Modular V12

Compact Guide

Revision 1.18

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1. Introduction

Welcome to V12

Splash screen

What does V12 do?

V12 is a comprehensive software package that covers most aspects of optimisation and production for the Furniture, Woodworking, and other sheet processing industries. It is Windows software which runs on most computers. It provides all the information to keep control of costs, cut down errors, and cut material efficiently and effectively.

V12 deals with a variety of products.

- Kitchen cabinets
- Office furniture
- Shop fittings
- Doors
- Plastic fabrications
- Caravans
- Bathrooms
- Vanity Units

Enter or import part sizes and quantities and let the program create a set of cutting patterns and cutting instructions. From the cutting patterns send information directly to the saw or machining centre to cut each pattern and machine each part.

The program works in Millimetres, Decimal Inches, or Fractional (Imperial) inches. Part lists can be entered in any measurement and converted.

A quick tour

The basic steps are:-

- Create or Import a list of part sizes
- Optimise
- Review cutting patterns
- Send cutting data to the saw

If the software is not installed read through the tour to get an overview of the program and follow the next section on 'Set up' to install the software

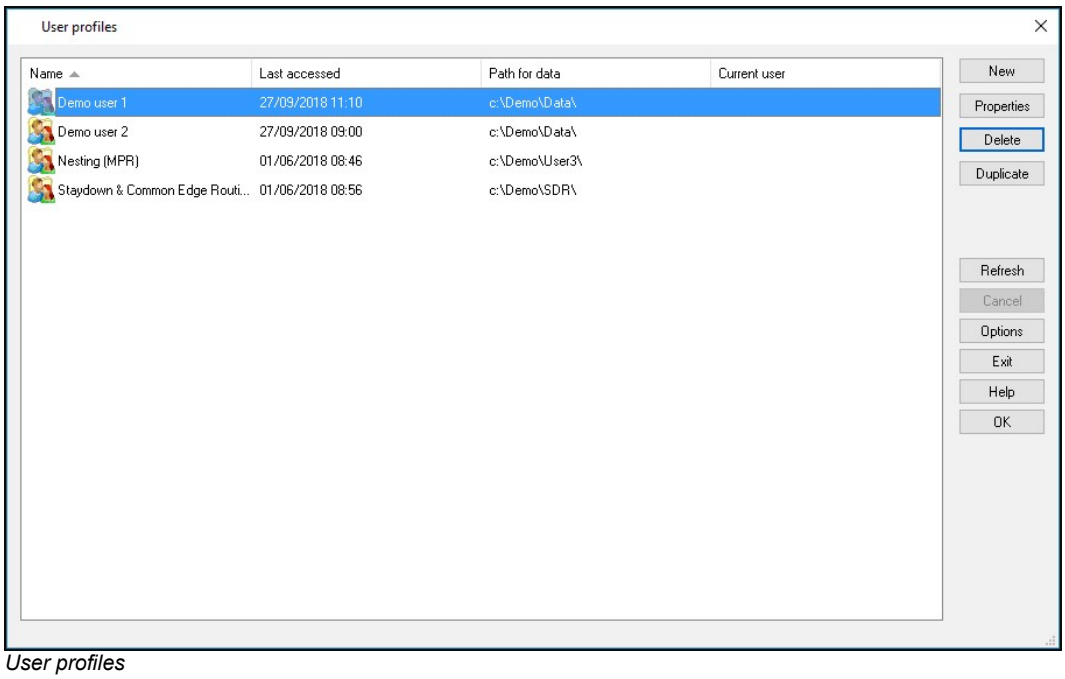
Select User profile

To run the program click on the icon on the desktop

The first screen is a splash screen which appears for a few moments and the program moves to the Main screen.

(If the splash screen does not appear there is a problem - see *'Problems with start-up'*).

USER PROFILE. Each user has a unique profile (account) where settings and data are stored. On start up the program displays a list of user profiles.



User profiles

- Select a profile (e.g. Demo user 1)
- **OK** to confirm

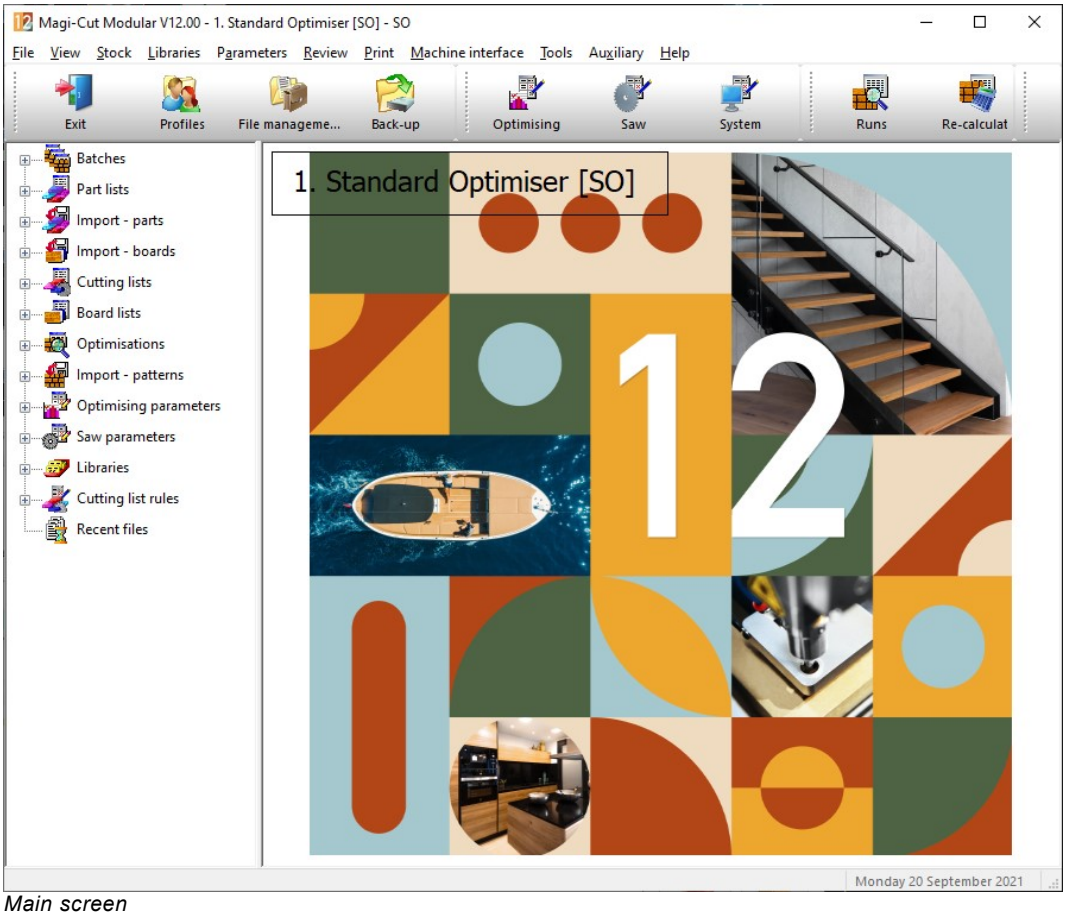
On install the program includes a set of demo data with several user profiles. By default the program automatically moves to the last user profile used. The program moves to the main screen and display the data for the profile.

Measurement modes - The software works in either millimetres, fractional inches, or decimal inches. The operation is the same in each case except that fractional inches are displayed and entered in the fractional format (44 x 61-1/4, 96 x 48-1/2).

Note - the demonstration data installed may differ slightly from the examples shown in this guide

Main screen

This is the command centre of the system. Access all the options from here.



Main screen

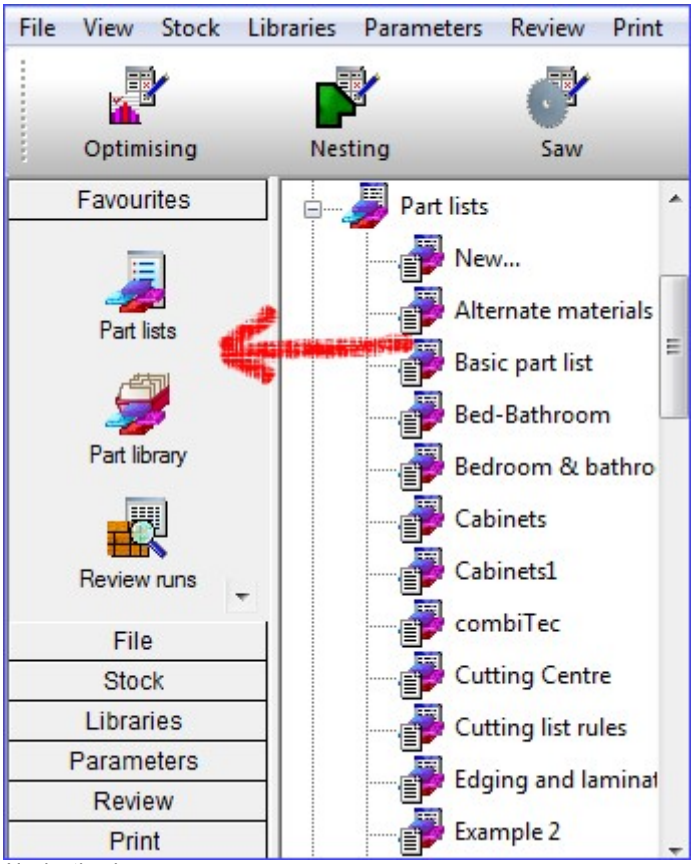
The program name is shown at the top of the screen. There are different names in some countries, for example, Cut-Rite, Magi-Cut, Schnitt-Profi(t). …

At the left is a tree showing the various options and existing data. Click on an item in the tree to see the files in a category.

There are also traditional menus and buttons to access all the options.

(Arrange the screen to suit your way of working with the *View* menu options).

NAVIGATION BAR. At the left (or right) of the screen is a toolbar with access to all the main program options. This bar can also be set to float at the left/right of the display and is available throughout and on the desktop- giving quick access to any part of the program.



Navigation bar

If the quick navigation bar is not visible - place the mouse cursor over the docking bar.

The docking bar is the thin vertical bar at the far left (or right) of the screen).

The docking bar pops up. Right click on one of the buttons on the navigation bar for a pop up menu of options to re-position the toolbar.

Part lists

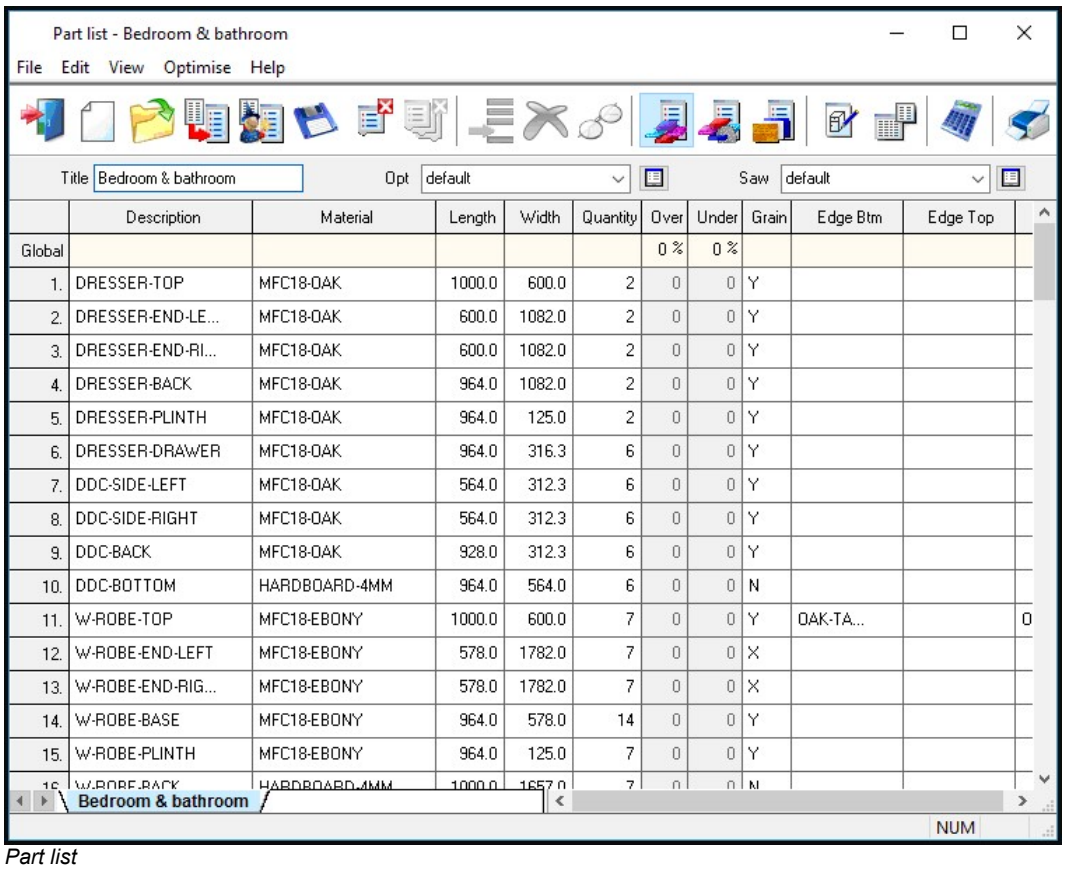
A part list is a list of all the part sizes and quantities required for cutting. This might be for a single order or for several different jobs.

(The demo data includes several examples of different sorts of part lists - these may be different from the example shown below).

Select a part list by opening the Part list branch of the file tree and double clicking on a part list.

(The program may prompt: *'Patterns exist - significant changes will delete patterns'* - this happens because in the demo data the part lists are already optimised - ignore this message as the next step is to optimise and re-create the patterns.

The part list contents are displayed.



	Description	Material	Length	Width	Quantity	Over	Under	Grain	Edge Btm	Edge Top	
Global						0 %	0 %				
1.	DRESSER-TOP	MFC18-OAK	1000.0	600.0	2	0	0	Y			
2.	DRESSER-END-LE...	MFC18-OAK	600.0	1082.0	2	0	0	Y			
3.	DRESSER-END-RI...	MFC18-OAK	600.0	1082.0	2	0	0	Y			
4.	DRESSER-BACK	MFC18-OAK	964.0	1082.0	2	0	0	Y			
5.	DRESSER-PLINTH	MFC18-OAK	964.0	125.0	2	0	0	Y			
6.	DRESSER-DRAWER	MFC18-OAK	964.0	316.3	6	0	0	Y			
7.	DDC-SIDE-LEFT	MFC18-OAK	564.0	312.3	6	0	0	Y			
8.	DDC-SIDE-RIGHT	MFC18-OAK	564.0	312.3	6	0	0	Y			
9.	DDC-BACK	MFC18-OAK	928.0	312.3	6	0	0	Y			
10.	DDC-BOTTOM	HARDBOARD-4MM	964.0	564.0	6	0	0	N			
11.	W-ROBE-TOP	MFC18-EBONY	1000.0	600.0	7	0	0	Y	OAK-TA...		0
12.	W-ROBE-END-LEFT	MFC18-EBONY	578.0	1782.0	7	0	0	X			
13.	W-ROBE-END-RIG...	MFC18-EBONY	578.0	1782.0	7	0	0	X			
14.	W-ROBE-BASE	MFC18-EBONY	964.0	578.0	14	0	0	Y			
15.	W-ROBE-PLINTH	MFC18-EBONY	964.0	125.0	7	0	0	Y			

Part list

- Review and/or enter the required part list items. The basic information is:-

```
Description
Material code
Length
Width
Quantity
```

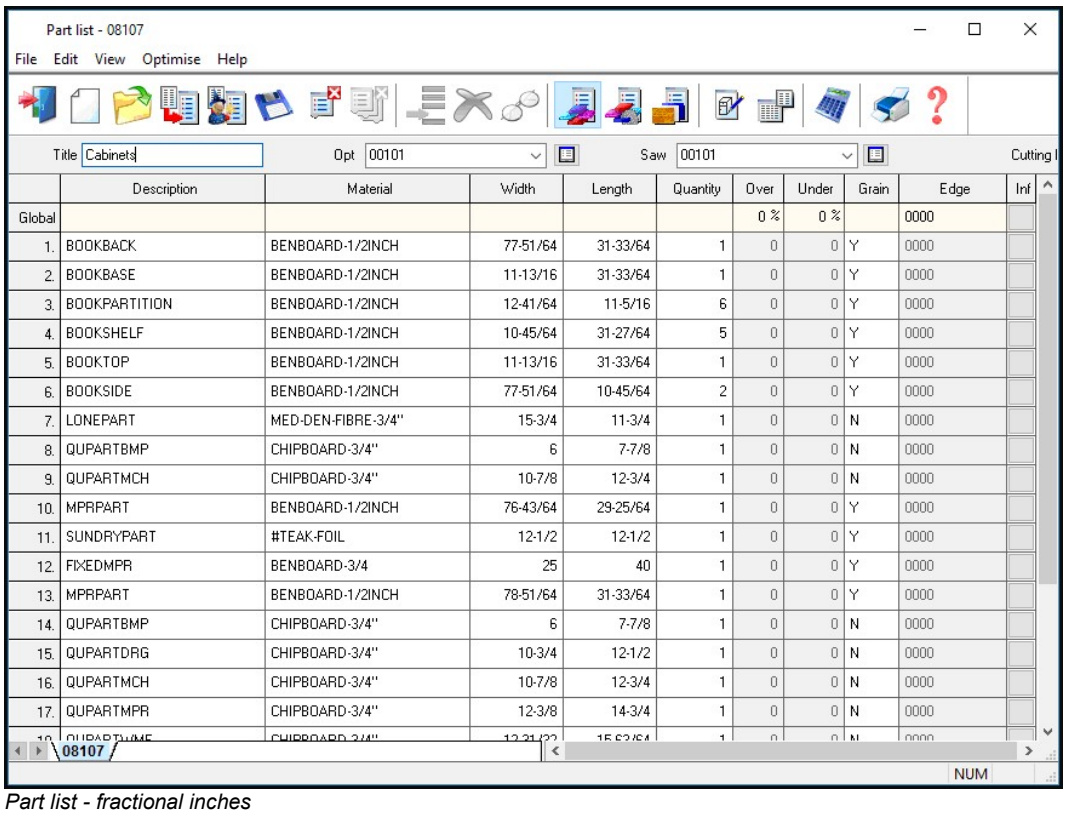
At the right of the part list screen there are several other columns - most of these are custom columns which can be used for all the extra data for parts, for example, edging, text for a part label, a tracking number …

MATERIAL CODE: This is important because it determines the material for that part. The program uses this to extract candidate boards from the board library and create a board list.

The board list is simply the list of available board sizes and quantities for the job.

Multiple part lists – up to 5 part lists can be open at a time. Click on the tabs at the foot of the screen to move to a part list.

The program also supports fractional inches and decimal inches.

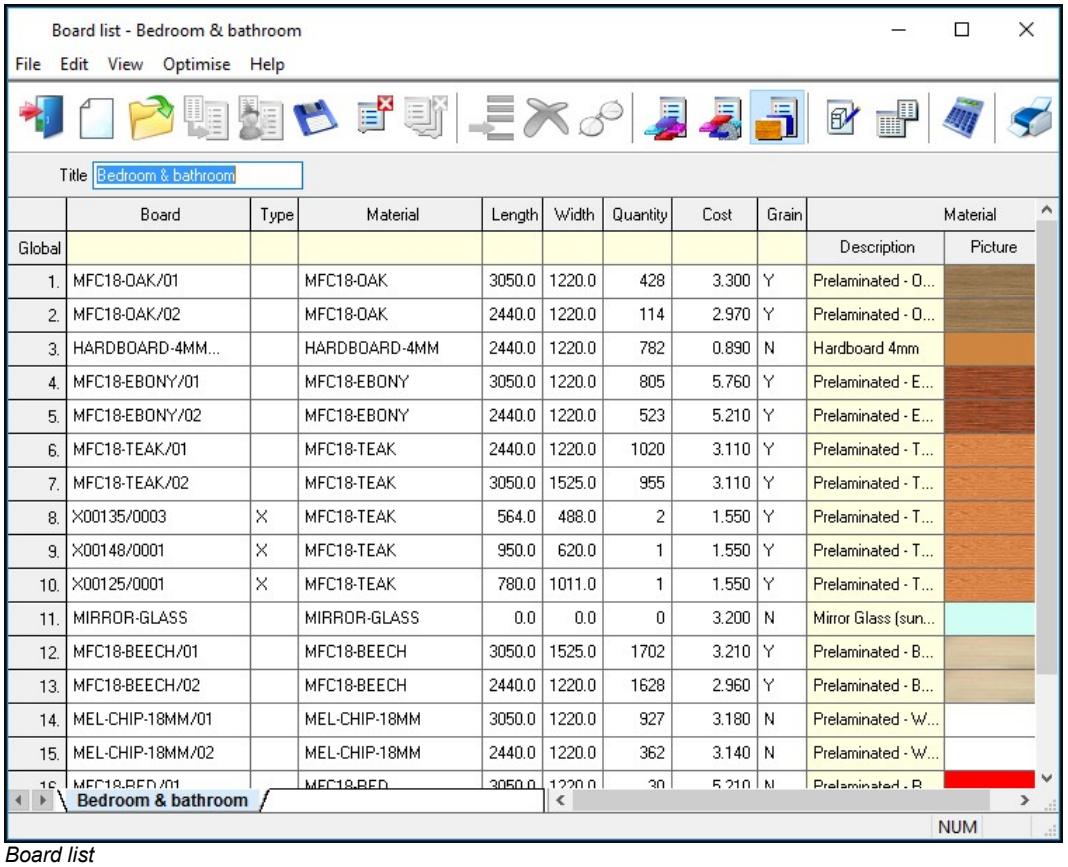


	Description	Material	Width	Length	Quantity	Over	Under	Grain	Edge	Inf
Global						0 %	0 %		0000	
1.	BOOKBACK	BENBOARD-1/2INCH	77-51/64	31-33/64	1	0	0	Y	0000	
2.	BOOKBASE	BENBOARD-1/2INCH	11-13/16	31-33/64	1	0	0	Y	0000	
3.	BOOKPARTITION	BENBOARD-1/2INCH	12-41/64	11-5/16	6	0	0	Y	0000	
4.	BOOKSHELF	BENBOARD-1/2INCH	10-45/64	31-27/64	5	0	0	Y	0000	
5.	BOOKTOP	BENBOARD-1/2INCH	11-13/16	31-33/64	1	0	0	Y	0000	
6.	BOOKSIDE	BENBOARD-1/2INCH	77-51/64	10-45/64	2	0	0	Y	0000	
7.	LONEPART	MED-DEN-FIBRE-3/4"	15-3/4	11-3/4	1	0	0	N	0000	
8.	QUPARTBMP	CHIPBOARD-3/4"	6	7-7/8	1	0	0	N	0000	
9.	QUPARTMCH	CHIPBOARD-3/4"	10-7/8	12-3/4	1	0	0	N	0000	
10.	MPRPART	BENBOARD-1/2INCH	76-43/64	29-25/64	1	0	0	Y	0000	
11.	SUNDRYPART	#TEAK-FOIL	12-1/2	12-1/2	1	0	0	Y	0000	
12.	FIXEDMPR	BENBOARD-3/4	25	40	1	0	0	Y	0000	
13.	MPRPART	BENBOARD-1/2INCH	78-51/64	31-33/64	1	0	0	Y	0000	
14.	QUPARTBMP	CHIPBOARD-3/4"	6	7-7/8	1	0	0	N	0000	
15.	QUPARTDRG	CHIPBOARD-3/4"	10-3/4	12-1/2	1	0	0	N	0000	
16.	QUPARTMCH	CHIPBOARD-3/4"	10-7/8	12-3/4	1	0	0	N	0000	
17.	QUPARTMPR	CHIPBOARD-3/4"	12-3/8	14-3/4	1	0	0	N	0000	

Part list - fractional inches

Board list

Click on the toolbar symbol to view the Board list



	Board	Type	Material	Length	Width	Quantity	Cost	Grain	Material	
Global									Description	Picture
1.	MFC18-OAK/01		MFC18-OAK	3050.0	1220.0	428	3.300	Y	Prelaminated - O...	
2.	MFC18-OAK/02		MFC18-OAK	2440.0	1220.0	114	2.970	Y	Prelaminated - O...	
3.	HARDBOARD-4MM...		HARDBOARD-4MM	2440.0	1220.0	782	0.890	N	Hardboard 4mm	
4.	MFC18-EBONY/01		MFC18-EBONY	3050.0	1220.0	805	5.760	Y	Prelaminated - E...	
5.	MFC18-EBONY/02		MFC18-EBONY	2440.0	1220.0	523	5.210	Y	Prelaminated - E...	
6.	MFC18-TEAK/01		MFC18-TEAK	2440.0	1220.0	1020	3.110	Y	Prelaminated - T...	
7.	MFC18-TEAK/02		MFC18-TEAK	3050.0	1525.0	955	3.110	Y	Prelaminated - T...	
8.	X00135/0003	X	MFC18-TEAK	564.0	488.0	2	1.550	Y	Prelaminated - T...	
9.	X00148/0001	X	MFC18-TEAK	950.0	620.0	1	1.550	Y	Prelaminated - T...	
10.	X00125/0001	X	MFC18-TEAK	780.0	1011.0	1	1.550	Y	Prelaminated - T...	
11.	MIRROR-GLASS		MIRROR-GLASS	0.0	0.0	0	3.200	N	Mirror Glass (sun...	
12.	MFC18-BEECH/01		MFC18-BEECH	3050.0	1525.0	1702	3.210	Y	Prelaminated - B...	
13.	MFC18-BEECH/02		MFC18-BEECH	2440.0	1220.0	1628	2.960	Y	Prelaminated - B...	
14.	MEL-CHIP-18MM/01		MEL-CHIP-18MM	3050.0	1220.0	927	3.180	N	Prelaminated - W...	
15.	MEL-CHIP-18MM/02		MEL-CHIP-18MM	2440.0	1220.0	362	3.140	N	Prelaminated - W...	

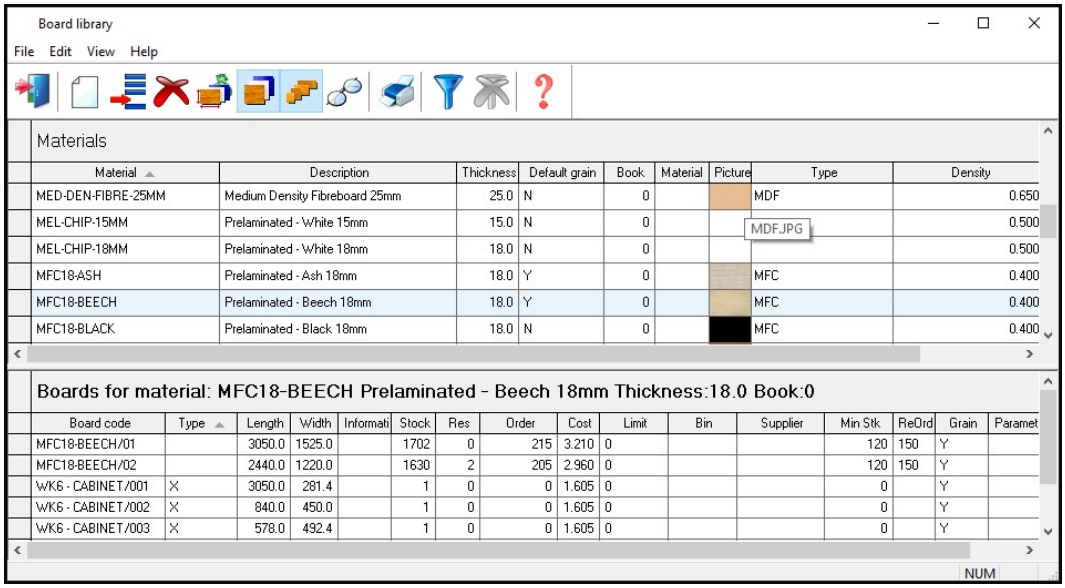
Board list

The Board list is created by the program extracting from the Board library all board sizes (and offcuts if any) matching the material codes used in the Part list against each part.

Note the board list includes information from the Board library describing the material.

Board library

The board library stores the details and quantities of all the sheet material (a library is provided in the demo data).



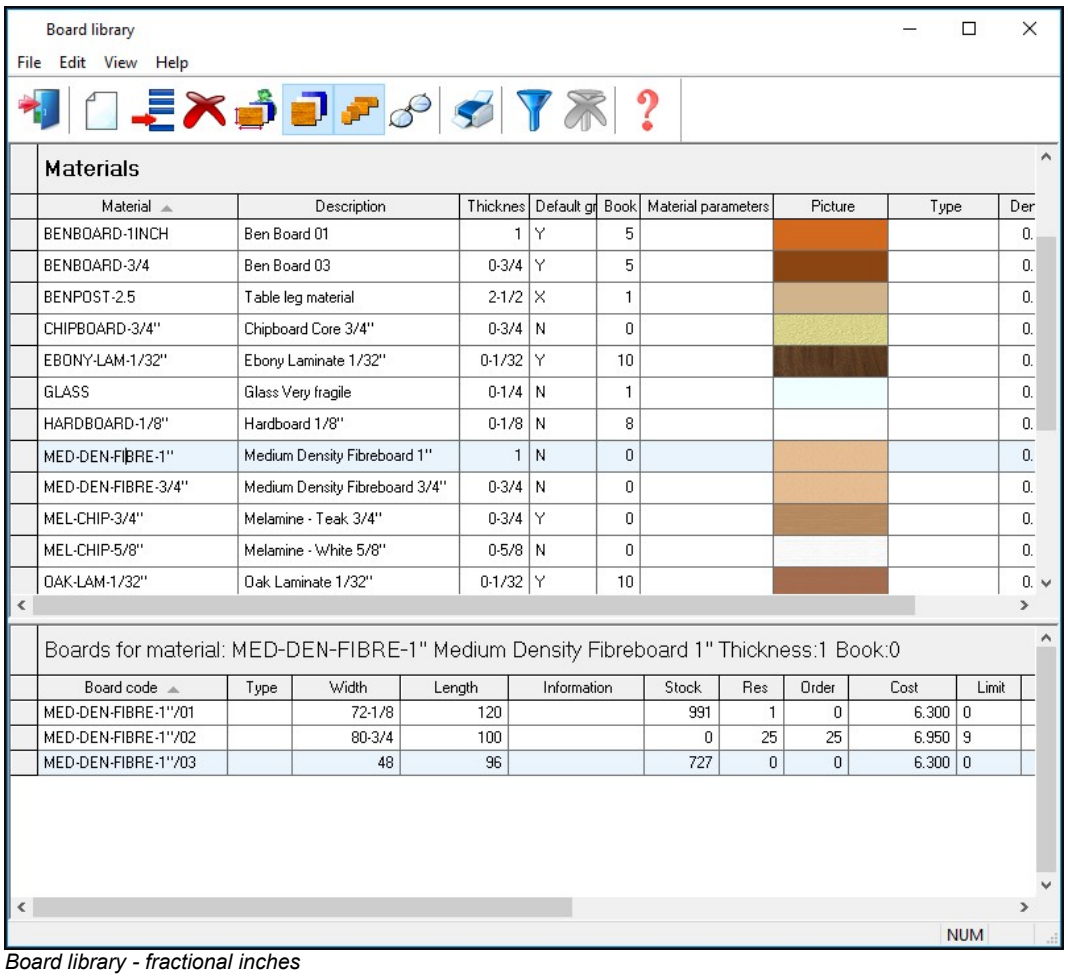
Board library

In this example there are two board sizes available for material MFC18-BEECH and also a few offcuts.

The board library can include much information for each sheet size, for example, cost, how to deal with low stock levels, storage etc.

Note - There are a wide range of materials from different suppliers so before using the program for real - an important task is to set up the board library for the materials typically available for the company. For more details see the section: *Board library*

The Board library also supports decimal and fractional inches.



Board library - fractional inches

Optimise

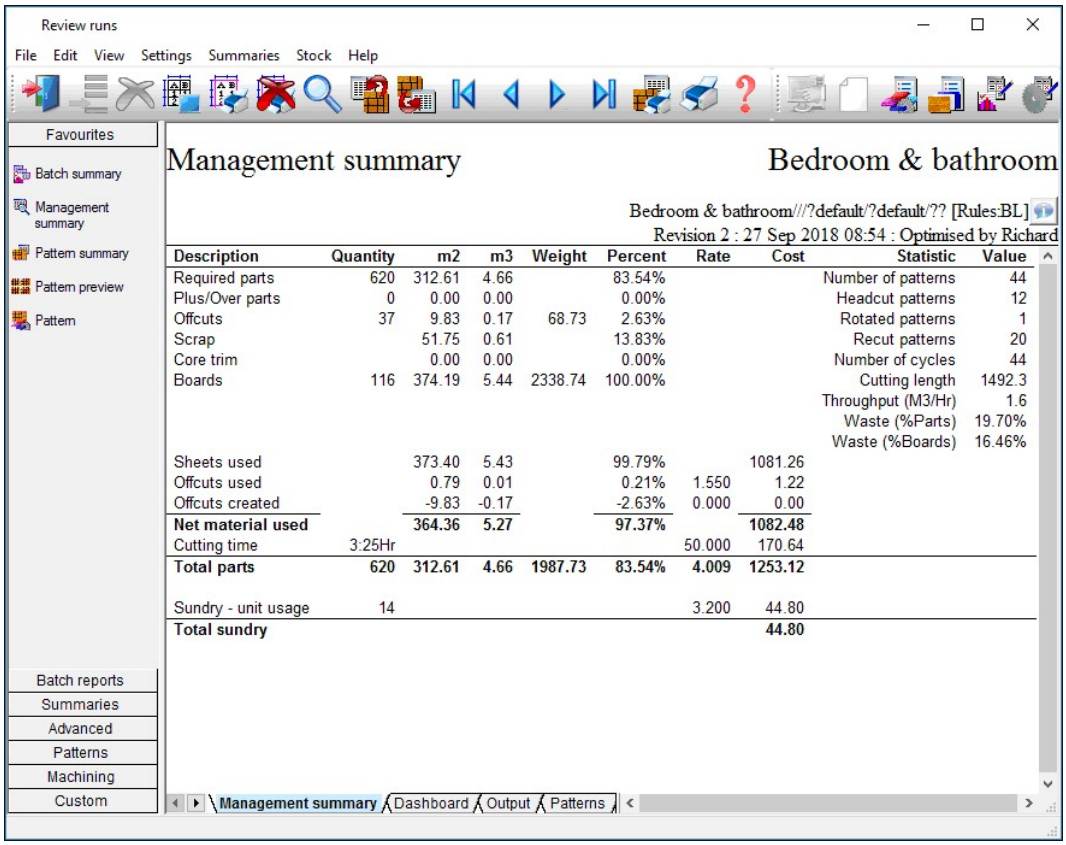
Once the Part list and Board list are created the job is ready to be optimised.

At the Part list screen (or at the Board list screen):-

Select the optimise symbol

The program produces a set of cutting patterns and moves to the 'Review runs' section of the program. This shows all cutting patterns and a set of summary reports.

The first report shown is an overall summary of the job; the *Management Summary*.



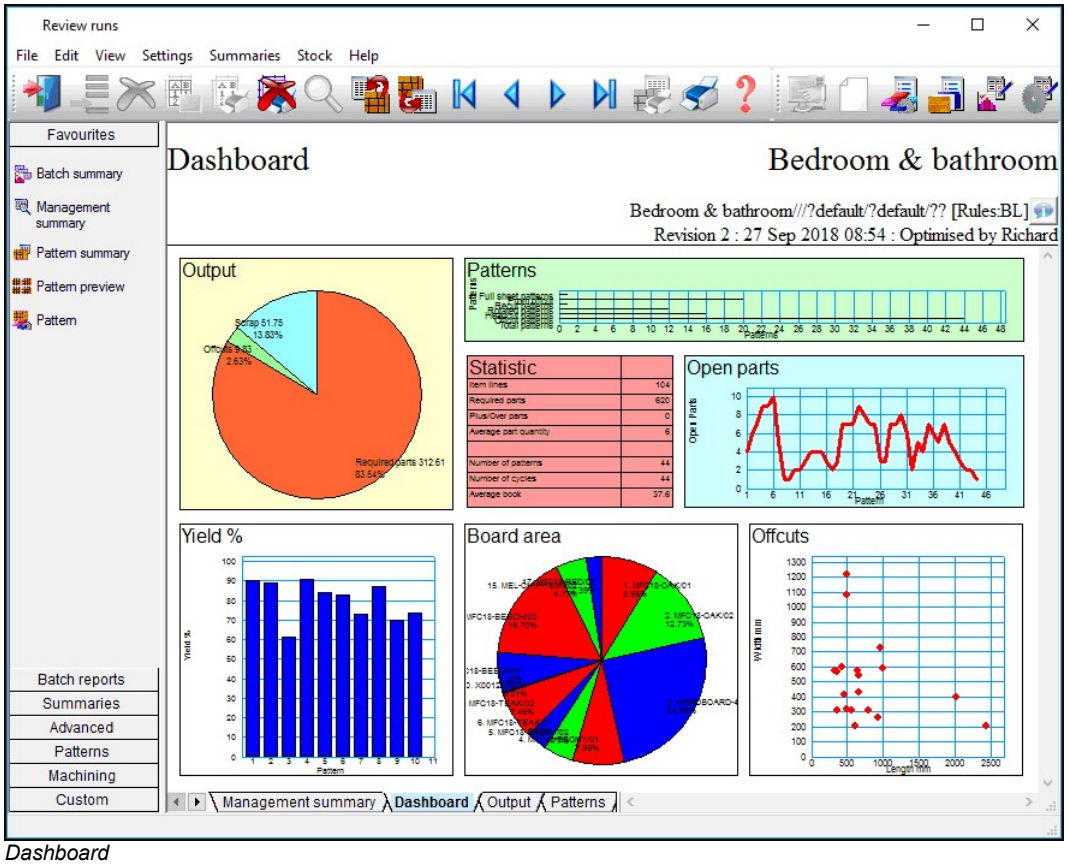
Description	Quantity	m2	m3	Weight	Percent	Rate	Cost	Statistic	Value
Required parts	620	312.61	4.66		83.54%			Number of patterns	44
Plus/Over parts	0	0.00	0.00		0.00%			Headcut patterns	12
Offcuts	37	9.83	0.17	68.73	2.63%			Rotated patterns	1
Scrap		51.75	0.61		13.83%			Recut patterns	20
Core trim		0.00	0.00		0.00%			Number of cycles	44
Boards	116	374.19	5.44	2338.74	100.00%			Cutting length	1492.3
								Throughput (M3/Hr)	1.6
								Waste (%Parts)	19.70%
								Waste (%Boards)	16.46%
Sheets used		373.40	5.43		99.79%		1081.26		
Offcuts used		0.79	0.01		0.21%	1.550	1.22		
Offcuts created		-9.83	-0.17		-2.63%	0.000	0.00		
Net material used		**364.36**	**5.27**		**97.37%**		**1082.48**		
Cutting time	3:25Hr					50.000	170.64		
Total parts	**620**	**312.61**	**4.66**	**1987.73**	**83.54%**	**4.009**	**1253.12**		
Sundry - unit usage	14					3.200	44.80		
Total sundry							**44.80**		

Management summary

This is an overall summary of the job, for example. Total costs, Overall Waste percentage, Net material used …

Use the Navigation buttons or 'Summaries' menu option to view other reports.

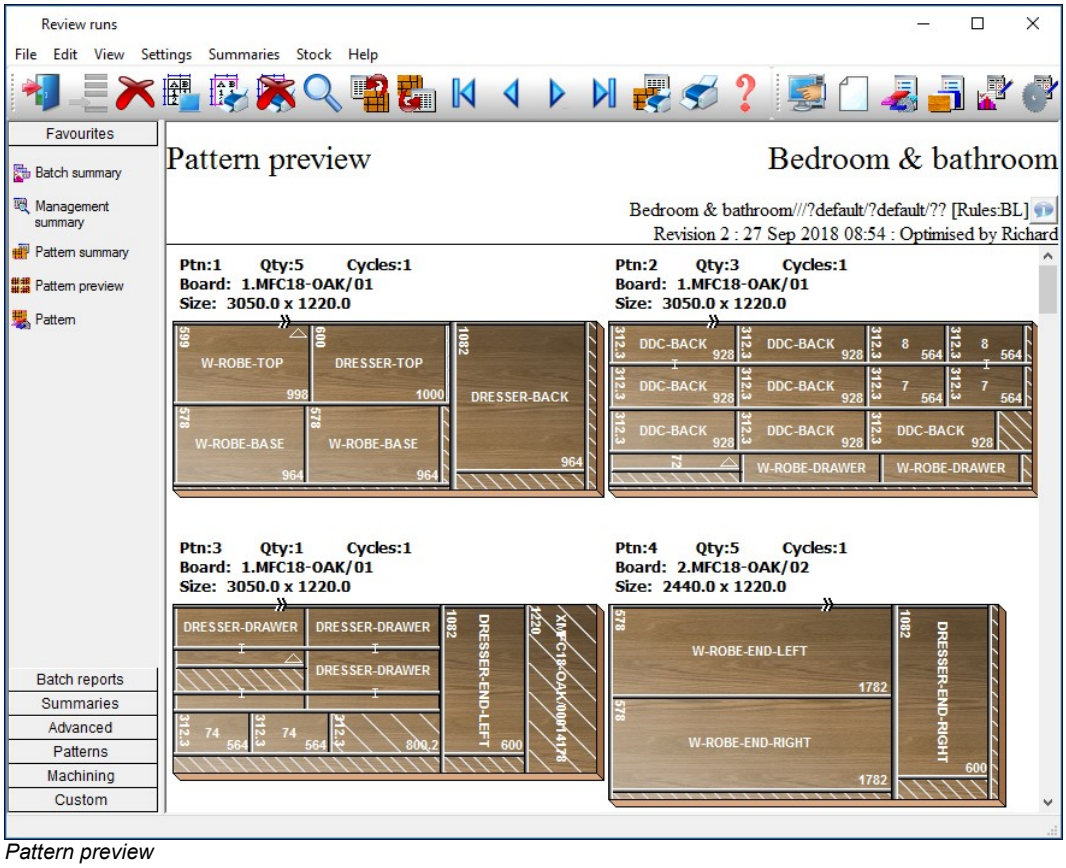
At the foot of the report are a set of tabs with more information. For example, the 'Dashboard' gives a graphical view of the data.



Dashboard

The individual cutting patterns are viewed via the 'Pattern preview' option.

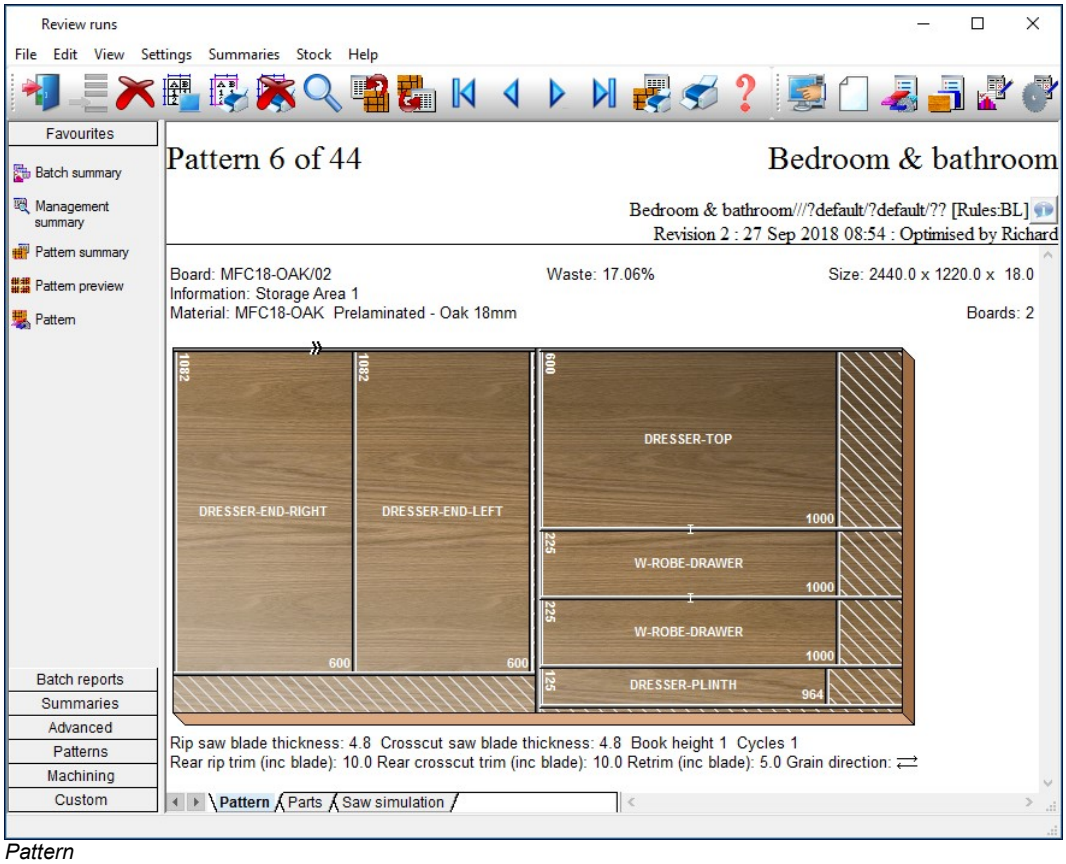
Pattern preview



Pattern preview

Use the navigation buttons or the Summaries menu to move between patterns and other summaries.

Double click on a thumbnail to view the pattern full screen.

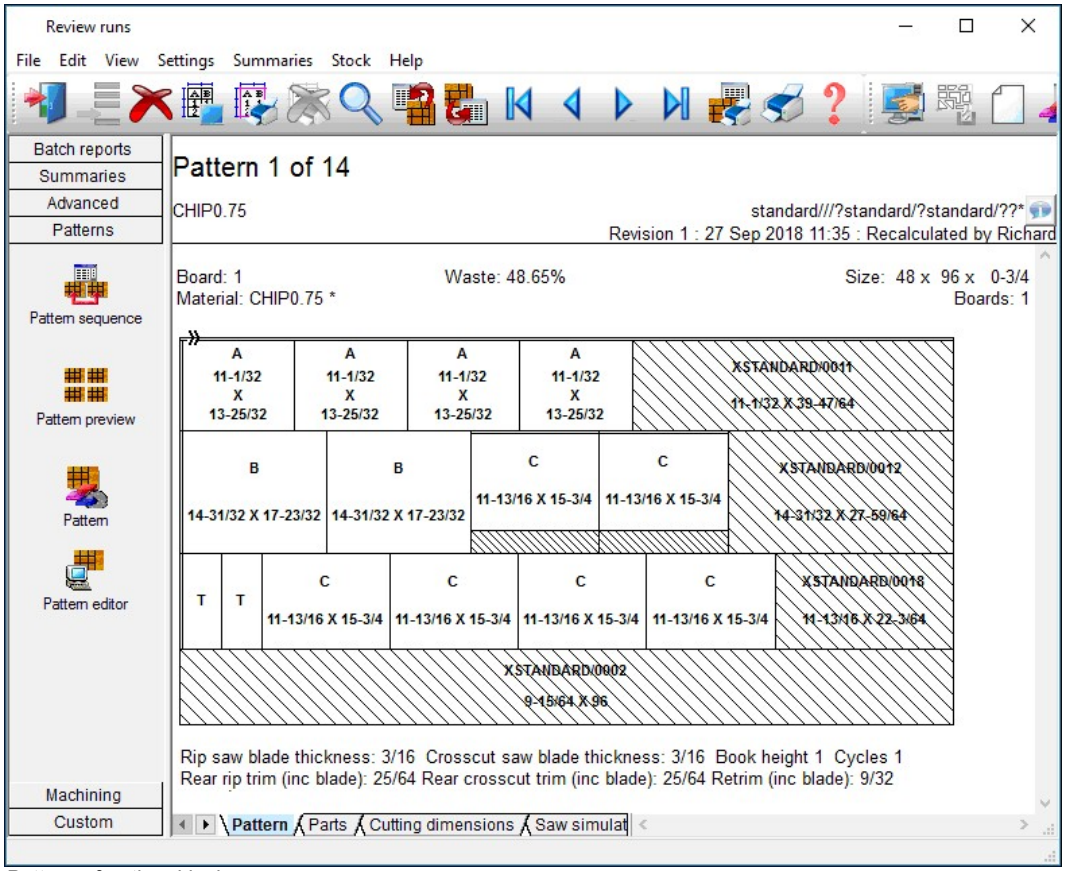


Pattern

The tabs at the foot of the report show more details, for example, a full list of the parts produced by the pattern.

The cuts, waste, offcuts and part information are shown for each pattern.

The program also supports decimal and fractional inches.



Pattern - fractional inches

In this example the pattern is shown in an alternative view ‘Monochrome’. There are several choices of pattern view.

- Enhanced picture with bitmap or solid colour
- Flat picture with bitmap or solid colour
- Picture with colour for different part type (recut, plus part, offcut …)
- Monochrom picture

Transfer to Saw or Machining centre

After Optimisation the patterns (cutting instructions) are transferred to the Saw or machining centre.

Saw

The program supports a wide range of saw controllers:-

- CADmatic (all types)
- Compumatic
- Topmatic
- Homag Sawtech (CHxx, NPS400, Ilenia)
- Table saws
- Online PC
- Various other controllers
- Printed patterns and cutting instructions for manual saws

Some of the Machining centre transfer options are:-

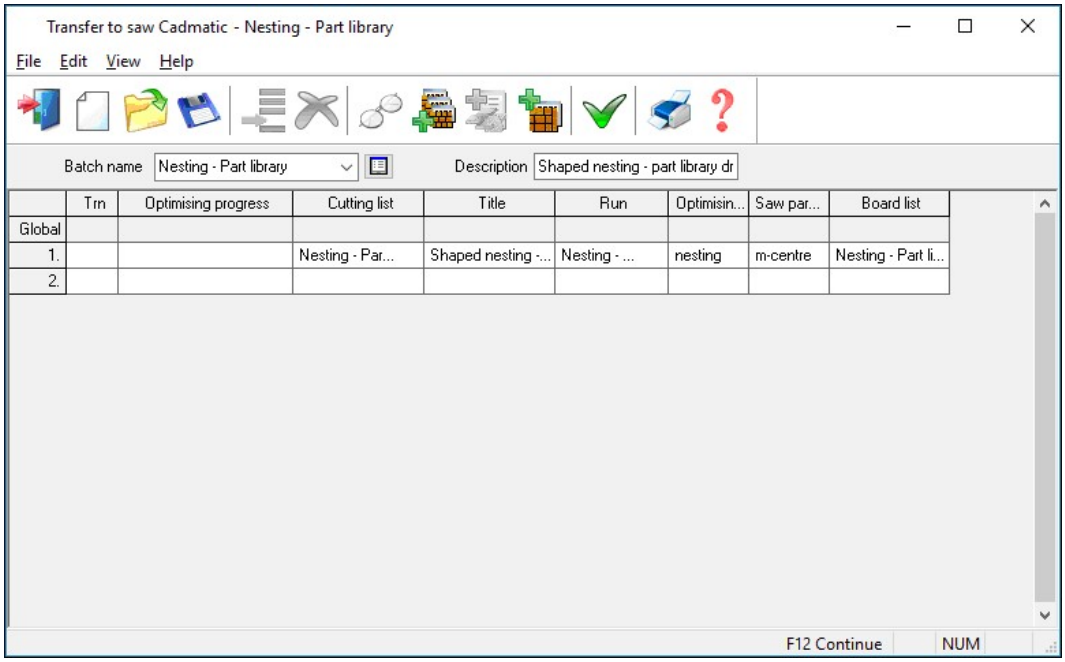
- Homag/Weeke WoodWop
- 2D DXF
- Nested DXF
- Busellato AutoLink (DXF)
- Biesse RoverCad (CID)

At the main screen select the Saw transfer or Machining Interface option.

Machining interface

Saw Transfer

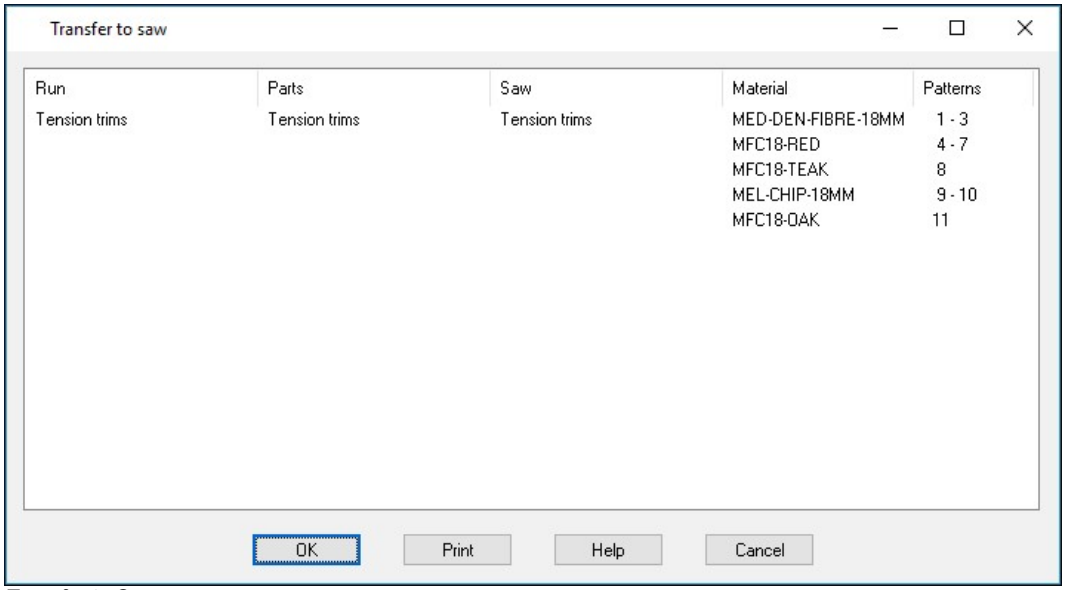
For Saw transfer, for example, the program prompts with the current job.



Transfer to saw batch screen

Select the 'Continue' option

The program displays the data to transfer.



Transfer to Saw

- OK to confirm

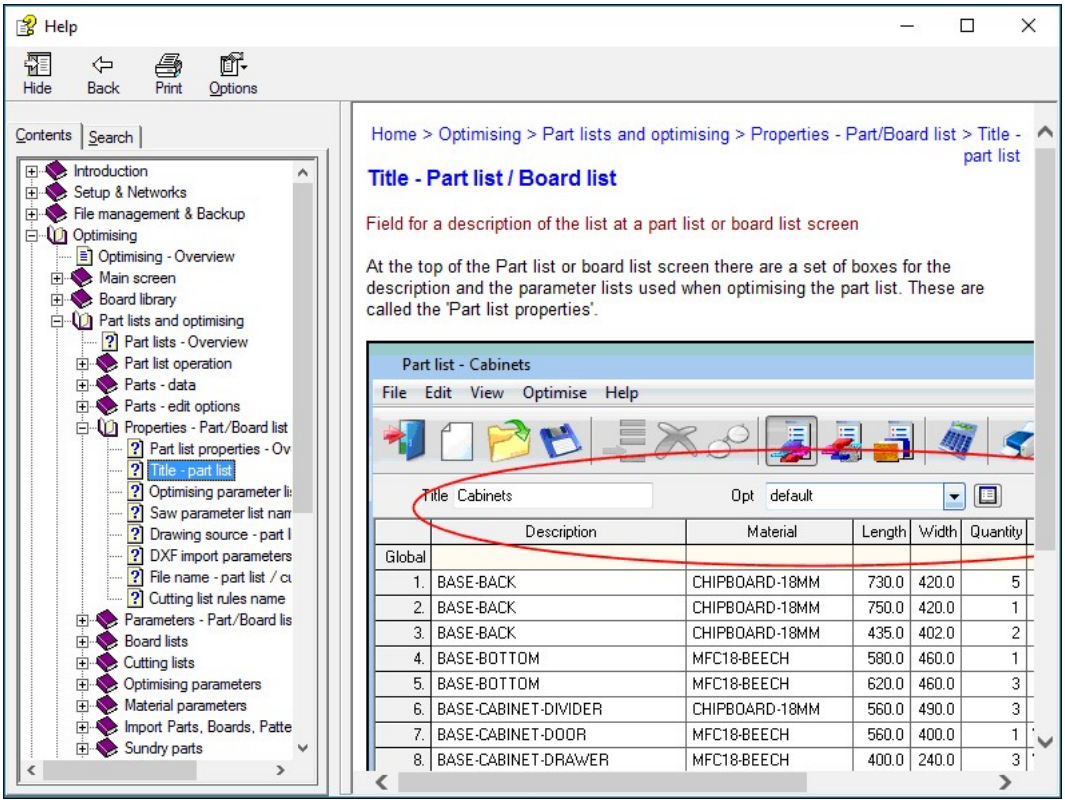
The transfer is finished.

Note - For practical use the saw transfer and machining transfer need to be set up for the company's machines. There are parameters for this and a wide range of options are available.

Typically the saw or machining centre transfer sends data to a location on the Network (Path for Saw data) and a separate program provided by the machinery manufacturer runs and sends the data to the machine. This can all be integrated into the above transfer process.

Help and support

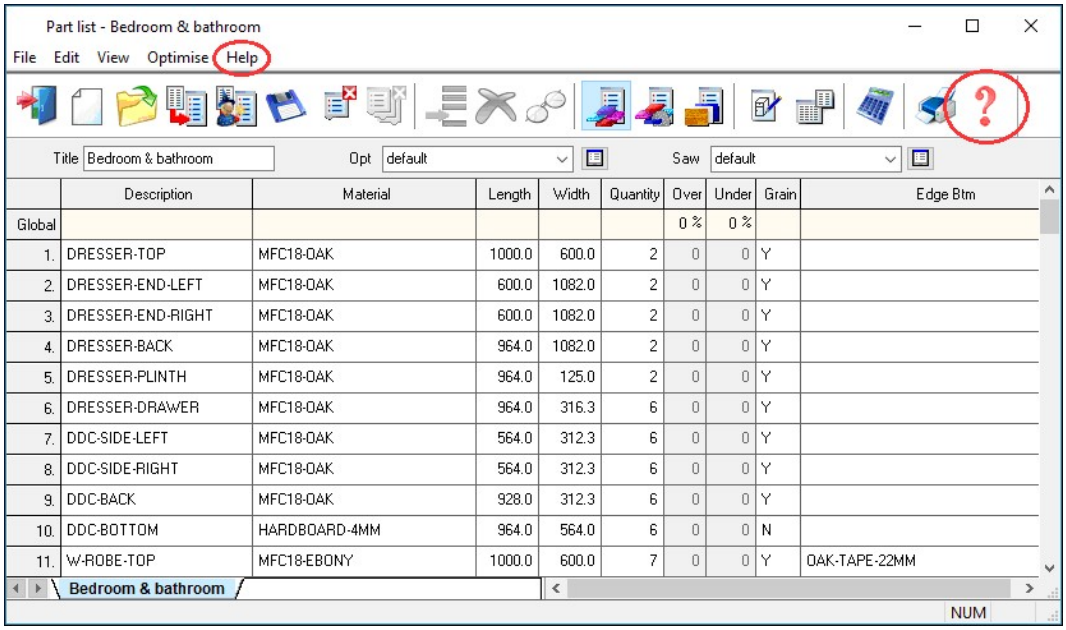
The program is fully supported by integrated, up to date, local help (no need to rely on a web link).



Help system

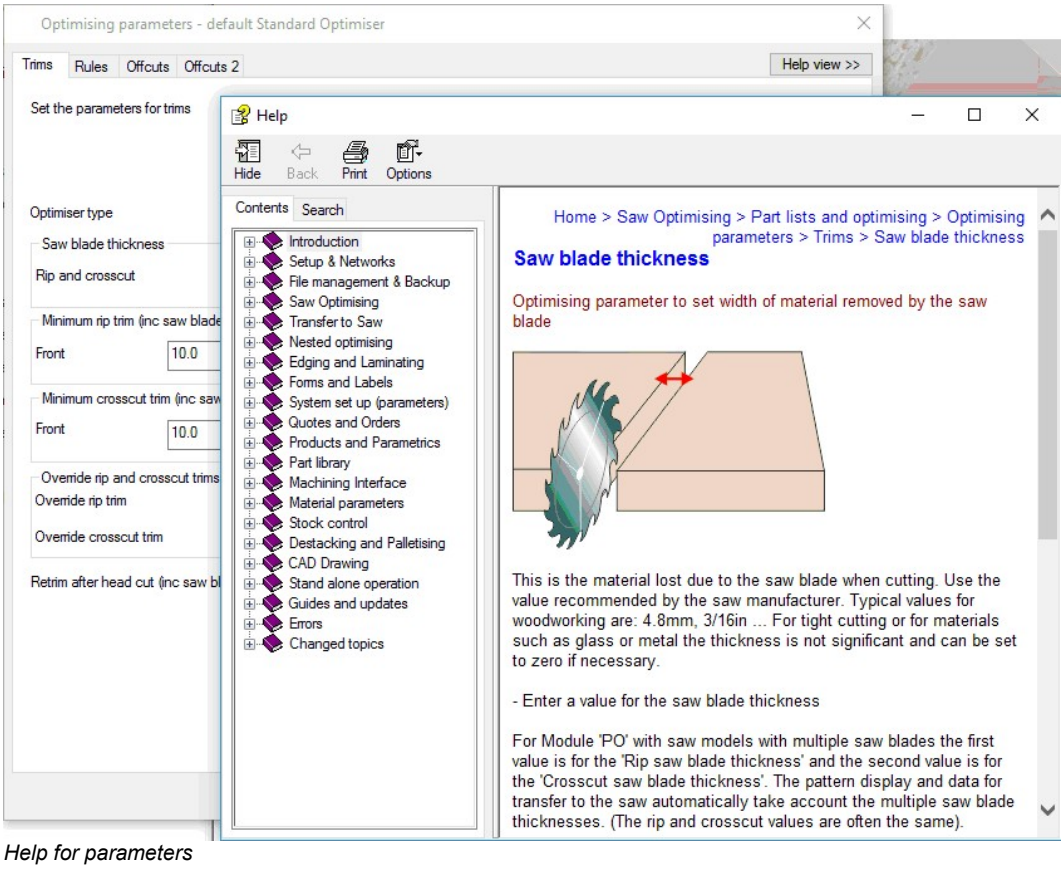
There is a help menu on most dialogs and screens.

F1 is active for context sensitive help at most boxes, parameters and options.



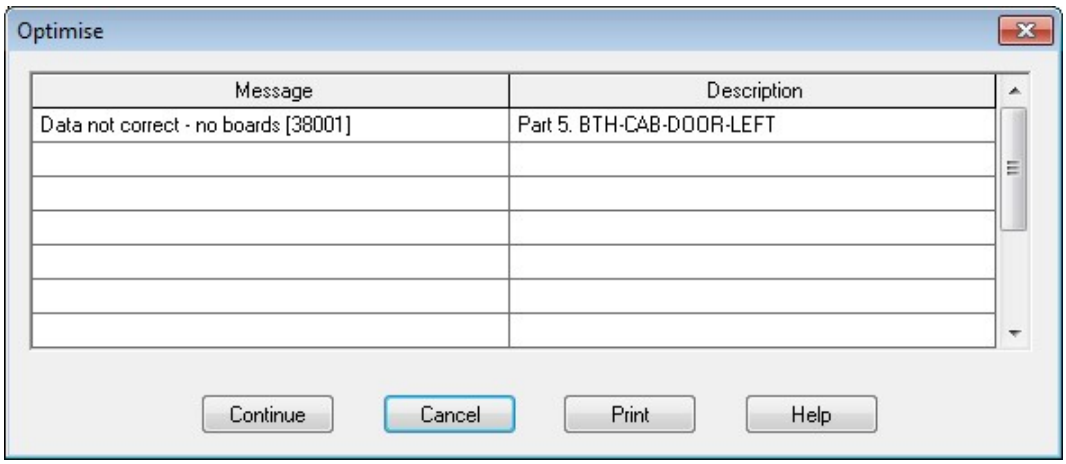
Help in context

Full help is available for most topics including ‘Overview’ and ‘How to’ topics and there is advice on each parameters and setting.



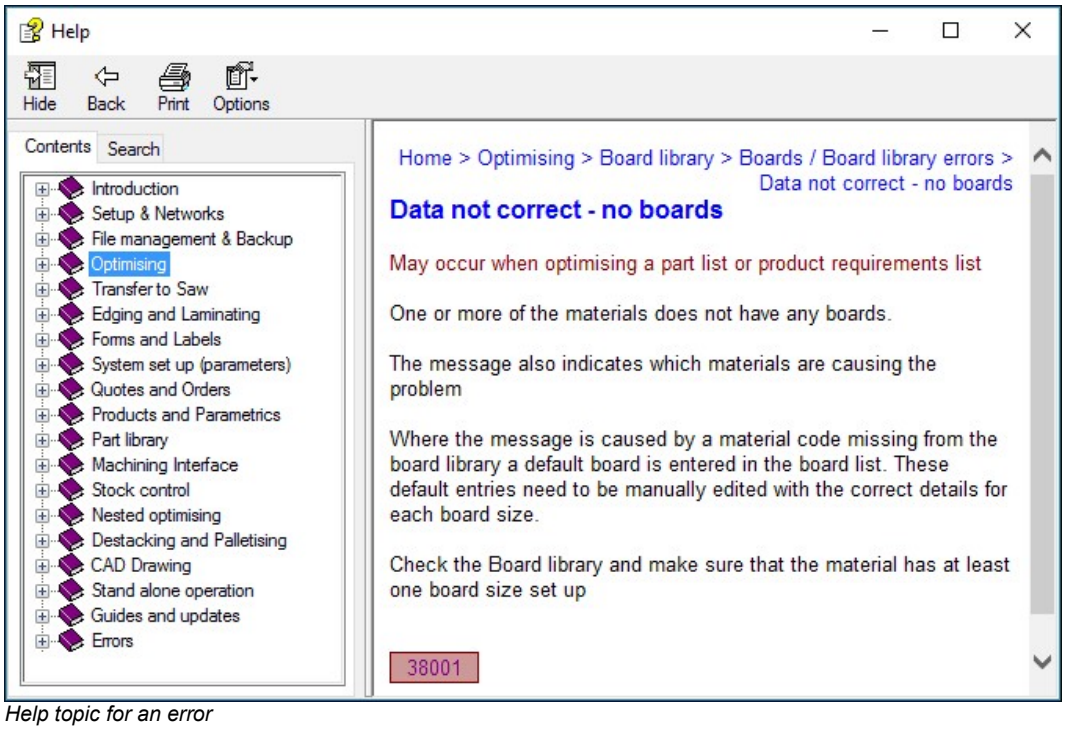
Help for parameters

Where an error is reported there is usually a link to more information in the help.



Error message

Click on the help button for more details:-



Help topic for an error

The number shown is the error number - this can be useful in identifying the exact problem.

Web site

There are links at the main screen to the UK web site for downloads, updates, documentation, latest news …

There are is also a page on the web site for reporting issues.

2. Set up (install)

Set up (single user)

Always install a new version to a NEW location.

Run the old and new version in parallel for a period to get used to the new version before transferring a lot of data to the new version. Also the data between versions is not fully compatible so existing data must be transferred from the old version to the new via the *'Copy / Convert'* option.

The program is used in two main configurations:-

- For a single user on a local computer
- For several users running over a network

For the program to run a security key must be plugged into one of the USB ports on a computer or server or a cloud licence registered.

security key

To install the program on a local computer run the set up program: **setup.exe**. Follow the instructions on screen carefully.

Network setup

For a Network decide first where the program runs and where user data is stored; there are many different ways to set up the Network operation. A typical set up is for the program and library data to be at the server and for each user to have a profile on a local computer.

The security key must be plugged into one of the USB ports on a computer on the Network (often the server). In addition the Network key software (called the Licence Manager) has to be running on the computer where the security key is located.

(See section below for details).

Program does not run

If the program does not run there are several possible causes:-

- Security key is missing or not correctly inserted or cannot be found by the program
- Extra configuration file required (for some Networks)
- Language modules are missing
- Some system components are missing
- Minimum specification is not sufficient

Security key missing

The program cannot run without the security key or logging in to a valid cloud licence.

- Check that the security key is in place and firmly inserted and that it is in the correct port

For a Network USB key:--

- Make sure the Network is up
- Make sure the Licence Manager is running
- Has the network run out of licences (too many users)

Extra configuration file needed for Network installations

For a small number of Network installations the standard set up is not suitable and the program may not run because the Network key or the licence manager cannot be found.

In these cases a special setup file (NetHasp.ini) has to be used. This is available with the Distribution but needs to be configured for each case - this is usually quite simple to do but requires some experience of different Network layouts.

Contact the supplier for details. See the section below *'Customise Networks'*.

Some system components are missing

On a Network install make sure that a 'Client' install has been done on any local computer that runs the program from the Server. This is needed to install some important components on the local computer.

Language modules are missing

If messages in English appear like the following:-

Error reading language file: 01 Use 00?
Error reading language file: 00

This means that a language module is missing or is not available. The message reports the number of the language module the program is trying to find and suggests an alternative if there is one.

Language modules are files with the extension LNG, for example, 00.LNG, 01.LNG and are usually located in the Program directory (where the program is installed).

The language is set via *System parameters.* This offers the list of available languages, for example, English (UK), English (USA) etc. Each item in the list is provided by one of the LNG files. If the above message(s) occur either there are no language files at all or the file for the choice last set in the program is missing or has been renamed.

Check with the supplier.

Minimum specification is not sufficient

V12 does not require a large amount of resources to run but a computer must meet the minimum specification. This is likely to be a problem with a local computer (or single user computer) rather than a server. To check this:-

Move to the directory where the extracted Download is located

Use *Windows Explorer* to locate the root directory of the Download.

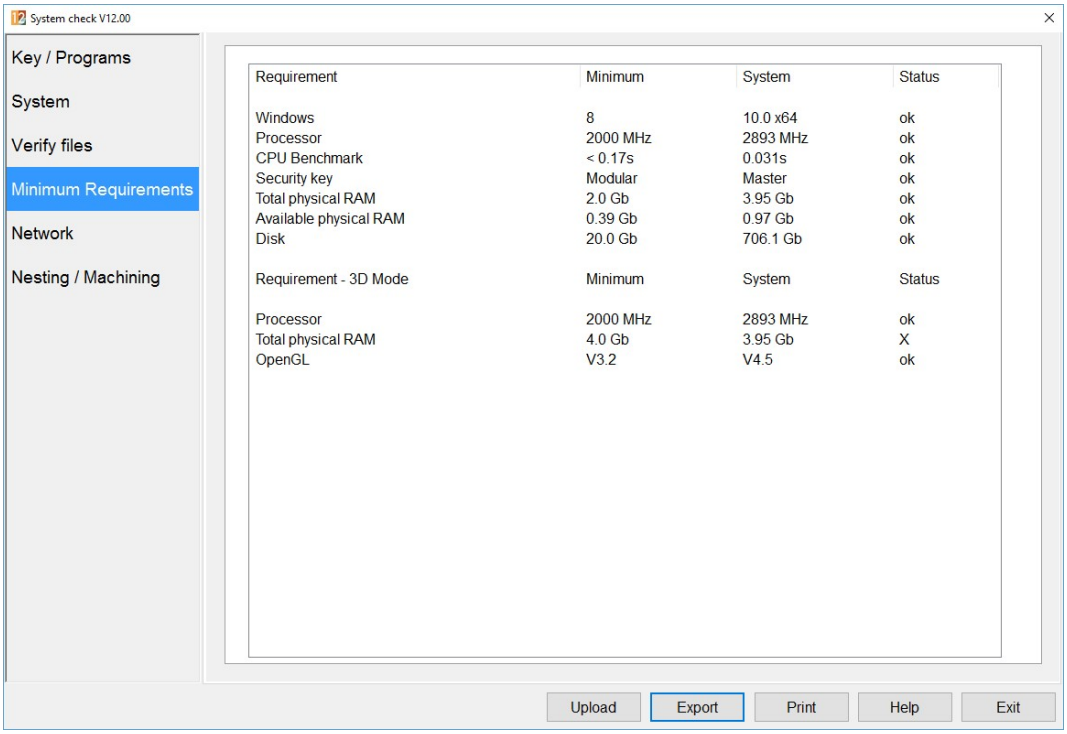
● Double click on the program CHECK.EXE

This program runs and displays a screen of information.

From the menu:-

● Select: **Check - Minimum requirements**

A dialog is displayed showing the minimum requirements at the left and the current system values at the right.



Minimum requirements

OK - indicates the item matches the minimum requirements

Transferring data from a previous version

Once the new version is running Ok some or all of the data from the previous versions may need to be transferred from the old version to the new version.

Always use this option to move data between versions (e.g. V8.03 to V8.10 or V7.18.3 to V8.10, V9.07 to V10.0, V10 to V11, V11 to V12)

To move data from an older version to a later one, e.g. V11.04.0 to V12.0, the user data and the common data must be converted for the new version and copied to a new location. Identify the user directory to convert and the new location.

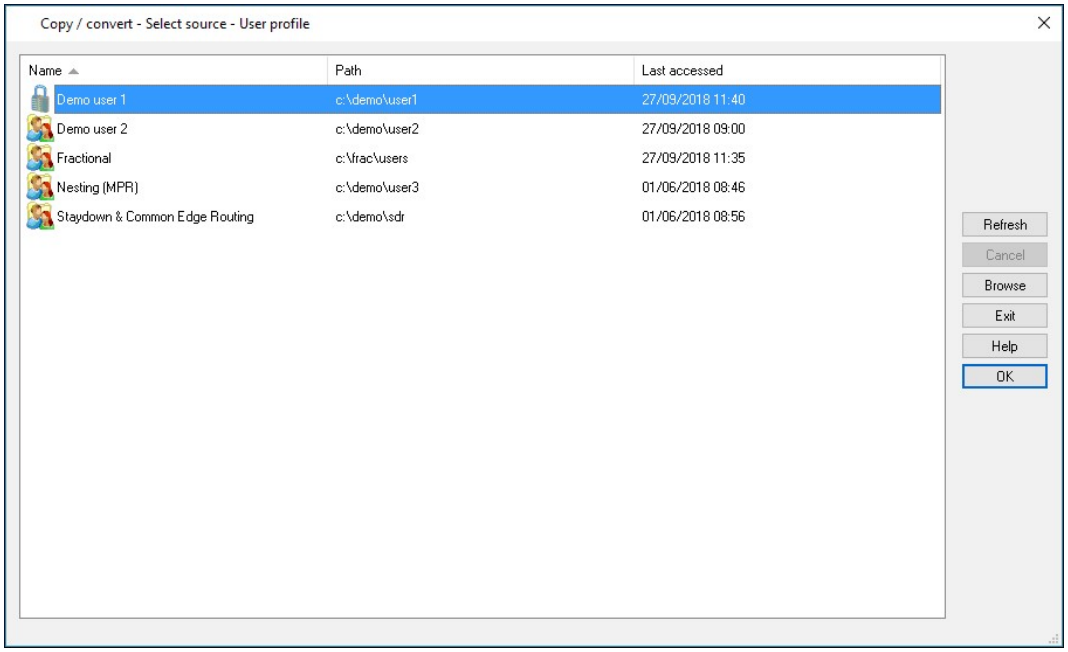
For example, the old data may be located in **c:\V11\Data\User 1** and the new data needs to be in **c:\V12\Data\User 1**.

(Where 'User 1' is the directory for the User profile).

At the main screen of the NEW version:-

● Select: **Tools - Copy / Convert user profile**

The program shows a list of user profiles. Select the profile to convert. Typically the profiles shown are the current profiles for the latest version and the profiles to convert are located elsewhere. Use the **Browse** option to select the user profile to convert.

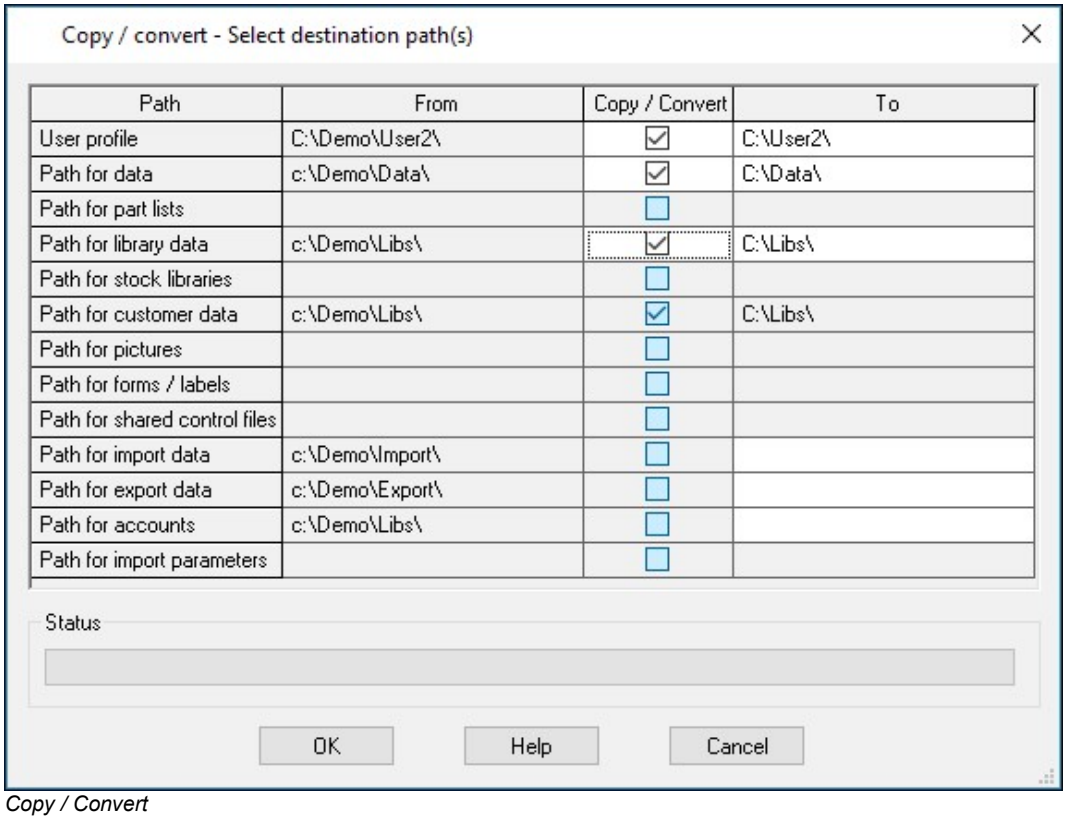


Copy / Convert

● Select the profile to convert
OK - confirm copy/convert user profile

The program moves to the screen to select the location for the new (converted) data.

The paths/folders involved are shown on the screen.



Copy / Convert

The directories shown are the full set of directories available. Some may not be in use and in some cases it is not necessary to convert all the data; for example, the library data may already be converted.

- Use the check boxes to select the directories to convert
- Enter the directory to convert to in the 'To' column.

Use the list button browse and select a directory (in the 'To' column)

Use the mouse to adjust the screen size and column width

- If any of the paths are sub-directories of the user profile these are named automatically. For example:-

Source user directory c:\v12\
Source path for data c:\v12\data
Source path for library data c:\v12\libs

If the destination user profile is set to c:\v12\ the following paths are set:-

Destination path for data c:\v12\data
Destination path for library data c:\v12\libs

If a source directory has already been converted to the current version the directory is not converted again and the data is only copied.

● Select OK to convert

At the end of the conversion the program prompts:-

Select user profile now

Yes - move to new user profile
No - stay in current user profile

Make a back up of existing data

The program includes a 'Back up' option to take a copy of a User profile. It is best to take a copy when experimenting with data or before moving data, for example, to a new version.

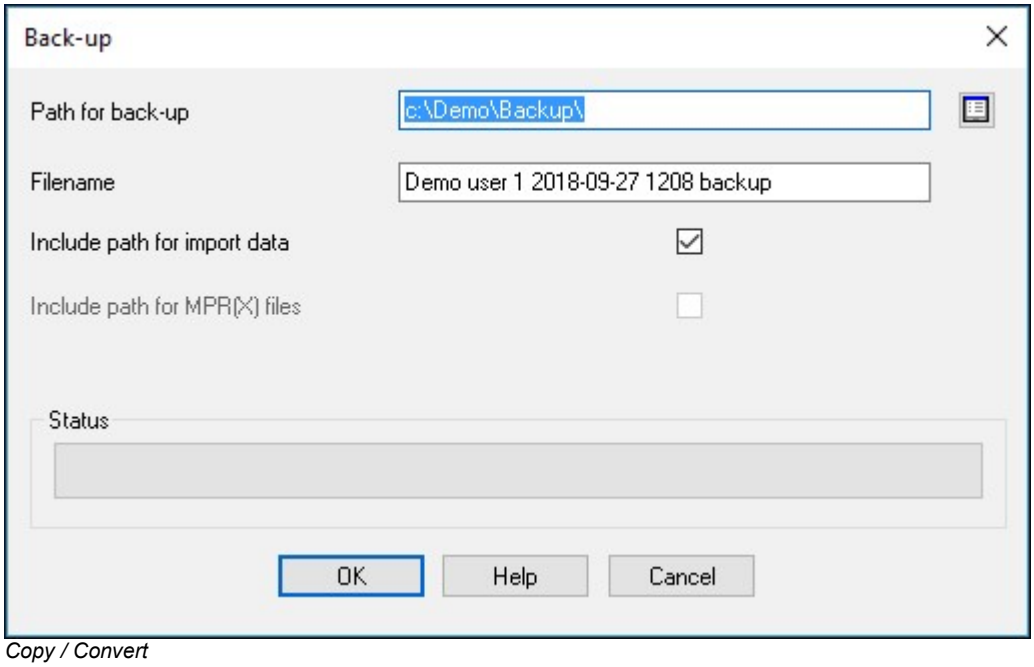
(On a Network version it is best to NOT rely on manual back up but to also make sure that all the program and data directories are included in the standard Network back up processes).

This copies the user profile information and all the user data (batches, runs ...) linked to that profile; this includes any library data linked to the user profile.

- Move to the profile to back up

At the main screen:-

● Select: **File - Back up - current user**



Copy / Convert

- Check the path for back up (edit if required)

(The default is set by the System parameter: *Path for Back up*)

Click on the list button to browse the paths and folders

- Check the file name (edit if required)
- **OK** to confirm

The data is copied to a single file (BKP). This is a zipped file containing all the files in a compressed form. When back up is complete program prompts with a message showing number of files and overall size.

Data

Data can often be split over several different directories. For example:-

C:\OPT\USER1
N:\OPTIMISING\LIBRARIES
C:\OPT\USER1\CUSTOMER

The program uses the System parameters for the User profile to locate the data to Back up including Library data. Back up covers the following Paths:-

User profile
Path for Part lists
Path for Library data
Path for Stock libraries
Path for Customer data

The name of the BKP file is based on the date and time and is stored in the: Path for Backup. e.g. 2021-10-29 1118 V12BACKUP.BKP. All files from these directories are backed up except for file extensions. ARX, DLL, EXE, HLP, LNG, ISU.

Upgrading a security key

When purchasing extra modules or extra users the security key usually has to be upgraded. This is typically done via an Upgrade file sent via a download or via a disk.

- Copy the upgrade file to a folder on the computer

The upgrade is activated via a program called CHECK.EXE which is part of V12.0

Move to the directory where the extracted Download is located

Use *Windows Explorer* to locate the root directory of the Download.

● Double click on the program: CHECK.EXE

[*Upgrade key only* - If the new version is already installed and the upgrade is to add modules - use the installed version of the software for the upgrade. At the main screen: Select: *Tools - System Check*]

The System check information screen is displayed. From the menu:-

● Select: **Check - Upgrade key**
or
Select the [**Upgrade**] option

The program displays a dialog to select the path for the Upgrade file.

● Select **OK** to begin the upgrade

The program proceeds to upgrade the key and usually reports:-

Key upgraded successfully

If the upgrade fails the program reports:- *'Upgrade failure'.* Report the failure and any diagnostic number(s) to the supplier

Remove or uninstall the optimising program

It is sometimes necessary to uninstall the program (for example if there was a mistake in the install process). To do this use the Windows options on the control panel.

Follow the Uninstall instructions carefully.

Note - the System files installed at a Workstation on a Network installation do not need to be removed. They are a standard Microsoft update to the Windows operating system. Any shortcuts on the Desktop etc. should be removed manually (*Right click on shortcut - Remove*)

Path for shared control files

With more than one user (either users on a network or users with different profiles on the same computer) it is often useful to co-ordinate processes where a sequential number is used. For example when naming optimised runs, orders, offcuts, tracking parts etc.

This is set by the System parameter: *Path for shared data*

- Enter the full path where the shared control files are stored (for example: n:\server\v12\SharedData). Make sure all users have read/write access to this path.

Parameter options that may use shared control files are:-

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

If this parameter is set the shared parameters are locked (greyed out) on the parameter pages and the numbering is controlled by the program.

Network USB key and Network USB key software - Install

The most common option is to place the Network key and the Network key software on a Network Server. Before installing the Licence manager make sure the existing licence manager (if any) is NOT running

Look at the distribution contents by Right clicking on the folder and choosing: 'Explore'. The Network key software is in the directory..\NETWORKS\NETKEY

● Create a directory to contain the Network key software

Use Windows Explorer to set up a directory on the computer or server. This can be any directory name, for example, N:\NETKEY. If Network key software directories already exist they can be overwritten; this makes sure the Network software is up to date.

● Copy the Network software from distribution to computer or server

To do this copy the contents of ..\NETWORKS\NETKEY to the directory set up on the computer or server.

If using a Download version from a self-extracting file - double click on the EXE to extract the files to a temporary location on the computer or server; the files are extracted to a sub-directory. Follow the above steps to copy the Network key software to a separate location on the computer or server.

Set up the Network key Licence Manager on the Computer or Server

The Licence Manager is set up with the program LMSETUP.EXE. To install the Licence Manager:-

- Move to the directory ..\NETWORKS\NETKEY

- Double click on LMSETUP.EXE to run it
- Follow the on-screen instructions for the LMSETUP install program

*- When installing the HASP device driver (*HaspUserSetup*) and Licence Manager (lmsetup) for Windows 7 onwards they must be run under a compatibility mode (Vista Service pack 2)*

- Double click on LMSETUP.EXE to run it
- Follow the on-screen instructions for the LMSETUP install program
When prompted the program must be installed as a service not an application. See the Install_LM_Under_Windows_7.pdf document in the NETKEY directory for more details on this.

Install the Network key device driver

- From the Start button on the Windows Taskbar select the Run option
- Run the program HaspUserSetup with the setting -i. e.g.
N:\NETKEY\HaspUserSetup.exe -i

If updating an existing system make sure that any Licence manager services that are running are stopped before installing HaspUserSetup.

It may be necessary to re-start the computer for the settings to take effect

Licence Manager Install - Notes

- During installation the LMSETUP program may modify firewall rules and installs an additional device driver

- The Licence Manager cannot be installed without accepting the Licence Manager licence Agreement

Set up for Optimising program (Networks)

Always install a new version to a new directory - data is not directly compatible between versions. It is best to run both the previous and the new version in parallel for a short changeover period.

Add the distribution files the Server or at a Workstation. Navigate to the root directory of the distribution and double click on the program: setup.exe

A series of dialog screens moves through the setup procedure. Follow the instructions carefully.

At the dialog: *Choose Destination Location*

● Enter the path on the Server to install the software to.

At the dialog: *Select Components* a list of items to install is displayed

Program files
System files
Metric parameter templates
Metric Demo data

● Uncheck *System files* and leave *Program files* checked

The other components are optional but it is often useful to have the demonstration data at the Server.

Select the type of licence you have either USB key or cloud licence.

Note - installation on the Server does not create a Windows program folder for the Windows Start menu as the Optimising program does not run from the Server console .

● Complete the install process by following the instructions on-screen

Install the 'Client' part of the Optimising program at each Workstation

It is also necessary to set up each Workstation running the Optimising program. Make sure the workstation can access the server.

Copy the distribution files to a folder at the Workstation. Navigate to the root directory of the folder and double click on the program: setup.exe

A series of dialog screens take you through the setup procedure. Follow the instructions carefully. At the dialog: *Choose Destination Location*

● Enter the path on the Server which the Optimising program was installed to.

Note - the setup program needs this information so that it can create shortcuts and other client information to link to the Server.

At the dialog: *Select Components* a list of items to install is displayed

Program files
System files
Metric parameter templates
Metric Demo data

● Uncheck *Program files* and leave *System files* checked.

Note - The demonstration and other data is usually not needed as this is installed at the Server

A Windows program folder is created for the Workstation - this contains shortcuts to the Optimising Program and other utilities.

Select the type of licence you have either USB key or cloud licence.

● Complete the install process by following the instructions on-screen

Set up for Windows Terminal Server

The set up for the security key is the same as for any other Network set up (see above) but the optimising program is installed differently.

Install the Optimising program (WTS)

Copy the distribution folder to the Server.

- Navigate to the root directory of the downloaded distribution
- Double click on the program wtssetup.exe

A series of dialog screens take you through the setup procedure. Follow the instructions with care.

At the dialog: *Choose Destination Location*

● Enter the path on the Server to install the software to.

At the dialog: *Select Components* a list of items to install is displayed

Program files
System files

Metric parameter templates
Metric Demo data

● Make sure ALL the components are checked
● Complete the install process by following the instructions on-screen

Install the 'Client' part of the Optimising program at each Terminal

At each Terminal running the optimising program:-

● Login to the WTS server with a unique user name.

Note: the same user name will be used to run V12 in the future

● Copy the distribution folder to the Server)

● Navigate to the root directory of the downloaded distribution
● Double click on the program wtssetup.exe

A series of dialog screens take you through the setup procedure. Follow the instructions with care.

At the dialog: *Choose Destination Location*

● Enter the path on the Server which the Optimising program was installed to.

Note - the setup program needs this information so that it can create shortcuts to this directory for the user profile for this terminal.

At the dialog: *Select Components* a list of items to install is displayed

Program files
System files
Metric parameter templates
Metric Demo data

● Check *System files*
● Make sure all the other items are unchecked - they are already installed at the server.

A Program folder for the Windows Start menu is created for the Workstation. This folder contains shortcuts to the Optimising Program and other utilities.

● Complete the install process by following the instructions on-screen

Choosing where Optimising data is stored (networks)

For a Network version there are many different ways of organising the program and data; this depends on each site - some general ideas are given below.

All data at Network Server (Server N:, Workstations C:)

One option is to store the Optimising program and data (Libraries and User profiles) on a Network Server. This layout is flexible and allows users to easily share library and other data and makes it easy to update the Optimising program. It also ensures that all important data can be backed up by the usual Network back-up facilities.

```
Network server
N:\V12\DATA\LIBS    - libraries
N:\V12              - program directory
N:\V12\NETKEY       - USB key software
Network Security key or registered cloud floating licence

N:\V12\DATA\USER1   - user profile 1
Path for data N:\V12\DATA\USER1
Path for library data N:\V12\DATA\LIBS

N:\V12\DATA\USER2   - user profile 2
Path for data N:\V12\DATA\USER2
Path for library data N:\V12\DATA\LIBS

Workstation 1
Desktop shortcut to N:\V12\V12.EXE or N:\V12\V12Cloud.EXE for a
cloud licence

Workstation 2
Desktop shortcut to N:\V12\V12.EXE or N:\V12\V12Cloud.EXE for a
cloud licence
```

See the 'System parameters' for each user to set up the paths for each user.

User data on local computers (Server N:, Computers C:)

In this layout each user maintains a user profile on their own Computer/Workstation. Libraries are shared on the Network Server

```
Network server
```

```
N:\V12\DATA\LIBS    - libraries
N:\V12              - program directory
N:\V12\NETKEY       - USB key software
Network Security key or registered cloud floating licence

Workstation 1
Desktop shortcut to N:\V12\V12.EXE or N:\V12\V12Cloud.EXE for a
cloud licence
C:\V12\DATA\ME - user profile 1
Path for data C:\V12\DATA\ME
Path for library data N:\V12\DATA\LIBS

Workstation 2
Desktop shortcut to N:\V12\V12.EXE or N:\V12\V12Cloud.EXE for a
cloud licence
C:\V12\DATA\ME - user profile
Path for data C:\V12\DATA\ME
Path for library data N:\V12\DATA\LIBS
```

Program and Data on Workstations. Library data and Network key on server (Server N:, Computers C:)

In this layout the full Optimising program is installed at each Computer/Workstation and only library data is shared.

```
Network server
N:\V12\DATA\LIBS    - libraries
N:\V12\NETKEY       - USB key software
Network Security key or registered cloud floating licence

Workstation 1
Desktop shortcut to C:\V12\V12.EXE or C:\V12\V12Cloud.EXE for a
cloud licence
C:\V12 - program directory
C:\V12\DATA\ME  - user profile
Path for Data C:\V12\DATA\ME
Path for Library data N:\V12\DATA\LIBS

Workstation 2
Desktop shortcut to C:\V12\V12.EXE or C:\V12\V12Cloud.EXE for a
cloud licence
C:\V12 - program directory
C:\V12\DATA\ME  - user profile
Path for Data C:\V12\DATA\ME
Path for Library data N:\V12\DATA\LIBS
```

Customise a Network USB key installation

Most Network setups work Ok with the standard install of the Optimising program and Network key software (Network licence manager). However for some Network setups some fine tuning is necessary.

Whenever the Optimising program is started and randomly whilst it is running the program checks for the security key and that a valid licence is available. To do this the program must look at the computer where the network key is located and the Licence manger software is running.

Some Network setups can cause this search to be slow or prevent it from working reliably if the default Network key setup is used.

These problems are fixed by fine tuning how the Optimising program searches for the security key and how the Licence manager is running on the Network. Two files are used for this.

NetHasp.ini - by default this is NOT installed as it is usually not required. A copy of this file is located on the Optimising program Distribution in the directory: ..\Networks\Other\. To use it take a copy and place it in the Program directory for the Optimising program (where the optimising program is installed).

Nhsrv.ini - this is created automatically by the LMSETUP program when the Network key software is installed and is located on the server or PC where the licence manager is running. Typically in the directory: ..\Program Files\Aladdin\HASP LM

These files control each end of the link between the Optimising program and the Licence manager.

Optimising program --- NetHasp.ini ---- Nhsrv.ini --- Licence manager

It is best to use NetHasp.ini to try and fix any problems - but in some cases both files need adjusting. The files are ASCII/Unicode files that can be edited by a text editor such as 'NotePad' - always take a backup copy of each file before making any changes.

Cloud licences

The program supports operation with a ‘cloud’ software licence in addition to hardware USB keys.

Cloud licencing mode is selected during the setup. When the installation has finished all shortcuts will point to V12Cloud.exe if for some reason you are actually using a USB dongle just change the target to V12.exe instead.

To use cloud licencing you will need to have a reliable internet connection.

Your distributor will supply a serial number and activation code for your cloud licence. Please keep these in a safe place. They are required to register your licence (select a log in name and password) and to reset the log in name / password if required.

The two types of cloud licence single PC licence and floating licences that can be shared between different users and may have one or more seats.

A single PC licence is locked to the PC used for the software. It is not possible to use the software on another PC. If the licence must be transferred to another PC (E.g. if the PC fails or is stolen), this can be done through the cloudseats program or system check.

If there are no floating licences available at log in (there may be more users than seats), a user will need to log out. The option to log out from cloud licencing is available on the menu of the main menu screen under the "Licence" menu item (see "Logging out of a cloud licence") as well as via system checks log out button.

Notes

- The program does not support single PC licences in cloud licencing mode under virtual PCs. Virtual PCs need to use floating licences.

Registering a cloud licence

The registration dialog allows you to select a log in name and password to be used for a floating licence. Floating licences may have more than one seat (user). All users of a licence must log in with the same log in name and password.

Enter the serial number and activation code supplied by your distributor and choose a log in name and password. Log in names and passwords must be a minimum of 8 characters long and a maximum of 50. Log in names are not case sensitive but passwords are.

The log in name cannot already be registered to another licence. Using an email address here should ensure that your log in name is unique.

When a valid log in name and password have been entered (and confirmed), the OK button becomes enabled. Select this button to register the licence. There will be a short delay while the program contacts the licencing server to register the licence. If successful, the program reports ‘Registration successful’ and returns to the log in dialog.

Cancel from the registration dialog also returns to the log in dialog.

Logging in to a cloud licence

When you start the program in floating cloud licencing mode, the log in dialog appears.

If you have not previously registered your licence, select the ‘Register’ button and follow the instructions in the *Registering a cloud licence* section.

If you have forgotten your log in name and / or password, select the ‘Reset credentials’ button and follow the instructions in the *Password rese*t section above.

Enter your log in name and password and select the OK button. Log in names are not case sensitive but the password is. There will be a short delay while the program contacts the licencing server to download the licence and the main menu will then appear.
The cloud licence details are subsequently displayed on the splash screen, the ‘about’ box and the System check screen.

Once the licence has been obtained, the program will continue to run and can be closed / restarted without logging in again. The program refreshes the licence at intervals so it is important to ensure that the PC remains connected to the internet.

If you have a floating licence (which may be shared between users) and the program has not been used for a period of thirty days, your licence may have been re-allocated to another user. In this case you will need to log in again. Also for floating licences a user needs to log out of the software to free up a seat (not just closing the software down but using the log out option from the main menu screen or via the log out button in system check). The software can also be configured to automatically log users out on closing the software via an option in system parameters.

Password reset

If a floating licence has been registered but log in details have been forgotten, use the password reset facility to select new ones (select ‘Reset credentials’ from the log in dialog).

Enter the serial number and activation code supplied by your distributor and choose a new log in name and password. Log in names and passwords must be a minimum of 8 characters long and a maximum of 50. Log in names are not case sensitive but passwords are.

The log in name cannot already be registered to another licence. Using an email address here should ensure that your log in name is unique.

When a valid log in name and password have been entered (and confirmed), the OK button becomes enabled. Select this button to reset the licence. There will be a short delay while the program contacts the licencing server to register the licence. If successful, the program reports ‘Reset successful’ and returns to the log in dialog.

3. Professional and Standard Optimisers (PO & SO)

Optimising is the heart of the system. There are different optimising modules to choose from depending on the type and amount of cutting undertaken.

The **Professional optimiser** is aimed at Larger scale production and 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 module (where this is used) and includes an interface to a large number of proprietary saws.

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 overall process is:-

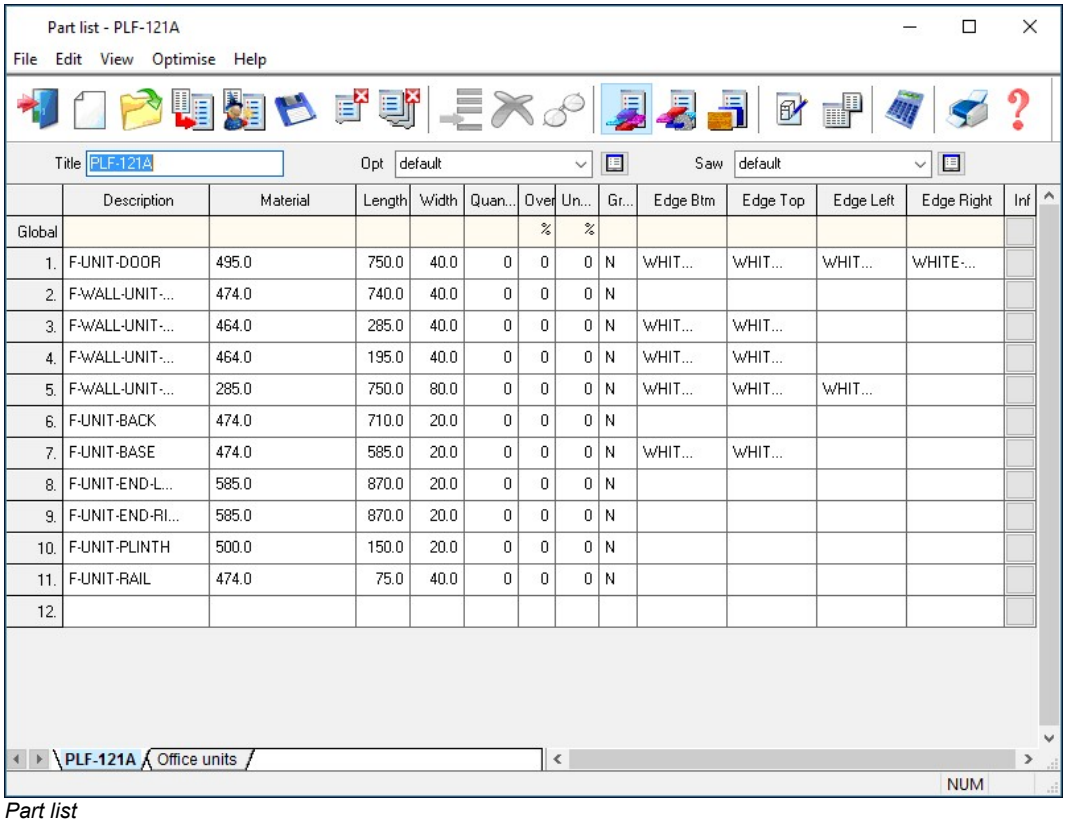
- *Enter or Import part sizes*
- *Optimise*
- *Send cutting data to saw*

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.



