Professional Optimiser – Datasheet PO

Large scale production – with full cost control

This is the most extensive optimising module. It gives full control over costs, cutting constraints and all cutting pattern features including the special requirements of larger scale production.

It is fully integrated with the PQ and PL modules (where these are used) and includes an interface to a large number of proprietary saws.

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

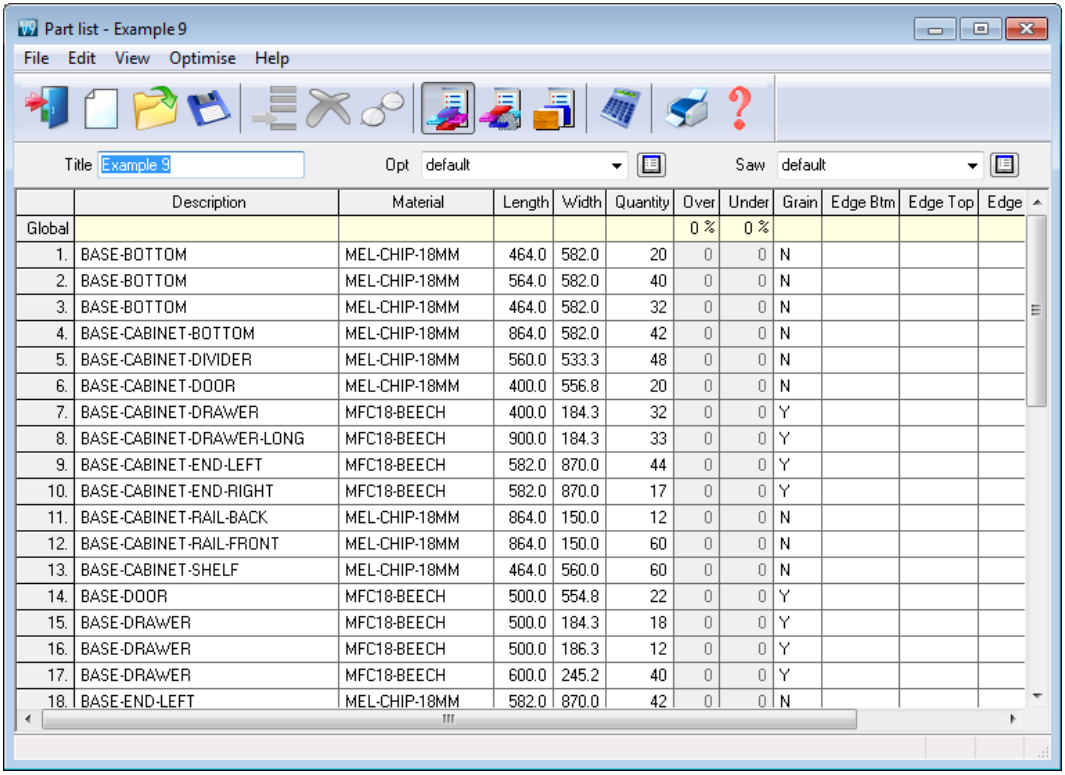
Part sizes

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
- Calculate part sizes from product requirements (PQ module)
- Import part sizes from external files or systems

The result is a list of Part sizes and requirements.

The part list is a list of part size and quantities.



