°)	-	-	-	0.68	0.6	EX	-	-	-
Junction Bezel Twist (°)	-4.77	0.61	-	-	-	-	-	-	-
Facet Twist (°)	0.01	1.04	-	-	-	-	-	-	-
Junction Bone Twist (°)	-2.09	0.75	-	-	-	-	-	-	-
Misalignment ALN (°)	-	-	-	4.77	4.8	-	GD	-	-
Radius roundness by OctoNus	for window size 15°: 0.62 for window size 30°: 0.84 for window size 45°: 0.94 for window size 90°: 1.03	-	-	-	-	-	VG	VG	-
Model Table Edge (%)	20.05	23.98	3.93	22.24	-	-	-	-	-
Table Edge TEV (%)	21.7	24.0	2.3	23.0	23.0	-	VG	-	-
Table edge junction (%)	0.00	5.58	5.58	0.70	-	-	-	-	-
Table angle (°)	134.5	136.3	1.8	135.0	-	-	-	-	-
Bezel width (%)	28.67	31.03	2.36	29.84	-	-	-	-	-
Estimated Intermediate GIA Cut Grade:					UnknownUnknownEX				
Estimated Final GIA Cut Grade:					UnknownUnknown				

New version

Cutting: --Model Mass: 1.0192 ct

Price: --Clarity: --

Discount: --DZ Color: --

PPC: --Grade: --

and Pricelist

GIA Facetware + MyRound

offe1Show Editor

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and diamonds for allocation.

icut (final)

