

# In-house cut workflow

The system provides the *in-house cut workflow* which includes the tools and comfortable user interfaces for registering your own in-house cuts from your own designs, sample stone scans, and successful allocation solutions. The workflow is a simple way for both the process of cut registration and subsequent solution allocation, and also provides extended control over the parameters of the solutions. This is achieved by the comfortable user interface for in-house cut registration, as well as adding the new Recut algorithms working with the [hybrid appraisers](#) and providing the option of automatic start of Smart Recut basing on the automatically detected best Recut solution.

You can apply the new workflow to any cuts.

 For a general overview of the process, see [Workflow - in-house cut allocation \(diagram\)](#)

The In-house cut workflow includes the following steps:

- In-house cut registration
- Allocation (Recut + Smart Recut) with one of the [hybrid appraisers](#) and one of the modern algorithms: "19. Single (FixedForm)" or "20. Single (Recut)", see [Algorithms comparison](#).
- (optional) adding allocation forms

Below these steps are described in an overview video and as step-by-step.

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## Overview Video

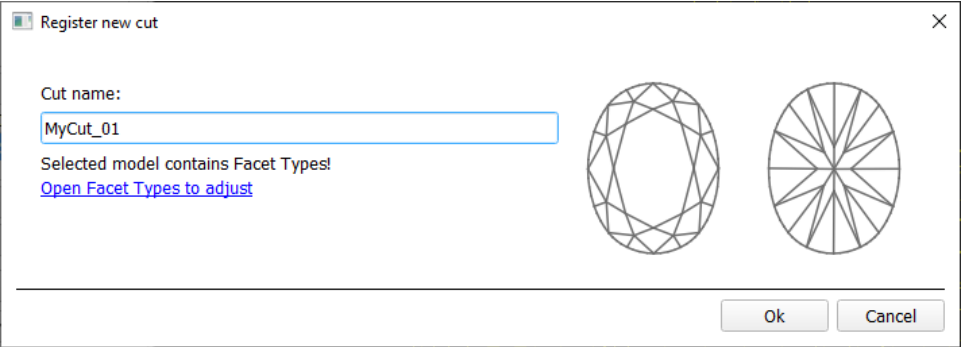
| Video   AnyCut Workflow - Main Steps                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                   |                                                                                               |                  |       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------|------------------|-------|
| Published:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 2019, September 3 | Last Updated:                                                                                 | 2019, October 16 | v.2.3 |
| Your browser does not support the HTML5 video element                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                   |                                                                                               |                  |       |
| <div>Video summary:</div> <ul style="list-style-type: none"><li>• AnyCut workflow includes the following steps: in-house cut registration, FixedForm (recut) allocation, SmartRecut AnyCut allocation with relative ASCII appraiser</li><li>• In-house cut registration starts from running SmartNormalize for the model you want to use as cut</li><li>• Register most symmetrical normalization result as new cut</li><li>• Provide custom facet types for your new cut</li><li>• Facet types from a sample can be used</li><li>• If necessary, corrections may be done for selected types from the sample</li><li>• Save your cut</li><li>• Run FixedForm (recut) allocation with your cut</li><li>• Use + <b>Smart Recut</b> option to immediately start SmartRecut after the Recut</li><li>• The system provides a set of solutions</li></ul> |                   |                                                                                               |                  |       |
| Video keywords: AnyCut, in-house cut, custom facet types, SmartRecut                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                   |                                                                                               |                  |       |
| Published in:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Release Notes     | 2019-09-13 - HPOxygen Server 5.2.22                                                           |                  |       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Documentation     | <a href="#">In-house cut workflow</a> , <a href="#">In-house cut registration</a>             |                  |       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Playlists         | <a href="#">All Videos</a>   YouTube: <a href="#">HP Carbon</a>                               |                  |       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Also              | <a href="#">As Separate Page</a>   <a href="#">On YouTube</a>   <a href="#">Specification</a> |                  |       |

## In-house cut registration

Main article: [In-house cut registration](#)

This stage includes obligatory normalization of the model you decided to use as cutting, then registration optimal normalization variant as a new cutting.

1. For the scan, you want to register as cutting, run the "SmartNormalize" algorithm. Several solutions are produced.
2. From the solutions, produced by the "SmartNormalize" algorithm, select the one you want to register as cutting.
3. Right-click this solution, and from the context menu, select **Register as new cut...** The dialog is displayed.
4. In the **Register new cut** dialog, if necessary, specify [facet types](#).



