Girdle Thickness

Girdle bezel: 3.5% (EX)
Girdle valley: 1.8% (EX)

Girdle thickness is measured in 720 directions in steps of 0.5 degrees. The thickness of the girdle any given direction is measured by intersecting the vertical plane that defines the direction with the facets that constitute the girdle. HPOxygen finds the upper and lower points of the intersection between the girdle and the vertical plane. The difference between the Z coordinates of these points (along vertical axis) is the final thickness of the girdle in the given direction.

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If there are extra facets on the girdle, they may be treated in two different ways

- in case if the extra facet has less than 15° deviation from the girdle (steep girdle extra facet), the extra facet is included into the girdle for the purposes of this measurement
- more than 15° (shallow girdle extra facet), the extra facet is not included.

Unlike Crown height or Pavilion depth measurements, no virtual model is used.

Steep girdle extra facet   Less than 15° from Girdle   Shallow girdle extra facet   More than 15° from Girdle

Girdle Thickness   Girdle Thickness
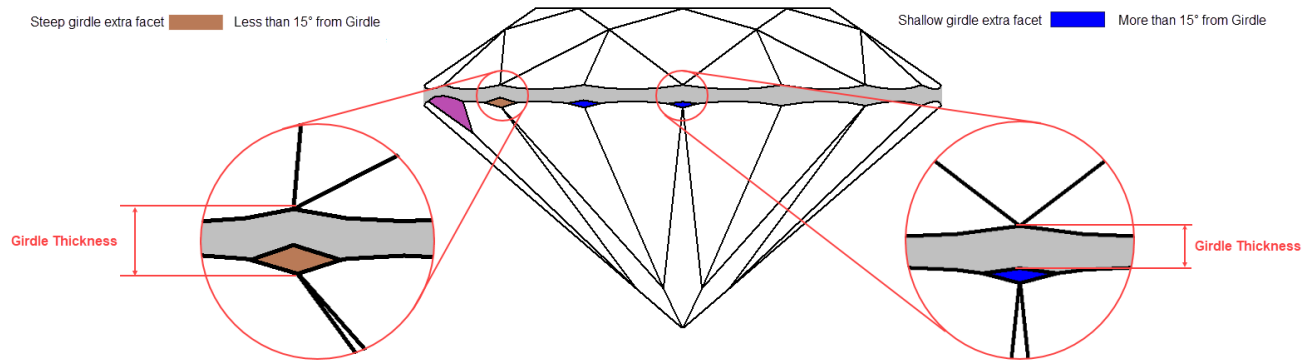
The obtained arrays of values are used to draw the involutes of the girdle surface and to determine the bezel, valley and bone girdle thicknesses. The valley, bezel and bone girdle thicknesses may be measured in at most 16, 8 and 8 points accordingly for most rounded cuts. These girdle thicknesses are measured using a virtual cut without Extra facets.

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Girdle Valley

> ⓘ   This parameter is applicable to the following cuts: Round brilliant, Marquise, Oval, Pear, Heart.

Firstly the valley girdle thicknesses are calculated. The whole girdle is separated into segments that correspond to crown upper facets and pavilion halves. These segments indicate areas on the girdle with the minimum thickness, i.e. valley girdle thickness. HPOxygen searches for the minimum of the girdle thickness within each segment and retains the azimuth of the found minimum.

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Calculation

Search for "valley" in Stone Heights Calculation.

