2023-01-19 - HP Carbon 1.7.6

Here you can find information about what is new in HP Carbon version 1.7.6.



Smart Cuts. SmartRecut for generic parametric cuts

Many users apply the generic parametric cuts for diamond allocation. These cuts have an extensive number of parameters and may provide with high-yield solutions. Asymmetric allocation algorithm 'SmartRecut' could provide with even higher yields to solutions based on the generic parametric cuts. Since current version users can run the SmartRecut algorithm for a solution based on most popular Octonus generic parametric cuts. set of cuts will expand over time. Let's call them "Smart Cuts".

There is a video about Smart Cuts: what is it, why is it useful to work with Smart Cuts, how to operate in software with Smart Cuts to get high yield solutions by Smart Recut.

Video SmartRecut for generic parametric cuts									
Published:	2022, December 15	Last Updated:	2021, December 23	v.4.2					
Your browser does not support the HTML	5 video element								
 Video summary: Generic parametric cuts may produce high-yield solutions. Since current version SmartRecut runs for solutions based on most popular Octonus generic parametric cuts (Smart Cuts). Thereby you get even higher yields. Smart Cut has its linked appraiser. Operator specify factory cut standards in the unified SmartCut appraiser just once. And get control over the necessary parameters limits at all stages of solutions allocation and appraising. Smart Cuts are located in Cutbook "Generic Cuts". Smart Cuts are highlighted by badge "S" Sweetline is available for generic parametric cuts. Sweetline allows you to find solutions with better Optical Performance. 									
Video keywords: Smart Cuts, DLL cuts,	generic parametric cuts, SmartRecut								
Data	Video_SmartCuts_Princess3Sox2z								
	Cutwise project with solutions of Smart Cut (Sweetline C	N)							
	Cutwise project with solutions of Smart Cut (Sweetline C	PFF)							
Published in:	Release Notes	2023-01-19 - HP Carbon 1.7.6							
	Documentation NA								
	Playlists	NA							
	Iso As Separate Page On YouTube Specification								

Many users apply the generic parametric cuts for diamond allocation. These cuts have an extensive number of parameters and may provide with high-yield solutions. Asymmetric allocation algorithm 'SmartRecut' could provide with even higher yields to solutions based on the generic parametric cuts. Since current version users can run the SmartRecut algorithm for a solution based on most popular Octonus generic parametric cuts. set of cuts will expand over time. Let's call them "Smart Cuts".

Smart Cuts are located in Cutbook "Generic Cuts". Smart Cuts are highlighted by badge "S" in the lower right corner of the cut. set of Smart Cuts will expand over time.



1	 Diamond 	Allocation										
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	Princess 4P52	Princess 4S	Princess 5S	Princess P44C44	Princess P52C44	Princess 3s	Radiant	Radiant P28C24	Square Baget	Square Emerald	Square Radiant	

Smart Cut has its linked appraiser which is automatically displayed along with cut selection. There are two types of parameters in the appraiser of Smart Cut: parameters of generic parameters from the new In-house appraiser.

Consider firstly parameters of generic parameters cut. There are first stage of allocation by global algorithms and second stage by SmartRecut algorithm. Global algorithms of allocation vary values of considered parameters for search of optimal solution. But SmartRecut algorithm doesn't use these parameters. Also note that these parameters doesn't participate in final solution grading. An editing the limits of these parameters is available in a user-friendly software interface in the panel appraiser editor. Previously, this operation was laborious, requiring manually edit of the appraiser txt-file.

Allocation so	lutions							×	Appraiser Editor											×
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4	Radiant P28C	66398\$	4.5463	SR VS1	EX	EX	EX	Profile1	GirdleBezel	0	EX	3.969	1.6	1.8	2.1	2.3	4	4.5	5.5	6.5
6	Radiant P28C	66398\$	4.5440	SR VS1	EX	EX	EX	Profile1	PavilionHeight	0	EX	.60.137	50	52	54	55	65	66	68	70
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10	Radiant P28C	65959\$	4.5154	SR VS1	EX	EX	EX	Profile1	CrownGoldStarSlope		EX	45.000	32	33	34	35	45	46	47	48
9	Radiant P28C	65959\$	4.5110	SR VS1	EX	EX	EX	Profile1	CrownSilverStarSlope		EX	65.532	52	53	54	55	72	73	74	75
▼ 8	Radiant P28C	65666\$	4.4945	SR VS1	EX	EX	EX	Profile1	PavilionGoldStarSlope	-	EX	40.091	38.7	38.7	38.7	38.7	46.7	47.7	48.7	49.7
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2	Radiant P28C24	58320\$ 🧻	4.3196	VS1	VG	VG	EX	Profile1	SweetLine	0	EX	-1.801	-109	-106	-103.5	-101	101	103.5	106	109
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									Crown H2toH				30	35	40	45	55	60	65	70
									Corner Break Ratio				10	15	18	20	35	40	45	50
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Secondly consider parameters from the In-house appraisers. SmartRecut algorithm uses only these parameters during it's allocation stage. After getting of solutions the grading is produced by only these parameters. boundaries. In most cases SmartRecut will be able to fit these values in the Excellent group.