Part list

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, and if necessary, dividing lists if they are too large to send to a saw in one go.

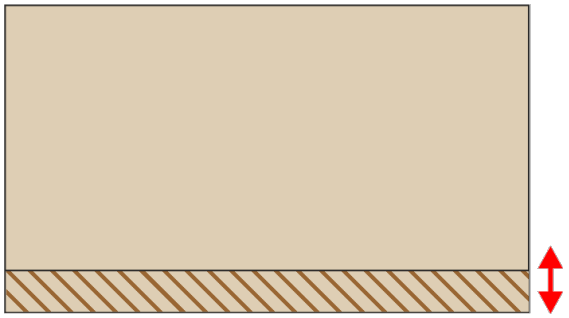
The part list can be customised with pre-set and user defined fields - these are often important for volume production in tracking parts, dividing lists, and for getting the correct data on to a label …

Note more than one list can be open at a time. This is handy for data between lists or for comparing lists. Click on the tabs at the foot of the screen to move between lists.

Optimising parameters are used to describe the type of cutting (trims, re-cuts, headcuts …). See the '*Parameters*' section for details. Typical parameters are:-

Saw blade thickness
Front Trims
Rear trims
…

The Front trim parameters, for example, allows the specification of the amount of material including saw blade thickness allowed at the front of the board for rips and cross cuts.

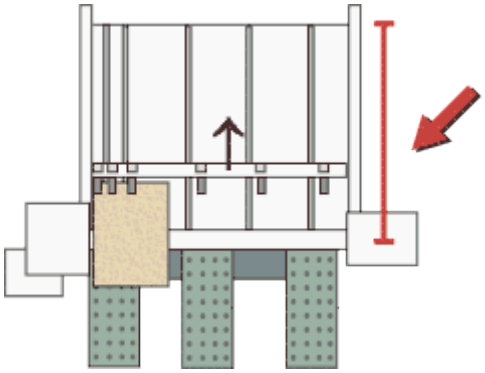


Front trim

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

Saw model
Cutting height
Overall cutting length
…

For example, the Overall drawback for a single saw determines how a board is divided and the headcuts that are taken.

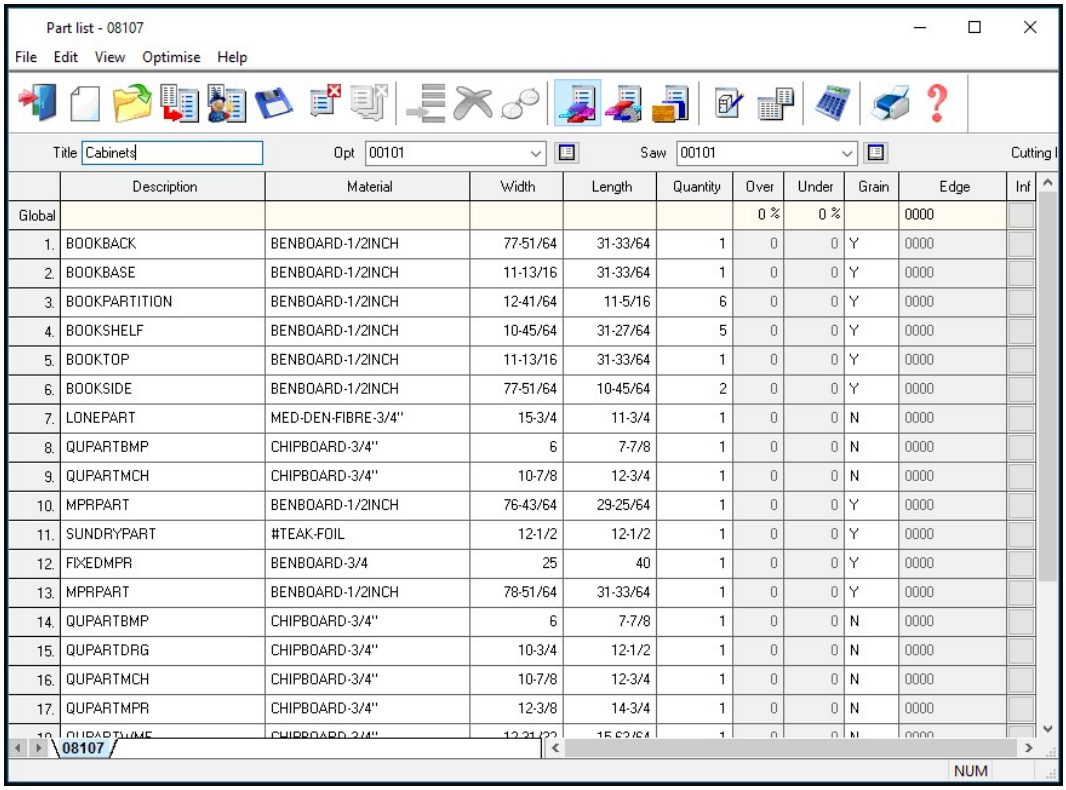


Saw bed

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.

In the above example the optimising parameter list and saw parameter list are the lists named 'Default' from the Demo data.

The program also supports fractional and decimal inches.

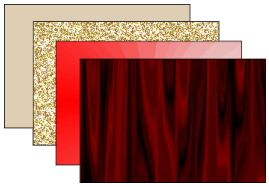


	Description	Material	Width	Length	Quantity	Over	Under	Grain	Edge	Inf
Global						0 %	0 %		0000	
1.	BOOKBACK	BENBOARD-1/2INCH	77-51/64	31-33/64	1	0	0	Y	0000	
2.	BOOKBASE	BENBOARD-1/2INCH	11-13/16	31-33/64	1	0	0	Y	0000	
3.	BOOKPARTITION	BENBOARD-1/2INCH	12-41/64	11-5/16	6	0	0	Y	0000	
4.	BOOKSHELF	BENBOARD-1/2INCH	10-45/64	31-27/64	5	0	0	Y	0000	
5.	BOOKTOP	BENBOARD-1/2INCH	11-13/16	31-33/64	1	0	0	Y	0000	
6.	BOOKSIDE	BENBOARD-1/2INCH	77-51/64	10-45/64	2	0	0	Y	0000	
7.	LONEPART	MED-DEN-FIBRE-3/4"	15-3/4	11-3/4	1	0	0	N	0000	
8.	QUPARTBMP	CHIPBOARD-3/4"	6	7-7/8	1	0	0	N	0000	
9.	QUPARTMCH	CHIPBOARD-3/4"	10-7/8	12-3/4	1	0	0	N	0000	
10.	MPRPART	BENBOARD-1/2INCH	76-43/64	29-25/64	1	0	0	Y	0000	
11.	SUNDRYPART	#TEAK-FOIL	12-1/2	12-1/2	1	0	0	Y	0000	
12.	FIXEDMPR	BENBOARD-3/4	25	40	1	0	0	Y	0000	
13.	MPRPART	BENBOARD-1/2INCH	78-51/64	31-33/64	1	0	0	Y	0000	
14.	QUPARTBMP	CHIPBOARD-3/4"	6	7-7/8	1	0	0	N	0000	
15.	QUPARTDRG	CHIPBOARD-3/4"	10-3/4	12-1/2	1	0	0	N	0000	
16.	QUPARTMCH	CHIPBOARD-3/4"	10-7/8	12-3/4	1	0	0	N	0000	
17.	QUPARTMPR	CHIPBOARD-3/4"	12-3/8	14-3/4	1	0	0	N	0000	

Part list - fractional inches

Materials

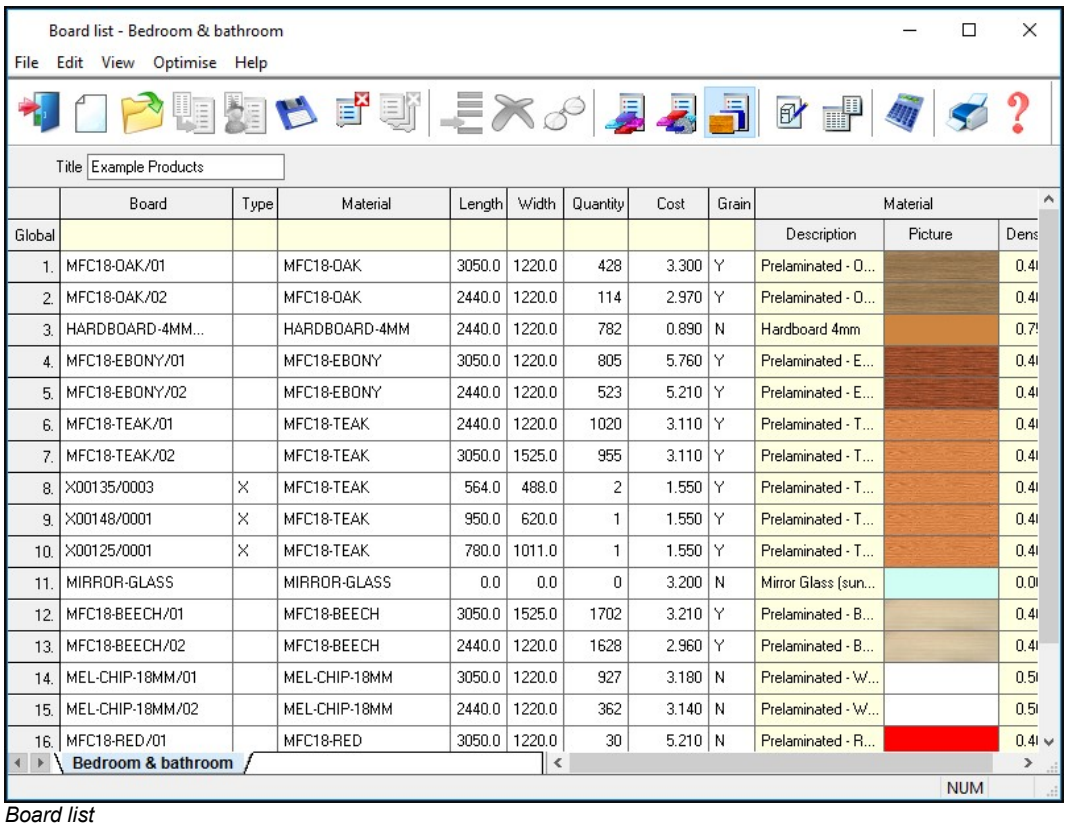
All materials are stored in the Board library. This is a database of all sheet material and includes quantities and costs.



Materials

The optimiser use the Material code against each part in the part list.#

For example, MFC18-BEECH to extract the available boards (of that material) from the Board library and create a Board list for the optimisation.



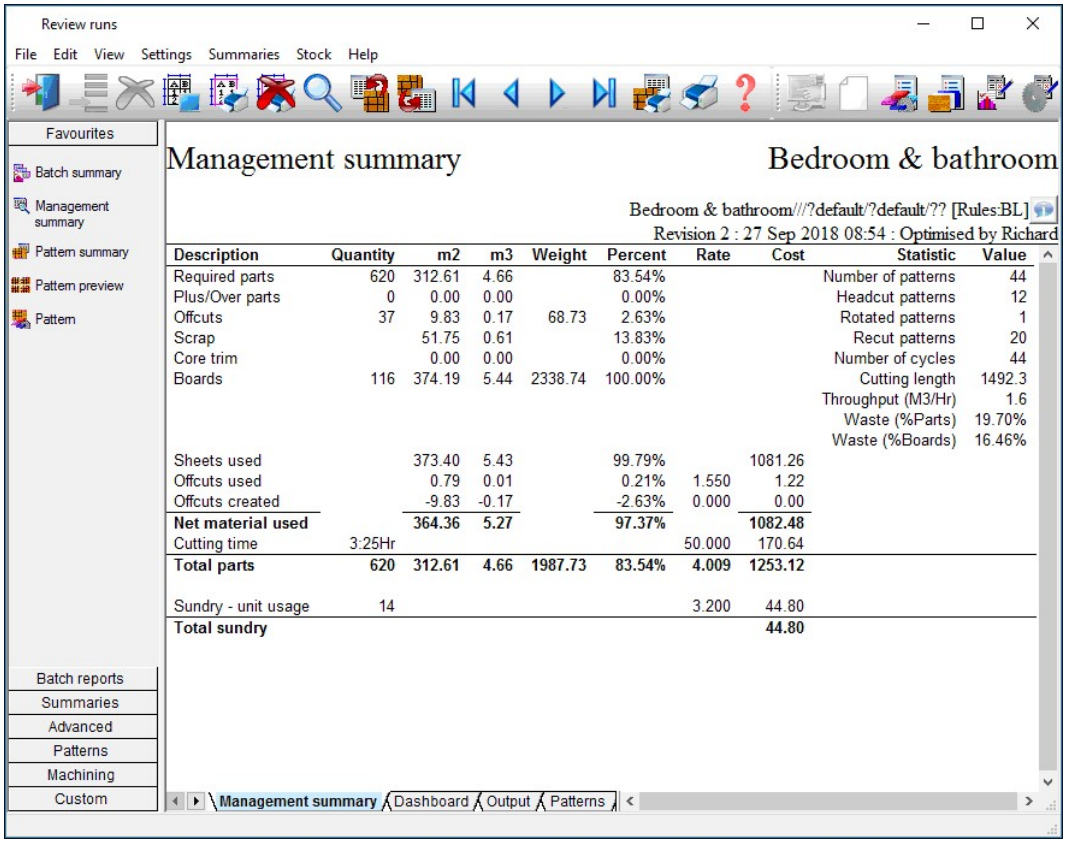
	Board	Type	Material	Length	Width	Quantity	Cost	Grain	Material		
Global									Description	Picture	Dens
1.	MFC18-OAK/01		MFC18-OAK	3050.0	1220.0	428	3.300	Y	Prelaminated - O...		0.4
2.	MFC18-OAK/02		MFC18-OAK	2440.0	1220.0	114	2.970	Y	Prelaminated - O...		0.4
3.	HARDBOARD-4MM...		HARDBOARD-4MM	2440.0	1220.0	782	0.890	N	Hardboard 4mm		0.7
4.	MFC18-EBONY/01		MFC18-EBONY	3050.0	1220.0	805	5.760	Y	Prelaminated - E...		0.4
5.	MFC18-EBONY/02		MFC18-EBONY	2440.0	1220.0	523	5.210	Y	Prelaminated - E...		0.4
6.	MFC18-TEAK/01		MFC18-TEAK	2440.0	1220.0	1020	3.110	Y	Prelaminated - T...		0.4
7.	MFC18-TEAK/02		MFC18-TEAK	3050.0	1525.0	955	3.110	Y	Prelaminated - T...		0.4
8.	X00135/0003	X	MFC18-TEAK	564.0	488.0	2	1.550	Y	Prelaminated - T...		0.4
9.	X00148/0001	X	MFC18-TEAK	950.0	620.0	1	1.550	Y	Prelaminated - T...		0.4
10.	X00125/0001	X	MFC18-TEAK	780.0	1011.0	1	1.550	Y	Prelaminated - T...		0.4
11.	MIRROR-GLASS		MIRROR-GLASS	0.0	0.0	0	3.200	N	Mirror Glass (sun...		0.0
12.	MFC18-BEECH/01		MFC18-BEECH	3050.0	1525.0	1702	3.210	Y	Prelaminated - B...		0.4
13.	MFC18-BEECH/02		MFC18-BEECH	2440.0	1220.0	1628	2.960	Y	Prelaminated - B...		0.4
14.	MEL-CHIP-18MM/01		MEL-CHIP-18MM	3050.0	1220.0	927	3.180	N	Prelaminated - W...		0.5
15.	MEL-CHIP-18MM/02		MEL-CHIP-18MM	2440.0	1220.0	362	3.140	N	Prelaminated - W...		0.5
16.	MFC18-RED/01		MFC18-RED	3050.0	1220.0	30	5.210	N	Prelaminated - R...		0.4

Board list

Optimising

Once the part list, parameters and board list are set up the job can be optimised to produce 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.

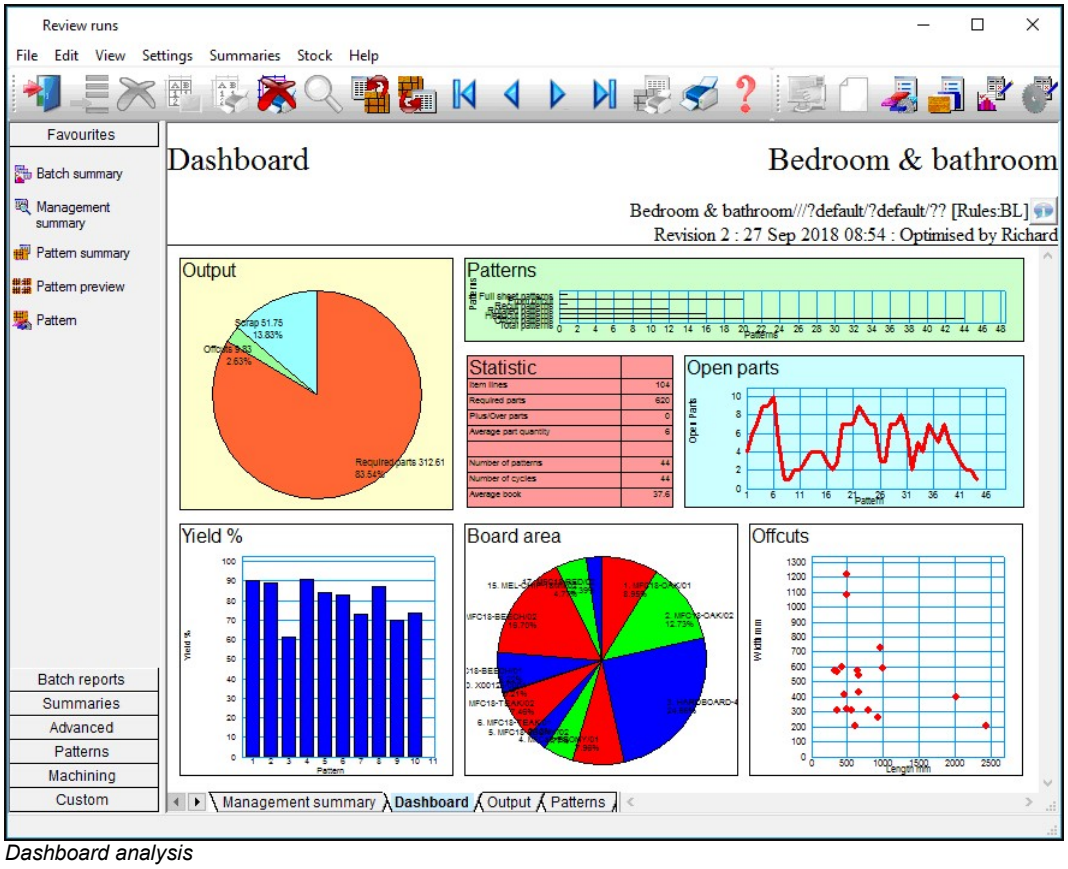


Description	Quantity	m2	m3	Weight	Percent	Rate	Cost	Statistic	Value
Required parts	620	312.61	4.66		83.54%			Number of patterns	44
Plus/Over parts	0	0.00	0.00		0.00%			Headcut patterns	12
Offcuts	37	9.83	0.17	68.73	2.63%			Rotated patterns	1
Scrap		51.75	0.61		13.83%			Recut patterns	20
Core trim		0.00	0.00		0.00%			Number of cycles	44
Boards	116	374.19	5.44	2338.74	100.00%			Cutting length	1492.3
								Throughput (M3/Hr)	1.6
								Waste (%Parts)	19.70%
								Waste (%Boards)	16.46%
Sheets used		373.40	5.43		99.79%		1081.26		
Offcuts used		0.79	0.01		0.21%	1.550	1.22		
Offcuts created		-9.83	-0.17		-2.63%	0.000	0.00		
Net material used		**364.36**	**5.27**		**97.37%**		**1082.48**		
Cutting time	3:25Hr					50.000	170.64		
Total parts	**620**	**312.61**	**4.66**	**1987.73**	**83.54%**	**4.009**	**1253.12**		
Sundry - unit usage	14					3.200	44.80		
Total sundry							**44.80**		

Management summary

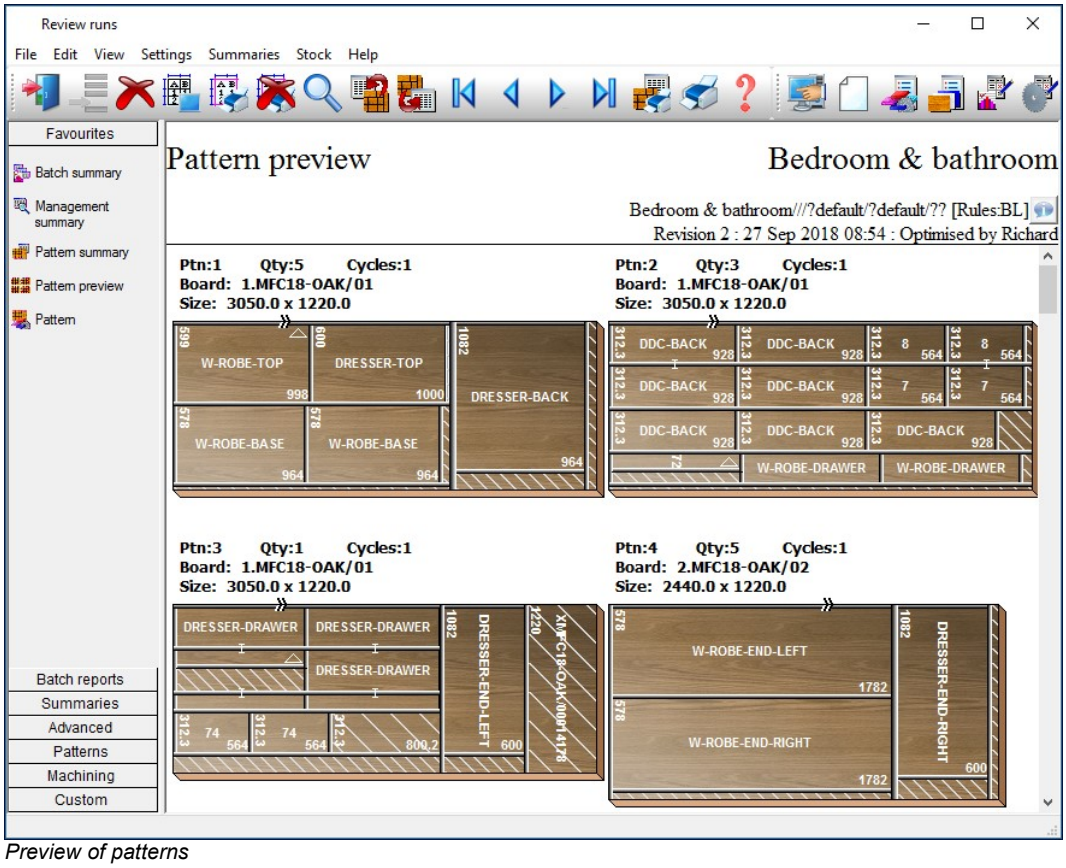
The management summary includes a Dashboard view showing a graphical view of some of the data.

This can be very valuable for larger runs where the reports consist of large numbers of patterns or parts.



Dashboard analysis

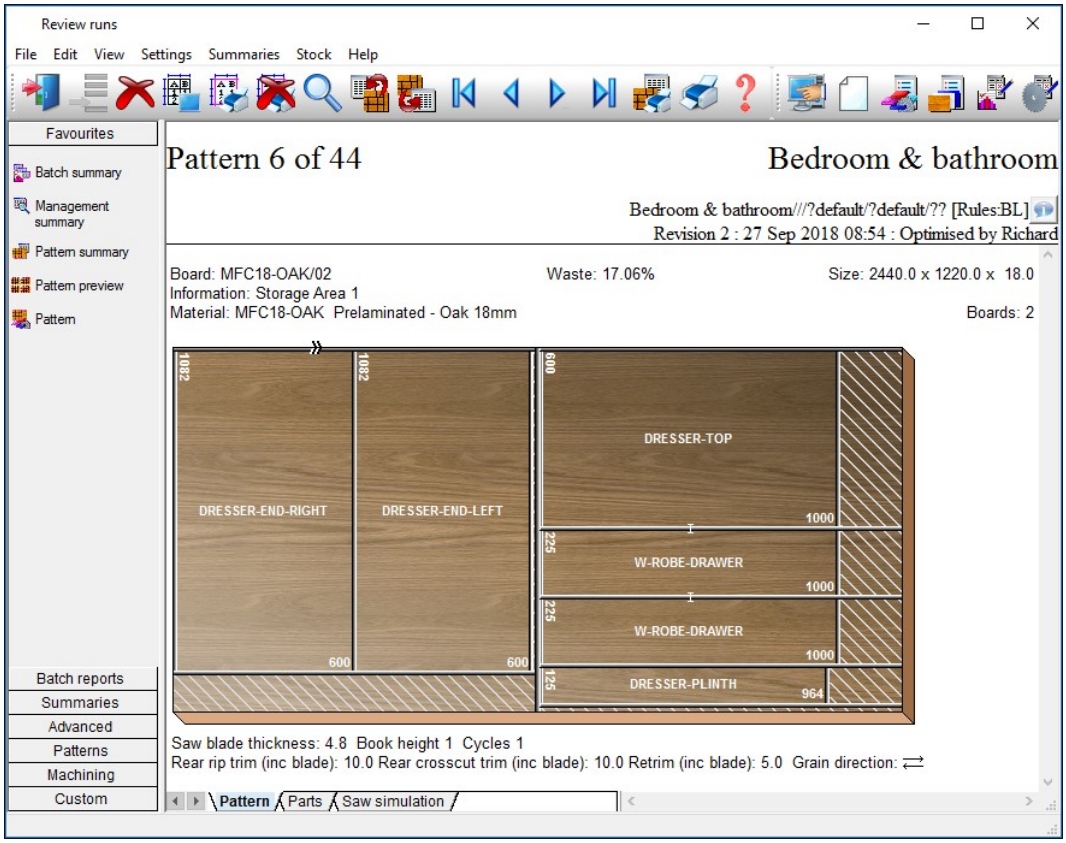
The cutting patterns are shown in a thumbnail overview.



Preview of patterns

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

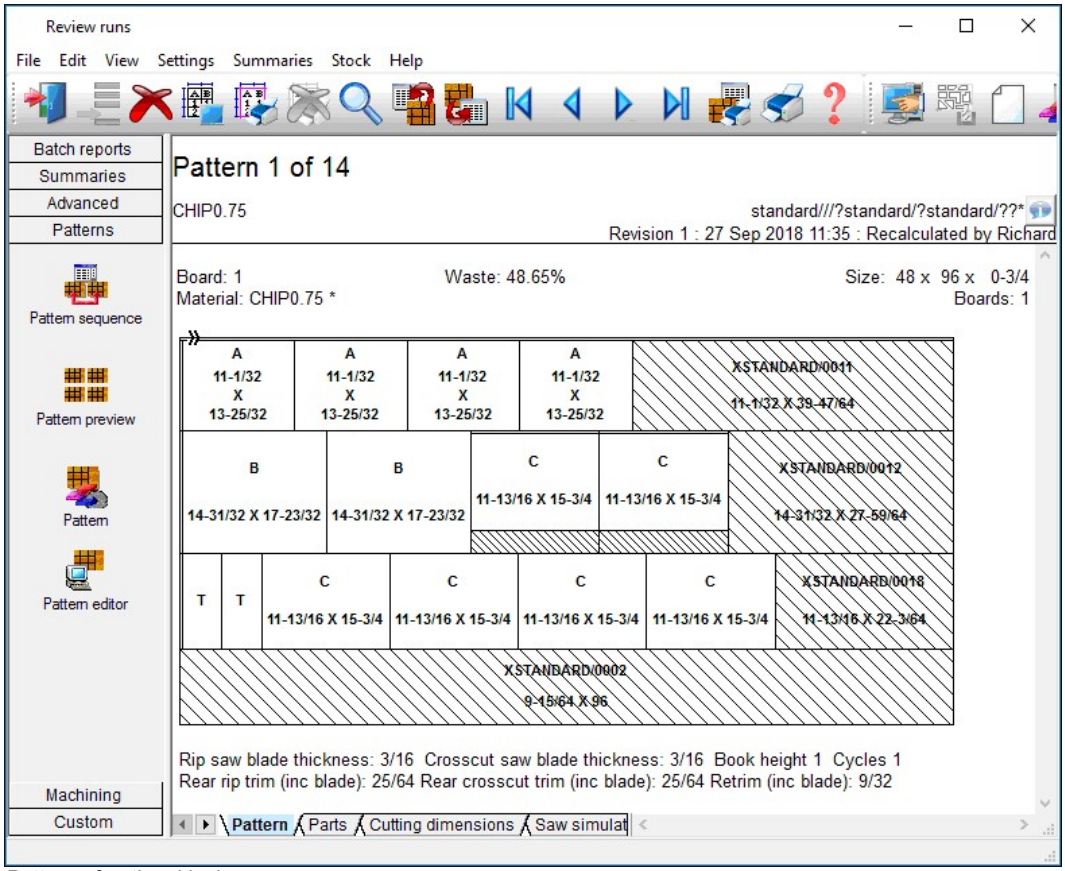
Extra details of each pattern are available on the tabs at the foot of each drawing.



Full details of pattern

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

The program also supports decimal and fractional inches.



Pattern - fractional inches

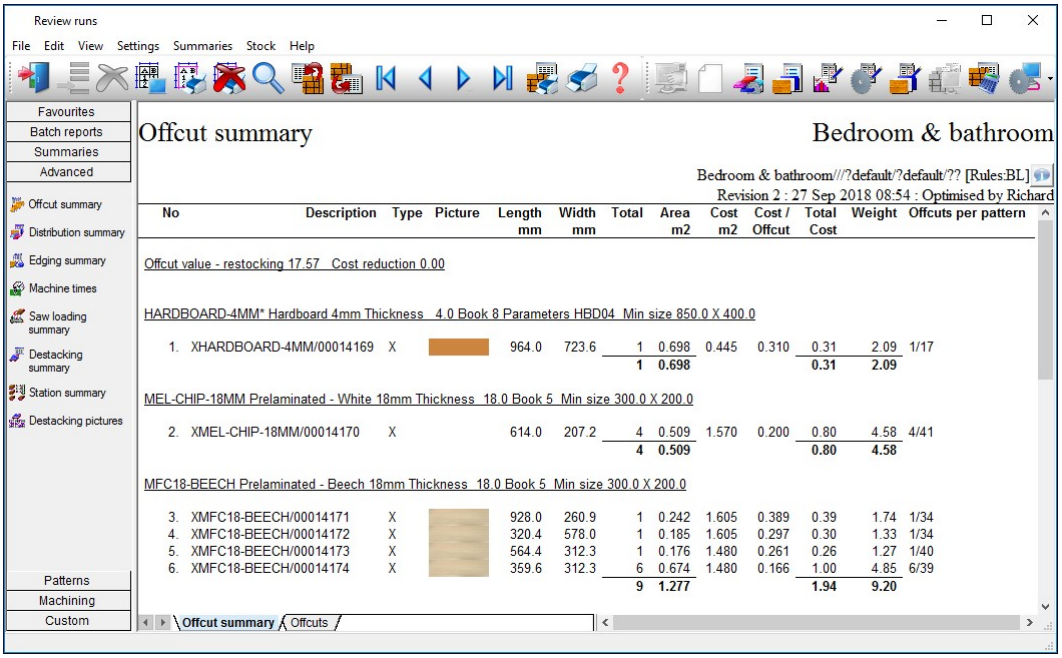
In this example the pattern is shown in an alternative view ‘Monochrome’. There are several choices of pattern view.

- Enhanced picture with bitmap or solid colour
- Flat picture with bitmap or solid colour
- Picture with colour for different part type (recut, plus part, offcut …)
- Monochrom picture

There are a range of reports on the job, including, offcuts, costs, board usage.

Offcuts

Shows the offcuts produced in a run.

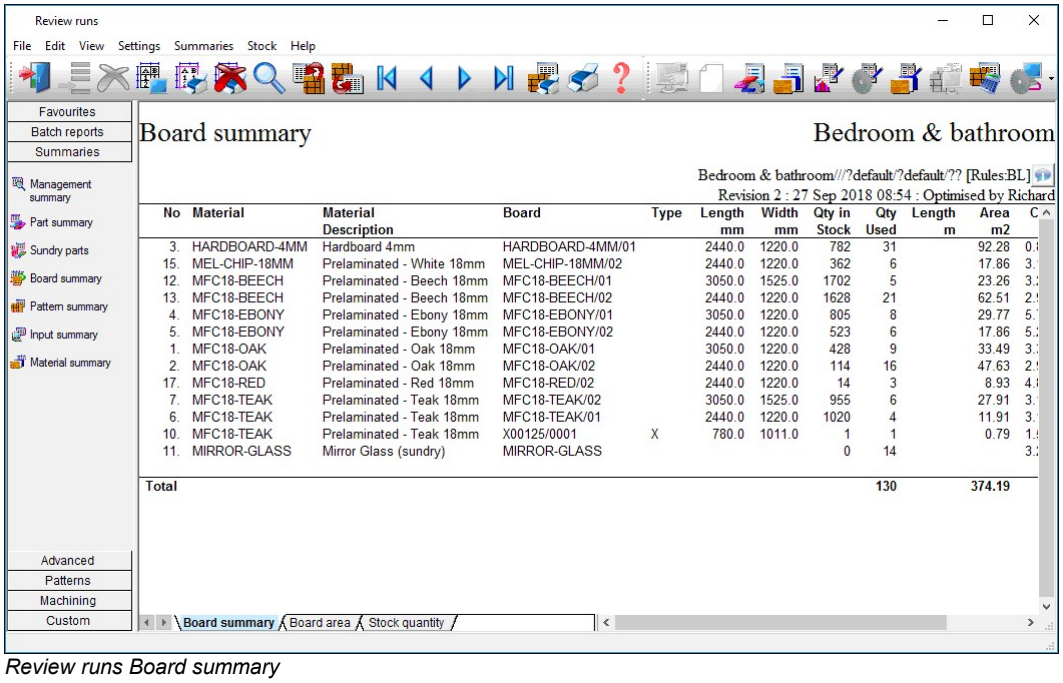


Review runs Offcut summary

Offcuts can be returned to the board library for use in later runs with the Stock control module.

Boards

Shows the amount of each board size used in a run.

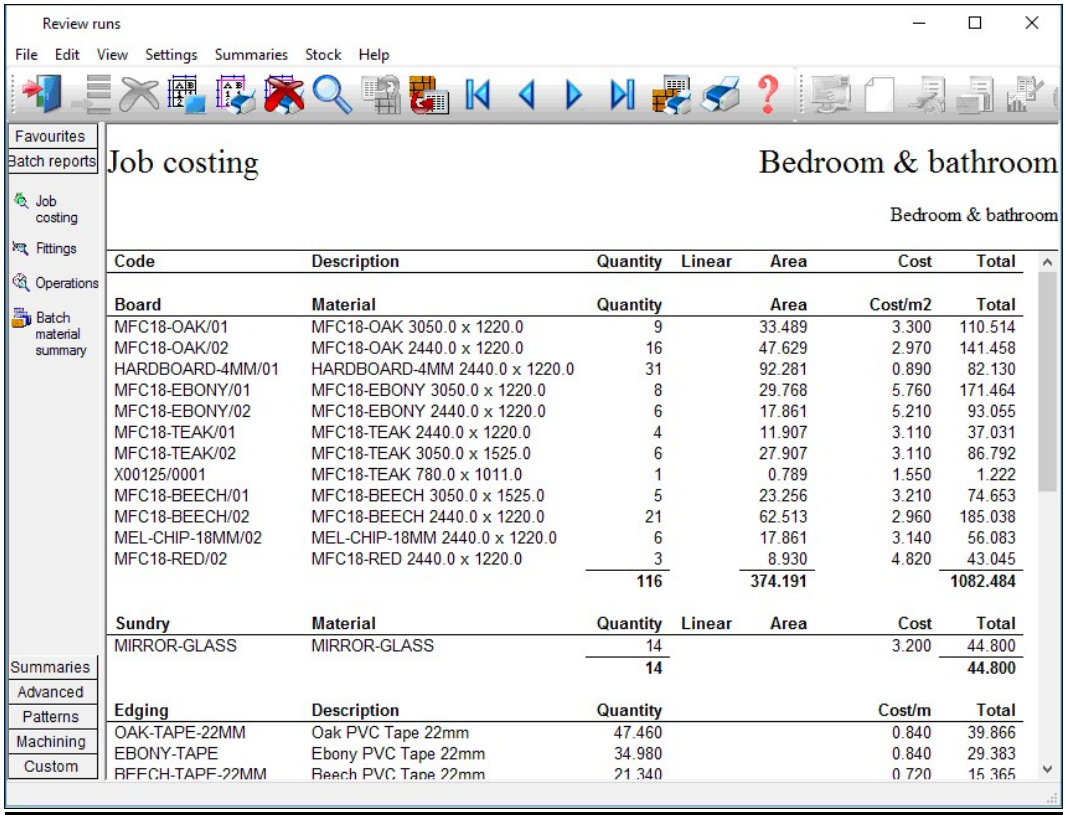


No	Material	Material Description	Board	Type	Length mm	Width mm	Qty in Stock	Qty Used	Length m	Area m2	C
3.	HARDBOARD-4MM	Hardboard 4mm	HARDBOARD-4MM/01		2440.0	1220.0	782	31		92.28	0.
15.	MEL-CHIP-18MM	Prelaminated - White 18mm	MEL-CHIP-18MM/02		2440.0	1220.0	362	6		17.86	3.
12.	MFC18-BEECH	Prelaminated - Beech 18mm	MFC18-BEECH/01		3050.0	1525.0	1702	5		23.26	3.
13.	MFC18-BEECH	Prelaminated - Beech 18mm	MFC18-BEECH/02		2440.0	1220.0	1628	21		62.51	2.
4.	MFC18-EBONY	Prelaminated - Ebony 18mm	MFC18-EBONY/01		3050.0	1220.0	805	8		29.77	5.
5.	MFC18-EBONY	Prelaminated - Ebony 18mm	MFC18-EBONY/02		2440.0	1220.0	523	6		17.86	5.
1.	MFC18-OAK	Prelaminated - Oak 18mm	MFC18-OAK/01		3050.0	1220.0	428	9		33.49	3.
2.	MFC18-OAK	Prelaminated - Oak 18mm	MFC18-OAK/02		2440.0	1220.0	114	16		47.63	2.
17.	MFC18-RED	Prelaminated - Red 18mm	MFC18-RED/02		2440.0	1220.0	14	3		8.93	4.
7.	MFC18-TEAK	Prelaminated - Teak 18mm	MFC18-TEAK/02		3050.0	1525.0	955	6		27.91	3.
6.	MFC18-TEAK	Prelaminated - Teak 18mm	MFC18-TEAK/01		2440.0	1220.0	1020	4		11.91	3.
10.	MFC18-TEAK	Prelaminated - Teak 18mm	X00125/0001	X	780.0	1011.0	1	1		0.79	1.
11.	MIRROR-GLASS	Mirror Glass (sundry)	MIRROR-GLASS				0	14			3.
Total								**130**		**374.19**	

Review runs Board summary

Job costing

A summary of all the cost centres for a job.

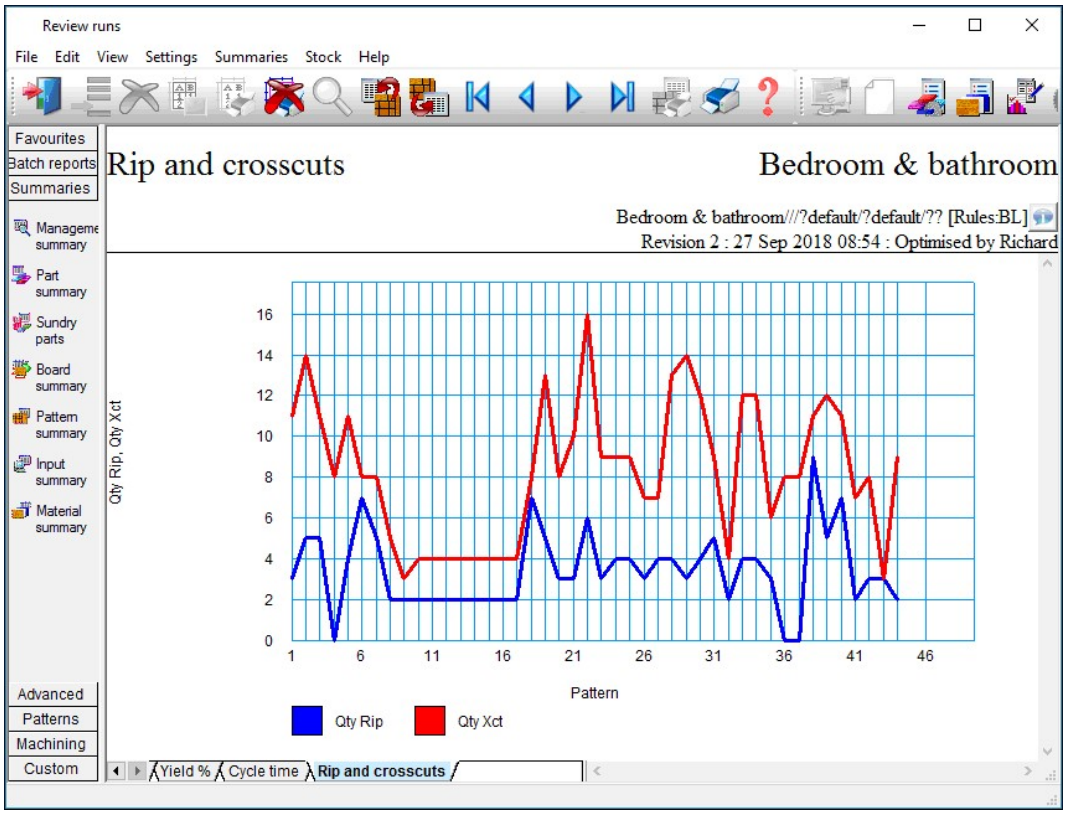


Code	Description	Quantity	Linear	Area	Cost	Total
Board	**Material**	**Quantity**		**Area**	**Cost/m2**	**Total**
MFC18-OAK/01	MFC18-OAK 3050.0 x 1220.0	9		33.489	3.300	110.514
MFC18-OAK/02	MFC18-OAK 2440.0 x 1220.0	16		47.629	2.970	141.458
HARDBOARD-4MM/01	HARDBOARD-4MM 2440.0 x 1220.0	31		92.281	0.890	82.130
MFC18-EBONY/01	MFC18-EBONY 3050.0 x 1220.0	8		29.768	5.760	171.464
MFC18-EBONY/02	MFC18-EBONY 2440.0 x 1220.0	6		17.861	5.210	93.055
MFC18-TEAK/01	MFC18-TEAK 2440.0 x 1220.0	4		11.907	3.110	37.031
MFC18-TEAK/02	MFC18-TEAK 3050.0 x 1525.0	6		27.907	3.110	86.792
X00125/0001	MFC18-TEAK 780.0 x 1011.0	1		0.789	1.550	1.222
MFC18-BEECH/01	MFC18-BEECH 3050.0 x 1525.0	5		23.256	3.210	74.653
MFC18-BEECH/02	MFC18-BEECH 2440.0 x 1220.0	21		62.513	2.960	185.038
MEL-CHIP-18MM/02	MEL-CHIP-18MM 2440.0 x 1220.0	6		17.861	3.140	56.083
MFC18-RED/02	MFC18-RED 2440.0 x 1220.0	3		8.930	4.820	43.045
		116		**374.191**		**1082.484**
Sundry	**Material**	**Quantity**	**Linear**	**Area**	**Cost**	**Total**
MIRROR-GLASS	MIRROR-GLASS	14			3.200	44.800
		14				**44.800**
Edging	**Description**	**Quantity**			**Cost/m**	**Total**
OAK-TAPE-22MM	Oak PVC Tape 22mm	47.460			0.840	39.866
EBONY-TAPE	Ebony PVC Tape 22mm	34.980			0.840	29.383
BEECH-TAPE-22MM	Beech PVC Tape 22mm	21.340			0.720	15.365

Review runs job costing

Charts and Analysis

Most reports include options to add a graphical view or chart of the report data. Up to 3 custom charts can be defined for each summary.



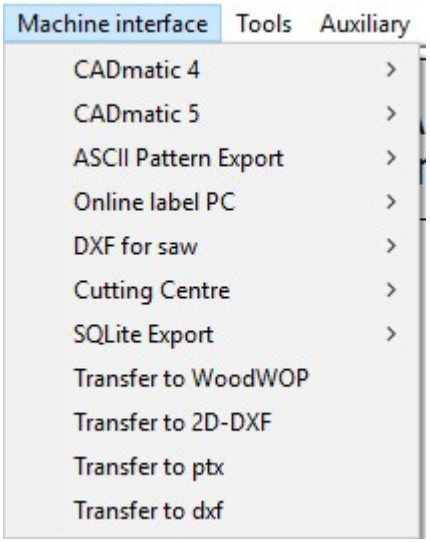
Review runs chart

The data to highlight in this way typically varies from company to company so there are full facilities for defining data to include and style of chart for each report in Review runs (*Settings - Chart settings*)

Saw Interface

Optimising data can be sent directly to many types of saw in proprietary formats. The Professional Optimiser supports most saw types including angular. The Standard Optimiser is typically for single axis beam saws.

Saw transfer parameters are used to set up the transfer for each saw. Users typically transfer to a handful of different saws, for example, two different Homag/Holzma saws.



Saw interface menu

The saw controllers supported are:-

Direct link – Homag/Holzma Topmatic/Micromatic
Module programmer
Online label PC
Homag/Holzma CADmatic 1
Homag/Holzma CADmatic 2
Selco CRLINK
Homag/Holzma CADmatic 3/4/5
Homag Sawtech (Espana)
Giben
Schelling Commander 2 and 4
SCM
SCM Seziona
ASCII/Unicode PTX
MDB PTX

This variety of saws includes many different types of saw including full support for Angular systems (Homag/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)

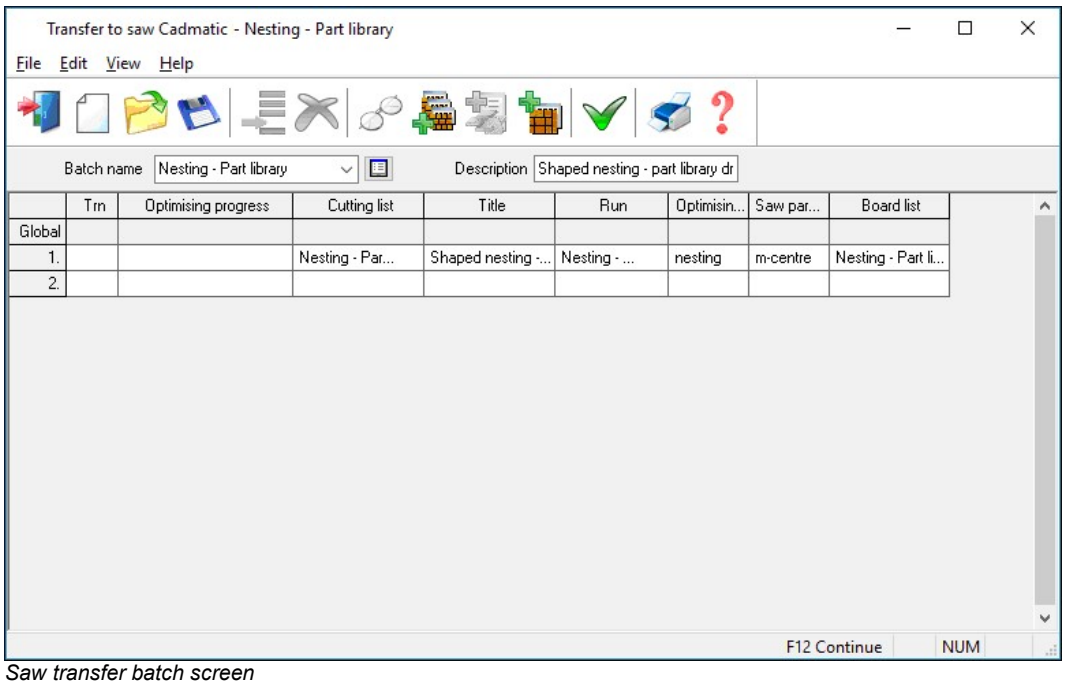
The pattern exchange format (PTX) is used by several manufacturers to control other machinery on the production line or send data back to the office.

Saw transfer process

Once the details for transfer to a specific saw are set up (Saw transfer parameters) the transfer process is straightforward.

Select the saw transfer option at the main menu

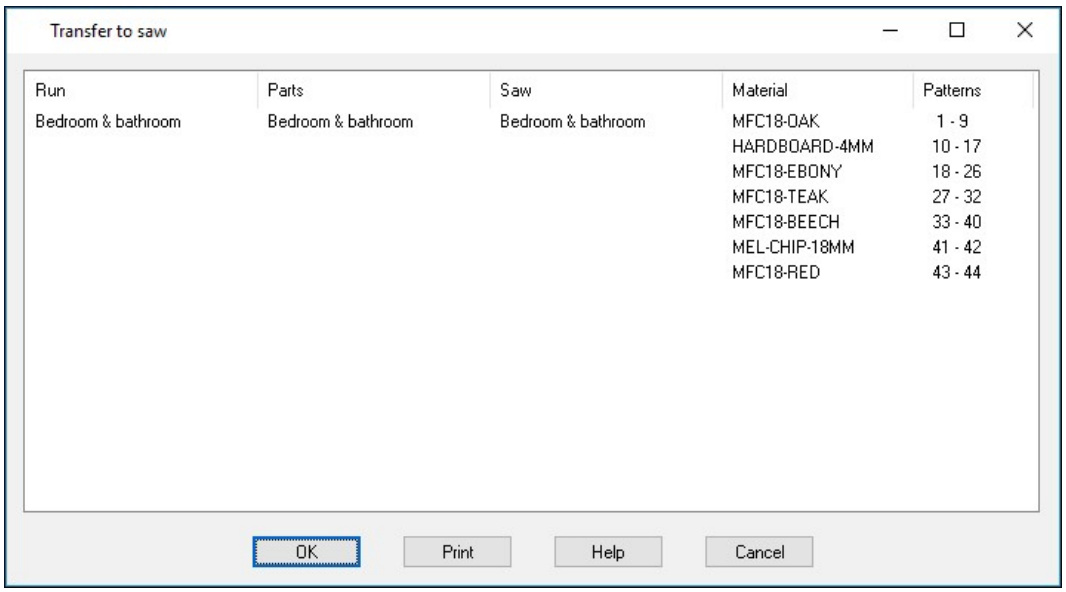
The program displays the current (last used) run or batch of runs.



Saw transfer batch screen

Select the 'Continue' option

The details of the data transferred are shown.



Saw transfer details

OK to confirm the transfer

Typically the data is sent to a folder on the Network (set by the system parameter: *Path for saw data*). A separate program from the manufacturer then runs automatically to send the data to the saw. This is all set up and integrated via the *Saw Transfer parameters.*

Batches

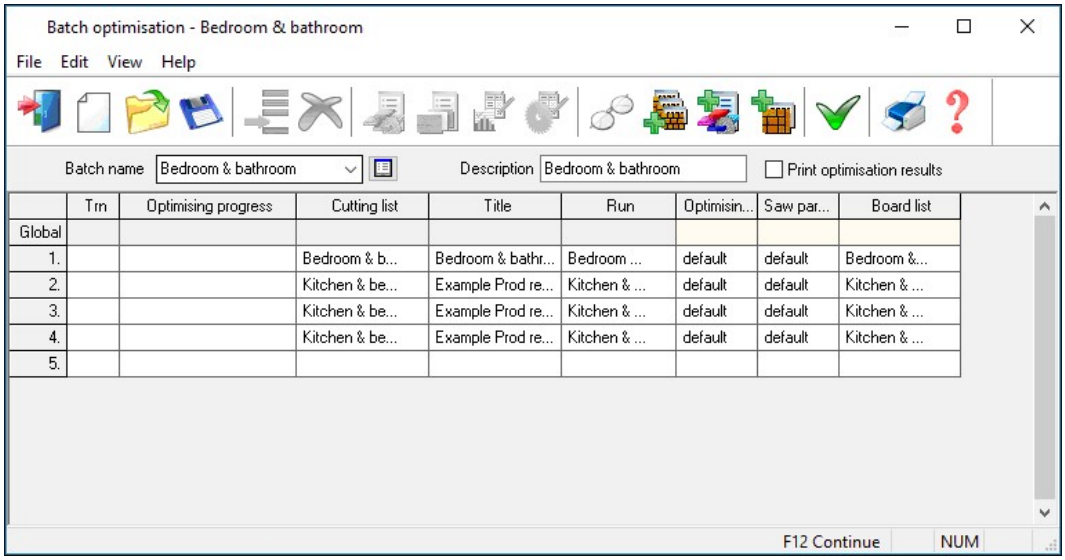
It is often useful to optimise more than one job at a time, for example, to process a set of smaller jobs or even to compare the same data optimised with several different settings in the parameter files. The following example illustrates this.

At the main screen:-

● Select: **Review runs - Batch optimisation**

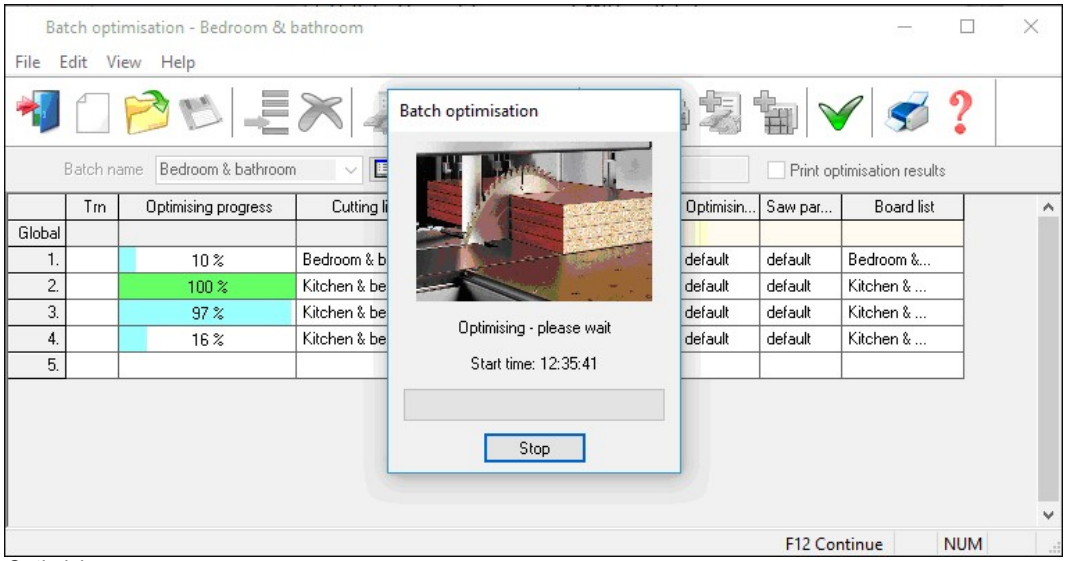
The program displays the batch screen. Enter the cutting lists to optimise. Parameters can be varied by choosing different parameter files in the 'Optimising parameter' and 'Saw parameter' columns as required.

Select the 'Continue' option



Multiple batch

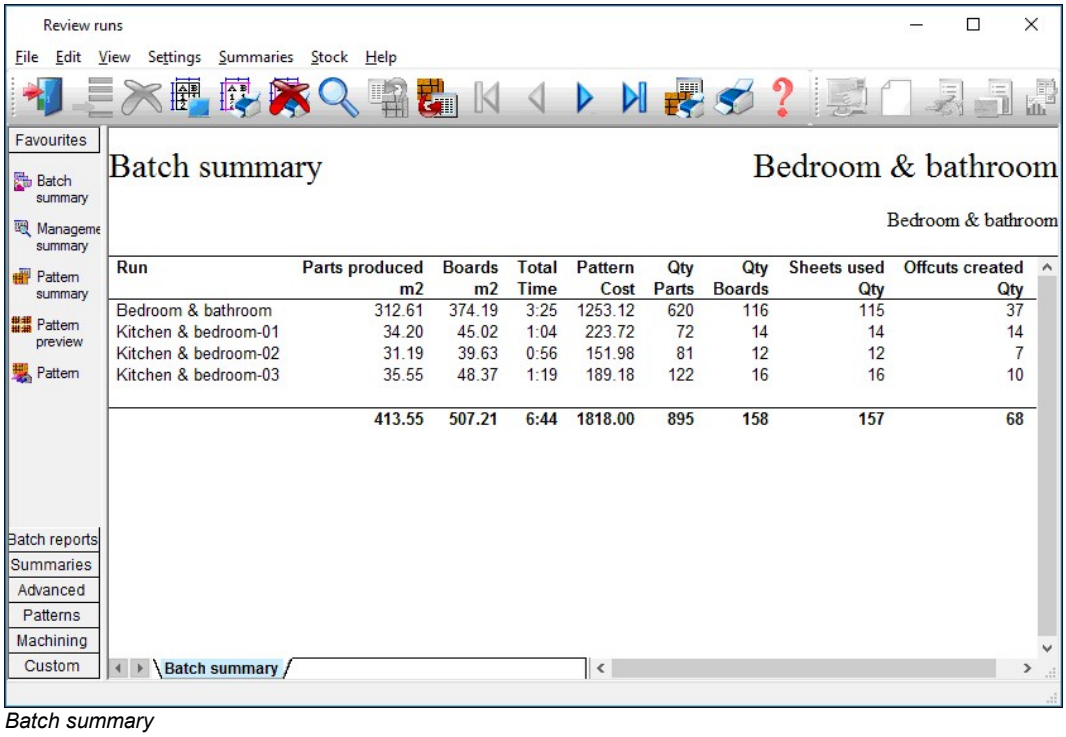
The progress of the optimising is shown in the column: *Optimising progress*



Optimising progress

When all runs are complete the program moves to the 'Batch summary' in Review runs.

This shows a one line summary for each job.

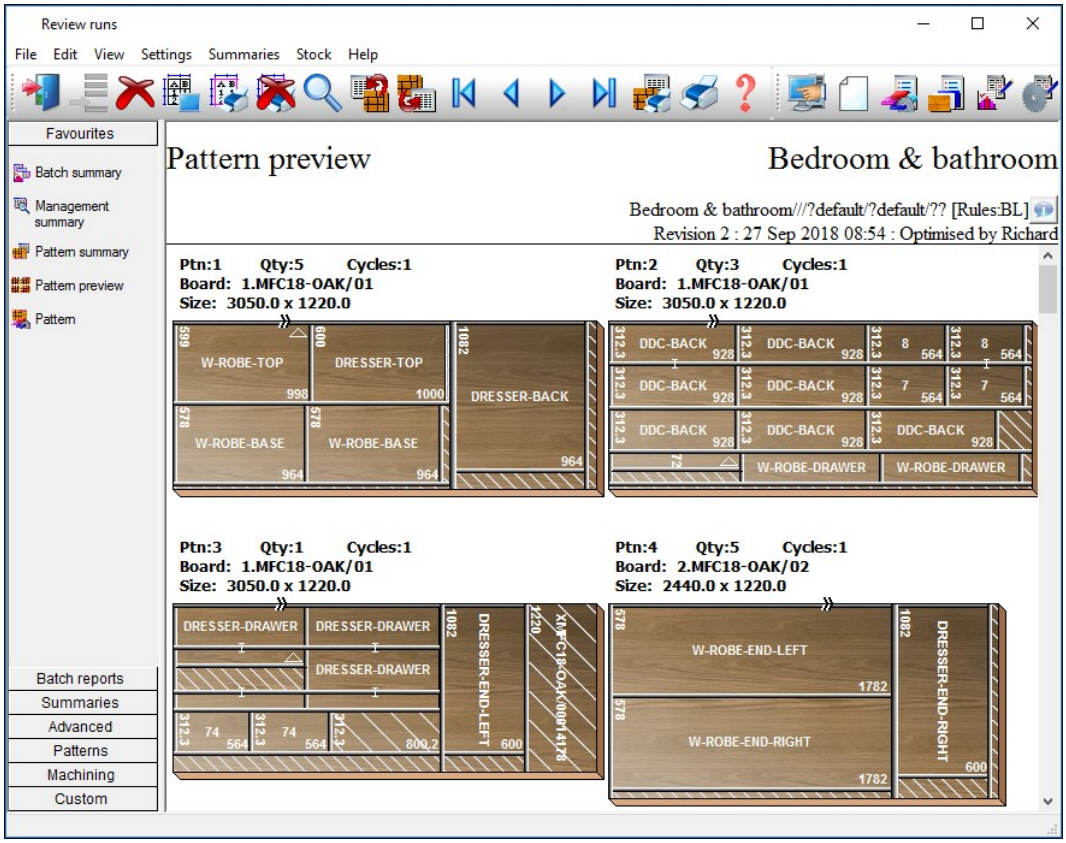


Run	Parts produced m2	Boards m2	Total Time	Pattern Cost	Qty Parts	Qty Boards	Sheets used Qty	Offcuts created Qty
Bedroom & bathroom	312.61	374.19	3:25	1253.12	620	116	115	37
Kitchen & bedroom-01	34.20	45.02	1:04	223.72	72	14	14	14
Kitchen & bedroom-02	31.19	39.63	0:56	151.98	81	12	12	7
Kitchen & bedroom-03	35.55	48.37	1:19	189.18	122	16	16	10
	413.55	**507.21**	**6:44**	**1818.00**	**895**	**158**	**157**	**68**

Batch summary

In this example the 'Runs' pane is switched on. This give a tree of all the batches and run in the User profile; so it is easy to quickly move between runs - this can be useful when quickly comparing one result with another.

- Select a run and choose a summary to move to the details of each run.



Runs pane - Multiple batch

In the above example the 'Runs pane' is turned on - this makes it easy to switch between optimised batches and runs.

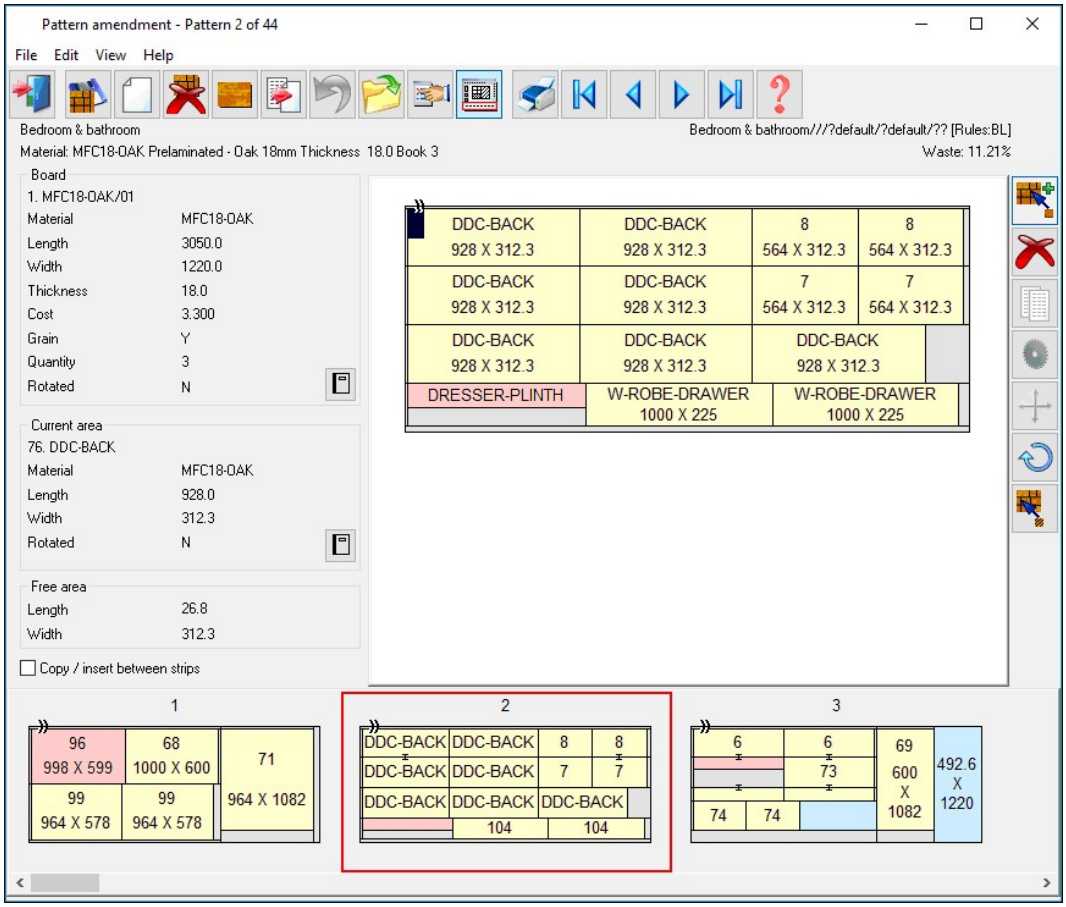
Pattern editor

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

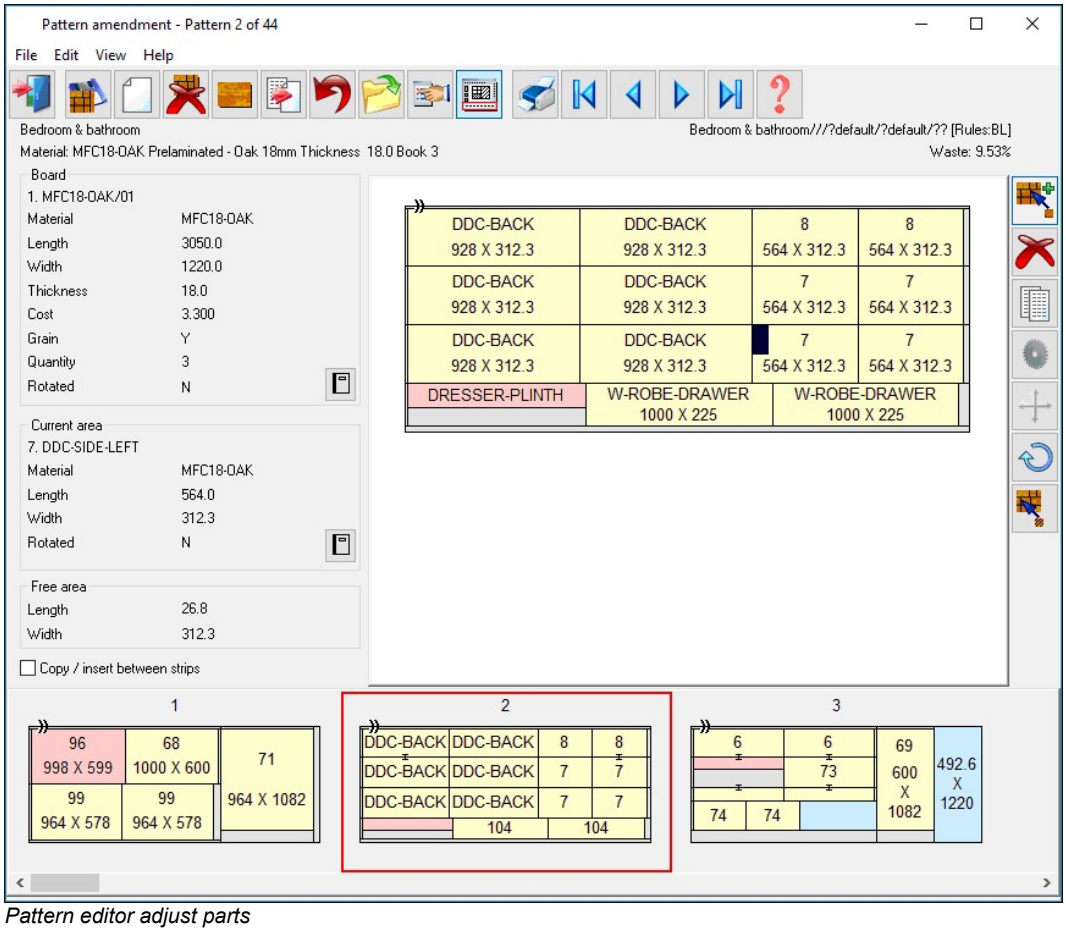
- Click on any pattern to move to the editor.



Pattern editor

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 parts in a pattern and/or the run quantities can be changed. In the following example a part is deleted and a run of 2 of a different part have been added.



Pattern editor adjust parts

The editor is easy to use and acts in a similar way to a graphics program. At the right (not shown above) are various editing tools and at the left a set of panels for the board and part properties.

Pattern Library

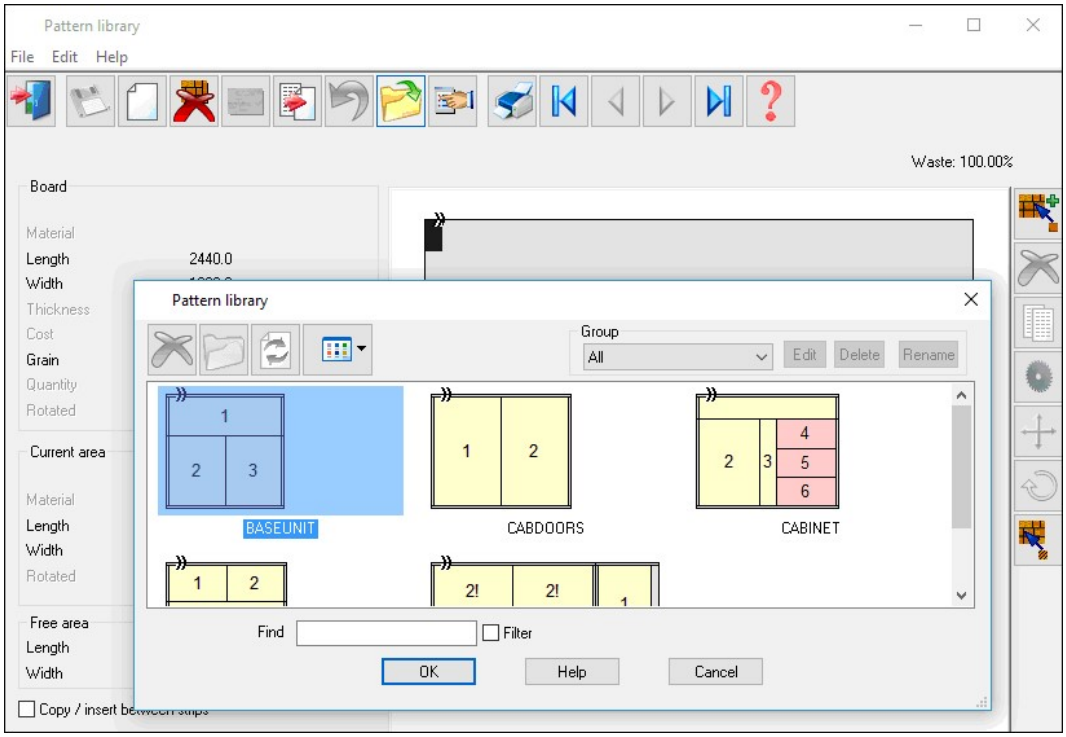
Quite often the pattern editor is used to adjust patterns for specialist work where the exact pattern or amount of waste is important. Amended patterns can be stored for future use in the Pattern library.

The *Pattern library* is a separate store of patterns and templates for patterns. A common use of the templates is for *Grain matching***.** At the main screen:-

- Select: **Libraries - Pattern library**

The screen moves to the Pattern library screen. The pattern library can be used to create new templates and view existing templates.

Click on the list button for a list of the current patterns in the library

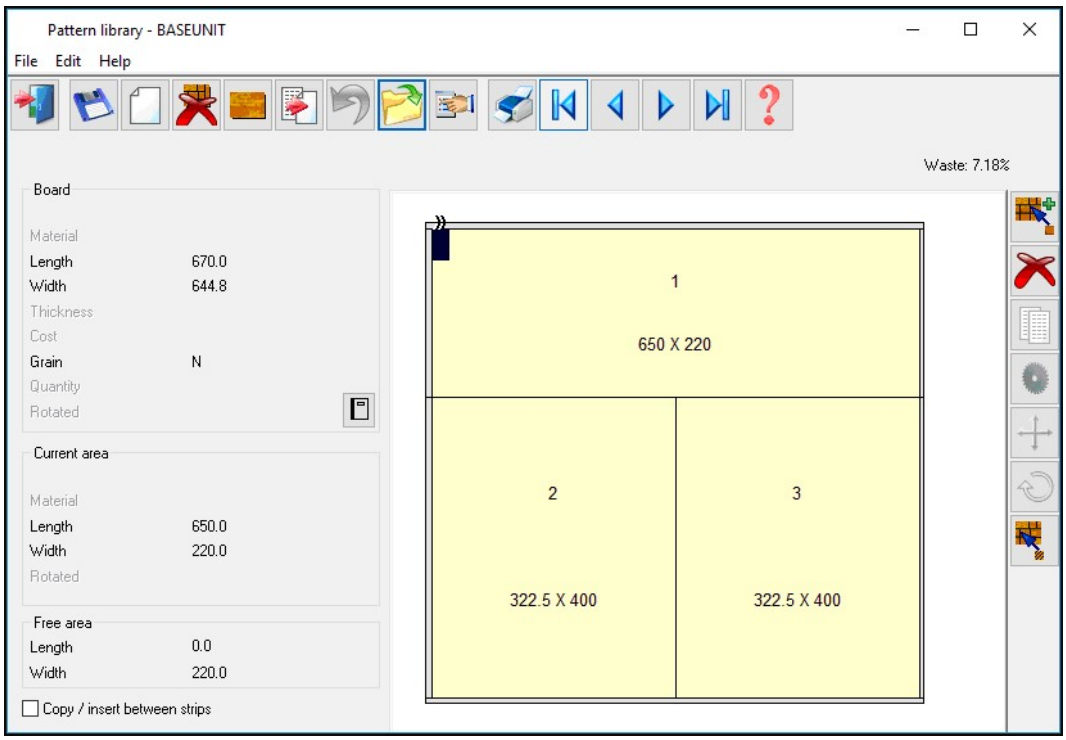


Pattern editor templates

Grain matching

The optimisers include a grain matching option so that parts that are specified for grain matching are kept together in the pattern layouts during optimisation; this is often necessary for items such as drawer fronts and cabinet doors with grained material.

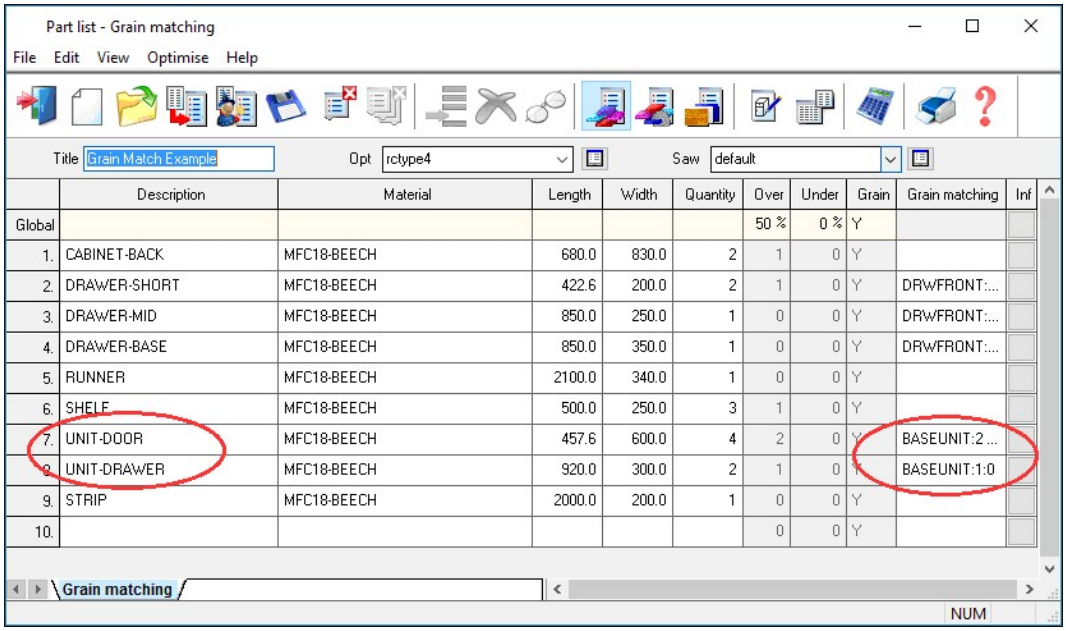
To work in this way use the *Pattern library* to create a template the parts must fit into. This is just a pattern like any other pattern but it is not associated with any particular board size or run. It describes the layout of the parts.



Pattern library - template for grain matching

The template is assigned to the parts as each part is set up in the Part list or Part library.

The information box parameter: *Grain matching* is used for this and it is set up as one of the extra part list fields.



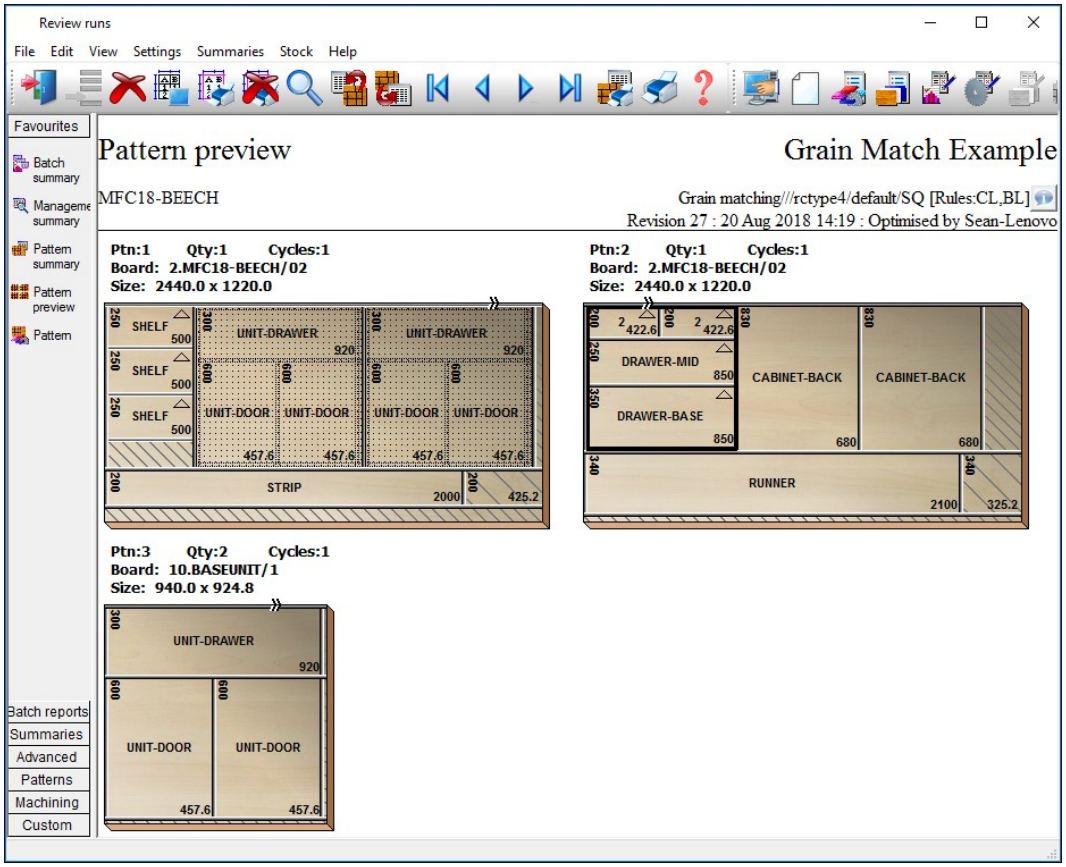
	Description	Material	Length	Width	Quantity	Over	Under	Grain	Grain matching	Inf
Global						50 %	0 %	Y		
1.	CABINET-BACK	MFC18-BEECH	680.0	830.0	2	1	0	Y		
2.	DRAWER-SHORT	MFC18-BEECH	422.6	200.0	2	1	0	Y	DRWFRONT:...	
3.	DRAWER-MID	MFC18-BEECH	850.0	250.0	1	0	0	Y	DRWFRONT:...	
4.	DRAWER-BASE	MFC18-BEECH	850.0	350.0	1	0	0	Y	DRWFRONT:...	
5.	RUNNER	MFC18-BEECH	2100.0	340.0	1	0	0	Y		
6.	SHELF	MFC18-BEECH	500.0	250.0	3	1	0	Y		
7.	UNIT-DOOR	MFC18-BEECH	457.6	600.0	4	2	0	Y	BASEUNIT:2 ...	
8.	UNIT-DRAWER	MFC18-BEECH	920.0	300.0	2	1	0	Y	BASEUNIT:1:0	
9.	STRIP	MFC18-BEECH	2000.0	200.0	1	0	0	Y		
10.						0	0	Y		

Part list - assign parts to template

Clicking on the 'Grain matching' template pops up a dialog to help assign the parts to the correct position in the template. The result is a list of the assignments in the Grain matching column (as above).

Note - part size does not have to match the size in the template only the layout matters. If there are cabinet doors of different sizes in the list they can all be assigned to the same template.

The pattern below shows how the optimisation allows for a set of parts (drawer fronts, doors …) arranged in a fixed templates from the pattern library so that the grain matches across the parts.



Pattern - grain match

In this case the first pattern (with the parts shaded) is cut at the saw and in the second pattern (with the bold outline) the parts in the template are cut as a single part and then cut separately.

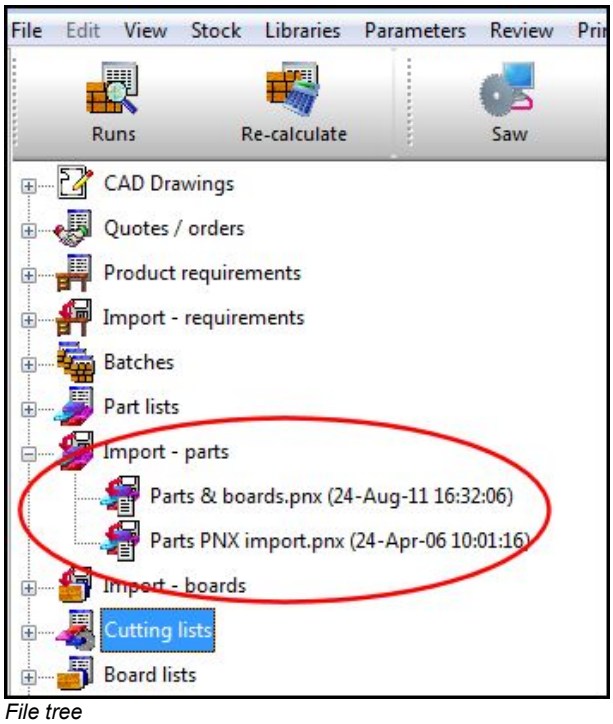
The settings for the template determine how the template and parts are cut in the optimising run.

Import and export cutting data

These days, especially for larger orders, the cutting list may be generated in other systems. The Professional and Standard optimisers include a variety of options for importing and exporting data from the program.

To import a part list, at the Main screen:-

- Open the File tree
- Select the Import area



File tree

- Click on a part list to import

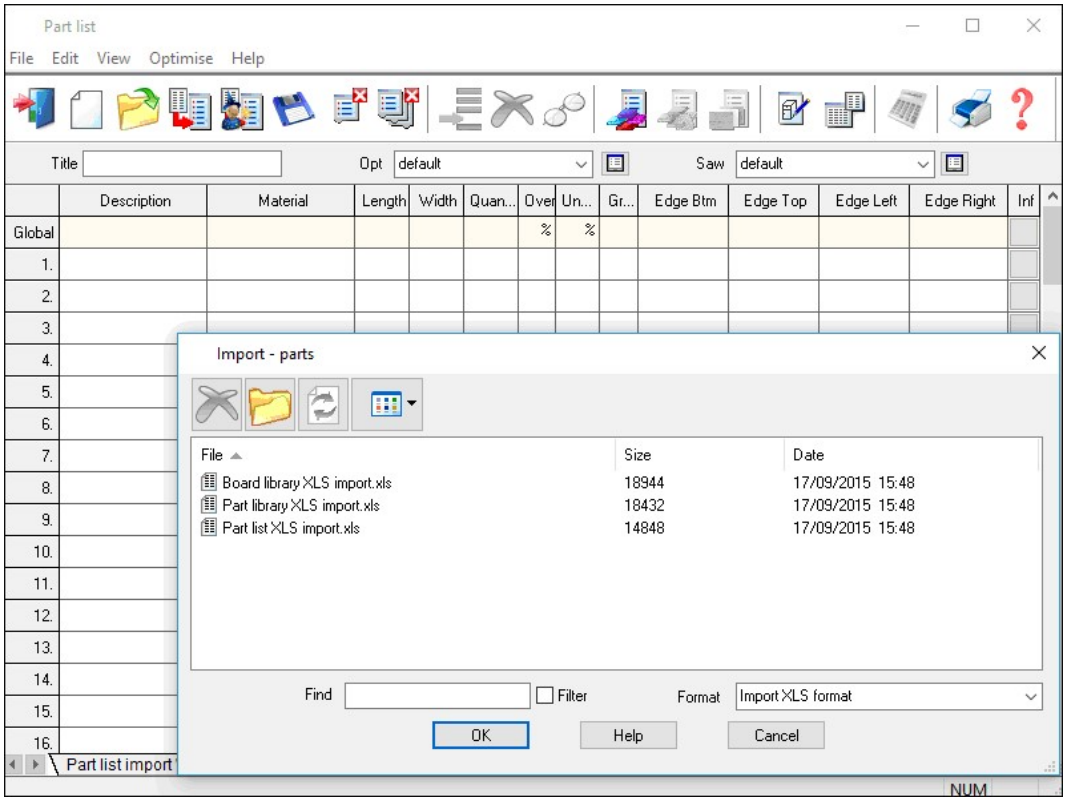
The format of the import files can be customised or set as one of the standard options.

Part list order – ASCII/Unicode CSV (PNX)
Cabinet Vision format
Product Planner format
Code and quantity – ASCII/Unicode CSV (PNX)
Batch - part list order (BTX & PNX)
Batch - Code and quantity (BTX & PNX)
User defined order – ASCII/Unicode CSV
Batch - user defined order (BTX)
Parts & boards – ASCII/Unicode CSV (PTX)
Parts & boards - Access (MDB)
User defined order - Excel (XLS)
User defined order - Excel (XLSX)

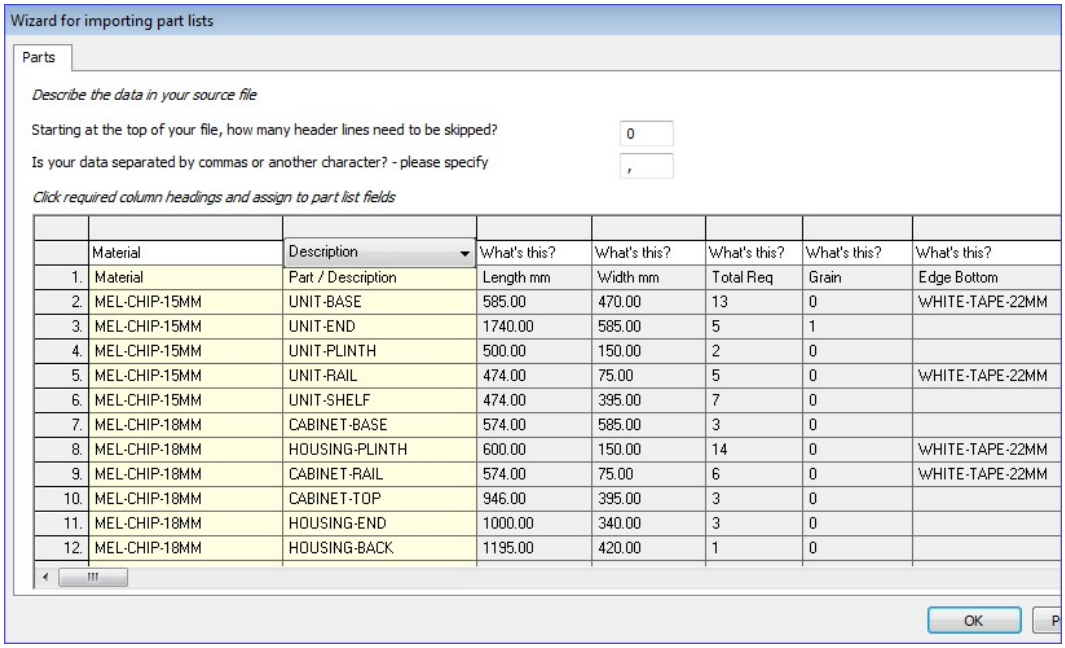
There are a variety of options for importing and exporting from the program to work with other software - from importing part lists or product requirements to import and export of full patterns.

Import at the part list

At the part list data can be imported directly (*File* – *Import*)

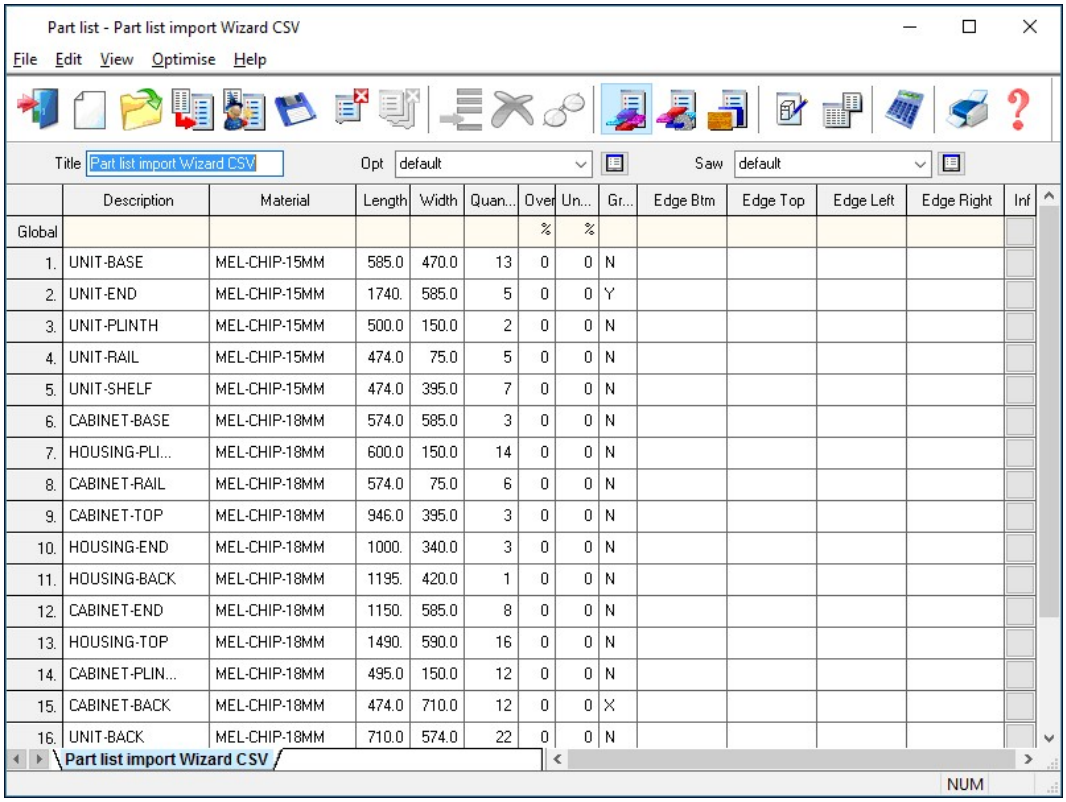


Where the format of the external file is not known or needs to be set up – use the Import Wizard (*File – Import Wizard*).



	Material	Description	What's this?	What's this?	What's this?	What's this?	What's this?
1.	Material	Part / Description	Length mm	Width mm	Total Req	Grain	Edge Bottom
2.	MEL-CHIP-15MM	UNIT-BASE	585.00	470.00	13	0	WHITE-TAPE-22MM
3.	MEL-CHIP-15MM	UNIT-END	1740.00	585.00	5	1	
4.	MEL-CHIP-15MM	UNIT-PLINTH	500.00	150.00	2	0	
5.	MEL-CHIP-15MM	UNIT-RAIL	474.00	75.00	5	0	WHITE-TAPE-22MM
6.	MEL-CHIP-15MM	UNIT-SHELF	474.00	395.00	7	0	
7.	MEL-CHIP-18MM	CABINET-BASE	574.00	585.00	3	0	
8.	MEL-CHIP-18MM	HOUSING-PLINTH	600.00	150.00	14	0	WHITE-TAPE-22MM
9.	MEL-CHIP-18MM	CABINET-RAIL	574.00	75.00	6	0	WHITE-TAPE-22MM
10.	MEL-CHIP-18MM	CABINET-TOP	946.00	395.00	3	0	
11.	MEL-CHIP-18MM	HOUSING-END	1000.00	340.00	3	0	
12.	MEL-CHIP-18MM	HOUSING-BACK	1195.00	420.00	1	0	

The program imports data from any CSV (comma separated values) files and Excel files. You can then work through the fields and assign them to the correct Part list fields name by selecting the field name on the 'What's this' button.



	Description	Material	Length	Width	Quan...	Over	Un...	Gr...	Edge Btm	Edge Top	Edge Left	Edge Right	Inf
Global						%	%						
1.	UNIT-BASE	MEL-CHIP-15MM	585.0	470.0	13	0	0	N					
2.	UNIT-END	MEL-CHIP-15MM	1740.	585.0	5	0	0	Y					
3.	UNIT-PLINTH	MEL-CHIP-15MM	500.0	150.0	2	0	0	N					
4.	UNIT-RAIL	MEL-CHIP-15MM	474.0	75.0	5	0	0	N					
5.	UNIT-SHELF	MEL-CHIP-15MM	474.0	395.0	7	0	0	N					
6.	CABINET-BASE	MEL-CHIP-18MM	574.0	585.0	3	0	0	N					
7.	HOUSING-PLI...	MEL-CHIP-18MM	600.0	150.0	14	0	0	N					
8.	CABINET-RAIL	MEL-CHIP-18MM	574.0	75.0	6	0	0	N					
9.	CABINET-TOP	MEL-CHIP-18MM	946.0	395.0	3	0	0	N					
10.	HOUSING-END	MEL-CHIP-18MM	1000.	340.0	3	0	0	N					
11.	HOUSING-BACK	MEL-CHIP-18MM	1195.	420.0	1	0	0	N					
12.	CABINET-END	MEL-CHIP-18MM	1150.	585.0	8	0	0	N					
13.	HOUSING-TOP	MEL-CHIP-18MM	1490.	590.0	16	0	0	N					
14.	CABINET-PLIN...	MEL-CHIP-18MM	495.0	150.0	12	0	0	N					
15.	CABINET-BACK	MEL-CHIP-18MM	474.0	710.0	12	0	0	X					
16.	UNIT-BACK	MEL-CHIP-18MM	710.0	574.0	22	0	0	N					

Note – you can also cut and paste directly from a spreadsheet to the part list – for example where the spreadsheet has the data in the same order and format as the part list.

Export reports

For larger runs it is often useful to export run data (summaries) to an external file so that the data can be used in an external system or in a spread sheet, for example, Excel. To do this:-

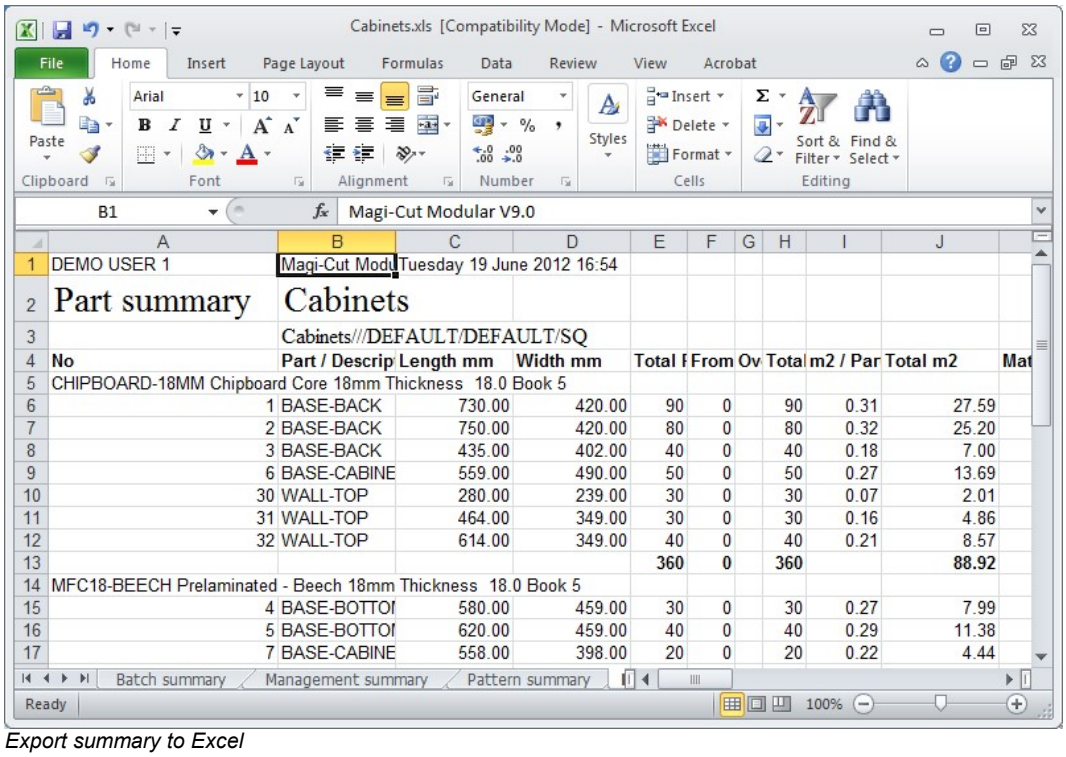
- Move to any summary

- Select: **File - Export**

Choose one of the export formats:-

ASCII
XLS
XLXS

In the following example a Part list summary was exported to Excel.



Export summary to Excel

Pattern Exchange format (PTX)

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/Unicode 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).

Professional optimiser - other features

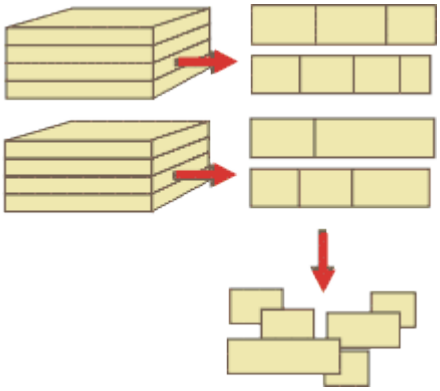
The Professional optimiser is designed for larger volumes of parts - up to the very largest; it balances the cutting time and costs against material cost to produce an effective solution.

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).



Strip production

- 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.