Reporting

Reported in	Section	Values	Units	Bookmarks	Name in Reports
All full reports	Main Parameters	Avg, Min, Max, Dev	%(diameter), mm	`GIRDLE_NARROW, GIRDLE_NARROW_MIN, GIRDLE_NARROW_MAX, GIRDLE_NARROW_DEV,` `GIRDLE_NARROW_MM, GIRDLE_NARROW_MM_MIN, GIRDLE_NARROW_MM_MAX, GIRDLE_NARROW_MM_DEV`	**Girdle height valley**
	Detailed Parameters	All 8 values (round brilliant and rounded fancies) or 4 values (other cuts)	%(diameter), mm	`GIRDLE_NARROW_1, ..., GIRDLE_NARROW_16,` `GIRDLE_NARROW_MM_1, ..., GIRDLE_NARROW_MM_16`	
None				⚠ This functionality is currently available only under the following HASP keys: • "Developer" HASP key • 7-30542 • 7-30546 All listed with **_GIA**, for example GIRDLE_NARROW_MAX_GIA, GIRDLE_NARROW_15_GIA All listed with **_OCT**, for example GIRDLE_NARROW_MAX_OCT, GIRDLE_NARROW_15_OCT **Note** The GIA and OCT sets of bookmarks are explained on the Girdle Heights Calculation Methods page.	

Note the non-standard naming of the percentage values (no "`PC`" in the name).

Visualization in Appraisers

Value	Units	Bookmark	Tab	Parameter Name	Comment
Min	%(diameter)	GIRDLE_NARROW_MIN	**Cut**	**GirdleValley**	
Dev	%(diameter)	GIRDLE_NARROW_DEV	**Symmetry**	**GirdleValley**	Defined as the maximum difference of Girdle Valley measurements, i.e. the same as deviation of Girdle Valley value. As all symmetry parameters, it is an estimate of a deviation from perfect symmetry,and should be zero for an ideal stone.

Girdle Bezel

ⓘ This parameter is applicable to all cuts, though the number of individual values may vary.

The minimal values of girdle thickness (the locations of girdle valley measurements) break the girdle into areas which contain thickness maximums (bezel and bone). HPOxygen searches for the maximum of the girdle thickness within each area and retains the azimuth of the found maximum.

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For each type of girdle thickness, the average, minimum, maximum and deviation of corresponding values are calculated.

Calculation

Search for "bezel" in Stone Heights Calculation.

Reporting

Reported in	Section	Values	Units	Bookmarks	Name in Reports
All full reports	Main Parameters	Avg, Min, Max, Dev	%(diameter), mm	GIRDLE_WIDE_BEZEL, GIRDLE_WIDE_BEZEL_MIN, GIRDLE_WIDE_BEZEL_MAX, GIRDLE_WIDE_BEZEL_DEV, GIRDLE_WIDE_BEZEL_MM, GIRDLE_WIDE_BEZEL_MM_MIN, GIRDLE_WIDE_BEZEL_MM_MAX, GIRDLE_WIDE_BEZEL_MM_DEV	**Girdle height bezel**
	Detailed Parameters	All 8 values (round brilliant and rounded fancies) or 4 values (other cuts)	%(diameter), mm	GIRDLE_WIDE_BEZEL_1, ..., GIRDLE_WIDE_BEZEL_8, GIRDLE_WIDE_BEZEL_MM_1, ..., GIRDLE_WIDE_BEZEL_MM_8	
None				⚠ This functionality is currently available only under the following HASP keys: • "Developer" HASP key • 7-30542 • 7-30546 All listed with **_GIA**, for example GIRDLE_WIDE_BEZEL_MAX_GIA, GIRDLE_WIDE_BEZEL_6_GIA All listed with **_OCT**, for example GIRDLE_WIDE_BEZEL_MAX_OCT, GIRDLE_WIDE_BEZEL_6_OCT **Note** The GIA and OCT sets of bookmarks are explained on the Girdle Heights Calculation Methods page.	

Visualization in Appraisers

Value	Units	Bookmark	Tab	Parameter Name	Comment
Avg	%(diameter)	GIRDLE_WIDE_BEZEL	**Cut**	**GirdleBezel**	
Dev	%(diameter)	GIRDLE_WIDE_BEZEL_DEV	**Symmetry**	**GirdleBezel**	Defined as the maximum difference of Girdle Bezel measurements, i.e. the same as deviation of Girdle Bezel value. As all symmetry parameters, it is an estimate of a deviation from perfect symmetry,and should be zero for an ideal stone.

ⓘ

Girdle Bone

ⓘ This parameter is applicable to the following cuts: Round brilliant, Marquise, Oval, Pear, Heart, Princess.

