V9 Modular - Introduction

V9 is a brand new full release of our long established Optimising and production software for the furniture, woodworking and other sheet processing industries.

For this version we have focussed on adding features and value to the everyday operation of the software which will be of benefit to most users. This includes, faster optimisation with multi-core processors, innovative and improved navigation between sections, an integrated dashboard for exploring results and summaries, custom charts for most reports and a wider range of import and export options.

New features for V9.0

Optimising

- Faster optimisation with multi-core and multiple processors
- Lite & Standard Optimisers - additional algorithm for improved yield
- Optimising parameter - option to consider or exclude offcut boards
- Batch screen - Optimisation progress indicators
- Crosscut Optimiser - supports optimising parameter ‘matching parts in strip’
- Nesting - board orientation - set minimum and maximum size of board for nesting table

Navigation

- Updated toolbars and icons throughout
- Standardised file and item selection dialogs
- Navigation bar - quicker access between applications
- Batch screen - direct access to edit cutting list, board list and parameters

Review runs and reports

- Review runs - integrated dashboard and custom charts for most reports
- Review run reports - extra columns for user-defined calculated values
- Review runs - direct access to edit cutting list, board list and parameters
- Review runs - file tree option to filter or group runs – e.g. by date
- Review runs reports and export - option to specify decimal separator
- Review runs - extra column for weight in most reports

Board library and Stock

- Board library - 50 character stock codes
- Board library - option to view full sheets or offcuts only
- Stock - option to update from Bargstedt SQL database and create board list just before optimising
- Stock valuation report - option to include full sheets or offcuts only
- Stock - offcuts - option for unique sequential id for each offcut created
- Stock control - record offcut history
- Board library - field for Material density

Import / Export

- Direct import & export of spread sheets in XLS/XLSX formats
- Picture files (JPG) can be attached to product and part library
- Integrated PDF - 'print to file' option

Security and data organisation

- Improved network operation with user profiles & passwords
- Improved and simplified options for the set up of shared data

Custom options and System details

- Labels for single parts and individual patterns
- Part list parameters - set defaults for material, overs, unders and grain
- V9 Minimum specification

Overview of V9 modules

Optimising

Faster optimisation with multi-core and multiple processors

Version 9 includes changes to reduce the optimisation time on multi-core or multiple processor systems. When optimising batches of more than one run or single runs with multiple materials or single runs with one Material using the 'Automatic selection' optimiser multiple processors are used to optimise runs/materials simultaneously.

Note - any reduction in optimising time is dependent on the relative sizes of the optimisations and the number of processors available.

For example, in a multiple run batch containing one run which takes more time to optimise than all other runs in the batch combined, the overall optimising time is determined by the length of time taken to optimise the single large run. If all the runs in the batch take a similar length of time to optimise, the overall optimisation time for the batch is noticeably reduced.

```
Batch 1 - 4 runs, 4 processors
Run 1 - 25s
Run 2 - 90s
Run 3 - 10s
Run 4 - 15s
```

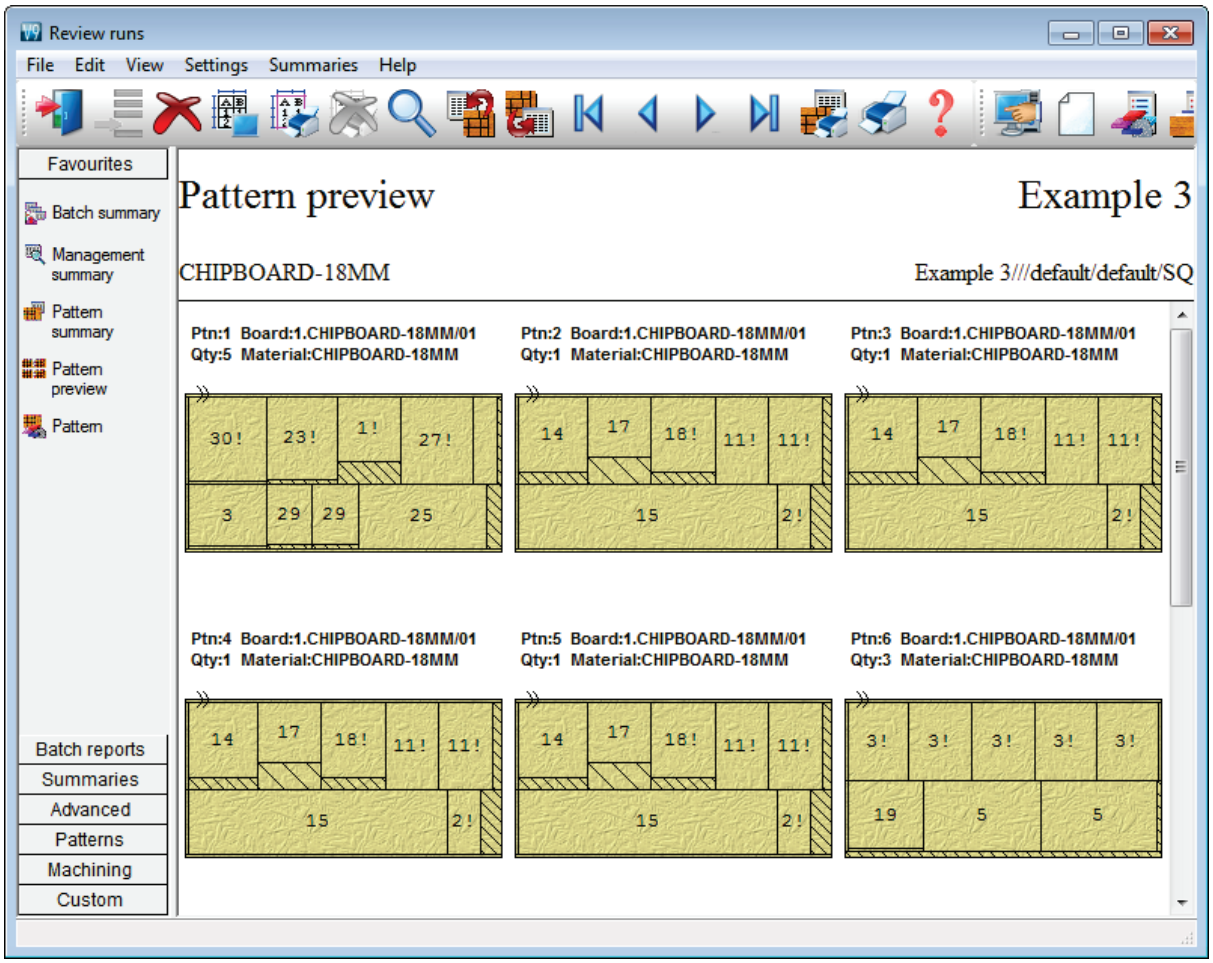
V8.2 total batch optimising time ≈ 140s
V9 total batch optimising time ≈ 90s

```
Batch 2 - 4 runs, 4 processors
Run 1 - 25s
Run 2 - 25s
Run 3 - 25s
Run 4 - 25s
```

V8.2 total batch optimising time ≈ 100s
V9 total batch optimising time ≈ 25s

Lite & Standard Optimisers - additional algorithm for improved yield

An additional algorithm is added to these optimisers to improve the yield for some types of runs. LO and SO optimisers typically deal with smaller numbers of parts required in small quantities.



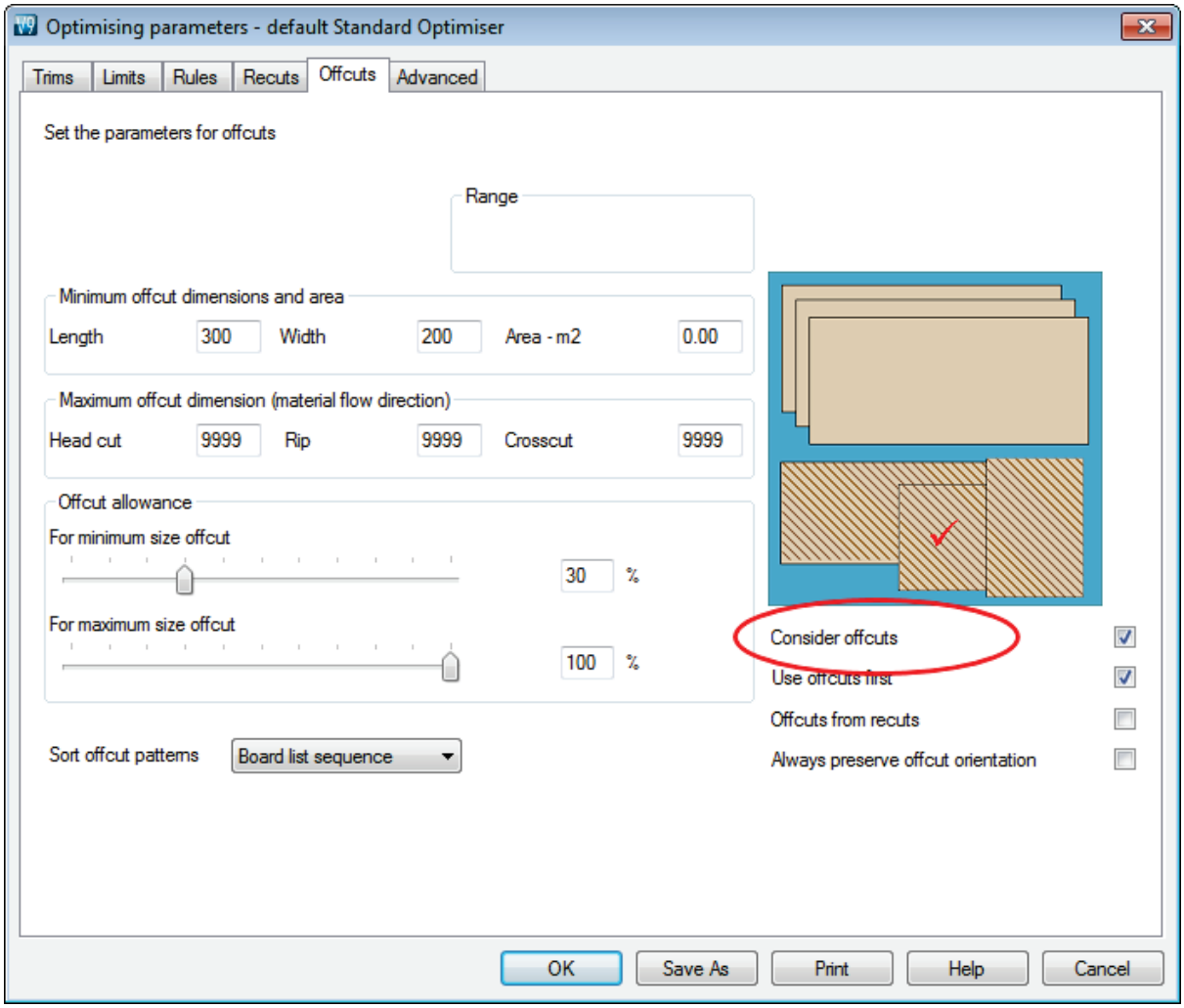
Note - any improvements and the extent of the improvement depend on each run and the parameter settings…

Note - For all optimisers the optimising yield is improved when costs of all boards are set to zero.

Optimising parameter - option to consider or exclude offcut boards

Version 9 includes a new parameter to allow users to specify whether offcut boards (offcuts from previous optimisations) are considered when generating patterns.

This facility is set via the parameter 'Consider offcuts' which is located on the offcuts page of the optimising parameters.



If this parameter is checked any offcuts in the board list may be used to generate patterns, whereas if it is not checked these offcuts are not used.

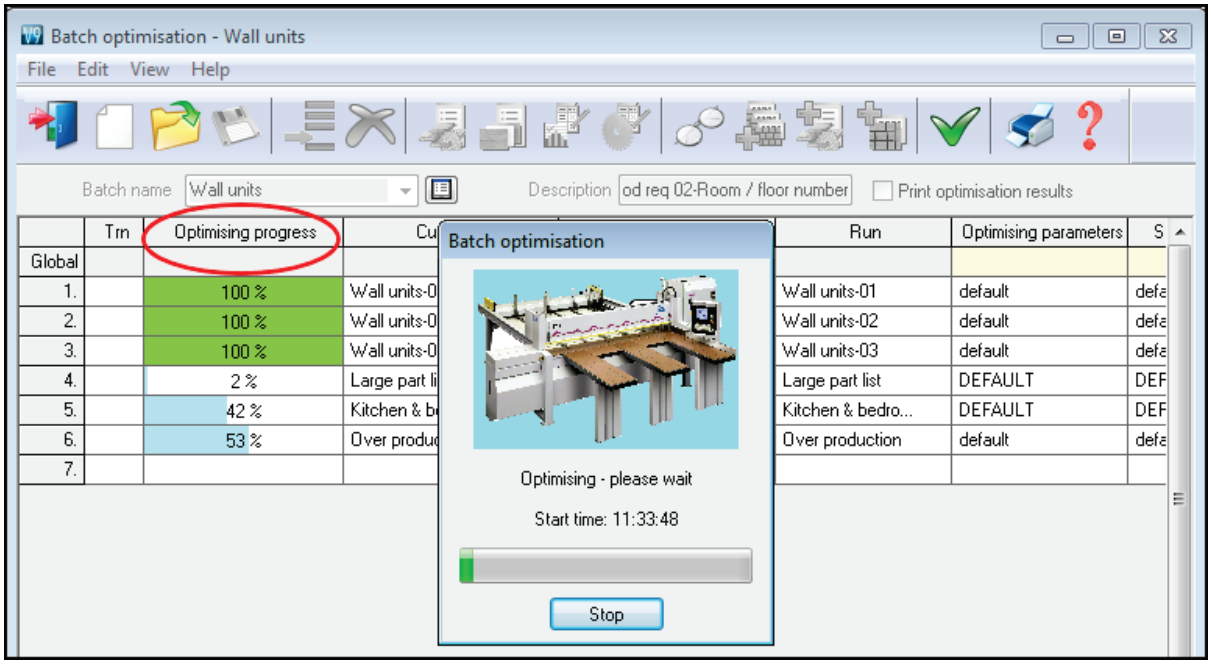
Note - If the parameter is not checked the associated 'Use offcuts first' parameter is disabled.

Batch screen - Optimising progress indicators

Optimising progress

V9 includes a new 'Optimising progress' field on the batch screen to indicate the progress of the optimisation for each run in the batch.

When a run is being optimised this field contains a coloured progress bar and a percentage figure.



Different colours are used to indicate the status of the optimisation:-

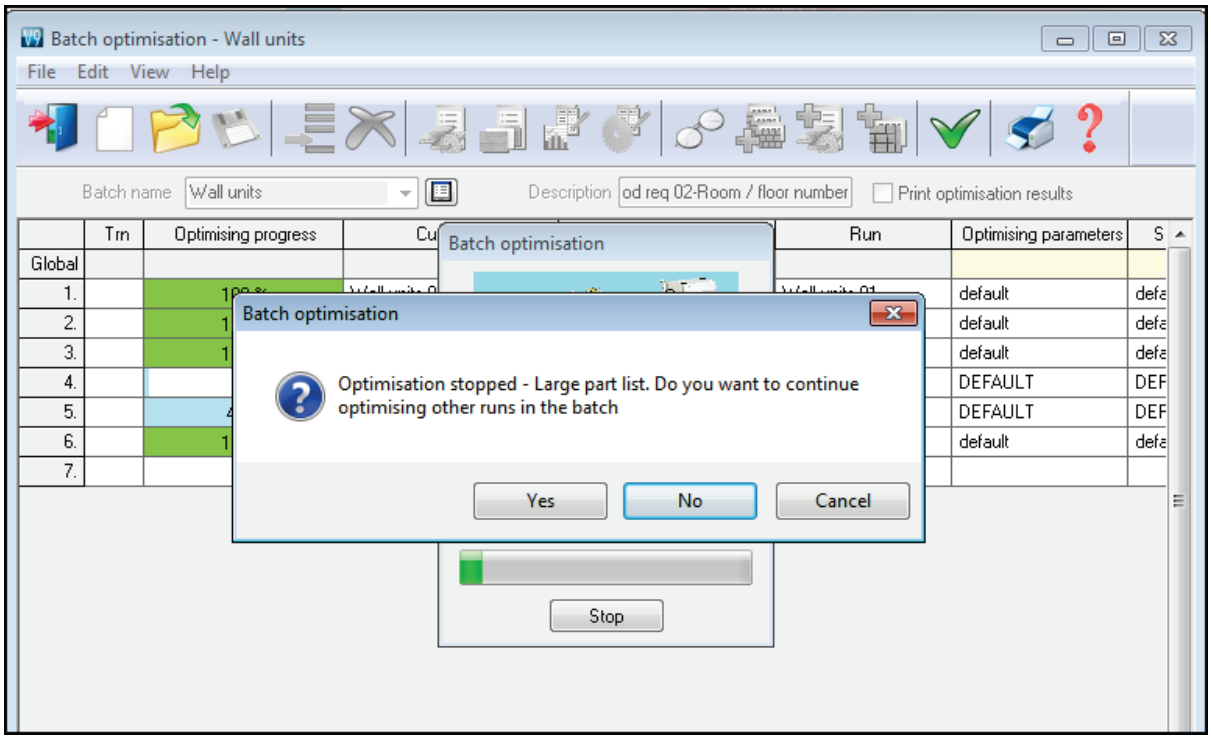
Light blue - the run is being optimised
Yellow - the run is being optimised and an initial solution has been found
Green - the optimisation has finished and a solution was found
Red - the optimisation has finished and no solution was found

The 'Please wait' dialog displayed for optimising also contains a progress bar. This progress bar displays the overall progress of the optimisation of the batch of runs - when the optimisation of a run with a large number of parts is finished a larger proportion of the progress bar is completed.

Note - When using multiple processors to optimise data the information text displayed in the wait dialog reads "Optimising - please wait" - because multiple optimisations can occur simultaneously it is not possible to display the single name of the optimiser in use.

Cancelling optimisations

The 'Please wait' dialog displayed for optimising contains a 'Stop' button and displays the start time of the optimisation. When the 'Stop' button is pressed the optimisation is paused and the user is prompted for an appropriate course of action.



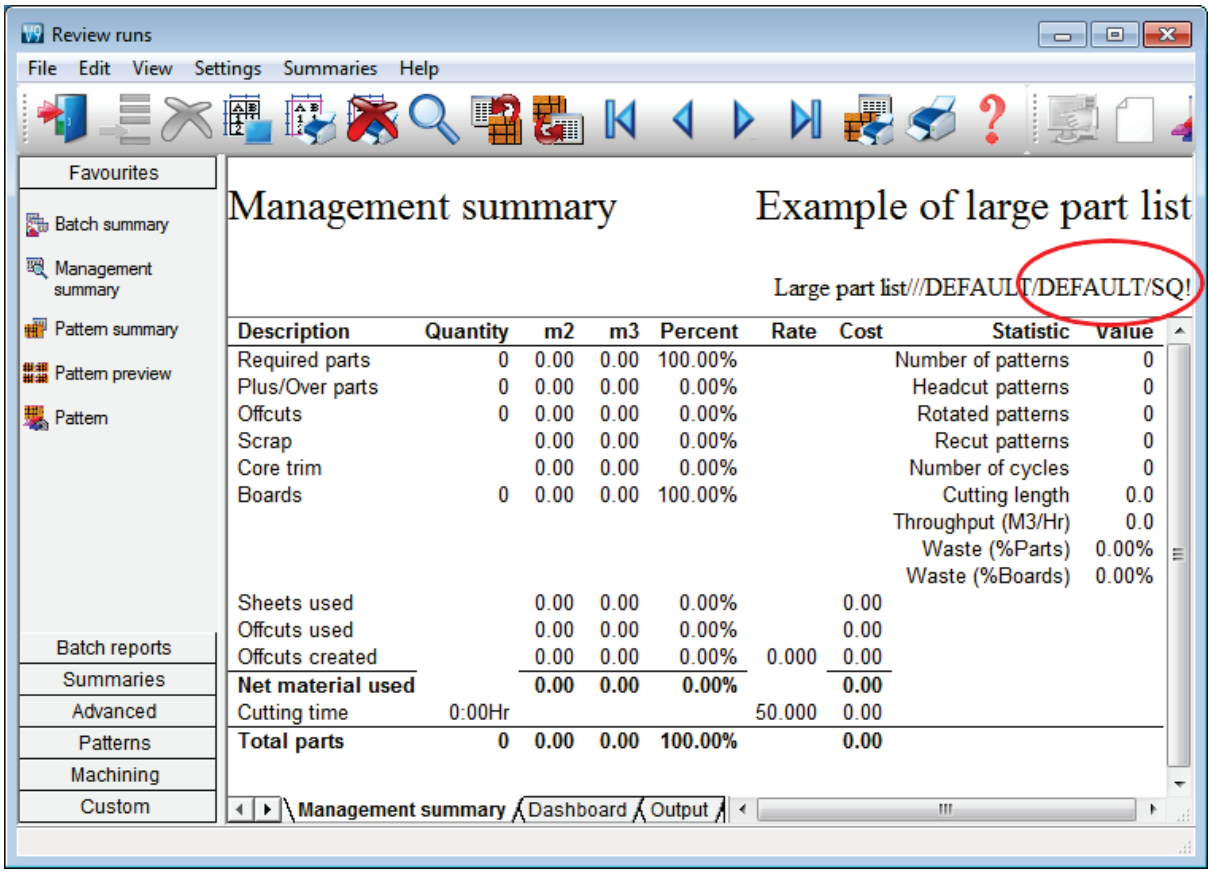
When optimising a single run, if an initial solution has been found the user is asked "Do you want to keep the solution found"? If the user chooses 'Yes', the optimisation is stopped and the initial solution found is displayed. If the user chooses 'No' the optimisation is cancelled and the user returns to the main screen. If the user chooses 'Cancel' the optimisation continues.

When optimising a single run if no initial solution has been found the user is asked "Do you want to cancel the optimisation"? If the user chooses 'Yes', the optimisation is cancelled and the user returns to the main screen. If the user chooses 'No' the optimisation continues.

When optimising a multiple run batch the user is asked " Do you want to continue optimising other runs in the batch"? If the user chooses 'Yes', the optimisation of the current run is cancelled and the optimisation proceeds to the next run in the batch. If the user chooses 'No' the batch optimisation is cancelled and the user returns to the main screen. If the user chooses 'Cancel' the optimisation continues.

If multiple cores (processors) are available and are being used to optimise multiple runs simultaneously only one run is cancelled by this process. Of the set of runs currently being optimised the run nearest the start of the batch is cancelled and the optimisation of the other runs continues.

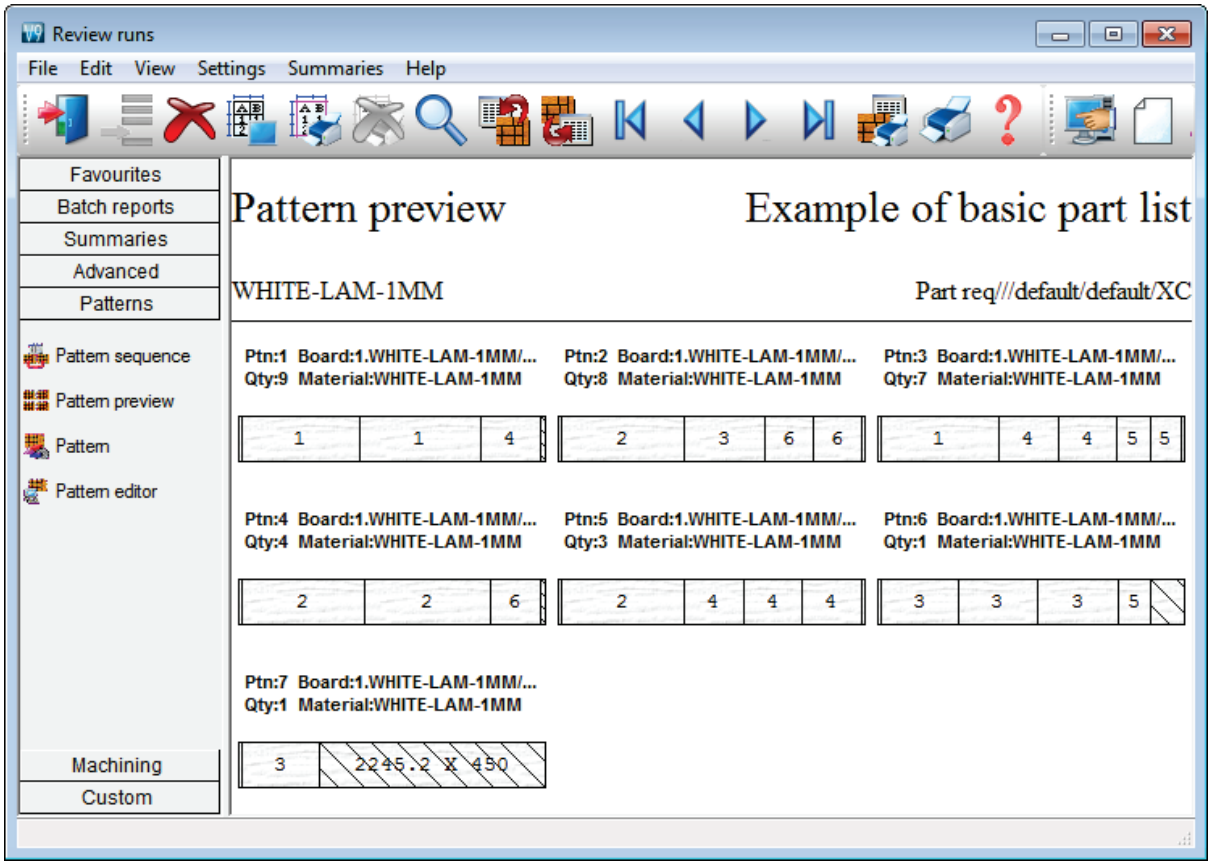
When the optimisation of a run is cancelled the optimising progress field on the batch screen includes the text "Cancelled". If a cancelled run is displayed in review runs the file information field in the report header has an exclamation mark appended.



Also there may be no results and no patterns depending on the point at which the run was stopped.

Crosscut Optimiser - supports optimising parameter ‘matching parts in strip’

Version 9 allows the use of the Optimising parameter: 'Boxes for matching parts in strip' with the crosscut optimiser (Optimiser type: 'Crosscut only (timber)').

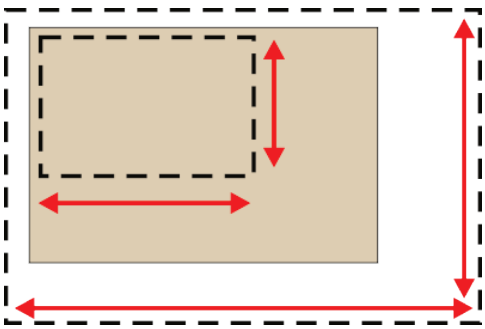


This parameter allows for the production of patterns containing strips where all the parts in a strip have the same information box content. This allows (via the information boxes) for greater control over which parts appear in which patterns; production and other factors can be taken into account.

(In previous versions the crosscut optimiser did not use this parameter).

Nesting - board orientation - set minimum and maximum size of board for nesting table

Version 9 includes a new set of nesting parameters to define the size of the nesting table. These parameters are used to determine the valid orientation(s) of boards for nesting runs.



The 'Board dimensions' parameters can be found on the 'Nesting 1' page of the nesting parameters. Users can configure the minimum and maximum length and width of boards that can be machined on

the nesting table. Board dimensions must be greater than or equal to the minimum length/width parameters and less than or equal to the maximum length/width parameters.

```
Board orientation = lengthways
Board length = 3660
Board width = 1830
Maximum length  = 2000
Maximum width  = 4000
```

The board does not fit the nesting table in a lengthways orientation so it cannot be used.

In this case the error: 'Data not correct - board length and orientation [37101]' is shown. This error is also shown if the board length is less than the minimum length. If the board width is greater than the maximum length or less than the minimum length the error: 'Data not correct - board width and orientation [37098]' is shown.

When the board orientation is set to 'Either way; the size of nesting table parameters force the correct orientation of the board.

```
Board orientation = either way
Board length = 3660
Board width = 1830
Maximum length  = 4000
Maximum width  = 2000
```

The board cannot be rotated because the rotated width of the board (3660) exceeds the maximum width (2000).

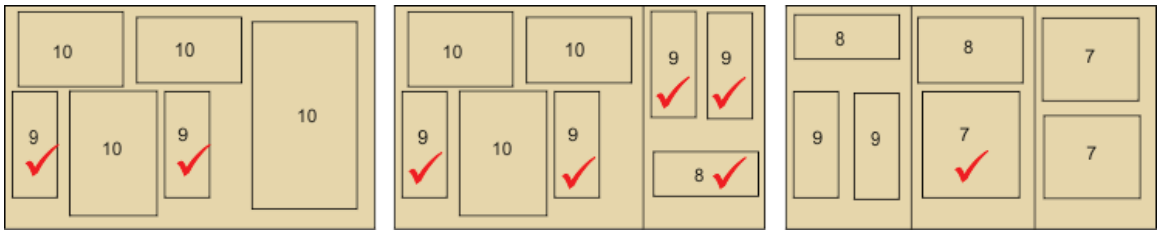
If neither orientation of the board is valid the errors: Data not correct - board too large [37012]' or 'Data not correct - board too small [37013]' are displayed depending on whether the board dimensions exceed the maximum parameter values or are less than the minimum parameter values.

Note - For rectangular nesting if the 'Depth of nesting table: Pre-cut width of board' parameters are set the pre-cut minimum and maximum width of the board must be valid for the size of nesting table.

Nesting parameters - Priority (new option 'mix with next lowest')

Priority 4

Parts with the next lowest level of priority can be placed in any of the previously generated patterns.



Nesting - use Board library limits

The Shaped nesting optimiser now allows users to set a 'limit' value of '9' for certain boards - this allows the quantity of these boards used by the Shaped nesting optimiser to exceed the quantity in the board list. When the quantity used exceeds the board list quantity a warning is displayed:

For Shaped nesting optimisations the following board limit values can be used:-

Board limit 0 - do not exceed quantity in stock
Board limit 8 - unlimited stock
Board limit 9 - unlimited stock, a warning is displayed when the quantity used exceeds the quantity in the board list

Nesting - Extra checks on part positions

There are now some extra checks on the layout of parts in nested patterns, for example, to check that parts do not overlap each other or borders.

Tension trims

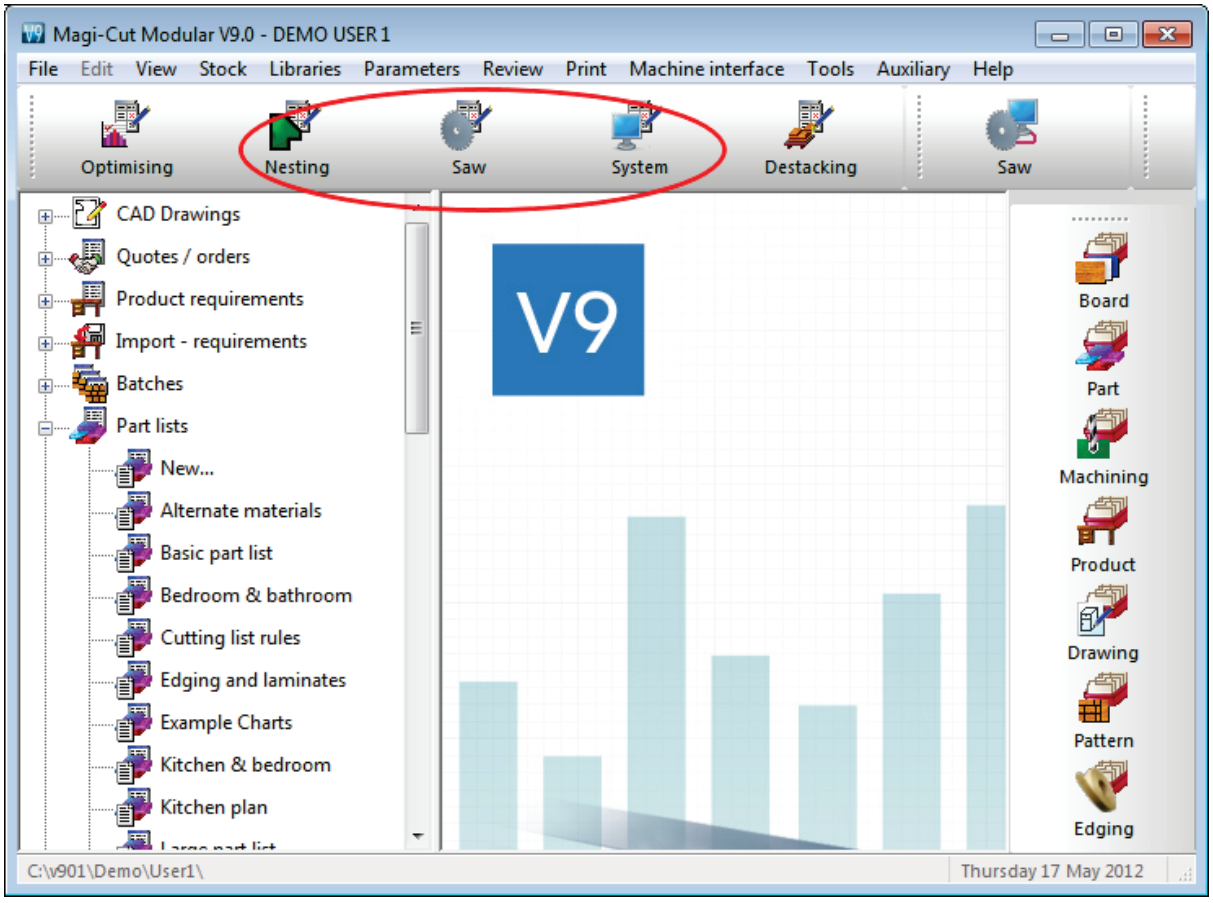
Tension trims now deal with close fitting patterns by excluding the last tension trim where this is appropriate.

Navigation

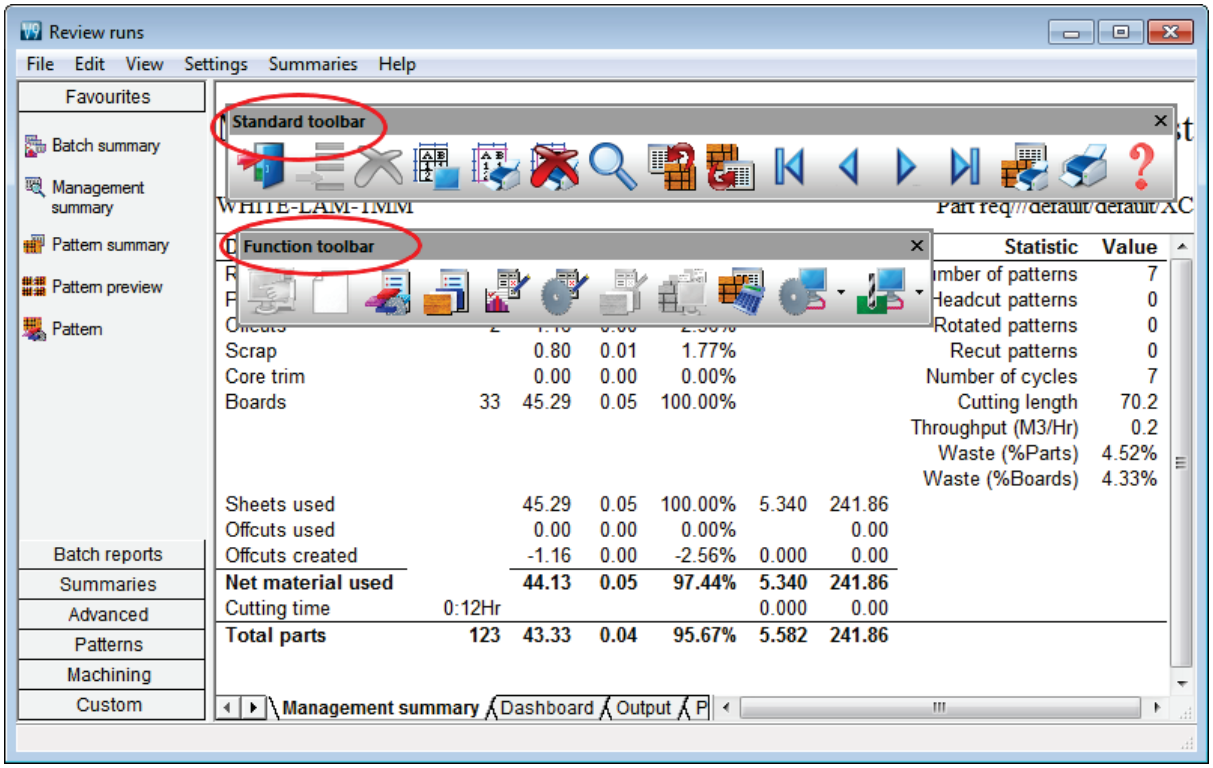
Updated toolbars and icons throughout

Version 9 is updated with true colour toolbars and button bars for all applications. This consistency through the different screens helps to make options easier to find and understand. The icons for each optimising options follow the icons from earlier versions but are clearer and applied throughout.

At the main screen:-



At Review runs:-

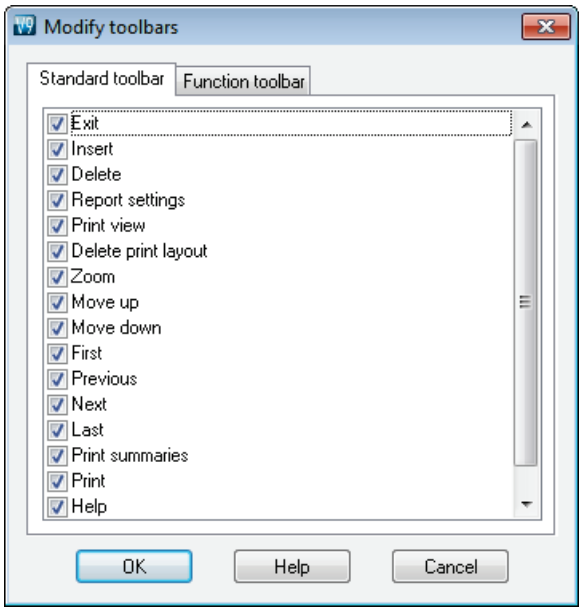


The toolbars can be slid into any required position.

Note - To achieve the best appearance, it is recommended that the system display settings are set to True colour (32 bit).

The size of icons and buttons bars can be set at the main screen (View menu) and applies to all screens.

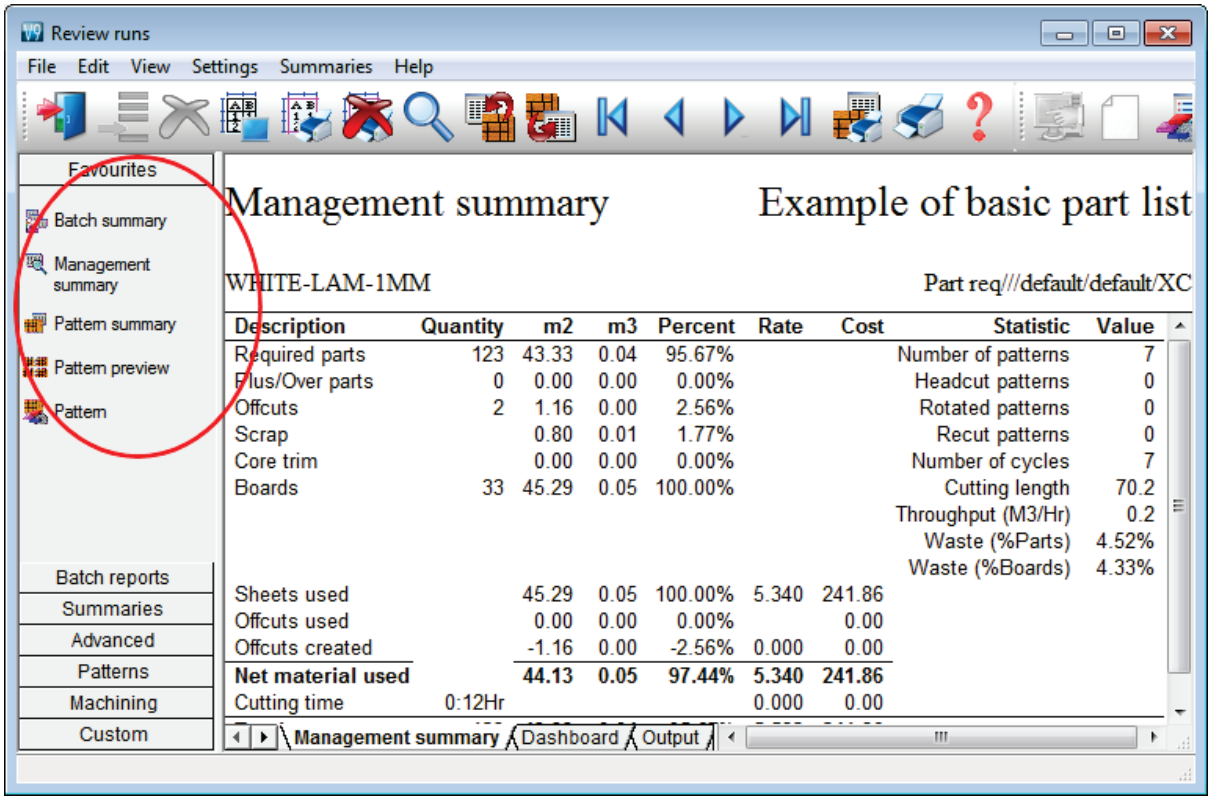
At the View menu at each screen the toolbars can be switched on or off and the options (buttons) shown on each bar can be set via the option: View - Modify toolbars, for example:-



(The toolbars available and the options available depend on whether the user is working with 'Review runs', 'Part list'…). These are:-

```
Main screen
Review runs
Cad drawings
Machining library
Machining editor
Nested pattern editor
Drawing library
```

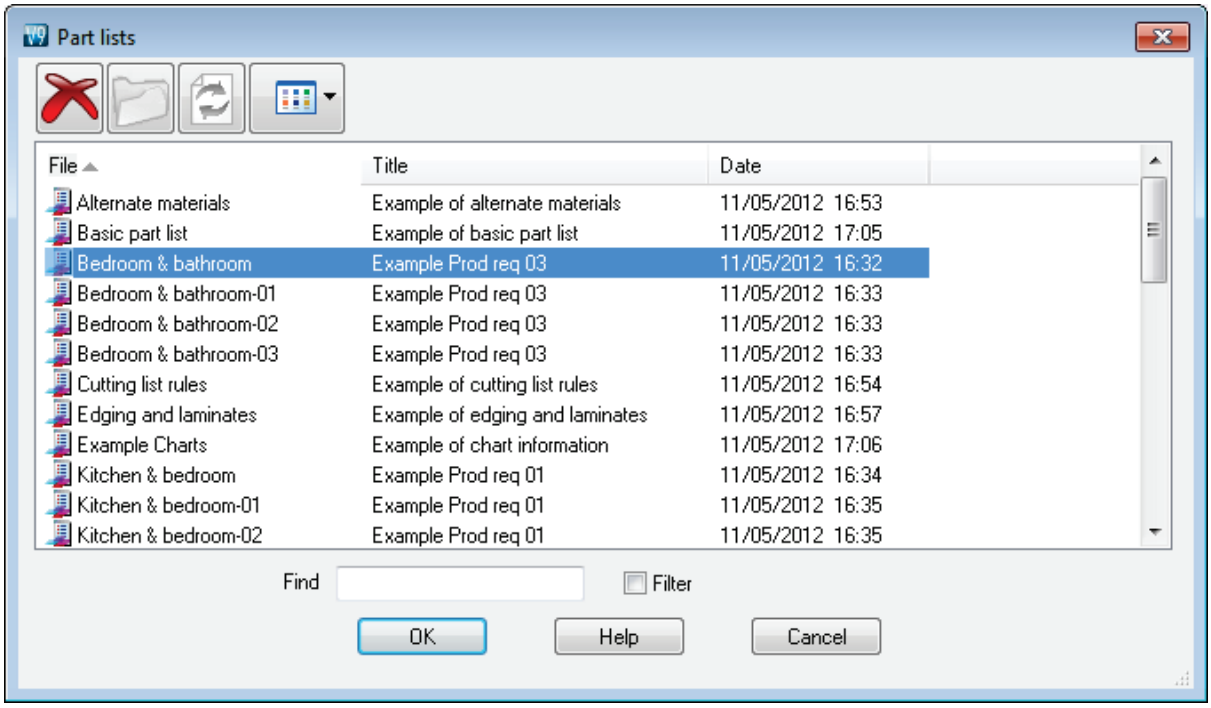
The report bar in Review runs can be modified separately from the Toolbars and operates in the same way as in the previous version.



Standardised file and item selection dialogs

General selection of files and other items

The selection dialog is updated and is applied to most cases where items are listed and selected - including Parameters - so there is a consistent and easier to use interface across the software. Extra options are added to easily change the view of the list. For example, at the part list.



The toolbar at the top contains several options:-

 delete selected item

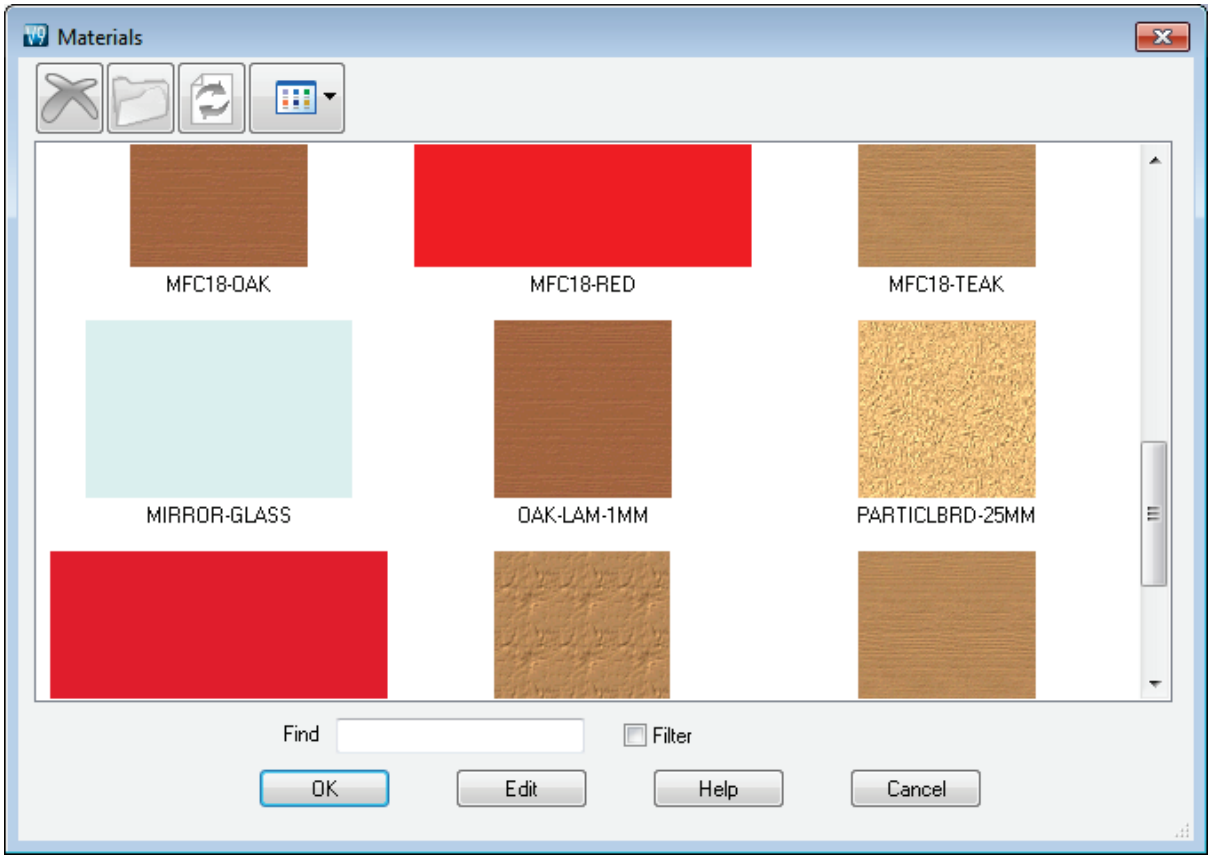
 change path - used when selecting one of the following file types: MPR, DXF, CSV, BKP file (for restore) or EXE, COM or BAT file (for saw / machining post transfer)

 browse - this is available when selecting a part code in the part library or a product code in the product library. If the button is set then when an item is highlighted in the selection dialog the full details will appear underneath in the part /product library dialog

 change view - the options are: Details, List, Small icon, Large icon.

The view type can be individually set for each selection type. e.g. Part lists can be selected in details view and materials selected in large icon view.

For Selection types where there is unique drawing available per item (e.g. part list, formula item, board code …) a relevant image is displayed.



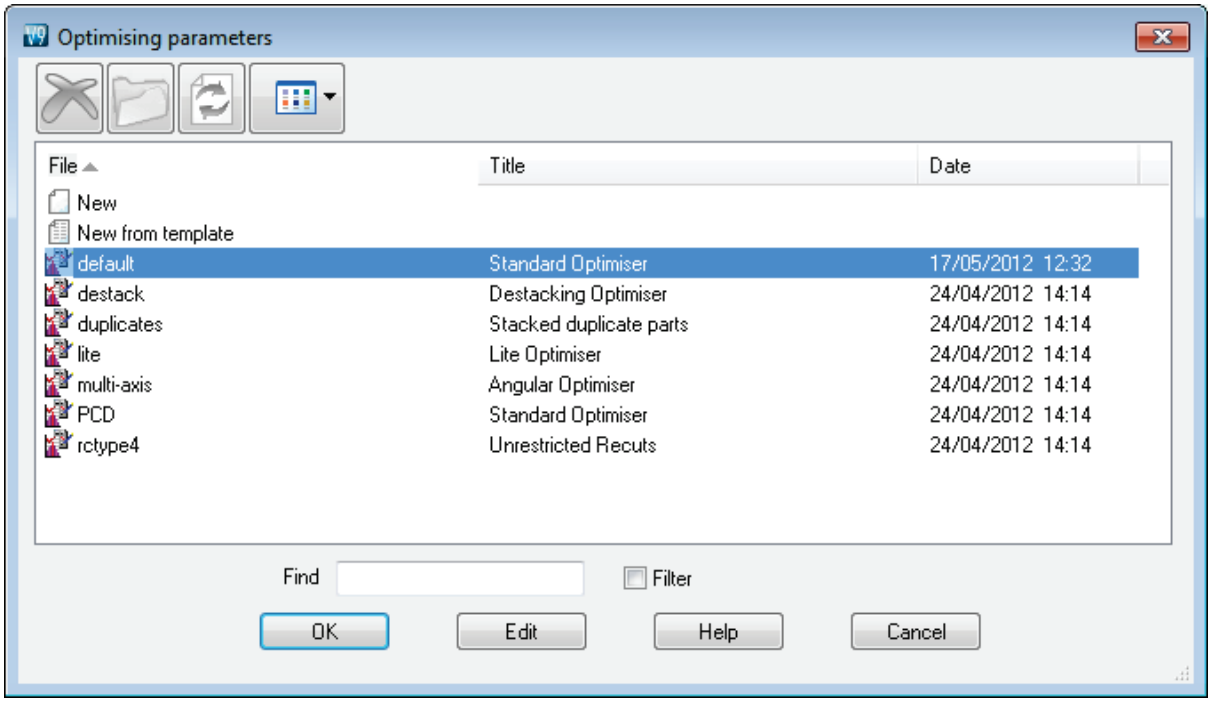
Date column

For selection dialogs based on files in 'Details' view mode an additional column 'Date' is displayed. This shows the last modified date of each file. Each column can be sorted by clicking on the appropriate header column so files can be either shown in name order or in date modified order.

(The Filter option to adjust the contents of the list is the same as in the Previous version)

Optimising / Saw / Nesting / Material parameters

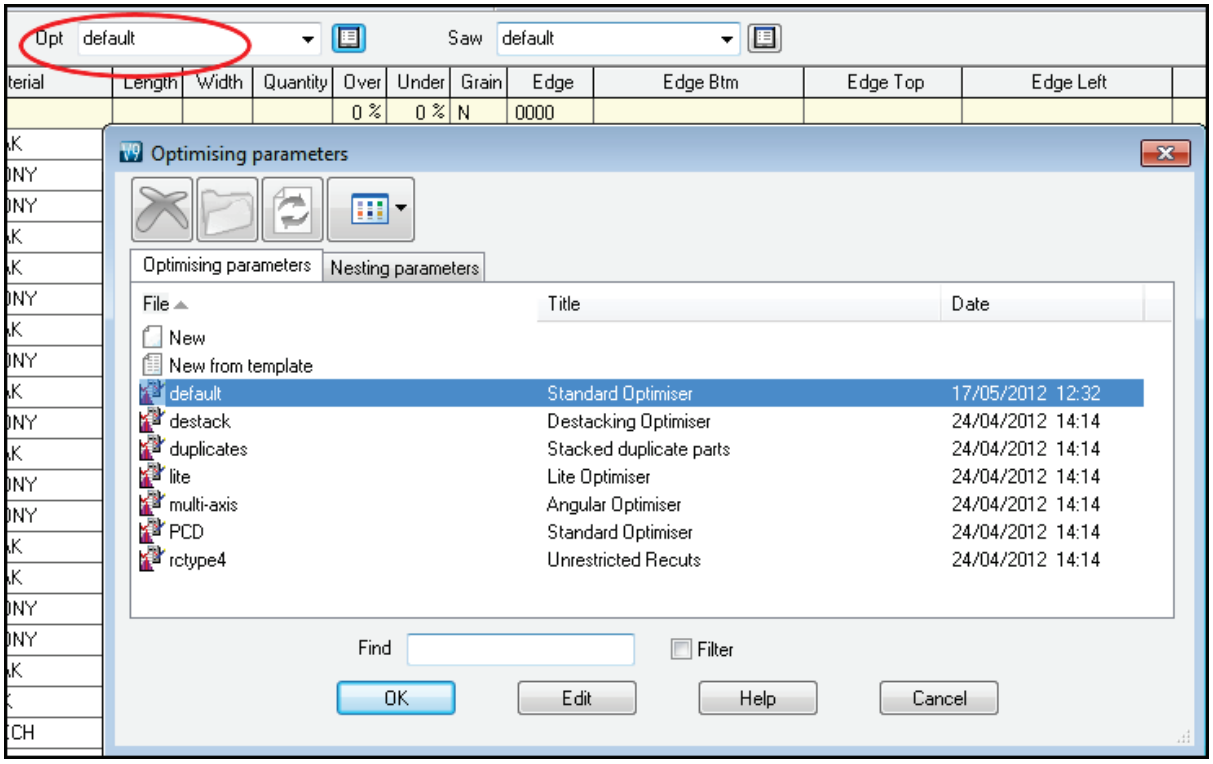
The new standard select dialog is also used for parameter lists.



The 'New' and 'New from template' options appear and work in the same way as for the previous version.

Optimising/Nesting selection dialog

In the part list and batch dialogs when selecting a parameter list either a optimising parameter file or a nesting parameter file can be selected depending on the part list. When the selection button is pressed for this option the selection dialog displays with a tab offering the choice of Optimising or Nesting parameters.



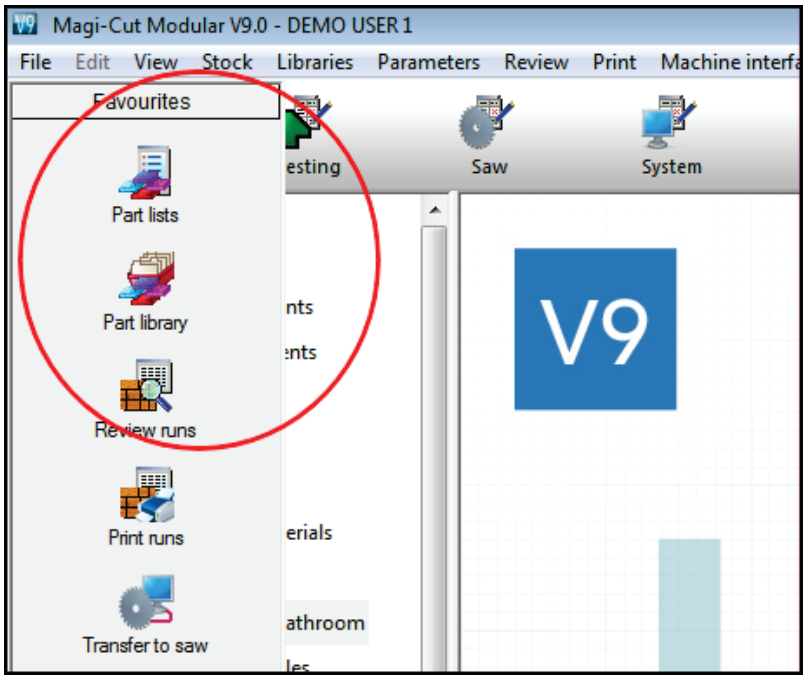
Note - The system parameter: 'Select using parameters' is removed as the View is now set by the view dialog.

Navigation bar – Quicker access between applications

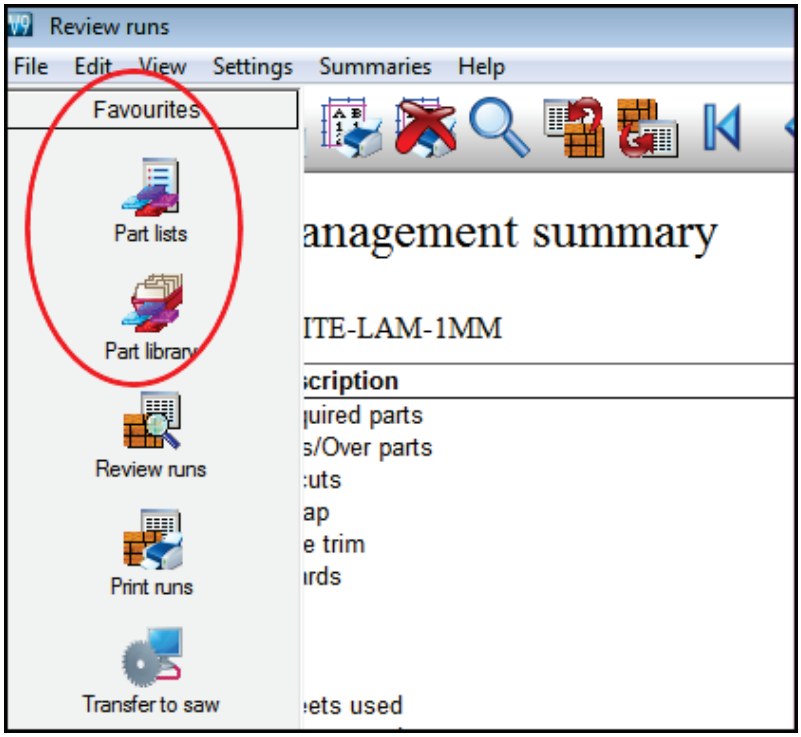
Quick Navigation bar

Version 9 includes a new desktop toolbar (Quick Navigation bar) to enable users to navigate the program more easily.

At the main screen it is very similar to the 'Shortcut' bar (as for the previous version) - but the advantage is that it stays active and visible at all screens.



Moving to Review runs the Quick navigation bar is still available.



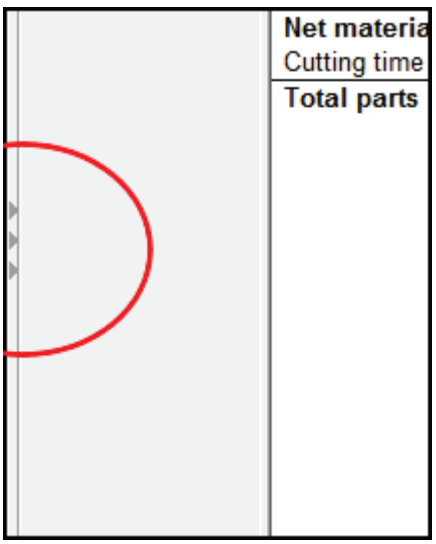
This makes it much easier to move from one part of the program to another.

The quick navigation bar is enabled from the 'Shortcut bar' option of the "View" menu on the main screen and can be used instead of the shortcut bar.

The Quick navigation bar is a stacked toolbar containing the same shortcuts as the standard Shortcut bar and its contents can be modified using the "Modify shortcut bar…" option of the "View" men

The Quick navigation bar is a desktop toolbar which can be docked on either the left or right hand side of the desktop and remains on top of all other windows.

When enabled the Quick navigation bar is minimized by default on the side of the desktop. To display the Quick navigation bar simply move the mouse pointer over the side of the desktop where it is docked and the Quick navigation bar will slide into view.



The docking position of the Quick navigation bar can be set by right clicking the mouse on one of the shortcut headers - right clicking the mouse on a shortcut header displays a popup menu with the

docking options, an option to close the Quick navigation bar and options to reposition the shortcut categories within the bar.

The width of the Quick navigation bar can be adjusted by dragging the right edge (if left docked) or left edge (if right docked).

When it is not possible to close the current application because the user is altering settings for that application the Quick navigation bar is not available and cannot be displayed.

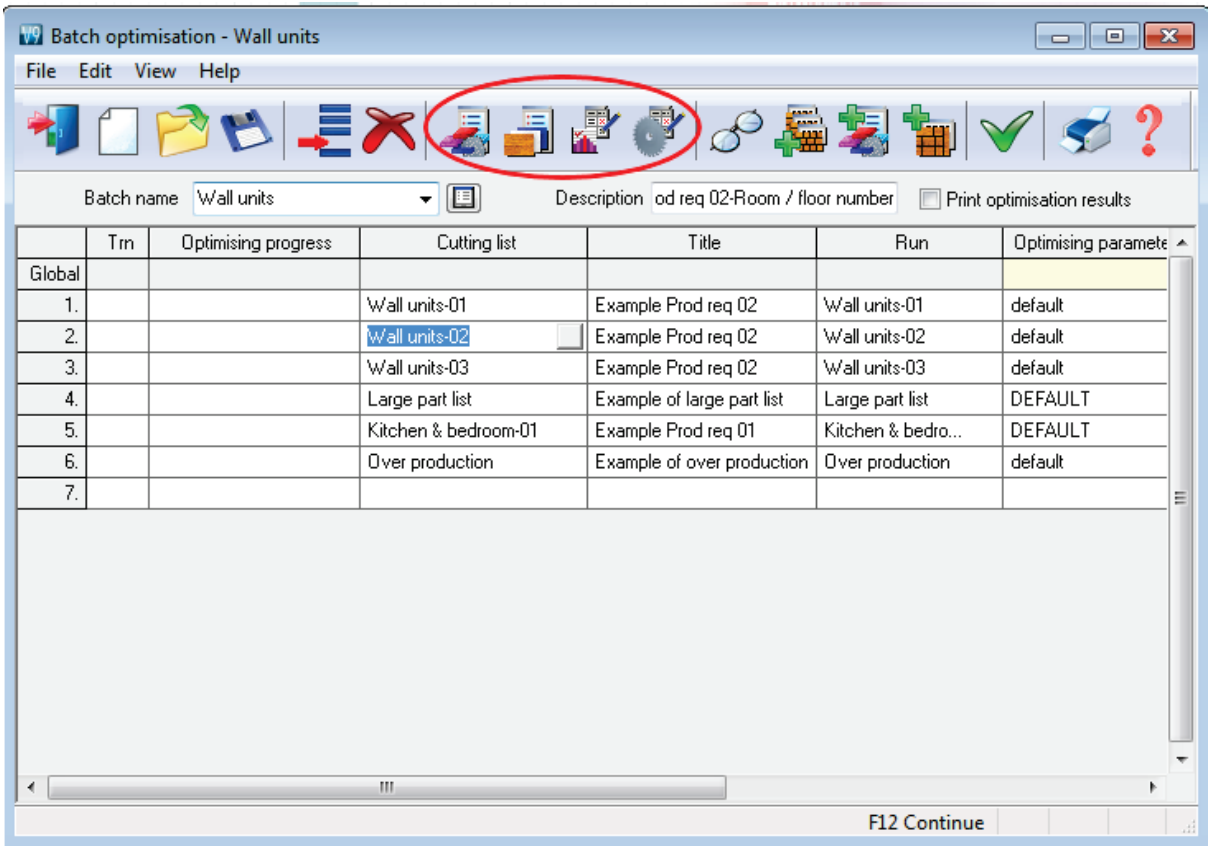
Active Main Screen - Toolbars, Shortcut bar and Menu

In addition to the Navigation bar, the main screen remains active (this is different from the previous version) so it is possible to move to the main menu by clicking on it and using that to move around the program.

Batch screen – Direct access to edit cutting list, board list and parameters

Version 9 allows the cutting list, working board list, optimising / nesting parameters and saw parameters (when available) to be edited directly from the batch screen. This is useful for checking details at the last minute or if there are errors to sort out.

To edit one of these components, navigate to the required line of the batch and select one of the new edit toolbar buttons.

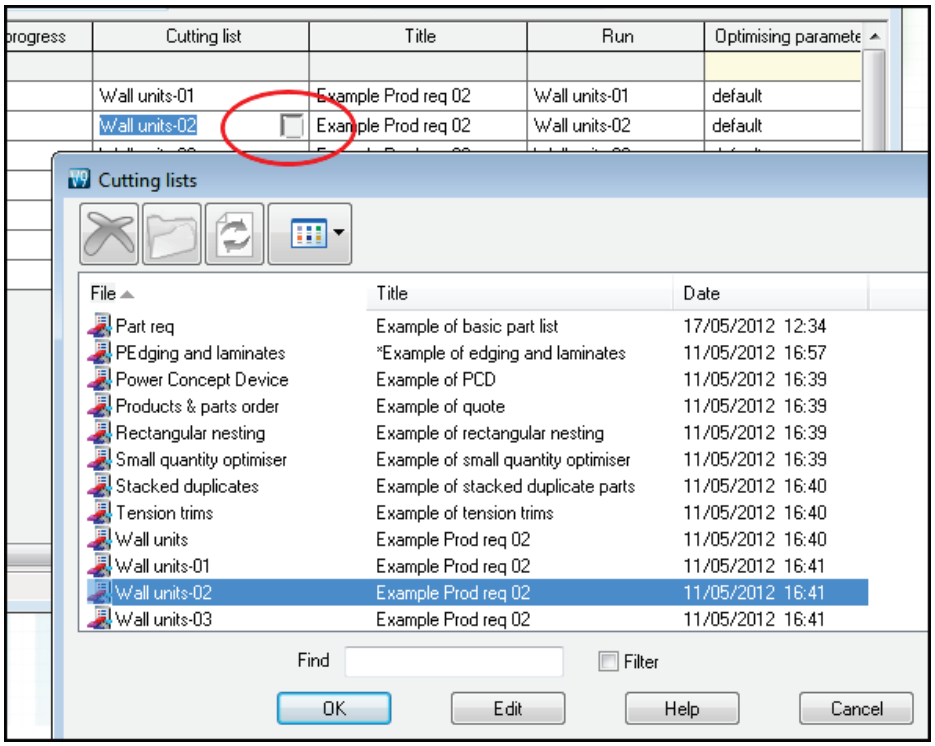


The options are:-

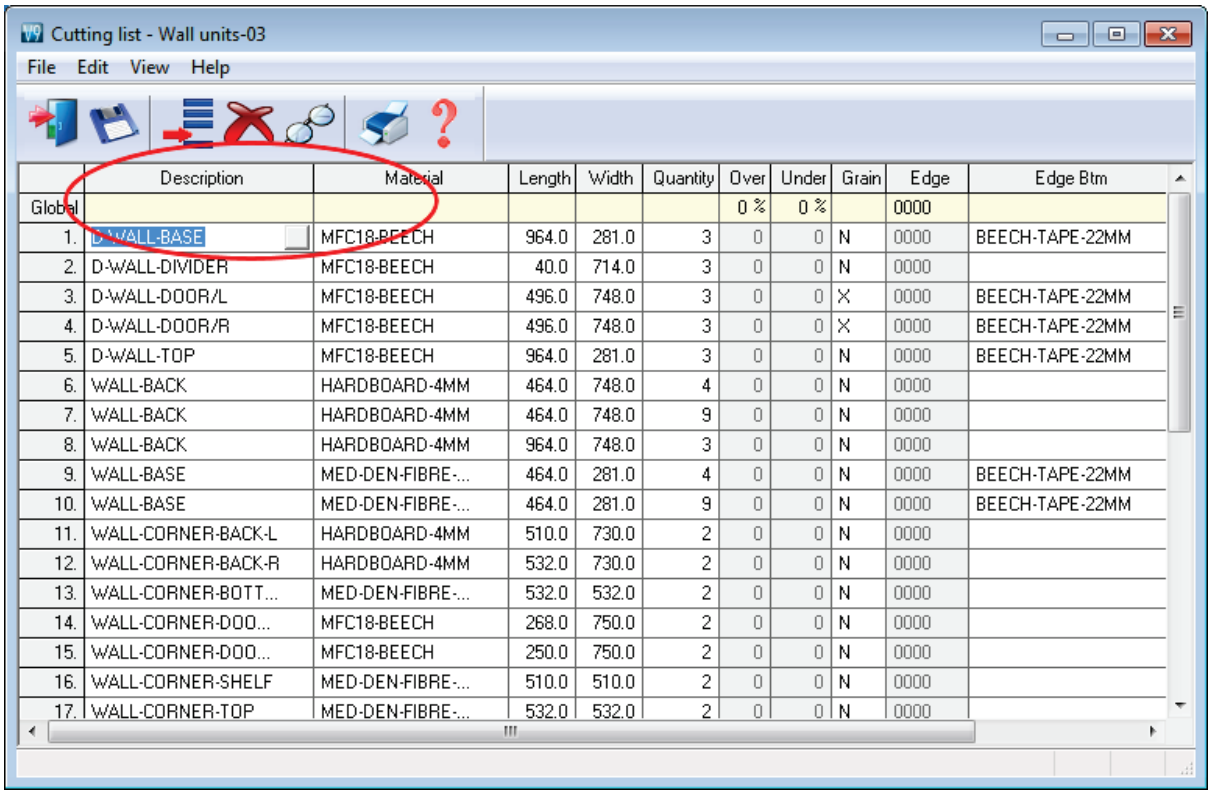
```
Parts …
Boards …
Optimising parameters …
Saw parameters …
```

They are also on the Edit menu.

It is also possible to access these files by clicking on a list button and selecting the file from the 'Select dialog' via the Edit button.



The cutting list and board list editing is restricted when the files are accessed from a batch screen - they only allow changes to the list selected so the options to move between lists are not available.



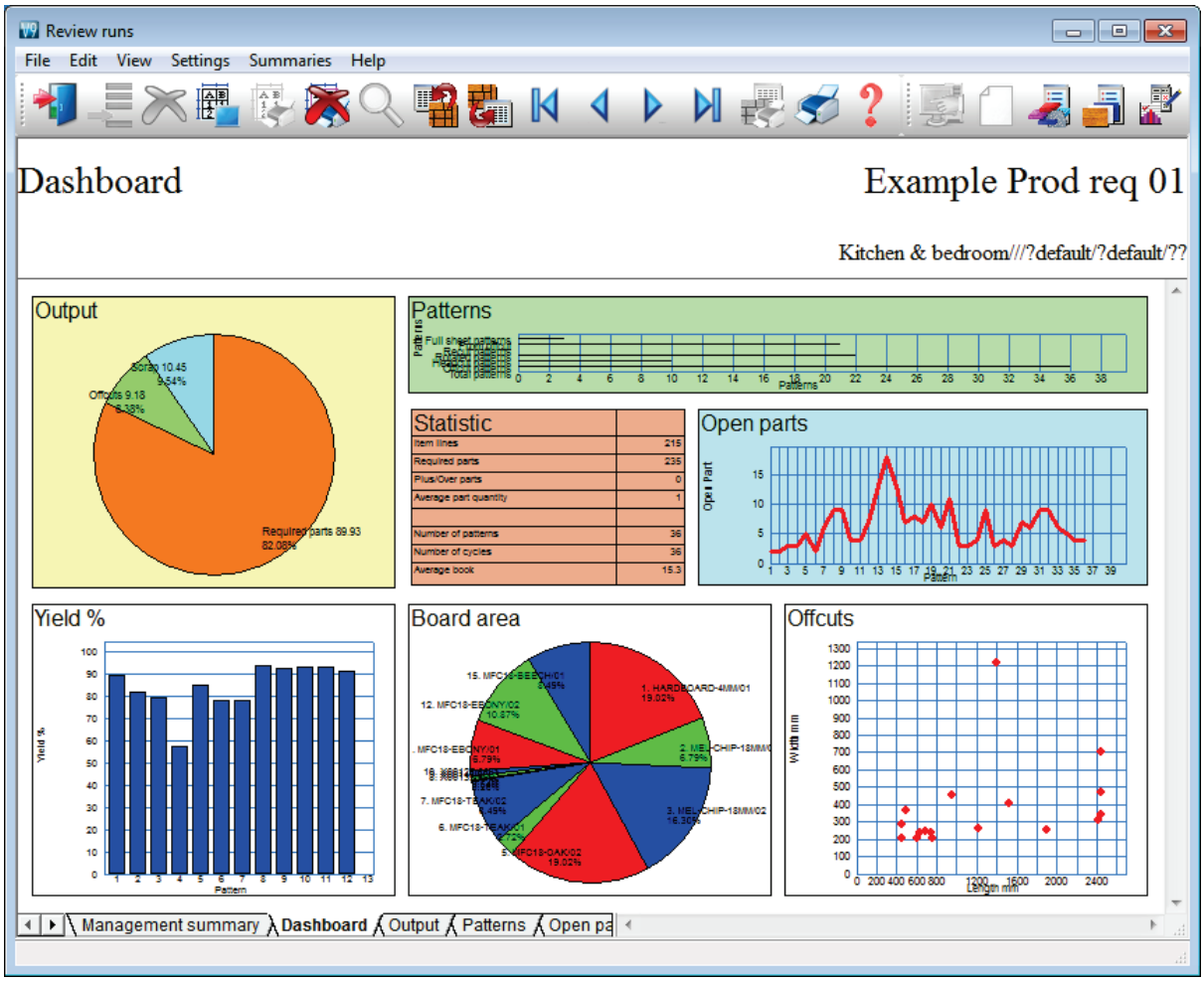
On exit from the editor, control returns to the Batch optimisation screen (or selection dialog).

Review runs and Reports

Review runs - integrated dashboard and custom charts for most reports

Dashboard

The Management summary for a run now includes a Dashboard option which shows selections and custom management information. With the correct choice of chart and data the snapshots can provide a rapid insight into each run.



- Click on chart to move to a full screen view

The Dashboard is accessed from the tabs at the foot of the summary. The first is for the summary and second one if the for the dashboard. The dashboard displays a set of three fixed charts, statistics and up to three user generated charts. The remaining three tabs are full size versions of the three fixed charts.

The top section is always the fixed charts and statistics and the bottom area can be up to 3 user generated charts.

The first chart is a pie chart of the output generated - this is split into Required parts, Plus/Over parts, Offcuts, Scrap and Core trim.

The second chart is information about the different pattern types and their origin.

The first two items in the chart are the origin of the material for the patterns. Full sheet patterns are patterns that are created from full sheet patterns, whereas ‘From offcut’ are patterns created from existing offcuts.

Recut, rotated, headcut and total patterns are the totals of each of these pattern types in the run. Offcut patterns are the number of patterns that generate 1 or more offcuts.

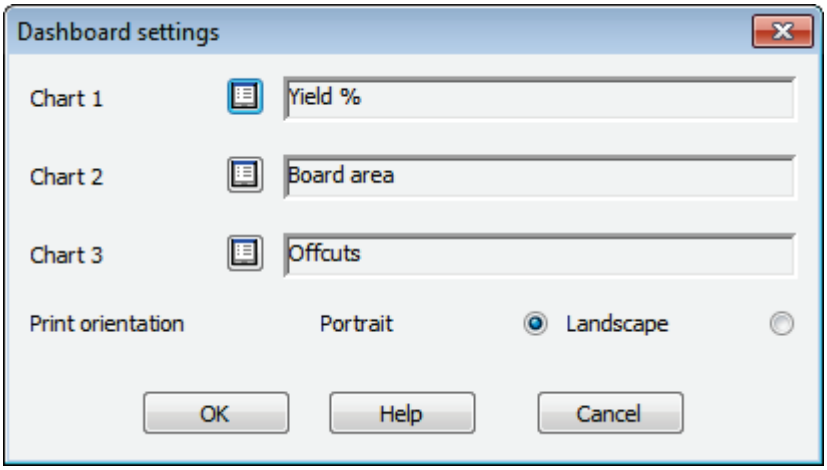
The Open parts chart is a count of the open parts for each pattern.

When the mouse is moved over the dashboard the cursor changes to a hand when it is over one of the charts. If the mouse is double clicked at this point, the full size version of that chart will be displayed.
Double clicking on any chart will display the dashboard.

Right clicking on the dashboard or one of the full size dashboard fixed charts will bring up the dashboard settings dialog, right clicking on a chart on any other summary will bring up the chart settings dialog for that summary type.

Selecting user generated charts

Set up of the Dashboard is via the menu option: 'Chart settings'.



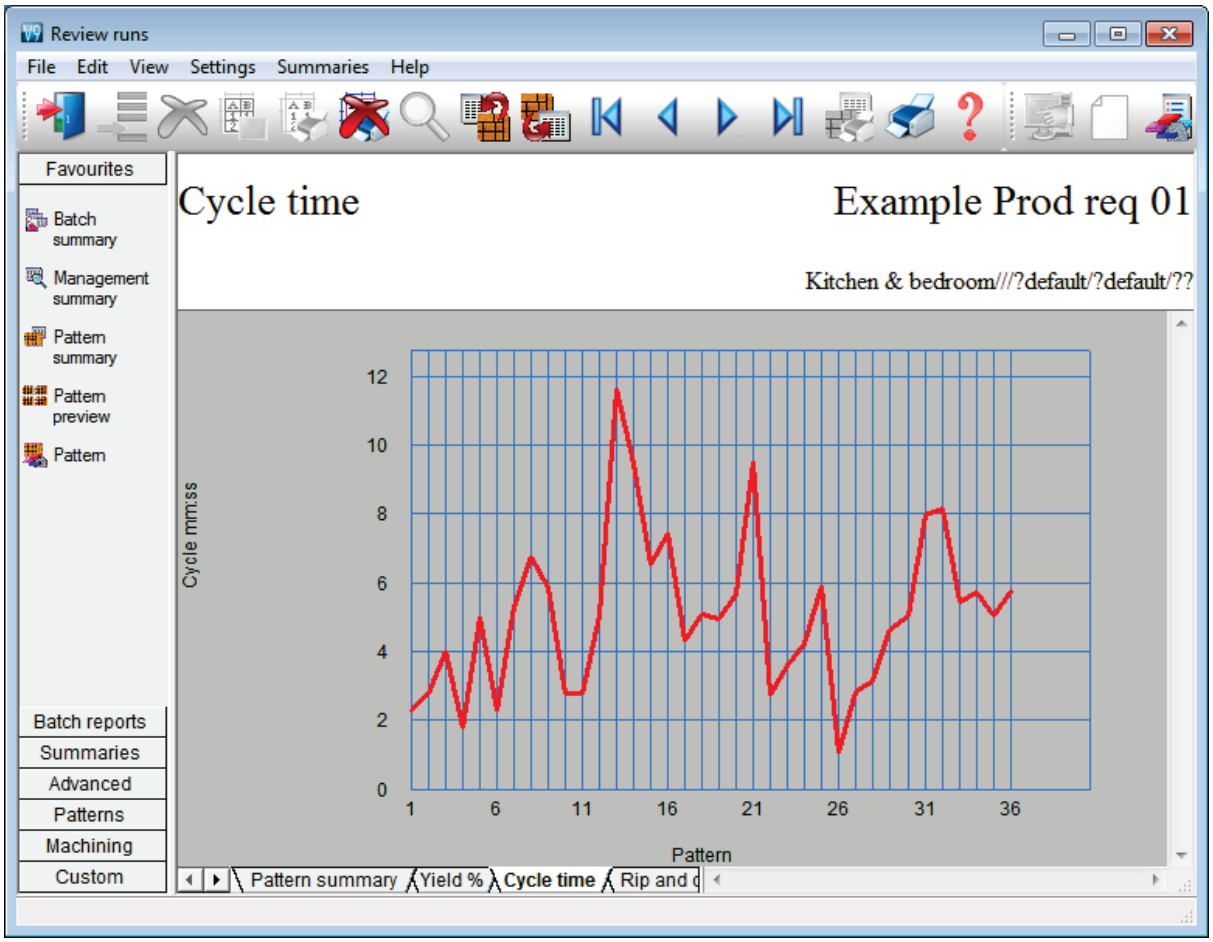
The buttons are used to select a previously specified chart (see below). The names that are listed are from the title field of the chart settings dialog in the other summaries.

The orientation option is used to specify how the dashboard will appear on a printout.