There is a sample of running of SmartRecut for one of Smart Cut - Radiant P28C24. There are solutions of SmarRecut with high yield and good optical performance:

Important! Known issues!

In the following cases, SmartRecut may not work on SmartCut solutions:

- Heart. Cut is not completed.
 PearPro, Pear_wBT.P24C32. Global algorithms may have mistake in values of CuletOffsetLength more than Relative interval. So Absolute and Relative intervals for SmartRecut are not compatible.
- Princesses (2S, 3S, 4S, 5S). Global algorithms have too big slope angle asymmetry for square Facet Types. It is conflict with SmartRecut parameter Angles_FacetTypesSlopeIdeality. The values of this parameter can be temporarily increased in presets for Princesses.

Updated profiles for Smart Cuts (Princess.2S to 5S)

Profiles were updated for Smart Princess Cuts: Princess.2S, Princess.3S, Princess.4S and Princess.5S.



Each Smart Princess cut has five profiles.

Three non-editable pre-configured profiles:

- High_performance
- Commercial
- Max_Mass

Two user profiles:

User_Profile1User_Profile2

Inclusi	User_Profile1					
▼ Apprai	User_Profile2					
	Max_Mass	Ε.				
Cut:	Commercial	ŀ.				
Profile:	High_performance					

Pre-configured profiles are designed to give users a fast start with the allocation and consider the user's needs. Three profiles are required to grant the user the desired range of options:

- Princess allocated with the High_performance profile will receive high performance and symmetry. But mass may be lower in comparison with the remaining 2 profiles.
- Commercial profile gives balanced performance and yield.
- Max_Mass profile is designed to give high yield solutions but can sacrifice Optical performance.

Solutions created with pre-configured Profiles are shown in the Cutwise Project:

https://cutwise.com/projects/4fb21e39-ac88-493e-8fc7-afe6923b7fb2/solutions?sort=w4B9EC74vbhVPzAFwEmEHY3MQfaX3DIOaZQ

		Profile:	High_Perf	formance	Comm	ercial	Max_Mass		
			22.Single (Recut)	22.Smart Recut	22.Single (Recut)	22.Smart Recut	22.Single (Recut)	22.Smart Recut	
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٨			0.44	0.49	0.51 P F V3 EX OU	0.50	0.45	0.45 P F O VO EX OU	
•			0.98	0.97	0.96	0.97	0.95	0.94	
3			1.33	1.21	1.09	1.09	1.39	1.45	
	Optical Symmetry		7.97	6.91	7.53	6.41	6.51	5.55	
0			-0.18ct	-0.18ct	-0.18ct	-0.19ct	-0.22ct	-0.22ct	

The first pair of solutions are created by 22. Single Recut and 22. SmartRecut using the High_Performance profile. Note the Optical performance of these solutions. The second pair of solutions uses the Commercial profile and the third pair uses the Max_Mass profile. Max_Mass solutions have lower optical performance and Symmetry, but higher yield.

Users can select one of the pre-configured profiles and immediately go to the allocation procedure without laborious Profiles modification.

For users that want to manually adjust Profiles – Pre-configured profiles can be a good starting point for modification. Users can copy Parameters from pre-configured profiles to one of the editable profiles and then modify desired Parameters (for instance, Total depth, Table or Crown/Pavilion Main facets Slopes limits) as per Factory requirements.

Smart Cut appraisers forms

SmartCut works full-fledged if good start form set appropriating to factory standards. Open Diamond Parameter panel and adjust the parameters so that the form has high Optical Performance and Excellent grade. If start form grade is worse than EX then global allocation algorithms will not work correctly.

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Set the form as a Start Form using the context menu.

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Sweetline requires two good forms (see documentation on Goodwin). Create the second Sweetline form in the same way (via Diamond Parameter). Add the form using the context menu.

