Standard Optimiser – Datasheet_SO

Adaptable cutting patterns with extended part information

The Standard Optimiser is designed for cutting batches of jobs on a single axis beam saw. It has the flexibility to deal with a wide range of part lists and part quantities and includes many extra features for dealing with offcuts, complicated cutting patterns and allows the part list to be fully customised via extra custom fields.

The optimiser supports transfer to a wide range of beam saws.

- Enter part sizes
- Optimise
- Send cutting data to saw

Part sizes

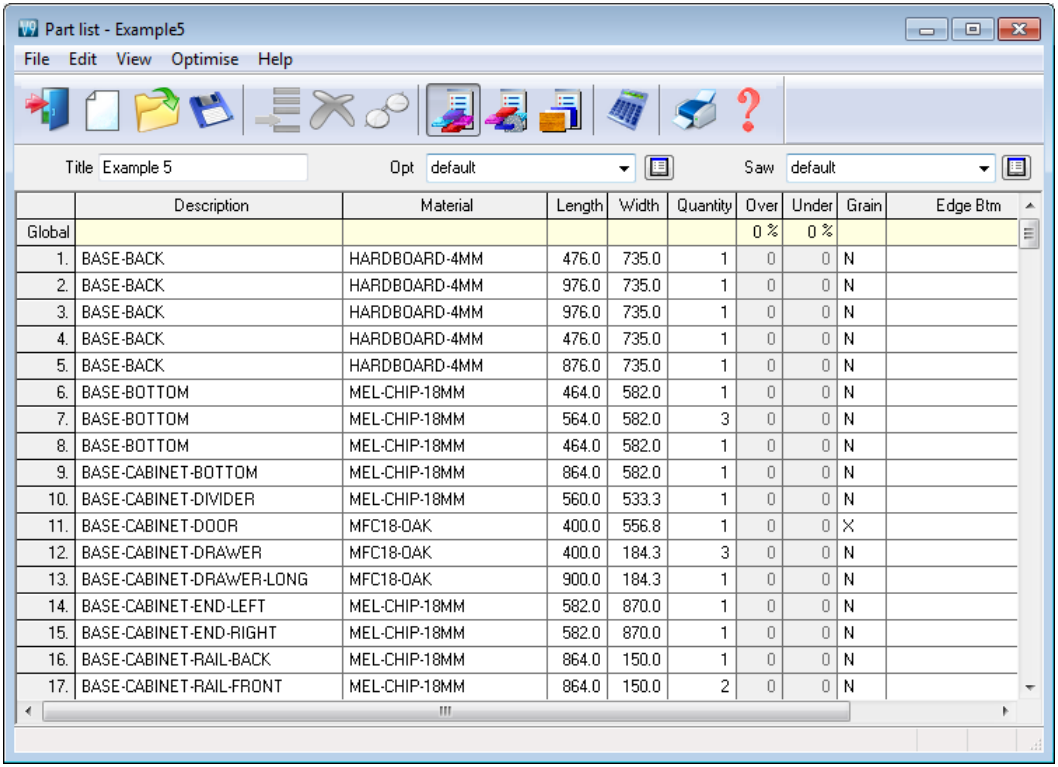
The starting point of optimisation is a list of part sizes. This can be produced in a variety of ways:-

- Enter sizes in the 'Part list' grid
- Import part sizes from external files or other systems

Some lists can have extra custom fields with information for reports or for part labels. The system also provides a set of pre-defined fields which automatically calculate extra data.

The sizes entered are typically the finished sizes and the part list (with the Edging module) includes options to adjust the sizes to allow for edging, laminates are re-trimming.

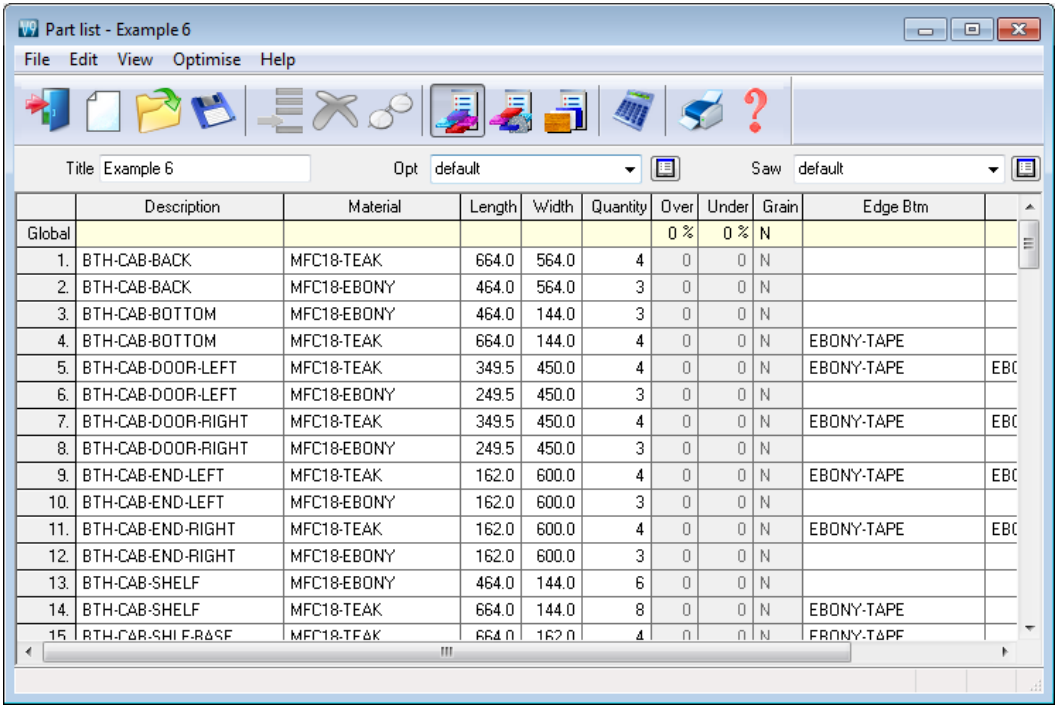
The part list includes a full set of options to edit or insert items, re-order and change the list.



