Version V8

Compact Guide

Revision 2.21

Copyright notice

This Manual and the Software referred to are licensed to the Company or Person identified by the Security key and shown on the Startup screen. Please make sure that you have read and understood the Software Licence Agreement provided before you install and use the software.

Contents

1. Introduction

Welcome to V8

What does V8 do?

V8 is a comprehensive software package that covers most aspects of optimisation and production for the Woodworking industry. It is Windows software which runs on most PC's. It provides all the information to keep control of costs, cut down errors, and cut material efficiently and effectively.

V8 deals with a variety of products.

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

You can design products, produce quotations and generate cutting patterns for any order or batch of orders. From the cutting patterns you can send information directly to the saw or machining centre to cut each pattern and machine each part.

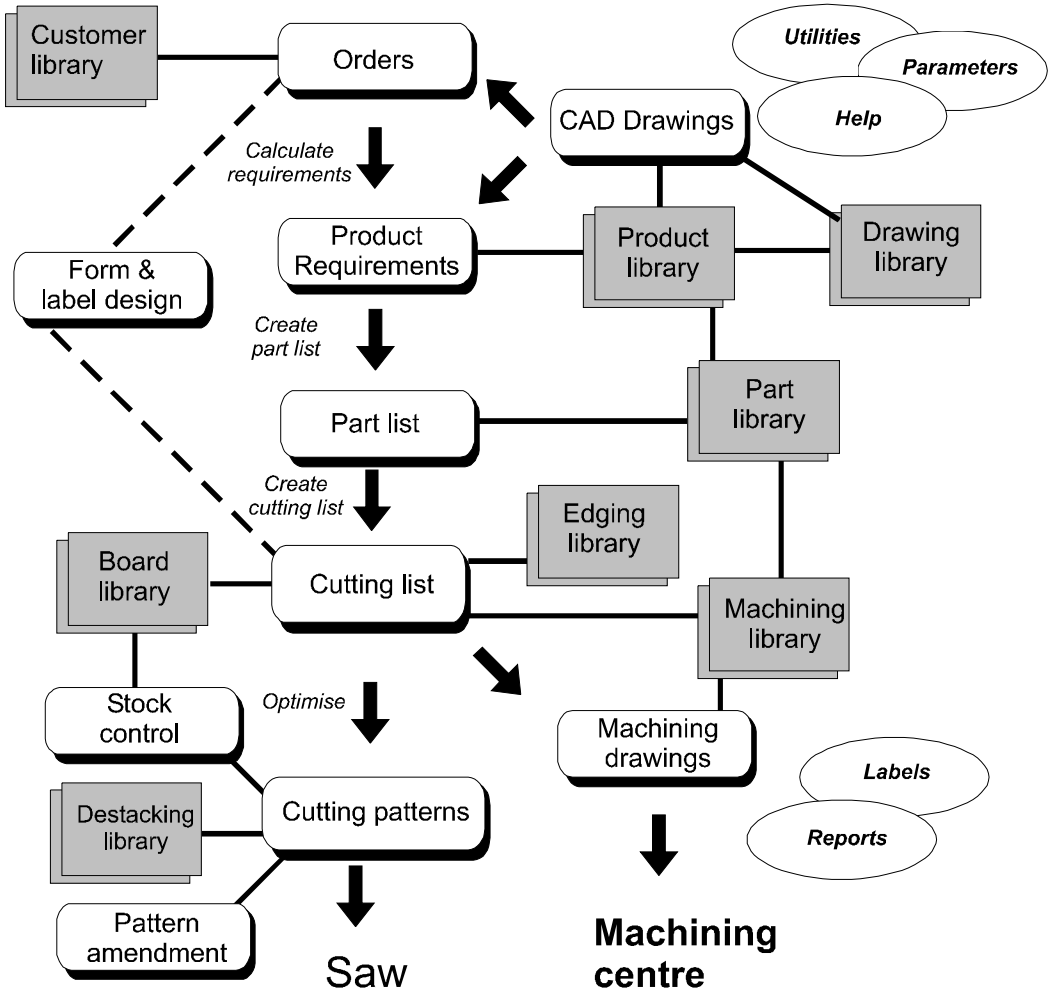
How do I work with V8 ?

Here is a typical way of working with the software.

- Take the order and produce order documents
- Automatically generate the list of parts to fulfil the order
- Optimise the list of parts to generate cutting patterns
- Send cutting instructions to the saw and the machining centre

V8 - at a glance

The main route through the software: ORDERS > PRODUCT REQUIREMENTS > PART LIST > CUTTING LIST > CUTTING PATTERNS > TRANSFER TO SAW



For Nesting optimising see section 7.

A quick tour

As an introduction to the software we will take the main route from entering an Order to sending Cutting instructions to the Saw.

The basic steps we are going to follow are:-

- Review an Order for products
- Create a part list based on the Order
- Optimise parts
- Review cutting patterns
- Send cutting patterns (instructions) to the saw

If you are not using Orders or Products move to the paragraph describing the Part List

If the software is not installed just read through the tour to get an overview of the program and then follow the next section on Setup to install the software

To run the program click on the icon on the desktop

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

If you have more than one data directory the program prompts you for the data directory to use. Select 'Demo - User 1' if this is available.

The demonstration data provided with the system is in a directory called 'Demo' - this was set up at installation.

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 and choices from here.

