


Algorithms comparison

In the table below, you can find information about algorithms presented in the system. This information is aimed to help you to decide which algorithm to use in your specific case.

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Algorithms

 **General notes on usage**

- Number in an algorithm name marks the **20XX year** when the algorithm was created. When selecting the algorithm, between several alike, it is always preferable to use the **newer** algorithm.
- Always run** the [19. SmartRecut \(Brilliant, Oval, AnyCut\)](#) on your Recut result to get the better mass.
- Hybrid

 marks algorithms that can effectively work with cuts populated with allocation forms and linked hybrid appraisers of these cuts. "Effectively work" means this algorithm will try to produce solutions to **all** allocation forms of your cut. The other algorithms will work only with the first (base) form of the cut.

- MyAnyCut
- CushionRectangular
- CushionSquare
- Own** appraisers of custom cuts

Recut

Algorithm	When to use	Related Pages	Previous Names (if ever renamed)
06. Semicut (Final)	Produces the solutions containing one diamond with the table parallel to the holder plane. Better to run on the polished/semipolished stones with the almost finalized cutting.		
13. Cascade-2M	Produces the solutions containing two diamonds. Better to run on the stones in the early stages of diamond processing.		
13. Single (Rough)	Produces the solutions containing one diamond located and scaled variously within the initial model.		
18. Semipolished	Finds all the same solutions as 13. Single (Rough) , but selects only one - the best - of them and then adds one more solution to it, which is aligned to the facets of the initial semicut stone and this solution may be better, especially after applying Smart Recut. It is recommended to run this algorithm on semipolished RBC and use both of produced solutions in Smart Recut later.		18. Single(Recut) (before 5.2.22)
19. Single (FixedForm) <div>Hybrid</div>	In In-house cut workflow , to produce solutions exactly of the same form (only scale or position may be changed) as the allocation forms registered within the cut. The number of results is limited by the number of allocation forms (but may be fewer). The algorithm searches for the best price and provides the solution with the best price as first in each run. The remaining solutions are searched "near the first" and are displayed just for "widening your options" (if you select to cut variant not because of price only). Better to use when there is a number of registered allocation forms and you want to bind to them while getting the best price.	In-house cut workflow , In-house cut registration	
20. Single (Recut) <div>Hybrid</div>	In In-house cut workflow , intended to produce solutions for forms and then search additionally beyond them (but in the limits specified by the appraiser). Better to use for searching for larger mass, taking into account that some fixed form solutions may be excluded from results if the algorithm finds better solutions.	In-house cut workflow , In-house cut registration	

Run on recut

Algorithm	When to use	Related Pages	Previous Names (if ever renamed)
17. SmartZoom	Allows improving existing solutions by weight (up to a few percent) due to adding some imperfections in shape. These imperfections are extra girdle facets, girdle height change, and girdle shape (roundness) change. The algorithm can be run for one of the current solutions and works fast (from a few seconds for simple to a couple of minutes for complex models).		
19. SmartRecut (Brilliant, Oval, AnyCut) <div>Hybrid</div>	Used to get larger mass via additional (after Recut) optimization. If Recut provides a symmetrical change of facets (they are changed together and accordingly to each other) then Smart Recut provides asymmetrical change (facets are changed independently). Besides larger mass, Smart Recut aims not to allow any (cut or symmetry) grade or performance loss. #13 provides optimization for Brilliant and Oval cuttings #19 additionally for any other cuttings.	Smart Recut , In-house cut workflow	"19. SmartRecut (Brilliant, Oval, AnyCut)" was "18. SmartAnyCut" 13. SmartRecut (Brilliant, Oval) when AnyCut feature is not included)

Technical

Algorithm	When to use	Related Pages	Previous Names (if ever renamed)
19. SmartNormalize	For the deletion of excess vertices and facets and making symmetry cut from a scanned model for further optimization usage.	Smart Normalize algorithm, In-house cut workflow	
19. SmartNormalizeLite	For the normalization of diamonds with the specific girdle design - in contradiction to the usual SmarNormalize this algorithm does not attempt to make a girdle strictly vertical. Thus, the algorithm may be used for normalizing the designer cuts for later optimizing without changing the form (using the "19. Single (FixedForm)" algorithm of the In-house cut workflow).	Smart Normalize Lite algorithm, In-house cut workflow	19. SmartNormalizeLite (will be renamed soon)
20. MEC for round bruting	A diamond bruting machine used in a round Brilliant cutting process is only able to produce a vertical girdle of a round shape. The algorithm finds a cylinder circumscribed around a selected solution which is used for the calculation of the correct position of a stone in a bruting machine and a bruting radius.		

Scenarios

What you want to do	Algorithm(s)	Comments
Create plans for Brilliant cut with the " GIA Facetware + MyRound " appraiser.		
Create plans for custom cuts (fantasies) using a new approach (custom cut + its own <div>Hybrid</div> appraiser)		
Create plans for custom cuts (fantasies) using an old approach		
Produce the solutions containing two diamonds.	13. Cascade-2M , then 19. SmartRecut (Brilliant, Oval, AnyCut)	Use the + Smart Recut option to make both algorithms work in one run.
Create your in-house cut or improve existing cut by adding the additional allocation forms	19. SmartNormalize	Use normalization for your model before registering it as your in-house cut or adding it as an allocation form to the existing cut.
Fewer solutions, only the best	18. Semipolished	