The minimal values of girdle thickness (the locations of girdle valley measurements) break the girdle into areas which contain thickness maximums (bezel and bone). HPOxygen searches for the maximum of the girdle thickness within each area and retains the azimuth of the found maximum.

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For each type of girdle thickness, the average, minimum, maximum and deviation of corresponding values are calculated.

Calculation

Search for "bone" in Stone Heights Calculation.

Reporting

| Reported in	Section	Values	Units	Bookmarks	Names in Reports
Full Report for Brilliant, Full Report for Rounded Fancies, Full report for Princess	Main Parameters	Avg, Min, Max, Dev	%(diameter), mm	`GIRDLE_WIDE_BONE, GIRDLE_WIDE_BONE_MIN, GIRDLE_WIDE_BONE_MAX, GIRDLE_WIDE_BONE_DEV,` `GIRDLE_WIDE_BONE_MM, GIRDLE_WIDE_BONE_MM_MIN, GIRDLE_WIDE_BONE_MM_MAX, GIRDLE_WIDE_BONE_MM_DEV`	**Girdle height bone**
	Detailed Parameters	All 8 values	%(diameter), mm	`GIRDLE_WIDE_BONE_1, ..., GIRDLE_WIDE_BONE_8,` `GIRDLE_WIDE_BONE_MM_1, ..., GIRDLE_WIDE_BONE_MM_8`	
None				⚠ This functionality is currently available only under the following HASP keys: • "Developer" HASP key • 7-30542 • 7-30546 All listed with _GIA, for example GIRDLE_WIDE_BONE_MIN_GIA, GIRDLE_WIDE_BONE_8_GIA All listed with **_OCT**, for example GIRDLE_WIDE_BONE_MIN_OCT, GIRDLE_WIDE_BONE_8_OCT **Note** The GIA and OCT sets of bookmarks are explained on the Girdle Heights Calculation Methods page.	

Visualization in Appraisers

Value	Units	Bookmark	Tab	Parameter Name	Comment
Dev	%(diameter)	GIRDLE_WIDE_BONE_DEV	**Symmetry**	**GirdleBone**	Defined as the maximum difference of Girdle Bone measurements, i.e. the same as the deviation of Girdle Bone value. As all symmetry parameters, it is an estimate of a deviation from perfect symmetry, and should be zero for an ideal stone.

Girdle Height Correlation

Alias: GirdleHeightCorrelation

ⓘ This parameter is applicable to the Oval cut.

The maximum difference between the bezel and bone heights. The parameter shows how well a Girdle is leveled in the areas of bezel and bone: the less the value is, the greater the leveling.