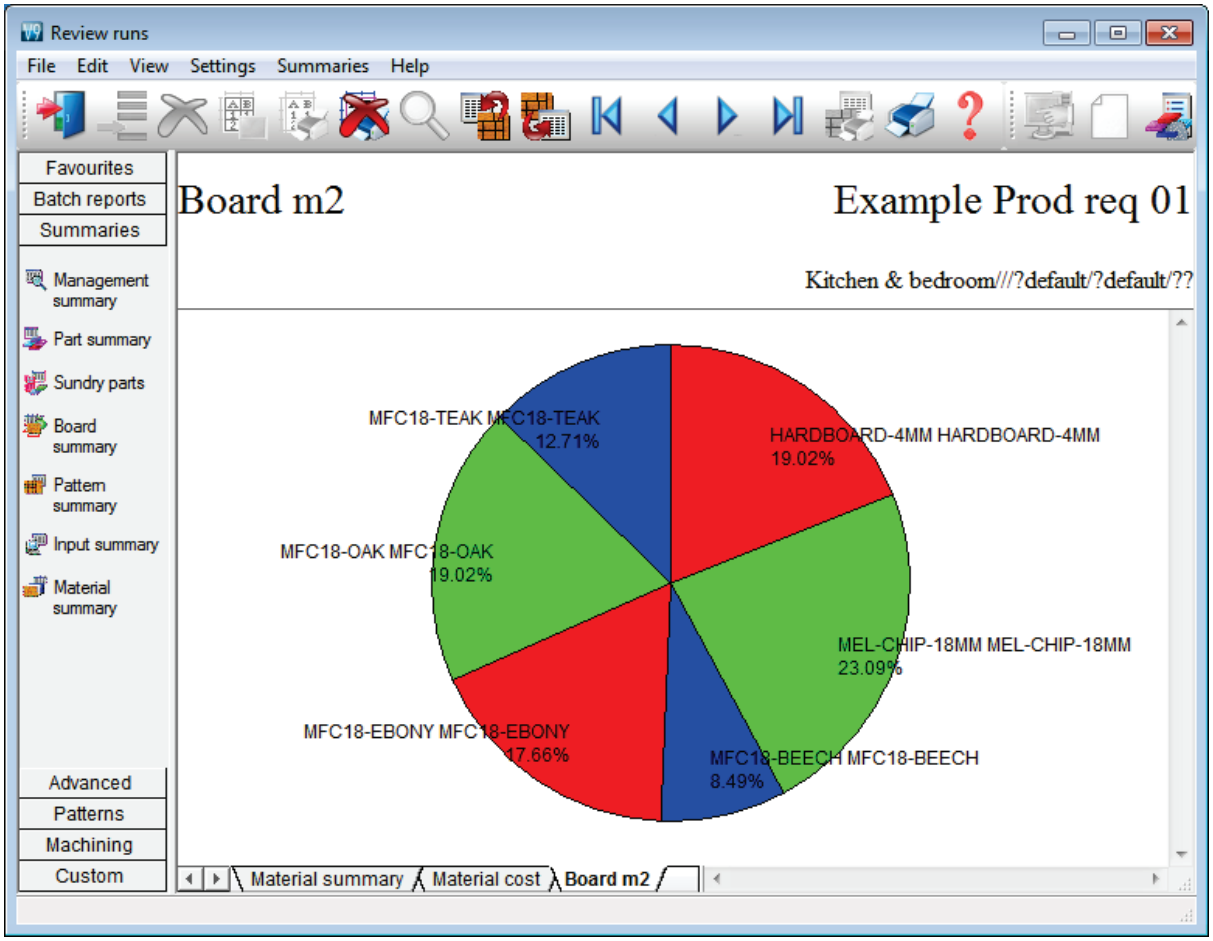
Charts for reports

Each report (summary) can now include a customised chart or graph showing a snapshot of all or part of the data. (The management summary has an extra option; the Dashboard - see above)

For example, for the Pattern summary:-



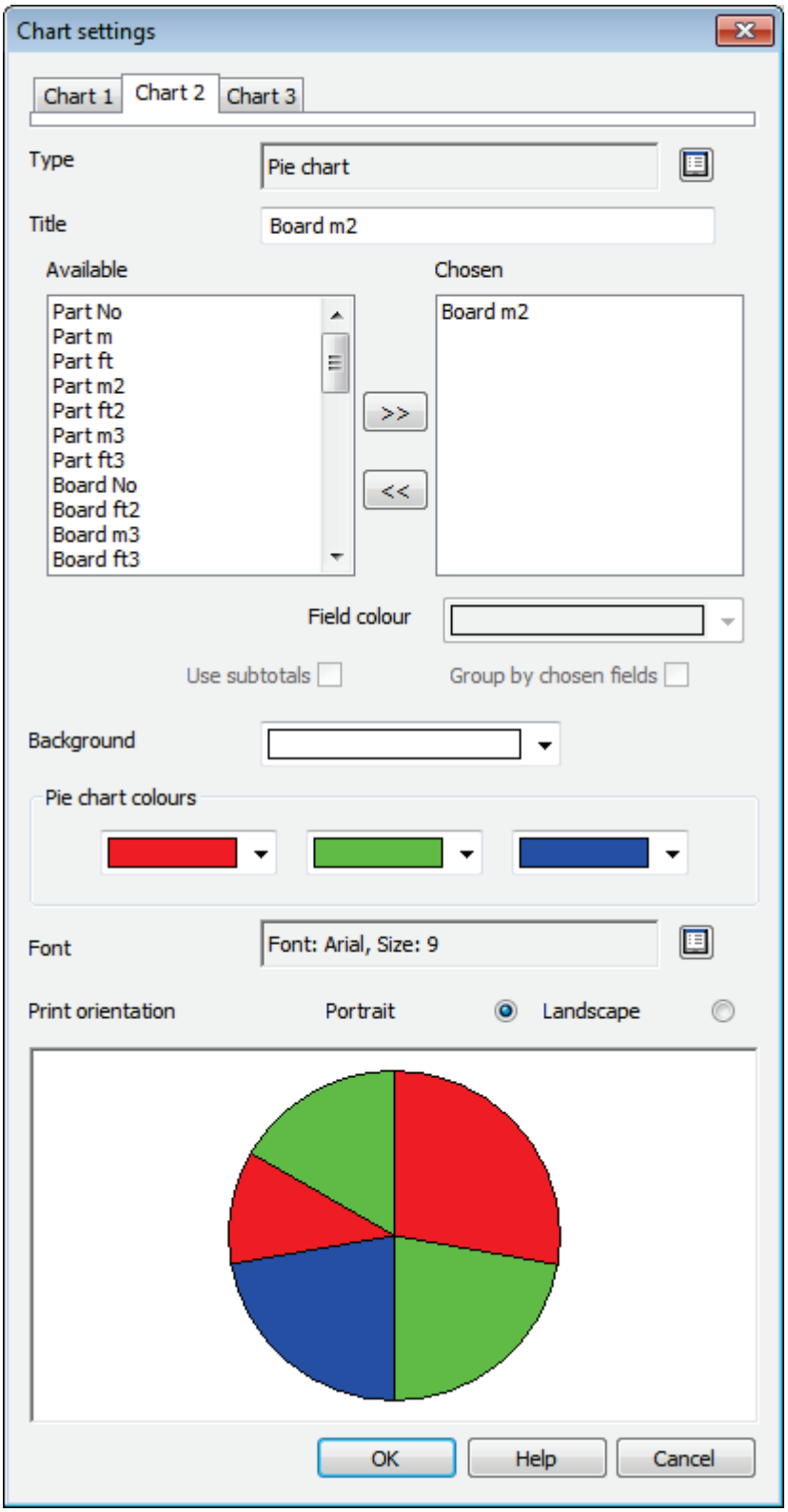
For the Material summary:-



The charts are accessed from the tabs at the foot of each summary.

Chart set up

Charts are defined via the Chart Settings option that appears on the settings menu (for each Report).



The tab at the top is used to select which chart to setup/modify. Up to 3 charts can be defined for each summary.

For each chart the type is initially set to None, the button to the right is used to select the chart type. This can be a vertical/horizontal bar chart, a scatter graph, a vertical line plot or a pie chart.

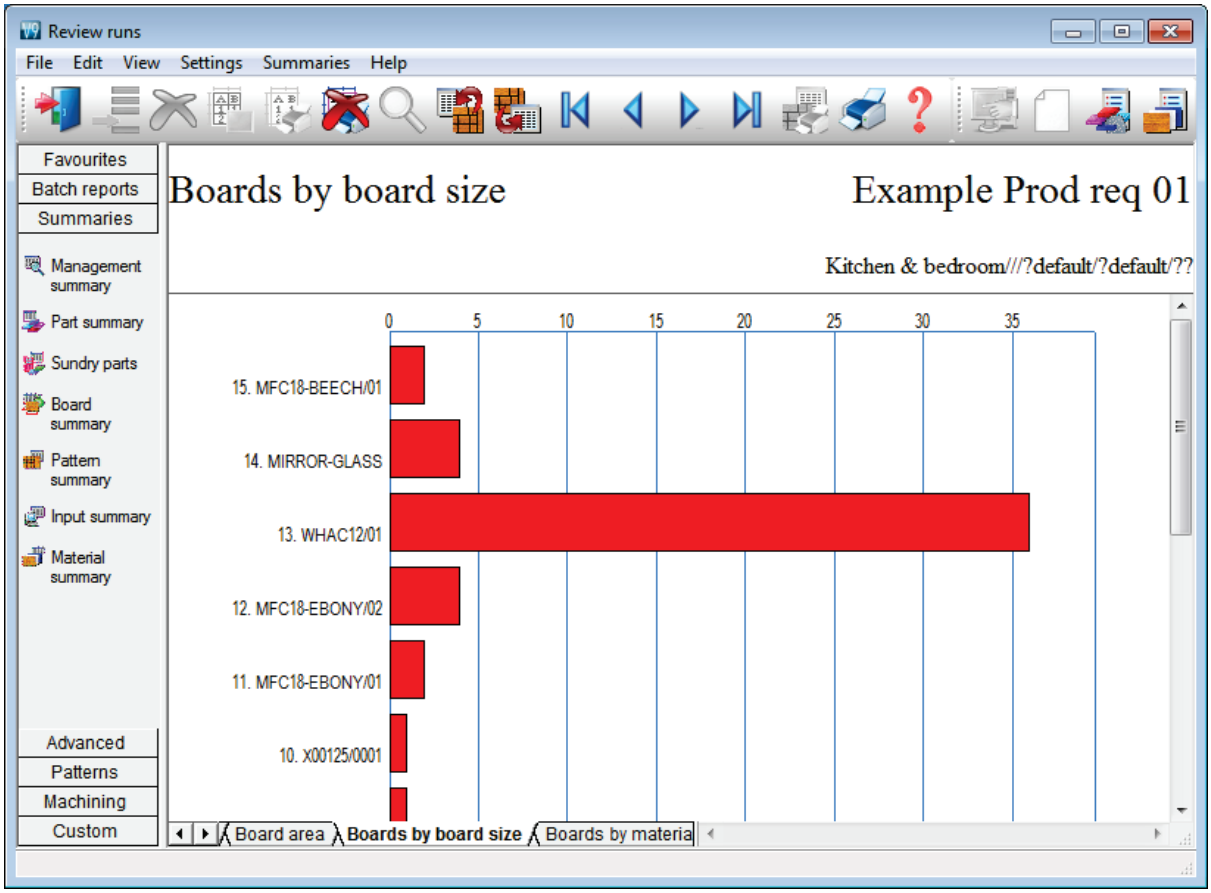
Once the type is set the remaining controls in the dialog are enabled. The title field is used to specify the name of the chart, this name appears on the main review runs screen above the chart and on the tab control at the bottom. This name is also used to select this chart in the dashboard as explained later on.

The next set of controls are used to specify which field(s) are to be used for the chart. Note for a pie chart only 1 field should be selected and for a scatter graph only 2 fields must be selected.

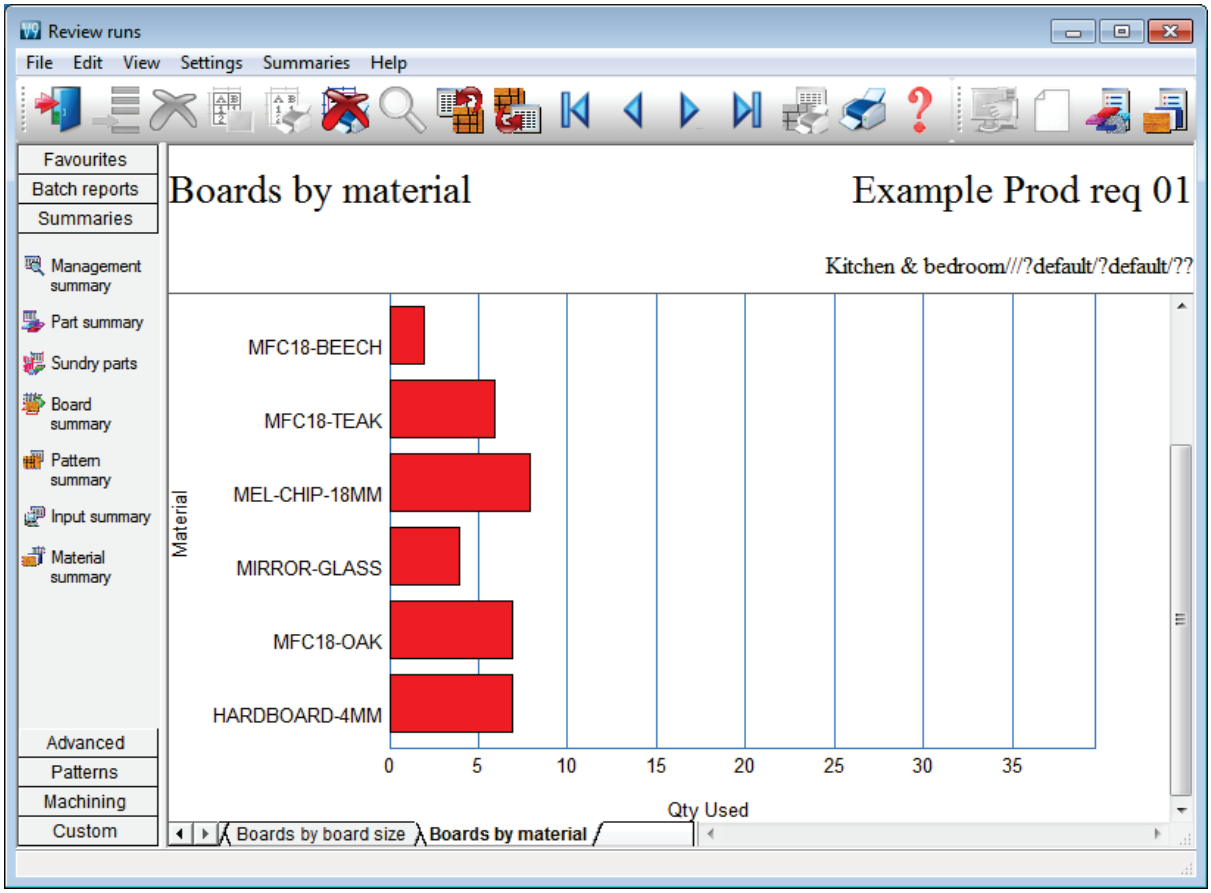
The available column is a list of the fields in the current report and the chosen column is the fields chosen for this chart. After the field(s) are chosen they can be allocated a specific colour by first clicking on one in the chosen list box and then clicking on the field colour control below the chosen list box.

Normally the data for a chart is taken from the item lines of a summaries (e.g. a pattern summary has 10 patterns, so there are 10 items of information for the chart), but there may be cases where the value in the subtotal lines is more appropriate (e.g. total of board quantities used across materials, not patterns) and the 'Use subtotals' is used to select this method.

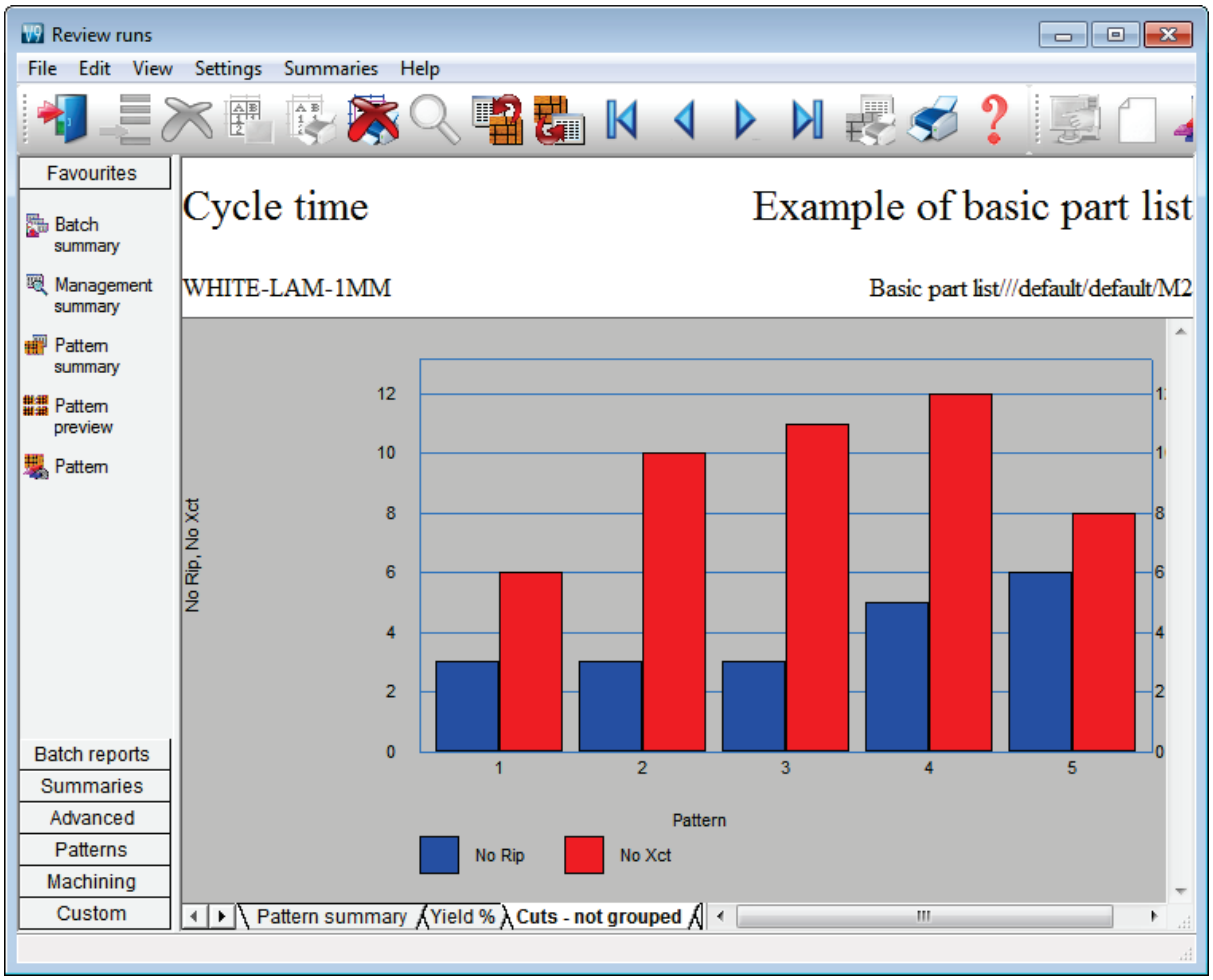
For example for the Board summary 'board quantity' by material may be a more compact chart than 'board quantity by board size'.



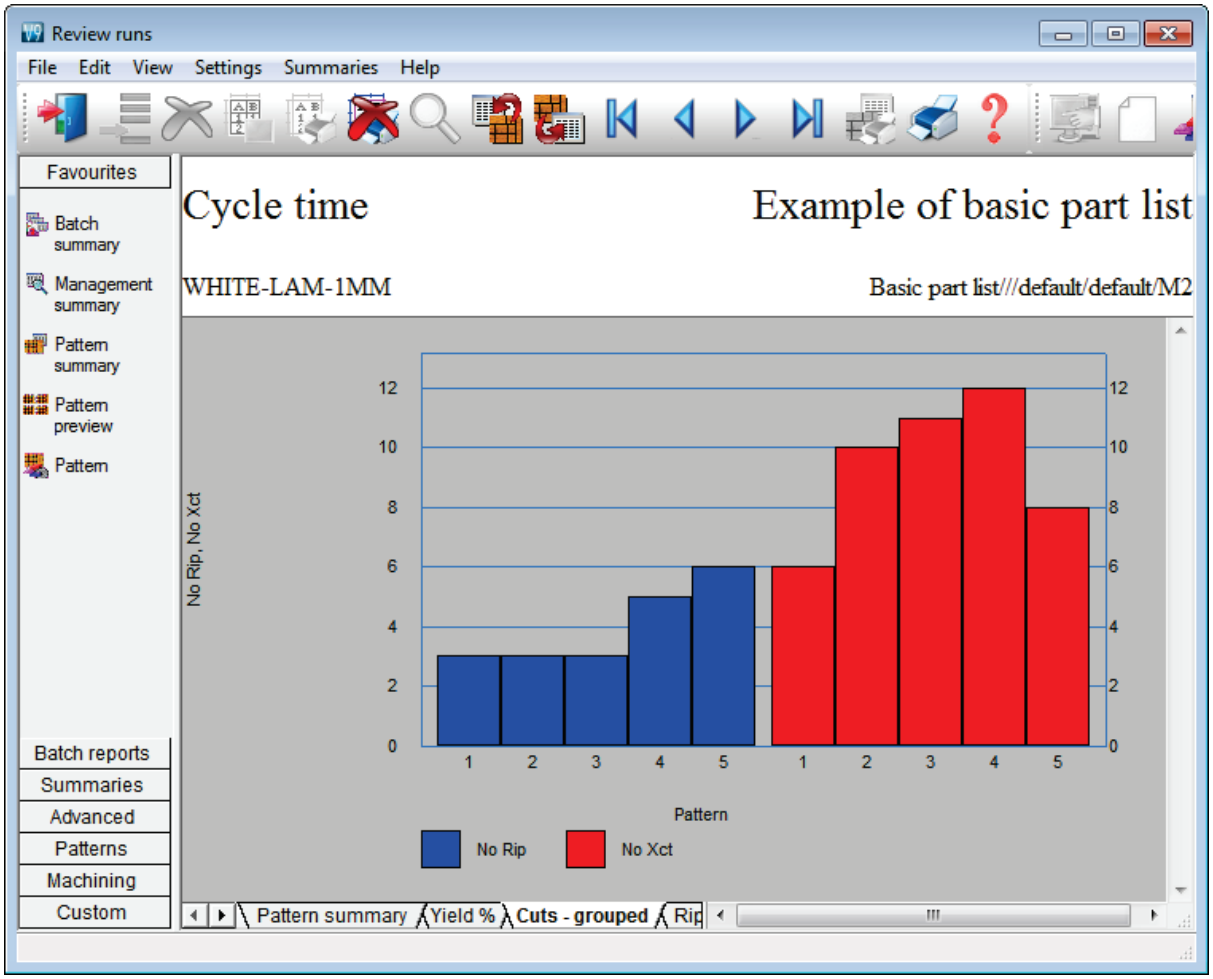
Boards by material



The 'Group by chosen fields' option is for bar charts only and places all the bars for each field value together. For example the cuts in patterns could be analysed by rip and cross cuts. If not grouped the chart is as follows:-



If the chart is grouped:-



Other chart settings

The 'background' option is used to select a colour to use for the background of the chart.

The pie chart colours are used to specify the three alternating colours that are used to colour in the wedges of a pie chart.

The font button is used to select the font that is used to display text on the charts.

The orientation option is how the chart will appear when it is printed. This might be different to the orientation of the summary text (e.g. portrait for the summary and landscape for the chart).

The image at the bottom is a preview of how the chart will look with specified settings. Note - It is not based on the actual data in the current report.

Axis - The axis values are all shown as decimal values. When a time field is used the value is changed to a decimal value. e.g. A cycle time of 03:30 would have a value of 3.5.

Scrolling - The scroll bar can appear on horizontal and vertical bar charts if there are lots of values to display. A horizontal scroll bar appears for vertical charts and a vertical scroll bar appears for horizontal charts.

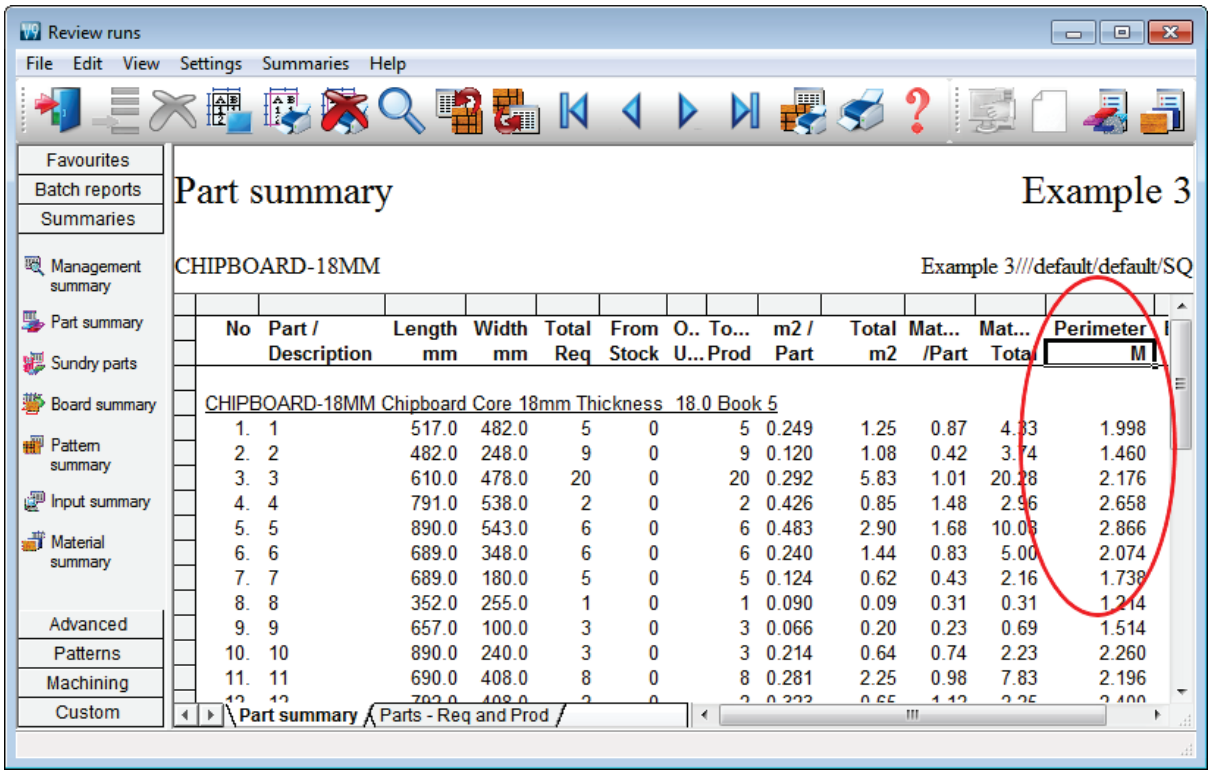
Operation - The tabs at the bottom of the summary are used to change between a summary and any of its associated charts. The tabs take their name from the title provided in the chart settings dialog.

Review runs reports - extra columns for user-defined calculated values

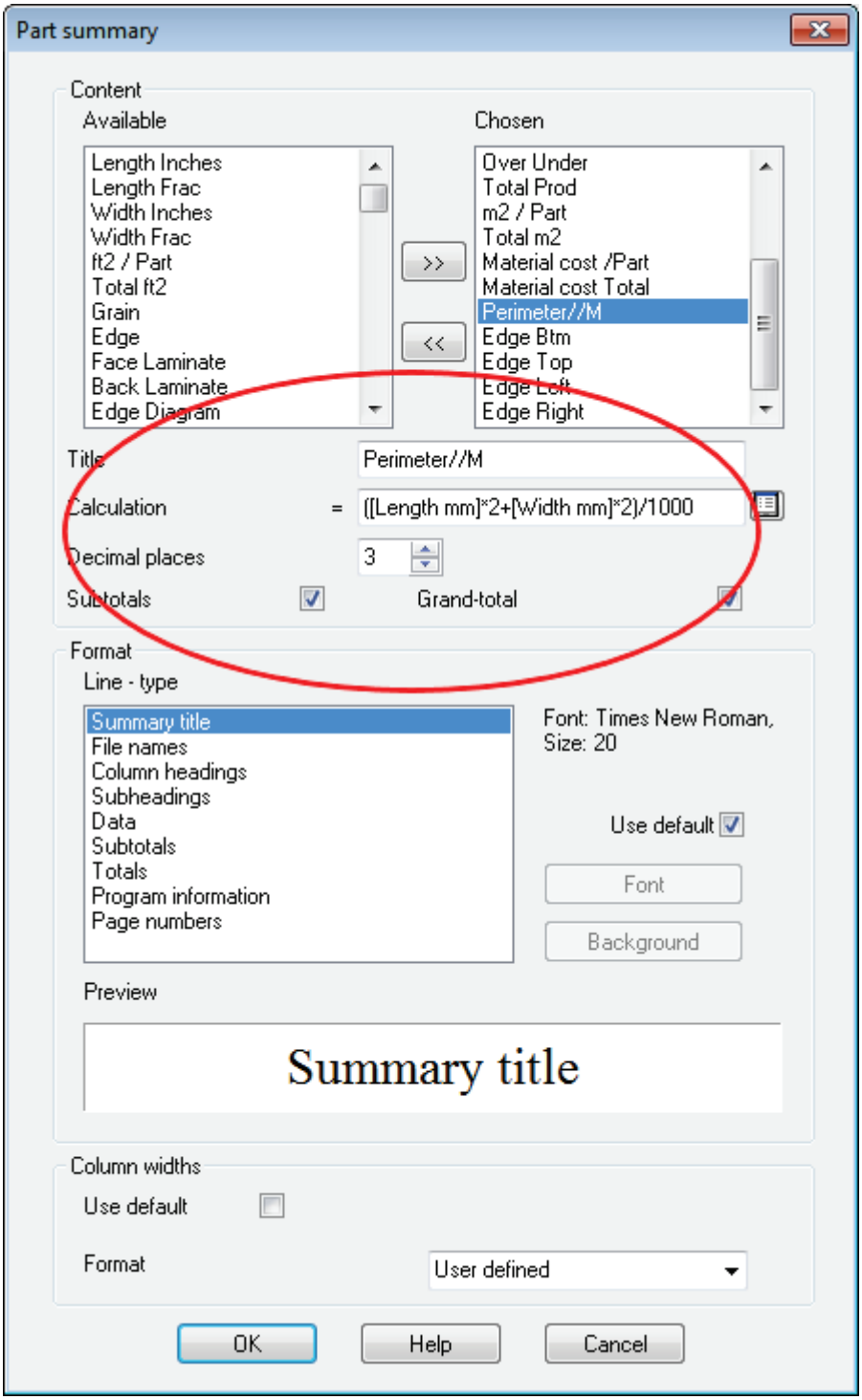
Calculated fields

Calculated fields are formula based values that are based on other fields within the summary. They allow standard reports to be customised with extra columns of calculated data.

For example, the following Part summary includes a field that calculates the part perimeter.



Fields are set up (for each report) by the option: Settings - Report settings.



For a new calculated field select one of the five 'Calculated field' options in the 'Available' box and move it over to the 'Chosen' box. Select the field in the 'Chosen' box. The calculated field boxes become available. Enter the details - the field can be given a title at this point.

The title is used to specify what names appear in the column heading for this field in the summary and the name in the chosen list box.

The name in the chosen list box will be updated when a title is changed and a different item is selected in the chosen list box.

The formula is used to specify what value appears in the column. The formula starts with the '=' symbol and then is like other formula used across the package. Only fields from the current summary can be used in a formula and the button to the right of the edit box is used to select one of these fields.

```
1. Select a calculated field in the board summary
2. Enter = in the edit box
3. Click on the button and double click on the 'Length mm' field
       The edit box will then show =[Length mm]
4. Enter * in the edit box
5. Click on the button and double click on the 'Width mm' field
       The edit box will then show =[Length mm]*[Width mm]
```

In the summary this field will then show the area (in square millimetres).

A further example:-

```
=[Length mm]+[Width mm]
=[Cost]*1.20
=IF([Length mm]>2500,2500,[Length mm])  - Using an if statement in a
formula
=[Calculated field 1]*[ Calculated field 2]   - Using a previous calculated
field in a calculated field.
= STR(LEFT([Part / Description],3)+[Total]) - This is used for processing
text based fields
```

The decimal places control is used to specify the amount of decimal places to show for the calculated field answers. This can range from 0 to 5, the default is 2.

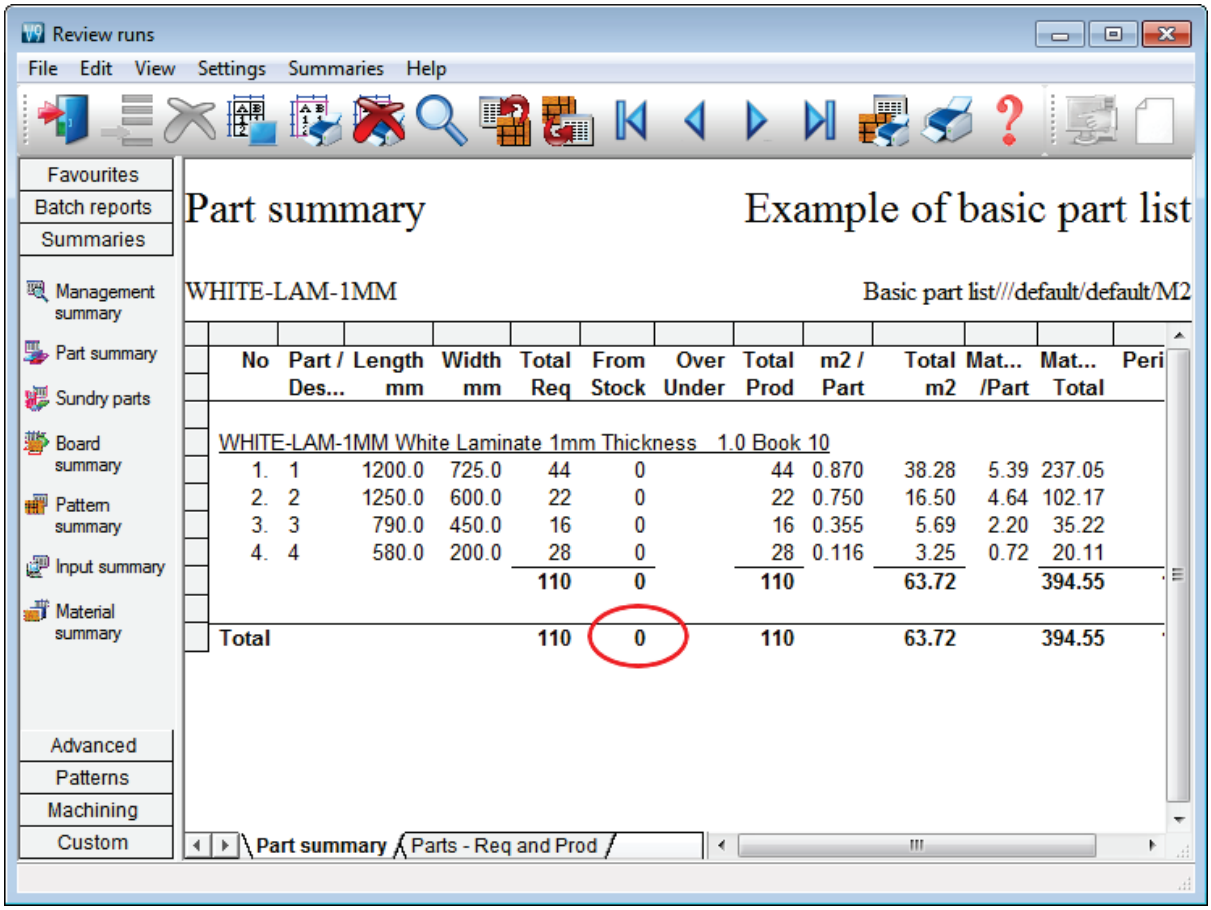
Initially the calculated field values only appear on item lines, but they can also appear on subtotal lines and the grand total line. The subtotals and grand-total check boxes are there to specify which of these lines they appear on. Note - totals are not always available an all summaries - totals are not available on the destacking summary and subtotals are not available on the batch summary.

Note - If fractional inch values or times are used in a formula the value is first converted to decimal.

Field totals

For Version 9 some extra total values are automatically calculated for relevant reports. (These were not available in the previous version).

For example, the 'From stock' field at the part summary now has a total included.



The extra totals available are:-

Summary	Fields
Part sizes	Total prod, Cut and To Cut
Nesting sizes	Total prod, Cut and To Cut
Job costing	Area and quantity totals for each section
Part	From stock
Offcut	Total
Station	Bsb qty, Part Qty
Patterns	No Rip, No Xct

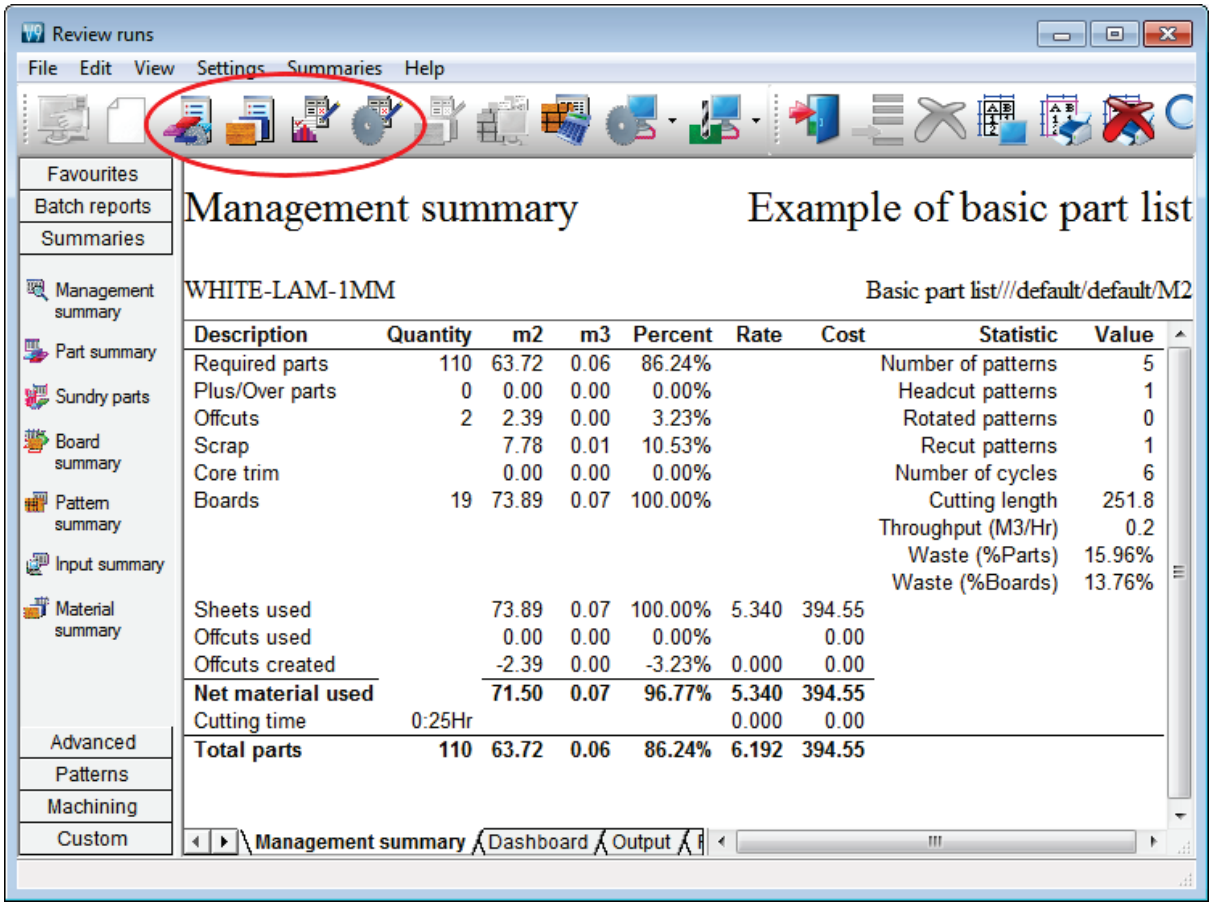
Note - these new total values will also appear in the file created when a report is exported. The new totals do not change the order of the values on each line.

Review runs – Direct access to edit cutting list, board list and parameters.

Version 9 of the software allows the cutting list, working board list and parameters to be edited for individual runs from within Review runs. Optimising/nesting, saw and material parameters may be edited (where available).

(Cutting lists, board lists … can also be edited from the Batch screen - see above).

Move to the required run and select one of the new edit toolbar buttons or options on the Edit menu.



Description	Quantity	m2	m3	Percent	Rate	Cost	Statistic	Value
Required parts	110	63.72	0.06	86.24%			Number of patterns	5
Plus/Over parts	0	0.00	0.00	0.00%			Headcut patterns	1
Offcuts	2	2.39	0.00	3.23%			Rotated patterns	0
Scrap		7.78	0.01	10.53%			Recut patterns	1
Core trim		0.00	0.00	0.00%			Number of cycles	6
Boards	19	73.89	0.07	100.00%			Cutting length	251.8
							Throughput (M3/Hr)	0.2
							Waste (%Parts)	15.96%
							Waste (%Boards)	13.76%
Sheets used		73.89	0.07	100.00%	5.340	394.55		
Offcuts used		0.00	0.00	0.00%		0.00		
Offcuts created		-2.39	0.00	-3.23%	0.000	0.00		
Net material used		**71.50**	**0.07**	**96.77%**	**5.340**	**394.55**		
Cutting time	0:25Hr				0.000	0.00		
Total parts	**110**	**63.72**	**0.06**	**86.24%**	**6.192**	**394.55**		

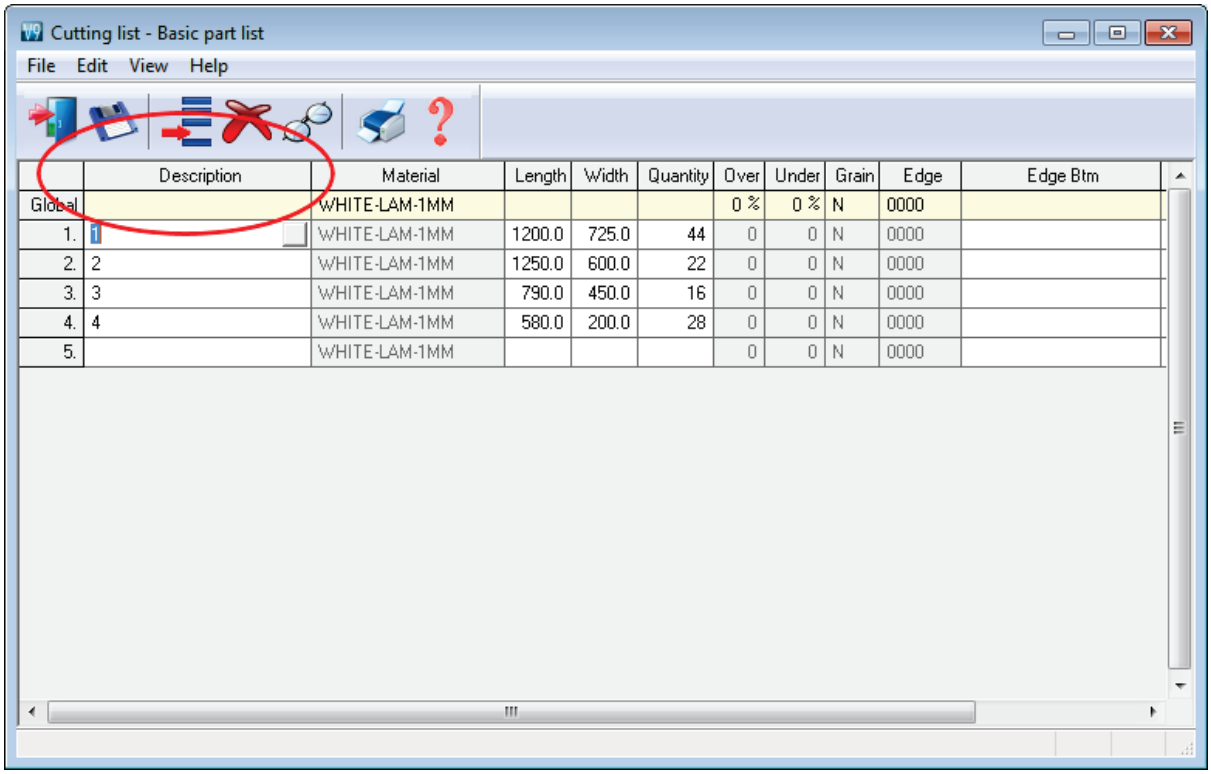
(In this example the Function toolbar has been moved to the left - the default location is to the right).

The options are:-

```
Parts …
Boards …
Optimising parameters …
Saw parameters …
```

They are also on the Edit menu.

The cutting list/board list editors work in a restricted mode in these cases, allowing only changes to the list selected



On exit from the editor, control returns to Review runs and the run is recalculated.

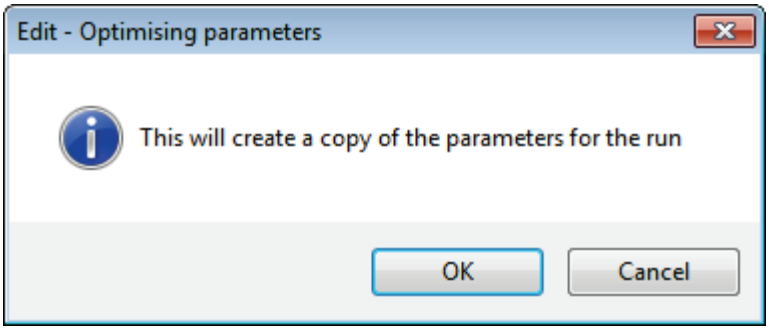
Editing in this way, after optimisation, can be useful for minor changes and late adjustments but any significant change in parts sizes, quantities, boards available … may affect the optimising result. In this case the program deletes the patterns and prompts with an option to re-optimise the list.

Editing a run's optimising / nesting parameters and saw parameters - creating a parameter snapshot

This section applies only where more than one set of optimising / nesting or saw parameters are allowed. For optimising / nesting parameters: LO (with other modules), SO, PO or NE modules. For saw parameters: SO or PO modules. For LO, where only one set of parameters is allowed, the parameter editor is loaded with the current parameters.

Typically many runs use the same parameter lists so that if a parameter list is changed any existing results become invalid

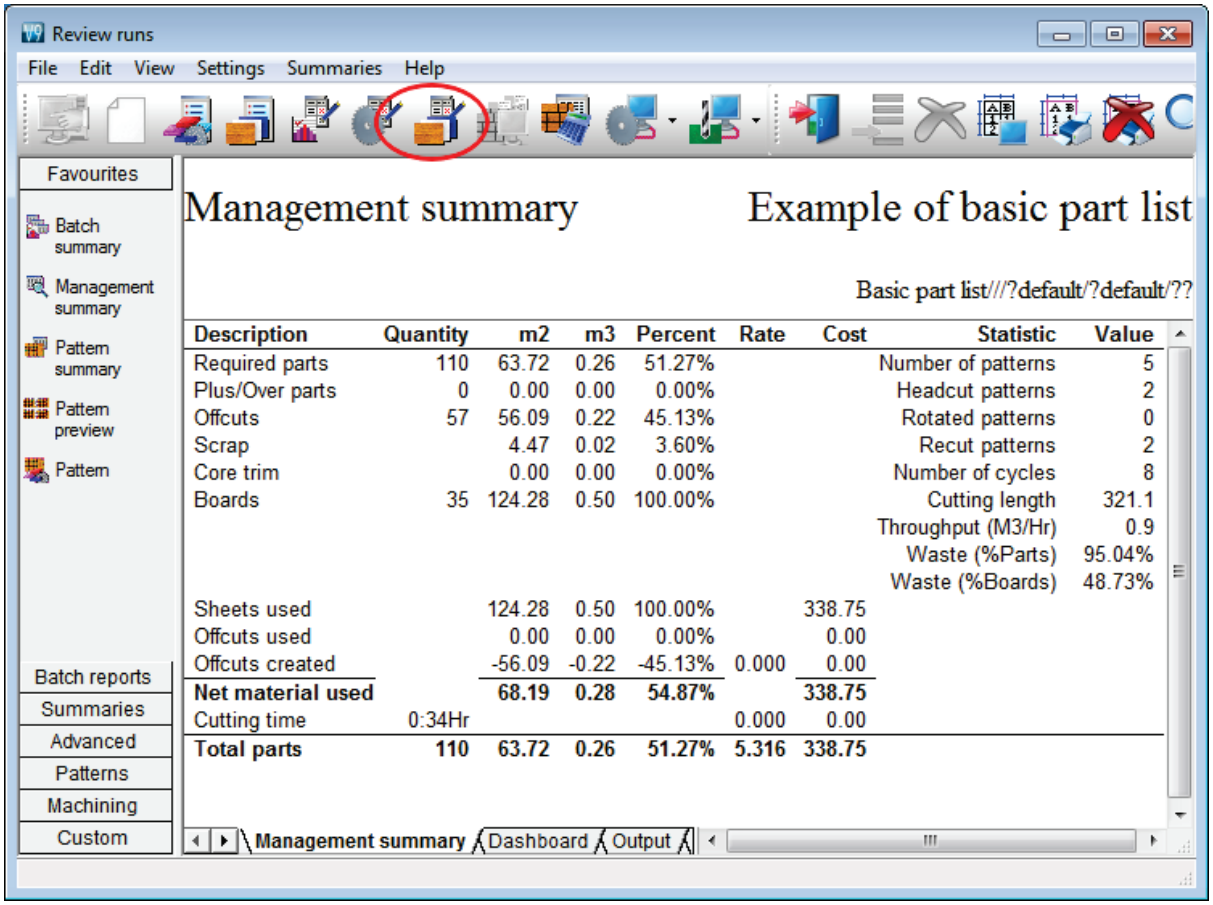
To avoid invalidating other runs which use the same parameters, the program prompts to create a 'snapshot' of the parameters used by the run. The new parameters are named after the run.



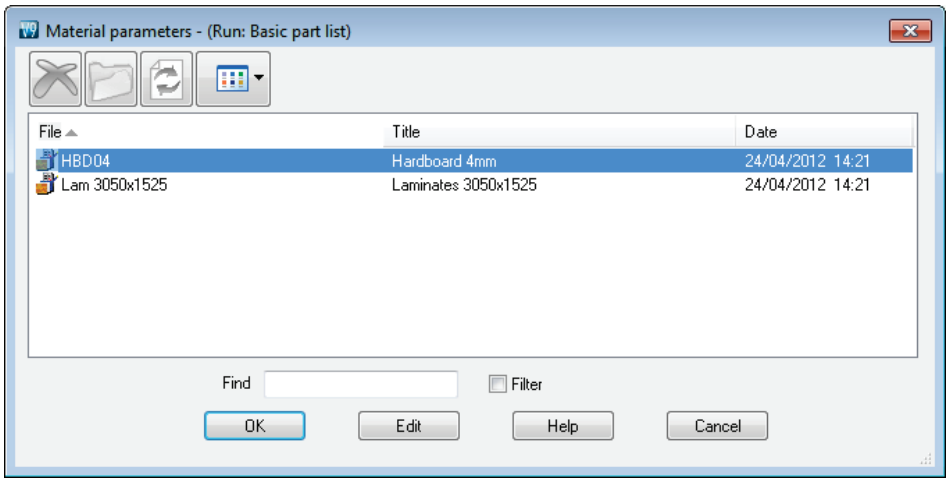
The new copy of the parameter list is shown in the parameter editor where changes may be made. If the parameters are saved they are permanently associated with the run. Otherwise the run reverts to using the original parameters and the snapshot is deleted.

Editing material parameters

Some runs have additional parameters for some or all of the materials used. If this is the case the material parameter option is enabled.



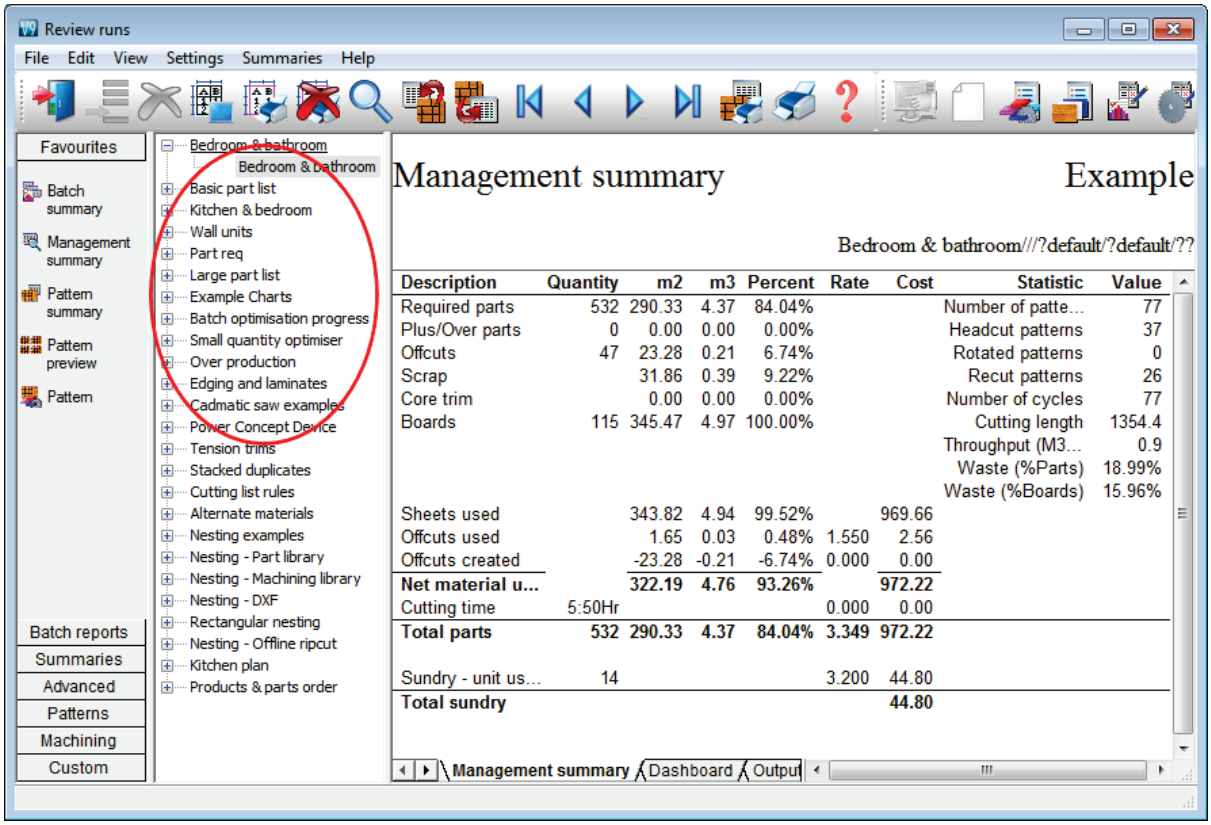
When this option is selected, the list of material parameter files used by the run are shown in the selection dialog. An example is shown below.



If any of the material parameter files are edited, the run is recalculated on return to review runs. Note for material parameters a snapshot is not used.

Review runs – File tree option to filter or group runs by a category

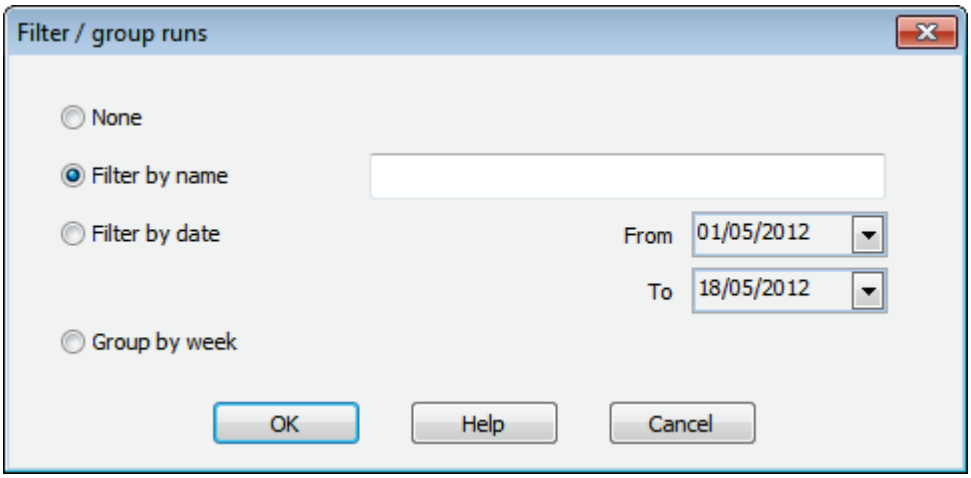
Review runs shows all available runs in the 'Runs pane' (Runs tree). This can sometimes make it difficult to locate the runs which match a specific name or those produced in a particular date range.



Version 9 enables the file tree to be filtered by name or date. Alternatively, runs can be grouped by date (week number).

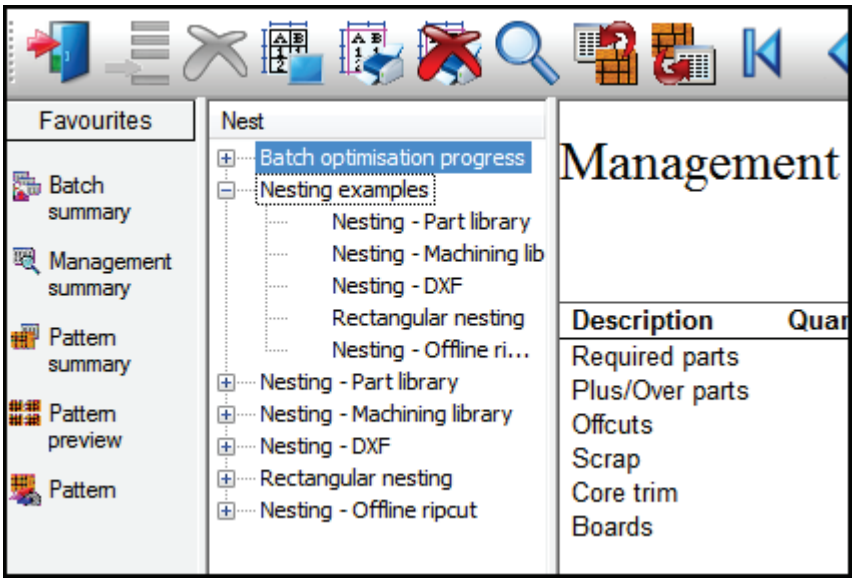
Filtering / grouping options

A new option on the Review runs 'View menu': *View - Filter / group runs …*



Filter by name

Only those batches, runs or cutting lists whose name contains the text entered are shown in the tree. The *Recent first* option is still observed and the text entered is displayed above the file tree to indicate that a filter has been applied (In this example 'Nest').



Filter by date

Select the date range required. Only those batches, runs or cutting lists whose modification time lies within the date range are shown in the tree. The *Recent first* option is still observed and the date range is displayed above the file tree to indicate that a filter has been applied.

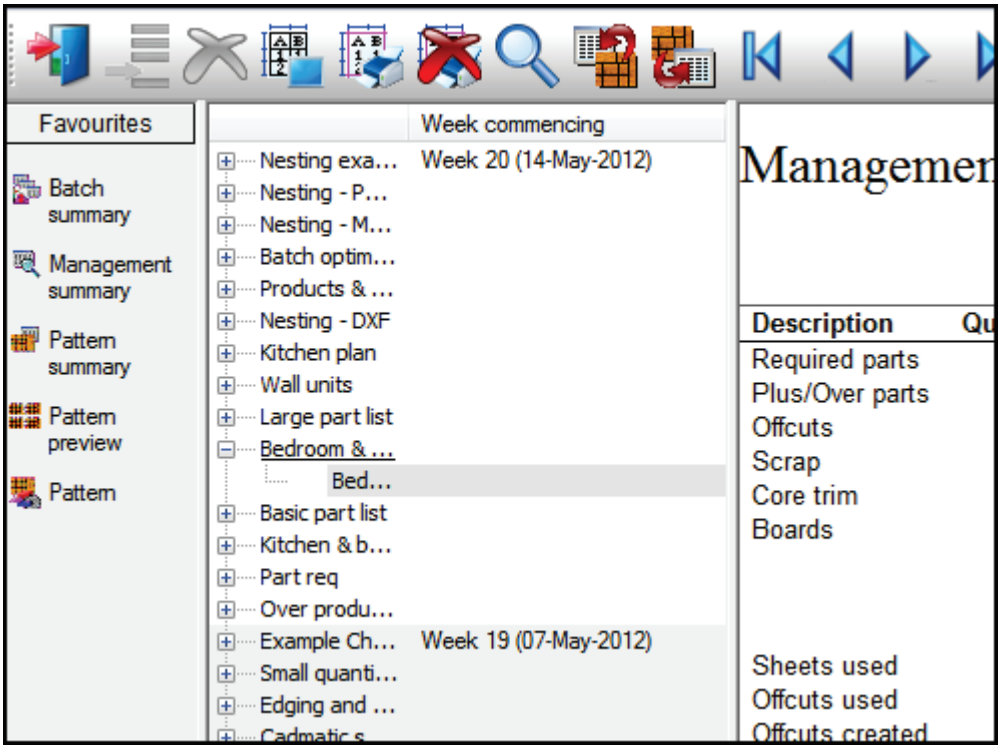
Group by week

In this mode, the tree displays all of the runs but grouped by date into ISO week numbers (by modification date). The last 60 weeks are shown in groups, with earlier runs added to the *Older* group.

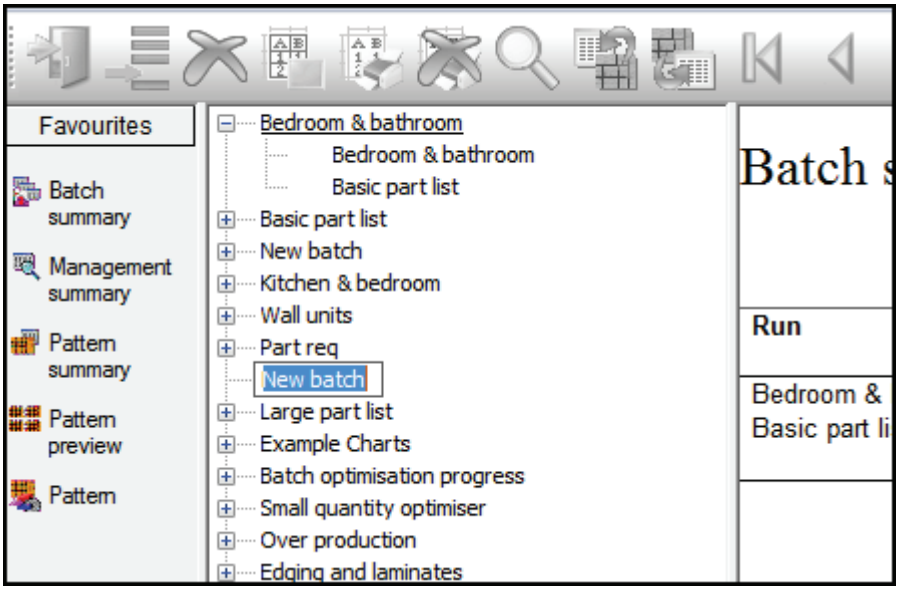
Weeks start on a Monday and Week 1 contains the first Thursday of the year. Weeks from previous years are indicated by the inclusion of the year at the start of the group name.

Only those groups which contain files appear in the tree. The group label appears in an additional column to the right of the filenames and alternate groups have a different background colour in order to easily identify the runs for each group.

If the *Recent first* option is selected, runs are sorted by date within the groups.



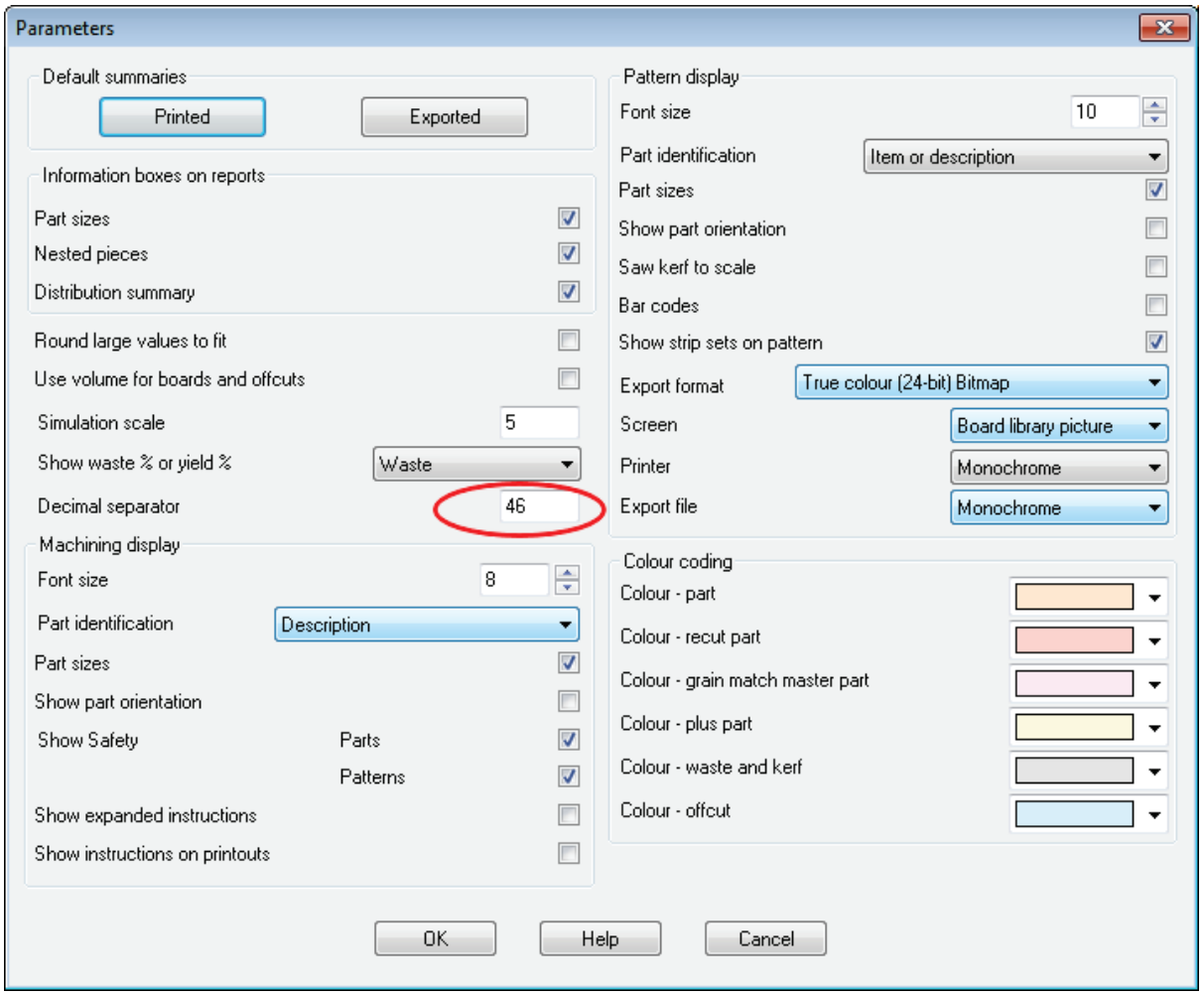
If a new batch is created in the run tree, this is temporarily assigned to the *New* group until the file tree is refreshed (at which point the new batch joins the correct week).



Note - If a filter is selected, this is reset to *None* when Review runs is restarted. The *Group by week* setting is persistent. The options available are listed below.

Review runs reports and export - option to specify decimal separator

Version 9 allows users to specify a decimal separator for number fields in Review runs reports. The desired separator is set in the "Decimal separator" Review runs parameter. Enter a separator character (e.g. ' , ') or an ASCII character code (e.g. '44').



This separator is used for all decimal dimension fields (millimetres and decimal inches), percentages, areas, volumes and costs. Text fields containing decimal numbers (e.g. information boxes, Input summary -parameters) use the default separator '.' (full stop).

Note - Pattern amendment does not use the defined separator and is always set to a full stop.

Note - Valid ASCII codes for separators for reports are 32-33, 35-47, 58-64, 91-96, 123-127

Board library and Stock

Material library - 50 Character board codes

V9 allows longer board codes up to 50 characters to be entered in the Board library - in previous versions board codes are limited to 25 characters in the Board library. This change also allows 50 character offcut codes to be used.

Note - board codes are still truncated to 25 characters in certain printed stock reports and board list prints.

Material codes

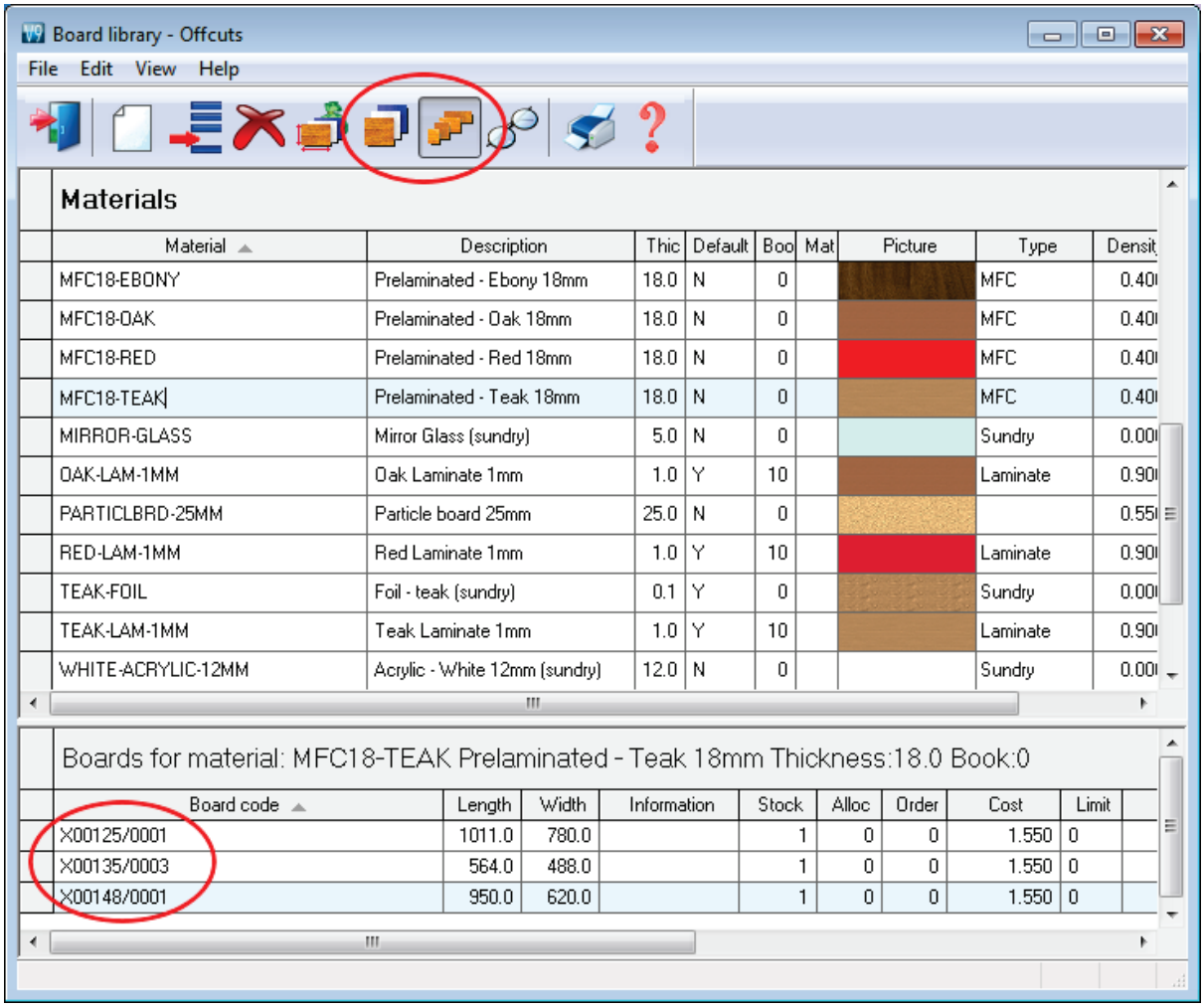
V9 also allows material codes up to 50 characters long to be entered in the Board library. These longer codes can also now be used throughout the program

Board library - option to view full sheets or offcuts only

It is sometimes useful to view only stock boards or only offcuts in the board library. There are 2 new options on the Board library 'View' menu.

View - Stock boards
View - Offcuts

- Click on the menu option to switch the view on or off.



The above example shows 'Offcuts only'. The options are also available on the toolbar (as highlighted above).

Note - If the library contents are printed - the filter set for the screen still applies

Note - Boards which have a board code beginning with 'X' *or* with board type *Offcut* are treated as offcuts by the report.

Note - board type names are now called *Stock board* and *Offcut* (previously *Board* or *Offcut*)

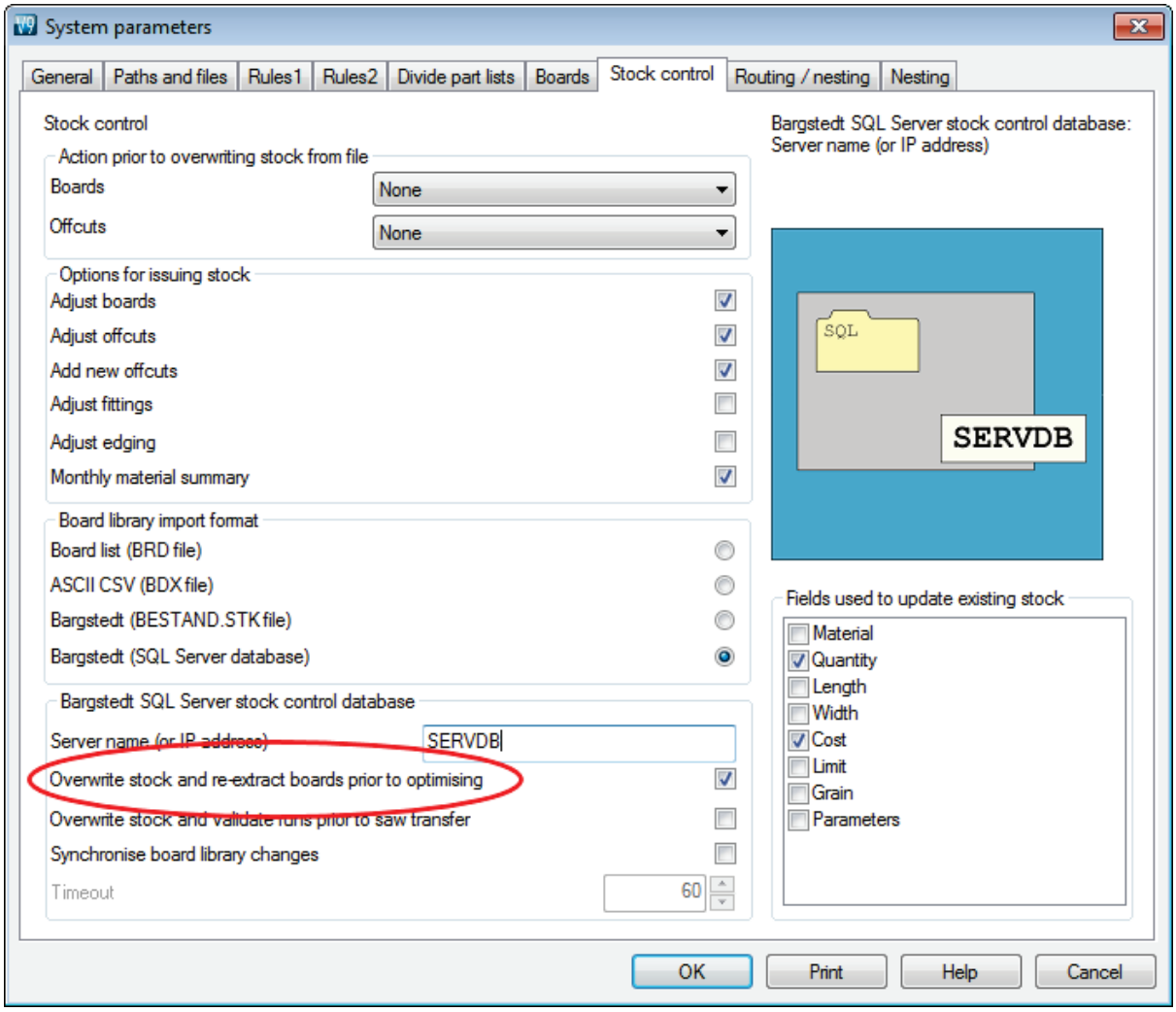
Stock - option to update from Bargstedt SQL database and create board list just before optimising

Version 9 includes an option to automatically overwrite stock in the board library from the Bargstedt SQL stock database and re-extract the working board lists for each run being optimised. This occurs immediately before optimising. This ensures the board library accurately reflects the current stock situation.

There is also an option to overwrite stock and validate runs before saw transfer. This ensures an accurate an up to date stock situation for the saw prior to cutting.

These options are controlled by a new System parameters on the Stock control page:

Overwrite stock and re-extract boards prior to optimising
Overwrite stock and validate runs prior to saw transfer



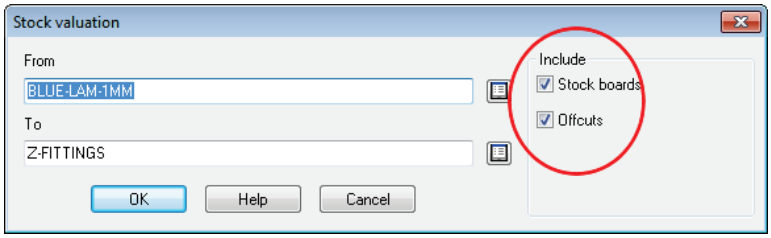
Note - any manual edits to a working board list are lost when re-optimising.

Inches

The synchronisation / import of stock from the Bargstedt SQL stock database is also available in inches modes. The Bargstedt stock database stores dimensions in 1/1000". This may result in rounding errors when operating in fractional inches mode.

Stock valuation report – option to include full sheets or offcuts only

The stock valuation report (SC module) now includes to option of displaying only stock boards or offcuts within the specified material range. This is set at the Range dialog.



At the main screen:-

- Select: **Print - Stock Valuation**

At the report:-

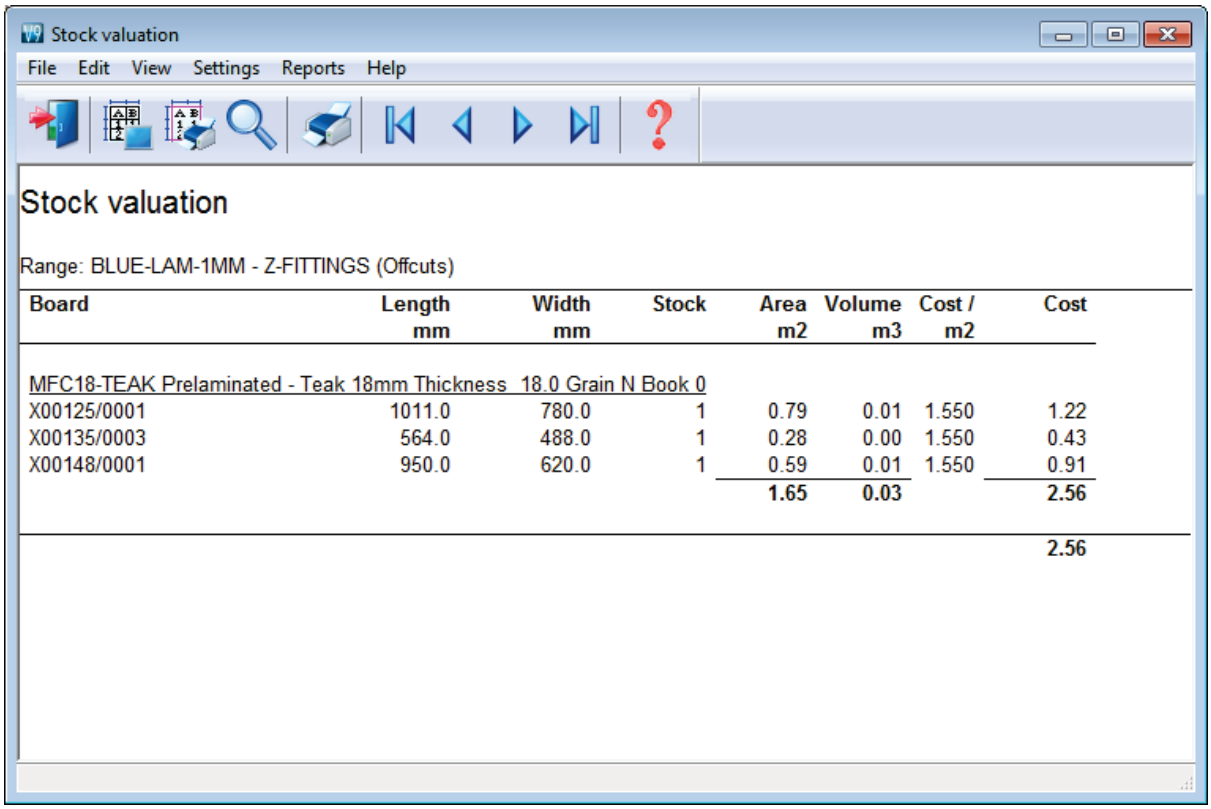
- Select: **File - Modify range**

The following example shows 'Offcuts only'.