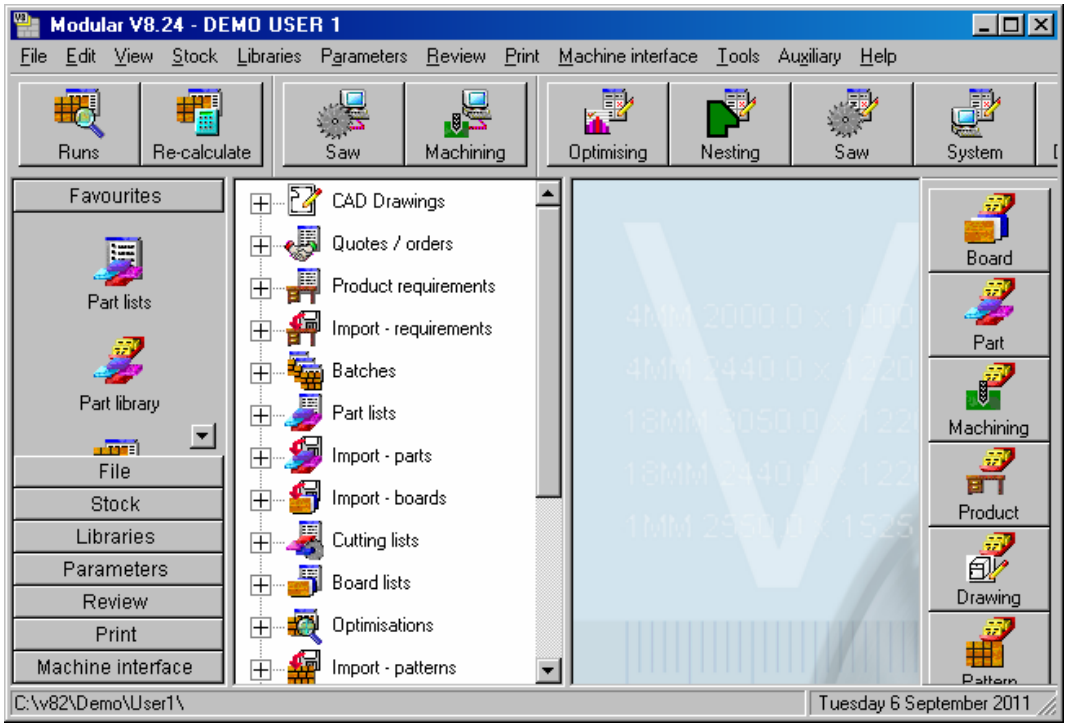


Figure 1-01 Main screen

At the far left is a stacked ToolBar (Shortcut Bar) giving quick access to each section of the Program.

At the left is a tree showing the various options and existing data. You can also use the traditional menus and the buttons to access options.

The other part of the screen optionally shows an information panel with the current directory and other data and a File view which shows a preview of any selected file.

You can arrange the screen to suit your way of working with the *View* menu option.

If you are using the software for the first time - check that the Serial number, type of licence, and Company name are correct and click on the Licence button to check the details of the software licence agreement. These are options on the *Help* menu.

Measurement modes - The software works in either millimetres, fractional inches, or decimal inches. The operation of the software 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).

Taking / reviewing an Order

To take or review an order for products:-

At the tree at the left double click on the option: *Quotes / Orders*

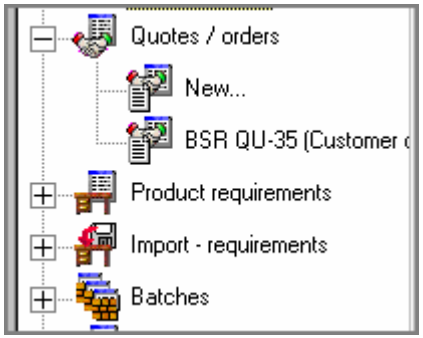


Figure 1-02 File tree at the main screen

On the sub-tree that opens double click on an order (e.g. BSR QU-35). The order details are displayed (e.g. Order BSR QU-35).

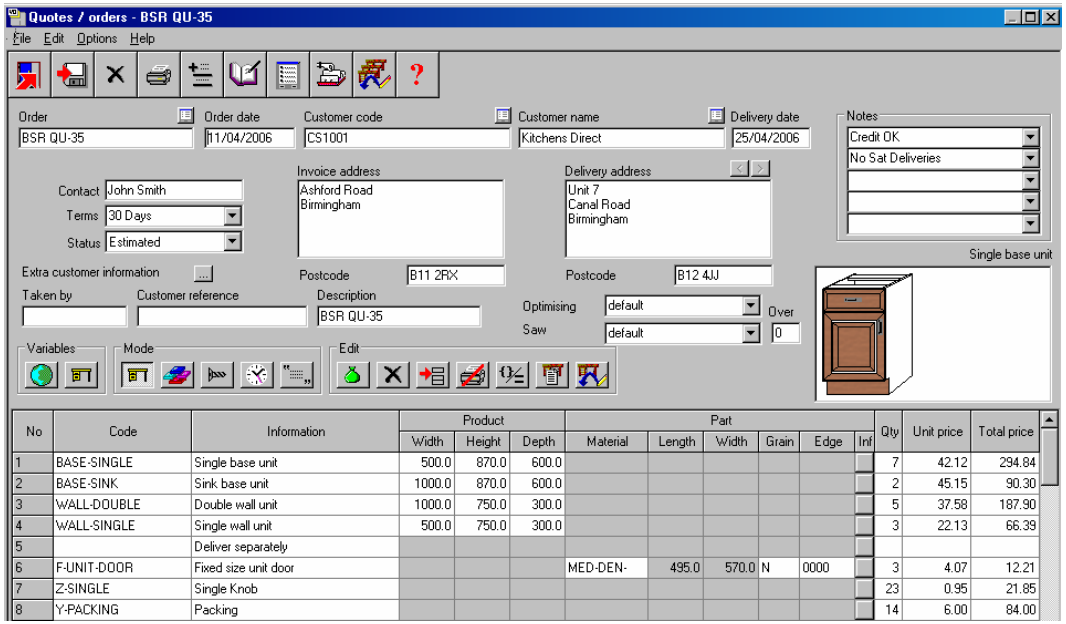
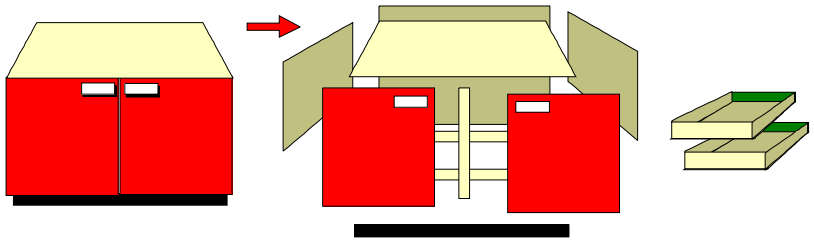