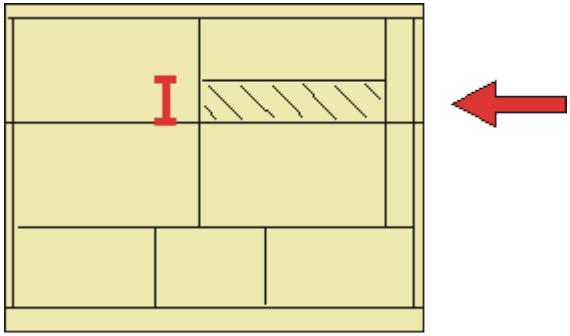
	Description	Material	Length	Width	Quantity	Over	Under	Grain	Edge Btm	Edge Top	Edge
Global						0 %	0 %				
1.	BASE-BOTTOM	MEL-CHIP-18MM	464.0	582.0	20	0	0	N			
2.	BASE-BOTTOM	MEL-CHIP-18MM	564.0	582.0	40	0	0	N			
3.	BASE-BOTTOM	MEL-CHIP-18MM	464.0	582.0	32	0	0	N			
4.	BASE-CABINET-BOTTOM	MEL-CHIP-18MM	864.0	582.0	42	0	0	N			
5.	BASE-CABINET-DIVIDER	MEL-CHIP-18MM	560.0	533.3	48	0	0	N			
6.	BASE-CABINET-DOOR	MEL-CHIP-18MM	400.0	556.8	20	0	0	N			
7.	BASE-CABINET-DRAWER	MFC18-BEECH	400.0	184.3	32	0	0	Y			
8.	BASE-CABINET-DRAWER-LONG	MFC18-BEECH	900.0	184.3	33	0	0	Y			
9.	BASE-CABINET-END-LEFT	MFC18-BEECH	582.0	870.0	44	0	0	Y			
10.	BASE-CABINET-END-RIGHT	MFC18-BEECH	582.0	870.0	17	0	0	Y			
11.	BASE-CABINET-RAIL-BACK	MEL-CHIP-18MM	864.0	150.0	12	0	0	N			
12.	BASE-CABINET-RAIL-FRONT	MEL-CHIP-18MM	864.0	150.0	60	0	0	N			
13.	BASE-CABINET-SHELF	MEL-CHIP-18MM	464.0	560.0	60	0	0	N			
14.	BASE-DOOR	MFC18-BEECH	500.0	554.8	22	0	0	Y			
15.	BASE-DRAWER	MFC18-BEECH	500.0	184.3	18	0	0	Y			
16.	BASE-DRAWER	MFC18-BEECH	500.0	186.3	12	0	0	Y			
17.	BASE-DRAWER	MFC18-BEECH	600.0	245.2	40	0	0	Y			
18.	BASE-END-LEFT	MEL-CHIP-18MM	582.0	870.0	42	0	0	N			

The part list editor can be used to add items or change sizes and quantities as required.

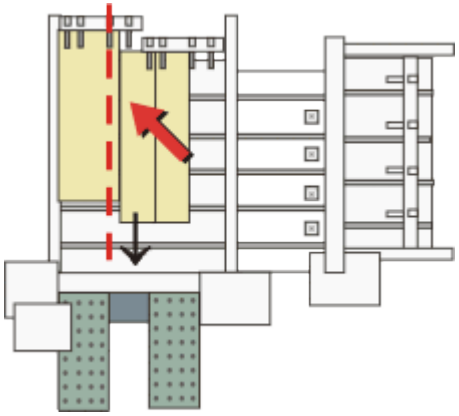
The part list includes many options for adjusting sizes, calculating edging (EL module) and if necessary dividing lists if they are too large to send to a saw in one go.

The part list can be customised with many pre-set and user defined fields - these are often important for volume production in tracking parts, dividing lists …

Optimising parameters are used to describe the type of cutting (trims, re-cuts, headcuts …)



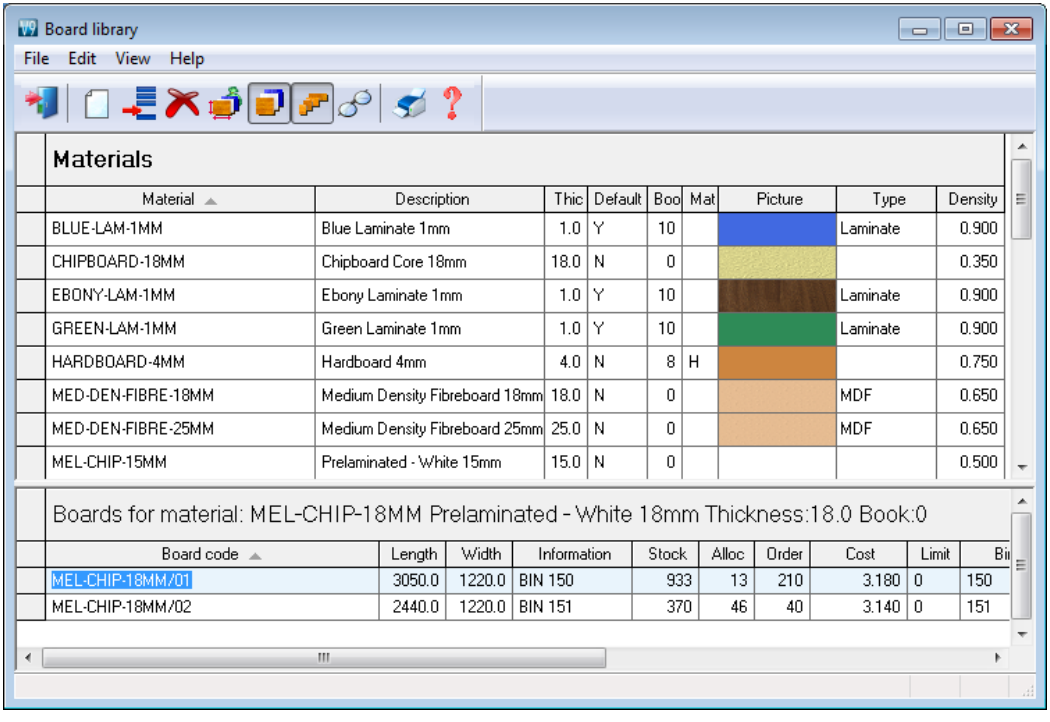
Saw parameters are used to describe each saw; overall cutting length, position of clamps, size of waste flap …



