

# Girdle Heights Calculation Methods

On this page:

1

Overview

2

Examples

2.1

Girdle Bezel Difference Example

2.2

Girdle Bone Difference Example

2.3


Girdle Valley Difference Example

3

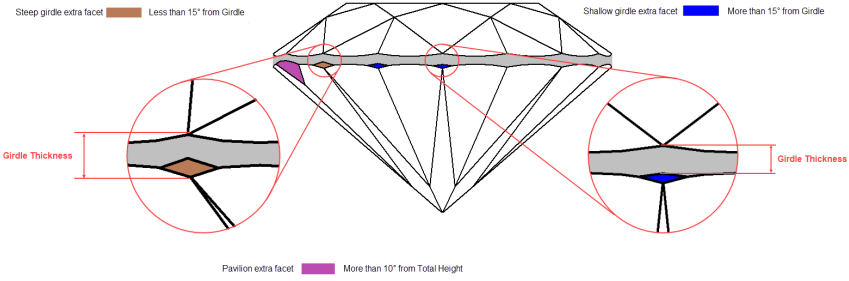
Related Pages

## Overview

When there is an extra facet adjacent to the girdle, there are **OLD** and **New** methods to handle them, that define different shapes of the corresponding girdle curve. Later, the points related to the [calculation](#) of the stone heights will be searched on this curve. As the different versions of the program use different methods, it is important to understand difference between them.




- In versions up to 5.2.10 - [Girdle bezel](#), [Girdle bone](#), and [Girdle valley](#) are calculated using the **OLD** method. **NEW** method values are also calculated for testing purposes, but available only via the **Export Report Data** function.
- Starting from version 5.2.10 - the [Girdle bezel](#), and [Girdle bone](#) are calculated using the **NEW** method. The [Girdle valley](#) is calculated using the **OLD** method.

Girdle Heights Calculation Methods	
OLD Method	NEW method
<div>Notes</div> <ul style="list-style-type: none"><li>extra facet adjacent to the girdle and meeting at least one of the conditions:<ul style="list-style-type: none"><li>with height &gt; 10% from <b>Total Height</b></li><li>from pavilion side, with facet area &gt; 1/580 from the total cut area</li><li>from crows side, with facet area &gt; 1/900 from the total cut area</li></ul>...<b>is not a girdle extra facet</b> (it is a <b>crown</b> or <b>pavilion extra facet</b>)</li><li><b>steep</b> girdle extra facet has less than 15° deviation from the girdle plane</li><li><b>shallow</b> girdle extra facet - more than 15°</li></ul>	
<ul style="list-style-type: none"><li>Uses real model:<ul style="list-style-type: none"><li><b>steep girdle extra facets</b> are calculated as a part of a girdle</li><li><b>shallow girdle extra facets</b> are not calculated as a part of a girdle</li></ul></li></ul>	<ul style="list-style-type: none"><li>Uses <b>virtual model</b> built on the real brilliant model by:<ul style="list-style-type: none"><li>leaving <b>steep girdle extra facets</b> in their places and calculating them as a part of a girdle</li><li>excluding <b>shallow girdle extra facets</b></li><li>excluding <b>caverns</b></li><li>for RBC, in all HPO versions except 5.2.10 - excluding <b>crown</b> and <b>pavilion extra facets</b> adjacent to the girdle</li><li>when excluding a facet, the neighboring facets are continued until they intersect</li></ul></li></ul> <div>See examples and further explanations on the <a href="#">Building Virtual Model</a> page.</div>
<div><div><div>Steep girdle extra facet</div><div></div><div>Less than 15° from Girdle</div></div><div><div>Shallow girdle extra facet</div><div></div><div>More than 15° from Girdle</div></div><div><div>Pavilion extra facet</div><div></div><div>More than 10° from Total Height</div></div><div></div></div>	

The following parameters are calculated differently:

- [Girdle Bezel](#)
- [Girdle Bone](#)
- [Girdle Valley](#)

For these parameters, the normal bookmark set is **extended** with the same bookmarks with **\_GIA** (OLD method) and **\_OCT** (NEW method) in their names.