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7 W FINICE 124123 Z.0034 SK 00.33% V31 N TO.03 EA EA EA N	Delete IDee 171	60.5 67.5 64.5 66 72 75 77 70	Comparative I3D Mini Vi
8 Prince 12474\$ 2.0192 SR 67.27% VS1 H +6.81 EX EX EX H		5 6 7 d 145 15 16 17	
9 Prince 12412\$ 2.0116 SR 66.93% VS1 H +6.63 EX EX EX Hi	Export model of 'Plan 17'		Facet Types
10 Prince 12474\$ 2.0204 SR 67.27% VS1 H +6.36 EX EX EX Hi	Add 'Plan 17' to Solutions Report		Solutions Report
11 Prince 12474\$ 2.0227 SR 67.27% VS1 H +6.65 EX EX EX Hi	Processing 'Plan 17'		
12 Prince 12412\$ 2.0108 SR 66.93% VS1 H +6.54 EX EX EX Hi	Clarity precision: O @ Draft O O Precise	61 63 60 6/ /4,8 /0 /8 80,0	Semipolish Report
13 • Prince 12535\$ 2.0331 SR 67.60% VS1 H +6.47 EX EX EX Hi	Galahad: Generate Next Step Plans	25 26 27 32 33 43 45 47	Rough Report
14 • Prince 10804\$ 1.9862 65.93% VS1 H EX EX EX H	Allocation	30 31 32 37 45 48 50 52	
15 • Prince 10586\$ 1.9447 64.60% VS1 H EX EX EX Hi	Fit to rough (Run Balloon)		Upload to Cutwise
16 Prince 9520\$ 1.8915 62.94% VS1 H VG VG EX Hi	Bound Swim (Vary Param)	52 53 54 56 62 64 66 68	Facetware
✔ 17 • Prince 9931\$ 🧱 1.8282 60.61% VS1 H EX EX EX H	Bound Swim (Fixed Cut)	-4 -2 -1,5 -1 1 1,5 2 4	
18 • Prince 8815\$ 1.7506 58.28% VS1 H VG VG EX H	Bound Swim (Fixed Table and Cut)	35 35 35 3 5 7 0 70 70 70	Standard Report
4	Change Cut	35 35 35 35 56 58 60 62	My Appraiser
▼ Plan 17	change cut	80 83 84 85 92 92 93 95	
Diam # Cut Price Discount PPC Mass Clarity D	Undo solution changes	40 40 40 40 50 57 59 60	Reports
Lachucians (0)	Register as new cut	-70 -70 -65 -25 0 25 50	Polish Report
	Add to allocation forms	2 3 4 7 11 11 12 14	
Appraiser Manual appraiser	Set as Start Form	2 3 4 7 11 11 12 14	Comparative Report
Cut: Princess.3S * Appraiser: Princess.3S	View options	70 70 70 70 82 82 82 82	Northell R *
Profile: High_performance	Calculate Optical Symmetry	93 93 93 93,5 95,5 96 96 96	Model Building Info
Diamond Allocation	Calculate Brightness metric		
	Show alternative shadow building results		
Algorithm: 22. Single (Recut) + Smak		_bw> *	Chaus Madel
Cutbook: Favorites • 1/9 O E Diamond g	rade: Export *		Show Model
	Princess.3S 1		
	Shape Princess.3S Grade EX	Weight 1.82 ct H VS1 V	
Cushion PM4	Proportions Advanced Advanced 2 Adv	vanced 3 Advanced 4 Advanced 5 Advanced 6	
PG8 PH24 Heart Princess 2S Princess 3S Princess 4S	Crown angle 37.94 °	Girdle ratio	
	Pavilion angle 40.85 °	 Diameter 6.62 mm 	
	Table 69.9 %	Sec. diameter b.02 mm b.102 mm b.02 mm b.102 mm	
	Girdle (hezel) 3.1 %	Total Height 1011 74.8 % 4 k	
Princess 55 Radiant PM4 PG8 PM4 PG8	Pavilion depth 61.1 %	TotalHeightFix % 4.95 mm < >	
P28C24 PH24 PRrill PH24 PRrill PH24 PRrill Star	t p		
	Parameters are unlocked	step: rine kougn	

Mark required forms as Sweetline forms.