Using Information boxes

A unique feature of the program is the ability to add extra custom and/or pre-defined fields to the part list; called 'Information boxes'. These not only provide extra information for each part (for example for use on labels) but are also used to extend the capabilities of optimising to take account of many production constraints or requirements. For example:-

- Allow for grain matching of parts
- Include custom information on parts
- Create calculated fields or codes for export
- Allow the use of alternative or substitute materials when optimising

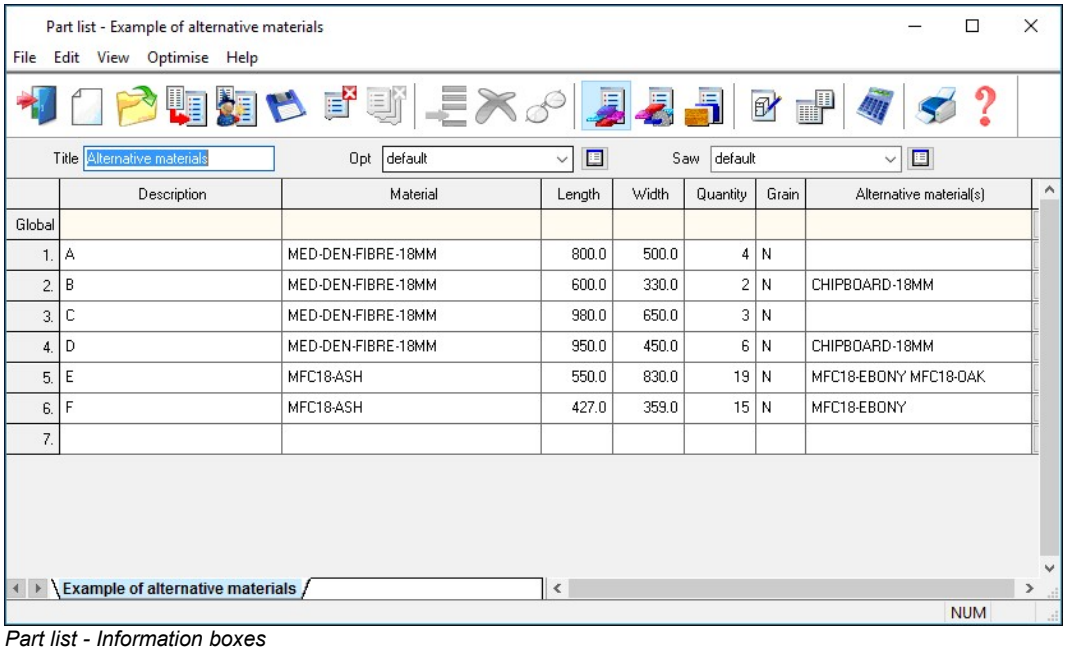
- Set a cutting priority for each part or group of parts
- Use longer edging codes
- Deal with 'one off' production rules

One example (see above) is the use of the ‘Grain matching’ information box.

Alternative materials (Information boxes)

An example of the use of information boxes is in providing the option for optimising to use alternative or substitute materials when creating cutting patterns. These may, for example, be common parts, or dividers or fillers. To do this one of the pre-defined information boxes is added to the part list (*Parameters - Information boxes*)

The information box appears on the part list as one of the fields.

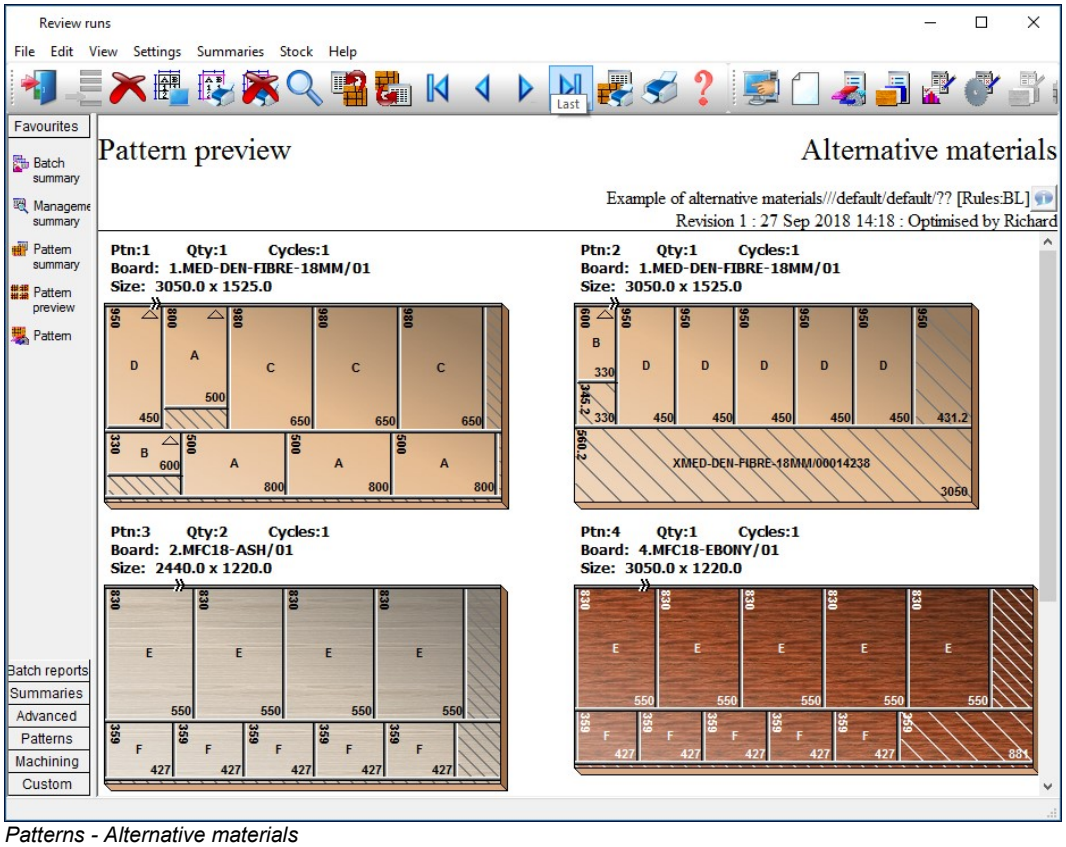


	Description	Material	Length	Width	Quantity	Grain	Alternative material(s)
Global							
1.	A	MED-DEN-FIBRE-18MM	800.0	500.0	4	N	
2.	B	MED-DEN-FIBRE-18MM	600.0	330.0	2	N	CHIPBOARD-18MM
3.	C	MED-DEN-FIBRE-18MM	980.0	650.0	3	N	
4.	D	MED-DEN-FIBRE-18MM	950.0	450.0	6	N	CHIPBOARD-18MM
5.	E	MFC18-ASH	550.0	830.0	19	N	MFC18-EBONY MFC18-OAK
6.	F	MFC18-ASH	427.0	359.0	15	N	MFC18-EBONY
7.							

Part list - Information boxes

In this case the possible alternative materials are added to the Information box.

On optimising the program can place parts G, H, D, B on alternative materials if there is a shortage of the first material. In this case G and H were place on the alternative MFC18-EBONY.



Patterns - Alternative materials

Cutting list rules (Information boxes)

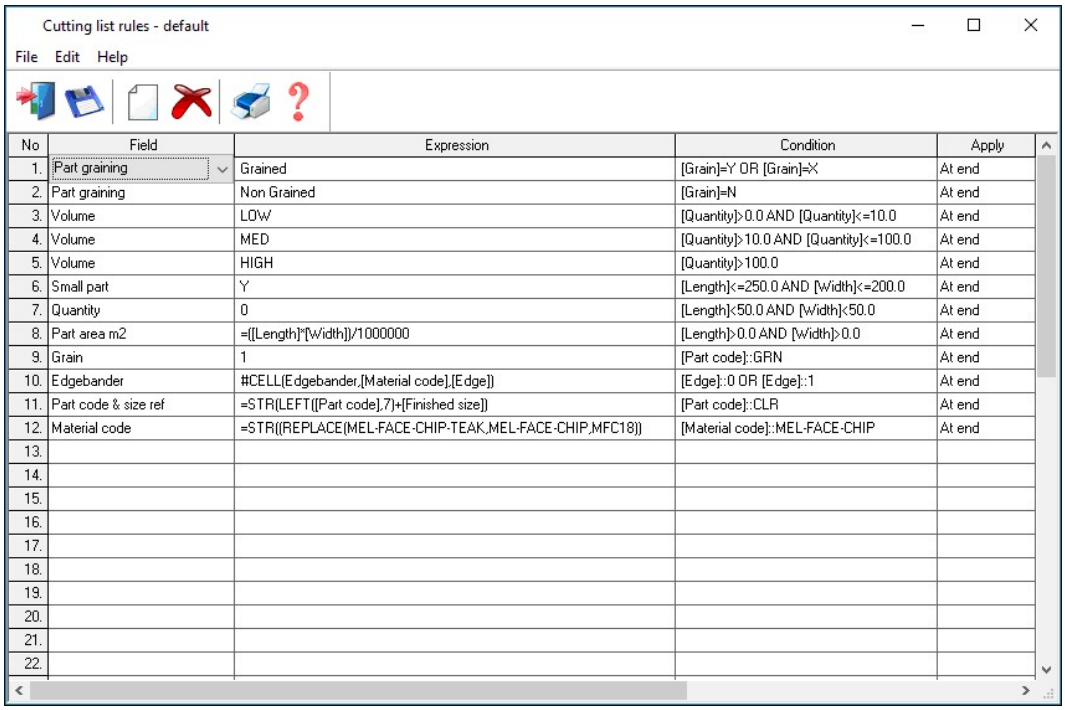
Very often later stages of production need extra information about the part to control the production process. For example, information on part labels, bar codes or other data for an edgebander. The part list can be extended with extra custom fields to allow for this. For example we might require the following extra data.

- Part area in M2 to export to a database
- Label saying whether a part is grained or not
- A detailed reference for the part label

Custom fields are added to the part list via the Information box parameters. The result is extra fields in the part list. For example:-

Part graining
Part area
Part code & size

The cutting list rules are set to place the data in the custom fields using the *'Cutting list rules'* library (*Main screen - Libraries - Cutting list rules*)

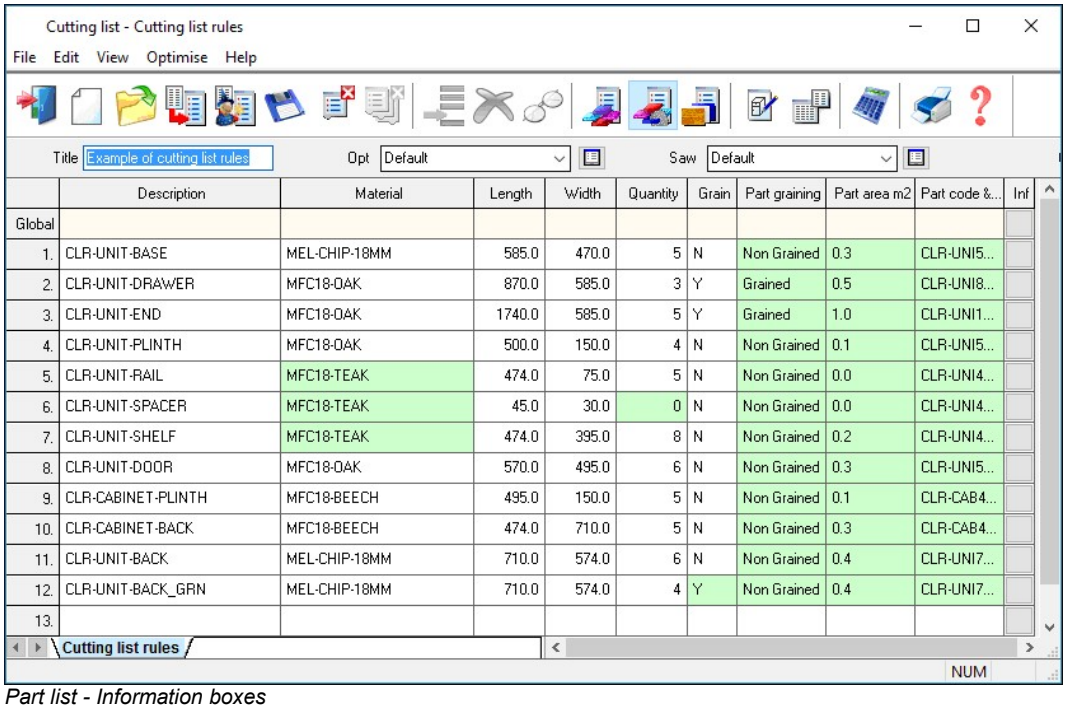


No	Field	Expression	Condition	Apply
1.	Part graining	Grained	[Grain]=Y OR [Grain]=X	At end
2.	Part graining	Non Grained	[Grain]=N	At end
3.	Volume	LOW	[Quantity]>0.0 AND [Quantity]<=10.0	At end
4.	Volume	MED	[Quantity]>10.0 AND [Quantity]<=100.0	At end
5.	Volume	HIGH	[Quantity]>100.0	At end
6.	Small part	Y	[Length]<=250.0 AND [Width]<=200.0	At end
7.	Quantity	0	[Length]<50.0 AND [Width]<50.0	At end
8.	Part area m2	=([Length]*[Width])/1000000	[Length]>0.0 AND [Width]>0.0	At end
9.	Grain	1	[Part code]::GRN	At end
10.	Edgebander	#CELL(Edgebander,[Material code],[Edge])	[Edge]::0 OR [Edge]::1	At end
11.	Part code & size ref	=STR(LEFT([Part code],7)+[Finished size])	[Part code]::CLR	At end
12.	Material code	=STR((REPLACE(MEL-FACE-CHIP-TEAK,MEL-FACE-CHIP,MFC18))	[Material code]::MEL-FACE-CHIP	At end
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				

Cutting list - rules

The data for these fields is calculated before optimising. The results are shown in the 'Cutting list' (this is the adjusted part list used for optimising).

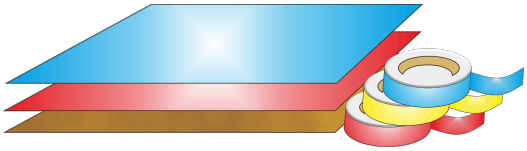
Click on the Cutting list symbol



	Description	Material	Length	Width	Quantity	Grain	Part graining	Part area m2	Part code &...	Inf
Global										
1.	CLR-UNIT-BASE	MEL-CHIP-18MM	585.0	470.0	5	N	Non Grained	0.3	CLR-UNI5...	
2.	CLR-UNIT-DRAWER	MFC18-OAK	870.0	585.0	3	Y	Grained	0.5	CLR-UNI8...	
3.	CLR-UNIT-END	MFC18-OAK	1740.0	585.0	5	Y	Grained	1.0	CLR-UNI1...	
4.	CLR-UNIT-PLINTH	MFC18-OAK	500.0	150.0	4	N	Non Grained	0.1	CLR-UNI5...	
5.	CLR-UNIT-RAIL	MFC18-TEAK	474.0	75.0	5	N	Non Grained	0.0	CLR-UNI4...	
6.	CLR-UNIT-SPACER	MFC18-TEAK	45.0	30.0	0	N	Non Grained	0.0	CLR-UNI4...	
7.	CLR-UNIT-SHELF	MFC18-TEAK	474.0	395.0	8	N	Non Grained	0.2	CLR-UNI4...	
8.	CLR-UNIT-DOOR	MFC18-OAK	570.0	495.0	6	N	Non Grained	0.3	CLR-UNI5...	
9.	CLR-CABINET-PLINTH	MFC18-BEECH	495.0	150.0	5	N	Non Grained	0.1	CLR-CAB4...	
10.	CLR-CABINET-BACK	MFC18-BEECH	474.0	710.0	5	N	Non Grained	0.3	CLR-CAB4...	
11.	CLR-UNIT-BACK	MEL-CHIP-18MM	710.0	574.0	6	N	Non Grained	0.4	CLR-UNI7...	
12.	CLR-UNIT-BACK_GRN	MEL-CHIP-18MM	710.0	574.0	4	Y	Non Grained	0.4	CLR-UNI7...	
13.										

Part list - Information boxes

4. Edges & Laminating

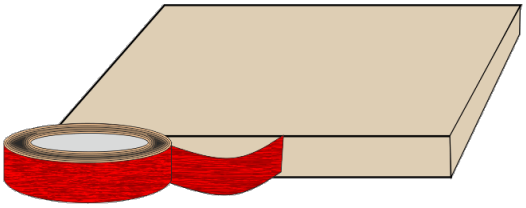


There is a full set of options to deal with edged, trimmed and laminated parts. A wide variety of edging methods are covered:-

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

Edging

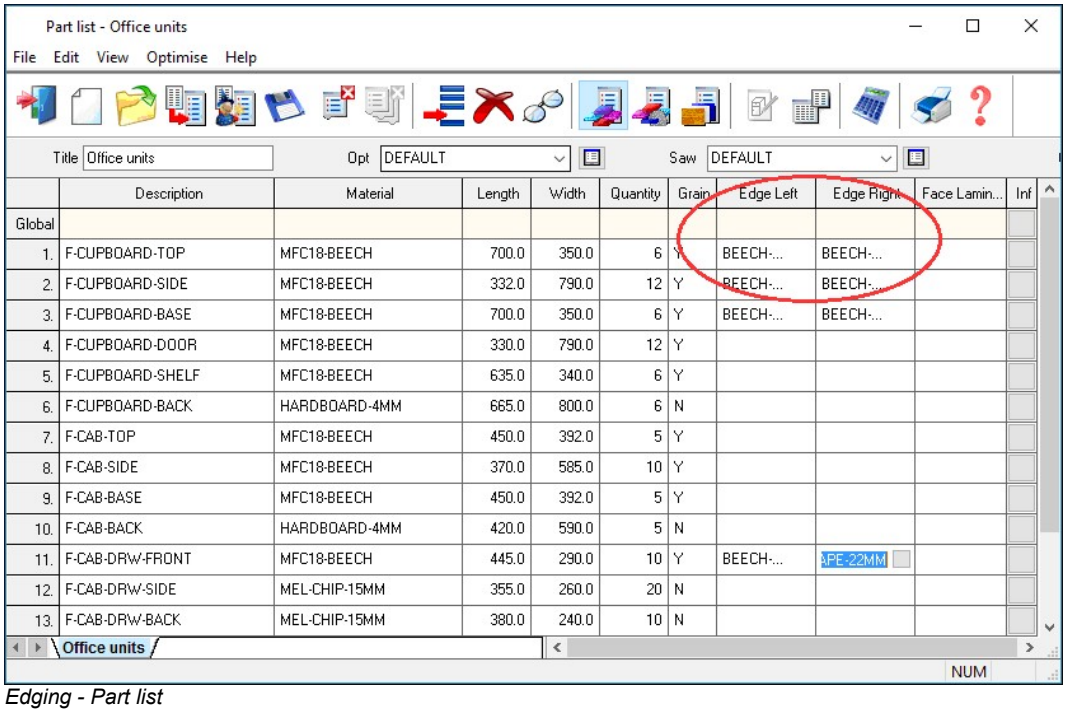
The edging requirement is set at the part list and can be set for each part. The program automatically calculates the correct cutting sizes.



Edging

Sizes are entered (or imported) via the Part list.

These are typically the finished sizes but where there is edging and laminating the finished size has to be adjusted to the cut size before being sent to the saw.



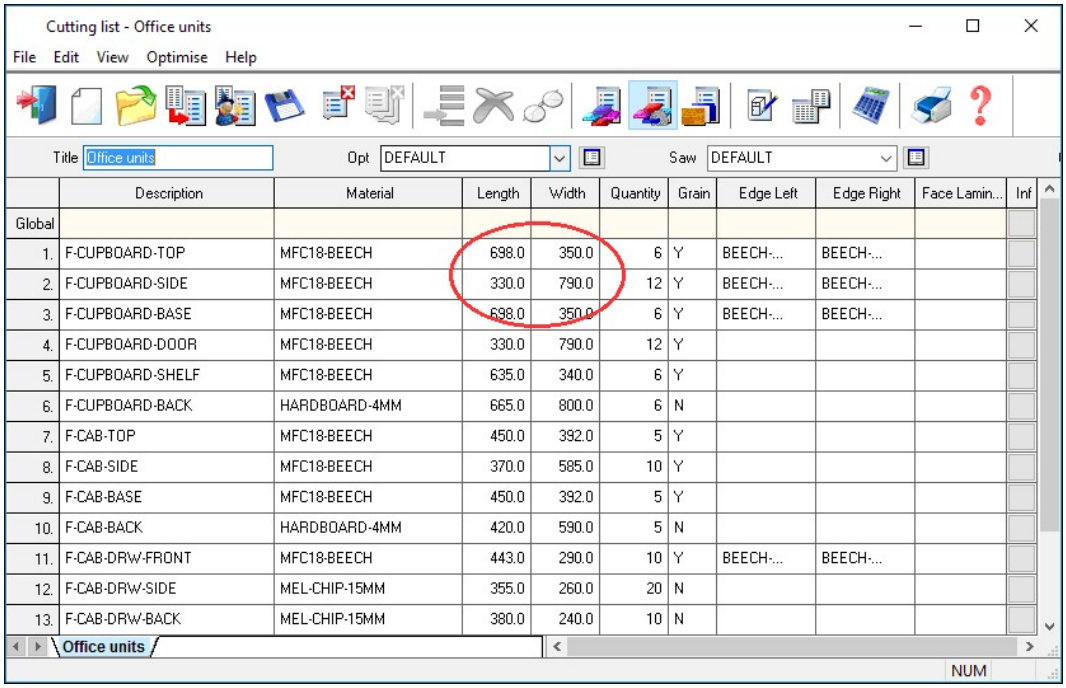
	Description	Material	Length	Width	Quantity	Grain	Edge Left	Edge Right	Face Lamin...	Inf
Global										
1.	F-CUPBOARD-TOP	MFC18-BEECH	700.0	350.0	6	Y	BEECH-...	BEECH-...		
2.	F-CUPBOARD-SIDE	MFC18-BEECH	332.0	790.0	12	Y	BEECH-...	BEECH-...		
3.	F-CUPBOARD-BASE	MFC18-BEECH	700.0	350.0	6	Y	BEECH-...	BEECH-...		
4.	F-CUPBOARD-DOOR	MFC18-BEECH	330.0	790.0	12	Y				
5.	F-CUPBOARD-SHELF	MFC18-BEECH	635.0	340.0	6	Y				
6.	F-CUPBOARD-BACK	HARDBOARD-4MM	665.0	800.0	6	N				
7.	F-CAB-TOP	MFC18-BEECH	450.0	392.0	5	Y				
8.	F-CAB-SIDE	MFC18-BEECH	370.0	585.0	10	Y				
9.	F-CAB-BASE	MFC18-BEECH	450.0	392.0	5	Y				
10.	F-CAB-BACK	HARDBOARD-4MM	420.0	590.0	5	N				
11.	F-CAB-DRW-FRONT	MFC18-BEECH	445.0	290.0	10	Y	BEECH-...	APE:22MM		
12.	F-CAB-DRW-SIDE	MEL-CHIP-15MM	355.0	260.0	20	N				
13.	F-CAB-DRW-BACK	MEL-CHIP-15MM	380.0	240.0	10	N				

Edging - Part list

A set of extra fields (called Information boxes) extend the Part list to allow for the entry of the edging code for each edge of each part. For example, in the above example items such as drawers and doors have edging material on some of the edges.

Click on the cutting list symbol

The correct cutting sizes are produced automatically.



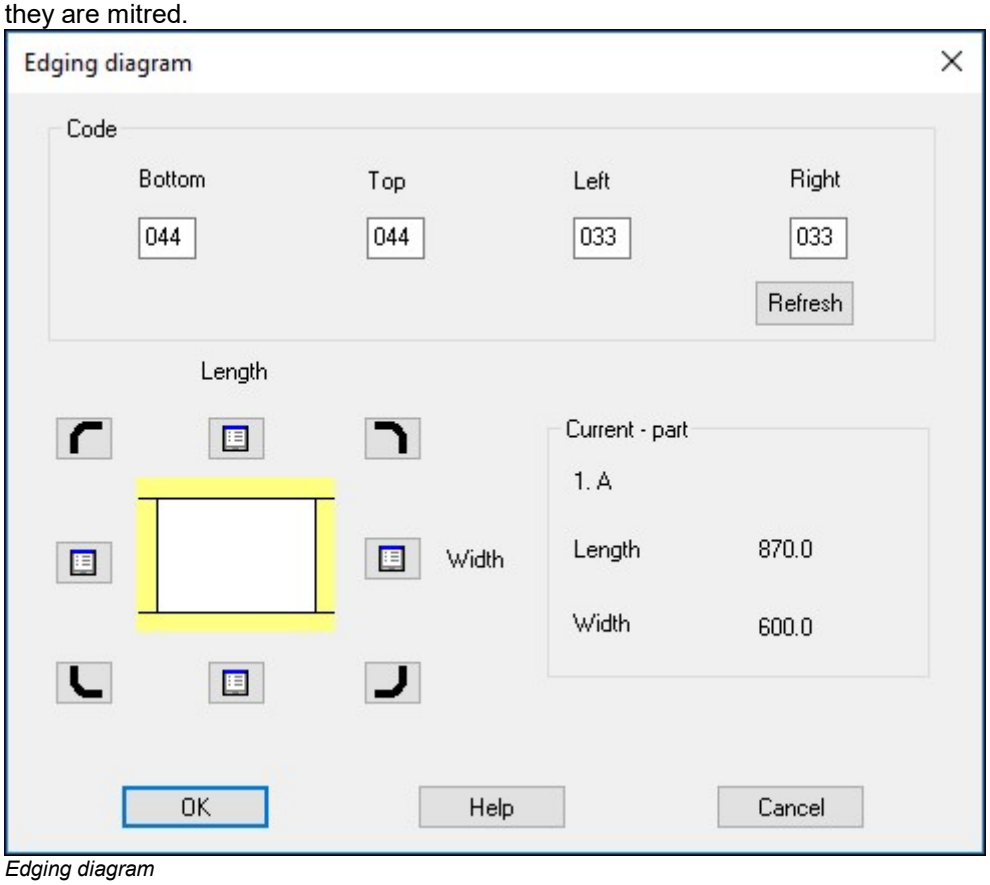
	Description	Material	Length	Width	Quantity	Grain	Edge Left	Edge Right	Face Lamin...	Inf
Global										
1.	F-CUPBOARD-TOP	MFC18-BEECH	698.0	350.0	6	Y	BEECH-...	BEECH-...		
2.	F-CUPBOARD-SIDE	MFC18-BEECH	330.0	790.0	12	Y	BEECH-...	BEECH-...		
3.	F-CUPBOARD-BASE	MFC18-BEECH	698.0	350.0	6	Y	BEECH-...	BEECH-...		
4.	F-CUPBOARD-DOOR	MFC18-BEECH	330.0	790.0	12	Y				
5.	F-CUPBOARD-SHELF	MFC18-BEECH	635.0	340.0	6	Y				
6.	F-CUPBOARD-BACK	HARDBOARD-4MM	665.0	800.0	6	N				
7.	F-CAB-TOP	MFC18-BEECH	450.0	392.0	5	Y				
8.	F-CAB-SIDE	MFC18-BEECH	370.0	585.0	10	Y				
9.	F-CAB-BASE	MFC18-BEECH	450.0	392.0	5	Y				
10.	F-CAB-BACK	HARDBOARD-4MM	420.0	590.0	5	N				
11.	F-CAB-DRW-FRONT	MFC18-BEECH	443.0	290.0	10	Y	BEECH-...	BEECH-...		
12.	F-CAB-DRW-SIDE	MEL-CHIP-15MM	355.0	260.0	20	N				
13.	F-CAB-DRW-BACK	MEL-CHIP-15MM	380.0	240.0	10	N				

Edging - Cutting list

For example, a finished length of 332.5 mm requires a cutting size of 330.5 mm if the part is edged by (1mm) tape on each length edge.

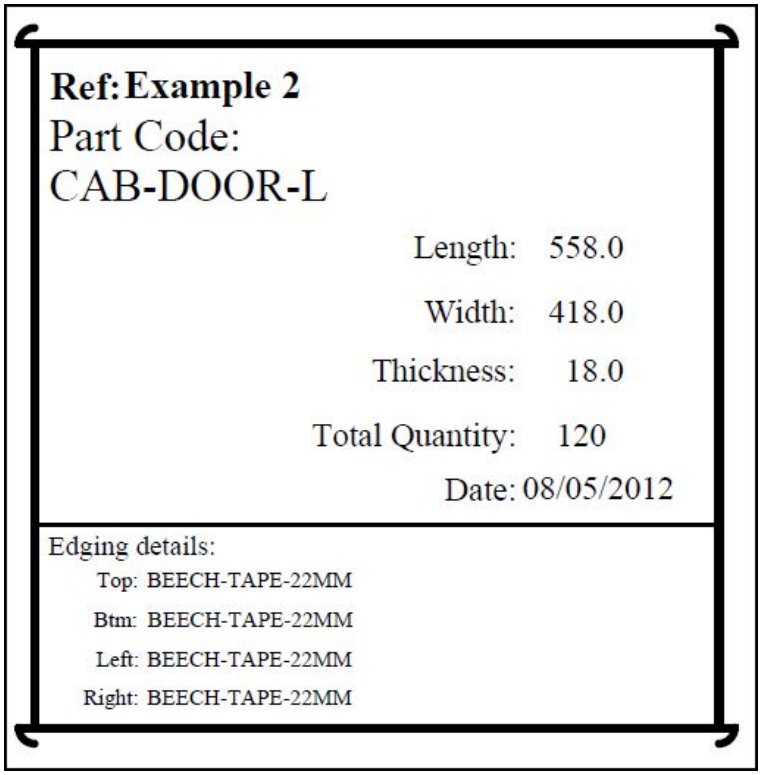
The part list can include a field for describing the Edge diagram.

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



Edging diagram

This can be used when printing labels for edging to show on the label (at the Edgebander) exactly how the edging is applied.



Edging diagram label

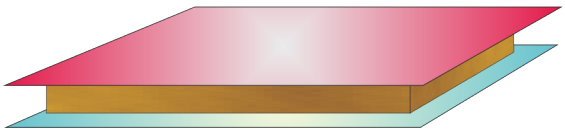
The edging diagram can be included on each part label to show clearly how the edging is produced. This is available with:-

- Printing labels at the Office
- 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.

- 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.

Part list - Office units

File Edit View Optimise Help

Title: Office units Opt: DEFAULT Saw: DEFAULT

	Description	Material	Length	Width	Quantity	Grain	Face Laminate	Back Laminate	Inf
Global									
1.	F-CUPBOARD-TOP	MFC18-BEECH	700.0	350.0	6	Y	BEECH-L...	BEECH-L...	
2.	F-CUPBOARD-SIDE	MFC18-BEECH	332.0	790.0	12	Y			
3.	F-CUPBOARD-BASE	MFC18-BEECH	700.0	350.0	6	Y			
4.	F-CUPBOARD-DOOR	MFC18-BEECH	330.0	790.0	12	Y			
5.	F-CUPBOARD-SHELF	MFC18-BEECH	635.0	340.0	6	Y			
6.	F-CUPBOARD-BACK	HARDBOARD-4MM	665.0	800.0	6	N			
7.	F-CAB-TOP	MFC18-BEECH	450.0	392.0	5	Y	BEECH-L...	BEECH-L...	
8.	F-CAB-SIDE	MFC18-BEECH	370.0	585.0	10	Y	BEECH-L...	BEECH-L...	
9.	F-CAB-BASE	MFC18-BEECH	450.0	392.0	5	Y			
10.	F-CAB-BACK	HARDBOARD-4MM	420.0	590.0	5	N			
11.	F-CAB-DRW-FRONT	MFC18-BEECH	445.0	290.0	10	Y			
12.	F-CAB-DRW-SIDE	MEL-CHIP-15MM	355.0	260.0	20	N			
13.	F-CAB-DRW-BACK	MEL-CHIP-15MM	380.0	240.0	10	N			

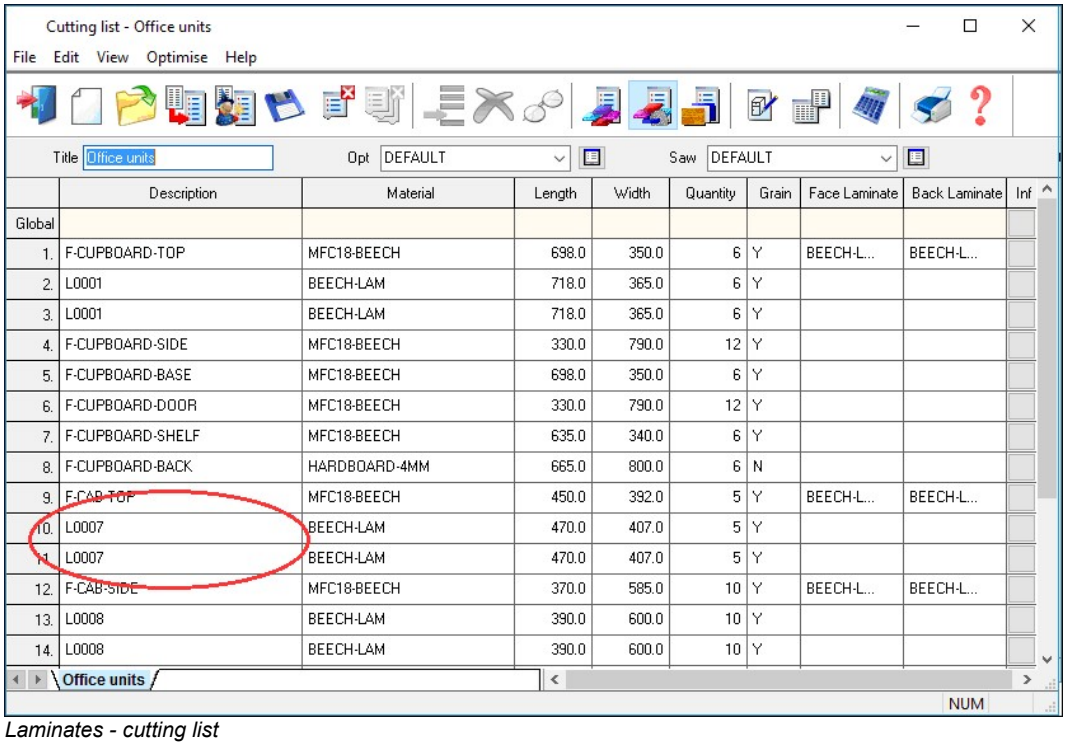
Office units

NUM

Laminates - part list

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.

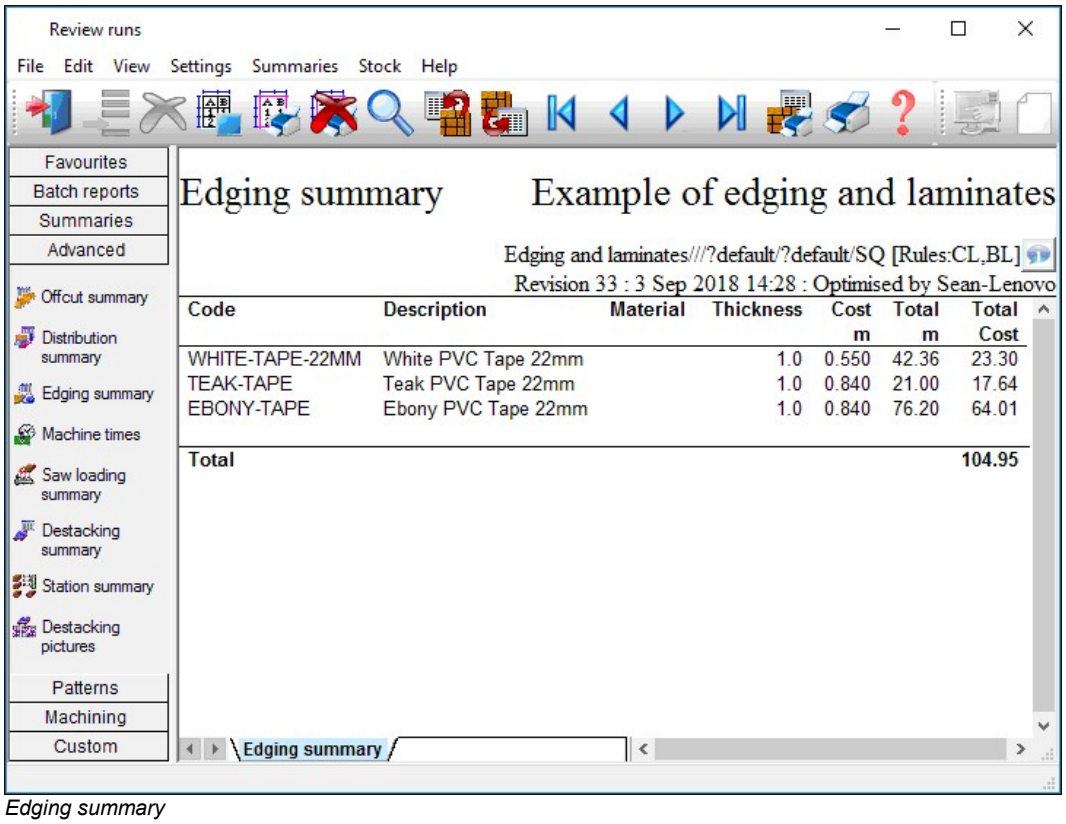


	Description	Material	Length	Width	Quantity	Grain	Face Laminate	Back Laminate	Inf
Global									
1.	F-CUPBOARD-TOP	MFC18-BEECH	698.0	350.0	6	Y	BEECH-L...	BEECH-L...	
2.	L0001	BEECH-LAM	718.0	365.0	6	Y			
3.	L0001	BEECH-LAM	718.0	365.0	6	Y			
4.	F-CUPBOARD-SIDE	MFC18-BEECH	330.0	790.0	12	Y			
5.	F-CUPBOARD-BASE	MFC18-BEECH	698.0	350.0	6	Y			
6.	F-CUPBOARD-DOOR	MFC18-BEECH	330.0	790.0	12	Y			
7.	F-CUPBOARD-SHELF	MFC18-BEECH	635.0	340.0	6	Y			
8.	F-CUPBOARD-BACK	HARDBOARD-4MM	665.0	800.0	6	N			
9.	F-CAB-TOP	MFC18-BEECH	450.0	392.0	5	Y	BEECH-L...	BEECH-L...	
10.	L0007	BEECH-LAM	470.0	407.0	5	Y			
11.	L0007	BEECH-LAM	470.0	407.0	5	Y			
12.	F-CAB-SIDE	MFC18-BEECH	370.0	585.0	10	Y	BEECH-L...	BEECH-L...	
13.	L0008	BEECH-LAM	390.0	600.0	10	Y			
14.	L0008	BEECH-LAM	390.0	600.0	10	Y			

Laminates - cutting list

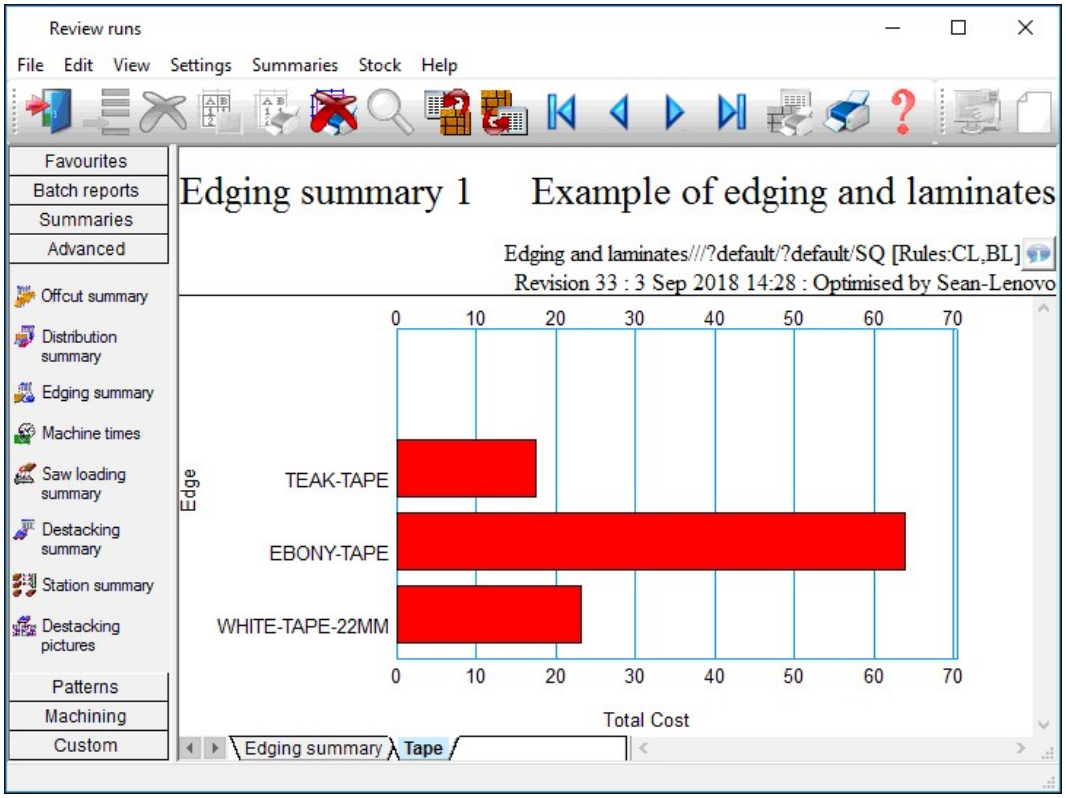
Edging summary and costs

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



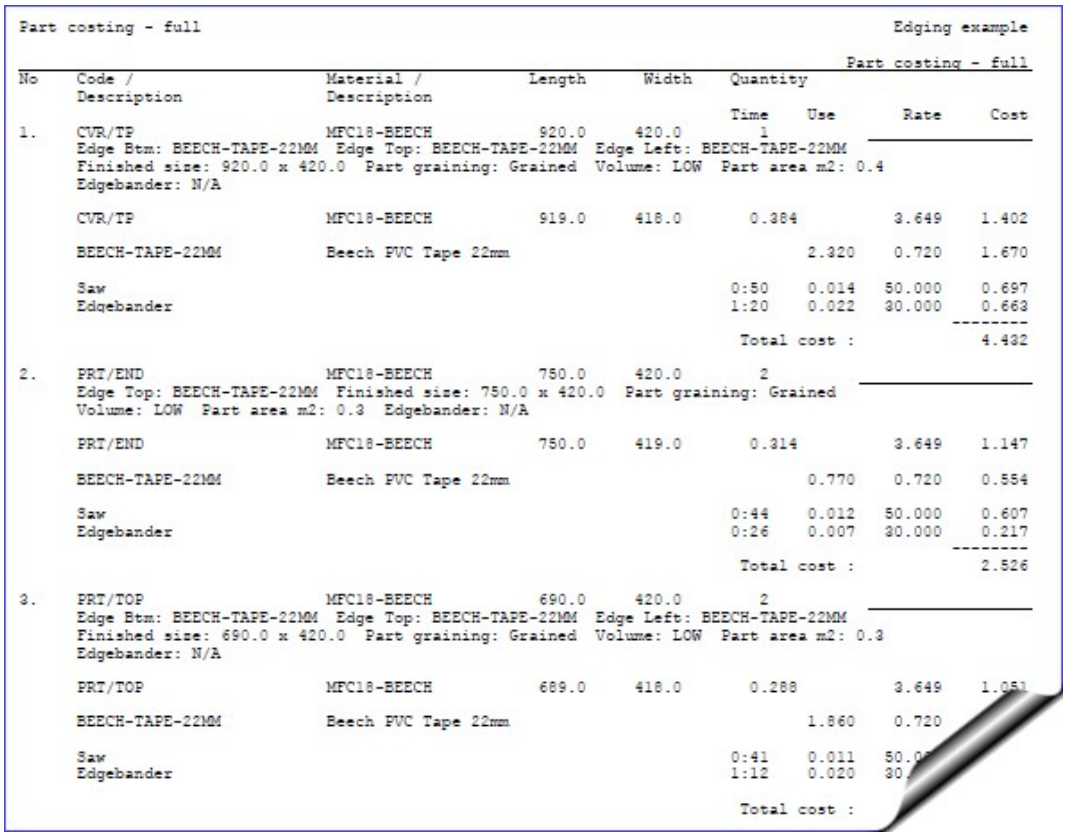
Edging summary

The Edging summary can include a custom graphic representation of the data.



Edging summary - chart

The printed part costing report includes the cost of edging material and the edgebander costs.



Part costing - full — Edging example

Part costing - full

No	Code / Description	Material / Description	Length	Width	Quantity / Time	Use	Rate	Cost
1.	CVR/TP	MFC18-BEECH	920.0	420.0	1			
	Edge Btm: BEECH-TAPE-22MM Edge Top: BEECH-TAPE-22MM Edge Left: BEECH-TAPE-22MM							
	Finished size: 920.0 x 420.0 Part graining: Grained Volume: LOW Part area m2: 0.4							
	Edgebander: N/A							
	CVR/TP	MFC18-BEECH	919.0	418.0	0.384		3.649	1.402
	BEECH-TAPE-22MM	Beech PVC Tape 22mm				2.320	0.720	1.670
	Saw				0:50	0.014	50.000	0.697
	Edgebander				1:20	0.022	30.000	0.663
					Total cost :			4.432
2.	PRT/END	MFC18-BEECH	750.0	420.0	2			
	Edge Top: BEECH-TAPE-22MM Finished size: 750.0 x 420.0 Part graining: Grained							
	Volume: LOW Part area m2: 0.3 Edgebander: N/A							
	PRT/END	MFC18-BEECH	750.0	419.0	0.314		3.649	1.147
	BEECH-TAPE-22MM	Beech PVC Tape 22mm				0.770	0.720	0.554
	Saw				0:44	0.012	50.000	0.607
	Edgebander				0:26	0.007	30.000	0.217
					Total cost :			2.526
3.	PRT/TOP	MFC18-BEECH	690.0	420.0	2			
	Edge Btm: BEECH-TAPE-22MM Edge Top: BEECH-TAPE-22MM Edge Left: BEECH-TAPE-22MM							
	Finished size: 690.0 x 420.0 Part graining: Grained Volume: LOW Part area m2: 0.3							
	Edgebander: N/A							
	PRT/TOP	MFC18-BEECH	689.0	418.0	0.288		3.649	1.051
	BEECH-TAPE-22MM	Beech PVC Tape 22mm				1.860	0.720	
	Saw				0:41	0.011	50.0	
	Edgebander				1:12	0.020	30.	
					Total cost :			

Edging - part costing

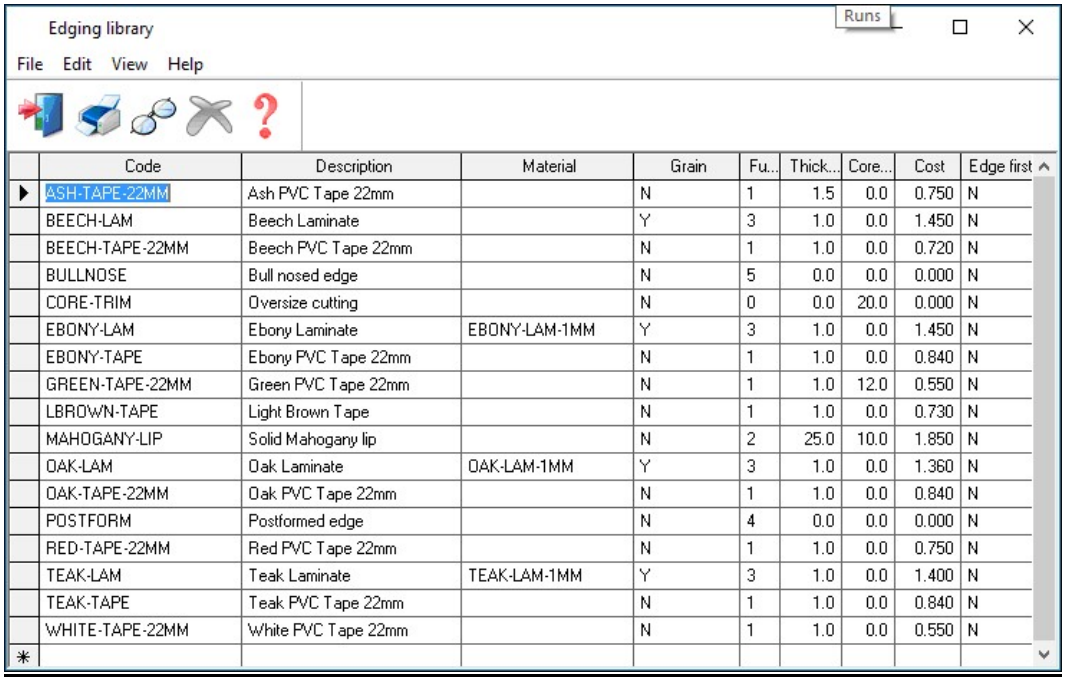
The operational details and costs of each Edgebander are set up in the Edging parameters and the Machining rate parameters. These include options such as:-

- 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, for example, whether edging is applied before laminating, whether a core trim is taken, the type of edging …



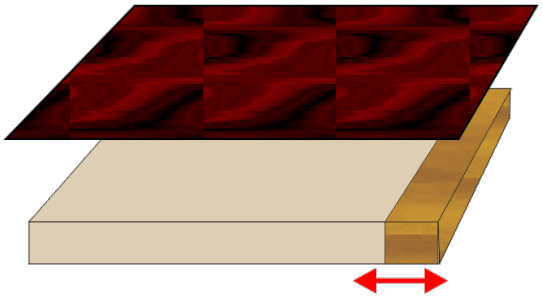
	Code	Description	Material	Grain	Fu...	Thick...	Core...	Cost	Edge first
▶	ASH-TAPE-22MM	Ash PVC Tape 22mm		N	1	1.5	0.0	0.750	N
	BEECH-LAM	Beech Laminate		Y	3	1.0	0.0	1.450	N
	BEECH-TAPE-22MM	Beech PVC Tape 22mm		N	1	1.0	0.0	0.720	N
	BULLNOSE	Bull nosed edge		N	5	0.0	0.0	0.000	N
	CORE-TRIM	Oversize cutting		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-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-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-TAPE-22MM	White PVC Tape 22mm		N	1	1.0	0.0	0.550	N
*									

Edging library

For example, where a core trim is specified, this indicates that the core material is trimmed first before edging is applied. This is quite common, for instance with doors, where solid wood edges are often applied before laminating.

- 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.

The core trim, for example, allows for the removal of core material ready for solid wood lipping.

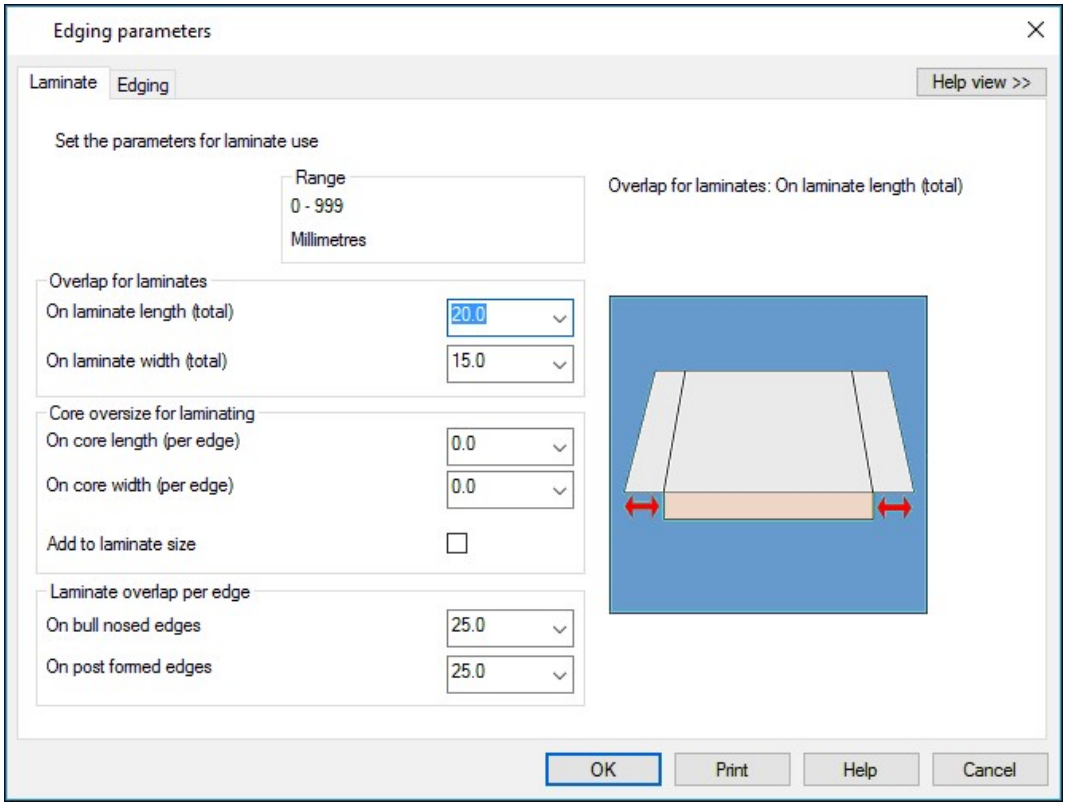


Lipping

The laminate size is automatically adjusted to take account of the lipping.

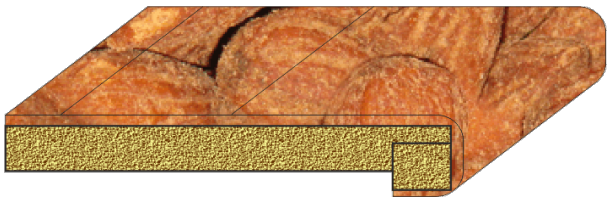
Edging parameters

The tolerances and settings for applying edging and laminates are set via the Edging parameters (*Main screen - Parameters - Edging*).



Edging parameters

This includes the details for more complex edges such as Post form and bullnose edges.



5. Parts & Labels

The software provides a database for parts and used with the form and label designer provides extensive facilities for managing extra data for parts.

It is especially useful where the same parts are used again and again in different cutting lists or where extra information is needed for each part for later processing, admin, or bar codes,

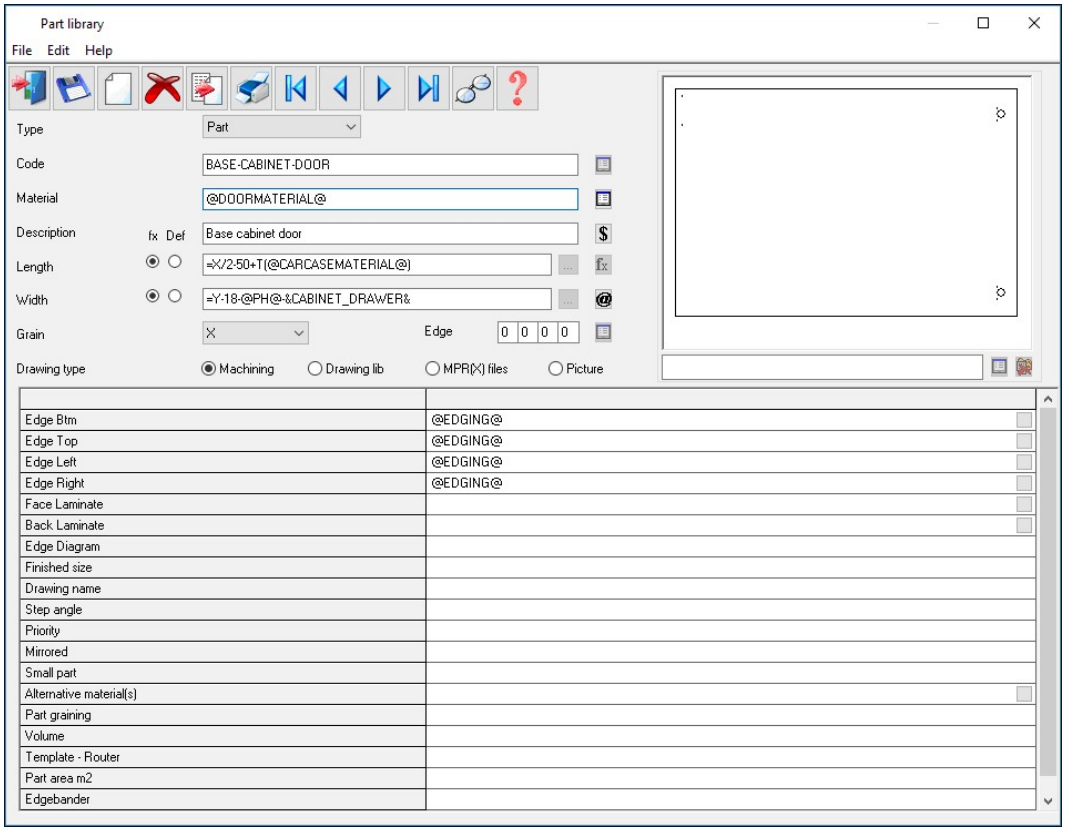
Parts can be added to any cutting list with minimum data entry - this saves times and avoids costly mistakes.

Part library

Parts are defined and stored in the part library. The data entry screen provides an easy way to enter part details. At the main screen:-

• Select: **Libraries - Part library**
or
Select the toolbar option

The part library data entry screen is shown.

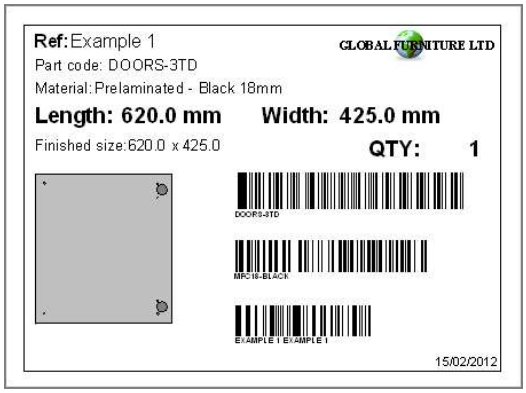


Part library

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 the Machining library or a graphics file such as BMP, JPG or MPR(X).

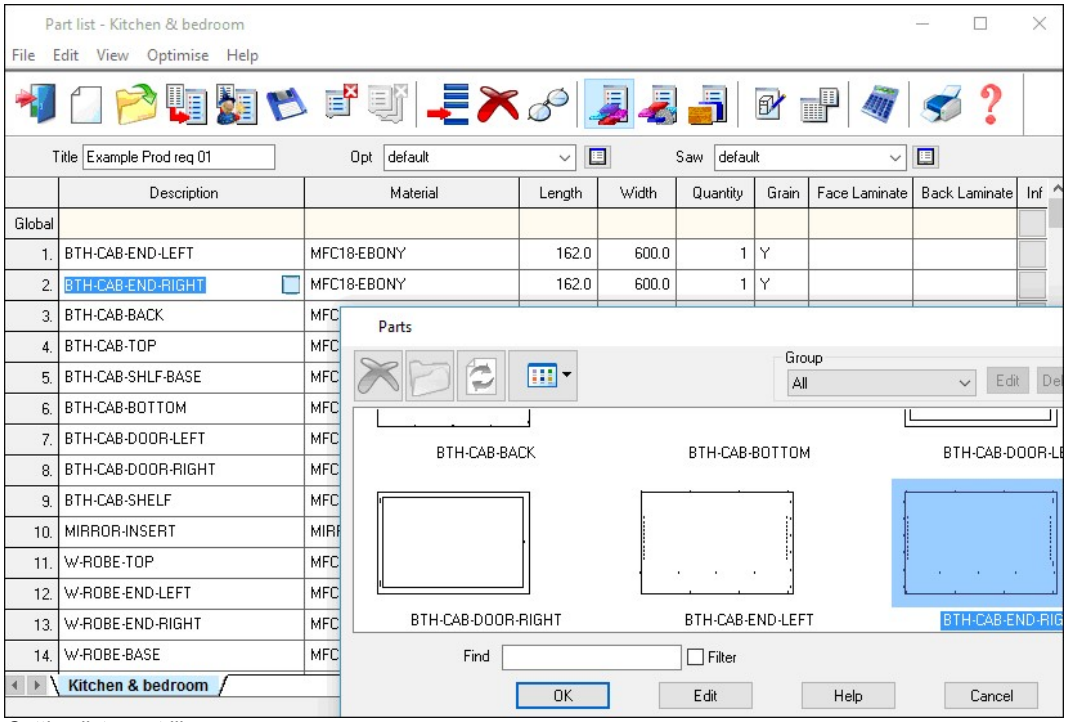
For some parts it is often useful to include a picture of the part on a label to help identify the part quickly.



Part label

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.



Cutting list - part library

Form & Label designer

The program 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.

Printing labels at the office and at the saw

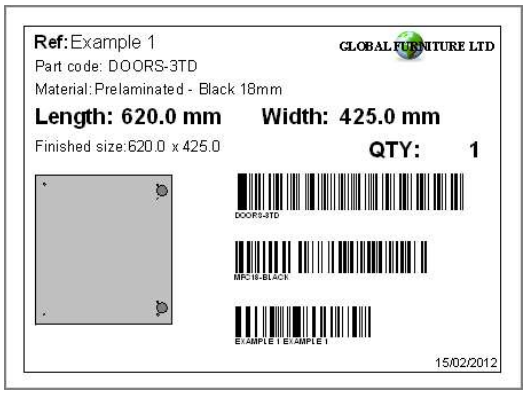
These are typically labels or forms for printing in the Office but can also be used with the Online PC module for printing labels at the saw. The designer can also create label designs that can be used/downloaded to the CADmatic saw controller (For the CADmatic the information is passed to the CADmatic controller on transfer of data to the saw).

For other saw controllers the options available for designing and printing labels at the saw depend on the software and capabilities of each controller. The full part list data including any custom information is available in the files sent to the saw but the design must be undertaken via the saw controller.

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:-

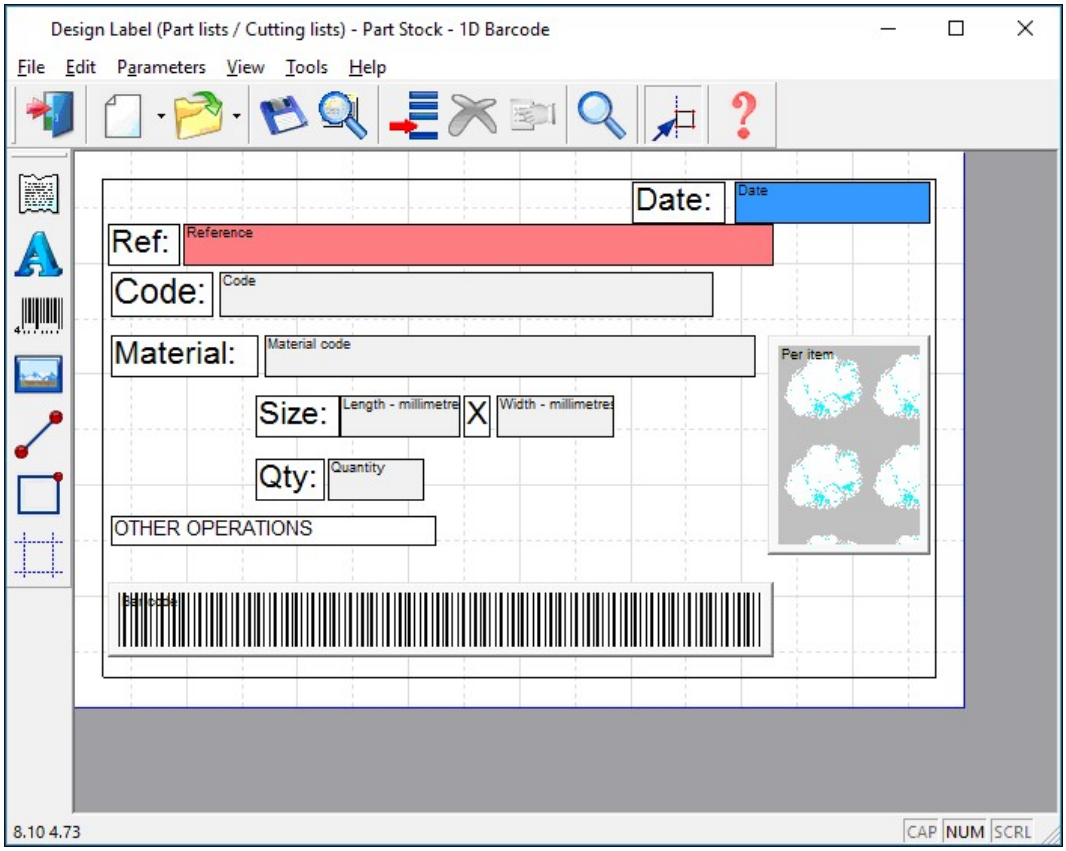
Material code
Length
Width
...
Part drawing
User defined details
Barcodes
Logos
...

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.



Part label

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



Label designer

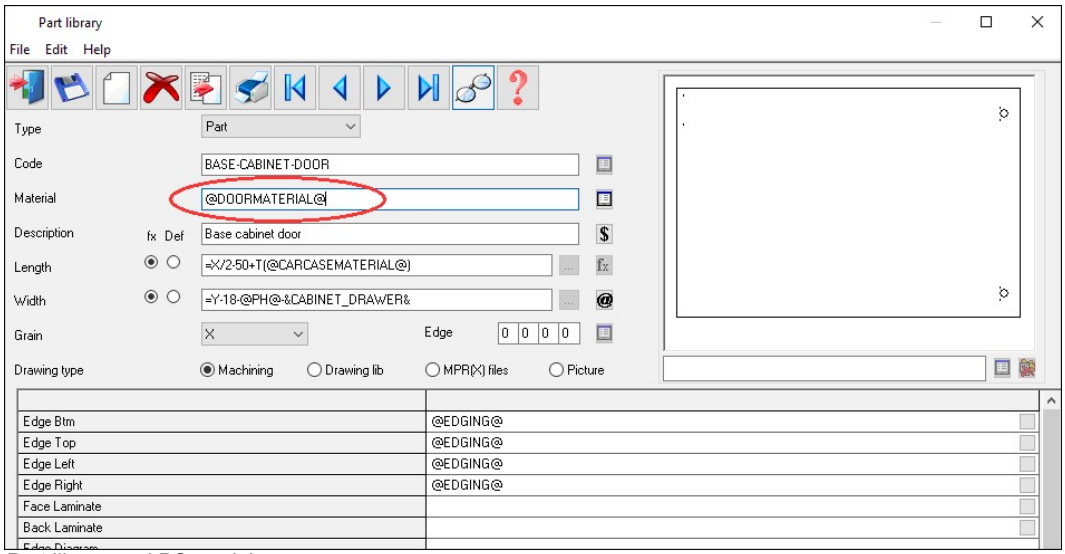
Each label or form is fully customisable. The designers include several options to help create effective designs.

- 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

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.



Part library and PQ module

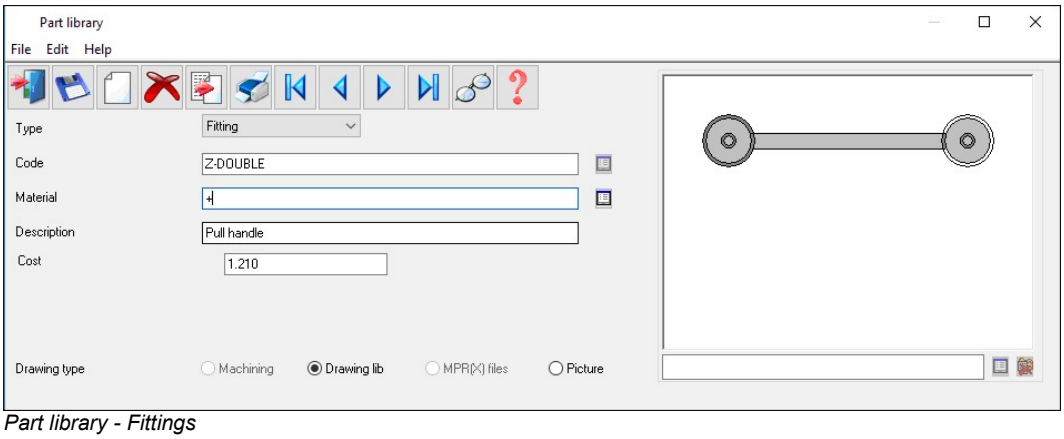
In this example the Material is defined by a variable '@DOORMATERIAL@' and the Length and Width are defined by formulae. This single part library entry can produce the correct specification for a range of cabinet doors in different materials, colours and sizes.

Fittings, Sundry parts, Operations

Requires the PQ module

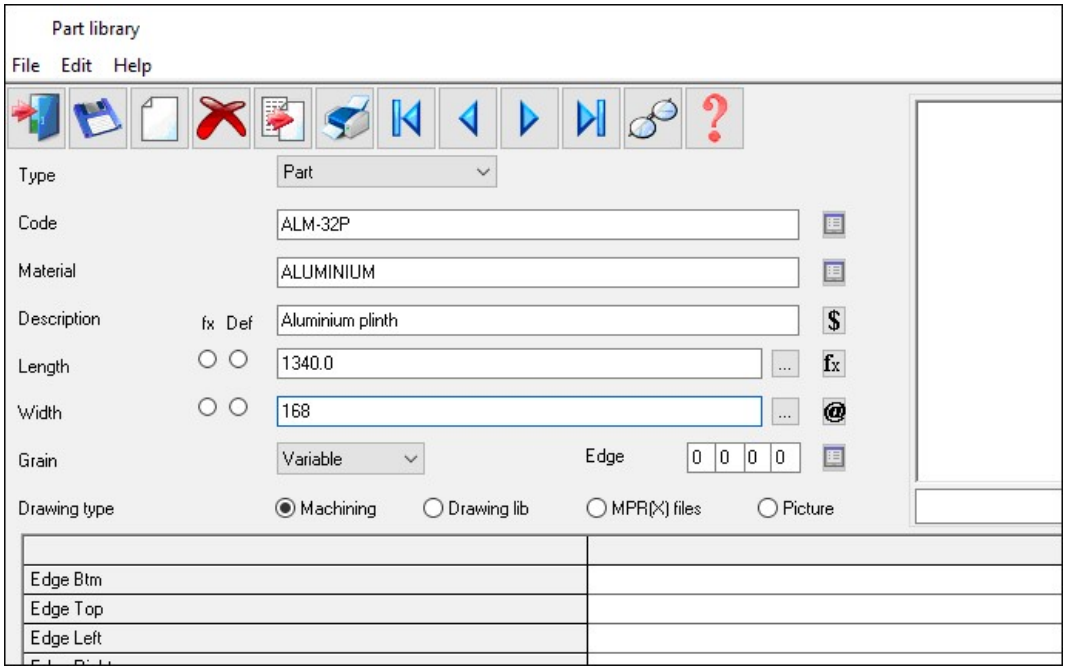
The parts database can also include fittings (hardware).

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



Part library - Fittings

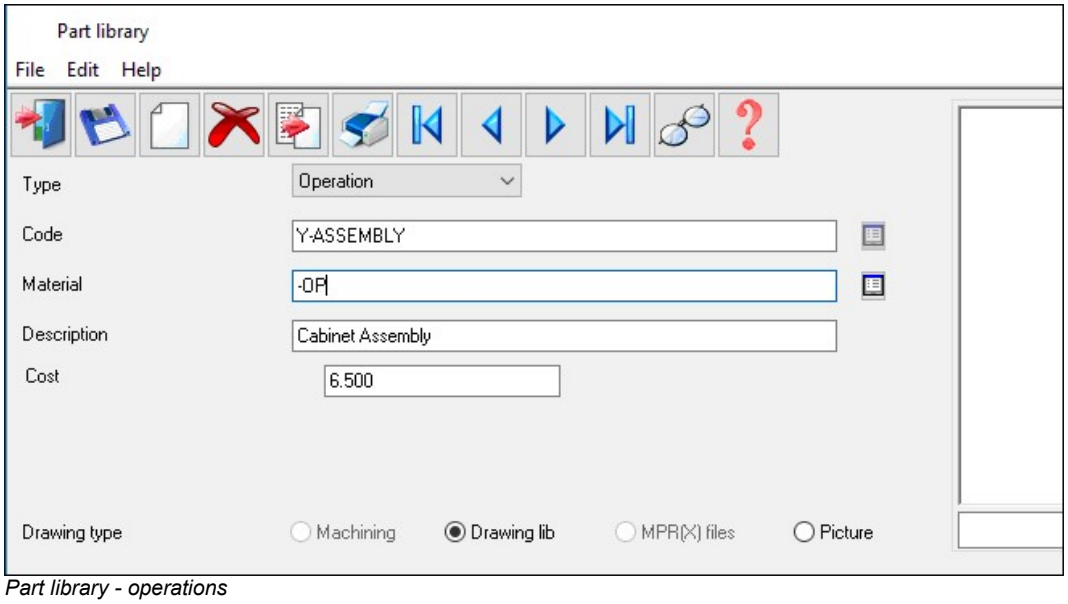
The library can also include 'bought in' or sundry parts that are required but are ready to use.



Part library - sundry parts

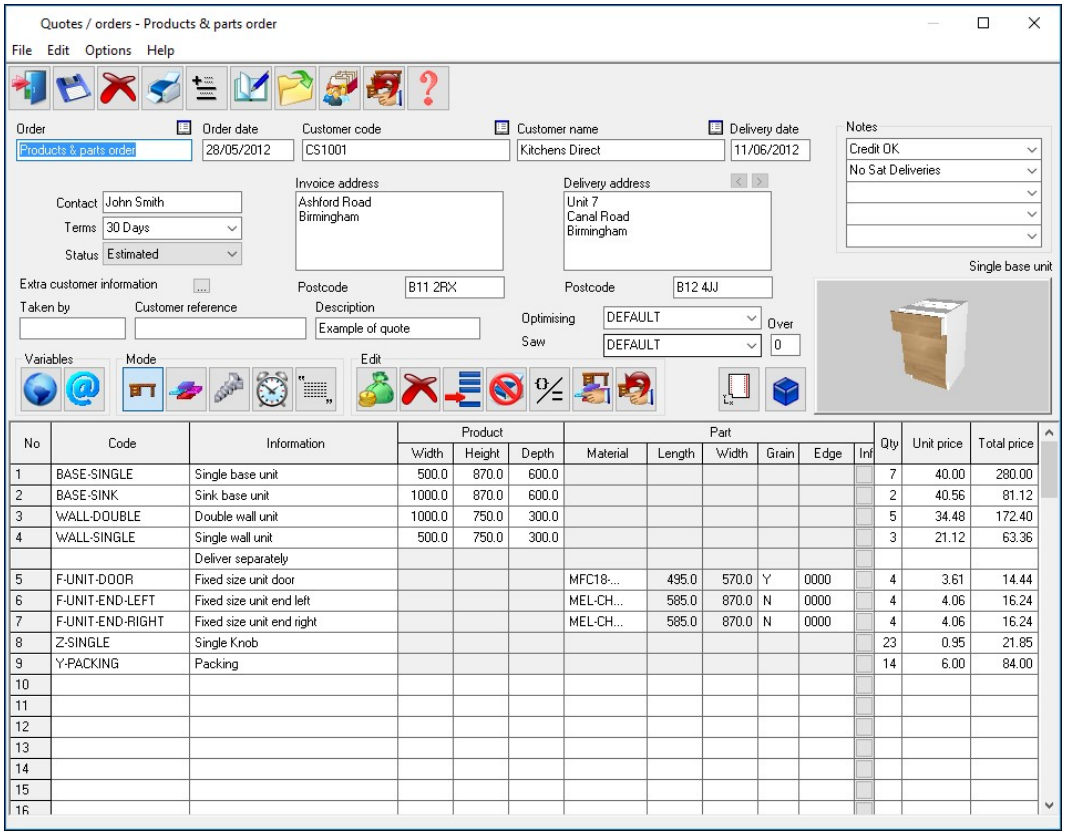
The operations required for each part can also be included in the database.

These are items such as, clamping, assembly, packing - where these can be allocated on a 'per part' basis.



Part library - operations

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



Quote / order

Parts & Labels with the Machining Interface

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, JPG) drawing
- WoodWop MPR(X) drawings

Parts & Labels with the Online PC option

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

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

Printing labels at the saw

Many saw controllers only have limited options for designing and printing labels at the saw so they are not always suitable for detailed labels or for making use of custom label information.

6. Stock Control (SC)

Stock control

A complete stock system for sheet materials - it can also be integrated with external systems such as the Homag Automation 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.

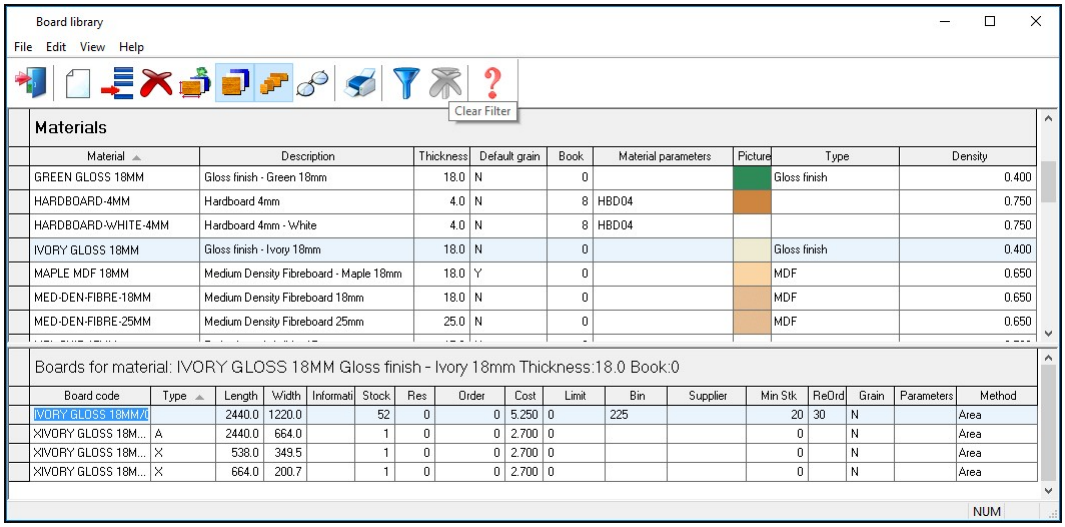
The simplest operation is to control the physical stock in the Board library.

- 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.

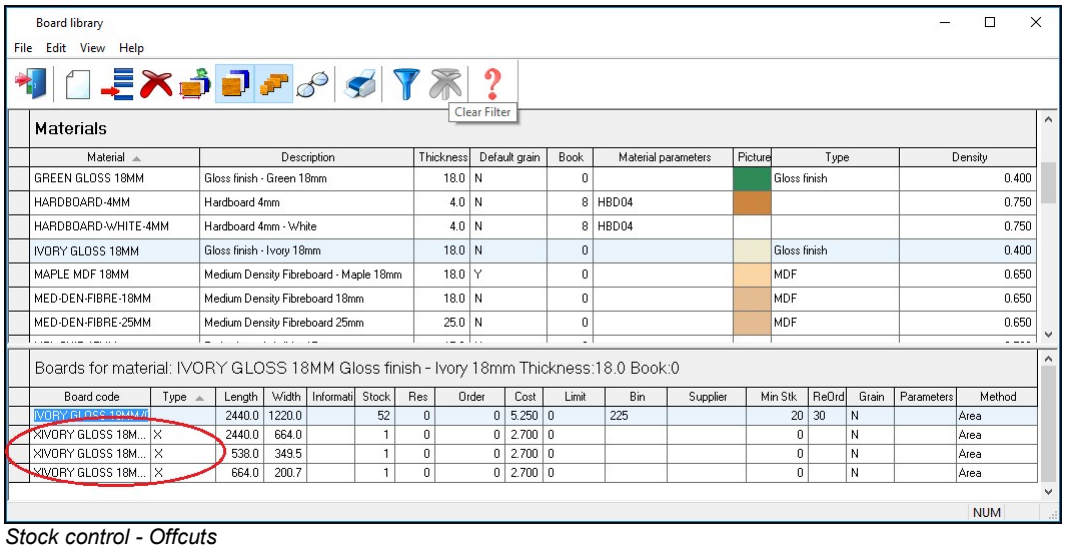
Control physical stock

The board inventory is shown in the Board library.



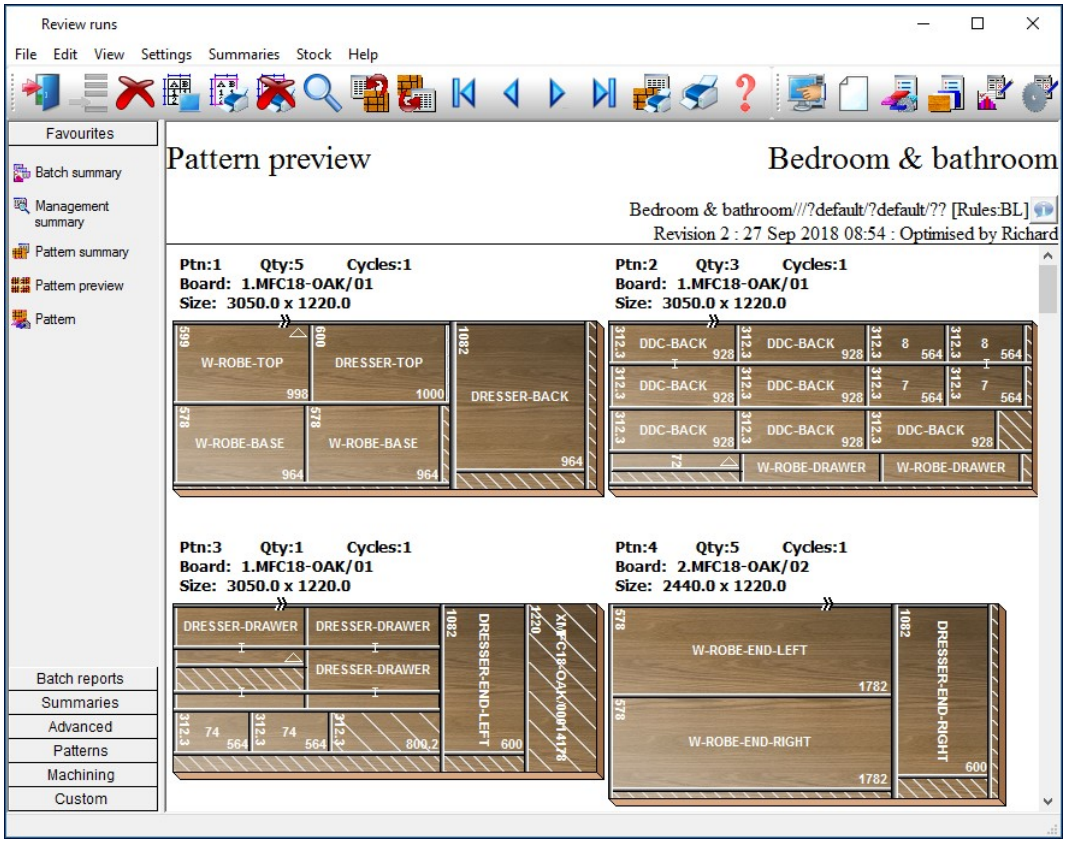
Stock control - Board library

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



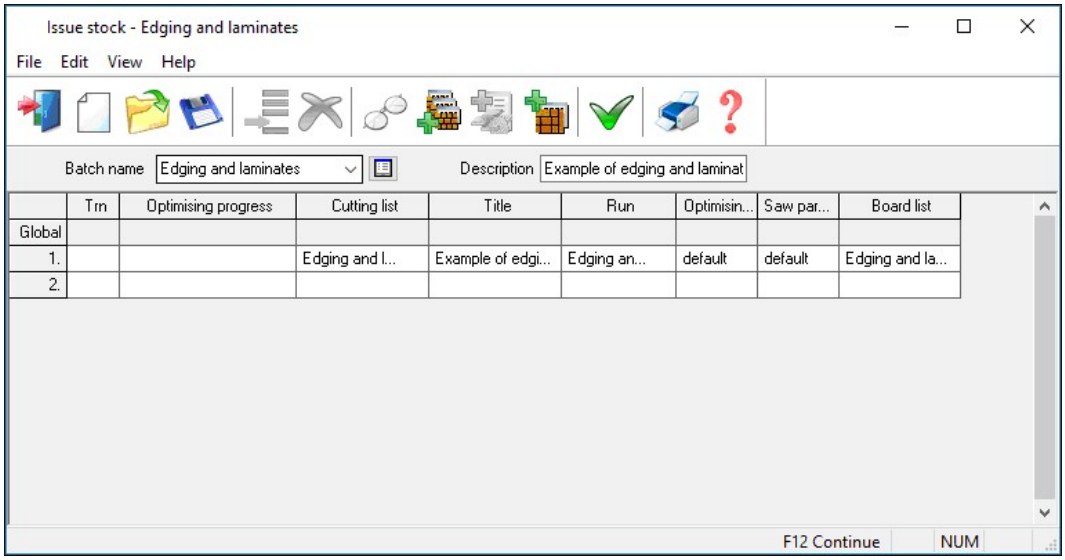
Stock control - Offcuts

The quantity of boards required for any job is calculated by the optimization.



Stock control - optimising

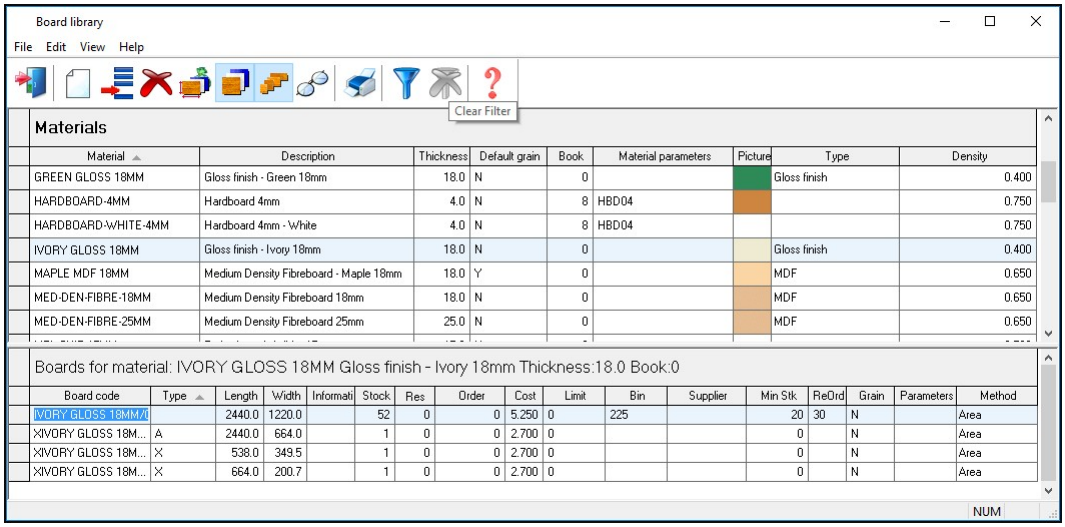
Once the run is committed for cutting (data sent to saw) the stock can be updated by the 'Issue stock for runs' options.



Issue stock for runs

The Board library is updated.

The board quantities are reduced and any offcuts are added back to the library.



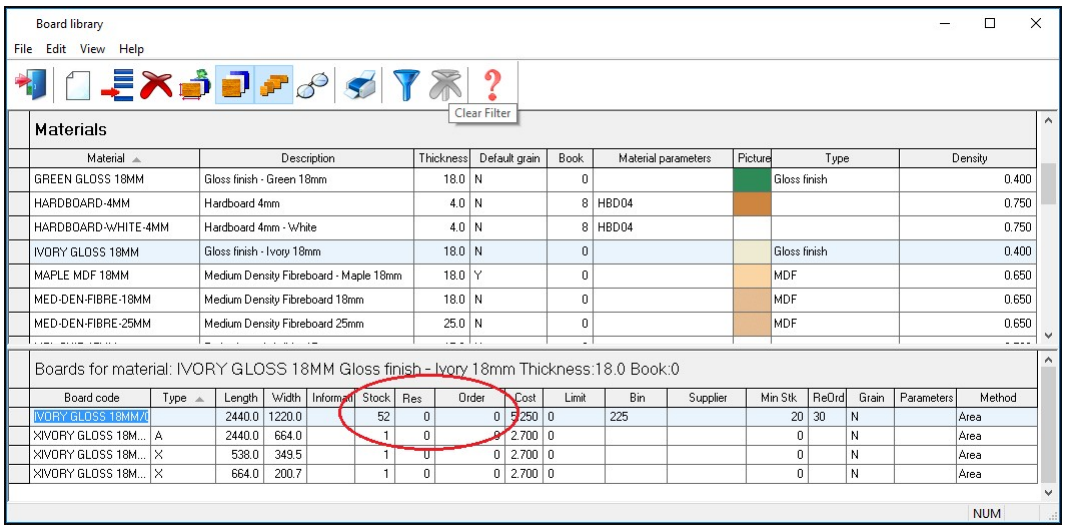
Board library update

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 reservation and receipts

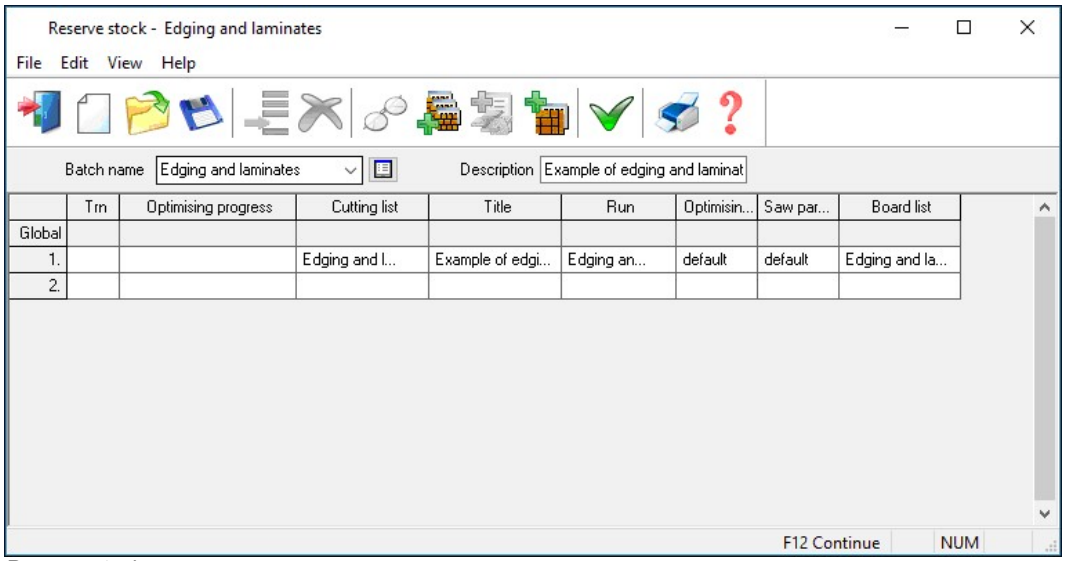
The module includes a full set of options for the reservation and receipt of stock. Reservation can be used after optimising to reserve stock for the job. Receipts are used to record incoming stock and adjust stock levels.

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



Board library - stock levels

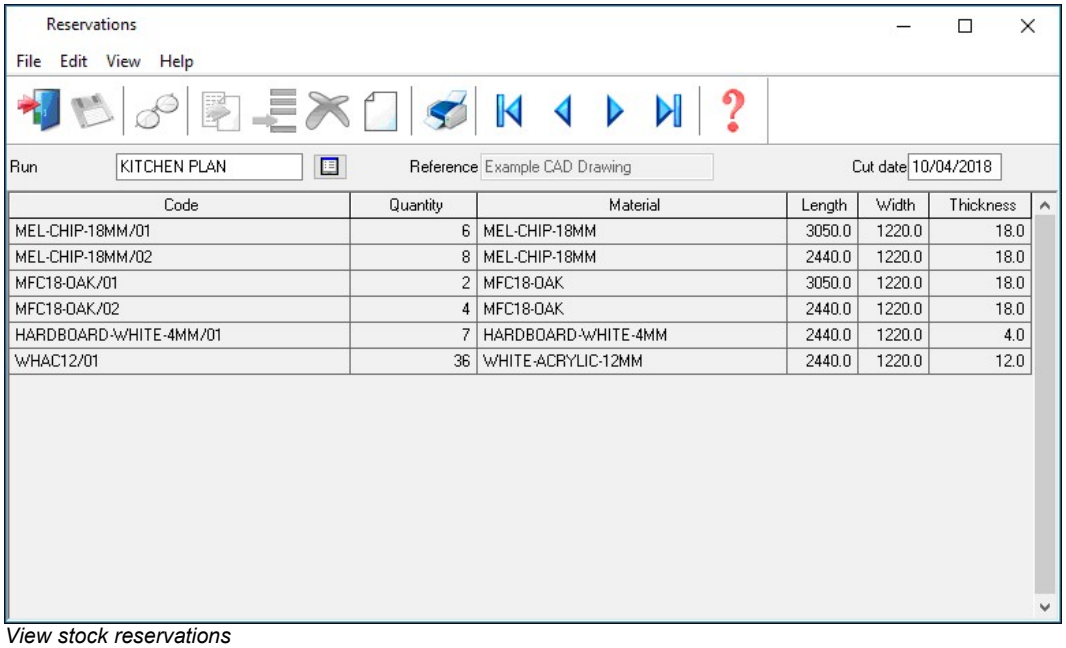
Stock can be reserved by 'Stock reservation' (*Stock - Reserve stock*)



Reserve stock

The stock for a selected run is reserved.

The details of all the current reservations can be review via: *'Stock Reservations'*

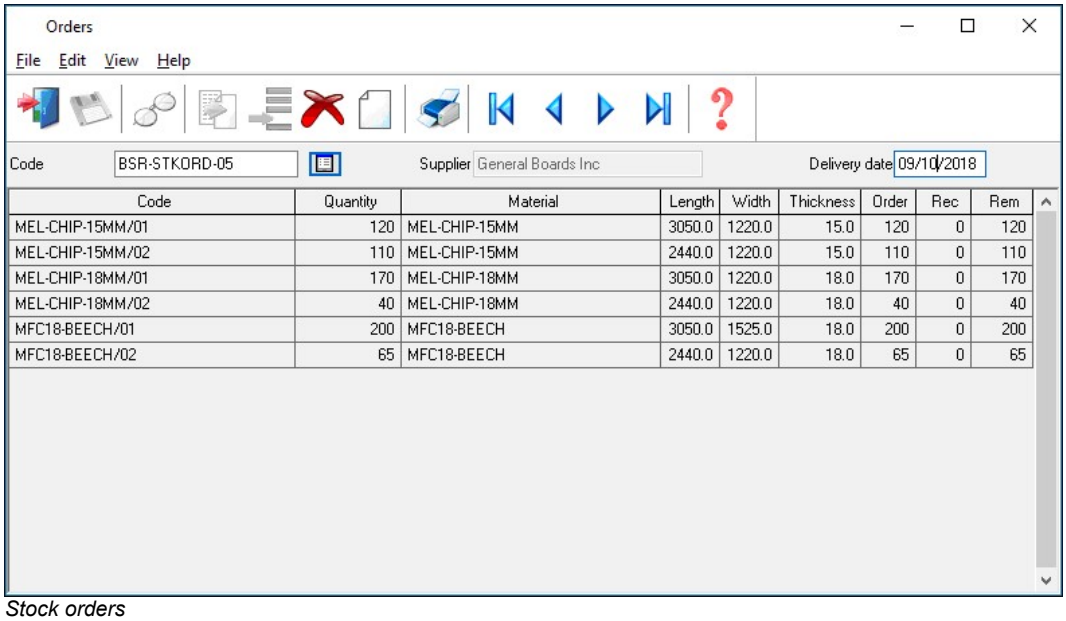


Code	Quantity	Material	Length	Width	Thickness
MEL-CHIP-18MM/01	6	MEL-CHIP-18MM	3050.0	1220.0	18.0
MEL-CHIP-18MM/02	8	MEL-CHIP-18MM	2440.0	1220.0	18.0
MFC18-OAK/01	2	MFC18-OAK	3050.0	1220.0	18.0
MFC18-OAK/02	4	MFC18-OAK	2440.0	1220.0	18.0
HARDBOARD-WHITE-4MM/01	7	HARDBOARD-WHITE-4MM	2440.0	1220.0	4.0
WHAC12/01	36	WHITE-ACRYLIC-12MM	2440.0	1220.0	12.0

View stock reservations

There is also a full set of screens and options for ordering and receiving stock.

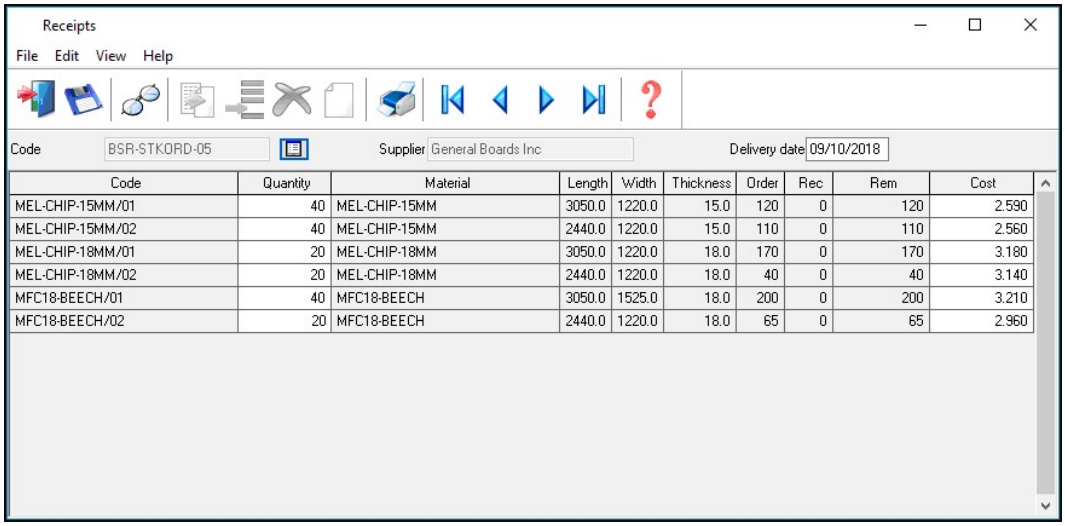
Stock is ordered via the Order screen:-



Code	Quantity	Material	Length	Width	Thickness	Order	Rec	Rem
MEL-CHIP-15MM/01	120	MEL-CHIP-15MM	3050.0	1220.0	15.0	120	0	120
MEL-CHIP-15MM/02	110	MEL-CHIP-15MM	2440.0	1220.0	15.0	110	0	110
MEL-CHIP-18MM/01	170	MEL-CHIP-18MM	3050.0	1220.0	18.0	170	0	170
MEL-CHIP-18MM/02	40	MEL-CHIP-18MM	2440.0	1220.0	18.0	40	0	40
MFC18-BEECH/01	200	MFC18-BEECH	3050.0	1525.0	18.0	200	0	200
MFC18-BEECH/02	65	MFC18-BEECH	2440.0	1220.0	18.0	65	0	65

Stock orders

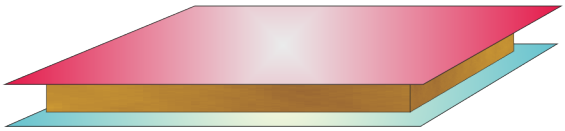
Stock receipts are recorded in the Receipts screen.



Code	Quantity	Material	Length	Width	Thickness	Order	Rec	Rem	Cost
MEL-CHIP-15MM/01	40	MEL-CHIP-15MM	3050.0	1220.0	15.0	120	0	120	2.590
MEL-CHIP-15MM/02	40	MEL-CHIP-15MM	2440.0	1220.0	15.0	110	0	110	2.560
MEL-CHIP-18MM/01	20	MEL-CHIP-18MM	3050.0	1220.0	18.0	170	0	170	3.180
MEL-CHIP-18MM/02	20	MEL-CHIP-18MM	2440.0	1220.0	18.0	40	0	40	3.140
MFC18-BEECH/01	40	MFC18-BEECH	3050.0	1525.0	18.0	200	0	200	3.210
MFC18-BEECH/02	20	MFC18-BEECH	2440.0	1220.0	18.0	65	0	65	2.960

Stock receipts

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



Laminating

Laminates and core material are stored in the Board library.