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

Materials

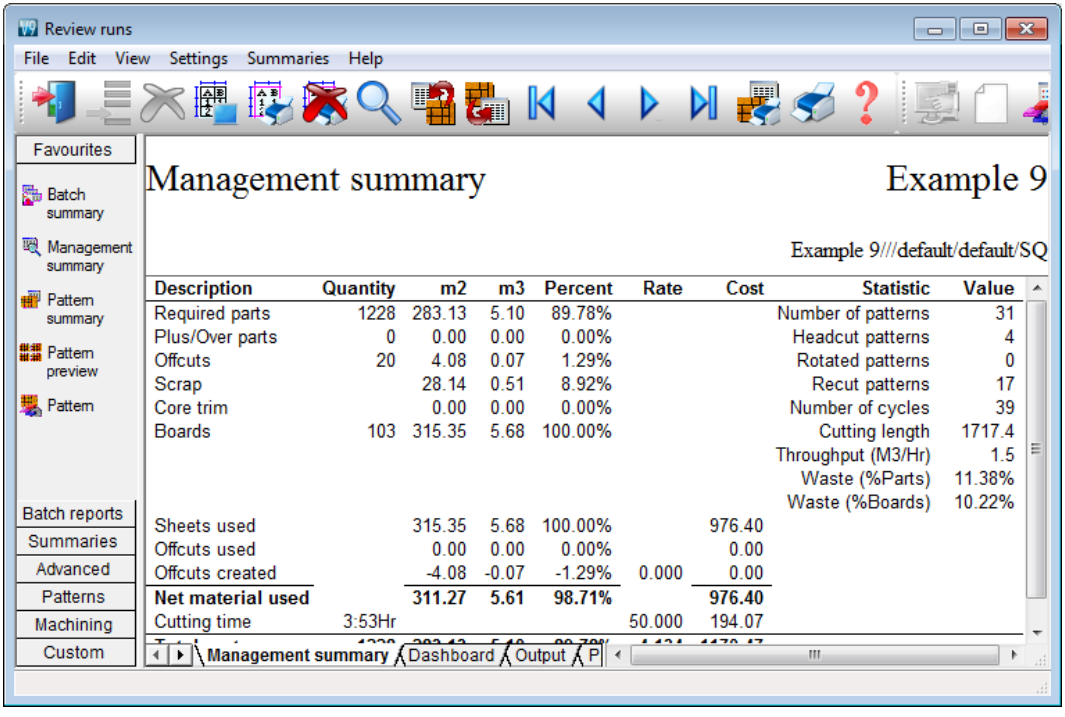
All materials are stored in the Board library. This is a database of all sheet material and includes quantities and costs.



The Material column in the Part list associates each part with the correct material to use. It is possible using extra fields in the part list to allow for alternate materials on jobs, for example, for dividers or hidden items.