Carbon - [Princess-SmartDLL-Demo-Dec2022.ox2z]					- 8 ×
	nna (h7 4 🔊 🚗 🔊 🔺	🖩 į 🕂 🕂 🖑 🖙 m, m, m, 👦	🗩 🗩 🖮 🔆 🔥 📎		= 6' X
Scan inclusions Recut diamonds inpolisive Photoreal colors galanad galanad compares fancy t					
▼ Plans & Scans		Princess.3S	Show	Carbor	View
🔶 🍚 📕 📮 📕 📕 🗮 🗮 🗙 👫 - 🏹 - Compare Standard R	Profile: Hig	gh_performance (read only)	Presets		Model
Cut Price Mass Alloc Yield Jarit 12 Sym-0 GruttGive	Absolute Proportions Absolute Symmetry	Relative Proportions Relative Symmetry Di	counts		
Imported model 3.0030 +2.65	GirdleBatio	1 1 1 1 1 102 105	GD] FR]		I3D Mini View
1 • Prince 16286\$ 1.9446 Form 64.60% VS1 H EX EX EX Hig	h_perform Table	60,5 62,5 64,5 66 72 75	77 79		Comparative I3D Mini Vi
✔ 2 ● Prince 15279\$ 📕 1.8274 Form 60.61% VS1 H 🛛 EX EX EX Hig	Label of 'Plan 2'	5 6 7 9 14,5 15	16 17		Facet Types
		2 2 2 2 3,5 4,5	5,5 6,5		Solutions Report
		46 48 50 52 62 65 61 63 65 67 74.8 76	78 80.5		Cominalish Denest
	Model color of 'Plan 2'	25 26 27 32 38 43	45 47		Semipolish Report
		30 31 32 37 45 48	50 52		Rough Report
		36 36 36 37 41 45	46 47		Upload to Cutwise
	Create copy of 'Plan 2'	-4 -2 -1.5 -1 1 1.5	2 4		Facetware
	Export model of 'Plan 2'	35 35 35 35 70 70	70 70		Standard Report
€ Plan 2	Add 'Plan 2' to Solutions Report	35 35 35 35 56 58	60 62		My Appraiser
Diam # * Cut Price Discoun PPC Mass Clarity D	Processing 'Plan 2'	80 83 84 85 92 92	93 95		* Reports
✓ Oliam 1 Prince 15279\$ ±036 8395.00\$/ct 1.8274ct VS1 H	Clarity precision: O @ Draft O Precise	-70 -70 -70 -65 -25 0	25 50	and the second second	Diffe David
Inclusions (0)	Galahad: Generate Next Step Plans	2 3 4 7 11 11	12 14		Polish Report
✓ Appraiser Manual appraiser	Fit to rough (Run Balloon)	2 3 4 7 11 11	12 14		Comparative Report
Cut: Princess.35 Appraiser: Princess.35	Bound Swim (Vary Param)	70 70 70 70 82 82	82 82		Bentahal R *
Profile: High_performance Hide High_performance High_performance High_performance High_performance High_performance High_performance High_performance H	Bound Swim (Fixed Cut)	93 93 93 93,5 95,5 96	96 96	10 to 🔍 🖉 🔊	 Model Building Info
 Diamond Allocation 	Bound Swim (Fixed Table and Cut)			Children and the second second	
Algorithm: 22. Single (Recut) + Small	Change Cut	ow> *			
Cutbook: Favorites • 1/9 O E. Diamond g	Undo solution changes				✓ Show Model
	Sweetline anycut: set 1 st point of line Sweetline anycut: set 2 nd point of line	Weight 1.82 ct H V nced 3 Advanced 4 Advanced 5 Advanced 6	/51 v		
PG8 PH24 Heart Princess 2S Princess 3S Princess 4S	Register as new cut	Girdle ratio 1.000			
	Set as Start Form View options	Diameter 6.65 mm Sec. diameter 6.65 mm Total Height mm 4.97 mm			
Radiant PM4 PC8	Calculate Optical Symmetry	Total Height % 74.8 % TotalHeightFix % 4.97 mm			
P28C24 pH74 PRrill PH74 PRrill PH74 Allo	Show alternative shadow building results	Step: Fine Rough	-		

Gold and Silver Stars in Facet Types

Factories have their limits on the angles of certain facet types. They need an easy way to specify which angles should be controlled in optimization and displayed in reports. For this purpose, the new attributes has been introduced - Gold and Silver Stars.

There is a video about Gold and Silver Stars:

Video | Gold and Silver Stars in Facet Types

Published:	2022, December 16	Last Updated:	2021, December 16	v.2.0				
Your browser does not support the HTML5 video element								
 Video summary: New attributes for Facet Types are introduced - Gold and Silver Stars Gold and Silver Stars symbolize the primary and additional slope angles. When registering a new Goodwin Cut, you can choose the template that is most appropriate for your cut and appraiser requirements. When registering you can open Facet Types to adjust the stars The slope angles are the same in the appraiser, in the Standard and in the i3D mini reports. And Cutwise gets the same values. Video keywords: Gold Stars. Silver Stars. Facet Types 								
Data: PrincessDemo.ox2z								
Published in:	Release Notes	2023-01-19 - HP Carbon 1.7.6						
	Documentation	NA						
	Playlists NA							
	Also	As Separate Page Specification						

Gold Stars symbolize the primary facets of the crown and pavilion and Silver Stars additional angles that factories control in their appraisers.

If the Cut has Gold Stars in Facet Types, then the CrownGoldStarSlope Proportions (Crown angle average) and PavilionGoldStarSlope Proportions (Pavilion angle average) are calculated by the facets marked by Gold Star groups. Symmetry additionally controls deviations of facets with same type and tier but all different subtypes.

Similarly calculations are made for CrownSilverStarSlope and PavilionSilverStarSlope if the Cut has Silver Stars.



Registration

When registering a new Goodwin Cut, you can choose the template that is most appropriate for your cut and appraiser requirements.