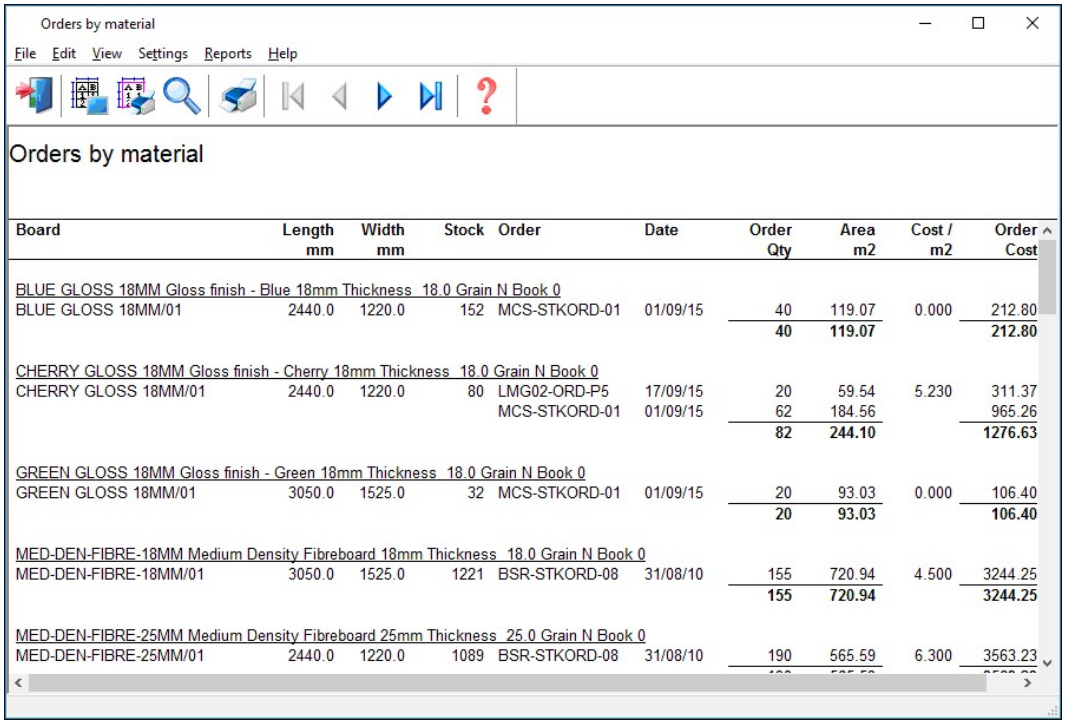
Stock reports

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

Orders by material
Orders by supplier
Reservations 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.

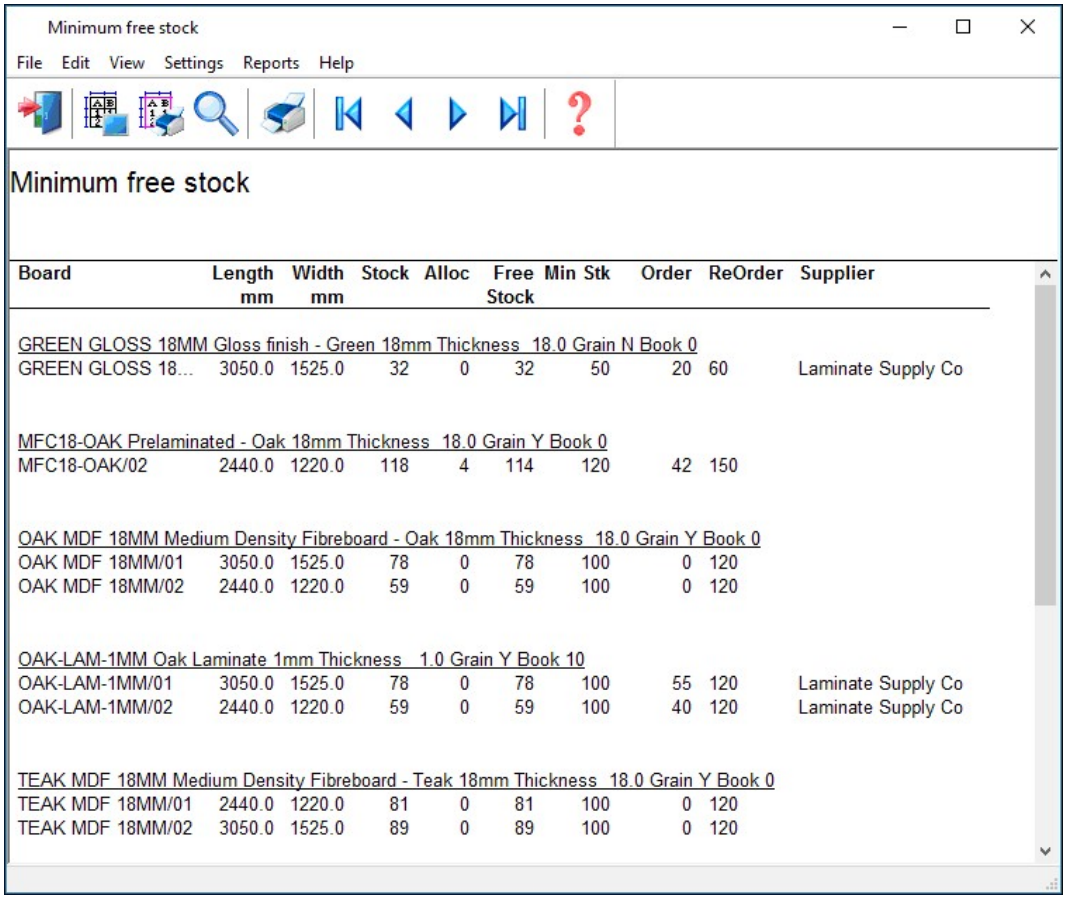
Orders by Material



Board	Length mm	Width mm	Stock	Order	Date	Order Qty	Area m2	Cost / m2	Order Cost
BLUE GLOSS 18MM Gloss finish - Blue 18mm Thickness 18.0 Grain N Book 0									
BLUE GLOSS 18MM/01	2440.0	1220.0	152	MCS-STKORD-01	01/09/15	40	119.07	0.000	212.80
						40	**119.07**		**212.80**
CHERRY GLOSS 18MM Gloss finish - Cherry 18mm Thickness 18.0 Grain N Book 0									
CHERRY GLOSS 18MM/01	2440.0	1220.0	80	LMG02-ORD-P5	17/09/15	20	59.54	5.230	311.37
				MCS-STKORD-01	01/09/15	62	184.56		965.26
						82	**244.10**		**1276.63**
GREEN GLOSS 18MM Gloss finish - Green 18mm Thickness 18.0 Grain N Book 0									
GREEN GLOSS 18MM/01	3050.0	1525.0	32	MCS-STKORD-01	01/09/15	20	93.03	0.000	106.40
						20	**93.03**		**106.40**
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

Report - orders by material

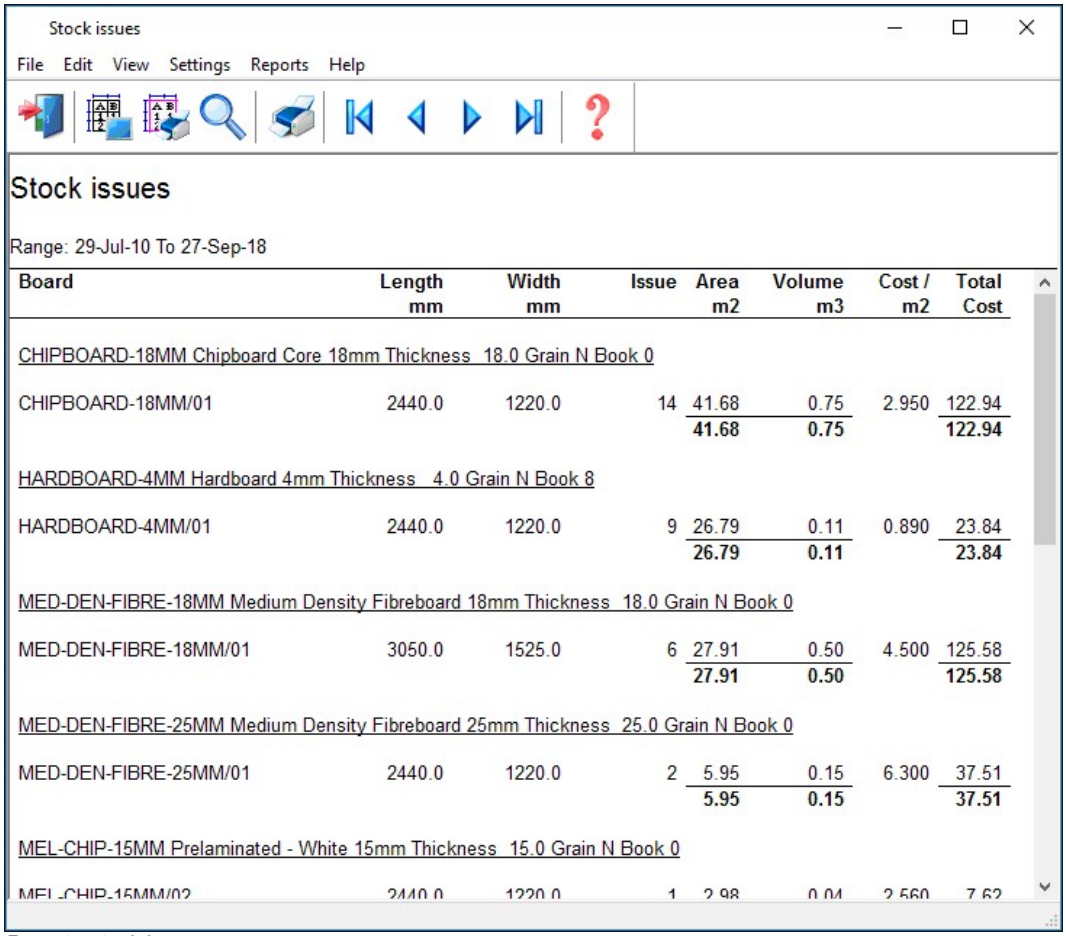
Minimum free stock



Board	Length mm	Width mm	Stock	Alloc	Free Stock	Min Stk	Order	ReOrder	Supplier
GREEN GLOSS 18MM Gloss finish - Green 18mm Thickness 18.0 Grain N Book 0									
GREEN GLOSS 18...	3050.0	1525.0	32	0	32	50	20	60	Laminate Supply Co
MFC18-OAK Prelaminated - Oak 18mm Thickness 18.0 Grain Y Book 0									
MFC18-OAK/02	2440.0	1220.0	118	4	114	120	42	150	
OAK MDF 18MM Medium Density Fibreboard - Oak 18mm Thickness 18.0 Grain Y Book 0									
OAK MDF 18MM/01	3050.0	1525.0	78	0	78	100	0	120	
OAK MDF 18MM/02	2440.0	1220.0	59	0	59	100	0	120	
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 MDF 18MM Medium Density Fibreboard - Teak 18mm Thickness 18.0 Grain Y Book 0									
TEAK MDF 18MM/01	2440.0	1220.0	81	0	81	100	0	120	
TEAK MDF 18MM/02	3050.0	1525.0	89	0	89	100	0	120	

Report - Minimum free stock

Stock issues



Stock issues

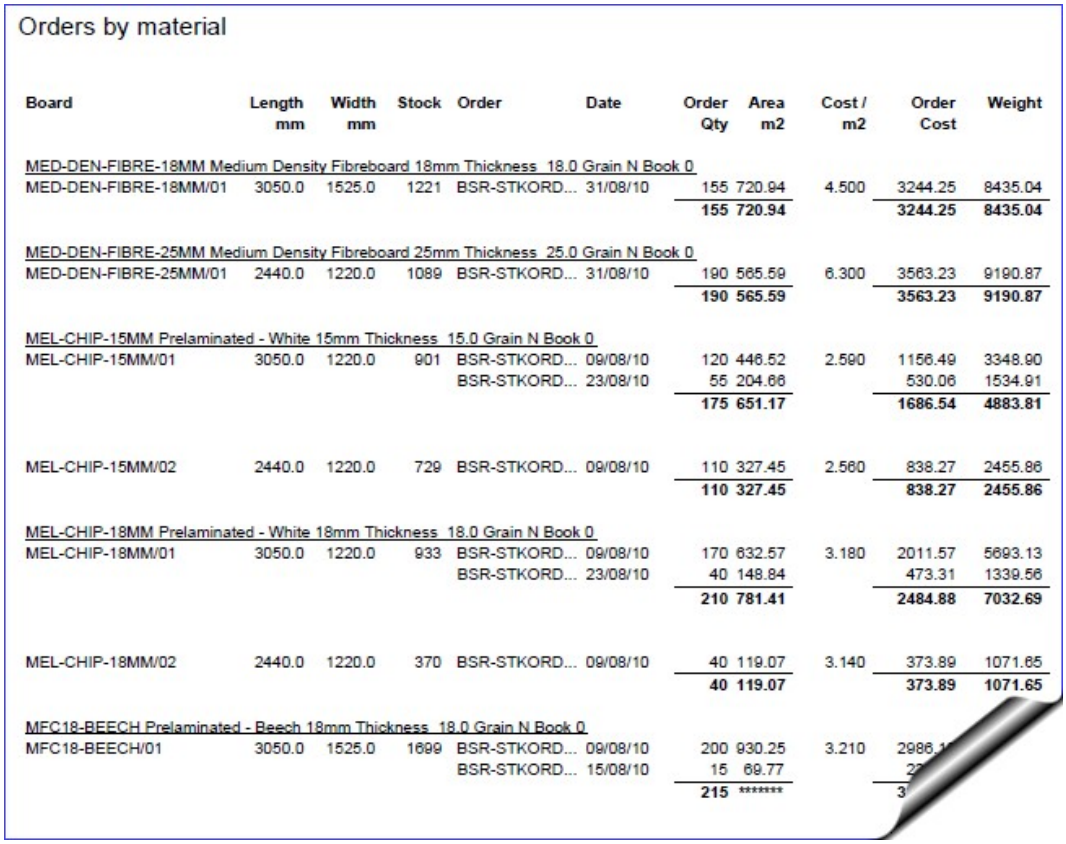
Range: 29-Jul-10 To 27-Sep-18

Board	Length mm	Width mm	Issue	Area m2	Volume m3	Cost / m2	Total Cost
CHIPBOARD-18MM Chipboard Core 18mm Thickness 18.0 Grain N Book 0							
CHIPBOARD-18MM/01	2440.0	1220.0	14	41.68	0.75	2.950	122.94
				41.68	**0.75**		**122.94**
HARDBOARD-4MM Hardboard 4mm Thickness 4.0 Grain N Book 8							
HARDBOARD-4MM/01	2440.0	1220.0	9	26.79	0.11	0.890	23.84
				26.79	**0.11**		**23.84**
MED-DEN-FIBRE-18MM Medium Density Fibreboard 18mm Thickness 18.0 Grain N Book 0							
MED-DEN-FIBRE-18MM/01	3050.0	1525.0	6	27.91	0.50	4.500	125.58
				27.91	**0.50**		**125.58**
MED-DEN-FIBRE-25MM Medium Density Fibreboard 25mm Thickness 25.0 Grain N Book 0							
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

Report - stock issues

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.



Orders by material

Board	Length mm	Width mm	Stock	Order	Date	Order Qty	Area m2	Cost / m2	Order Cost	Weight
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...	31/08/10	155	720.94	4.500	3244.25	8435.04
						155	**720.94**		**3244.25**	**8435.04**
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...	31/08/10	190	565.59	6.300	3563.23	9190.87
						190	**565.59**		**3563.23**	**9190.87**
MEL-CHIP-15MM Prelaminated - White 15mm Thickness 15.0 Grain N Book 0										
MEL-CHIP-15MM/01	3050.0	1220.0	901	BSR-STKORD...	09/08/10	120	446.52	2.590	1156.49	3348.90
				BSR-STKORD...	23/08/10	55	204.66		530.06	1534.91
						175	**651.17**		**1686.54**	**4883.81**
MEL-CHIP-15MM/02	2440.0	1220.0	729	BSR-STKORD...	09/08/10	110	327.45	2.560	838.27	2455.86
						110	**327.45**		**838.27**	**2455.86**
MEL-CHIP-18MM Prelaminated - White 18mm Thickness 18.0 Grain N Book 0										
MEL-CHIP-18MM/01	3050.0	1220.0	933	BSR-STKORD...	09/08/10	170	632.57	3.180	2011.57	5693.13
				BSR-STKORD...	23/08/10	40	148.84		473.31	1339.56
						210	**781.41**		**2484.88**	**7032.69**
MEL-CHIP-18MM/02	2440.0	1220.0	370	BSR-STKORD...	09/08/10	40	119.07	3.140	373.89	1071.65
						40	**119.07**		**373.89**	**1071.65**
MFC18-BEECH Prelaminated - Beech 18mm Thickness 18.0 Grain N Book 0										
MFC18-BEECH/01	3050.0	1525.0	1699	BSR-STKORD...	09/08/10	200	930.25	3.210	2986.1	
				BSR-STKORD...	15/08/10	15	69.77		2	
						215	*******		3	

Printed reports - stock control

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 module can be integrated with external systems.

- Full integration with the Homag woodStore materials system

- Import/Export options for materials and boards

- Option to run external linking program automatically

This latter 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

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 PQ module 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).

7. Products & Quotes (PQ)

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 …

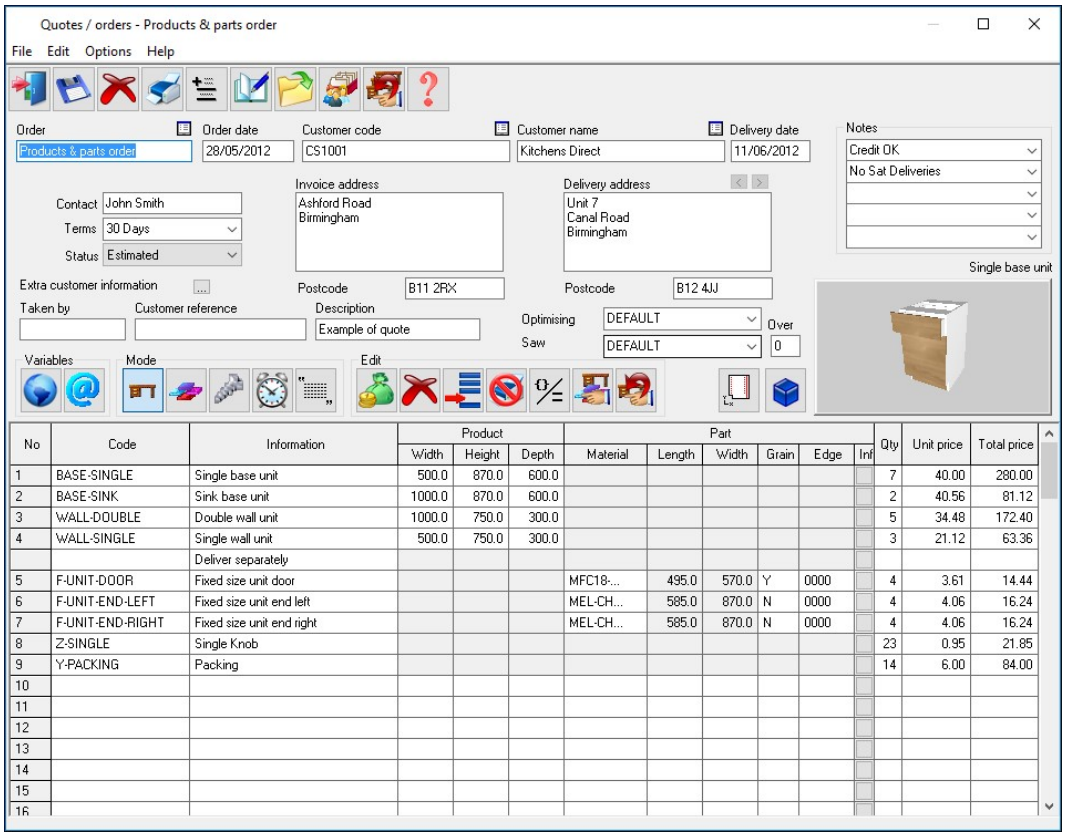
The key to the module is that the product detail is very flexible - a single definition can cover a wide range of customer or production variations.

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.

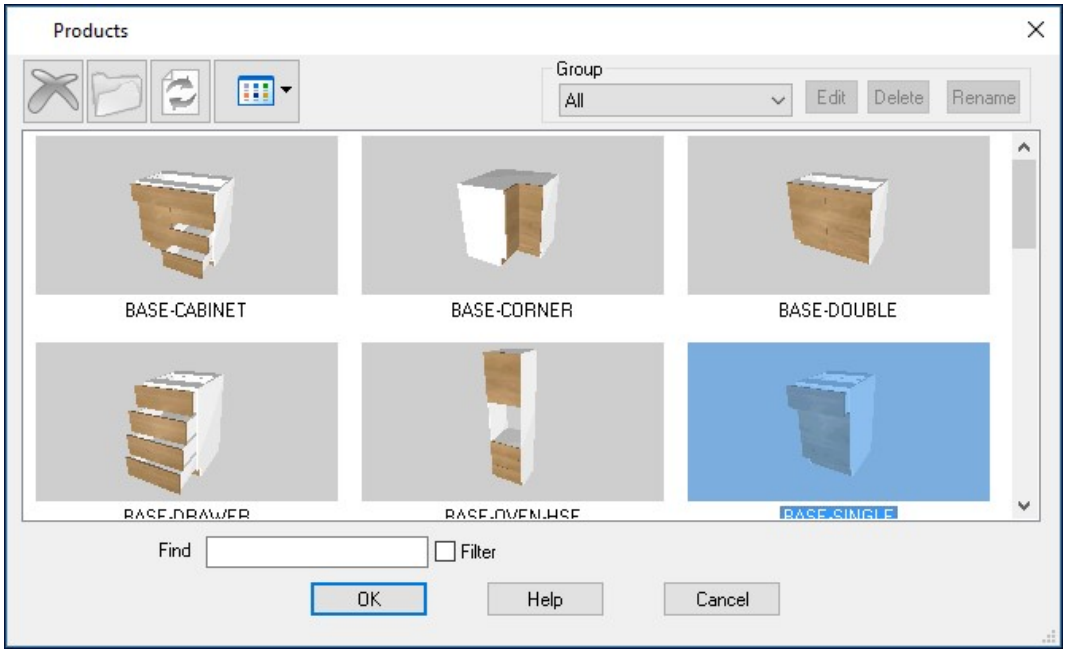


Quotes / Orders

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.

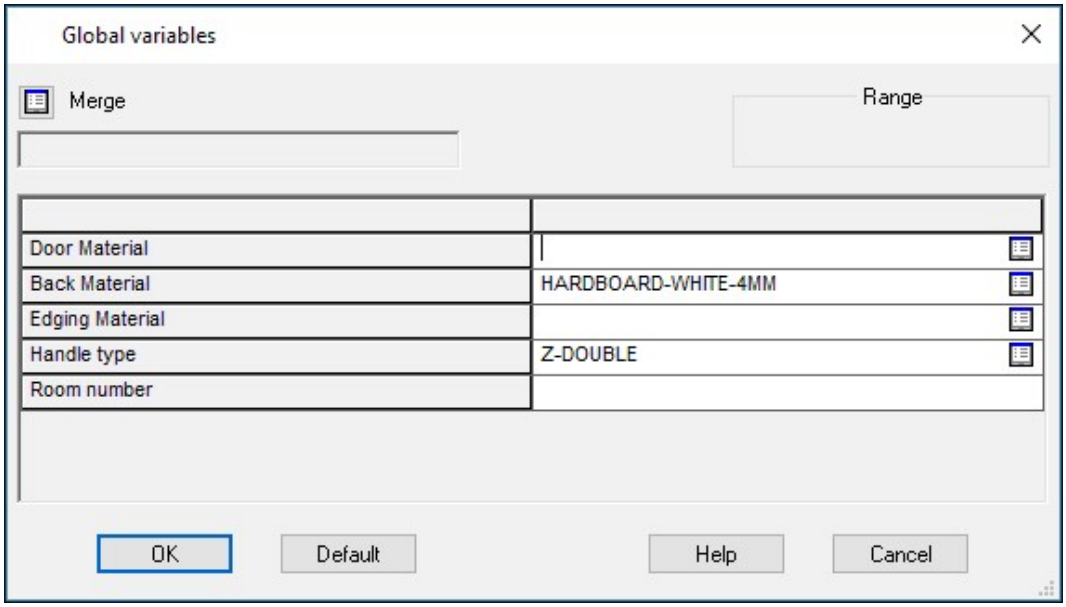


Product selection

Products and Parts can be displayed as 2D or 3D models in the Order screen.

Select to view a 3D model of your product/part, the product model has to have been created previously via 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).

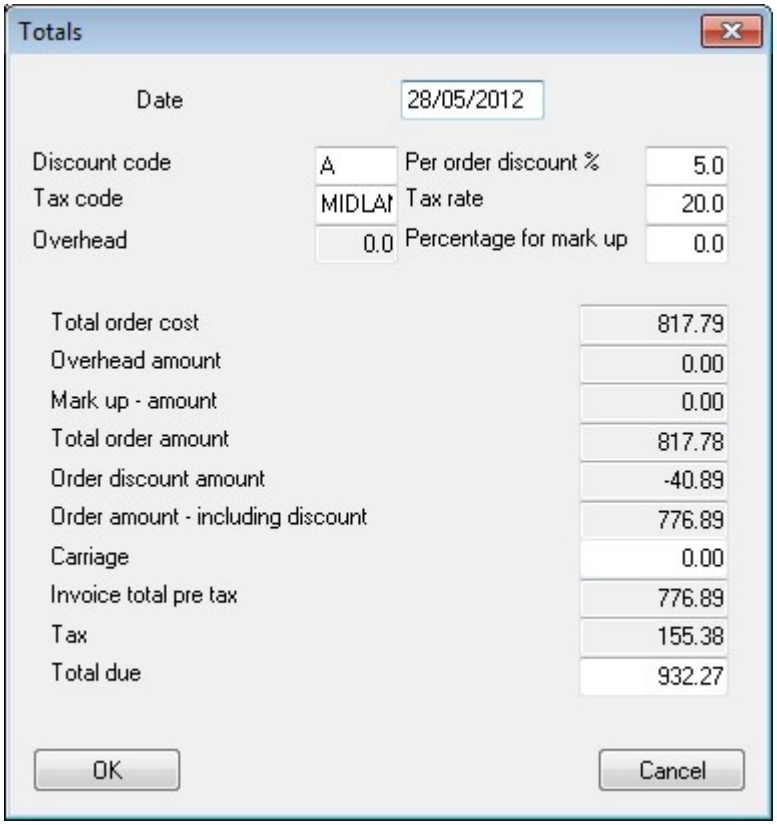


Variables dialog

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.

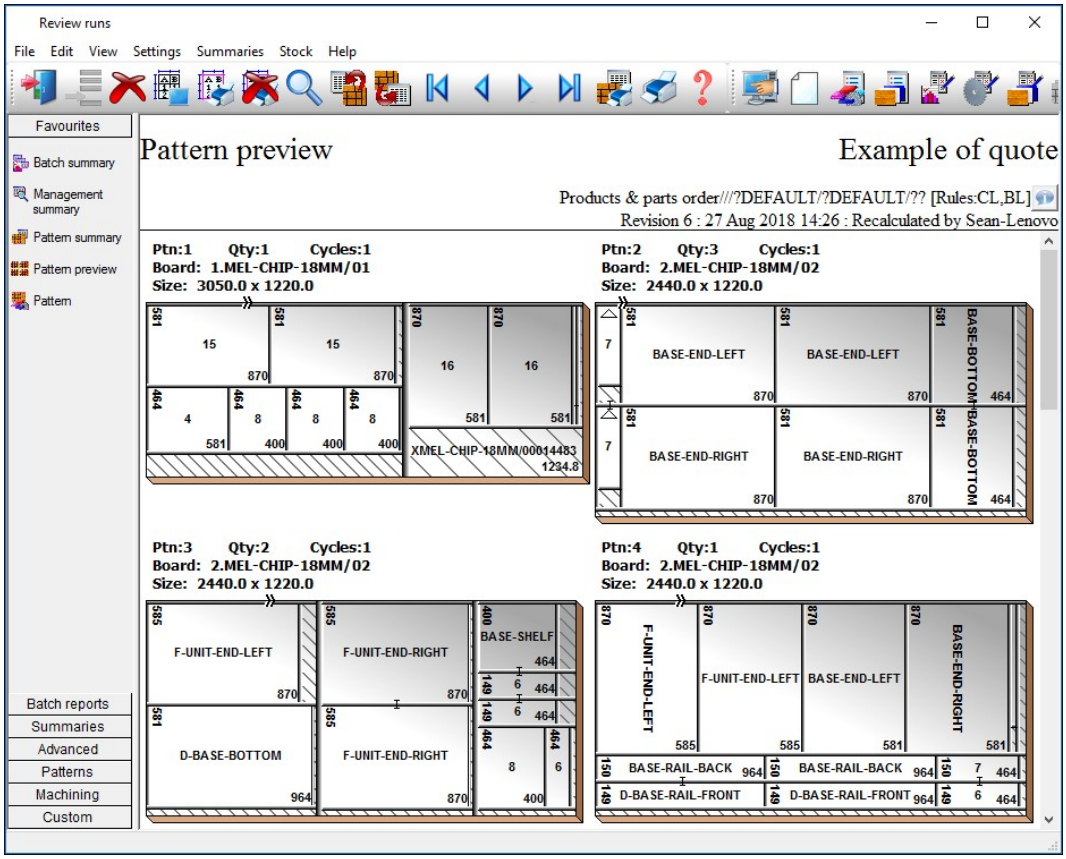


Estimate dialog

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.



Order - optimise

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 invoice

Invoice date: 28/05/2012 Order no. Products & parts order Our ref. Your ref.

28/05/2012

Customer address
Kitchens Direct
Ashford Road
Birmingham

B11 2RX

Order / item no.	Details	Quantity	Unit £	Total £
Products & parts order/007	**Code:** F-UNIT-END-RIGHT Length: 585.0 **Description:** Fixed size unit end right Width: 870.0 **Finish:** MFC18-OAK	4	4.52	18.08
Products & parts order/008	**Code:** Z-SINGLE **Description:** Single Knob **Finish:**	23	0.95	21.85
Products & parts order/009	**Code:** Y-PACKING **Description:** Packing **Finish:**	14	6.00	84.00

Order - optimise

The module produces a full breakdown of product costing.

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

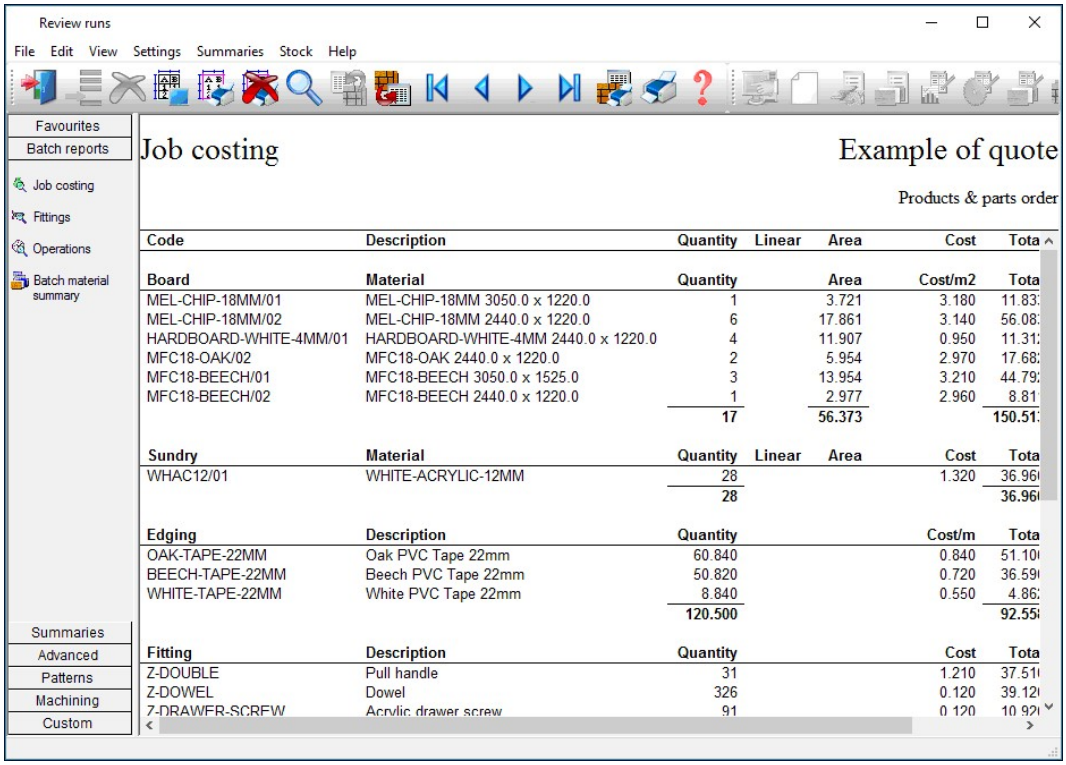
Code	Qty	Description	Material	Length	Width / Time	Item cost / Per hour	Total
BASE-END-LEFT	1	Base unit end...	MED-DEN-FIBR...	582.0	870.0	6.322	6.322
Description: Base unit end left Material: MED-DEN-FIBRE-18MM							
BASE-END-RIGHT	1	Base unit end...	MED-DEN-FIBR...	582.0	870.0	6.322	6.322
Description: Base unit end right Material: MED-DEN-FIBRE-18MM							
BASE-BACK	1	Base unit back	HARDBOARD-4MM	476.0	735.0	0.978	0.978
BASE-BOTTOM	1	Base unit floor	MED-DEN-FIBR...	464.0	582.0	3.463	3.463
Material: MED-DEN-FIBRE-18MM							
BASE-PLINTH	1	Base unit plinth	MED-DEN-FIBR...	464.0	125.0	1.048	1.048
Material: MED-DEN-FIBRE-18MM							
BASE-RAIL-FRONT	1	Base unit rai...	MED-DEN-FIBR...	464.0	150.0	1.509	1.509
Description: Base unit rail front Material: MED-DEN-FIBRE-18MM							
BASE-RAIL-BACK	1	Base unit rai...	MED-DEN-FIBR...	464.0	150.0	1.009	1.009
Description: Base unit rail back Material: MED-DEN-FIBRE-18MM							
BASE-SHELF	1	Base unit shelf	MED-DEN-FIBR...	464.0	400.0	1.345	1.345
Material: MED-DEN-FIBRE-18MM							
BASE-DRAWER	1	Base unit drawer	MFC18-OAK	500.0	186.3	2.591	2.591
BASE-DOOR	1	Base unit door	MFC18-OAK	500.0	554.8	4.228	4.228
+BUDC	1	Base unit drawer carcase		462.0	148.3	546.0	
BUDC-LEFT	1	Drawer carcas...	WHITE-ACRYLI...	546.0	136.3	1.320	1.320
Description: Drawer carcase left Material: WHITE-ACRYLIC-12MM							
BUDC-RIGHT	1	Drawer carcas...	WHITE-ACRYLI...	546.0	136.3	1.320	1.320
Description: Drawer carcase right Material: WHITE-ACRYLIC-12MM							
BUDC-BACK	1	Drawer carcas...	WHITE-ACRYLI...	438.0	136.3	1.320	1.320
Description: Drawer carcase back Material: WHITE-ACRYLIC-12MM							
BUDC-BOTTOM	1	Drawer carcas...	WHITE-ACRYLI...	462.0	546.0	1.320	1.320
Description: Drawer carcase base Material: WHITE-ACRYLIC-12MM							
Z-DRAWER-SCREW	13	Acrylic drawe...	WHITE-ACRYLI...	0.120			1.560
Description: Acrylic drawer screw							
Z-DOUBLE	2	Pull handle	WHITE-ACRYLI...	1.210			2.420
ZH180-HINGE	2	Hinge 180 HKK...	WHITE-ACRYLI...	0.400			0.800
Description: Hinge 180 HKK123-321							
Z-DOWEL	22	Dowel	WHITE-ACRYLI...	0.120			2.640
Z-SHELF-SUPPORT	4	Shelf support	WHITE-ACRYLI...	0.190			0.760
Z-RUNNER	2	Drawer runner	WHITE-ACRYLI...	0.430			
ZS40-8-CSUNK-SCREW	8	Csunk Screw 4...	WHITE-ACRYLI...	0.010			
Description: Csunk Screw 40mm No8							
Y-ASSEMBLY	180	Cabinet Assembly	WHITE-ACRYLI...	6.500			

2.	BASE-SINK	2	Sink base unit	1000.0	870.0	

DOORMATERIAL: MFC18-OAK
CARCASEMATERIAL: MED-DEN-FIBRE-18

Product costing - print

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



Code	Description	Quantity	Linear	Area	Cost	Tota

Board	Material	Quantity	Area	Cost/m2	Tota
MEL-CHIP-18MM/01	MEL-CHIP-18MM 3050.0 x 1220.0	1	3.721	3.180	11.83
MEL-CHIP-18MM/02	MEL-CHIP-18MM 2440.0 x 1220.0	6	17.861	3.140	56.08
HARDBOARD-WHITE-4MM/01	HARDBOARD-WHITE-4MM 2440.0 x 1220.0	4	11.907	0.950	11.31
MFC18-OAK/02	MFC18-OAK 2440.0 x 1220.0	2	5.954	2.970	17.68
MFC18-BEECH/01	MFC18-BEECH 3050.0 x 1525.0	3	13.954	3.210	44.79
MFC18-BEECH/02	MFC18-BEECH 2440.0 x 1220.0	1	2.977	2.960	8.81
		17	56.373		150.51

Sundry	Material	Quantity	Linear	Area	Cost	Tota
WHAC12/01	WHITE-ACRYLIC-12MM	28			1.320	36.96
		28				36.96

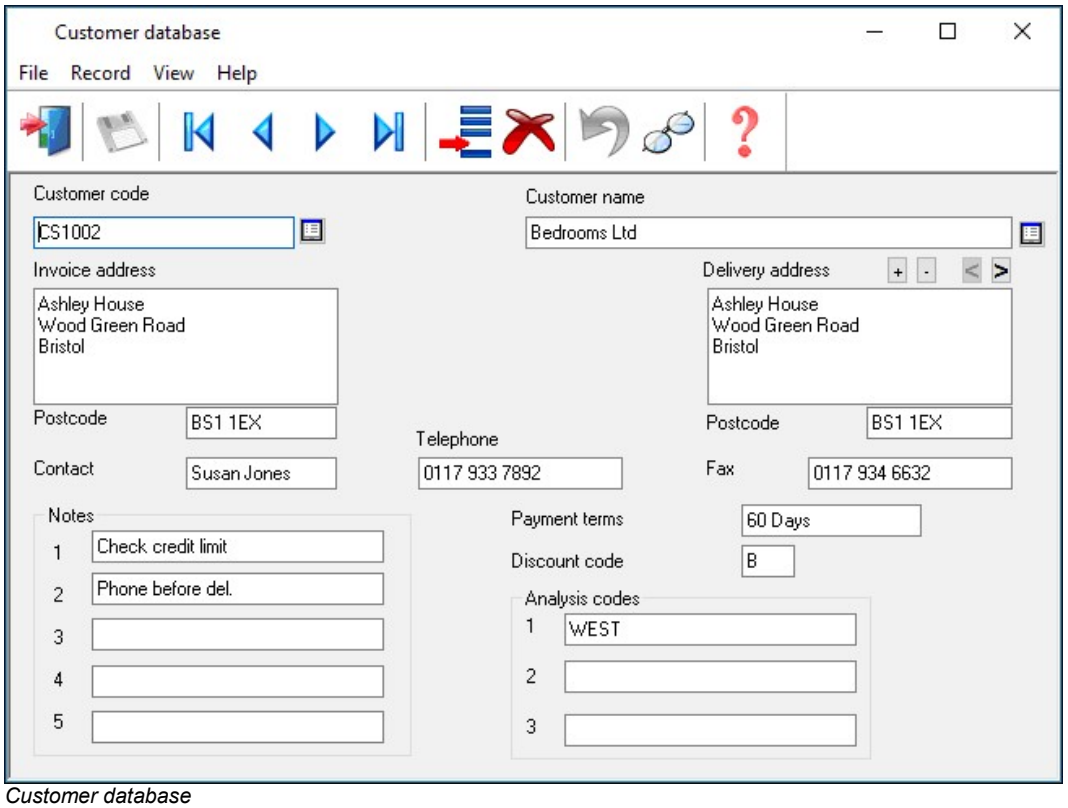
Edging	Description	Quantity	Cost/m	Tota
OAK-TAPE-22MM	Oak PVC Tape 22mm	60.840	0.840	51.10
BEECH-TAPE-22MM	Beech PVC Tape 22mm	50.820	0.720	36.59
WHITE-TAPE-22MM	White PVC Tape 22mm	8.840	0.550	4.86
		120.500		92.55

Fitting	Description	Quantity	Cost	Tota
Z-DOUBLE	Pull handle	31	1.210	37.51
Z-DOWEL	Dowel	326	0.120	39.12
Z-DRAWER-SCREW	Acrylic drawer screw	91	0.120	10.92

Job costing

Customer database

The module includes an integrated database for customer details and addresses etc.



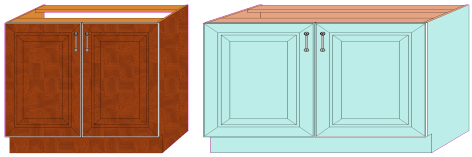
Customer database

This is an Access MDB database - so the data can be easily linked to other systems.

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.



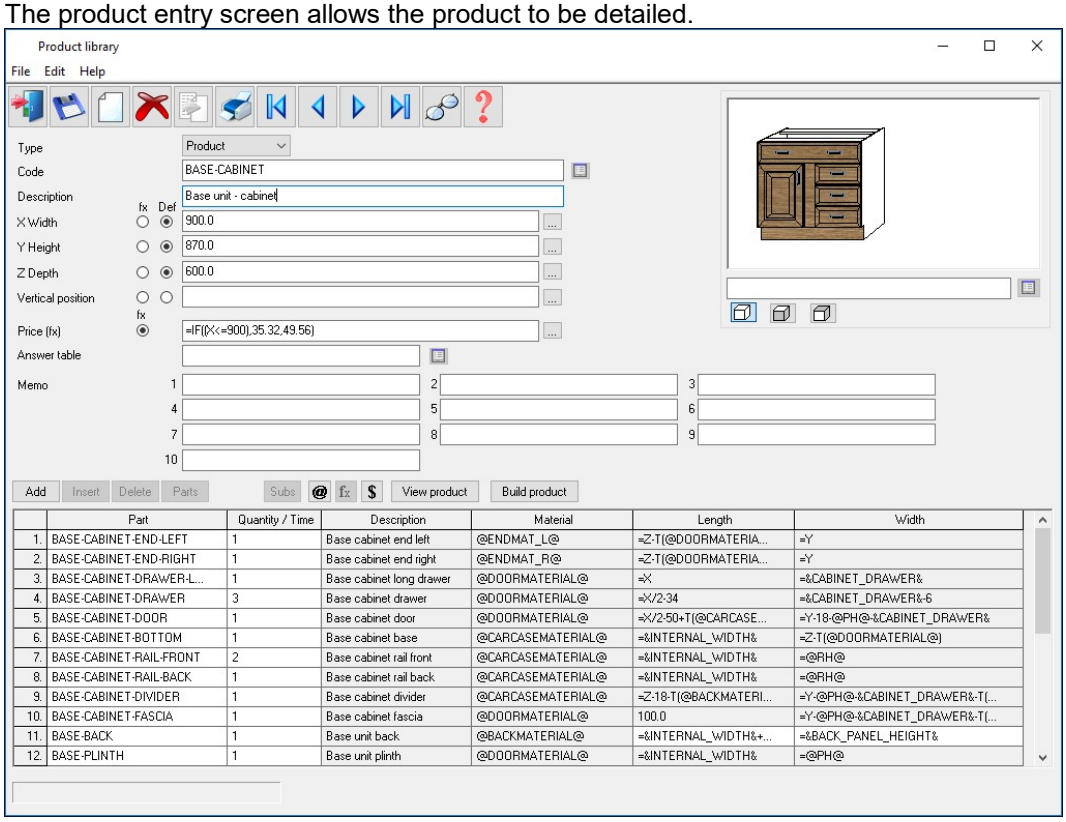
Products

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.



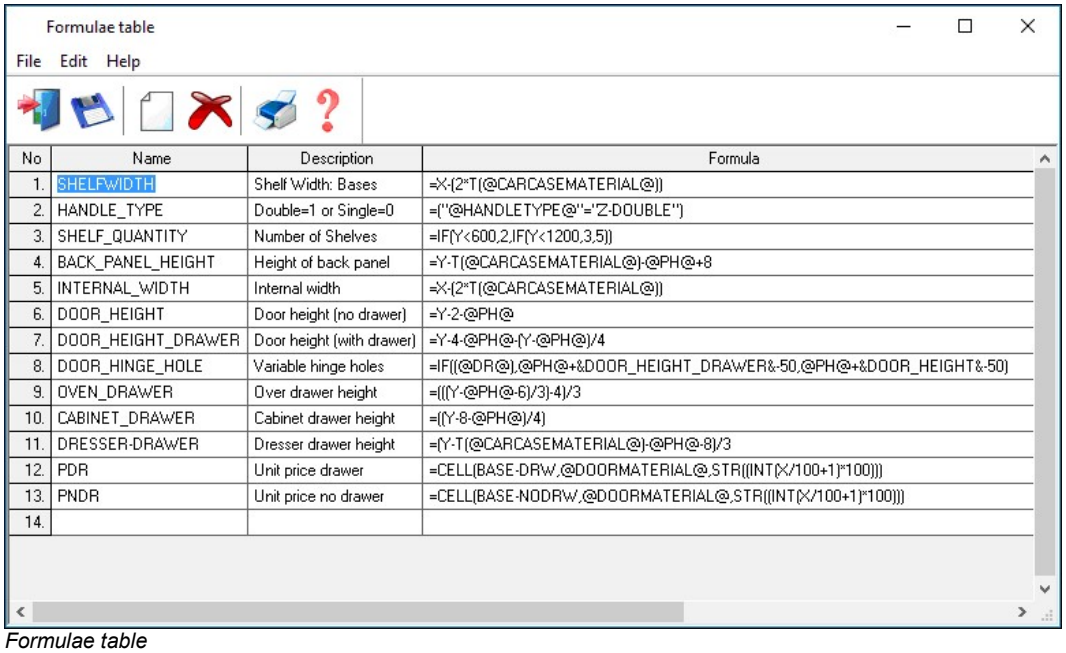
Product library

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.

The formula is pre-defined formula that depends on the material thickness. There are tables for defining variables, lookup tables, and formulae.



No	Name	Description	Formula
1.	SHELFWIDTH	Shelf Width: Bases	=X-(2*T(@CARCASEMATERIAL@))
2.	HANDLE_TYPE	Double=1 or Single=0	=("@HANDLETYPE@"="Z-DOUBLE")
3.	SHELF_QUANTITY	Number of Shelves	=IF(Y<600,2,IF(Y<1200,3,5))
4.	BACK_PANEL_HEIGHT	Height of back panel	=Y-T(@CARCASEMATERIAL@)-@PH@+8
5.	INTERNAL_WIDTH	Internal width	=X-(2*T(@CARCASEMATERIAL@))
6.	DOOR_HEIGHT	Door height (no drawer)	=Y-2-@PH@
7.	DOOR_HEIGHT_DRAWER	Door height (with drawer)	=Y-4-@PH@-(Y-@PH@)/4
8.	DOOR_HINGE_HOLE	Variable hinge holes	=IF((@DR@),@PH@+&DOOR_HEIGHT_DRAWER&-50,@PH@+&DOOR_HEIGHT&-50)
9.	OVEN_DRAWER	Over drawer height	=(((Y-@PH@-6)/3)-4)/3
10.	CABINET_DRAWER	Cabinet drawer height	=((Y-8-@PH@)/4)
11.	DRESSER-DRAWER	Dresser drawer height	=(Y-T(@CARCASEMATERIAL@)-@PH@-8)/3
12.	PDR	Unit price drawer	=CELL(BASE-DRW,@DOORMATERIAL@,STR((INT(X/100+1)*100)))
13.	PNDR	Unit price no drawer	=CELL(BASE-NODRW,@DOORMATERIAL@,STR((INT(X/100+1)*100)))
14.			

Formulae table

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.

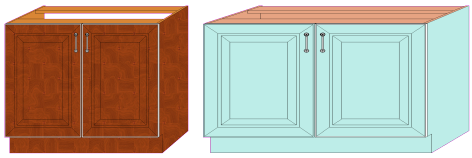
More about custom products

When working with custom products many of the parts or other features of the product are defined by a formula rather than a fixed value and some features of the product are defined as variable items, such as overall size or door material.

The actual size or material is specified when you enter the order details or product requirements for a particular order. This is a big advantage because a single 'Product' definition can be used to cater for a variety of customer preferences, or different options within a style or range. This helps to keep the product library small and easy to maintain.

For example, in the following simple case, TOP and DOORS are the variables for the materials in the product.

To enter an item as a variable surround the variable name with the @ symbol, for example: @TOP@ @DOORS@.



Products

```
TUDOR/1 Kitchen cabinet 750.0
Code     Qty  Material Description       Gr  Edge
TOP/1     1   @TOP@    Long work top    Y   1111
DOOR/2    2   @DOORS@  Tudor doors      Y   0000
FT/1234 15   +SCREW   3/4" screws
FT/006    1   +EXTRA   Inside trays
```

Product and part formulae

If you define a product such that some or all of the overall product dimensions are different for each customer then some or all of the individual parts also vary in size. For example, the tops in the above case have different lengths and widths for each product variation.

To deal with this define for each part how its size varies with the overall product dimensions.

In the example above tops this may be quite simple:-

```
length of top = overall width of product
width of top = overall depth of product
```

The formulae for the doors may be more complicated:-

```
length of door = height of product - 35mm
width of door = (width of product-10mm)/2
```

The overall product dimensions are represented by the following variable names:-

```
X - overall product width
Y - overall product height
Z - overall product depth
```

Which you can use in formulae. In the above example the formulae become:-

```
length of top = X
width of top = Z
length of door = Y-35
width of door = (X-10)/2
```

A formula can also contain a variable, such as, @PLINTH@. Where the variable stands for a specific value that varies with each product.

```
Length of door = Y-2*@PLINTH@
```

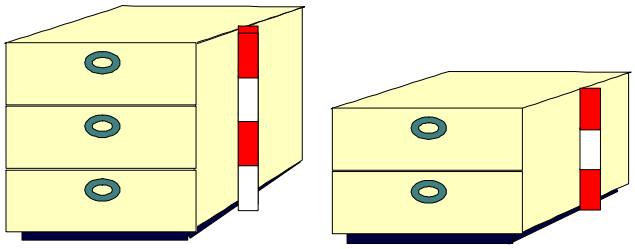
The product requirements calculation replaces the variable @PLINTH@ by the value entered at the optimise products screen.

Conditional statements

A conditional statement is a statement that evaluates to 0 if the statement is false and 1 if the statement is true.

```
=(X>400)
=((Z-12)<500)
```

The statement (X>400) means If X is greater than 400 the statement is set to 1 or if X is less than 400 the statement is set to 0. A typical use of these statements is in the quantity box. On some products the number of drawers may depend on the overall height of the product, for example:-



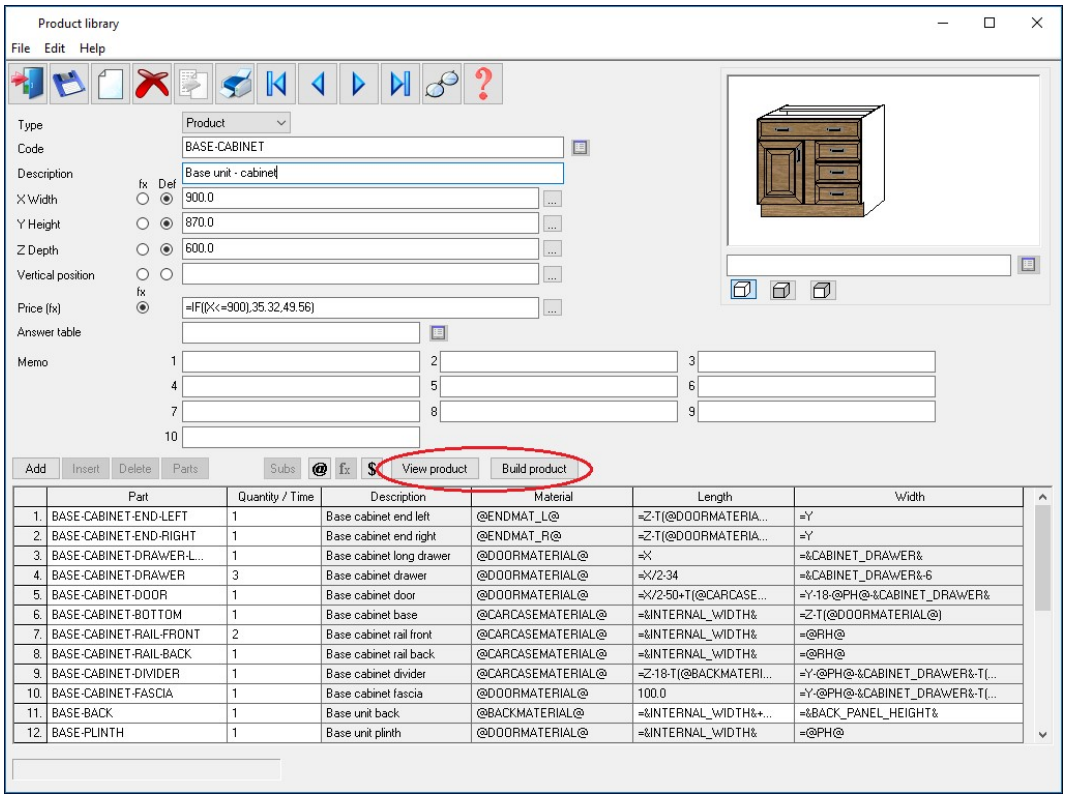
Formula

```
2 drawers if product is less than 1000mm in height
3 drawers if product is more than 1000mm in height
```

The formula for this is: Number of drawers' = 2+1*(Y>=1000)

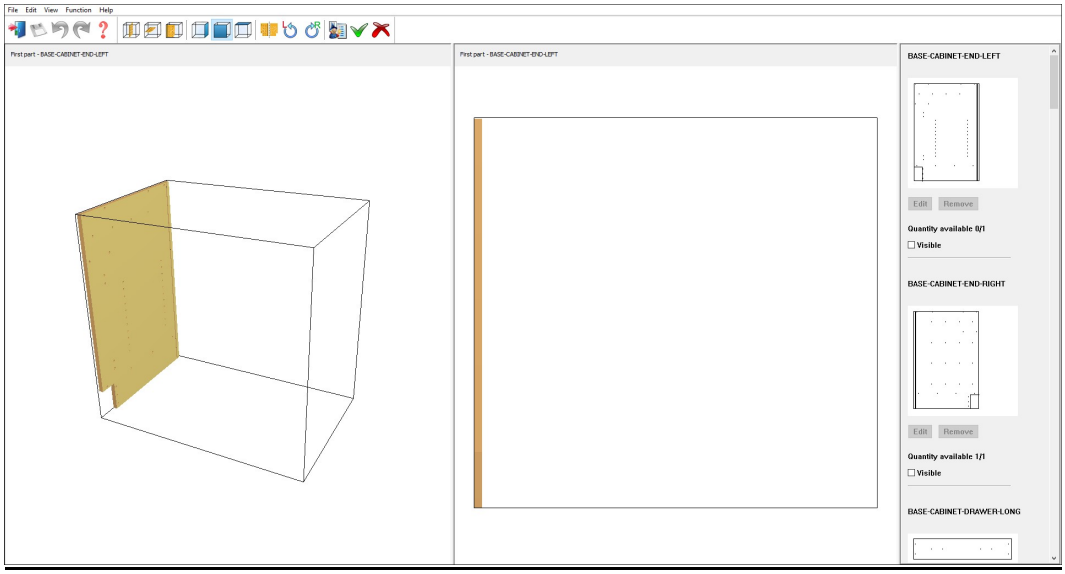
Making 3D models in the product library

It is possible to construct a 3D model of a product in the product library by specifying how the products parts are connected together.



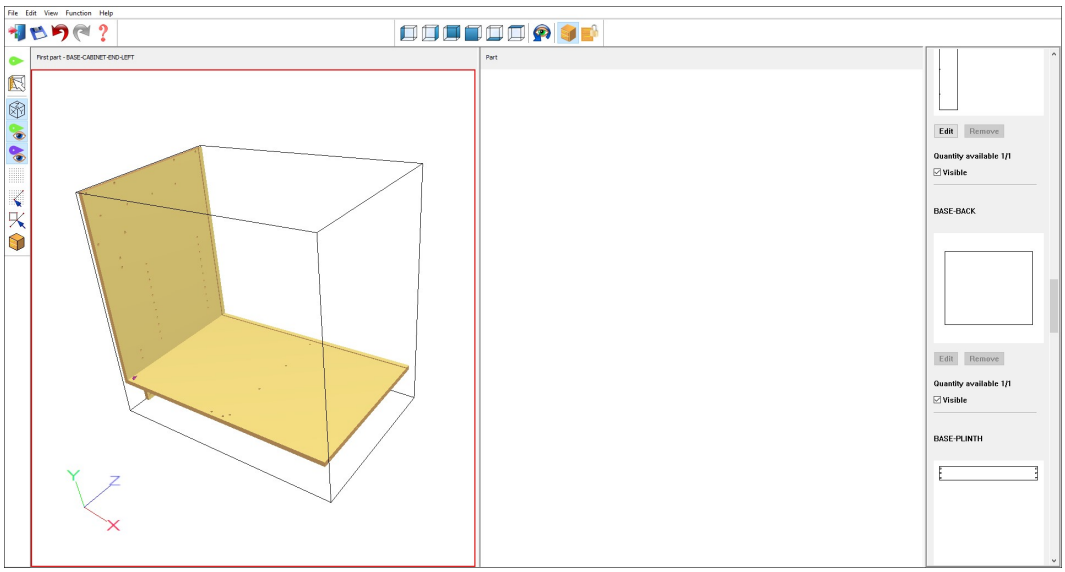
These products can then be viewed in 3D in product requirements or quote. When viewing such products variables answers can be changed to instantly see their effect on the product.

Products are created by specifying a first part in the product and how it is positioned within the product cuboid created to the product size specified in the product library.



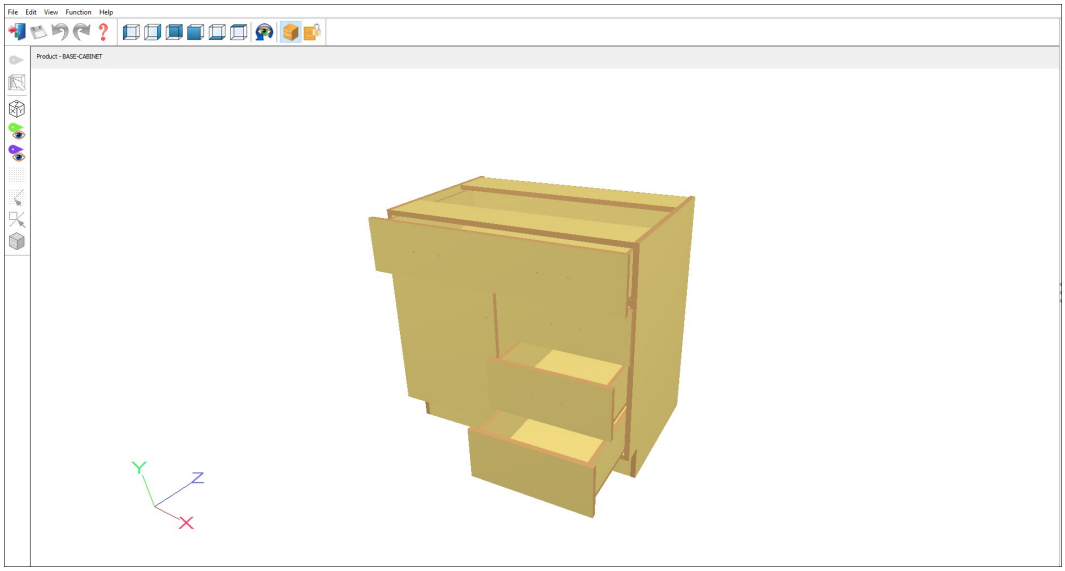
First Part Positioning

Once the first part has been placed the other parts of the product can be added one at a time.



3D Product Builder

Until the product is complete:



3D Completed Product

The products are built using connectors. A connector is attached to each part and then snapped together.

A connector

Connectors positions on their part can be specified parametrically so they will remain in the correct place as the dimensions of the product change.

Product requirements

Product requirements are the quantities of each product required to fulfil an order. The requirements can include values for sizes, finishes and fittings etc. where these are variable items that vary with each order.

With the product and part libraries set up the program can automatically calculate for each product requirement list the type, sizes and quantities of each part required. The result is a cutting list of part sizes for those products. The program optimises the cutting list to produce a set of cutting patterns.

At the Main screen:-

- Select: **File - Product requirements**

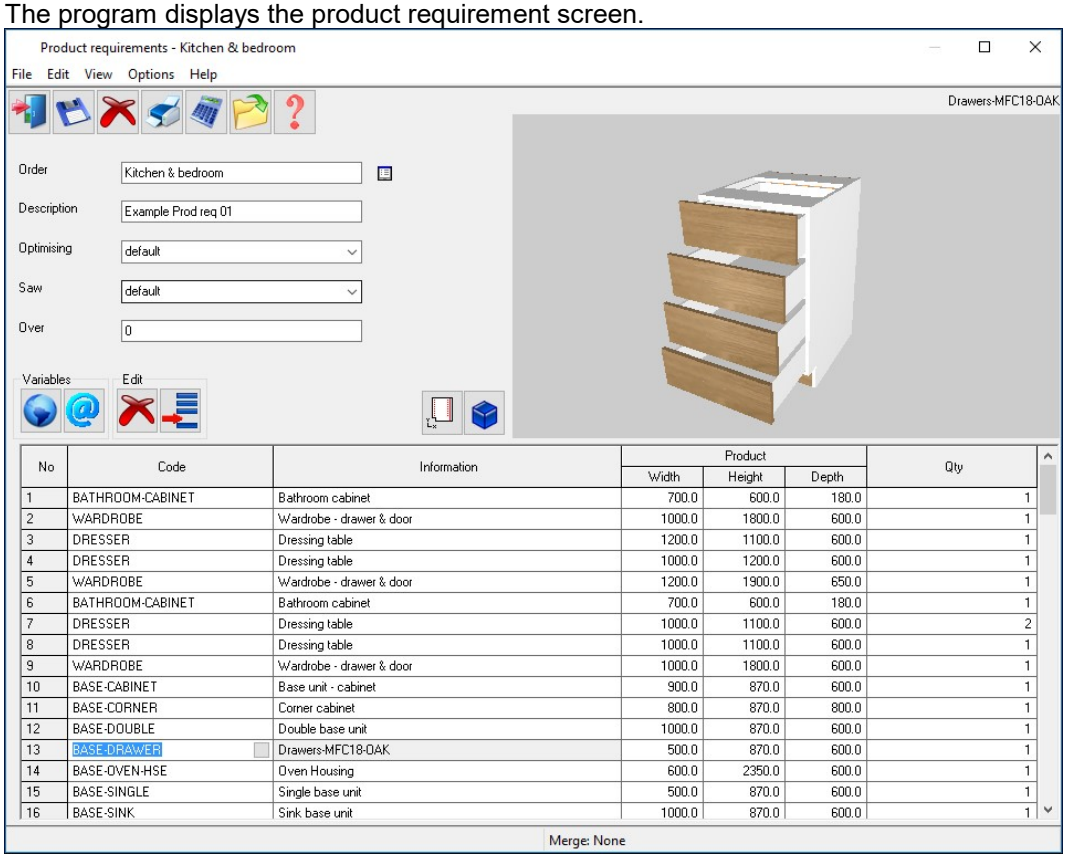
or

- **Click on a file name** (Product requirements section of the File tree)

The product requirement are also available from the main screen at the File menu.

- Select: **File - Product requirements**

The program displays the product requirement screen.



No	Code	Information	Product			Qty
			Width	Height	Depth	
1	BATHROOM-CABINET	Bathroom cabinet	700.0	600.0	180.0	1
2	WARDROBE	Wardrobe - drawer & door	1000.0	1800.0	600.0	1
3	DRESSER	Dressing table	1200.0	1100.0	600.0	1
4	DRESSER	Dressing table	1000.0	1200.0	600.0	1
5	WARDROBE	Wardrobe - drawer & door	1200.0	1900.0	650.0	1
6	BATHROOM-CABINET	Bathroom cabinet	700.0	600.0	180.0	1
7	DRESSER	Dressing table	1000.0	1100.0	600.0	2
8	DRESSER	Dressing table	1000.0	1100.0	600.0	1
9	WARDROBE	Wardrobe - drawer & door	1000.0	1800.0	600.0	1
10	BASE-CABINET	Base unit - cabinet	900.0	870.0	600.0	1
11	BASE-CORNER	Corner cabinet	800.0	870.0	800.0	1
12	BASE-DOUBLE	Double base unit	1000.0	870.0	600.0	1
13	BASE-DRAWER	Drawers-MFC18-OAK	500.0	870.0	600.0	1
14	BASE-OVEN-HSE	Oven Housing	600.0	2350.0	600.0	1
15	BASE-SINGLE	Single base unit	500.0	870.0	600.0	1
16	BASE-SINK	Sink base unit	1000.0	870.0	600.0	1

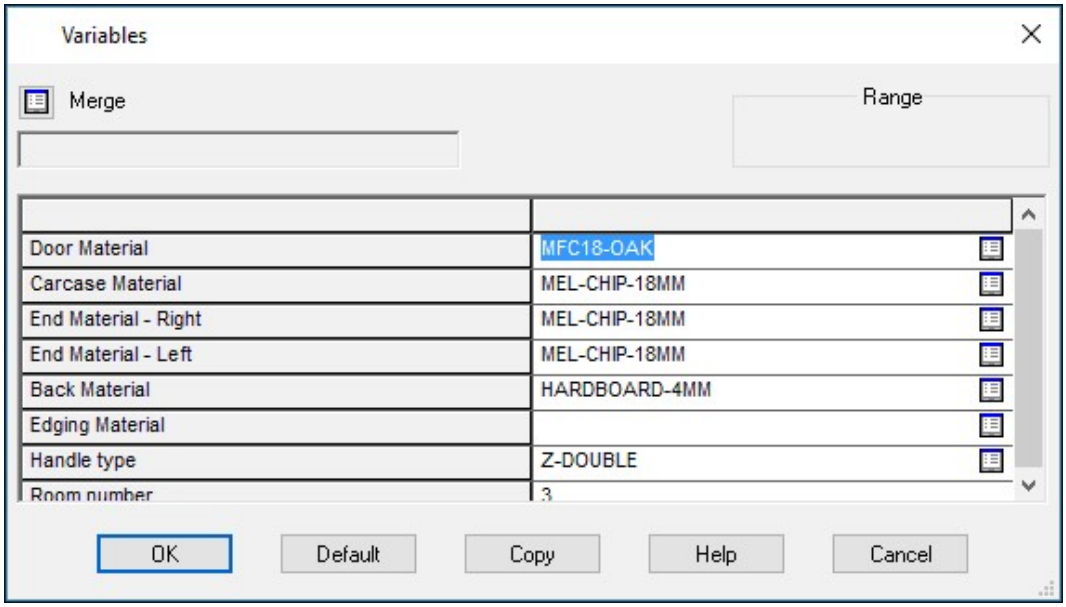
Product requirements

The screen shows the list of products required and the quantity of each. This might be a list for a customer or batch of items for production.

When reviewing the requirements, products can be displayed as 2D drawings or 3D models.

Select to view a 3D model of your product, the model has to have been created previously via the product library.

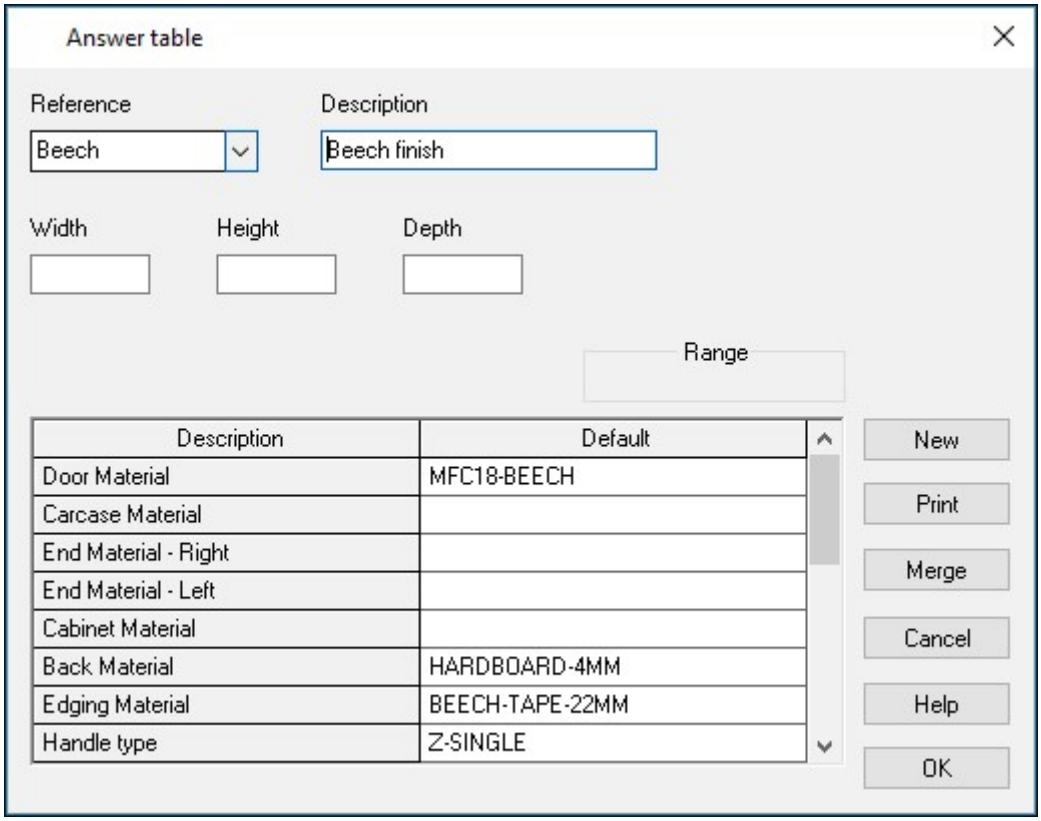
Custom products - For custom products the programs prompts for the customised details when products are entered. For example, the overall width, depth or height, finish or material for a product (where these are variable items).



Enter variable values dialog

The ‘Copy’ option offers a list of pre-defined 'answers' which can be used to quickly set up a product.

The sets of 'answers' are created in the 'Answer table' and can be useful where a product has several different but well defined ranges.

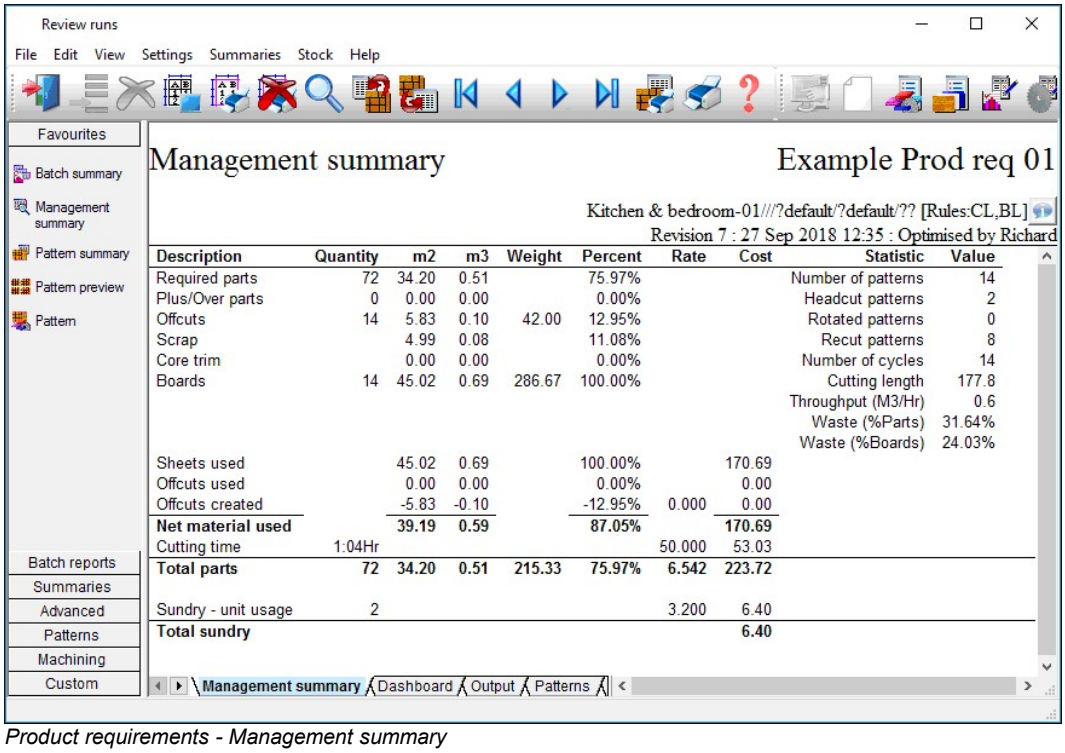


Answer table

In the above example there are a set of pre-defined values for the Beech finish.

Select the Optimise button to create cutting patterns

When optimisation is complete the screen displays the *Management summary*



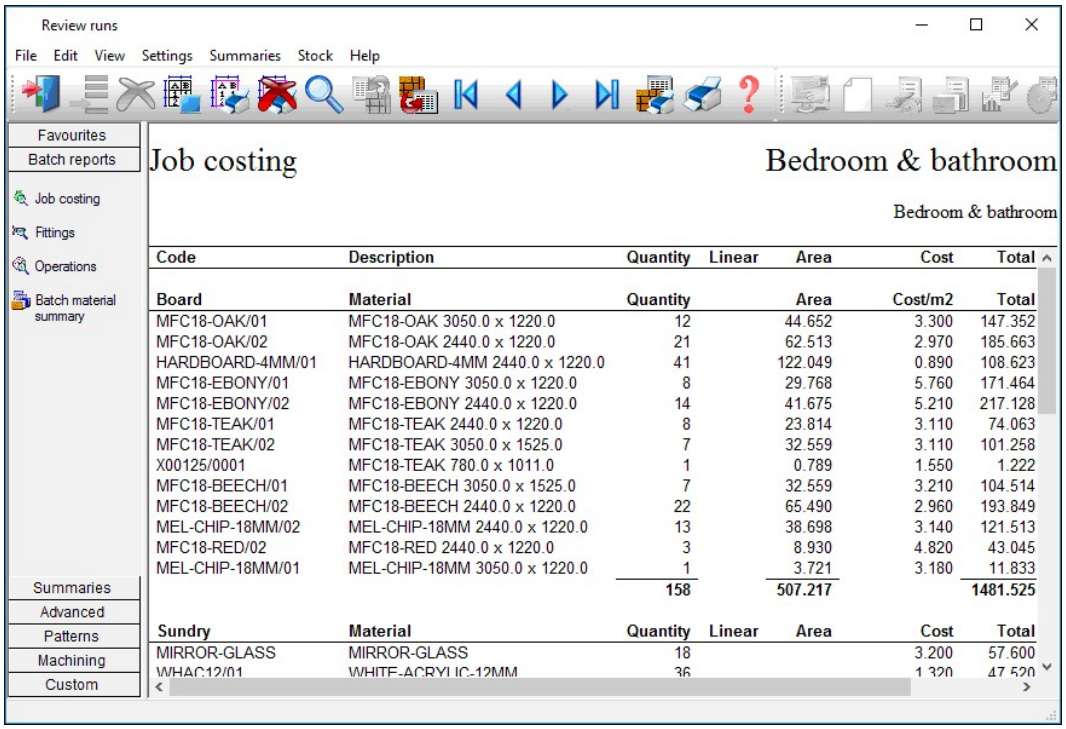
Description	Quantity	m2	m3	Weight	Percent	Rate	Cost	Statistic	Value
Required parts	72	34.20	0.51		75.97%			Number of patterns	14
Plus/Over parts	0	0.00	0.00		0.00%			Headcut patterns	2
Offcuts	14	5.83	0.10	42.00	12.95%			Rotated patterns	0
Scrap		4.99	0.08		11.08%			Recut patterns	8
Core trim		0.00	0.00		0.00%			Number of cycles	14
Boards	14	45.02	0.69	286.67	100.00%			Cutting length	177.8
								Throughput (M3/Hr)	0.6
								Waste (%Parts)	31.64%
								Waste (%Boards)	24.03%
Sheets used		45.02	0.69		100.00%		170.69		
Offcuts used		0.00	0.00		0.00%		0.00		
Offcuts created		-5.83	-0.10		-12.95%	0.000	0.00		
Net material used		**39.19**	**0.59**		**87.05%**		**170.69**		
Cutting time	1:04Hr					50.000	53.03		
Total parts	**72**	**34.20**	**0.51**	**215.33**	**75.97%**	**6.542**	**223.72**		
Sundry - unit usage	2					3.200	6.40		
Total sundry							**6.40**		

Product requirements - Management summary

The patterns and summaries can be reviewed and the data sent to the saw in the usual way.

Requirements report **-** You can print report for each optimised requirements list. This shows a complete breakdown of the products, parts and quantities for the requirements list.

Job costing report **-** Another useful report is the job costing report. This shows a full breakdown of the production costs, including material, fittings, edging, assembly operations etc.



Code	Description	Quantity	Linear	Area	Cost	Total

Board	Material	Quantity	Area	Cost/m2	Total
MFC18-OAK/01	MFC18-OAK 3050.0 x 1220.0	12	44.652	3.300	147.352
MFC18-OAK/02	MFC18-OAK 2440.0 x 1220.0	21	62.513	2.970	185.663
HARDBOARD-4MM/01	HARDBOARD-4MM 2440.0 x 1220.0	41	122.049	0.890	108.623
MFC18-EBONY/01	MFC18-EBONY 3050.0 x 1220.0	8	29.768	5.760	171.464
MFC18-EBONY/02	MFC18-EBONY 2440.0 x 1220.0	14	41.675	5.210	217.128
MFC18-TEAK/01	MFC18-TEAK 2440.0 x 1220.0	8	23.814	3.110	74.063
MFC18-TEAK/02	MFC18-TEAK 3050.0 x 1525.0	7	32.559	3.110	101.258
X00125/0001	MFC18-TEAK 780.0 x 1011.0	1	0.789	1.550	1.222
MFC18-BEECH/01	MFC18-BEECH 3050.0 x 1525.0	7	32.559	3.210	104.514
MFC18-BEECH/02	MFC18-BEECH 2440.0 x 1220.0	22	65.490	2.960	193.849
MEL-CHIP-18MM/02	MEL-CHIP-18MM 2440.0 x 1220.0	13	38.698	3.140	121.513
MFC18-RED/02	MFC18-RED 2440.0 x 1220.0	3	8.930	4.820	43.045
MEL-CHIP-18MM/01	MEL-CHIP-18MM 3050.0 x 1220.0	1	3.721	3.180	11.833
		158	507.217		1481.525

Sundry	Material	Quantity	Linear	Area	Cost	Total
MIRROR-GLASS	MIRROR-GLASS	18			3.200	57.600
WHAC12/01	WHITE-ACRYLIC-12MM	36			1.320	47.520

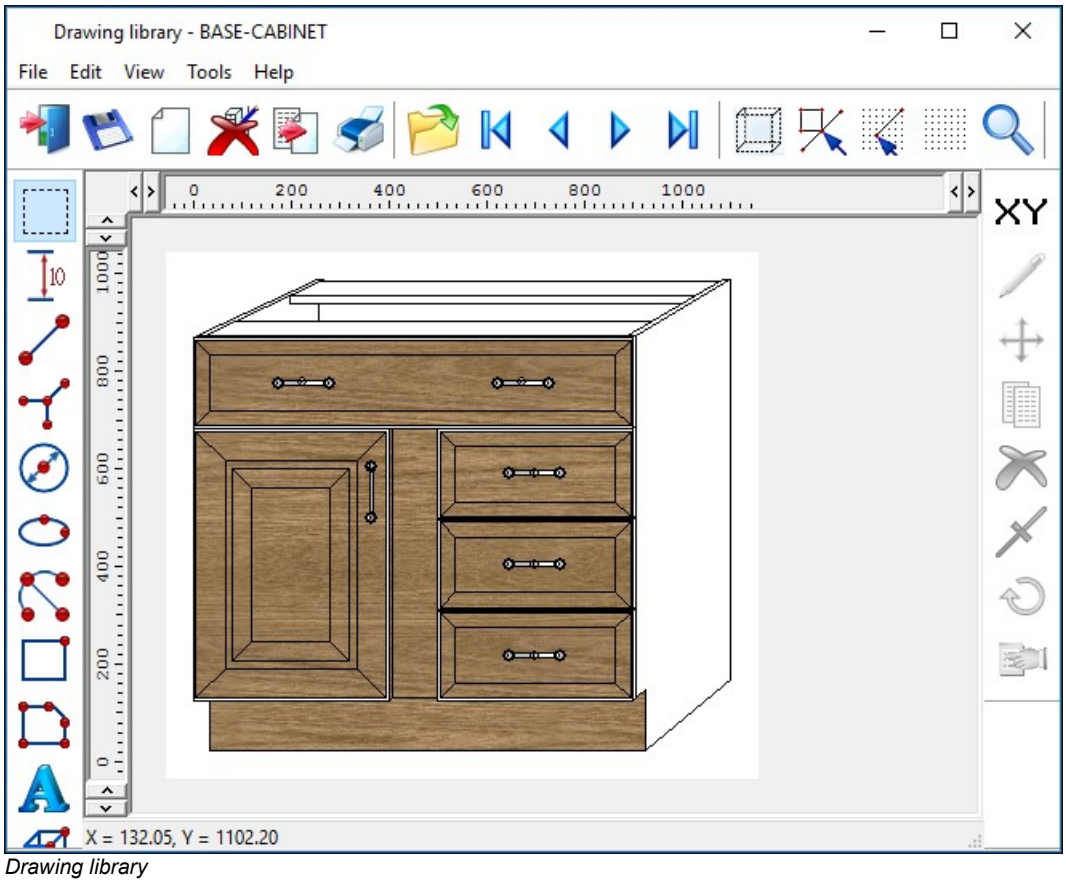
Job costing

Drawing library

The program includes a drawing library for creating (or importing) drawings of parts and/or products. The advantage of the drawing library (compared to a picture or bitmap) is that the drawing can be scaled and can include more detail.

Drawings can be useful in easily identifying items and can be printed on labels and reports.
Both the part and product library screens have a box for displaying a drawing associated with the part or product. At the main screen:-

• Select: **Libraries - Drawing library**

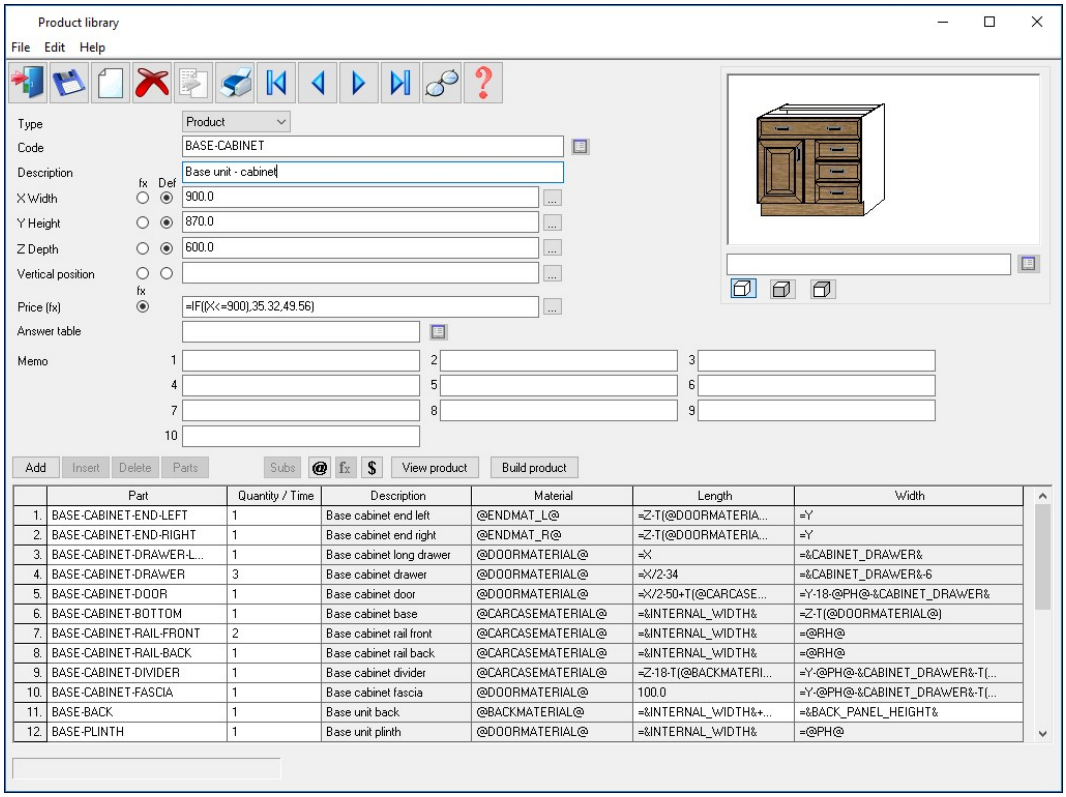


Drawing library

The drawing library contains a set of general drawing tools to help draw the items and there are also specialist tools to quickly draw cabinets and other items in perspective. The tools include a full range of vector drawing tools, rectangle, arc, ellipse, lines …

The same drawing can be assigned to one or more products in the product library if necessary.

If the drawing has the same code as a product in the product library is it automatically linked to that product.

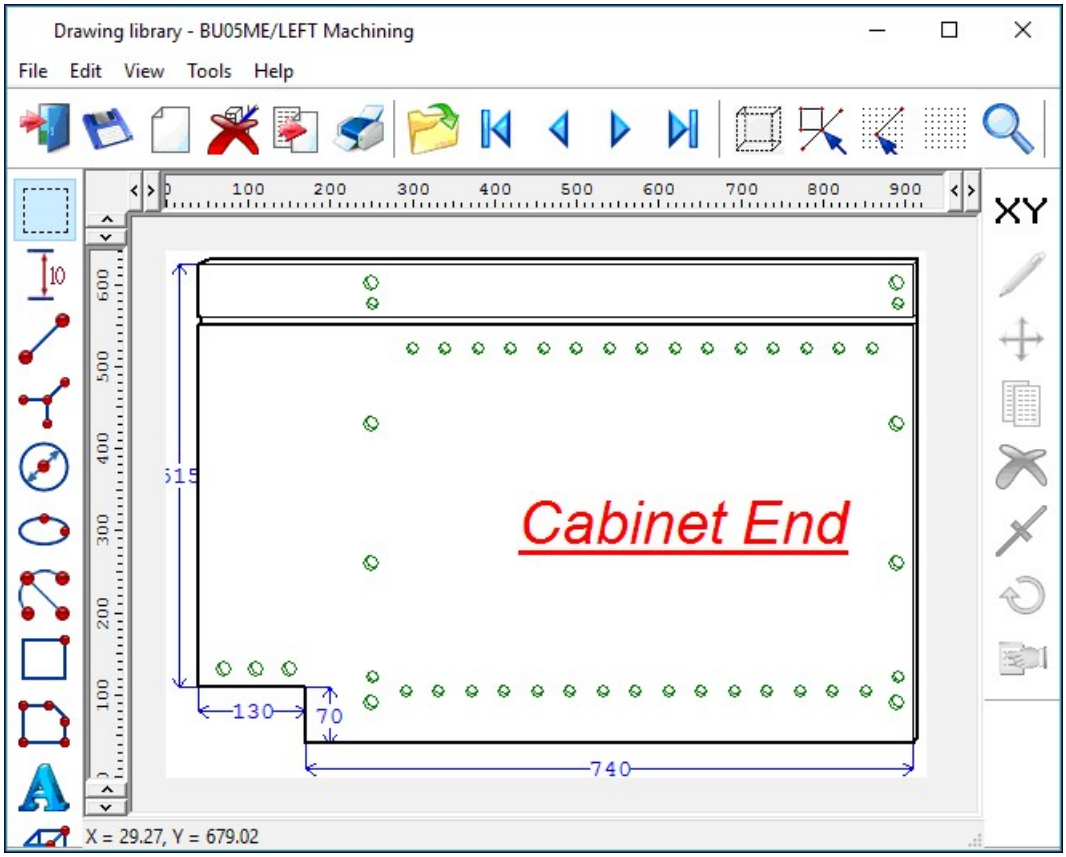


	Part	Quantity / Time	Description	Material	Length	Width
1.	BASE-CABINET-END-LEFT	1	Base cabinet end left	@ENDMAT_L@	=Z-T(@DOORMATERIA...	=Y
2.	BASE-CABINET-END-RIGHT	1	Base cabinet end right	@ENDMAT_R@	=Z-T(@DOORMATERIA...	=Y
3.	BASE-CABINET-DRAWER-L...	1	Base cabinet long drawer	@DOORMATERIAL@	=X	=&CABINET_DRAWER&
4.	BASE-CABINET-DRAWER	3	Base cabinet drawer	@DOORMATERIAL@	=X/2-34	=&CABINET_DRAWER&-6
5.	BASE-CABINET-DOOR	1	Base cabinet door	@DOORMATERIAL@	=X/2-50+T(@CARCASE...	=Y-18-@PH@-&CABINET_DRAWER&
6.	BASE-CABINET-BOTTOM	1	Base cabinet base	@CARCASEMATERIAL@	=&INTERNAL_WIDTH&	=Z-T(@DOORMATERIAL@)
7.	BASE-CABINET-RAIL-FRONT	2	Base cabinet rail front	@CARCASEMATERIAL@	=&INTERNAL_WIDTH&	=@RH@
8.	BASE-CABINET-RAIL-BACK	1	Base cabinet rail back	@CARCASEMATERIAL@	=&INTERNAL_WIDTH&	=@RH@
9.	BASE-CABINET-DIVIDER	1	Base cabinet divider	@CARCASEMATERIAL@	=Z-18-T(@BACKMATERI...	=Y-@PH@-&CABINET_DRAWER&-T(...
10.	BASE-CABINET-FASCIA	1	Base cabinet fascia	@DOORMATERIAL@	100.0	=Y-@PH@-&CABINET_DRAWER&-T(...
11.	BASE-BACK	1	Base unit back	@BACKMATERIAL@	=&INTERNAL_WIDTH&+...	=&BACK_PANEL_HEIGHT&
12.	BASE-PLINTH	1	Base unit plinth	@DOORMATERIAL@	=&INTERNAL_WIDTH&	=@PH@

Drawing at Product library

The drawing layout and tools are very flexible so a wide range of accurate drawings are possible.

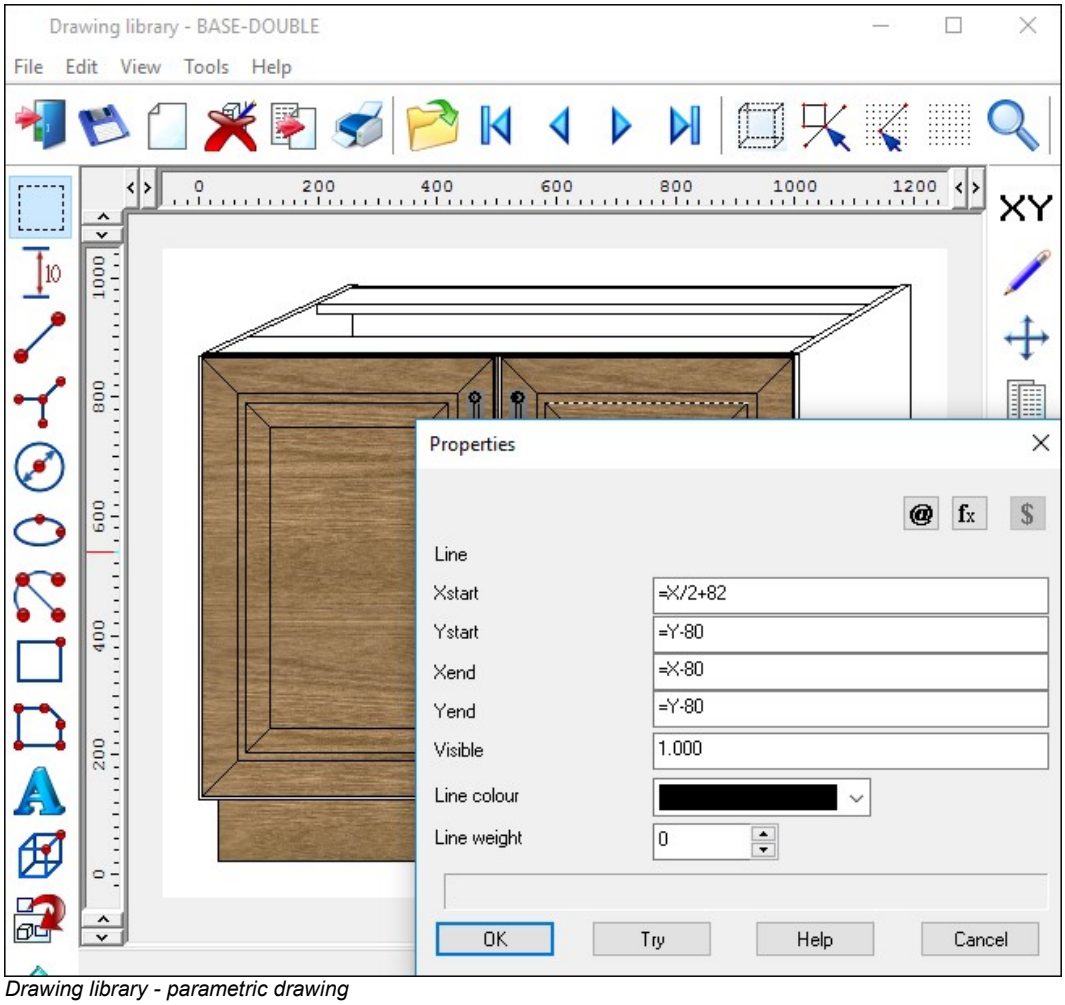
For example, a perspective view of machining for a part.



Drawing library - machining

The following drawing shows a detailed construction view.

This is a parametric drawing where the drawing is controlled by formula and is an exact representation of that item - including a perspective view



Drawing library - parametric drawing

For a parametric drawing each line is related to the overall product dimensions by a formula (set in the Properties dialog for the line or other drawing object). When the drawing is linked to a product the size of the drawing adjusts automatically.

There are also formula functions to express the perspective so that as the drawing changes size the perspective is still correct.

The drawings can also be exported as images.

8. Machining interface

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, Homag/Weeke WoodWop, and other proprietary formats.

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
...

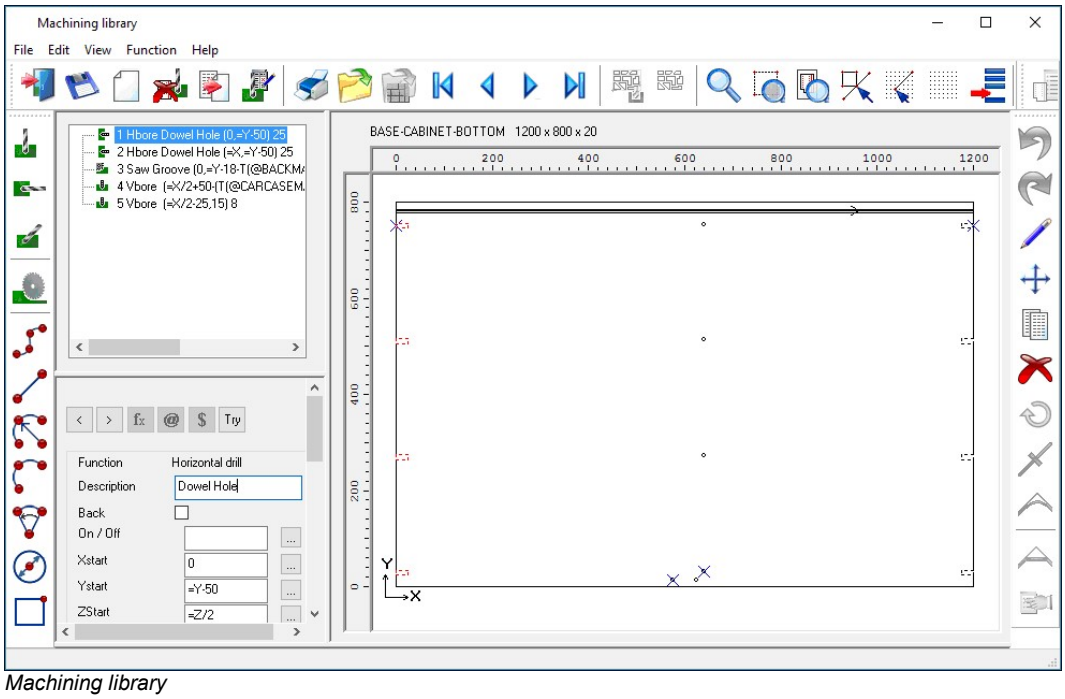
At the main screen:-

- Select: **Libraries - Machining library**

or

Select the Toolbar symbol

The machining library dialog is displayed. Use the navigation buttons or list box to move to the required part drawing.



Machining library

The panes at the left show 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.

The above example shows a set of drilling and routing instructions for a part.

Machining Instructions **-** At the left of the screen is the FUNCTION toolbar to select the type of machining operation (such as drilling or routing).

Enter the details of each operation in the boxes to the right of the toolbar. The part drawing illustrating the machining is shown in the area to the far right of the screen. The drawing is built up as you enter machining operations.

For example, for a vertical drill operation enter the co-ordinates of the first hole - depth and diameter of the hole and the number, separation and direction of the repeated holes.

You can also enter the tool number and other machine specific details.

To move directly to a machine operation (for example to edit the details) click on the relevant part of the drawing. The current instruction is highlighted.

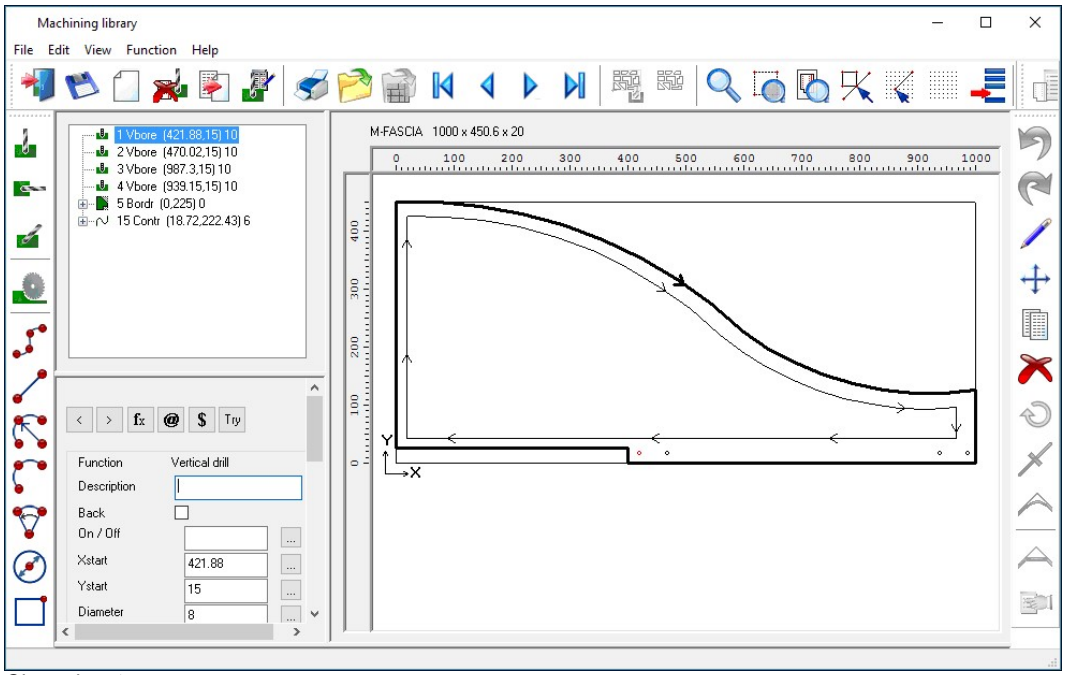
You can also use the mouse to enter instructions, for example, to specify the start and end of a groove.