Figure 1-03 Orders screen

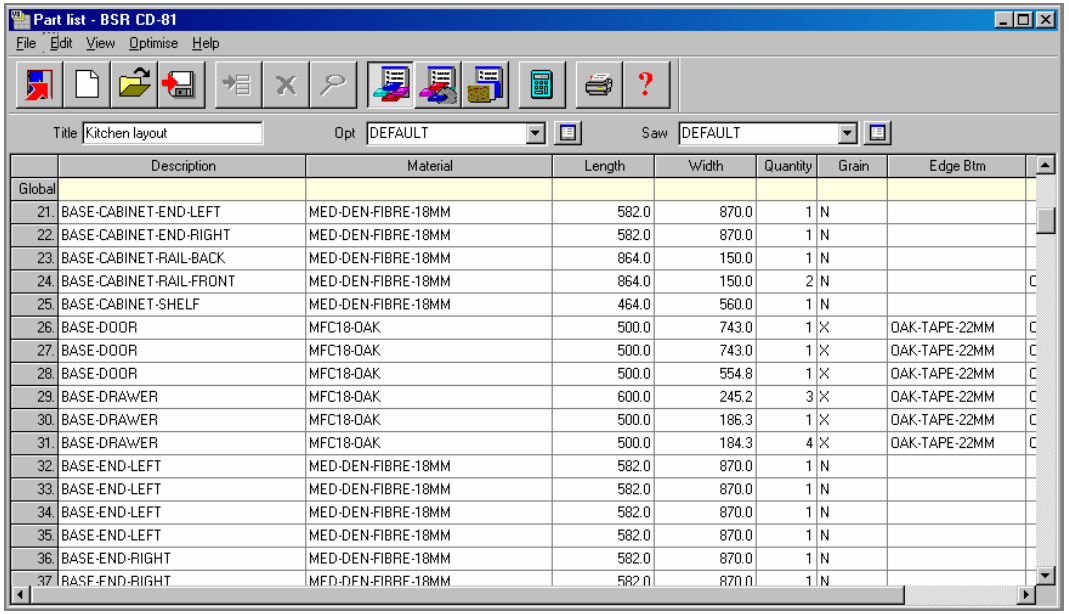
The customer and order details are at the top of the screen and at the foot the details of the products in the order.

As the diagram below shows each product is made from several different parts.



The details of each product and the parts it contains are stored in the PRODUCT LIBRARY.

Part list - To create the cutting patterns for producing the parts required for the Order the program automatically calculates the type and quantity of parts required using the details from the Product library. The result is a full list of part sizes and quantities required. To do the calculation and see the list of parts:- At the Quote screen menu select: **Options - Parts**



	Description	Material	Length	Width	Quantity	Grain	Edge Btm
Global							
21.	BASE-CABINET-END-LEFT	MED-DEN-FIBRE-18MM	582.0	870.0	1	N	
22.	BASE-CABINET-END-RIGHT	MED-DEN-FIBRE-18MM	582.0	870.0	1	N	
23.	BASE-CABINET-RAIL-BACK	MED-DEN-FIBRE-18MM	864.0	150.0	1	N	
24.	BASE-CABINET-RAIL-FRONT	MED-DEN-FIBRE-18MM	864.0	150.0	2	N	
25.	BASE-CABINET-SHELF	MED-DEN-FIBRE-18MM	464.0	560.0	1	N	
26.	BASE-DOOR	MFC18-OAK	500.0	743.0	1	X	OAK-TAPE-22MM
27.	BASE-DOOR	MFC18-OAK	500.0	743.0	1	X	OAK-TAPE-22MM
28.	BASE-DOOR	MFC18-OAK	500.0	554.8	1	X	OAK-TAPE-22MM
29.	BASE-DRAWER	MFC18-OAK	600.0	245.2	3	X	OAK-TAPE-22MM
30.	BASE-DRAWER	MFC18-OAK	500.0	186.3	1	X	OAK-TAPE-22MM
31.	BASE-DRAWER	MFC18-OAK	500.0	184.3	4	X	OAK-TAPE-22MM
32.	BASE-END-LEFT	MED-DEN-FIBRE-18MM	582.0	870.0	1	N	
33.	BASE-END-LEFT	MED-DEN-FIBRE-18MM	582.0	870.0	1	N	
34.	BASE-END-LEFT	MED-DEN-FIBRE-18MM	582.0	870.0	1	N	
35.	BASE-END-LEFT	MED-DEN-FIBRE-18MM	582.0	870.0	1	N	
36.	BASE-END-RIGHT	MED-DEN-FIBRE-18MM	582.0	870.0	1	N	
37.	BASE-END-RIGHT	MED-DEN-FIBRE-18MM	582.0	870.0	1	N	

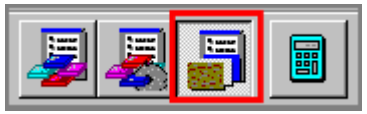
Figure 1-04 Part list / Cutting list screen

Extra information - the *Inf* box (at the right of the Part list) can be expanded to cover a wide range of custom fields for information about each part. For example, information for storage, further processing, part and order tracking, laminate sizes etc.

Global line - the line at the top of the list is called the global line. This can be used to provide a common answer for every part in the list for a given field - in this example the over and under percentages are set to 0 for all parts.

Boards - Each part has a material code, for example: MED-DEN-FIBRE-18MM

The demo data already contains a BOARD LIBRARY describing the materials in regular use. The program automatically works out the required materials and board sizes and produces a list of available boards for the cutting patterns.



View the list of boards by clicking on the 'Boards' button at the top of the screen.