- 5. Set **Cut name**.
- 6. Click **Ok**.

## Allocation

This stage includes sequentially:

- Recut allocation
- Smart Recut allocation

You can execute both steps within one run.

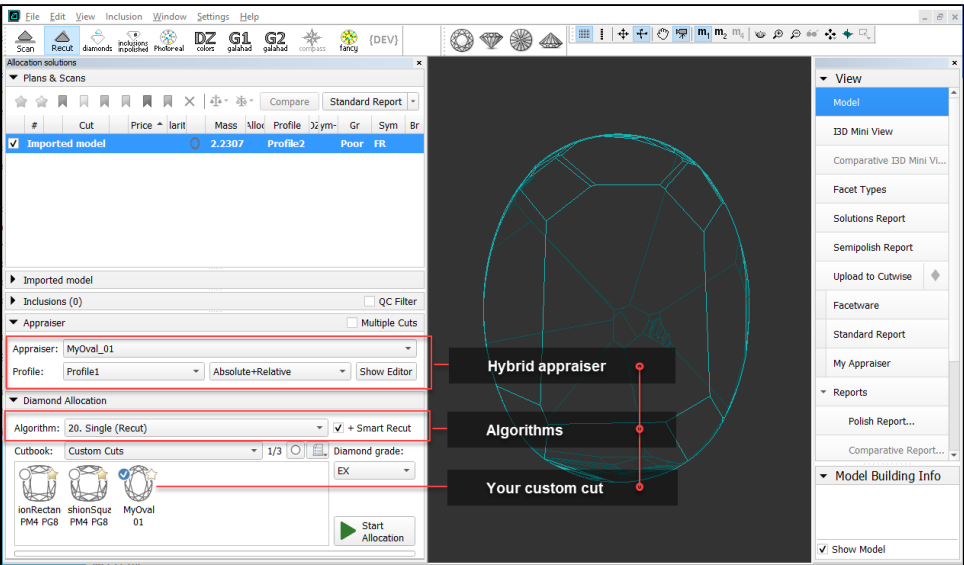
For the Recut allocation within the in-house cut workflow, two algorithms are presented in the system:

- **19. Single (FixedForm)** - is intended to produce solutions in maximum correspondence with registered forms and limited by these forms number. Better to use when there is a number of registered forms and you want to bind to them. See detailed description of allocation forms in the "Adding Allocation Forms" section below.
- **20. Single (Recut)** - is 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.

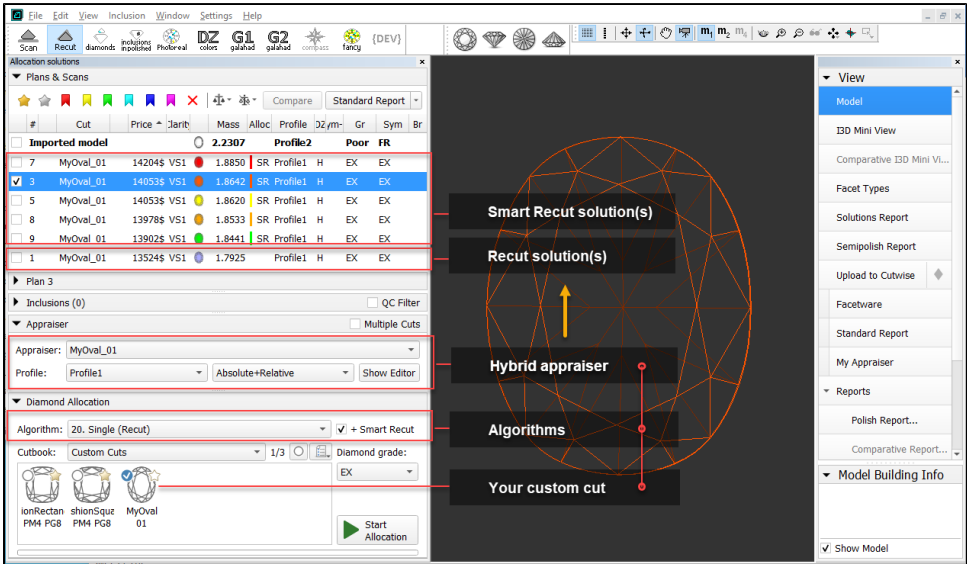
To perform Recut + Smart Recut allocation for your previously registered in-house cut:

1. In **Recut** mode under **Diamond Allocation** cut select **Algorithm** = "19. Single (FixedForm)" or "20. Single (Recut)".
2. From **Cutbook** > **In-house cuts** select your registered in-house cut
3. Set **Appraiser** = [hybrid appraiser](#), linked to your in-house cut or [MyAnyCut](#) with the profile configured for your in-house cut.
4. Select the **+SmartRecut** option. With this option selected, from the two best by price Recut solutions, the SmartRecut will be immediately started.