External drawings – where the drawings are external files such as DXF or Homag/Weeke MPR(X) 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.



Shaped parts

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

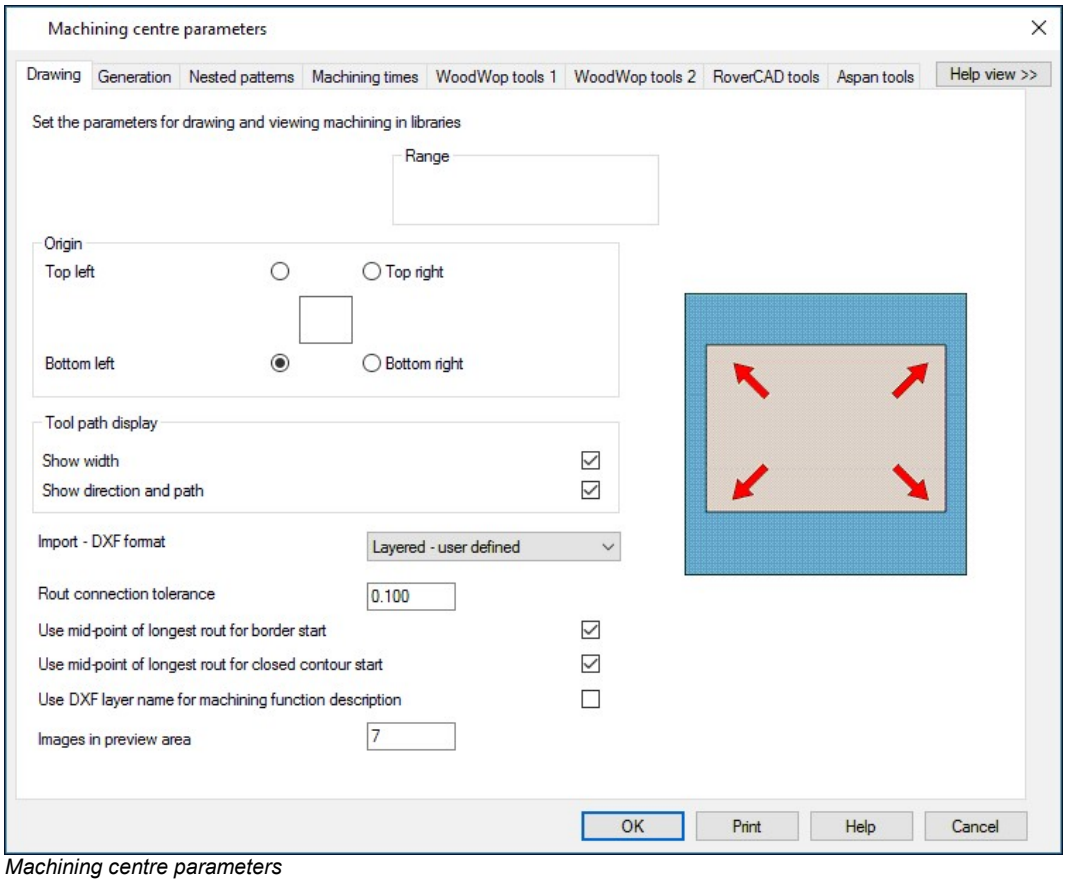
Use the mouse to quickly draw the function and use the boxes at the left to add the detailed measurements where required.

Machining parameters

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

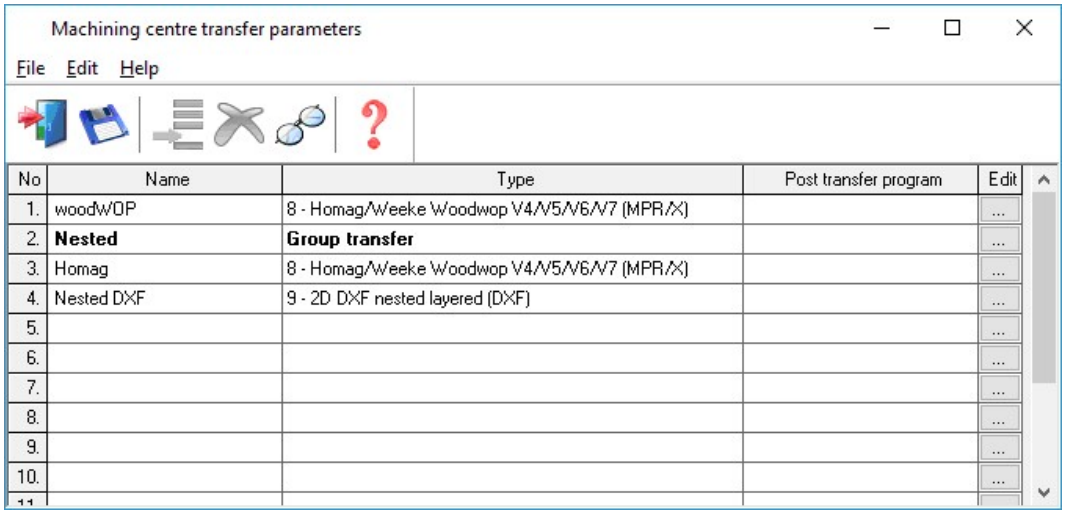
Machining centre parameters
Machining centre transfer parameters

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 Homag/Weeke WoodWop.



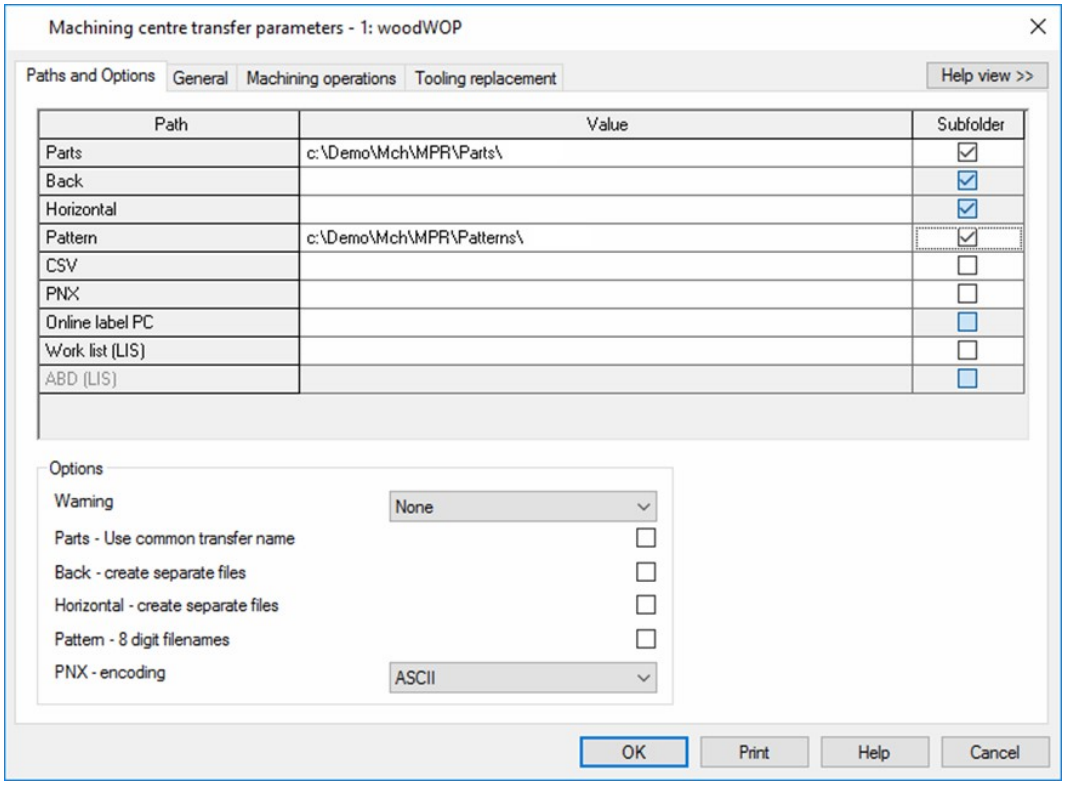
Machining centre parameters

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.



No	Name	Type	Post transfer program	Edit
1.	woodWOP	8 - Homag/Weeke Woodwop V4/V5/V6/V7 (MPR/X)		...
2.	**Nested**	**Group transfer**		...
3.	Homag	8 - Homag/Weeke Woodwop V4/V5/V6/V7 (MPR/X)		...
4.	Nested DXF	9 - 2D DXF nested layered (DXF)		...
5.				...
6.				...
7.				...
8.				...
9.				...
10.				...

Second screen reached via Edit button

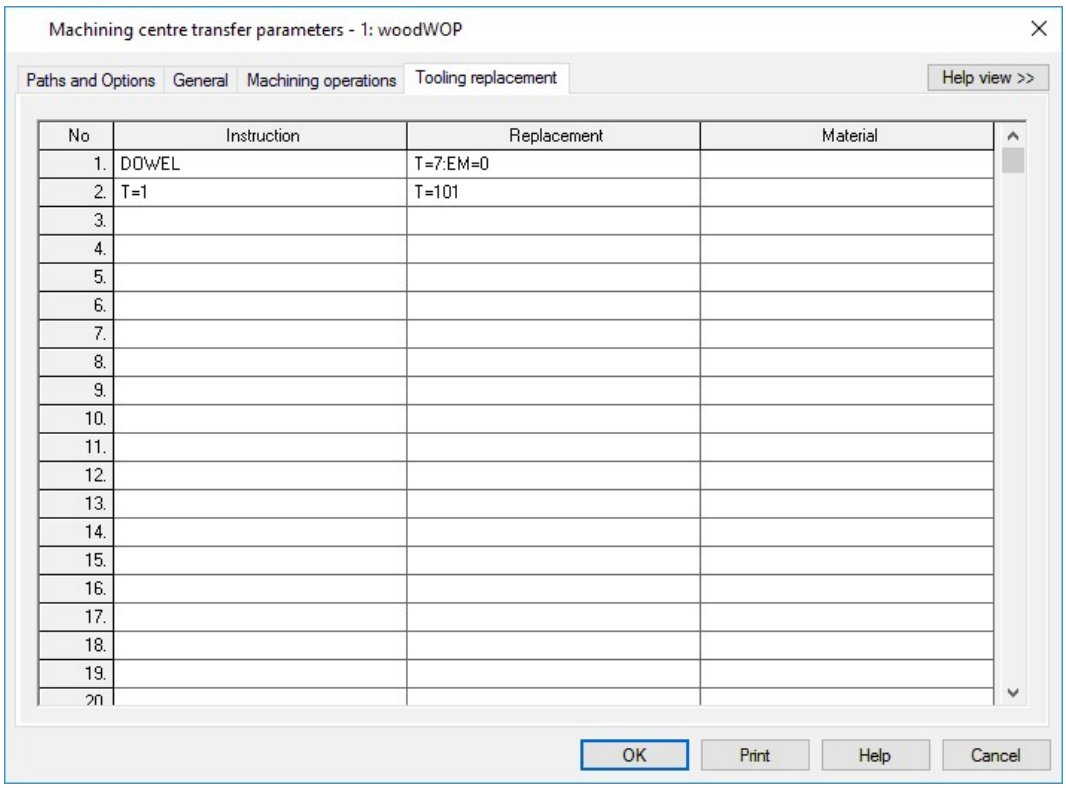


Machining centre transfer parameters

A wide range of transfer formats are supported:-

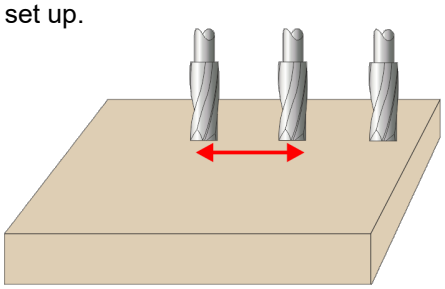
```
Homag/Weeke WoodWop V4/V5/V6/V7 (MPR(X))
Homag Weeke WoodWop V2.5 (MPR)
2D DXF non layered
2D DXF layered
D DXF layered
Biesse RoverCad (CID)
Morbidelli Aspan V3.2 (ASC)
Morbidelli Aspan V4.0 (ASC)
Busellato Autolink (DXF)
ASCII/Unicode PTX
MDB  PTX
Machining Program Interface (MPI) file
Xilog (XXL)
Biesse (CIX)
```

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.



Machining centre transfer parameters Tooling

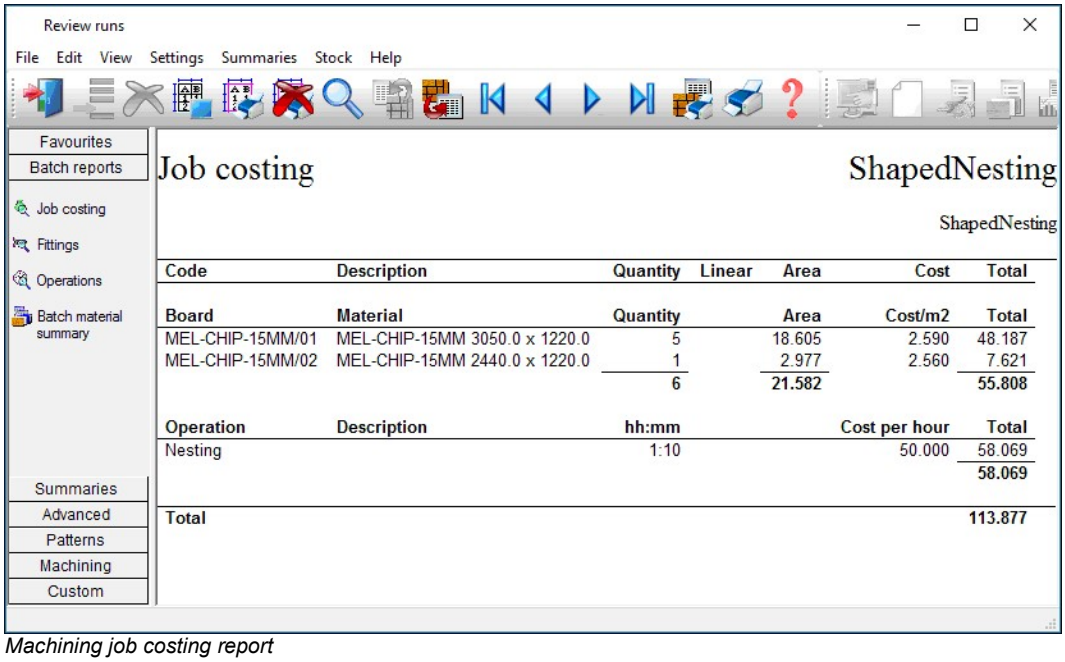
For most parameters there is a clear picture of the setting involved and examples of the set up.



Tooling

Machining summary and costs

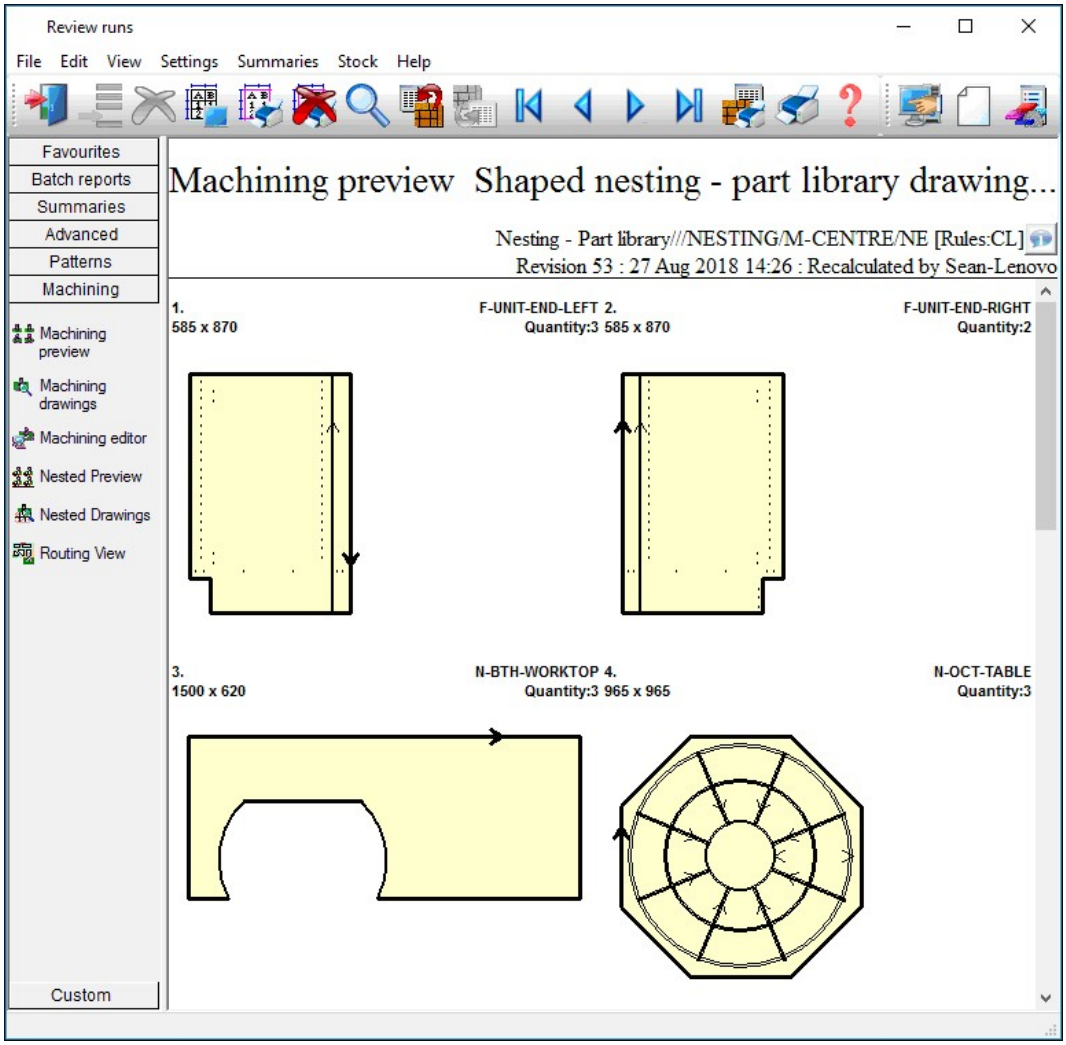
The costing for a job includes the machining times and costs.



Machining job costing report

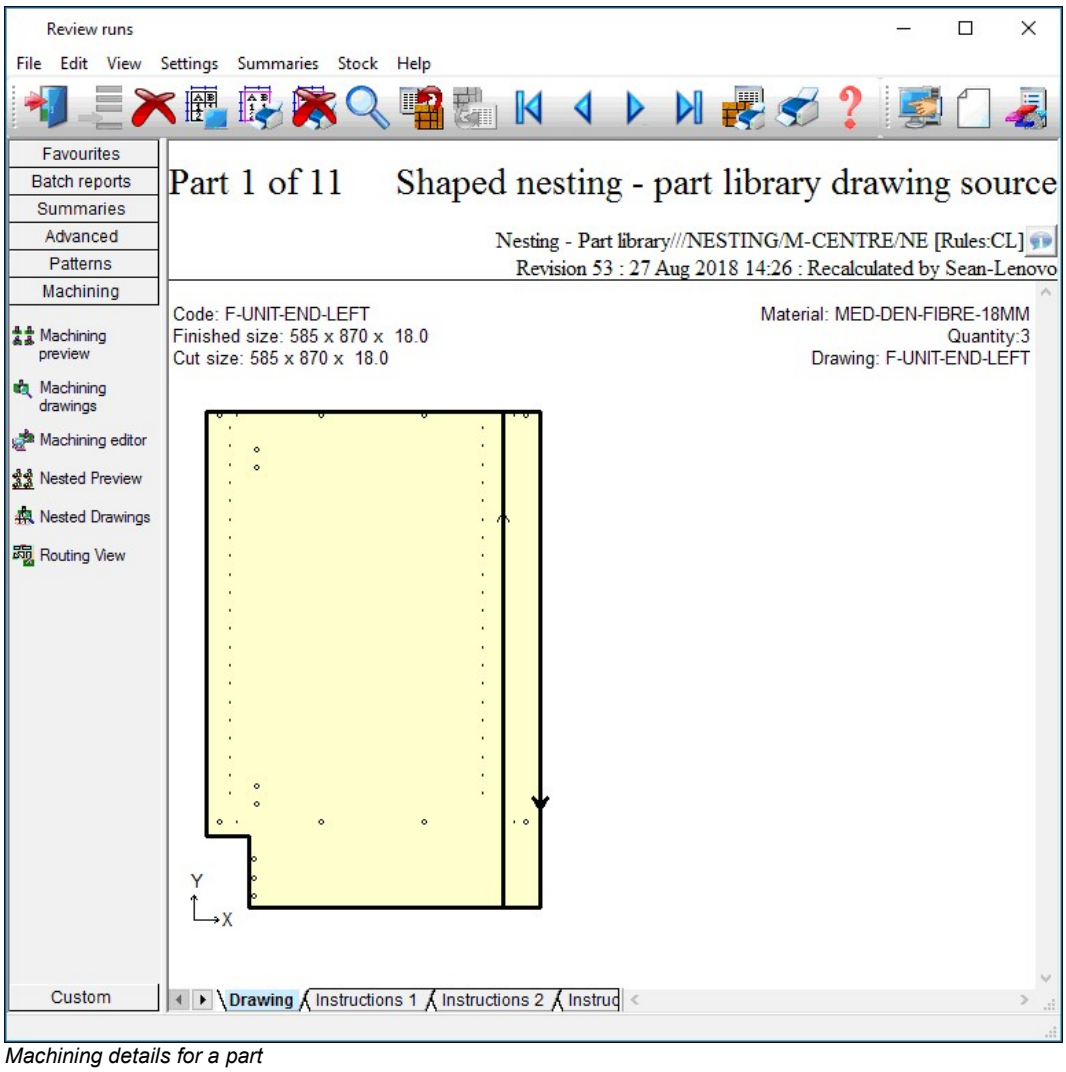
The job summary includes the machining drawings (with all dimensions resolved and calculated) and reports for each type of instruction. The machining can be checked at the Review runs screen:-

• Select: Machining in the stacked ToolBar
• Select: **Machining Preview**



Machining preview

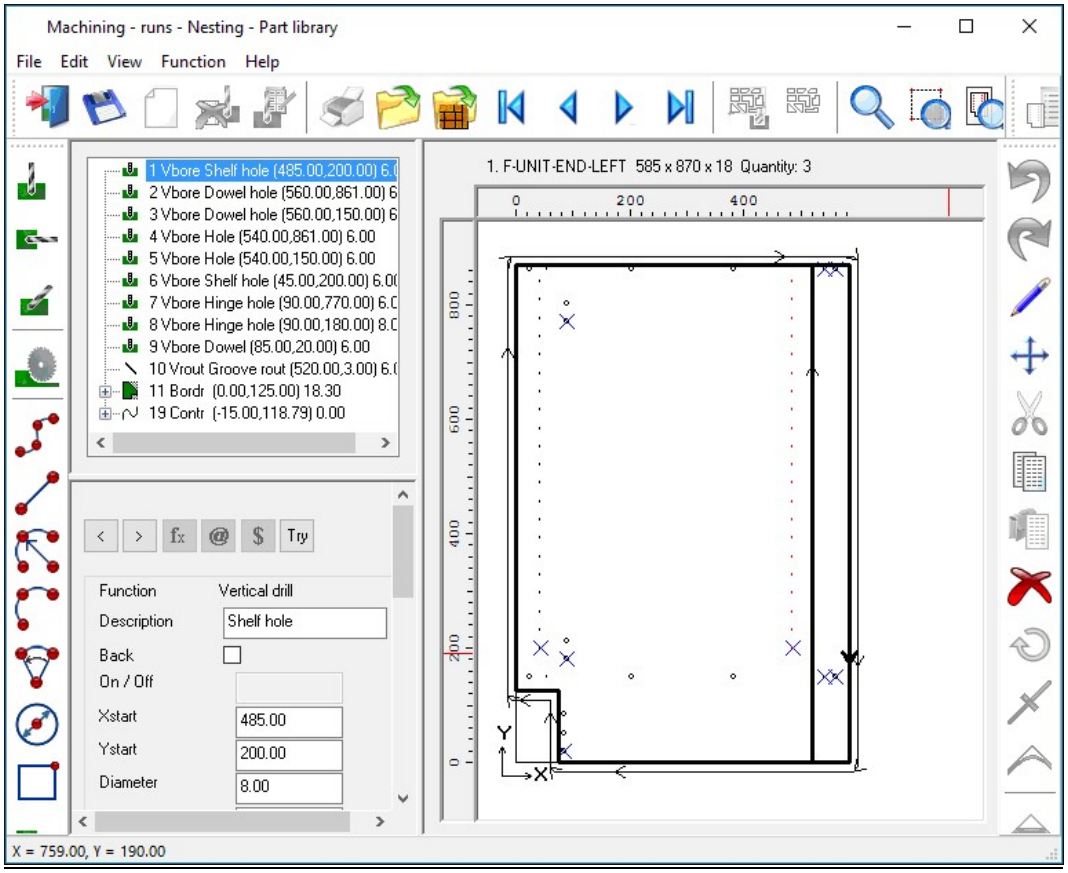
- Click on a part to move to the machining drawing



Machining details for a part

At this stage all the machine instructions have been fully calculated and set to absolute numbers ready for transfer to the machining centre. It is possible to make last minute changes to instructions; e.g. to exclude an instruction or change an offset.

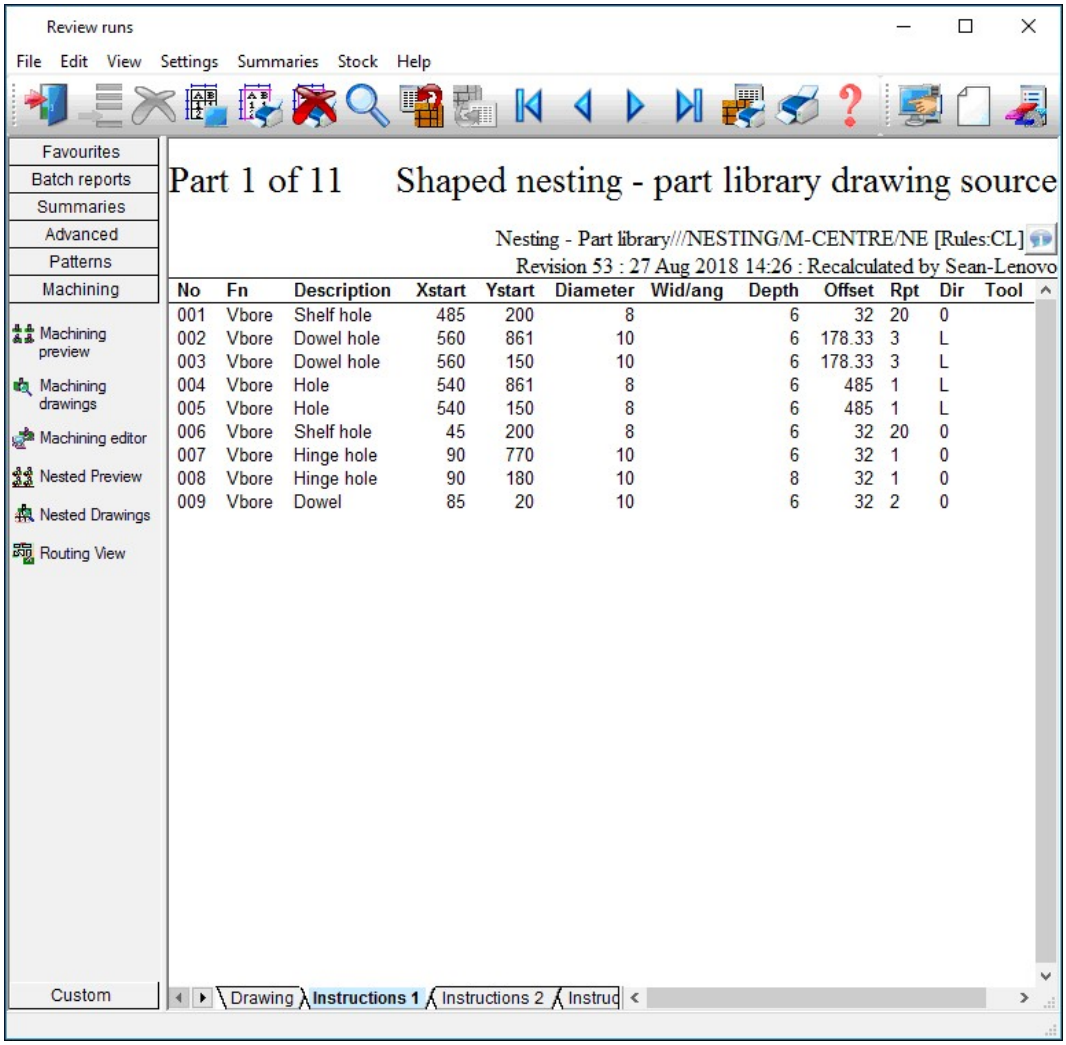
- Click on the drawing to move to the editor.



Machining - edit part drawing

The instruction pane at the left shows how all the instructions are converted to absolute values.

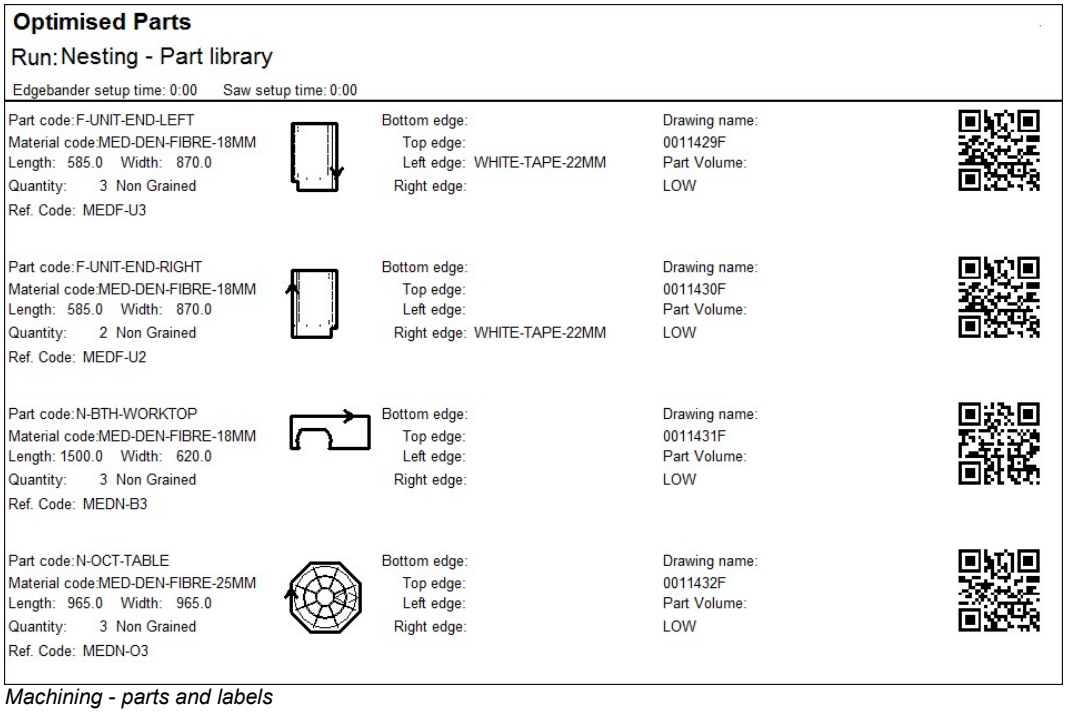
- Click on the tabs at the foot of the part drawing to see more details on the instructions for each part.



No	Fn	Description	Xstart	Ystart	Diameter	Wid/ang	Depth	Offset	Rpt	Dir	Tool
001	Vbore	Shelf hole	485	200	8		6	32	20	0	
002	Vbore	Dowel hole	560	861	10		6	178.33	3	L	
003	Vbore	Dowel hole	560	150	10		6	178.33	3	L	
004	Vbore	Hole	540	861	8		6	485	1	L	
005	Vbore	Hole	540	150	8		6	485	1	L	
006	Vbore	Shelf hole	45	200	8		6	32	20	0	
007	Vbore	Hinge hole	90	770	10		6	32	1	0	
008	Vbore	Hinge hole	90	180	10		8	32	1	0	
009	Vbore	Dowel	85	20	10		6	32	2	0	

Machining - instructions

Route cards or labels for each machined parts can be printed at the office.



Optimised Parts

Run: Nesting - Part library

Edgebander setup time: 0:00 Saw setup time: 0:00

Part code: F-UNIT-END-LEFT Material code: MED-DEN-FIBRE-18MM Length: 585.0 Width: 870.0 Quantity: 3 Non Grained Ref. Code: MEDF-U3		Bottom edge: Top edge: Left edge: WHITE-TAPE-22MM Right edge:	Drawing name: 0011429F Part Volume: LOW
Part code: F-UNIT-END-RIGHT Material code: MED-DEN-FIBRE-18MM Length: 585.0 Width: 870.0 Quantity: 2 Non Grained Ref. Code: MEDF-U2		Bottom edge: Top edge: Left edge: Right edge: WHITE-TAPE-22MM	Drawing name: 0011430F Part Volume: LOW
Part code: N-BTH-WORKTOP Material code: MED-DEN-FIBRE-18MM Length: 1500.0 Width: 620.0 Quantity: 3 Non Grained Ref. Code: MEDN-B3		Bottom edge: Top edge: Left edge: Right edge:	Drawing name: 0011431F Part Volume: LOW
Part code: N-OCT-TABLE Material code: MED-DEN-FIBRE-25MM Length: 965.0 Width: 965.0 Quantity: 3 Non Grained Ref. Code: MEDN-O3		Bottom edge: Top edge: Left edge: Right edge:	Drawing name: 0011432F Part Volume: LOW

Machining - parts and labels

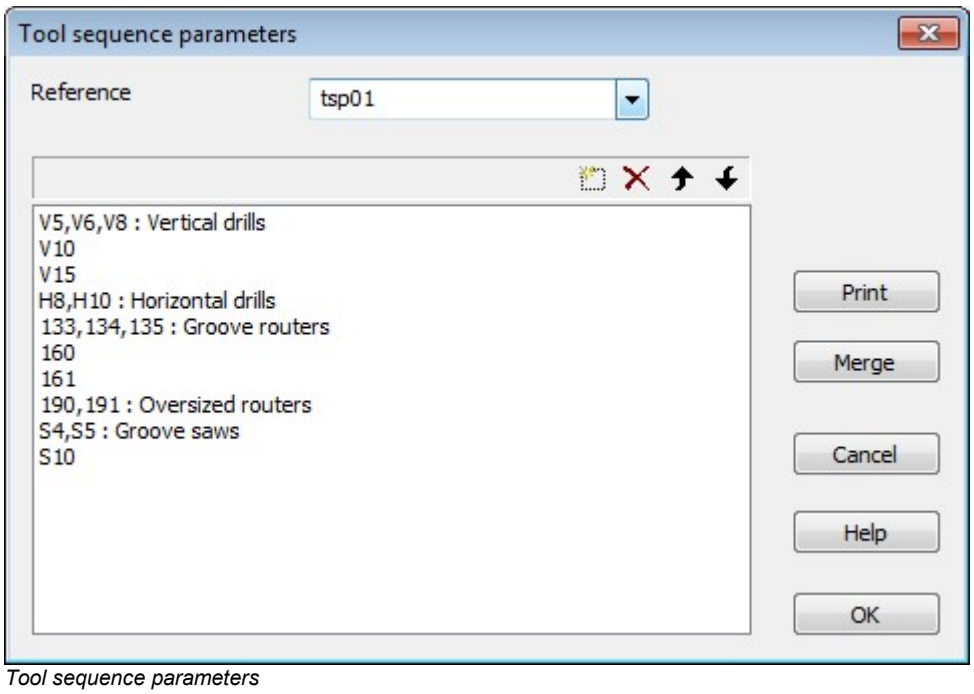
External drawings

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(X). 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.

After optimisation all the instructions are converted to fixed values so minor adjustments are easy to make and this does not affect the stored drawing in the machining library.

Tool optimisation

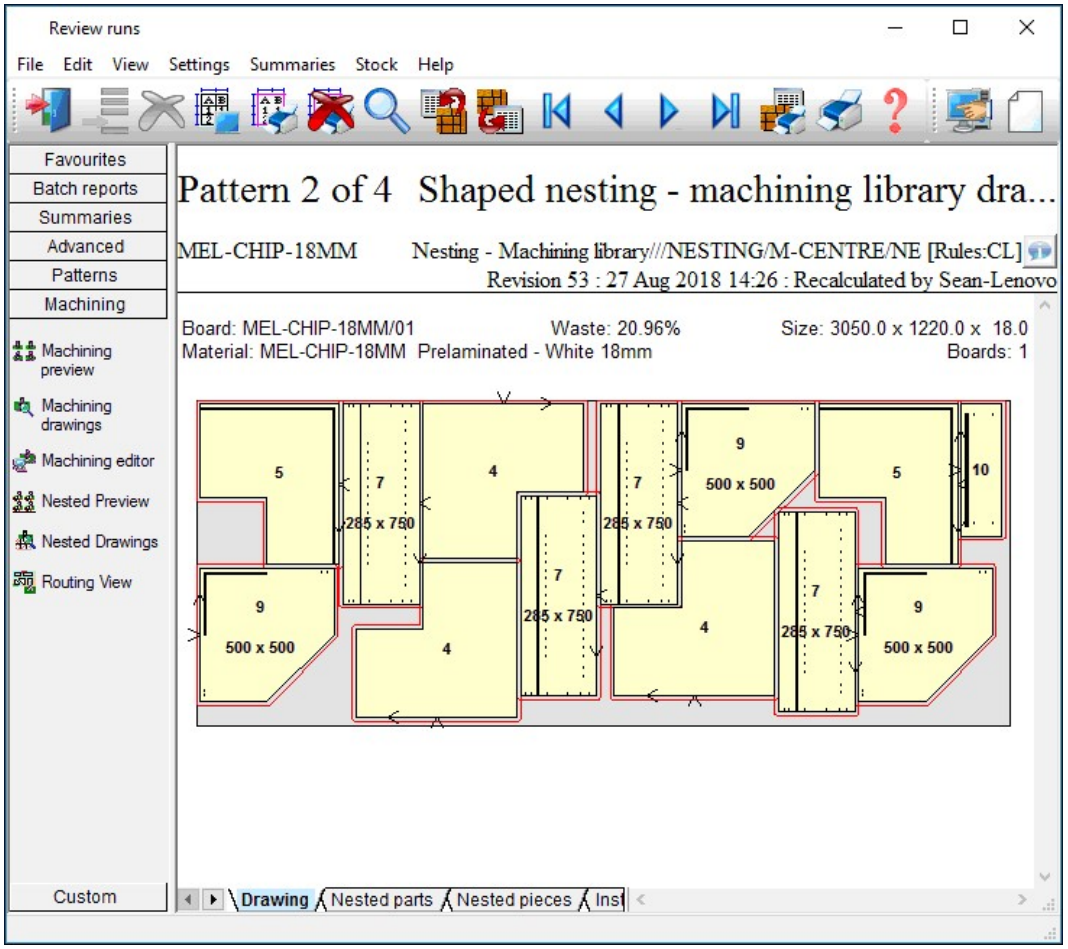
The program includes tool optimisation which minimizes the distance travelled for each set of tooling. This is calculated as the information is transferred to the machining centre. Use the 'Tool Sequence parameters' to set up the rules for tool optimisation.



Tool sequence parameters

9. Nesting Optimiser (NE)

A nested pattern is a pattern which is divided (and parts are machined) at a Machining centre. It can include shaped and non-shaped parts depending on the type of Nesting chosen.



Nesting optimising - pattern

The pattern layouts produced by the nesting optimisers reflect the different cutting methods and parts may include machining instructions.

There are different types of Optimiser used for nesting.

- Rectangular nesting
- Shaped nesting

- For rectangular nesting each part is placed on a pattern within a rectangular area. For shaped nesting parts can overlap the rectangular area around each part and be placed at an angle to each other.

- The choice of Nesting optimiser type is set via the Nesting parameters. Each part list is optimised with a specific nesting parameter list..

- Generated patterns (and parts) can be checked and edited in Review runs.

- For the Nesting optimiser types the patterns are generated for transfer to a *Machining centre*.

The Nesting module provides all the facilities and features to create and use nested patterns..

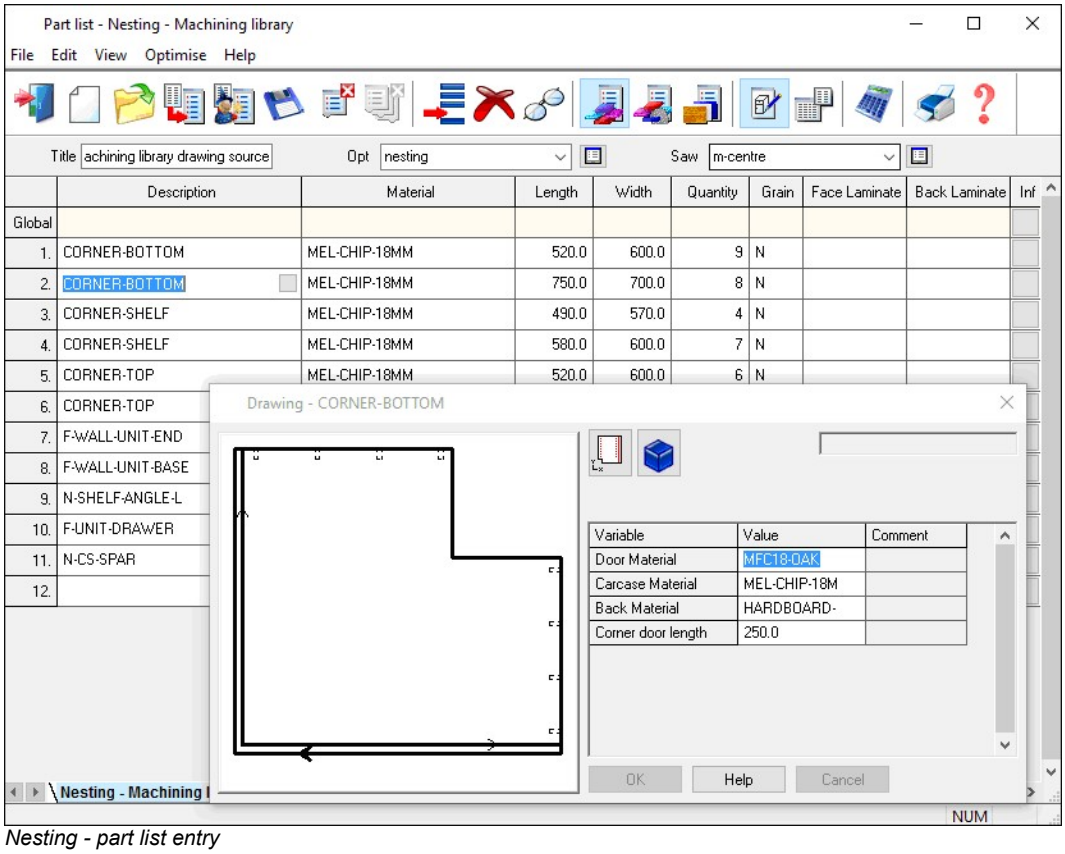
- *Enter part sizes*
- *Optimise*
- *Send cutting data to machining centre*

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(X))
- Enter rectangular parts in the Part list grid
- Use parts from the Machining library

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



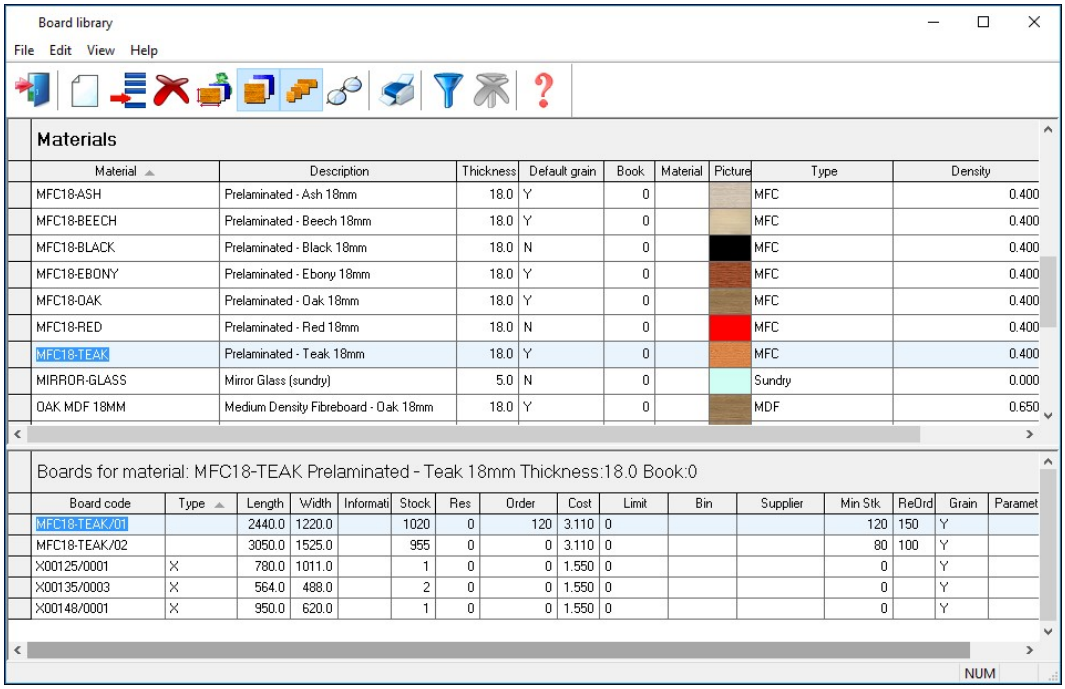
Nesting - part list entry

In this example the drawings for parts are stored in the machining library.

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.

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.



Nesting - Board library

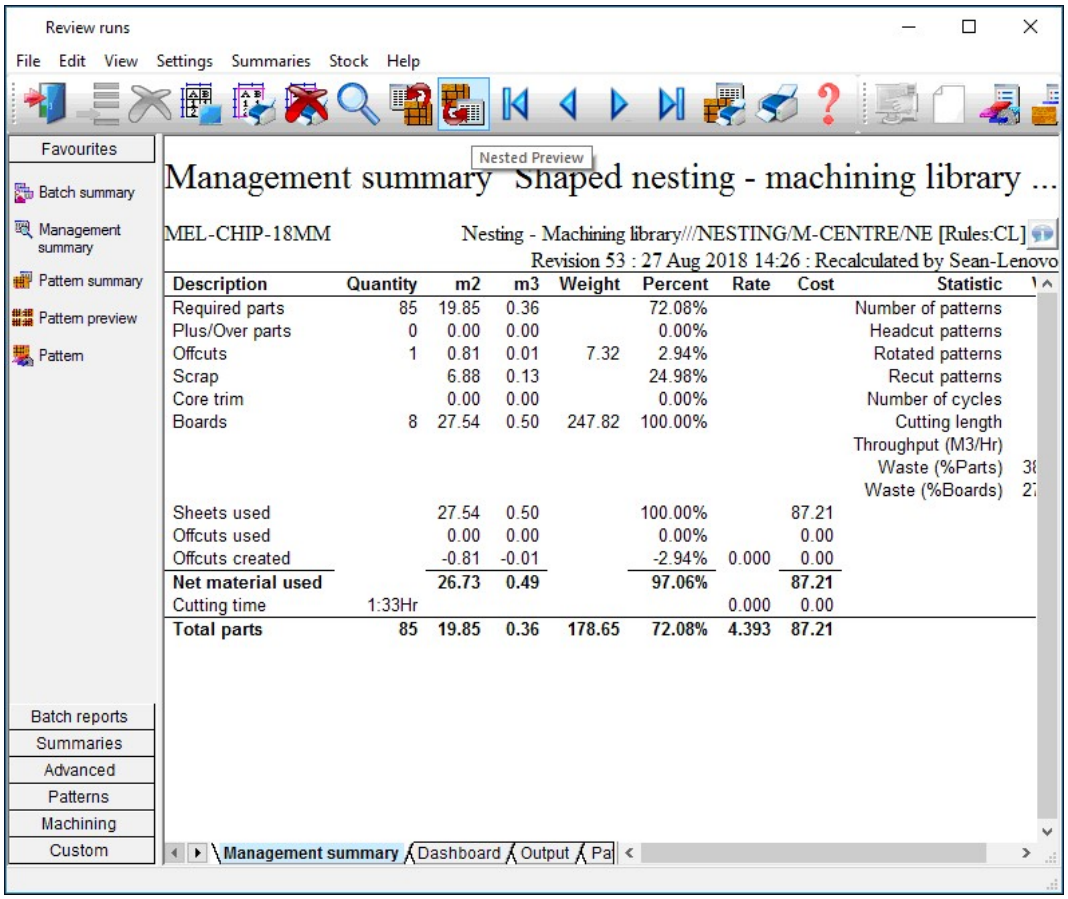
In this example the material MFC18-TEAK has two available board sizes 3050.0 x 1525.0 and 2440.0 x 1220.0 and several offcuts.

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.

Nested optimising

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

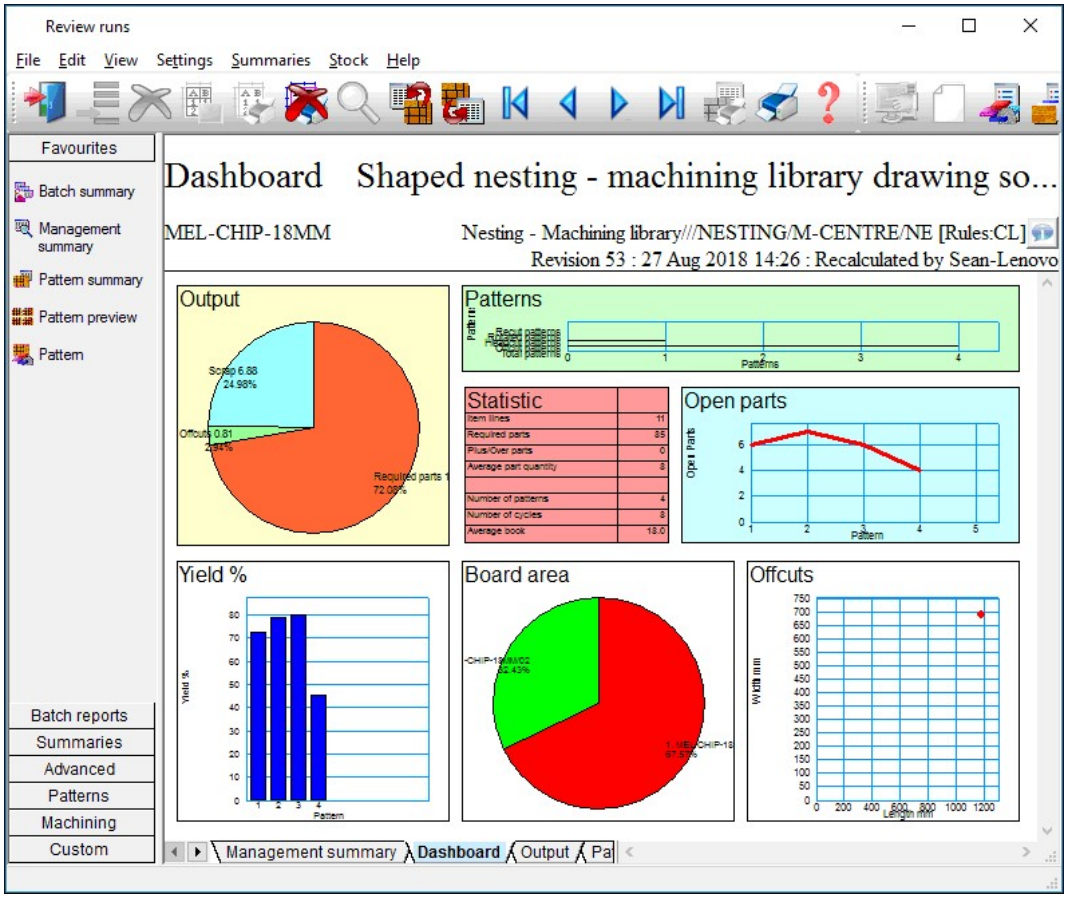
The first summary shown for each job is an overview of cutting and costs.



Description	Quantity	m2	m3	Weight	Percent	Rate	Cost	Statistic
Required parts	85	19.85	0.36		72.08%			Number of patterns
Plus/Over parts	0	0.00	0.00		0.00%			Headcut patterns
Offcuts	1	0.81	0.01	7.32	2.94%			Rotated patterns
Scrap		6.88	0.13		24.98%			Recut patterns
Core trim		0.00	0.00		0.00%			Number of cycles
Boards	8	27.54	0.50	247.82	100.00%			Cutting length
								Throughput (M3/Hr)
								Waste (%Parts)
								Waste (%Boards)
Sheets used		27.54	0.50		100.00%		87.21	
Offcuts used		0.00	0.00		0.00%		0.00	
Offcuts created		-0.81	-0.01		-2.94%	0.000	0.00	
Net material used		**26.73**	**0.49**		**97.06%**		**87.21**	
Cutting time	1:33Hr					0.000	0.00	
Total parts	**85**	**19.85**	**0.36**	**178.65**	**72.08%**	**4.393**	**87.21**	

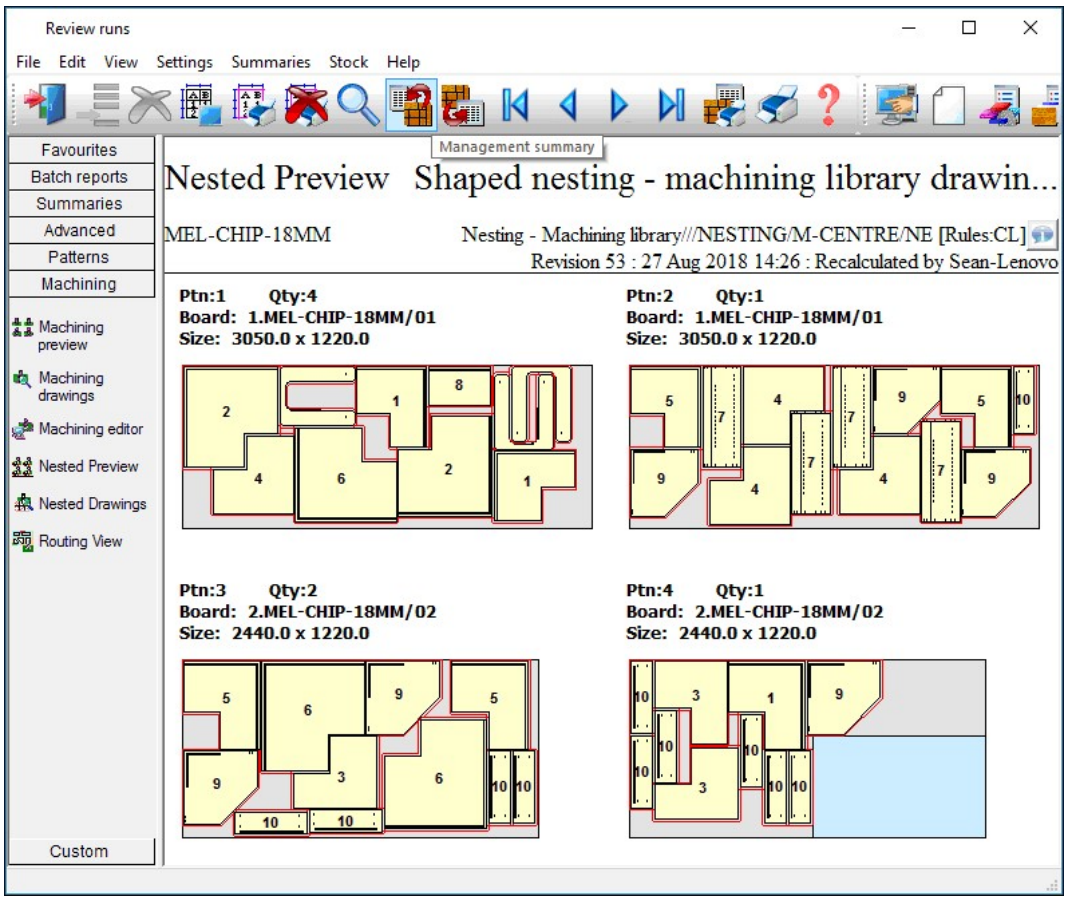
Nesting - Management summary

The summary includes a Dashboard showing charts of selected (custom) portions of the data.



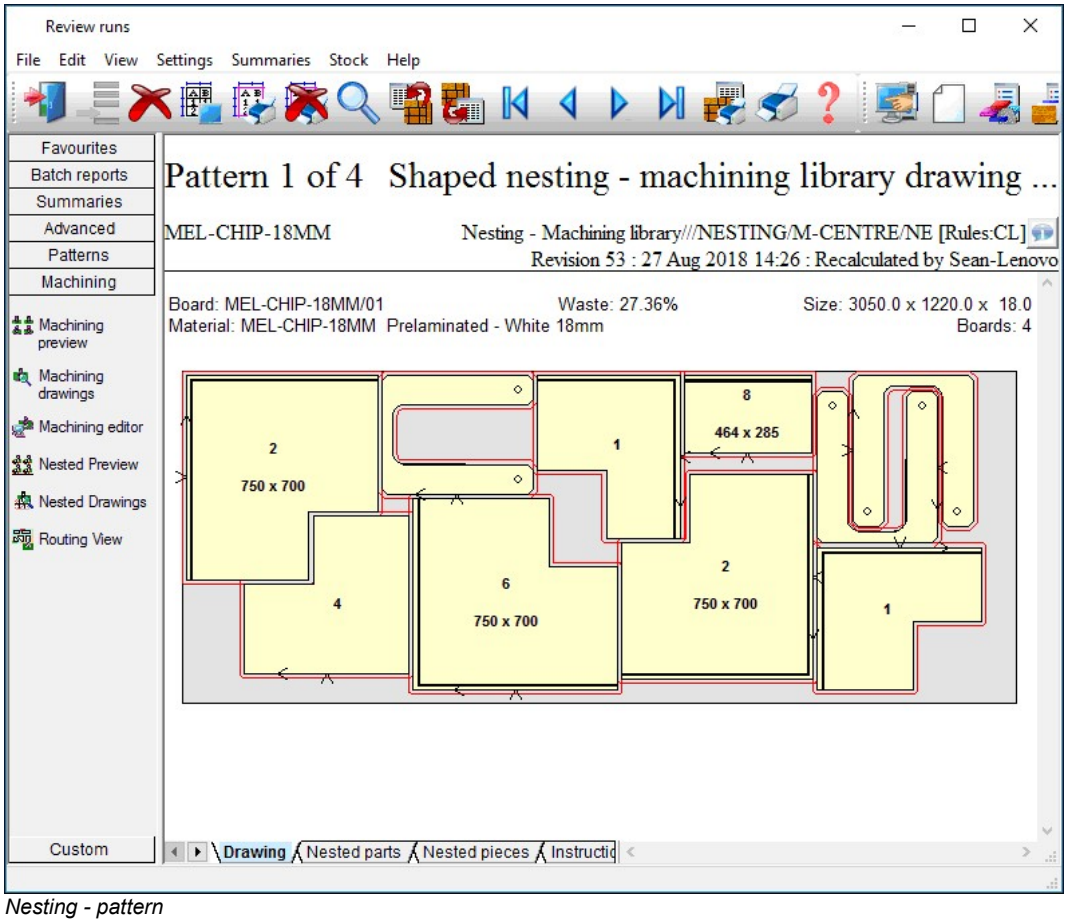
Nesting - Dashboard

The cutting patterns are shown in a thumbnail view.



Nesting - pattern preview

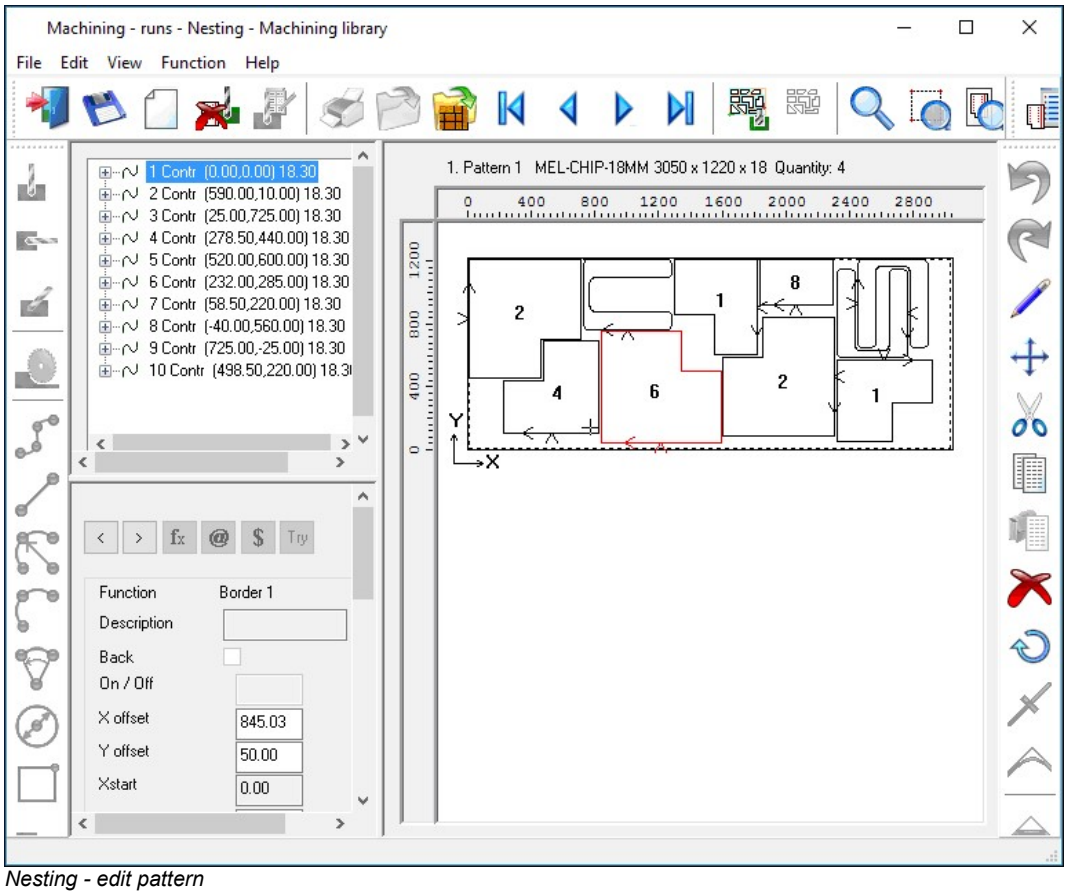
Click on a thumbnail to see the pattern in full screen view.



Nesting - pattern

Further information about the cutting pattern is on the tabs at the foot of the drawing.

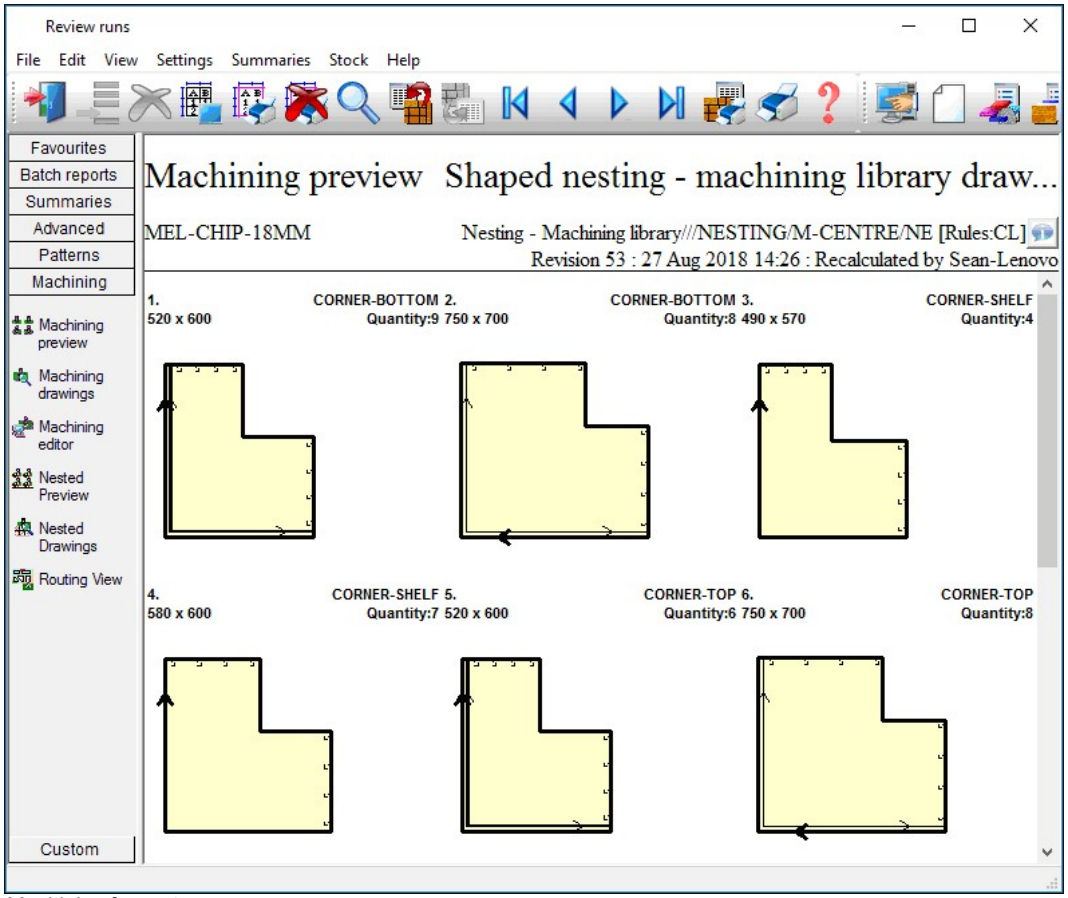
Use the machining editor to check the details and make any last minute changes to the cutting plan.



Nesting - edit pattern

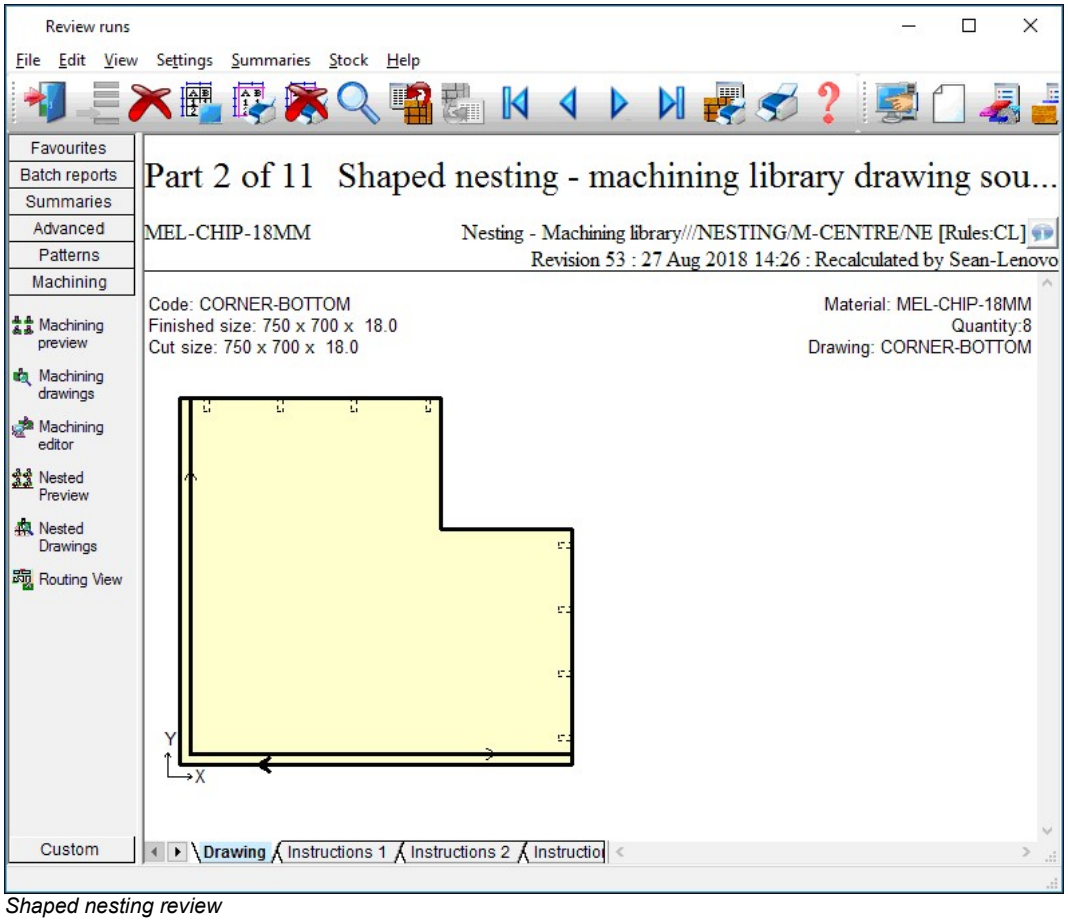
Parts can be moved or deleted and minor changes can be made to the borders. The machining instructions for each part (drilling, routing …) can also be viewed at each part drawing.

The machining for each part can also be reviewed.



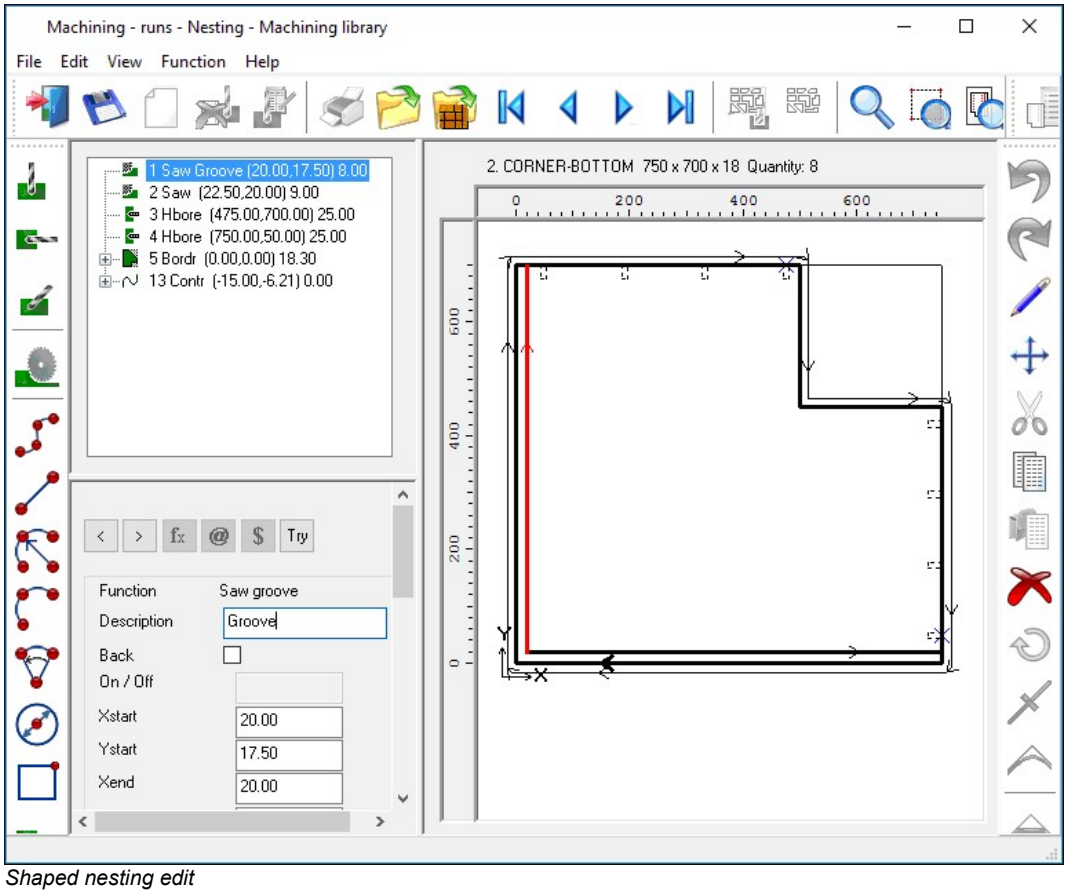
Machining for parts

Click on a part to review the details.



Shaped nesting review

- Click on a part to move to the editor.

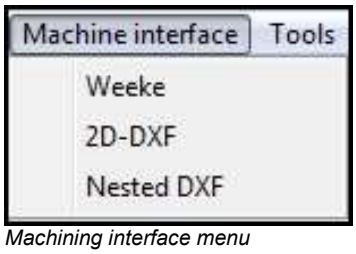


Shaped nesting edit

At this stage all instructions have been converted to absolute values ready for transfer to the machining centre.

Transfer to Machining centre

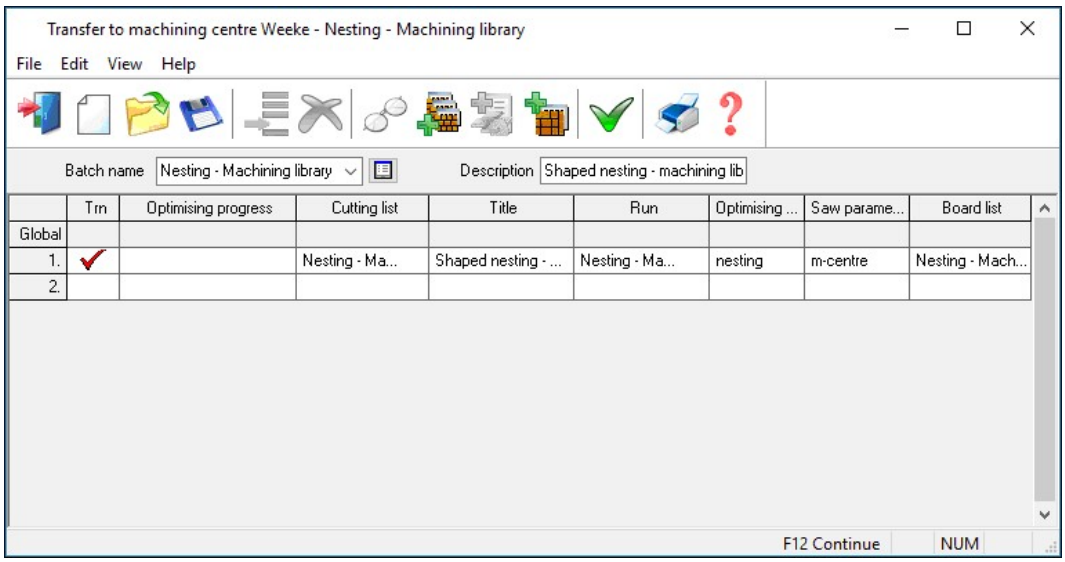
To transfer the drawings to a machining centre at the main screen select 'Machine Interface' and then select the Machining centre, for example, Homag/Weeke.



Machining interface menu

Links to a variety of machining centres are available also to industry standard formats such as 2D Dxf.

The program displays the data to transfer (default is the current batch) - use the options to choose other batches or runs.



Transfer to machining centre

The program keeps track of transfers and a run is marked with a tick if it has already been sent; the rules for tracking can customised.

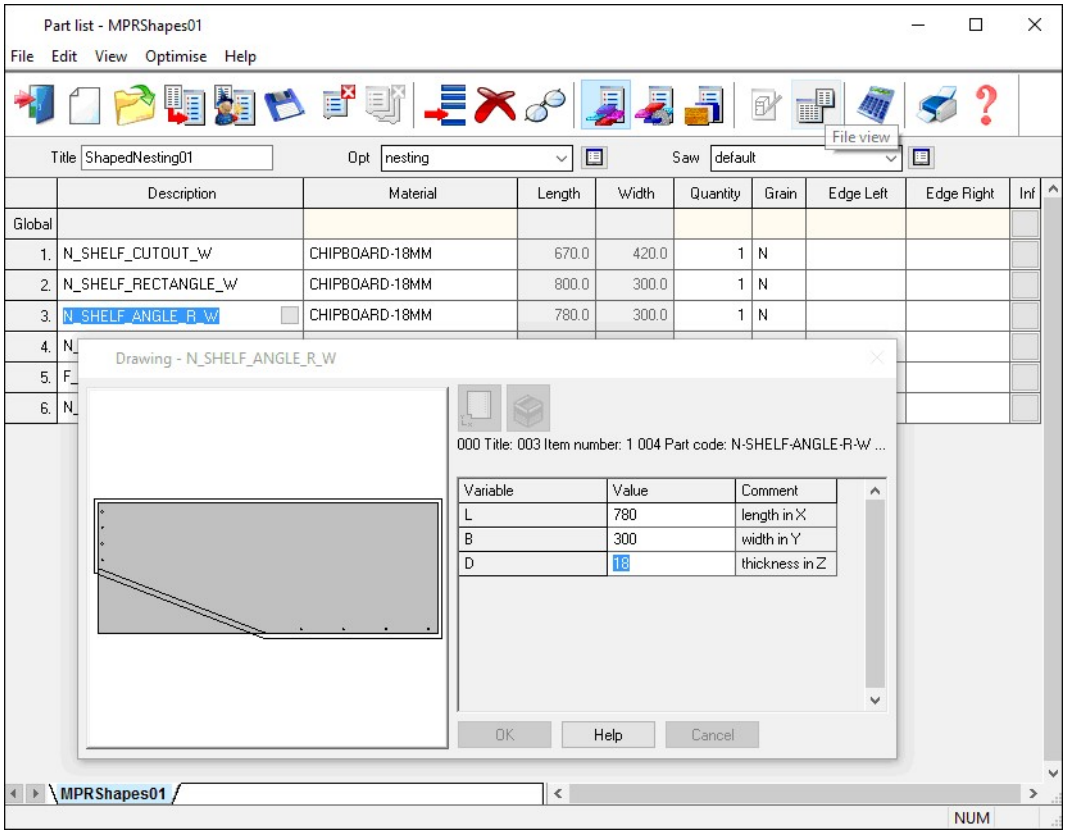
Select the tick to continue

After transfer the program returns to the main menu.

Nesting with MPR(X) files

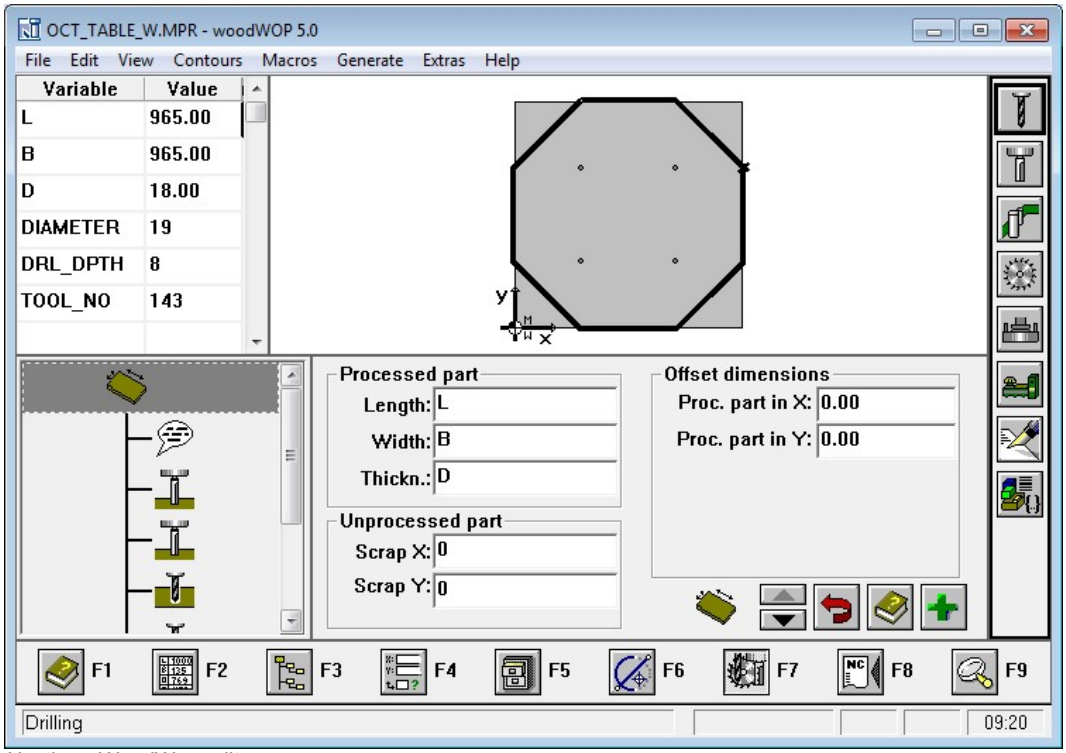
Homag/Weeke WoodWop

The Nesting optimiser is fully integrated with the Homag/Weeke WoodWop system. MPR(X) based parts can be used in the Part list and cutting patterns produced to download to the Machining centre.The part list can be set to use MPR(X) parts as the source.



Nesting MPR(X) - part list

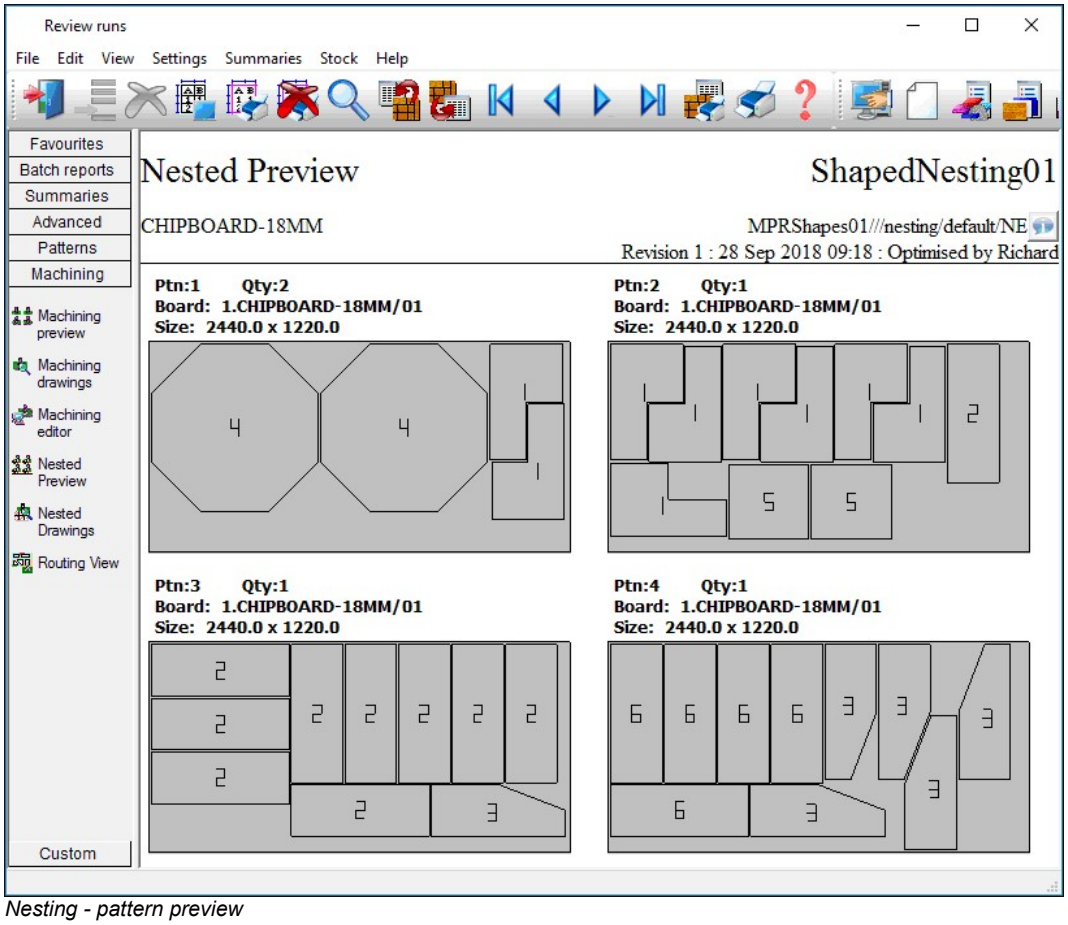
Where the NE module is used with Homag/Weeke WoodWop the program automatically moves to the WoodWop editor when editing individual MPR(X) parts.



Nesting - WoodWop editor

When working in this way the parts are edited via Homag/Weeke WoodWop and the patterns can be adjusted via the Nesting optimiser editor.

The optimised result is a set of cutting patterns including the MPR(X) parts.



Nesting - pattern preview

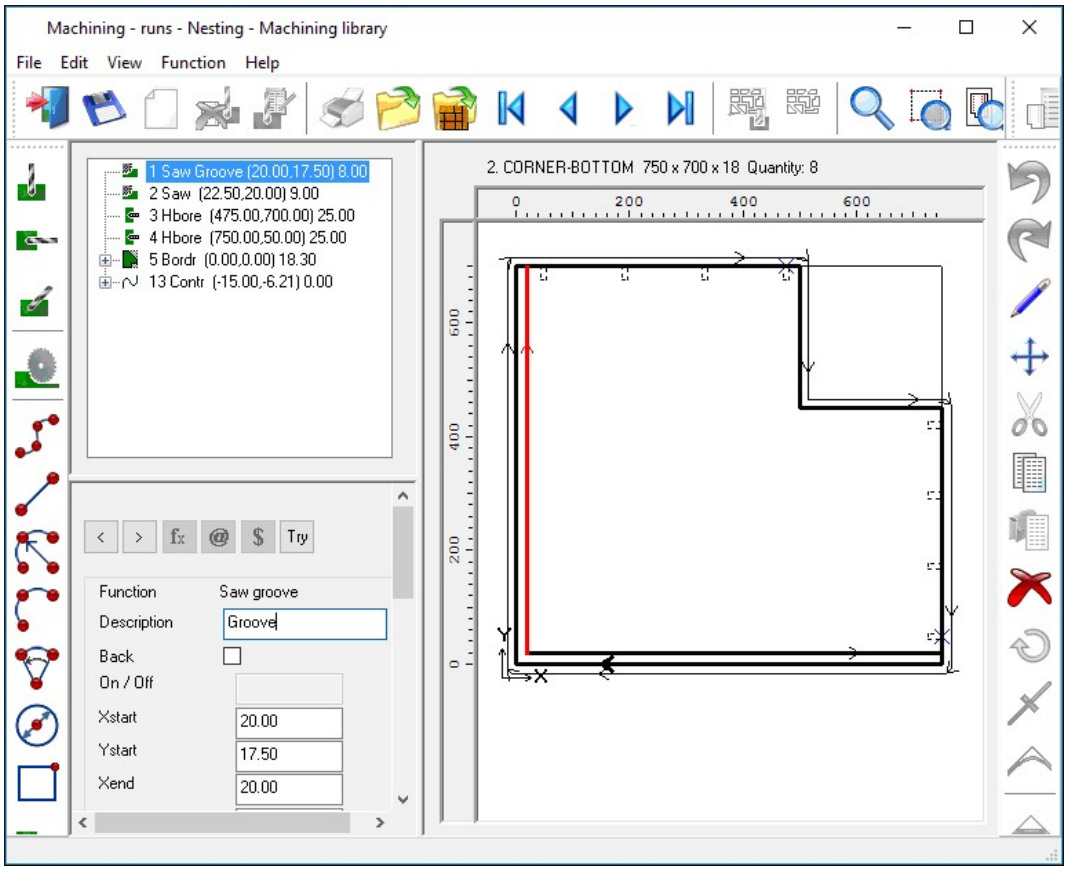
- The editors should only be used for minor or last minute changes - if there are substantial changes then it is better to re-optimise the job as the balance of waste and costs may have changed significantly.

The Power of Nesting optimising

Defining shaped parts

Shaped parts are defined by drawing contours that define the shape of part. This is done at the Machining library or via an MPR(X) file using Homag/Weeke WoodWop.

At the Machining library use the *Border* function to define the shape of the part.



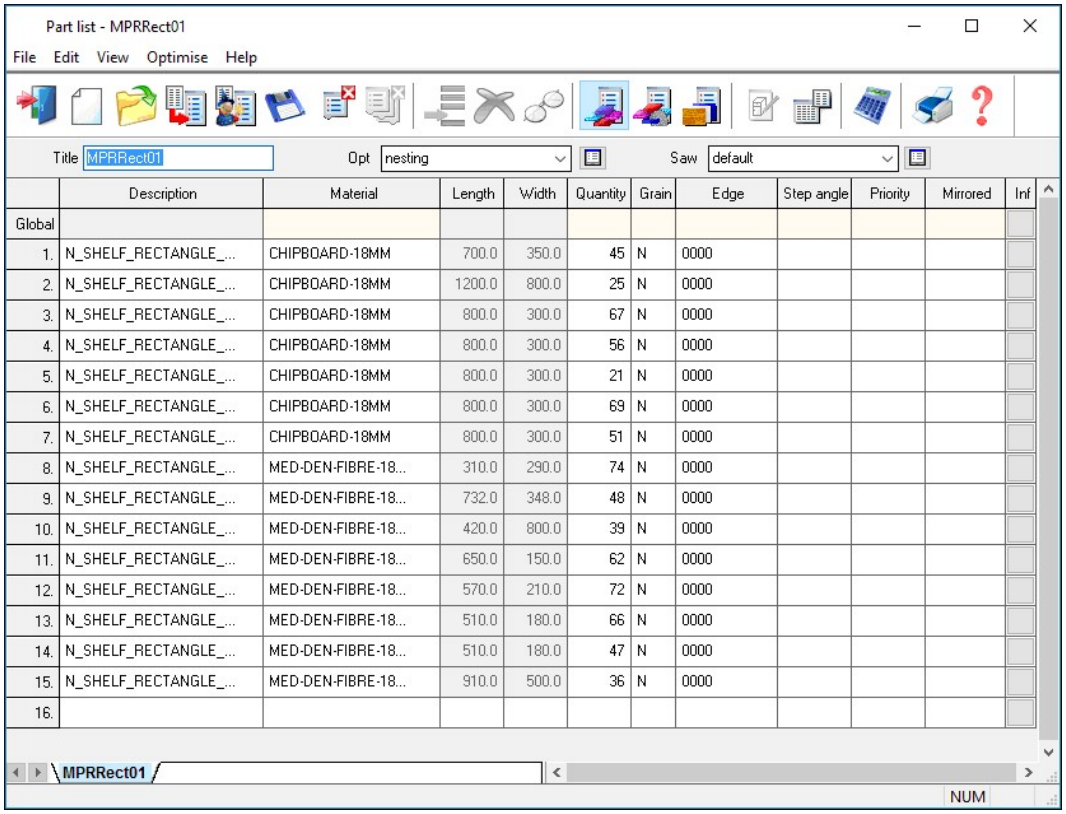
Nesting optimising - define shaped parts

If a Safety border is required this is added as a contour surrounding the shaped part and is set as a safety border by checking the Safety box in the contour function.

For an MPR(X) file two closed contours are required (similar to the above) to define the shape of the part and the safety border. Check the 'Nesting contour' option for the first contour and the 'Nesting safety distance' option for the second contour.

If a safety border is not defined the Nesting parameter 'Nesting safety distance' is used instead to calculate a safety border at a uniform offset around the contour of the shape.

A set of Information box parameters are available for Nesting to control features of each part, for example, Step angle, Priority, Mirrored.



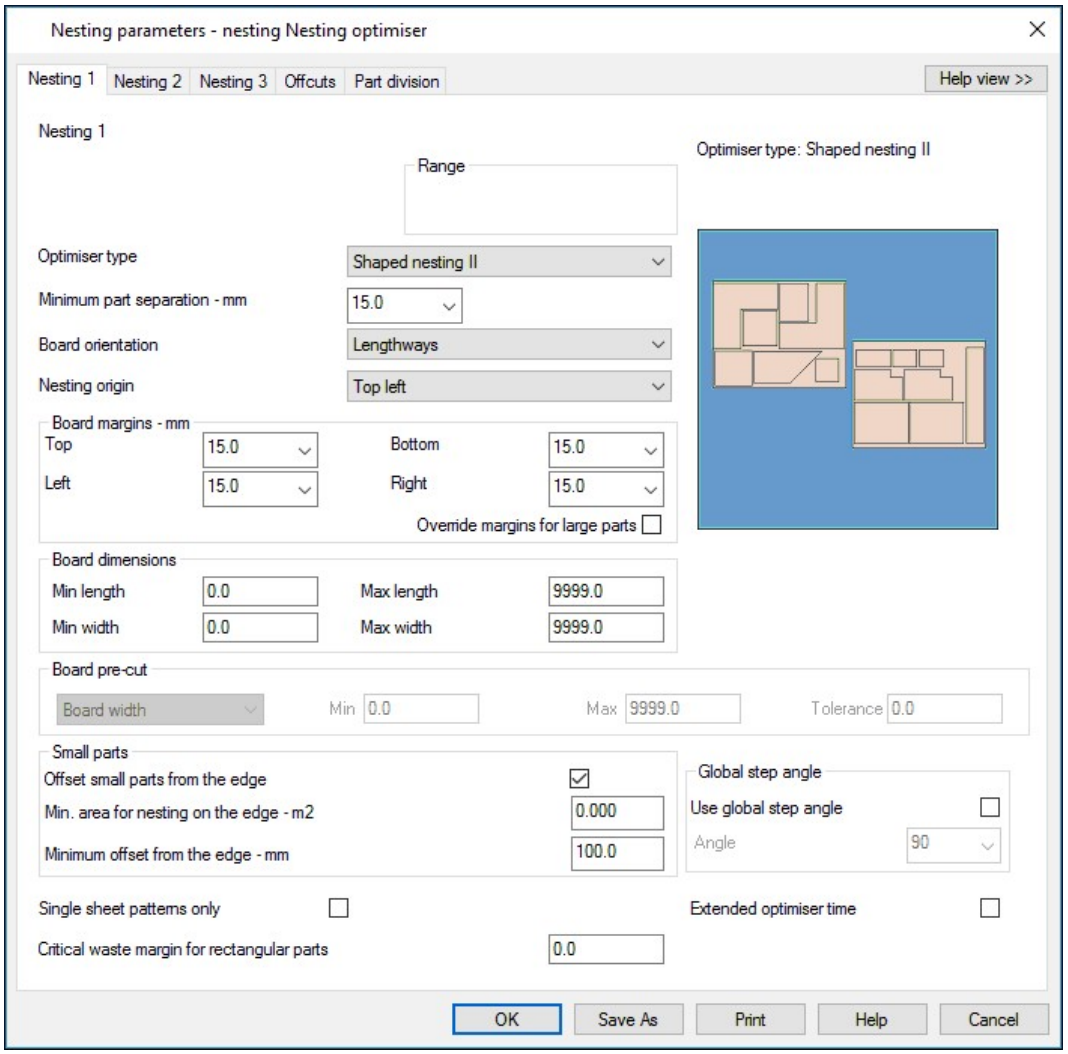
	Description	Material	Length	Width	Quantity	Grain	Edge	Step angle	Priority	Mirrored	Inf
Global											
1.	N_SHELF_RECTANGLE_...	CHIPBOARD-18MM	700.0	350.0	45	N	0000				
2.	N_SHELF_RECTANGLE_...	CHIPBOARD-18MM	1200.0	800.0	25	N	0000				
3.	N_SHELF_RECTANGLE_...	CHIPBOARD-18MM	800.0	300.0	67	N	0000				
4.	N_SHELF_RECTANGLE_...	CHIPBOARD-18MM	800.0	300.0	56	N	0000				
5.	N_SHELF_RECTANGLE_...	CHIPBOARD-18MM	800.0	300.0	21	N	0000				
6.	N_SHELF_RECTANGLE_...	CHIPBOARD-18MM	800.0	300.0	69	N	0000				
7.	N_SHELF_RECTANGLE_...	CHIPBOARD-18MM	800.0	300.0	51	N	0000				
8.	N_SHELF_RECTANGLE_...	MED-DEN-FIBRE-18...	310.0	290.0	74	N	0000				
9.	N_SHELF_RECTANGLE_...	MED-DEN-FIBRE-18...	732.0	348.0	48	N	0000				
10.	N_SHELF_RECTANGLE_...	MED-DEN-FIBRE-18...	420.0	800.0	39	N	0000				
11.	N_SHELF_RECTANGLE_...	MED-DEN-FIBRE-18...	650.0	150.0	62	N	0000				
12.	N_SHELF_RECTANGLE_...	MED-DEN-FIBRE-18...	570.0	210.0	72	N	0000				
13.	N_SHELF_RECTANGLE_...	MED-DEN-FIBRE-18...	510.0	180.0	66	N	0000				
14.	N_SHELF_RECTANGLE_...	MED-DEN-FIBRE-18...	510.0	180.0	47	N	0000				
15.	N_SHELF_RECTANGLE_...	MED-DEN-FIBRE-18...	910.0	500.0	36	N	0000				
16.											

Nesting - part list entry

Information boxes are set from the main screen (*Parameters - Information boxes).*

Nesting parameters

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 …



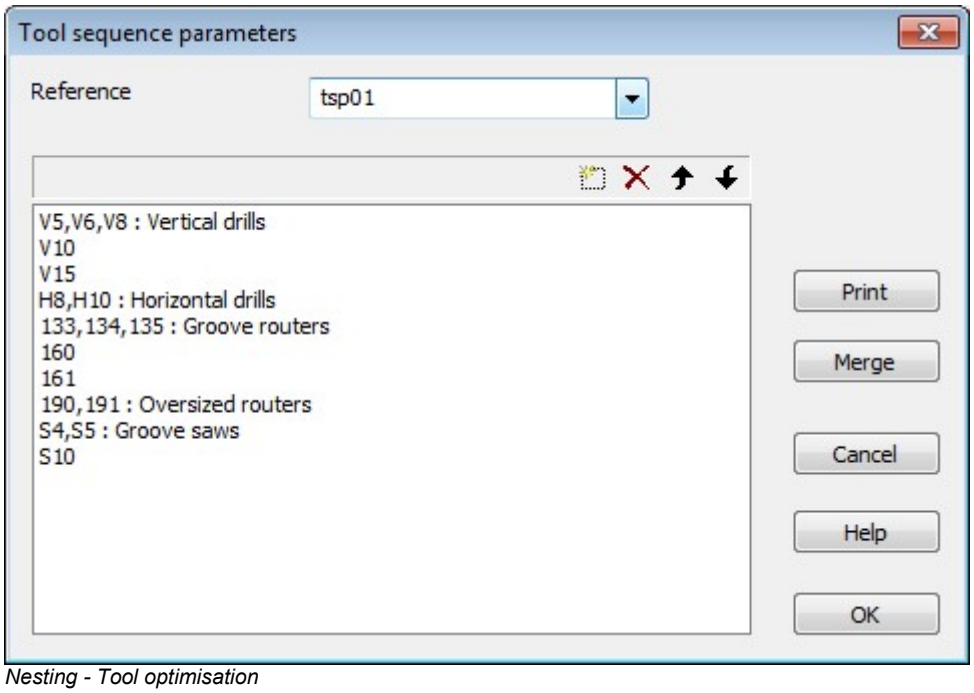
Nesting parameters

The nesting optimiser includes options for:-

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

Tool optimisation

The program includes tool optimisation for nested patterns which minimizes the distance travelled for each set of tooling. This is calculated as the information is transferred to the machining centre. Use the 'Tool Sequence parameters' to set up the rules for tool optimisation.