This functionality is currently available only under the following HASP keys:

- "Developer" HASP key
- 7-30542
- 7-30546

For example,

- GIRDLE\_WIDE\_BEZEL\_MAX
- GIRDLE\_WIDE\_BEZEL\_6
- GIRDLE\_WIDE\_BEZEL\_MAX\_GIA
- GIRDLE\_WIDE\_BEZEL\_6\_GIA
- GIRDLE\_WIDE\_BEZEL\_MAX\_OCT
- GIRDLE\_WIDE\_BEZEL\_6\_OCT



Currently, for girdle heights calculation, the GIA method is used, which means all reports and appraisers contain GIA method results.

Therefore, values of default bookmarks are equal to **\_GIA**, that is, for example, GIRDLE\_WIDE\_BEZEL\_MAX = GIRDLE\_WIDE\_BEZEL\_MAX\_GIA

## Examples

### Girdle Bezel Difference Example

Here is an example of how [Girdle Bezel](#) is calculated differently using GIA and Octonus methods.

Project File with models for this sample	<a href="#">2005_01_28_kb7 (4).oxgz</a>
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See details on how points are found in the "Finding Points" section of the [Stone Heights Calculation](#) page.

GIRDLE_WIDE_BEZEL_1_OCT	2.87	GIRDLE_WIDE_BEZEL_1_GIA	2.87	GIRDLE_WIDE_BEZEL_MM_1_OCT	0.137	GIRDLE_WIDE_BEZEL_MM_1_GIA	0.137
GIRDLE_WIDE_BEZEL_2_OCT	2.5	GIRDLE_WIDE_BEZEL_2_GIA	2.22	GIRDLE_WIDE_BEZEL_MM_2_OCT	0.119	GIRDLE_WIDE_BEZEL_MM_2_GIA	0.106
GIRDLE_WIDE_BEZEL_3_OCT	3.35	GIRDLE_WIDE_BEZEL_3_GIA	3.35	GIRDLE_WIDE_BEZEL_MM_3_OCT	0.16	GIRDLE_WIDE_BEZEL_MM_3_GIA	0.16
GIRDLE_WIDE_BEZEL_4_OCT	3.21	GIRDLE_WIDE_BEZEL_4_GIA	3.21	GIRDLE_WIDE_BEZEL_MM_4_OCT	0.153	GIRDLE_WIDE_BEZEL_MM_4_GIA	0.153
GIRDLE_WIDE_BEZEL_5_OCT	2.66	GIRDLE_WIDE_BEZEL_5_GIA	2.66	GIRDLE_WIDE_BEZEL_MM_5_OCT	0.127	GIRDLE_WIDE_BEZEL_MM_5_GIA	0.127
GIRDLE_WIDE_BEZEL_6_OCT	2.58	GIRDLE_WIDE_BEZEL_6_GIA	2.58	GIRDLE_WIDE_BEZEL_MM_6_OCT	0.123	GIRDLE_WIDE_BEZEL_MM_6_GIA	0.123
GIRDLE_WIDE_BEZEL_7_OCT	2.64	GIRDLE_WIDE_BEZEL_7_GIA	2.64	GIRDLE_WIDE_BEZEL_MM_7_OCT	0.126	GIRDLE_WIDE_BEZEL_MM_7_GIA	0.126
GIRDLE_WIDE_BEZEL_8_OCT	2.99	GIRDLE_WIDE_BEZEL_8_GIA	2.99	GIRDLE_WIDE_BEZEL_MM_8_OCT	0.143	GIRDLE_WIDE_BEZEL_MM_8_GIA	0.143
GIRDLE_WIDE_BEZEL_MIN_OCT	2.5	GIRDLE_WIDE_BEZEL_MIN_GIA	2.22	GIRDLE_WIDE_BEZEL_MM_MIN_OCT	0.119	GIRDLE_WIDE_BEZEL_MM_MIN_GIA	0.106
GIRDLE_WIDE_BEZEL_MAX_OCT	3.35	GIRDLE_WIDE_BEZEL_MAX_GIA	3.35	GIRDLE_WIDE_BEZEL_MM_MAX_OCT	0.16	GIRDLE_WIDE_BEZEL_MM_MAX_GIA	0.16
GIRDLE_WIDE_BEZEL_AVG_OCT	2.85	GIRDLE_WIDE_BEZEL_AVG_GIA	2.81	GIRDLE_WIDE_BEZEL_MM_AVG_OCT	0.136	GIRDLE_WIDE_BEZEL_MM_AVG_GIA	0.134
GIRDLE_WIDE_BEZEL_DEV_OCT	0.85	GIRDLE_WIDE_BEZEL_DEV_GIA	1.13	GIRDLE_WIDE_BEZEL_MM_DEV_OCT	0.041	GIRDLE_WIDE_BEZEL_MM_DEV_GIA	0.054