For example, in GoodwinGoldStars template, "1C1P" means that the Cut must have one (Gold) Star on the crown and pavilion. In GoodwinStars2C2P template, "2C2P" means that the Cut must have both Stars (Gold and Silver) on the crown and pavilion.

Register new cut	×
Cut name: PrincessDemo Selected model contains Facet Types! Open Facet Types to adjust	
Select the template!	Ok Cancel

The following cases are possible:

Case 1. The stars are set automatically.

Most often you will see the message "Stars has been set automatically, you can open Facet Types to adjust".

Register new cut	×
Cut name: PrincessDemo Selected model contains Facet Types! Stars has been set automatically, you can open Facet Types to adjust. <u>Open Facet Types to adjust</u>	
 ● Goodwin ○ ASCII ✓ Create appraiser for your new cut from selected template (recommended) AnycutBasic Goodwin1C1P Goodwin1C2P Goodwin2C3P Goodwin_Stars1C1P Goodwin_Stars1C2P 	
Goodwin_Stars2C2P Appraiser for cut 'PrincessDemo' will be created from template Goodwin_Stars20	C2P
	Ok Cancel

It means you can "Open Facet Types to adjust", call the context menu and set the Stars on the desired facet groups.

💎 Facet	Types						
Facets	Element	* Tier	Type Star	SubType	No.	Color	Alias Alias
× 4	Crown		Star	Length			Rename
× 4	Crown		Corner				Rename
× 2	Crown	合1	Main	Width			Rename
× 2	Crown	1	Main	Length			Rename
⊗ 2	Crown	2 🏫	Main	Width			Rename
8 2	Crown	🔶 🔶 Set	Gold Star	jth			Rename
⊗ 4	Girdle	😭 Set	Silver Star				Rename
× 4	Pavilion	🖉 Rer	move Star	th	1		Rename
⊗ 4	Pavilion		Chevron	Width	2		Rename
× 4	Pavilion		Chevron	Width	3		Rename
⊗ 4	Pavilion		Chevron	Length	1		Rename
× 4	Pavilion		Chevron	Length	2		Rename
⊗ 4	Pavilion		Chevron	Length	3		Rename
× 2	Pavilion	合 1	Main	Width			Rename
⊗ 2	Pavilion	1	Main	Length			Rename
× 4	Pavilion	2 🏫	Main				Rename
Tabali E71	fa ana ba					Carb	Nave Craw
Total: 571	lacets					Sort	New Group
From Sa	ample	Basic Type:	s Auto	Types			Apply
Export	Sample		Make	Report			Close

Then click Apply, close the Facet Types window and register your Cut.

Also, you may see the facets marked with the Stars on the thumbnail on the right.

Register new cut	×
Cut name: PrincessDemo Selected model contains Facet Types! Stars has been set automatically, you can open Facet Types to adjust. Open Facet Types to adjust Goodwin O ASCII Create appraiser for your new cut from selected template (recommended) AnycutBasic Goodwin1C1P Goodwin1C2P	
Goodwin2C3P Goodwin_Stars1C1P Goodwin_Stars1C2P	
Goodwin_Stars2C2P Appraiser for cut 'PrincessDemo' will be created from template Goodwin_Stars	2C2P
	Ok Cancel

Case 2. The message "Failed to set the Stars automatically. Please set them manually in Facet Types with the context menu" will appear.

Cut name:	
PrincessDemo Selected model contains Facet Types! Please set the Stars automatically. Please set them manually in Facet Types with the context menu. Open Facet Types to adjust Image: Coord of the Stars automatically. PrincessDemo Image: Coord of the Stars automatically. Please set them manually in Facet Types with the context menu. Open Facet Types to adjust Image: Coord of the Stars automatically. Image: Coord of the Stars automatically. Image: Coord of the Stars automatically. Image: Coord of the Stars automatically. Image: Coord of the Stars automatically. Image: Coord of Coor	
Ok	Cancel

In this case, you must open the Facet Types window and manually set the stars on the desired facets groups through the context menu.

Note! In this case, we recommend checking your Facet Types, as stars should be placed automatically on normal Facet Types.

Case 3. If your cut already has stars on the desired facet groups, go through the normal cut registration steps. This can happen if you create a new cut from solution with cut that already had stars.