To restrict the report to offcuts, deselect the Stock boards option (and vice versa).

The program ensures that one option remains selected.

The Stock valuation report indicates that the list has been restricted by appending the text *(Offcuts)* or *(Stock boards)* to the range line. An example is shown below.

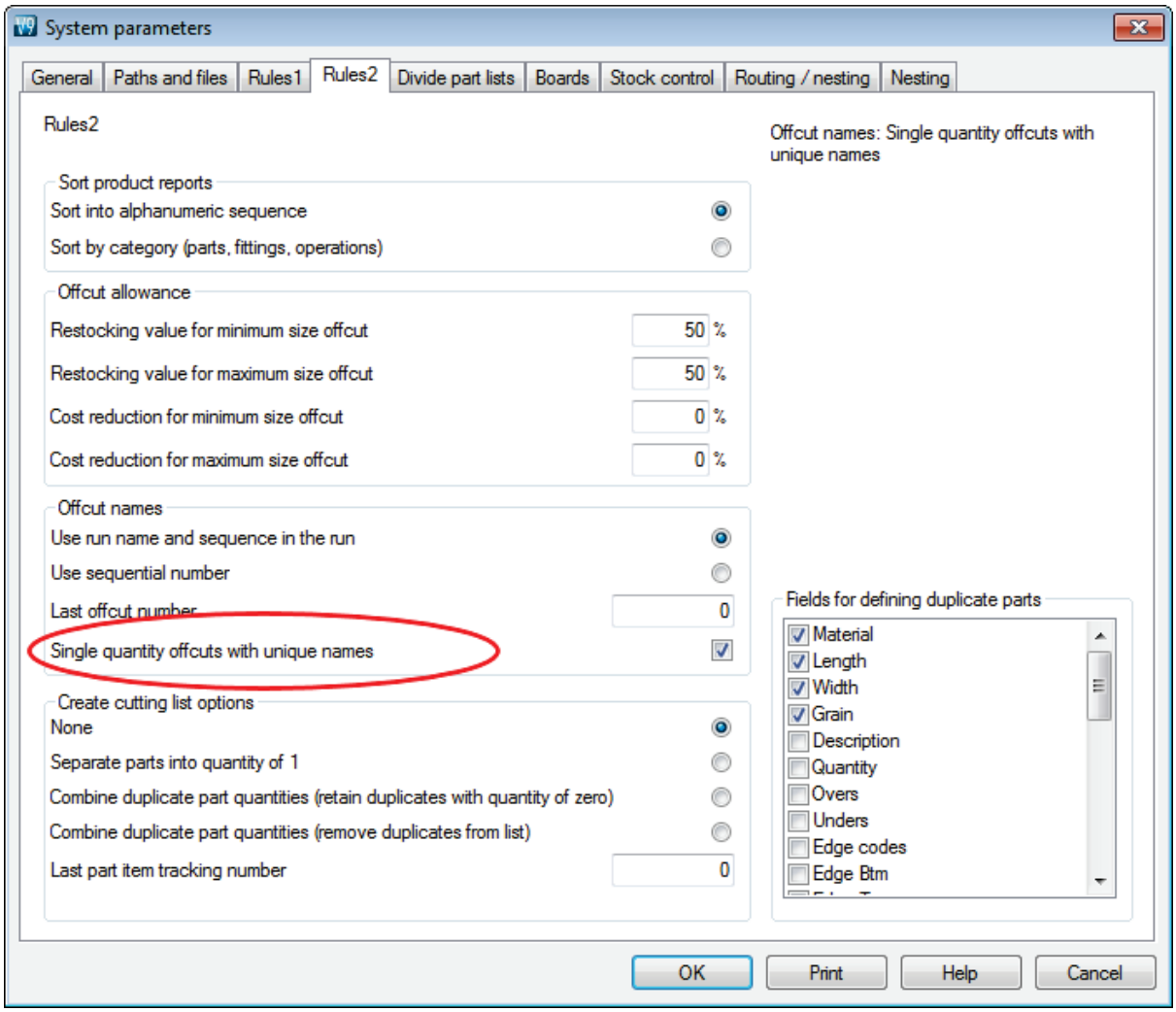


Note - Boards which have a board code beginning with 'X' *or* with board type *Offcut* are treated as offcuts by the report.

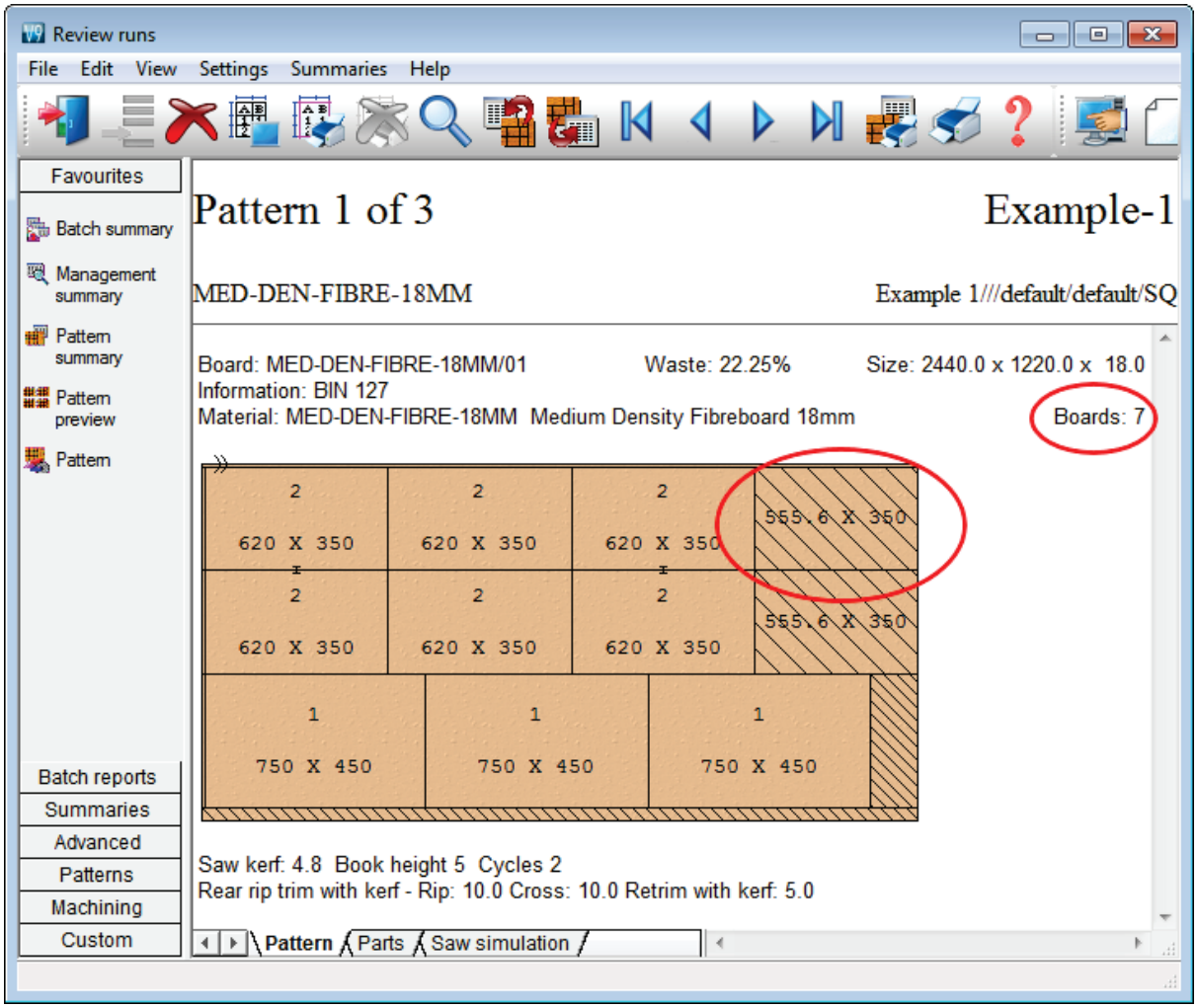
Offcuts – Option for unique sequential ID for each offcut created

In production it is sometimes useful to have a unique ID for each offcut (even if there are several offcuts of the same size) produced when cutting a stack.

Version 9 includes a new System parameter: *Single quantity offcuts with unique names*. This parameter can be found in the 'Offcut names' section on the 'Rules 2' page of system parameters. When this parameter is set duplicate offcut sizes are not aggregated and patterns containing offcuts can only have a run quantity of one.



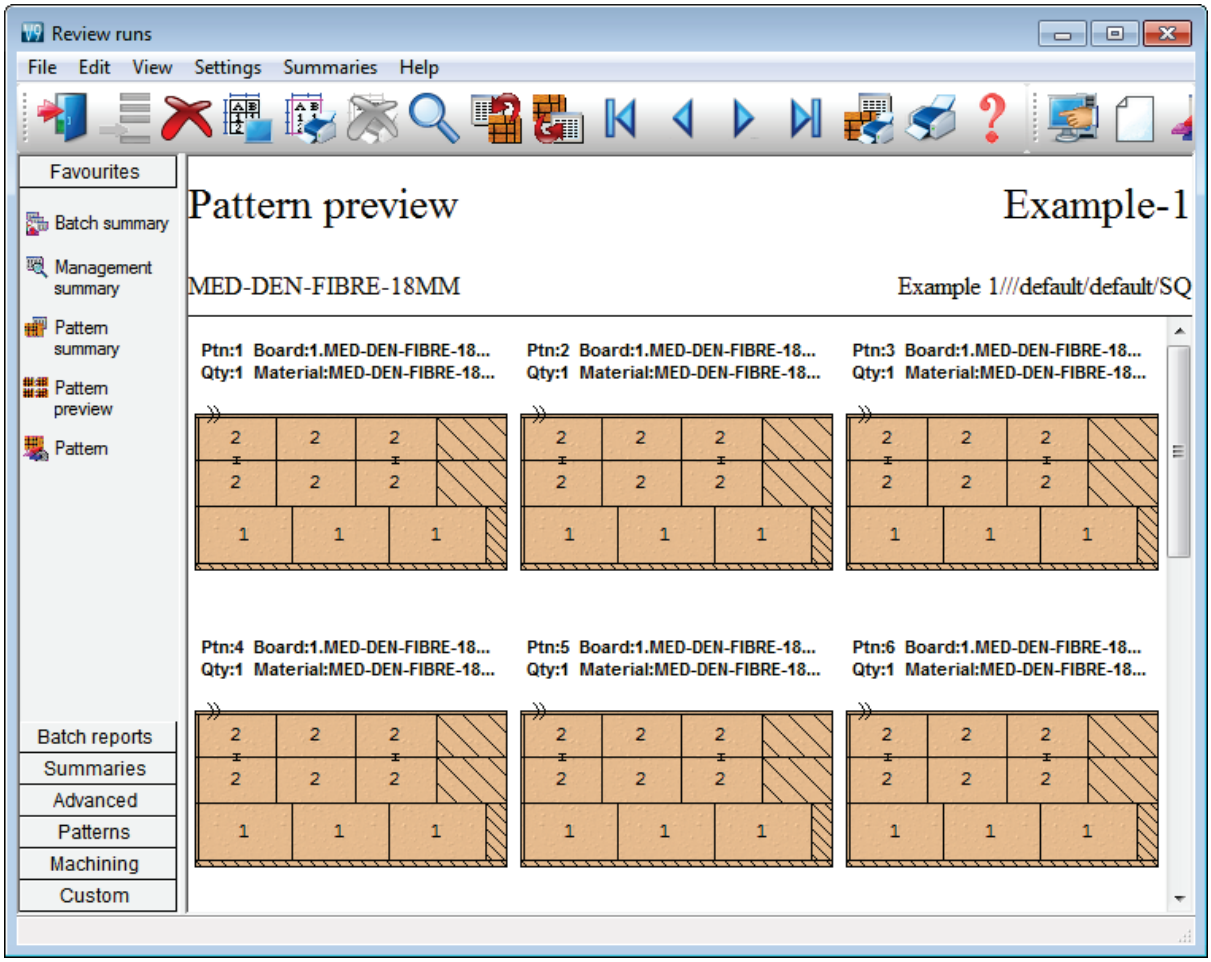
When this parameter is NOT set a pattern with a run quantity more than 1 produces offcuts labelled with the same name:-



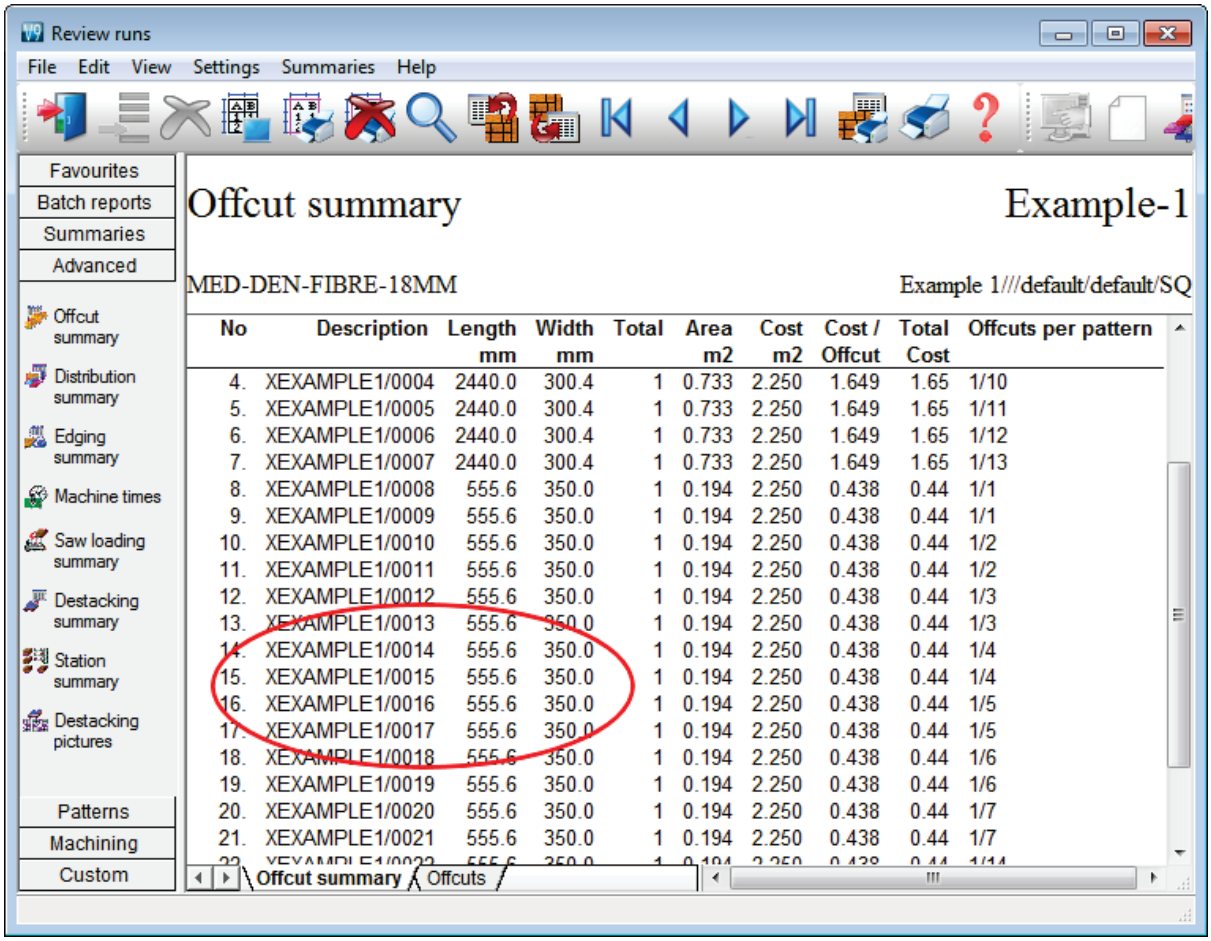
The offcuts are represented as:-

```
XEXAMPLE1/0002   Qty: 14   (555.6 x 350.0)
```

When this parameter is set each offcut gets a unique ID and to achieve this all patterns have a run quantity of 1.



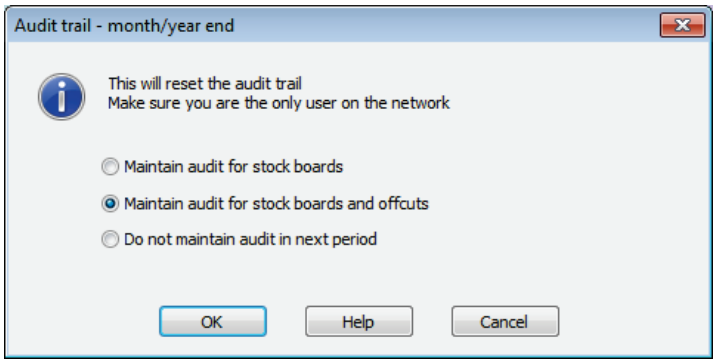
Each offcut has a unique ID/



No	Description	Length mm	Width mm	Total	Area m2	Cost m2	Cost / Offcut	Total Cost	Offcuts per pattern
4.	XEXAMPLE1/0004	2440.0	300.4	1	0.733	2.250	1.649	1.65	1/10
5.	XEXAMPLE1/0005	2440.0	300.4	1	0.733	2.250	1.649	1.65	1/11
6.	XEXAMPLE1/0006	2440.0	300.4	1	0.733	2.250	1.649	1.65	1/12
7.	XEXAMPLE1/0007	2440.0	300.4	1	0.733	2.250	1.649	1.65	1/13
8.	XEXAMPLE1/0008	555.6	350.0	1	0.194	2.250	0.438	0.44	1/1
9.	XEXAMPLE1/0009	555.6	350.0	1	0.194	2.250	0.438	0.44	1/1
10.	XEXAMPLE1/0010	555.6	350.0	1	0.194	2.250	0.438	0.44	1/2
11.	XEXAMPLE1/0011	555.6	350.0	1	0.194	2.250	0.438	0.44	1/2
12.	XEXAMPLE1/0012	555.6	350.0	1	0.194	2.250	0.438	0.44	1/3
13.	XEXAMPLE1/0013	555.6	350.0	1	0.194	2.250	0.438	0.44	1/3
14.	XEXAMPLE1/0014	555.6	350.0	1	0.194	2.250	0.438	0.44	1/4
15.	XEXAMPLE1/0015	555.6	350.0	1	0.194	2.250	0.438	0.44	1/4
16.	XEXAMPLE1/0016	555.6	350.0	1	0.194	2.250	0.438	0.44	1/5
17.	XEXAMPLE1/0017	555.6	350.0	1	0.194	2.250	0.438	0.44	1/5
18.	XEXAMPLE1/0018	555.6	350.0	1	0.194	2.250	0.438	0.44	1/6
19.	XEXAMPLE1/0019	555.6	350.0	1	0.194	2.250	0.438	0.44	1/6
20.	XEXAMPLE1/0020	555.6	350.0	1	0.194	2.250	0.438	0.44	1/7
21.	XEXAMPLE1/0021	555.6	350.0	1	0.194	2.250	0.438	0.44	1/7

Stock control - Option to record offcut history

Version 9 includes the option to record an offcut history in the audit trail. The option to audit offcut movements has been added to the *Audit trail - month / year end* procedure available from the Stock menu.



If this option is selected, any offcuts in the board library are assigned an opening balance in the audit trail. The following rules are also observed when the audit is maintained for offcuts.

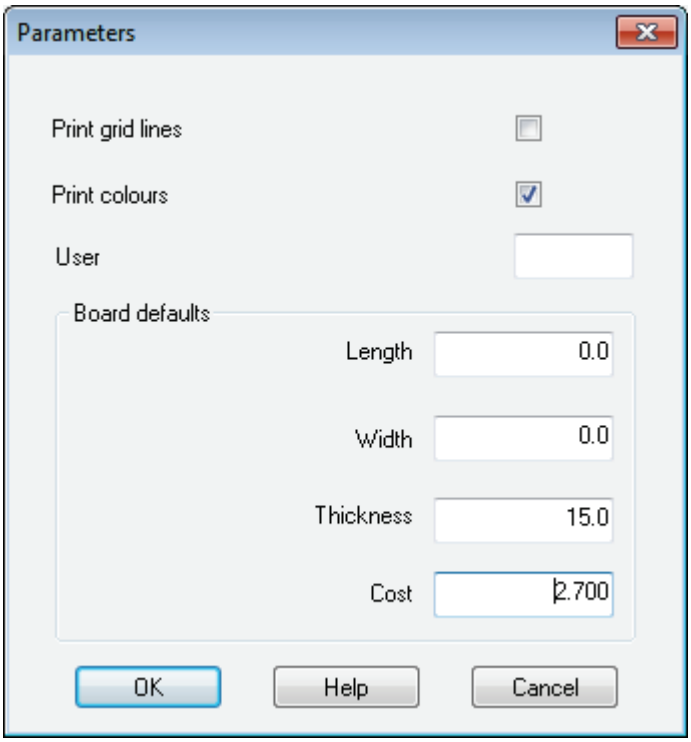
- Issue stock no longer deletes offcuts from the board library when their stock quantity is used up.
- Offcuts with zero quantity are deleted from the board library by the month/year end procedure.

Board library parameters - default thickness and cost

Version 9 allows the entry of a default cost for new boards and a default thickness for new materials. These defaults supplement the existing defaults for board length and width.

At the Board library screen:-

- Select**: File - Parameters**



The defaults for these are initially zero. As new boards and materials are entered in the library, the defaults are transferred to the board cost and material thickness fields.

Material density

This new field is used to store the density of a material in either metric tons per m^3 or pounds per ft^3 depending on the current measurement mode.

The range of values is:-

Metric measurement mode: 0.000 - 99.999 tons per m^3 (1 ton = 1000Kg)
Inches measurement modes: 0.000 - 99.999 pounds per ft^3

Material weight fields - review runs and stock reports

Weight fields are available on the following reports.

Batch summary - Weight Parts field
Management summary - Weight field (Weight of offcuts, boards and parts)
Part summary - Weight field
Board summary - Weight field
Material summary - Weight Parts and Weight Boards fields

Stock - Orders by material - Weight field
Stock valuation - Weight field

Monthly material report - Weight Parts and Weight Boards fields

The weight is kilograms or pounds depending on the current system parameter measurement mode. The weight field is located in the Available list in the report setting dialog.

If a material is specified that has no density set in the board library the weight = 0.

Weight is calculated as:

```
Area (board or part) x material thickness x quantity x material density
```

(The material density is set at the Board library).

Import / Export

Direct import & export of spread sheets in XLS/XLSX formats

Import XLS / XLSX

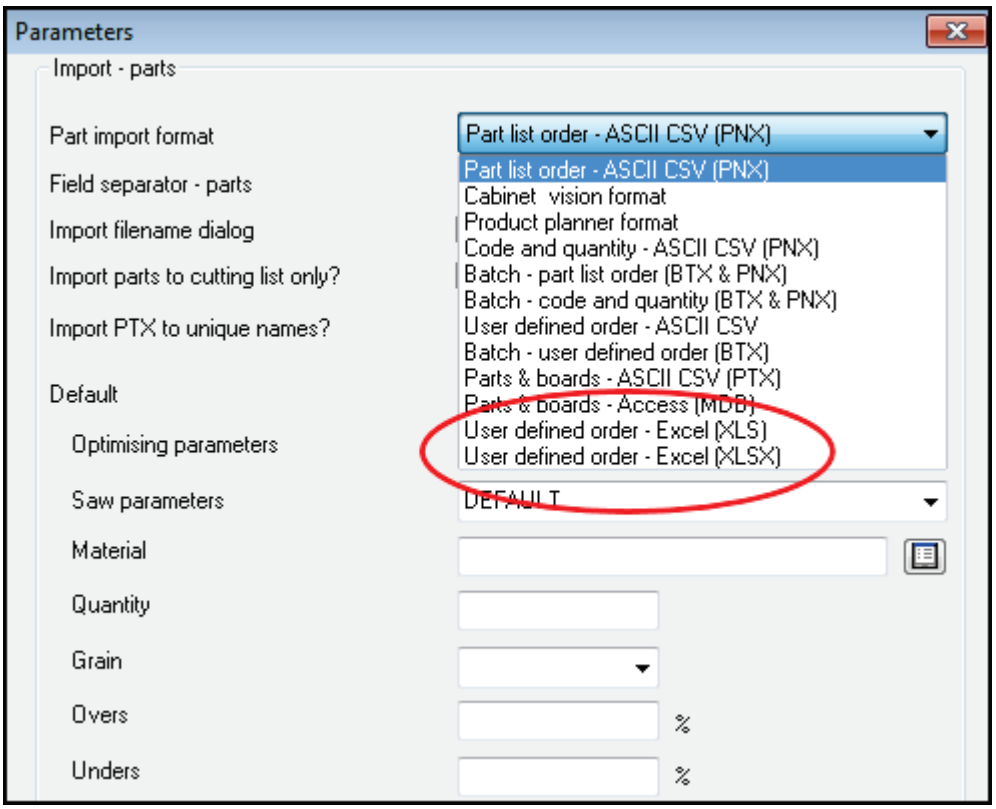
Part lists, boards lists and product requirements can be imported from XLS or XLSX files.

Part lists

At the 'Import parts parameters' dialog the part import format has two additional options at the bottom of the combo box - User defined order - Excel (XLS) and User defined order - Excel (XLSX).

At the main screen:-

- Select: **File - Import parts**



For a user defined order a set of 'Part list import parameters' are also set up and these include options to specify the file extension etc. When the XLS or XLSX import type is selected the file extension specified in the part list import parameters is ignored and XLS or XLSX is assumed and only XLS/XLSX files are shown in the list box.

To import part list XLS /XLSX 'Stand alone' the command line the /FORMAT argument uses 20 for XLS and 21 for XLSX.

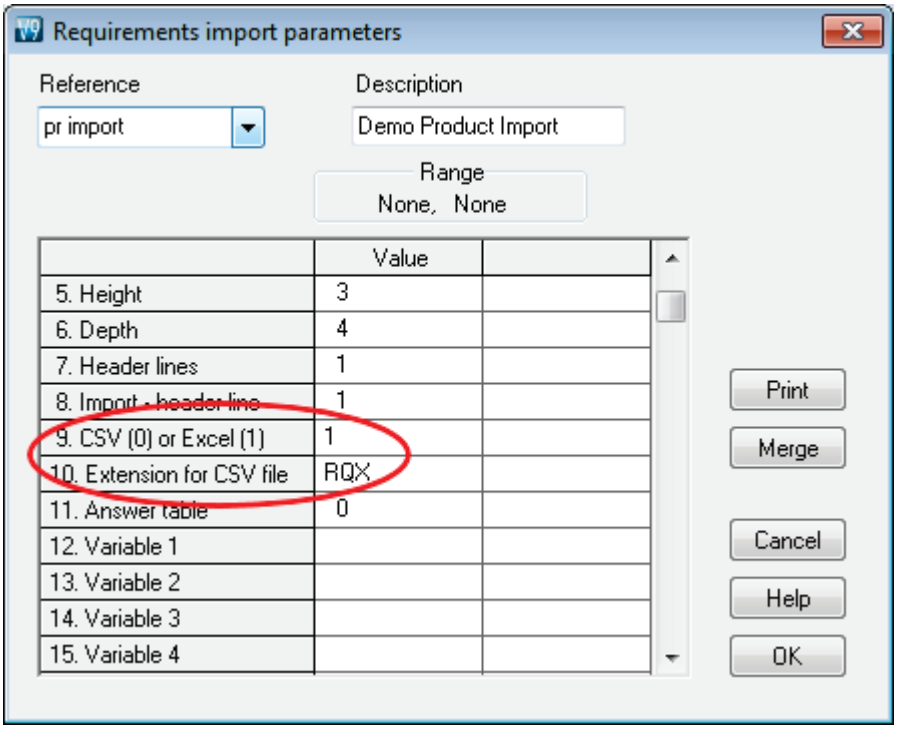
Board lists

In the import board parameters dialog the board import format also has the same two additional options. A suitable board list import parameters file is also required before the import can take place (*Main screen - File - Import - Boards*)

To import board list XLS /XLSX 'Stand alone' the command line the /FORMAT argument uses 30 for XLS and 31 for XLSX.

Product requirements

In the Requirements import parameters there is a field called 'CSV or Excel'. If this is set to 0, then the import file is treated as a text file, if this field is set to 1 the import file is treated as an XLS or XLSX file. Note when the field is set to 1 'Excel' the field 'Extension for CSV file' is not used.



Note - In Excel mode if there are two files with the same name (e.g. IMPORT.XLS and IMPORT.XLSX) the XLSX file is imported.

To import product requirement XLS /XLSX 'Stand alone' the command line the /FORMAT command needs to be use with either 1 for XLS or 2 for XLSX, the default of 0 is for CSV files.

Export XLS / XLSX

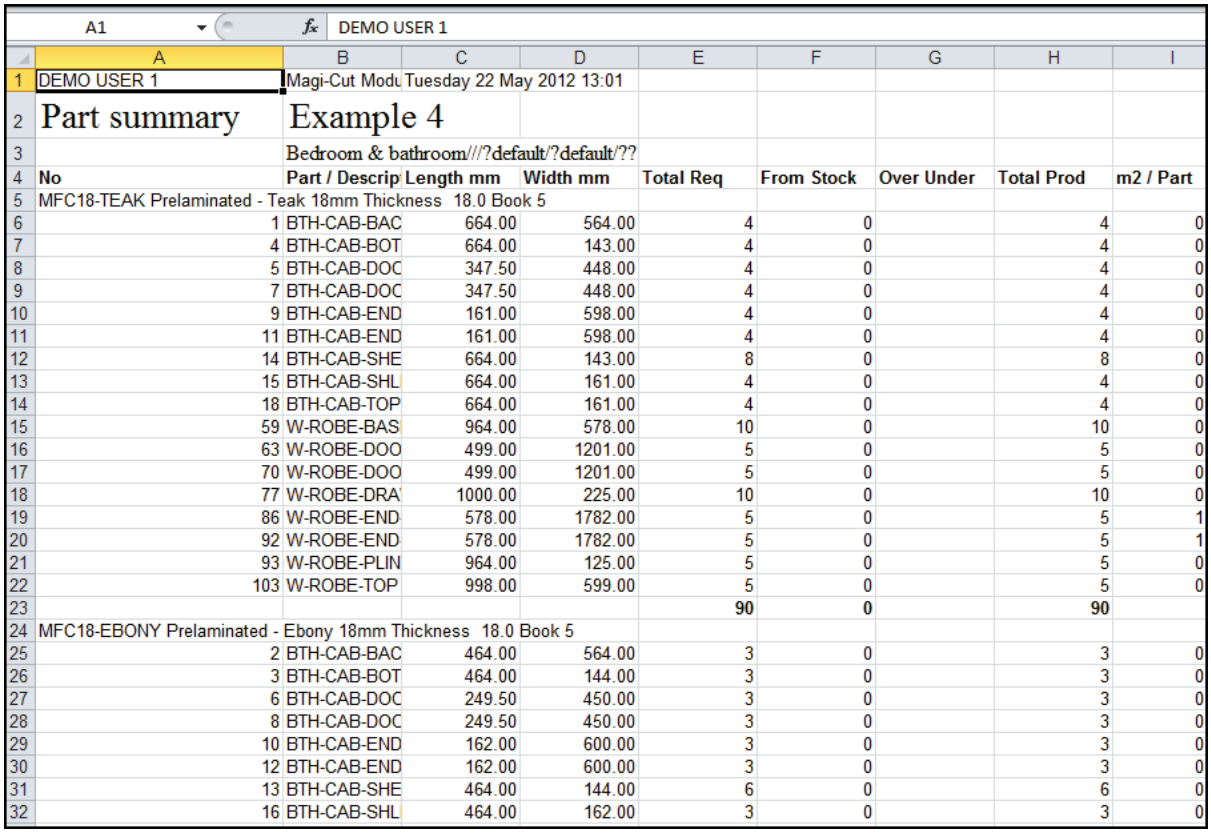
The summaries in review runs can be exported to XLS or XLSX files. A single summary can be exported in review runs or summaries from a batch of runs can be exported from the main menu or the command line.

Single summary export

At any summary (e.g. Pattern summary)

- Select: **File Export** (XLS or XLSX)

This is an example of an export to Excel of a Part summary.



	A	B	C	D	E	F	G	H	I
1	DEMO USER 1	Magi-Cut Modu	Tuesday 22 May 2012 13:01						
2	Part summary	Example 4							
3		Bedroom & bathroom///?default/?default/??							
4	No	Part / Descrip	Length mm	Width mm	Total Req	From Stock	Over Under	Total Prod	m2 / Part
5	MFC18-TEAK Prelaminated - Teak 18mm Thickness 18.0 Book 5								
6	1	BTH-CAB-BAC	664.00	564.00	4	0		4	0
7	4	BTH-CAB-BOT	664.00	143.00	4	0		4	0
8	5	BTH-CAB-DOC	347.50	448.00	4	0		4	0
9	7	BTH-CAB-DOC	347.50	448.00	4	0		4	0
10	9	BTH-CAB-END	161.00	598.00	4	0		4	0
11	11	BTH-CAB-END	161.00	598.00	4	0		4	0
12	14	BTH-CAB-SHE	664.00	143.00	8	0		8	0
13	15	BTH-CAB-SHL	664.00	161.00	4	0		4	0
14	18	BTH-CAB-TOP	664.00	161.00	4	0		4	0
15	59	W-ROBE-BAS	964.00	578.00	10	0		10	0
16	63	W-ROBE-DOO	499.00	1201.00	5	0		5	0
17	70	W-ROBE-DOO	499.00	1201.00	5	0		5	0
18	77	W-ROBE-DRA	1000.00	225.00	10	0		10	0
19	86	W-ROBE-END	578.00	1782.00	5	0		5	1
20	92	W-ROBE-END	578.00	1782.00	5	0		5	1
21	93	W-ROBE-PLIN	964.00	125.00	5	0		5	0
22	103	W-ROBE-TOP	998.00	599.00	5	0		5	0
23					**90**	**0**		**90**	
24	MFC18-EBONY Prelaminated - Ebony 18mm Thickness 18.0 Book 5								
25	2	BTH-CAB-BAC	464.00	564.00	3	0		3	0
26	3	BTH-CAB-BOT	464.00	144.00	3	0		3	0
27	6	BTH-CAB-DOC	249.50	450.00	3	0		3	0
28	8	BTH-CAB-DOC	249.50	450.00	3	0		3	0
29	10	BTH-CAB-END	162.00	600.00	3	0		3	0
30	12	BTH-CAB-END	162.00	600.00	3	0		3	0
31	13	BTH-CAB-SHE	464.00	144.00	6	0		6	0
32	16	BTH-CAB-SHL	464.00	162.00	3	0		3	0

Multiple summaries export

At the main screen:-

- Select: **File - Export Runs** (choose XLS or XLSX)

When the export type is selected, the batch screen appears to select a batch and after this the standard export dialog appears so the export characteristics can be chosen in the usual way.

The XLS/XLXS batch based file is named after the batch name and the run based files are named after the run names. e.g. A batch called 'WALL UNITS' containing 3 runs called 'WALL UNITS-01', 'WALL UNITS-02' and 'WALL UNITS-03' respectively. The select summaries for the export are Batch, Job costing, Board, Part and Pattern summaries. This produces 4 XLS files.

'WALL UNITS.XLS' which will contain 2 sheets - 1 for the batch summary and 1 for job costing summary.

3 files 'WALL UNITS-01.XLS', 'WALL UNITS-02.XLS' and 'WALL UNITS-03.XLS' which each have 3 sheets - 1 for board summary, 1 for part summary and 1 for the pattern summary.

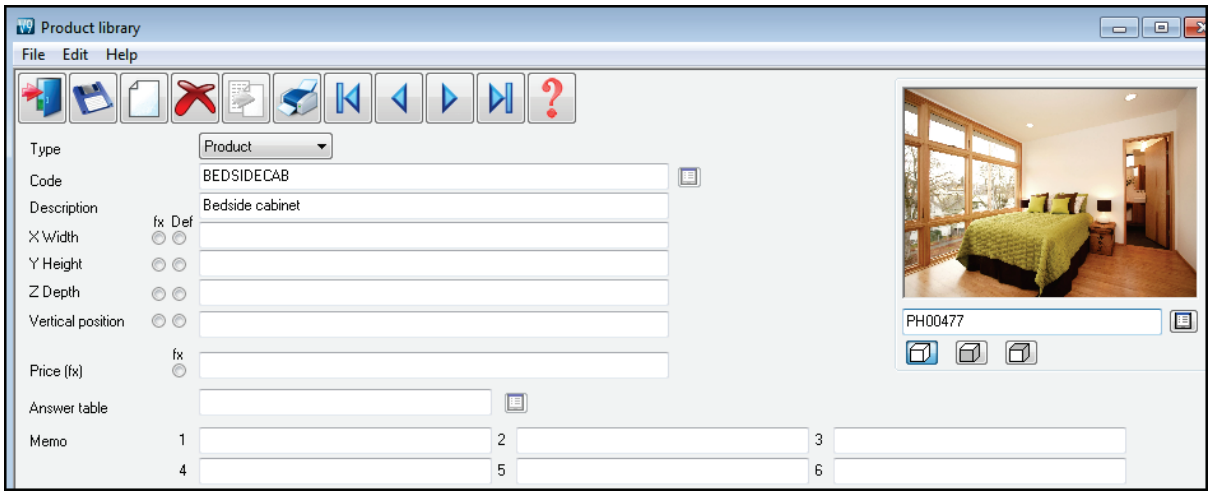
Stand alone - multiple summaries export

The summaries can also be exported on the command line via the OUTPUT.EXE option and by using the /EXPORT /XLS or /EXPORT /XLSX command line arguments,

Picture files (JPG) can be attached to product and part library

Picture files (JPEG or JPEG) can now be used in Part library or product library drawing. The picture file can either be automatically associated by having the same name as the part / product code or a picture file can be specified in the drawing code field.

Double clicking on the drawing in the drawing dialog in the part / product library pops up the editor associated with picture files.



The picture files are stored in the 'Path for library data' as individual files.

Integrated PDF - 'print to file' option

PDF files can be generated for review runs reports and stock reports via the integrated PDF generator.

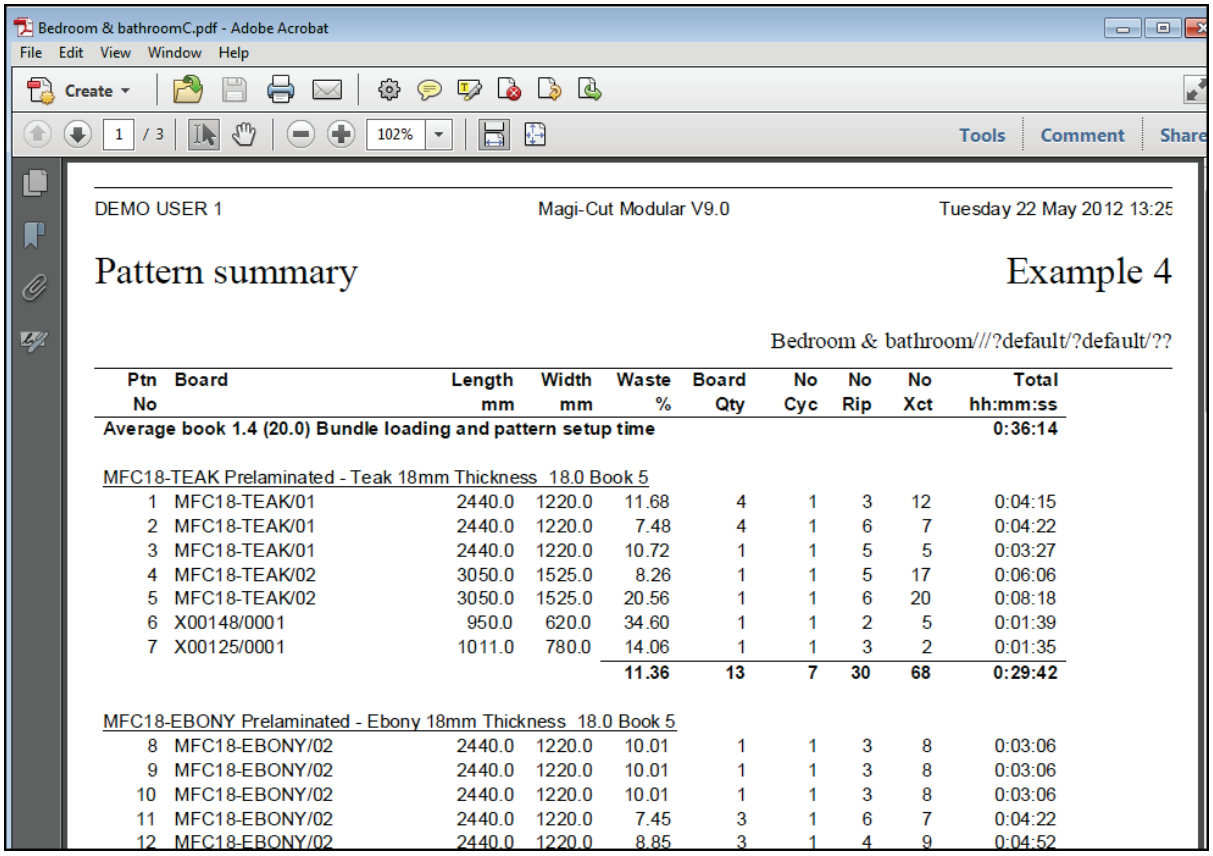
The PDF generator is included with the program so there is no need to install a separate PDF report writer

This also avoids having to choose between the printer and a separate PDF driver each time reports are printed.

This option is available from:-

Main menu - via 'Print Runs to file (PDF)' option on the print menu.
Review runs - 'Print to file (PDF)' option on the file menu.
Stock reports - 'Print to file (PDF)' option on the file menu when viewing any stock report
Stand alone generation of PDFs from review runs via Output.exe.

A PDF version of a summary.



DEMO USER 1 Magi-Cut Modular V9.0 Tuesday 22 May 2012 13:25

Pattern summary

Example 4

Bedroom & bathroom///?default/?default/??

Ptn No	Board	Length mm	Width mm	Waste %	Board Qty	No Cyc	No Rip	No Xct	Total hh:mm:ss
Average book 1.4 (20.0) Bundle loading and pattern setup time									**0:36:14**
MFC18-TEAK Prelaminated - Teak 18mm Thickness 18.0 Book 5									
1	MFC18-TEAK/01	2440.0	1220.0	11.68	4	1	3	12	0:04:15
2	MFC18-TEAK/01	2440.0	1220.0	7.48	4	1	6	7	0:04:22
3	MFC18-TEAK/01	2440.0	1220.0	10.72	1	1	5	5	0:03:27
4	MFC18-TEAK/02	3050.0	1525.0	8.26	1	1	5	17	0:06:06
5	MFC18-TEAK/02	3050.0	1525.0	20.56	1	1	6	20	0:08:18
6	X00148/0001	950.0	620.0	34.60	1	1	2	5	0:01:39
7	X00125/0001	1011.0	780.0	14.06	1	1	3	2	0:01:35
				11.36	**13**	**7**	**30**	**68**	**0:29:42**
MFC18-EBONY Prelaminated - Ebony 18mm Thickness 18.0 Book 5									
8	MFC18-EBONY/02	2440.0	1220.0	10.01	1	1	3	8	0:03:06
9	MFC18-EBONY/02	2440.0	1220.0	10.01	1	1	3	8	0:03:06
10	MFC18-EBONY/02	2440.0	1220.0	10.01	1	1	3	8	0:03:06
11	MFC18-EBONY/02	2440.0	1220.0	7.45	3	1	6	7	0:04:22
12	MFC18-EBONY/02	2440.0	1220.0	8.85	3	1	4	9	0:04:52

Main menu

Selecting this option is like the 'Print Runs' option where the batch dialog appears first and then a dialog to select which reports to print. Note - PDF files are not available for forms.

Selecting the Print button will generate PDF files for the selected summaries in the path for export data. The files will be named as follows:

If any batch summaries are selected there will be 1 PDF file for the batch summaries named as <batchname>-batch.PDF.

Then the summaries are generated with a PDF file for each run and named as <runname>.PDF.

e.g. A batch called Test containing runs 00005 and 00006 would generate:

test-batch.pdf - containing batch reports
00005.PDF - summaries from first run
00006.PDF - summaries from second run

The '-batch' is added to differentiate where a single run batch has the same batch name as the run name,

Review runs

The Print to file (PDF) will generate a PDF file in the export path of the current summary. The file name will be <run name><report code>.PDF

e.g. A management summary in run 00005 generates 00005B.PDF

Stock reports

The Print to file (PDF) will generate a PDF file in the export path of the current stock report.
The filenames are the same as the default filename generated when exporting a stock report.

Date Time report name.PDF

e.g. 2012-04-16 1519 Orders by supplier.PDF

Standalone review runs reports

The /PDF argument is used with OUTPUT.EXE to generate PDF files.

e.g. c:\v9\OUTPUT.EXE /PRINT /PDF /REPORTS:BC

This generates the same filenames as the Main menu print runs to file (PDF) option.

Note - The files generated are in PDF format version 1.7.

Picture formats for Online label PC

TH picture formats for Online label PC are now: BMP, WMP, EMF, JPG/JPEG

Security and data organisation

Improved network operation with user profiles & passwords

Version 9 introduces the concept of *User profiles* to replace and enhance the *User directory* features of the previous version.

The user profile stores those settings which are specific to a user (system parameters, customised view files …). These settings are stored in a set of files in the user profile path. The other program paths and folders may be the same as the user profile path or these may be set to other locations.

The list of user profiles is displayed and managed from a new selection screen and there are new options to duplicate and password-protect user profiles.

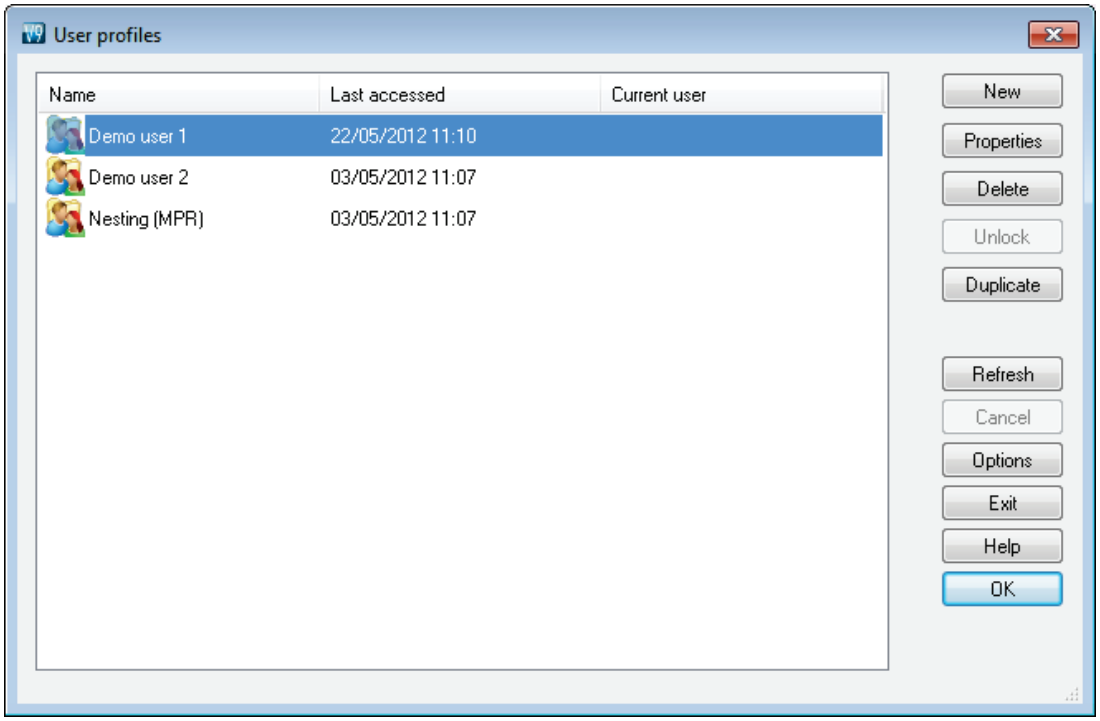
Version 9 supports up to 1000 user profiles (a big increase on the available user directories of the previous versions).

User profile selection screen

This screen may appear when you first run the program or after selecting **File - User profiles** from the main menu.

The list of user profiles found by the program are displayed in the list control. By default, the program displays the name of each profile, its modification time and the current user (if any).

Profiles which are in use are denoted by the padlock symbol and text is shown in red.



In version 9 profile names may be up to 40 characters.

The columns shown and the order may be modified via the Options button.

If two user profiles have the same name, the program displays the profile path (in brackets) for the second profile to differentiate them. For example: *Demo user 1 (c:\v90\Demo\CopyOfUser1)*

If a user profile has no name entered in its properties, the program displays the profile path (in brackets) in the profile name column.

Initially the user profiles are sorted by name but it is possible to sort by any column, This is achieved by clicking on column heading. The current sort is retained by the program.

The tooltip for the profile name includes the profile path in brackets if this column is not currently displayed.

A user profile is selected by double-clicking or via the OK button.

Customising the User profile screen

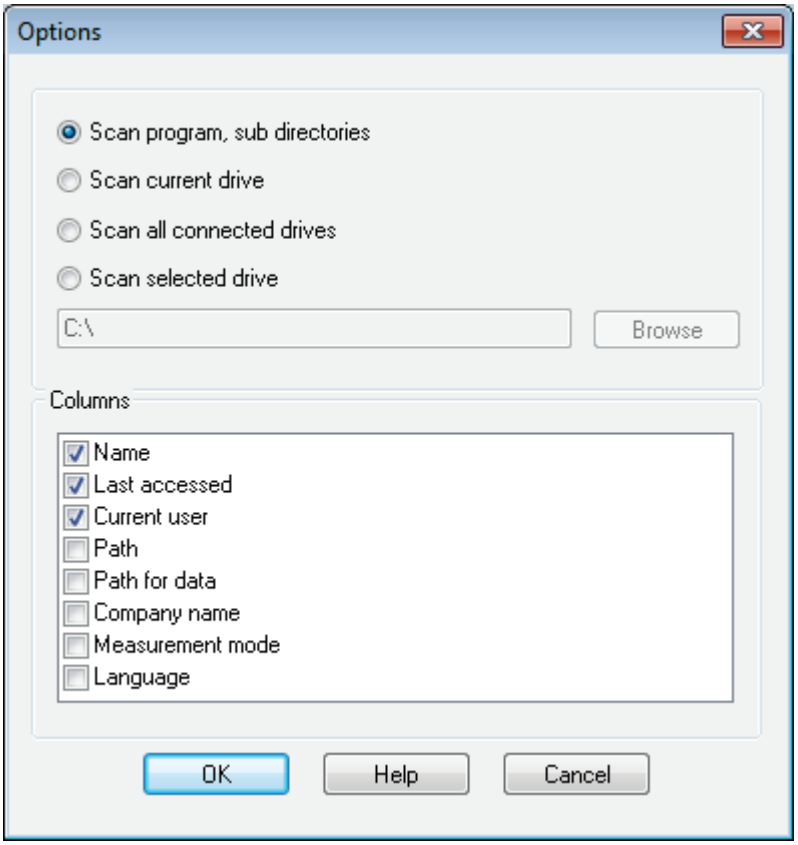
The default columns are:

Profile name (taken from the profile properties)
Last accessed
Current user

Optional columns are:

User profile path
Path for data (system parameters)
Company name (system parameters
Measurement mode
Language

The columns shown and the order may be modified via the Options button. An example is shown below.

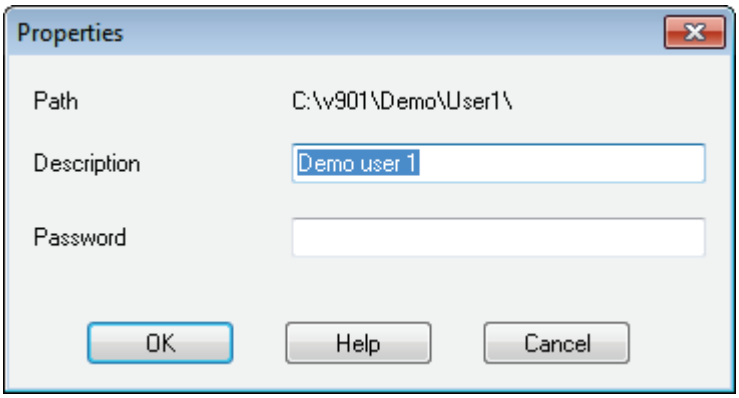


Columns are selected / de-selected with the checkbox. The column order is modified by dragging the items to new positions.

The program ensures that either *Profile name* or *Profile path* remains selected.

Password protection for user profiles

User profiles may optionally be password protected to prevent accidental selection by other users. The password is entered in the Properties dialog. An example is shown below.



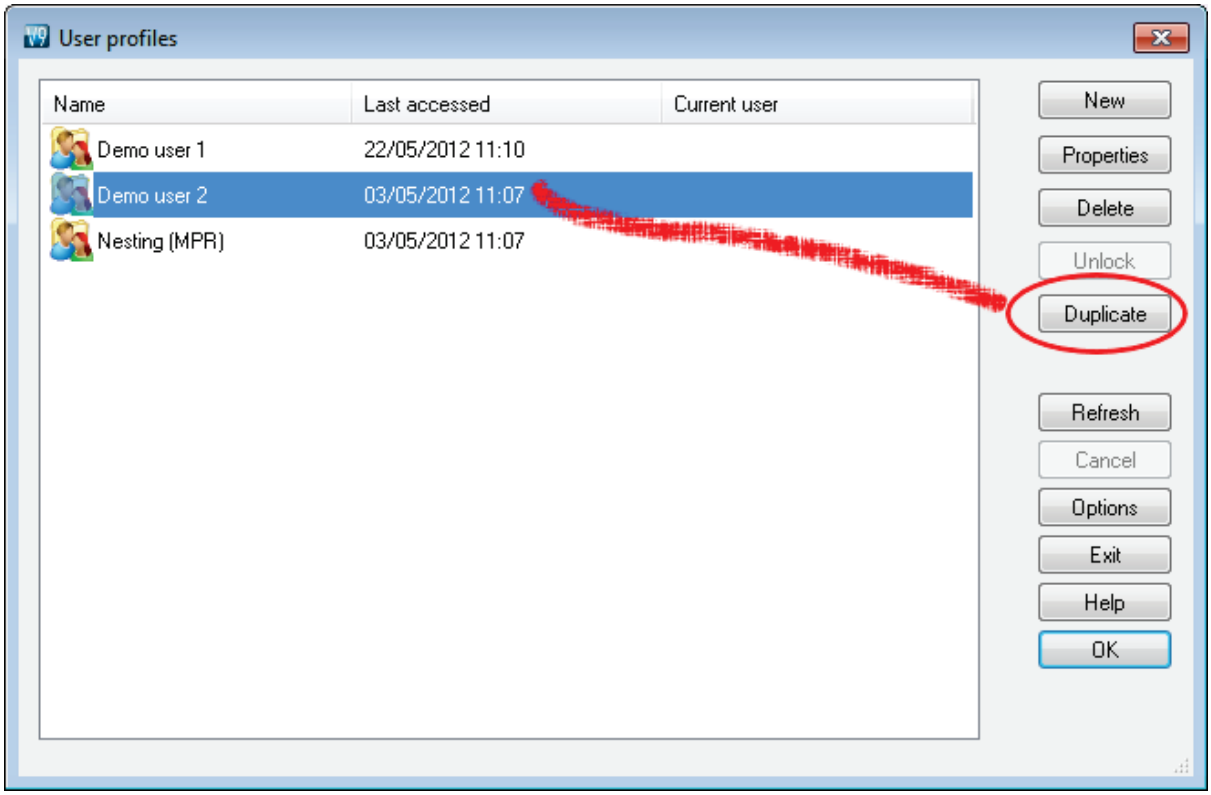
Passwords may be any length and are case sensitive. If a password is entered, the program asks for it to be confirmed when OK is selected. An example is shown below. If the passwords do not match, an error message is reported and the program returns to the properties dialog.

If a password is associated with a user profile, the program prompts for this when the user profile is selected or if you attempt to delete it or modify its properties.

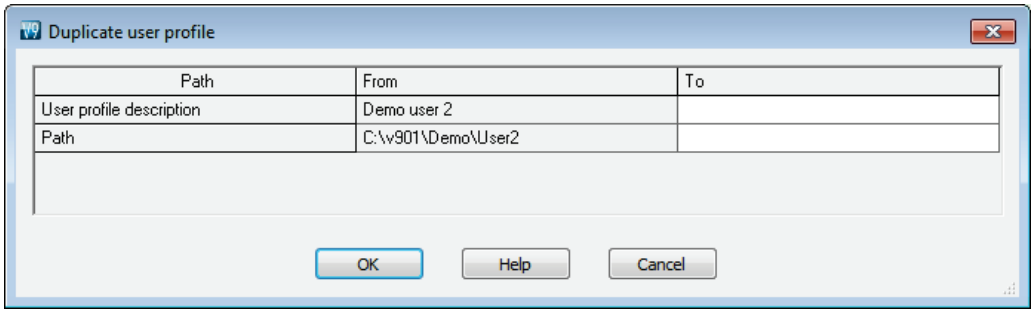
Duplicating a user profile

The *Duplicate* feature allows an existing user profile to be copied so that all of the common settings can be applied to a new user.

Highlight the user profile to be copied and select the Duplicate button. The Duplicate user profile dialog appears. An example is shown below.



The program prompts to enter the details for the new profile.



Enter a new user profile name and path. The path is validated and created if required.

If the same path is entered or the path contains an existing user profile, the program displays an error message. The program copies the user profile settings to the new path and the new user profile appears in the list (if the new path lies below the search path for user profiles - see options dialog).

Note - this feature does not duplicate other data files, only those files containing user profile settings. This means that, for example, the *path for data* (system parameters) contains the same path as the original user profile.

Note - The profile name is shown on the banner on the main screen - where this is different from the company name.

Shared control files

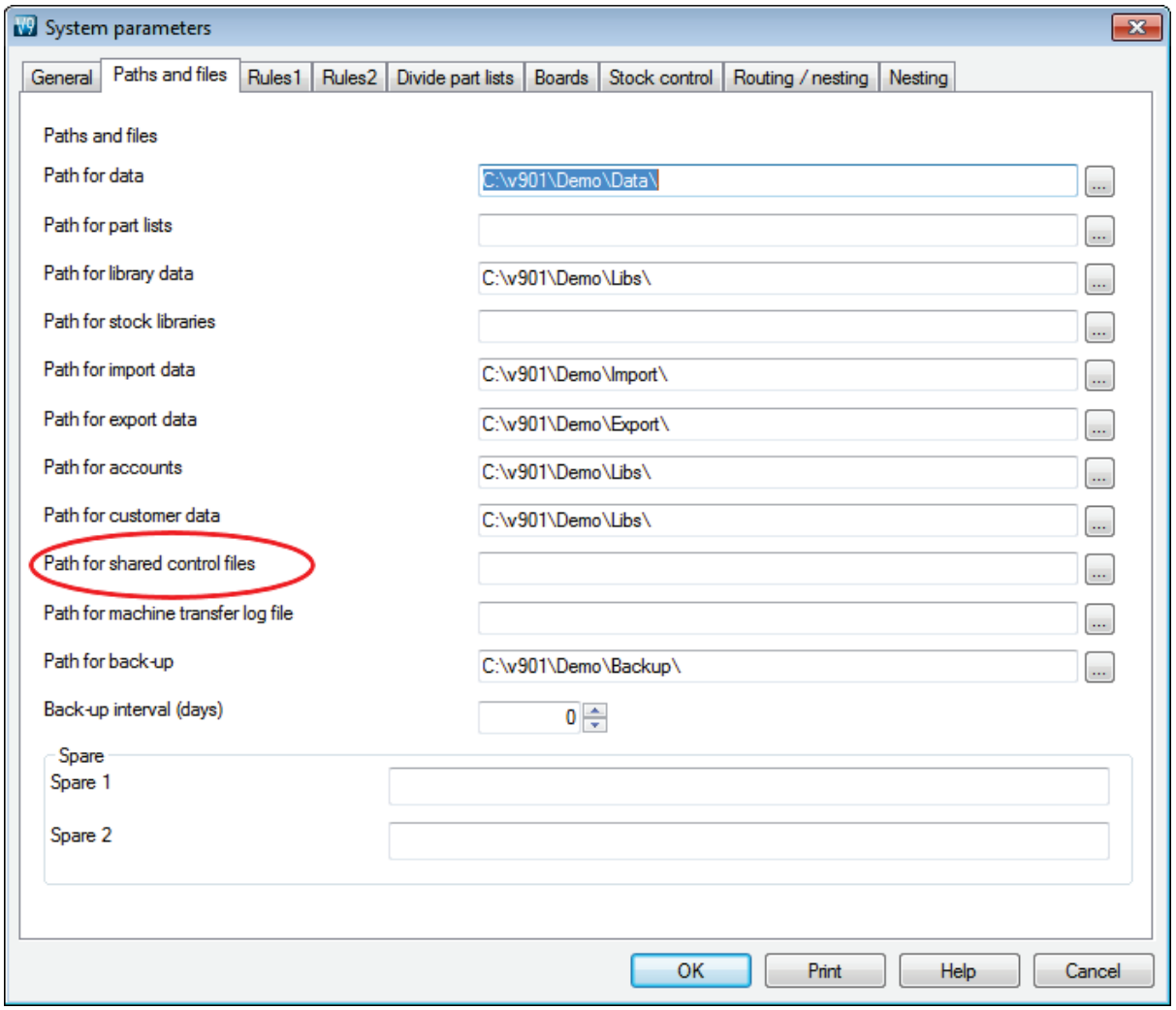
Some processes may allocate sequential numbers. For example, last sequential run number for optimising. When there is more than one user, it may be important that these sequential numbers are allocated correctly between the users so that run numbers generated by each user are unique.

Version 9 optionally allows this by allocating sequential numbers from a shared sequential number file. This replaces and simplifies the 'Share' options of the previous version.

The values shared are:

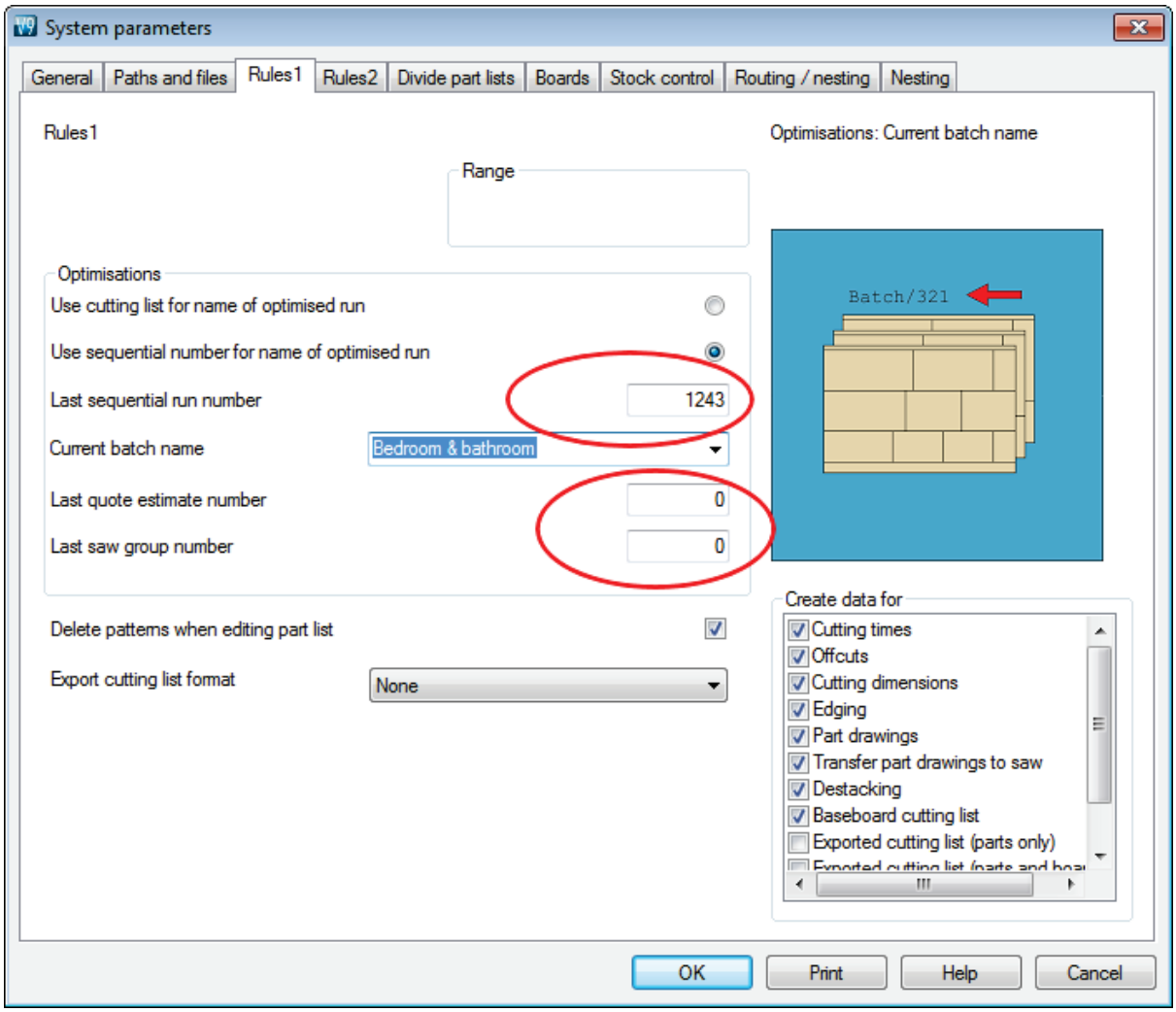
```
Last sequential run number (system parameters - Rules 1 page)
Last quote estimate number (new system parameter - Rules 1 page)
Last saw group number (system parameters - Rules 1 page)
Last offcut number (system parameters - Rules 2 page)
Last part item tracking number (system parameters - Rules 2 page)
Last drawing number (machining centre parameters - Generation page)
```

To activate this feature - decide where to store the shared sequential number file and ensure that all users have read / write access to this path. Enter this path in the new System parameter: *Path for shared control files*.



When the path for shared control files has been entered, the parameters normally used to store the last sequential number for these processes are shown disabled on the parameter pages and an edit button is shown to the right of the edit control.

The parameters display the current value of the shared number.



Selecting the edit button allows the shared values to be edited directly. Clicking the OK button updates those shared numbers which have been changed. If the shared number file is being updated by another user at this instant, the program reports an error and returns to the dialog.

Note - In version 9, forms and label design files are stored in the *Path for data* (system parameter) rather than the user profile path. This allows the designs to be shared more easily between users.

Easier options for Back up and Restore of data

The Back up option (*Main screen - File - Back up*) is simplified to make the process easier to use. There are two options.

Back up Current user (previously 'Back up Full')
Back up batch

The operation is the same as for previous versions.

The 'Restore' option is changed slightly (*Main screen - File - Restore*). The options are:-

Restore (previously 'Restore Full')

Retrieve batches (previously 'Restore batches')

Restore

This restores a back up of a User directory and data to a new location. Only a new location is allowed so existing data cannot be overridden

Retrieve batches

This retrieves (restores) one or more selected batches. A batch can only be restored to the directory it came from - so only the relevant back up files for the current user profile are shown in the list.

Copy / Convert

This option now shows the list of User profiles and not the folders.

Custom options and System details

Part list parameters - set defaults for material, overs, unders and grain.

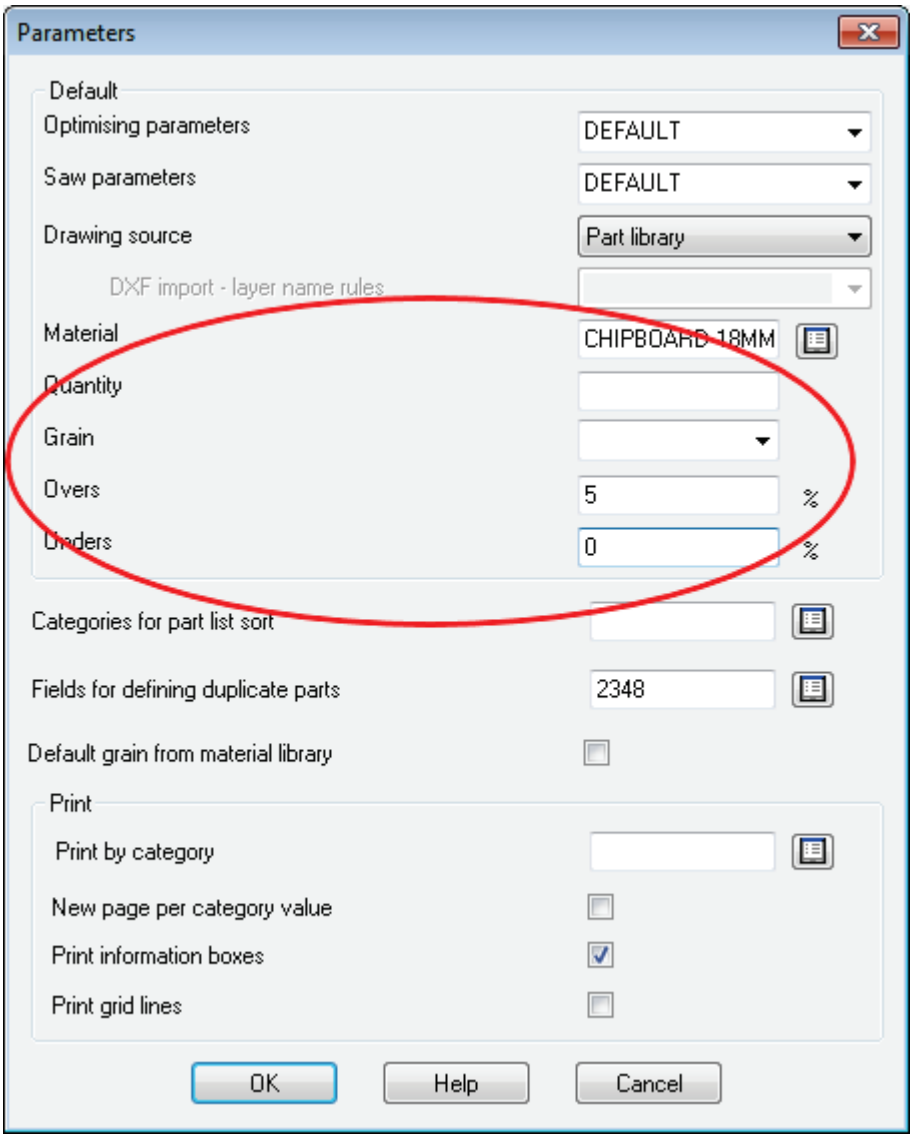
When creating new part lists (via import parts or in the part list itself) default values can be automatically supplied for a set of the part list fields. These are:-

```
Material
Quantity
Grain
Overs
Unders
```

When a part is added to a part list or a part list is imported then if there is no value provided for a field, then the default field value is used. If the part item does have a field value the default field value is not used.

Part list

At any part list select: **File - Parameters**



- Enter any default values required.

The material, quantity and grain values is used when adding a part to a part list. The overs/unders values are only used when creating a new part list and are set at the global level on the global line.

Import parts

The import parts parameters dialog contains the same 5 parameters and they behave the same way as the part list.

Note - these parameters only work on the following part import formats:

Part list order - ASCII CSV (PNX)
Code and quantity - ASCII CSV (PNX)
Batch - Part list order - ASCII CSV (BTX & PNX)
Batch - Code and quantity - ASCII CSV (BTX & PNX)
User defined order - ASCII CSV
Batch - User defined order - ASCII CSV

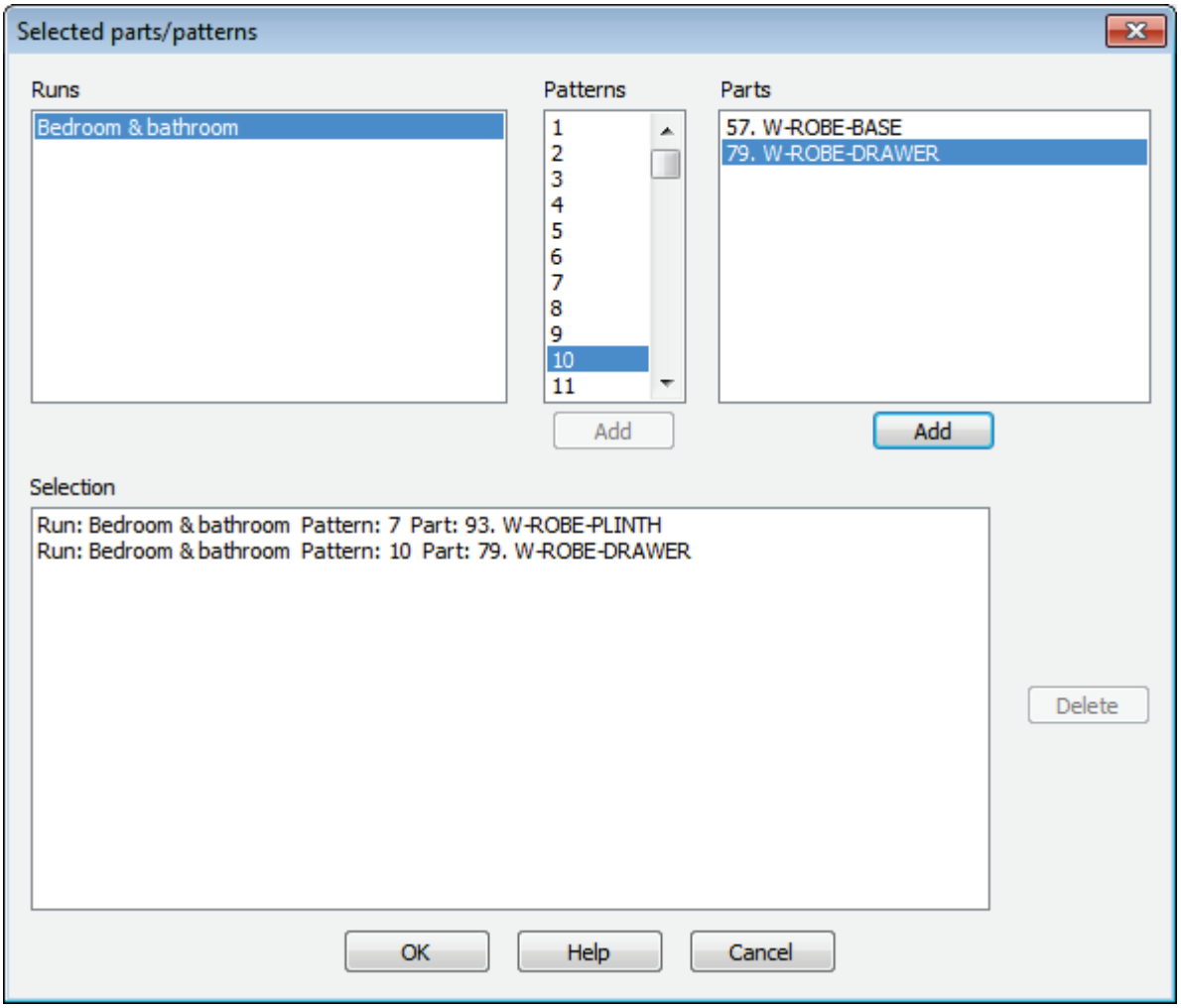
Labels for single parts and individual patterns

Patterns and /or parts can be specifically selected and labels re-printed for these items. It is useful when printed labels are missed or damaged and have to be re-printed.

This is an extra choice on the 'Print - Labels' option. At the main menu:-

- Select: **Print - Labels**
- Select: **Selected parts/patterns**
- Choose a label design (template)
- Choose a batch

The program prompts with a screen to select runs and specific patterns and parts within a run.



The runs list box is used to select one of the runs for the selected batch. After a run is selected, the patterns list box is filled out with list of patterns for the selected run.

When a pattern is selected the parts list box is filled out with the parts that occur in that pattern.

At this point either a single pattern or one or more parts from a pattern can be chosen for printing.

The add button below the patterns list box is used to add the current pattern for printing. *Note* - A pattern can only be added once.

The add button below the parts list box is used to add one or more parts for printing. Note - once single parts from a pattern are added, then the whole pattern cannot be added for printing.

When a pattern or parts are added they appear in the selection list box at the bottom of the dialog in the order they appear in the run / patterns.

If a pattern / parts are incorrectly added to the selection list box they can be selected and removed via the delete button.

V9 Minimum specification

The minimum hardware specification for V9 is listed below.

Processor speed 1.5Ghz
Memory 1Gb (200Mb free)
Hard disk 1GB free
Display 1024 x 768 or higher
USB port

The supported operating systems for this version are:

Windows XP Home Service Pack 3
Windows XP Professional Service Pack 3
Windows XP Professional X64 Edition
Windows 2003 Server (32bit and 64bit versions)
Windows Vista Service Pack 2 (32bit and 64bit versions)
Windows 2008 Server (32bit and 64bit versions)
Windows 7 (32bit and 64bit versions)
Windows 2008 Server R2 x64 Edition
Small Business Server 2011

System check tool - drive sizes shown in Gb

The display of drive sizes is now in Gigabytes (Gb) rather than Megabytes (Mb).

```
Memory (Mb):    Physical Total: 4096 ok      Free: 4096 ok
                Virtual Total: 8192          Free: 8192 ok

Disk (Gb):      C:399.8(470.4) ok            D:393.9(460.1) ok
                M:1583.3(2095.9) ok          N:1583.3(2095.9) ok
                S: 85.5(465.7) ok            T:178.2(465.7) ok
                Z:1005.9(1848.3) ok
```

System parameter: Path for Forms / Labels

This parameter sets the location of form and label design files (TLF files).

- Enter the full path

or

 Click on the button to browse and select a path

If this parameter is left blank (the default), the program stores form / label design files in the *Path for data*. If the path is set any existing design files in the *Path for data* must be manually copied (via Windows Explorer) to the new path.

- Copy / Convert - when converting user profiles from this version onwards, if the *Path for forms / labels* is set, the contents are copied to the new location. When converting from earlier user profiles, no files are copied to the *Path for forms / labels*.

Backup / Restore - The back up system includes this path (if the path is set)

Path for pictures

This parameter sets the location for external image files (bmp, wmf, emf, jpg, jpeg).

- Enter the full path

or

 Click on the button to browse and select a path

If this parameter is left blank (the default), the program stores picture files in the *Path for data*. If the path is set any existing picture files in the *Path for data* must be manually copied (via Windows Explorer) to the new path.

- Copy/Convert - when converting user profiles from this version onwards, if the path for pictures is set, the contents are copied to the new location. For converting from earlier user profiles no files are copied to this path.

- Back up / Restore - The back up system includes this path

- DXF files are still located in the *Path for import data* and MPR files are still located via the Information box '*MPR path*'; *Path for MPR file*s; *Path for library data*

Overview of V9 Modules

The following pages give an overview of the operation of V9 and the modules available.

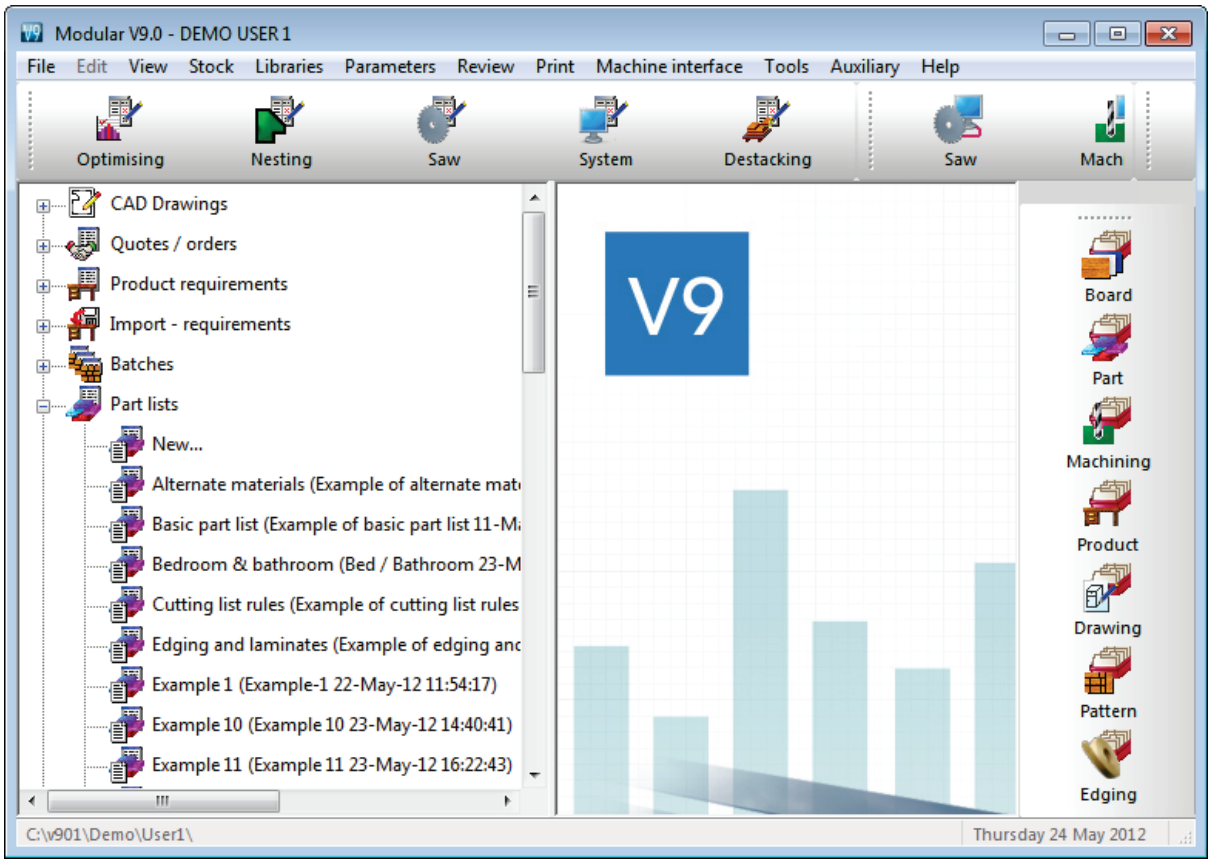
- **Standard Optimiser - SO**
- **Professional Optimiser - PO**
- **Lite Optimiser - LO**
- **Nesting Optimiser - NE**

- **Edges & Laminating - EL**
- **Stock control - SC**
- **Parts & Labels - PL**
- **Products & Quotes - PQ**
- **Machining Interface - MI**
- **Destacking & Palletisation - DS**
- **Cad drawings - CA**

The heart of any system is one (or more) of the Optimiser modules - these include all the standard features and reports for successful Optimising. The other modules can be added to match requirements and provide a fully integrated suite of Optimising and Production software.