Girdle Bezel values summary:

		OCT,%	GIA,%	OCT,mm	GIA,mm
GIRDLE_WIDE_BEZEL	1	2.87	2.87	0.137	0.137
	2	2.5	2.22	0.119	0.106
	3	3.35	3.35	0.16	0.16
	4	3.21	3.21	0.153	0.153
	5	2.66	2.66	0.127	0.127
	6	2.58	2.58	0.123	0.123
	7	2.64	2.64	0.126	0.126
	8	2.99	2.99	0.143	0.143

	MIN	2.5	2.22	0.119	0.106
	MAX	3.35	3.35	0.16	0.16
	AVG	2.85	2.81	0.136	0.134
	DEV	0.85	1.13	0.041	0.054

### Girdle Bone Difference Example

Here is an example of how [Girdle Bone](#) is calculated differently using GIA and Octonus methods.

Project File with models for this sample	<a href="#">2005_01_28_kb7 (4).oxgz</a>
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See details on how points are found in the "Finding Points" section of the [Stone Heights Calculation](#) page.

GIRDLE_WIDE_BONE_1_OCT	3.27	GIRDLE_WIDE_BONE_1_GIA	3.27	GIRDLE_WIDE_BONE_MM_1_OCT	0.156	GIRDLE_WIDE_BONE_MM_1_GIA	0.156
GIRDLE_WIDE_BONE_2_OCT	3.57	GIRDLE_WIDE_BONE_2_GIA	3.57	GIRDLE_WIDE_BONE_MM_2_OCT	0.17	GIRDLE_WIDE_BONE_MM_2_GIA	0.17
GIRDLE_WIDE_BONE_3_OCT	3.68	GIRDLE_WIDE_BONE_3_GIA	3.68	GIRDLE_WIDE_BONE_MM_3_OCT	0.176	GIRDLE_WIDE_BONE_MM_3_GIA	0.176
GIRDLE_WIDE_BONE_4_OCT	3.28	GIRDLE_WIDE_BONE_4_GIA	3.28	GIRDLE_WIDE_BONE_MM_4_OCT	0.157	GIRDLE_WIDE_BONE_MM_4_GIA	0.157
GIRDLE_WIDE_BONE_5_OCT	3.84	GIRDLE_WIDE_BONE_5_GIA	3.84	GIRDLE_WIDE_BONE_MM_5_OCT	0.183	GIRDLE_WIDE_BONE_MM_5_GIA	0.183
GIRDLE_WIDE_BONE_6_OCT	3.19	GIRDLE_WIDE_BONE_6_GIA	2.7	GIRDLE_WIDE_BONE_MM_6_OCT	0.153	GIRDLE_WIDE_BONE_MM_6_GIA	0.129
GIRDLE_WIDE_BONE_7_OCT	3.54	GIRDLE_WIDE_BONE_7_GIA	3.54	GIRDLE_WIDE_BONE_MM_7_OCT	0.169	GIRDLE_WIDE_BONE_MM_7_GIA	0.169
GIRDLE_WIDE_BONE_8_OCT	3.29	GIRDLE_WIDE_BONE_8_GIA	3.29	GIRDLE_WIDE_BONE_MM_8_OCT	0.157	GIRDLE_WIDE_BONE_MM_8_GIA	0.157
GIRDLE_WIDE_BONE_MIN_OCT	3.19	GIRDLE_WIDE_BONE_MIN_GIA	2.7	GIRDLE_WIDE_BONE_MM_MIN_OCT	0.153	GIRDLE_WIDE_BONE_MM_MIN_GIA	0.129
GIRDLE_WIDE_BONE_MAX_OCT	3.84	GIRDLE_WIDE_BONE_MAX_GIA	3.84	GIRDLE_WIDE_BONE_MM_MAX_OCT	0.183	GIRDLE_WIDE_BONE_MM_MAX_GIA	0.183
GIRDLE_WIDE_BONE_AVG_OCT	3.46	GIRDLE_WIDE_BONE_AVG_GIA	3.4	GIRDLE_WIDE_BONE_MM_AVG_OCT	0.165	GIRDLE_WIDE_BONE_MM_AVG_GIA	0.162
GIRDLE_WIDE_BONE_DEV_OCT	0.65	GIRDLE_WIDE_BONE_DEV_GIA	1.13	GIRDLE_WIDE_BONE_MM_DEV_OCT	0.031	GIRDLE_WIDE_BONE_MM_DEV_GIA	0.054