Optimising

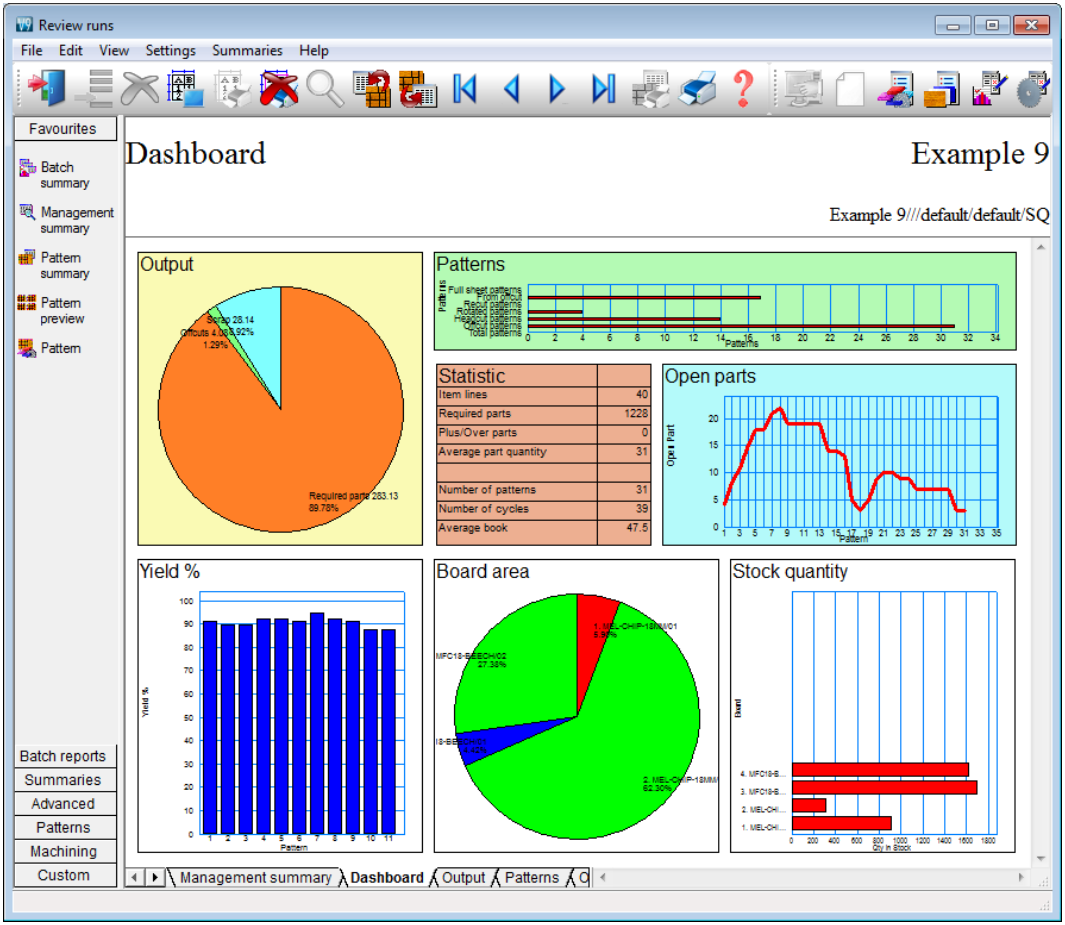
Optimisation produces the pattern layouts (balancing cutting times and waste) and a set of detailed reports on each job. The results are shown in the section of the program 'Review runs'. Runs are stored and can be easily recalled for review or adjustments.



Description	Quantity	m2	m3	Percent	Rate	Cost	Statistic	Value
Required parts	1228	283.13	5.10	89.78%			Number of patterns	31
Plus/Over parts	0	0.00	0.00	0.00%			Headcut patterns	4
Offcuts	20	4.08	0.07	1.29%			Rotated patterns	0
Scrap		28.14	0.51	8.92%			Recut patterns	17
Core trim		0.00	0.00	0.00%			Number of cycles	39
Boards	103	315.35	5.68	100.00%			Cutting length	1717.4
							Throughput (M3/Hr)	1.5
							Waste (%Parts)	11.38%
							Waste (%Boards)	10.22%
Sheets used		315.35	5.68	100.00%		976.40		
Offcuts used		0.00	0.00	0.00%		0.00		
Offcuts created		-4.08	-0.07	-1.29%	0.000	0.00		
Net material used		**311.27**	**5.61**	**98.71%**		**976.40**		
Cutting time	3:53Hr				50.000	194.07		