	Description	Material	Length	Width	Quantity	Over	Under	Grain	Edge Btm
Global						0 %	0 %		
1.	BASE-BACK	HARDBOARD-4MM	476.0	735.0	1	0	0	N	
2.	BASE-BACK	HARDBOARD-4MM	976.0	735.0	1	0	0	N	
3.	BASE-BACK	HARDBOARD-4MM	976.0	735.0	1	0	0	N	
4.	BASE-BACK	HARDBOARD-4MM	476.0	735.0	1	0	0	N	
5.	BASE-BACK	HARDBOARD-4MM	876.0	735.0	1	0	0	N	
6.	BASE-BOTTOM	MEL-CHIP-18MM	464.0	582.0	1	0	0	N	
7.	BASE-BOTTOM	MEL-CHIP-18MM	564.0	582.0	3	0	0	N	
8.	BASE-BOTTOM	MEL-CHIP-18MM	464.0	582.0	1	0	0	N	
9.	BASE-CABINET-BOTTOM	MEL-CHIP-18MM	864.0	582.0	1	0	0	N	
10.	BASE-CABINET-DIVIDER	MEL-CHIP-18MM	560.0	533.3	1	0	0	N	
11.	BASE-CABINET-DOOR	MFC18-OAK	400.0	556.8	1	0	0	X	
12.	BASE-CABINET-DRAWER	MFC18-OAK	400.0	184.3	3	0	0	N	
13.	BASE-CABINET-DRAWER-LONG	MFC18-OAK	900.0	184.3	1	0	0	N	
14.	BASE-CABINET-END-LEFT	MEL-CHIP-18MM	582.0	870.0	1	0	0	N	
15.	BASE-CABINET-END-RIGHT	MEL-CHIP-18MM	582.0	870.0	1	0	0	N	
16.	BASE-CABINET-RAIL-BACK	MEL-CHIP-18MM	864.0	150.0	1	0	0	N	
17.	BASE-CABINET-RAIL-FRONT	MEL-CHIP-18MM	864.0	150.0	2	0	0	N	

In this example there are a large number of part sizes required in small quantities. Each part has a material code which matches the part to the available materials.

The number of columns in use can be adjusted to match the details required and help with data entry. The global line at the top of the list allows entry values that apply to the whole list and help to speed up data entry and avoid mistakes.

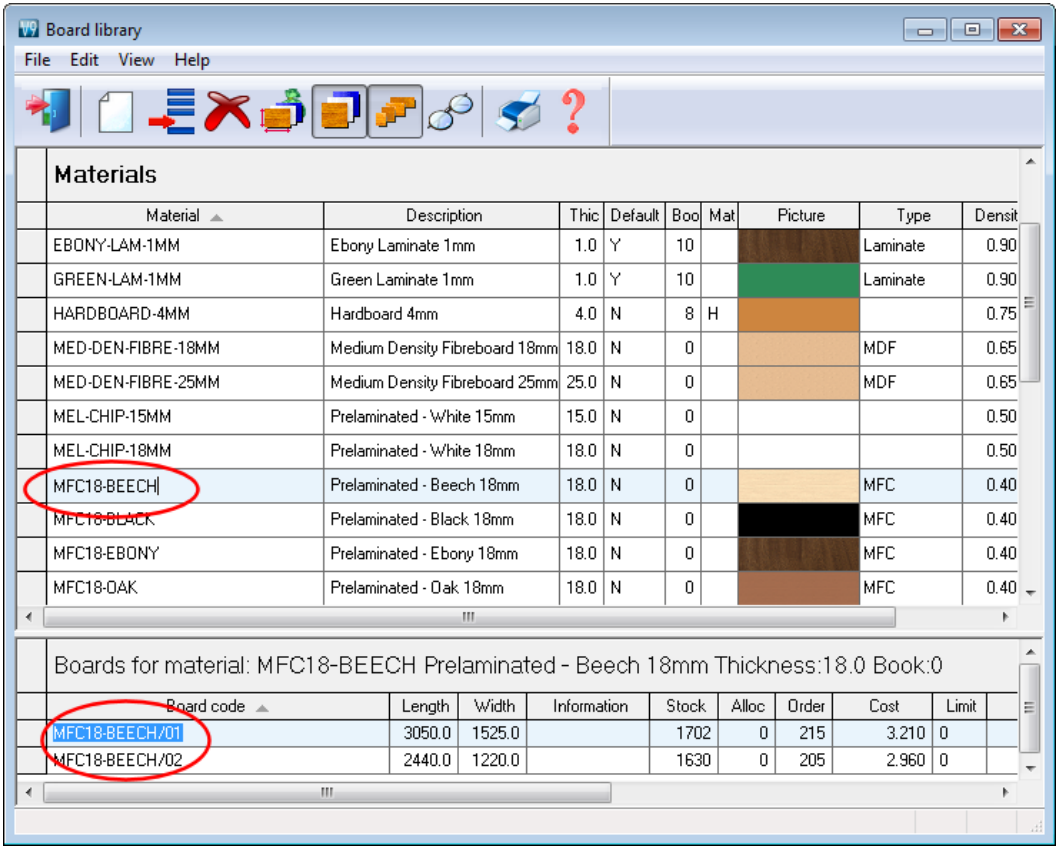


	Description	Material	Length	Width	Quantity	Over	Under	Grain	Edge Btm	
Global						0 %	0 %	N		
1.	BTH-CAB-BACK	MFC18-TEAK	664.0	564.0	4	0	0	N		
2.	BTH-CAB-BACK	MFC18-EBONY	464.0	564.0	3	0	0	N		
3.	BTH-CAB-BOTTOM	MFC18-EBONY	464.0	144.0	3	0	0	N		
4.	BTH-CAB-BOTTOM	MFC18-TEAK	664.0	144.0	4	0	0	N	EBONY-TAPE	
5.	BTH-CAB-DOOR-LEFT	MFC18-TEAK	349.5	450.0	4	0	0	N	EBONY-TAPE	EB(
6.	BTH-CAB-DOOR-LEFT	MFC18-EBONY	249.5	450.0	3	0	0	N		
7.	BTH-CAB-DOOR-RIGHT	MFC18-TEAK	349.5	450.0	4	0	0	N	EBONY-TAPE	EB(
8.	BTH-CAB-DOOR-RIGHT	MFC18-EBONY	249.5	450.0	3	0	0	N		
9.	BTH-CAB-END-LEFT	MFC18-TEAK	162.0	600.0	4	0	0	N	EBONY-TAPE	EB(
10.	BTH-CAB-END-LEFT	MFC18-EBONY	162.0	600.0	3	0	0	N		
11.	BTH-CAB-END-RIGHT	MFC18-TEAK	162.0	600.0	4	0	0	N	EBONY-TAPE	EB(
12.	BTH-CAB-END-RIGHT	MFC18-EBONY	162.0	600.0	3	0	0	N		
13.	BTH-CAB-SHELF	MFC18-EBONY	464.0	144.0	6	0	0	N		
14.	BTH-CAB-SHELF	MFC18-TEAK	664.0	144.0	8	0	0	N	EBONY-TAPE	
15.	BTH-CAB-SHLF-BASE	MFC18-TEAK	664.0	162.0	4	0	0	N	EBONY-TAPE	

Sizes can be entered in millimetres, decimal inches or fractional inches.