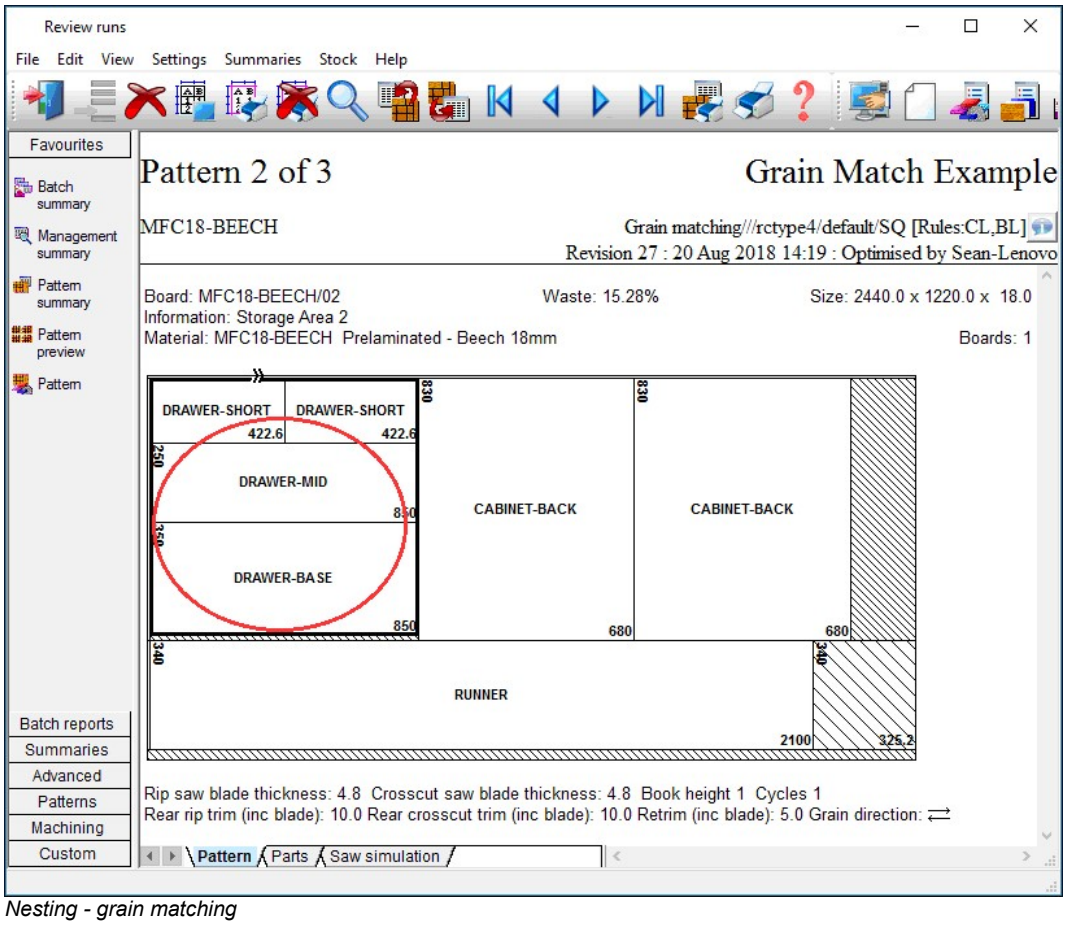
Nesting - Tool optimisation

Note – MPR(X) based parts and patterns use the 'Project Manager' option for tool optimisation and do not use the Tool sequence parameters.

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.

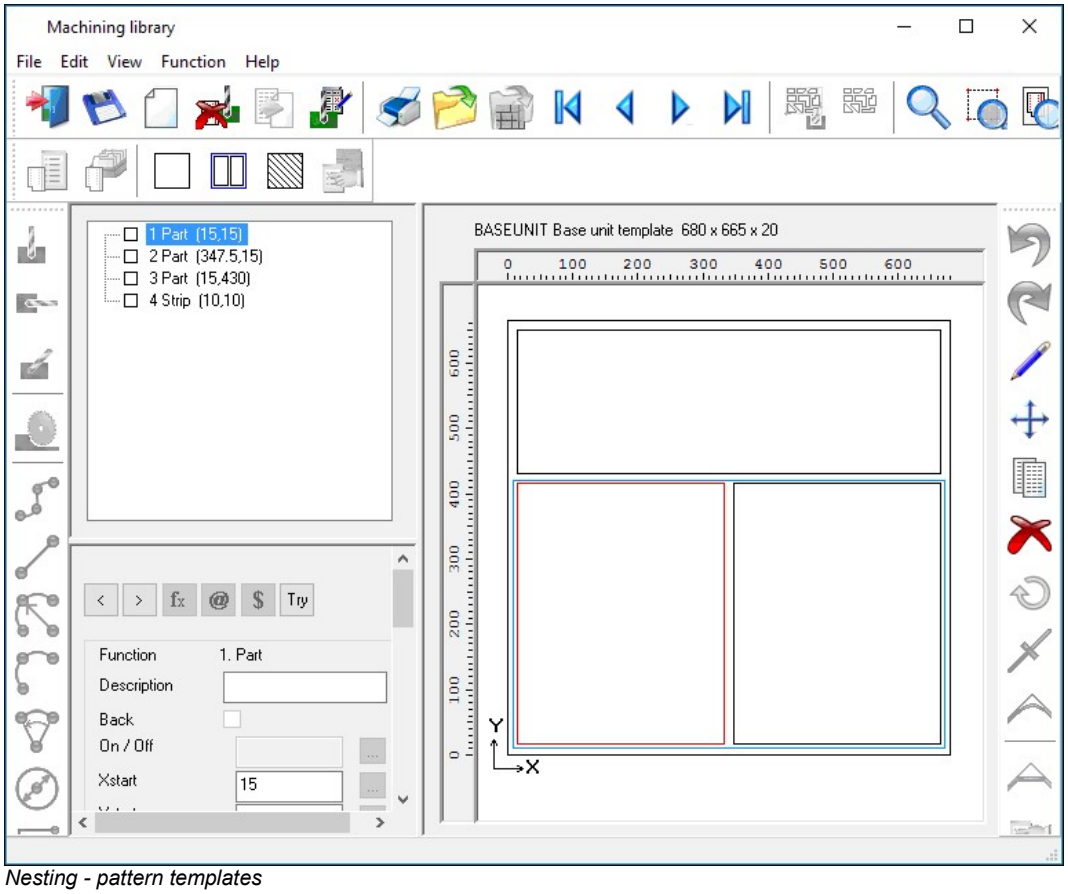


Nesting - grain matching

Templates for Nesting

The Machining editor can be used to create templates for Nesting patterns. A template sets out how a group of parts are to be cut and is useful, for example, where grain matching is important.

The templates are created and stored in the Machining library and are linked to parts at the Part list.

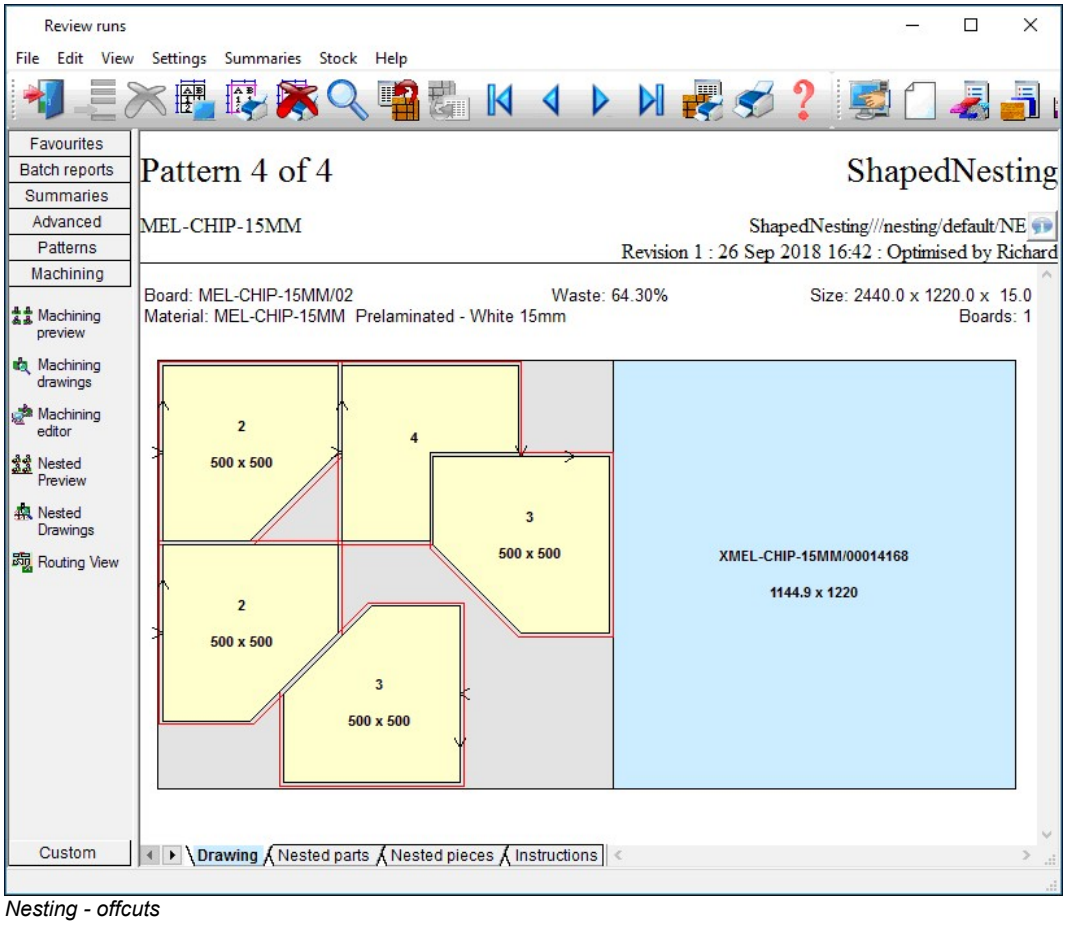


Nesting - pattern templates

The template can include waste parts (spacers) and separate groups of parts. There are Machining library options to add parts, groups or waste parts to a template.

Nested patterns - offcuts

Nested patterns can contain offcuts and follow the parameters for offcuts set in the Optimising parameters.



Nesting - offcuts

Note - Offcuts with duplicate sizes are not aggregated for nested patterns.

When a nested pattern is transferred to the machining centre the offcuts are converted into 1 or 2 rout contours depending on if they are along a whole side or just on a corner.

Working with different types of part drawing

The program can work with different types of part drawing. At the part list the drawing source can be set to any of the following:-

Part library
MPR(X)
DXF
Machining library
Drawing library

This can be set for all part lists or per part list.

MPR(X) and DXF options allow the use of parts to be based on separate MPR(X) or DXF files (one drawing per part). An alternative for external files is to import DXF files into the Machining or Part library.

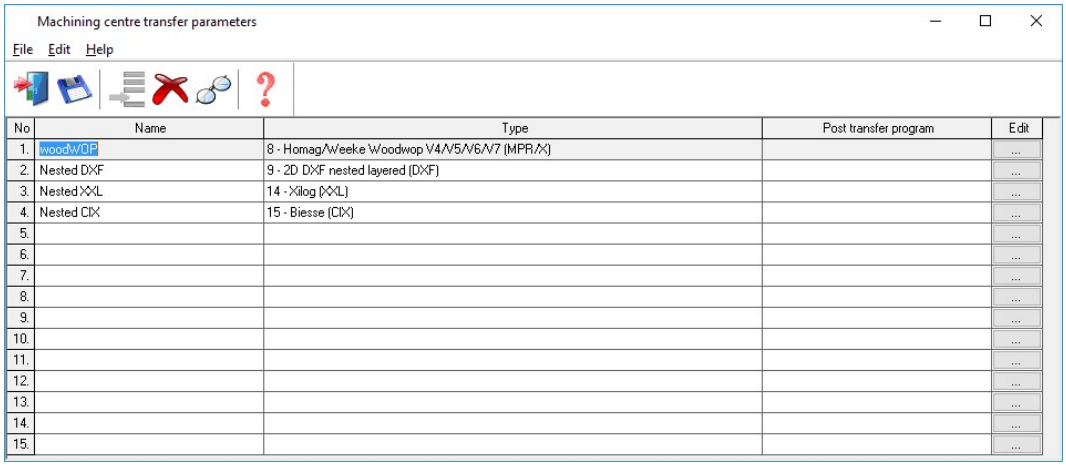
When parts are based on MPR(X) files then the editing of part instructions is done via Homag/Weeke WoodWop. The Homag/Weeke WoodWop program is called automatically when an MPR(X) based part is edited.

Use the 'DXF Import - layer name rules' to describe the DXF format. This format is often user defined for part and machining information.

Machining centre transfer parameters

These parameters are used to set up the link to a Machining centre. Typically they describe the type of Machining centre and the path to send the data to.

Set up a separate entry (one line) for each type of machining centre to transfer to.



No	Name	Type	Post transfer program	Edit
1.	woodWOP	8 - Homag/Weeke Woodwop V4/V5/V6/V7 (MPR/X)		...
2.	Nested DXF	9 - 2D DXF nested layered (DXF)		...
3.	Nested XXL	14 - Xilog (XXL)		...
4.	Nested CIX	15 - Biesse (CIX)		...
5.				...
6.				...
7.				...
8.				...
9.				...
10.				...
11.				...
12.				...
13.				...
14.				...
15.				...

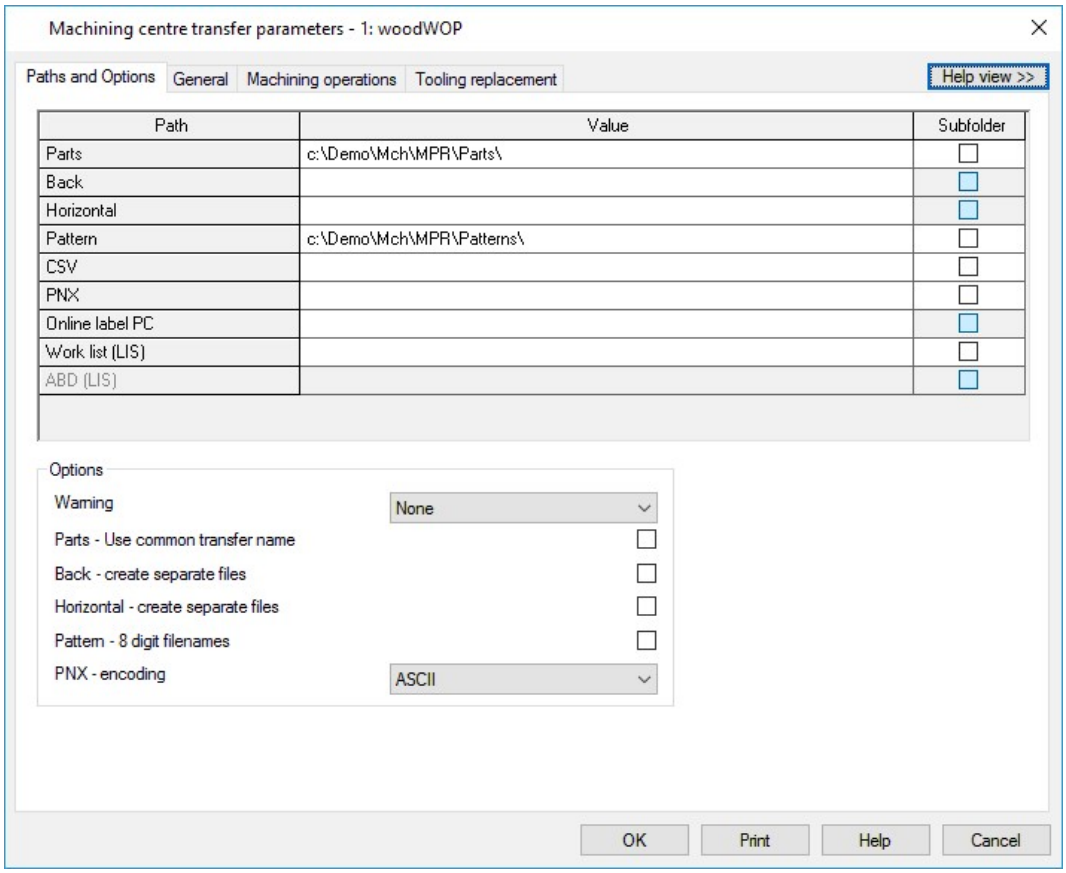
Nesting - Machining centre transfer parameters

There are several different types of transfer available - depends on the machining centre. For example:-

0 - 2D DXF Non-layered (DXF)
8 - Homag/Weeke WoodWop V4/V5/V6/V7 (MPR(X))
9 - 2D DXF nested layered (DXF)
11 – ASCII/Unicode PTX

12 - MDB PTX

The edit button is for any extra parameters - these vary as they depend on the type of machining centre and open in a new dialog.

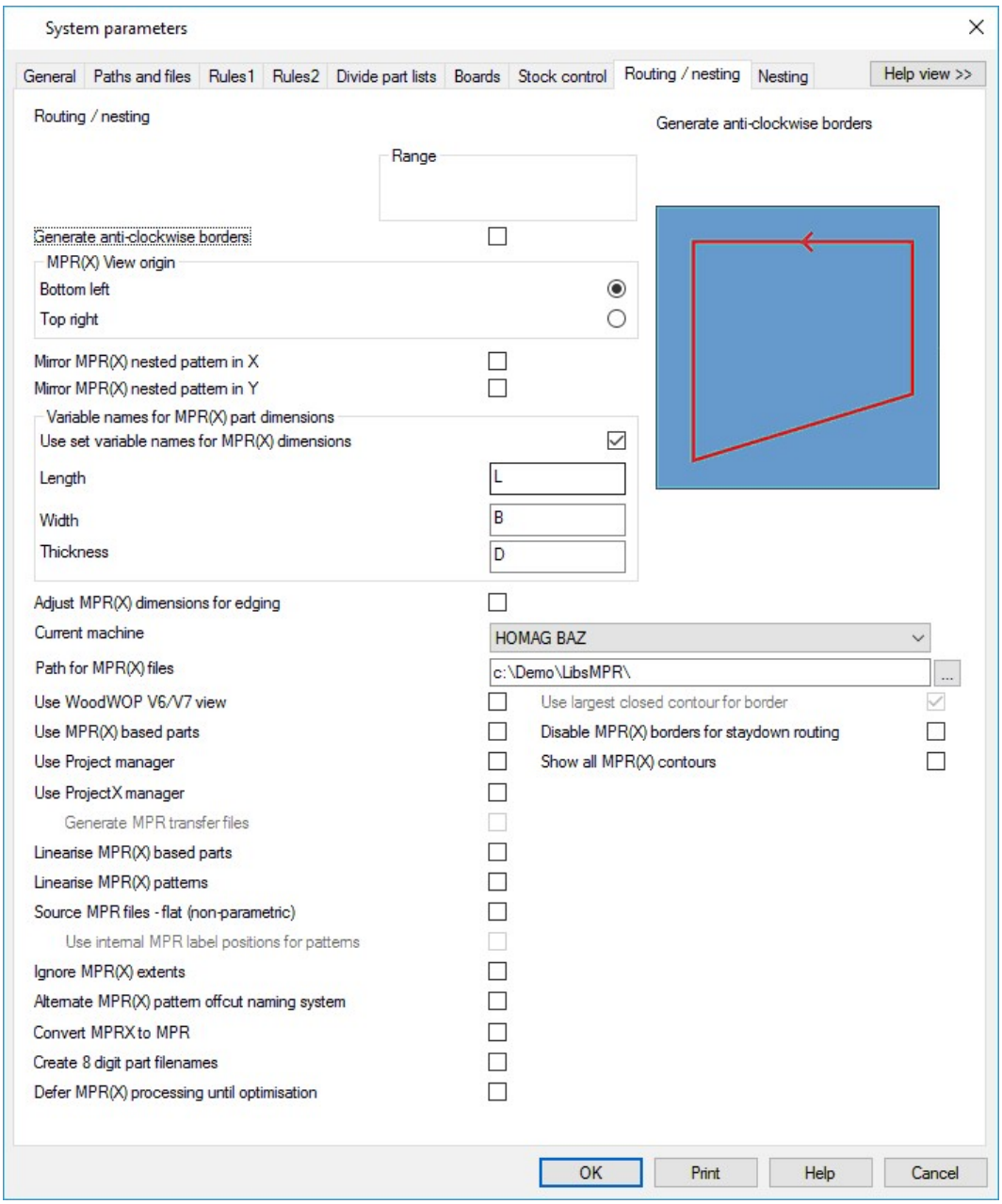


The parameters include a table to set up the rules to convert from one set of machining instructions to another - this allows for transfer to machines with different instruction sets for tooling.

System parameters (Routing/Nesting, Nesting)

The system parameters for Nesting are located on the two tabs (Routing/Nesting and Nesting). At the main screen, for example:-

- Select: **Parameters - System parameters - Nesting tab**


System parameters
General
Paths and files
Rules1
Rules2
Divide part lists
Boards
Stock control
Routing / nesting
Nesting
Help view >>
Routing / nesting
Range
Generate anti-clockwise borders
MPR(X) View origin
Bottom left
Top right
Mirror MPR(X) nested pattern in X
Mirror MPR(X) nested pattern in Y
Variable names for MPR(X) part dimensions
Use set variable names for MPR(X) dimensions
Length
L
Width
B
Thickness
D
Adjust MPR(X) dimensions for edging
Current machine
HOMAG BAZ
Path for MPR(X) files
c:\Demo\LibsMPR\
Use WoodWOP V6/V7 view
Use MPR(X) based parts
Use Project manager
Use ProjectX manager
Generate MPR transfer files
Linearise MPR(X) based parts
Linearise MPR(X) patterns
Source MPR files - flat (non-parametric)
Use internal MPR label positions for patterns
Ignore MPR(X) extents
Alternate MPR(X) pattern offcut naming system
Convert MPRX to MPR
Create 8 digit part filenames
Defer MPR(X) processing until optimisation
Use largest closed contour for border
Disable MPR(X) borders for staydown routing
Show all MPR(X) contours
OK
Print
Help
Cancel

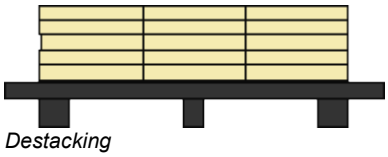
These include settings to identify the paths for external files (such as the WoodNest files), setting the part origin, setting what macros are used etc.

10. Destacking & Palletisation

This 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. It 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.



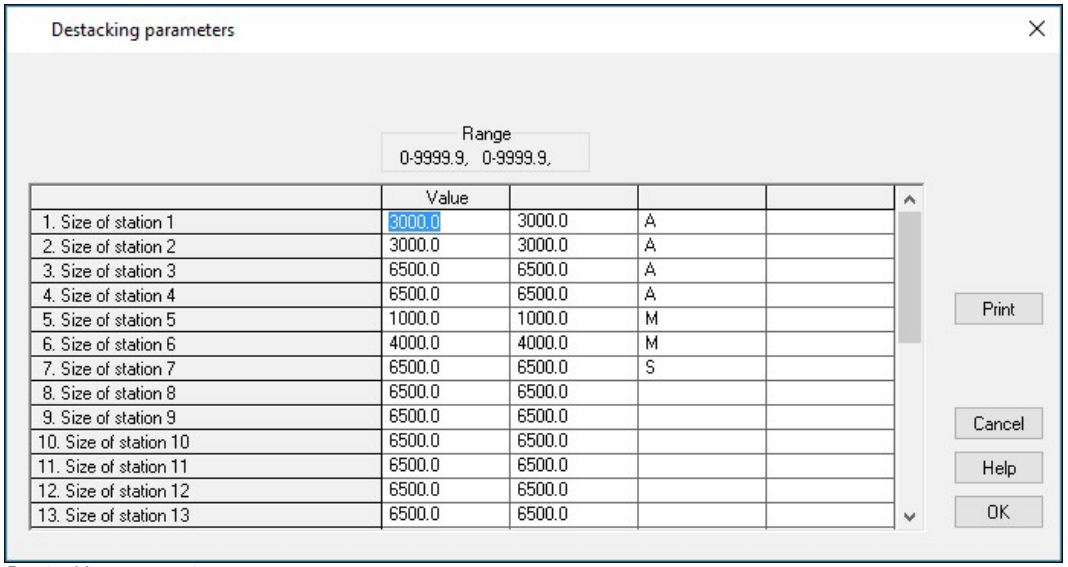
Destacking

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.



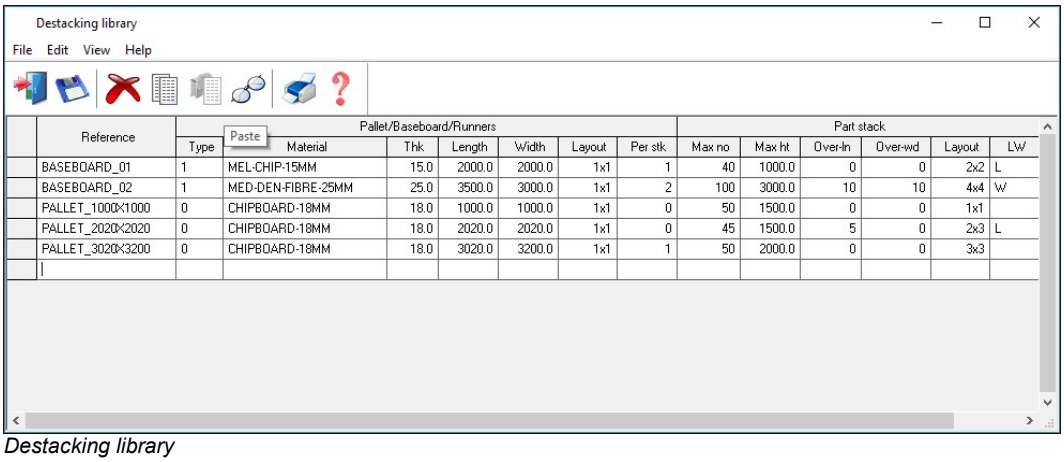
Destacking parameters

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					
		Type	Material	Thk	Length	Width	Layout	Per stk	Max no	Max ht	Over-ln	Over-wd	Layout	LW
	BASEBOARD_01	1	MEL-CHIP-15MM	15.0	2000.0	2000.0	1x1	1	40	1000.0	0	0	2x2	L
	BASEBOARD_02	1	MED-DEN-FIBRE-25MM	25.0	3500.0	3000.0	1x1	2	100	3000.0	10	10	4x4	W
	PALLET_1000X1000	0	CHIPBOARD-18MM	18.0	1000.0	1000.0	1x1	0	50	1500.0	0	0	1x1	
	PALLET_2020X2020	0	CHIPBOARD-18MM	18.0	2020.0	2020.0	1x1	0	45	1500.0	5	0	2x3	L
	PALLET_3020X3200	0	CHIPBOARD-18MM	18.0	3020.0	3200.0	1x1	1	50	2000.0	0	0	3x3	

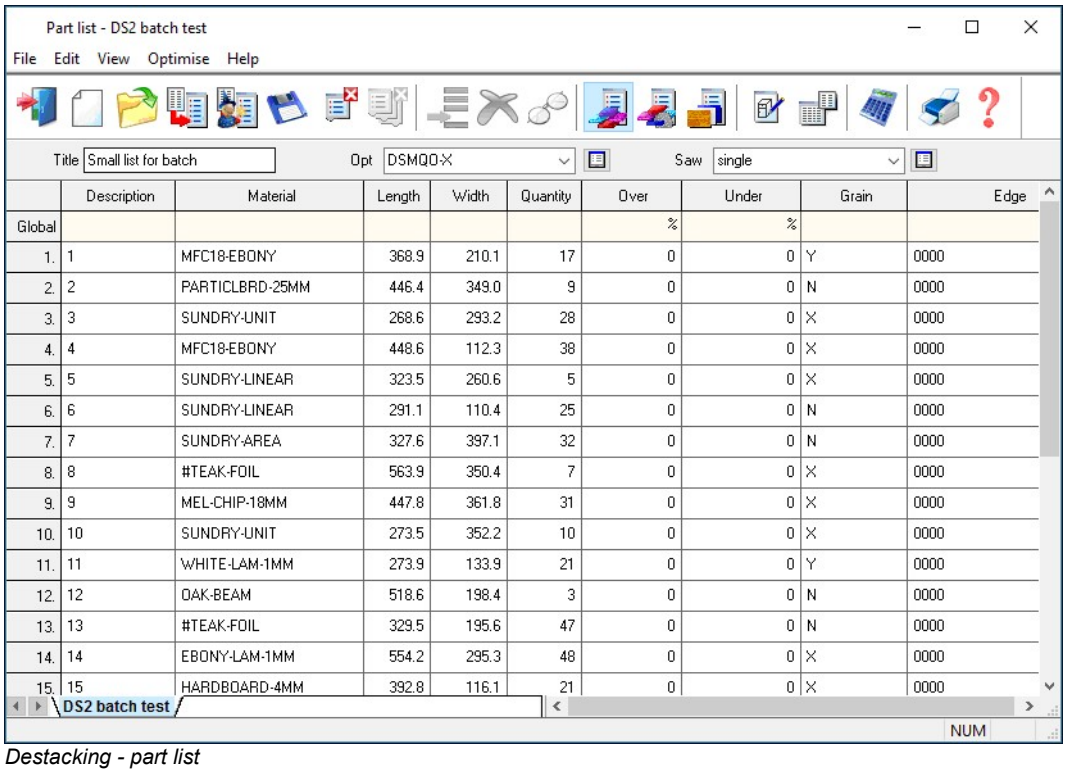
Destacking library

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).



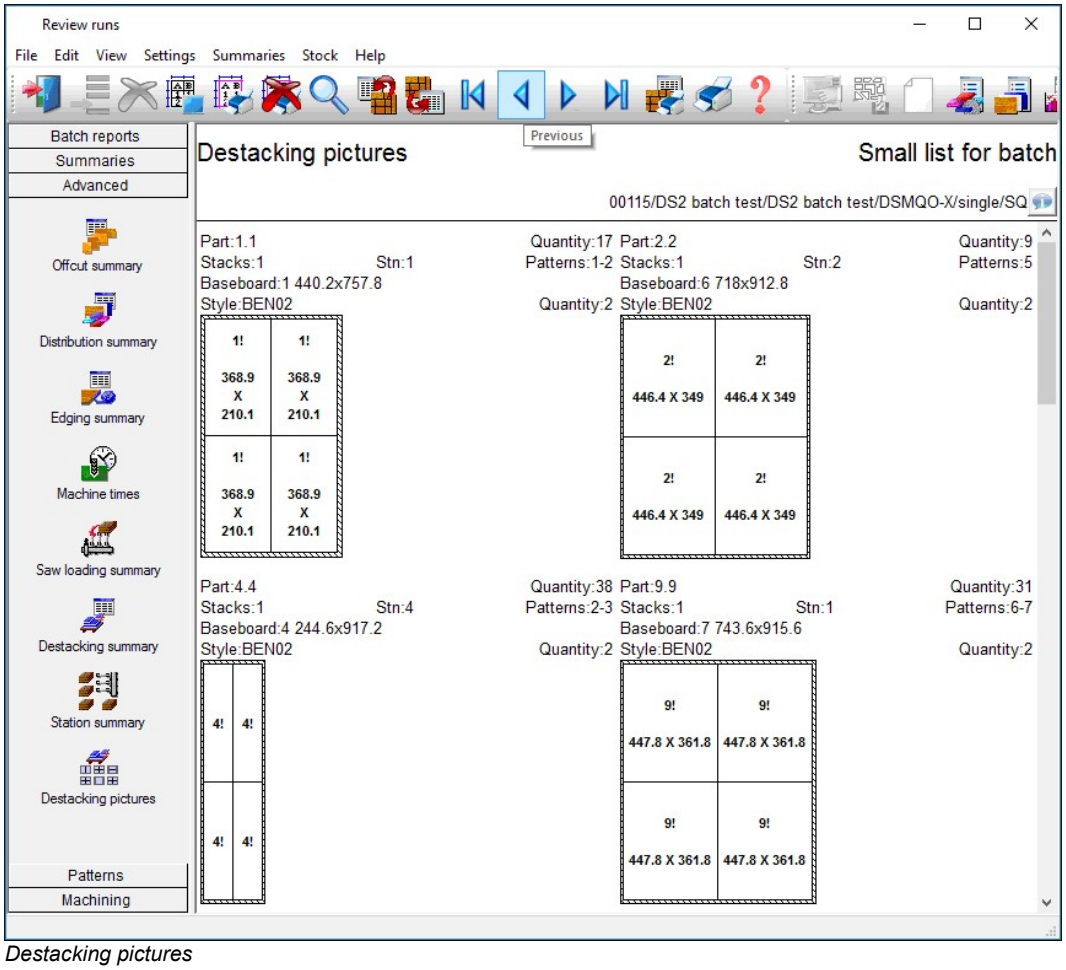
	Description	Material	Length	Width	Quantity	Over	Under	Grain	Edge
Global						%	%		
1.	1	MFC18-EBONY	368.9	210.1	17	0	0	Y	0000
2.	2	PARTICLBRD-25MM	446.4	349.0	9	0	0	N	0000
3.	3	SUNDRY-UNIT	268.6	293.2	28	0	0	X	0000
4.	4	MFC18-EBONY	448.6	112.3	38	0	0	X	0000
5.	5	SUNDRY-LINEAR	323.5	260.6	5	0	0	X	0000
6.	6	SUNDRY-LINEAR	291.1	110.4	25	0	0	N	0000
7.	7	SUNDRY-AREA	327.6	397.1	32	0	0	N	0000
8.	8	#TEAK-FOIL	563.9	350.4	7	0	0	X	0000
9.	9	MEL-CHIP-18MM	447.8	361.8	31	0	0	X	0000
10.	10	SUNDRY-UNIT	273.5	352.2	10	0	0	X	0000
11.	11	WHITE-LAM-1MM	273.9	133.9	21	0	0	Y	0000
12.	12	OAK-BEAM	518.6	198.4	3	0	0	N	0000
13.	13	#TEAK-FOIL	329.5	195.6	47	0	0	N	0000
14.	14	EBONY-LAM-1MM	554.2	295.3	48	0	0	X	0000
15.	15	HARDBOARD-4MM	392.8	116.1	21	0	0	X	0000

Destacking - part list

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.



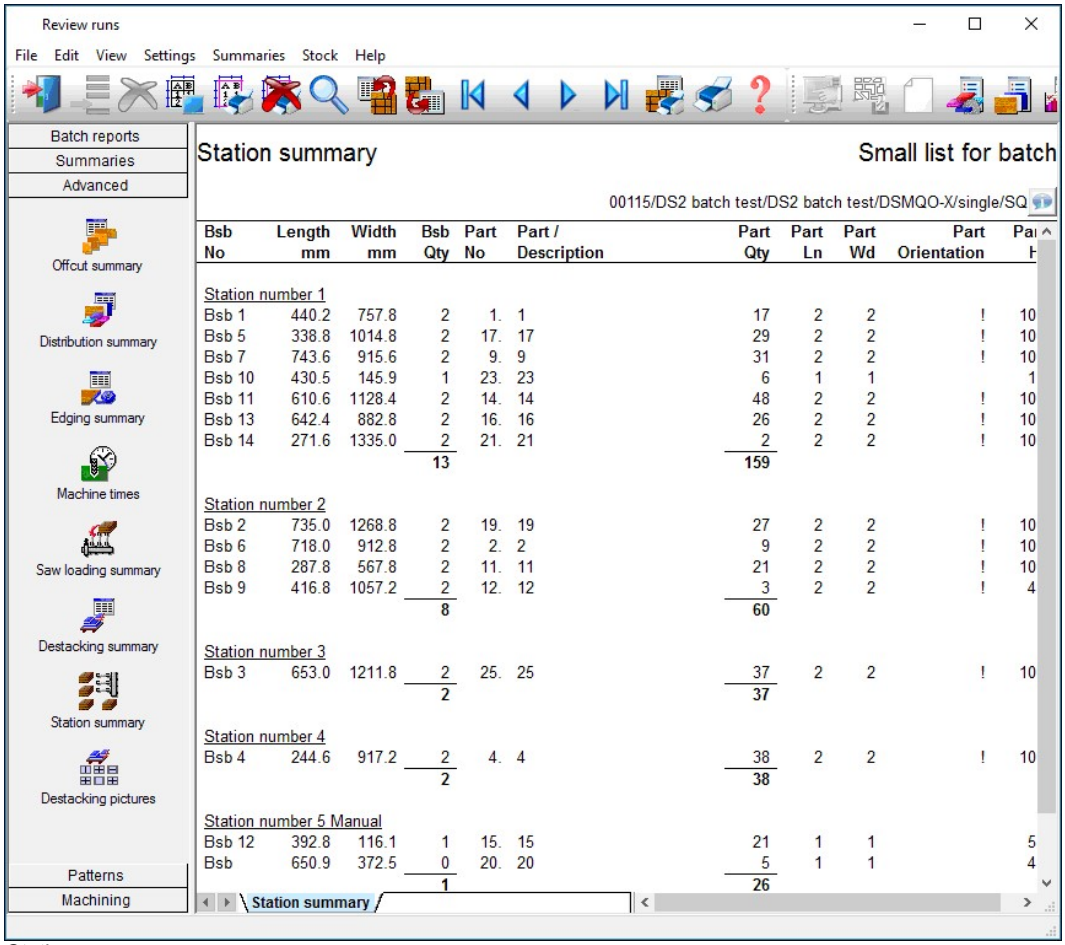
Destacking pictures

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.

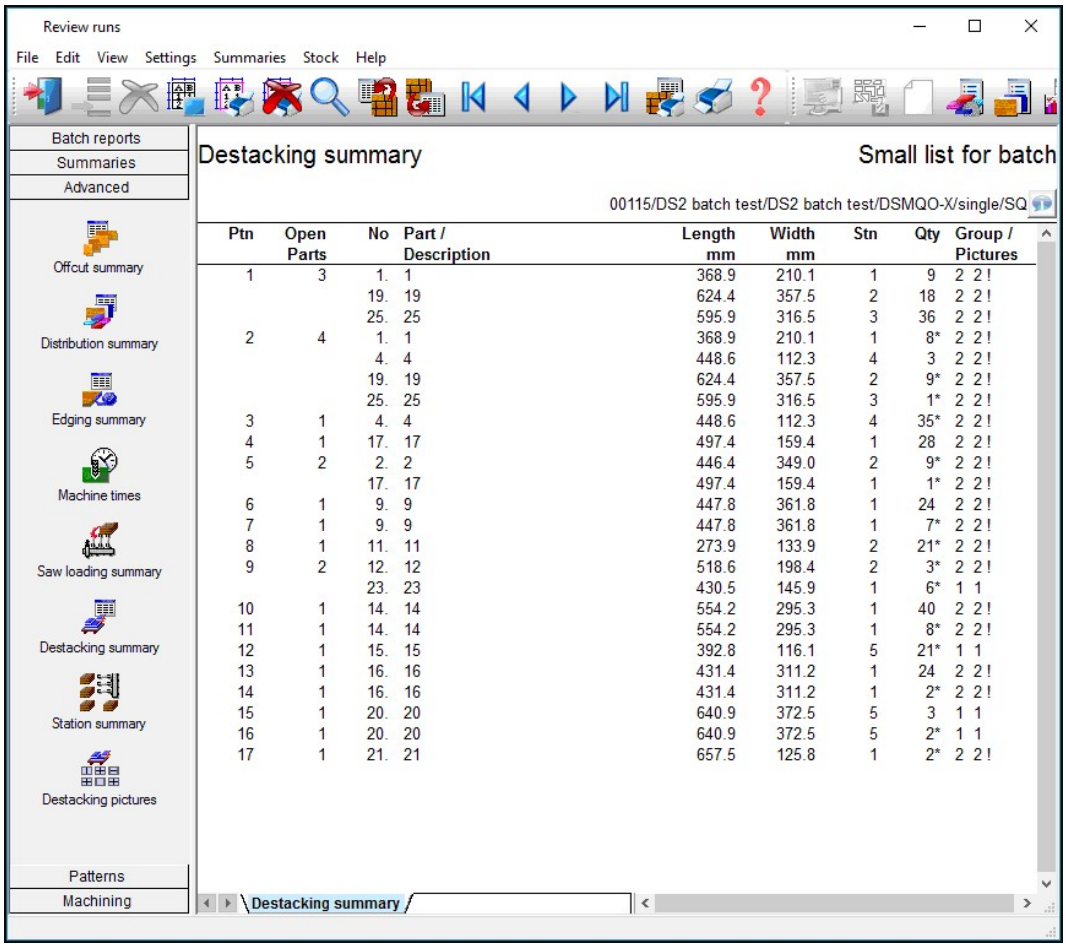


Bsb No	Length mm	Width mm	Bsb Qty	Part No	Part / Description	Part Qty	Part Ln	Part Wd	Part Orientation	Pa H
Station number 1										
Bsb 1	440.2	757.8	2	1.	1	17	2	2	!	10
Bsb 5	338.8	1014.8	2	17.	17	29	2	2	!	10
Bsb 7	743.6	915.6	2	9.	9	31	2	2	!	10
Bsb 10	430.5	145.9	1	23.	23	6	1	1		1
Bsb 11	610.6	1128.4	2	14.	14	48	2	2	!	10
Bsb 13	642.4	882.8	2	16.	16	26	2	2	!	10
Bsb 14	271.6	1335.0	2	21.	21	2	2	2	!	10
			13			159				
Station number 2										
Bsb 2	735.0	1268.8	2	19.	19	27	2	2	!	10
Bsb 6	718.0	912.8	2	2.	2	9	2	2	!	10
Bsb 8	287.8	567.8	2	11.	11	21	2	2	!	10
Bsb 9	416.8	1057.2	2	12.	12	3	2	2	!	4
			8			60				
Station number 3										
Bsb 3	653.0	1211.8	2	25.	25	37	2	2	!	10
			2			37				
Station number 4										
Bsb 4	244.6	917.2	2	4.	4	38	2	2	!	10
			2			38				
Station number 5 Manual										
Bsb 12	392.8	116.1	1	15.	15	21	1	1		5
Bsb	650.9	372.5	0	20.	20	5	1	1		4
			1			26				

Station summary

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	3	1.	1	368.9	210.1	1	9	2 2 !
		19.	19	624.4	357.5	2	18	2 2 !
		25.	25	595.9	316.5	3	36	2 2 !
2	4	1.	1	368.9	210.1	1	8*	2 2 !
		4.	4	448.6	112.3	4	3	2 2 !
		19.	19	624.4	357.5	2	9*	2 2 !
		25.	25	595.9	316.5	3	1*	2 2 !
3	1	4.	4	448.6	112.3	4	35*	2 2 !
4	1	17.	17	497.4	159.4	1	28	2 2 !
5	2	2.	2	446.4	349.0	2	9*	2 2 !
		17.	17	497.4	159.4	1	1*	2 2 !
6	1	9.	9	447.8	361.8	1	24	2 2 !
7	1	9.	9	447.8	361.8	1	7*	2 2 !
8	1	11.	11	273.9	133.9	2	21*	2 2 !
9	2	12.	12	518.6	198.4	2	3*	2 2 !
		23.	23	430.5	145.9	1	6*	1 1
10	1	14.	14	554.2	295.3	1	40	2 2 !
11	1	14.	14	554.2	295.3	1	8*	2 2 !
12	1	15.	15	392.8	116.1	5	21*	1 1
13	1	16.	16	431.4	311.2	1	24	2 2 !
14	1	16.	16	431.4	311.2	1	2*	2 2 !
15	1	20.	20	640.9	372.5	5	3	1 1
16	1	20.	20	640.9	372.5	5	2*	1 1
17	1	21.	21	657.5	125.8	1	2*	2 2 !

Destacking summary

Using Destacking information

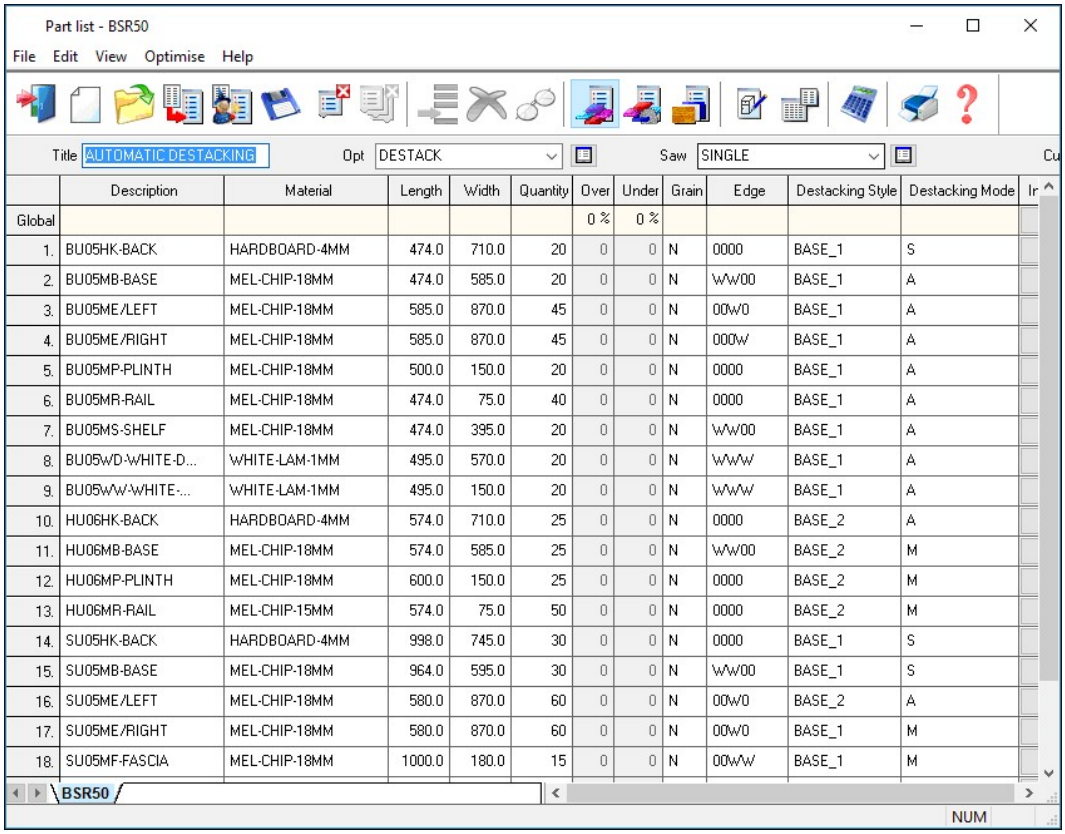
- All the reports can be easily printed and used at the Destacking area or for planning.

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

- Labels for each pallet and/or each stack can be printed in the office.

Baseboards

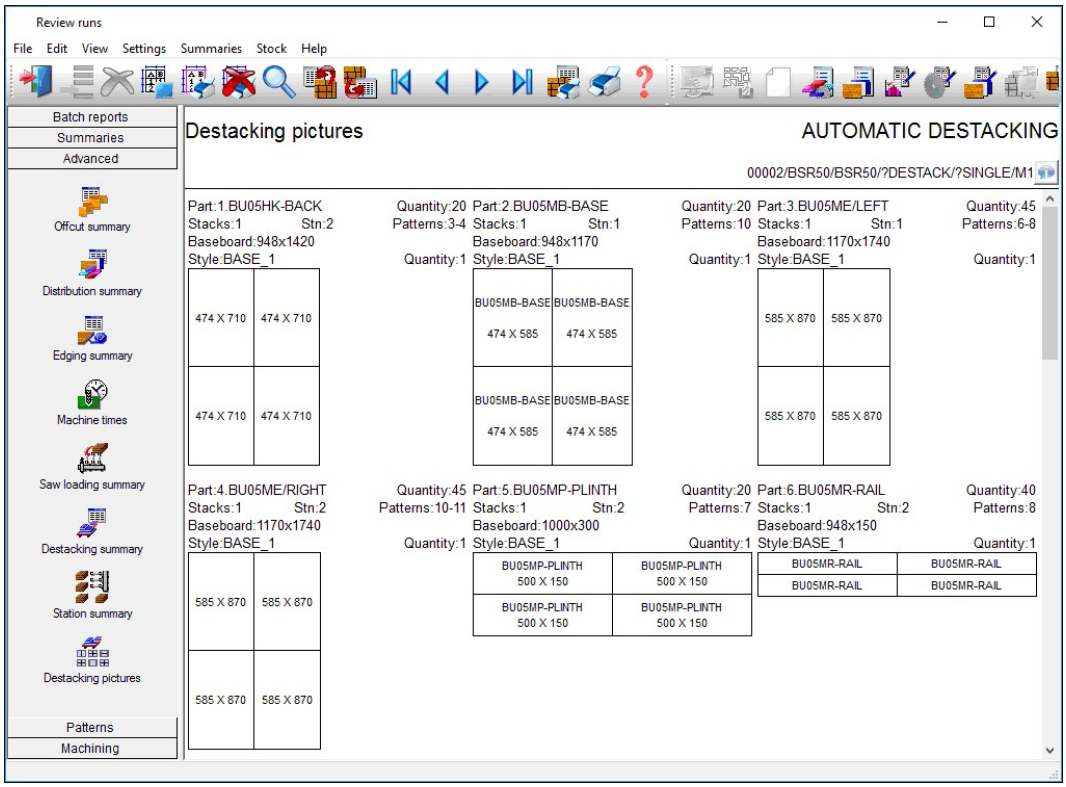
Many customers offstack to cut to size baseboards rather than pallets. Destacking can be set up for this (or a mixture of both).



	Description	Material	Length	Width	Quantity	Over	Under	Grain	Edge	Destacking Style	Destacking Mode	Ir
Global						0 %	0 %					
1.	BU05HK-BACK	HARDBOARD-4MM	474.0	710.0	20	0	0	N	0000	BASE_1	S	
2.	BU05MB-BASE	MEL-CHIP-18MM	474.0	585.0	20	0	0	N	WW00	BASE_1	A	
3.	BU05ME/LEFT	MEL-CHIP-18MM	585.0	870.0	45	0	0	N	00W0	BASE_1	A	
4.	BU05ME/RIGHT	MEL-CHIP-18MM	585.0	870.0	45	0	0	N	000W	BASE_1	A	
5.	BU05MP-PLINTH	MEL-CHIP-18MM	500.0	150.0	20	0	0	N	0000	BASE_1	A	
6.	BU05MR-RAIL	MEL-CHIP-18MM	474.0	75.0	40	0	0	N	0000	BASE_1	A	
7.	BU05MS-SHELF	MEL-CHIP-18MM	474.0	395.0	20	0	0	N	WW00	BASE_1	A	
8.	BU05WD-WHITE-D...	WHITE-LAM-1MM	495.0	570.0	20	0	0	N	WWW	BASE_1	A	
9.	BU05WW-WHITE-...	WHITE-LAM-1MM	495.0	150.0	20	0	0	N	WWW	BASE_1	A	
10.	HU06HK-BACK	HARDBOARD-4MM	574.0	710.0	25	0	0	N	0000	BASE_2	A	
11.	HU06MB-BASE	MEL-CHIP-18MM	574.0	585.0	25	0	0	N	WW00	BASE_2	M	
12.	HU06MP-PLINTH	MEL-CHIP-18MM	600.0	150.0	25	0	0	N	0000	BASE_2	M	
13.	HU06MR-RAIL	MEL-CHIP-15MM	574.0	75.0	50	0	0	N	0000	BASE_2	M	
14.	SU05HK-BACK	HARDBOARD-4MM	998.0	745.0	30	0	0	N	0000	BASE_1	S	
15.	SU05MB-BASE	MEL-CHIP-18MM	964.0	595.0	30	0	0	N	WW00	BASE_1	S	
16.	SU05ME/LEFT	MEL-CHIP-18MM	580.0	870.0	60	0	0	N	00W0	BASE_2	A	
17.	SU05ME/RIGHT	MEL-CHIP-18MM	580.0	870.0	60	0	0	N	00W0	BASE_1	M	
18.	SU05MF-FASCIA	MEL-CHIP-18MM	1000.0	180.0	15	0	0	N	00WW	BASE_1	M	

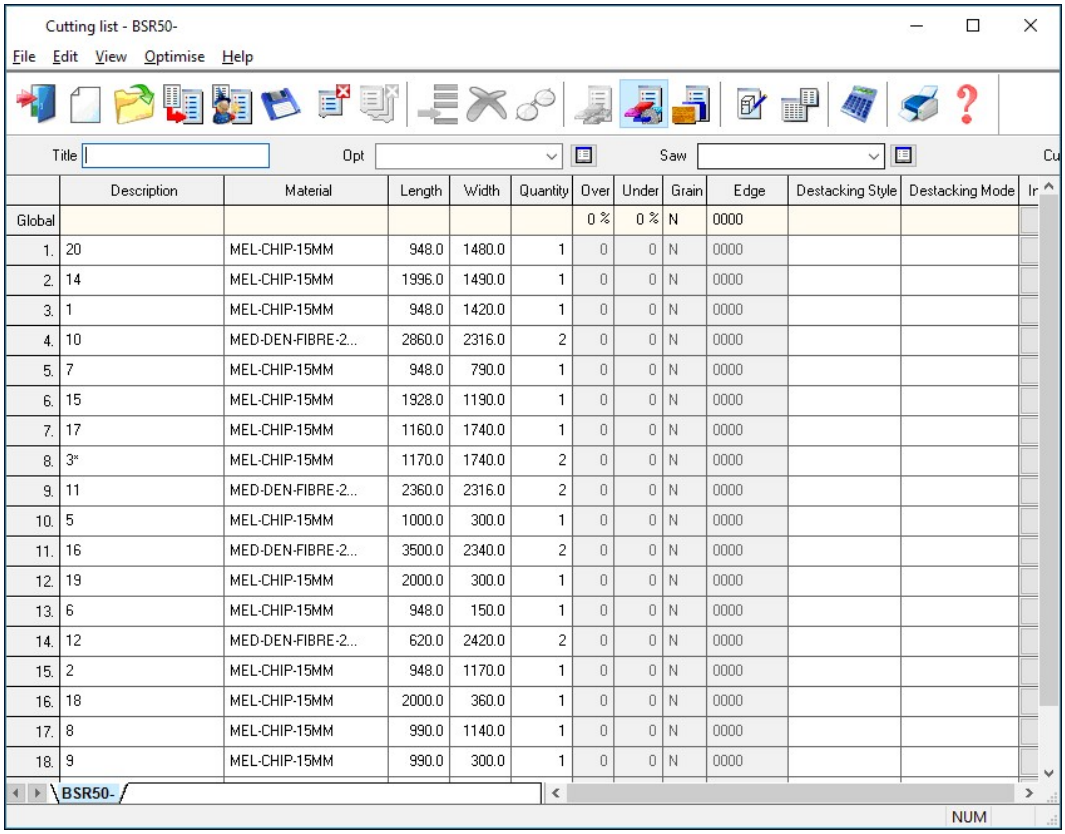
Destacking with Baseboards

The destacking pictures show the layout for each part on the baseboards.



Destacking pictures - Baseboards

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



	Description	Material	Length	Width	Quantity	Over	Under	Grain	Edge	Destacking Style	Destacking Mode
Global						0 %	0 %	N	0000		
1.	20	MEL-CHIP-15MM	948.0	1480.0	1	0	0	N	0000		
2.	14	MEL-CHIP-15MM	1996.0	1490.0	1	0	0	N	0000		
3.	1	MEL-CHIP-15MM	948.0	1420.0	1	0	0	N	0000		
4.	10	MED-DEN-FIBRE-2...	2860.0	2316.0	2	0	0	N	0000		
5.	7	MEL-CHIP-15MM	948.0	790.0	1	0	0	N	0000		
6.	15	MEL-CHIP-15MM	1928.0	1190.0	1	0	0	N	0000		
7.	17	MEL-CHIP-15MM	1160.0	1740.0	1	0	0	N	0000		
8.	3*	MEL-CHIP-15MM	1170.0	1740.0	2	0	0	N	0000		
9.	11	MED-DEN-FIBRE-2...	2360.0	2316.0	2	0	0	N	0000		
10.	5	MEL-CHIP-15MM	1000.0	300.0	1	0	0	N	0000		
11.	16	MED-DEN-FIBRE-2...	3500.0	2340.0	2	0	0	N	0000		
12.	19	MEL-CHIP-15MM	2000.0	300.0	1	0	0	N	0000		
13.	6	MEL-CHIP-15MM	948.0	150.0	1	0	0	N	0000		
14.	12	MED-DEN-FIBRE-2...	620.0	2420.0	2	0	0	N	0000		
15.	2	MEL-CHIP-15MM	948.0	1170.0	1	0	0	N	0000		
16.	18	MEL-CHIP-15MM	2000.0	360.0	1	0	0	N	0000		
17.	8	MEL-CHIP-15MM	990.0	1140.0	1	0	0	N	0000		
18.	9	MEL-CHIP-15MM	990.0	300.0	1	0	0	N	0000		

Destacking - Baseboard picking list

Note - the baseboard cutting list has the same name as the part list with a hyphen added. e.g. 'Cabinets', 'Cabinets-'. This list is found in the 'Cutting list' section.

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.

11. CAD Drawings

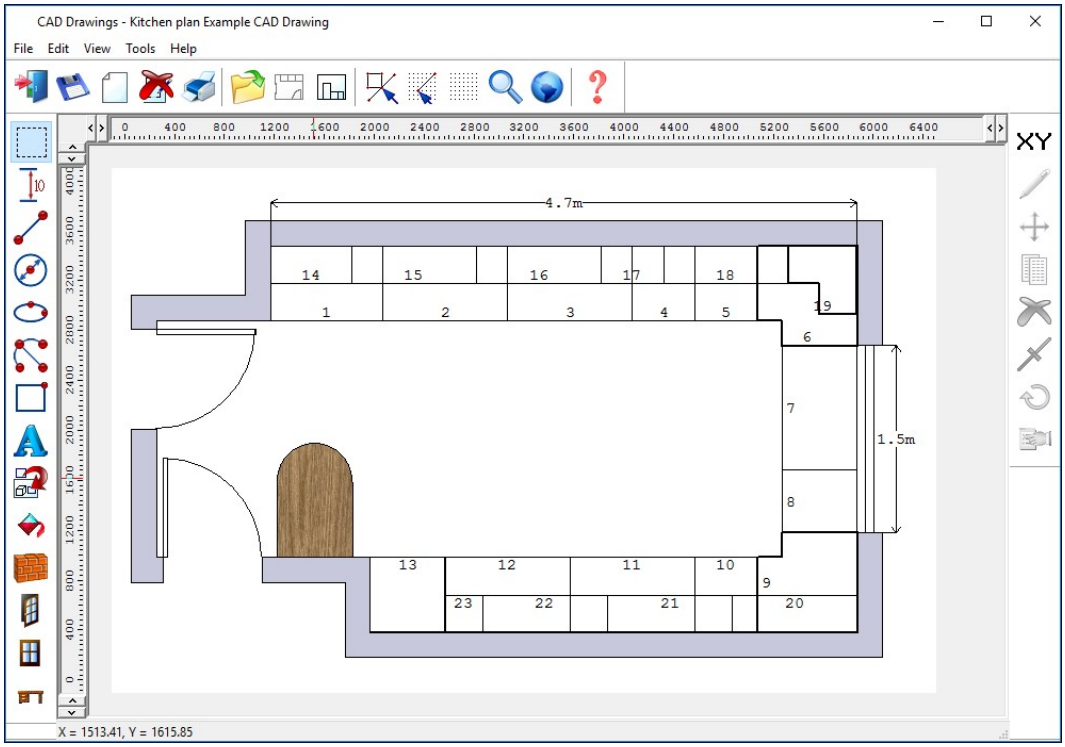
A flexible design tool for laying out jobs e.g. Office spaces, Kitchens, Washrooms …

- Create room layout
- Add products
- Optimise

This option provides full costing, drawings and supporting documents.The layouts 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.



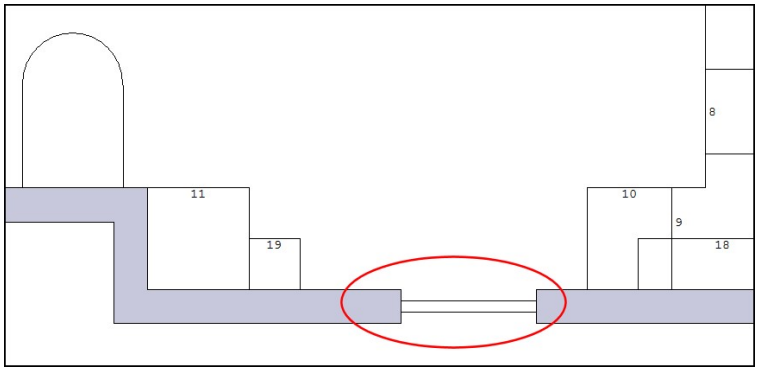
CAD drawings

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

Wall
Door
Window

A full set of drawing tools are also included:, arc, line, circle, ellipse, text …

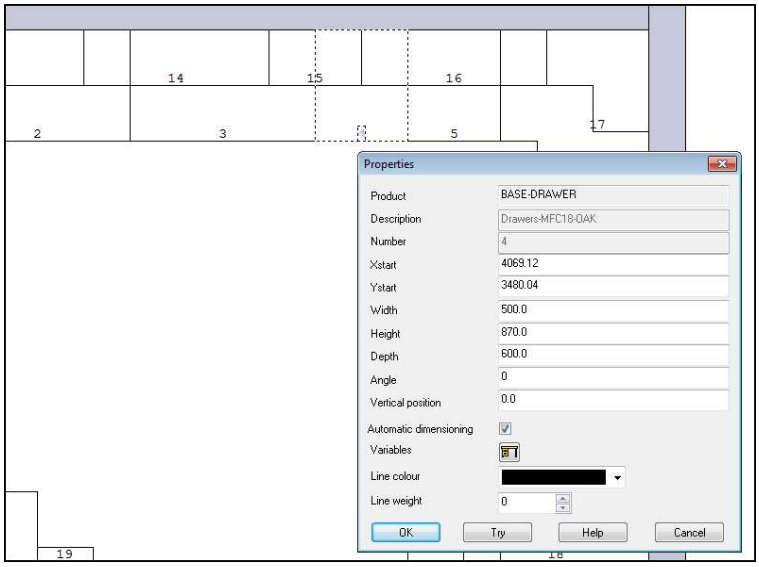
Here the Window tool is used to add a window,



Window tool

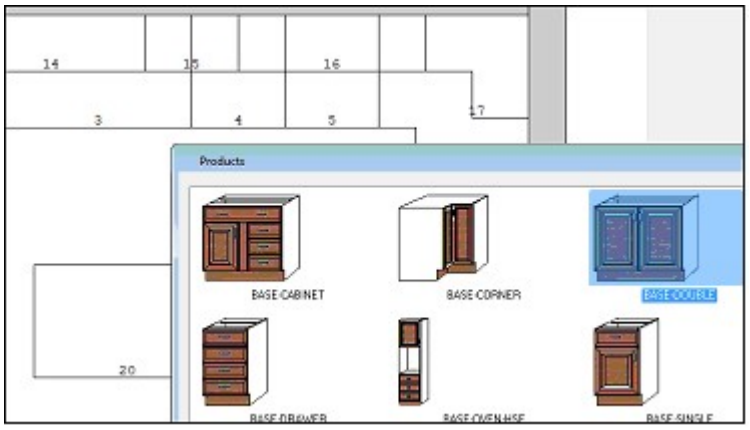
Products were re-positioned as a result of the change.

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



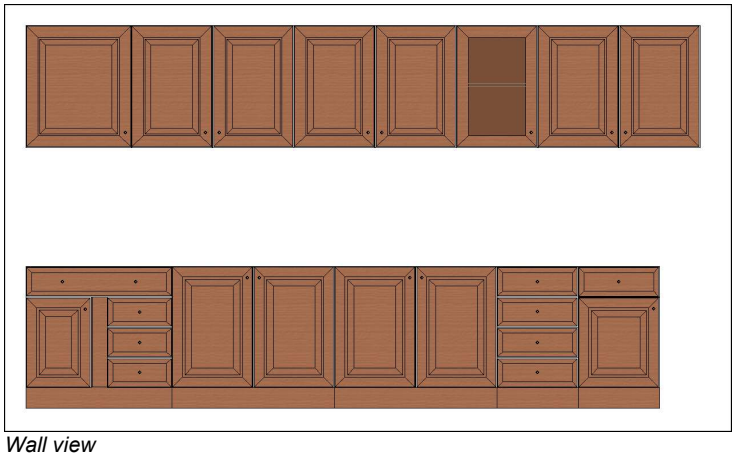
Window tool - properties

Use the Product tool to add products to the drawing.



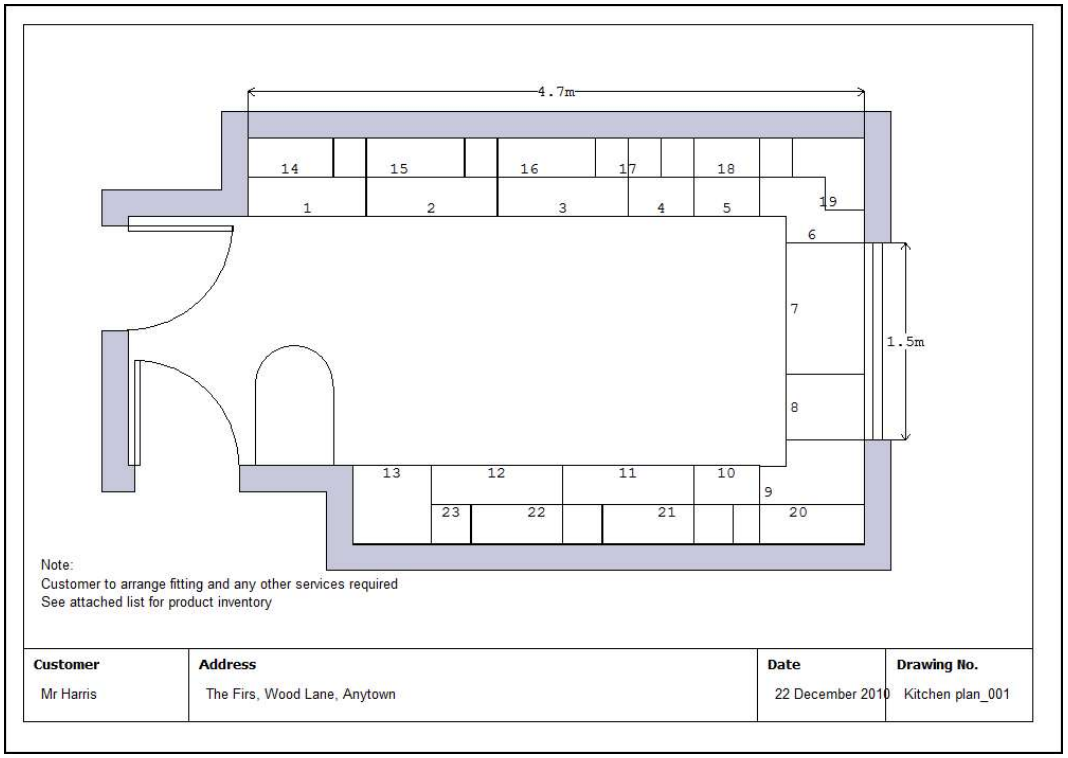
Select product

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



Wall view

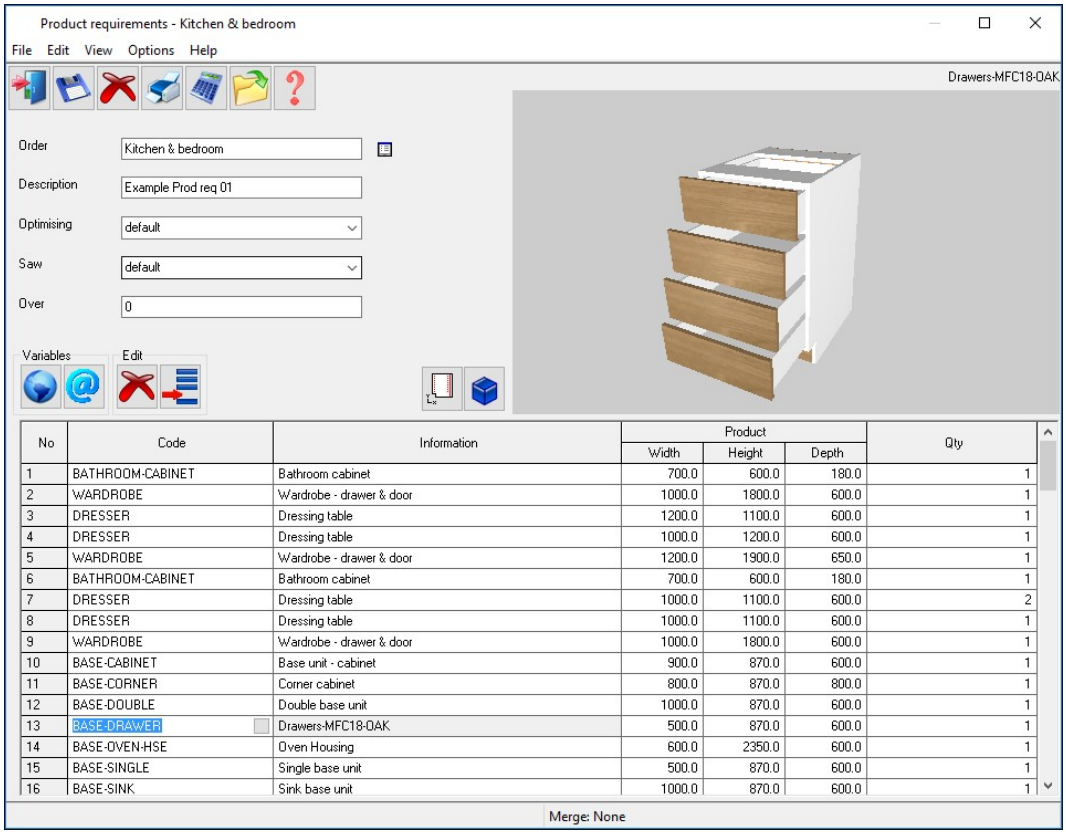
Any drawing can be added to a diagram layout - so that a full annotated drawing can be produced if required.



Layout diagram

Product requirements

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

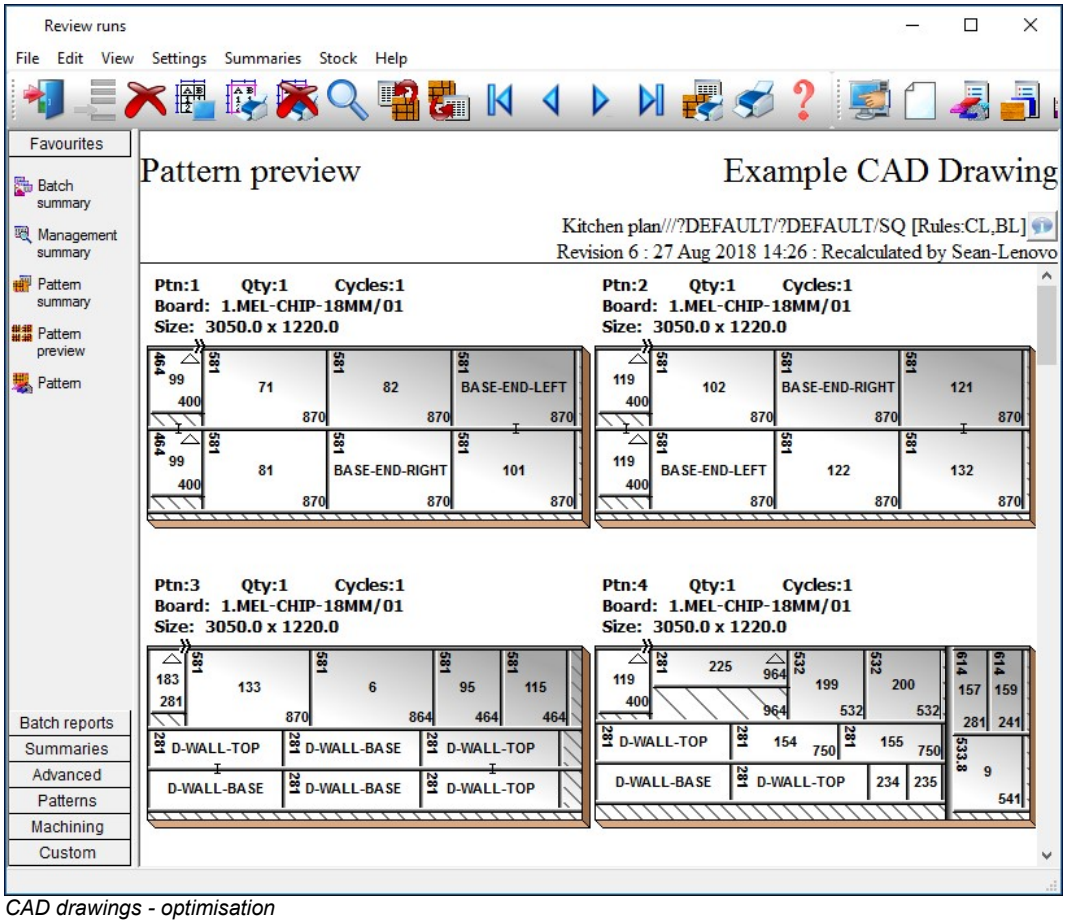


No	Code	Information	Product			Qty
			Width	Height	Depth	
1	BATHROOM-CABINET	Bathroom cabinet	700.0	600.0	180.0	1
2	WARDROBE	Wardrobe - drawer & door	1000.0	1800.0	600.0	1
3	DRESSER	Dressing table	1200.0	1100.0	600.0	1
4	DRESSER	Dressing table	1000.0	1200.0	600.0	1
5	WARDROBE	Wardrobe - drawer & door	1200.0	1900.0	650.0	1
6	BATHROOM-CABINET	Bathroom cabinet	700.0	600.0	180.0	1
7	DRESSER	Dressing table	1000.0	1100.0	600.0	2
8	DRESSER	Dressing table	1000.0	1100.0	600.0	1
9	WARDROBE	Wardrobe - drawer & door	1000.0	1800.0	600.0	1
10	BASE-CABINET	Base unit - cabinet	900.0	870.0	600.0	1
11	BASE-CORNER	Corner cabinet	800.0	870.0	800.0	1
12	BASE-DOUBLE	Double base unit	1000.0	870.0	600.0	1
13	BASE-DRAWER	Drawers-MFC18-OAK	500.0	870.0	600.0	1
14	BASE-OVEN-HSE	Oven Housing	600.0	2350.0	600.0	1
15	BASE-SINGLE	Single base unit	500.0	870.0	600.0	1
16	BASE-SINK	Sink base unit	1000.0	870.0	600.0	1

CAD drawings - product requirements

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 requirements or the quotation are optimised in the usual way to produce a set of cutting patterns for the job.



CAD drawings - optimisation

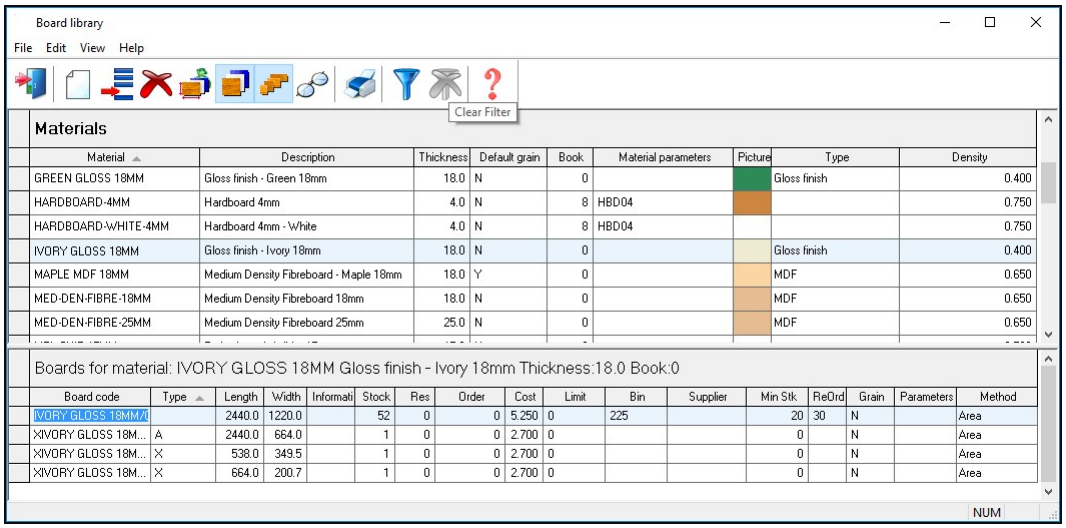
12. Board library

The Board library is a record of the Materials in use. The program uses it to select the correct board sizes when a list of parts (or products) is optimised. Setting up the board library with the materials and board sizes is essential for optimising. This can be quite an extensive task but there are options for importing boards from other systems with the Stock control module. Once the library is set up there is then only regular maintenance to allow for new suppliers, materials and price changes.

At the main screen:-

• Select: **Libraries - Board library**

The first screen is a list of MATERIALS. The materials can be, for example, core material such as chipboard or MDF or various laminates.



Board library

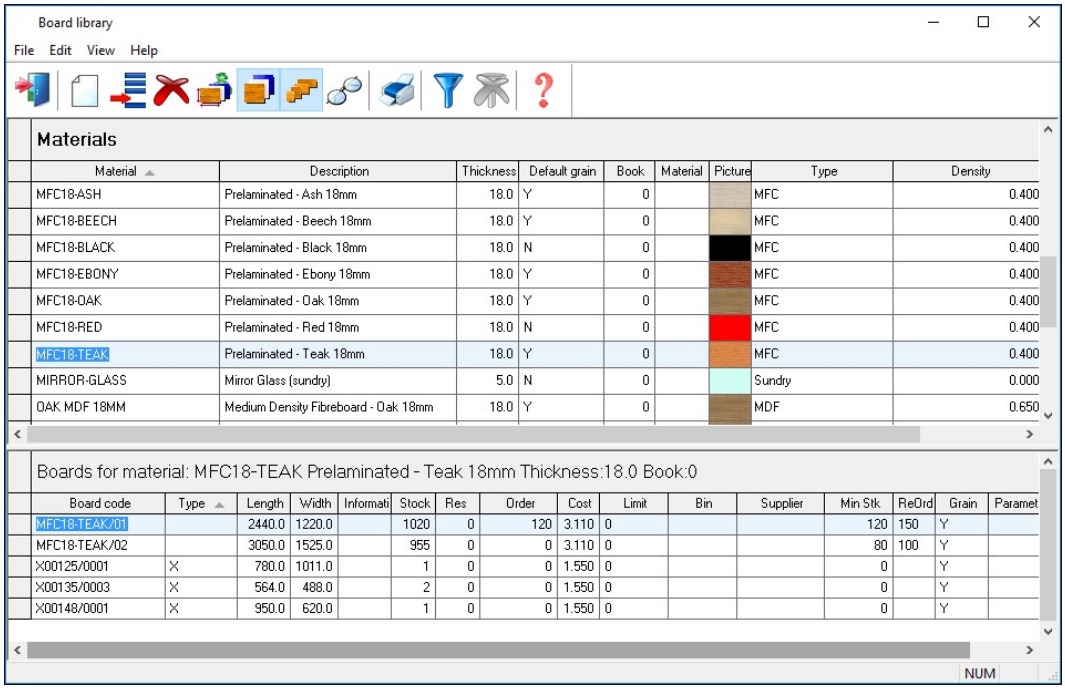
Material code - each material has a unique material code. This is important because the program uses this code to identify the material for each part and find the correct material in the material library.

For each material enter the data for each column: Material code, Description, Thickness, Grain (whether the material has a grain or not), Book (the maximum book height in terms of the number of boards) and Parameters.

Picture - each material can include a picture of the material - this can be a bit map or a colour and can be used to help identify the material and also used to render parts and products using that material in the Part and Product libraries.

Parameters - this is the name of an alternative set of parameters (called MATERIAL PARAMETERS) for the material. These can be useful where different settings are used for cutting different materials, for example, a slower speed or a different blade.

For each material there may be several different board sizes and different quantities of each size available. These are shown, for the current material, in the lower pane.



Board library materials and boards

Board details **-** to add a new board fill in the values for each column: Board code, length, width, information (this can be any descriptive data about the board) and the cost per square area of the board, for example, £2.54 per square metre. A realistic cost is

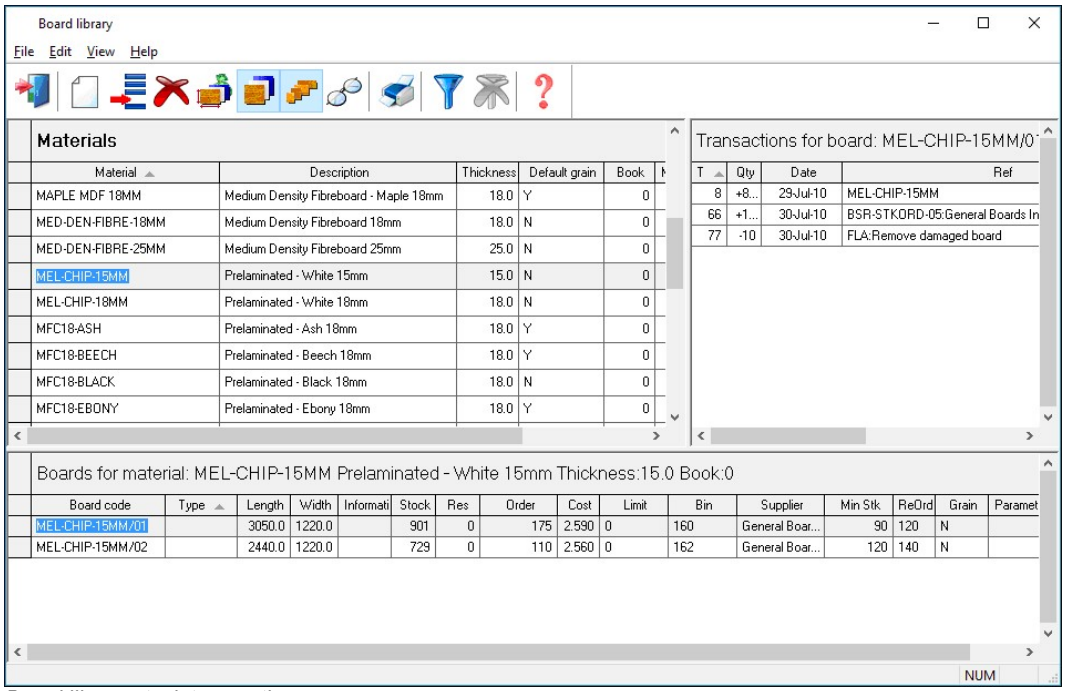
important as this is used when the cutting patterns are generated to help decide which are the most effective patterns.

Quantities **-**There are three columns for quantities (Stock, Res, Order) - enter the boards available in stock under 'Stock'. The other two columns are used with the Stock control module.

Limit **-** This setting (0-9) determines how the boards are used.

For example, a setting of 8 allows the software to ignore the physical quantity in stock when generating cutting patterns - useful for estimating stock requirements when stocks are low.

With the Stock control module (SC) the library also includes the transactions on each board.



Board library stock transactions

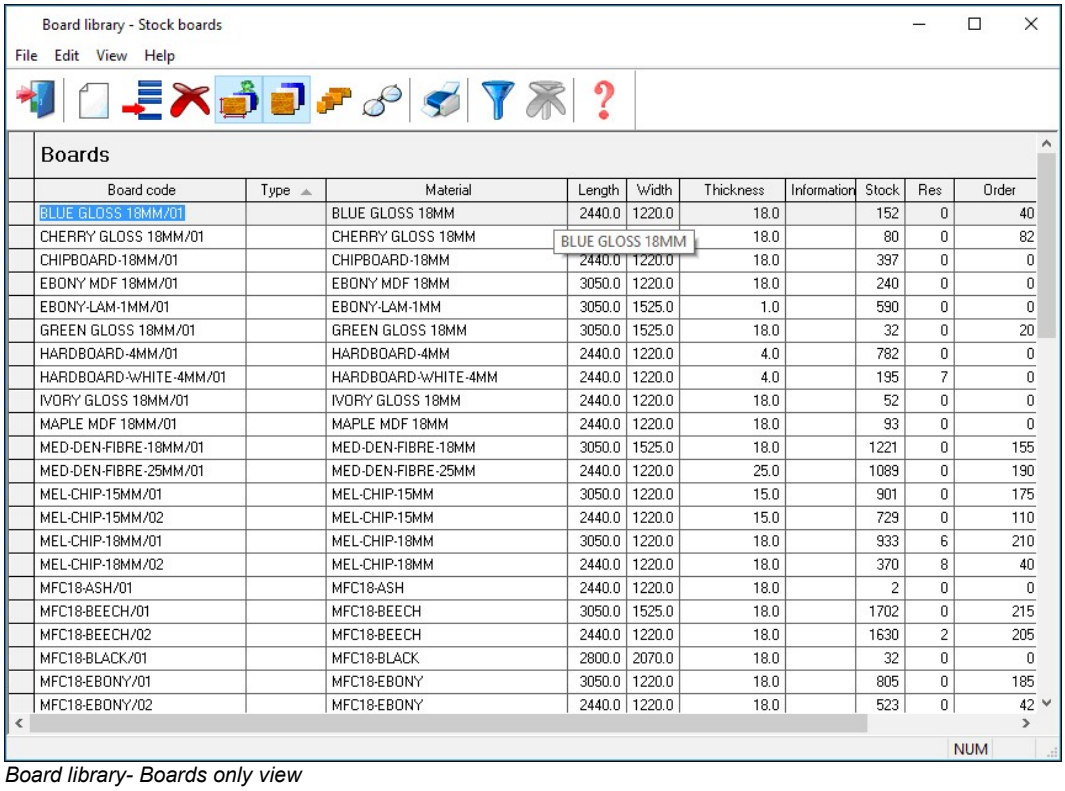
Transactions for the current board are shown in a separate pane at the right of the screen.

Board library views

There are several different views of the library data. 'Boards only' shows the list of board sizes and there is a choice of listing offcuts or stock boards.

Boards only

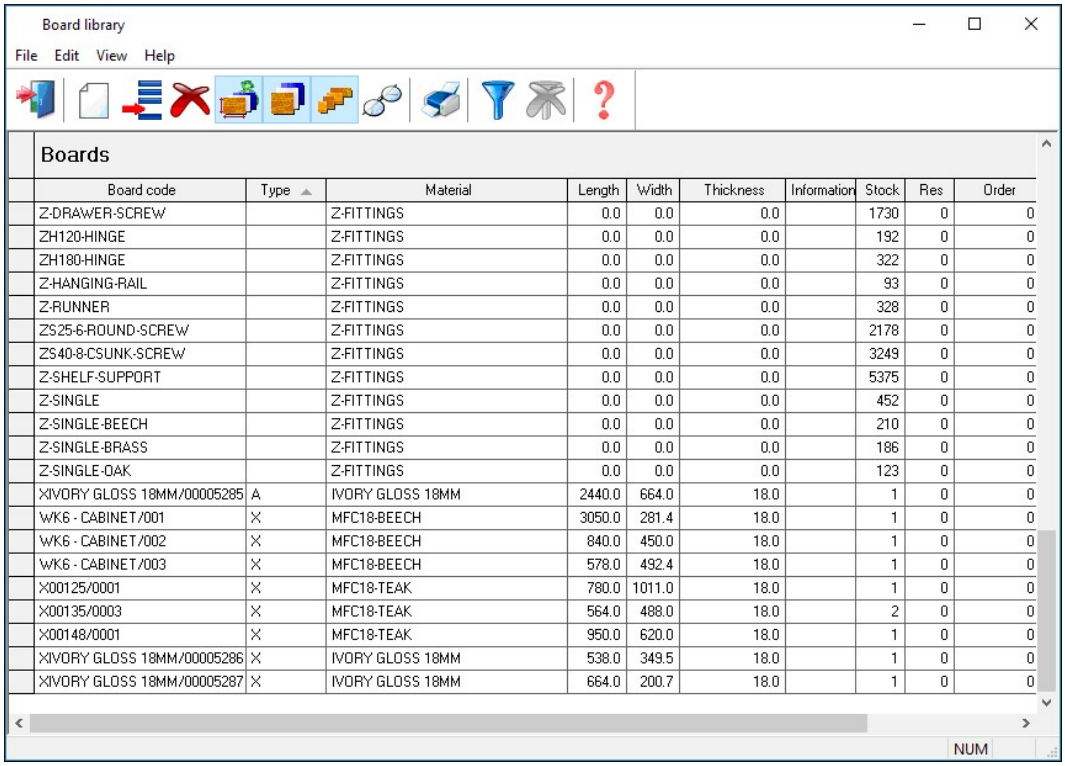
The library includes an alternative layout 'Boards only' which shows all the boards in a single list. This can be convenient when adding or searching for specific board sizes.



Board code	Type	Material	Length	Width	Thickness	Information	Stock	Res	Order
BLUE GLOSS 18MM/01		BLUE GLOSS 18MM	2440.0	1220.0	18.0		152	0	40
CHERRY GLOSS 18MM/01		CHERRY GLOSS 18MM			18.0		80	0	82
CHIPBOARD-18MM/01		CHIPBOARD-18MM	2440.0	1220.0	18.0		397	0	0
EBONY MDF 18MM/01		EBONY MDF 18MM	3050.0	1220.0	18.0		240	0	0
EBONY-LAM-1MM/01		EBONY-LAM-1MM	3050.0	1525.0	1.0		590	0	0
GREEN GLOSS 18MM/01		GREEN GLOSS 18MM	3050.0	1525.0	18.0		32	0	20
HARDBOARD-4MM/01		HARDBOARD-4MM	2440.0	1220.0	4.0		782	0	0
HARDBOARD-WHITE-4MM/01		HARDBOARD-WHITE-4MM	2440.0	1220.0	4.0		195	7	0
IVORY GLOSS 18MM/01		IVORY GLOSS 18MM	2440.0	1220.0	18.0		52	0	0
MAPLE MDF 18MM/01		MAPLE MDF 18MM	2440.0	1220.0	18.0		93	0	0
MED-DEN-FIBRE-18MM/01		MED-DEN-FIBRE-18MM	3050.0	1525.0	18.0		1221	0	155
MED-DEN-FIBRE-25MM/01		MED-DEN-FIBRE-25MM	2440.0	1220.0	25.0		1089	0	190
MEL-CHIP-15MM/01		MEL-CHIP-15MM	3050.0	1220.0	15.0		901	0	175
MEL-CHIP-15MM/02		MEL-CHIP-15MM	2440.0	1220.0	15.0		729	0	110
MEL-CHIP-18MM/01		MEL-CHIP-18MM	3050.0	1220.0	18.0		933	6	210
MEL-CHIP-18MM/02		MEL-CHIP-18MM	2440.0	1220.0	18.0		370	8	40
MFC18-ASH/01		MFC18-ASH	2440.0	1220.0	18.0		2	0	0
MFC18-BEECH/01		MFC18-BEECH	3050.0	1525.0	18.0		1702	0	215
MFC18-BEECH/02		MFC18-BEECH	2440.0	1220.0	18.0		1630	2	205
MFC18-BLACK/01		MFC18-BLACK	2800.0	2070.0	18.0		32	0	0
MFC18-EBONY/01		MFC18-EBONY	3050.0	1220.0	18.0		805	0	185
MFC18-EBONY/02		MFC18-EBONY	2440.0	1220.0	18.0		523	0	42

Board library- Boards only view

Boards only with Offcuts

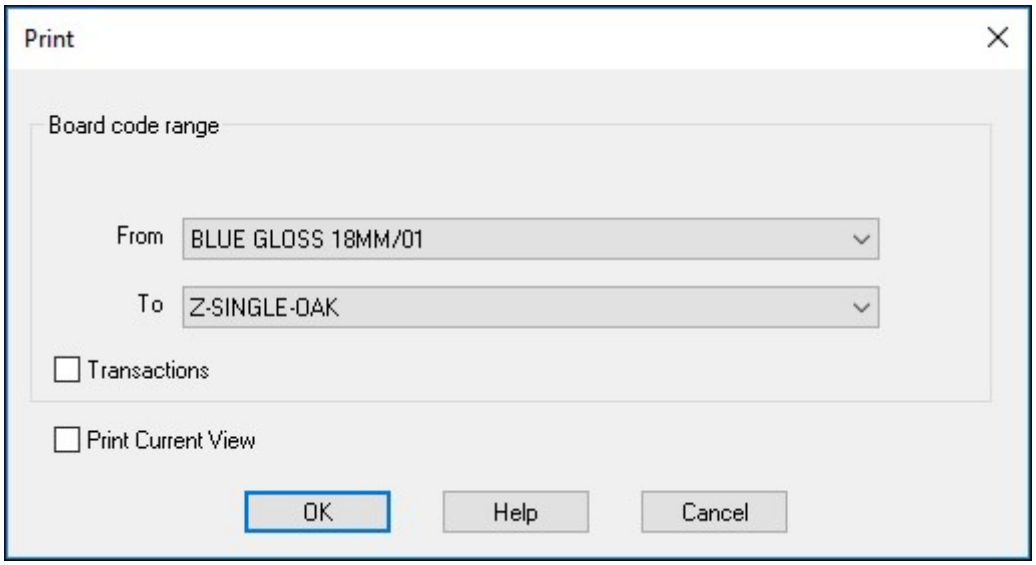


Boards only with offcuts

Board library - Print and Export

There are a range of options to print the Board data

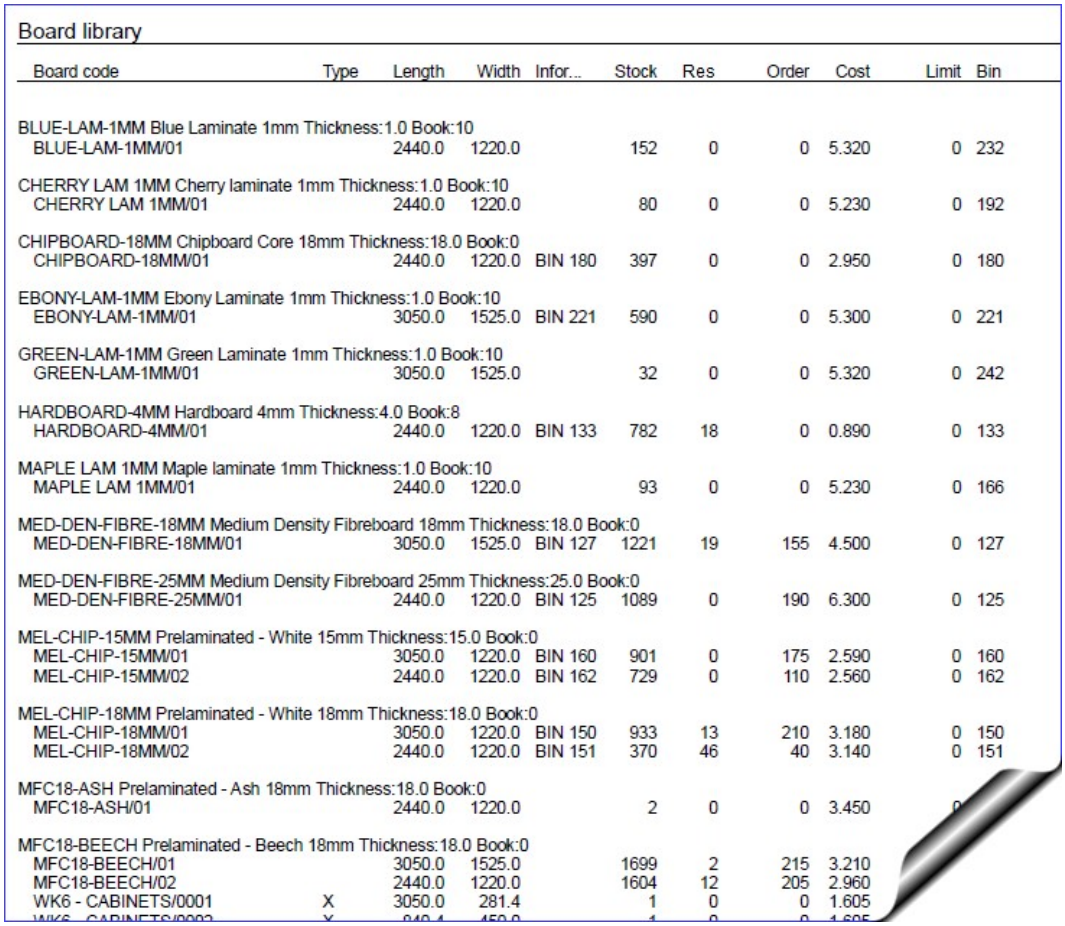
The program prompts for the range of items to print and whether transactions are included.



Boards print

The print out is based on the current view - adjust the columns on screen to alter the print.

Columns can be hidden via the View menu which controls the on-screen display.



Board library

Board code	Type	Length	Width	Infor...	Stock	Res	Order	Cost	Limit	Bin
BLUE-LAM-1MM Blue Laminate 1mm Thickness:1.0 Book:10										
BLUE-LAM-1MM/01		2440.0	1220.0		152	0	0	5.320	0	232
CHERRY LAM 1MM Cherry laminate 1mm Thickness:1.0 Book:10										
CHERRY LAM 1MM/01		2440.0	1220.0		80	0	0	5.230	0	192
CHIPBOARD-18MM Chipboard Core 18mm Thickness:18.0 Book:0										
CHIPBOARD-18MM/01		2440.0	1220.0	BIN 180	397	0	0	2.950	0	180
EBONY-LAM-1MM Ebony Laminate 1mm Thickness:1.0 Book:10										
EBONY-LAM-1MM/01		3050.0	1525.0	BIN 221	590	0	0	5.300	0	221
GREEN-LAM-1MM Green Laminate 1mm Thickness:1.0 Book:10										
GREEN-LAM-1MM/01		3050.0	1525.0		32	0	0	5.320	0	242
HARDBOARD-4MM Hardboard 4mm Thickness:4.0 Book:8										
HARDBOARD-4MM/01		2440.0	1220.0	BIN 133	782	18	0	0.890	0	133
MAPLE LAM 1MM Maple laminate 1mm Thickness:1.0 Book:10										
MAPLE LAM 1MM/01		2440.0	1220.0		93	0	0	5.230	0	166
MED-DEN-FIBRE-18MM Medium Density Fibreboard 18mm Thickness:18.0 Book:0										
MED-DEN-FIBRE-18MM/01		3050.0	1525.0	BIN 127	1221	19	155	4.500	0	127
MED-DEN-FIBRE-25MM Medium Density Fibreboard 25mm Thickness:25.0 Book:0										
MED-DEN-FIBRE-25MM/01		2440.0	1220.0	BIN 125	1089	0	190	6.300	0	125
MEL-CHIP-15MM Prelaminated - White 15mm Thickness:15.0 Book:0										
MEL-CHIP-15MM/01		3050.0	1220.0	BIN 160	901	0	175	2.590	0	160
MEL-CHIP-15MM/02		2440.0	1220.0	BIN 162	729	0	110	2.560	0	162
MEL-CHIP-18MM Prelaminated - White 18mm Thickness:18.0 Book:0										
MEL-CHIP-18MM/01		3050.0	1220.0	BIN 150	933	13	210	3.180	0	150
MEL-CHIP-18MM/02		2440.0	1220.0	BIN 151	370	46	40	3.140	0	151
MFC18-ASH Prelaminated - Ash 18mm Thickness:18.0 Book:0										
MFC18-ASH/01		2440.0	1220.0		2	0	0	3.450	0	
MFC18-BEECH Prelaminated - Beech 18mm Thickness:18.0 Book:0										
MFC18-BEECH/01		3050.0	1525.0		1699	2	215	3.210		
MFC18-BEECH/02		2440.0	1220.0		1604	12	205	2.960		
WK6 - CABINETS/0001	X	3050.0	281.4		1	0	0	1.605		

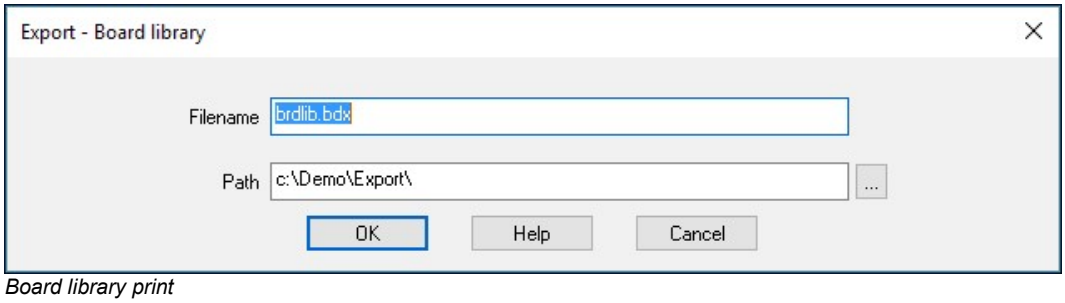
Board library print

Use **File - Print setup** - to select and set up the printer before printing.