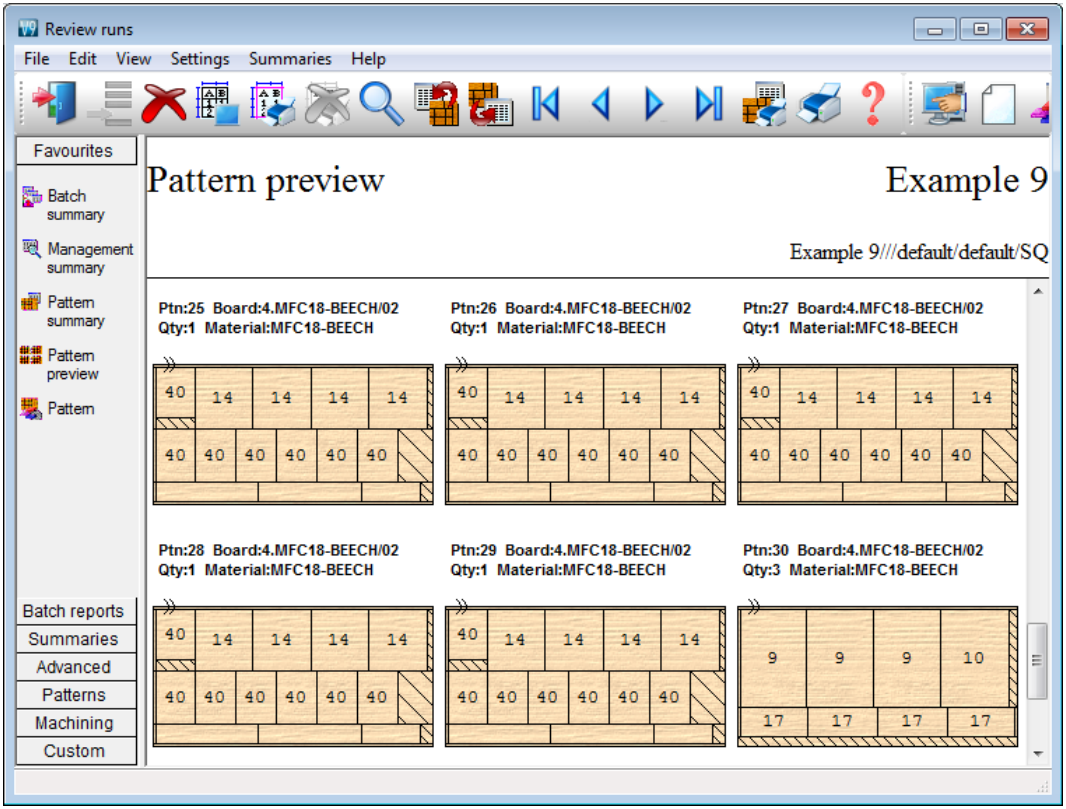
This shows the overall details of a job, yield, costs, type of cutting pattern.

The Management summary includes the Dashboard which provides a graphical view of the summary.



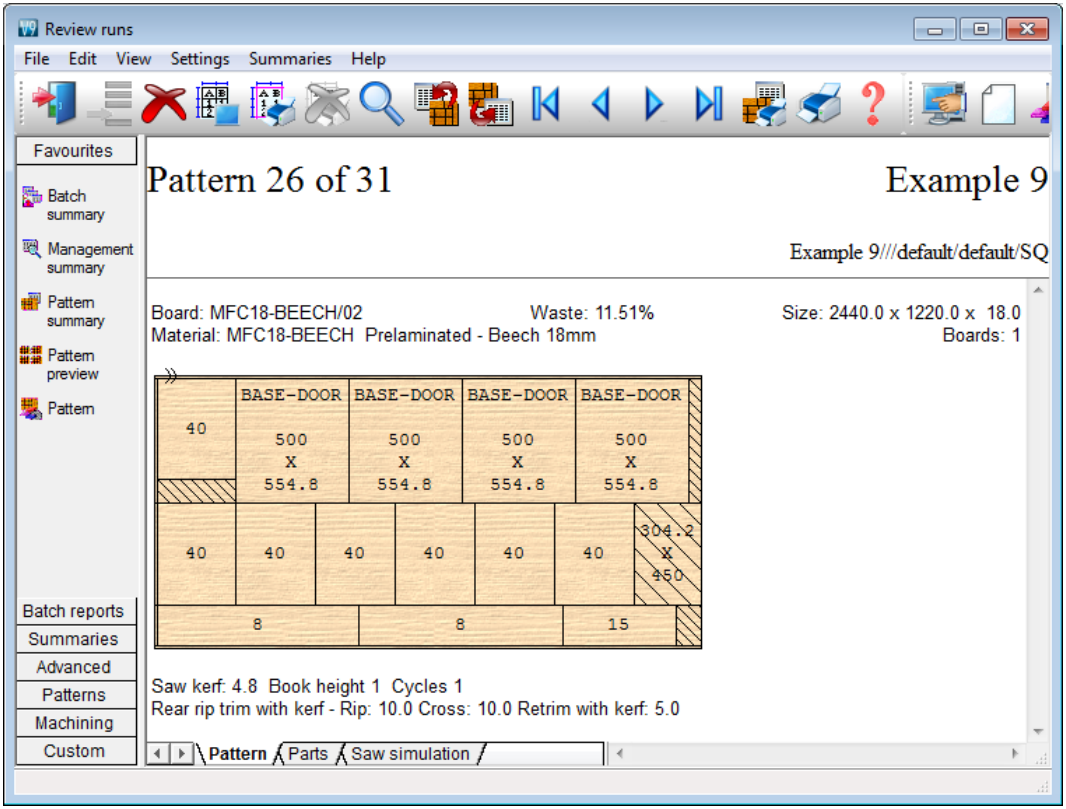
This can be customised for almost any view and to include charts from other summaries.