Materials

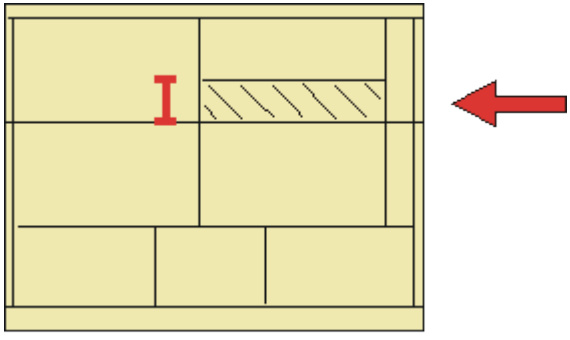
All materials are stored in the Board library. This is a database of all sheet material and includes quantities and costs. The Board library stores a record for each material and a record for each board size (including any offcuts) for each material type.



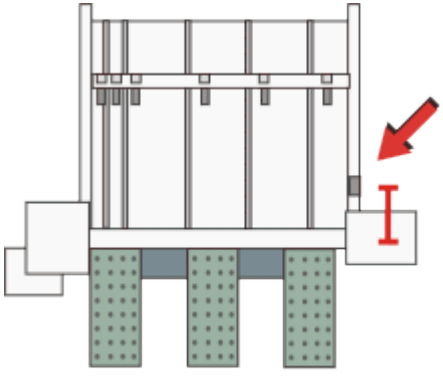
In this example the material MFC18-TEAK has two available board sizes 3050.0 x 1525.0 and 2440.0 x 1220.0 and several offcuts.

The Material column in the Part list associates each part with the correct material to use and the optimiser selects the optimum boards sizes to use for each job.


Optimising parameters are used to describe the type of cutting (trims, re-cuts, headcuts etc.) - these features may vary with different part lists.



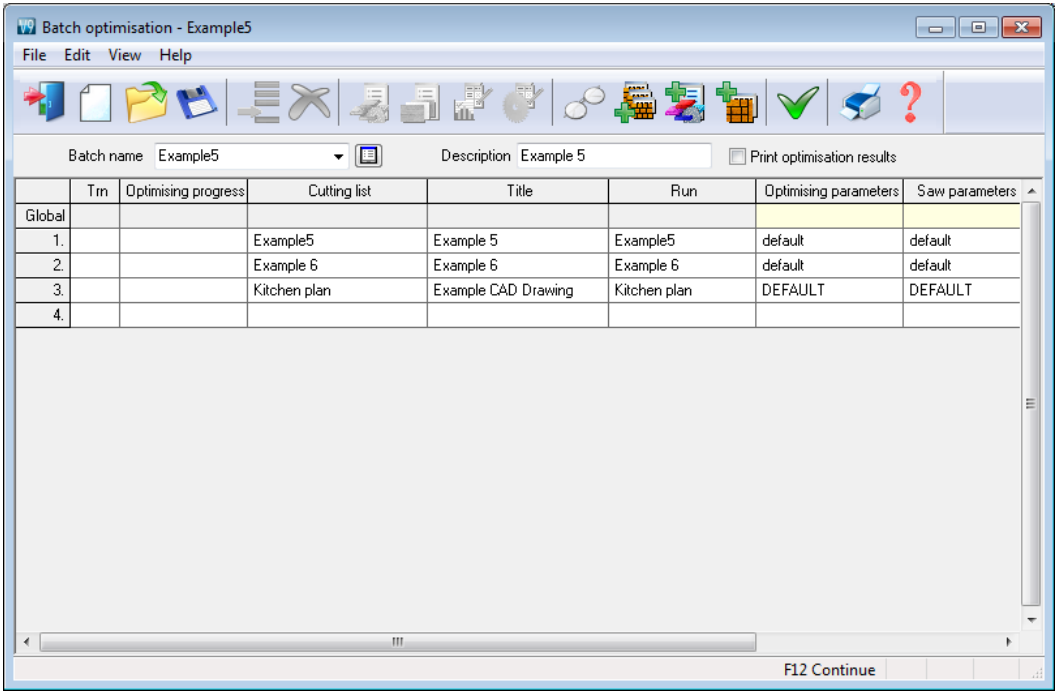

Saw parameters are used to describe each saw; overall cutting length, position of clamps, fence speed …



Different parameters lists can be set up and used to produce the correct cutting requirements for any list. Typically users set up a handful of parameters lists with commonly used settings and add extra lists for one-off or special jobs.

Optimising

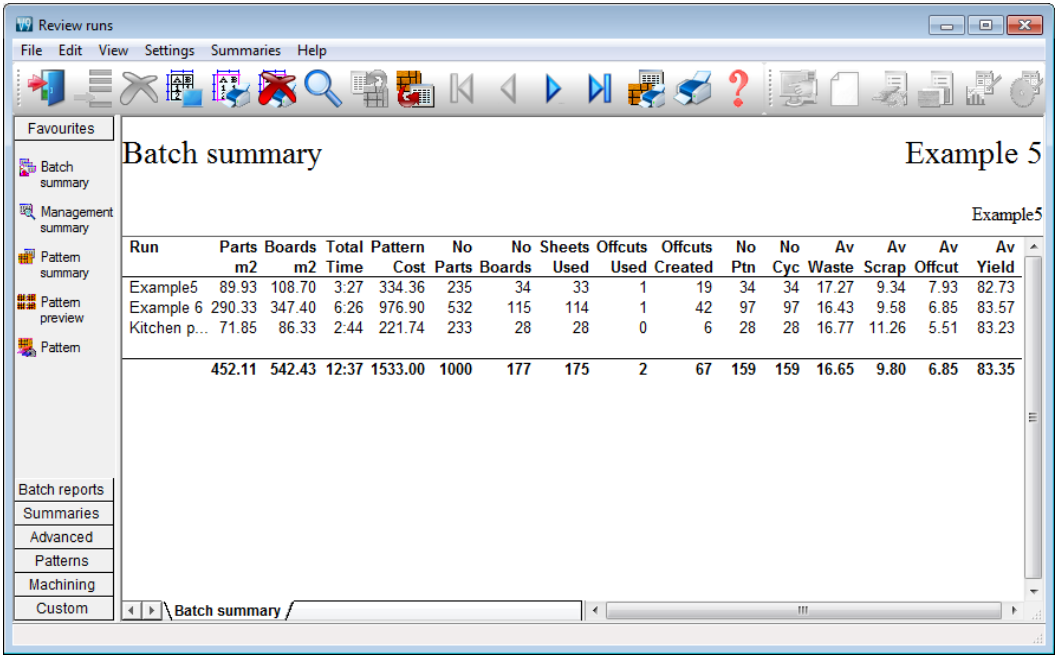
Optimisation produces the pattern layouts (balancing cutting times and waste) and a set of detailed reports on each job. Jobs can be batched together. This is useful where there are lot small orders in the day.



	Tm	Optimising progress	Cutting list	Title	Run	Optimising parameters	Saw parameters
Global							
1.			Example5	Example 5	Example5	default	default
2.			Example 6	Example 6	Example 6	default	default
3.			Kitchen plan	Example CAD Drawing	Kitchen plan	DEFAULT	DEFAULT
4.							