Title BSR QU-35

	Board	Material	Length	Width	Thick...	Information	Quantity	Cost	Limit	Grain	Parameters
Global											
1.	HARDBOARD-4MM/01	HARDBOARD-4MM	2000.0	1000.0	4.0	Spec. Order	795	0.890	9	N	HBD04-01
2.	HARDBOARD-4MM/02	HARDBOARD-4MM	2440.0	1220.0	4.0	BIN 133	131	0.750	0	N	HBD04-02
3.	MED-DEN-FIBRE-18MM/01	MED-DEN-FIBRE-18MM	3660.0	1550.0	18.0	BIN 127	1090	4.500	0	N	
4.	MED-DEN-FIBRE-18MM/02	MED-DEN-FIBRE-18MM	2440.0	1220.0	18.0	BIN 128	767	4.350	0	N	
5.	MFC18-OAK/01	MFC18-OAK	3050.0	1220.0	18.0		430	3.300	0	N	
6.	MFC18-OAK/02	MFC18-OAK	2440.0	1220.0	18.0		111	2.970	0	N	
7.	WHAC12/01	WHITE-ACRYLIC-12MM	2440.0	1220.0	12.0		436	1.320	4	N	
8.											

Figure 1-05 - Board list screen

Optimise

The next step is to optimise the part list using the available boards to get a set of cutting patterns.

Return to the part list screen by clicking on the 'Parts' button at the top of the screen

Select the optimise button at the top of the screen.

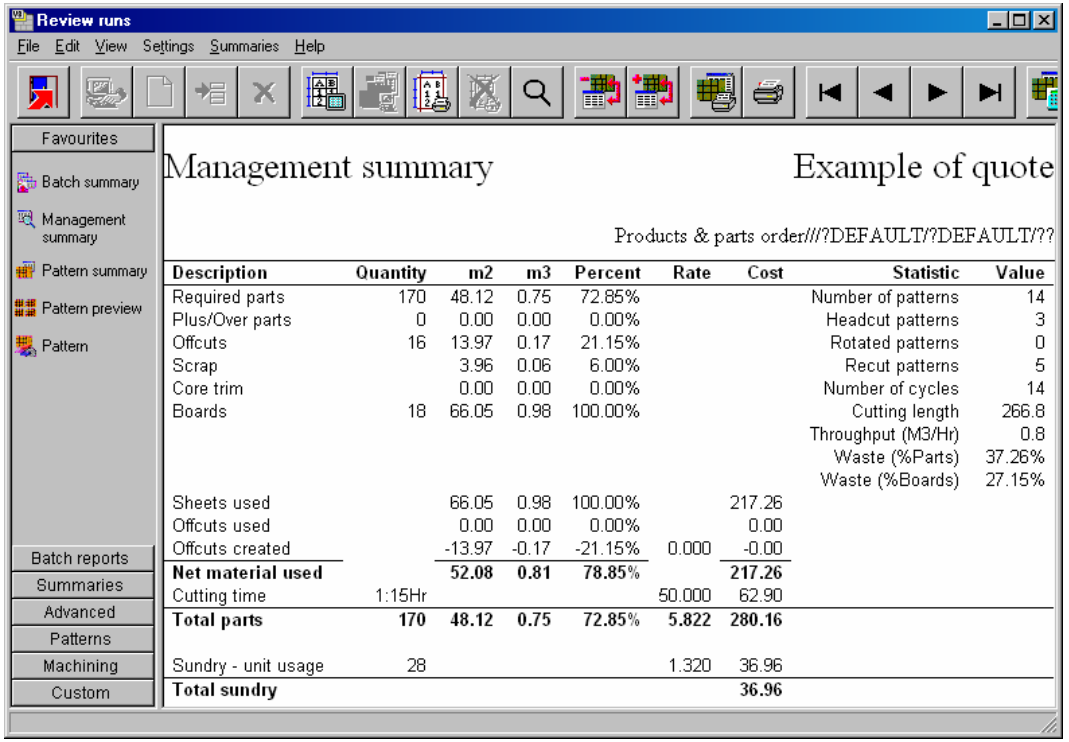
At optimisation the part list is converted to a cutting list which contains the sizes for cutting.

For example, if the part list contains finished sizes and parts include edging or consist of laminates then the cut size for the core material is different from the finished sizes.

The program automatically calculates the cut sizes and can include extra pieces for the laminates. The result is the Cutting list.

The Cutting list (list of cutting sizes) is then optimised to produce a set of cutting patterns.

Cutting patterns



Description	Quantity	m2	m3	Percent	Rate	Cost	Statistic	Value
Required parts	170	48.12	0.75	72.85%			Number of patterns	14
Plus/Over parts	0	0.00	0.00	0.00%			Headcut patterns	3
Offcuts	16	13.97	0.17	21.15%			Rotated patterns	0
Scrap		3.96	0.06	6.00%			Recut patterns	5
Core trim		0.00	0.00	0.00%			Number of cycles	14
Boards	18	66.05	0.98	100.00%			Cutting length	266.8
							Throughput (M3/Hr)	0.8
							Waste (%Parts)	37.26%
							Waste (%Boards)	27.15%
Sheets used		66.05	0.98	100.00%		217.26		
Offcuts used		0.00	0.00	0.00%		0.00		
Offcuts created		-13.97	-0.17	-21.15%	0.000	-0.00		
Net material used		**52.08**	**0.81**	**78.85%**		**217.26**		
Cutting time	1:15Hr				50.000	62.90		
Total parts	**170**	**48.12**	**0.75**	**72.85%**	**5.822**	**280.16**		
Sundry - unit usage	28				1.320	36.96		
Total sundry						**36.96**		

Figure 1-06 Management summary (Review runs)

The Management summary shows the parts produced, yield and overall costs of the optimisation.

At the left is a Stacked ToolBar showing the other summaries, for example, part summary (cost per part), summary of boards used, summary of useful offcuts, a list of boards for loading the saw etc

To see the other summaries use the Stacked ToolBar or the Navigation buttons at the top of the screen.