GirdleHeightCorrelation

Girdle bezel heights
Girdle bone heights

OR

Larger and therefore will be taken
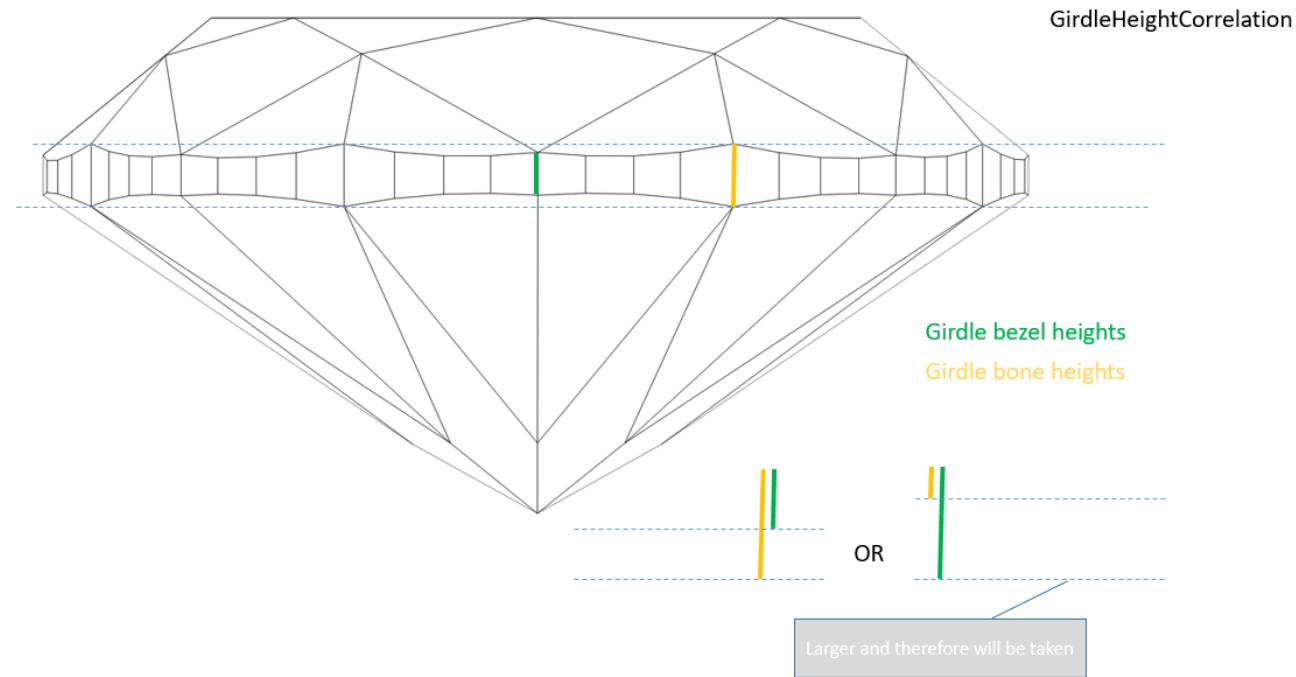
Calculation

So we measure the height of every Girdle bezel and take the maximum from obtained values, we measure the height of every Girdle bone and take the minimum from obtained values, then calculate the difference between this maximum and minimum. This is the first number. Then from Girdle bones, we take maximum, from Girdle bezels - minimum, then calculate the difference between this maximum and minimum. This is the second number. Then we take maximum from these two numbers. This is our parameter.

For detailed information about Girdle bezel and Girdle bone, see corresponding sections in the Girdle Thickness article. The detailed description of how Girdle bezel and Girdle bone are defined and used in the system is presented in the New measurements of Heights for Pavilion and Girdle section of the OctoNus site page.

Girdle bezel heights
Girdle bone heights
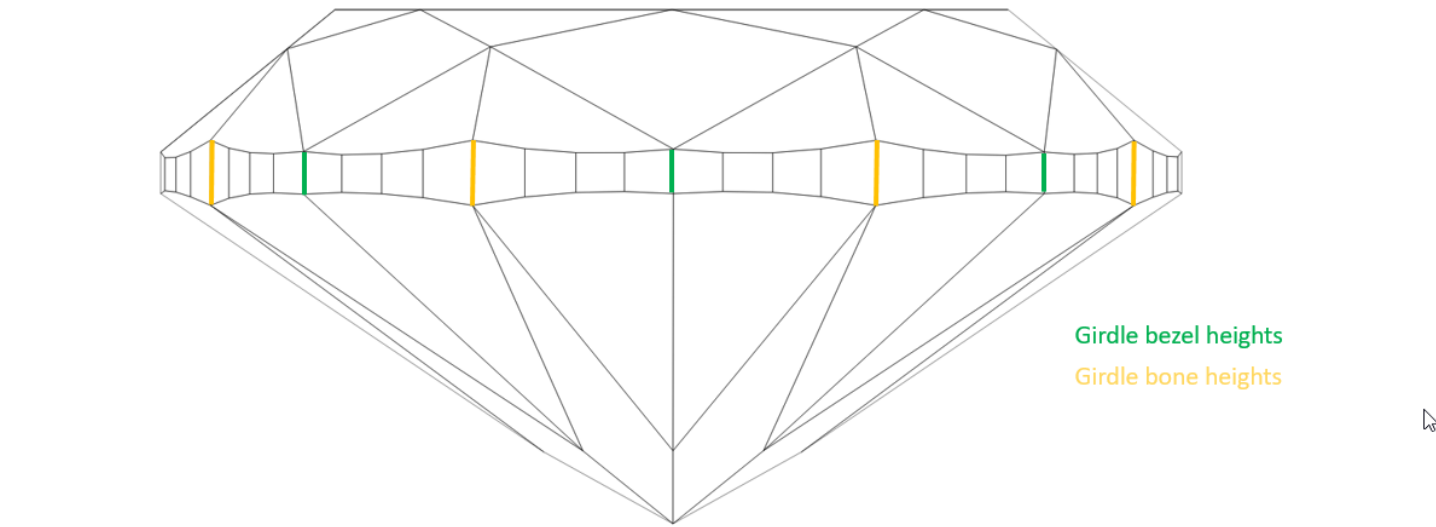
$$\text{MAX}(\text{MAX}(\text{Girdle bezel height})-\text{MIN}(\text{Girdle bone height}), \text{MAX}(\text{Girdle bone height})-\text{MIN}(\text{Girdle bezel height}))$$