The results are shown in the section of the program 'Review runs'.

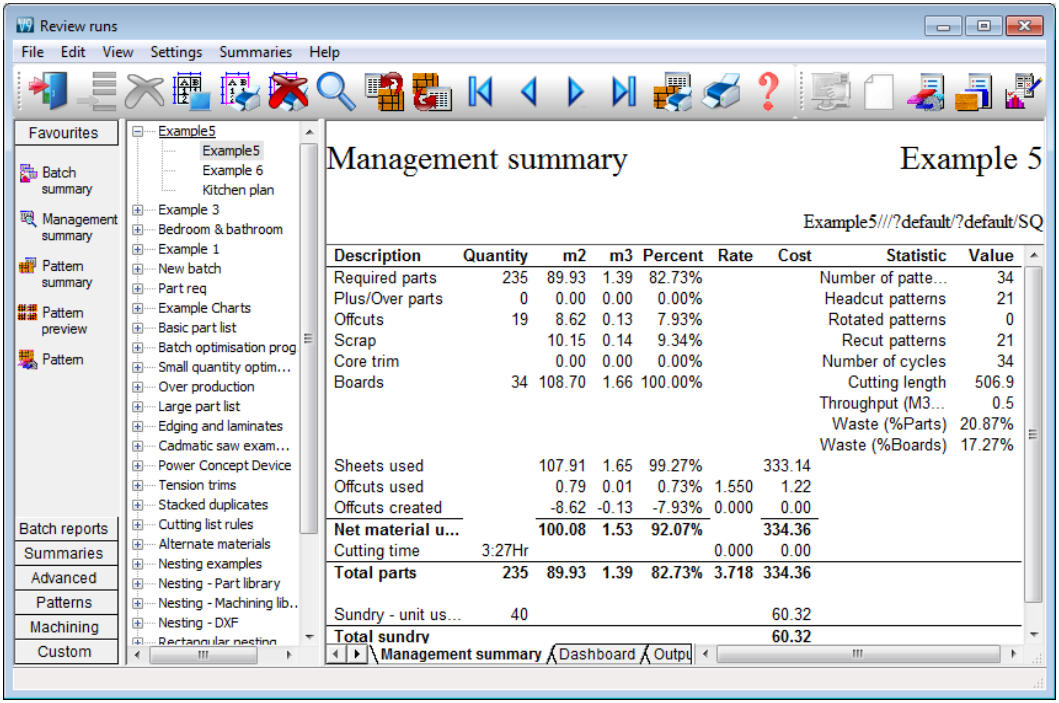
Runs are stored and can be easily recalled for review or adjustments.



Run	Parts m2	Boards m2	Total Time	Pattern Cost	No Parts	No Boards	Sheets Used	Offcuts Used	Offcuts Created	No Ptn	No Cyc	Av Waste	Av Scrap	Av Offcut	Av Yield
Example5	89.93	108.70	3:27	334.36	235	34	33	1	19	34	34	17.27	9.34	7.93	82.73
Example 6	290.33	347.40	6:26	976.90	532	115	114	1	42	97	97	16.43	9.58	6.85	83.57
Kitchen p...	71.85	86.33	2:44	221.74	233	28	28	0	6	28	28	16.77	11.26	5.51	83.23
	452.11	**542.43**	**12:37**	**1533.00**	**1000**	**177**	**175**	**2**	**67**	**159**	**159**	**16.65**	**9.80**	**6.85**	**83.35**

Select an item to see the details of each job.

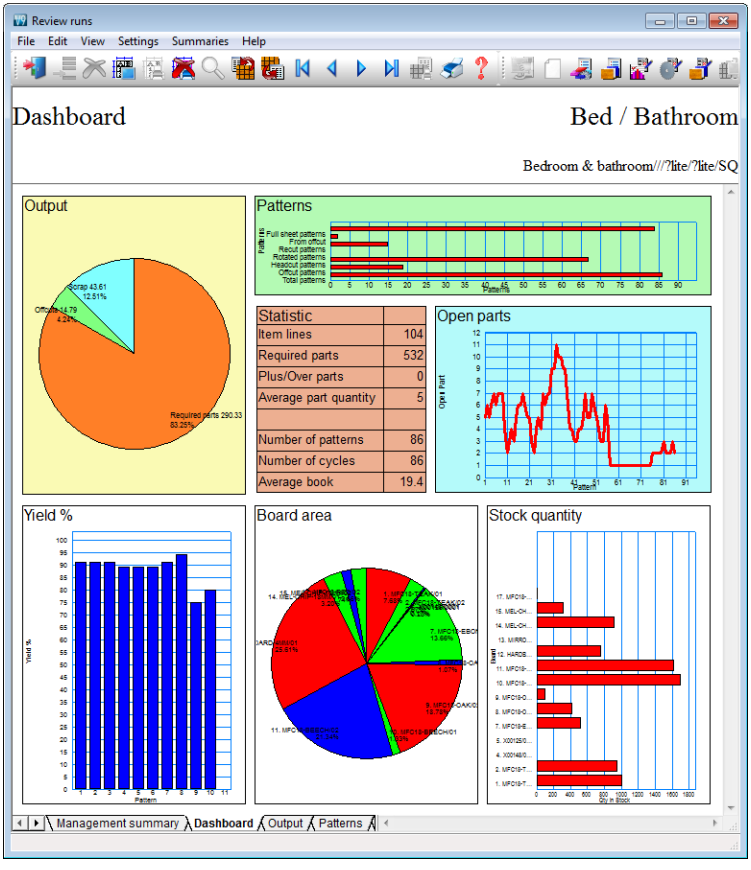
The first report shown is an overall summary of the job.



Description	Quantity	m2	m3	Percent	Rate	Cost	Statistic	Value
Required parts	235	89.93	1.39	82.73%			Number of patte...	34
Plus/Over parts	0	0.00	0.00	0.00%			Headcut patterns	21
Offcuts	19	8.62	0.13	7.93%			Rotated patterns	0
Scrap		10.15	0.14	9.34%			Recut patterns	21
Core trim		0.00	0.00	0.00%			Number of cycles	34
Boards	34	108.70	1.66	100.00%			Cutting length	506.9
							Throughput (M3...	0.5
							Waste (%Parts)	20.87%
							Waste (%Boards)	17.27%
Sheets used		107.91	1.65	99.27%		333.14		
Offcuts used		0.79	0.01	0.73%	1.550	1.22		
Offcuts created		-8.62	-0.13	-7.93%	0.000	0.00		
Net material u...		**100.08**	**1.53**	**92.07%**		**334.36**		
Cutting time	3:27Hr				0.000	0.00		
Total parts	**235**	**89.93**	**1.39**	**82.73%**	**3.718**	**334.36**		
Sundry - unit us...	40					60.32		
Total sundry						**60.32**		