The cutting patterns are shown in a thumbnail overview.



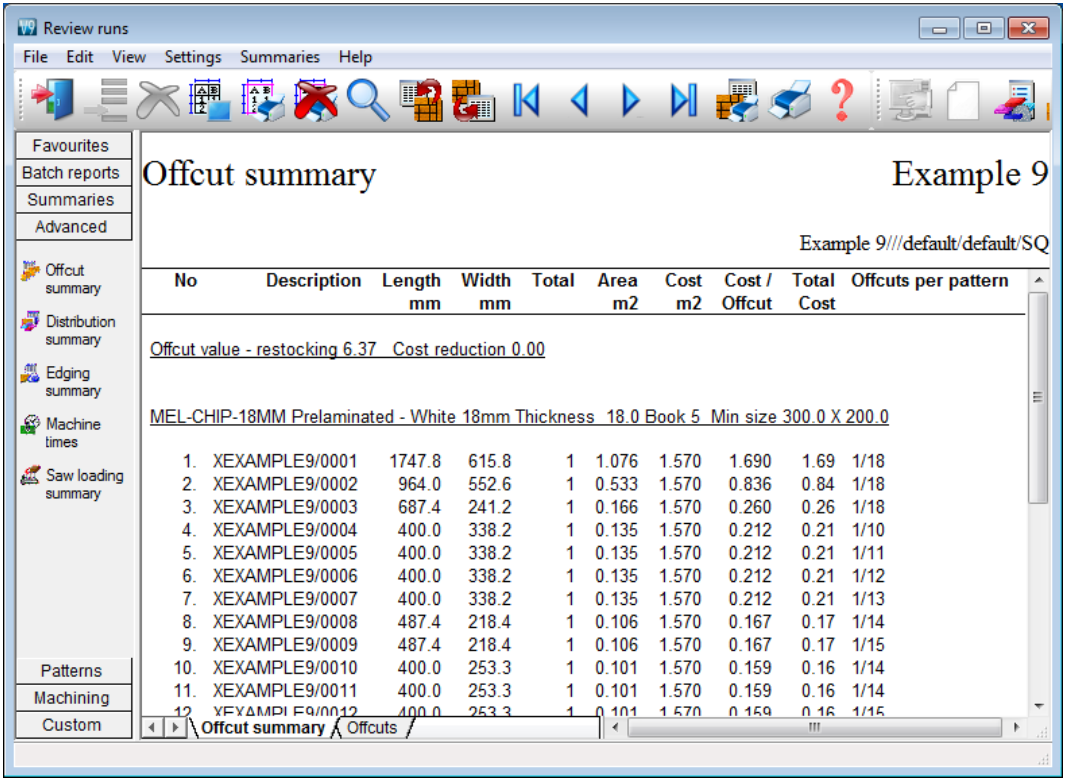
Clicking on a thumbnail picture moves to the full screen of each pattern.

Extra details of each pattern are available on the tabs at the foot of each drawing.



All reports can be fully customised and the Form & Design option is available for custom reports - fully integrated into the program.