⚠	Import	ant! Onc	e you ha	ve create	ed cut with	n the St	ars, they ca	noved or rearranged. All preforms, optimization solutions, and SmartNormalize solution	ons derived from them will inherit the stars from the first master preform
	💎 Facet	t Types						– 🗆 X	
	Facets	Element	* Tier	Type Star	SubType wiath	No.	Color Alias		
	⊗ 4	Crown		Star	Length		Rena		
	× 4	Crown		Corner			Rena		
	× 2	Crown	合 1	Main	Width		Rena		
	× 2	Crown	1	Main	Length		Rena		
	× 2	Crown	👷 2	Main	Width		Rena		
	8 2	Crown	>	Main ars can only b	l enoth be changed du	ring Cut Re	gistration!		
	× 4	Girdle	😭 Se	t Gold Star			2		
	× 4	Pavilion	☆ Se 必Re	t Silver Star					
	× 4	Pavilion	2 m	Chevron	Width	3	Rena		
	× 4	Pavilion		Chevron	Length	1	Rena		
	× 4	Pavilion		Chevron	Length	2	Rena		
	⊗ 4	Pavilion		Chevron	Length	3	Rena		
	× 2	Pavilion	合1	Main	Width		Rena		
	⊗ 2	Pavilion	1	Main	Length		Rena		
	× 4	Pavilion	👷 2	Main			Rena		
	4	6				ſ	2 -1		
	10tal: 571	racets				l	Sort		
	From Si	ample	Basic Types	Auto	Types		Ap		
	Export	t Sample		Make	Report		Clo		

Reporting

After stars marking the slope angles are *the same* in the Appraiser Editor panel:

ppraiser Editor ×											
			Pr	Prince ofile: P	essDem rofile1	0				Sh Pre	ow sets
Absolute Proportions	Abso	lute Sy	mmetry	Relativ	e Proport	ions	Relative	Symmetr	y Dis	counts	
Parameter		Grade	Value	[FR	[GD	[VG	[EX	EX]	VG]	GD]	FR]
GirdleRatio	0	EX	1.013	0,94	0,95	0,96	0,97	1,03	1,035	1,035	1,035
Table	0	EX	68.815	67	67	67	67	73	78	79	79
CrownHeight	0	EX	12.435	8,5	8,7	9,2	9,5	1 <u>\$</u> ,7	14	14,4	15,2
GirdleBezel	0	EX	3.699	0,2	0,3	0,4	0,65	5	5,4	5,4	5,4
PavilionHeight	0	EX	59.294	54,5	55	55,5	56	62,5	63,5	65,5	67
TotalHeight	0	EX	75.427	68,3	68,8	69,3	69,8	77,5	79,5	82,5	83,5
CrownGoldStarSlope		EX	35.094	30,8	30,8	30,8	30,8	\$7,3	37,3	37,8	38,3
CrownSilverStarSlope		EX	42.629	38,4	38,4	38,4	38,4	44,9	44,9	45,4	45,9
PavilionGoldStarSlope		EX	39.808	36	36	36	36	44	45	46	47
PavilionSilverStarSlope		EX	58.635	53,8	53,8	53,8	53,8	61,8	62,8	63,8	64,8
SweetLine	0	EX	-0.007	-100	-100	-100	-100	100	100	100	100

...and in the Standard Report:

Standard Report					
Settings	:				
Cut: Princess	•				
Template: Standard Report for p	orincess 💌				
Enhanced precision: 0 digits	\$				
Cut	Prin	cess	Model		2
Spread	-0.58 ct,	-19.19 %	Scale weight, ct		N/A
Extra Facet Girdle / Nat	N	0	Corrected mass, ct		3.61, 3.6089
Cut appraiser	Princes	sDemo	Cut grade		VG
Symmetry appraiser	Princes	sDemo	Sym grade		EX
Model building info	N/	/Α	Final grade		-
Darameter	A1	10	Min	Мах	Day
Girdle Patio (1)W0	10	12	IVIIII	IVIAX	Dev
Width mm	8 230	mm	_		
Length mm	8 3 4 2	mm	_	_	_
Total height %	6 214 mm	75.43 %	_	_	_
Crown beight: Side %	1024 mm	12 43 %	12.43	12.43	0.00
Crown beight: Corper %	1.024 mm	12.43 %	12.43	12.43	0.00
Pavilion beight: Side %	4.885 mm	59.29 %	59.29	59.29	0.00
Pavilion height: Corner %	4.885 mm	59.29 %	59.29	59.29	0.00
Table: Side %	5.721 mm	69.01 %	68.82	69.20	0.38
Table: Corner w.r.t. Corner %	58.	55	58.55	58.55	0.00
Table: Corner w.r.t. Width %	83.	32	83.32	83.32	0.00
Diameter: Corner %	11.725 mm	142.31 %	142.31	142.31	0.00
Girdle thickness: Side. %	0.305 mm	3.70 %	3.70	3.70	0.00
Girdle thickness: Corner. %	0.305 mm	3.70 %	3.70	3.70	0.00
Culet. %	0.000 mm	0.00 %	0.00	0.00	0.00
Crown Corner height, %	12,	43	12,43	12.43	0.00
Crown angle, °	35.	09	35.09	35.09	0.00
Crown first angle, °	42.	63	42.63	42.63	0.00
Crown Corner angle, °	22.	86	22.86	22.86	0.00
Pavilion angle, °	39.	.81	39.58	40.03	0.45
Pavilion first angle, °	58.	64	58.35	58.92	0.56
Girdle facet angle, °	90.	00	90.00	90.00	0.00
Table offset, %	0.000 mm	0.00 %	_	_	
Culet offset, %	0.047 mm	0.57 %	_	_	_
Table-culet offset, %	0.047 mm	0.57 %	_	_	_