Board data can also be exported to an external file.

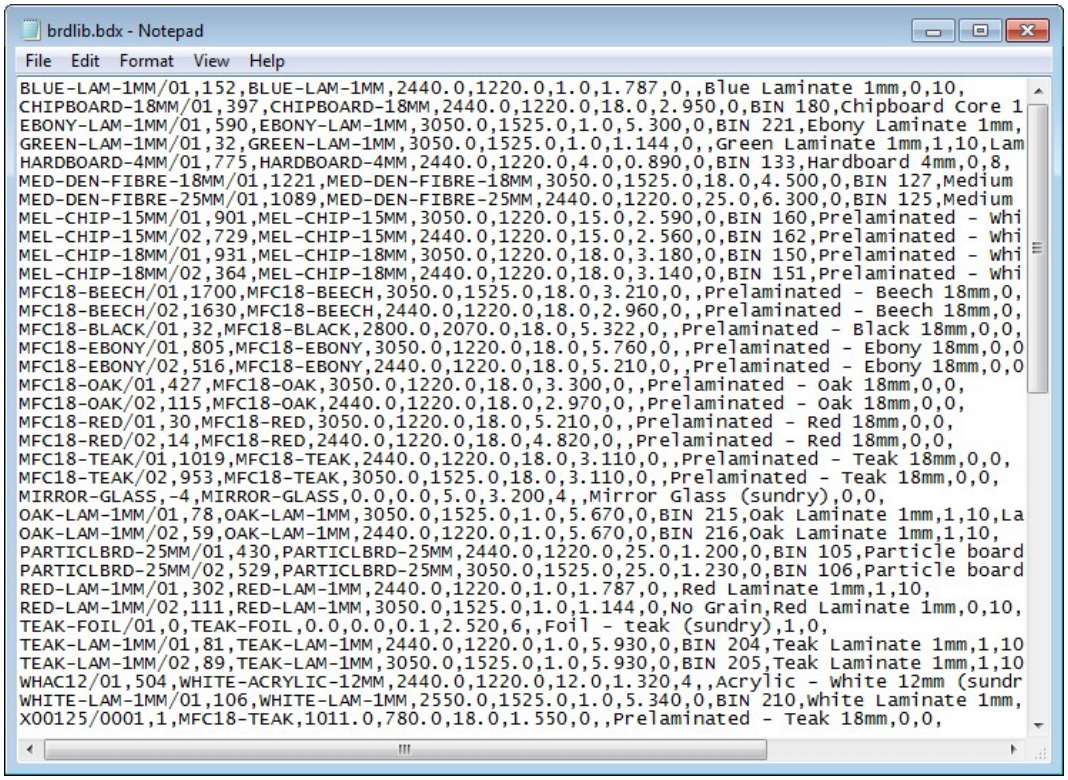
Export Board library

The board library contents can be exported to an ASCII/Unicode file.



Board library print

The file is placed in the path for export data by default.

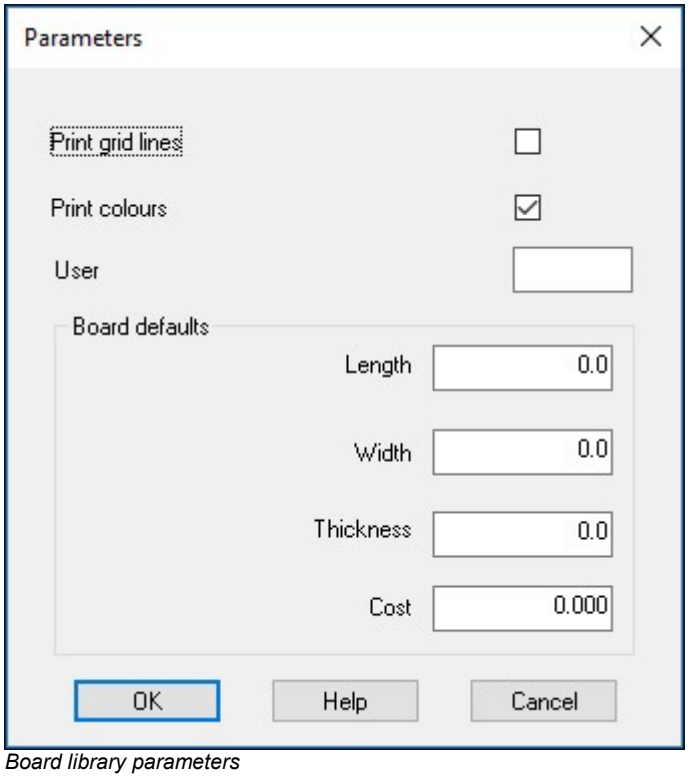


Board library print

There is one line for each board (the material records are not exported). The format is 'bdx' which is an ASCII/Unicode file with the records in a defined order (details of the BDX format are in the online help).

Board library parameters

The parameters are used to set up the board library view and to set up default values for entering board - this can help to speed up data entry.



Board library parameters

Stock control module

Stock transactions are only available with the Stock control module.

With the Stock control module offcuts from optimisation can be added back to the library and a full set of options are available for stock orders, issuing stock, stock receipts etc.

The stock control module can also be integrated with the Homag Automation SQL server stock management system.

13. More about Parameters and settings

Parameters are used for setting up the system. For example, to set up the types of saw in use and types of pattern allowed - using saw parameters; this ensures the patterns produced are suitable for the saw and optimised for it.

In a similar way parameters are used to set up, Machining centres, Destacking machinery, Edgebanders, Costing, Methods of saw transfer, and many other features.

Setting up parameters can be daunting at first, but it is typically a 'once only' task and most suppliers provide a range of examples and templates to use.

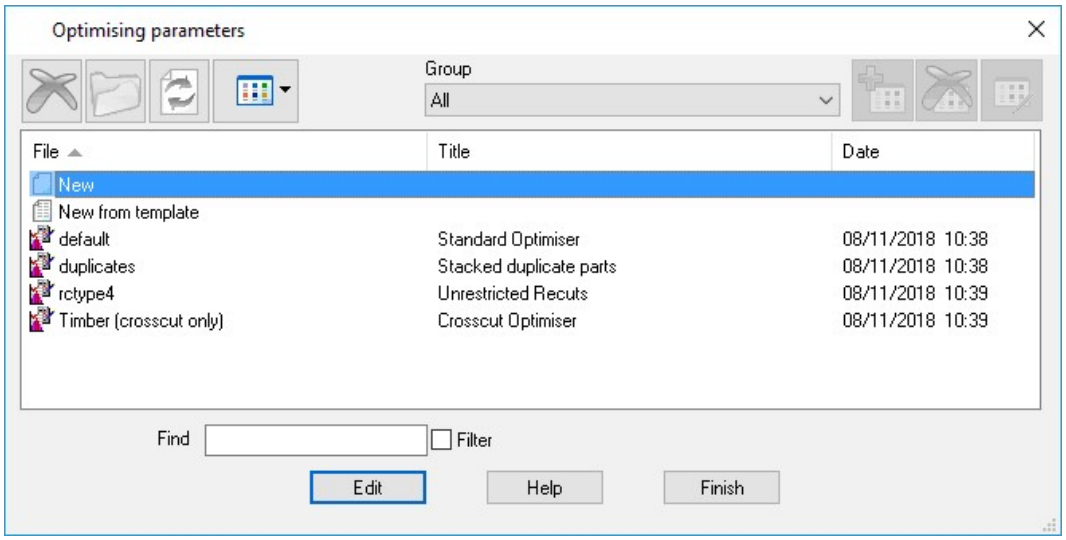
Most users should look at the system, optimising, saw transfer, and saw parameters carefully and then deal with the other lists as they are needed.

Parameter lists at the Main screen

- Optimising parameters
- Nesting parameters
- Saw parameters
- Material parameters
- System parameters
- Saw transfer parameters
- Part list import parameters
- Board list import parameters
- Requirements import parameters
- DXF import - layer name rules
- Edging parameters
- Destacking parameters
- Machining centre parameters
- Machining centre transfer parameters
- Tool sequence parameters
- Machine rate parameters
- Information boxes

How Parameters lists work

For some parameter lists, for example, Optimising, Nesting or Saw parameters there are typically several different lists each stored in a separate file. In this case the program offers a choice of list:-

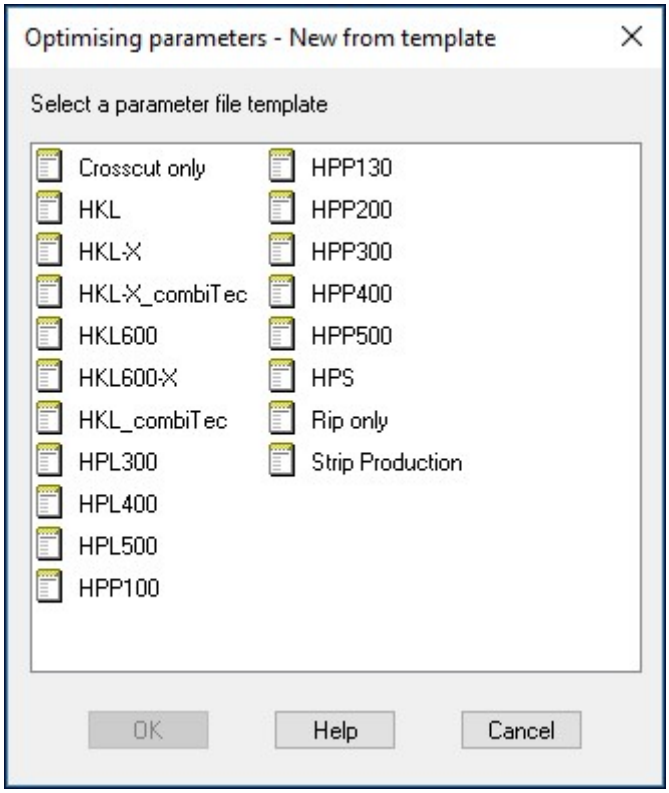


Parameter lists - select

- Select the list required or use New to create a new list of parameters.

Use the Views option to change the view; the options are: 'Details', 'List', 'Small icons', 'Large icons'.

The 'New from template' option allows the creation of a new list from a previously defined list - this is useful where just a few values need to change. For Saw parameters, suppliers typically provide a template for most of their saw models.

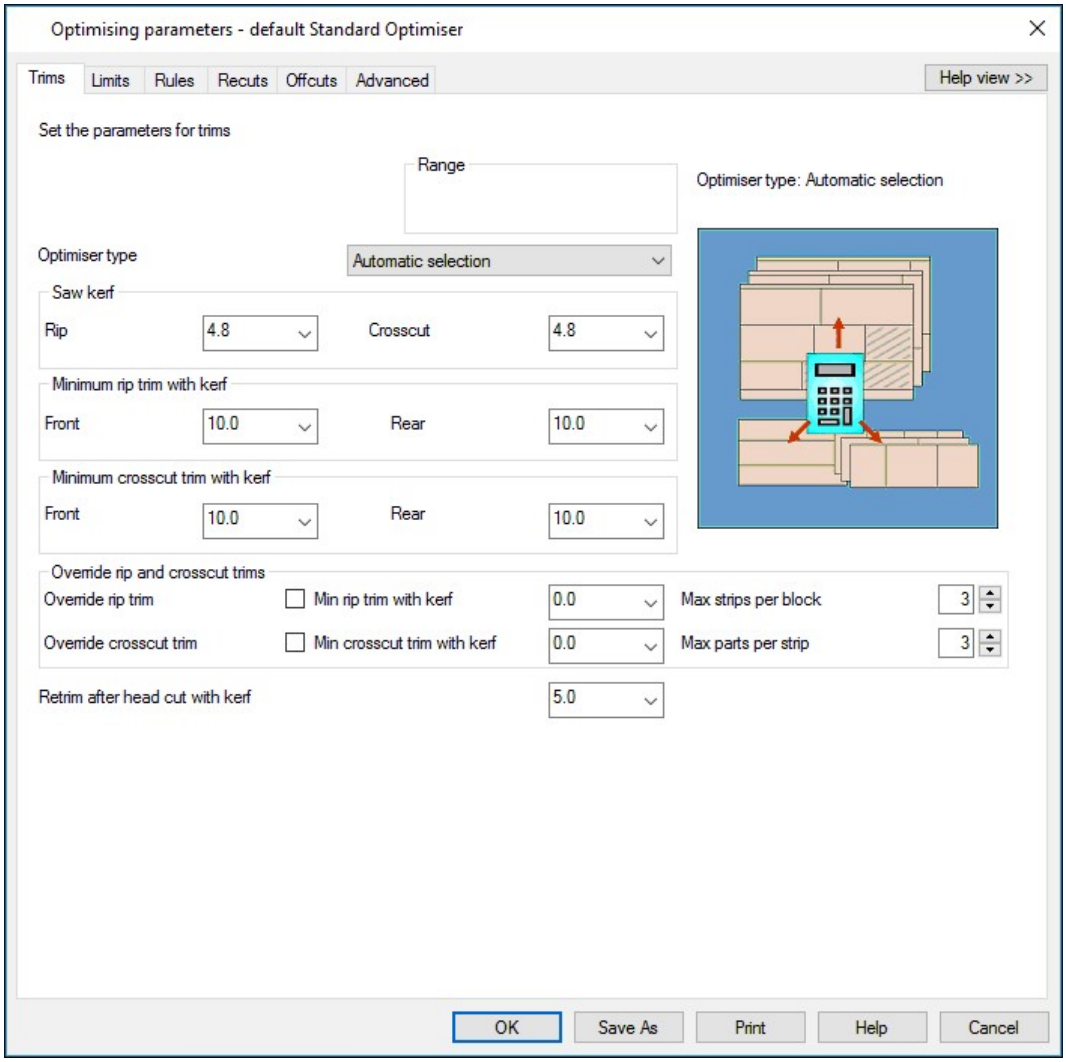


Parameter templates

- Select a suitable template.

Even when using a template check the new list carefully as there may be one or two parameters that need further changes.

On selecting a file the program moves to the Parameter screen (in this example, Optimising parameters).



Optimising parameters

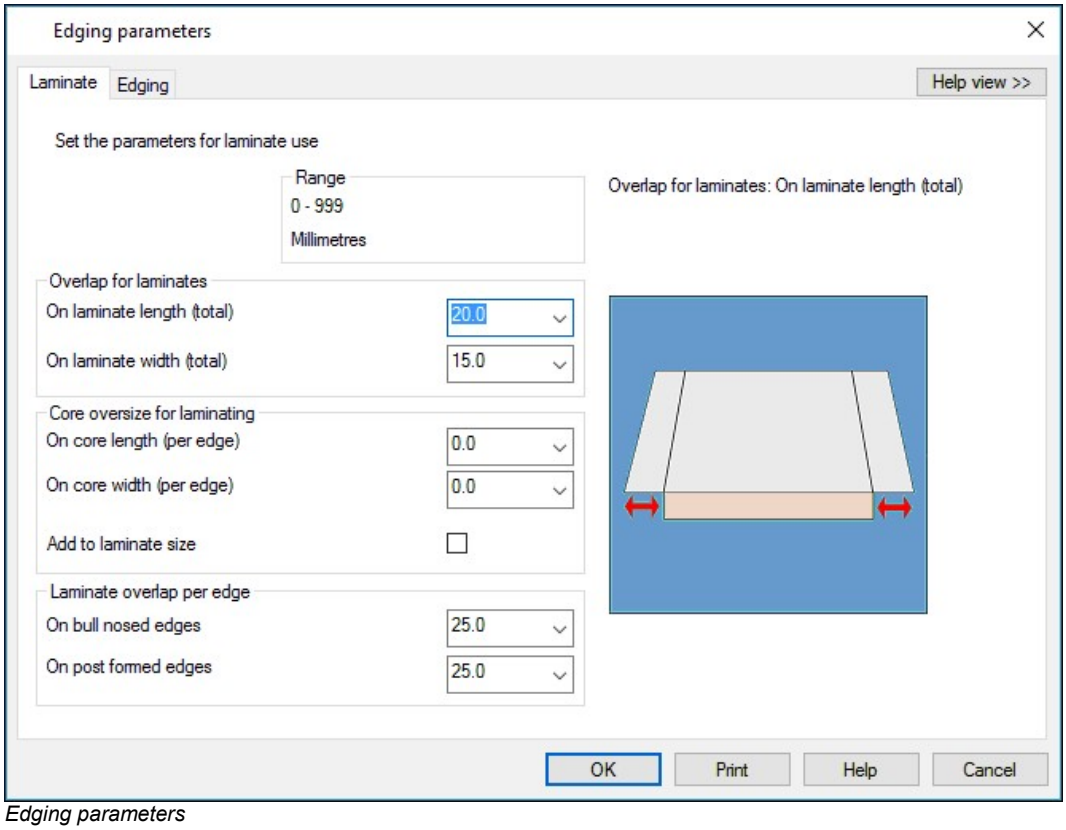
Most parameter screens operate in a similar way to the familiar Windows 'Property pages'. Click on an option or type in a value as necessary.

Many parameters show a diagram which gives a reminder of what the setting is for and how it operates.

- Click on HELP for full details of each parameter.

For some parameter lists such as *Machining centre parameters* or *Edging parameters* there is only one set for the program. In this case the program moves directly to the parameter screen.

Where the parameter screen shows a set of tabs at the top right - this means there are several pages of parameters. Click on the tabs to see the other pages.



Edging parameters

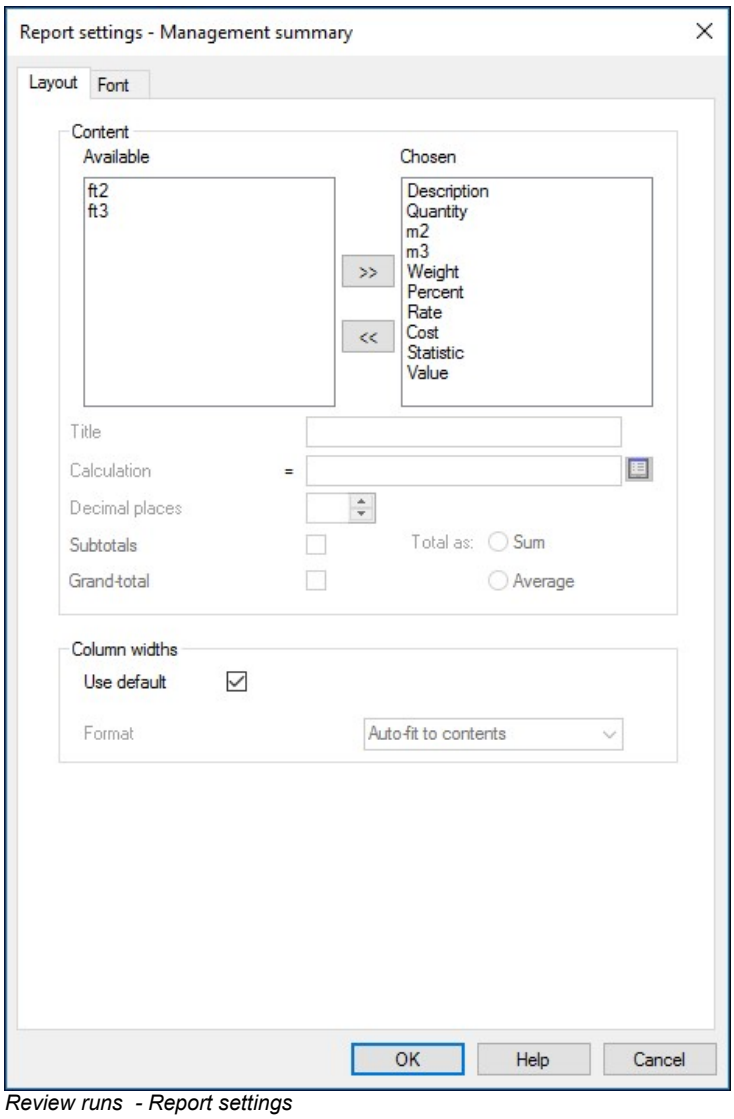
Some of the tabs only apply if you have a particular set up. For example, with the saw parameters the tabs for Multi-axis saws (are greyed out) if using a Single saw or sliding table saw.

Parameters controlling the look and style of screens and reports

There are also sets of Parameters that deal with the look and style of the reports and screens and how data is exported. These parameters are usually located in the same section of the program where they are used so it is easy to change the parameter and see the effect. The most commonly used are: Part list parameters and Review runs parameters (including export).

Parameters for each report

There are parameters to control the layout and content of each report in Review runs.
Move to a report and select: *Settings - Report settings*

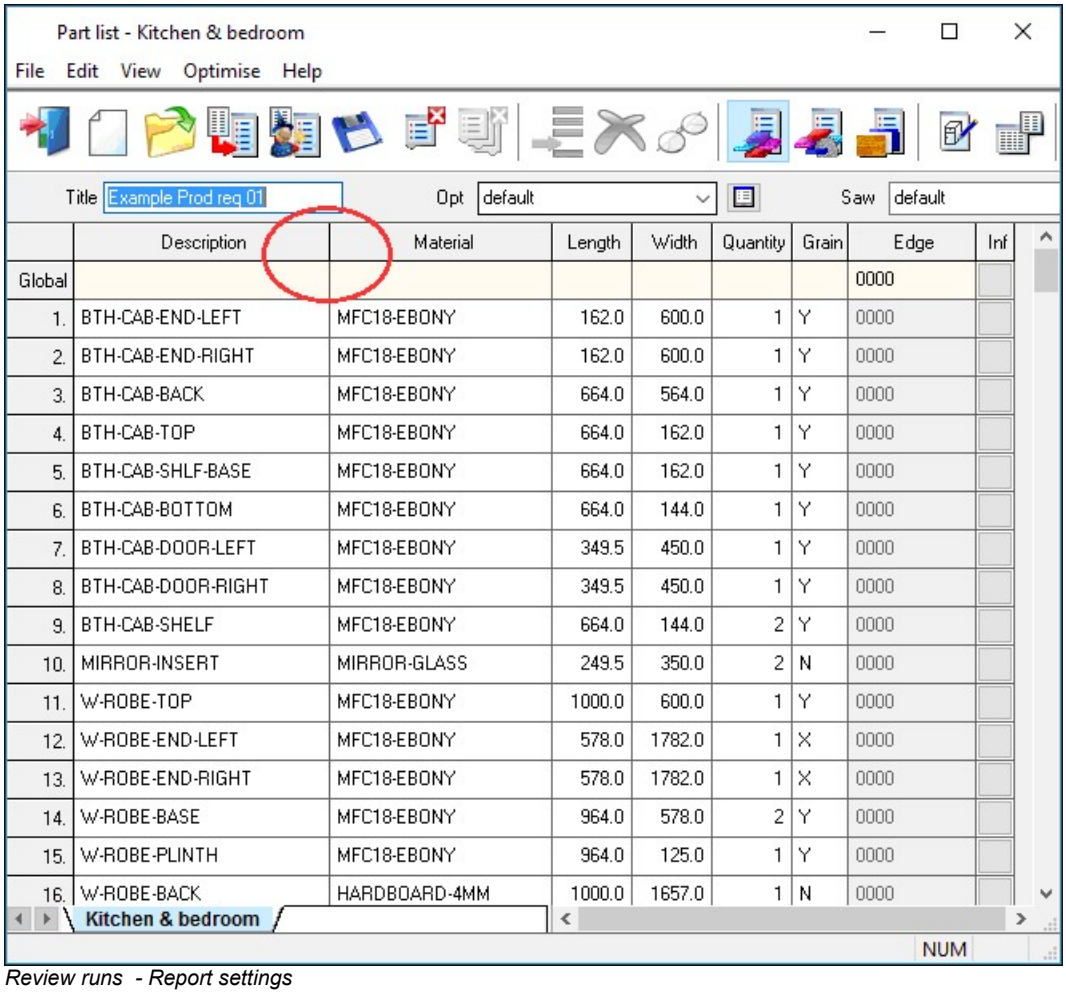


Review runs - Report settings

This type of dialog is quite often used (in Review runs and Form design) where you are selecting a few fields from a list of available fields. The Available fields are shown on the left and the ones chosen on the right. In this example the chosen fields are for the Management summary in Review runs.

Changing screen and column sizes

Use the mouse on screens and grids to change the screen and column size - the settings are saved between sessions.



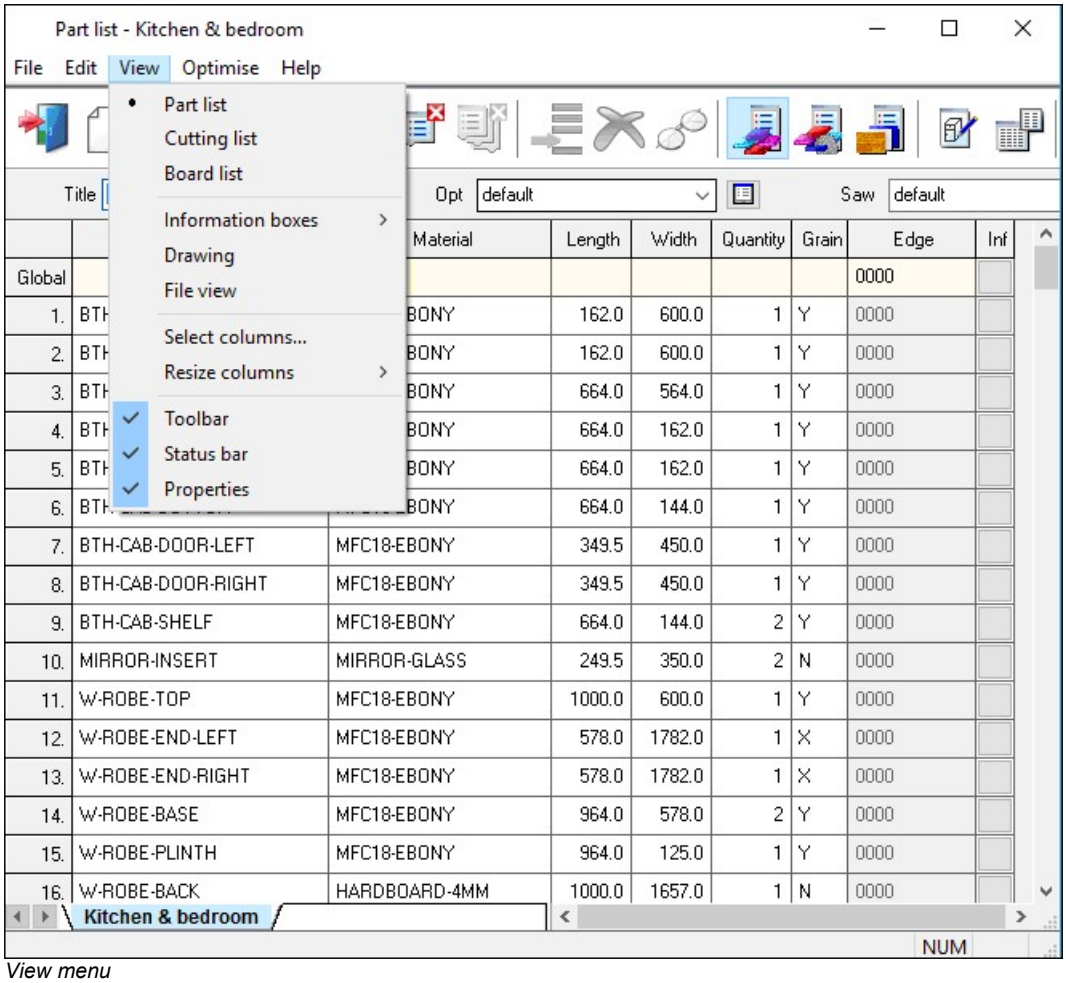
	Description	Material	Length	Width	Quantity	Grain	Edge	Inf
Global							0000	
1.	BTH-CAB-END-LEFT	MFC18-EBONY	162.0	600.0	1	Y	0000	
2.	BTH-CAB-END-RIGHT	MFC18-EBONY	162.0	600.0	1	Y	0000	
3.	BTH-CAB-BACK	MFC18-EBONY	664.0	564.0	1	Y	0000	
4.	BTH-CAB-TOP	MFC18-EBONY	664.0	162.0	1	Y	0000	
5.	BTH-CAB-SHLF-BASE	MFC18-EBONY	664.0	162.0	1	Y	0000	
6.	BTH-CAB-BOTTOM	MFC18-EBONY	664.0	144.0	1	Y	0000	
7.	BTH-CAB-DOOR-LEFT	MFC18-EBONY	349.5	450.0	1	Y	0000	
8.	BTH-CAB-DOOR-RIGHT	MFC18-EBONY	349.5	450.0	1	Y	0000	
9.	BTH-CAB-SHELF	MFC18-EBONY	664.0	144.0	2	Y	0000	
10.	MIRROR-INSERT	MIRROR-GLASS	249.5	350.0	2	N	0000	
11.	W-ROBE-TOP	MFC18-EBONY	1000.0	600.0	1	Y	0000	
12.	W-ROBE-END-LEFT	MFC18-EBONY	578.0	1782.0	1	X	0000	
13.	W-ROBE-END-RIGHT	MFC18-EBONY	578.0	1782.0	1	X	0000	
14.	W-ROBE-BASE	MFC18-EBONY	964.0	578.0	2	Y	0000	
15.	W-ROBE-PLINTH	MFC18-EBONY	964.0	125.0	1	Y	0000	
16.	W-ROBE-BACK	HARDBOARD-4MM	1000.0	1657.0	1	N	0000	

Review runs - Report settings

Move the mouse to a window edge or column edge and use the grab handles (holding down the left mouse button) to drag column, row or windows.

**Note* - some screens have a fixed size or fixed minimum size and cannot be changed

On most data screens, for example, the Part list, Review runs summaries, Board list, Board there is also a 'View menu' with various options for changing the screen display and operation.



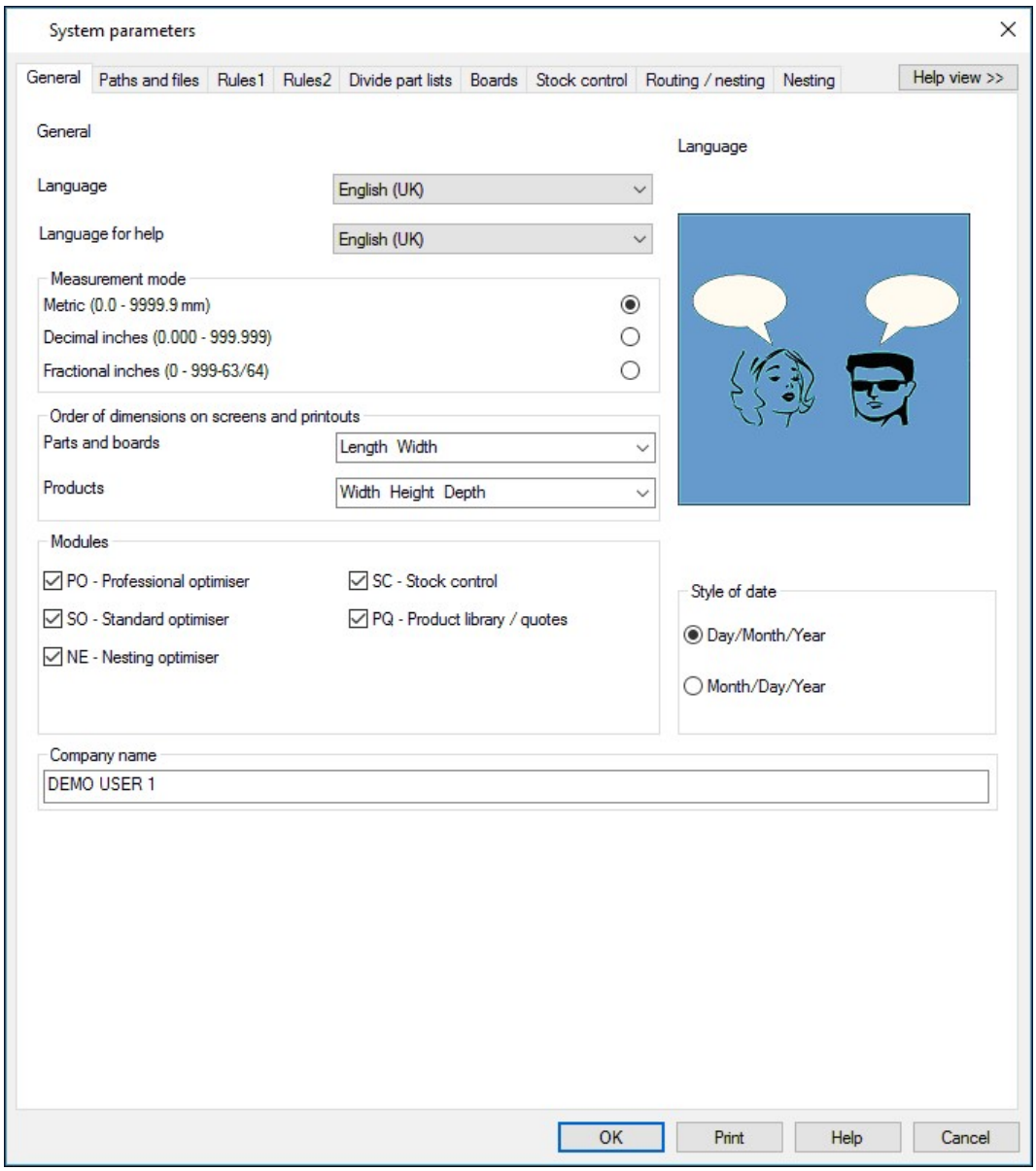
View menu

The size of the screen and the size of the columns can be changed using the mouse.

Settings menus - Many screens also have a *Settings menu* which can be used to set what is shown on the screen and how it operates..

System parameters

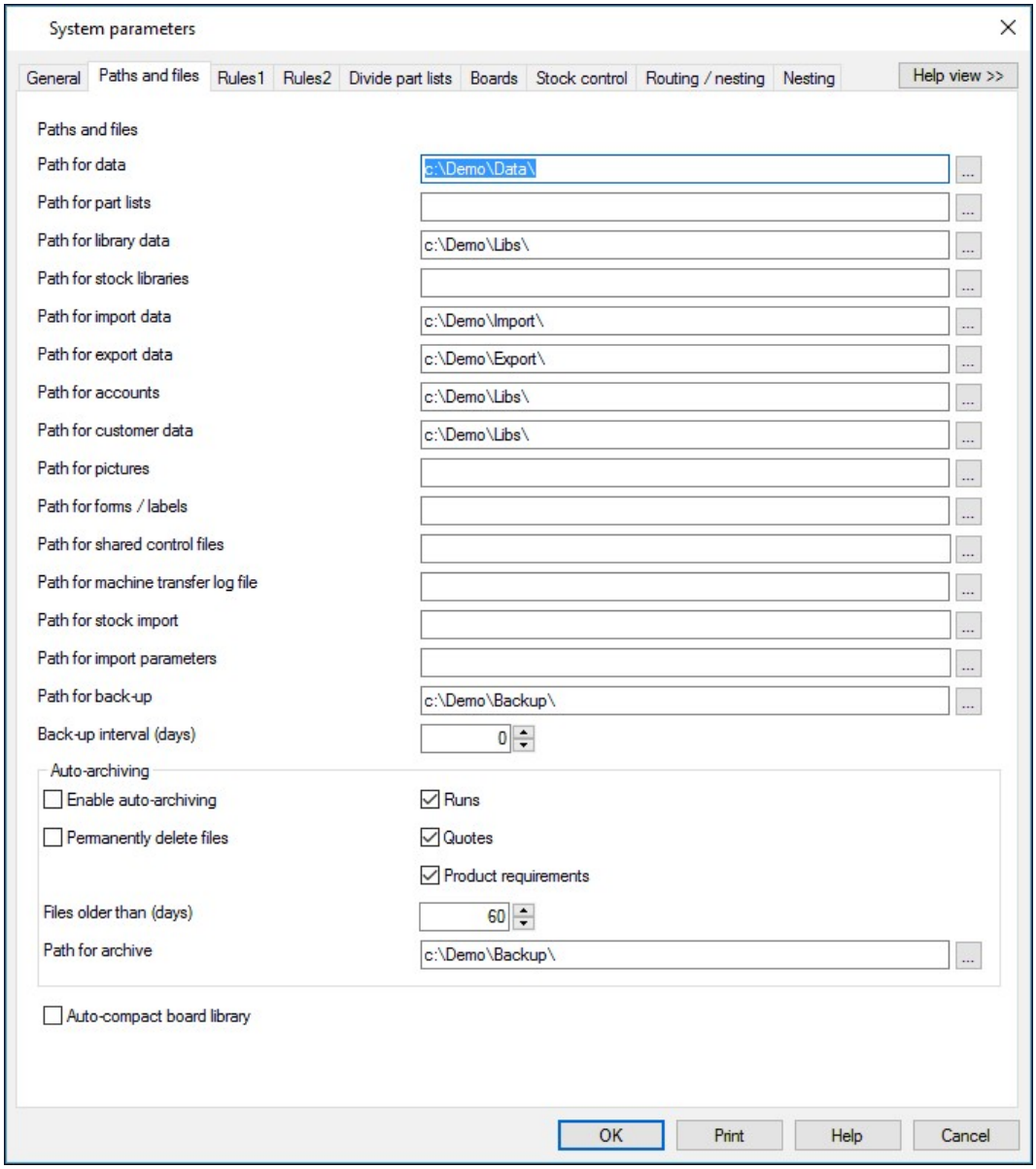
The system parameters are important - these mostly control the overall operation of the program, for example, the measurement mode to use, the language to use, how files are named, the paths for storing data …



System parameters - General

There are several pages of parameters each for different aspects of the program.

The second tab covers the paths for storing data.



System parameters - Paths and files

Click on a tab to move to that section and check and adjust the parameters.

Once set the system parameters should rarely need to be changed again. The installed program is set up with reasonable defaults - and these are fine for running the program initially - but check the parameters carefully to make sure the program is set up to match your preferences and way of working.

Demo data - the system is provided with several sets of parameter data (and your supplier may have added some others) - these can be used as the base for your setup.

14. More about the Saw Interface

After Optimisation the patterns (cutting instructions) are transferred to the Saw.

Saw interface

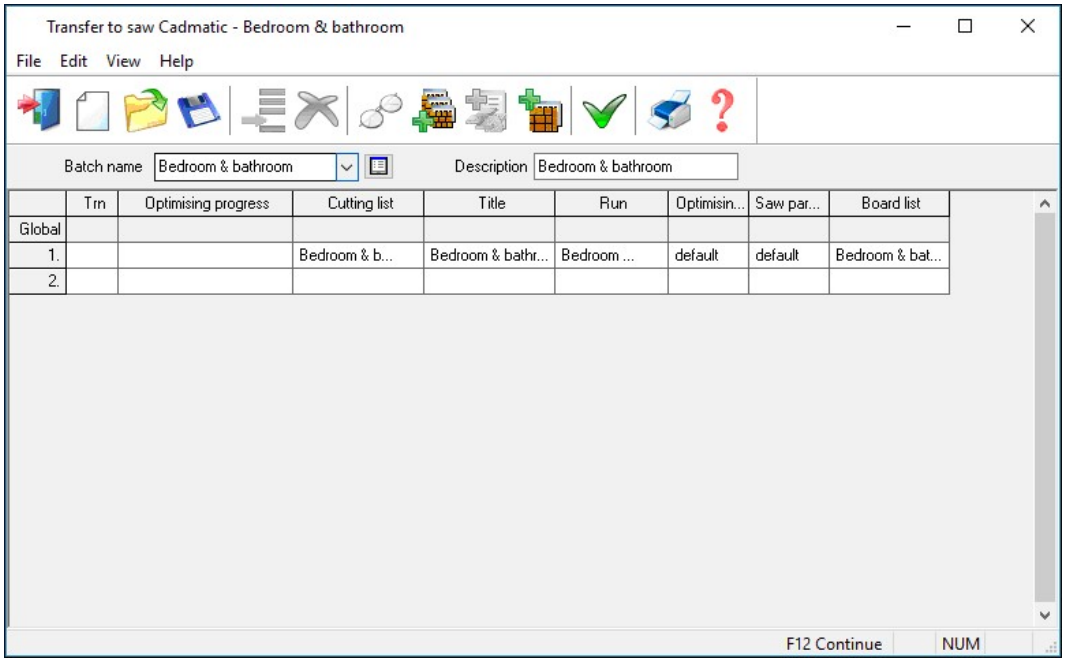
The program supports a wide range of saw controllers:-

CADmatic (all types)
Compumatic
Topmatic
Homag Sawtech (CHxx, NPS400, Ilenia)

- Table saws
- Online PC
- Various other controllers
- Printed patterns and cutting instructions for manual saws

At the main screen select the Saw transfer

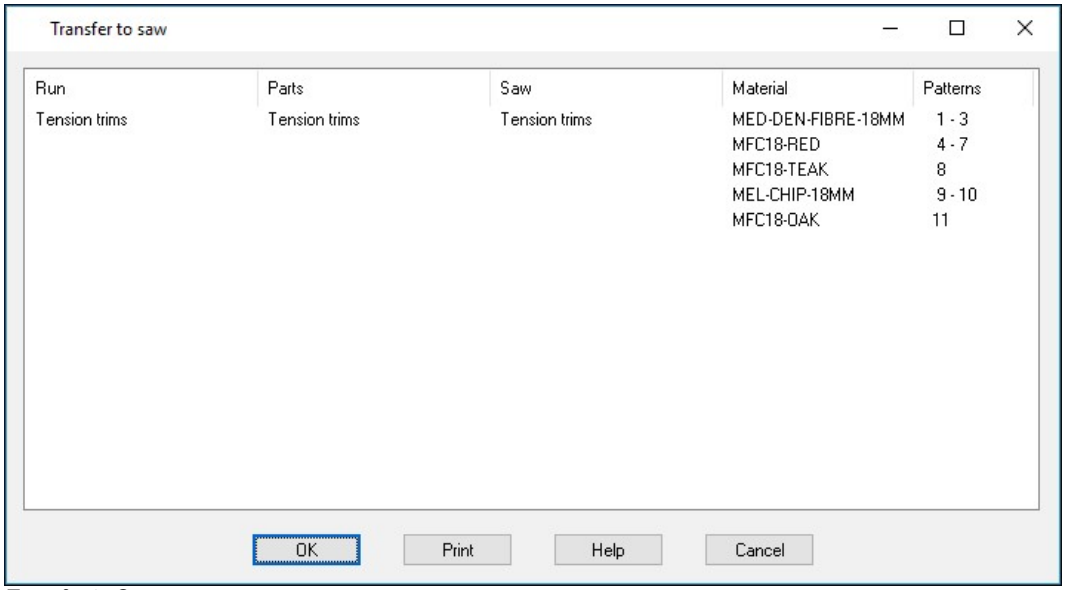
For Saw transfer, for example, the program prompts with the current job.



Transfer to saw batch screen

Select the 'Continue' option

The program displays the data to transfer.



Transfer to Saw

- OK to confirm

The transfer is finished.

Note - For practical use the saw transfer and machining transfer need to be set up for the company's machines. There are parameters for this and a wide range of options are available.

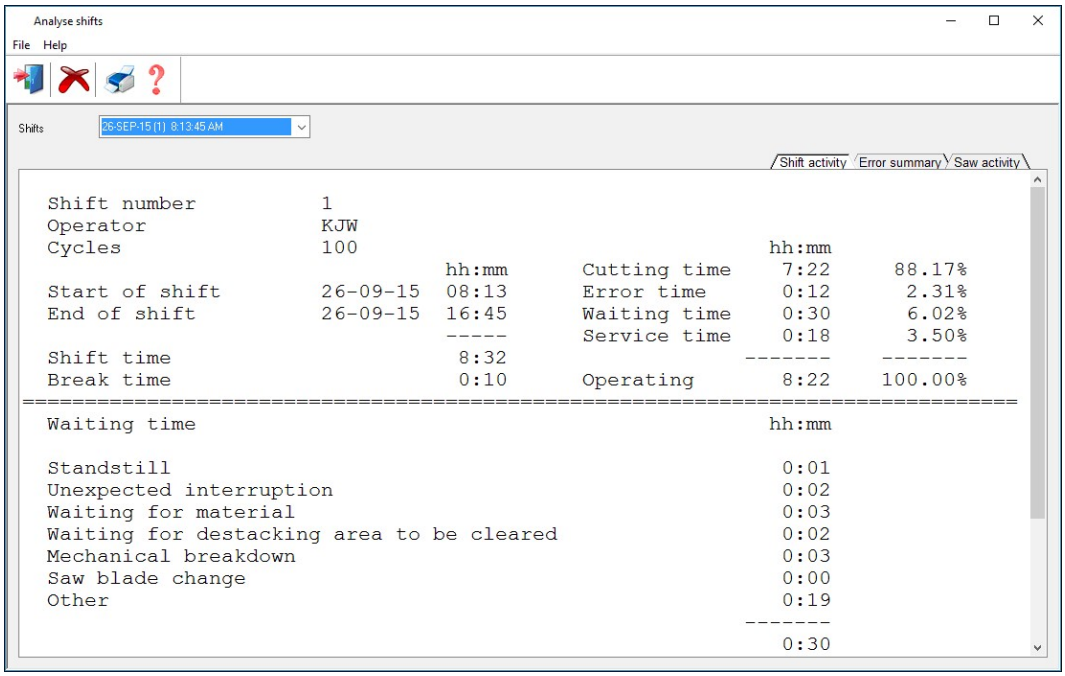
Typically the saw or machining centre transfer sends data to a location on the Network (Path for Saw data) and a separate program provided by the machinery manufacturer runs and sends the data to the machine. This can all be integrated into the above transfer process.

Analyse Shifts

Some saw controllers can record information as the saw is working. There are reports to analyse this data on a shift basis or to analyse each run. Use this option to analyse the feedback from the saw for each shift. At the main screen:-

- Select: **Machine Interface**
- Select the saw (e.g. CADmatic 4)
- Select: **Analyse shifts**

Click on the Combo box to view the current list of shifts and click on a report to select it.. A summary of the shift is shown.



Analyse shifts summary

At the top are the shift number, operator's initials and the number of saw cycles during the shift. The other information shows the start and end of the shift and the total elapsed shift time. The analysis of the time is split between the following categories:

`Shift time` - total duration of shift

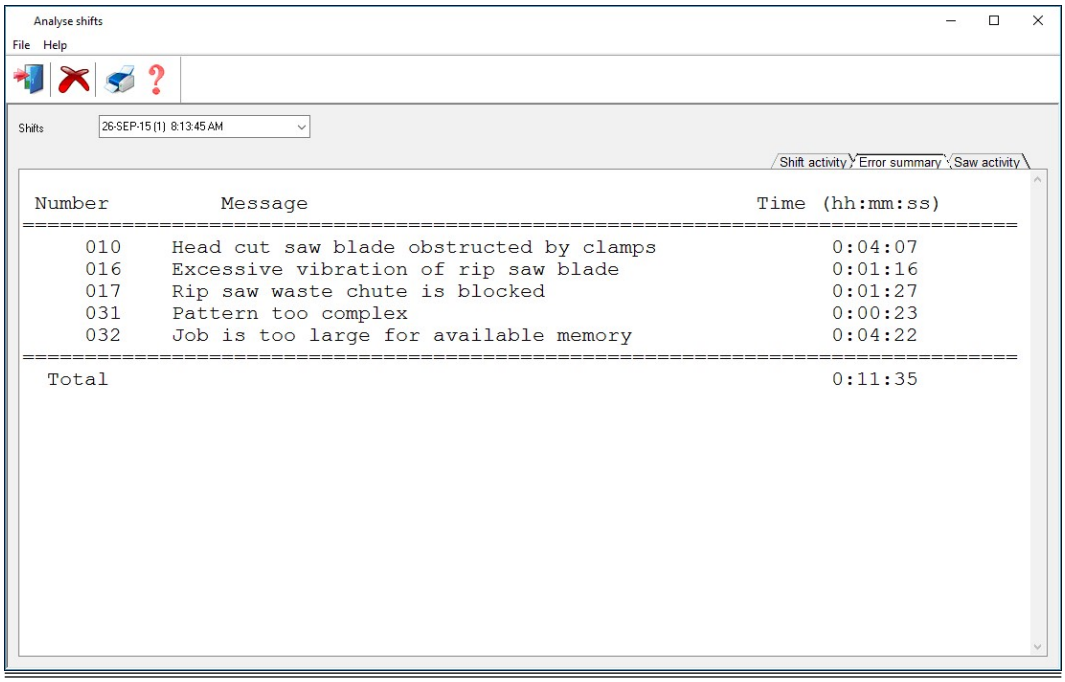
```
Cutting time  - time that the saw is cutting
Error time    - down time recorded against saw errors
Service time  - time for service operations (e.g. change saw
blade)
Waiting time  - saw not in use
```

Waiting time = Op time - cutting - error - service
Break time - operator's break (for example: meals, rest)
Operating time - shift time less break time: *Op time = shift - break*

At the foot of the report is the material usage during the shift. This shows the area of parts and board processed during the shift.

- Click on the tabs at the top right to see more details. The reports available are:-

- Saw activity - shows the full details of each cutting cycle
- Error summary - shows any errors and the cause



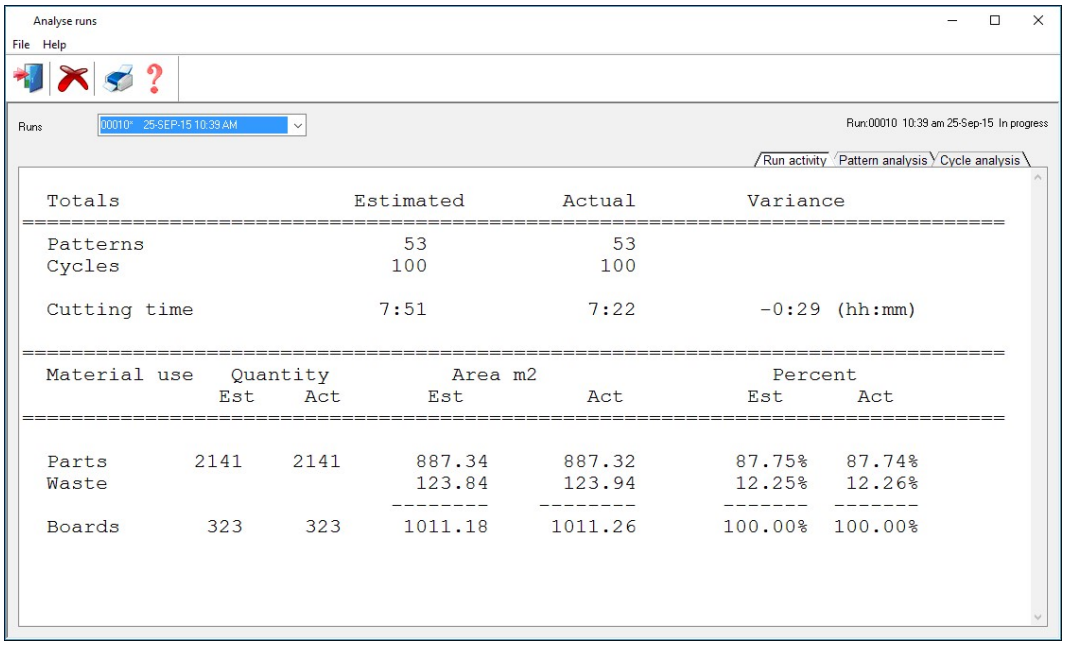
Analyse shifts summary of errors

Analyse runs

The feedback data from the saw can also be analysed in terms of runs, that is, comparing the estimated values for a run with the time actually taken at the saw.

- Select: **Machine Interface**
- Select the saw (e.g. CADmatic 4)
- Select: **Analyse runs**

- Click on the combo box to see a list of the run data available and click on a run to see the details for that run.

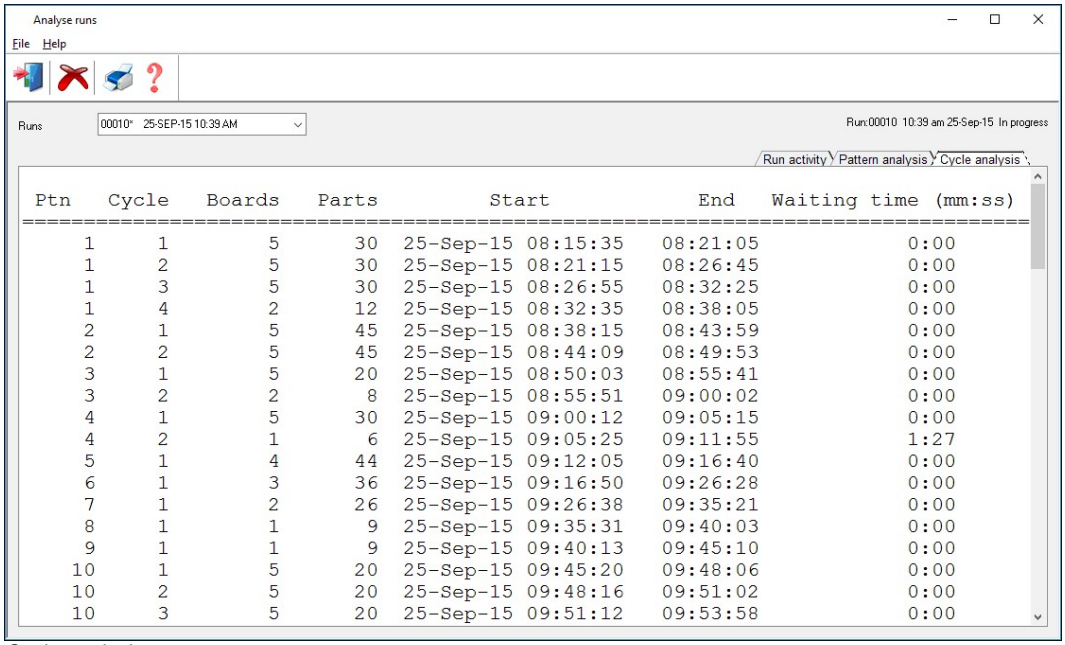


Analyse Runs summary

The 'Est' and 'Act' columns show the difference between the estimated values and the actual values. In this case the parts produced and waste were the same but the actual cutting time was shorter than estimated.

- Click on a tab at the top right for more detailed reports, that show the differences on a per pattern and per cycle basis, for example:-

Cycle analysis



Ptn	Cycle	Boards	Parts	Start	End	Waiting time (mm:ss)
1	1	5	30	25-Sep-15 08:15:35	08:21:05	0:00
1	2	5	30	25-Sep-15 08:21:15	08:26:45	0:00
1	3	5	30	25-Sep-15 08:26:55	08:32:25	0:00
1	4	2	12	25-Sep-15 08:32:35	08:38:05	0:00
2	1	5	45	25-Sep-15 08:38:15	08:43:59	0:00
2	2	5	45	25-Sep-15 08:44:09	08:49:53	0:00
3	1	5	20	25-Sep-15 08:50:03	08:55:41	0:00
3	2	2	8	25-Sep-15 08:55:51	09:00:02	0:00
4	1	5	30	25-Sep-15 09:00:12	09:05:15	0:00
4	2	1	6	25-Sep-15 09:05:25	09:11:55	1:27
5	1	4	44	25-Sep-15 09:12:05	09:16:40	0:00
6	1	3	36	25-Sep-15 09:16:50	09:26:28	0:00
7	1	2	26	25-Sep-15 09:26:38	09:35:21	0:00
8	1	1	9	25-Sep-15 09:35:31	09:40:03	0:00
9	1	1	9	25-Sep-15 09:40:13	09:45:10	0:00
10	1	5	20	25-Sep-15 09:45:20	09:48:06	0:00
10	2	5	20	25-Sep-15 09:48:16	09:51:02	0:00
10	3	5	20	25-Sep-15 09:51:12	09:53:58	0:00

Cycle analysis

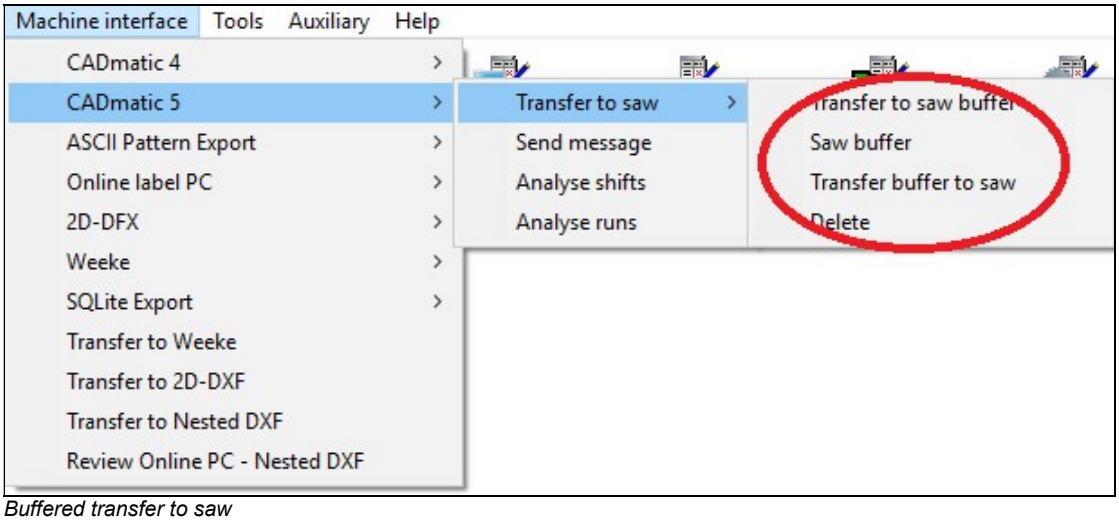
The Saw interface option also includes an option to communicate and send messages to the saw during operation.

Saw Buffer

When transferring data to the Saw with multiple users it can be useful to set up the Saw transfer so that only one user acts as the master location for sending data to the saw. This allows the various incoming runs to be sorted in a buffer and sent to the saw in a more controlled way.

This is set by a Saw transfer parameter: 'Saw buffer'.

If this way of working is set up the saw interface menu (for the master user) contains extra options for managing the saw data.



Buffered transfer to saw

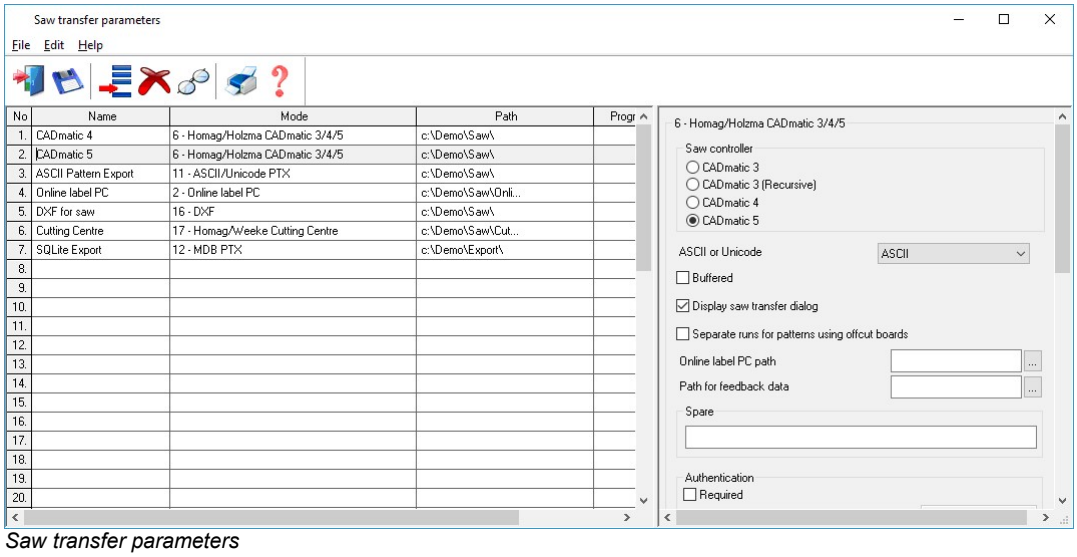
The options are:-

Transfer to saw buffer
Saw Buffer
Transfer buffer to saw
Delete

Saw transfer parameters

The various links to the saws are set up with the *Saw transfer parameters*. Use one row for each saw.

There are many different types of saw and saw controller and the parameters are often very different for each type. The first thing to set is the MODE which determines the overall type of saw. e.g. Homag/Holzma CADmatic 3/4/5.



Saw transfer parameters

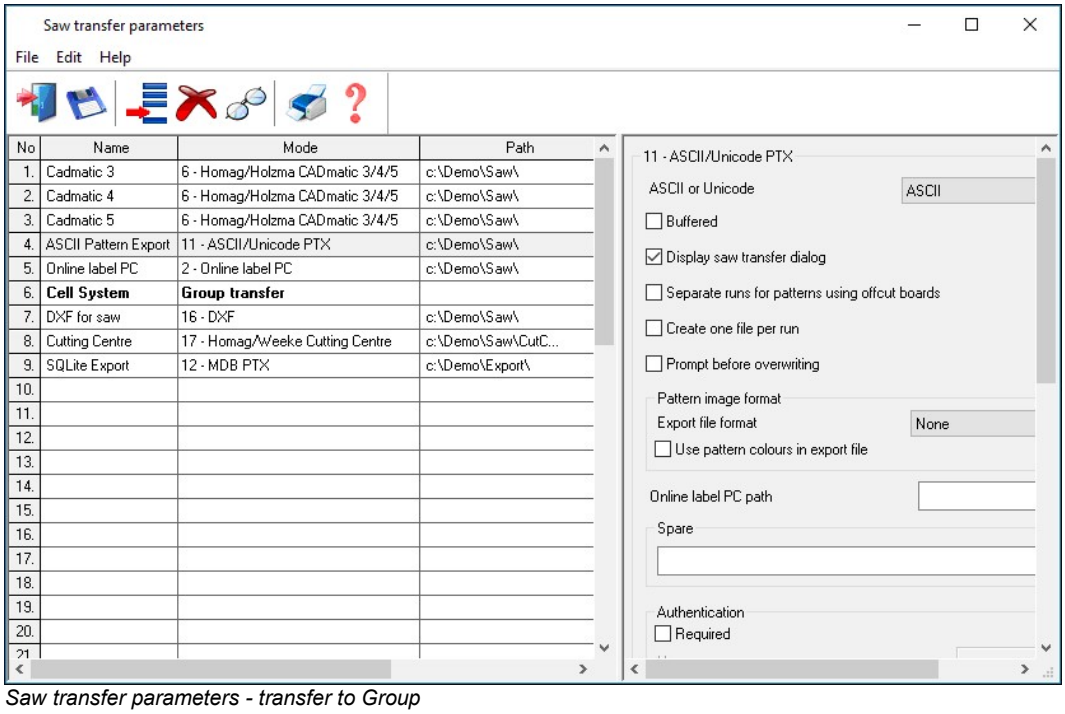
For each row there are extra parameters in the right hand pane to allow for the accurate set up of each saw and its proprietary settings.

All the saw types set up via these parameters are shown as options on the Machine Interface menu.

Most suppliers now provide typical examples of how to set the Saw transfer parameters for their types of saw and controller.

Transfer to Groups

The Saw transfer parameters do not only apply to saws and can be used to transfer data to a group of machines on a flow line, for example, a Homag/Holzma Saw and Homag Automation destacking machine, using the 'Group transfer' option.



Saw transfer parameters - transfer to Group

The machines in the group and the order of the machines are set up via the Saw transfer parameters. There are extra options in the right hand pane to set up the communication link for each machine on the Network.

The Group option appears as an item on the Machine interface menu at the main screen and this can then be used like any other transfer option to send data to all the machines in the group; this ensures the same data is sent to each machine and it is correctly co-ordinated.

This type of transfer is only suitable for transfer modes where export file names are unique and create 'one file per run'. The pattern exchange transfer format (PTX) is

typically used for sending data to other machines such as Homag, Homag Automation etc.

15. Managing data, Import data, Export results

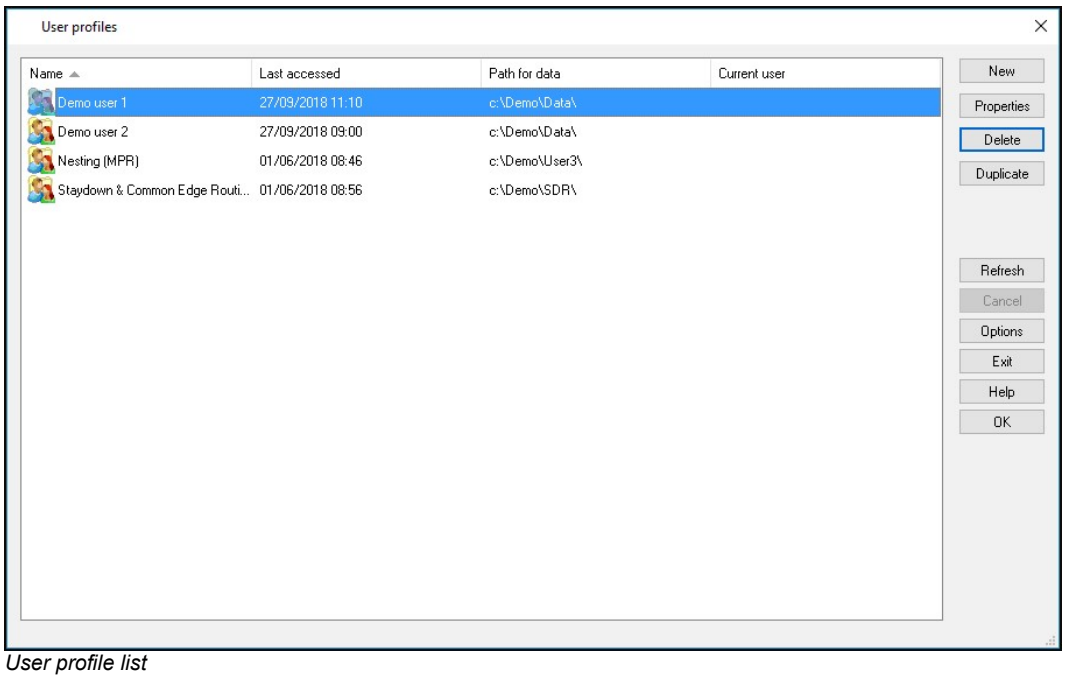
There are several utilities built into the software to help organising data, data backup, and interfacing with external files, databases and systems.

- Manage data and files
- Back up user directories
- Online help
- Importing and exporting data

User Profiles

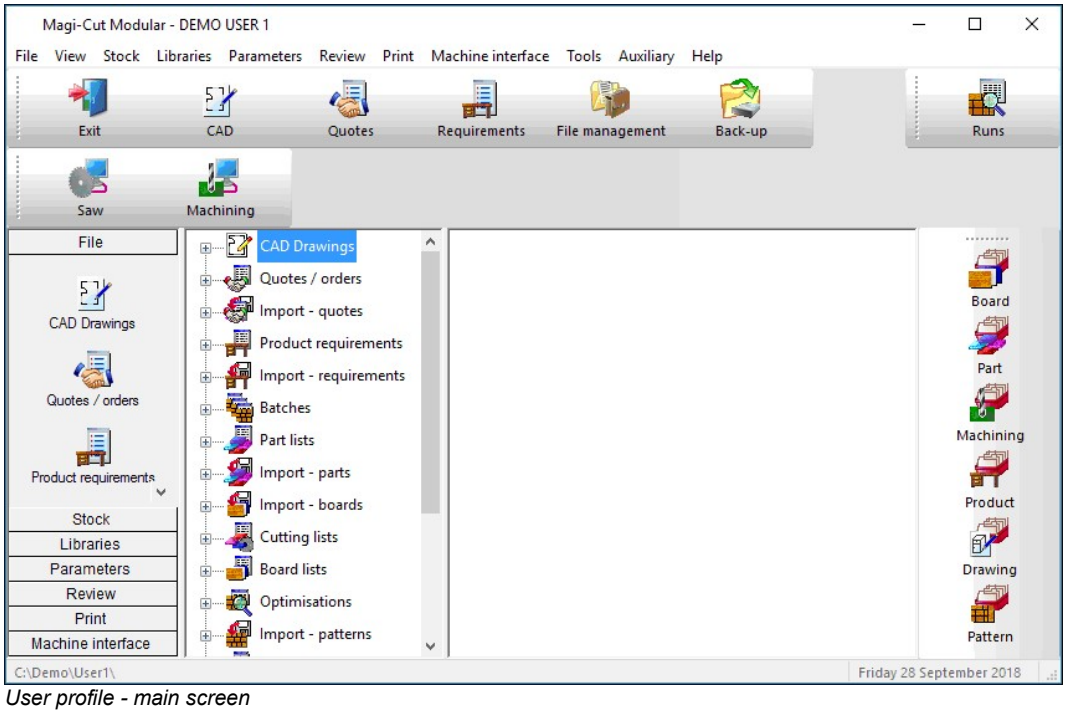
The data is organised around 'User profiles'. Each user has their own 'profile' which stores the various settings they use and is controlled by a password. On entering the program the program moves to the last profile used or prompts with the list of user profiles available. To see all the User profiles, at the Main screen

• Select: **File - User profiles**



User profile list

- Click on a profile to move to it



User profile - main screen

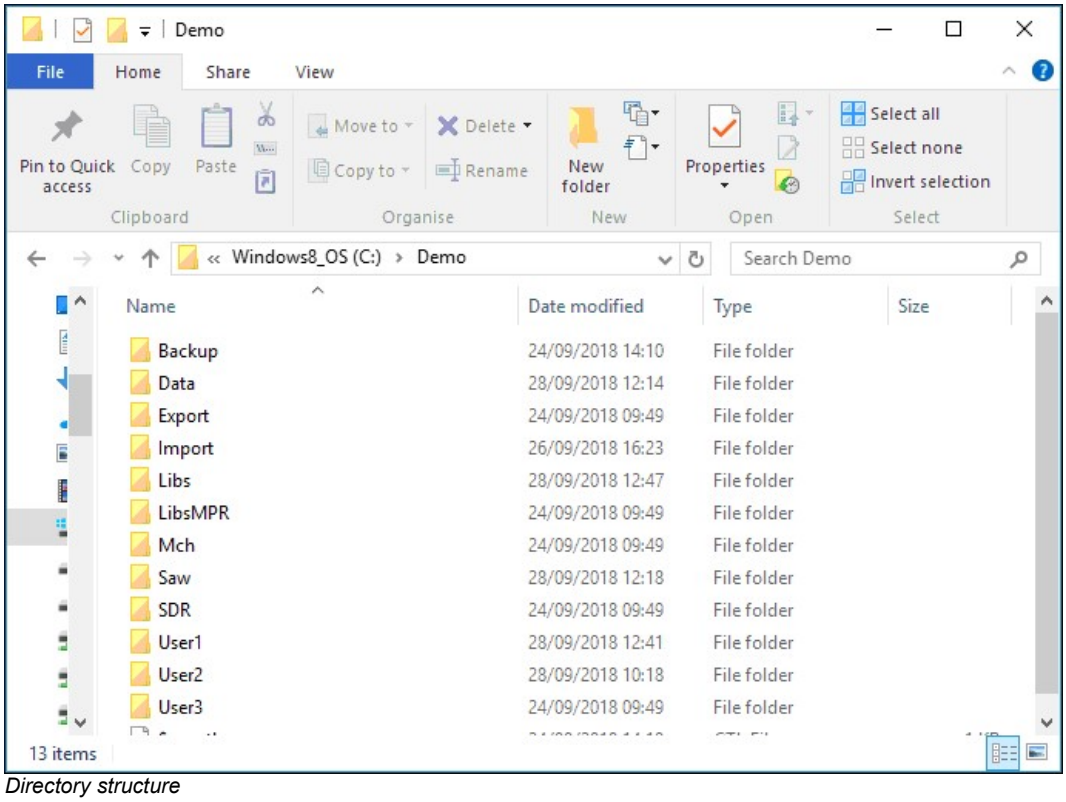
In this example the profile is 'Demo user 1'.

This profile contains all the screen and other default settings, system parameter settings, part lists and optimisations for this user.

This data is spread over a directory structure set by the System parameter: *Paths and files*

Typically any common data between users, such as, Board library, product library, import data, or export data is shared between profiles - so all users access the same common data.

On the computer the data structure often looks similar to the following.



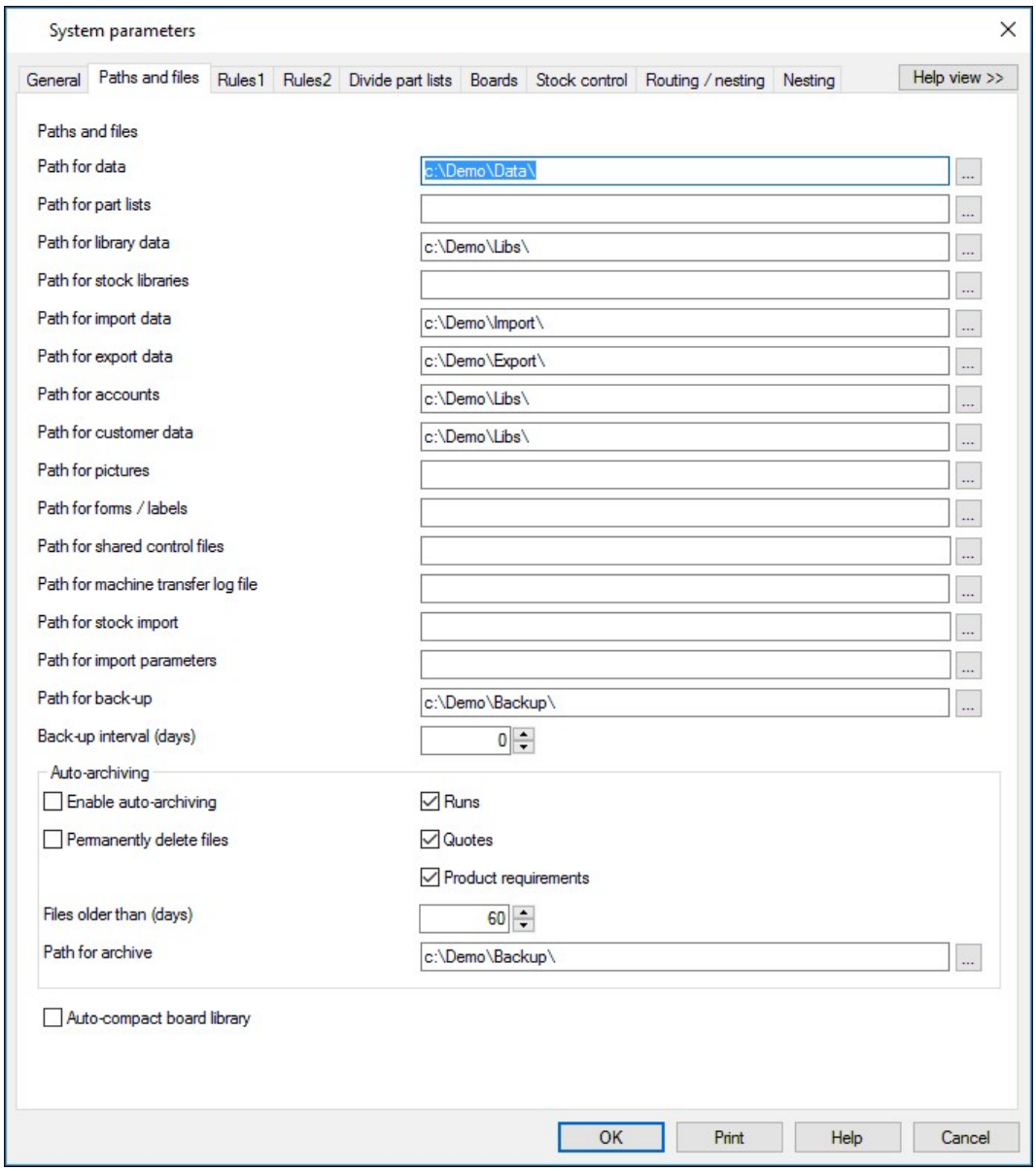
Directory structure

In the above structure 'V12' is the directory where the Program is installed. 'Demo' is the main data directory. Within the main data directory the User profiles are:-

'User1'
'User2'
'User3'

The common data, for example the board library, is located in the 'Libs' directory.

The system parameter tab: *Paths and files* for 'Demo User 1' shows how this profile is mapped on to the data structure.



System parameter: Paths and files

In this case the 'Path for library data' points to the 'Libs' directory so the common data is shared.

The 'Path for Data' points to the 'Data' directory - and the part lists and runs etc. are also shared between the users and stored in one place. This allows any user to log on and access any of the part lists for example.

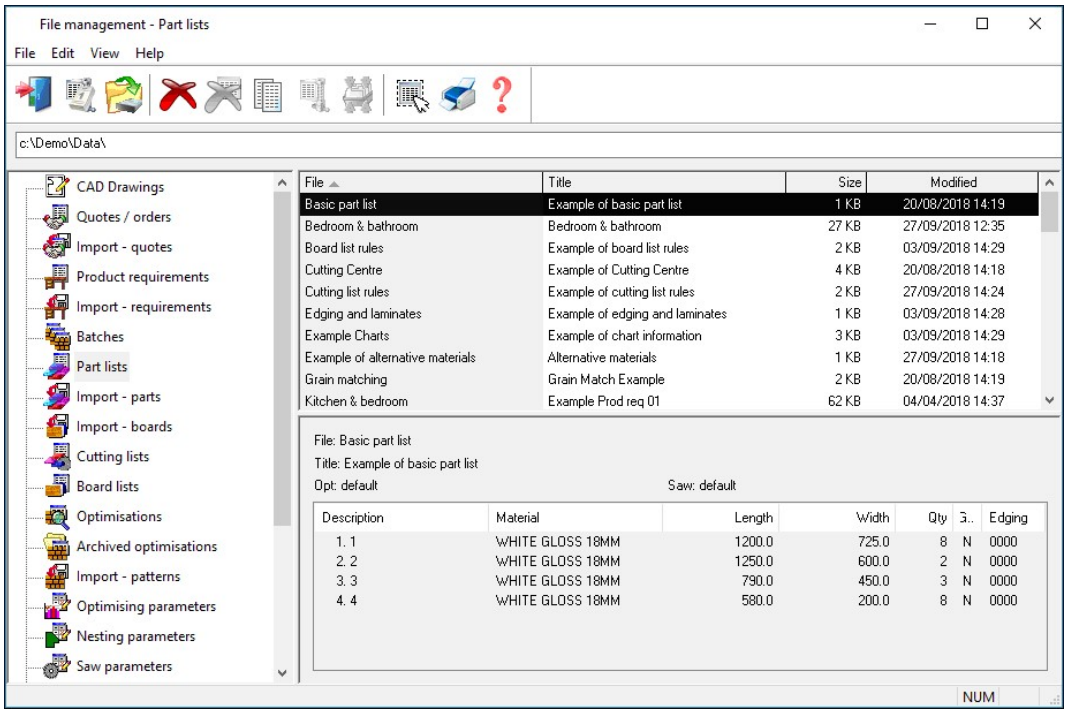
Another very common arrangement is for users to each have their own 'Data' directory so that part lists etc. are reserved for them.

In this example, the users are all using same computer - and a very similar arrangement is often used on Networks but note that the arrangement of data for network use does require some careful planning.

File Management

It is not necessary to use Windows to manage the data and file structure. The program provides a full range of tools for managing files. At the main screen:-

• Select: **File - File management**



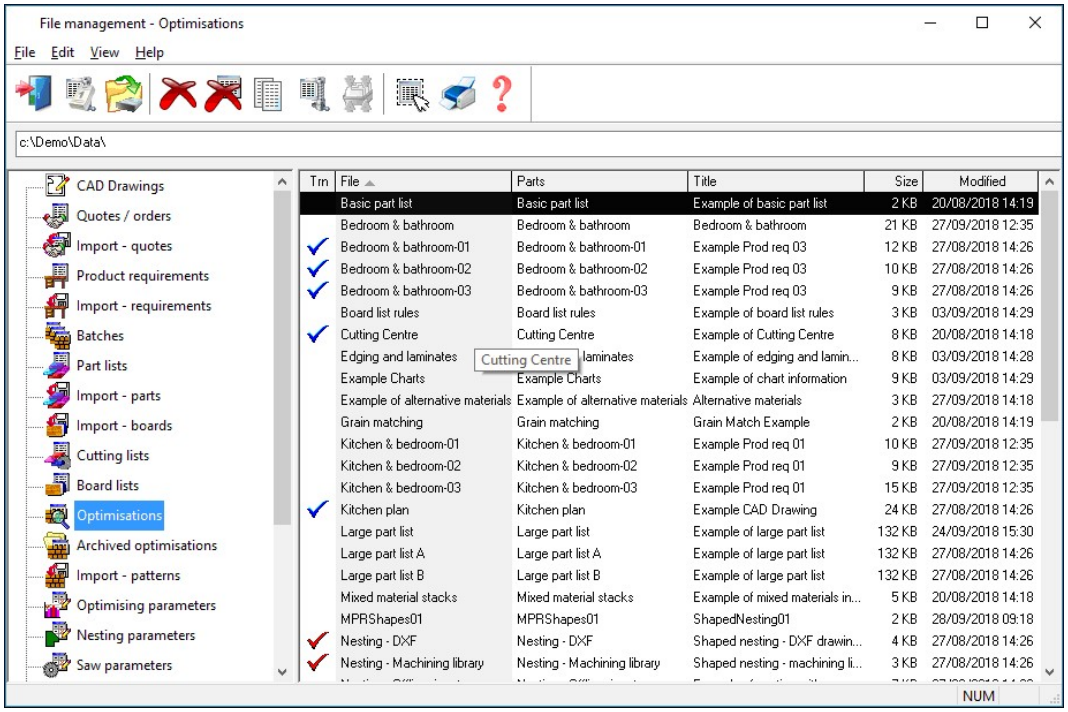
File Management

The pane on the left shows the various file type used by the program, for example, part lists, optimisations (runs), Optimising parameters…

• Select a category from the left pane

The list of files (for example, part lists) is shown at the right. The contents of the current file are shown towards the foot of the screen.

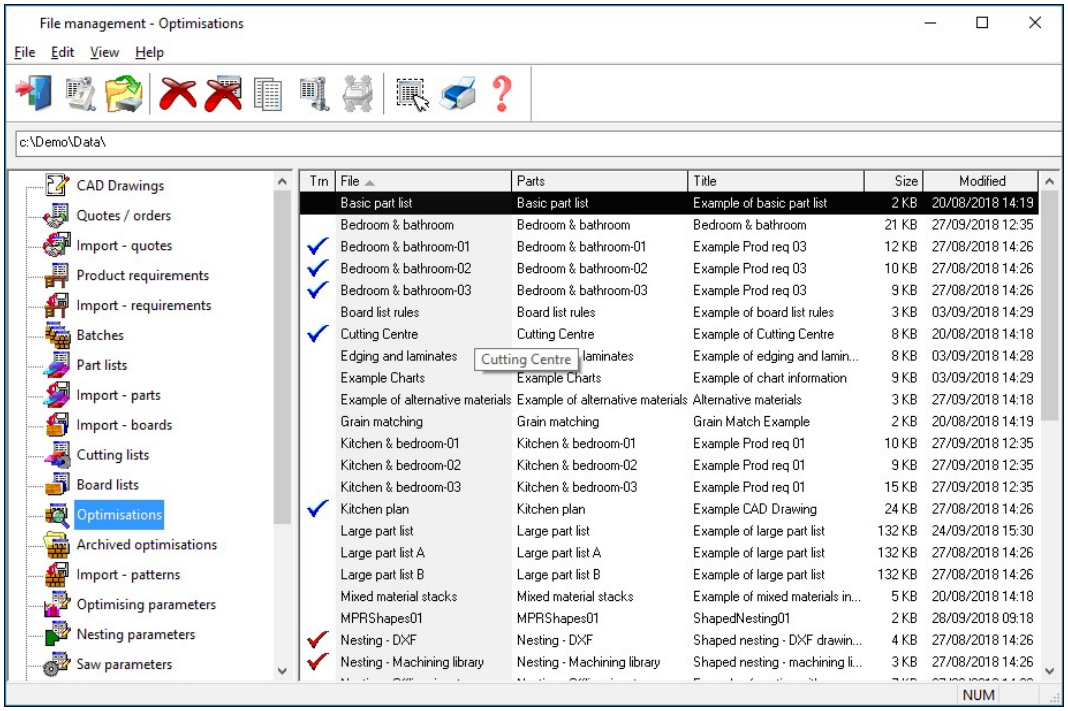
The following screen shows a list of optimisations (Runs).



File Management - optimisations

Note in this case the file contents are not shown - as the run file is not a simple ASCII file also a run e.g. 'Basic part list' is actually a collection of, typically, several different files.

- Use the mouse or navigation buttons to select a file or files.



File management - select files

- Use the tools to delete or copy files as required.

- delete files

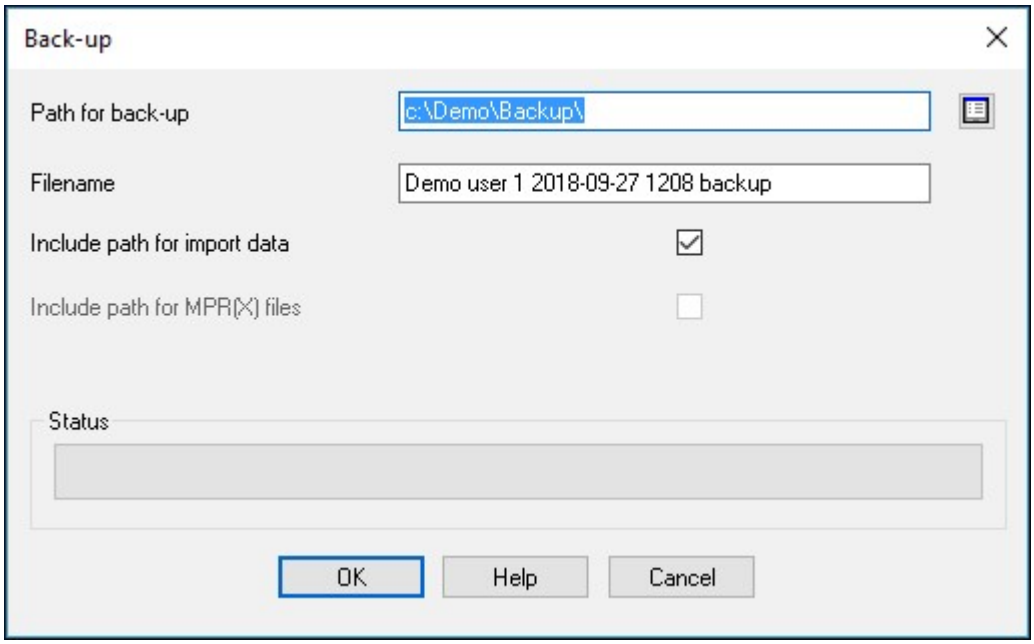
- copy files

Windows Explorer - it is also possible to use the regular Windows Explorer options to manage data but File Management presents the data by type and keeps track of any related or temporary files, for example, extra files produced when optimising (runs).

Back up

The File management screen also includes a link to the back-up options.

Back-up user profile



Back up

The Back-up process makes a copy of the User profile and stores it in a single BKP file. It is a good policy to always take a back up of the user profile before making any substantive changes with File Management.

The backup includes the user profile and the Path for data and the Path for library data - so most of the user data is copied. There are some exceptions, for example, the path for import and export data so check the details in the Online help before using Back up extensively so that it is clear what is safe and what is not.

Note - The Back up option is also available at the main screen.

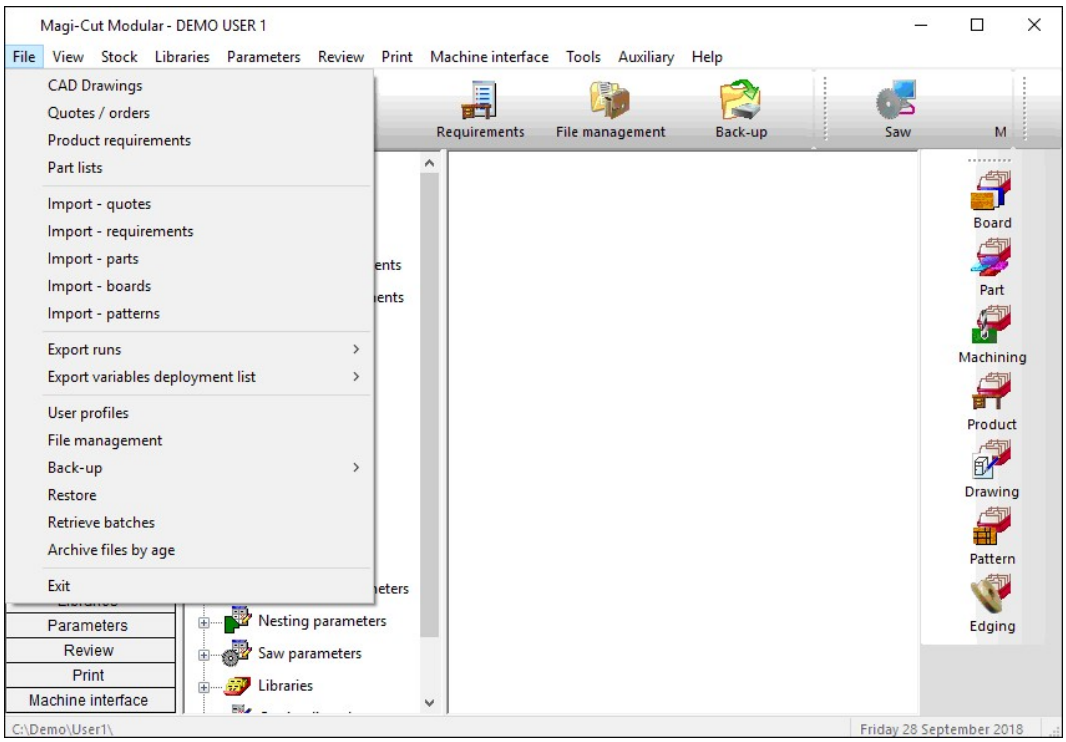
If possible also make sure that the program and data directories are covered by a regular system back up using the Company's own procedures.

Import and Export

These days it is more common for programs to interact with other files and systems. For example, part lists may be created by a separate Sales order system, Boards may need to be imported and exported from a stock control database, and management data for optimised runs may need to exported to other reporting systems or spread sheets.

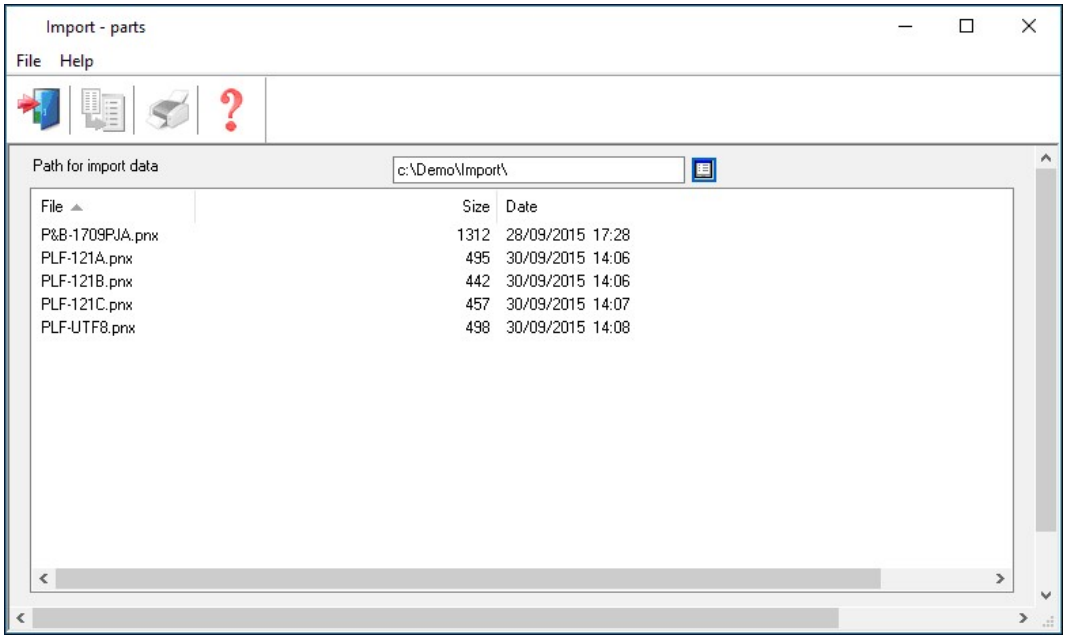
Import parts, boards, product requirements

Part lists, board lists and product requirement lists can be quickly imported. At the main menu these are options on the File menu.



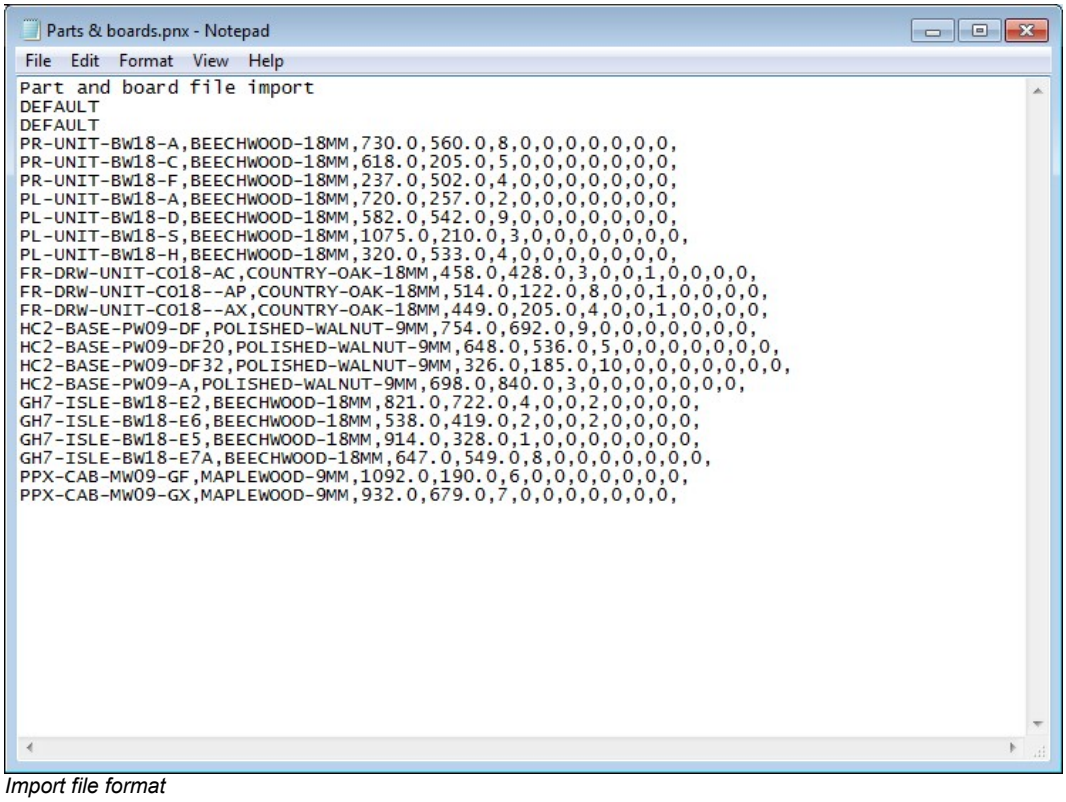
Import parts, boards, requirements

The program moves to the Import screen.



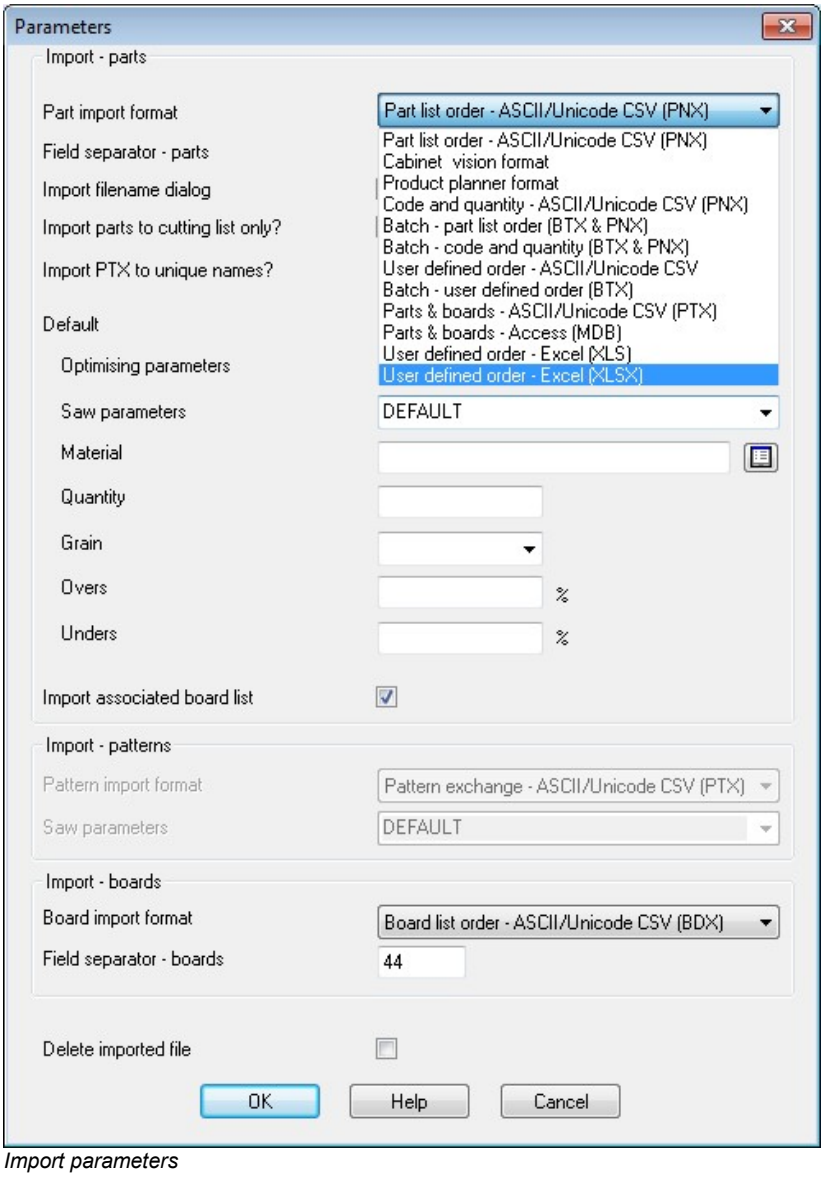
Import parts

Select a file to import. In this example the import format is the program's format of PNX; an ASCII/Unicode file with the fields in a fixed order.