To see the Cutting patterns, at the Stacked ToolBar:-

- Select: **Patterns**
- Select: **Pattern Preview**

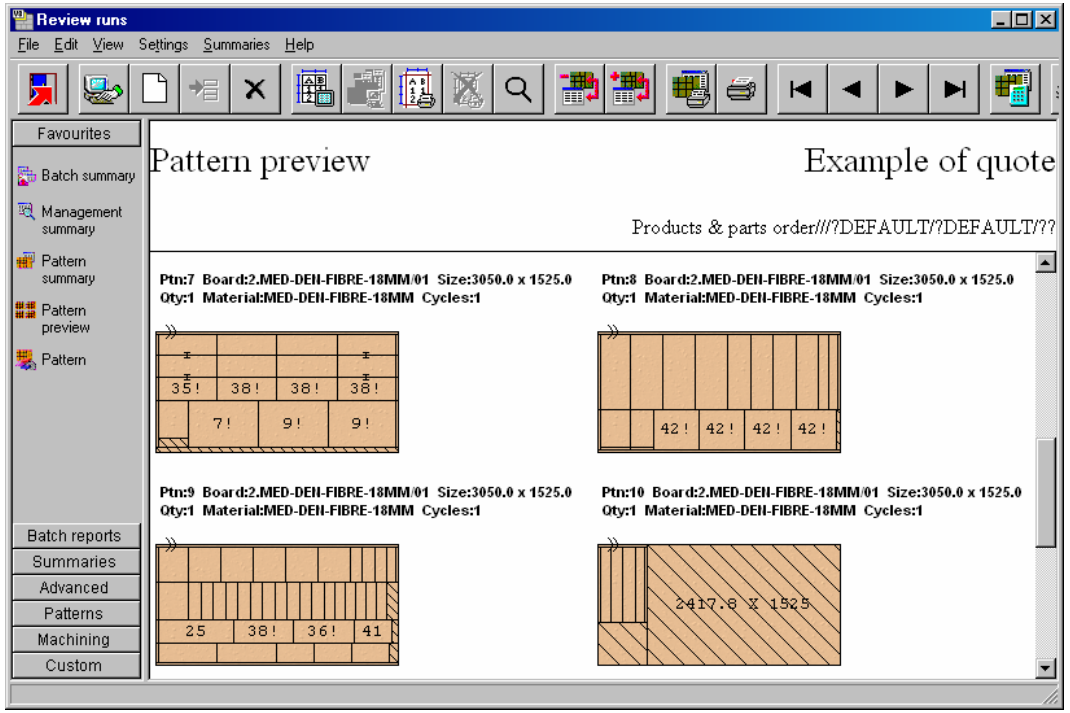


Figure 1-07 Pattern preview

The preview shows a thumbnail picture of all the patterns in the run. Use the slider bar to move through the pages.

The patterns are grouped by material and the cutting or run quantity is shown for each pattern. Offcuts, Recuts and waste areas can have different shading or colours.

Double click on a thumbnail to see the details of each pattern.

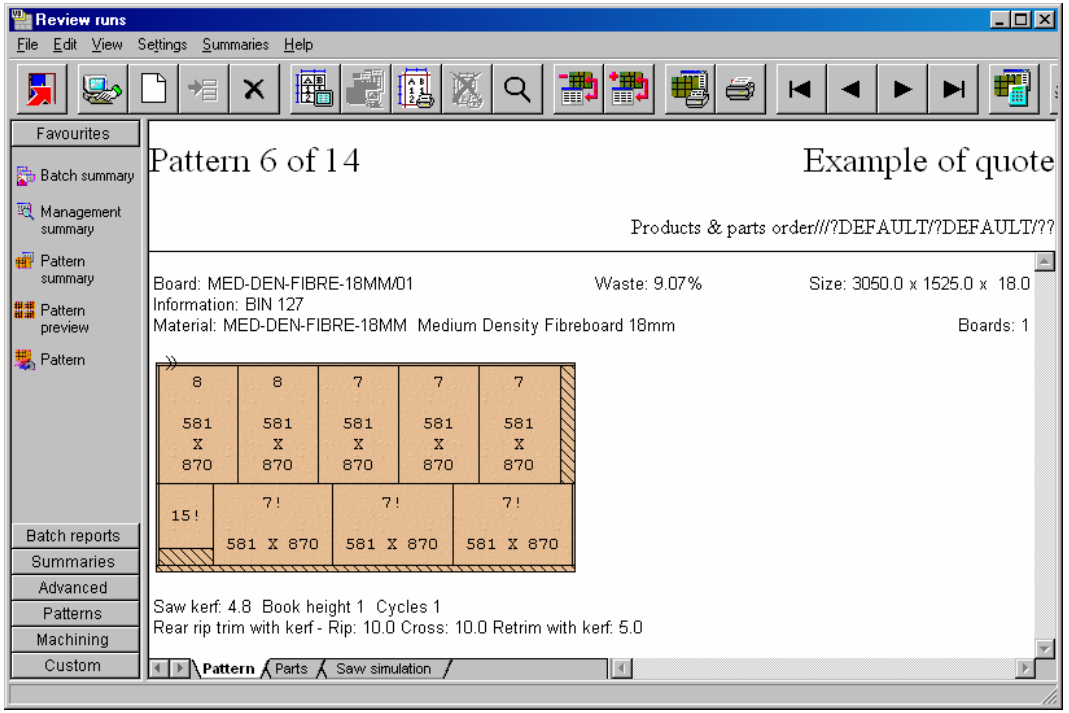


Figure 1-08 Cutting pattern

At the foot of each pattern are tabs for the details of each part cut and a saw simulation and - for some saws - the cutting instructions.

Where the distributor provides a 'saw simulator' program for the saw - the program can link to this to get extra information about cutting times. This ia added to the Management Summary and the Pattern summary.

Note - the parts in each pattern can be coloured or shaded to show re-cut parts, waste, useful offcuts etc. - use the System parameters to set this.

Transfer to saw

After Optimisation the patterns (cutting instructions) are transferred to the 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 - check with your supplier
- Print pattern and cutting instructions for manual saws

Use the *System parameters*, *Saw Parameters* and *Saw transfer parameters* to set up the software for the correct saw.

The data installed with the program includes sets of pre-defined parameters already set up for many different Saw models.

The link between the Computer and the Saw controller is usually a direct cable or network. To transfer patterns (cutting instructions) to the saw, at the Main screen menu:-

- Select: **Machine Interface**

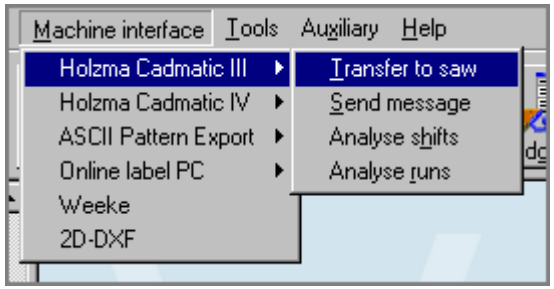


Figure 1-09 Machine interface menu at main screen

The program shows a menu of the various links set up.