...and in the I3D mini report:



	Diameter		Crown angle Pavil	Pavilion angle	Table: Side	Culet	Enroad	Extra facet	
minimum	maximum	average	crown angle	Favilion angle	Table, Side	Culer	Spread	girdle / Nat	
8.239 mm 11.725 mm		10.556 mm	35.09°	39.81°	69.01 %	0.00 %	-19.19 %	No	
we date	Ith	D-1	Crown height:	Pavilion height:	Tatal Laisett		Girdle height		
Width	Length	Ratio (L/W)	Crown height: Side	Pavilion height: Side	Total height	Bezel	Girdle height Bone	Valley	

...and after upload to cutwise.com (https://cutwise.com/diamond/485183):





Proportions		
Length \times Width	8.342 mm	8.239 mm
Total Height	75.43%	6.214 mm
Table	69.01%	5.721 mm
Crown Angle	35.0	09°
Crown Height	12.43 %	1.024 mm
Pavilion First Angle	58.0	54°
Pavilion First Angle Pavilion Angle	58.0	64° 81°
Pavilion First Angle Pavilion Angle Pavilion Depth	58. 39. 59.29 %	54° 31° 4.885 mm
Pavilion First Angle Pavilion Angle Pavilion Depth Girdle	58. 39.1 59.29 % 3.7%	64° 31° 4.885 mm 0.305 mm
Pavilion First Angle Pavilion Angle Pavilion Depth Girdle Culet	58. 39. 59.29 % 3.7% 0%	64° 31° 4.885 mm 0.305 mm 0 mm

×

Change Cut: algorithm of manual allocation (Tools)

In solution with one or more diamonds operator can relatively quickly check what its weight and cost will be if you replace the cut of one of the diamonds. This operation can be used for solutions obtained by standard algorithms as well as for solutions obtained from external sources. For example, run the 13. Cascade-2M optimization for Brilliant and then replace the second diamond with Pear for one of the solutions.

To do this, you need to choose a solution and activate the diamond in it. Call the context menu, then the ChangeCut command.



Then select new cut of the future diamond.



The algorithm starts. If there is a plane in the solution, then it will be used as an additional constraint. The algorithm replaces cut, saves the approximate location of the diamond, iterates of the yellow inclusions, and chooses the best solution. The forms of in-house cuts and forms from appraisers are not used.

After the algorithm completed, in the solution list, operator can observe the cost after changing the cut.



If for some reason you are not satisfied with the solution with a new facet, you can undo the changes made by calling the Undo Solution changes command from the context menu of the solution.





A Note

Please note that algorithm Change Cut... in Carbon differs from Change Cut... in Pacor/Helium Rough!

Difference is that Carbon algorithm uses layers in solution as limitation. So diamond after Change cut... tool can not be located behind layer even if placement of diamond behind layer allows to increase it's mass.

This is known bug and will be fixed in next version.

Remaining Depth - new Mode in Comparative I3D Reports

For optimal work on brutting, the cutter needs to see in the current moment the discrepancies of values between the planned girdle and the one obtained during scanning.

In Comparative I3D Reports, New mode - Remaining was added by two variants, color projection of the distance on the scan and reference model. This mode can be enabled by the button -

"Remaining Depth". The projections can be changed by the button - "Remaining Depth Current or Reference". On Legend a color scale was added of the distance.



Frozen Cur: Imported model (Ova Ref: 11 (Oval 1.5490 ct)	Remaining Depth al 2.2307 ct)	Comparative Polish Current Polish Reference Q Q Reset
		Mode: No Labels Slope, ° Azimuth, ° Facet Type Facet Height, mn Facet Height, mn Facet Height, mn Distance from Re Distance from Re Olistance from Cu Remaining Depth Color Indication Facet Number MIC (Crown / Pavil Average Paramet Legend Remaining Depth Reference
		View: Sync with scene Font size: - 14 Crown Left Front

Scale:	25µm 505 15	25 50	100	200	300µm
Models:	- current	 Reference 	- Highlighted Facet - Selected Fa	icet <u>Min</u> Max values	
Centers	: 🕂 Girdle Center	+ Culet Center	X Table Center \bigoplus MIC Center	er	
Girdle:	 Bezel Min Bezel Max 	 Bone Min Bone Max 	● Valley Min ○ Valley Max ○ Side Max	Corner Min O Corner Max O Width Min O Width Max	 Length Min Length Max