V9 Main screen

All files and options are integrated at the Main screen.



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

Standard Optimiser – 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.

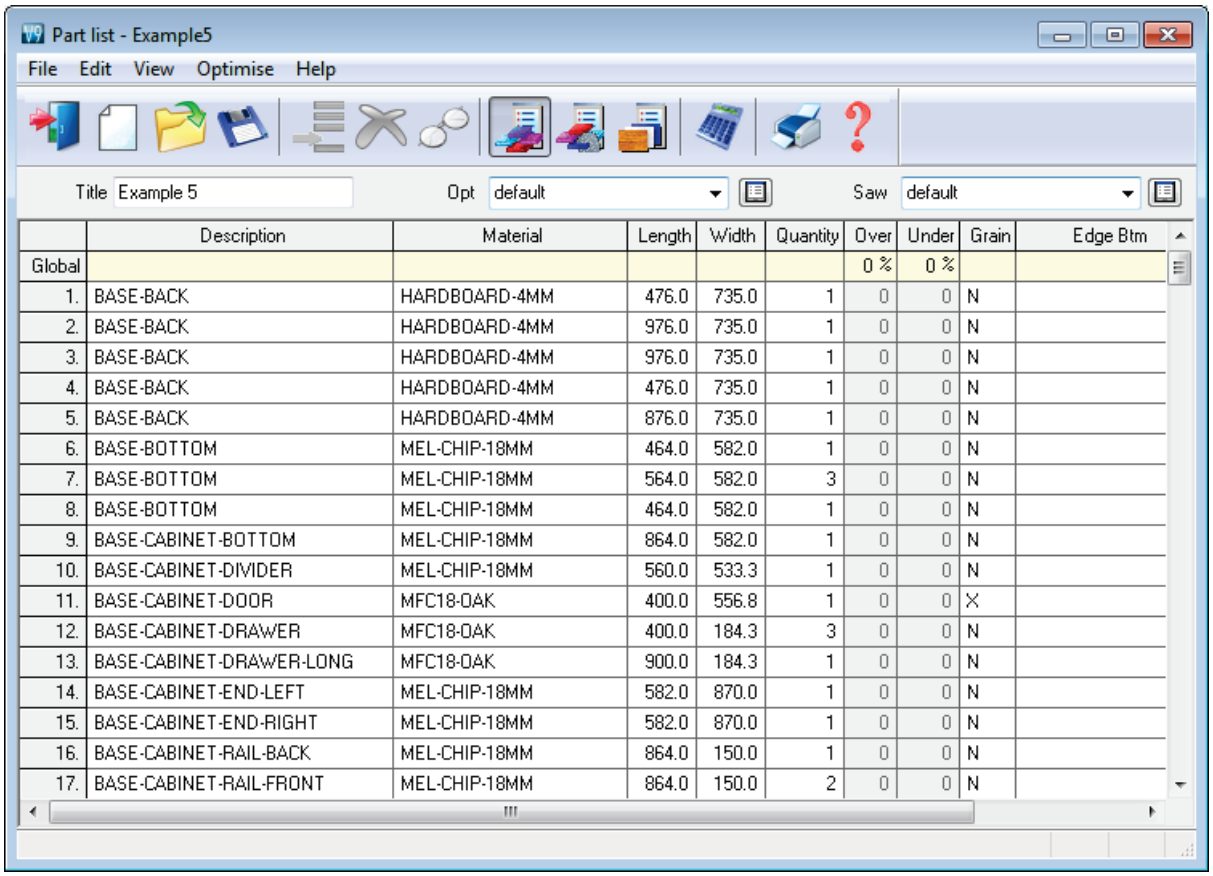
The optimiser supports transfer to a wide range of beam saws.

- Enter part sizes
- Optimise
- Send cutting data to the 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 systems

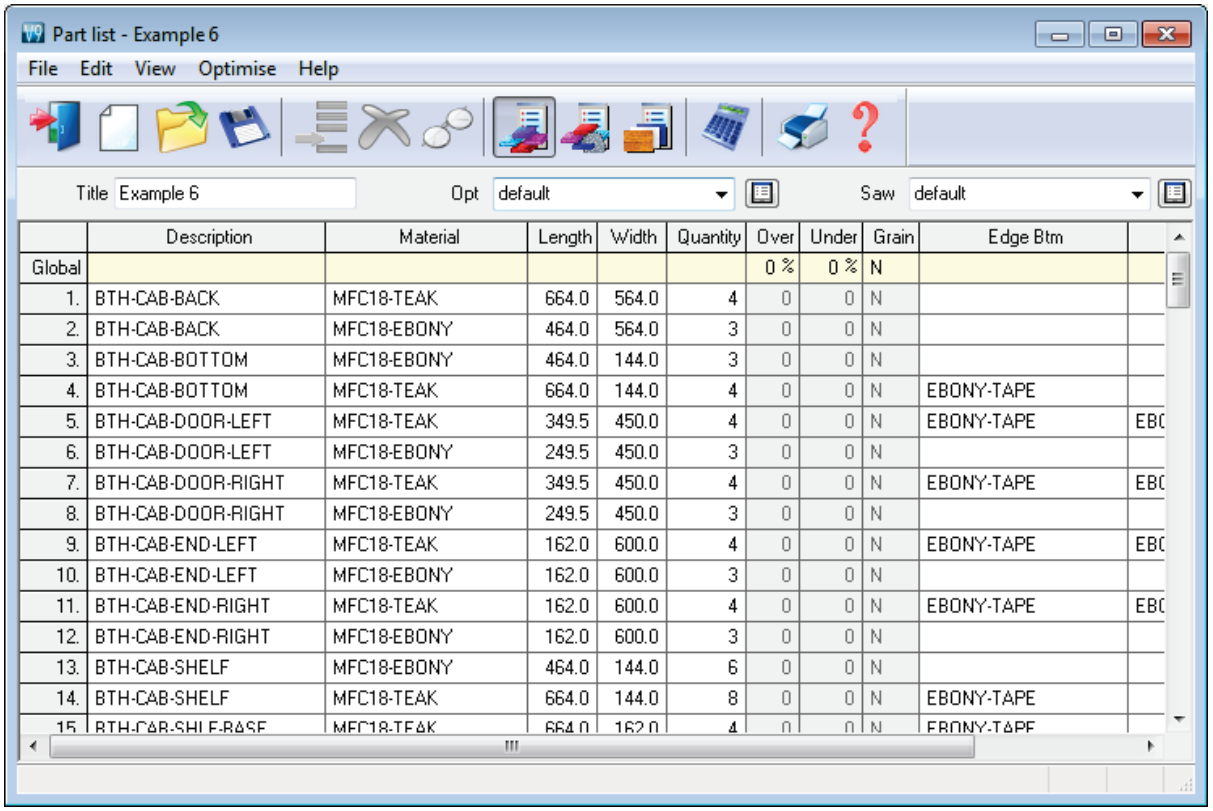


	Description	Material	Length	Width	Quantity	Over	Under	Grain	Edge Btm
Global						0 %	0 %		
1.	BASE-BACK	HARDBOARD-4MM	476.0	735.0	1	0	0	N	
2.	BASE-BACK	HARDBOARD-4MM	976.0	735.0	1	0	0	N	
3.	BASE-BACK	HARDBOARD-4MM	976.0	735.0	1	0	0	N	
4.	BASE-BACK	HARDBOARD-4MM	476.0	735.0	1	0	0	N	
5.	BASE-BACK	HARDBOARD-4MM	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. The part list editor can be used to add items or change sizes and quantities as required.

Some list can have extra custom fields with information for reports or for part labels.

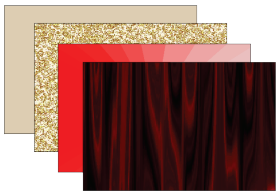
The system also provides a set of pre-defined fields which automatically calculate extra data.



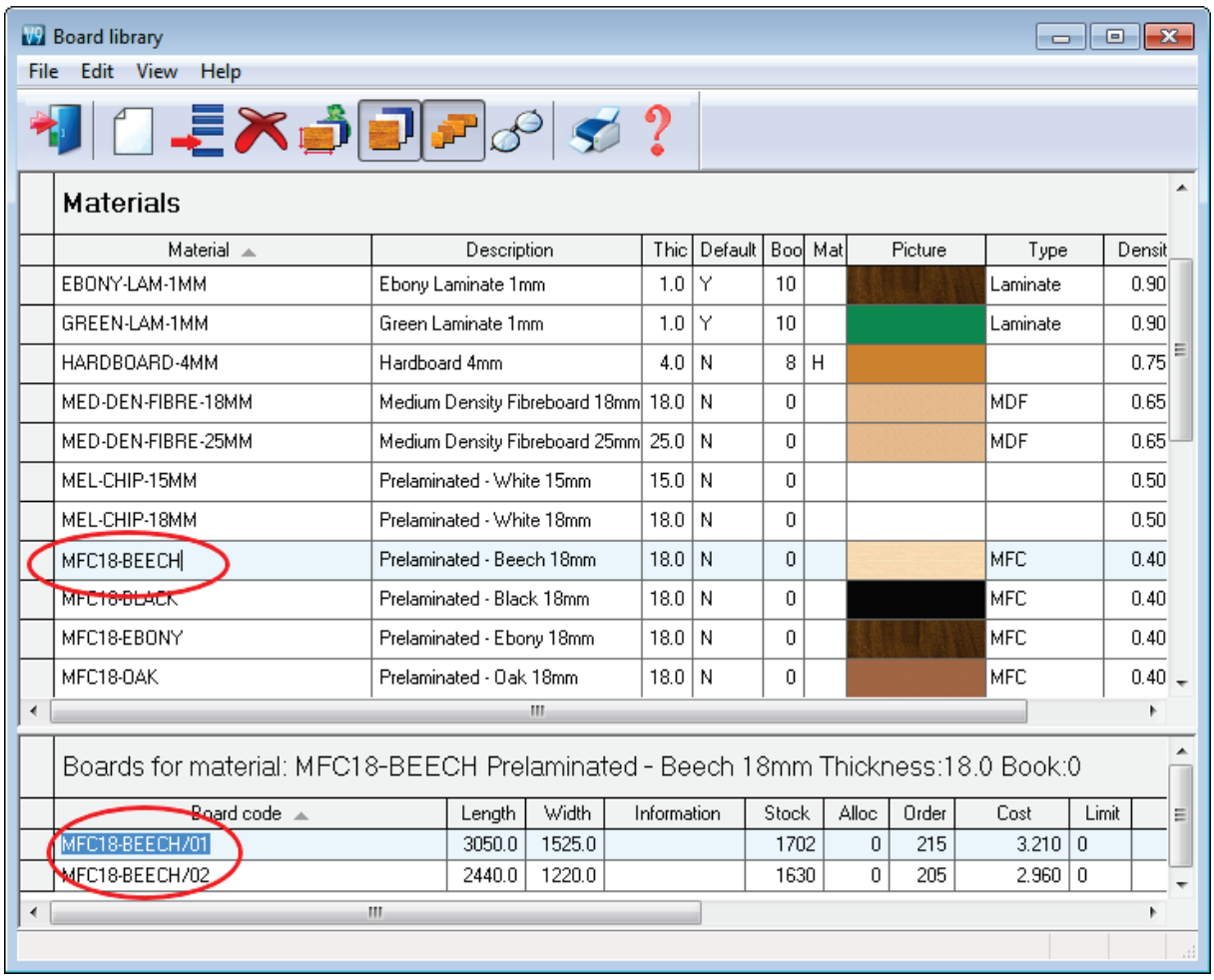
	Description	Material	Length	Width	Quantity	Over	Under	Grain	Edge Btm	
Global						0 %	0 %	N		
1.	BTH-CAB-BACK	MFC18-TEAK	664.0	564.0	4	0	0	N		
2.	BTH-CAB-BACK	MFC18-EBONY	464.0	564.0	3	0	0	N		
3.	BTH-CAB-BOTTOM	MFC18-EBONY	464.0	144.0	3	0	0	N		
4.	BTH-CAB-BOTTOM	MFC18-TEAK	664.0	144.0	4	0	0	N	EBONY-TAPE	
5.	BTH-CAB-DOOR-LEFT	MFC18-TEAK	349.5	450.0	4	0	0	N	EBONY-TAPE	EBC
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	EBC
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	EBC
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	EBC
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	

Materials

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



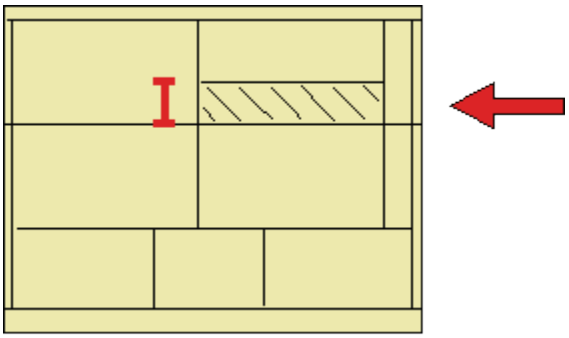
The Board library stores a record for each material and a record for each board size (including any offcuts) for each material type.



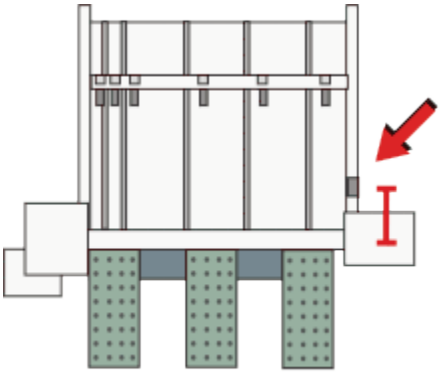
In this example the material MFC18-TEAK has two available board sizes 3050.0 x 1525.0 and 2440.0 x 1220.0 and several offcuts.

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 …

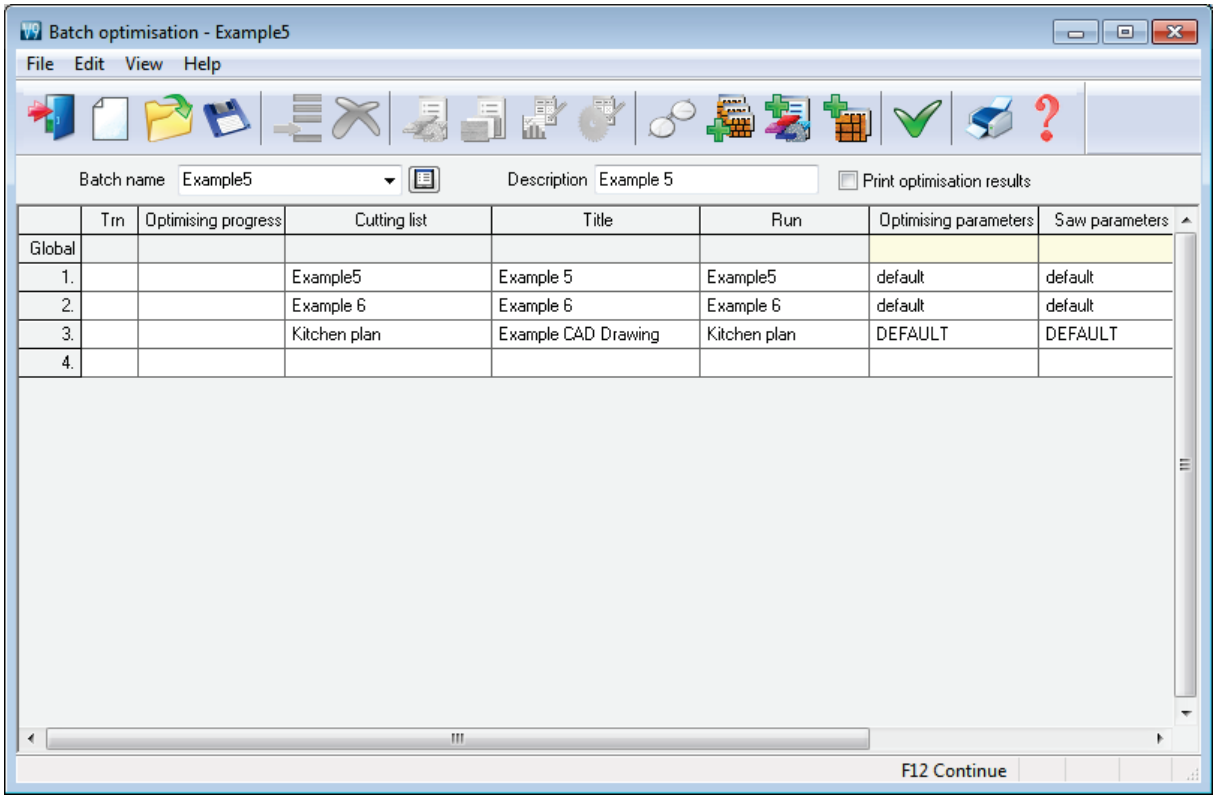


Different parameters lists can be set up and used to produce the correct cutting requirements for any list. Typically users set up a handful of parameters lists with commonly used settings and add extra lists for one-off or special jobs.

Optimising

Optimisation produces the pattern layouts (balancing cutting times and waste) and a set of detailed reports on each job.

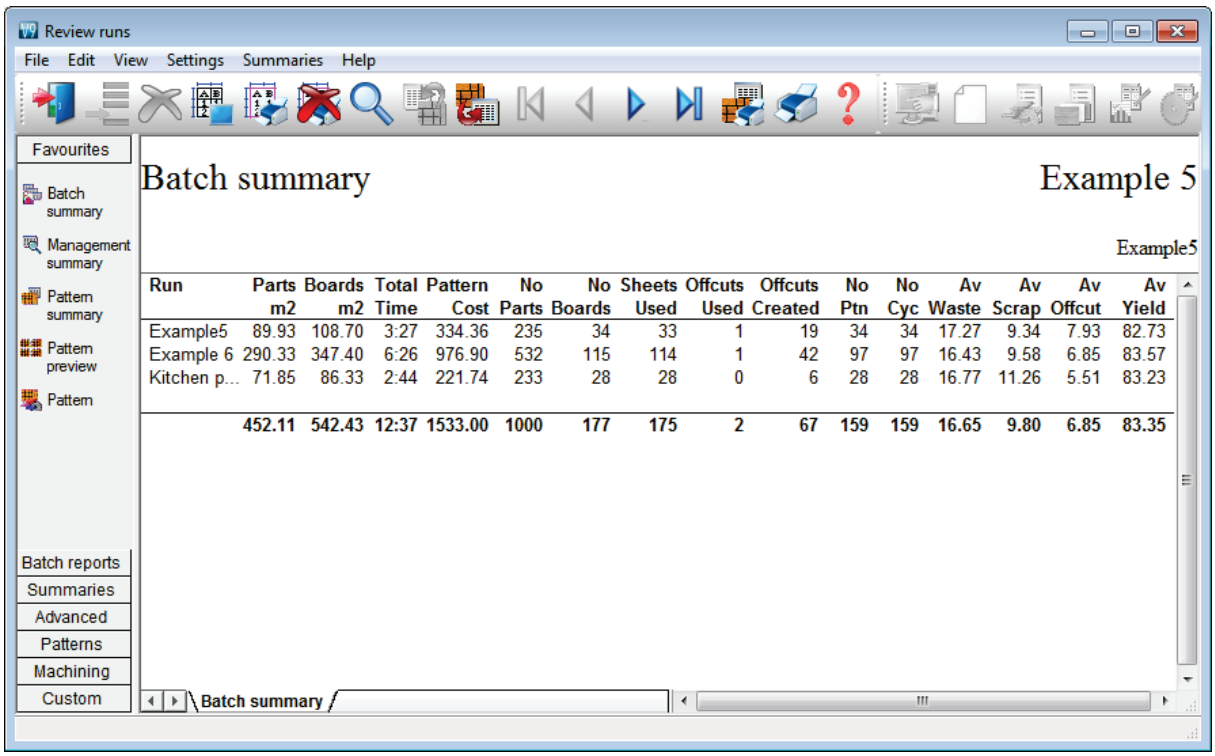
Jobs can be batched together. This is useful where there are lot small orders in the day.



	Trn	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.							

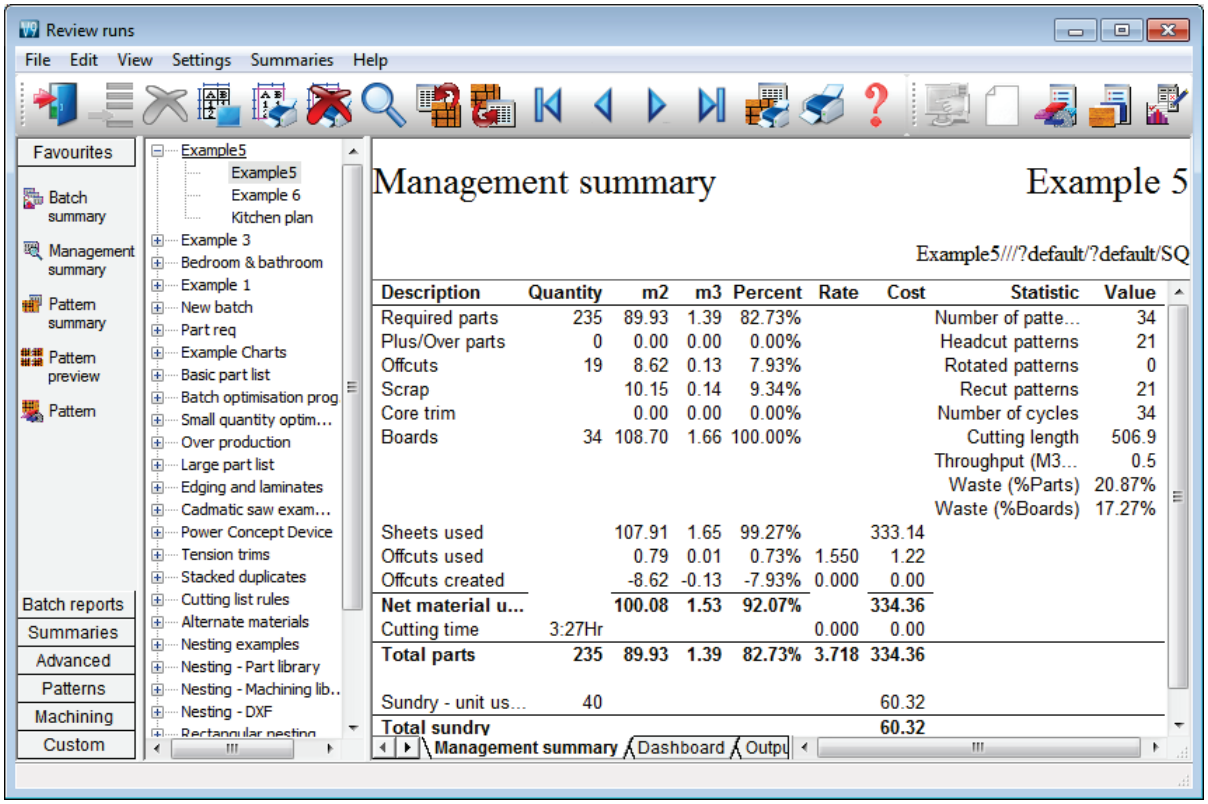
The results are shown in the section of the program 'Review runs'.

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.

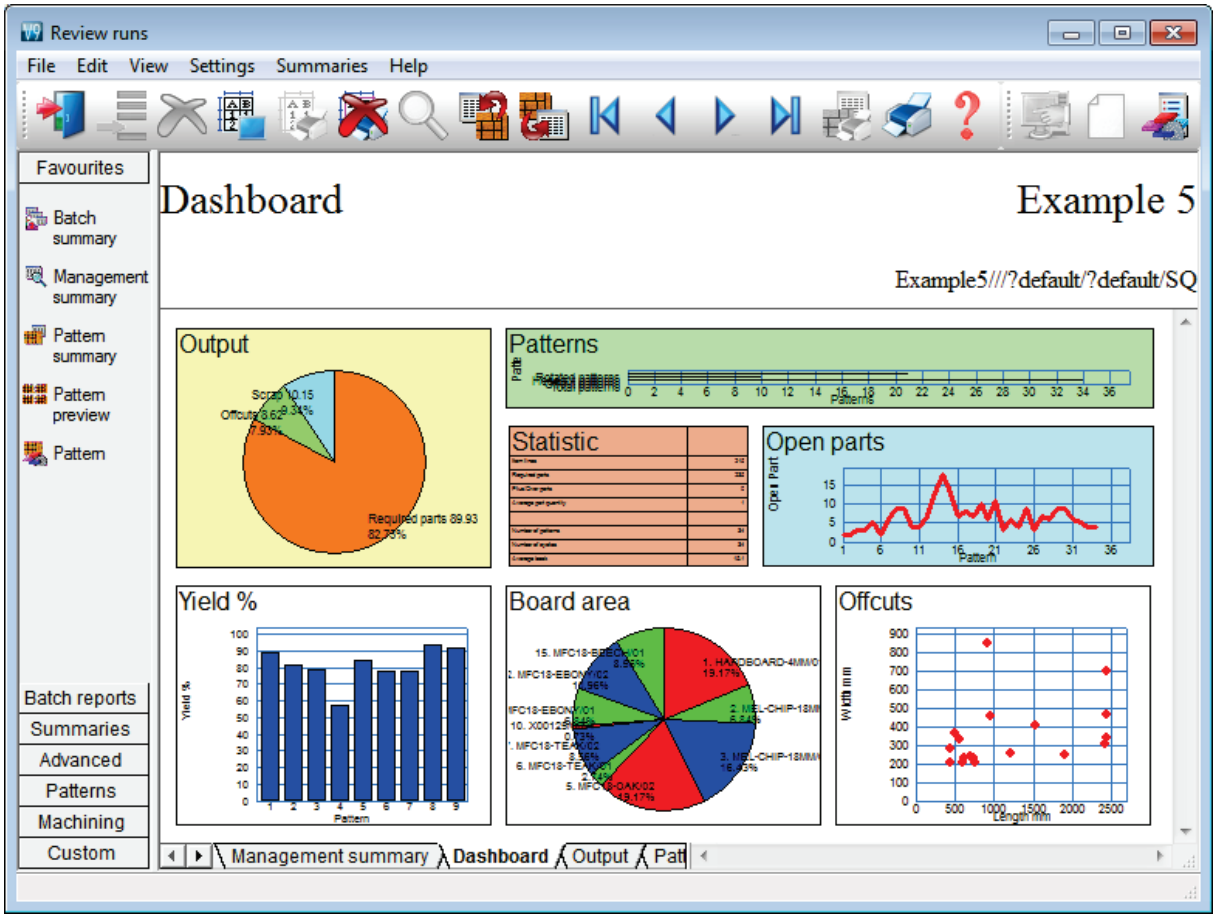


Description	Quantity	m2	m3	Percent	Rate	Cost	Statistic	Value
Required parts	235	89.93	1.39	82.73%			Number of patte...	34
Plus/Over parts	0	0.00	0.00	0.00%			Headcut patterns	21
Offcuts	19	8.62	0.13	7.93%			Rotated patterns	0
Scrap		10.15	0.14	9.34%			Recut patterns	21
Core trim		0.00	0.00	0.00%			Number 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**		

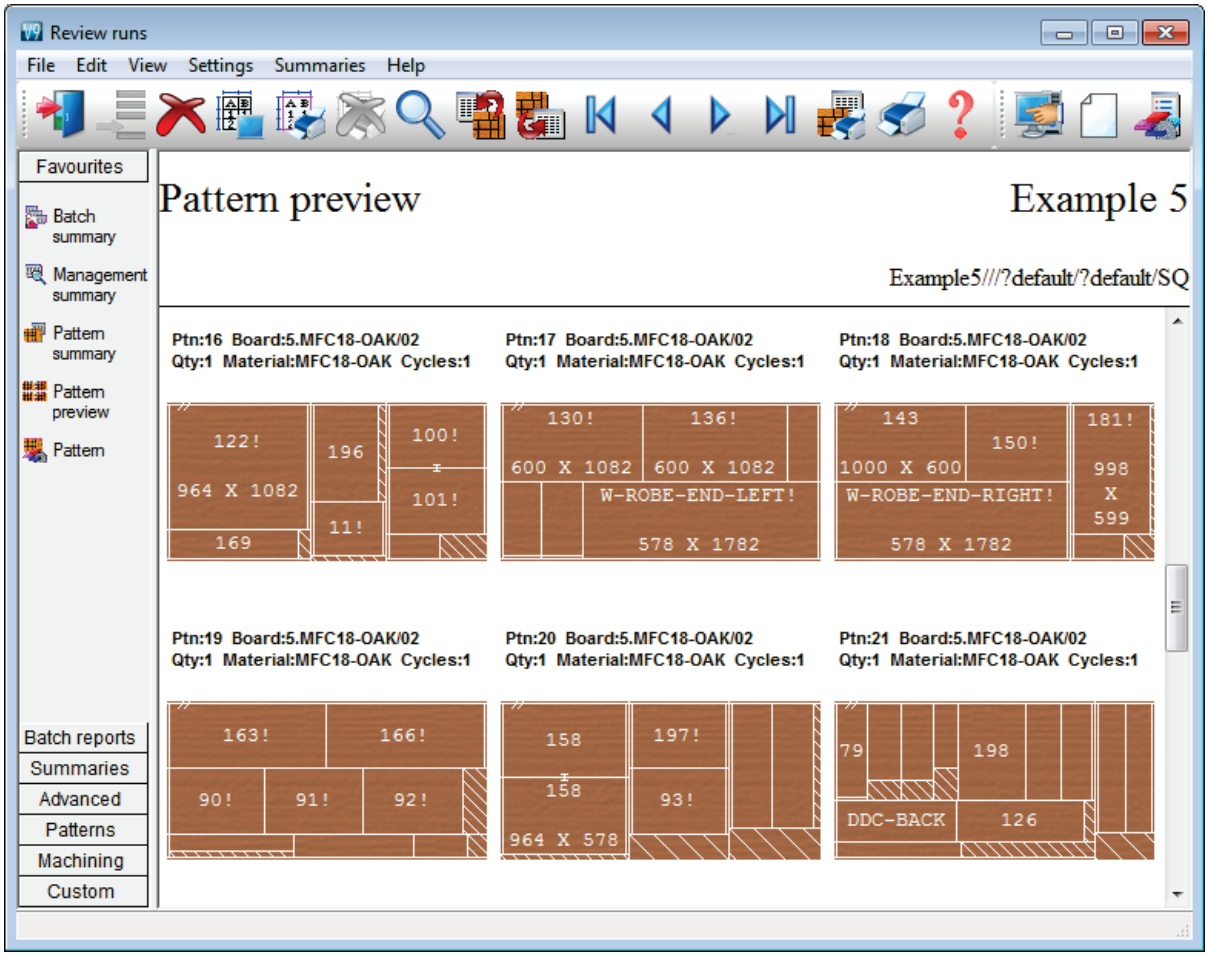
A window shows the list of optimised jobs so it is easy to quickly check and review one job then another.

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.

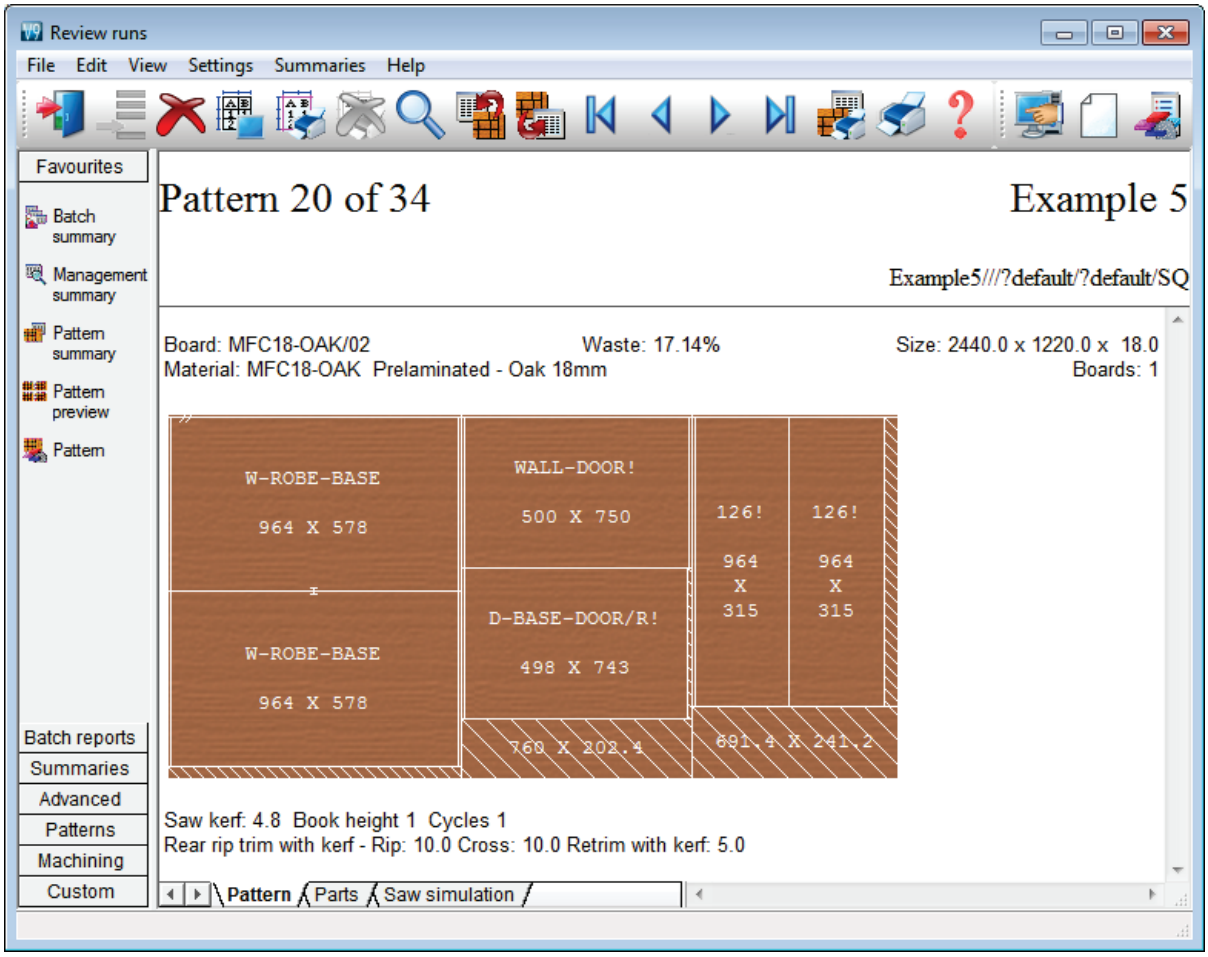


The cutting patterns are shown in a thumbnail preview.

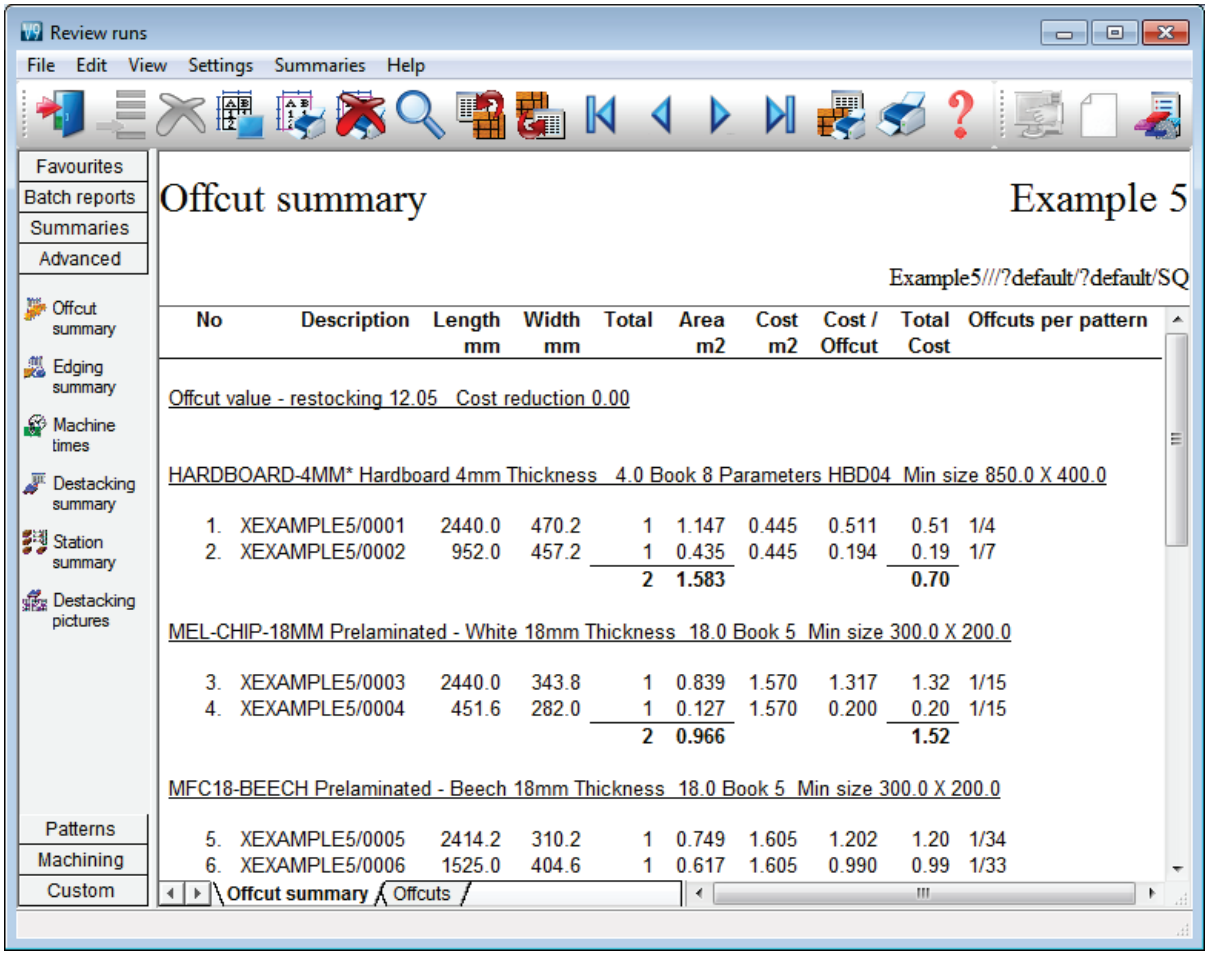


The patterns can also be viewed full screen.

Further details of each cutting patterns are accessed from the tabs at the foot of each pattern.



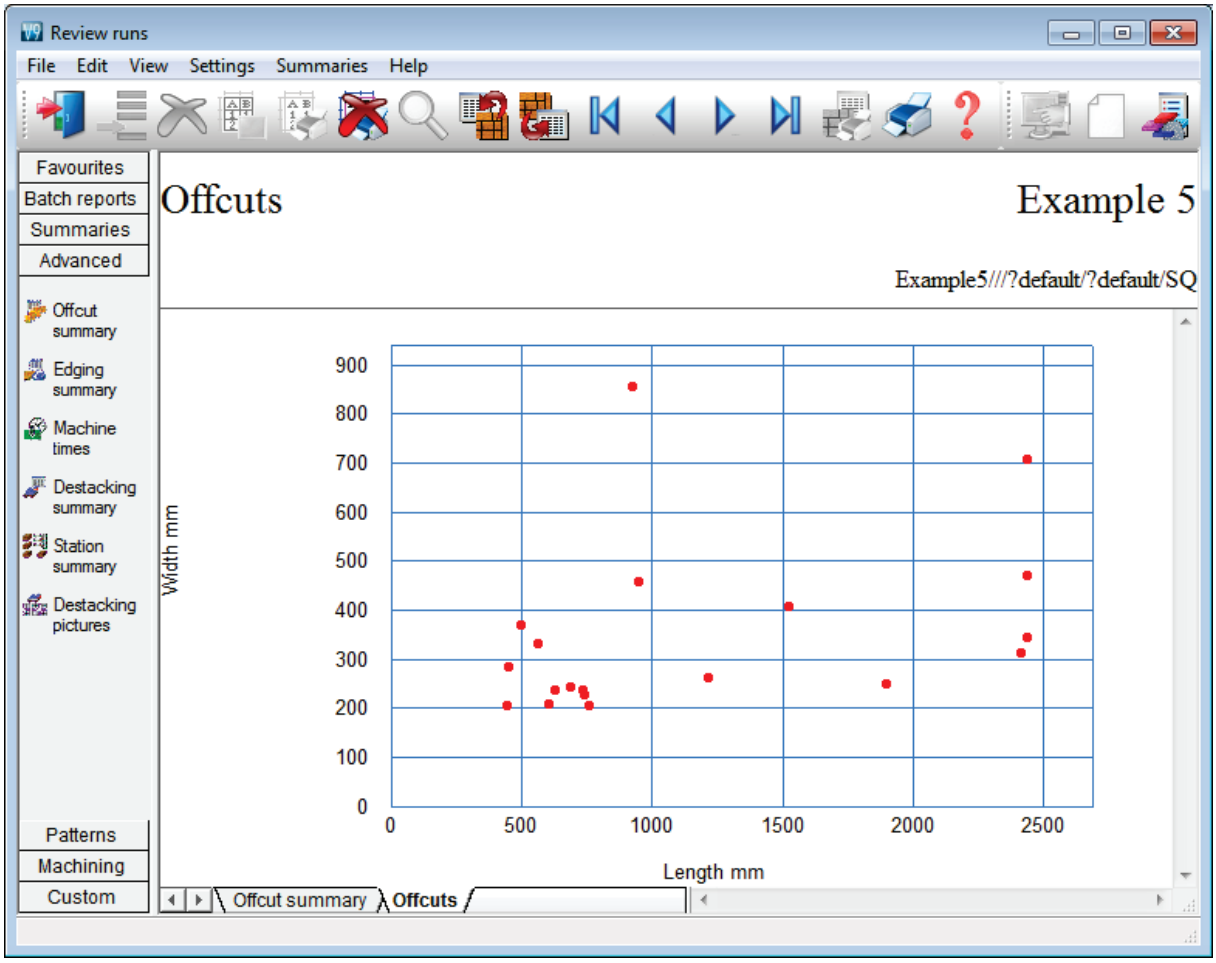
The summaries include a list of patterns and cutting quantities, summary or parts produced, a list of offcuts produced …



No	Description	Length mm	Width mm	Total	Area m2	Cost m2	Cost / Offcut	Total Cost	Offcuts per pattern
Offcut value - restocking 12.05 Cost reduction 0.00									
HARDBOARD-4MM* Hardboard 4mm Thickness 4.0 Book 8 Parameters HBD04 Min size 850.0 X 400.0									
1.	XEXAMPLE5/0001	2440.0	470.2	1	1.147	0.445	0.511	0.51	1/4
2.	XEXAMPLE5/0002	952.0	457.2	1	0.435	0.445	0.194	0.19	1/7
				2	**1.583**			**0.70**	
MEL-CHIP-18MM Prelaminated - White 18mm Thickness 18.0 Book 5 Min size 300.0 X 200.0									
3.	XEXAMPLE5/0003	2440.0	343.8	1	0.839	1.570	1.317	1.32	1/15
4.	XEXAMPLE5/0004	451.6	282.0	1	0.127	1.570	0.200	0.20	1/15
				2	**0.966**			**1.52**	
MFC18-BEECH Prelaminated - Beech 18mm Thickness 18.0 Book 5 Min size 300.0 X 200.0									
5.	XEXAMPLE5/0005	2414.2	310.2	1	0.749	1.605	1.202	1.20	1/34
6.	XEXAMPLE5/0006	1525.0	404.6	1	0.617	1.605	0.990	0.99	1/33

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.

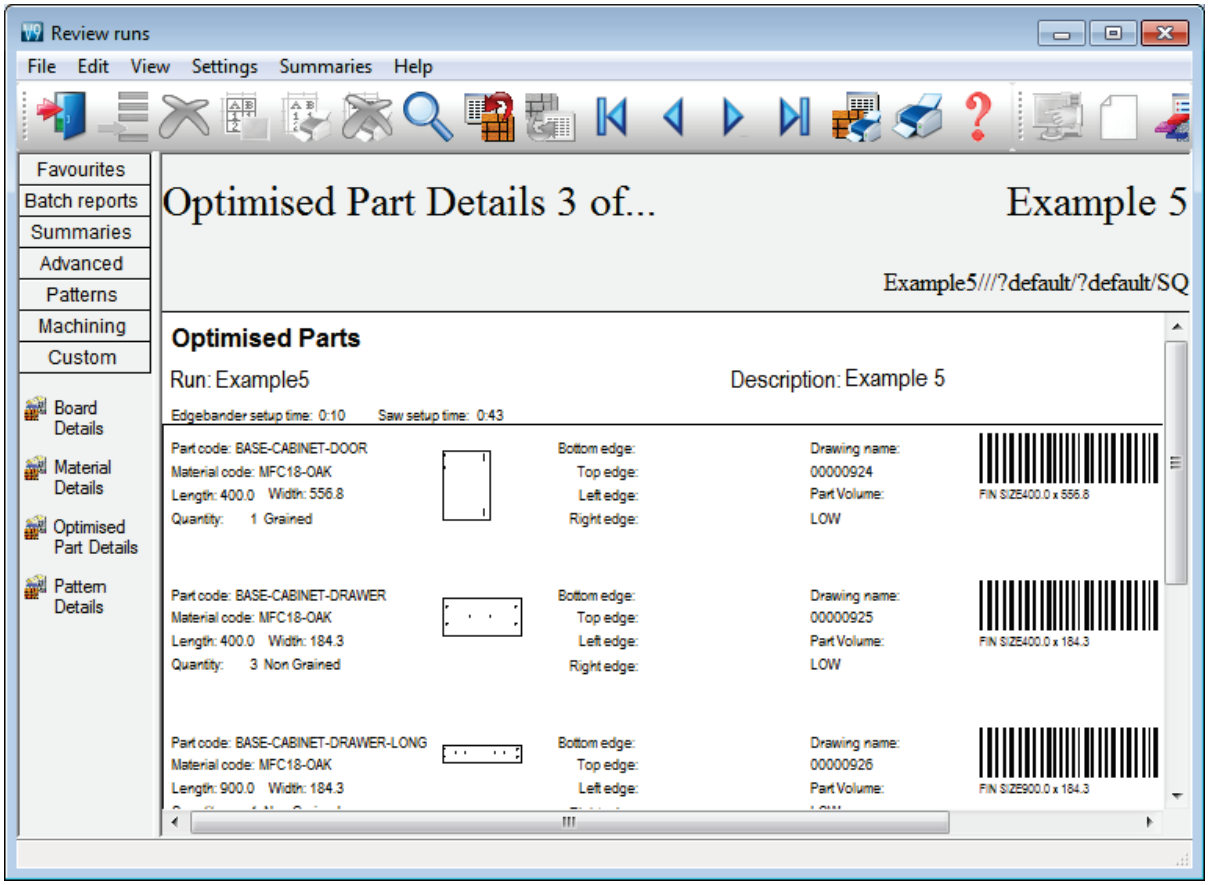


Summaries available include:-

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

In addition a very 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.

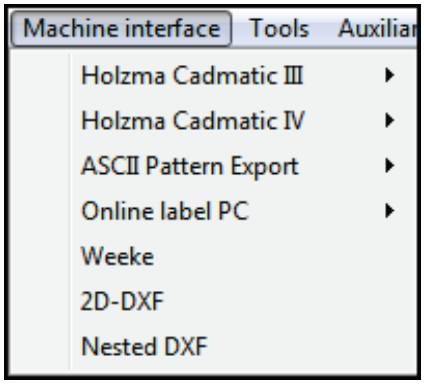


The custom summary above shows a bar code and drawing for each part type.

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.



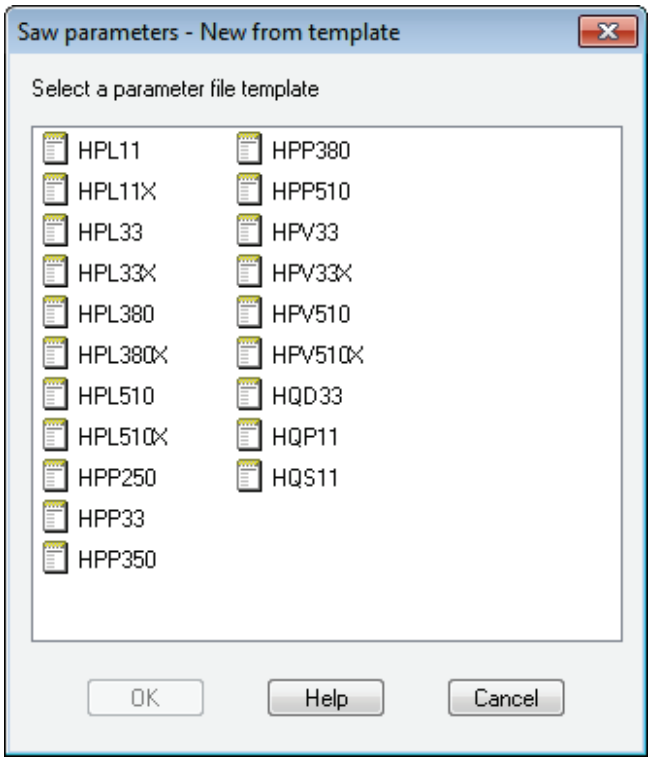
The saw controllers supported are:-

```
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
```

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.

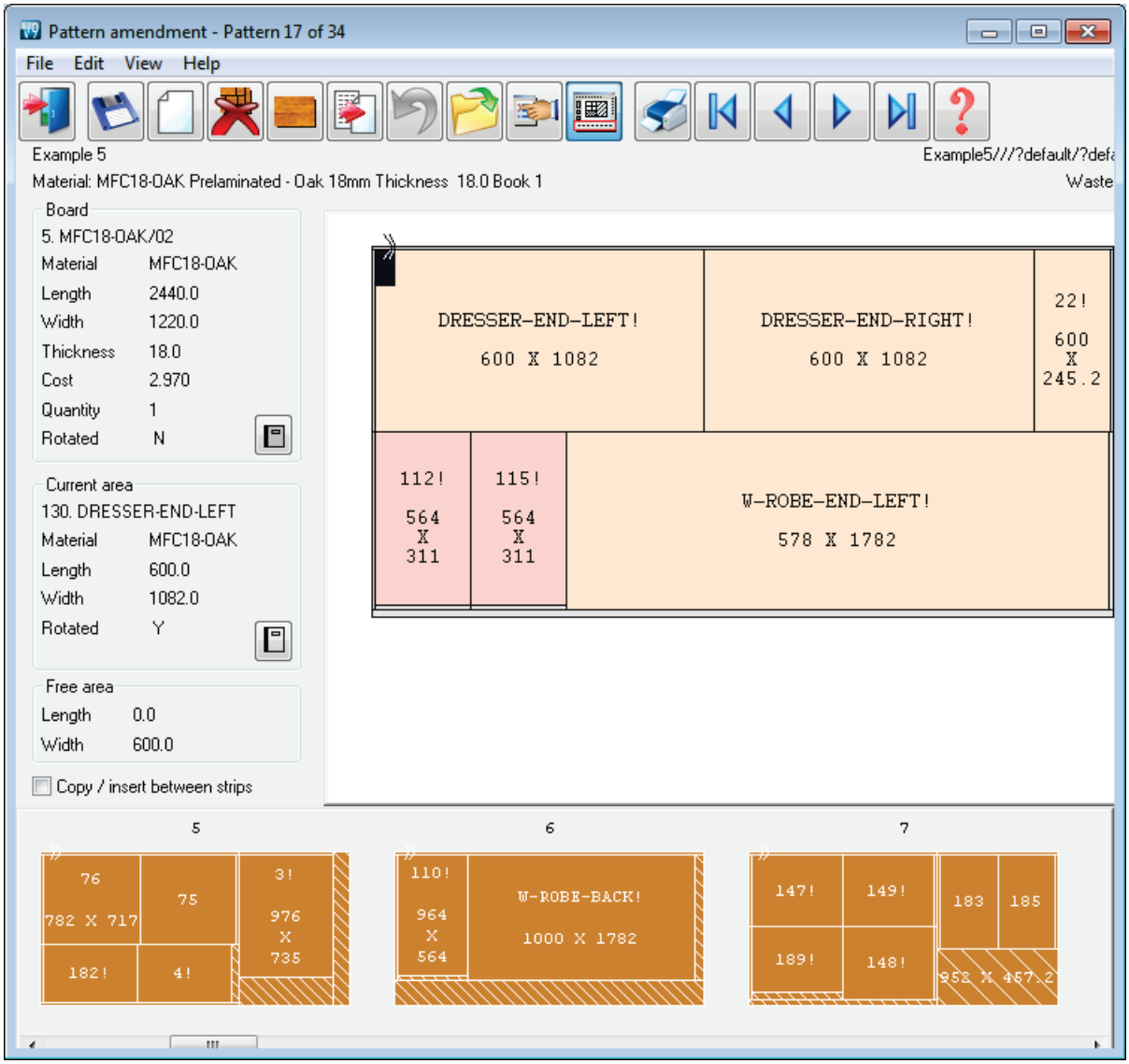


Pattern editor

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

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.

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

Comparison of each optimising module

	PO	**SO**	**LO**
Part list No. of lines (part sizes)	20,000	20,000	10,000
Total pieces	99,999	99,999	10,000
Maximum jobs in batch	250	250	
Transfer to Single saws	•	•	
Transfer to Angular saws	•		
Transfer to Saws with split fences	•	•	
Transfer to Cadmatic 4	•	•	•
Batch operation	•	•	
Strip production	•		
Full sheet over production	•		
Volume optimisation	•		
Small quantity optimisation	•	•	•
Control of open stacks	•	•	
Control of cutting (trims, recuts …)	•	Limited	Limited
Cutting times	•	•	
Costs	•	•	•
Free cut analysis	•		
File management	•	•	•
System maintenance	•	•	•
Pattern editor & library	•	•	
Reports and summaries (configurable)	•	•	Limited
Custom reports	•	•	
Customised part list	•	•	
Board library	•	•	•
Form & label design	•	•	
Integrated local help	•	•	•
Links to website	•	•	•

Form & label design is for forms and labels at the Office

Professional Optimiser – 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.

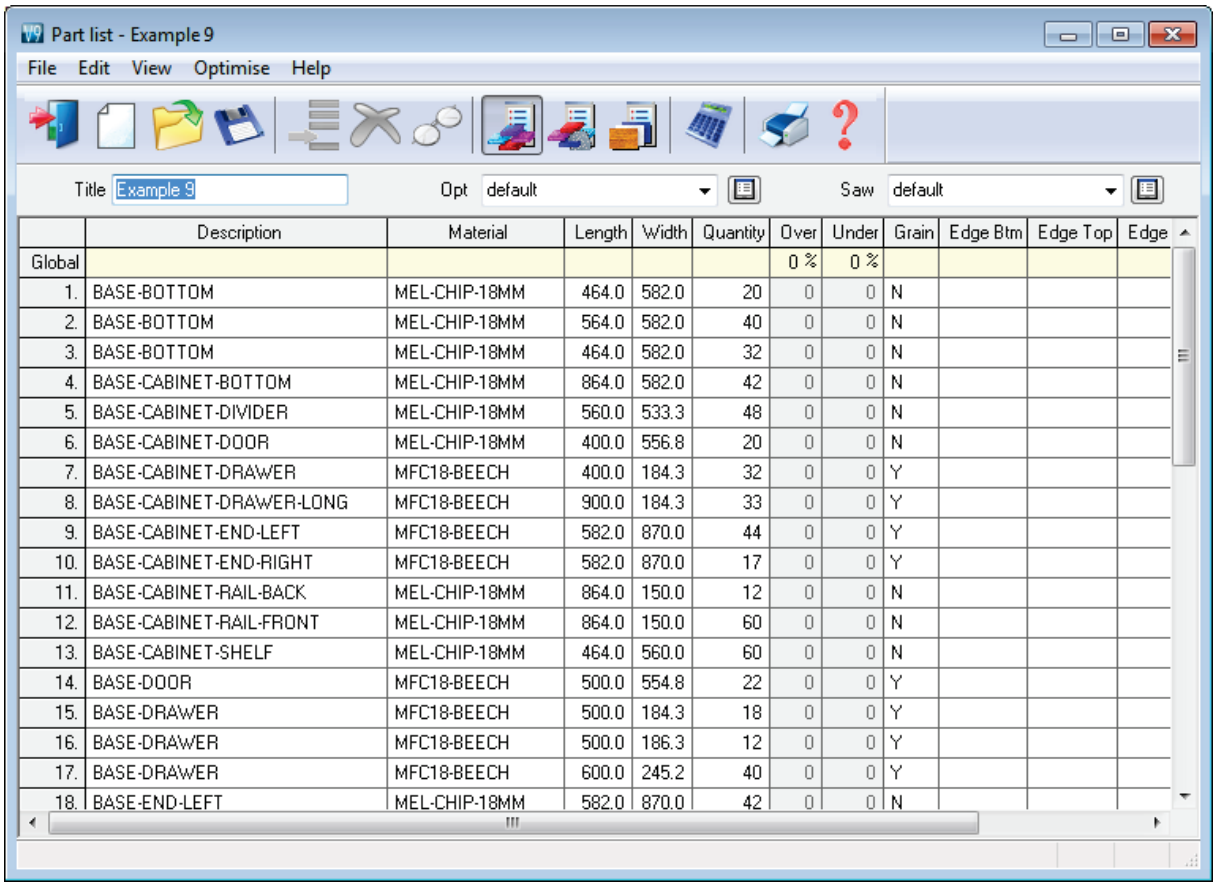
- Enter part sizes
- Optimise
- Send cutting data to saw

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.



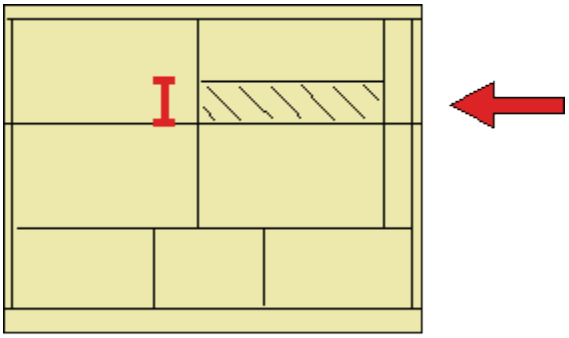
	Description	Material	Length	Width	Quantity	Over	Under	Grain	Edge Btm	Edge Top	Edge
Global						0 %	0 %				
1.	BASE-BOTTOM	MEL-CHIP-18MM	464.0	582.0	20	0	0	N			
2.	BASE-BOTTOM	MEL-CHIP-18MM	564.0	582.0	40	0	0	N			
3.	BASE-BOTTOM	MEL-CHIP-18MM	464.0	582.0	32	0	0	N			
4.	BASE-CABINET-BOTTOM	MEL-CHIP-18MM	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.

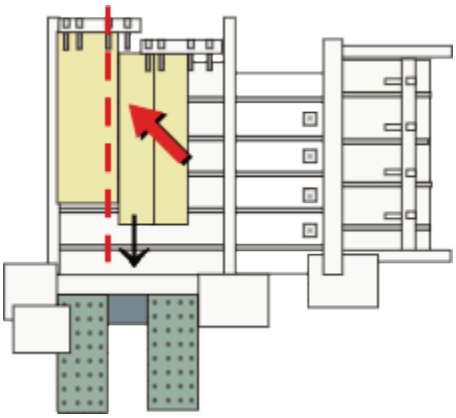
The part list includes many options for adjusting sizes, calculating edging (EL module) and if necessary dividing lists if they are too large to send to a saw in one go.

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 …)



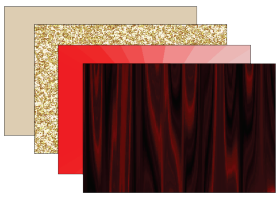

Saw parameters are used to describe each saw; overall cutting length, position of clamps, size of waste flap …



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

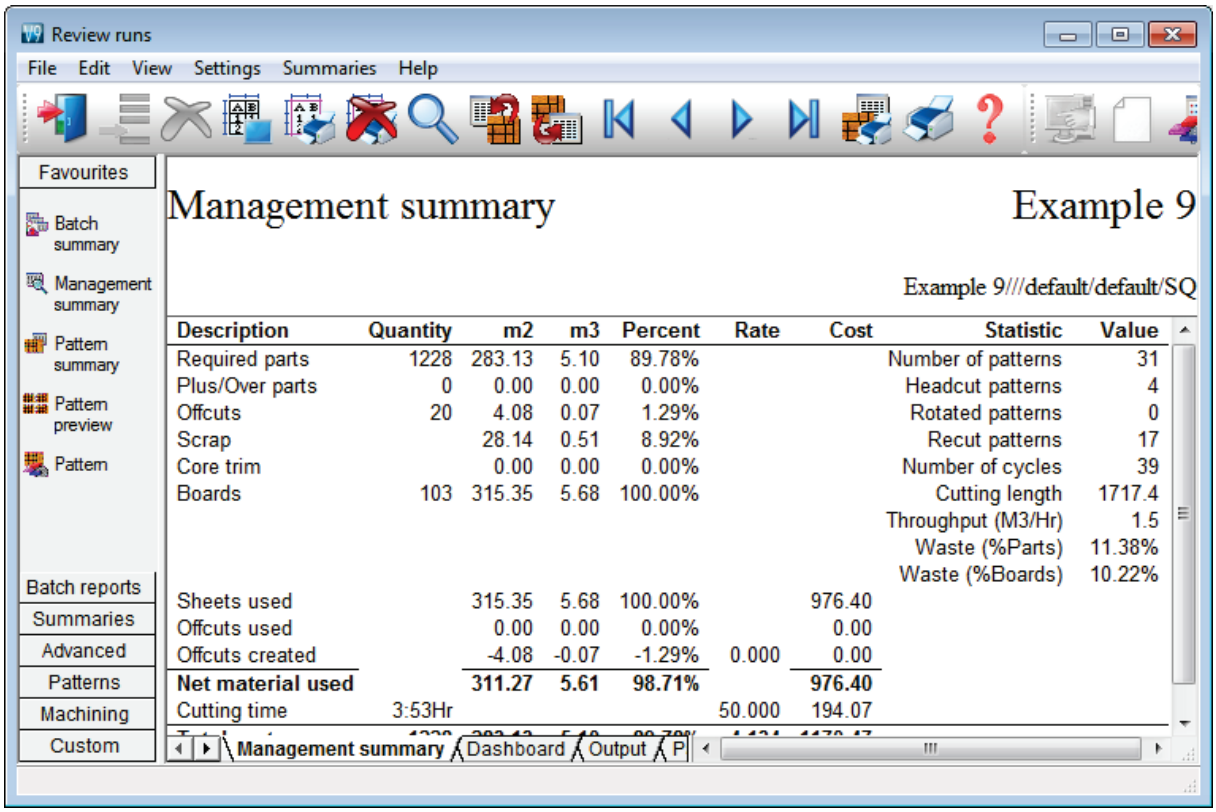
All materials are stored in the Board library. This is a database of all sheet material and includes quantities and costs.



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

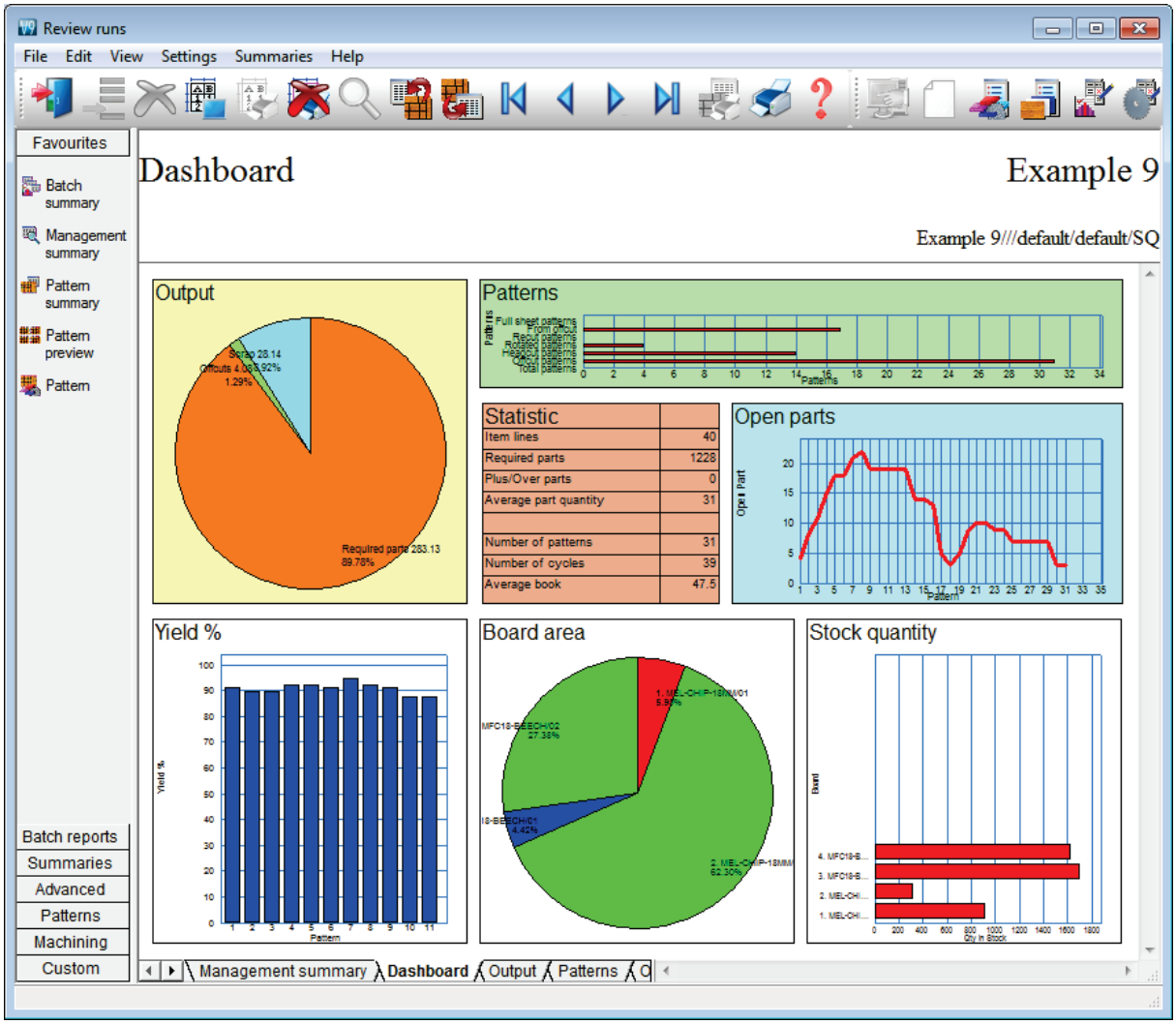
Optimisation produces the pattern layouts (balancing cutting times and waste) and a set of detailed reports on each job. The results are shown in the section of the program 'Review runs'. Runs are stored and can be easily recalled for review or adjustments.



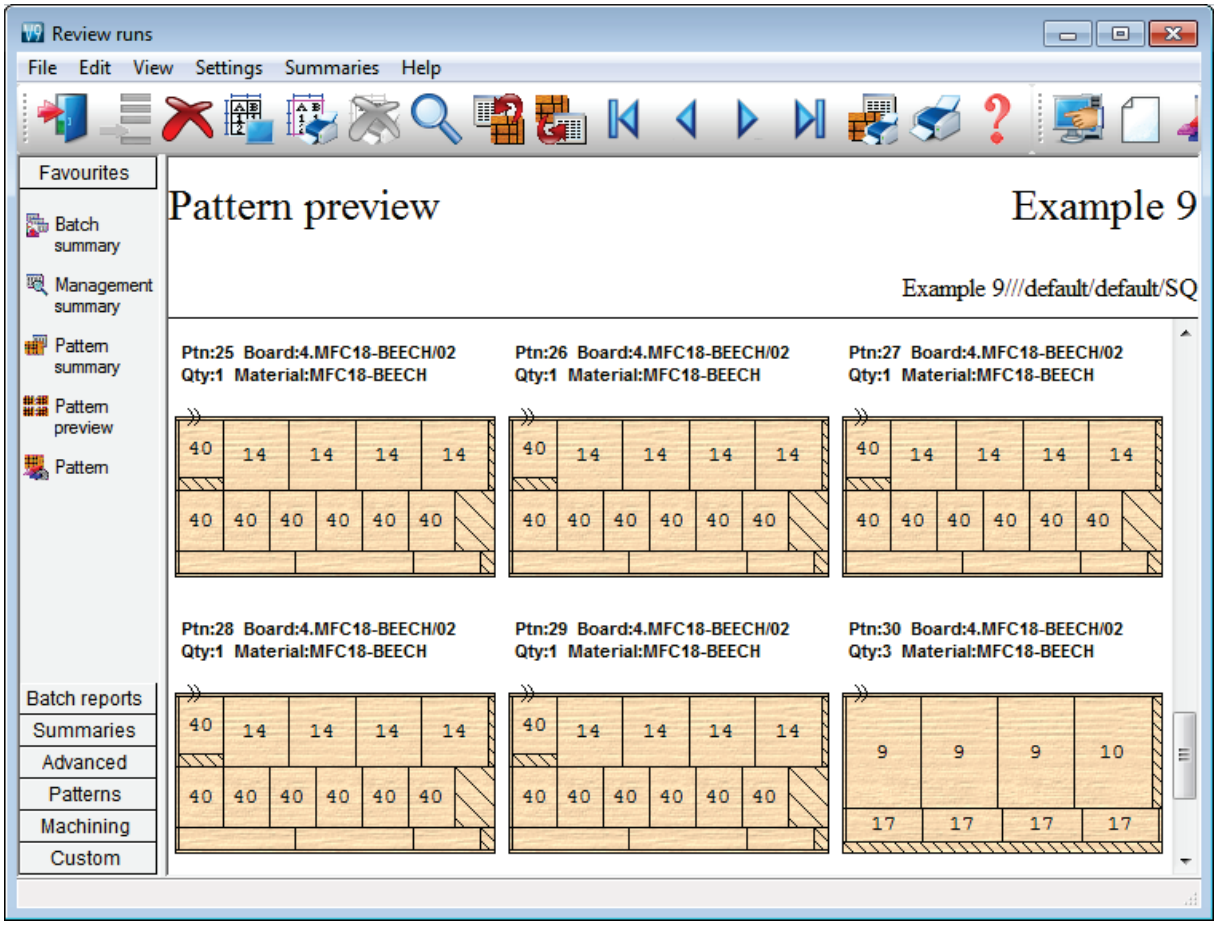
Description	Quantity	m2	m3	Percent	Rate	Cost	Statistic	Value
Required parts	1228	283.13	5.10	89.78%			Number of patterns	31
Plus/Over parts	0	0.00	0.00	0.00%			Headcut patterns	4
Offcuts	20	4.08	0.07	1.29%			Rotated patterns	0
Scrap		28.14	0.51	8.92%			Recut patterns	17
Core trim		0.00	0.00	0.00%			Number 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		

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.

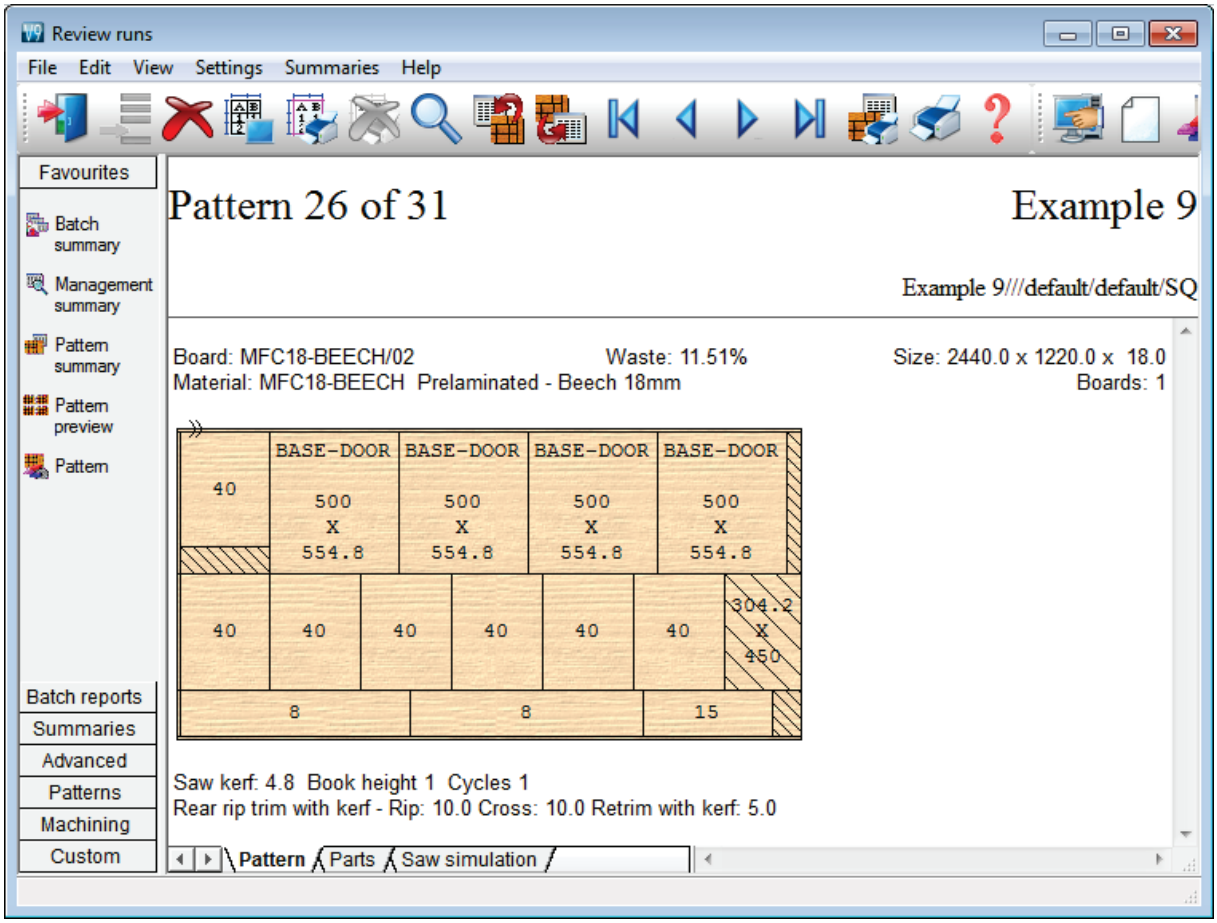


The cutting patterns are shown in a thumbnail overview.



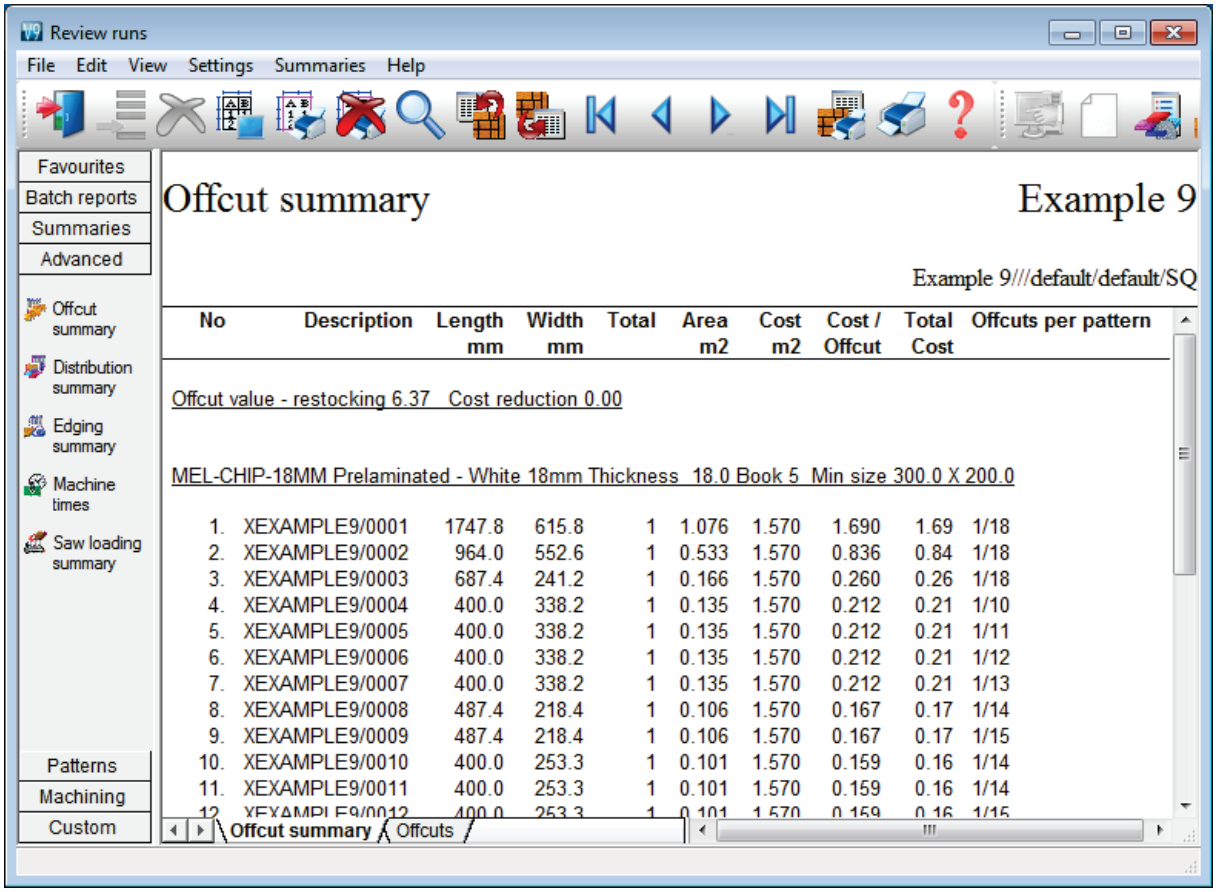
Clicking on a thumbnail picture moves to the full screen of each pattern.

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



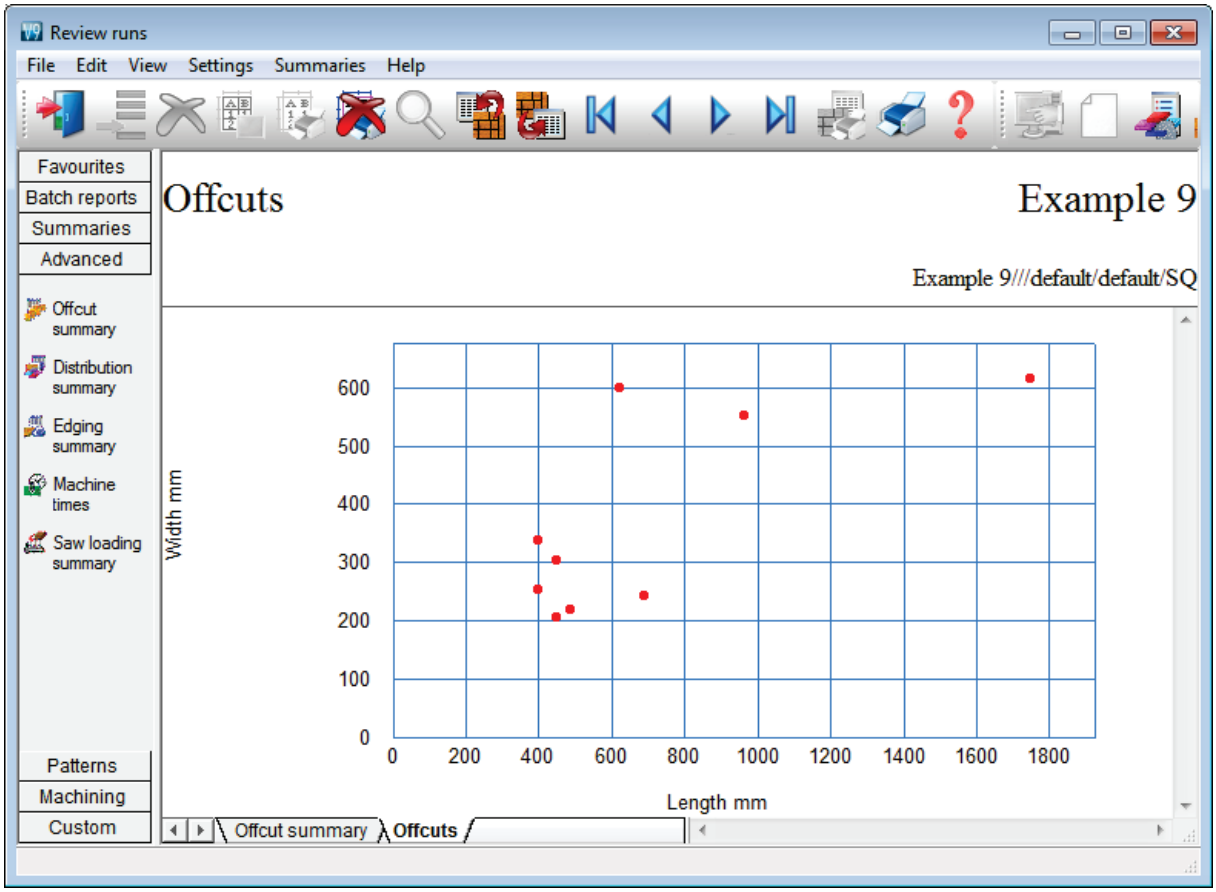
All reports can be fully customised and the Form & Design option is available for custom reports - fully integrated into the program.