 Note that the SmartRecut algorithm will run with the latest used options. The latest version of the composite appraiser in addition to others supports **Fix Girdle**, **Fix Crown** and **Fix Facets** options.



5. Click **Run**. Recut solutions are added to the list, then Smart Recut solutions are added.



# Adding allocation forms

Main article: [In-house cut registration](#)

 Algorithms are able to run on a single base form (cut itself). Still, it is highly recommended to register allocation forms, especially for the different W:L ratio, as it significantly improves allocation results.

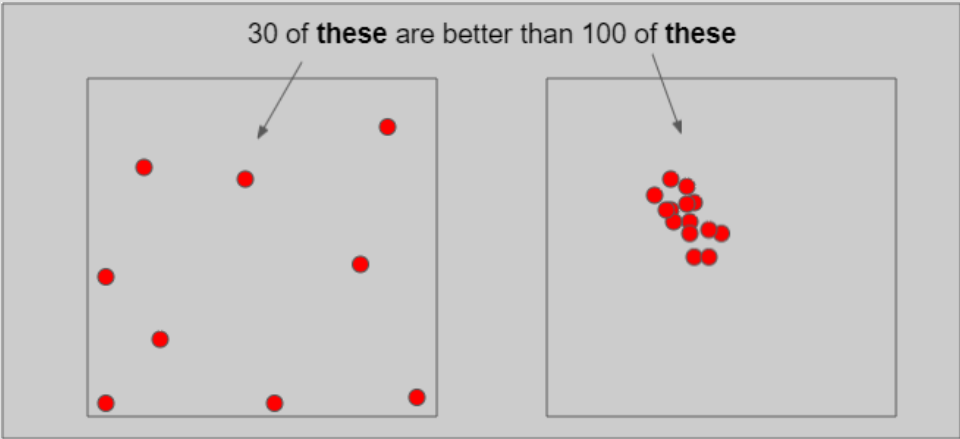
For any registered in-house cut, immediately after its registering or at any moment later, you can add any number of the *allocation forms*. Each *allocation form* is a high-quality solution variant for your cut. Any solutions or normalized scans can be registered as allocation forms for your registered cuts.

Registering allocation forms improves the quality of solutions because on running your registered in-house cut, the optimization algorithm will check all the included forms trying to produce solutions well allocated with these forms. This means, the more high-quality solutions you register as allocation forms, the better results you achieve when running optimization with your cut.

Some questions and answers on allocation forms:

## 1. How many and what forms should be added?

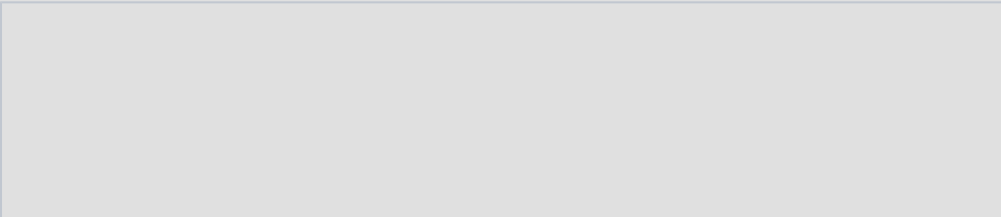
You need at least 20-30 forms. It is better to have more\*. The quantity depends on the quality:



In a multidimensional array of diamond parameters\*\*, the more these parameters differ, the better (array coverage). Also the greater the GirdleRatio of your cut is, the more allocation forms are recommended to achieve a better result.