- Select the saw required and: ***Transfer to Saw***

Note - if only one link to a saw is set up the program moves directly to the 'Transfer to saw' menu.

The Batch screen is displayed showing the data to transfer.

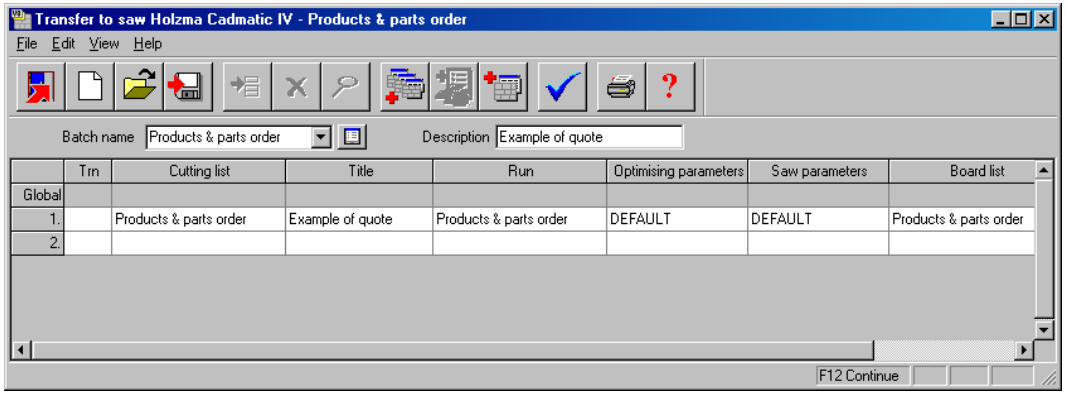


Figure 1-10 Transfer to saw batch screen

The data shown is the data for the current run (or optimisation) but the choice can easily be changed using the batch options.

Select the continue option to confirm the transfer

The program checks the batch and converts the data to the correct format for transfer to the saw. The format of the data and how it is transferred can vary with the different saw and other machinery types.

The Transfer dialog confirms the transfer and shows which materials are cut in which patterns.

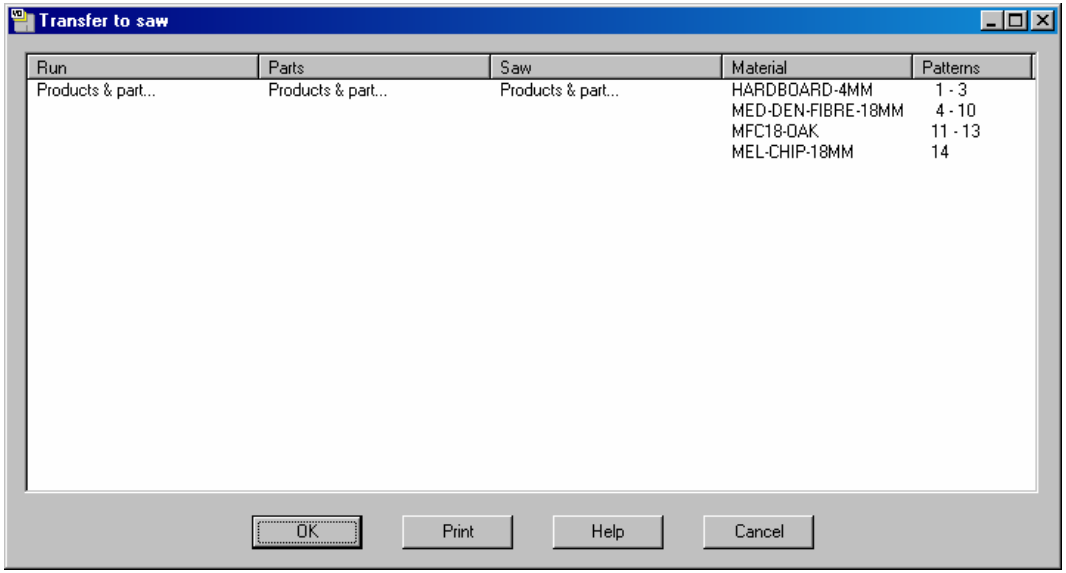


Figure 1-11 Transfer to saw details

Note - patterns are sorted by material ready for cutting at the saw.

- Select Ok to confirm the transfer

The complete order is now at the saw ready for cutting and that is the end of this quick tour

Some final points about Optimising

It can be confusing when you first look at an optimising program because there are some things that usually must be set up first. The basic steps are these:-

- Set up materials and board sizes in the *Board library*
- Create at least one set of *Optimising, Saw parameters* and *Saw Transfer parameters*
- Create a list of parts to cut (or create an Order or list of Product requirements)
- Specify which optimising and saw parameters to use for optimising
- Optimise part list
- Review cutting patterns
- Transfer cutting patters to saw (or machining centre)

Each of the above topics is covered in the following chapters of this guide

Demo data - the program includes a wide range of Demonstration data - use this as a starting point, the board library, parameters and several examples orders, product requirements and part lists are set up ready to Optimise.

Where to Start - this tour began at the *Quote / Orders* screen but you can also start at the *Product requirements* screen or the *Part list* screen.

Product requirements - Sometimes it is simpler to use the alternative PRODUCT REQUIREMENTS screen. This is more convenient for entering a list of products where you are not concerned with managing the order and printing invoices and advice notes etc.

Part list - If not using products start at the *Part list* - type in (or import) the list of sizes and *Optimise* from that point.

Machining centre - cutting instructions can also be sent to a machining centre - in this case the patterns are divided by the machining process - these are often called 'Nested patterns'.

2. Setup (install)

Your supplier may have already set up the software or provided separate instructions. If not follow these instructions to install the software.