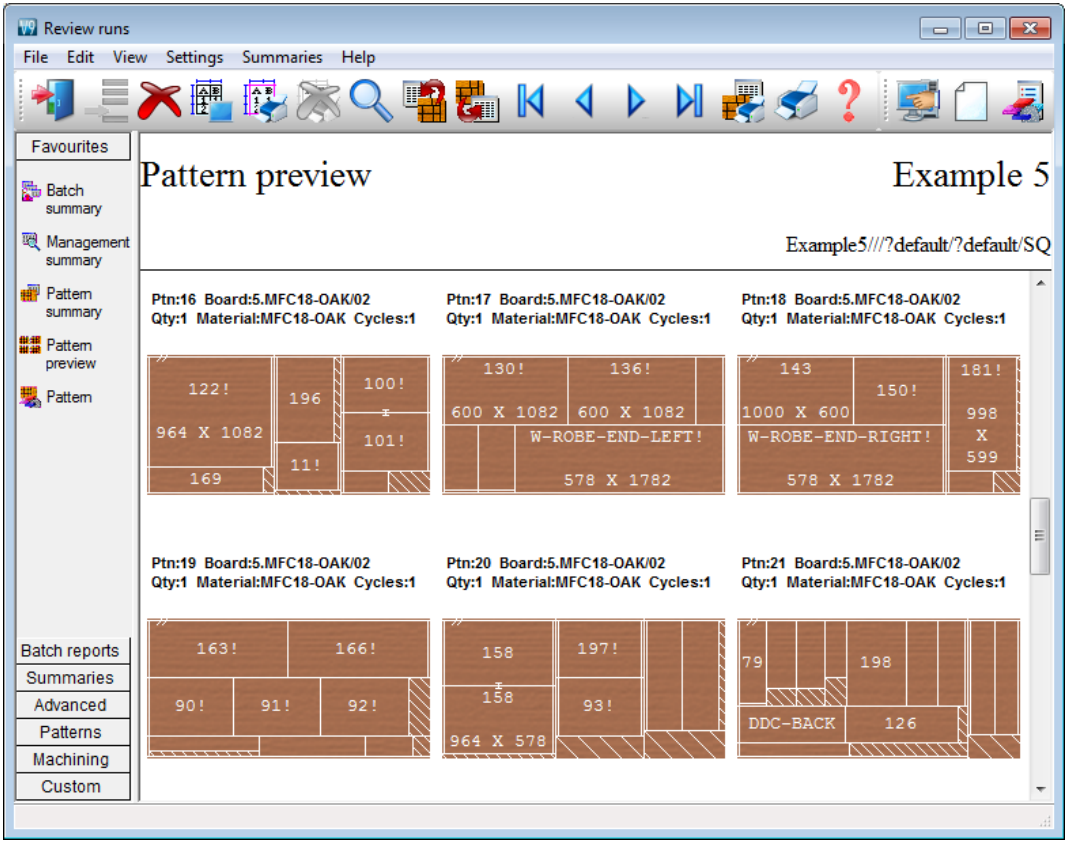
The management summary shows the overall yield, costs and the type of patterns produced. A window shows the list of optimised jobs so it is easy to quickly check and review one job then another.

An option at the Management summary is the Dashboard which shows custom snapshots of the data allowing a better insight into selected features of the job.



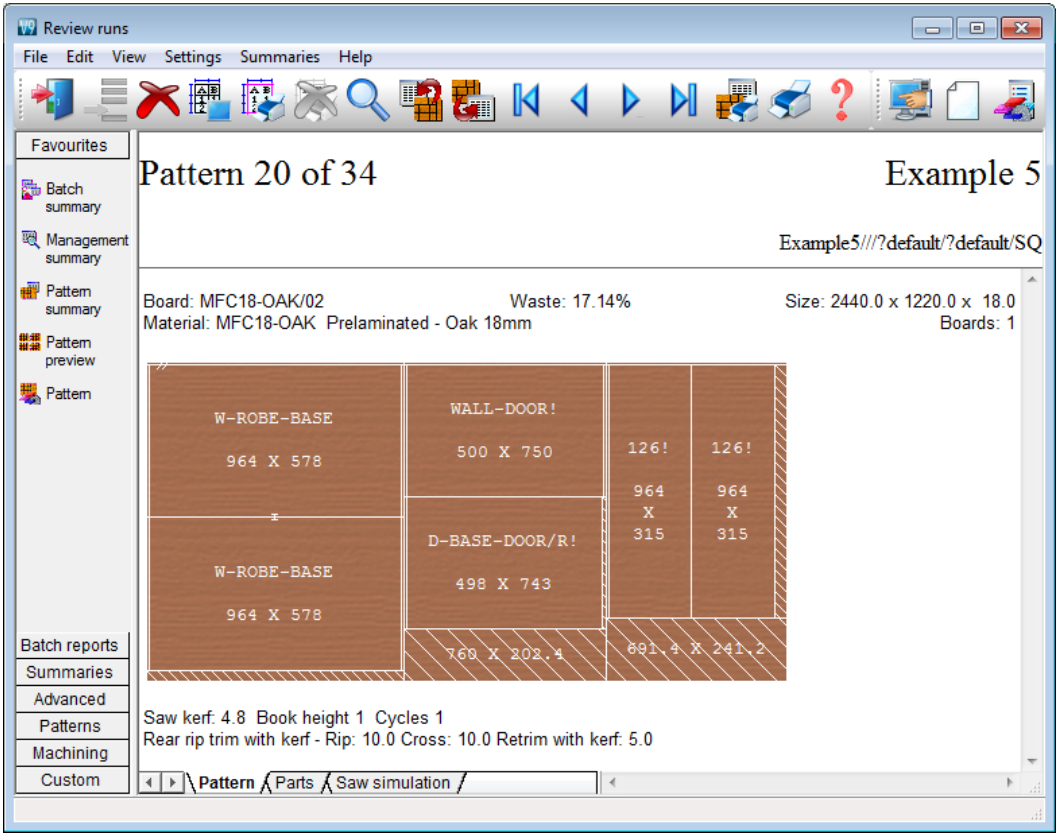
The Dashboard can include a selection of charts from other summaries so critical aspects of the job can be highlighted. The Dashboard and all the charts are fully customisable.