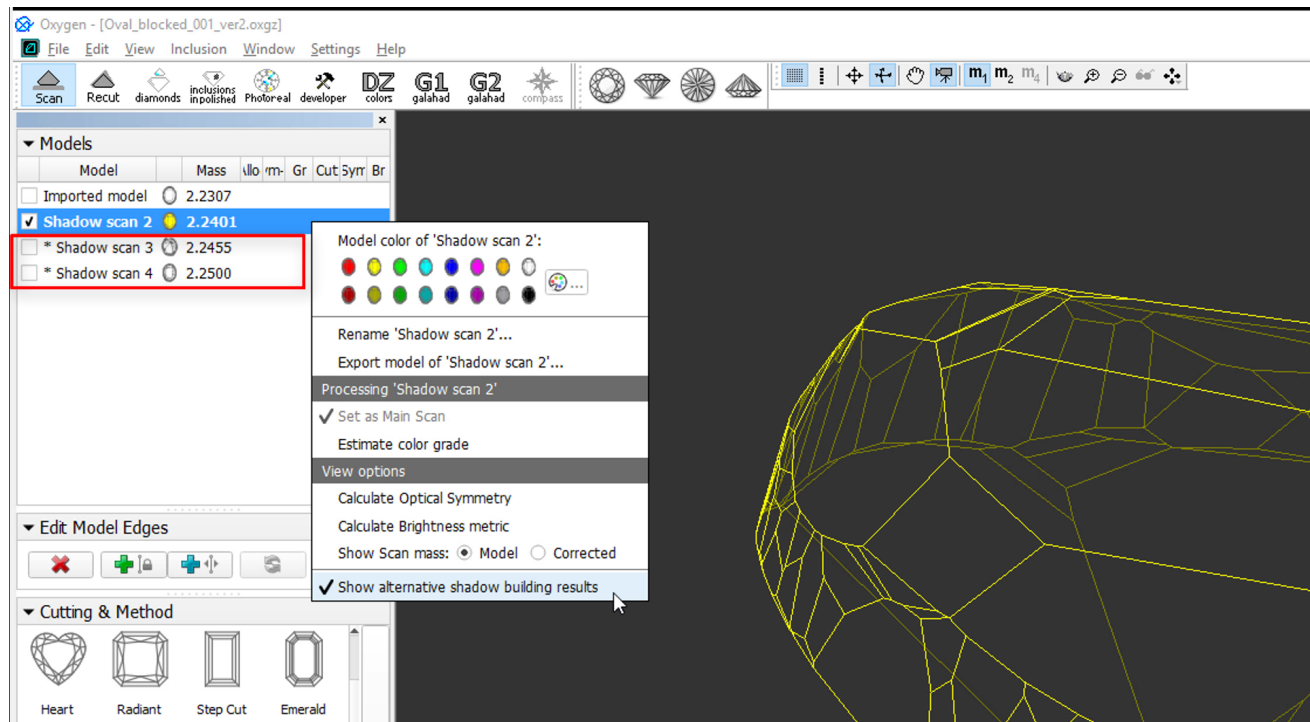
grade of 1st diam:  
EX

Parameters	Min	Measured value	Max	Dev	Avg	Rounded value	Estimated Cut Grade	Estimated Symmetry Grade	Estimated Polish Grade
Shape	-	-	-	-	Brilliant	-	-	-	-
Estimated Weight (Ct)	-	-	-	-	1.0192	-	-	-	-
Diameter (mm)	6.33	6.38	0.05	6.36	-	-	VG	-	-
Table Size (%)	55.1	56.3	1.2	55.7	56	-	VG	-	-
Crown Angle (°)	36.30	36.90	0.60	36.45	36.5	-	EX	-	-
Pavilion Angle (°)	40.50	40.70	0.20	40.61	40.6	-	EX	-	-
Star Length (%)	*50.0*	*50.0*	*50.0*	*50.0*	*50*	-	EX	EX: 0.00 to 7.20	-
Lower Half (%)	78.7	79.6	0.9	79.2	80	-	EX	-	-
Girdle Bezel Thickness (%)	3.29	4.22	0.93	3.92	4.0	-	EX	-	-
Star Angle (°)	*25.0*	*25.0*	*0.0*	*25.0*	*25.0*	-	EX	-	-
Upper Angle (°)	42.6	43.5	0.9	43.3	43.3	-	EX	-	-
Lower Angle (°)	41.5	41.8	0.3	41.7	41.7	-	EX	-	-
Girdle Valley Minimum (%) *	-	-	-	1.93	MED	EX	-	-	-
Girdle Valley Maximum (%) *	-	-	-	2.86	STK	EX	-	-	-
Culet Size (%) *	-	-	-	0.46	NON	EX	-	-	-
Crown Height (%)	15.98	16.94	0.96	16.47	16.5	-	EX	-	-
Pavilion Depth (%)	42.48	42.94	0.46	42.72	42.5	-	EX	-	-
Total Depth (%)	-	-	-	63.13	63.1	-	-	-	-
Table offset (%)	-	-	-	0.645	-	-	VG	-	-
Culet offset (%)	-	-	-	0.456	-	-	EX	-	-
Table-Culet (%)	-	-	-	1.054	-	-	VG	-	-
Crown Painting (°)	-0.63	5.29	5.92	0.64	0.6	EX	-	-	-
Pavilion Painting (°)	-0.32	0.27	0.59	0.04	0.0	EX	-	-	-
Sum Painting (°)	-	-	-	0.68	0.6	EX	-	-	-
Junction Bezel Twist (°)	-4.77	0.61	-	-	-	-	-	-	-
Facet Twist (°)	0.01	1.04	-	-	-	-	-	-	-
Junction Bone Twist (°)	-2.09	0.75	-	-	-	-	-	-	-
Misalignment ALN (°)	-	-	-	4.77	4.8	-	GD	-	-
Radius roundness by OctoNus	for window size 15°: 0.62 for window size 30°: 0.84 for window size 45°: 0.94 for window size 90°: 1.03	-	-	-	-	-	VG	VG	-
Model Table Edge (%)	20.05	23.98	3.93	22.24	-	-	-	-	-
Table Edge TEV (%)	21.7	24.0	2.3	23.0	23.0	-	VG	-	-
Table edge junction (%)	0.00	5.58	5.58	0.70	-	-	-	-	-
Table angle (°)	134.5	136.3	1.8	135.0	-	-	-	-	-
Bezel width (%)	28.67	31.03	2.36	29.84	-	-	-	-	-
Estimated Intermediate GIA Cut Grade:					VGGD				
Estimated Final GIA Cut Grade:					*VG*				

\* Some parameters marked with \* could not be calculated and were substituted with standard values. Approximate grades are assumptions based on these substitution values.

## Shadow Scan - Alternative Building Results

For some cuttings, there are several applicable algorithms. 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**.



## Brightness Metrics

The calculation is not active by default. To enable calculation, right click on any scan or solution and select **Calculate Bitmap Brightness**. Th program will start calculating the metrics for each scan and solution one by one. The values will appear in the **Br.** column.

While the calculation is in progress, the "..." mark will be shown in the "Br" column. Once calculated, the metrics are stored in the project and will not need to be recalculated if you save and reopen the project.

The calculation takes ~30-60 sec for one scan/solution.



Allocation solutions

Plans & Scans

★ ☆ ★ ★ ★ ★ ★ ★

Compare Standard Report

	Price	Cutting	Mass	Alloc	Yield	Clarity	Co	Sym-O	Gr	Cut	Sym	Br
Imported model			2.2307		100.00%			+5.20				0.64
1	5930\$	Oval_WBT_C32_G64_P24...	1.5337		68.59%	VS1	H	+7.66	EX	EX	EX	
2	4476\$	Oval_WBT_C32_G64_P24...	1.4848		66.35%	VS1	H	+8.19	EX	EX	EX	
3	8157\$	Oval				VS1	H	+7.40	VG	VG	VG	
4	9120\$	Oval				VS1	H	+7.24	EX	EX	EX	
5	8157\$	Oval				VS1	H	+7.44	VG	VG	VG	
6	9120\$	Oval				VS1	H	+7.54	EX	EX	EX	
7	9120\$	Oval				VS1	H	+7.69	EX	EX	EX	
8	9120\$	Oval				VS1	H	+7.65	EX	EX	EX	0.79
9	9120\$	Oval				VS1	H	+7.75	EX	EX	EX	0.76
10	9120\$	Oval				VS1	H	+7.45	EX	EX	EX	...

Label of 'Plan 3':

Model color of 'Plan 3':

Create copy of 'Plan 3'

Delete 'Plan 3'...

Export model of 'Plan 3'...

Processing 'Plan 3'

Clarity precision: ☐ Draft ☐ Precise

Galahad: Generate Next Step Plans...

Allocation

Fit to rough (Run Balloon)

Bound Swim (Vary Param)

Bound Swim (Fixed Cut)

Bound Swim (Fixed Table and Cut)

View options

Calculate Optical Symmetry

Calculate Bitmap Brightness

Diamond Info

3

Mass: 1.6031 ct

VS1

H

VG

PPC: 5090 \$/ct

## Interface - Buttons for Stone Standard Position

On the top panel, buttons for quick positioning of the stone in the scene are added. They are:

- Top View (Crown)
- Side View (Table Up)
- Bottom View (Pavilion)
- Side View (Table Down)



## Increased Holder Check Frequency

The frequency of checking the holder is now increased.

Previously	Now
------------	-----

Holder Check	Time	Holder Check	Time
#0	0 min	#0	0 min
#1	10 min	#1	10 min
#2	+ 3 h	#2	30 min
#3	+ 3 h	#3	60 min
...	...	#4	+ 1 h
...	...	#5	+ 1 h
...	...	...	...