Import file format

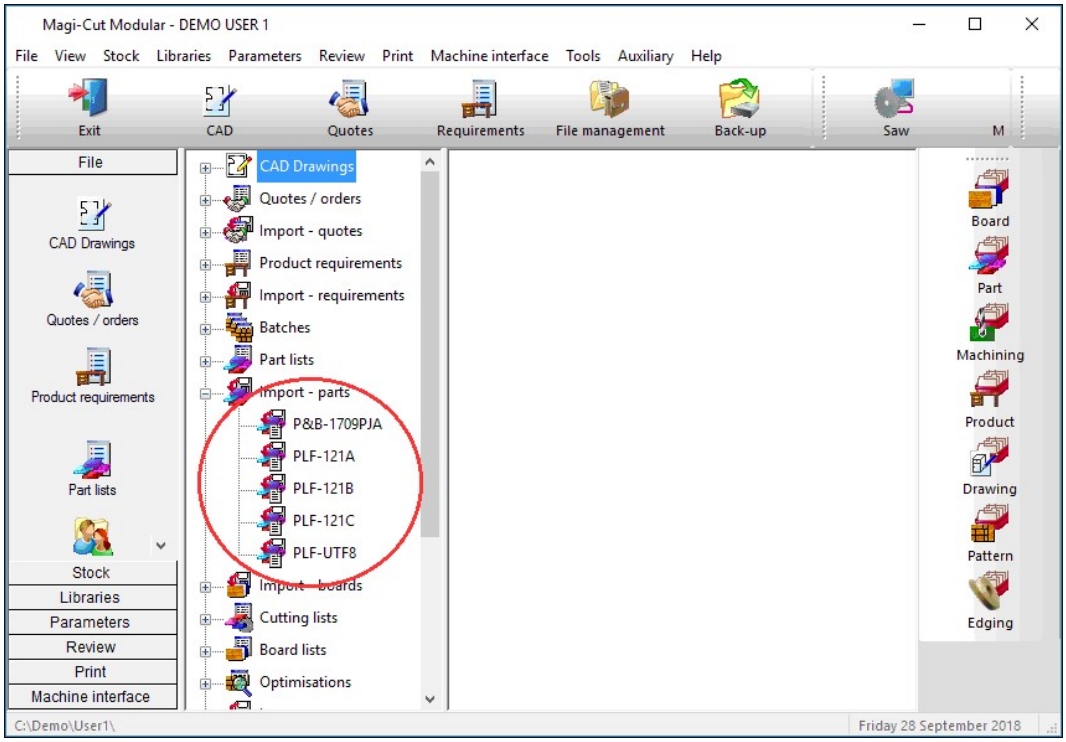
Use the Import parameters to choose a different format. **File - Parameters**



Import parameters

It is also possible to use a custom format (user defined format) - this can be useful where there is limited control on the format of the external file. The *'Part list import parameters'* are used to customise import format. Similar parameters are available for Boards and Product requirements.

Files can also be imported from the File Tree. This is a quicker option once the format has been chosen because the file can be imported and there is no need to go via the Import dialog.

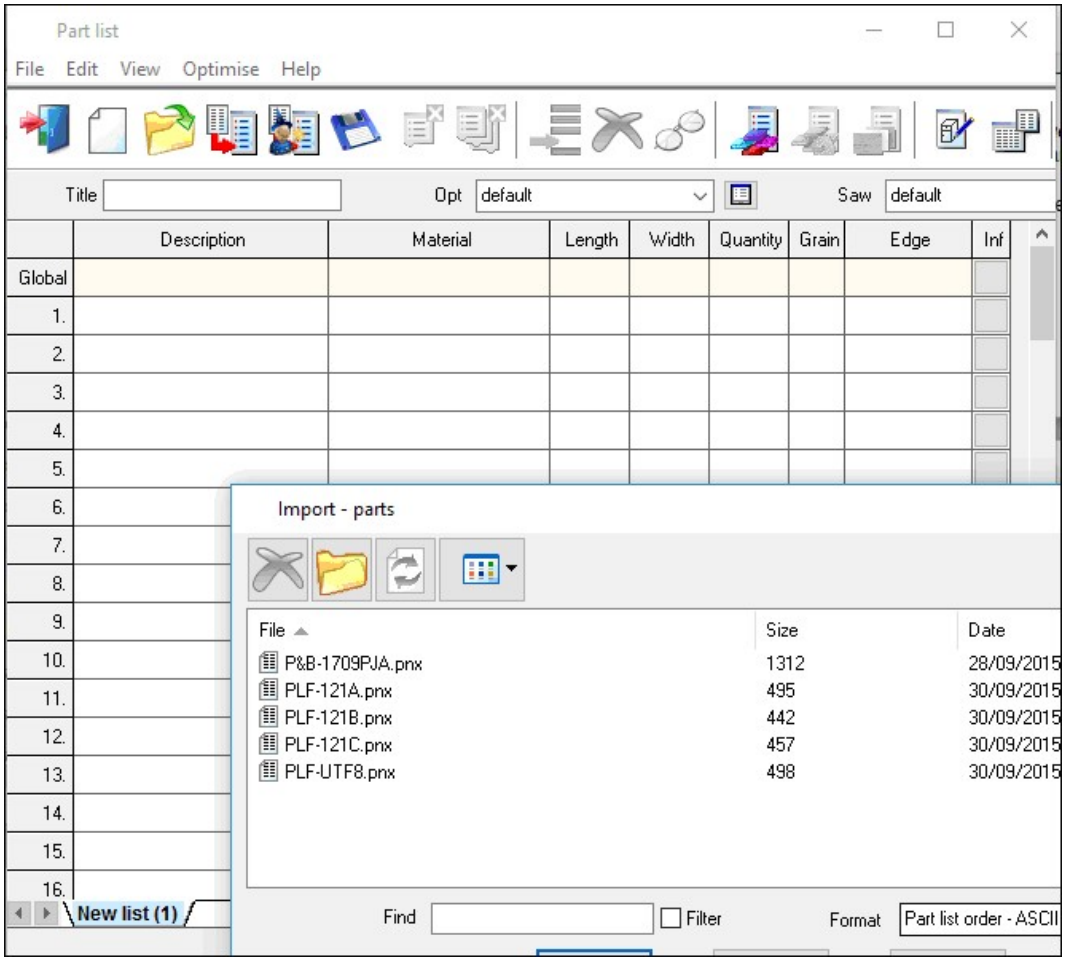


Import from file tree

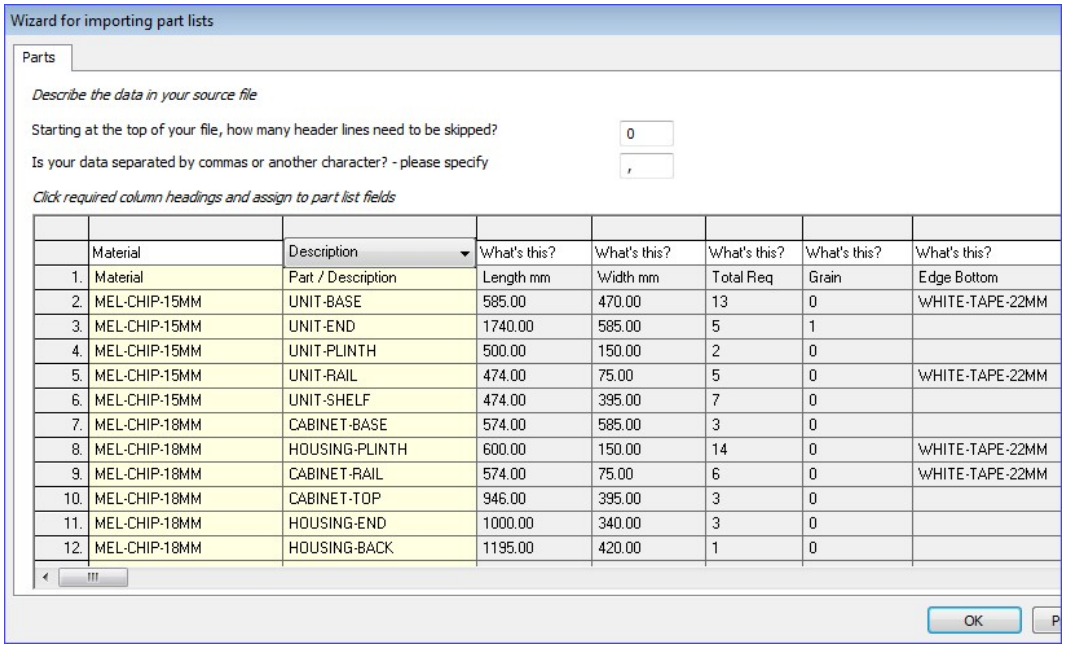
Pattern exchange - The pattern exchange format (PTX) can be used to import and export pattern data to and from other systems and machine controllers.

Data can also be importe at the Part list.

At the part list data can be imported directly (*File* – *Import*)



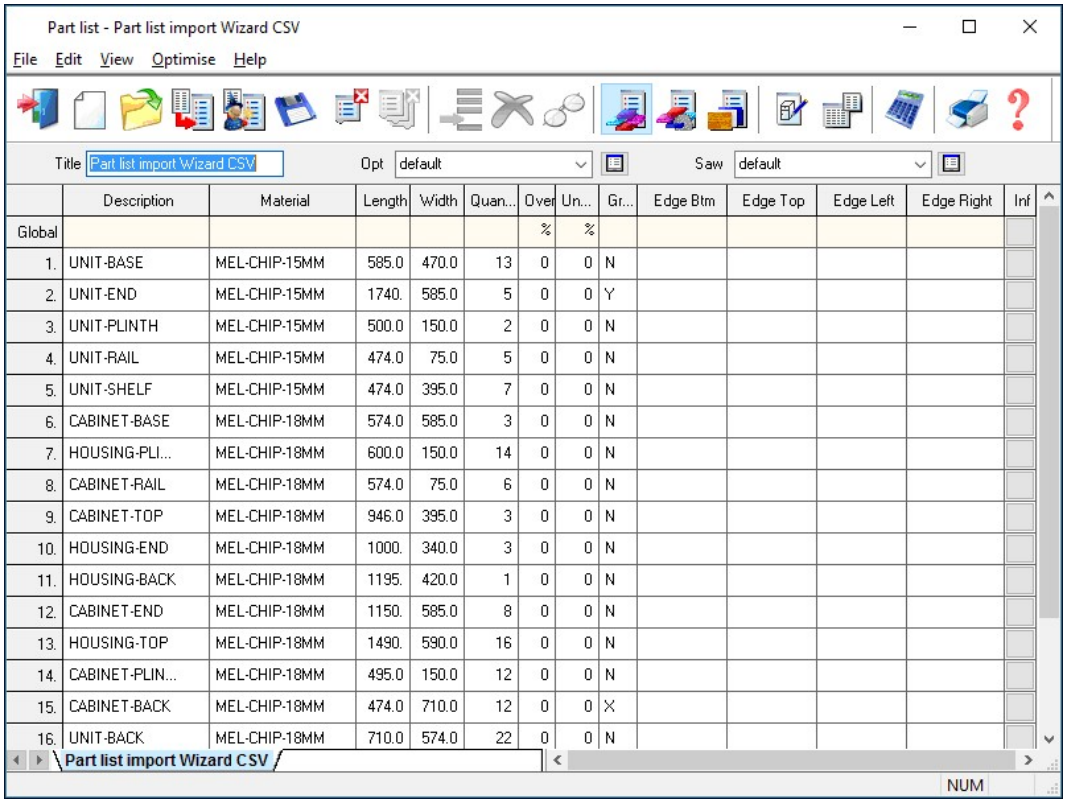
Where the format of the external file is not known or needs to be set up – use the Import Wizard (*File – Import Wizard*).



	Material	Description	What's this?	What's this?	What's this?	What's this?	What's this?
1.	Material	Part / Description	Length mm	Width mm	Total Req	Grain	Edge Bottom
2.	MEL-CHIP-15MM	UNIT-BASE	585.00	470.00	13	0	WHITE-TAPE-22MM
3.	MEL-CHIP-15MM	UNIT-END	1740.00	585.00	5	1	
4.	MEL-CHIP-15MM	UNIT-PLINTH	500.00	150.00	2	0	
5.	MEL-CHIP-15MM	UNIT-RAIL	474.00	75.00	5	0	WHITE-TAPE-22MM
6.	MEL-CHIP-15MM	UNIT-SHELF	474.00	395.00	7	0	
7.	MEL-CHIP-18MM	CABINET-BASE	574.00	585.00	3	0	
8.	MEL-CHIP-18MM	HOUSING-PLINTH	600.00	150.00	14	0	WHITE-TAPE-22MM
9.	MEL-CHIP-18MM	CABINET-RAIL	574.00	75.00	6	0	WHITE-TAPE-22MM
10.	MEL-CHIP-18MM	CABINET-TOP	946.00	395.00	3	0	
11.	MEL-CHIP-18MM	HOUSING-END	1000.00	340.00	3	0	
12.	MEL-CHIP-18MM	HOUSING-BACK	1195.00	420.00	1	0	

The program imports data from any CSV (comma separated values) files and Excel files.

You can then work through the fields and assign them to the correct Part list fields name by selecting the field name on the 'What's this' button.



	Description	Material	Length	Width	Quan...	Over	Un...	Gr...	Edge Btm	Edge Top	Edge Left	Edge Right	Inf
Global						%	%						
1.	UNIT-BASE	MEL-CHIP-15MM	585.0	470.0	13	0	0	N					
2.	UNIT-END	MEL-CHIP-15MM	1740.	585.0	5	0	0	Y					
3.	UNIT-PLINTH	MEL-CHIP-15MM	500.0	150.0	2	0	0	N					
4.	UNIT-RAIL	MEL-CHIP-15MM	474.0	75.0	5	0	0	N					
5.	UNIT-SHELF	MEL-CHIP-15MM	474.0	395.0	7	0	0	N					
6.	CABINET-BASE	MEL-CHIP-18MM	574.0	585.0	3	0	0	N					
7.	HOUSING-PLI...	MEL-CHIP-18MM	600.0	150.0	14	0	0	N					
8.	CABINET-RAIL	MEL-CHIP-18MM	574.0	75.0	6	0	0	N					
9.	CABINET-TOP	MEL-CHIP-18MM	946.0	395.0	3	0	0	N					
10.	HOUSING-END	MEL-CHIP-18MM	1000.	340.0	3	0	0	N					
11.	HOUSING-BACK	MEL-CHIP-18MM	1195.	420.0	1	0	0	N					
12.	CABINET-END	MEL-CHIP-18MM	1150.	585.0	8	0	0	N					
13.	HOUSING-TOP	MEL-CHIP-18MM	1490.	590.0	16	0	0	N					
14.	CABINET-PLIN...	MEL-CHIP-18MM	495.0	150.0	12	0	0	N					
15.	CABINET-BACK	MEL-CHIP-18MM	474.0	710.0	12	0	0	X					
16.	UNIT-BACK	MEL-CHIP-18MM	710.0	574.0	22	0	0	N					

Note – you can also cut and paste directly from a spreadsheet to the part list – for example where the spreadsheet has the data in the same order and format as the part list.

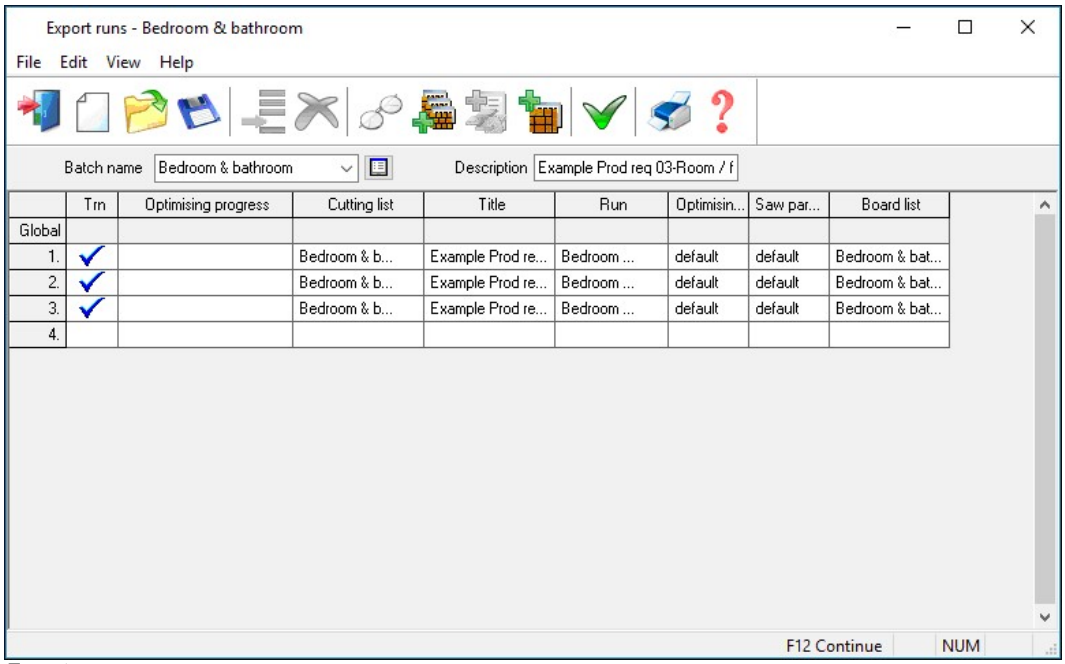
Export

The main use for export is to export results (optimisations) to an external file or system. Individual reports (for example, Pattern summary) can be exported at the screen view or a complete set of results can be exported.

At the main screen:-

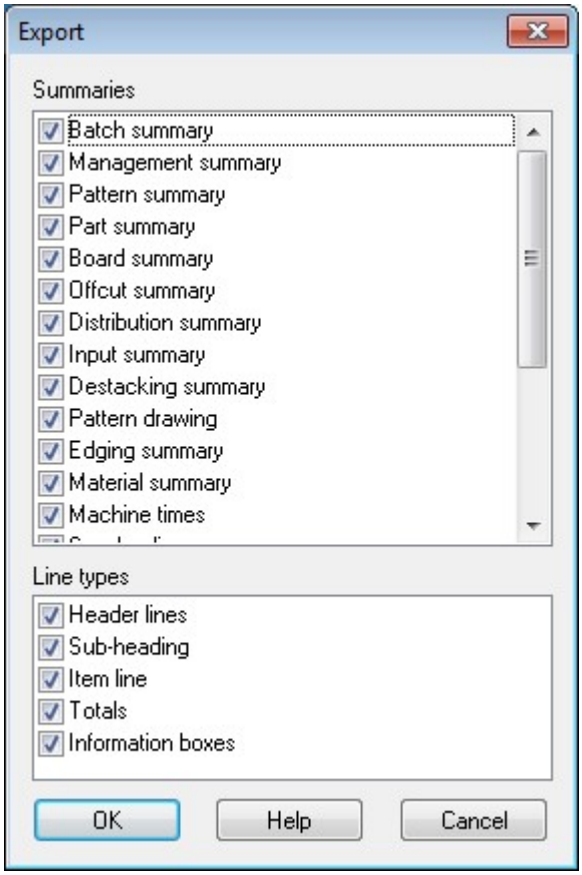
- Select: **File- Export runs**
- Choose the export format (ASCII, MDB, XLS, XLSX)

(XLS and XLSX are Excel formats).



Export runs

The program prompts for the summaries to export and also the type of data to include.



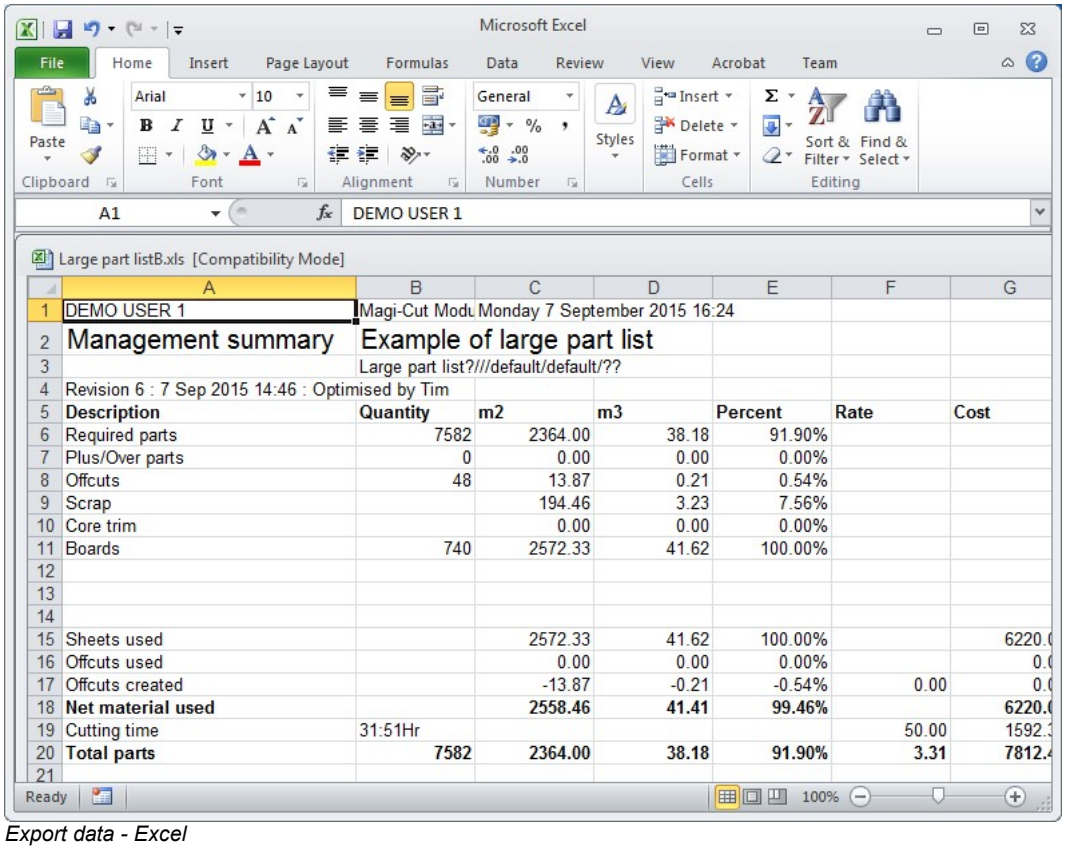
Summaries to Export

In some cases items such as the headings, sub headings and Totals are not required - these can be easily excluded.

The data is sent to the *Path for Export data*

There is also an Export option at each summary – so just that summary can be exported.

In the case of Excel, for example, the reports are sent to a single file with each summary on a separate spread sheet tab.



	A	B	C	D	E	F	G
1	DEMO USER 1	Magi-Cut Modu	Monday 7 September 2015 16:24				
2	Management summary	Example of large part list					
3		Large part list?///default/default/??					
4	Revision 6 : 7 Sep 2015 14:46 : Optimised by Tim						
5	**Description**	**Quantity**	**m2**	**m3**	**Percent**	**Rate**	**Cost**
6	Required parts	7582	2364.00	38.18	91.90%		
7	Plus/Over parts	0	0.00	0.00	0.00%		
8	Offcuts	48	13.87	0.21	0.54%		
9	Scrap		194.46	3.23	7.56%		
10	Core trim		0.00	0.00	0.00%		
11	Boards	740	2572.33	41.62	100.00%		
12							
13							
14							
15	Sheets used		2572.33	41.62	100.00%		6220.(
16	Offcuts used		0.00	0.00	0.00%		0.(
17	Offcuts created		-13.87	-0.21	-0.54%	0.00	0.(
18	**Net material used**		**2558.46**	**41.41**	**99.46%**		**6220.(**
19	Cutting time	31:51Hr				50.00	1592.1
20	**Total parts**	**7582**	**2364.00**	**38.18**	**91.90%**	**3.31**	**7812.4**
21							

Export data - Excel

For Export to an ASCII file each report is sent to a separate ASCII file with the data types identified by a token at the start of each line. Here is an example of the board summary data.

```
%1,DEMO USER 1,Modular V12.0, 23 November 2021
%1,Board summary,Kitchen layout
%1,,00009/BSR CD-81/BSR CD-81/?DEFAULT/?DEFAULT/5
%1,No,Board,Length,Width,Information,Qty in Stock,Qty Used,Length m,Area m2,Cost
Rate,Total Cost
%2,HARDBOARD-4MM* Hardboard 4mm Thickness  4.0 Book 8 Parameters HBD04
%3,1.,HARDBOARD-4MM/01,2000.0,1000.0,Spec. Order,795,2,,4.00,0.890,3.56
%3,2.,HARDBOARD-4MM/02,2440.0,1220.0,BIN 133,131,6,,17.86,0.750,13.40
```

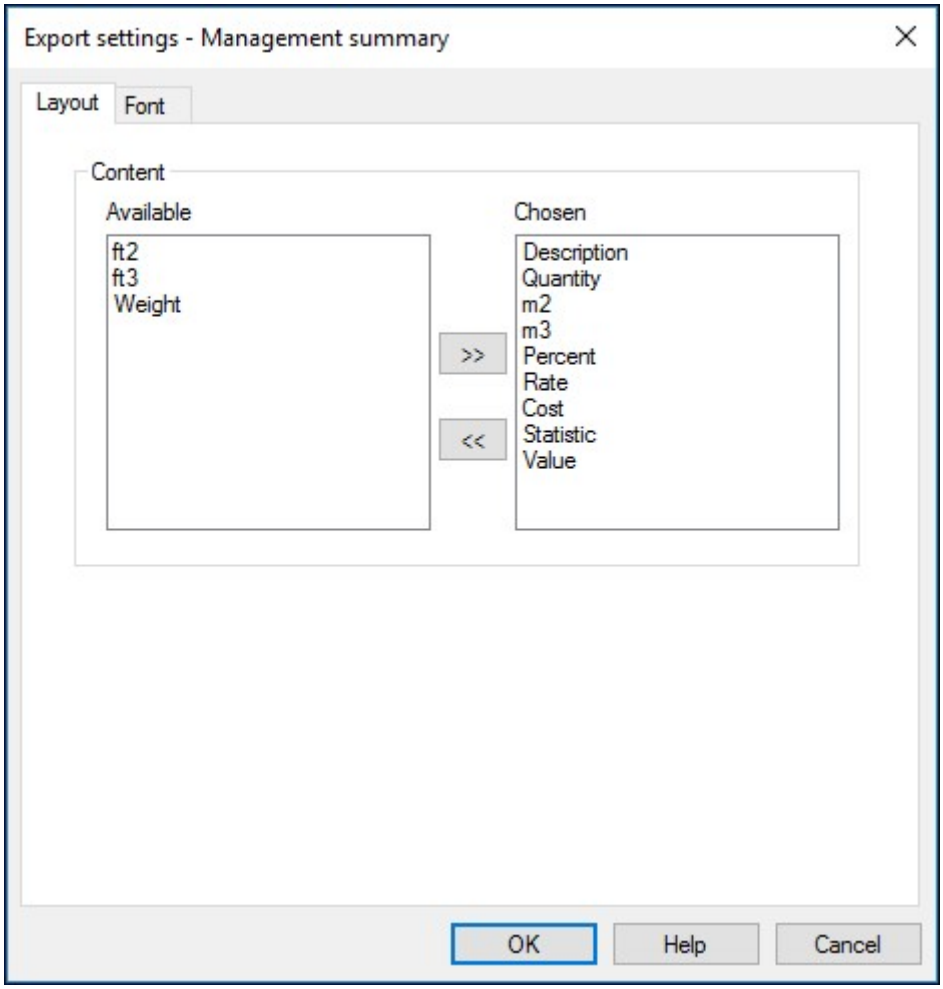
```
%4,,,,,,8,,21.86,,16.96
%2,MED-DEN-FIBRE-18MM Medium Density Fibreboard 18mm Thickness 18.0 Book 5
%3,3.,MED-DEN-FIBRE-18MM/01,3660.0,1550.0,BIN 127,1090,2,,11.35,4.500,51.06
%3,4.,MED-DEN-FIBRE-18MM/02,2440.0,1220.0,BIN 128,767,12,,35.72,4.350,155.39
%4,,,,,,,14,,47.07,,206.45
%2,MFC18-OAK Prelaminated - Oak 18mm Thickness 18.0 Book 5
%3,6.,MFC18-OAK/02,2440.0,1220.0,,111,6,,17.86,2.970,53.05
%4,,,,,,,6,,17.86,,53.05
%2,WHITE-ACRYLIC-12MM Acrylic - White 12mm (sundry) Thickness 12.0 Book 8
%3,7.,WHAC12/01,,,,436,36,,,1.320,47.52
%4,,,,,,,36,,,,47.52
%4,Total,,,,,,64,,86.79,,323.97
```

Review runs parameters

The data to export can also be customised at the Review Runs screens:-

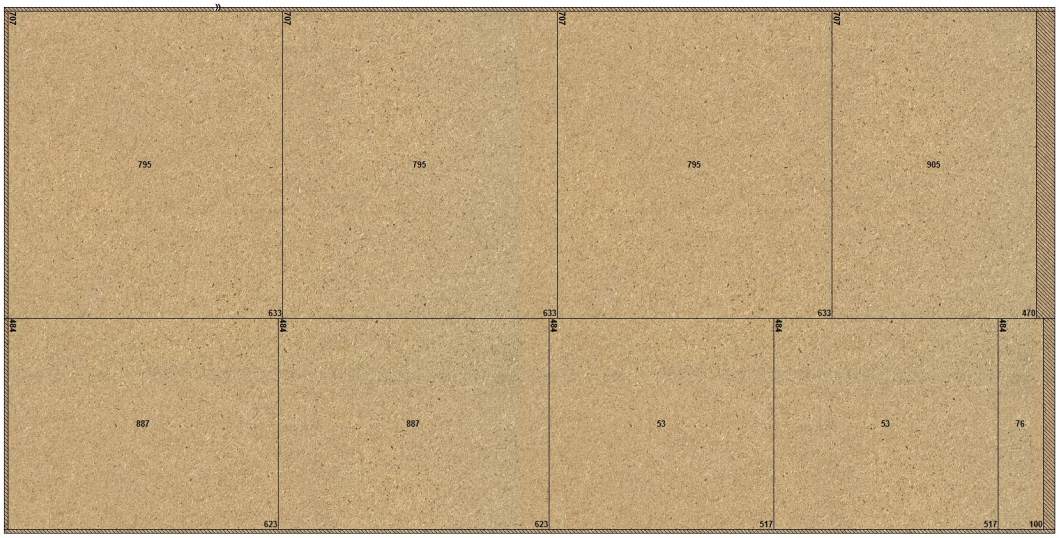
- Locate the report
- Select: **Settings - Export settings**

This shows the Export settings dialog.



Export settings

Pattern images - at any on-screen pattern there is an option to export the pattern image.
File – Export – Pattern



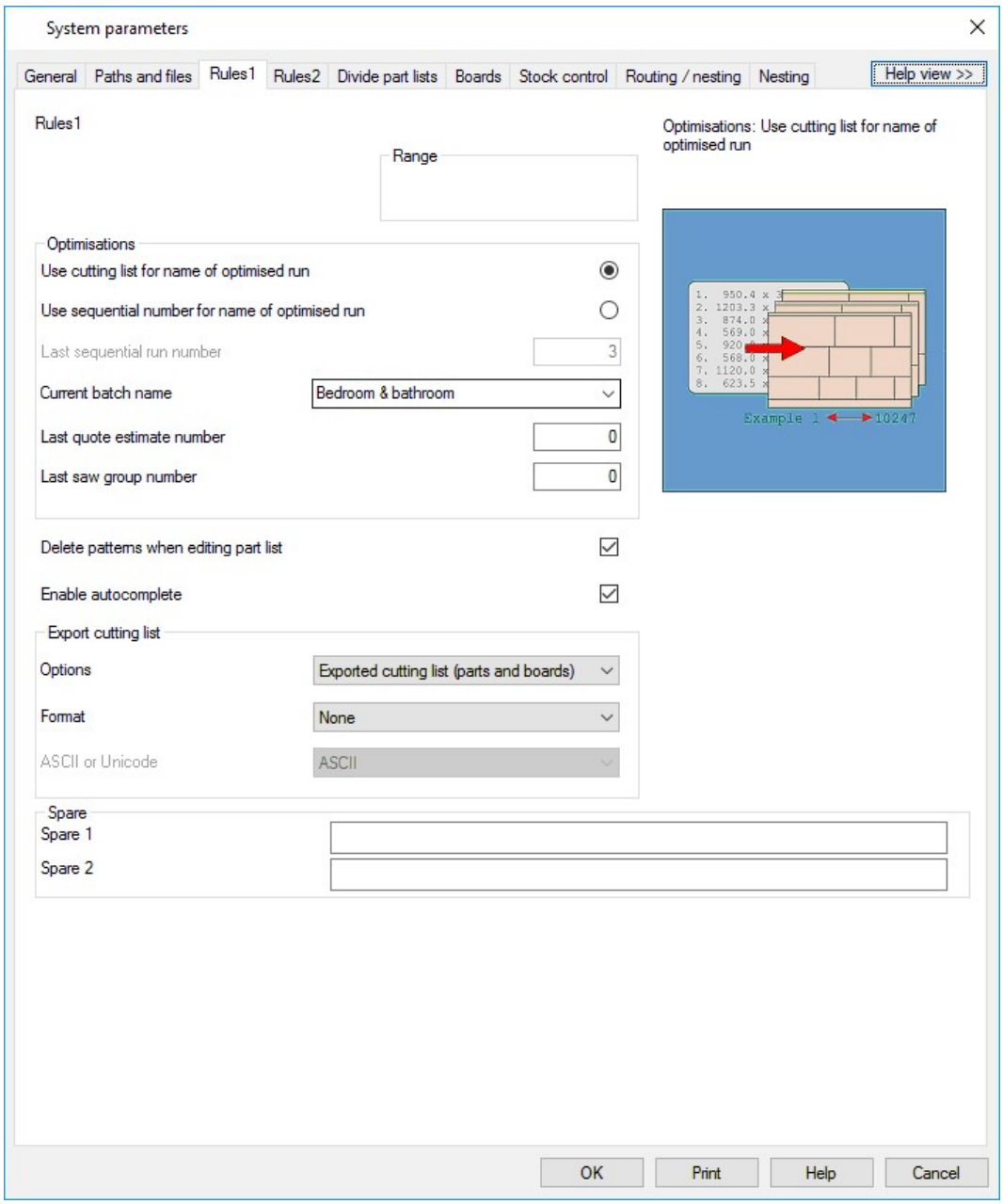
Pattern images

There are also options to export non run based reports:-

Part costing
Product costing
Fittings
Operations
Board library data
Part library data

It is sometimes useful to export the cutting list (for example where it is changed for edging and laminating and the sizes are used elsewhere in production).

This export is included in the optimisation provided that the option is chosen in system parameters.


System parameters
General
Paths and files
Rules1
Rules2
Divide part lists
Boards
Stock control
Routing / nesting
Nesting
Help view >>
Rules1
Range
Optimisations
Use cutting list for name of optimised run
Use sequential number for name of optimised run
Last sequential run number
3
Current batch name
Bedroom & bathroom
Last quote estimate number
0
Last saw group number
0
Delete patterns when editing part list
Enable autocomplete
Export cutting list
Options
Exported cutting list (parts and boards)
Format
None
ASCII or Unicode
ASCII
Spare
Spare 1
Spare 2
Optimisations: Use cutting list for name of optimised run
Example 1
10247
OK
Print
Help
Cancel

Create data for

The program creates files in the PNX and BDX (for board sizes) formats.

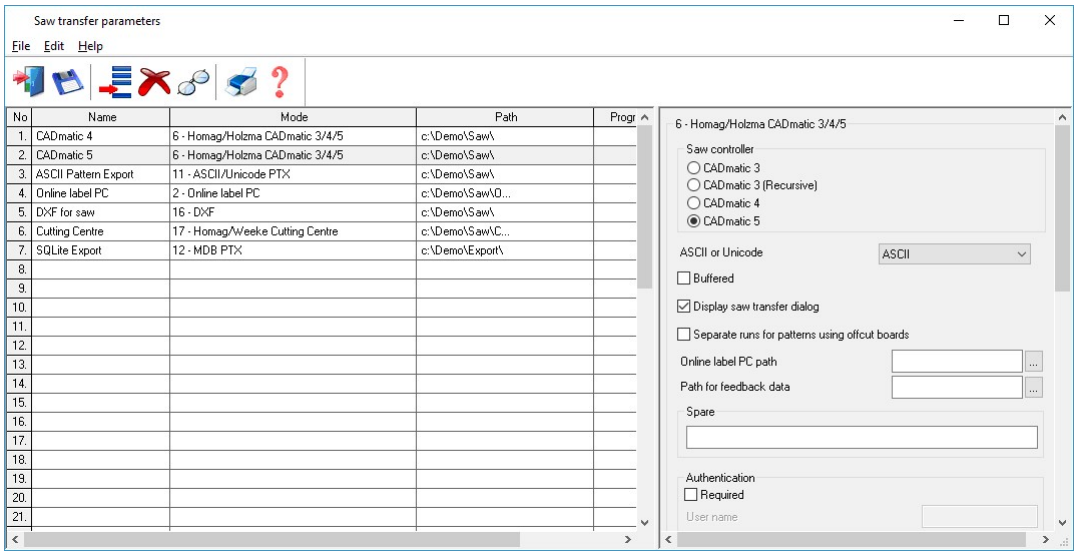
Pattern Exchange Format

The Pattern exchange format contains all the part sizes, board sizes, parameter settings, cutting instructions and drawing information for a run and most of the summary data.

This is the program's proprietary format for patterns (results). It is used by several manufacturers where they want pick up information from the optimisation results (cutting patterns).

It is a public format and fully described in the Interface guide.

All the pattern data and structure is contained in the file in ASCII/Unicode or MDB database format - so it is very useful where custom changes are needed for controlling specific machines or external systems. For example, to update stock control systems, use a special post processor to transfer to a saw.



Saw transfer parameters

Quite often both the standard .saw file and the .ptx file are used by a manufacturer. In this case both files can be exported in a single command by grouping

This option is also available for transfer to Machining centres.

An example of the ASCII/Unicode PTX file:-

```
HEADER,1.06,Kitchen layout,0,0,1
JOBS,1,BSR CD-81,Kitchen layout,,,,1,DEFAULT,DEFAULT,175,13.96
NOTES,1,1,BSR CD-81.ctt/BSR CD-
81.brd/DEFAULT.prm/DEFAULT.spm/HBD04.MPM//00009.ptn/00009.xbd
PARTS_REQ,1,1,BASE-BACK,1,976.0,735.0,1,0,0,0,1
PARTS_REQ,1,2,BASE-BACK,1,476.0,735.0,1,0,0,0,1
PARTS_REQ,1,3,BASE-BACK,1,876.0,735.0,1,0,0,0,1
PARTS_REQ,1,4,BASE-BACK,1,976.0,735.0,1,0,0,0,1
PARTS_REQ,1,5,BASE-BACK,1,976.0,735.0,1,0,0,0,1
PARTS_REQ,1,6,BASE-BACK,1,476.0,735.0,1,0,0,0,1
PARTS_REQ,1,7,BASE-BACK,1,976.0,735.0,1,0,0,0,1
PARTS_REQ,1,8,BASE-BACK,1,976.0,735.0,1,0,0,0,1
PARTS_REQ,1,9,BASE-BACK,1,476.0,735.0,1,0,0,0,1
PARTS_REQ,1,10,BASE-BACK,1,476.0,735.0,1,0,0,0,1
PARTS_REQ,1,11,BASE-BOTTOM,2,564.0,581.0,3,0,0,0,3
PARTS_REQ,1,12,BASE-BOTTOM,2,464.0,581.0,1,0,0,0,1
PARTS_REQ,1,13,BASE-BOTTOM,2,464.0,581.0,1,0,0,0,1
PARTS_REQ,1,14,BASE-BOTTOM,2,464.0,581.0,1,0,0,0,1
PARTS_REQ,1,15,BASE-BOTTOM,2,464.0,581.0,1,0,0,0,1
PARTS_REQ,1,16,BASE-CABINET-BOTTOM,2,864.0,581.0,1,0,0,0,1
PARTS_REQ,1,17,BASE-CABINET-DIVIDER,2,559.0,533.3,1,0,0,0,1
PARTS_REQ,1,18,BASE-CABINET-DOOR,3,398.0,554.8,1,0,0,2,1
PARTS_REQ,1,19,BASE-CABINET-DRAWER,3,398.0,182.3,3,0,0,0,3
PARTS_REQ,1,20,BASE-CABINET-DRAWER-LONG,3,898.0,182.3,1,0,0,0,1
PARTS_REQ,1,21,BASE-CABINET-END-LEFT,2,581.0,870.0,1,0,0,0,1
PARTS_REQ,1,22,BASE-CABINET-END-RIGHT,2,581.0,870.0,1,0,0,0,1
PARTS_REQ,1,23,BASE-CABINET-RAIL-BACK,2,864.0,150.0,1,0,0,0,1
PARTS_REQ,1,24,BASE-CABINET-RAIL-FRONT,2,864.0,149.0,2,0,0,0,2
PARTS_REQ,1,25,BASE-CABINET-SHELF,2,464.0,560.0,1,0,0,0,1
PARTS_REQ,1,26,BASE-DOOR,3,498.0,741.0,1,0,0,2,1
PARTS_REQ,1,27,BASE-DOOR,3,498.0,552.8,1,0,0,2,1
PARTS_REQ,1,28,BASE-DOOR,3,498.0,741.0,1,0,0,2,1
PARTS_REQ,1,29,BASE-DRAWER,3,498.0,182.3,4,0,0,2,4
PARTS_REQ,1,30,BASE-DRAWER,3,598.0,243.2,3,0,0,2,3
PARTS_REQ,1,31,BASE-DRAWER,3,498.0,184.3,1,0,0,2,1
PARTS_REQ,1,32,BASE-END-LEFT,2,581.0,870.0,1,0,0,0,1
PARTS_REQ,1,33,BASE-END-LEFT,2,581.0,870.0,1,0,0,0,1
PARTS_REQ,1,34,BASE-END-LEFT,2,581.0,870.0,1,0,0,0,1
PARTS_REQ,1,35,BASE-END-LEFT,2,581.0,870.0,1,0,0,0,1
PARTS_REQ,1,36,BASE-END-RIGHT,2,581.0,870.0,1,0,0,0,1
PARTS_REQ,1,37,BASE-END-RIGHT,2,581.0,870.0,1,0,0,0,1
PARTS_REQ,1,38,BASE-END-RIGHT,2,581.0,870.0,1,0,0,0,1
PARTS_REQ,1,39,BASE-END-RIGHT,2,581.0,870.0,1,0,0,0,1
PARTS_REQ,1,40,BASE-PLINTH,2,964.0,125.0,1,0,0,0,1
PARTS_REQ,1,41,BASE-PLINTH,2,964.0,125.0,1,0,0,0,1
```

...

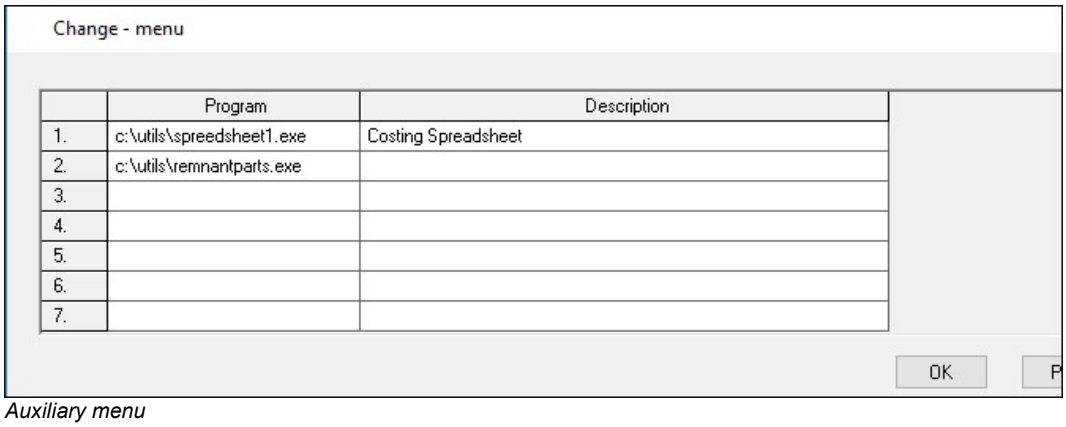
Automating routine operations and commands

There are several options for automating routine operations and commands.

- Auxiliary menu
- Automatic command files
- Stand alone operation

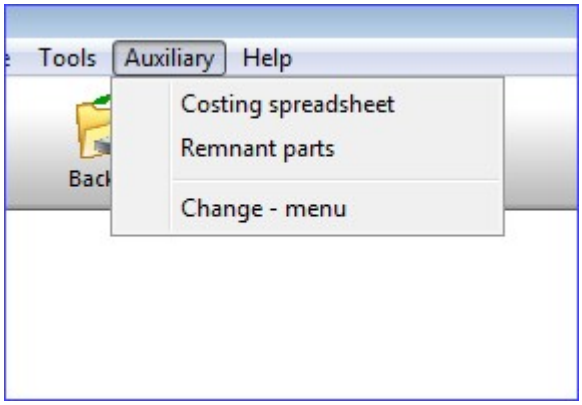
Auxiliary menu

This is a menu option at the main screen. It offers a custom menu. It is typically used for linking to and running other programs but with the convenience of running them from inside the optimising program. For example, run a spread sheet or another production program.



Auxiliary menu

Once set up these options are then available on the Auxiliary menu.



Auxiliary menu example

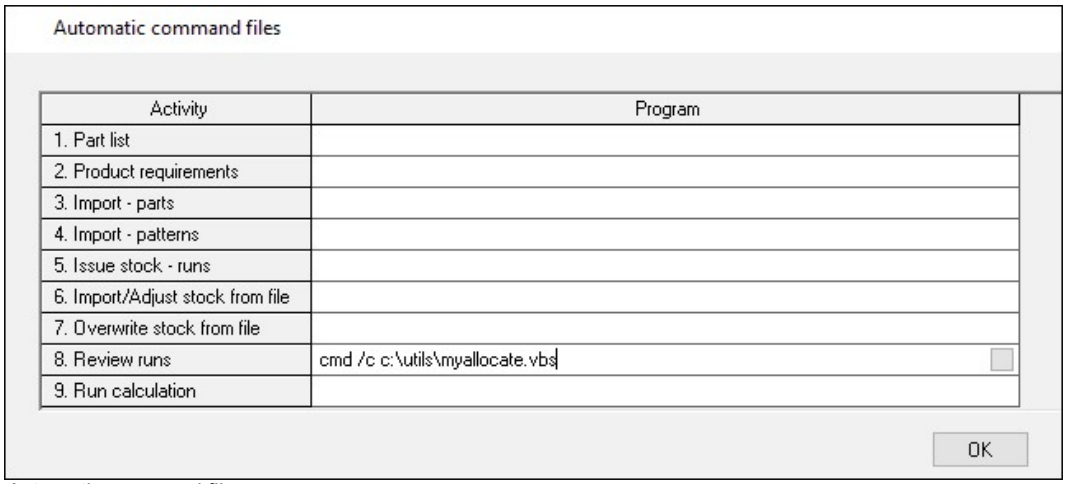
Automatic command files

It can be useful to automate common jobs, for example:-

- reserve stock after an optimisation
- optimise after importing parts
- remember to copy summary data to another file
- always make a backup at the end of the day
- provide extra reminders after some operations

The automatic command options allow the specification of a command, batch file, or script file which can run automatically when exiting from program activities (e.g. on leaving Review runs).

Note that if running a command in stand alone mode in the program section ensure that any equal "=" signs are replaced with commas ":" or the command will not work.



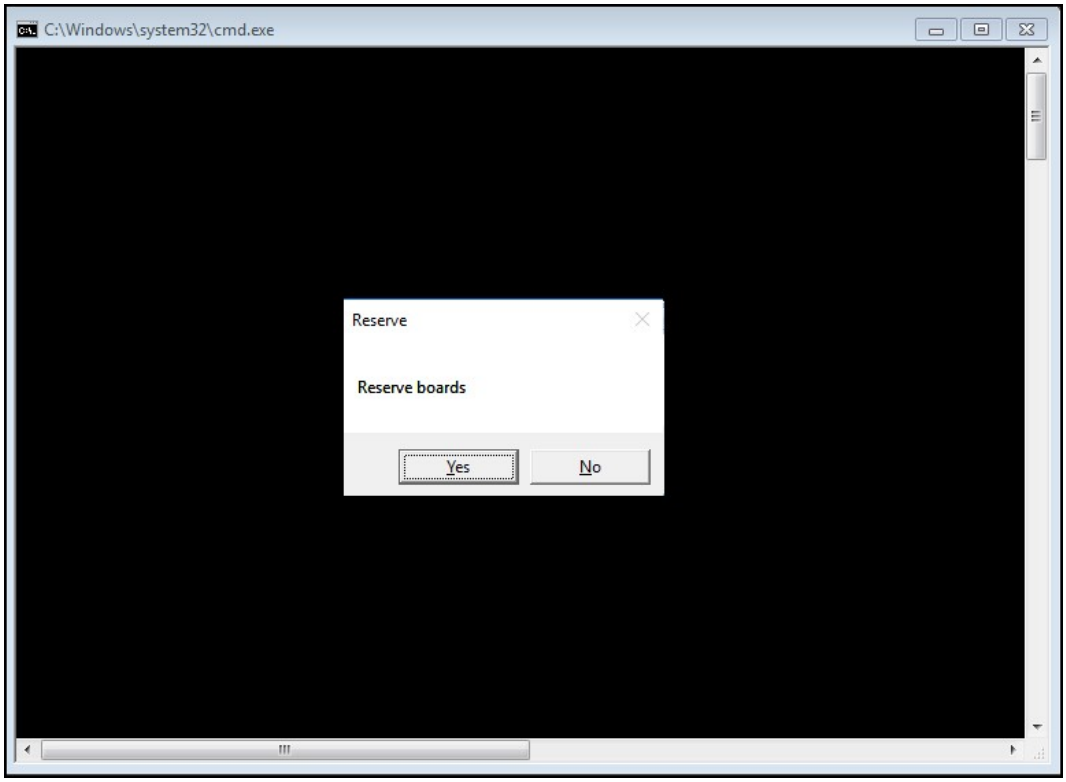
Automatic command files

In the above example the script files MyAllocate.vbs runs on exit from Review runs. This makes sure, for example, that reservations are not missed.

The script file might be something like:-

```
askuser
Sub askuser
Dim ans
Dim wshShell
set wshShell = WScript.CreateObject("WSCript.shell")
ans = MsgBox("Reserve boards", vbYesNo, "Reserve")
If ans = vbYes Then
wshShell.CurrentDirectory ="c:\v12\demo\user1\"
wshShell.run "c:\v12\stock.exe /allocstock"
Else
End If
End Sub
```

The result is to prompt for stock reservation each time on exit from Review runs.



Automatic command files example

The program returns to the main screen in the usual way.

Stand alone operation

Another way of automating routine processes is to run sections of the program 'stand alone'; this typically means they run as silent processes and do not require any user input or show any screens. This can be useful for automating routine jobs, for example, importing part lists from another system, updating stock …

A typical task is to import parts from a PTX file as a stand alone operation. Run the program IMPORT.EXE from a user directory. This can be from a batch file or from a shortcut or by using the Windows option 'Start - Run'. For example, using a Windows batch file the commands are:-

```
..\import job32.ptx /format:8
```

The command line is used to make the relevant settings (as they would be otherwise set in the program or via parameters. For example, the import command is very flexible with several command line options.

```
IMPORT [filename] [/FORMAT:nn] [/OVERWRITE] [/RENAME] [/DELETE]
[/NOWRTBRD] [/UDF] [/SEP]
```

There is access to many sections of the program with this method, for example:-

- Back up User profile
- Batch operations
- CADlink
- Export board library
- Import parts, patterns, boards
- Machining library link picker
- Print or export reports
- Product requirements import
- Stock update
- Saw transfer

16. Design Labels and Forms

Use the Design options to create templates for labels and forms. Labels are typically for printing labels in the office for parts or products but also can be used to design labels for the CADmatic saw controllers or the Online PC saw interface for labels at the saw.

Forms are typically for adding brand new custom forms to Review runs or providing a full set of order or stock documentations; Invoices, despatch notes, worksheets …

At the main screen:-

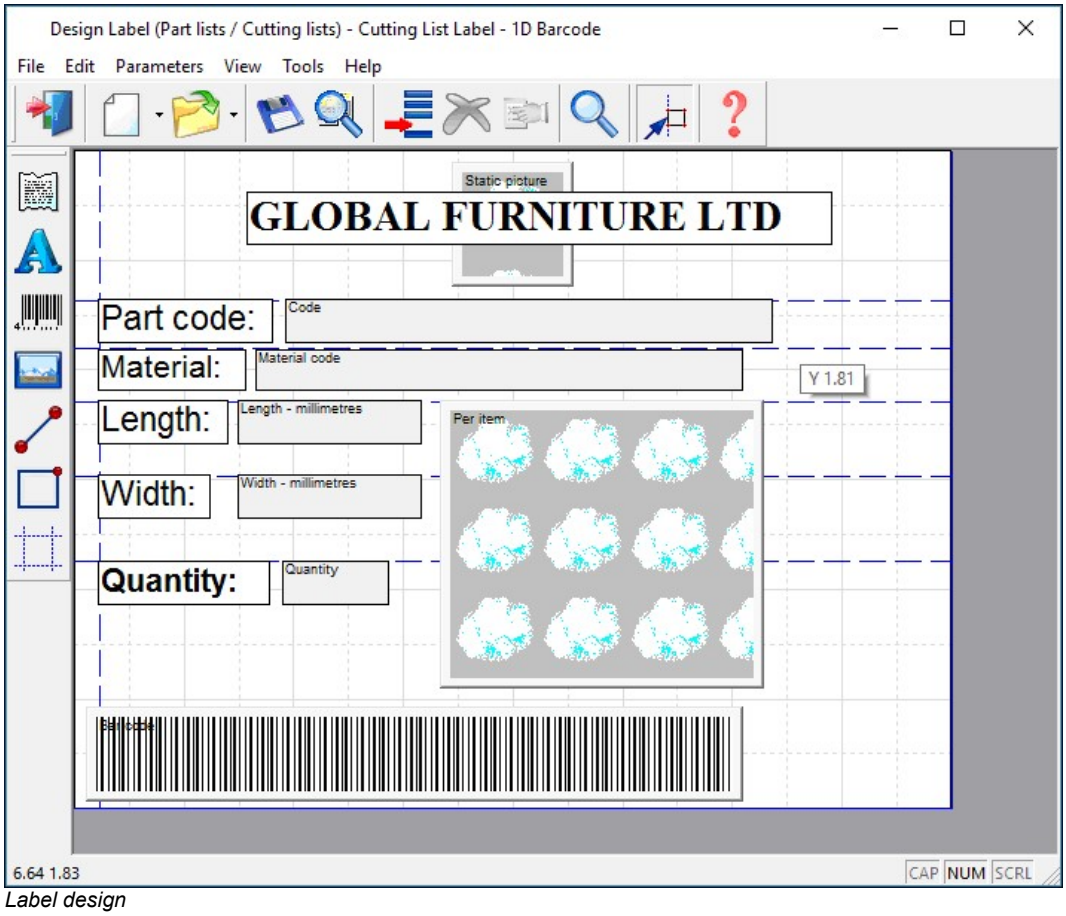
• Select: **Tools – Form/Label designer**

• Select **File>New** then either form or label

• Select the type of form or label required:-

Quotes / Orders
Product requirements
Part lists / Cutting lists
Cutting patterns
Runs
Saw (for labels only)

The following example shows a design for a label at the Design screen.



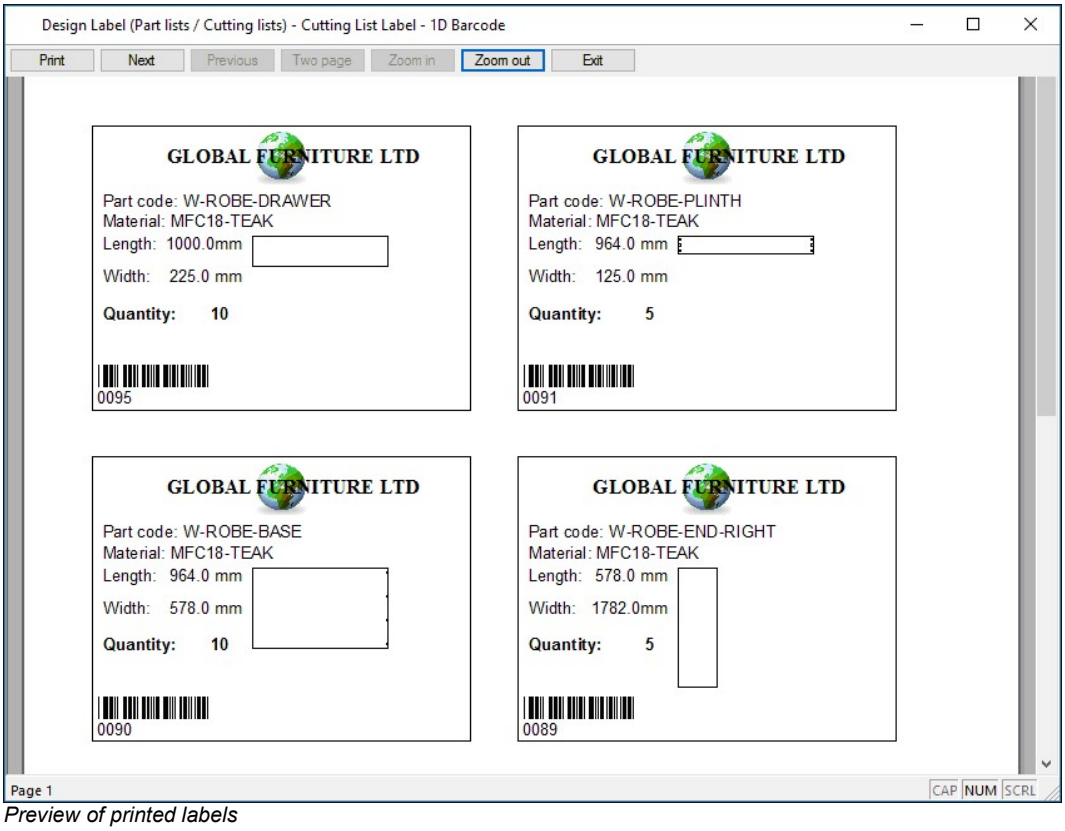
Label design

To design a form or label create a template that describes the items of information (objects) on the label or form; where they are placed and special effects such as pictures or colour. Once the template is saved it can be used by the program for printing that style of label or form.

Many users typically only need one or two templates for all their part and product labels but may need several templates for forms such as invoices, despatch notes, waybills and so on.

Standard templates **-** There are several standard templates supplied with the software which you can use as a starting point for your templates. Use the SAVE AS option to take a copy of the standard form and always make changes to the copy.

Data Preview - use this to see what the label looks like.



Preview of printed labels

When creating a NEW design use the OBJECT TOOLBAR (at the left) to place label design elements on the label. The main elements are:-

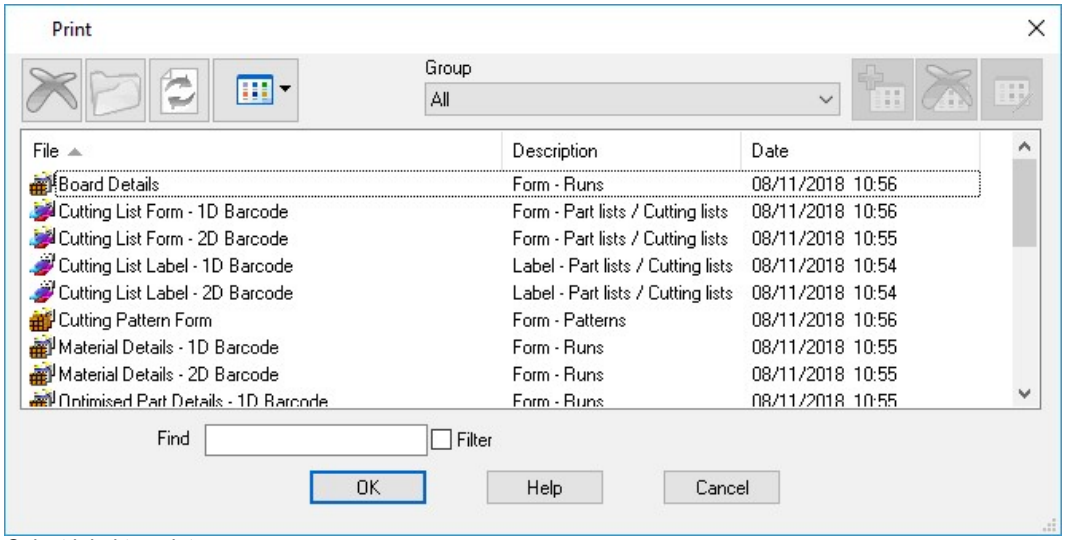
- Text boxes - fixed text to describe the data
- Data boxes - for the variable data (e.g. part codes)
- Lines - to draw lines on the label
- Picture boxes - for part drawings or logos

- Barcode boxes - for bar codes (e.g. bar code for part code and quantity)

Use the properties box to change any features, for example, to fine tune the position of the item.

Print - to print a label for part lists or cutting patterns etc.

- Select the Print menu at the main screen
- Select 'Form / label print' '

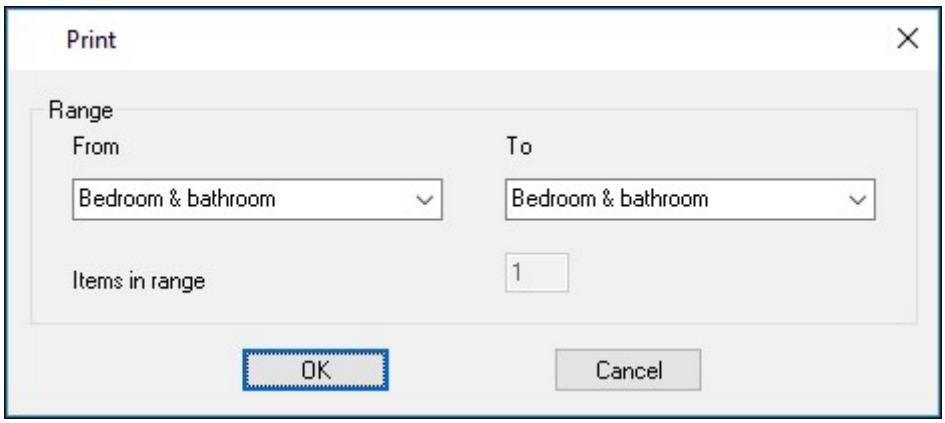


Select label template

- Select the required template

Select **OK** to print

The program prompts for the data to print.



Select data for label printing

- Check the data and select OK to print labels.

The labels can be set up to print in a wide variety of layouts; continuous, 2 per page …

Printed labels

Printing labels at the saw

To print labels at the saw, for example, to print labels for each part or each stack as it is cut the data for each label is transferred to the saw when the run is transferred.

Use 'Design labels and forms' to design the template for labels at the Saw.

At the main screen select: *Tools - Label design - Saw*

Then choose the saw type:-

- CADmatic 1
- CADmatic 2
- CADmatic 3
- Homag
- Online PC

Note - not all saws have the same capabilities when printing labels so the Label design may restrict options in some cases.

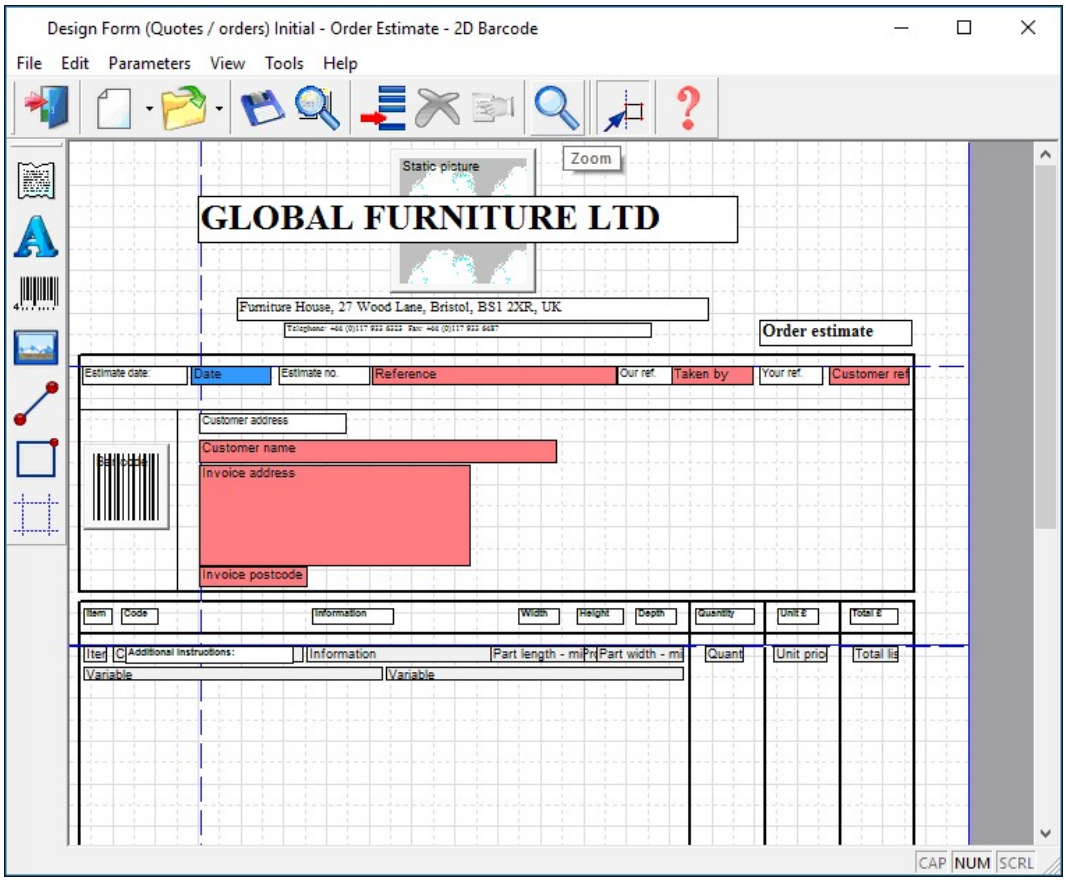
Use *File - Export* (at the Design screen) to send the design to the saw.

The label design is a file (in the correct format for the saw) which is transferred to the saw. The file name and location depend on the type of saw.

It is also possible to print labels for other saw types - details and capabilities depend on each saw type - check with your supplier.

Forms

Design a form in the same way as a label - the main differences are that a form (like an invoice) usually contains a section with a list of varying data items (e.g. products and prices) and uses page numbers, headings, and continuation pages etc.



Form design

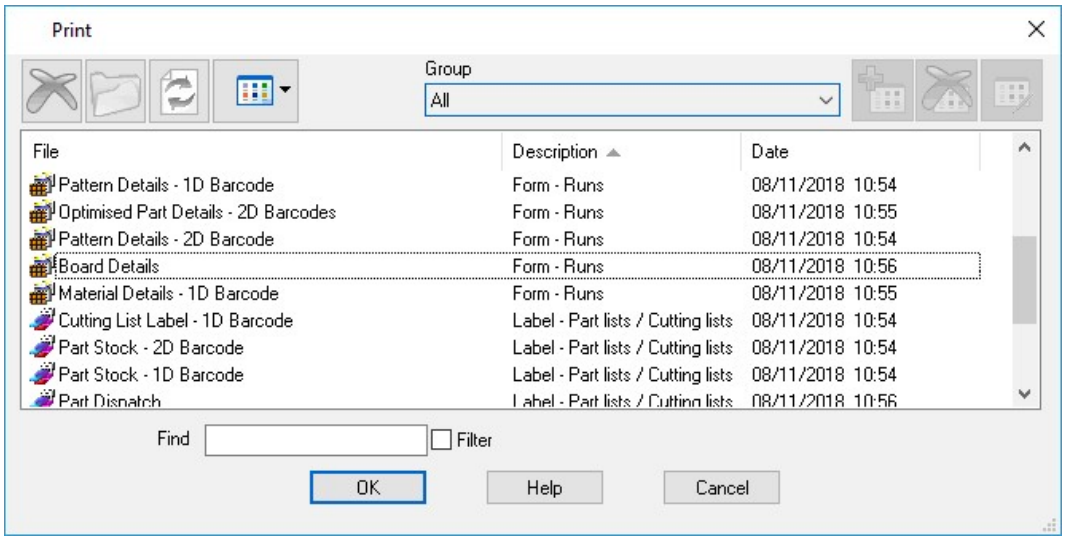
Use the object tool bar for the common items.

Print a form

- Select (at the main screen) **Print**
- Select **Form/Label print**

Choose the type of form to print (Quotes, Product requirements, Part lists, Cutting patterns, Runs).

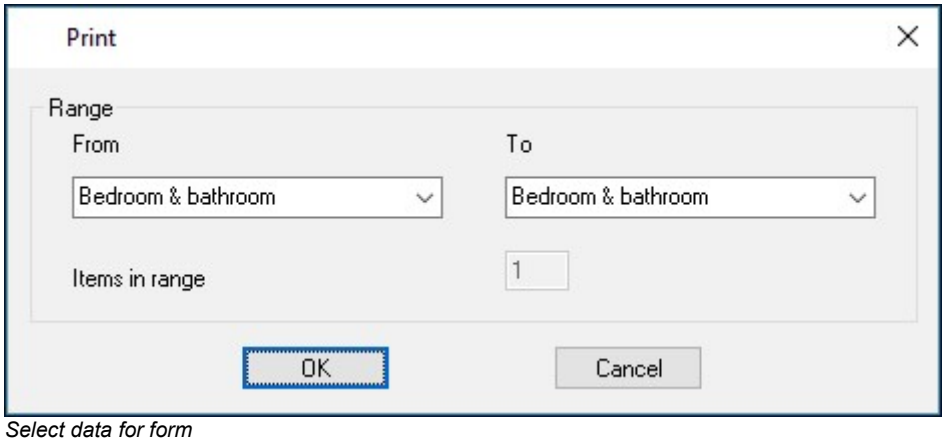
The program prompts for the template to use:-



Select form template

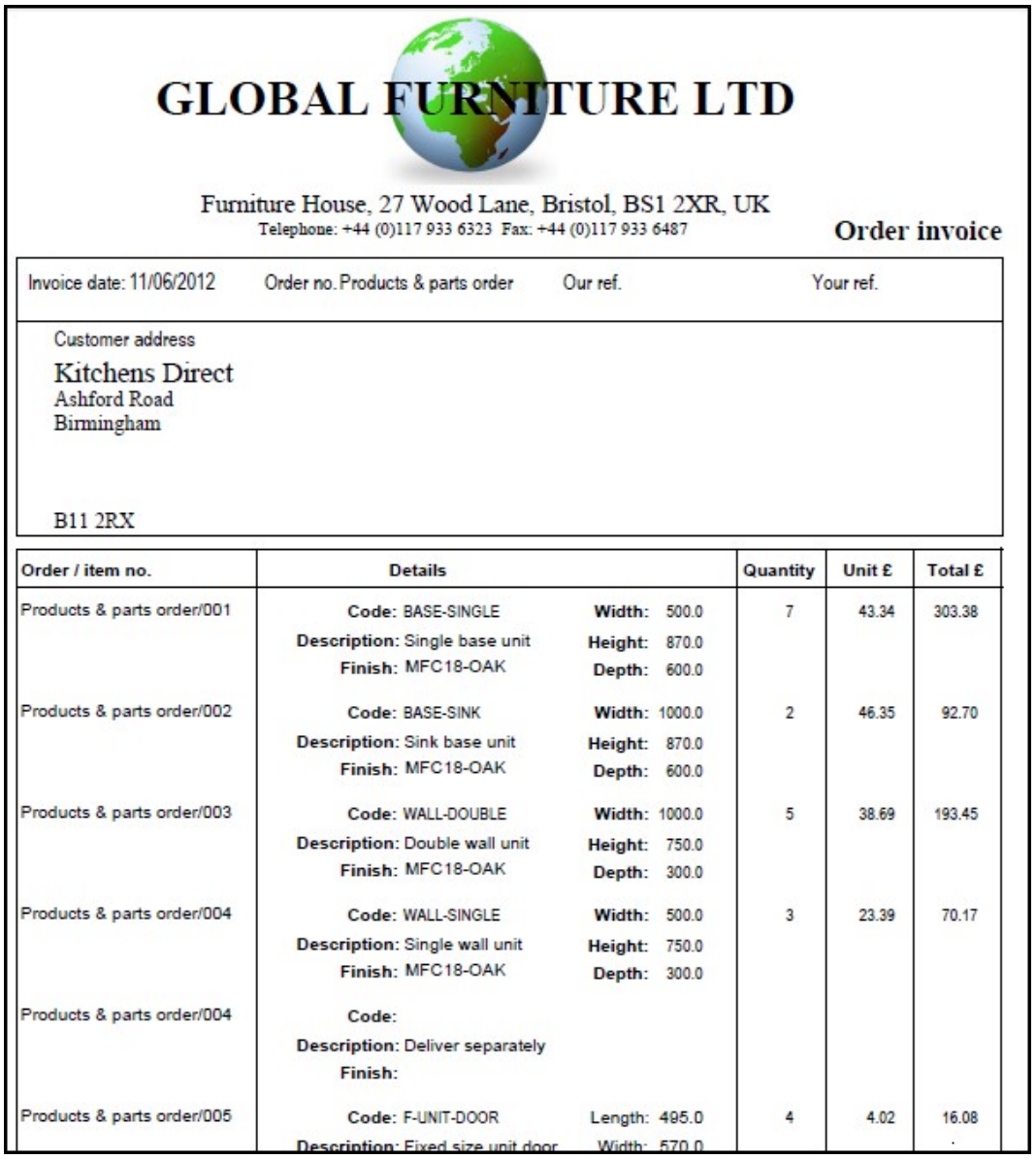
- Select a template

The program then prompts for the data to print, this varies with the type of data, for example, for a Quotation or order file:-



Select data for form

For a run or cutting patterns the program prompts with the current batch screen, select **OK** to continue. Select PRINT to print the data from the preview.



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 invoice

Invoice date: 11/06/2012 Order no. Products & parts order Our ref. Your ref.

Customer address
Kitchens Direct
Ashford Road
Birmingham

B11 2RX

Order / item no.	Details		Quantity	Unit £	Total £
Products & parts order/001	**Code:** BASE-SINGLE **Description:** Single base unit **Finish:** MFC18-OAK	**Width:** 500.0 **Height:** 870.0 **Depth:** 600.0	7	43.34	303.38
Products & parts order/002	**Code:** BASE-SINK **Description:** Sink base unit **Finish:** MFC18-OAK	**Width:** 1000.0 **Height:** 870.0 **Depth:** 600.0	2	46.35	92.70
Products & parts order/003	**Code:** WALL-DOUBLE **Description:** Double wall unit **Finish:** MFC18-OAK	**Width:** 1000.0 **Height:** 750.0 **Depth:** 300.0	5	38.69	193.45
Products & parts order/004	**Code:** WALL-SINGLE **Description:** Single wall unit **Finish:** MFC18-OAK	**Width:** 500.0 **Height:** 750.0 **Depth:** 300.0	3	23.39	70.17
Products & parts order/004	**Code:** **Description:** Deliver separately **Finish:**				
Products & parts order/005	**Code:** F-UNIT-DOOR **Description:** Fixed size unit door	Length: 495.0 Width: 570.0	4	4.02	16.08

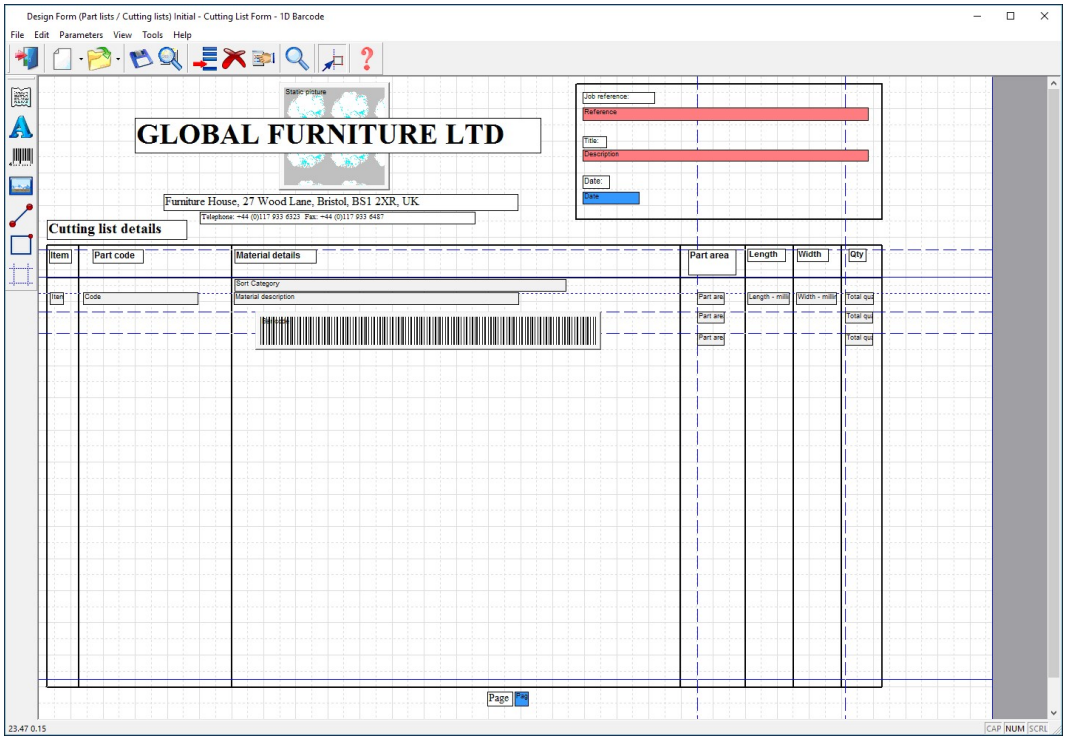
Form and label parameters **-** Use these to set the page size, margins and other general features or each label and form template.

With labels set the frequency with which labels are produced, per part, per part type, per stack etc.

Custom Reports / Summaries

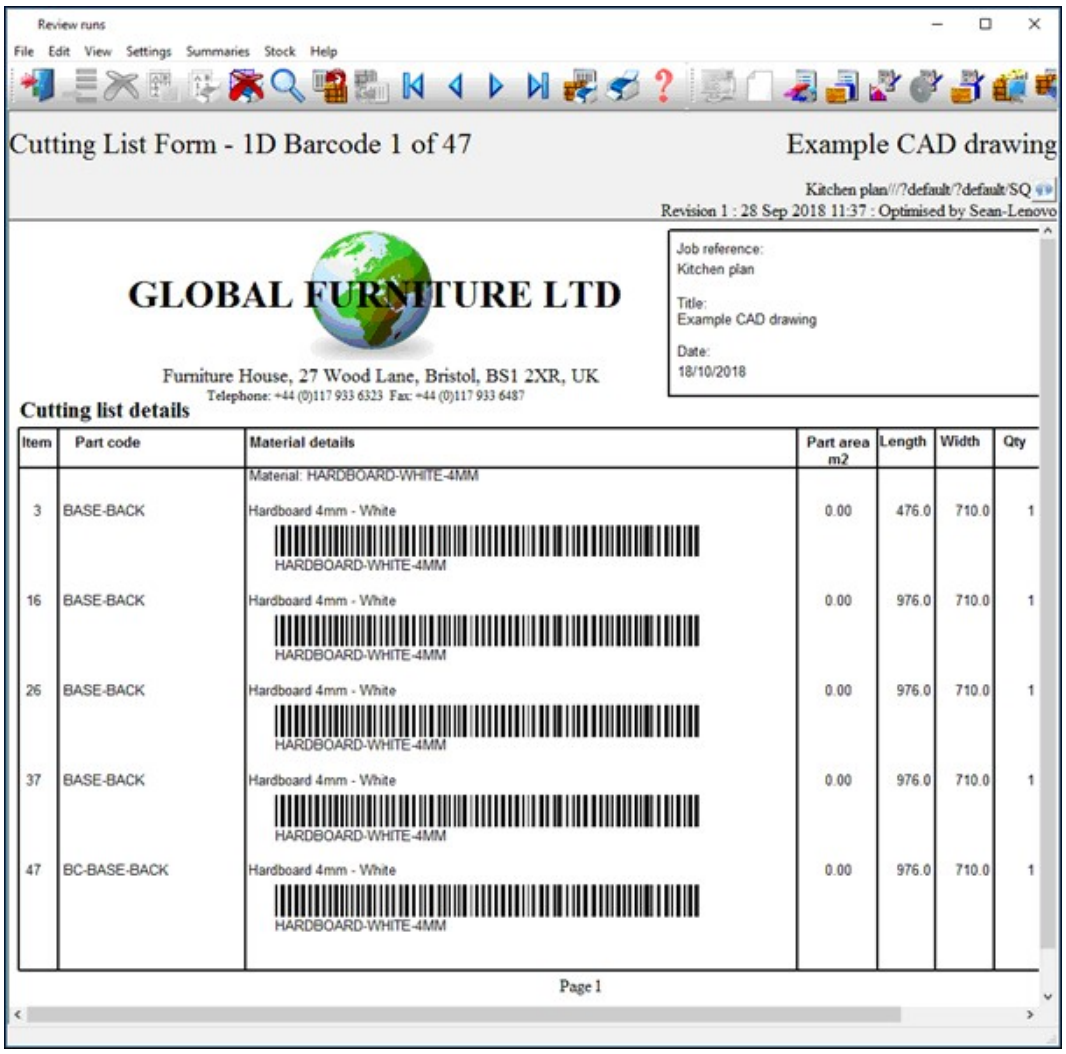
Form design can also be used to create fully customised reports for runs (optimising results). This can be useful for tailoring documents to suit the production process. Emphasising important data, removing details, matching the order of data to the company standard …

Here is part of a design for a custom report for a cutting list summary.

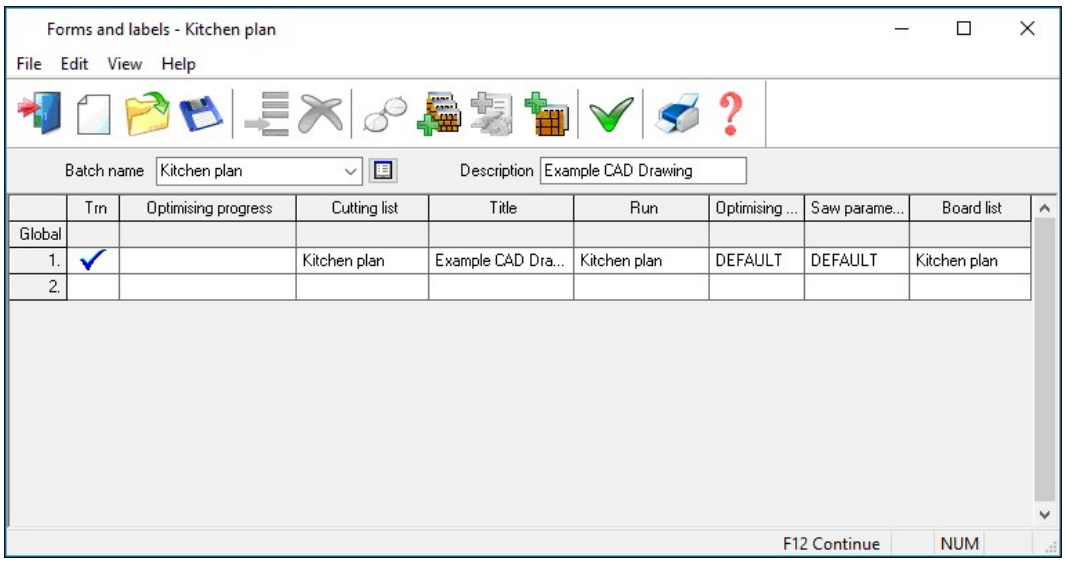


Custom report design

The layout and information on the report can be fully customised. The above design produces the following style of report or summary.



In this case the program prompts for the run to use for the data.



Select run data for form

The report is printed in the usual way.

GLOBAL FURNITURE LTD

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

Job reference:
Kitchen plan

Title:
Example CAD drawing

Date:
18/10/2018

Cutting list details

Item	Part code	Material details	Part area m2	Length	Width	Qty
		Material: HARDBOARD-WHITE-4MM				
3	BASE-BACK	Hardboard 4mm - White HARDBOARD-WHITE-4MM	0.00	476.0	710.0	1
16	BASE-BACK	Hardboard 4mm - White HARDBOARD-WHITE-4MM	0.00	976.0	710.0	1
26	BASE-BACK	Hardboard 4mm - White HARDBOARD-WHITE-4MM	0.00	976.0	710.0	1
37	BASE-BACK	Hardboard 4mm - White HARDBOARD-WHITE-4MM	0.00	976.0	710.0	1

Printed report

Custom reports in Review runs

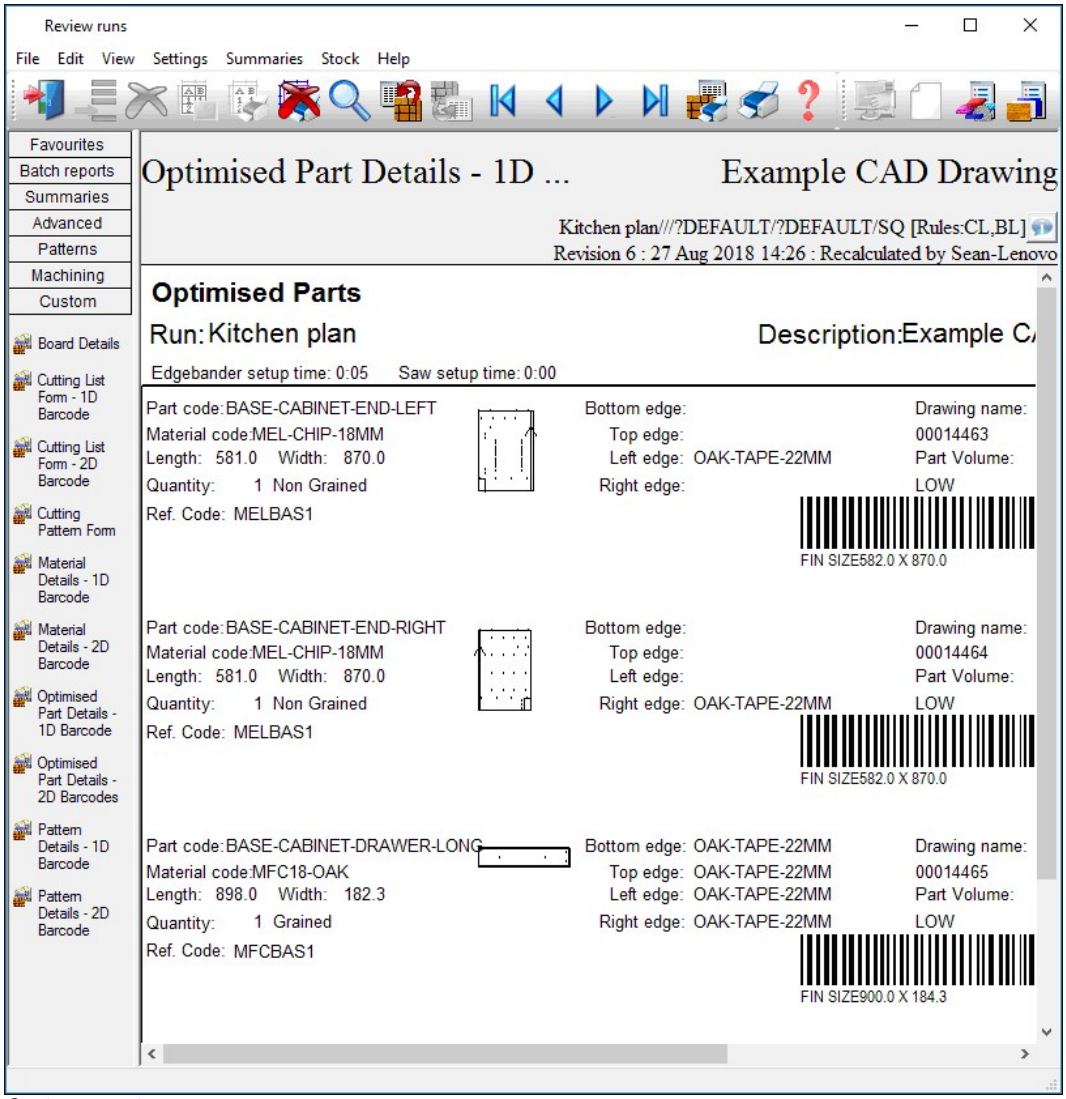
For run based custom reports it is often more convenient to integrate the reports in Review runs so that they appear on the Report bar - like any other report. To do this use the option at the main screen.

Select: **Tools > Form/Label designer**
Select: **File > New > Form**

Finally select a form design which best suits your requirements, the options are:

```
Form - Runs Boards
Form - Runs Materials
Form - Runs Parts
Form - Runs Patterns
```

Any reports created via this option are automatically added to the report bar under the 'Custom' tab.

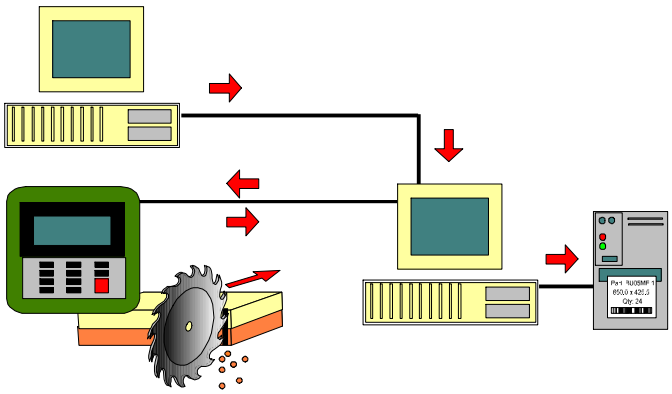


Custom report

These reports can also be accessed from the main screen as forms (*Print - Forms - Runs*).

17. Online PC Saw Interface

The Online PC option runs on a computer located next to the saw. This provides a link to the saw for printing labels and sending data to the saw in cases where the saw controller has more limited graphic facilities.



Online PC

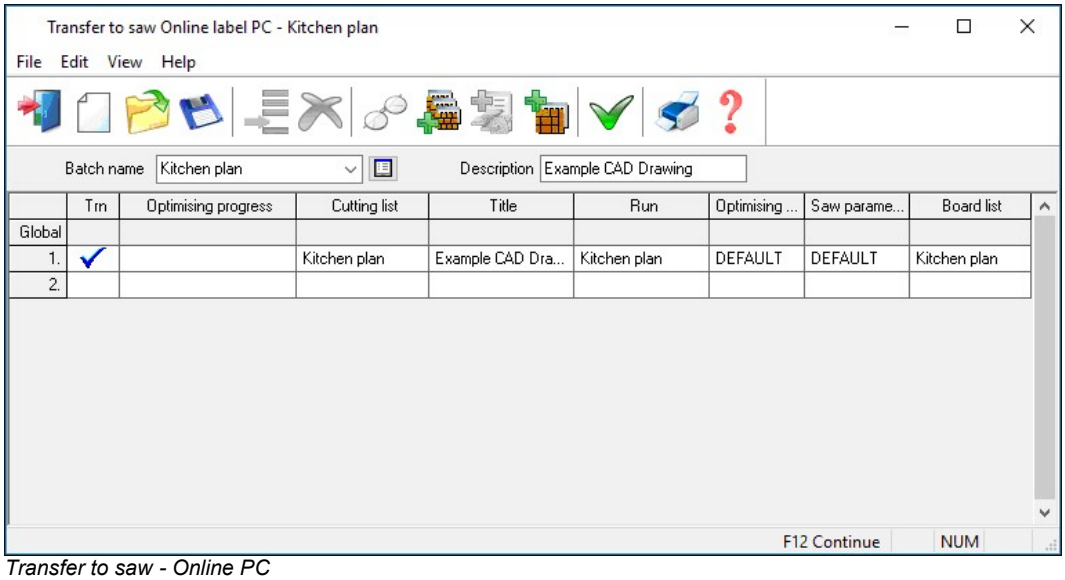
The diagram illustrates one arrangement - several different arrangements are possible.

To use the Online PC option set the Saw Transfer parameters to include a saw type for the Online PC saw type and give the saw type a name like 'OnlinePC'.

- Select (at the main screen) **Machine interface**
- Select the saw type set as the option for Online PC (e.g. OnlinePC)

To transfer runs to the saw select: **Transfer to saw**

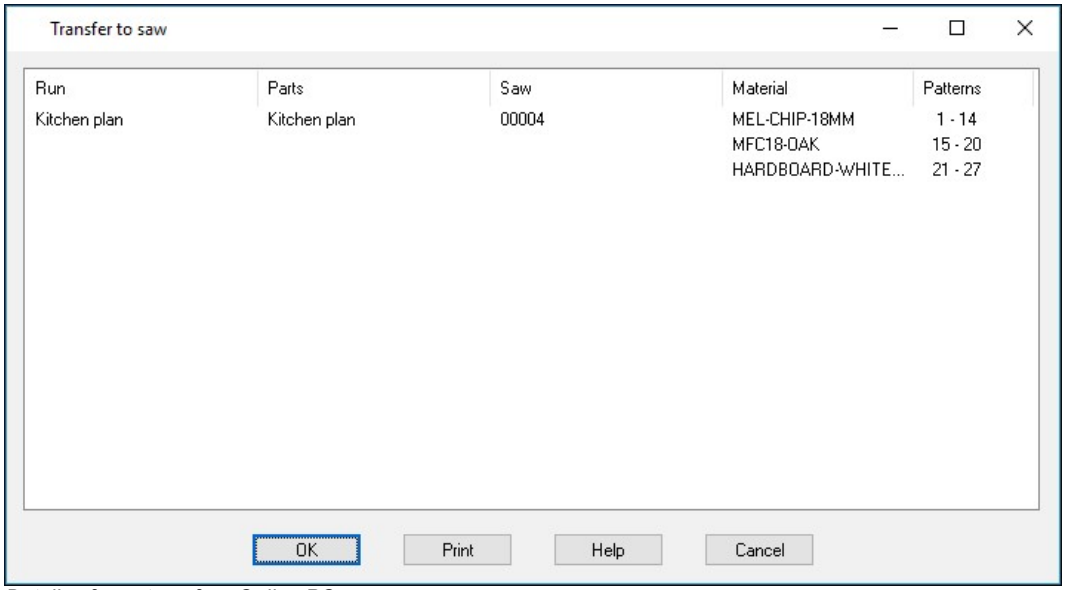
The program prompts for the data to transfer (in the usual way).



Transfer to saw - Online PC

Select the 'Continue' option

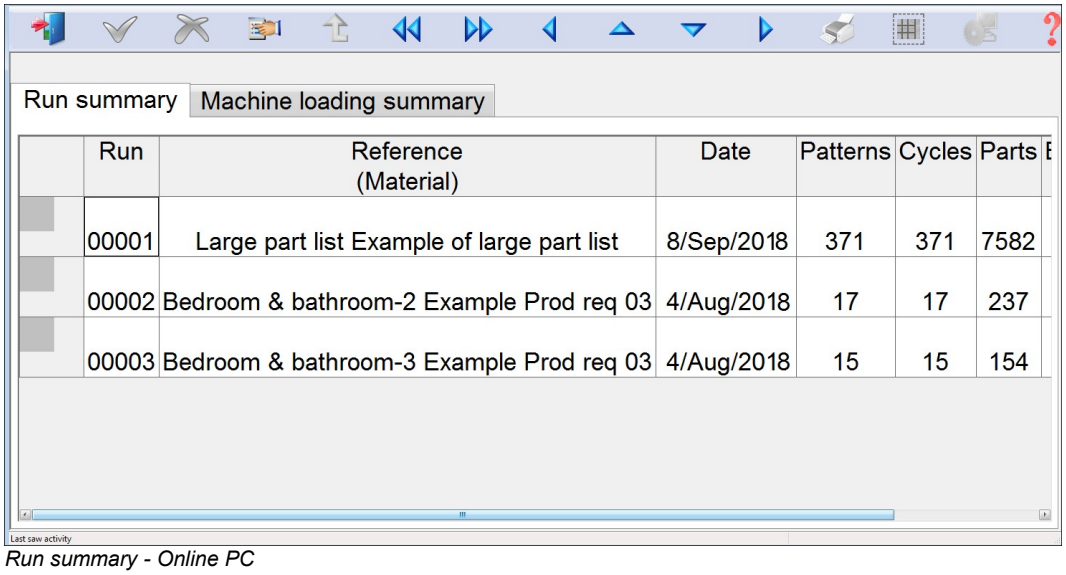
The details of the transfer are shown.



Details of saw transfer - Online PC

The Online PC option includes a set of options for viewing and editing any runs sent to the saw. To review runs at the saw select**: Online PC - operations**

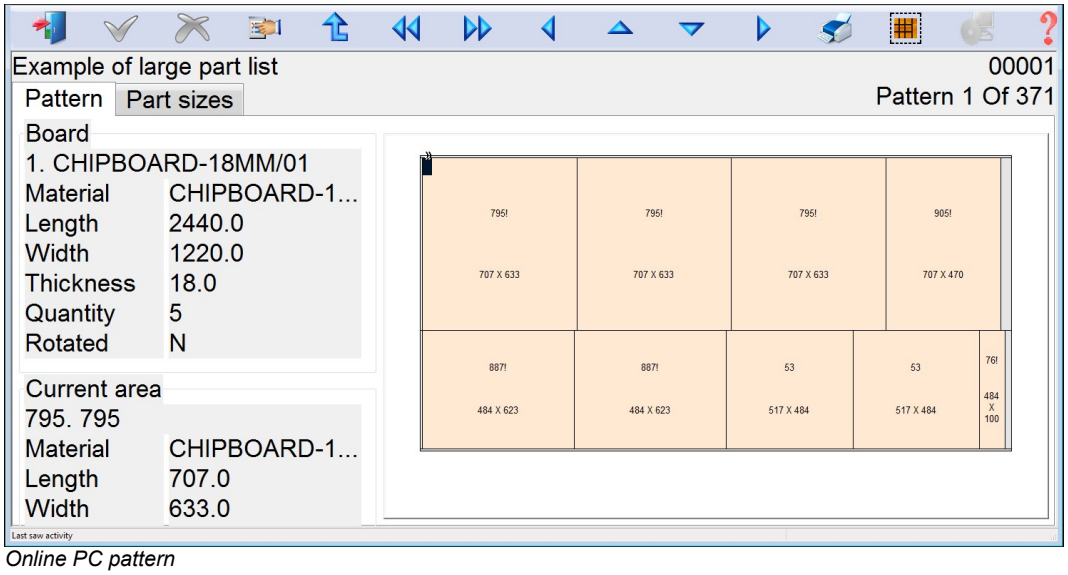
The first screen shows the runs at the saw.



Run summary - Online PC

The font size adjusts automatically to the computer screen resolution so the display fills up the screen so the display is as clear as possible - it is often used with a touch screen.

- Click on a run to see the details of each pattern.

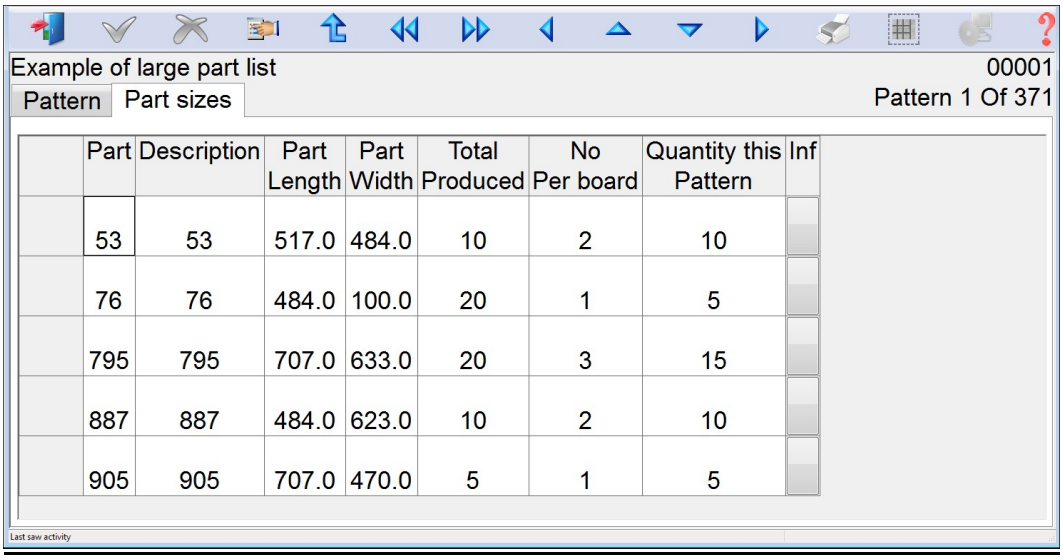


Online PC pattern

Manual label printing - move to the pattern and part required and select PRINT to print the label.

For saws with Compumatic controllers synchronisation of cutting and labels is automatic.

View the details of the parts for each pattern and if appropriate to the saw controller the cutting dimensions.



Online PC Part sizes

The status bar at the foot of the screen shows information from the PC at the saw and the state of the run.

A tab for Cutting dimensions is shown where these are needed for the saw controller