The cutting patterns are shown in a thumbnail preview



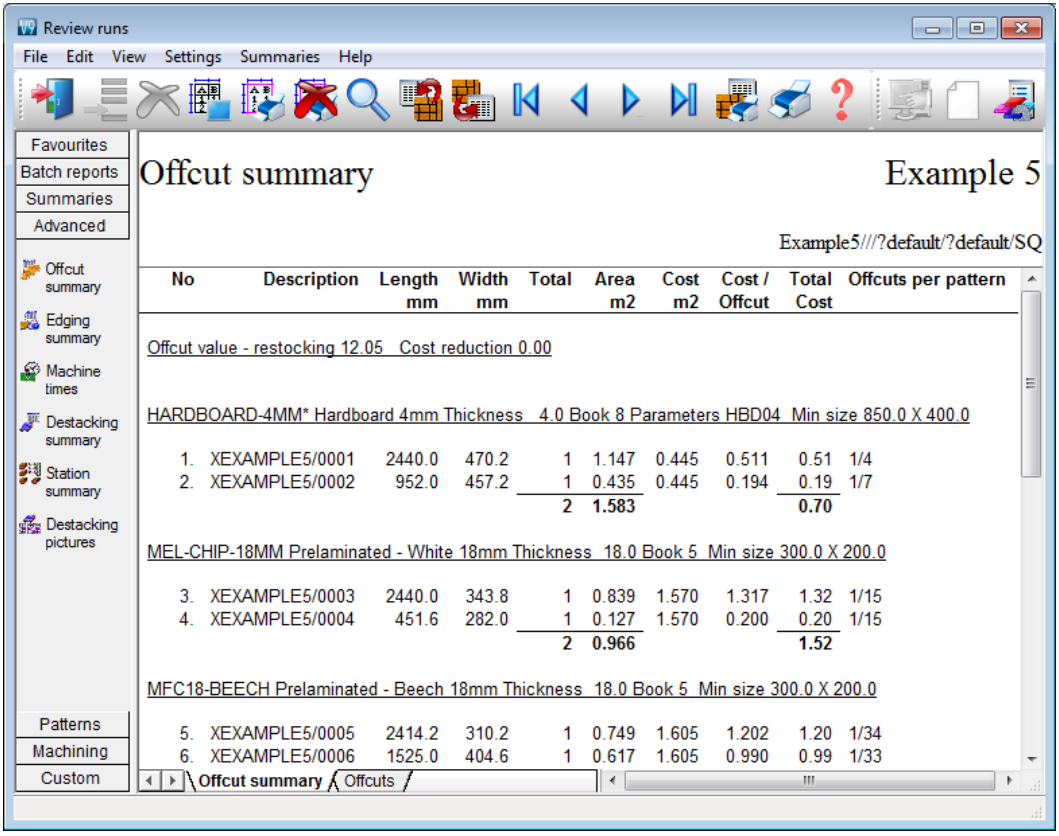
The patterns can be viewed full screen by clicking on the thumbnail.

The full details of the pattern include, part label, waste, offcuts and the pattern orientation.



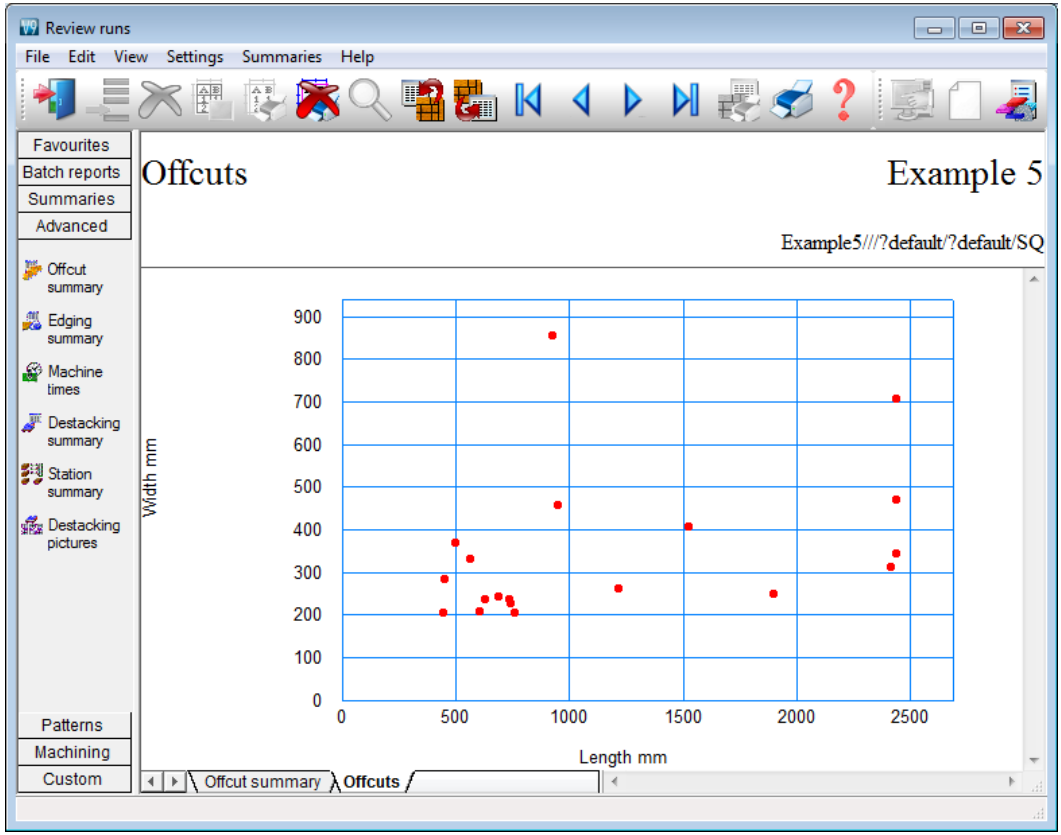
Further details, for example, the parts cut, cutting instructions, saw simulation for each pattern are accessed from the tabs at the foot of each pattern.

A large number of other summaries are available, for example, a list of patterns and cutting quantities, summary or parts produced, a list of offcuts produced …



Where appropriate offcuts can be returned to the Board library and re-used.

Up to 3 chart views can be designed and included for each summary.