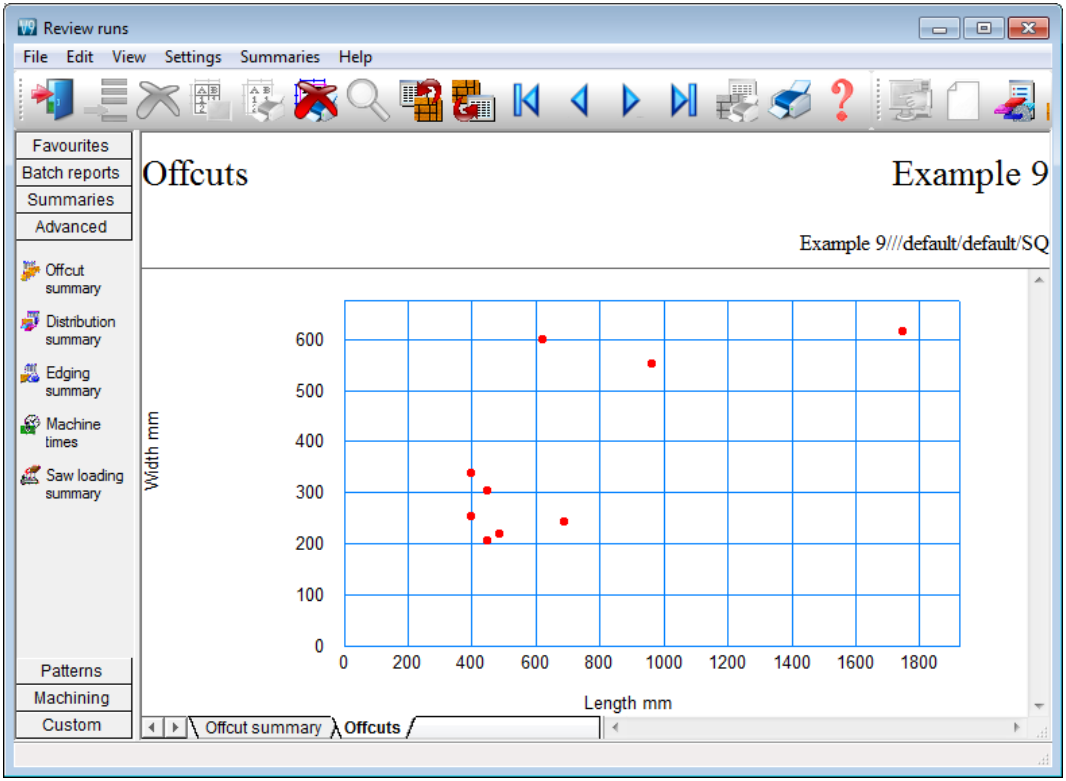
Each summary can include up to 3 custom charts to show aspects of the data. For example the Offcut Summary.



No	Description	Length mm	Width mm	Total	Area m2	Cost m2	Cost / Offcut	Total Cost	Offcuts per pattern
1.	XEXAMPLE9/0001	1747.8	615.8	1	1.076	1.570	1.690	1.69	1/18
2.	XEXAMPLE9/0002	964.0	552.6	1	0.533	1.570	0.836	0.84	1/18
3.	XEXAMPLE9/0003	687.4	241.2	1	0.166	1.570	0.260	0.26	1/18
4.	XEXAMPLE9/0004	400.0	338.2	1	0.135	1.570	0.212	0.21	1/10
5.	XEXAMPLE9/0005	400.0	338.2	1	0.135	1.570	0.212	0.21	1/11
6.	XEXAMPLE9/0006	400.0	338.2	1	0.135	1.570	0.212	0.21	1/12
7.	XEXAMPLE9/0007	400.0	338.2	1	0.135	1.570	0.212	0.21	1/13
8.	XEXAMPLE9/0008	487.4	218.4	1	0.106	1.570	0.167	0.17	1/14
9.	XEXAMPLE9/0009	487.4	218.4	1	0.106	1.570	0.167	0.17	1/15
10.	XEXAMPLE9/0010	400.0	253.3	1	0.101	1.570	0.159	0.16	1/14
11.	XEXAMPLE9/0011	400.0	253.3	1	0.101	1.570	0.159	0.16	1/14
12.	XEXAMPLE9/0012	400.0	253.3	1	0.101	1.570	0.159	0.16	1/15

The tabs at the foot of the report give access to the different charts.

The following custom chart 'Offcuts' shows the distribution of Offcut sizes.



The 'Chart settings' option for each summary allows a wide variety of custom charts to be set up.

Professional optimising

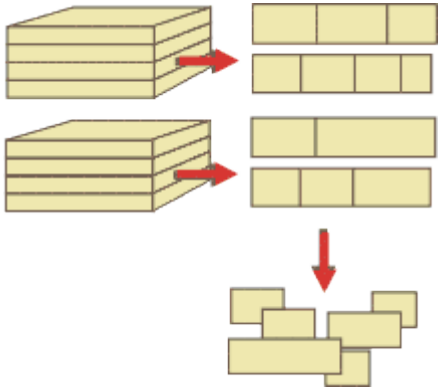
The Professional optimiser is designed for larger volumes of parts - up to the very largest; it balances the cutting time and costs against material cost to produce an effective solution.

The optimiser includes many specialist features which are often needed with volume production.

- Over production of parts (up to a full sheet)

- 'Strip production' option to allow ripping and cross cutting to appear on separate patterns.

This is often required where the cutting line separates ripping and cross cutting across separate saws (e.g. Kitchen worktops).



- Option to restrict the number of pallet groups.

The number of parts not completed at any time is kept below a fixed value. This helps with offstacking and later production processes where there are large volumes of parts.