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
Offcut value - restocking 6.37 Cost reduction 0.00									
MEL-CHIP-18MM Prelaminated - White 18mm Thickness 18.0 Book 5 Min size 300.0 X 200.0									
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 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

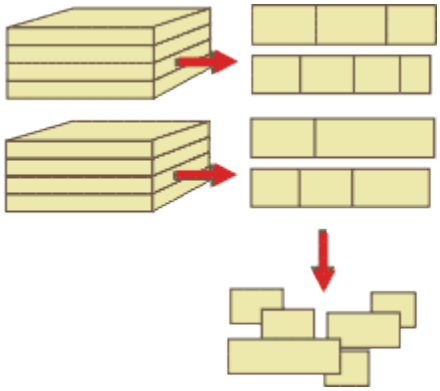
The Professional optimiser is designed for larger volumes of parts - up to the very largest; it balances the cutting time and costs against material cost to produce an effective solution.

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.

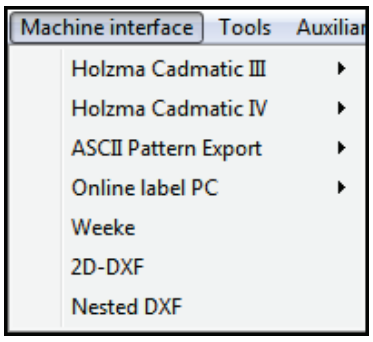
- Optimising parameters to control the number of different board sizes used and the order of part production (priority).

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:-

```
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
```

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)

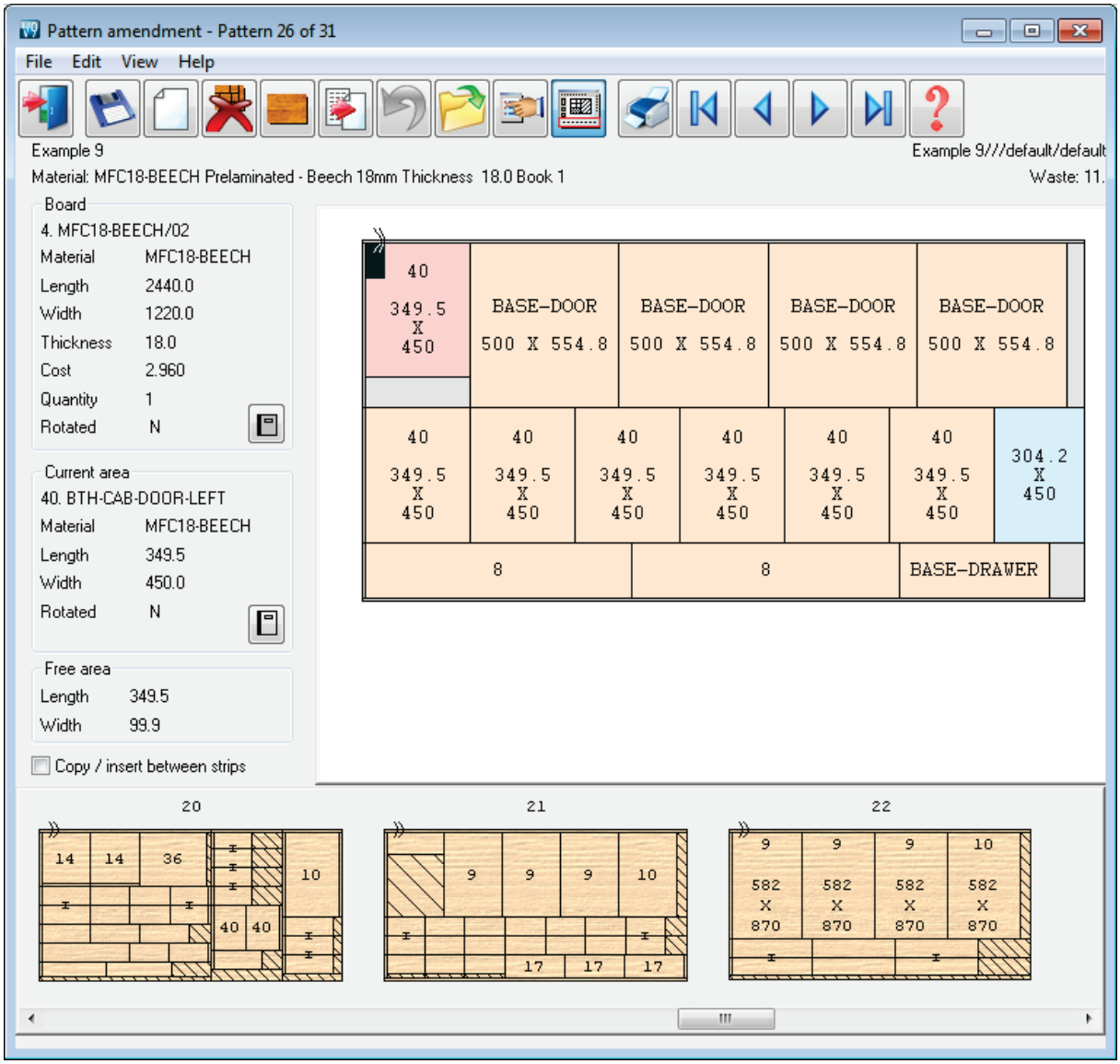
Our pattern exchange format (PTX) is used by several manufacturers to control other machinery on the production line or send data back to the office.

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.

Form & label design is for forms and labels at the Office
Full Edging calculations require the EL module

For a comparison of optimisers - see the 'Standard Optimiser' section above

Lite Optimiser – LO

Sheet optimising for custom Workshops

The Lite optimiser is designed for the smaller workshop. It is straightforward to use with a minimum of setup. It is for cutting lists with a wide variety of part sizes, small run quantities, typically cut '1 high'. The focus is on material savings rather than cutting time.

It is typically used with Sliding table saws, Vertical panel saws, or smaller Beam saws.

Cutting patterns can be directly downloaded to the Holzma Cadmatic 4 controller.

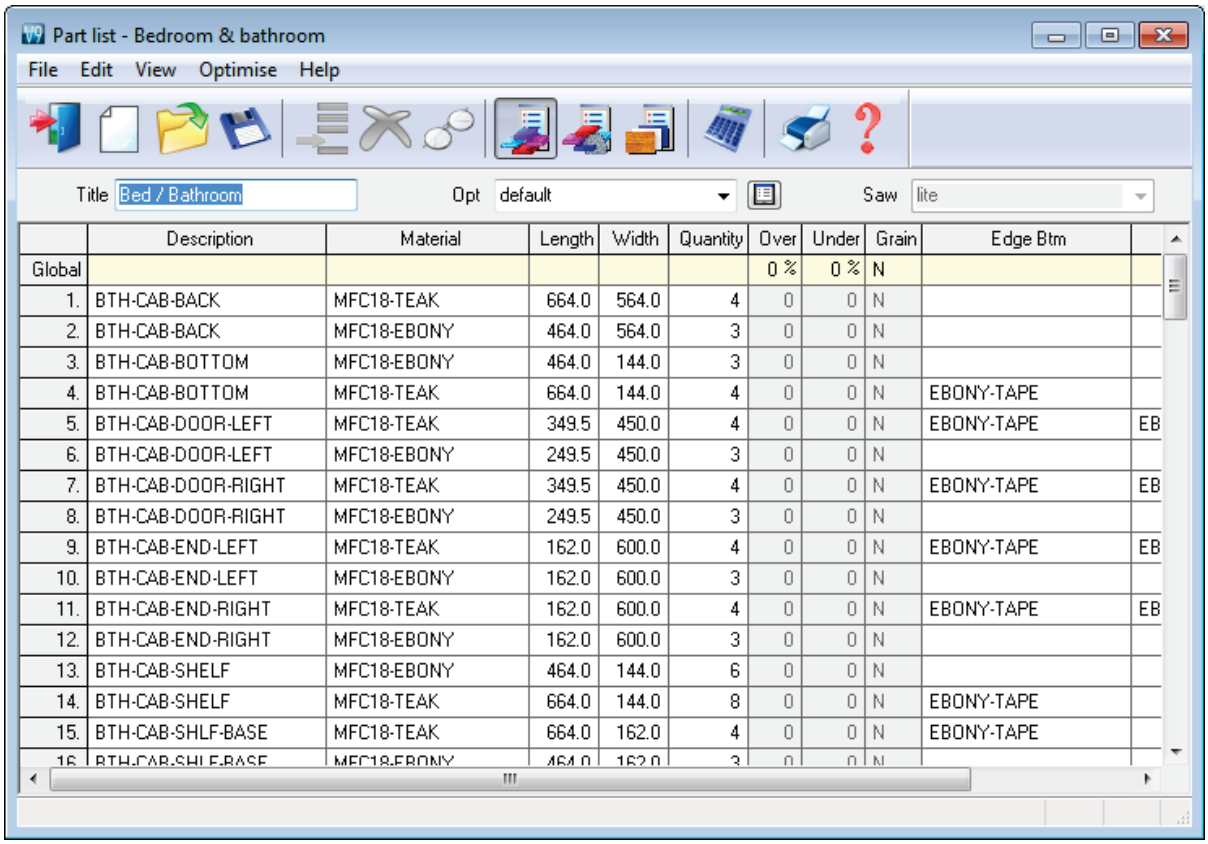
- Enter part sizes
- Optimise
- Patterns and cutting instructions

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
- Cut and paste from a spreadsheet
- Import part sizes from external files

The result is a list of part sizes.

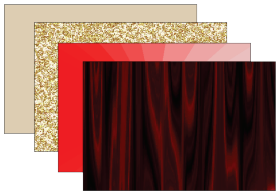


	Description	Material	Length	Width	Quantity	Over	Under	Grain	Edge Btm	
Global						0 %	0 %	N		
1.	BTH-CAB-BACK	MFC18-TEAK	664.0	564.0	4	0	0	N		
2.	BTH-CAB-BACK	MFC18-EBONY	464.0	564.0	3	0	0	N		
3.	BTH-CAB-BOTTOM	MFC18-EBONY	464.0	144.0	3	0	0	N		
4.	BTH-CAB-BOTTOM	MFC18-TEAK	664.0	144.0	4	0	0	N	EBONY-TAPE	
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	
16.	BTH-CAB-SHLF-BASE	MFC18-EBONY	464.0	162.0	3	0	0	N		

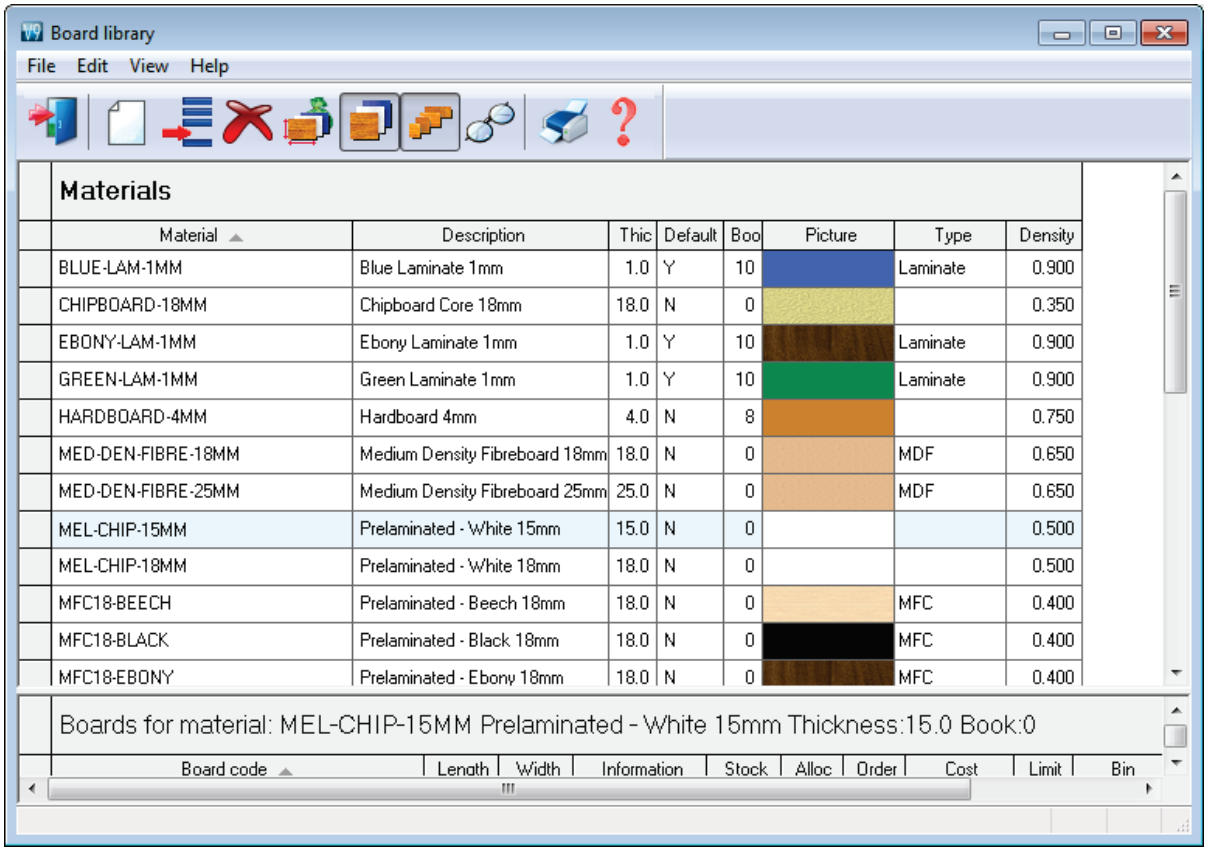
In this example there are a large number of different part sizes required in small quantities. Use the part list editor to check and adjust sizes as required.

Materials

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

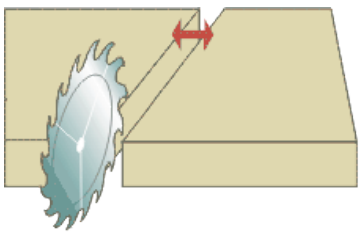


The Board library stores a record for each material and a record for each board size (including any offcuts) for each material type.

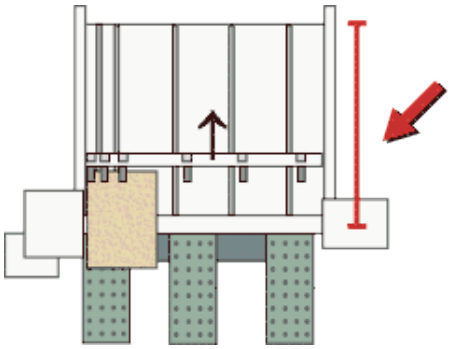


In this example the material MFC18-EBONY has 2 available board sizes 3050.0 x 1220.0 and 2440.0 x 1220.0. The 'Material' column in the Part list associates each part with the correct material to use and the optimiser works out the optimum boards sizes to use for each job.

 A set of optimising parameters describe the constraints on cutting; saw kerf, trims …

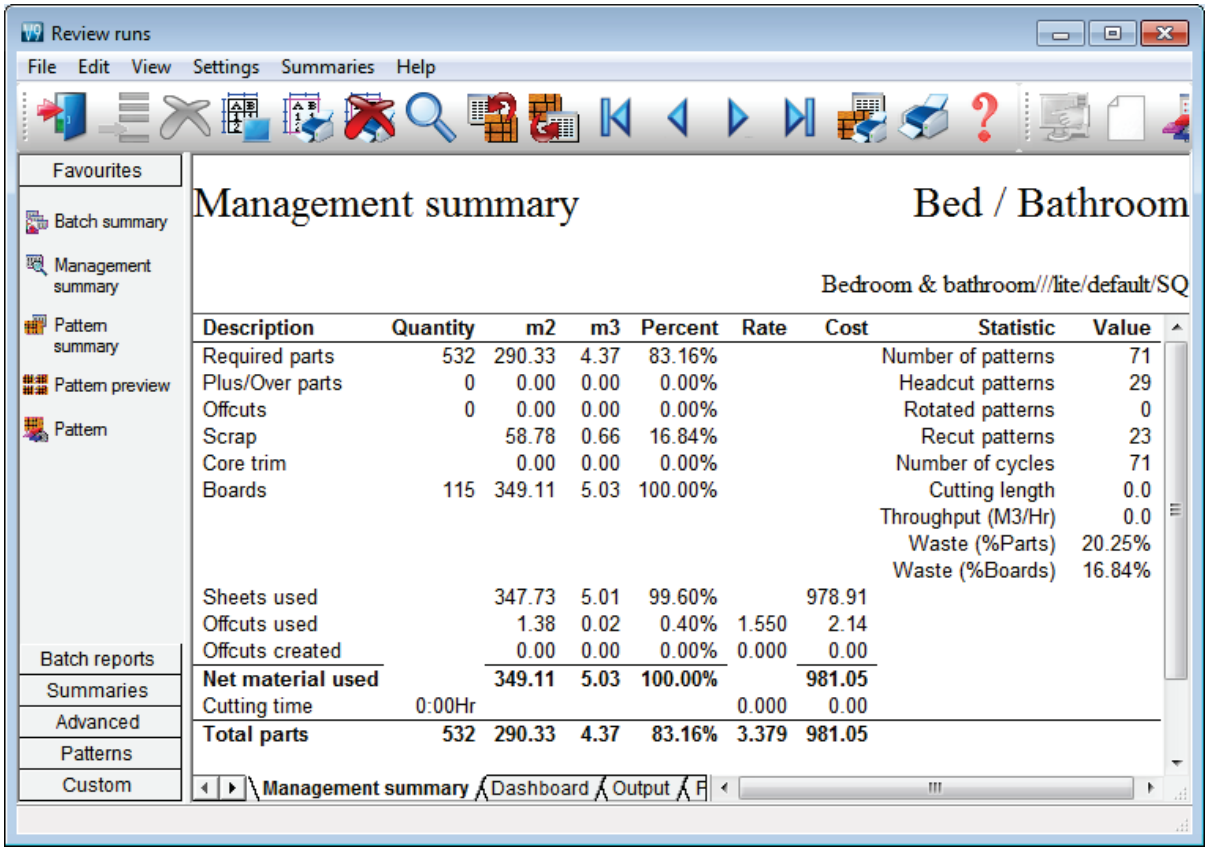


Another set of parameters (Saw parameters) are used to describe each saw; overall cutting length, cutting height …



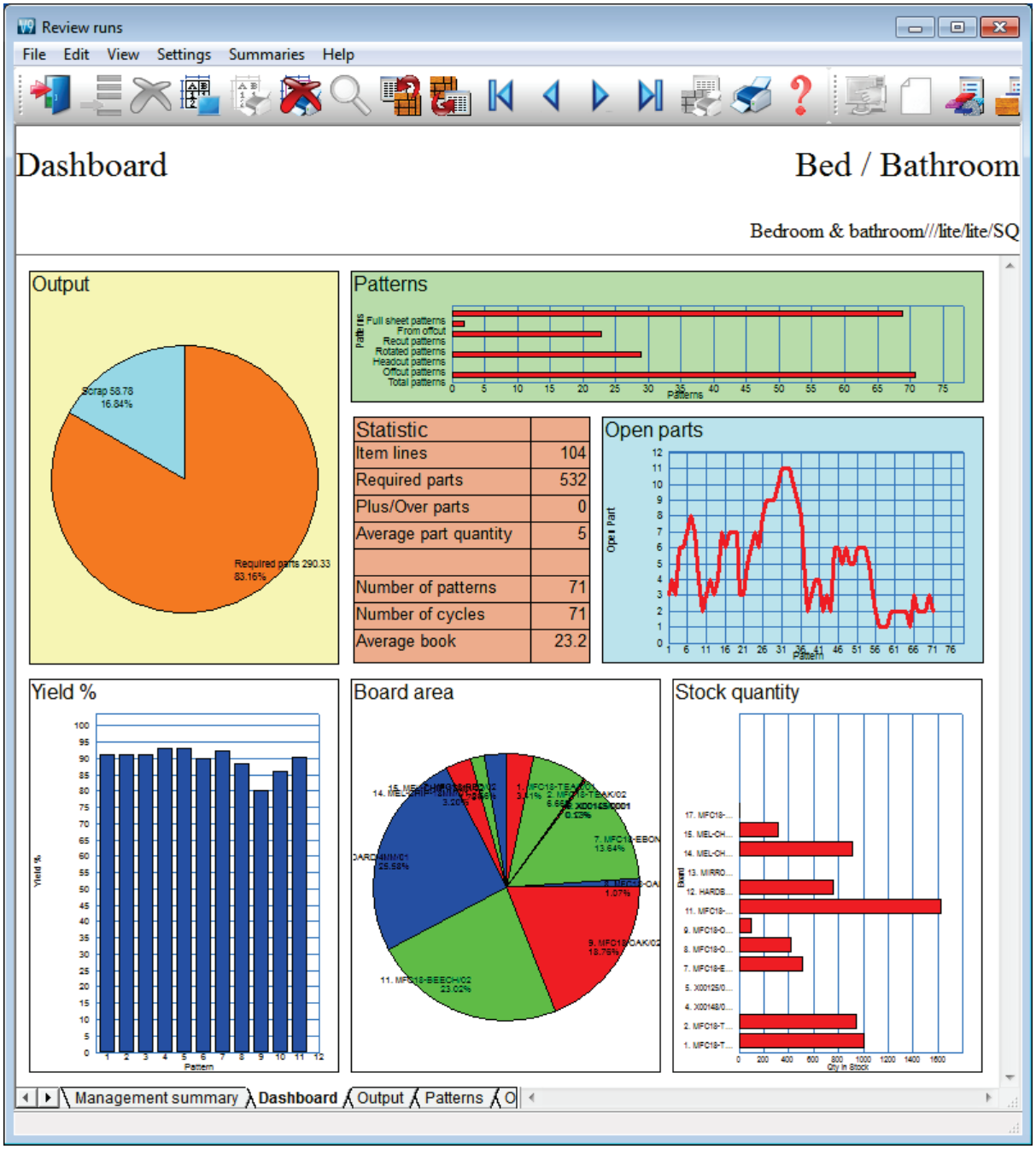
Optimisation produces the pattern layouts and a set of detailed reports on each job.

The first report shown is an overall summary.

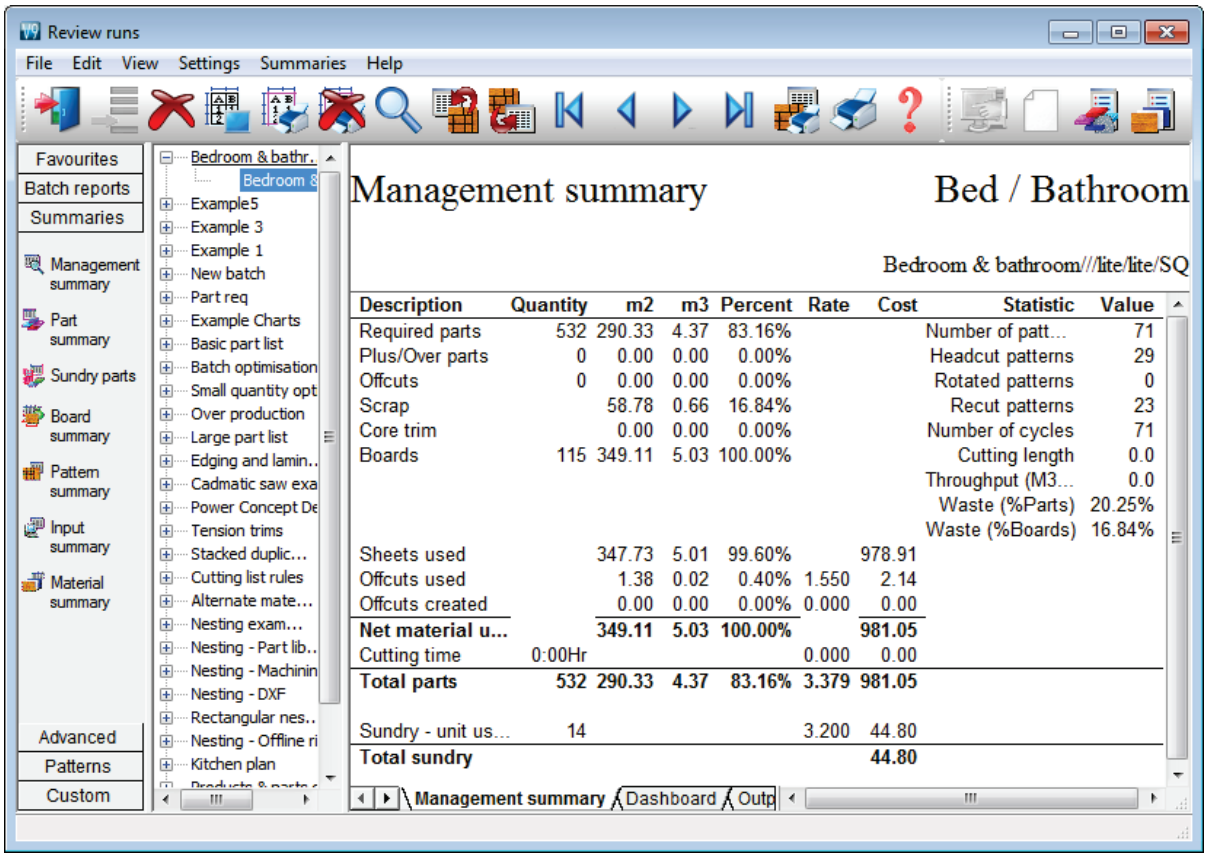


Description	Quantity	m2	m3	Percent	Rate	Cost	Statistic	Value
Required parts	532	290.33	4.37	83.16%			Number of patterns	71
Plus/Over parts	0	0.00	0.00	0.00%			Headcut patterns	29
Offcuts	0	0.00	0.00	0.00%			Rotated patterns	0
Scrap		58.78	0.66	16.84%			Recut patterns	23
Core trim		0.00	0.00	0.00%			Number of cycles	71
Boards	115	349.11	5.03	100.00%			Cutting length	0.0
							Throughput (M3/Hr)	0.0
							Waste (%Parts)	20.25%
							Waste (%Boards)	16.84%
Sheets used		347.73	5.01	99.60%		978.91		
Offcuts used		1.38	0.02	0.40%	1.550	2.14		
Offcuts created		0.00	0.00	0.00%	0.000	0.00		
Net material used		**349.11**	**5.03**	**100.00%**		**981.05**		
Cutting time	0:00Hr				0.000	0.00		
Total parts	**532**	**290.33**	**4.37**	**83.16%**	**3.379**	**981.05**		

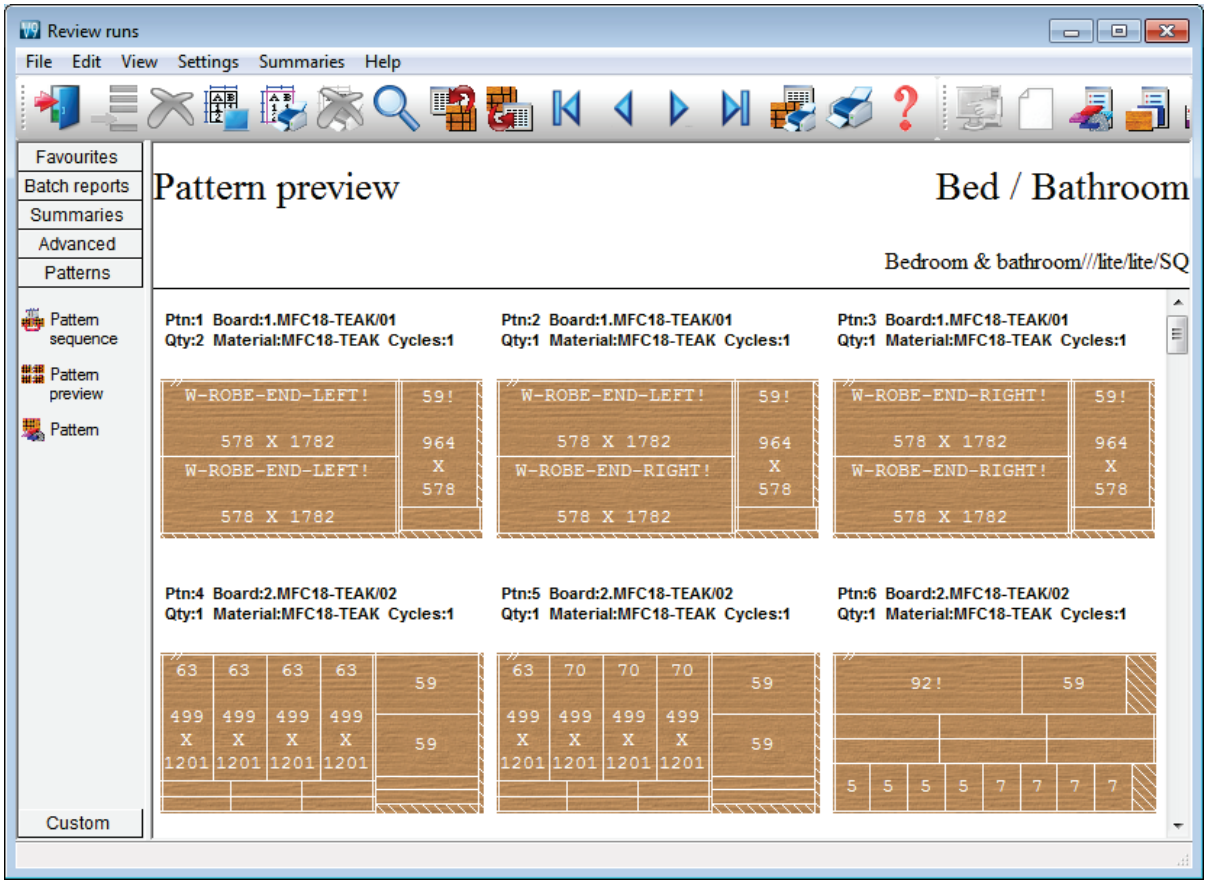
The Management summary includes the Dashboard which provides a graphical view of the summary. This can be customised for almost any view and to include charts from other summaries.



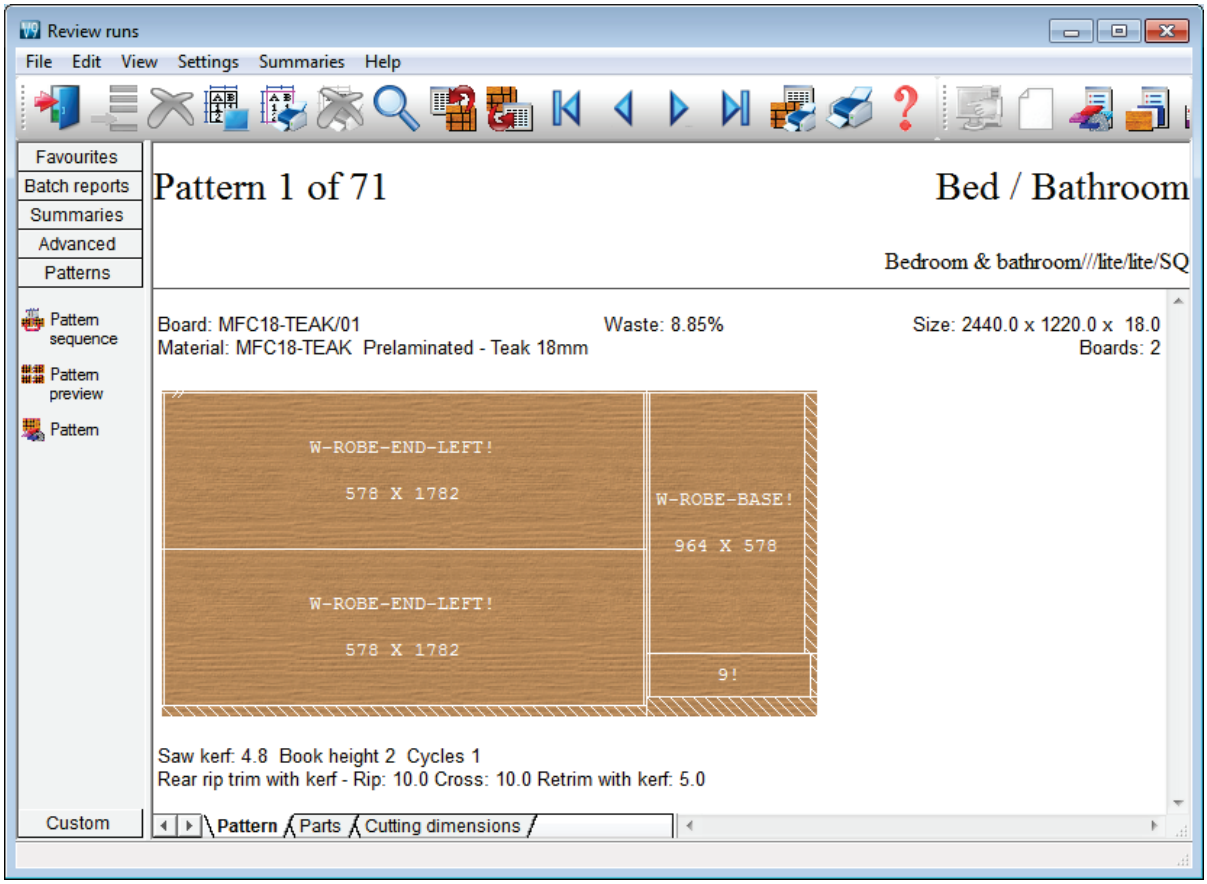
A window (Runs pane) shows the list of optimised jobs so it is easy to quickly check and review one job then another.



The cutting patterns are shown in a thumbnail preview.

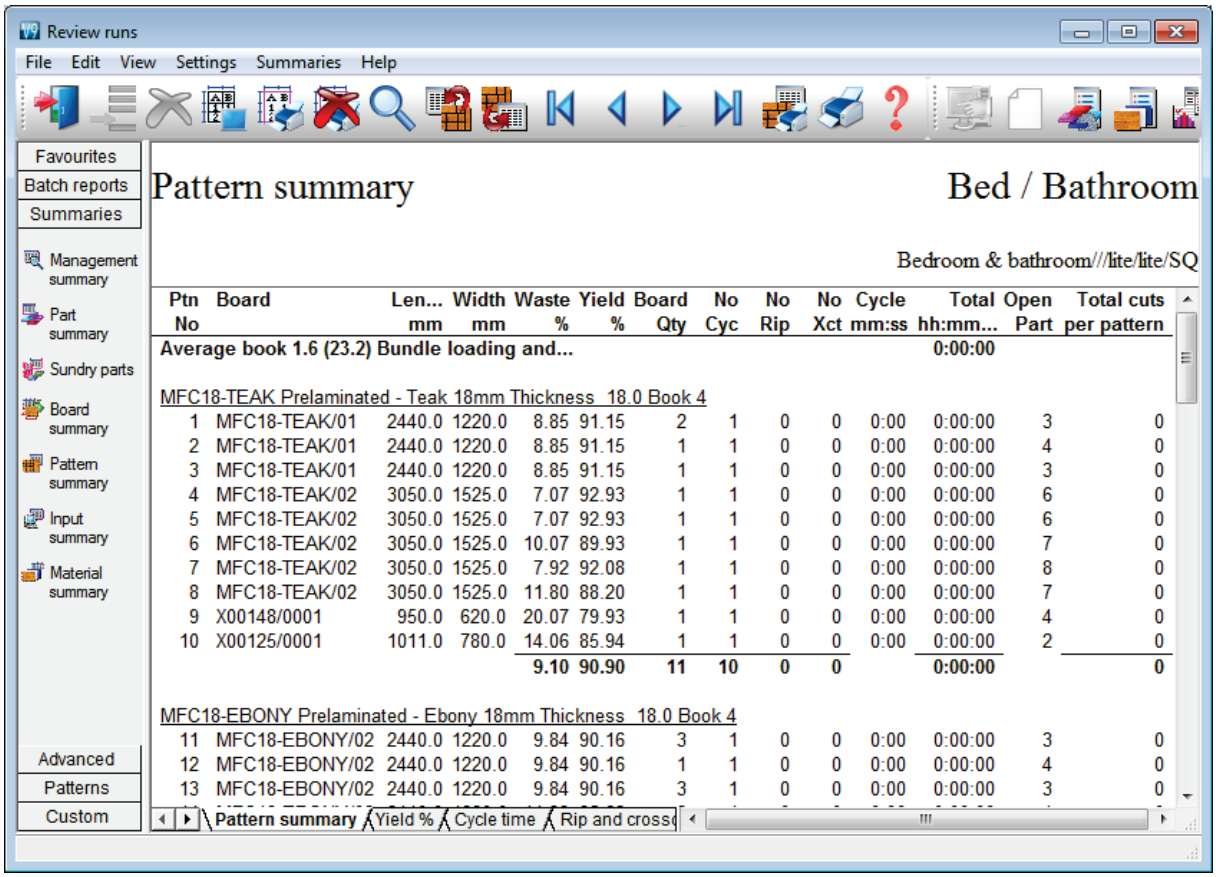


The patterns can also be viewed full screen.



The tabs at the foot of each pattern show full further details.

The summaries include a list of patterns and cutting quantities, summary of parts produced, and a list of boards used.



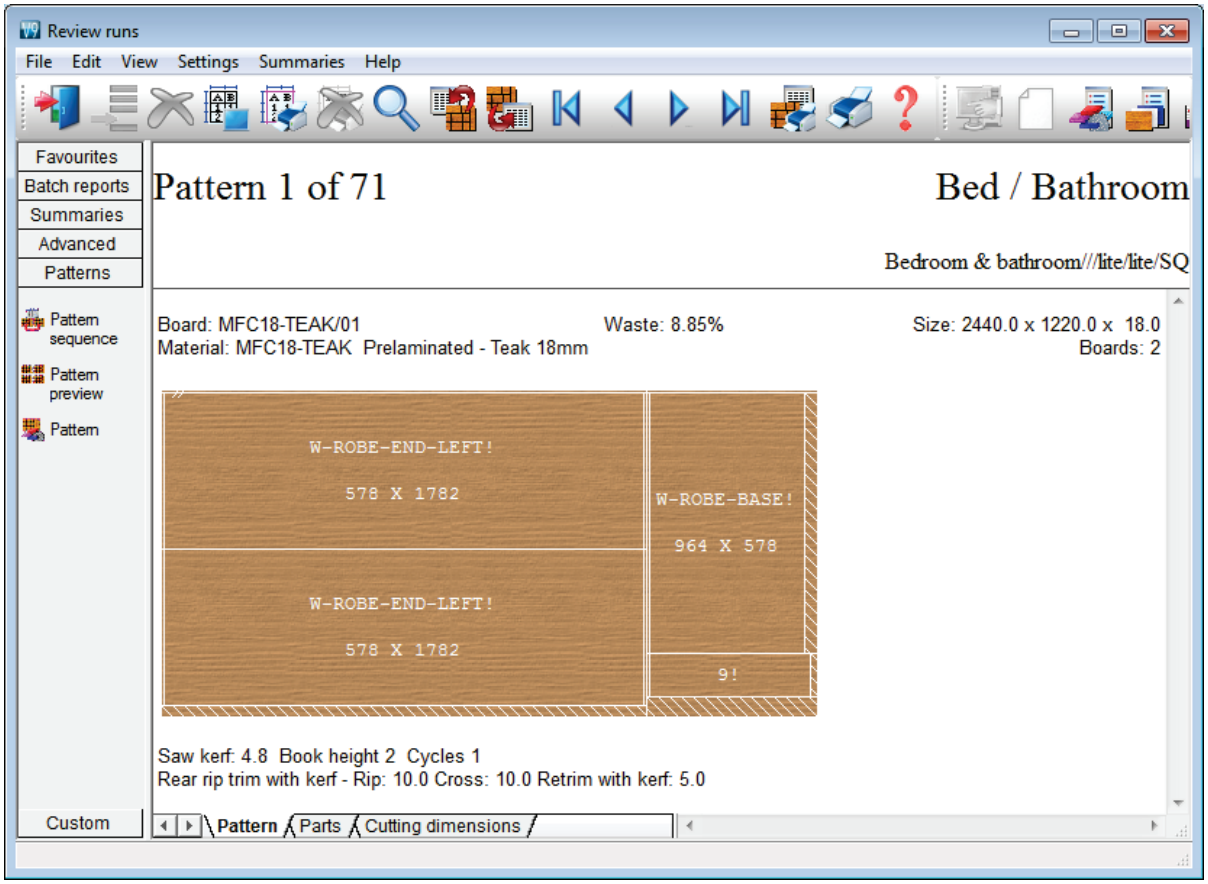
Ptn No	Board	Len... mm	Width mm	Waste %	Yield %	Board Qty	No Cyc	No Rip	No Xct	Cycle mm:ss	Total hh:mm...	Open Part	Total cuts per pattern
Average book 1.6 (23.2) Bundle loading and...											**0:00:00**		
MFC18-TEAK Prelaminated - Teak 18mm Thickness 18.0 Book 4													
1	MFC18-TEAK/01	2440.0	1220.0	8.85	91.15	2	1	0	0	0:00	0:00:00	3	0
2	MFC18-TEAK/01	2440.0	1220.0	8.85	91.15	1	1	0	0	0:00	0:00:00	4	0
3	MFC18-TEAK/01	2440.0	1220.0	8.85	91.15	1	1	0	0	0:00	0:00:00	3	0
4	MFC18-TEAK/02	3050.0	1525.0	7.07	92.93	1	1	0	0	0:00	0:00:00	6	0
5	MFC18-TEAK/02	3050.0	1525.0	7.07	92.93	1	1	0	0	0:00	0:00:00	6	0
6	MFC18-TEAK/02	3050.0	1525.0	10.07	89.93	1	1	0	0	0:00	0:00:00	7	0
7	MFC18-TEAK/02	3050.0	1525.0	7.92	92.08	1	1	0	0	0:00	0:00:00	8	0
8	MFC18-TEAK/02	3050.0	1525.0	11.80	88.20	1	1	0	0	0:00	0:00:00	7	0
9	X00148/0001	950.0	620.0	20.07	79.93	1	1	0	0	0:00	0:00:00	4	0
10	X00125/0001	1011.0	780.0	14.06	85.94	1	1	0	0	0:00	0:00:00	2	0
				9.10	**90.90**	**11**	**10**	**0**	**0**		**0:00:00**		**0**
MFC18-EBONY Prelaminated - Ebony 18mm Thickness 18.0 Book 4													
11	MFC18-EBONY/02	2440.0	1220.0	9.84	90.16	3	1	0	0	0:00	0:00:00	3	0
12	MFC18-EBONY/02	2440.0	1220.0	9.84	90.16	1	1	0	0	0:00	0:00:00	4	0
13	MFC18-EBONY/02	2440.0	1220.0	9.84	90.16	3	1	0	0	0:00	0:00:00	3	0

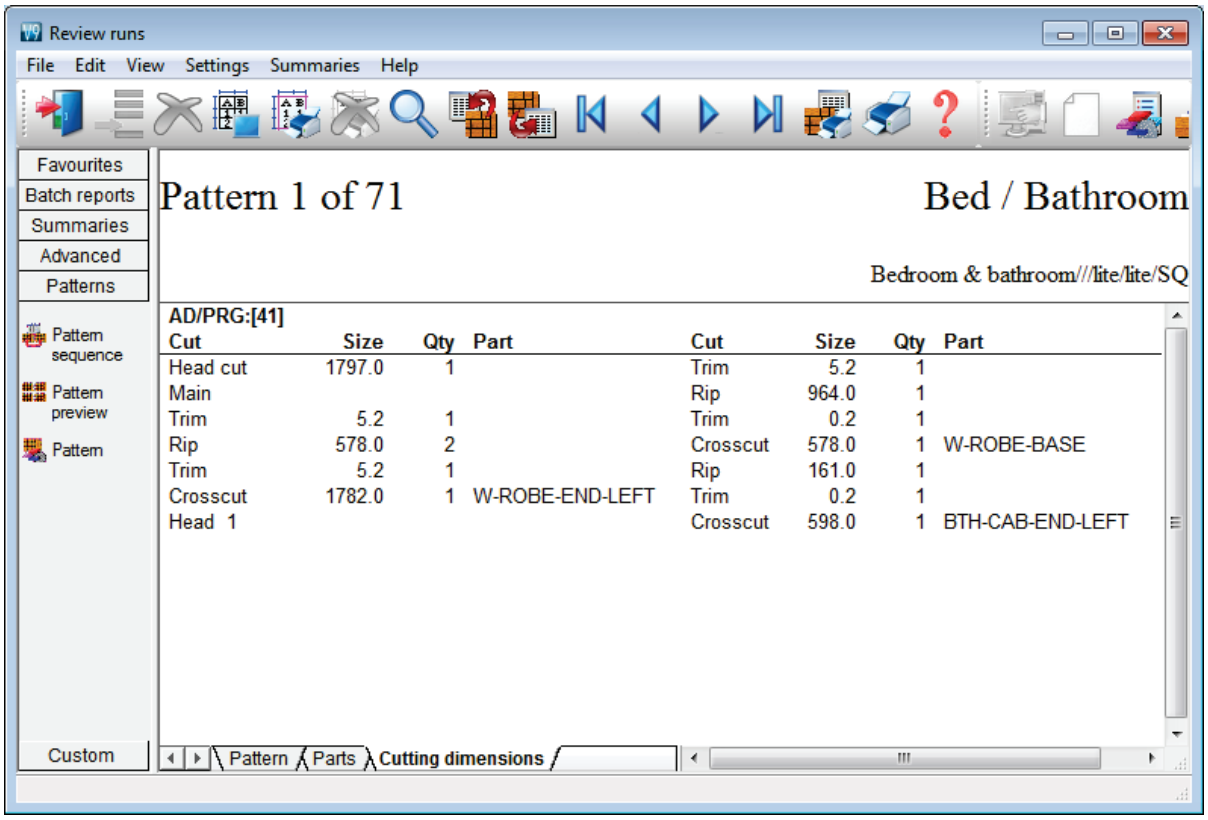
Summaries available include:-

```
Management summary
Pattern summary
Part summary
Board summary
Material summary
Sundry parts
```

Cutting dimensions

The cutting dimensions for each pattern are shown on a tab at the foot of each pattern.





The patterns and dimensions can also be printed for the run.

DEMO USER 1 | Magi-Cut Modular V9.0 | Wednesday 23 May 2012 10:56

Pattern 1 of 71

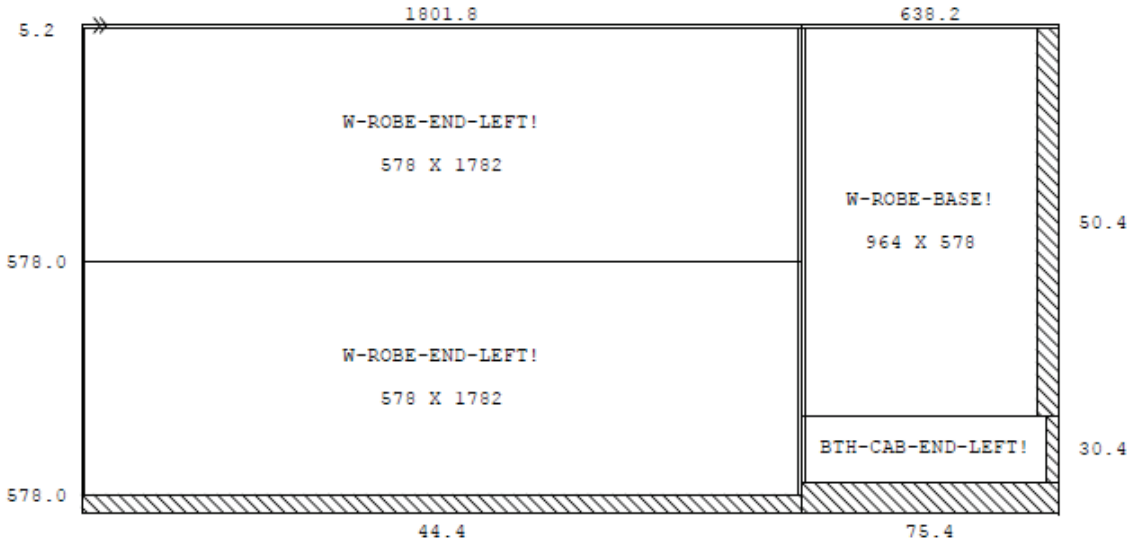
Bed / Bathroom

Bedroom & bathroom///lite/lite/SQ

Board: MFC18-TEAK/01
Material: MFC18-TEAK Prelaminated - Teak 18mm

Waste: 8.85%

Size: 2440.0 x 1220.0 x 18.0
Boards: 2



Saw kerf: 4.8 Book height 2 Cycles 1
Rear rip trim with kerf - Rip: 10.0 Cross: 10.0 Retrim with kerf: 5.0

No	Part Description	Length mm	Width mm	Total Prod	Cut	Per brd	Per ptn	To cut
9.	BTH-CAB-END-LEFT	161.0	598.0	4	NIL	1	2	2
	1.Edge Btm EBONY-TAPE, 2.Edge Top EBONY-TAPE, 3.Edge Left EBONY-TAPE, 8.Finished size 162....							
59.	W-ROBE-BASE	964.0	578.0	10	NIL	1	2	8
	8.Finished size 964.0 x 578.0, 15.Part graining Non Grained, 16.Volume LOW, 18.Part area m2 0.6, 19.E...							
86.	W-ROBE-END-LEFT	578.0	1782.0	5	NIL	2	4	1
	8.Finished size 578.0 x 1782.0, 9.Drawing name 00000067, 15.Part graining Non Grained, 16.Volume L...*							
				19	**NIL**			**11**

AD/PRG:[41]

Cut	Size	Qty	Part
Head cut	1797.0	1	
Main			
Trim	5.2	1	
Rip	578.0	2	
Trim	5.2	1	
Crosscut	1782.0	1	W-ROBE-END-LEFT
Head 1			

Saw Interface

Optimising data can be sent directly to a saw with the Holzma Cadmatic 4 controller. The program is already set up for this.

For a comparison of optimisers - see the Standard Optimiser section above

Nesting Optimiser – NE

A powerful tool for nested based manufacturing

Where parts are cut (and machined) at a Machining centre Nesting based optimisation is required. This handles both rectangular and shaped parts.

Nesting typically deals with bespoke or 'one off' jobs and small run quantities.

Data can be transferred to Weeke WoodWop or 2D DXF

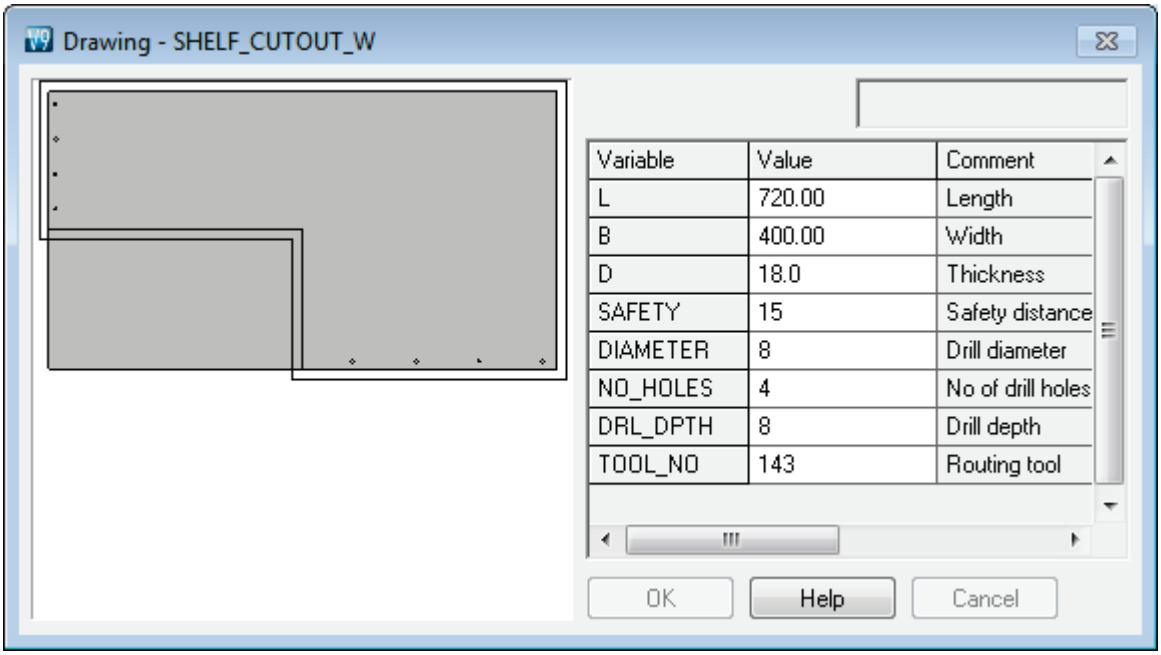
- Enter part sizes
- Optimise
- Send cutting data to machining centre

Part sizes

The starting point of optimisation is a list of part sizes and/or drawings. This can be produced in a variety of ways

- Use external part files (MPR)
- Enter rectangular parts in the Part list grid

The result is a list of part sizes with attached drawings (where required).



In this example the drawings for parts are stored in external MPR files. The drawings are created in Weeke WoodWop. NE is fully integrated with Weeke WoodWop.

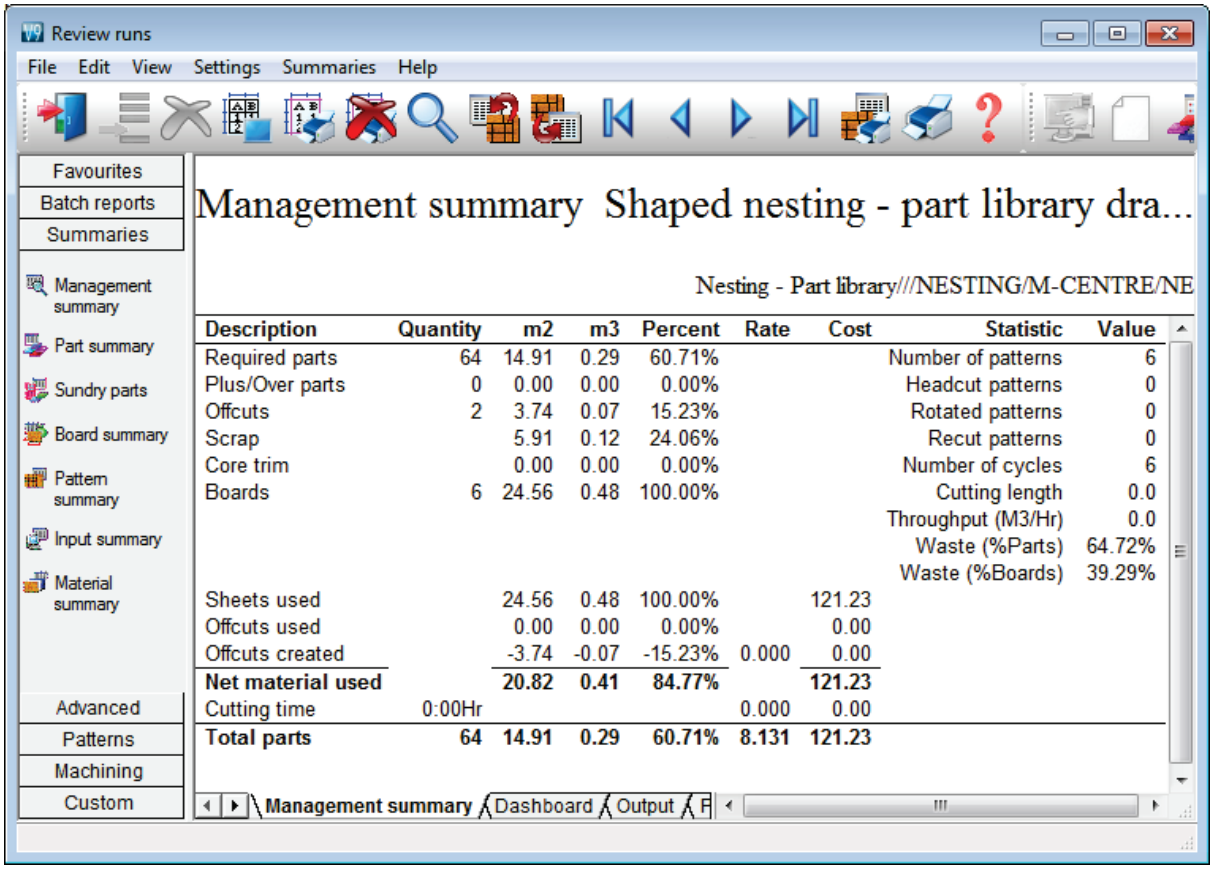
To use the Machining library to create drawings in a database (rather than external files) the MI module is required.

The NE optimiser includes the Machining editor and library for creating drawing templates and making changes to drawings but it cannot be used for creating and storing part drawings.

Nested optimising

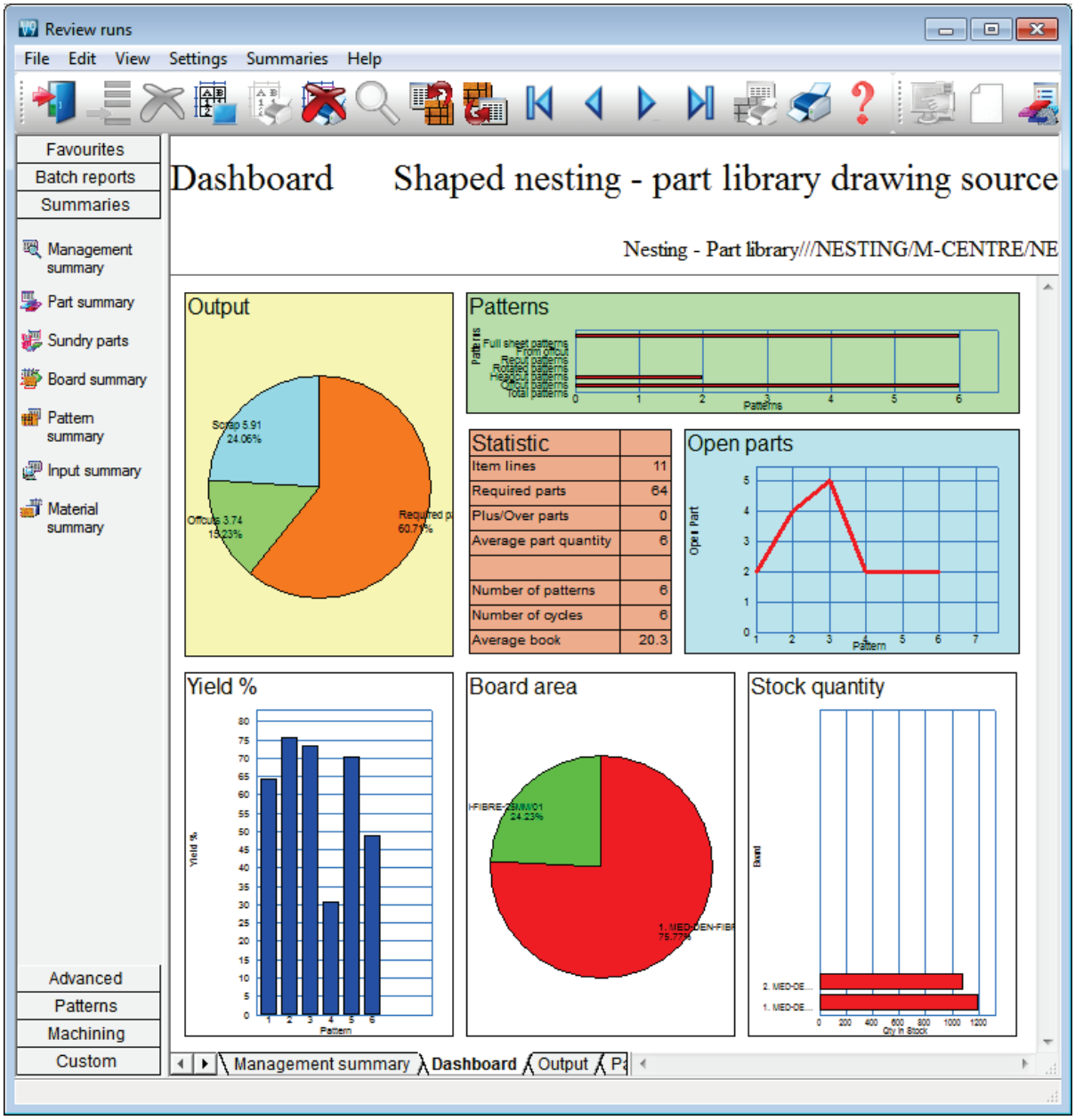
Part sizes are optimised to produce a set of patterns for machining. Part lists can be optimised singly or in a batch.

The first summary shown for each job is an overview of cutting and costs.

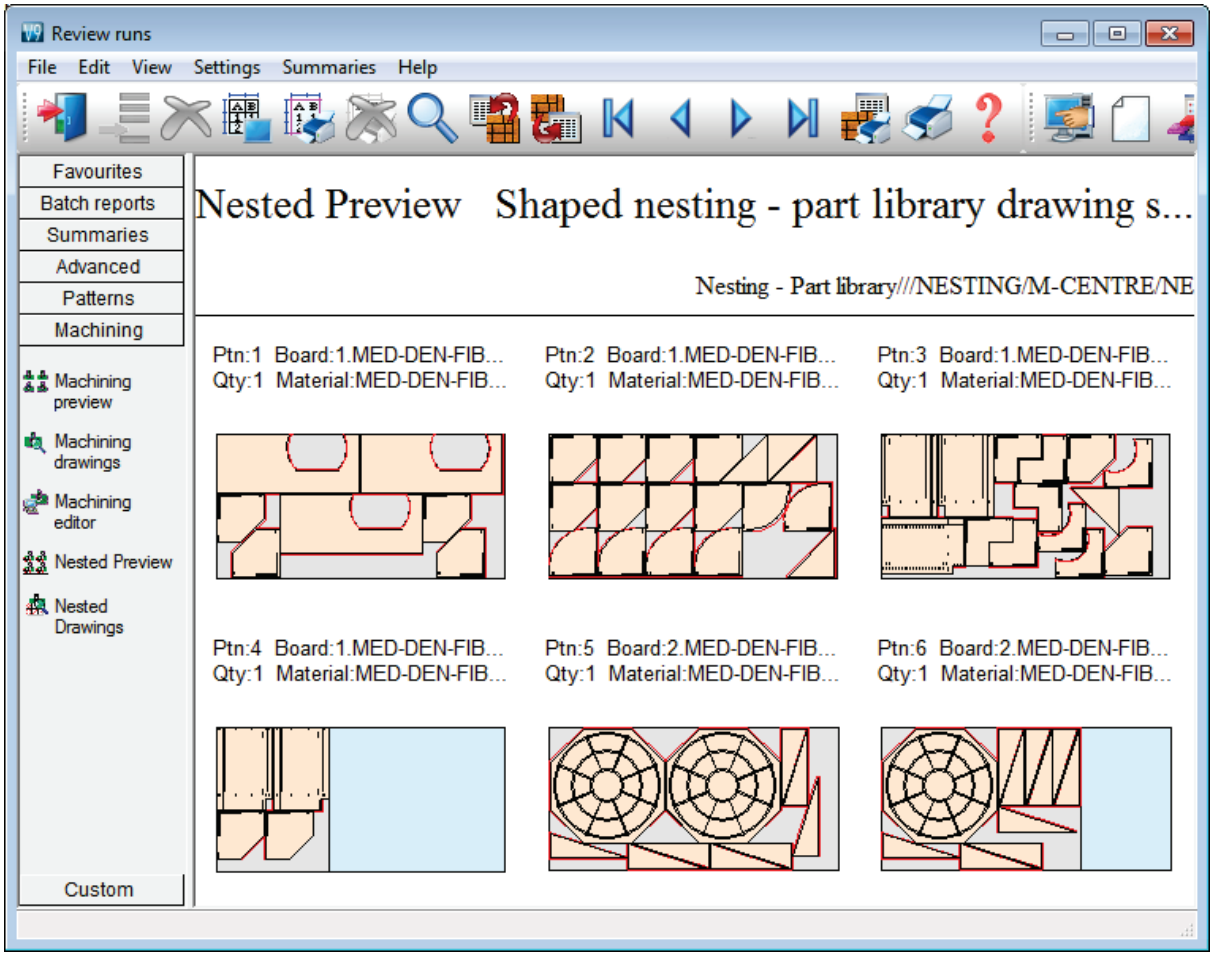


Description	Quantity	m2	m3	Percent	Rate	Cost	Statistic	Value
Required parts	64	14.91	0.29	60.71%			Number of patterns	6
Plus/Over parts	0	0.00	0.00	0.00%			Headcut patterns	0
Offcuts	2	3.74	0.07	15.23%			Rotated patterns	0
Scrap		5.91	0.12	24.06%			Recut patterns	0
Core trim		0.00	0.00	0.00%			Number of cycles	6
Boards	6	24.56	0.48	100.00%			Cutting length	0.0
							Throughput (M3/Hr)	0.0
							Waste (%Parts)	64.72%
							Waste (%Boards)	39.29%
Sheets used		24.56	0.48	100.00%		121.23		
Offcuts used		0.00	0.00	0.00%		0.00		
Offcuts created		-3.74	-0.07	-15.23%	0.000	0.00		
Net material used		**20.82**	**0.41**	**84.77%**		**121.23**		
Cutting time	0:00Hr				0.000	0.00		
Total parts	**64**	**14.91**	**0.29**	**60.71%**	**8.131**	**121.23**		

The management summary includes a Dashboard option which displays charts and snapshots of the data and can include selected custom charts.

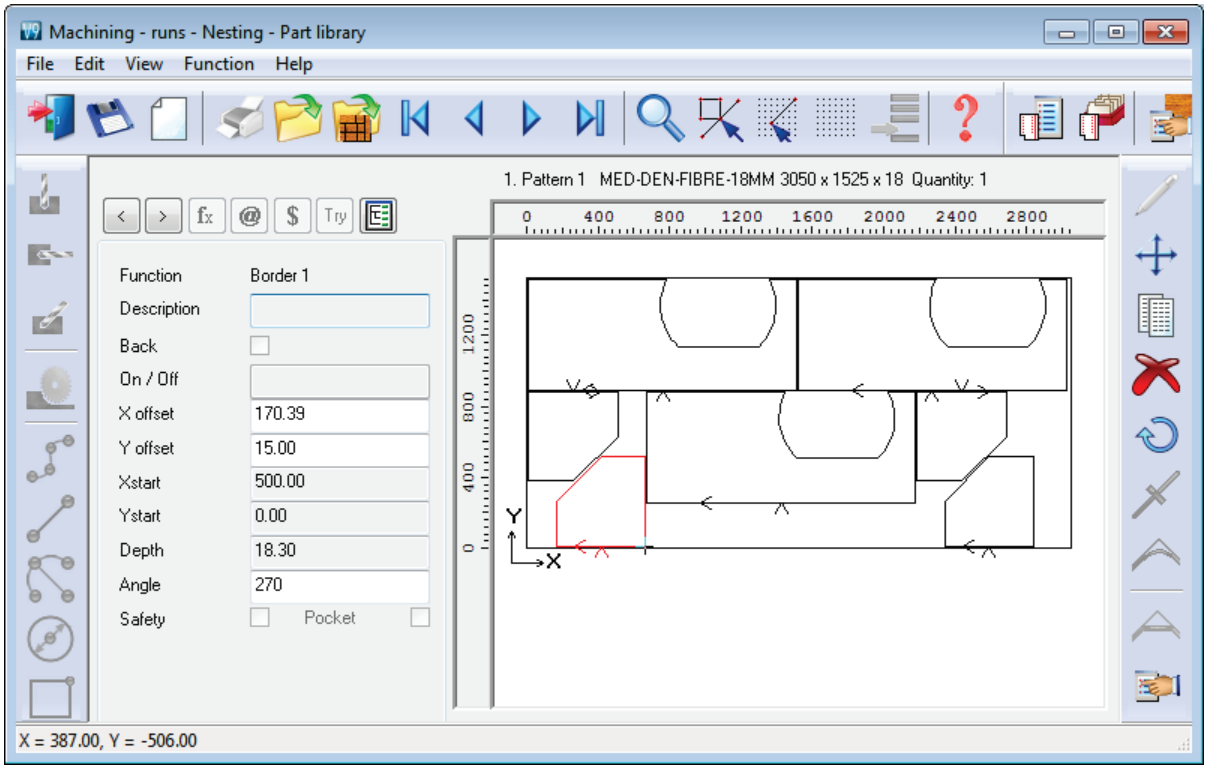


The cutting patterns are shown in a thumbnail view.



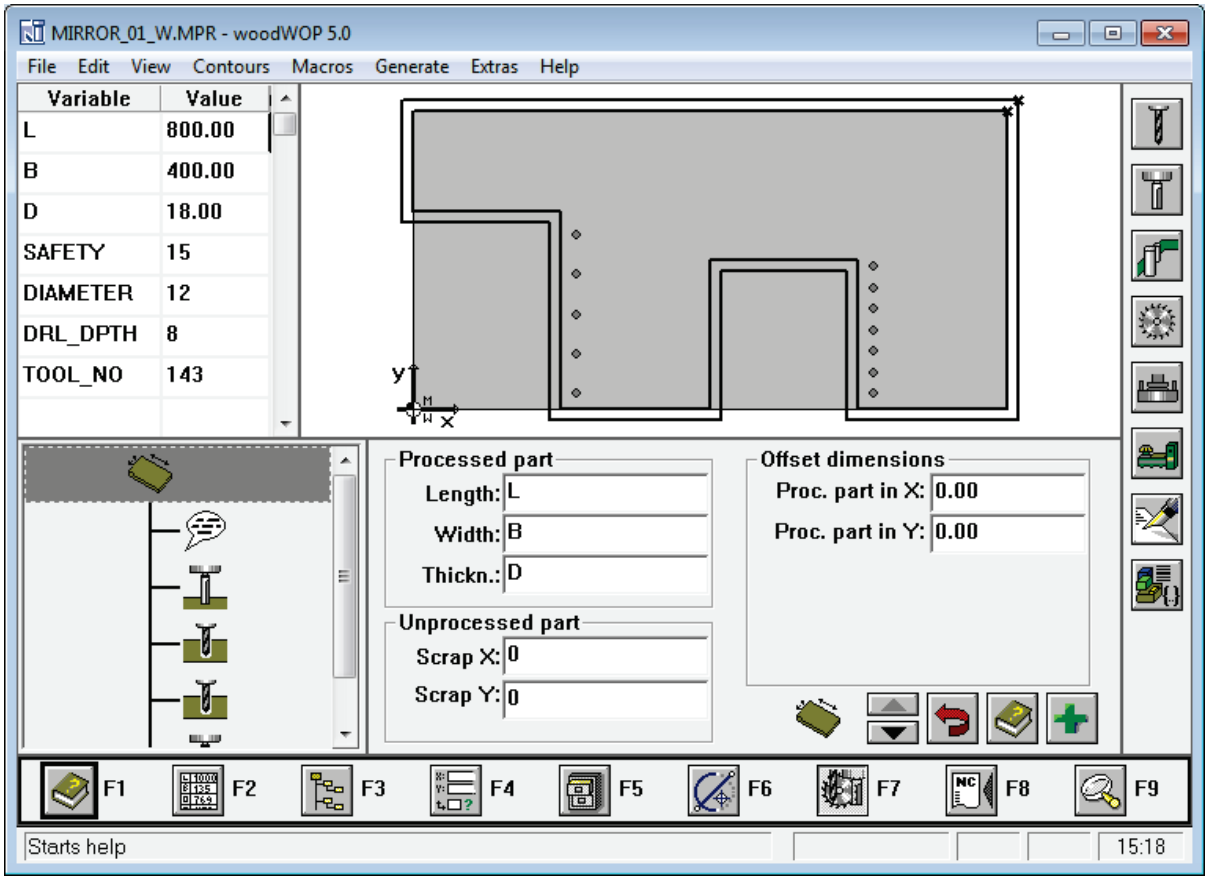
Click on a thumbnail to see the pattern in full screen view. Further information about the cutting pattern is on the tabs at the foot of the drawing.

Use the machining editor to check the details and make any last minute changes to the cutting plan.

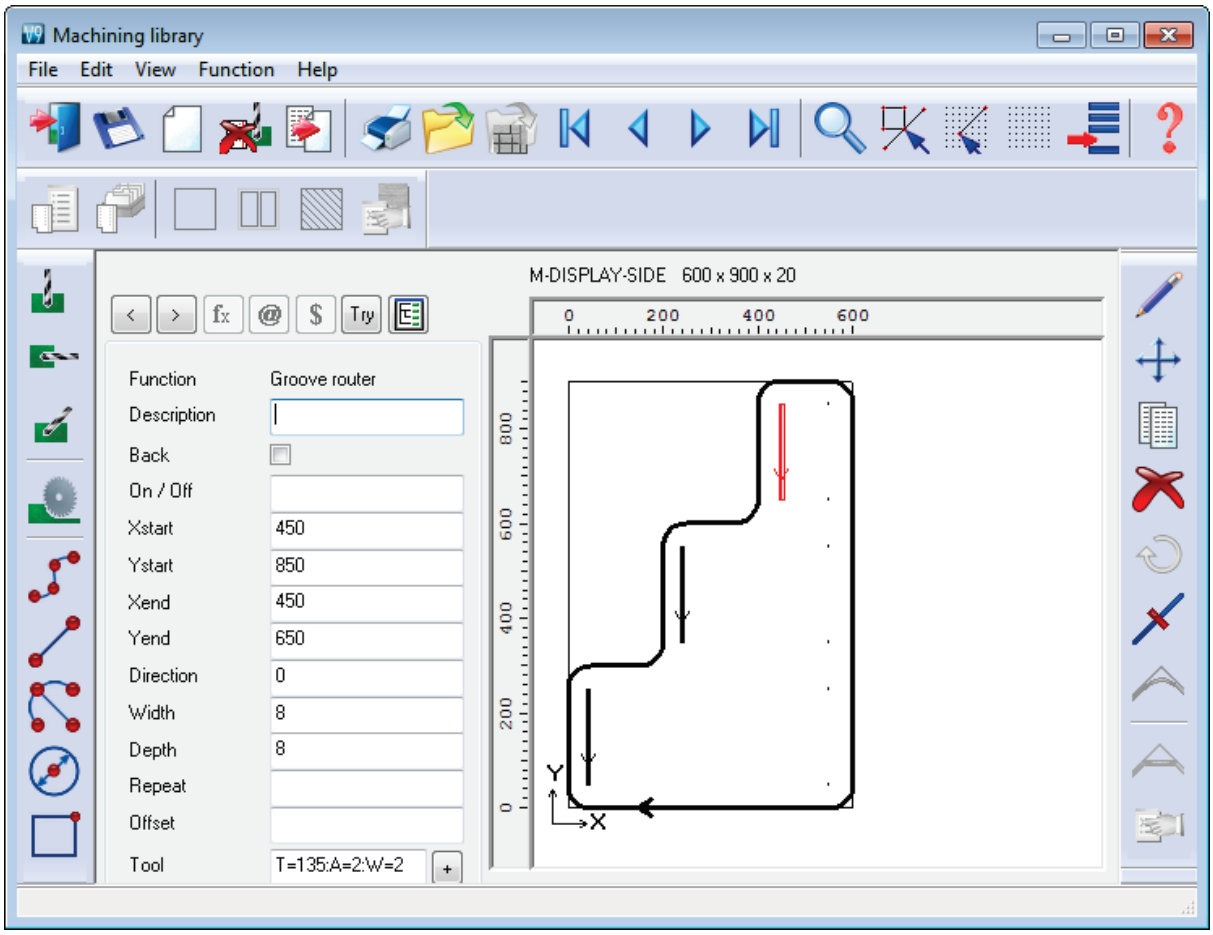


Parts can be moved or deleted and minor changes can be made to the borders. The machining instructions for each part (drilling, routing …) can also be viewed at each part drawing.

Where the NE module is used with Weeke WoodWop the program automatically moves to the WoodWop editor when editing individual MPR parts.



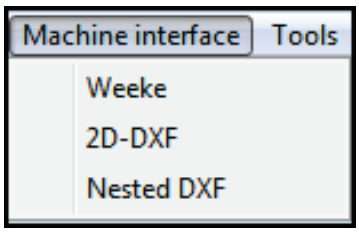
Where the program is used with the **MI module** the machining library editor can be used for part drawings.



- The editors should only be used for minor or last minute changes - if there are substantial changes then it is better to re-optimise the job as the balance of waste and costs may have changed significantly.

Machining Interface

The cutting data is sent to the machining centre via the 'Machining interface' option.



With the 'Machining centre transfer parameters' several different transfers can be set up for the different machines available for a job.

The transfer options can be set up for:-

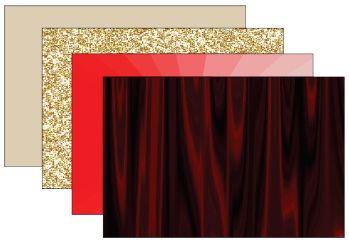
```
Weeke WoodWop MPR
2D DXF Non-layered
2D DXF Layered Nested
```

Settings include options for:-

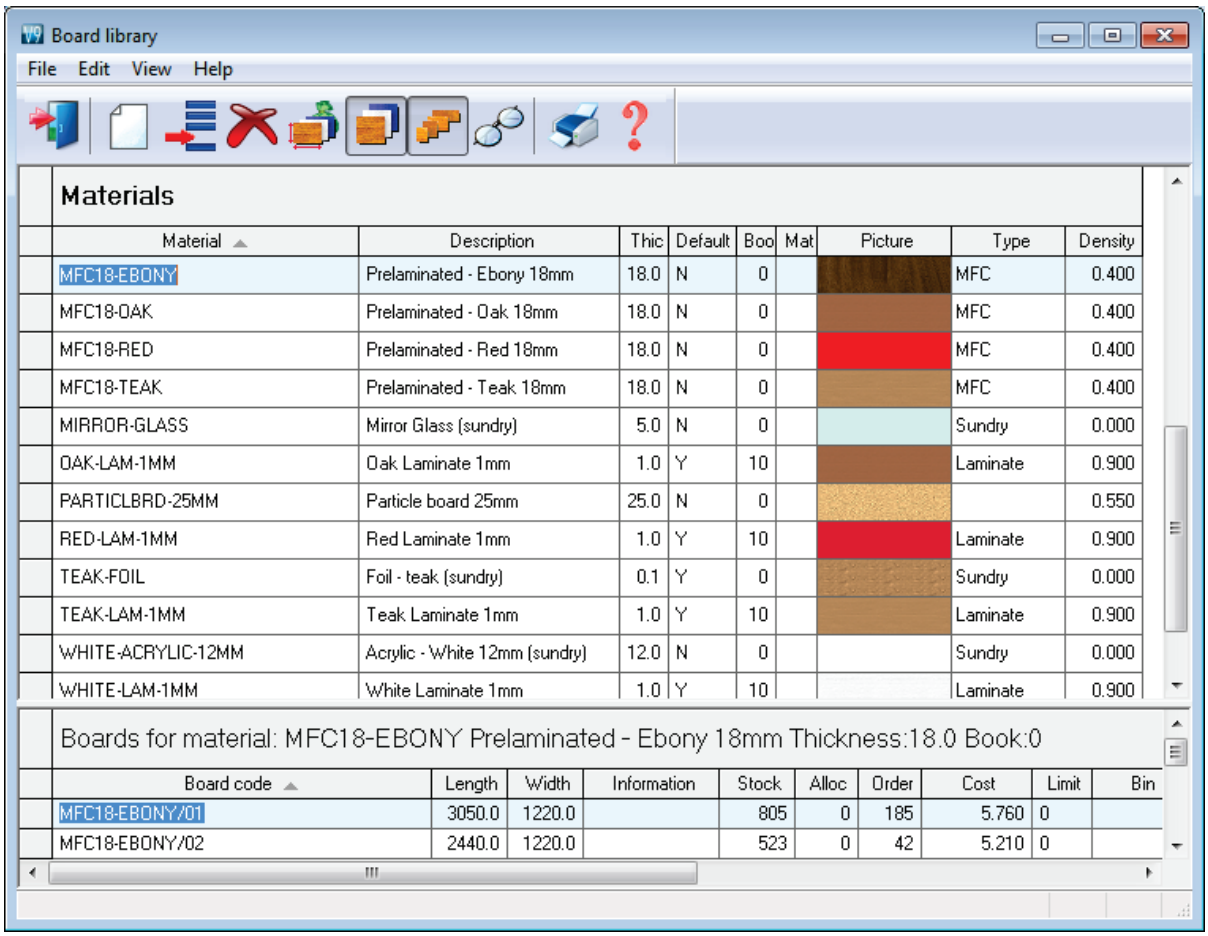
- Splitting front and back instructions for horizontal drilling to different machines.
- Converting tool instructions from one format to another
- Convert inches data to millimetres
- Minimising the tool sequence

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.