Girdle Bezel values summary:

		OCT,%	GIA,%	OCT,mm	GIA,mm
GIRDLE_WIDE_BONE	1	3.27	3.27	0.156	0.156
	2	3.57	3.57	0.17	0.17
	3	3.68	3.68	0.176	0.176
	4	3.28	3.28	0.157	0.157
	5	3.84	3.84	0.183	0.183
	6	3.19	2.7	0.153	0.129
	7	3.54	3.54	0.169	0.169
	8	3.29	3.29	0.157	0.157
	MIN	3.19	2.7	0.153	0.129
	MAX	3.84	3.84	0.183	0.183
	AVG	3.46	3.4	0.165	0.162
	DEV	0.65	1.13	0.031	0.054

### Girdle Valley Difference Example

Here is an example of how [Girdle Valley](#) is calculated differently using GIA and Octonus methods.

Project File with models for this sample	<a href="#">Valley - Combined.oxgz</a>
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See details on how points are found in the "Finding Points" section of the [Stone Heights Calculation](#) page.

GIRDLE_NARROW_1_OCT	3.66	GIRDLE_NARROW_1_GIA	3.66	GIRDLE_NARROW_MM_1_OCT	0.169	GIRDLE_NARROW_MM_1_GIA	0.169
GIRDLE_NARROW_2_OCT	3.72	GIRDLE_NARROW_2_GIA	3.72	GIRDLE_NARROW_MM_2_OCT	0.172	GIRDLE_NARROW_MM_2_GIA	0.172
GIRDLE_NARROW_3_OCT	4.04	GIRDLE_NARROW_3_GIA	3.88	GIRDLE_NARROW_MM_3_OCT	0.187	GIRDLE_NARROW_MM_3_GIA	0.18
GIRDLE_NARROW_4_OCT	3.92	GIRDLE_NARROW_4_GIA	4.6	GIRDLE_NARROW_MM_4_OCT	0.181	GIRDLE_NARROW_MM_4_GIA	0.213
GIRDLE_NARROW_5_OCT	4.01	GIRDLE_NARROW_5_GIA	4.01	GIRDLE_NARROW_MM_5_OCT	0.186	GIRDLE_NARROW_MM_5_GIA	0.186
GIRDLE_NARROW_6_OCT	3.94	GIRDLE_NARROW_6_GIA	3.94	GIRDLE_NARROW_MM_6_OCT	0.182	GIRDLE_NARROW_MM_6_GIA	0.182
GIRDLE_NARROW_7_OCT	2.91	GIRDLE_NARROW_7_GIA	2.91	GIRDLE_NARROW_MM_7_OCT	0.135	GIRDLE_NARROW_MM_7_GIA	0.135
GIRDLE_NARROW_8_OCT	2.5	GIRDLE_NARROW_8_GIA	2.5	GIRDLE_NARROW_MM_8_OCT	0.115	GIRDLE_NARROW_MM_8_GIA	0.115
GIRDLE_NARROW_9_OCT	2.68	GIRDLE_NARROW_9_GIA	2.68	GIRDLE_NARROW_MM_9_OCT	0.124	GIRDLE_NARROW_MM_9_GIA	0.124
GIRDLE_NARROW_10_OCT	2.28	GIRDLE_NARROW_10_GIA	2.28	GIRDLE_NARROW_MM_10_OCT	0.105	GIRDLE_NARROW_MM_10_GIA	0.105