### NOTES

\* But how much more? And may adding a form make hybrid appraiser worse? The answer is that the more forms it has, the slower the appraiser is, therefore it is not recommended to have more than 100. Also if the relative part allows getting A from B or vice versa during allocation (click Show Picture... below) then one of them is redundant and again - only slows down the appraiser.



| Calc | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
|------|----|----|----|----|----|----|----|----|----|
| 36.5 | FR | FR | FR | FR | FR | FR | GD | GD | GD |
| 37   | FR | FR | FR | FR | GD | GD | VG | VG | VG |
| 37.5 | FR | FR | GD | GD | VG | VG | EX | VG | VG |
| 38   | FR | GD | VG | VG | EX | EX | EX | VG | GD |
| 38.5 | GD | VG | EX | EX | EX | EX | VG | VG | GD |
| 39   | VG | EX | EX | EX | EX | VG | GD | GD | FR |
| 39.5 | VG | EX | EX | EX | VG | VG | GD | FR | FR |
| 40   | EX | EX | EX | VG | VG | GD | FR | FR | FR |
| 40.5 | VG | VG | VG | GD | GD | FR | FR | FR | FR |
| 41   | VG | VG | VG | GD | FR | FR | FR | FR | FR |
| 41.5 | GD | GD | GD | FR | FR | FR | FR | FR | FR |
| 42   | FR | FR | FR | FR | FR | FR | FR | FR | FR |

**A** can be obtained from **B** during allocation (close, a deviation is allowed by the relative part).  
cannot be obtained from **B** during allocation (far, a deviation is not allowed by the relative part)

Thus:  
either **A** or **B** is redundant and only slows down the appraiser,  
it is good to have in addition to **A** or **B**.

**\*\*** When we say "parameters" we mean not only the ones presented in the appraiser but also the **additional** (for example, azimuths of non-main facets of crown and pavilion). Precisely, changing the additional parameters in many cases provides the best form distribution over the array.

2. If no allocation forms, is it a hybrid appraiser?

A cut always has at least one form available immediately after cut registration (*base form*). That is why you need only 10 minutes to start using the new in-house cut (see "Ready for use" in [this](#) diagram). Does a linked hybrid appraiser stay hybrid in this situation? See next question.

3. If only one form was added, is it a hybrid appraiser?

If your cut has only one allocation form or few forms and the relative part of its hybrid appraiser is narrow enough, this creates a great risk of mass loss, as the solution will be searched not along all the array provided by the absolute part but only close to this form. On the other hand, if you significantly widen the relative part, it may become wider than the absolute which means the appraiser degenerates into a simple absolute.

4. How the SweetLine parameter should be specified in a hybrid appraiser?

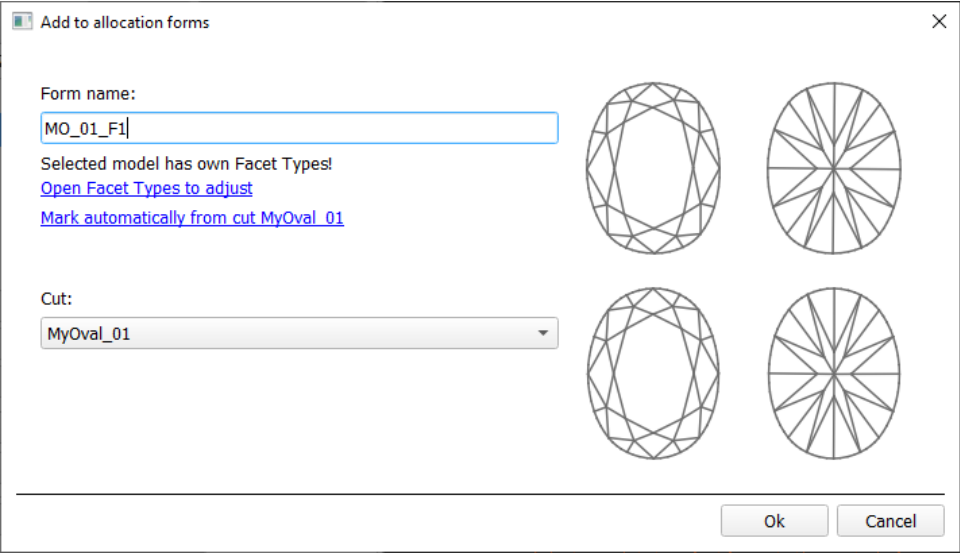
The **SweetLine** slope is specified for an entire cut as described [here](#). As forms belong to the same cut, the slopes of the SweetLines they belong to will be similar. But as good forms are distributed over the array, the position of their SweetLines may be different:

| Calc | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
|------|----|----|----|----|----|----|----|----|----|
| 36.5 | FR | FR | FR | FR | FR | FR | GD | GD | GD |
| 37   | FR | FR | FR | FR | GD | GD | VG | VG | VG |
| 37.5 | FR | FR | GD | GD | VG | VG | EX | VG | VG |
| 38   | FR | GD | VG | VG | EX | EX | EX | VG | GD |
| 38.5 | GD | VG | EX | EX | EX | EX | VG | VG | GD |
| 39   | VG | EX | EX | EX | EX | VG | GD | GD | FR |
| 39.5 | VG | EX | EX | EX | VG | VG | GD | FR | FR |
| 40   | EX | EX | EX | VG | VG | GD | FR | FR | FR |
| 40.5 | VG | VG | VG | GD | GD | FR | FR | FR | FR |
| 41   | VG | VG | VG | GD | FR | FR | FR | FR | FR |
| 41.5 | GD | GD | GD | FR | FR | FR | FR | FR | FR |
| 42   | FR | FR | FR | FR | FR | FR | FR | FR | FR |

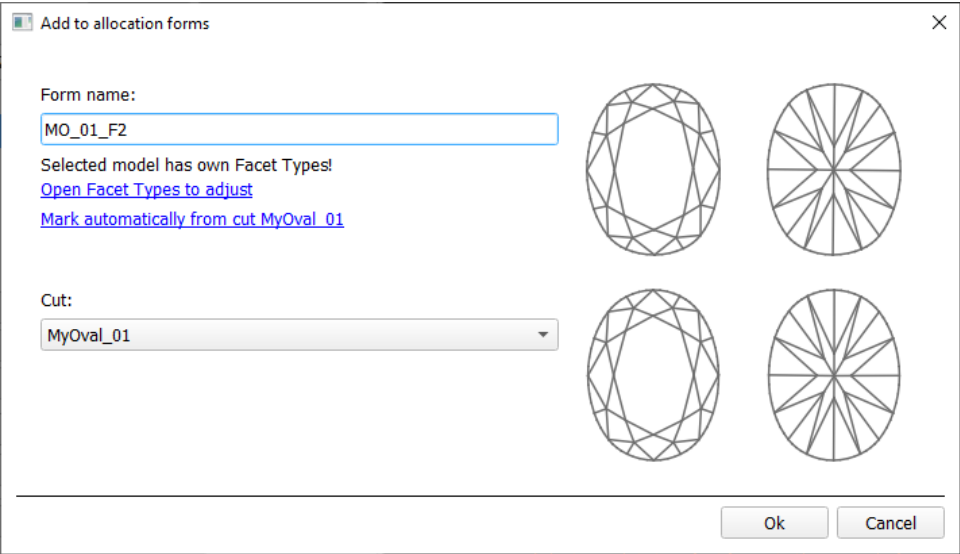
Therefore, for the absolute part of the hybrid appraiser, we should turn off the SweetLine (set all values to "100" which will remove the fixed green zone from the picture above) and only in the relative part set the possible deviation from the SweetLine of each particular allocation form.

To add a new allocation form to your registered in-house cut, do one of the following:

- To add a new allocation form from a scan:
  - For the scan, you want to register as the allocation form, run the "SmartNormalize" algorithm. Several solutions are produced.
  - Among the solutions, produced by the "SmartNormalize" algorithm, right-click the one you want to register as the allocation form.
  - From the context menu, select **Add to allocation forms...**The dialog is displayed.
  - In the **Add to allocation forms...** dialog, from the **Cut** list, select the registered cut, you want to add the allocation form to.
  - Facet Marking from the selected cut is automatically applied to your new form. If necessary, adjust the facet types.
  - Set **Form name**.