To install the program for the first time or to update to a new version of the program from a previous version - check the following steps:-

• Check that the PC meets the minimum specification. The Optimising program does NOT run if the PC is below the minimum specification

• If you are already using a previous Version (e.g. V8.1x, V8.0x, V7.1x, V7.0x) make a backup of the data first. It is important that existing data is safe before you attempt to update to a new version

• If you are already using a previous Version or have received extra modules you may need to upgrade the security key Upgrade the security key before making the new installation. Use the program CHECK.EXE which is on the Distribution disk for the NEW version.

Note - if the new version is already installed and you are just adding modules you can use an option on the Tools menu at the main screen to upgrade the security key.

• Install the new version to a new Directory

Data is NOT compatible between any older version and the latest version so you cannot install the new version to an existing directory - data may be lost.

If you are already using a previous version it is best to run both versions in parallel for a short period until you are confident in using the new version and have tried out all your usual operations, such as optimising, transfer to saw, etc.

• Transfer any data required from the old version to the new

Each version installs with some demonstration data which can be used to test out the new installation and get familiar with the new features - but once the new version is installed and running Ok you may want to transfer some or all of the data from the previous version.

2.1 Checking the minimum specification

The program does NOT run on PC's below the minimum specification. The minimum hardware specification is:-

```
Processor speed 1.5 Ghz
Memory 512 MB
Hard disk 1GB free
CD-ROM or DVD drive
Display 1024x768 or higher resolution
Parallel port or USB port
```

The supported operating systems are:-

```
Windows 2000   Service Pack 4 (with Update Rollout 1)
               Server Service Pack 4 (with Update Rollout 1)
Windows XP     Home Service Pack 2
               Professional Service Pack 2
               Windows XP Professional X64 Edition
Windows 2003   Server (32bit and 64bit editions)
Windows Vista  32bit and 64bit editions
Windows 2008   Server (32bit and 64bit editions)
Windows 7      32bit and 64bit editions
Windows 2008   Server R2 x64 Edition
```

On a Network any workstations (client PC's) that are running the program need to match the Minimum Specification even if the software is installed on and accessed from a server.

Even if the program is NOT installed you can use the program CHECK.EXE to show the current system requirements.

- Insert the Distribution CD-ROM

or

- Move to the directory where the extracted Download is located

(If the CD-ROM automatically starts the Setup program - abandon this - then right click on the CD-ROM icon and select *Explore*)

Use *Windows Explorer* to locate the root directory of the CD-ROM or 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.

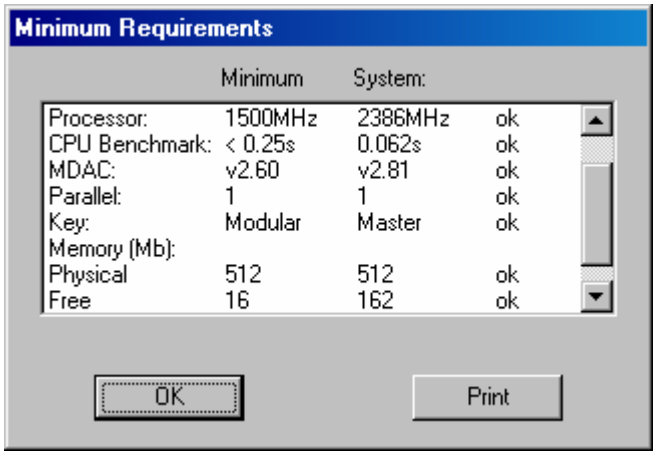


Figure 2-01 Minimum requirements

Ok - indicates that the item matches the minimum requirements

The install also ensures that any general system components required are present and up to date.

2.2 Make a backup of existing data

If you are using a previous version of the program it is best to back up each User directory (and associated files) first so that there is a backup copy of all data in case there is a problem - for example, accidentally installing the new version on top of the old one.

The program uses the System parameters in each User directory to locate the data to back up including the Library data and any other shared data.

Note - take the backup with the previous version

For each User directory:-

- Make sure the System parameter: *Path for backup* is set (*Main screen - Parameters - System parameters*)

- Move to the User directory

- Select: **File - Back up**

The program prompts to confirm the backup:-

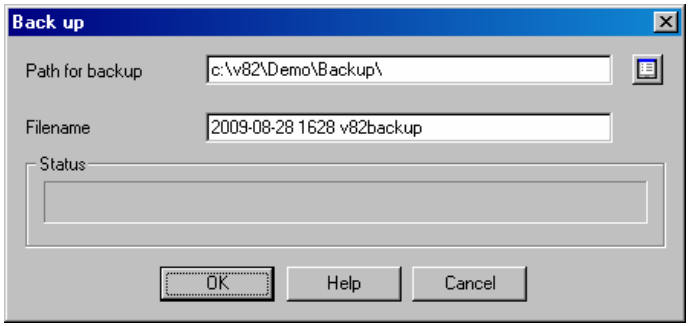


Figure 2-02 Create backup dialog

- Select Ok to confirm.

The backup is created automatically. When the backup is complete the program confirms the backup with a small prompt (the prompt is slightly different for V7 and V8)

- Select Ok to finish

Data not correct - Path. If you get this message this usually indicates that the System parameter: *Path for backup* is not set.

Where there are several users on a Network - each user typically has their own (one or more) user directories and these all need to be backed up - one at a time.

V7.1 Back up

For a V7.1 Back up the data is transferred to a directory and set of sub-directories. The main directory is labelled based on the date, for example:-

```
V7Backup20061215_1512
```

It is a sub-directory of the: *Path for backup*

If the WinZip program is installed on the PC the back up process also offers the opportunity to create a single zip file of the data with the following prompts:-

```
Create Zip file
Delete Intermediate files
```

The resulting zip file is located in the: *Path for backup*

V8.2/V8.1/V8.0 Back up

The Back up process covers the following Paths:-

```
User Directory
Path for Part lists
Path for Library data
Path for Stock libraries
Path for Customer data
```

All files from these directories are backed up except for file extensions. ARX, DLL, EXE, HLP, LNG, ISU. The name of the backup file is based on the date and time and the file stored in the: *Path for backup,* for example: `2009-03-29 1118 V8BACKUP.BKP`

2.3 Upgrading a security key

If the security key needs to be upgraded you should have received a key upgrade file (on a floppy disk, memory stick, or via a download).