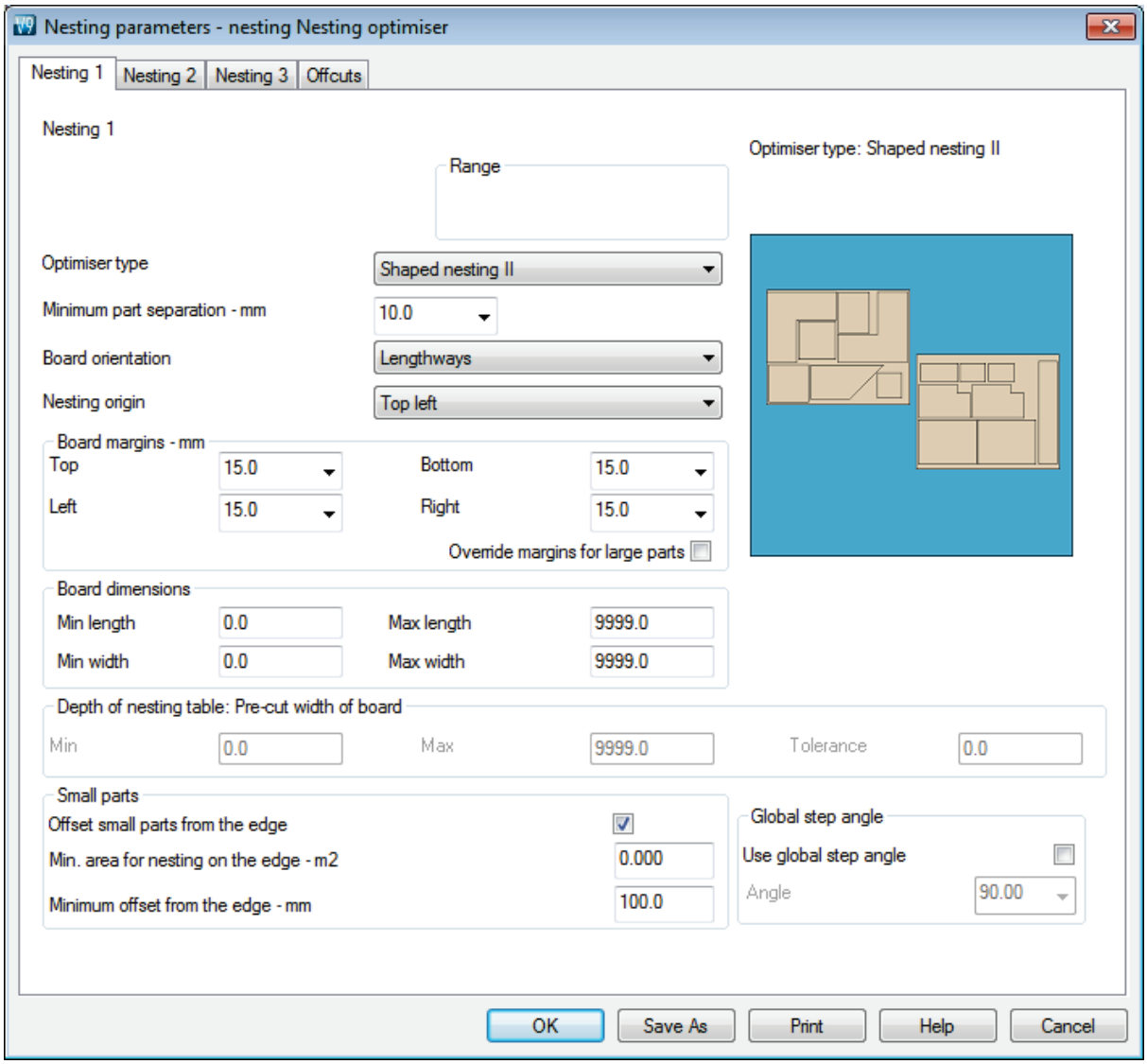
The Material column in the Part list associates each part with the correct material to use and the optimiser selects the optimum board sizes to use for each job.

The power of Nesting optimising

Cutting parts on a Machining centre requires careful control of the pattern layout. The nesting parameters give full control of cutting process for features such as:-

- Board margins
- Safety margins
- Part separation
- Placement of offcuts
- Placement of waste cuts
- Rules for placing small parts near the board edge

...



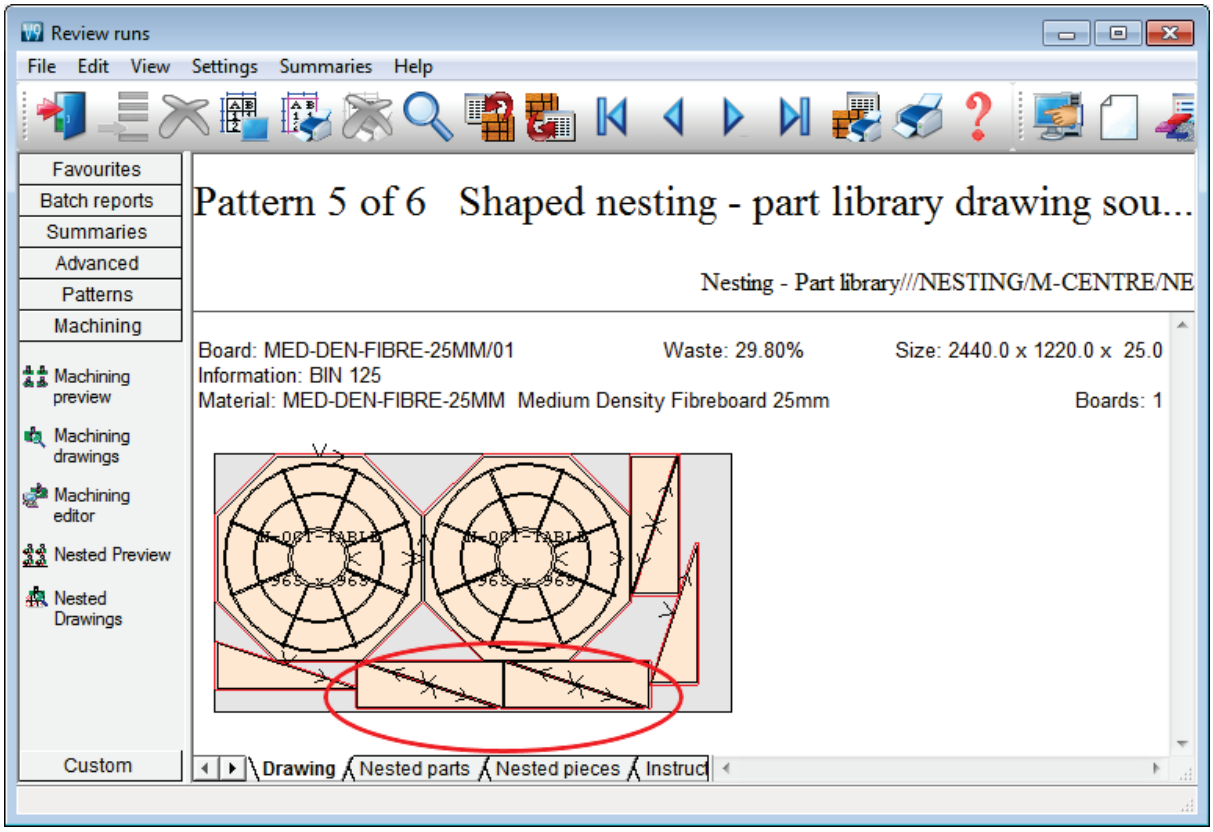
The nesting optimiser includes options for:-

- Shaped parts
- Rectangular parts only
- Calculate best position for pre-cutting jumbo boards

Grain matching

Nesting optimising often involves the visible parts of a product so grain matching can be important.

Grain matched parts can be set as a template in the machining editor and the template is used by the optimisers to ensure parts stay together and are cut from adjacent areas of board.



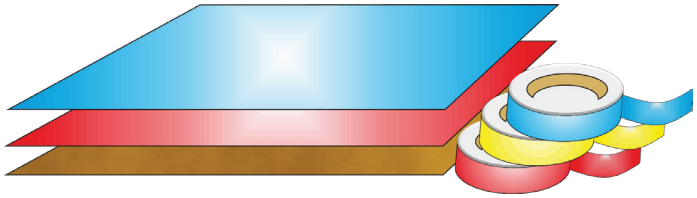
Summary of Nesting optimiser

	NE	NE + MI
Part list No. of lines (part sizes)	20,000	20,000
Total pieces	99,999	99,999
Maximum jobs in batch	250	250
Transfer to Weeke WoodWop	•	•
Transfer to 2D DXF	•	•
Full integration with Weeke WoodWop	•	•
Drawing database		•
External MPR / DXF files		•
Batch operation	•	•
Shaped parts	•	•
Optimise pre-cut	•	•
Grain matching	•	•
Full control of cutting	•	•
File management	•	•
System maintenance	•	•
Drawing editor	•	•
Reports and summaries (configurable)	•	•
Custom reports	•	•
Customised part list	•	•
Board library	•	•
Form & label design	•	•
Integrated local help	•	•
Links to website	•	•
Machining drawing editor - parts	WoodWop	WoodWop
		Machining editor
Machining drawing editor - patterns	Machining editor	Machining editor

Form & label design is for printing labels and forms at the office
For MPR files Weeke WoodWop is required

Edges & Laminating – EL

Accurate application and costing of edge-banding materials

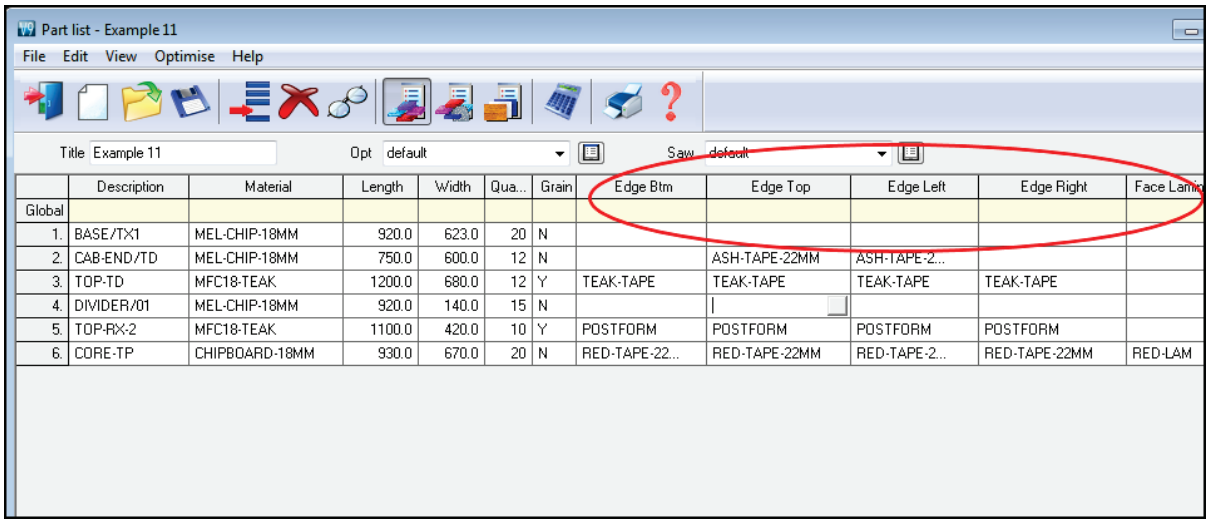


The program provides a full set of options to deal with edged, trimmed and laminated parts. A wide variety of edging methods are covered:-

- Tape
- Laminate strips
- Solid lipping
- Postform edging
- Bullnose edging
- Laminate front and back
- Core trimming (cutting back before edging)
- Edge before laminating

Edging and trims

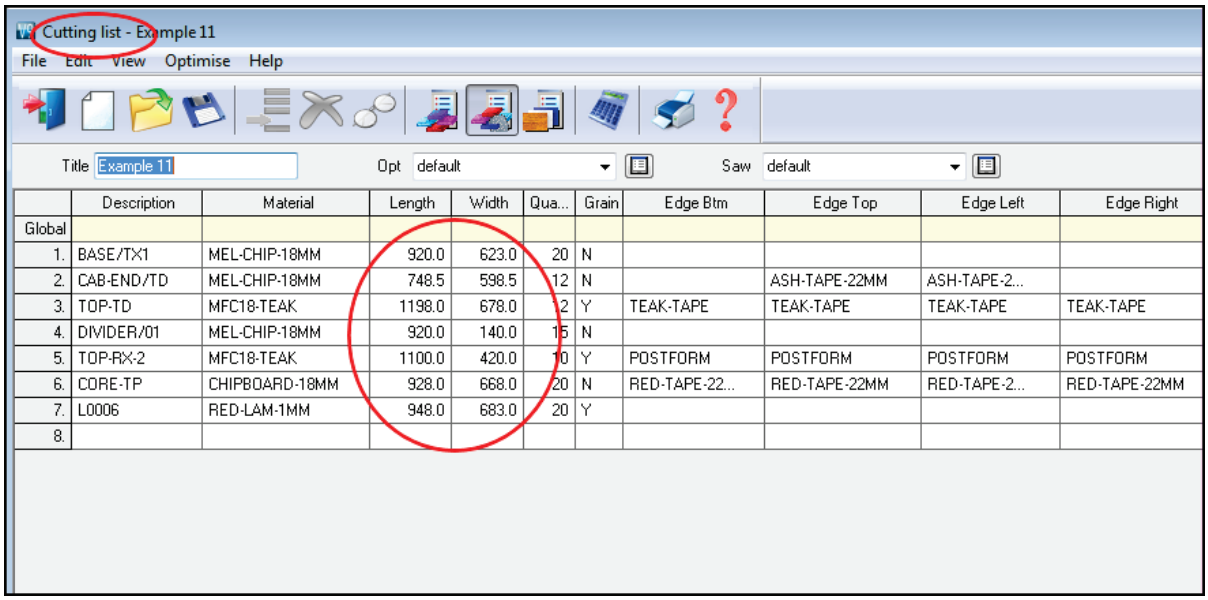
The edging requirement is set at the part list for each part. The program automatically calculates the correct cutting sizes.



	Description	Material	Length	Width	Qua...	Grain	Edge Btm	Edge Top	Edge Left	Edge Right	Face Lamin
Global											
1.	BASE/TX1	MEL-CHIP-18MM	920.0	623.0	20	N					
2.	CAB-END/TD	MEL-CHIP-18MM	750.0	600.0	12	N		ASH-TAPE-22MM	ASH-TAPE-2...		
3.	TOP-TD	MFC18-TEAK	1200.0	680.0	12	Y	TEAK-TAPE	TEAK-TAPE	TEAK-TAPE	TEAK-TAPE	
4.	DIVIDER/01	MEL-CHIP-18MM	920.0	140.0	15	N					
5.	TOP-RX-2	MFC18-TEAK	1100.0	420.0	10	Y	POSTFORM	POSTFORM	POSTFORM	POSTFORM	
6.	CORE-TP	CHIPBOARD-18MM	930.0	670.0	20	N	RED-TAPE-22...	RED-TAPE-22MM	RED-TAPE-2...	RED-TAPE-22MM	RED-LAM

A set of extra fields at the Part list allow for the entry of the edging code for each edge of each part. The correct cutting sizes are produced automatically.

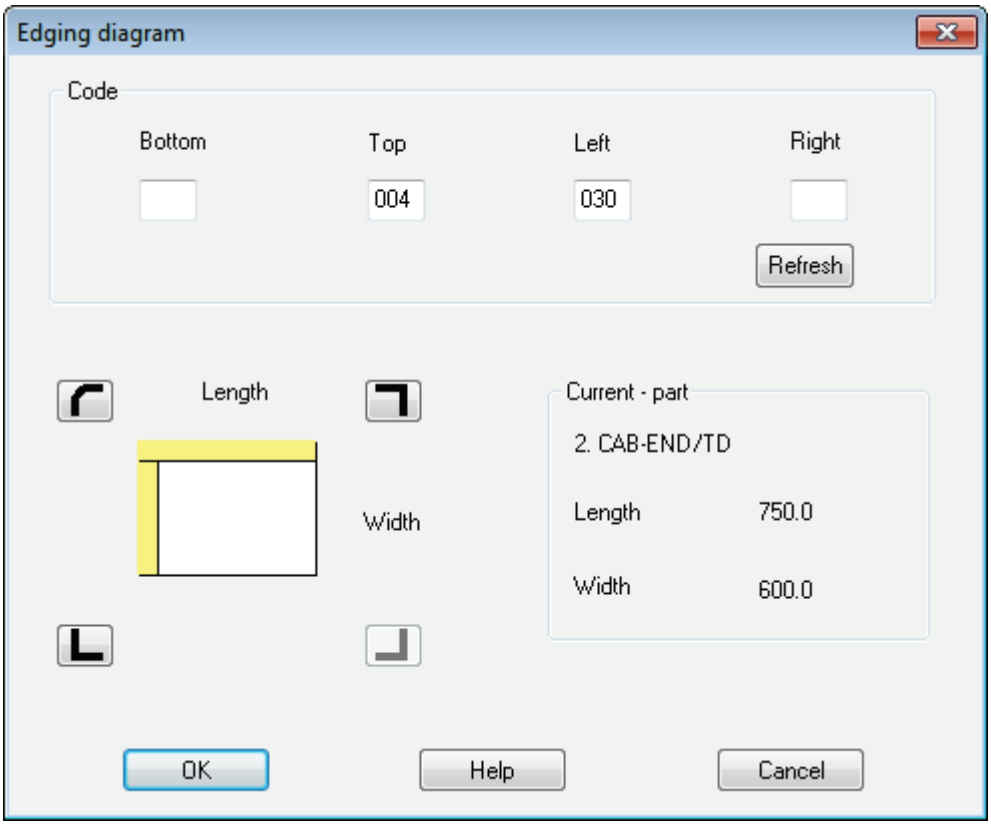
For example a finished length of 750.0 mm requires a cutting size of less (e.g. 748.5) if the part is edged by tape on any of the width edges.



	Description	Material	Length	Width	Qua...	Grain	Edge Btm	Edge Top	Edge Left	Edge Right
Global										
1.	BASE/TX1	MEL-CHIP-18MM	920.0	623.0	20	N				
2.	CAB-END/TD	MEL-CHIP-18MM	748.5	598.5	12	N		ASH-TAPE-22MM	ASH-TAPE-2...	
3.	TOP-TD	MFC18-TEAK	1198.0	678.0	2	Y	TEAK-TAPE	TEAK-TAPE	TEAK-TAPE	TEAK-TAPE
4.	DIVIDER/01	MEL-CHIP-18MM	920.0	140.0	15	N				
5.	TOP-RX-2	MFC18-TEAK	1100.0	420.0	10	Y	POSTFORM	POSTFORM	POSTFORM	POSTFORM
6.	CORE-TP	CHIPBOARD-18MM	928.0	668.0	20	N	RED-TAPE-22...	RED-TAPE-22MM	RED-TAPE-2...	RED-TAPE-22MM
7.	L0006	RED-LAM-1MM	948.0	683.0	20	Y				
8.										

The part list can include a field for describing the Edge diagram.

This field can be used to set how adjoining edge pieces butt on to each other or whether they are mitred.



With the PL module the edging diagram can be included on each part label to show clearly how the edging is produced. This is available with:-

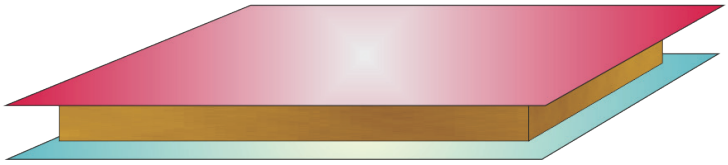
- Printing labels at the Office (PL module)
- Printing labels at the Saw (Online label PC)

- Printing labels at the Saw (Cadmatic saw controller)

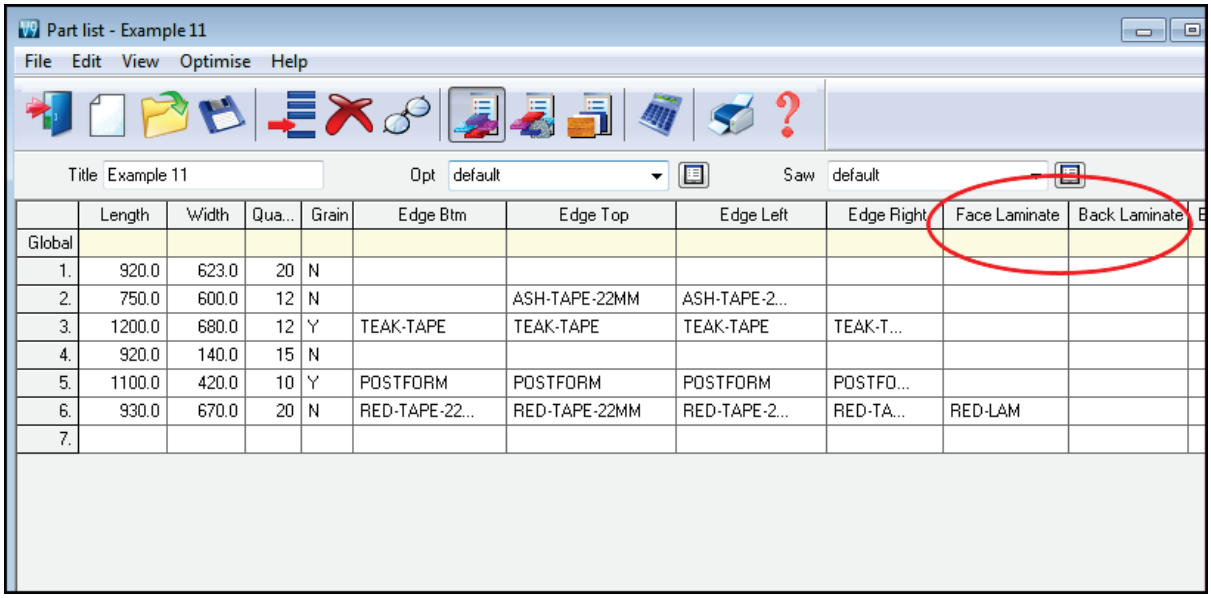
For the Cadmatic the information is passed to the Cadmatic controller on transfer of data to the saw.

- With the Parts & Labels module the edging requirements can be printed on a label as a bar code and used for processing at the edgebander after cutting.

Laminating



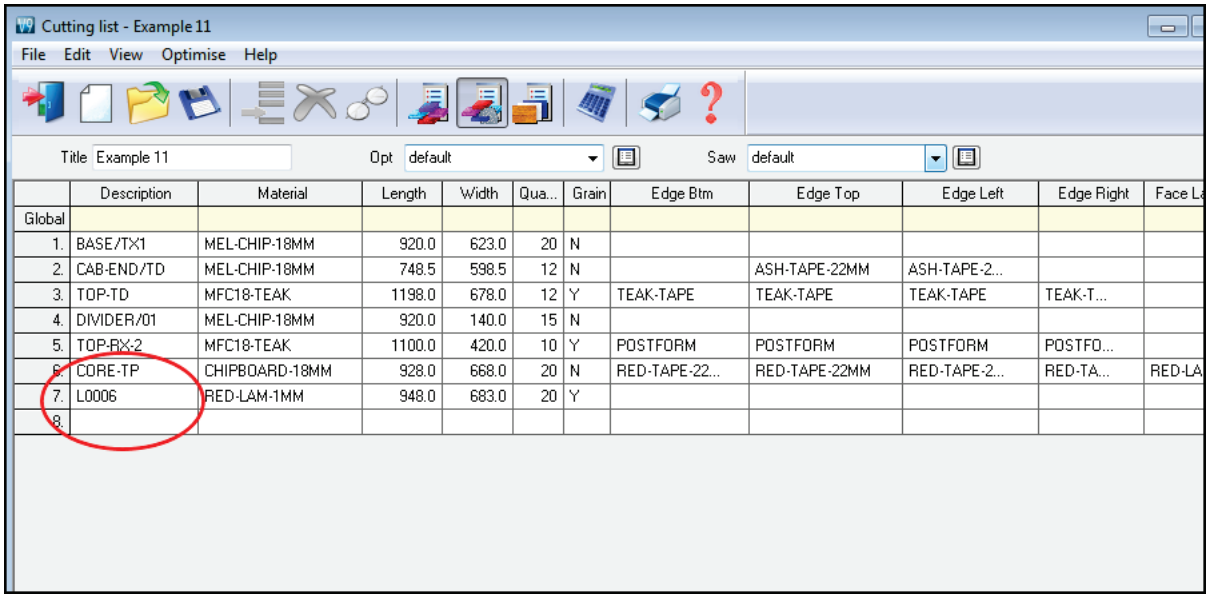
The part list can also include fields for laminating one or both sides of a part.



	Length	Width	Qua...	Grain	Edge Btm	Edge Top	Edge Left	Edge Right	Face Laminate	Back Laminate
Global										
1.	920.0	623.0	20	N						
2.	750.0	600.0	12	N		ASH-TAPE-22MM	ASH-TAPE-2...			
3.	1200.0	680.0	12	Y	TEAK-TAPE	TEAK-TAPE	TEAK-TAPE	TEAK-T...		
4.	920.0	140.0	15	N						
5.	1100.0	420.0	10	Y	POSTFORM	POSTFORM	POSTFORM	POSTFO...		
6.	930.0	670.0	20	N	RED-TAPE-22...	RED-TAPE-22MM	RED-TAPE-2...	RED-TA...	RED-LAM	
7.										

The program automatically adds extra items to the cutting list (cutting requirement) to allow for the laminate pieces required.

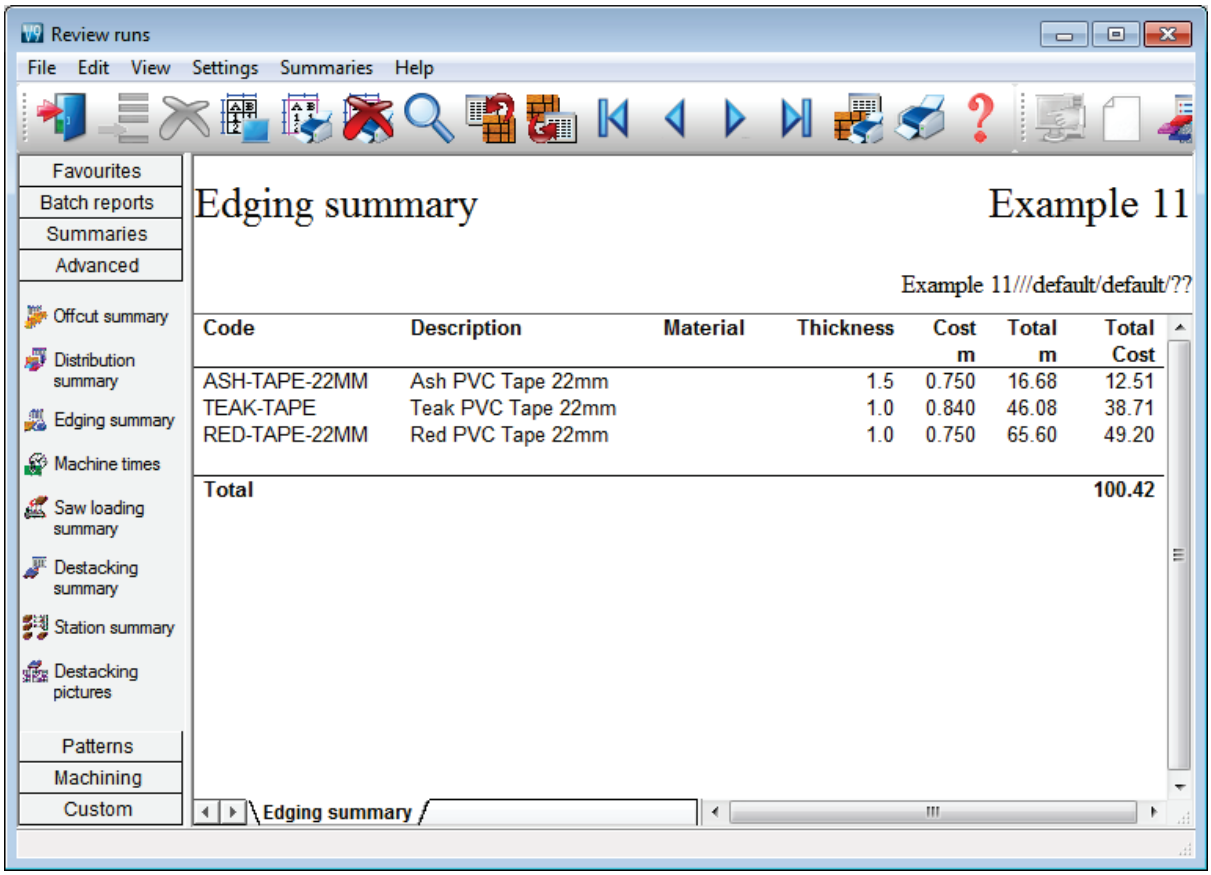
The laminate size is adjusted to allow for trimming as required.



	Description	Material	Length	Width	Qua...	Grain	Edge Btm	Edge Top	Edge Left	Edge Right	Face La
Global											
1.	BASE/TX1	MEL-CHIP-18MM	920.0	623.0	20	N					
2.	CAB-END/TD	MEL-CHIP-18MM	748.5	598.5	12	N		ASH-TAPE-22MM	ASH-TAPE-2...		
3.	TOP-TD	MFC18-TEAK	1198.0	678.0	12	Y	TEAK-TAPE	TEAK-TAPE	TEAK-TAPE	TEAK-T...	
4.	DIVIDER/01	MEL-CHIP-18MM	920.0	140.0	15	N					
5.	TOP-BX-2	MFC18-TEAK	1100.0	420.0	10	Y	POSTFORM	POSTFORM	POSTFORM	POSTFO...	
6.	CORE-TP	CHIPBOARD-18MM	928.0	668.0	20	N	RED-TAPE-22...	RED-TAPE-22MM	RED-TAPE-2...	RED-TA...	RED-LA
7.	L0006	RED-LAM-1MM	948.0	683.0	20	Y					
8.											

Edging summary and costs

The edging summary gives full details of the edging requirements including the costs.



Code	Description	Material	Thickness	Cost m	Total m	Total Cost
ASH-TAPE-22MM	Ash PVC Tape 22mm		1.5	0.750	16.68	12.51
TEAK-TAPE	Teak PVC Tape 22mm		1.0	0.840	46.08	38.71
RED-TAPE-22MM	Red PVC Tape 22mm		1.0	0.750	65.60	49.20
Total						**100.42**

The part costing report shows the edging material costs and the Egdebander costs.

DEMO USER 1 Modular V9.0 Wednesday 23 May 2012 16:24

Part costing - full Example 11

Part costing - full

No	Code / Description	Material / Description	Length	Width	Quantity			
					Time	Use	Rate	Cost
1.	BASE/TX1	MEL-CHIP-18MM	920.0	623.0	20			
	Finished size: 920.0 x 623.0 Part graining: Non Grained Volume: MED							
	Part area m2: 0.6							
	BASE/TX1	MEL-CHIP-18MM	920.0	623.0	0.573		4.646	2.663
	Saw				0:41	0.011	50.000	0.565
					Total cost :			3.227
2.	CAB-END/TD	MEL-CHIP-18MM	750.0	600.0	12			
	Edge Top: ASH-TAPE-22MM Edge Left: ASH-TAPE-22MM Finished size: 750.0 x 600.0							
	Part graining: Non Grained Volume: MED Part area m2: 0.4							
	CAB-END/TD	MEL-CHIP-18MM	748.5	598.5	0.448		4.646	2.081
	ASH-TAPE-22MM	Ash PVC Tape 22mm				1.390	0.750	1.043
	Saw				0:35	0.010	50.000	0.493
	Edgebander				0:31	0.009	30.000	0.258
					Total cost :			3.875
3.	TOP-TD	MFC18-TEAK	1200.0	680.0	12			
	Edge Btm: TEAK-TAPE Edge Top: TEAK-TAPE Edge Left: TEAK-TAPE Edge Right: TEAK-TAPE							
	Finished size: 1200.0 x 680.0 Part graining: Grained Volume: MED Part area m2: 0.8							
	Edgebander: N/A							
	TOP-TD	MFC18-TEAK	1198.0	678.0	0.812		3.866	3.140
	TEAK-TAPE	Teak PVC Tape 22mm				3.840	0.840	3.226
	Saw				0:49	0.014	50.000	0.687
	Edgebander				1:12	0.020	30.000	0.597
					Total cost :			7.650

The operational details and costs of each Edgebander are set up in the Edging parameters and the Machining rate parameters. These include options such as:-

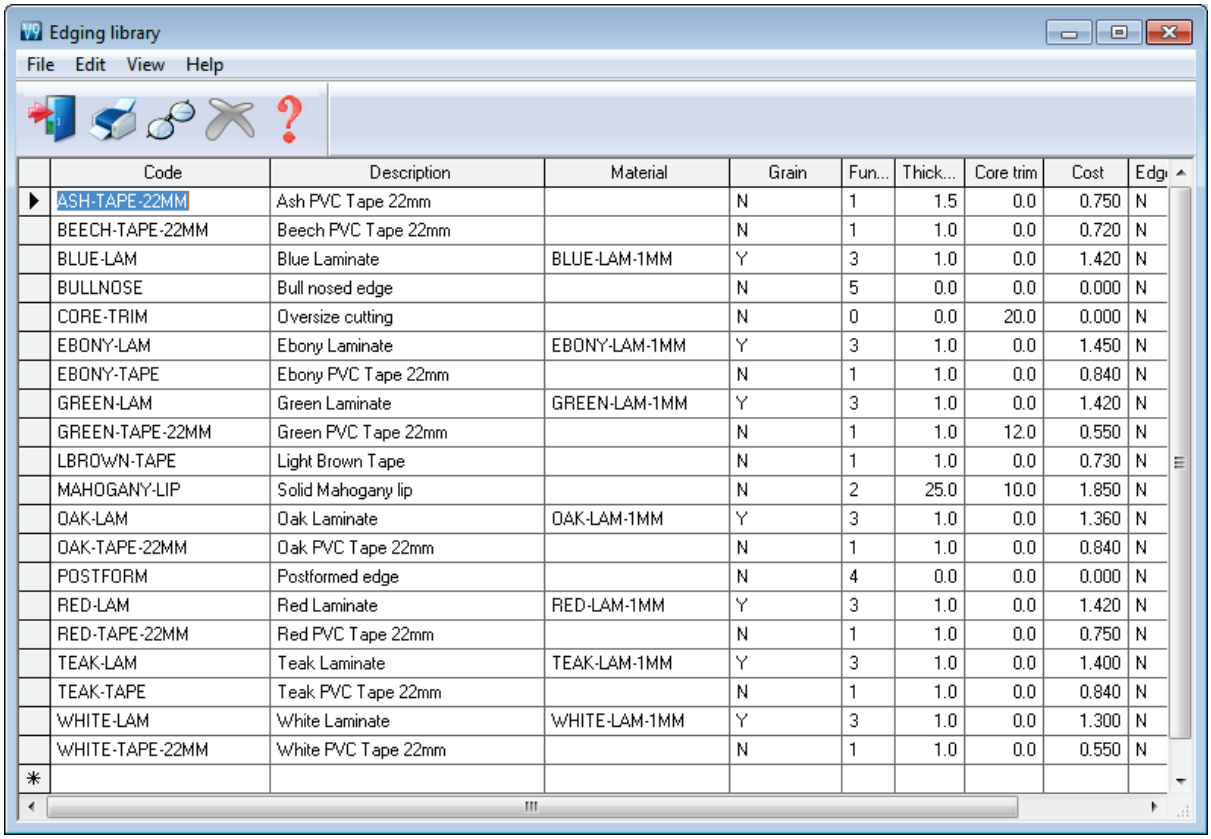
- Overlap for edging
- Gap between parts
- Edgebander speed
- Double sided or not

...

Edging library

The details of the edging materials and operations are set up in the Edging library.

This can be customised to match many different edging methods.



Code	Description	Material	Grain	Fun...	Thick...	Core trim	Cost	Edg
ASH-TAPE-22MM	Ash PVC Tape 22mm		N	1	1.5	0.0	0.750	N
BEECH-TAPE-22MM	Beech PVC Tape 22mm		N	1	1.0	0.0	0.720	N
BLUE-LAM	Blue Laminate	BLUE-LAM-1MM	Y	3	1.0	0.0	1.420	N
BULLNOSE	Bull nosed edge		N	5	0.0	0.0	0.000	N
CORE-TRIM	Oversize cutting		N	0	0.0	20.0	0.000	N
EBONY-LAM	Ebony Laminate	EBONY-LAM-1MM	Y	3	1.0	0.0	1.450	N
EBONY-TAPE	Ebony PVC Tape 22mm		N	1	1.0	0.0	0.840	N
GREEN-LAM	Green Laminate	GREEN-LAM-1MM	Y	3	1.0	0.0	1.420	N
GREEN-TAPE-22MM	Green PVC Tape 22mm		N	1	1.0	12.0	0.550	N
LBROWN-TAPE	Light Brown Tape		N	1	1.0	0.0	0.730	N
MAHOGANY-LIP	Solid Mahogany lip		N	2	25.0	10.0	1.850	N
OAK-LAM	Oak Laminate	OAK-LAM-1MM	Y	3	1.0	0.0	1.360	N
OAK-TAPE-22MM	Oak PVC Tape 22mm		N	1	1.0	0.0	0.840	N
POSTFORM	Postformed edge		N	4	0.0	0.0	0.000	N
RED-LAM	Red Laminate	RED-LAM-1MM	Y	3	1.0	0.0	1.420	N
RED-TAPE-22MM	Red PVC Tape 22mm		N	1	1.0	0.0	0.750	N
TEAK-LAM	Teak Laminate	TEAK-LAM-1MM	Y	3	1.0	0.0	1.400	N
TEAK-TAPE	Teak PVC Tape 22mm		N	1	1.0	0.0	0.840	N
WHITE-LAM	White Laminate	WHITE-LAM-1MM	Y	3	1.0	0.0	1.300	N
WHITE-TAPE-22MM	White PVC Tape 22mm		N	1	1.0	0.0	0.550	N

- Where there are a large number of different laminates for example with laminate colours the Board library can be used instead of the edging library for describing the laminates - this is often more convenient for sheet laminates.

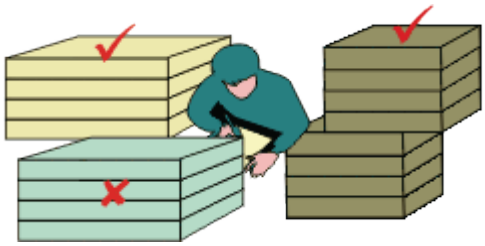
Summary of Edges & Laminating

Edges and Laminating requires one of the Optimising modules: LO, SO or PO

	EL	EL + PL
Maximum items in library	99999	99999
Maximum length of edge code	25	25
Maximum laminates in board library	Unlimited	Unlimited
Edges	•	•
Laminates	•	•
Costing	•	•
Edging diagram with labels		•
Edging summary	•	•

Stock Control – SC

For accurate and efficient inventory management



A complete stock system for sheet materials but it can also be integrated with external systems such as the Bargstedt SQL server stock management system.

Offcuts generated in one optimisation can be sent back to the board library for use in later runs with customised cost adjustment.

The exact amount of stock can be reserved for future jobs.

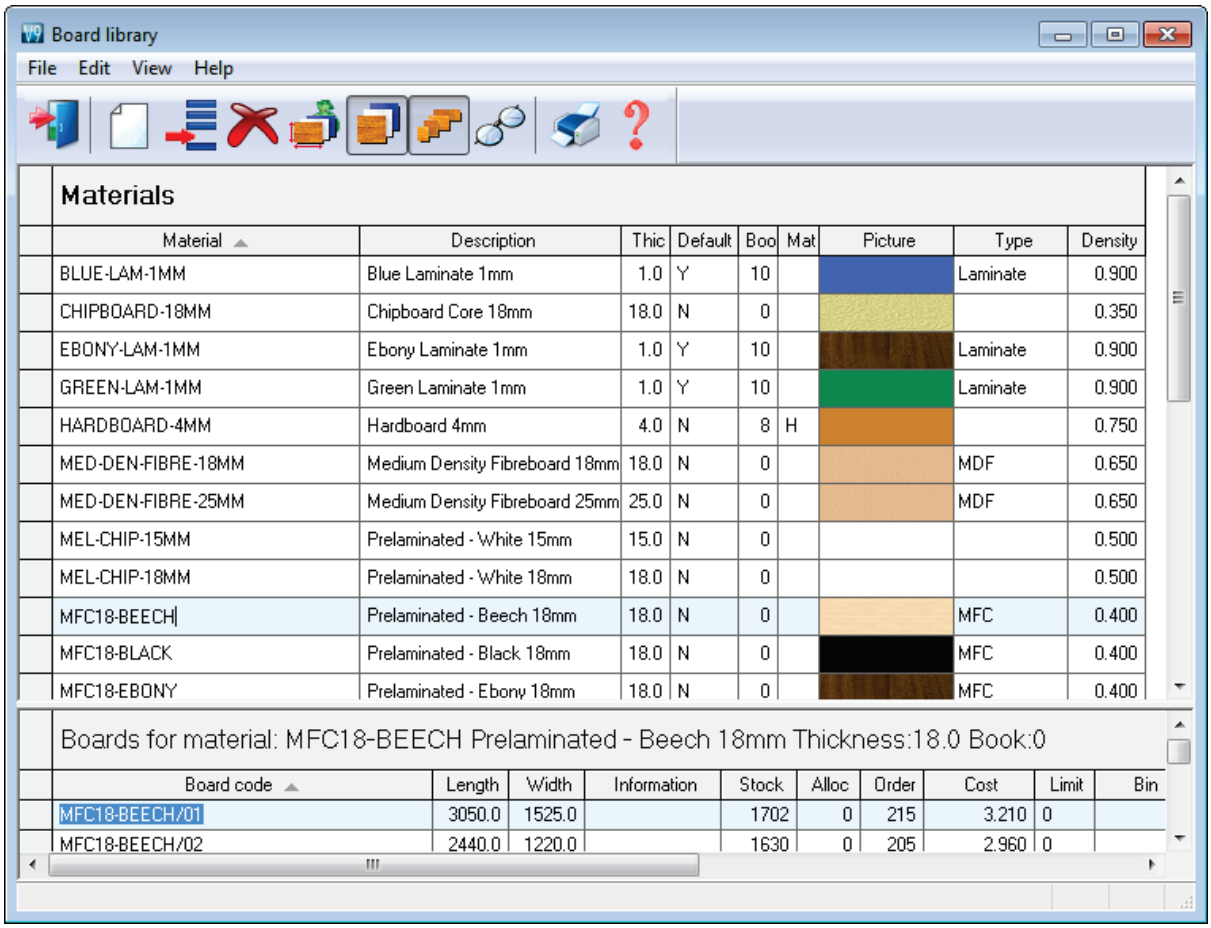
The simplest operation is to control the physical stock in the Board library.

- Optimise run (or batch of runs)
- Issue stock for runs

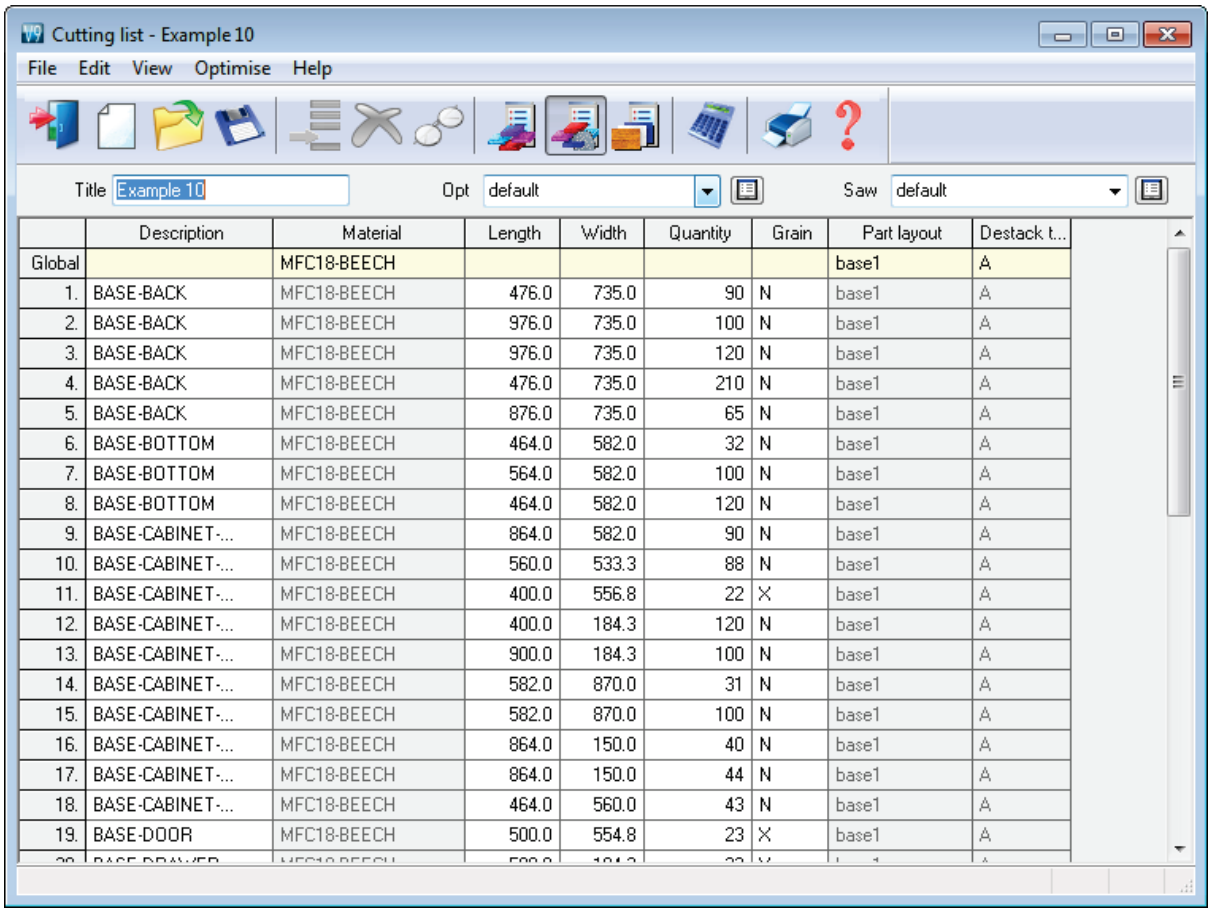
The sheets required for cutting are removed from the library and any offcuts generated by the run are entered as new items in the library.

Control physical stock


The board inventory is shown in the Board library.

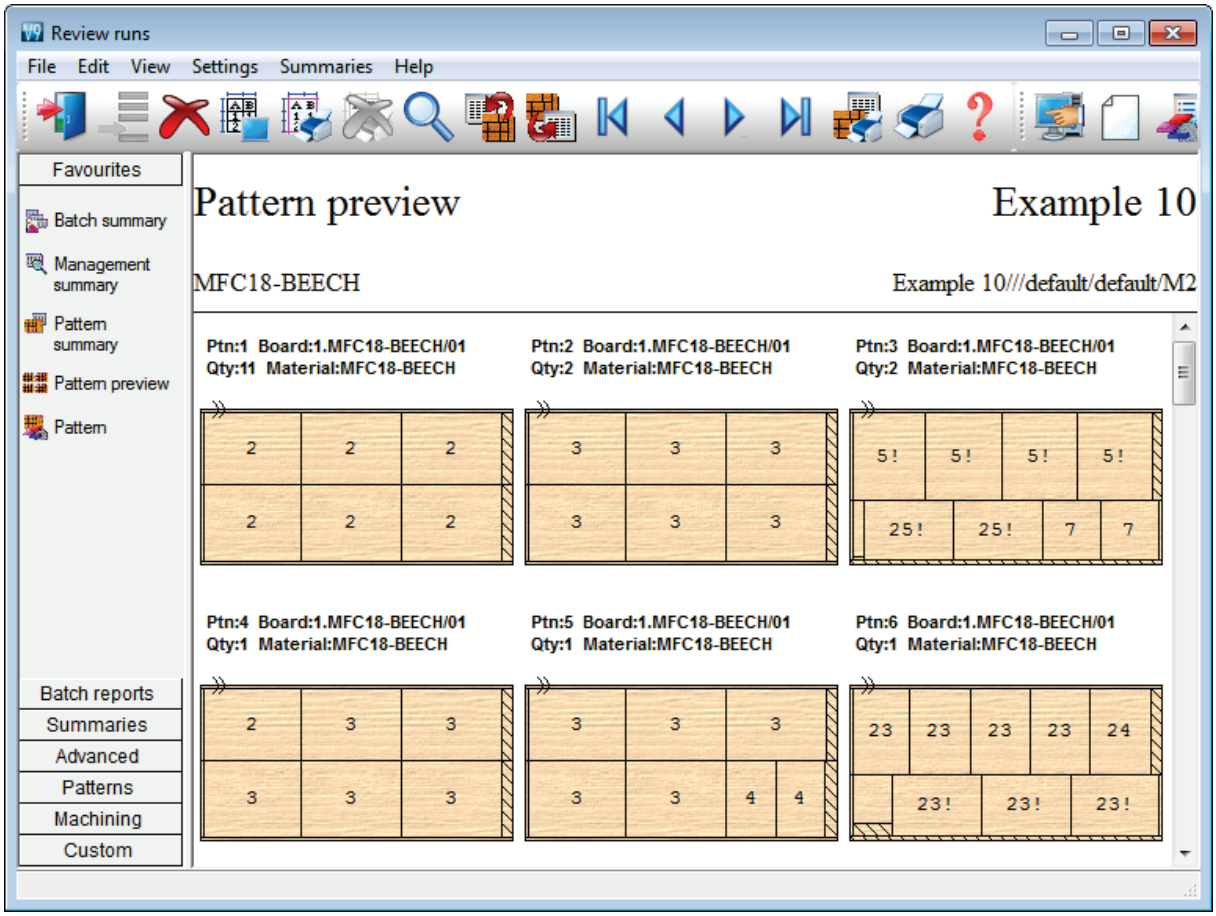


This includes offcuts generated from earlier jobs (labelled with **X …**)

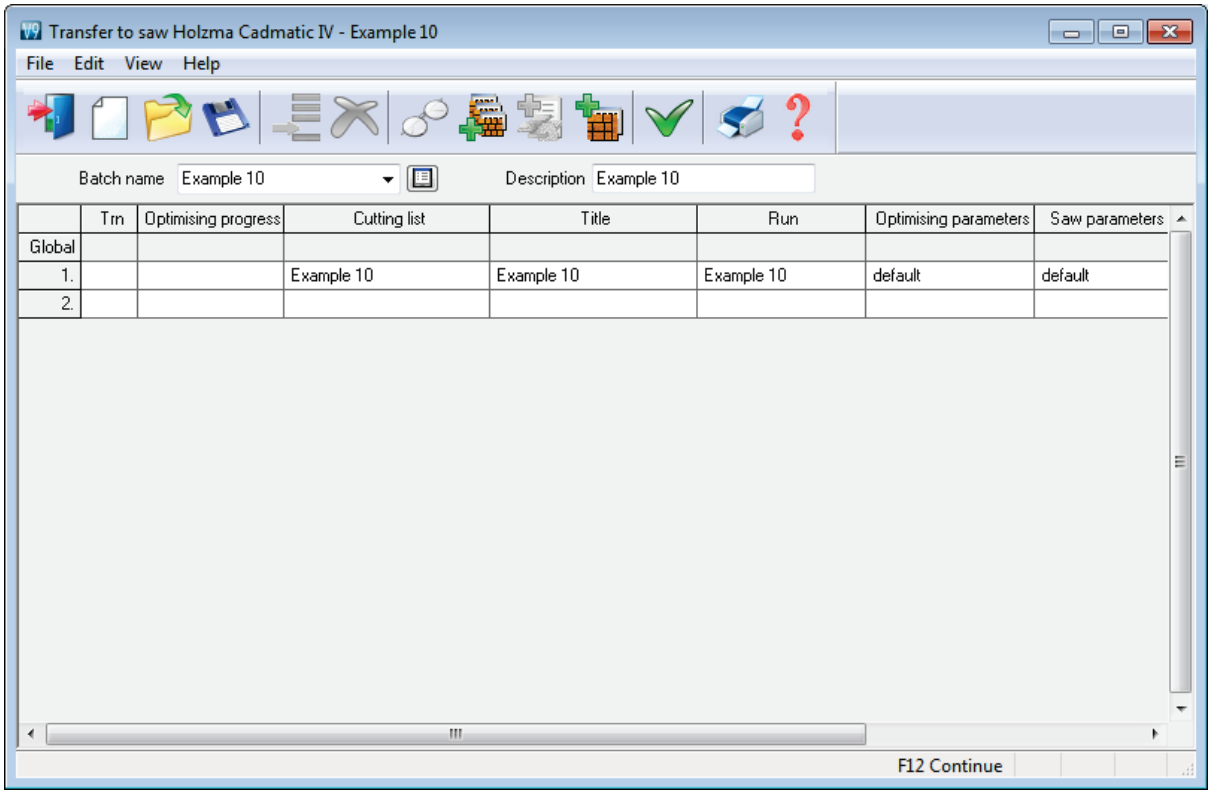


	Description	Material	Length	Width	Quantity	Grain	Part layout	Destack t...
Global		MFC18-BEECH					base1	A
1.	BASE-BACK	MFC18-BEECH	476.0	735.0	90	N	base1	A
2.	BASE-BACK	MFC18-BEECH	976.0	735.0	100	N	base1	A
3.	BASE-BACK	MFC18-BEECH	976.0	735.0	120	N	base1	A
4.	BASE-BACK	MFC18-BEECH	476.0	735.0	210	N	base1	A
5.	BASE-BACK	MFC18-BEECH	876.0	735.0	65	N	base1	A
6.	BASE-BOTTOM	MFC18-BEECH	464.0	582.0	32	N	base1	A
7.	BASE-BOTTOM	MFC18-BEECH	564.0	582.0	100	N	base1	A
8.	BASE-BOTTOM	MFC18-BEECH	464.0	582.0	120	N	base1	A
9.	BASE-CABINET-...	MFC18-BEECH	864.0	582.0	90	N	base1	A
10.	BASE-CABINET-...	MFC18-BEECH	560.0	533.3	88	N	base1	A
11.	BASE-CABINET-...	MFC18-BEECH	400.0	556.8	22	X	base1	A
12.	BASE-CABINET-...	MFC18-BEECH	400.0	184.3	120	N	base1	A
13.	BASE-CABINET-...	MFC18-BEECH	900.0	184.3	100	N	base1	A
14.	BASE-CABINET-...	MFC18-BEECH	582.0	870.0	31	N	base1	A
15.	BASE-CABINET-...	MFC18-BEECH	582.0	870.0	100	N	base1	A
16.	BASE-CABINET-...	MFC18-BEECH	864.0	150.0	40	N	base1	A
17.	BASE-CABINET-...	MFC18-BEECH	864.0	150.0	44	N	base1	A
18.	BASE-CABINET-...	MFC18-BEECH	464.0	560.0	43	N	base1	A
19.	BASE-DOOR	MFC18-BEECH	500.0	554.8	23	X	base1	A

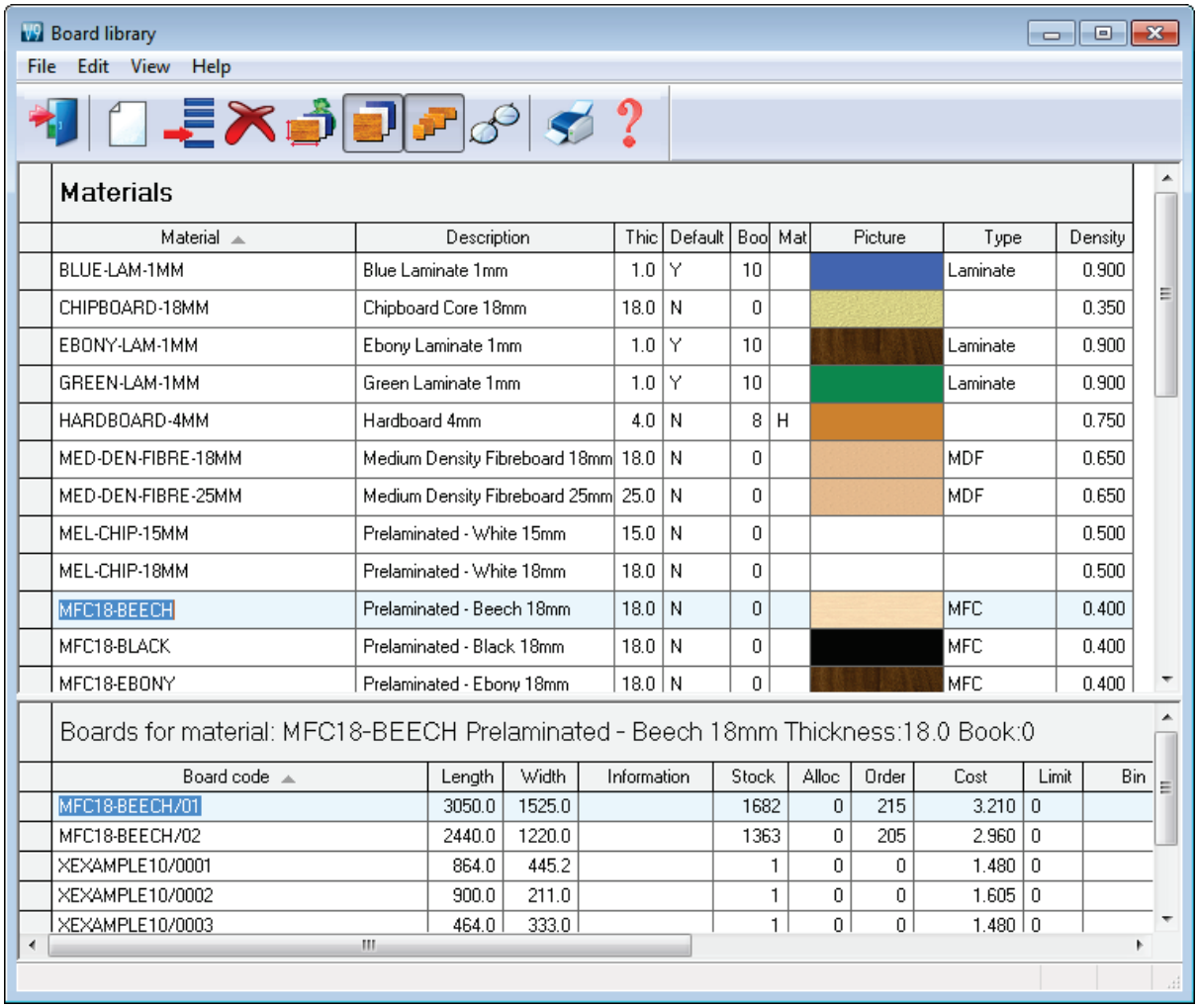
The quantity of boards required is calculated by the optimization.



Once the run is committed for cutting (data sent to saw) the stock can be updated by the 'Issue stock for runs' options.



The Board library is updated.

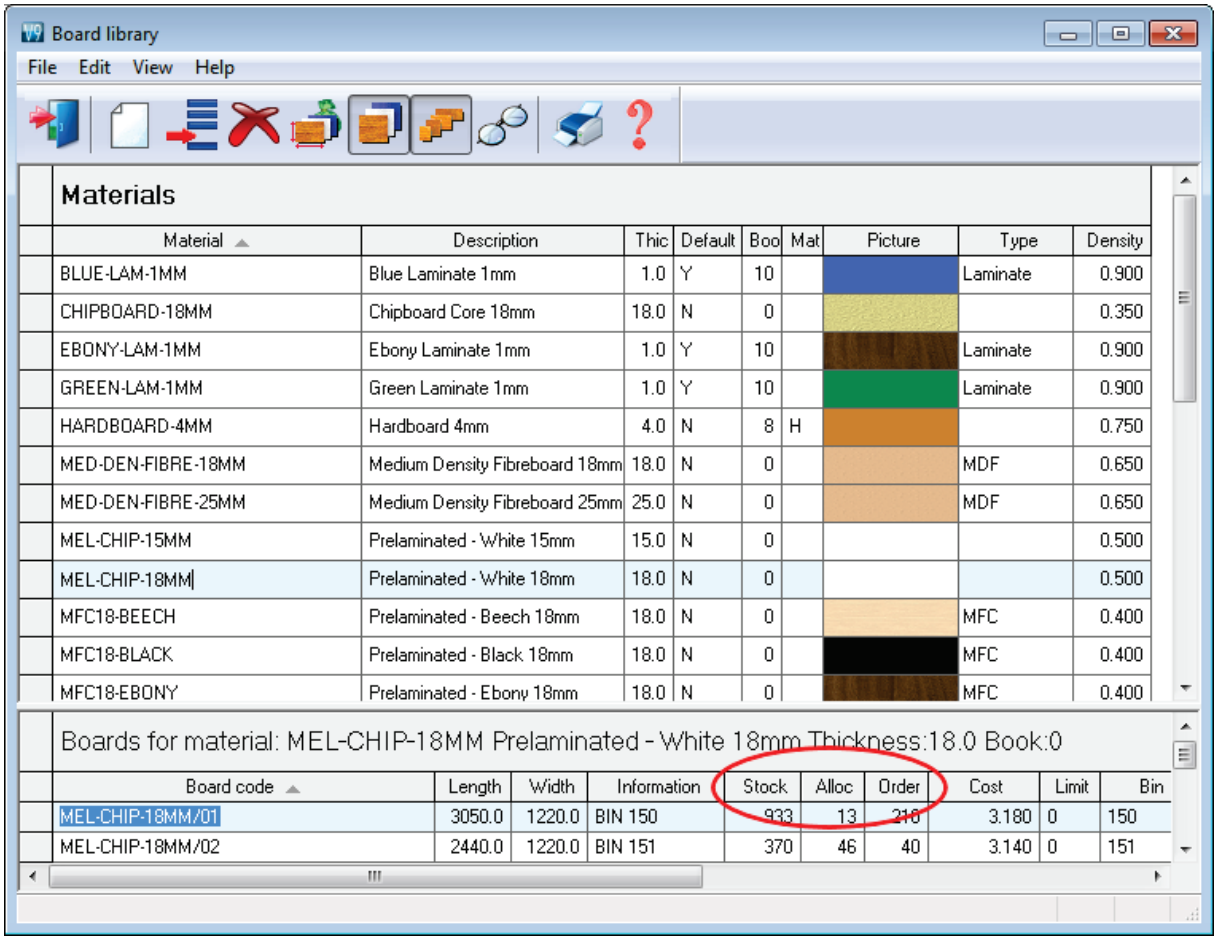


The program carefully controls the operation of part lists and optimising - once a run has been used for a stock issue it cannot be manually changed or re-optimised

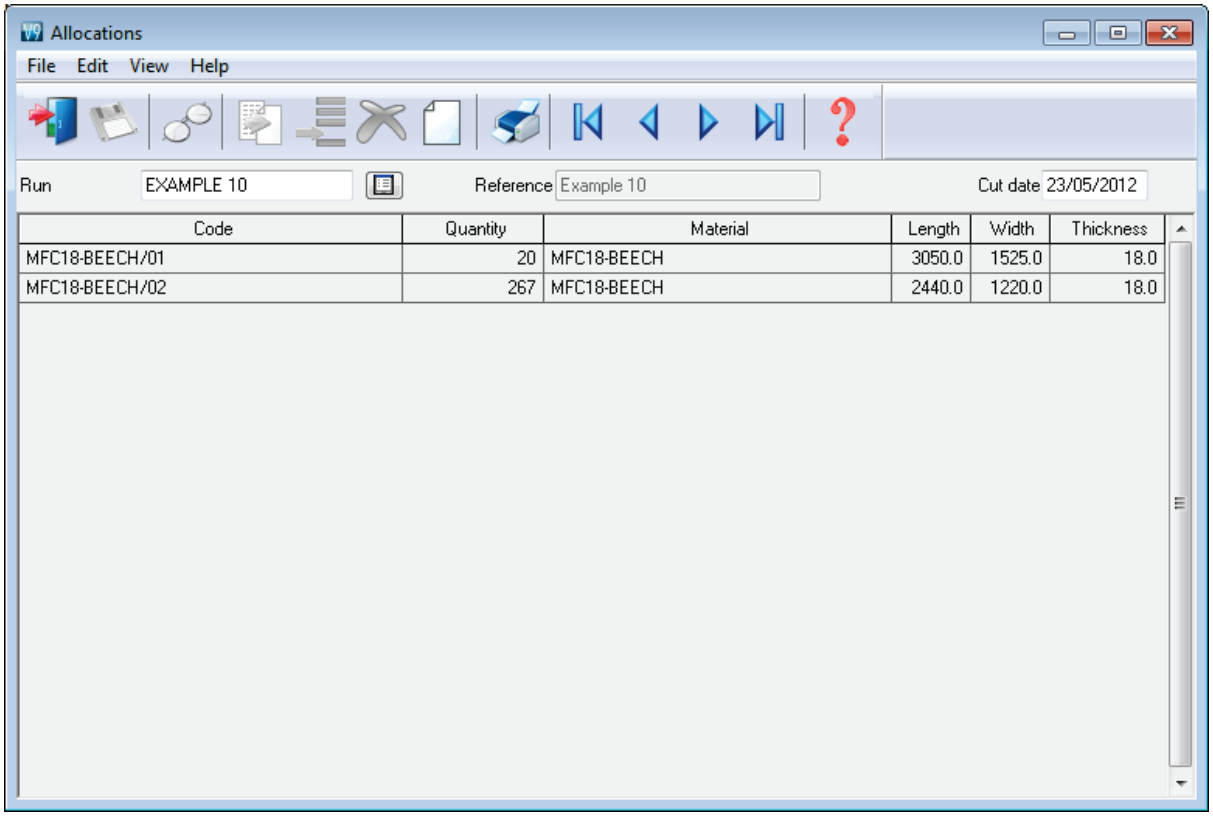
Stock allocation and receipts

The SC module includes a full set of options for the allocation and receipt of stock. Allocation can be used after optimizing to reserve the stock for the job. Receipts are used to record incoming stock and adjust stock levels.

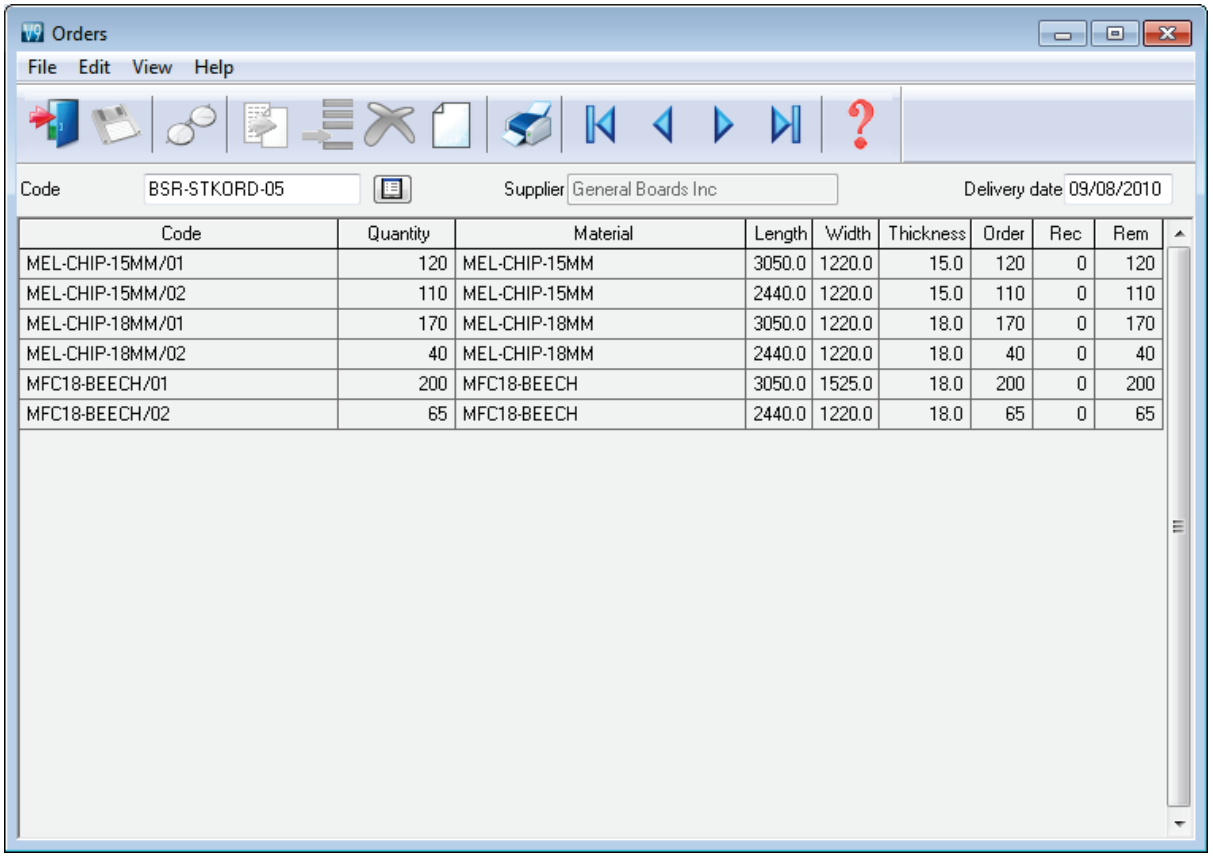
The Board library includes fields for Stock on order and Allocated stock and the optimiser takes account of the allocated stock (reserved stock) when optimising so that reserved stock is not used.



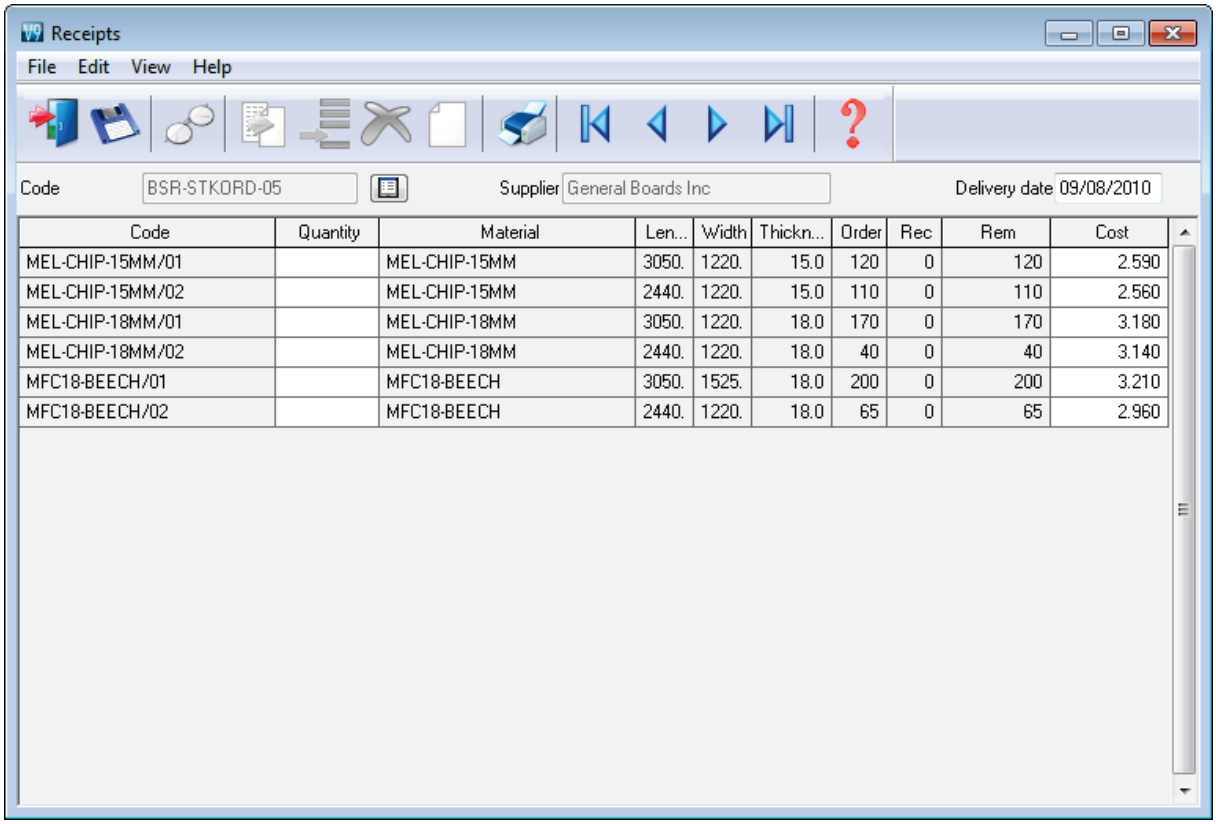
A stock allocation screen deals with stock reservation.



Stock is ordered via the Order screen:-

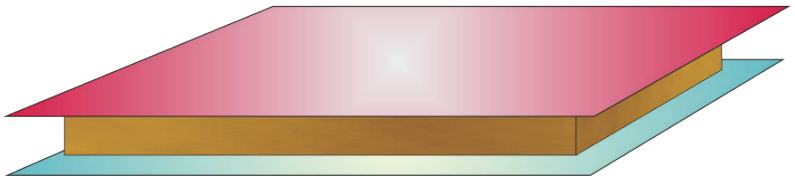


Stock receipts are recorded in the Receipts screen.



Code	Quantity	Material	Len...	Width	Thickn...	Order	Rec	Rem	Cost
MEL-CHIP-15MM/01		MEL-CHIP-15MM	3050.	1220.	15.0	120	0	120	2.590
MEL-CHIP-15MM/02		MEL-CHIP-15MM	2440.	1220.	15.0	110	0	110	2.560
MEL-CHIP-18MM/01		MEL-CHIP-18MM	3050.	1220.	18.0	170	0	170	3.180
MEL-CHIP-18MM/02		MEL-CHIP-18MM	2440.	1220.	18.0	40	0	40	3.140
MFC18-BEECH/01		MFC18-BEECH	3050.	1525.	18.0	200	0	200	3.210
MFC18-BEECH/02		MFC18-BEECH	2440.	1220.	18.0	65	0	65	2.960

Pre-laminated material - where boards are laminated prior to cutting the stock update automatically keeps track of both core material and laminate material used.



Laminates and core material are stored in the Board library.

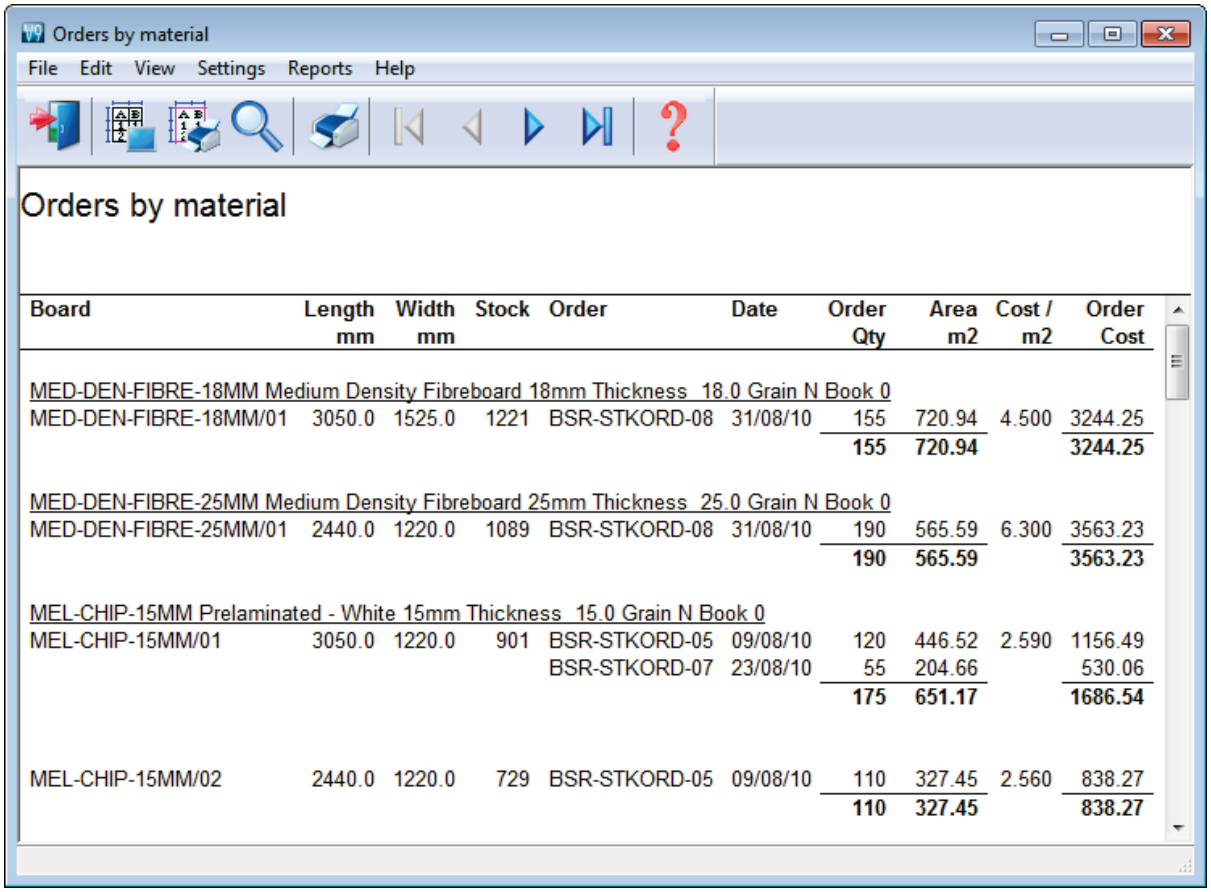
Stock reports

A range of reports are available for monitoring the stock process.

Orders by material
Orders by supplier
Allocations by material
Stock valuation
Minimum free stock
Monthly material summary
Stock issues summary
Audit trail report
Stock history
End of month/year

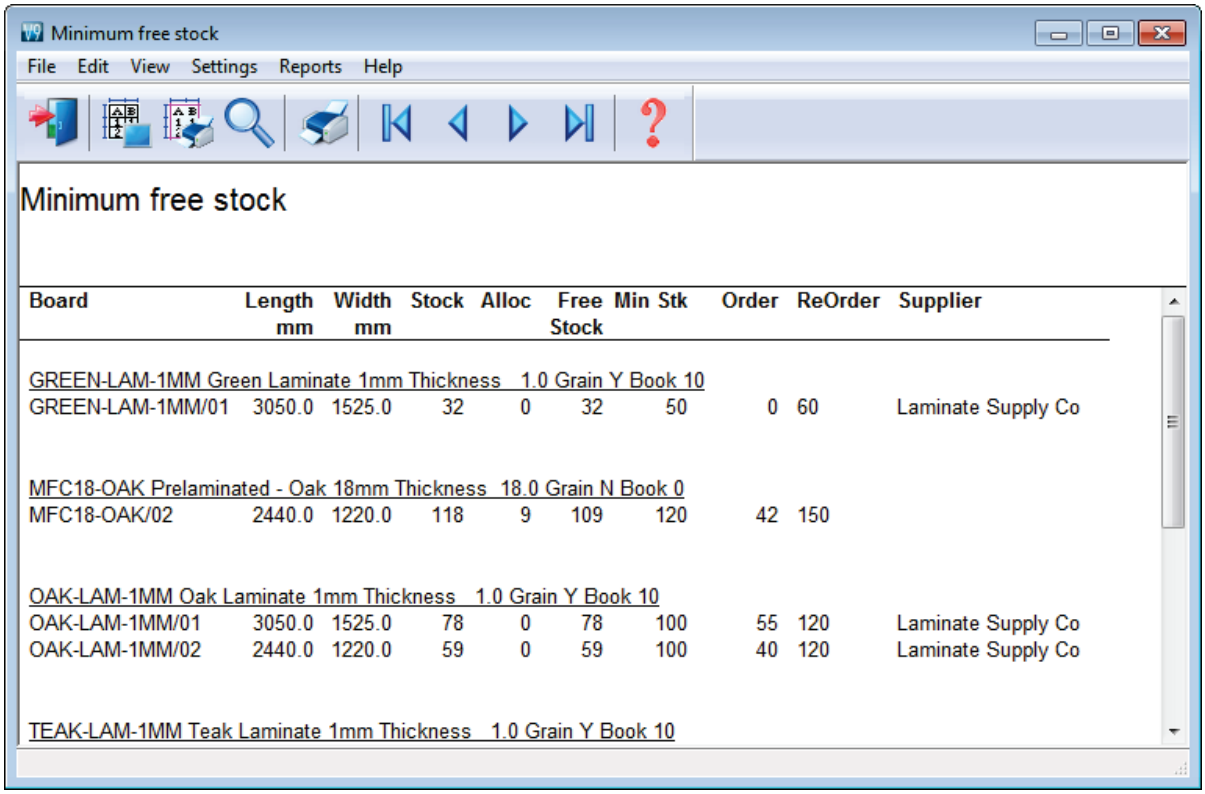
Each report can be viewed on screen and printed.