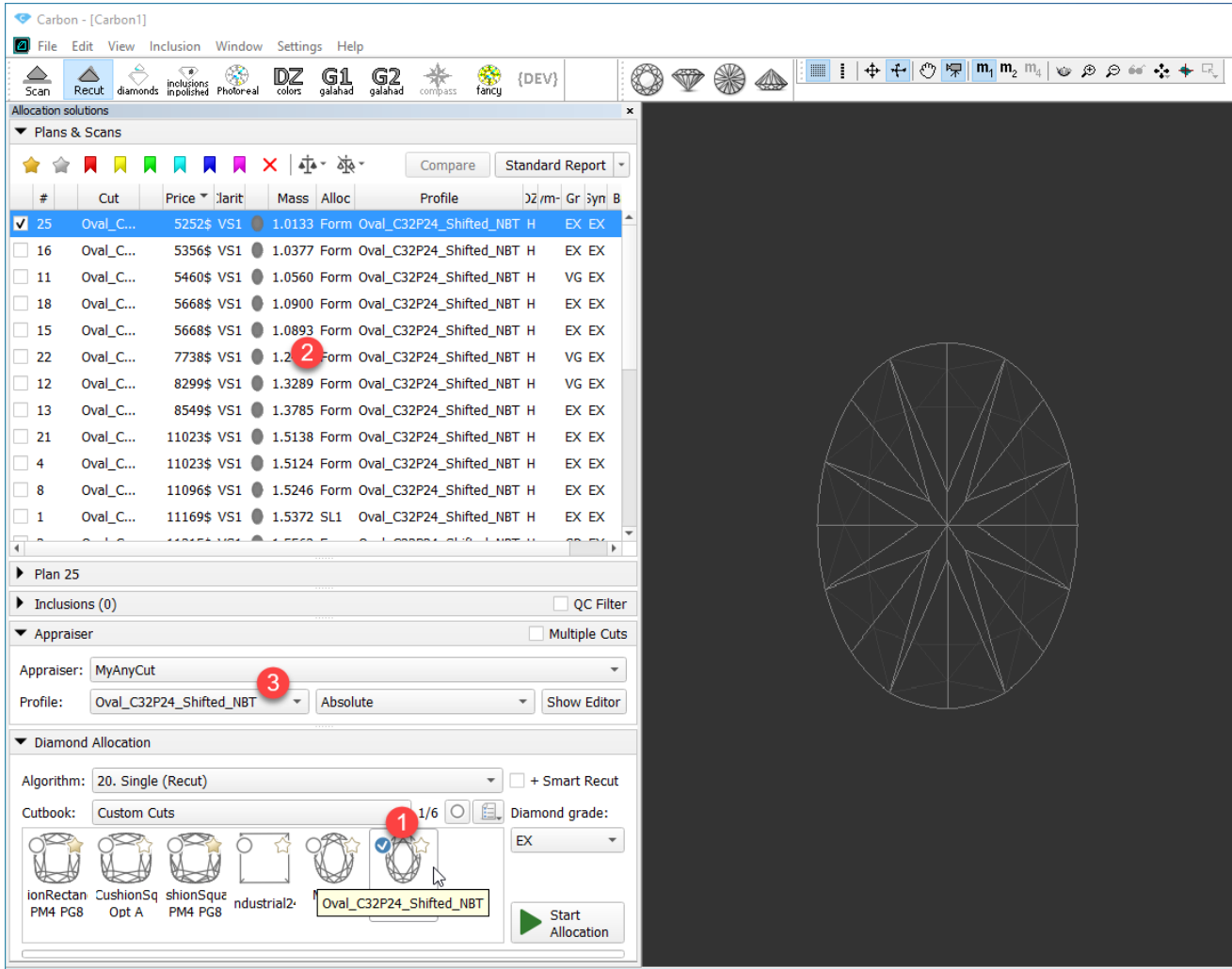
- Click **Ok**.
- To add a new allocation form from a solution:
  - Right-click the solution you want to use as an additional allocation form.
  - From the context menu, select **Add to allocation forms...**The dialog is displayed.
  - Further steps are the same, as described above for the normalized scans.



## Workflow demonstration and testing

The following elements of the system can be used for testing the AnyCut Workflow:

- Under **Custom Cuts**, the "Oval\_C32P24\_Shifted\_NBT" cut is presented. The cut contains a number of allocation forms.
- Corresponding profile under the [MyAnyCut](#) hybrid appraiser.



On figure: 1 - demo oval cut; 2 - allocation forms within cut; 3 - MyAnyCut hybrid appraiser with the corresponding profile.

## Related Pages

- [Workflow - in-house cut allocation \(diagram\)](#)
- [In-house cut registration](#)
- [MyAnyCut](#)
- [Appraisers for Cushion](#)
- [19. SmartRecut \(Brilliant, Oval, AnyCut\)](#)