In User Interface

Recut > **Appraiser** = "MyOvalOpt | MyOval" or "MyOvalPlus | MyOvalPerformanceWare" > **Show Editor** > the **Symmetry** tab.
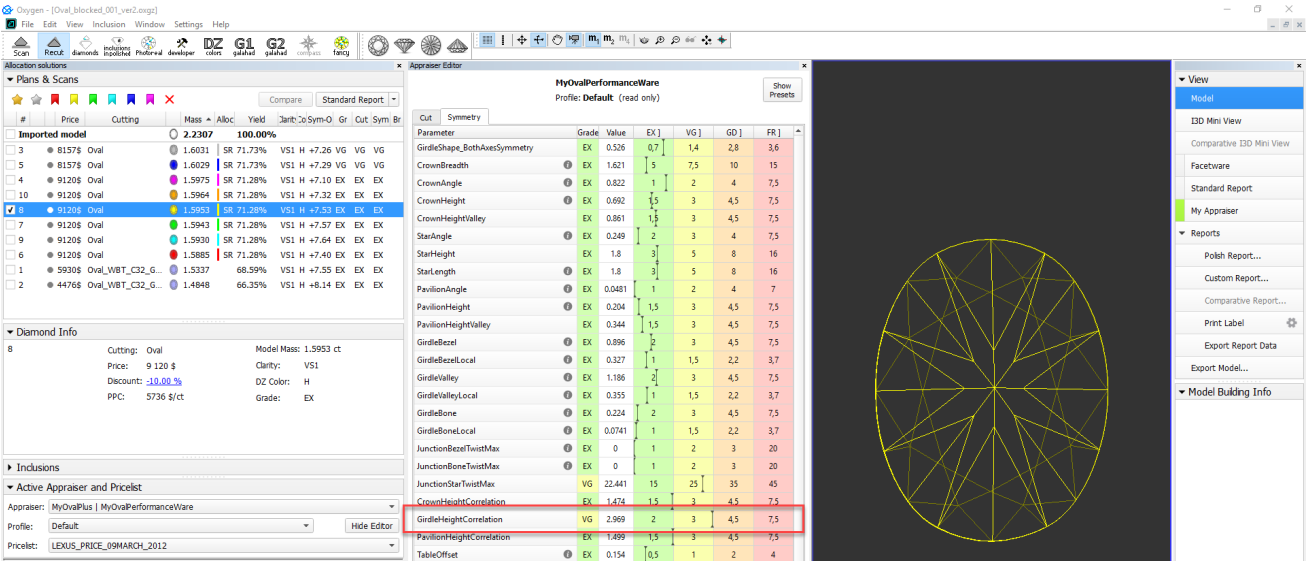
Reporting

Reported in	Section	Values	Units	Bookmarks
Full Report for Rounded Fancies	Main Parameters	Avg	%(diameter)	GIRDLE_HEIGHT_CORRELATION