Orders by Material



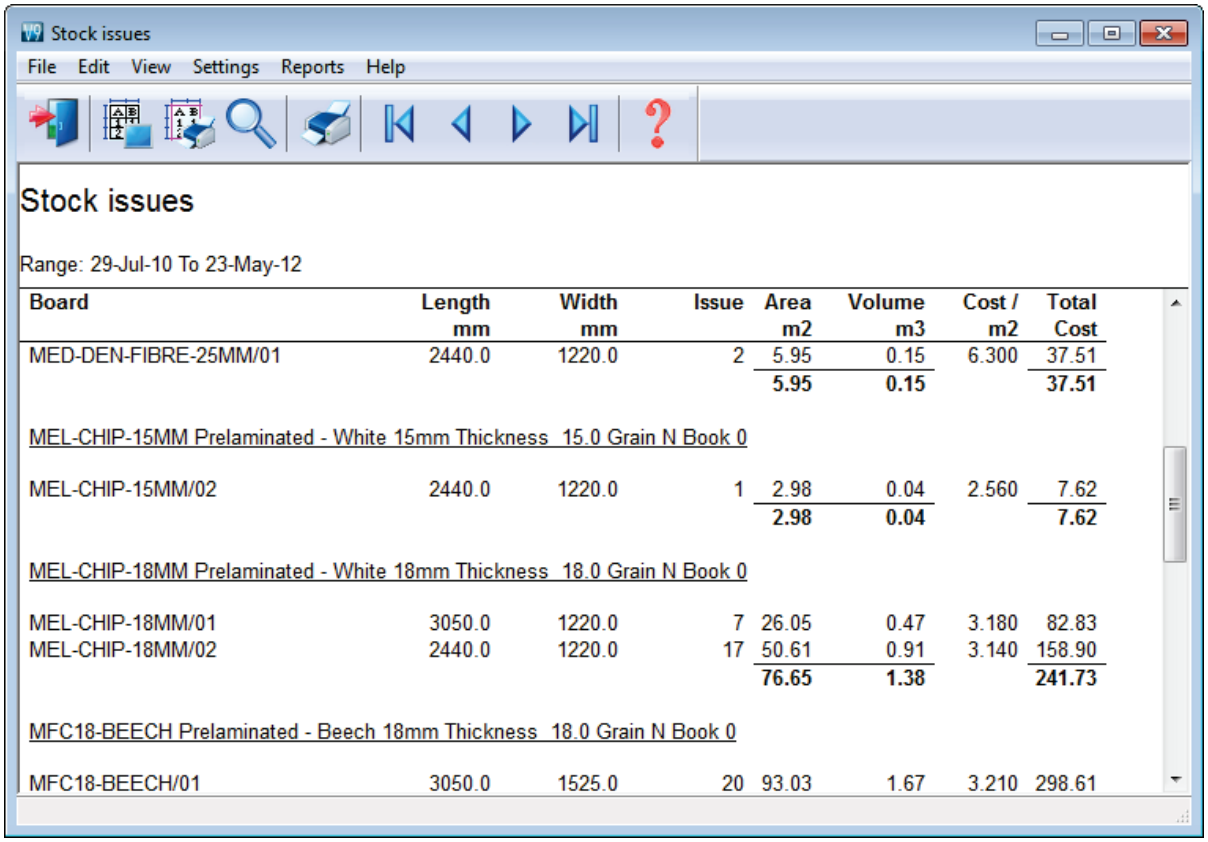
Board	Length mm	Width mm	Stock	Order	Date	Order Qty	Area m2	Cost / m2	Order Cost
MED-DEN-FIBRE-18MM Medium Density Fibreboard 18mm Thickness 18.0 Grain N Book 0									
MED-DEN-FIBRE-18MM/01	3050.0	1525.0	1221	BSR-STKORD-08	31/08/10	155	720.94	4.500	3244.25
						155	**720.94**		**3244.25**
MED-DEN-FIBRE-25MM Medium Density Fibreboard 25mm Thickness 25.0 Grain N Book 0									
MED-DEN-FIBRE-25MM/01	2440.0	1220.0	1089	BSR-STKORD-08	31/08/10	190	565.59	6.300	3563.23
						190	**565.59**		**3563.23**
MEL-CHIP-15MM Prelaminated - White 15mm Thickness 15.0 Grain N Book 0									
MEL-CHIP-15MM/01	3050.0	1220.0	901	BSR-STKORD-05	09/08/10	120	446.52	2.590	1156.49
				BSR-STKORD-07	23/08/10	55	204.66		530.06
						175	**651.17**		**1686.54**
MEL-CHIP-15MM/02	2440.0	1220.0	729	BSR-STKORD-05	09/08/10	110	327.45	2.560	838.27
						110	**327.45**		**838.27**

Minimum free stock



Board	Length mm	Width mm	Stock	Alloc	Free Stock	Min Stk	Order	ReOrder	Supplier
GREEN-LAM-1MM Green Laminate 1mm Thickness 1.0 Grain Y Book 10									
GREEN-LAM-1MM/01	3050.0	1525.0	32	0	32	50	0	60	Laminate Supply Co
MFC18-OAK Prelaminated - Oak 18mm Thickness 18.0 Grain N Book 0									
MFC18-OAK/02	2440.0	1220.0	118	9	109	120	42	150	
OAK-LAM-1MM Oak Laminate 1mm Thickness 1.0 Grain Y Book 10									
OAK-LAM-1MM/01	3050.0	1525.0	78	0	78	100	55	120	Laminate Supply Co
OAK-LAM-1MM/02	2440.0	1220.0	59	0	59	100	40	120	Laminate Supply Co
TEAK-LAM-1MM Teak Laminate 1mm Thickness 1.0 Grain Y Book 10									

Stock issues



Board	Length mm	Width mm	Issue	Area m2	Volume m3	Cost / m2	Total Cost
MED-DEN-FIBRE-25MM/01	2440.0	1220.0	2	5.95	0.15	6.300	37.51
				5.95	**0.15**		**37.51**
MEL-CHIP-15MM Prelaminated - White 15mm Thickness 15.0 Grain N Book 0							
MEL-CHIP-15MM/02	2440.0	1220.0	1	2.98	0.04	2.560	7.62
				2.98	**0.04**		**7.62**
MEL-CHIP-18MM Prelaminated - White 18mm Thickness 18.0 Grain N Book 0							
MEL-CHIP-18MM/01	3050.0	1220.0	7	26.05	0.47	3.180	82.83
MEL-CHIP-18MM/02	2440.0	1220.0	17	50.61	0.91	3.140	158.90
				76.65	**1.38**		**241.73**
MFC18-BEECH Prelaminated - Beech 18mm Thickness 18.0 Grain N Book 0							
MFC18-BEECH/01	3050.0	1525.0	20	93.03	1.67	3.210	298.61

The module includes options to consolidate the library at a period end and has a full audit trail. There are also options to manage stock and update costs etc.

All the stock reports can be fully customized and all have print options.

DEMO USER 1 Modular V9.0 Wednesday 23 May 2012 14:56

Orders by material

Board	Length mm	Width mm	Stock	Order	Order Qty	Cost / m2	Order Cost
MED-DEN-FIBRE-18MM Medium Density Fibreboard 18mm Thickness 18.0 Grain N Book 0							
MED-DEN-FIBRE-18MM/01	3050.0	1525.0	1221	BSR-STKORD-08	155	4.500	3244.25
					155		**3244.25**
MED-DEN-FIBRE-25MM Medium Density Fibreboard 25mm Thickness 25.0 Grain N Book 0							
MED-DEN-FIBRE-25MM/01	2440.0	1220.0	1089	BSR-STKORD-08	190	6.300	3563.23
					190		**3563.23**
MEL-CHIP-15MM Prelaminated - White 15mm Thickness 15.0 Grain N Book 0							
MEL-CHIP-15MM/01	3050.0	1220.0	901	BSR-STKORD-05	120	2.590	1156.49
				BSR-STKORD-07	55		530.06
					175		**1686.54**
MEL-CHIP-15MM/02	2440.0	1220.0	729	BSR-STKORD-05	110	2.560	838.27
					110		**838.27**
MEL-CHIP-18MM Prelaminated - White 18mm Thickness 18.0 Grain N Book 0							
MEL-CHIP-18MM/01	3050.0	1220.0	933	BSR-STKORD-05	170	3.180	2011.57
				BSR-STKORD-07	40		473.31
					210		**2484.88**

For this printed report only the Stock quantity is shown. All the data for printed reports can be exported to an external file.

Integration with external stock systems

These days it is quite common for stock and orders etc. to be held in external systems including mechanical stock handling systems. The SC module can be integrated with external systems.

- Full integration with the Bargstedt SQL server materials system
- Import/Export options for materials and boards

- Option to run external linking programs automatically

This later allows the Board library to be kept in sync with external databases.

The board library has a full set of editing options to allow manual adjustments and changes.

Stock control of parts

With the PL module the stock control options include the control of parts so that over produced parts can be stored and taken into account in future lists by reducing the requirement for that part.

Stock control of Fittings and Edging material

With the PL, PQ and EL modules the stock control options include the control of fittings (hardware) items in the Part library and Edging material in the Edging library (solid edging and laminate sheets).

Summary of Stock Control

Stock control requires one of the Optimising modules; LO, SO, PO, NE

	SC	**SC + EL**	**SC + PQ + PL**	**SC + PL**
Stock records	Unlim.	Unlim.	Unlim.	Unlim.
Stock reports (configurable)	•	•	•	•
Export stock data	•	•	•	•
Audit trail	•	•	•	•
Stock control of parts			•	•
Stock control of edging material		•		
Stock control of fittings			•	
Integration with external systems	•	•	•	•
Update stock after optimising	•	•	•	•
Stock orders and receipts	•	•	•	•
Reserve stock	•	•	•	•
Board library (mdb)	•	•	•	•
Integrated local help	•	•	•	•
Links to website	•	•	•	•

The Board library is the common Access MDB format.

Parts & Labels - PL

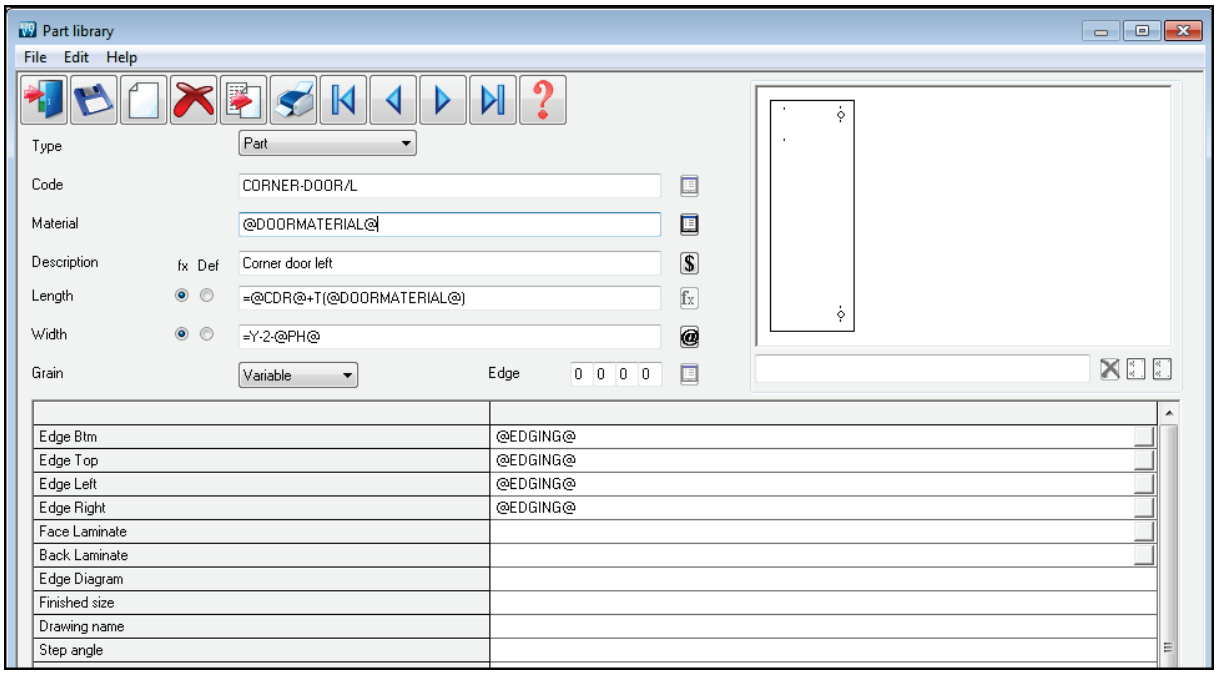
For better management and tracking of parts

The Parts & Labels module provides a database for parts and a form and label designer. It is useful where the same parts are used again and again in different cutting lists and where extra information is needed for each part for later processing, admin or bar codes,

Parts can be added to any cutting list with minimum data entry - this saves times and avoids costly mistakes.

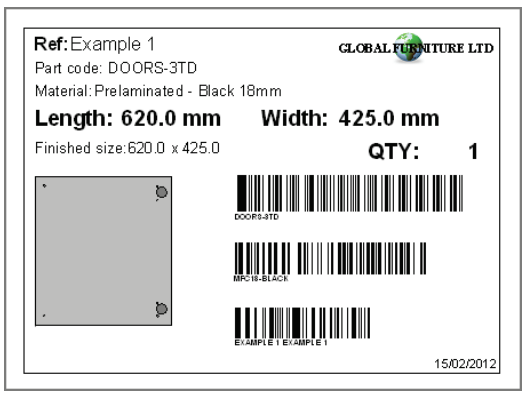
Parts database

The data entry screen provides an easy way to enter part details.



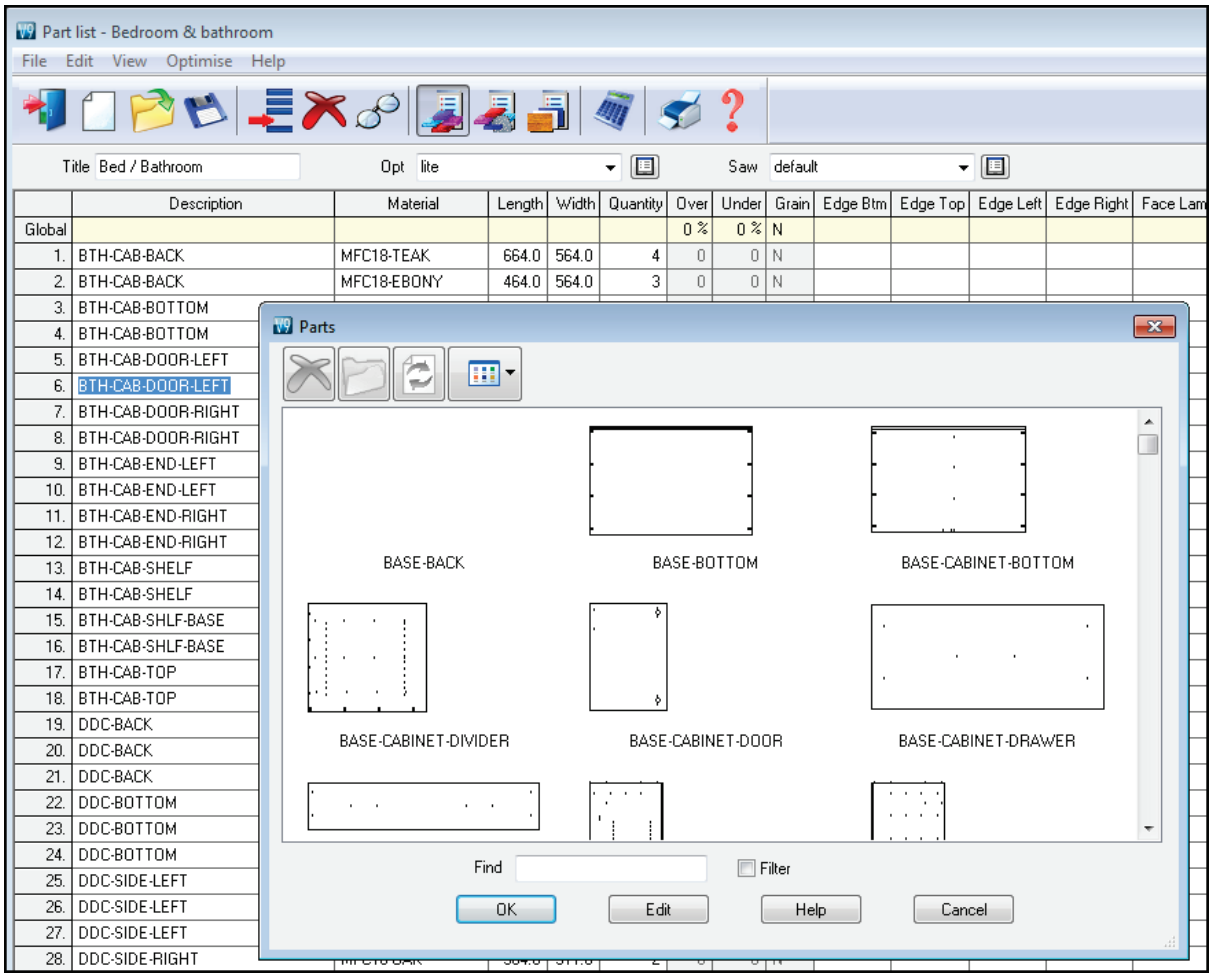
The part details include the standard items such as material code, length and width but any amount of user defined information can be stored with each part using extra fields (information boxes). This extra data can also be included on labels and reports to help with later processing of the part.

The part library can also include a picture of the part from a graphics file such as BMP or MPR. For some parts it is often useful to include a picture of the part on a label to help identify the part quickly.



At any cutting list the items in the library can be accessed by a single click and the part can be added to the list.

Typically only one or two items of information need to be adjusted such as the quantity required or possibly the material to use.



	Description	Material	Length	Width	Quantity	Over	Under	Grain	Edge Btm	Edge Top	Edge Left	Edge Right	Face Lam
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												
4.	BTH-CAB-BOTTOM												
5.	BTH-CAB-DOOR-LEFT												
6.	BTH-CAB-DOOR-LEFT												
7.	BTH-CAB-DOOR-RIGHT												
8.	BTH-CAB-DOOR-RIGHT												
9.	BTH-CAB-END-LEFT												
10.	BTH-CAB-END-LEFT												
11.	BTH-CAB-END-RIGHT												
12.	BTH-CAB-END-RIGHT												
13.	BTH-CAB-SHELF												
14.	BTH-CAB-SHELF												
15.	BTH-CAB-SHLF-BASE												
16.	BTH-CAB-SHLF-BASE												
17.	BTH-CAB-TOP												
18.	BTH-CAB-TOP												
19.	DDC-BACK												
20.	DDC-BACK												
21.	DDC-BACK												
22.	DDC-BOTTOM												
23.	DDC-BOTTOM												
24.	DDC-BOTTOM												
25.	DDC-SIDE-LEFT												
26.	DDC-SIDE-LEFT												
27.	DDC-SIDE-LEFT												
28.	DDC-SIDE-RIGHT												

Form & Label designers

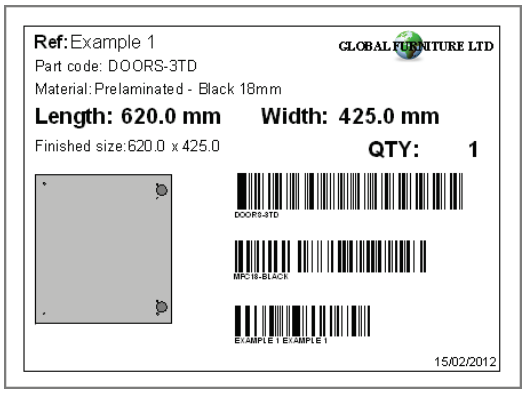
The module includes a designer screen so that almost any style of label (typically a small adhesive label) or a full form (a one page report or a route card) can be set up.

These are labels or forms for printing in the Office.

The data on the form or label can be chosen from any of the data set up for each part in the Part database. For example:-

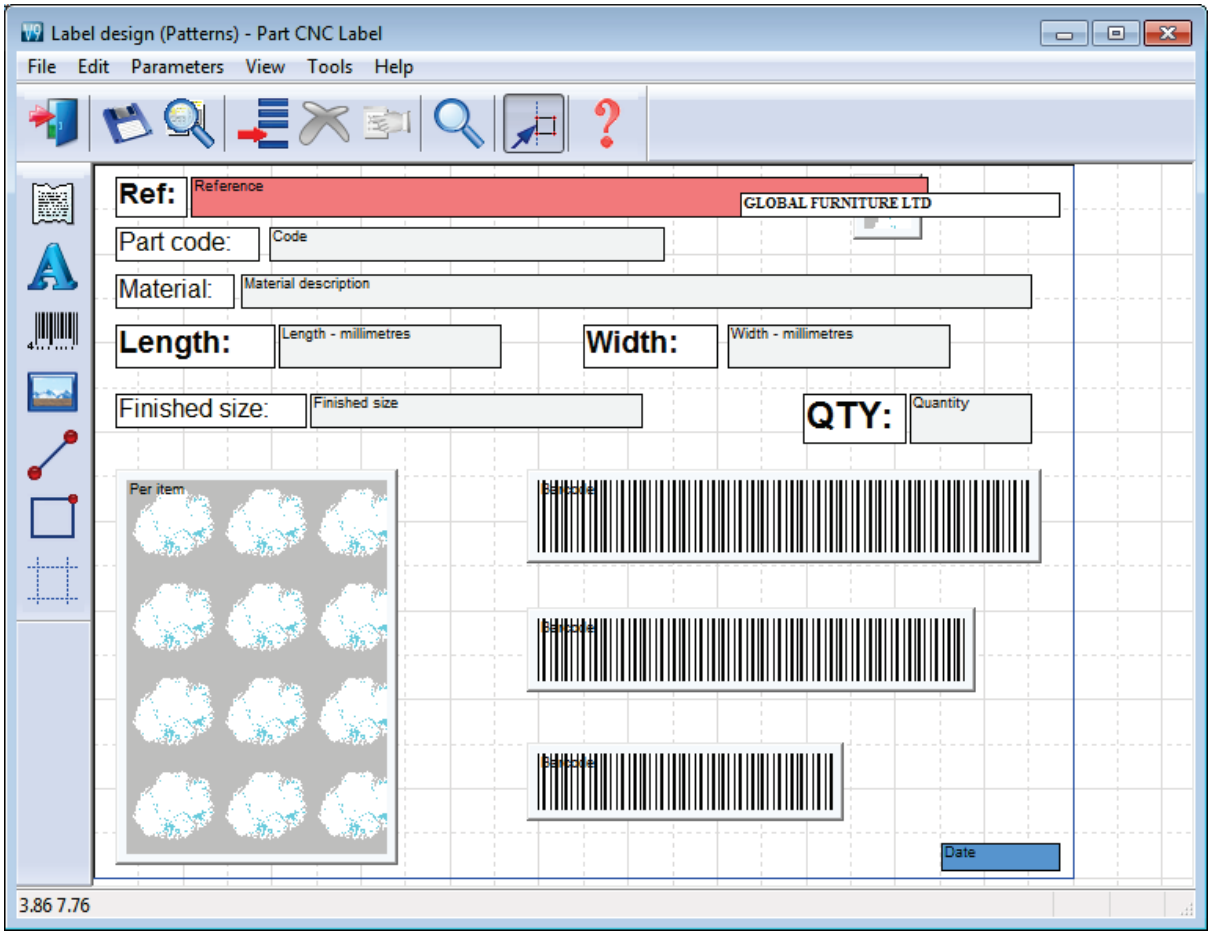
```
Material code
Length
Width
...
Part drawing
User defined details
Barcodes
Logos
...
```

The designer allows for the creation of a barcode for any of the items on the form or label, for example, barcodes for the part code and quantity.



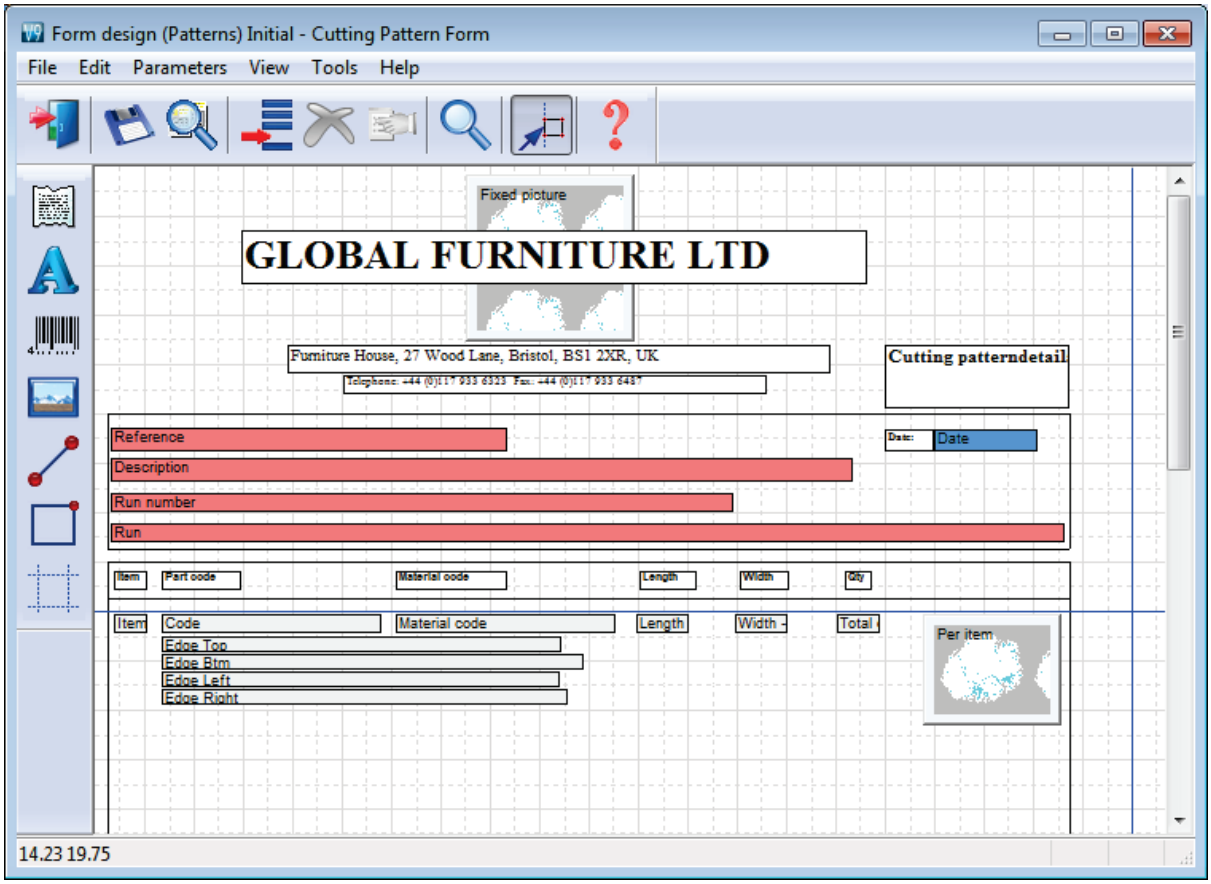
The designer screen is easy to use and a variety of templates are already set up to use as a starting point.

Here is the design screen:-



Each label or form is fully customisable.

The following is part of the design for a larger form/report.



The designers include several options to help create effective designs.

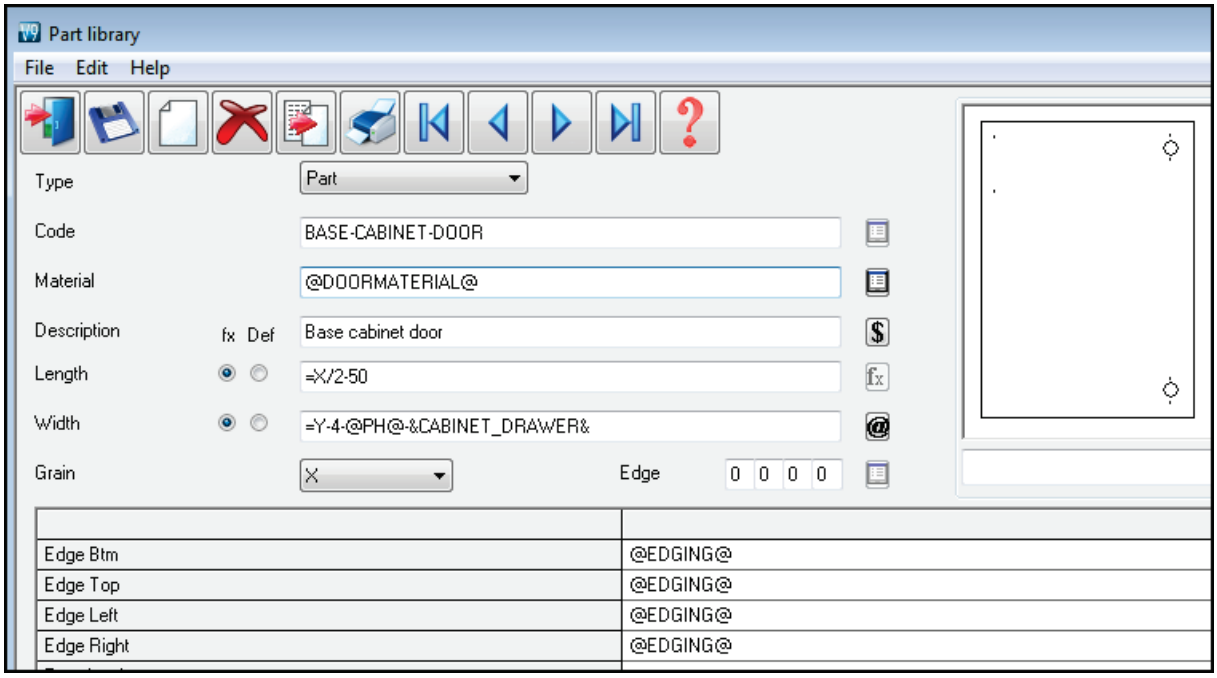
Grid, guidelines and snap options - to help place items on the design
Different templates - with alternative designs and styles
Quick preview - to check the layout
Data preview - to make an accurate check of the layout

The Part library and label designer together make a powerful addition to the program.

Parts & Labels with Products & Quotes (PQ) module

When used the with the PQ module the Part library extends the flexibility of the program since it can be used to define parts using variables and formulae for the part information.

The same part entry in the part library can be used for a range of colours, materials or sizes.



In this example the Material is defined by a variable '@DOORMATERIAL@' and the Length and Width are defined by formulae.

This single part library entry can produce the correct specification for a range of cabinet doors in different materials, colours and sizes.

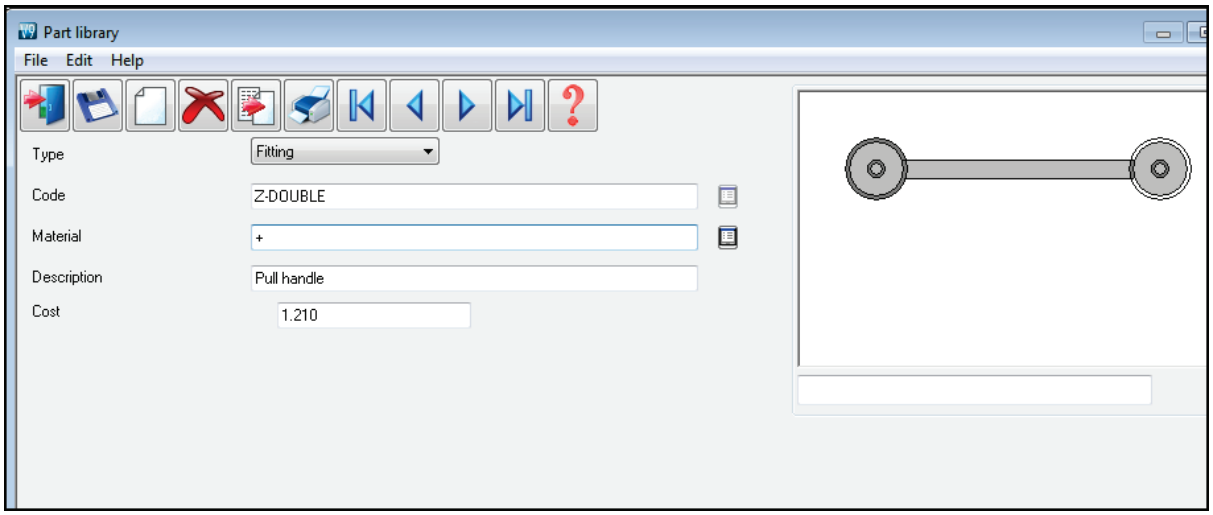
The PQ module is required to use the Part library in this way.

Fittings, Sundry parts, Operations

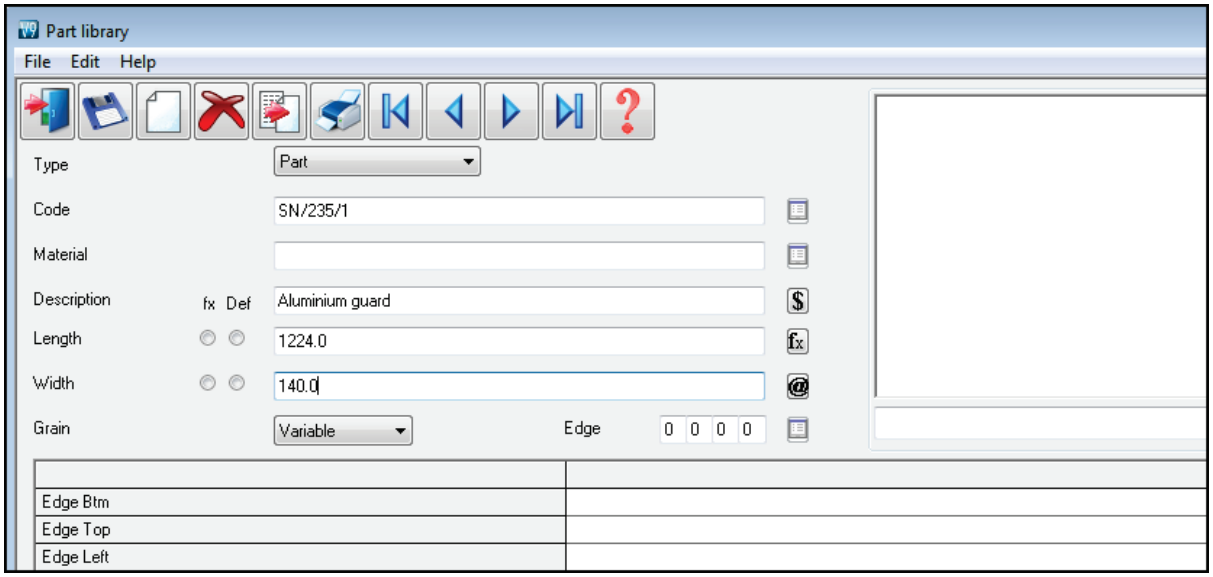
Requires the PQ module

The parts database can also include fittings (hardware).

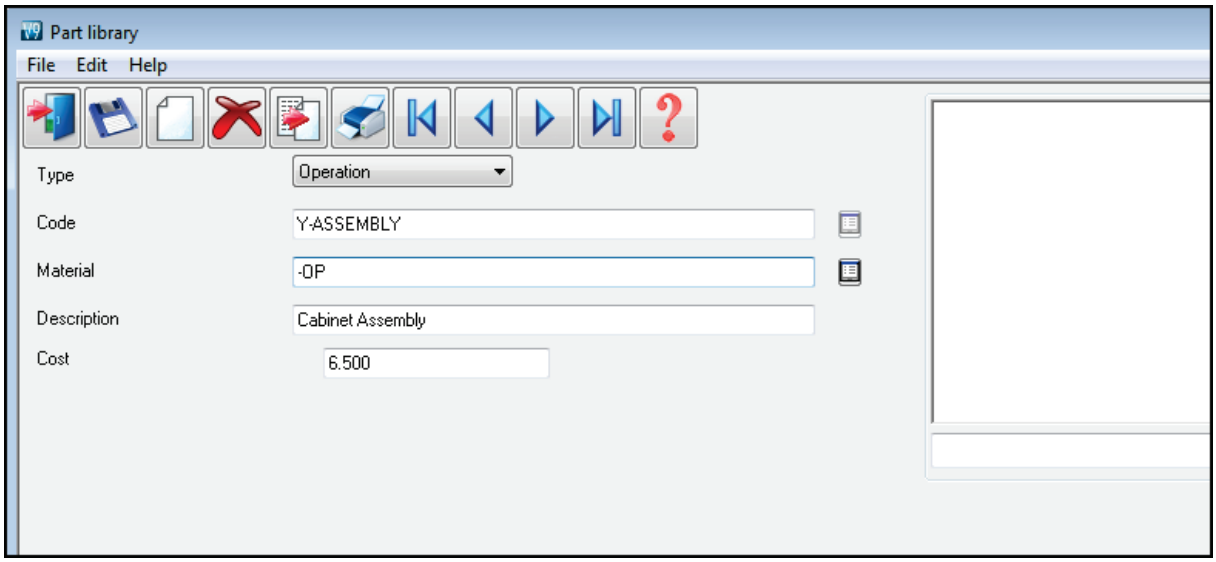
Fittings can include typical ironmongery items such handles, hinges and brackets and also larger 'bought in' appliances.



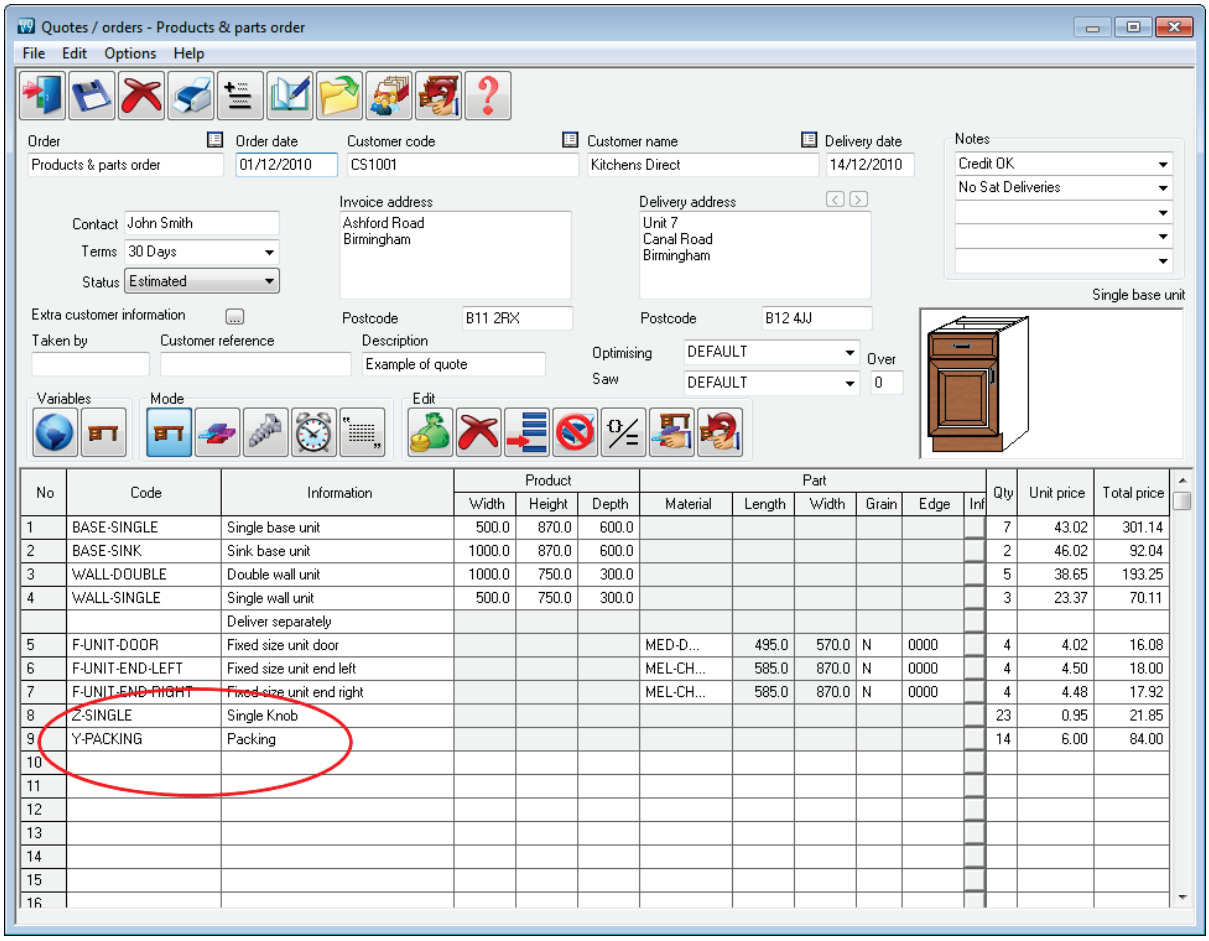
The library can also include 'bought in' or sundry parts that are required but are ready to use.



The operations required for each part can also be included in the database. These are items such as, clamping, assembly, packing - where these can be allocated on a 'per part' basis.

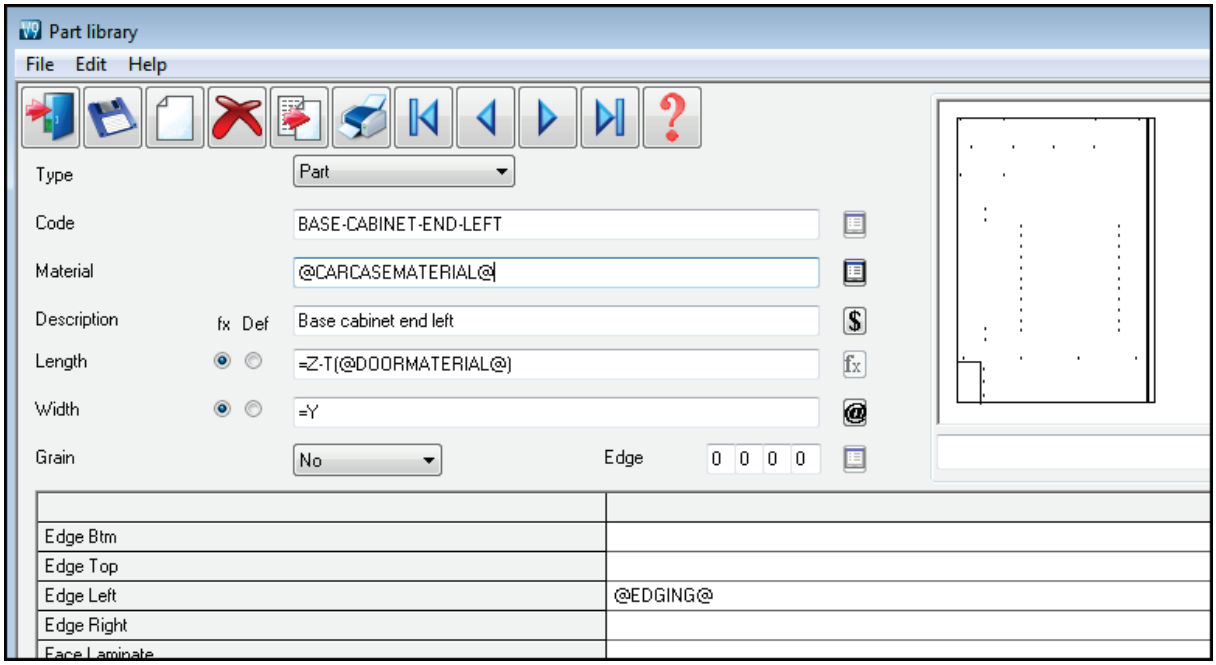


These items are added to the 'Order' so that a full specification (and costing) of the job is available.



Parts & Labels with the Machining Interface (MI) module

The Part library is fully integrated with the Machining Interface; the part picture can be a machining drawing from the parametric Machining library. So any pictures and details created in the machining library can be passed through to the part label or form.



The part library can also be integrated with:-

```
External bitmap (BMP) drawing
WoodWop MPR drawings
```

The MI module is required to use the Part library with the parametric machining library

Parts & Labels with the Online PC option

The PL module can be used with the Online PC option for designing and printing labels at the saw. The Online PC option is typically used where there is no saw controller or the saw controller only has limited set of options.

Information and labels from the PL module are automatically sent to the Online PC option to allow the viewing and printing of part information at the Saw.

Summary of Parts & Labels

- The form and label designer is not directly used for printing labels at the saw (other than via the Online PC option). It can be used to create designs for some saw controllers (e.g. Cadmatic) but there are often also label design options with many saw controllers.

- Typically the PL module is used with one of the optimising modules LO, SO or PO but it can also be used as a stand-alone module as a 'Parts only' option.

PL module includes:-

Parts database (part library)
Form designer
Label designer

	PL	PL + PQ	PL + MI	PL + Online PC
Maximum items in library	99999	99999	99999	99999
Parts	•	•	•	•
Sundry parts		•		
Fittings		•		
Operations		•		
Maximum length for part code	50	50	50	50
Form designer and templates	•	•	•	•
Label designer and templates	•	•	•	•
Parametric parts		•	•	
Parametric drawings			•	
External part drawings	•	•	•	•
Printing at Office	•	•	•	•
Printing at Saw				•
Import parts to database	•	•	•	•
Import external drawings to database	•	•	•	•

- The number of designs for the form designer or label designer is unlimited.
- Printing at the Saw is typically handled by software at the saw controller

Products & Quotes – PQ

For fast response to enquiries and orders

The Products & Quotes module is for accurate quotations and processing orders quickly and easily. It is most useful where the cutting requirements arise in producing assembled products; kitchens units, bedroom units, housings, furniture **…**

The product library can detail any job:-

- Standard product ranges
- Custom products
- Products with extra parts and fittings
- Can include lipping and bought in items …

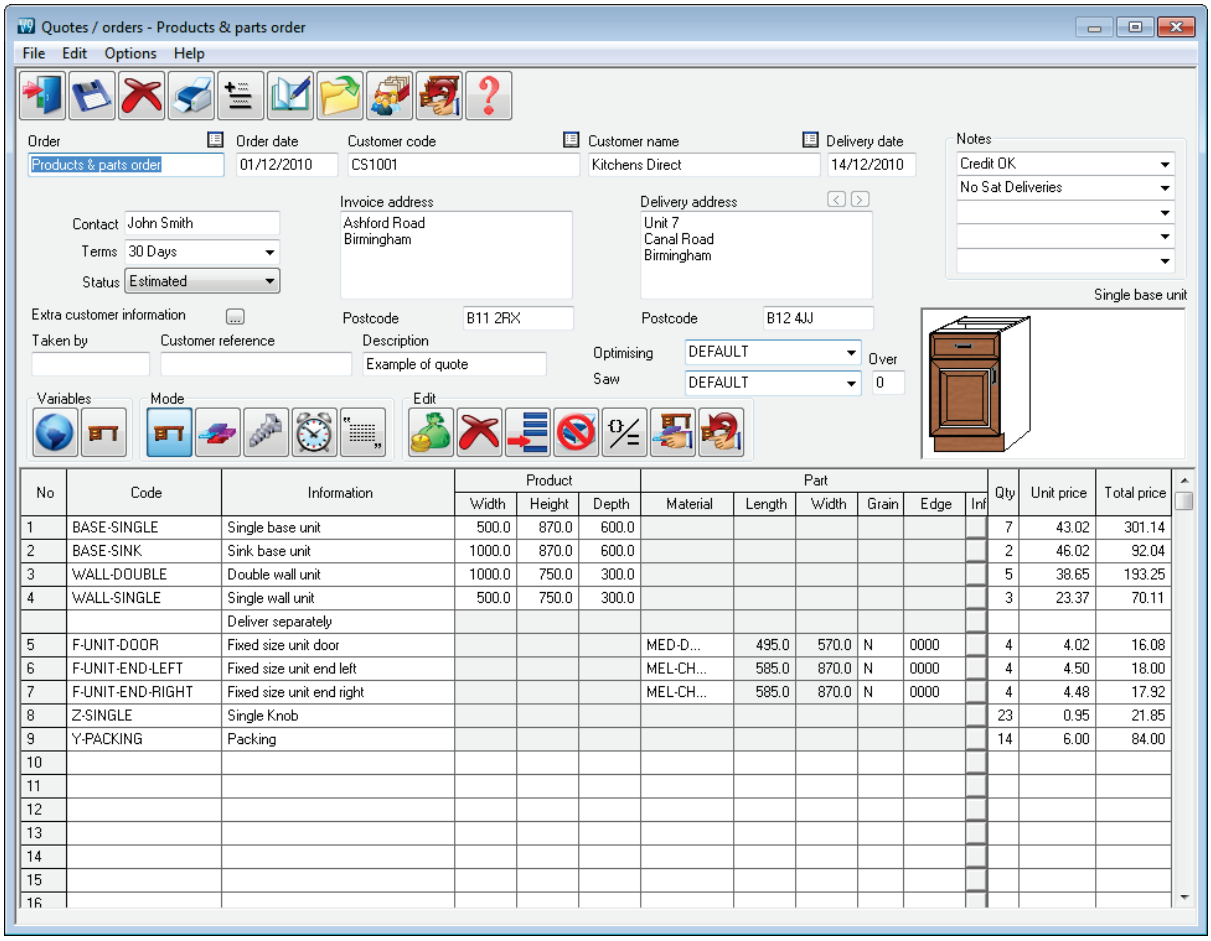
The key to the module is that the product detail is very flexible - a single definition can cover a wide range of customer or production variations.

For each order once the customer request for colour, material, size, fittings are specified the program can calculate the full set of materials, sizes, and quantities for all the parts in the product.

The result is a cutting list ready for the saw or machining centre.

Orders screen

A versatile order screen allows the entry of order for quotes or production.

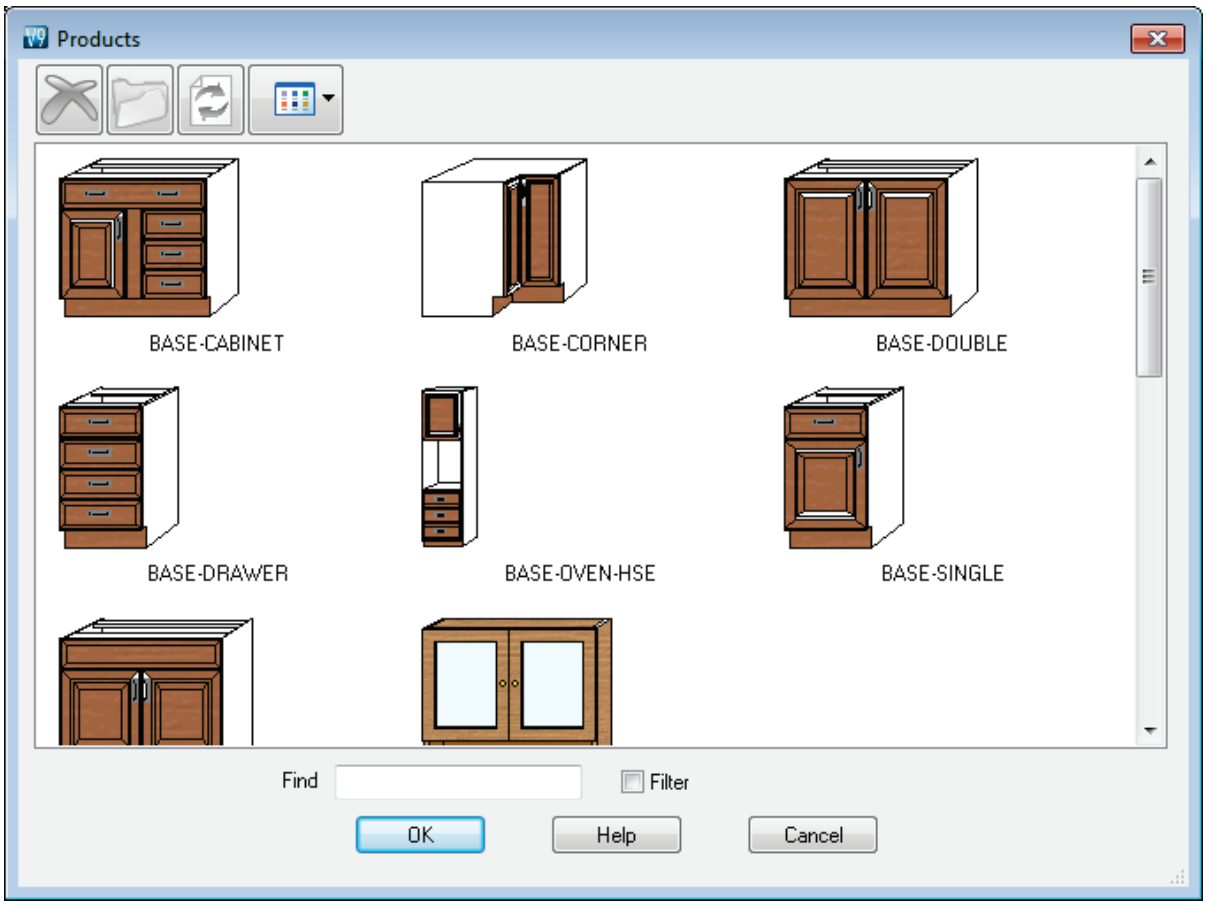


No	Code	Information	Product			Part						Qty	Unit price	Total price
			Width	Height	Depth	Material	Length	Width	Grain	Edge	Inf			
1	BASE-SINGLE	Single base unit	500.0	870.0	600.0							7	43.02	301.14
2	BASE-SINK	Sink base unit	1000.0	870.0	600.0							2	46.02	92.04
3	WALL-DOUBLE	Double wall unit	1000.0	750.0	300.0							5	38.65	193.25
4	WALL-SINGLE	Single wall unit	500.0	750.0	300.0							3	23.37	70.11
		Deliver separately												
5	F-UNIT-DOOR	Fixed size unit door				MED-D...	495.0	570.0	N	0000		4	4.02	16.08
6	F-UNIT-END-LEFT	Fixed size unit end left				MEL-CH...	585.0	870.0	N	0000		4	4.50	18.00
7	F-UNIT-END-RIGHT	Fixed size unit end right				MEL-CH...	585.0	870.0	N	0000		4	4.48	17.92
8	Z-SINGLE	Single Knob										23	0.95	21.85
9	Y-PACKING	Packing										14	6.00	84.00
10														
11														
12														
13														
14														
15														
16														

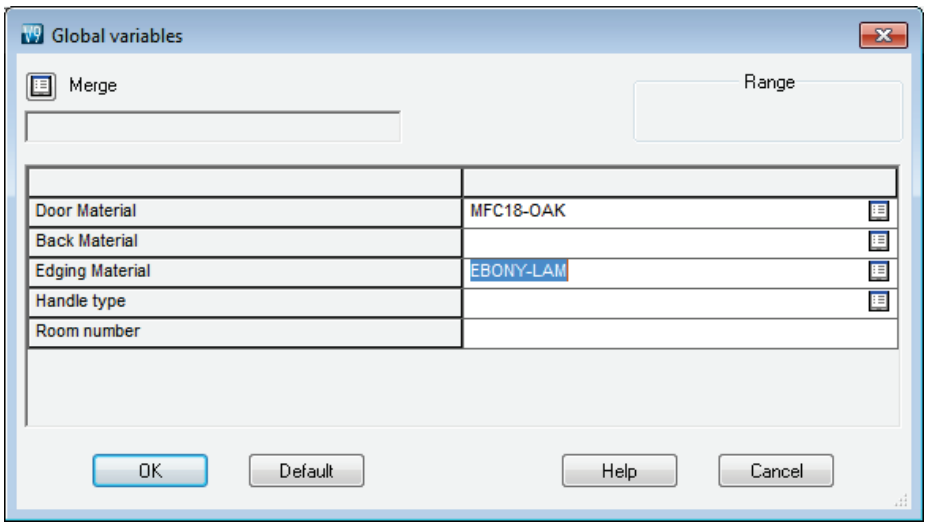
The top section allows for the entry of customer details, delivery and invoice address etc. In the grid enter the required products and other items.

Full costs are shown and the system can be set to several different pricing models.

Products and other items are selected from the product library.



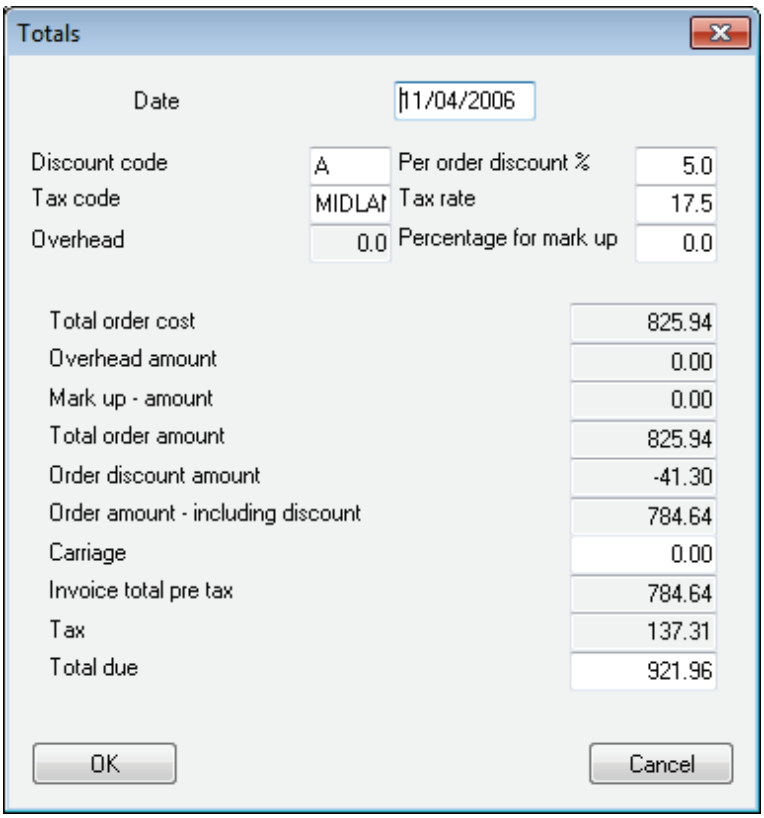
Where the product is defined as a parametric (variable) product the Order screen prompts for the customer's requirements (and production requirements).



The requirements can vary for each product line even for the same style of product.

There are a full set of facilities (variables, look up tables, formulae) with the Product library for creating parametric products.

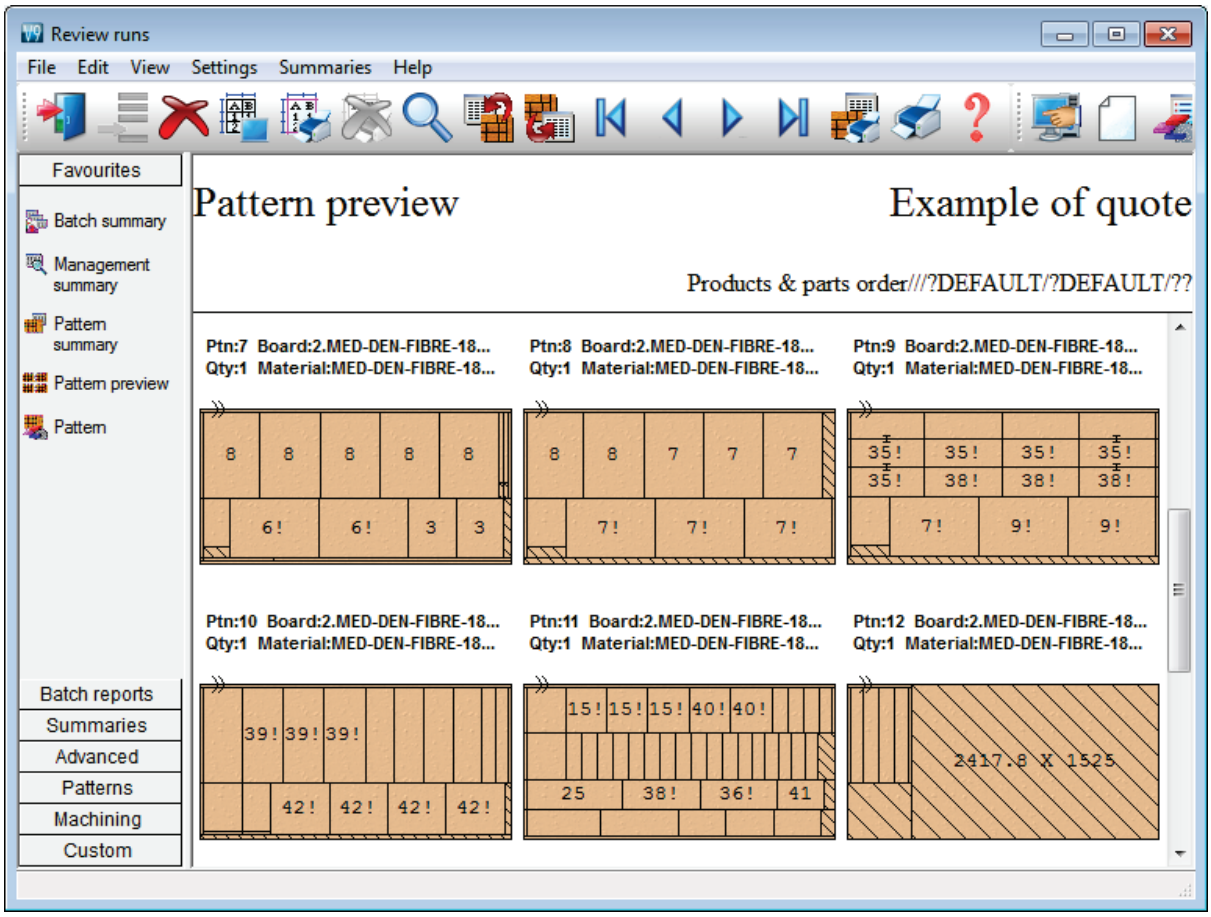
Once the order is complete the order can be estimated at the single click of a button.



The order status can be tracked and the Form & Label designer can be used to produce customer documents:-

Quotation
Advice note
Delivery note
...

Once an order is confirmed the order is optimised and the cutting patterns produced ready to send to the saw or machining centre.



The production and delivery documents are set up in the Form & Label designer - the program includes many different templates to help with the design of forms.

GLOBAL FURNITURE LTD

Furniture House, 27 Wood Lane, Bristol, BS1 2XR, UK
Telephone: +44 (0)117 933 6323 Fax: +44 (0)117 933 6487

Order confirmation

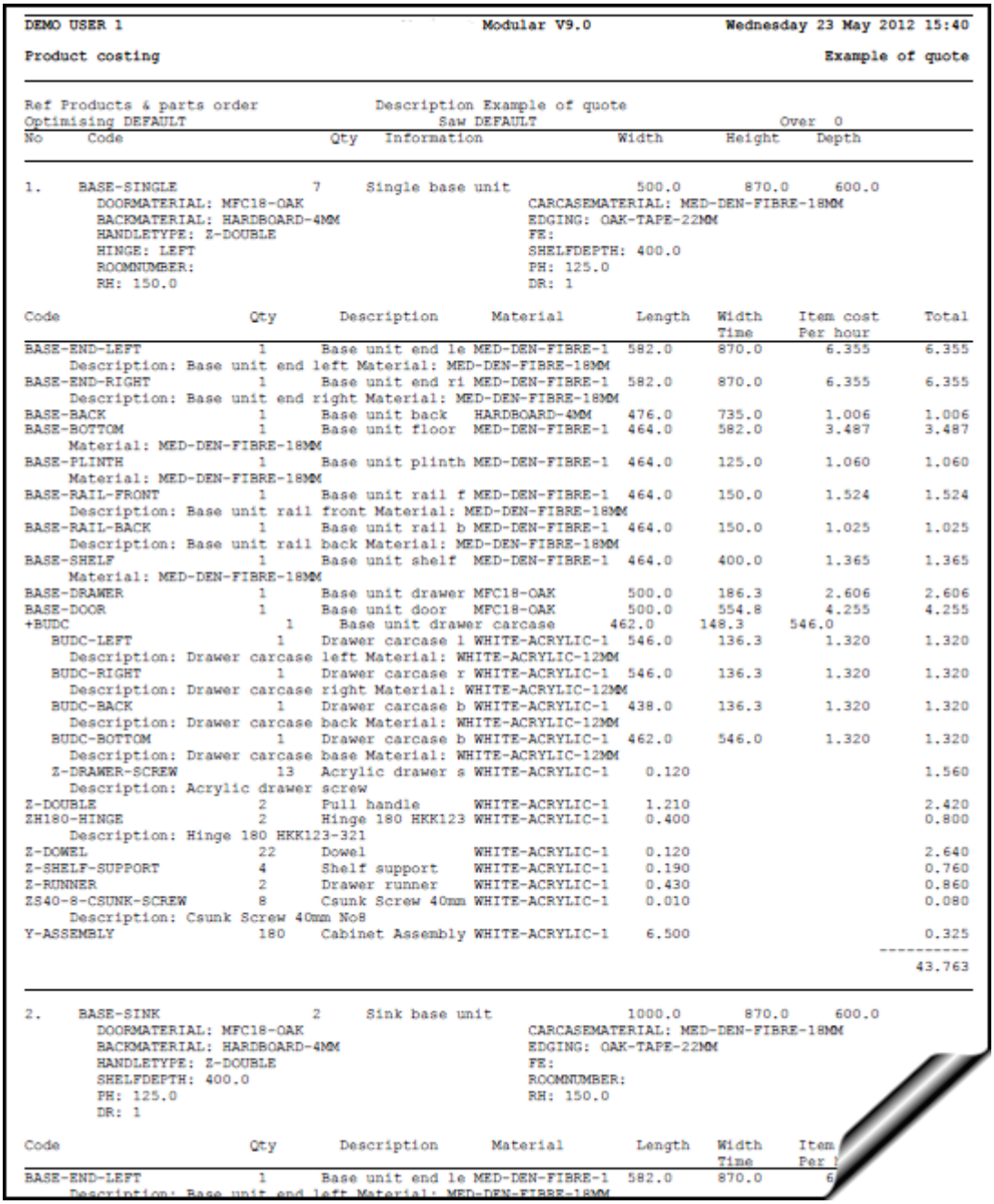
Date: 23/05/2012	Order No. Products & parts order	Our ref.
Payment terms: 30 Days	Delivery expected: 14/12/2010	Your ref.

Customer address	Delivery address
Kitchens Direct Ashford Road Birmingham B11 2RX	Unit 7 Canal Road Birmingham B12 4JJ

Item	Code	Information		Quantity	Unit £	Total £
1	BASE-SINGLE Width: 500.0 Height: 870.0 Depth: 600.0	Single base unit Carcase: MED-DEN-FIBRE-18MM Finish: MFC18-OAK Handle: Z-DOUBLE		7	43.76	306.32
2	BASE-SINK Width: 1000.0 Height: 870.0 Depth: 600.0	Sink base unit Carcase: MED-DEN-FIBRE-18MM Finish: MFC18-OAK Handle: Z-DOUBLE		2	46.96	93.92
3	WALL-DOUBLE Width: 1000.0 Height: 750.0 Depth: 300.0	Double wall unit Carcase: MED-DEN-FIBRE-18MM Finish: MFC18-OAK Handle: Z-DOUBLE		5	39.18	195.90

Page: 1

The module produces a full breakdown of product costing.



DEMO USER 1 — Modular V9.0 — Wednesday 23 May 2012 15:40

Product costing — **Example of quote**

Ref Products & parts order — Description Example of quote
Optimising DEFAULT — Saw DEFAULT — Over 0

No	Code	Qty	Information	Width	Height	Depth
1.	BASE-SINGLE	7	Single base unit	500.0	870.0	600.0

DOORMATERIAL: MFC18-OAK
BACKMATERIAL: HARDBOARD-4MM
HANDLETYPE: Z-DOUBLE
HINGE: LEFT
ROOMNUMBER:
RH: 150.0
CARCASEMATERIAL: MED-DEN-FIBRE-18MM
EDGING: OAK-TAPE-22MM
FE:
SHELFDEPTH: 400.0
PH: 125.0
DR: 1

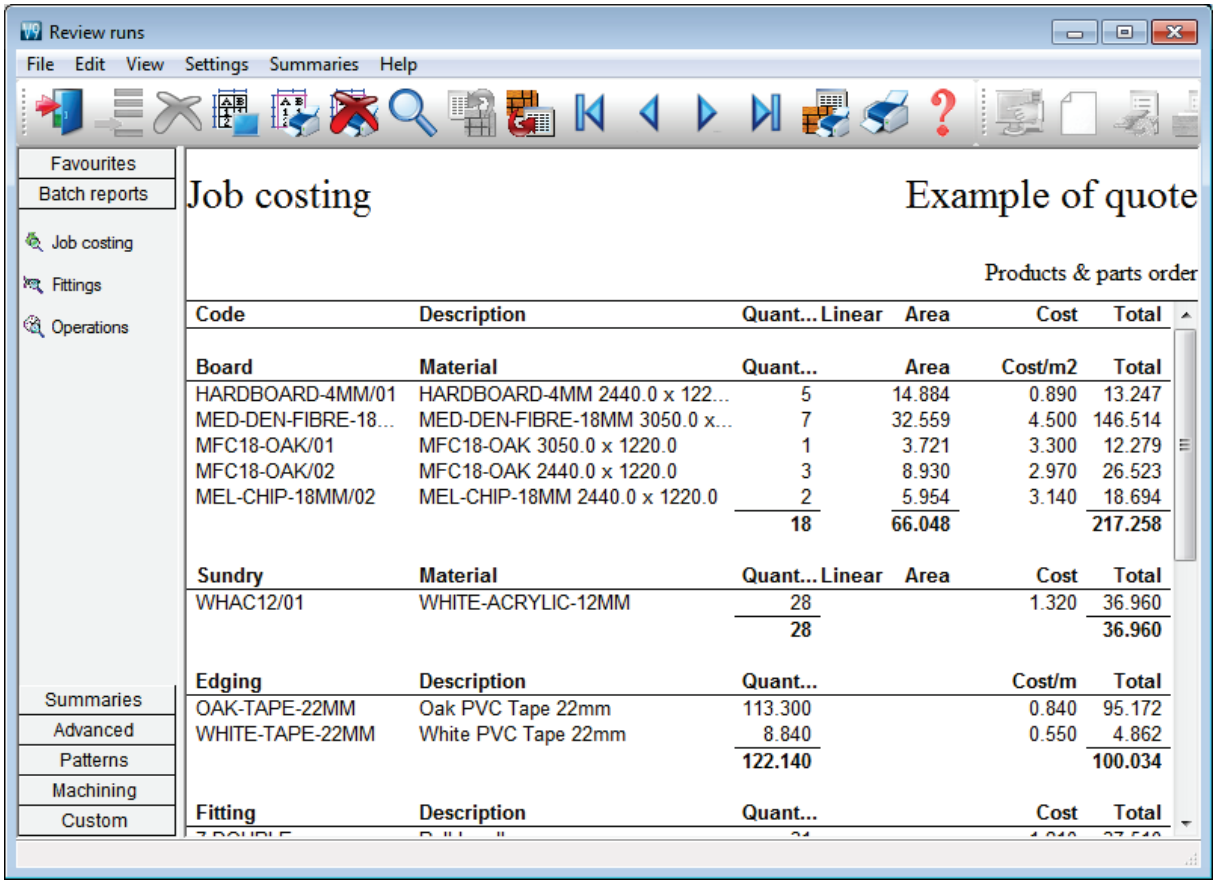
Code	Qty	Description	Material	Length	Width / Time	Item cost / Per hour	Total
BASE-END-LEFT	1	Base unit end le	MED-DEN-FIBRE-1	582.0	870.0	6.355	6.355
Description: Base unit end left Material: MED-DEN-FIBRE-18MM							
BASE-END-RIGHT	1	Base unit end ri	MED-DEN-FIBRE-1	582.0	870.0	6.355	6.355
Description: Base unit end right Material: MED-DEN-FIBRE-18MM							
BASE-BACK	1	Base unit back	HARDBOARD-4MM	476.0	735.0	1.006	1.006
BASE-BOTTOM	1	Base unit floor	MED-DEN-FIBRE-1	464.0	582.0	3.487	3.487
Material: MED-DEN-FIBRE-18MM							
BASE-PLINTH	1	Base unit plinth	MED-DEN-FIBRE-1	464.0	125.0	1.060	1.060
Material: MED-DEN-FIBRE-18MM							
BASE-RAIL-FRONT	1	Base unit rail f	MED-DEN-FIBRE-1	464.0	150.0	1.524	1.524
Description: Base unit rail front Material: MED-DEN-FIBRE-18MM							
BASE-RAIL-BACK	1	Base unit rail b	MED-DEN-FIBRE-1	464.0	150.0	1.025	1.025
Description: Base unit rail back Material: MED-DEN-FIBRE-18MM							
BASE-SHELF	1	Base unit shelf	MED-DEN-FIBRE-1	464.0	400.0	1.365	1.365
Material: MED-DEN-FIBRE-18MM							
BASE-DRAWER	1	Base unit drawer	MFC18-OAK	500.0	186.3	2.606	2.606
BASE-DOOR	1	Base unit door	MFC18-OAK	500.0	554.8	4.255	4.255
+BUDC	1	Base unit drawer carcase		462.0	148.3	546.0	
BUDC-LEFT	1	Drawer carcase l	WHITE-ACRYLIC-1	546.0	136.3	1.320	1.320
Description: Drawer carcase left Material: WHITE-ACRYLIC-12MM							
BUDC-RIGHT	1	Drawer carcase r	WHITE-ACRYLIC-1	546.0	136.3	1.320	1.320
Description: Drawer carcase right Material: WHITE-ACRYLIC-12MM							
BUDC-BACK	1	Drawer carcase b	WHITE-ACRYLIC-1	438.0	136.3	1.320	1.320
Description: Drawer carcase back Material: WHITE-ACRYLIC-12MM							
BUDC-BOTTOM	1	Drawer carcase b	WHITE-ACRYLIC-1	462.0	546.0	1.320	1.320
Description: Drawer carcase base Material: WHITE-ACRYLIC-12MM							
Z-DRAWER-SCREW	13	Acrylic drawer s	WHITE-ACRYLIC-1	0.120			1.560
Description: Acrylic drawer screw							
Z-DOUBLE	2	Pull handle	WHITE-ACRYLIC-1	1.210			2.420
ZH180-HINGE	2	Hinge 180 HKK123	WHITE-ACRYLIC-1	0.400			0.800
Description: Hinge 180 HKK123-321							
Z-DOWEL	22	Dowel	WHITE-ACRYLIC-1	0.120			2.640
Z-SHELF-SUPPORT	4	Shelf support	WHITE-ACRYLIC-1	0.190			0.760
Z-RUNNER	2	Drawer runner	WHITE-ACRYLIC-1	0.430			0.860
ZS40-8-CSUNK-SCREW	8	Csunk Screw 40mm	WHITE-ACRYLIC-1	0.010			0.080
Description: Csunk Screw 40mm No8							
Y-ASSEMBLY	180	Cabinet Assembly	WHITE-ACRYLIC-1	6.500			0.325
							43.763

No	Code	Qty	Information	Width	Height	Depth
2.	BASE-SINK	2	Sink base unit	1000.0	870.0	600.0

DOORMATERIAL: MFC18-OAK
BACKMATERIAL: HARDBOARD-4MM
HANDLETYPE: Z-DOUBLE
SHELFDEPTH: 400.0
PH: 125.0
DR: 1
CARCASEMATERIAL: MED-DEN-FIBRE-18MM
EDGING: OAK-TAPE-22MM
FE:
ROOMNUMBER:
RH: 150.0

Code	Qty	Description	Material	Length	Width / Time	Item / Per
BASE-END-LEFT	1	Base unit end le	MED-DEN-FIBRE-1	582.0	870.0	6
Description: Base unit end left Material: MED-DEN-FIBRE-18MM						

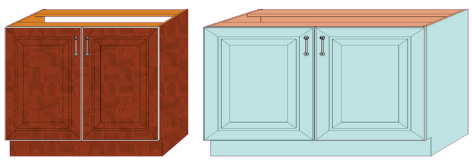
There is also a full breakdown for the costs of all parts and other items in the order.



Product library

The heart of the PQ module is the product library for building and storing parametric products.

The product library deals with custom or variable products in product ranges.

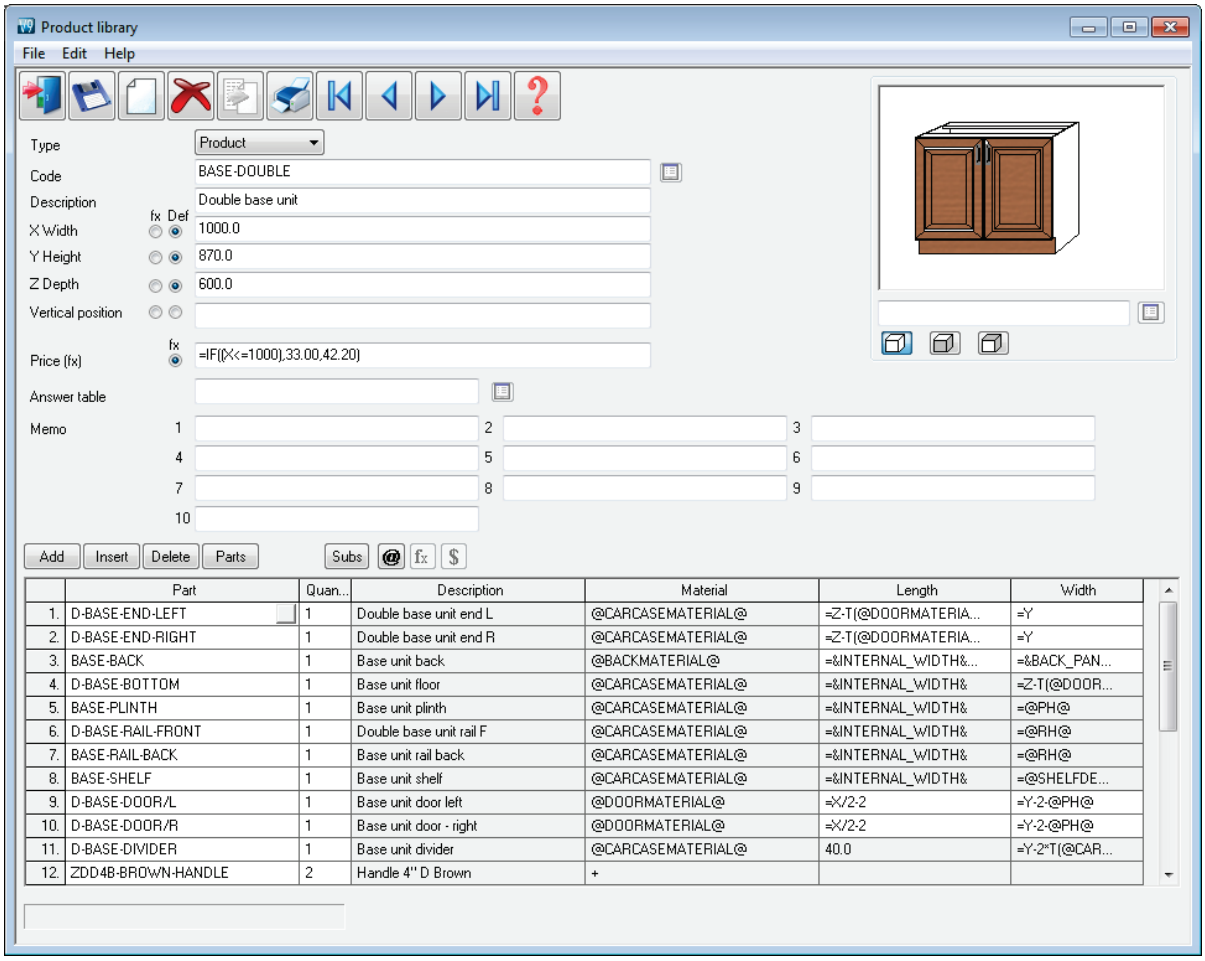


A single parametric product record can be defined to cover a wide range of options. The program automatically works out the correct part sizes and quantities based on the customer and/or production requirements.

In the above example there are two products produced from the same template. One with different materials, different sizes and one with no back.

This approach is very efficient and accurate since the program does all the calculating of sizes and quantities as the product requirements change from customer to customer.

The product entry screen allows the product to be detailed.