- Free cut analysis.

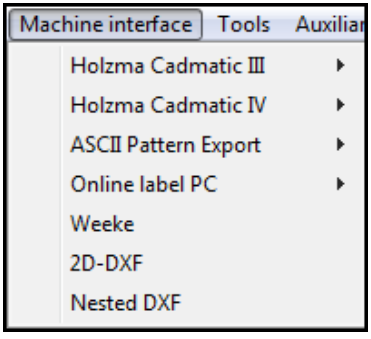
This determines the optimum position for cutting jumbo boards - a free cut to split boards is often an option for those using high board volumes.

- Optimising parameters to control the number of different board sizes used and the order of part production (priority). These are often more important for volume production.

Saw Interface

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

Saw interface parameters are used to 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:-

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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 including full support for Angular systems (Holzma only) dealing with larger volumes of cutting.

- Single saws

- Angular saws
- Angular saw with turntable
- Separated Rip and Cross cut saws (strip production)
- Saws with split fences (or split fence devices)

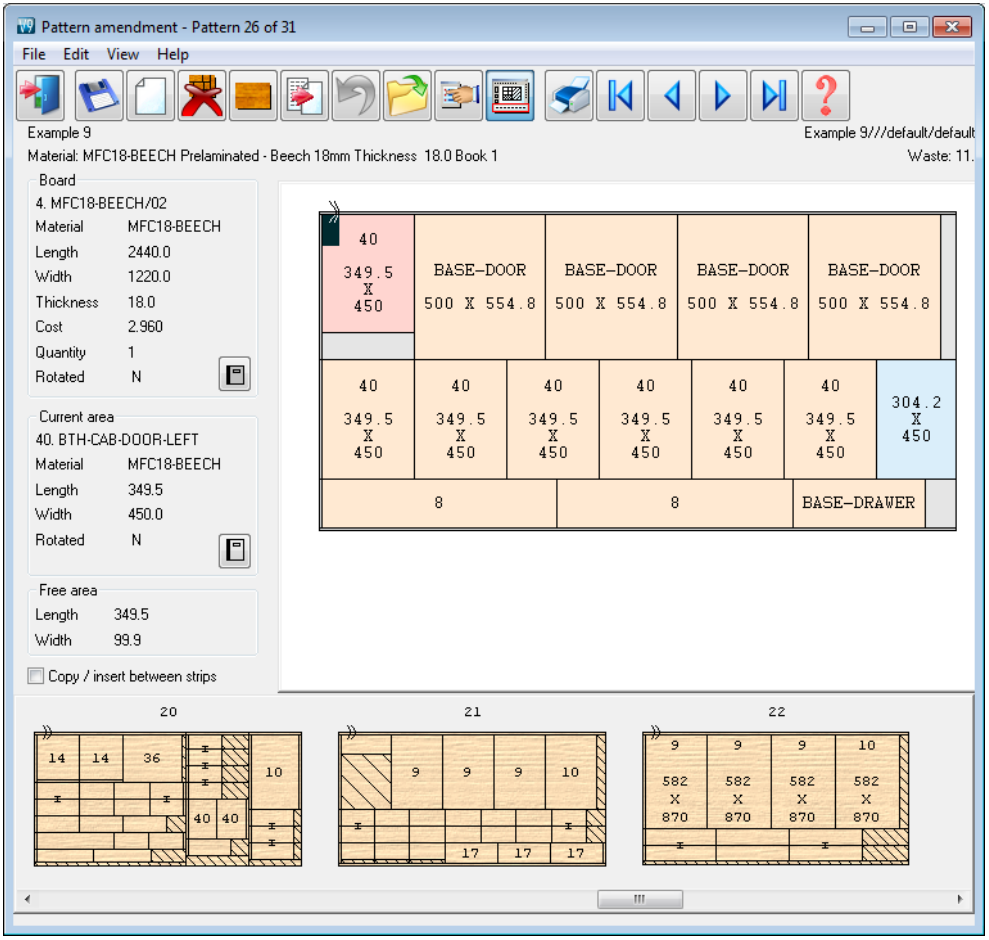
Our pattern exchange format (PTX) is used by several manufacturers to control other machinery on the production line or send data back to the office.

Pattern editor

In production there are sometimes last minute changes if materials are not available or an order changes. The optimiser includes a pattern editor and a pattern library. The editor allows 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

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.

Once the changes are complete the run is recalculated and the cutting data can be sent to the saw.

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.

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 instructions 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 saws/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	●	●	●