ſ	a 1										
l	Scale:	25µm	505	15	25	50	100		200		
	Models:	- Curre	ent		— ке	rerence	— Hignlighted Fa	cet — Selected Facet	Min Max values		
	Centers:	🔶 Gird	le Cente	er	+ Ci	ulet Center	X Table Center	\bigoplus MIC Center		ass	
	Girdle:	Bezel Bezel	l Min I Max		● Bo ○ Bo	ne Min ne Max	 Valley Min Valley Max 	 Side Min Side Max 	 Corner Min Corner Max 	 Width Min Width Max 	• I • I

Slice-type inclusion sandwich editing

There is a known "inclusion sandwich" technique used to allow the allocation algorithms to consider the part of inclusion inside the solution. In some cases operator might improve the diamond plan modifying the sandwich configuration according to actual plan orientation and the remaining size of the inner part of inclusion.

Since current version it is possible to adjust the configuration of "slice" type inclusion sandwich manually.

How to?

- 1. Select the part of inclusion sandwich you need to adjust with the "inclusion selection tool" and/or the inclusion list.
- 2. When the required part of sandwich is activated select the object movement mode button in the upper toolbar ("hand" icon). The delimiting plane of the slice sandwich is shown like a circle-saw in the scene.

×

Right

Rear

- 3. Move and rotate this plane with mouse.
- 4. Hold down the left mouse button and move the mouse ("drag" the mouse) this makes the plane rotation, when you also hold the "Shift" key along mouse drag, the plane is moving.
- On the end of each movement when left mouse button is released, the sandwich configuration is recalculated instantly.
- 5. Once you see that the sandwich has reached the required configuration you may try to improve the plan with the bound swim tool.
- 6. Once you finished work with inclusion sandwich ensure to deactivate object movement mode by switching to normal view mode ("camera" icon).

Video Inclusion sandwich - Change the sandwich geometry (Recalc)								
Published: 2022, December 15 Last Updated: 2021, December 15 v.1.0								
Your browser does not support th	ne HTML5 video element							
Video keywords: Sandwich, incl	lusion, editing							

×

ight, mm from Reference, µm

Parameters ng Depth Current or

Pavilion Right Rear

> Length Min enoth Max

Improvements in Sample21 model building method

Model building is improved for Sample21 method.

This is link to manual how to apply Sample21 method.

Examples of improvement:







Changes in I3D Report

Implemented red-green fill for "Both axes corrected" mode:



Price list adaptation for Melee diamonds

There is a new procedure for determining the price of diamonds weighing less than 0.0584ct (Sieve up to +9).

PPC - tables of Price per Carat depending on weight, as well as color, clarity and other discounts.

Mass2 - the weight of the diamond rounded to the boundary X,XX85

Mass4 - the weight of the diamond rounded to the X.XXXX5 boundary (usual math rules for 4 digits)

Previously

• the cost for all diamonds was determined as Mass2*PPC(Mass2)

Now

- the cost of diamonds weighing 0.0585ct and above remained the same according to the formula Mass2*PPC(Mass2)
 the cost of diamonds weighing 0.0585ct and below is determined by the new formula Mass4*PPC(Mass2)

Examples of pricing for Brilliant-D-IF without additional discounts

Weight	Mass2	PPC	Old Price	New Mass	New Price
Weight	Mass2	PPC	Old Price	New Mass	New Price
0.001	0.00	660	0.00	0.001	0.66
0.005	0.00	660	0.00	0.005	3.30
0.009	0.01	660	6.60	0.009	5.94
0.015	0.01	660	6.60	0.015	9.90
0.038	0.03	660	19.80	0.038	25.08

0.049	0.05	750	37.50	0.049	36.75
0.057	0.05	750	37.50	0.057	42.75
0.065	0.06	750	45.00	0.06	45.00

This made it possible to launch global optimization algorithms for low-weight rough diamonds.

Fixed problems and improvements

- Fixed bug with missing report template "HTML5_Illustrated_report_for_step_cut.html StepCut report template
 Fixed bugs in the algorithm SmartNormalize for Princess cut.
 Appraiser template Goodwin_GoldStar1C1P was renamed into Goodwin_Stars1C1P

Register new cut	X
Cut name: EmeraldTest	
Selected model contains Facet Types! Open Facet Types to adjust	
Goodwin ASCII	VV
✓ Create appraiser for your new cut from selected template (recommended)	
AnycutBasic Goodwin1C1P	
Goodwin1C1P Goodwin1C2P	
Goodwin2C3P	
Goodwin_Stars1C1P	
Goodwin_Stars2C2P	
Appraiser for cut 'EmeraldTest' will be created from template Goodwin_Stars1C1P	
	Ok Cancel