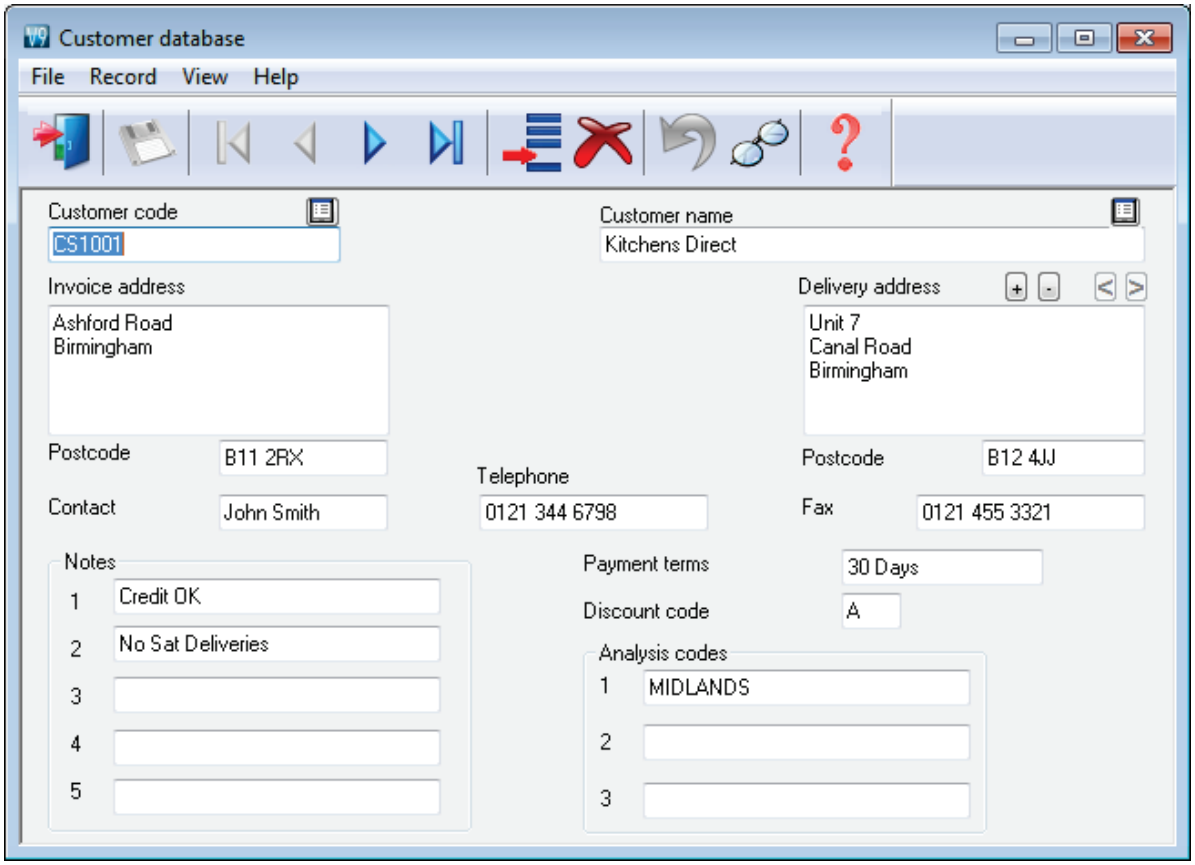
The details can include a drawing (from an external file e.g. bmp) or a drawing from the built-in drawing library.

The important point is that the product details such as Material or Length can be defined as variables e.g. @CARCASEMATERIAL@ or formulae &INTERNAL_WIDTH&

The variable is answered at the order screen where the customer material is entered e.g. TEAK or BEECH-18MM and the formula is pre-defined formula that depends on the material thickness. There are tables for defining variables, lookup tables, and formulae.

Customer Database

A customer database is included in Quote for entering and storing customer and sales details.



The task of building up the product details can be quite a lengthy and complex process - but the program includes many examples and templates to aid the process.

Summary of Products & Quotes

Products & Quotes requires one of the Optimising modules; LO, SO, PO, NE
Products & Quotes usually requires the PL module for parametric products

	PQ + PL
Product records	Unlimited
Customer records	Unlimited
Drawing library	•
External product drawings	•
Parametric products	•
Quotations	•
Job costing	•
Product costing	•
Flexible orders	•
Form & Label designer	•
Printed forms	•
Integrated local help	•
Links to website	•

Machining interface – MI

For fast set up of CNC machinery

Where parts contain additional machining such as grooves, routs, drilling and cut-outs the Machining interface module is used to create and store the part drawings (via the Machining library) and also send the correct machining instructions for each part to the CNC machining centres.

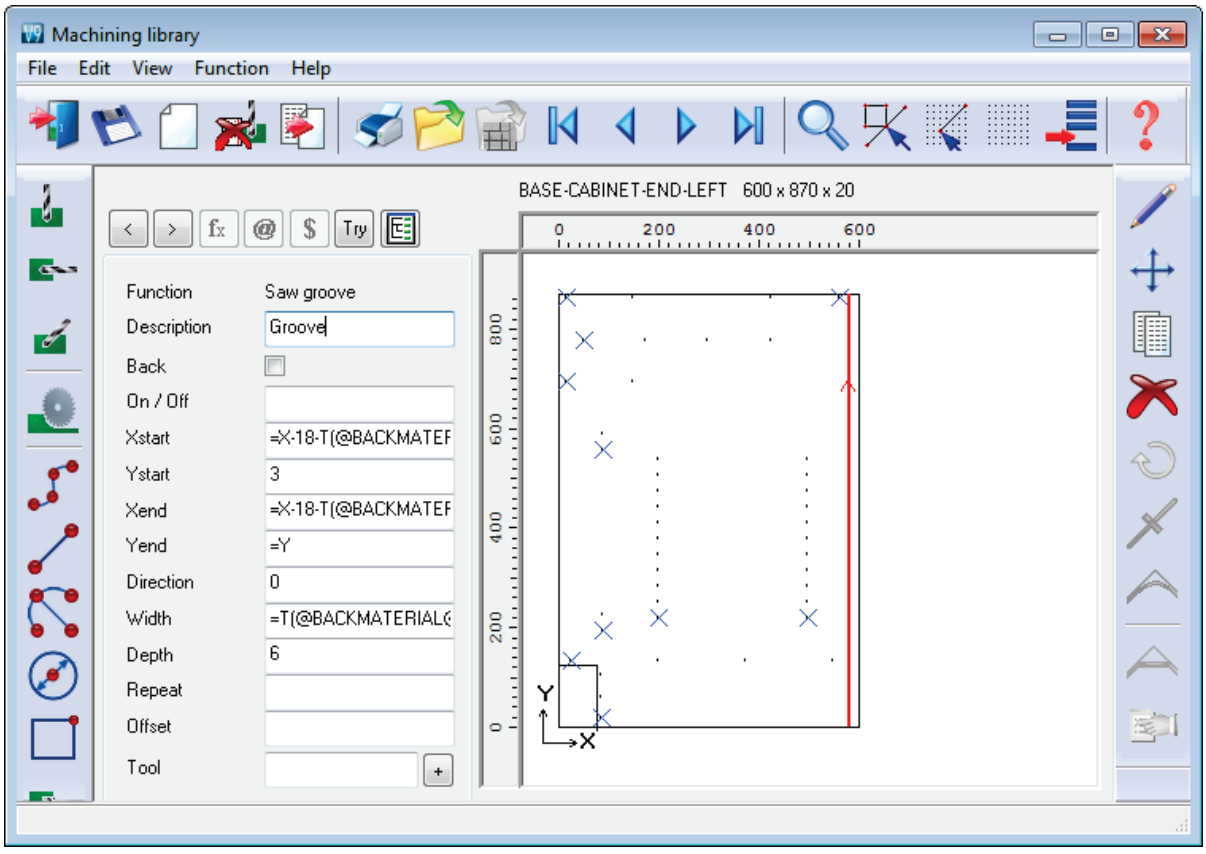
Most machining centre formats are supported including DXF, Weeke WoodWop, and other proprietary formats.

The MI interface requires one of the Optimiser modules LO, SO or PO or the Nesting optimisers (NE) for shaped parts.

Machining drawings

The machining editor provides full facilities for creating machining drawings. A wide variety of machining functions are provided:-

```
Saw groove
Horizontal drilling
Vertical drillings
Cut-outs
Arc router
Circle router
Pockets
Contours
Vacuum pods
...
```



The pane at the left shows the details of each instruction and the full part is shown in the diagram at the right.

Drawings can be set up with formulae so they are fully parametric and automatically adjust if the part size changes. Common machining patterns can be dealt with by one drawing assigned to many different parts.

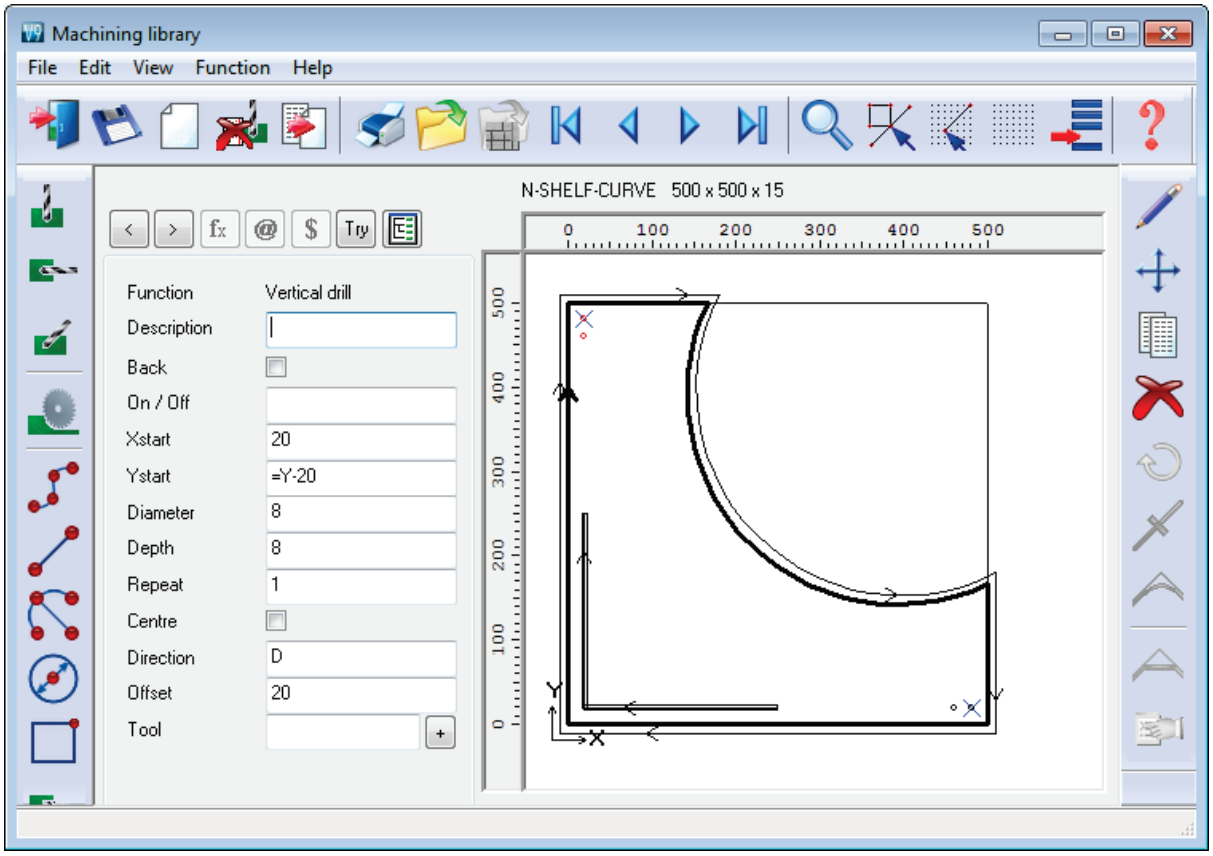
Drawings are stored in the Machining library

External drawings – where the drawings are external files such as DXF or Weeke MPR the Machining editor can still be used to view and adjust drawings and the drawing information is sent to a machining centre via the Machining Interface.

DXF drawings suitably layered can also be imported to the Machining library.

Shaped parts

The drawing editor allows for contours to define shaped parts.



Each machining instruction can include extra tooling information to allow for tool speeds, tool path compensation etc.

Use the mouse to quickly draw the function and use the boxes at the left to add the detailed measurements where required.

The transfer of machining data to CNC machines is set up via the following parameters:-

```
Machining centre parameters
Machining centre transfer parameters
```

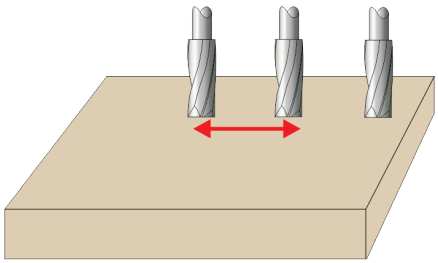
The machining centre parameters set up the general features for the machining drawings/instructions such as the Drawing origin, and specific features for proprietary machines such as the ‘Park mode’ for Weeke/WoodWop.

The Machining centre transfer parameters control the transfer of data to the machining centre. File format, where files are located and whether there are separate files for Front and Back instructions. A wide range of transfer formats are supported:-

```
Weeke/WoodWop V4/V5 (MPR)
Weeke/WoodWop V2.5 (MPR)
2D DXF non layered
2D DXF layered
D DXF layered
Biesse RoverCad (CID)
Morbidelli Aspan V3.2 (ASC)
Morbidelli Aspan V4.0 (ASC)
Busellato Autolink (DXF)
ASCII PTX
MDB  PTX
```

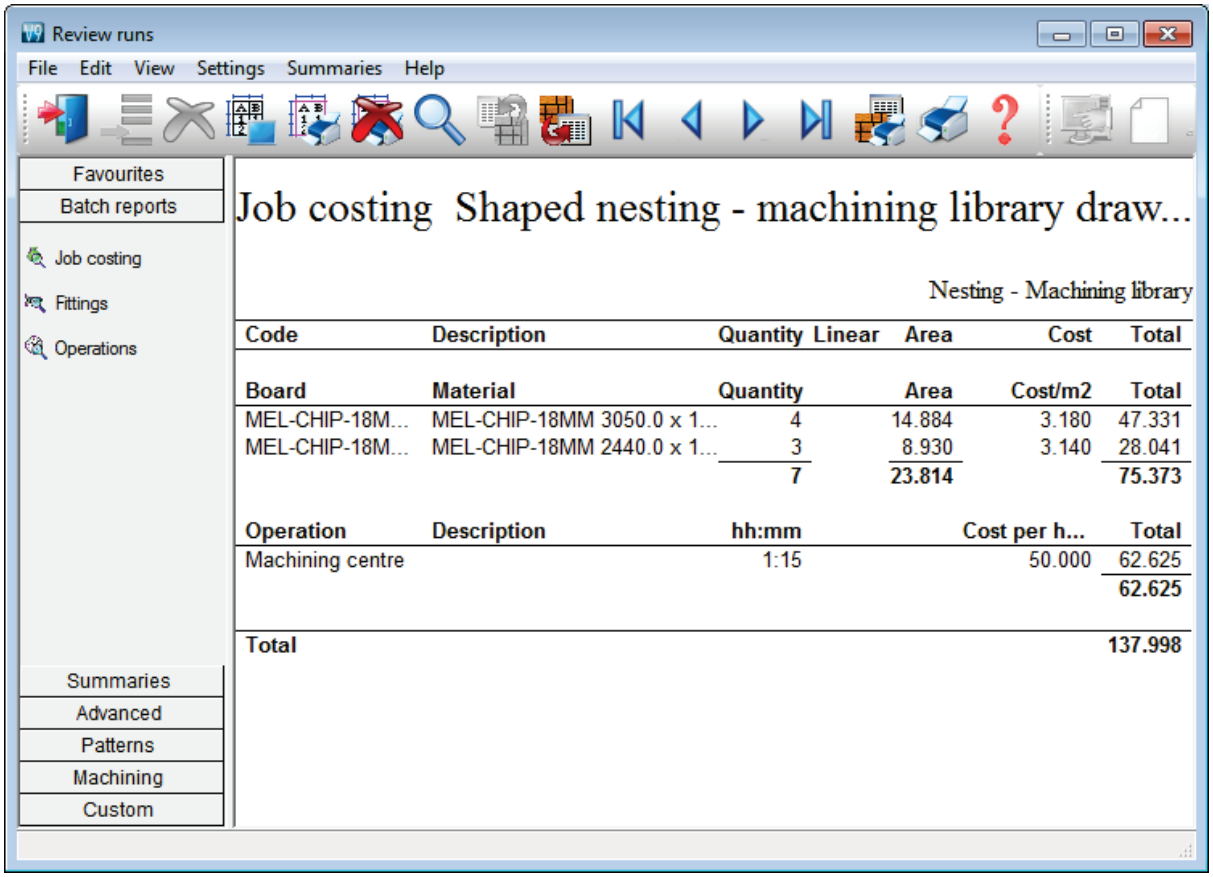
The machining centre transfer parameters also include a Tooling replacement table, so that tooling instructions can be translated to a specific format for a machine. This allows for a single set of drawings which can then be interpreted for different CNC machines.

For most parameters there is a clear picture of the setting involved and examples of the set up.



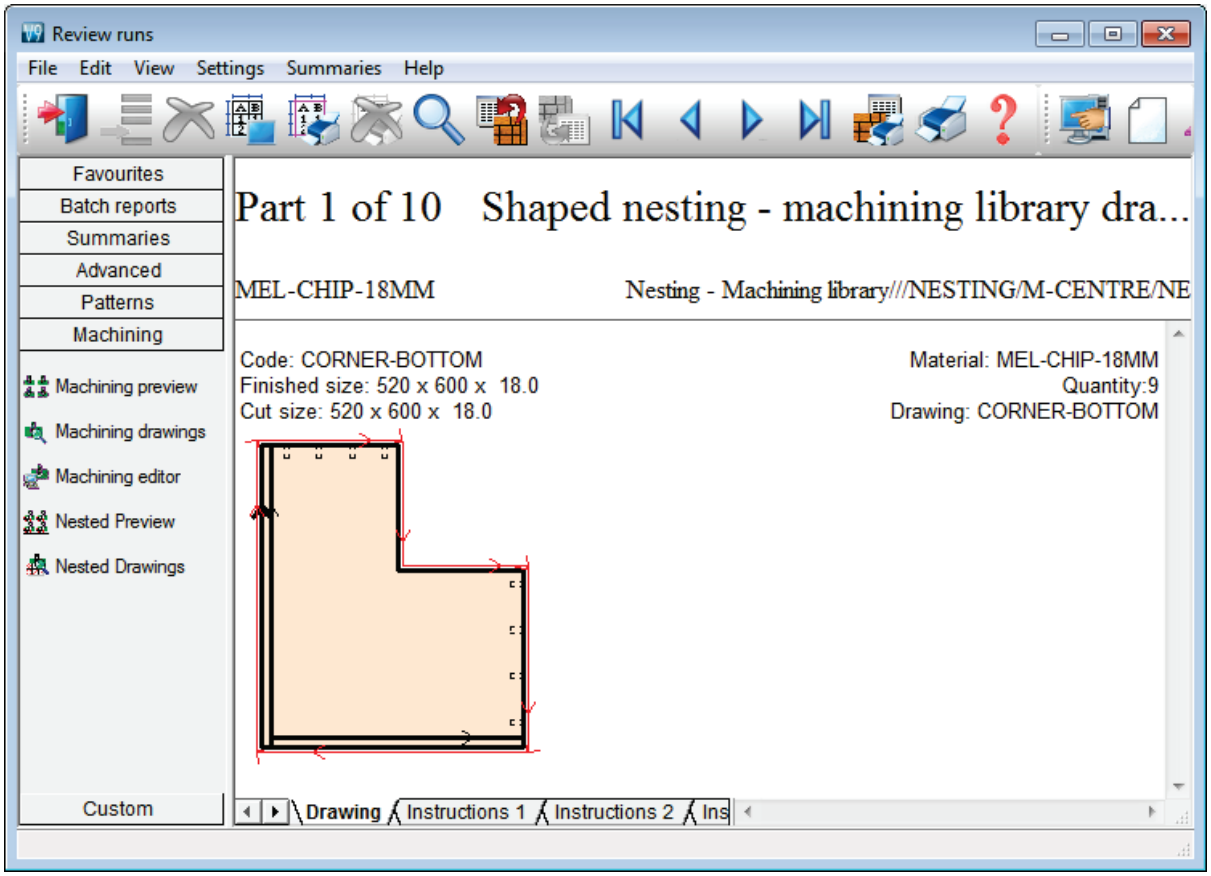
Machining summary and costs

The costing for a job includes the machining times and costs.

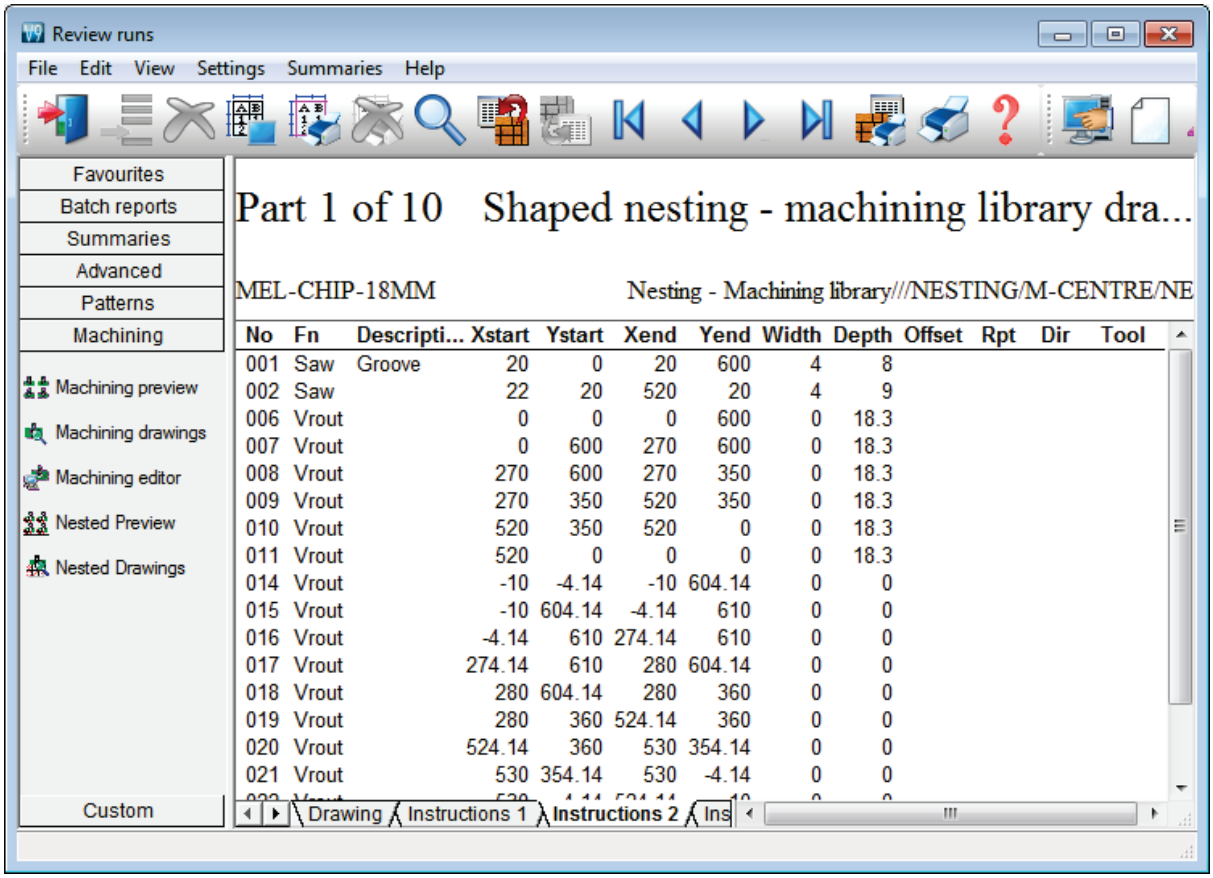


The job summary includes the machining drawings (with all dimensions resolved and calculated) and reports for each type of instruction.

Machining drawing

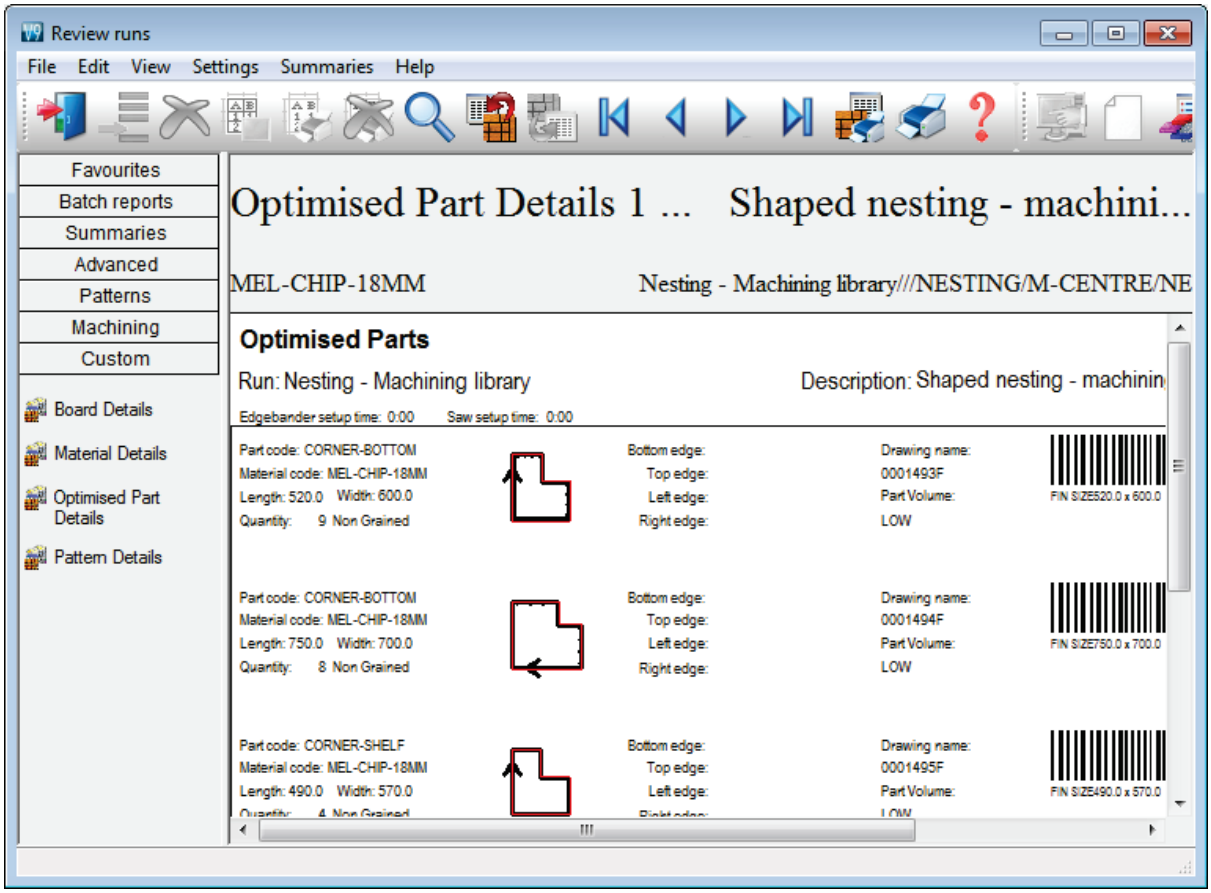


Machining instructions



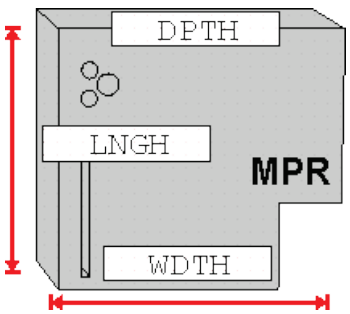
No	Fn	Descripti...	Xstart	Ystart	Xend	Yend	Width	Depth	Offset	Rpt	Dir	Tool
001	Saw	Groove	20	0	20	600	4	8				
002	Saw		22	20	520	20	4	9				
006	Vrout		0	0	0	600	0	18.3				
007	Vrout		0	600	270	600	0	18.3				
008	Vrout		270	600	270	350	0	18.3				
009	Vrout		270	350	520	350	0	18.3				
010	Vrout		520	350	520	0	0	18.3				
011	Vrout		520	0	0	0	0	18.3				
014	Vrout		-10	-4.14	-10	604.14	0	0				
015	Vrout		-10	604.14	-4.14	610	0	0				
016	Vrout		-4.14	610	274.14	610	0	0				
017	Vrout		274.14	610	280	604.14	0	0				
018	Vrout		280	604.14	280	360	0	0				
019	Vrout		280	360	524.14	360	0	0				
020	Vrout		524.14	360	530	354.14	0	0				
021	Vrout		530	354.14	530	-4.14	0	0				

With the Parts & Labels module route cards or labels for each machined parts can be printed at the office.



With the pattern editor last minute adjustments can be made to any drawing before sending the data to the CNC machining centre.

External drawings - The drawing editor and transfer of data to a CNC machine can be integrated with the use of external drawing files such as DXF and MPR.



In this case the stand-alone drawings can be used with parts so items do not have to be duplicated in the machining library or drawn twice.

Summary of Machining Interface

- Machining Interface requires one of the Optimising modules: LO, SO, PO or the Nesting Optimiser NE.

	MI	MI + PL
Machining drawings	99999	99999
Machining functions (drill, route …)	•	•
Support for proprietary formats	•	•
Support for DXF	•	•
Transfer to machining centre	•	•
Shaped drawings	•	•
Labels for drawings		•
Parametric drawings	•	•

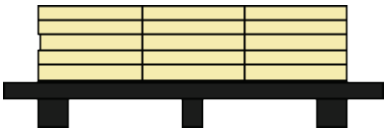
Destacking & Palletisation - DS

Efficient offstacking and faster through flow

The DS module provides for the set up and planning of the destacking process so that parts are distributed to pallets or baseboards efficiently after cutting.

Parts can be destacked manually or with specialised destacking equipment. The DS module is flexible enough to cope with many destack situations including the use of automatic machinery.

A straightforward example is where parts are manually destacked on to fixed size pallets around the saw.

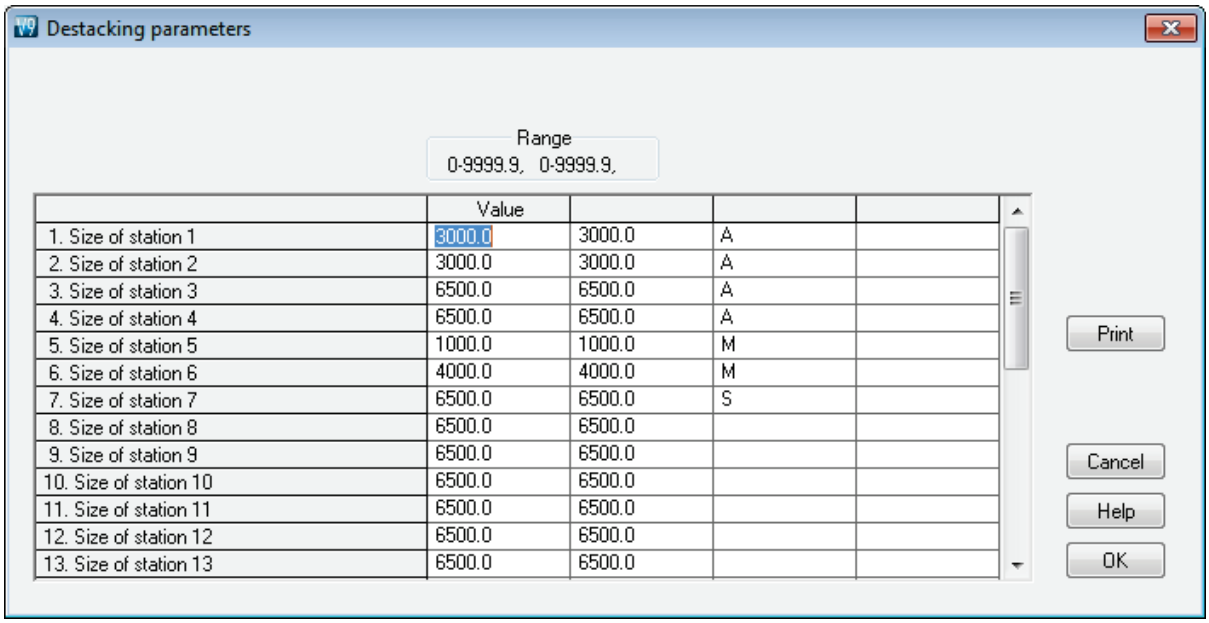


Each location around the saw is a 'Station'.

The optimisation takes account of the destacking requirements and parts are only destacked to stations that are large enough. The required quantity of each part is completed before the station is cleared ready for the next part.

Destacking parameters

The destacking parameters are used to describe the number, size and type of each station. Typically there might 4 or 5 stations available.

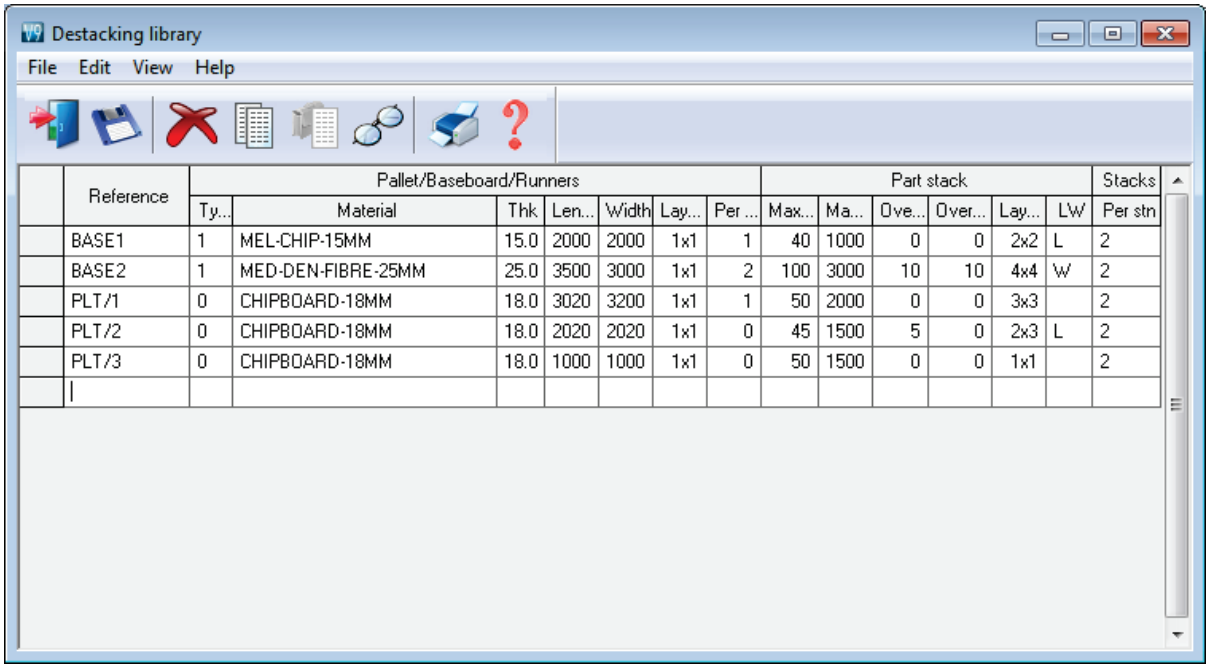


The destacking layout to use is set by information in the Part list (Part list information boxes).

Destacking library

The layout for destacking on to a pallet or baseboard is at its simplest the number in the length and the number in the width, for example, 3 x 3 or 2 x 1.

The styles to use are defined in the Destacking library. In this example there are different styles for baseboards and pallets.



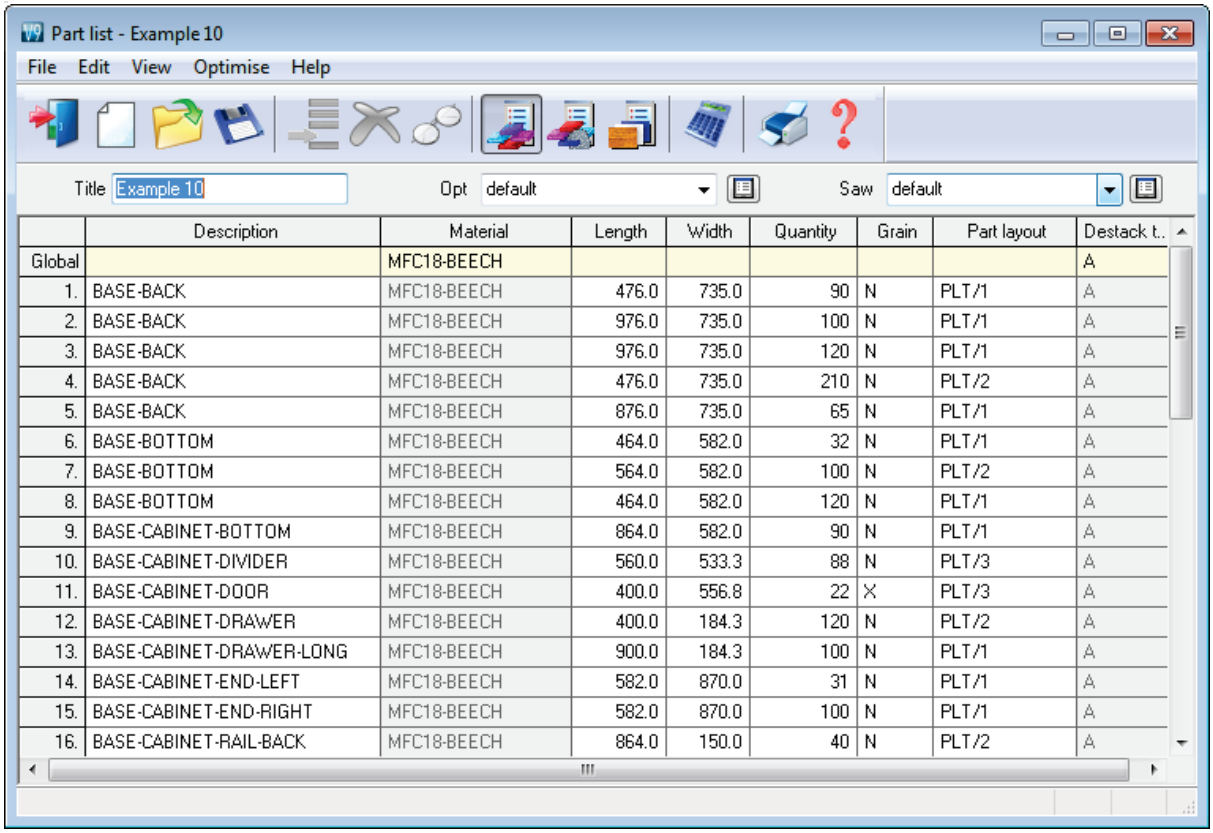
	Reference	Pallet/Baseboard/Runners							Part stack						Stacks
		Ty...	Material	Thk	Len...	Width	Lay...	Per ...	Max...	Ma...	Ove...	Over...	Lay...	LW	Per stn
	BASE1	1	MEL-CHIP-15MM	15.0	2000	2000	1x1	1	40	1000	0	0	2x2	L	2
	BASE2	1	MED-DEN-FIBRE-25MM	25.0	3500	3000	1x1	2	100	3000	10	10	4x4	W	2
	PLT/1	0	CHIPBOARD-18MM	18.0	3020	3200	1x1	1	50	2000	0	0	3x3		2
	PLT/2	0	CHIPBOARD-18MM	18.0	2020	2020	1x1	0	45	1500	5	0	2x3	L	2
	PLT/3	0	CHIPBOARD-18MM	18.0	1000	1000	1x1	0	50	1500	0	0	1x1		2

The library can hold many hundreds of styles but typically only a handful of styles are required. They can be set to match your requirements for stacking and processing.

Optimising and Destacking

The Destacking calculations are part of the optimising process and all the information is calculated during optimisation.

The destacking style to use for each part is set at the Part list using extra fields (Part list information boxes).

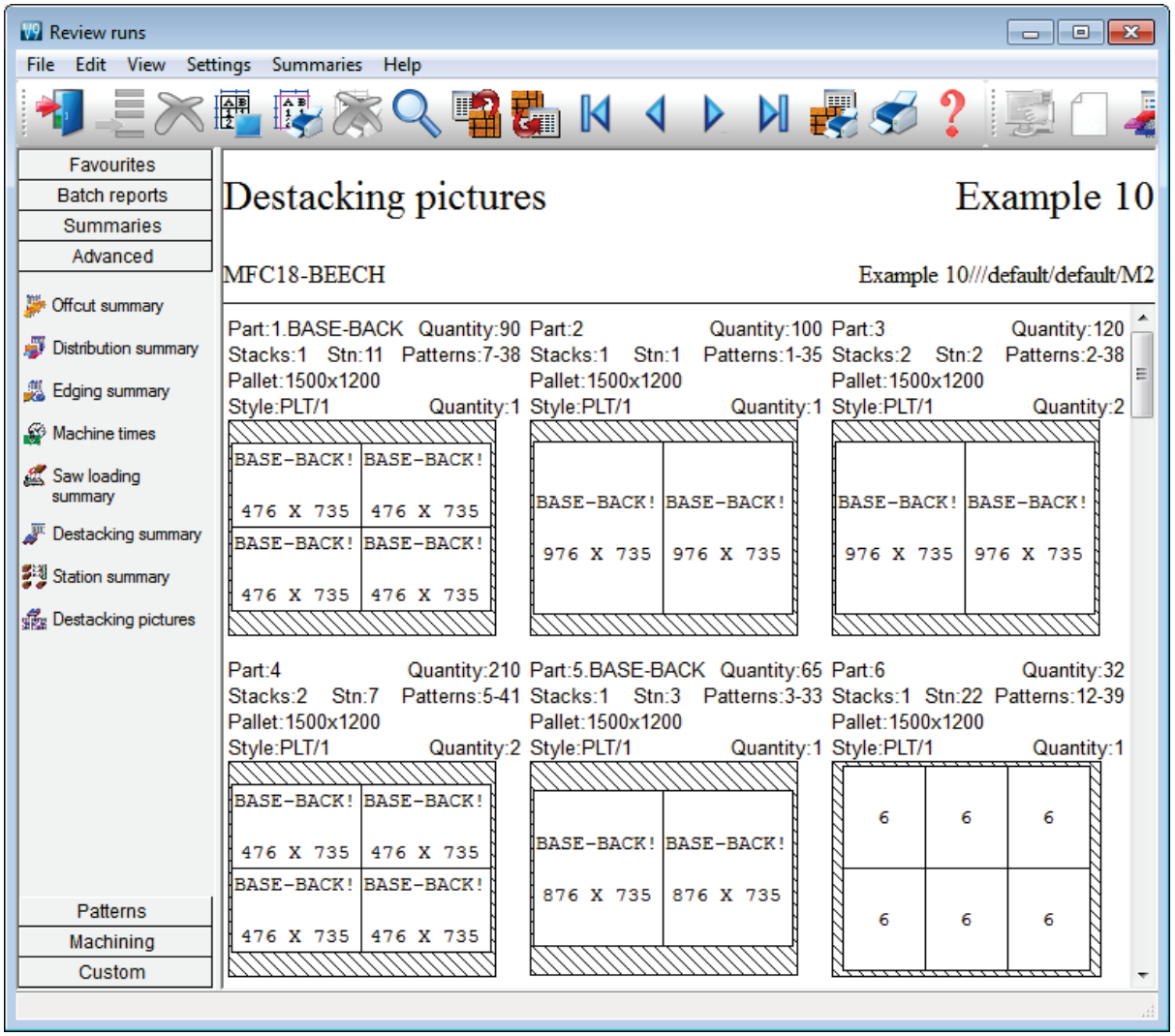


	Description	Material	Length	Width	Quantity	Grain	Part layout	Destack t..
Global		MFC18-BEECH						A
1.	BASE-BACK	MFC18-BEECH	476.0	735.0	90	N	PLT/1	A
2.	BASE-BACK	MFC18-BEECH	976.0	735.0	100	N	PLT/1	A
3.	BASE-BACK	MFC18-BEECH	976.0	735.0	120	N	PLT/1	A
4.	BASE-BACK	MFC18-BEECH	476.0	735.0	210	N	PLT/2	A
5.	BASE-BACK	MFC18-BEECH	876.0	735.0	65	N	PLT/1	A
6.	BASE-BOTTOM	MFC18-BEECH	464.0	582.0	32	N	PLT/1	A
7.	BASE-BOTTOM	MFC18-BEECH	564.0	582.0	100	N	PLT/2	A
8.	BASE-BOTTOM	MFC18-BEECH	464.0	582.0	120	N	PLT/1	A
9.	BASE-CABINET-BOTTOM	MFC18-BEECH	864.0	582.0	90	N	PLT/1	A
10.	BASE-CABINET-DIVIDER	MFC18-BEECH	560.0	533.3	88	N	PLT/3	A
11.	BASE-CABINET-DOOR	MFC18-BEECH	400.0	556.8	22	X	PLT/3	A
12.	BASE-CABINET-DRAWER	MFC18-BEECH	400.0	184.3	120	N	PLT/2	A
13.	BASE-CABINET-DRAWER-LONG	MFC18-BEECH	900.0	184.3	100	N	PLT/1	A
14.	BASE-CABINET-END-LEFT	MFC18-BEECH	582.0	870.0	31	N	PLT/1	A
15.	BASE-CABINET-END-RIGHT	MFC18-BEECH	582.0	870.0	100	N	PLT/1	A
16.	BASE-CABINET-RAIL-BACK	MFC18-BEECH	864.0	150.0	40	N	PLT/2	A

In this example several different pallet layouts are used. In many cases it may be necessary to specify different layouts for different parts, for example, it may dangerous to stack very small parts in a 4 x 4 layout.

The part list is optimised in the usual way. The Destacking information is shown in the 'Review runs summaries'. The optimisation automatically includes an advanced algorithm that ensures optimisation takes account of the stations sizes set in the Destacking parameters.

The Destacking pictures show the layout for each part.

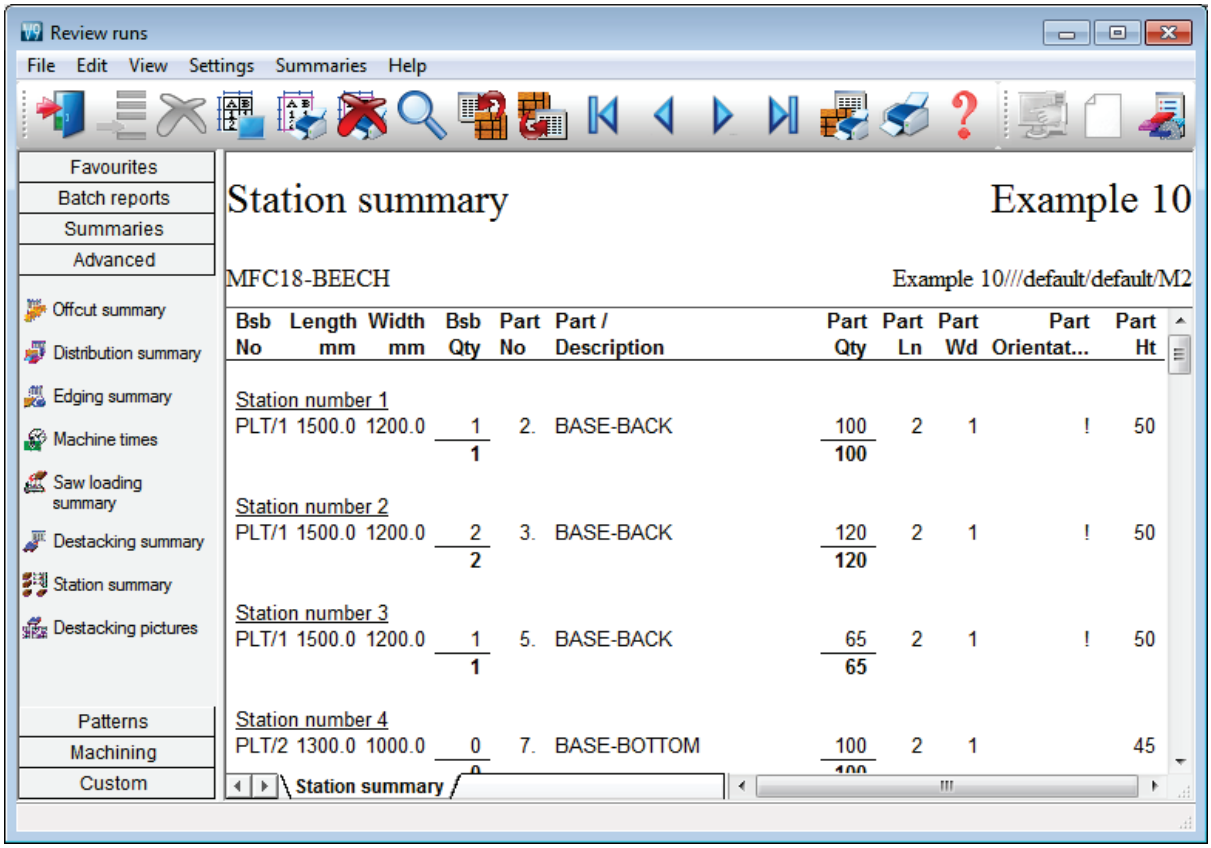


These can be used for controlling and checking the destack process.

Two other reports are available:-

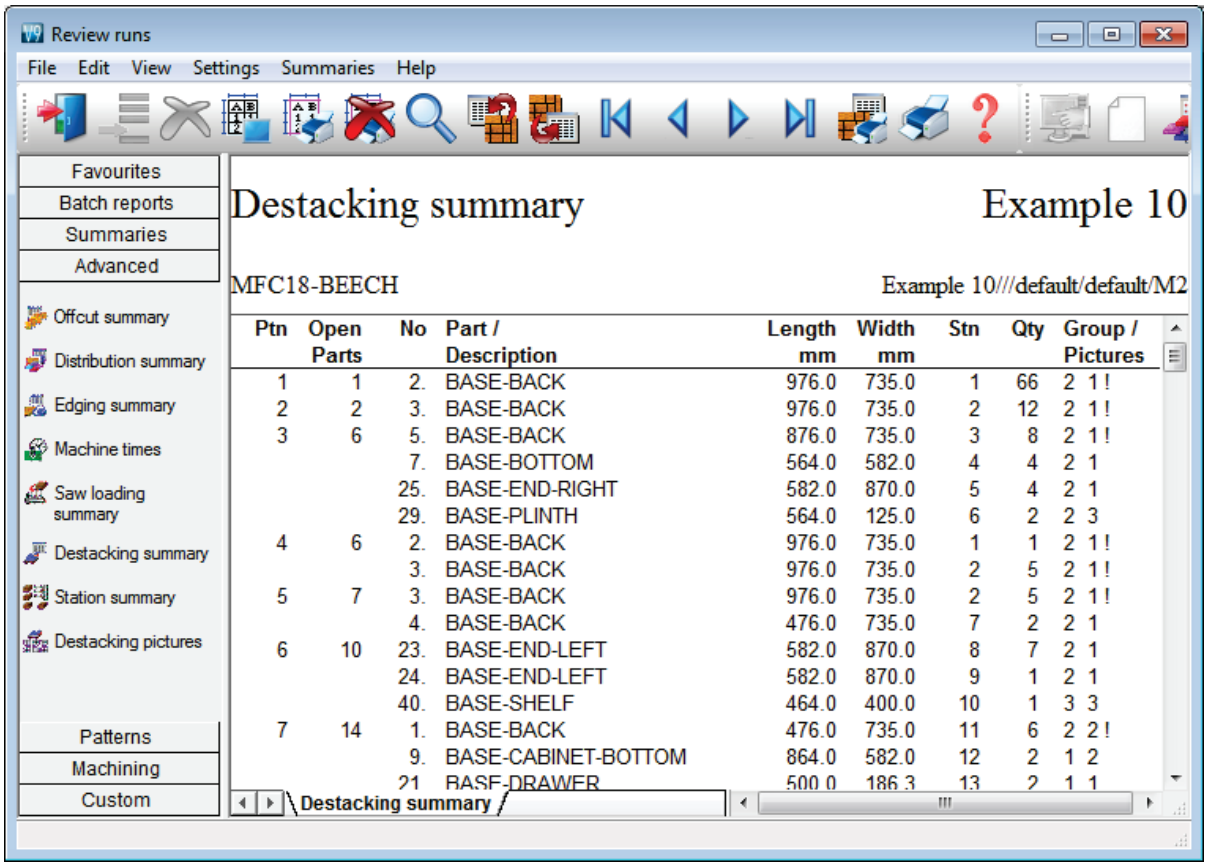
Station summary

This shows how each station is loaded and the order of parts arriving at each station.



Destacking Summary

This shows for each cutting pattern how the parts are produced and the sequence they arrive at stations.



Ptn	Open Parts	No	Part / Description	Length mm	Width mm	Stn	Qty	Group / Pictures
1	1	2.	BASE-BACK	976.0	735.0	1	66	2 1 !
2	2	3.	BASE-BACK	976.0	735.0	2	12	2 1 !
3	6	5.	BASE-BACK	876.0	735.0	3	8	2 1 !
		7.	BASE-BOTTOM	564.0	582.0	4	4	2 1
		25.	BASE-END-RIGHT	582.0	870.0	5	4	2 1
		29.	BASE-PLINTH	564.0	125.0	6	2	2 3
4	6	2.	BASE-BACK	976.0	735.0	1	1	2 1 !
		3.	BASE-BACK	976.0	735.0	2	5	2 1 !
5	7	3.	BASE-BACK	976.0	735.0	2	5	2 1 !
		4.	BASE-BACK	476.0	735.0	7	2	2 1
6	10	23.	BASE-END-LEFT	582.0	870.0	8	7	2 1
		24.	BASE-END-LEFT	582.0	870.0	9	1	2 1
		40.	BASE-SHELF	464.0	400.0	10	1	3 3
7	14	1.	BASE-BACK	476.0	735.0	11	6	2 2 !
		9.	BASE-CABINET-BOTTOM	864.0	582.0	12	2	1 2
		21	BASE-DRAWER	500.0	186.3	13	2	1 1

Using Destacking information

- All the reports can be easily printed and used at the Destacking area or for planning.

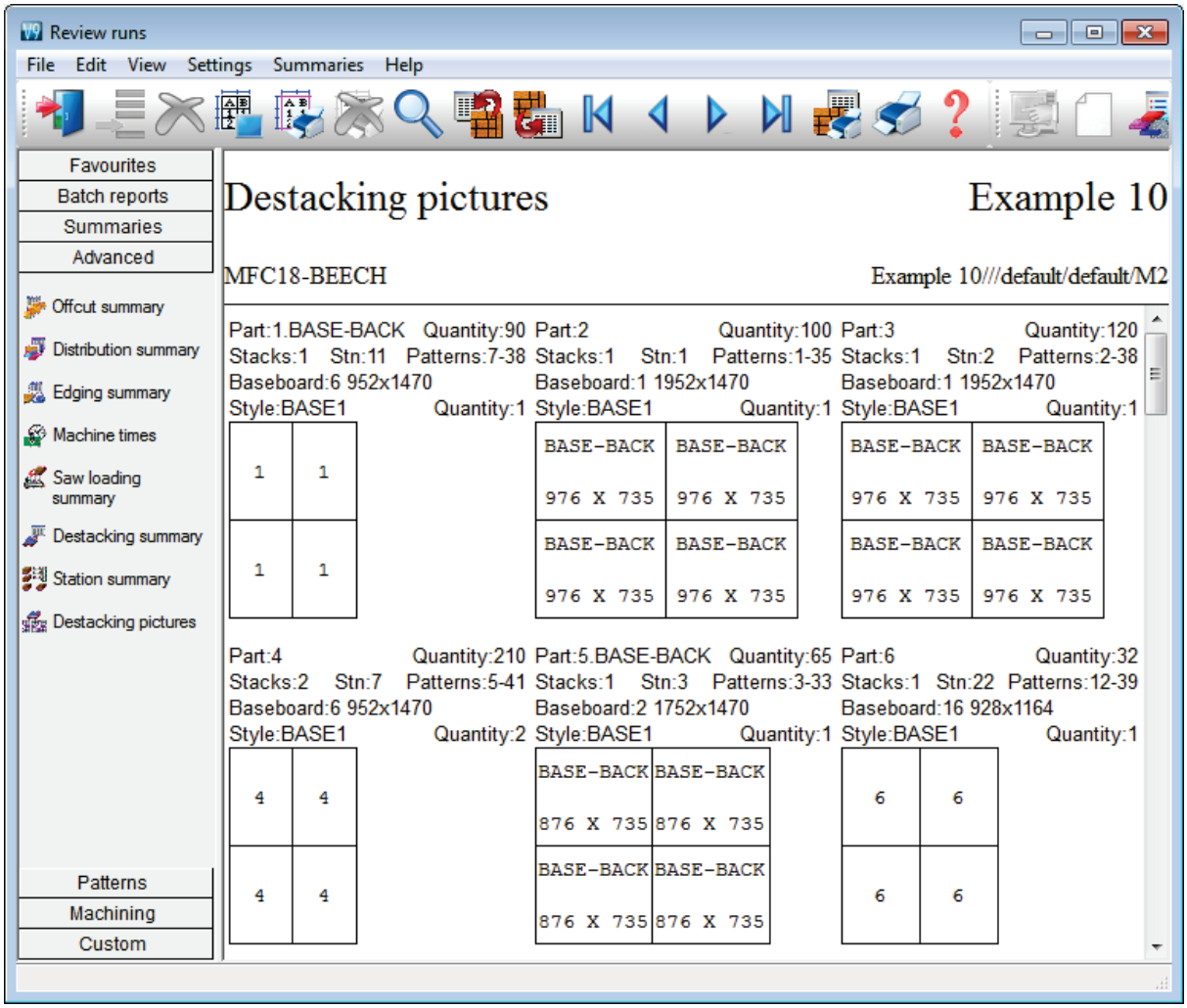
- For Holzma/Bargstedt destacking machinery the destacking information can be downloaded (via the Saw interface) for use by automatic destacking machinery.

- Labels for each pallets and/or each stack can be printed in the office if used with the 'Parts & Labels' (PL) module.

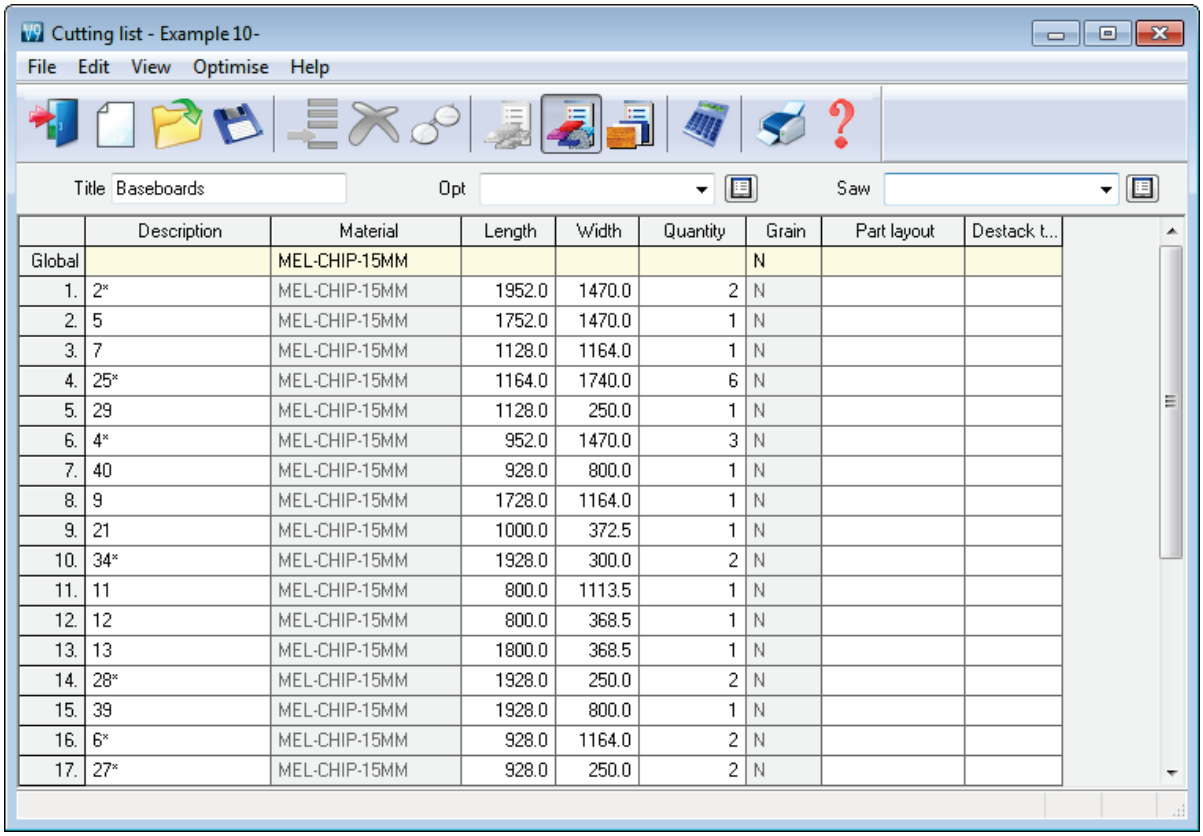
Baseboards

Many customers offstack to cut to size baseboards rather than pallets. Destacking can be set up for this (or a mixture of both).

Destacking pictures for baseboards:-



The program also provides a cutting list for the Baseboards ready for optimising.



	Description	Material	Length	Width	Quantity	Grain	Part layout	Destack t...
Global		MEL-CHIP-15MM				N		
1.	2*	MEL-CHIP-15MM	1952.0	1470.0	2	N		
2.	5	MEL-CHIP-15MM	1752.0	1470.0	1	N		
3.	7	MEL-CHIP-15MM	1128.0	1164.0	1	N		
4.	25*	MEL-CHIP-15MM	1164.0	1740.0	6	N		
5.	29	MEL-CHIP-15MM	1128.0	250.0	1	N		
6.	4*	MEL-CHIP-15MM	952.0	1470.0	3	N		
7.	40	MEL-CHIP-15MM	928.0	800.0	1	N		
8.	9	MEL-CHIP-15MM	1728.0	1164.0	1	N		
9.	21	MEL-CHIP-15MM	1000.0	372.5	1	N		
10.	34*	MEL-CHIP-15MM	1928.0	300.0	2	N		
11.	11	MEL-CHIP-15MM	800.0	1113.5	1	N		
12.	12	MEL-CHIP-15MM	800.0	368.5	1	N		
13.	13	MEL-CHIP-15MM	1800.0	368.5	1	N		
14.	28*	MEL-CHIP-15MM	1928.0	250.0	2	N		
15.	39	MEL-CHIP-15MM	1928.0	800.0	1	N		
16.	6*	MEL-CHIP-15MM	928.0	1164.0	2	N		
17.	27*	MEL-CHIP-15MM	928.0	250.0	2	N		

Flexible Destacking

The destacking options are very flexible and can be set up for:-

- Offstacking to the floor (no station sizes)
- Offstacking to a mix of automatic and manual stations
- Offstacking to include one or more 'Overflow' stations
- Use of 'Pallet groups'

Pallet groups

The program also includes more general options to take account of Pallet groups. For example, a field (information box) is available at the part list to set a pallet group number for each part.

This ensures the optimisers arrange the pattern layouts so parts in the same pallet group are finished before considering parts from other pallet groups. This speeds up later production and assembly operations and helps with delivery times for specific parts.

For example, a customer recently needed to set up their system to produce 1 job at a time and used the Pallet group option for this. The flexibility of the optimisers also allowed 'changeover' patterns where one group finished and the next started so waste was minimised.

Summary of Destacking

- Destacking requires optimising module: PO

	DS	DS + PL	DS + Homag
Maximum items in library	9999	9999	9999
Maximum number of stations	20	20	20
Automatic machinery	•	•	•
Manual destacking	•	•	•
Allow overflow stations	•	•	•
Pallet groups	•	•	•
Fixed pallets	•	•	•
Baseboards	•	•	•
Destack to floor	•	•	•
Labels for stacks or pallets		•	
Destack pictures	•	•	•
Destack summary	•	•	•
Station summary	•	•	•
Download to destack machinery			•

- The DS option can also be modified for one-off of special equipment - ask for a quote

CAD Drawings – CA

Easy to use 2D drawing and room layout

A flexible design tool for laying out jobs e.g. Office spaces, Kitchens, Washrooms **…**

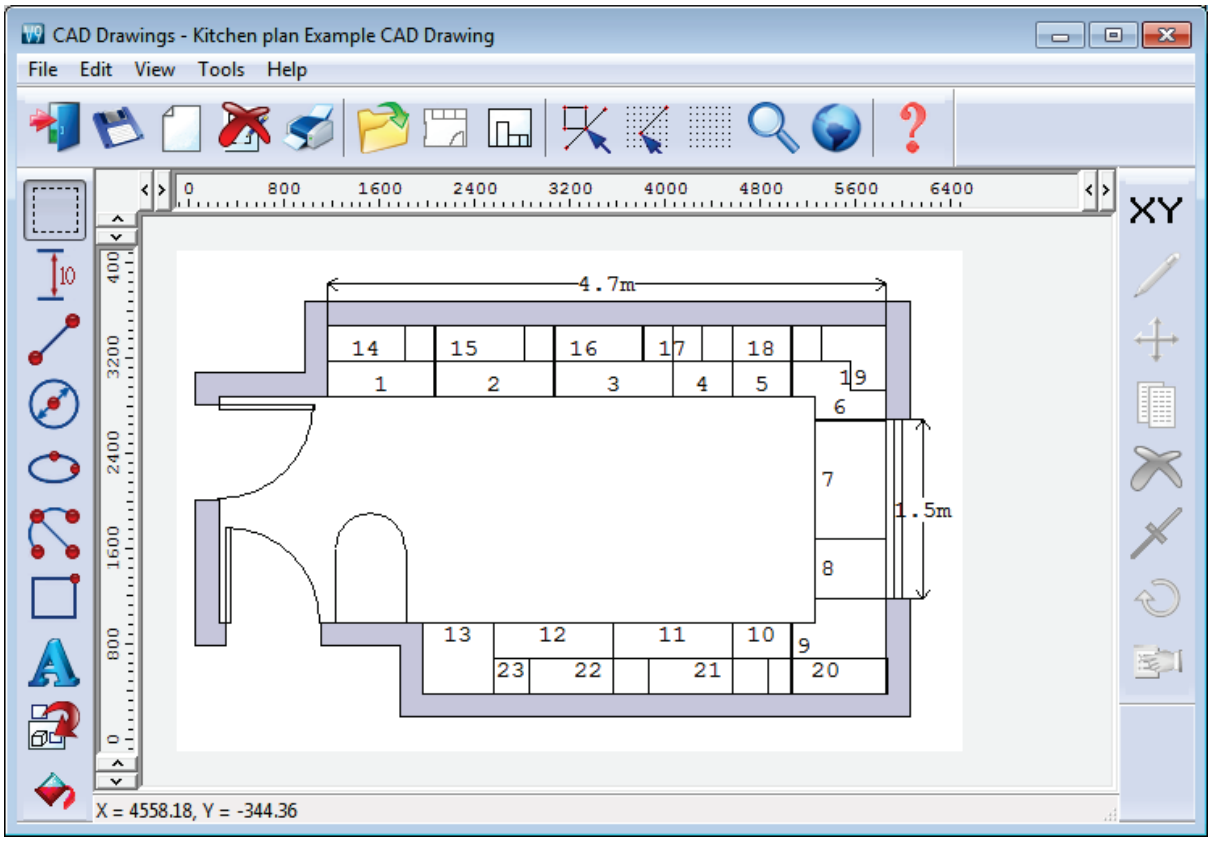
- Create room layout
- Add products
- Optimise

Provides full costing, drawings and supporting documents.

Layout can be exported in DXF format.

CAD drawing library

Use the screen and integrated tools to produce a space or room layout and position products on the layout.

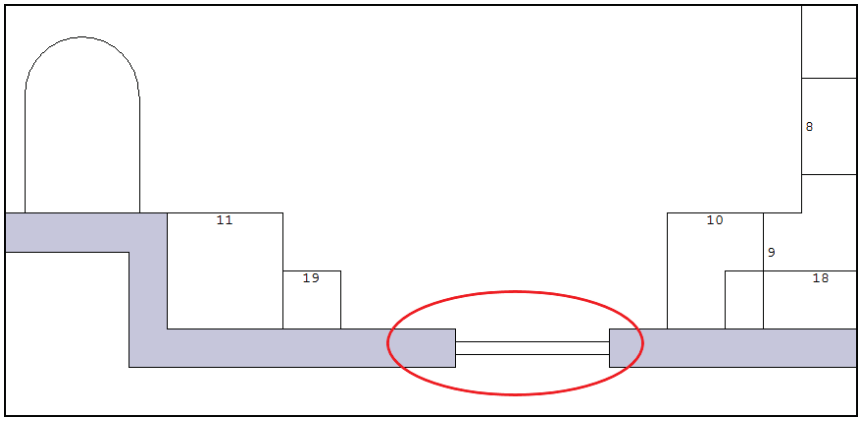


A set of tools allow for quick and accurate entry of the room details.

Wall
Door
Window

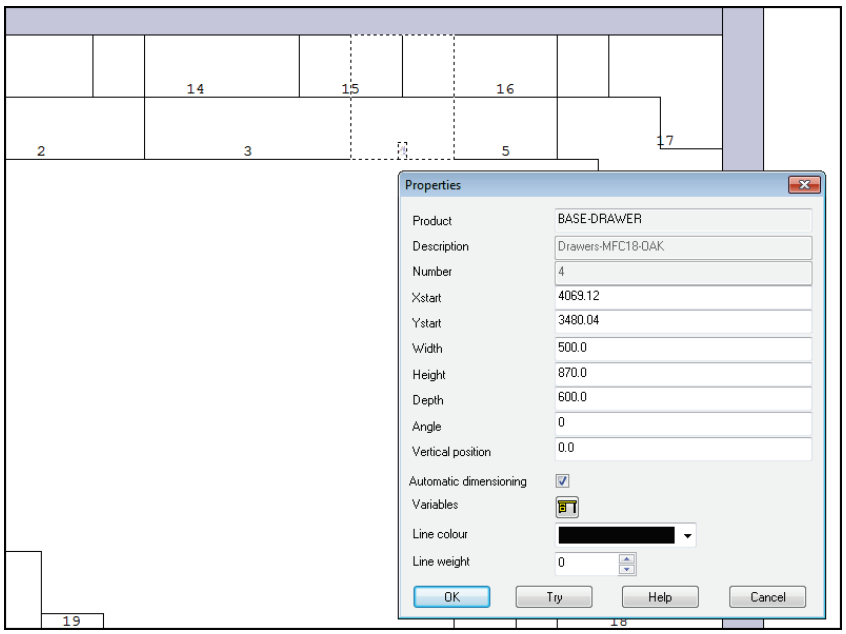
Plus all the usual drawing tools, arc, line, circle, ellipse, text **…**

Here the Window tool is used to add a window,

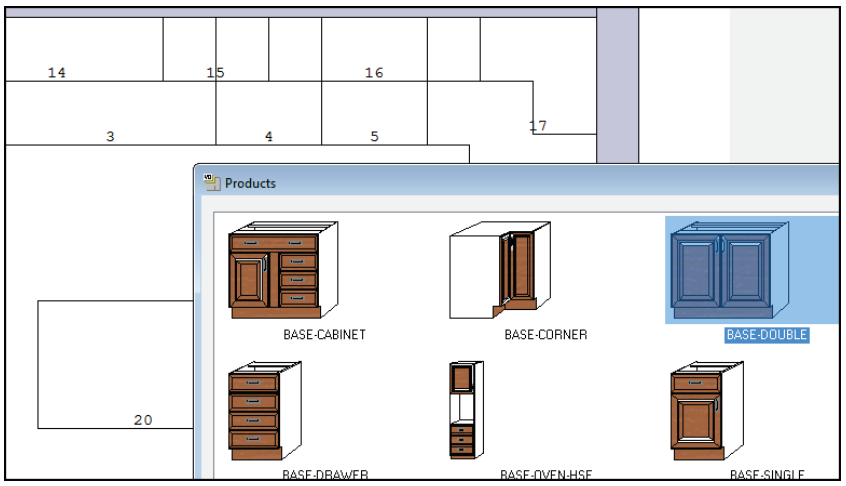


Products were re-positioned as a result of the change.

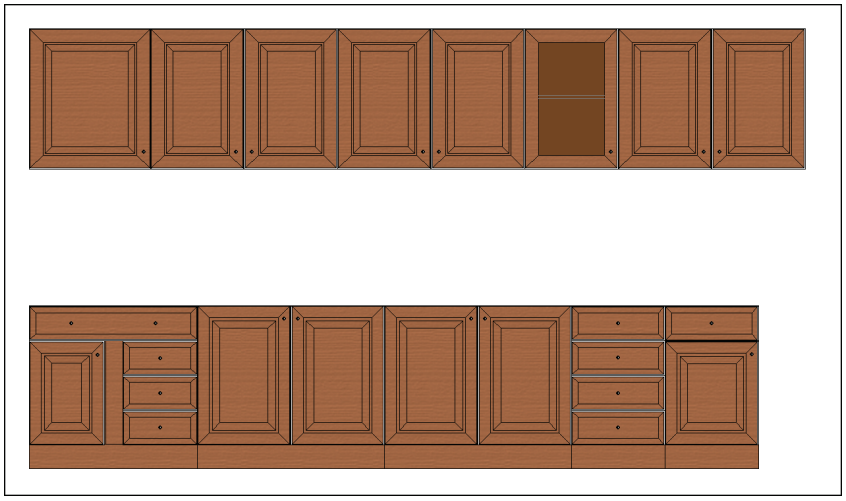
Details of each product are shown via the Properties pop-up



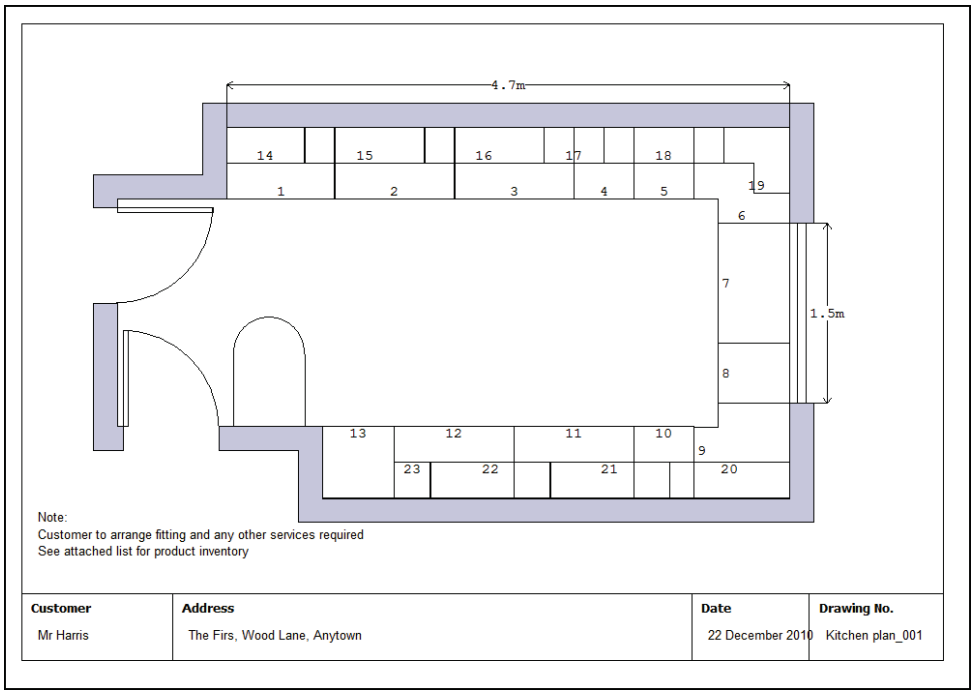
Use the Product tool to add products to the drawing.



The view can be switched between the plan view and an elevation along a selected wall.

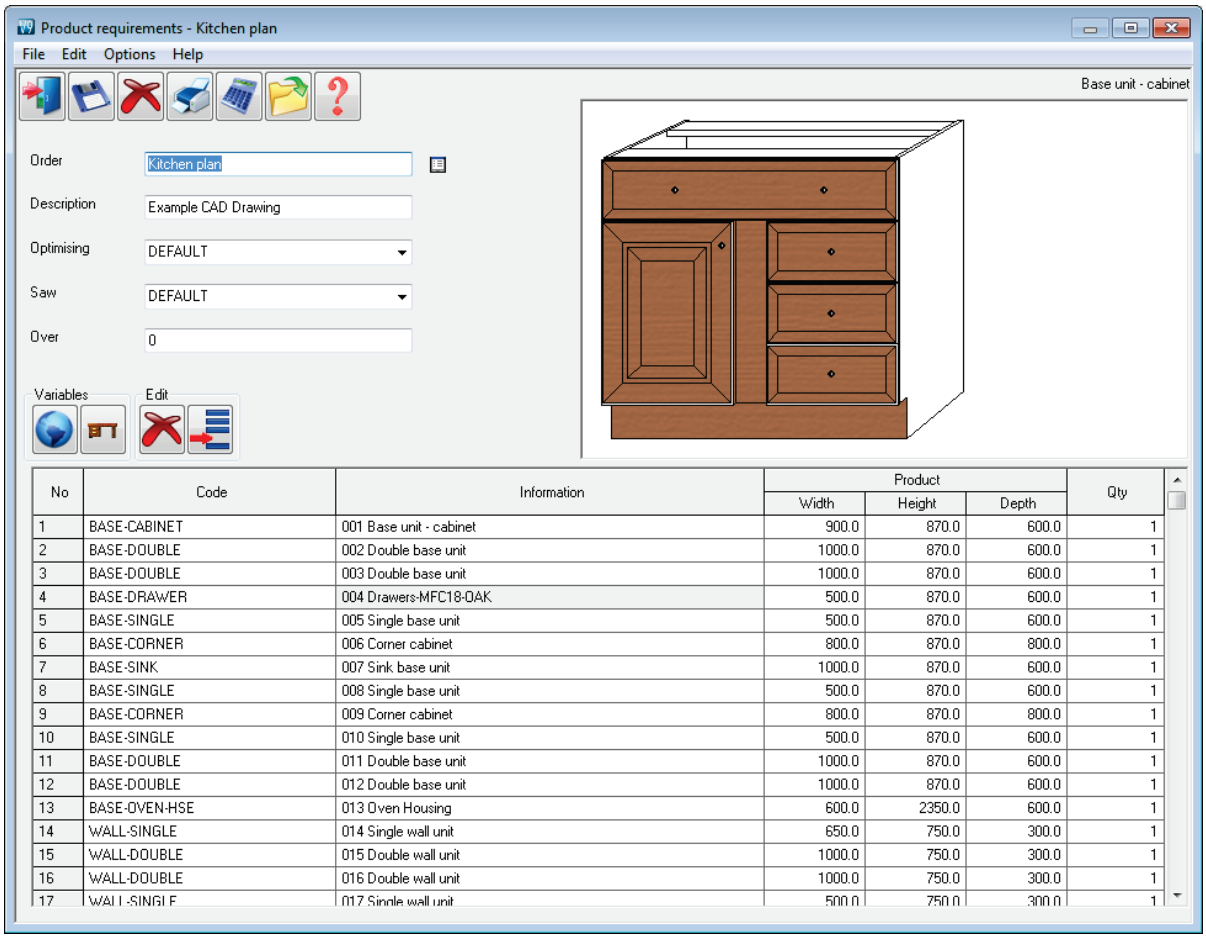


Any drawing can be added to a diagram layout - so that a full annotated drawing can be produced if required.



Product requirements

Once the drawing is complete the product requirements can be calculated automatically by the program.



No	Code	Information	Product			Qty
			Width	Height	Depth	
1	BASE-CABINET	001 Base unit - cabinet	900.0	870.0	600.0	1
2	BASE-DOUBLE	002 Double base unit	1000.0	870.0	600.0	1
3	BASE-DOUBLE	003 Double base unit	1000.0	870.0	600.0	1
4	BASE-DRAWER	004 Drawers-MFC18-OAK	500.0	870.0	600.0	1
5	BASE-SINGLE	005 Single base unit	500.0	870.0	600.0	1
6	BASE-CORNER	006 Corner cabinet	800.0	870.0	800.0	1
7	BASE-SINK	007 Sink base unit	1000.0	870.0	600.0	1
8	BASE-SINGLE	008 Single base unit	500.0	870.0	600.0	1
9	BASE-CORNER	009 Corner cabinet	800.0	870.0	800.0	1
10	BASE-SINGLE	010 Single base unit	500.0	870.0	600.0	1
11	BASE-DOUBLE	011 Double base unit	1000.0	870.0	600.0	1
12	BASE-DOUBLE	012 Double base unit	1000.0	870.0	600.0	1
13	BASE-OVEN-HSE	013 Oven Housing	600.0	2350.0	600.0	1
14	WALL-SINGLE	014 Single wall unit	650.0	750.0	300.0	1
15	WALL-DOUBLE	015 Double wall unit	1000.0	750.0	300.0	1
16	WALL-DOUBLE	016 Double wall unit	1000.0	750.0	300.0	1
17	WALL-SINGLE	017 Single wall unit	500.0	750.0	300.0	1

The requirements are then ready for optimising in the usual way.

Alternatively the program can produce a full Quotation for the Products and Quotes module.

The Quotation can be processed and optimised as required.

Summary of CAD Drawings

Products & Quotes requires one of the Optimising modules; LO, SO, PO, NE
Products & Quotes usually requires the PL module for parametric products

	PQ + PL
Product records	Unlimited
Customer records	Unlimited
Drawing library	•
External product drawings	•
Parametric products	•
Quotations	•
Job costing	•
Product costing	•
Flexible orders	•
Form & Label designer	•
Printed forms	•
Integrated local help	•
Links to website	•