GIRDLE_NARROW_11_OCT	2.17	GIRDLE_NARROW_11_GIA	2.17	GIRDLE_NARROW_MM_11_OCT	0.1	GIRDLE_NARROW_MM_11_GIA	0.1
GIRDLE_NARROW_12_OCT	3.09	GIRDLE_NARROW_12_GIA	3.09	GIRDLE_NARROW_MM_12_OCT	0.143	GIRDLE_NARROW_MM_12_GIA	0.143
GIRDLE_NARROW_13_OCT	3.57	GIRDLE_NARROW_13_GIA	3.57	GIRDLE_NARROW_MM_13_OCT	0.165	GIRDLE_NARROW_MM_13_GIA	0.165
GIRDLE_NARROW_14_OCT	3.45	GIRDLE_NARROW_14_GIA	3.45	GIRDLE_NARROW_MM_14_OCT	0.159	GIRDLE_NARROW_MM_14_GIA	0.159
GIRDLE_NARROW_15_OCT	2.94	GIRDLE_NARROW_15_GIA	2.54	GIRDLE_NARROW_MM_15_OCT	0.136	GIRDLE_NARROW_MM_15_GIA	0.118
GIRDLE_NARROW_16_OCT	3.23	GIRDLE_NARROW_16_GIA	2.09	GIRDLE_NARROW_MM_16_OCT	0.15	GIRDLE_NARROW_MM_16_GIA	0.097
GIRDLE_NARROW_MIN_OCT	2.17	GIRDLE_NARROW_MIN_GIA	2.09	GIRDLE_NARROW_MM_MIN_OCT	0.1	GIRDLE_NARROW_MM_MIN_GIA	0.097
GIRDLE_NARROW_MAX_OCT	4.04	GIRDLE_NARROW_MAX_GIA	4.6	GIRDLE_NARROW_MM_MAX_OCT	0.187	GIRDLE_NARROW_MM_MAX_GIA	0.213
GIRDLE_NARROW_AVG_OCT	3.26	GIRDLE_NARROW_AVG_GIA	3.19	GIRDLE_NARROW_MM_AVG_OCT	0.151	GIRDLE_NARROW_MM_AVG_GIA	0.148
GIRDLE_NARROW_DEV_OCT	1.87	GIRDLE_NARROW_DEV_GIA	2.51	GIRDLE_NARROW_MM_DEV_OCT	0.087	GIRDLE_NARROW_MM_DEV_GIA	0.116

Girdle Bezel values summary:

		OCT,%	GIA,%	OCT,mm	GIA,mm
GIRDLE_NARROW	1	3.66	3.66	0.169	0.169
	2	3.72	3.72	0.172	0.172
	3	4.04	3.88	0.187	0.18
	4	3.92	4.6	0.181	0.213
	5	4.01	4.01	0.186	0.186
	6	3.94	3.94	0.182	0.182
	7	2.91	2.91	0.135	0.135
	8	2.5	2.5	0.115	0.115
	9	2.68	2.68	0.124	0.124
	10	2.28	2.28	0.105	0.105
	11	2.17	2.17	0.1	0.1
	12	3.09	3.09	0.143	0.143
	13	3.57	3.57	0.165	0.165
	14	3.45	3.45	0.159	0.159
	15	2.94	2.54	0.136	0.118
	16	3.23	2.09	0.15	0.097
	MIN	2.17	2.09	0.1	0.097
	MAX	4.04	4.6	0.187	0.213
	AVG	3.26	3.19	0.151	0.148
	DEV	1.87	2.51	0.087	0.116

## Related Pages

- [Stone Heights Calculation](#)
- [Building Virtual Model](#)
- [Girdle Heights Calculation Methods](#)