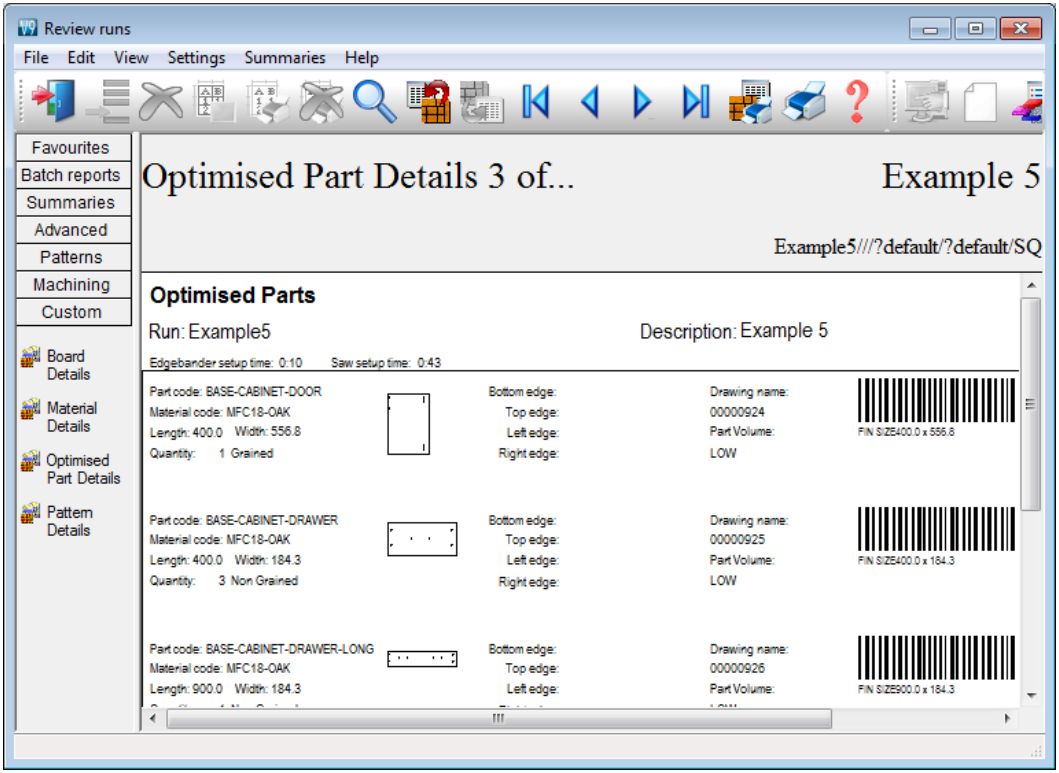


Summaries available include:-

```
Batch summary
Management summary
Pattern summary, Part summary
Board summary, Offcut summary
Saw loading summary, Material summary
Sundry parts, Machine times
```

In addition to standard summary a wide variety of custom reports can be created with the Form & Label design option.

All the information from cutting is available for the reports and a set of pre-defined templates can be used as a starting point for your own reports which are fully integrated into the program.

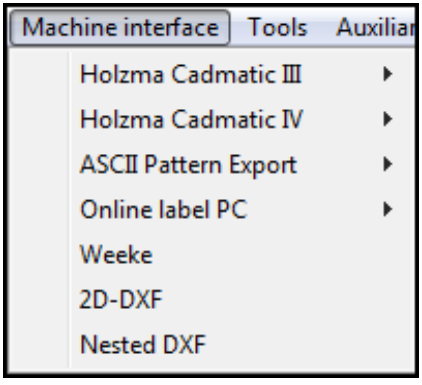


The custom summary above shows a bar code and drawing for each part.

Saw Interface

Optimising data can be sent directly to many types of saw in proprietary formats.

Saw interface parameters set up the transfer for each saw. Users typically transfer to a handful of different saws. For example, two different Holzma saws.



The saw controllers supported are:-

```
Direct link - Holzma Topmatic/Micromatic
Module programmer
Online label PC
Holzma Cadmatic I
Holzma Cadmatic II
Selco CRLINK
Holzma Cadmatic III/IV
Homag Sawtech (Espana)
Giben
Schelling Commander 2 and 4
SCM
SCM Seziona
Ascii PTX
MDB PTX
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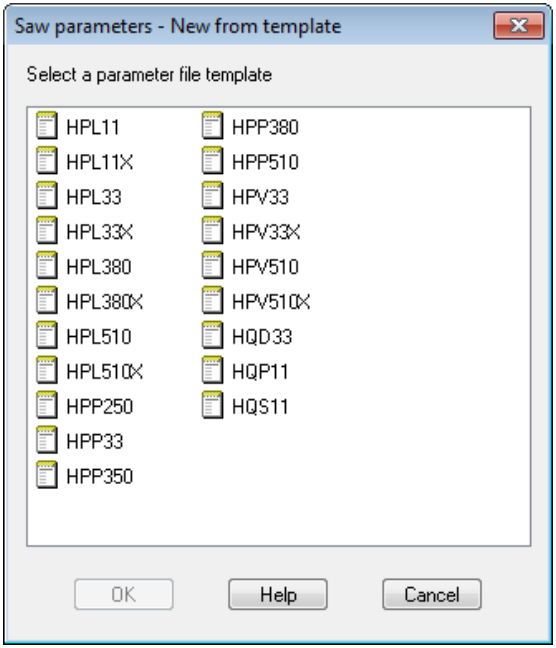
This variety of saws includes many different types of saw but typically the Standard Optimiser is used with Single axis beam saws.

A large set of saw parameter files are provided covering the settings for a wide range of saw models.



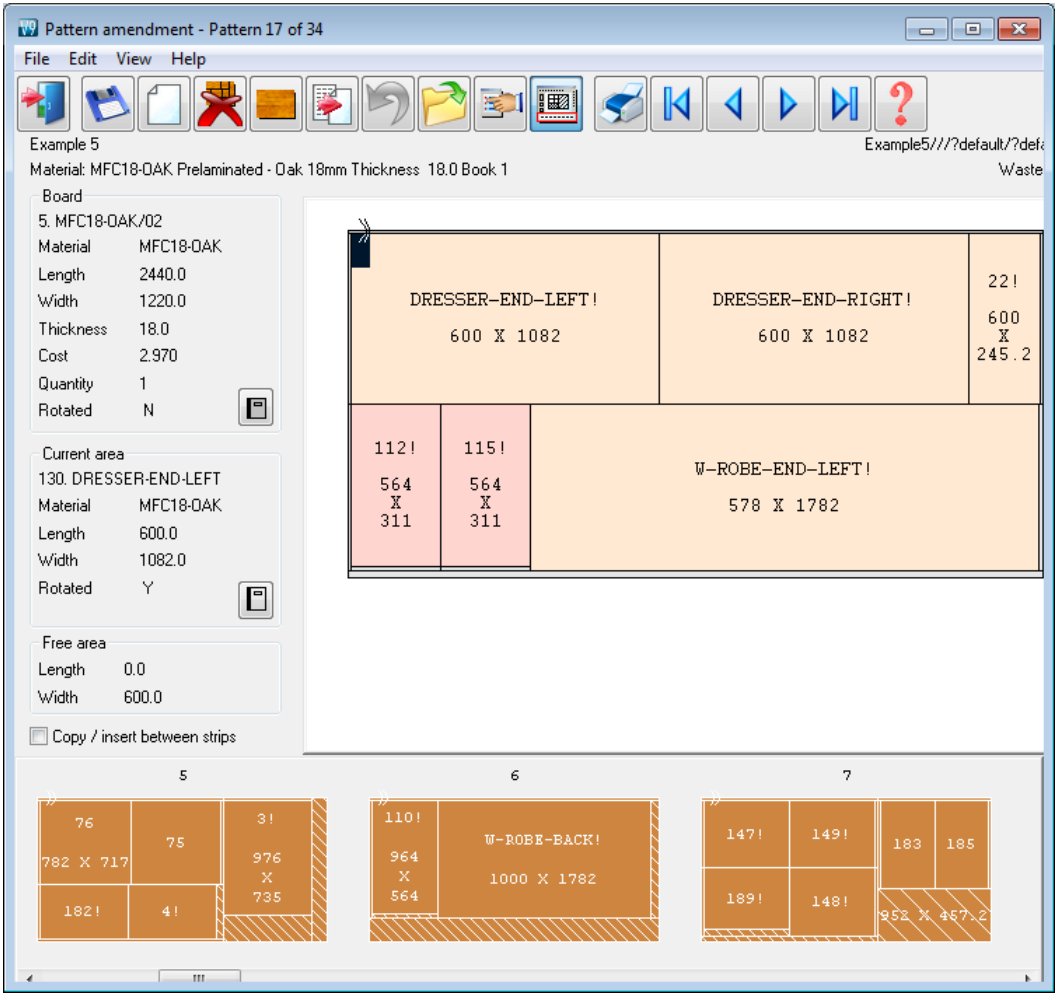
Pattern editor

The standard optimiser deals with a wide range of jobs but smaller jobs often require the flexibility to make last minute changes as orders change or materials are not available. The pattern editor and pattern library allow changes to each pattern, for example:-

- change the order in which patterns are cut
- alter a cut quantity
- remove a headcut
- swap parts
- alter a part size
- use a different board

The part requirements and run quantities are automatically re-calculated when the changes are confirmed; ready for the cutting data to be sent to the saw.

Click on any pattern to move to the editor.



In this example a part (that was cancelled) has been deleted.

The thumbnail at the foot of the editor allows patterns to be quickly selected and for parts to be moved between patterns.

The editor should be used carefully - if there are large scale changes it is better to re-optimise as the balance of costs and waste may change significantly.

 Common patterns can be stored in the pattern library to use as templates for other jobs.

Export cutting data

As well as sending data to a saw cutting data can also be exported to our standard PTX (Pattern exchange) format; either as an ASCII file or MDB database file.

This format has been in use for many years and several manufacturers use it for extracting data for post processing for other machines:-

- transfer to other office or production database systems
- control of destacking machinery
- control of edgebanders
- sending information to other stations in a cutting line.

Full control of imported data and clean part lists

These days it is much more common for part list requirements to be imported from other systems such as an Order system or Sales database. In these cases the data is often in a variety of formats and the incoming data contains records and fields that are not used in optimising.

The ***Part list import parameters*** allow you to describe the format of almost any external file and to specify the fields required for optimising (part code, length, width quantity etc.)

It often happens, as well, that not all the part sizes can be optimised e.g. thin rails or bought in items. Using the ***Cutting list rules*** option allows any imported list to be further refined and corrected automatically.

The program can also deal smoothly with converting from data in fractional or decimal inches to millimetres (or vice versa).

Comparison of Optimisers

	Lite	Standard	Professional
Part List	**LO**	**SO**	**PO**
Metric or Imperial dimensions	●	●	●
Grain/cross grain or ungrained parts	●	●	●
Exact quantity or over/under production	●	●	●
Maximum part sizes per part list (undivided)	10,000	20,000	20,000
Mixed material lists - unlimited materials per job	●	●	●
User-defined part list information fields	99	99	99
Configurable part list editor	●	●	●
Grain match - master part templates		●	●
Import			
Import part/cutting lists from user-defined csv, xls(x)	●	●	●
Import board lists from user-defined csv, xls(x) files	●	●	●
Import patterns - from PTX		●	●
Cutting list			
Multiple boards & offcut sizes per job	●	●	●
Cutting list rules - user defined tables	●	●	●
Allow alternative materials per part		●	●

Comparison of Optimisers (continued)

	Lite	Standard	Professional
Optimising	**LO**	**SO**	**PO**
Small/medium quantity sheet optimiser	●	●	●
Timber/workshop cross cut optimiser	●	●	●
Strip production optimiser			●
Full sheet over production optimiser			●
Volume optimisation			●
Auto optimiser selection			●
Pattern complexity controls	Limited	Limited	●
Saw kerf & trim settings	●	●	●
Separate kerf for rip and crosscut saws			●
Optimisation based on material cost	●	●	●
Optimisation based on cost (material + cutting time)			●
Vertical strips in head cut patterns			●
Maximum part sizes per optimisation	10,000	10,000	10,000
Maximum pieces per optimisation	10,000	10,000	Unlimited
Faster optimisation with multi-core processors	●	●	●
Batch optimisation multiple lists - up to 250 jobs	●	●	●
Strip production optimiser			●
Full sheet over production optimiser			●
Volume optimisation			●
Extended optimisation parameters		Limited	●
Control of open parts or pallet groups			●
Control of part priorities			●
Control of 'plus part' preference			●
Free cut analysis			●
Material parameters		●	●
Mixed material stacks			●
Re-optimisation of remaining (unproduced) parts			●

Comparison of Optimisers (continued)

	Lite	Standard	Professional
Export	**LO**	**SO**	**PO**
Export report data to Access database	●	●	●
Export summaries to XLS(X) files	●	●	●
Export summaries to PDF	●	●	●
Export patterns to DXF files	●	●	●
Reports, forms and labels			
Batch, job summaries	●	●	●
Part, Board, Material and pattern summaries	●	●	●
Offcut summary	●	●	●
Part costings - Weight calculations	●	●	●
Cutting time calculations/saw simulation report		●	●
Dashboard - graphs and bar charts	●	●	●
Configurable reports & summaries	●	●	●
Form design - part lists, patterns	●	●	●
Label design - includes bar codes & pictures	●	●	●
Labels for parts and offcuts	●	●	●
Stock			
Material library with boards and offcuts	●	●	●
Automatic stock issue from jobs	●	●	●
Import stock adjustment from file	●	●	●

Comparison of Optimisers (continued)

	Lite	Standard	Professional
Patterns	**LO**	**SO**	**PO**
Thumbnail preview of patterns	●	●	●
Pattern display - colour coded or material texture	●	●	●
Pattern editor - add, move, delete parts	●	●	●
Cutting intructions for saw operator	●	●	●
Pattern Library -standard templates -grain match ptns.		●	●
Manual patterns		●	●
Beam saw interface			
Transfer to Single saw - Cadmatic 4 only	●	●	●
Transfer to online label PC		●	●
Transfer to Single saws - most types		●	●
Transfer to Angular saws			●
Transfer to Weeke Cutting centre			●
Transfer to Multiple saw□/multiple saw parameter files		●	●
Tension trims, split waste, waste strip setting		●	●
Support for PCD device/split program fence		●	●
Support for combiTec - recut processing parameters			●
General			
File maintenance - copy/delete files	●	●	●
Backup & restore data	●	●	●
Integrated local (offline) comprehensive help	●	●	●
Link to website	●	●	●
User profiles	●	●	●
Windows XP/Vista/Win7/Win8 platforms	●	●	●