An upgrade is usually necessary in the following situations:-

- Moving from one major version to another (e.g. V7.18.3 to V8.2)
- For a new module (e.g. adding PL to V8.2)

Note - If you have moved from a single user key to a Network key - you should have received a new security key - see the section for Network installations.

To upgrade a key do the following:-

At the PC with the security key:-

- Insert the floppy disk or memory stick

or

- Use *Windows Explorer* to copy the upgrade file to a directory on the PC

The upgrade is activated via a program called CHECK.EXE which is part of V8.2

- Insert the Distribution CD-ROM

or

- Move to the directory where the extracted Download is located

(If the CD-ROM automatically starts the Setup program - abandon this - then right click on the CD-ROM icon and select *Explore*). Use *Windows Explorer* to locate the root directory of the CD-ROM or the root directory of the Download.

- Double click on the program: CHECK.EXE

[*Upgrade key only* - If the new version is already installed and you are upgrading the key to change modules then you can upgrade the key using the installed version. 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

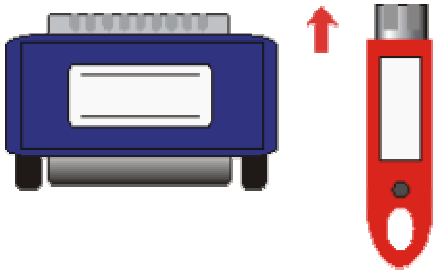
The program proceeds to upgrade the key and usually reports:-

Key upgraded successfully

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

2.4 Install the Optimising program

The program does not run without a security key. These are either single user keys or Network keys. The keys plug into a port on the local PC or Server (Parallel or USB).



It is rare for a key to physically fail so if the program does not run check that the key is in the correct port and is firmly located in the socket.

Look after the key. It gives access to a working system so the replacement cost is high. Insure the key to the full purchase price of the system.

Handling the security key - While it is quite rare for keys to be damaged just by being handled note the following points - especially if the key is handled a lot. If possible turn off the computer and any other equipment attached to the key before moving the key. Before moving any equipment attached to the key, such as a printer, external disk drive, tape backup etc., make sure that the equipment is turned off. Prevent any damage from Static Electricity by grounding yourself before touching a key, for example, by touching a stationery object such as a desk or radiator. If the key is being moved around frequently it is best to store it in an anti-static bag. The keys should be stored in the temperature range -40 to +70 Degrees Centigrade (Deg. C.). The operating temperature for the key is 0 to +40 Deg. C.

The Network keys also needs some additional software to be installed to manage the network licences.

The Network key also supports operation on Windows Terminal Server.

There are different steps for installing each type of key.

- **Single User key - see section 2.4.1**
- **Network key - see section 2.4.2**
- **Windows Terminal Server - see section 2.4.3**

Download version - if using a download version extract the download to a directory on the PC (or Server) and then follow the same instructions as for the CD-ROM as shown below.

2.4.1 Single user key - Install

- Insert the security key in a port on the computer
- Close down any applications that are currently running
- Insert the CD-ROM

Note - if the setup program does not run automatically - navigate to the root directory of the CD-ROM and double click on the program: setup.exe

A series of dialog screens take you through the install procedure. Follow the instructions carefully.

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

2.4.2 Network key - Install

Check with the Network Administrator before installing the network key, network key software, and Optimising software

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

- Insert the CD-ROM

If the V8 install process starts running - cancel this - then look at the CD-ROM contents by Right clicking on the CD-ROM icon and choosing. Explore. The Network key software is in the directory ..\NETWORKS\NETKEY

Note - if using a Download version - the set of directories is the same as the CD-ROM

- Create a directory to contain the Network key software

Use Windows Explorer to set up a directory on the PC 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 CD-ROM to PC or server

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

Note - 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 PC 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 PC or server.

Set up the Network key Licence Manager on the PC 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

If you are familiar with the Licence manager and have installed it before - you can choose the same set up options - the LMSETUP program prompts with the various choices.

If you are not familiar with the Licence Manager it is best to install it as an Application and put a link to it in the Startup folder - this allows the Licence Manager to be easily stopped and started and ensures that it starts automatically. The LMSETUP program prompts for these options and sets up the PC or server. (These choices can be changed later if necessary by running LMSETUP again).

- When installing the Licence Manager under Windows 7 the Licence Manager setup program (lmsetup) must be run under a compatibility mode (Vista Service pack 2).

Install the Network key device driver

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

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

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

Licence Manager Install - Notes

- Installing the Licence Manager as a service is advisable if the PC hosting the key is not accessible (for example, a server located in a different office); in this case the Licence Manager runs as soon as the PC starts.

- 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

Install the Optimising program

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.

- Insert the CD-ROM (at the Server or at a Workstation)

Note - if the setup program does not run automatically - navigate to the root directory of the CD-ROM 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 to install the software to.

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

Program files
System files
TEC Cabinet Library
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.

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 that the workstation can access the server.

- Insert the CD-ROM (at the Workstation)

Note - if the setup program does not run automatically - navigate to the root directory of the CD-ROM 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
TEC Cabinet Libary
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.

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

2.4.3 Network key - Install for Windows Terminal Server

Check with the Network Administrator before installing the optimising program on a Windows Terminal Server

Install Network key and Network licence manager

Follow the instructions in the section 2.42. to install the Network key and Network key software, then follow the section below to install the Optimising program.

Install the Optimising program

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.

- Insert the CD-ROM (at the Server)

Note - if the setup program automatically starts to run this causes an error with Windows Terminal Server. Cancel the error dialog and cancel the setup.

- Navigate to the root directory on the CD-ROM / downloaded distribution
- Double click on the program wtssetup.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 to install the software to.

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

```
Program files
System files
TEC Cabinet Library
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 using a unique user name.

Note: the same user name will be used to run V82 in the future

- Insert the CD-ROM (at the Server)

Note - if the setup program automatically starts to run this causes an error with Windows Terminal Server. Cancel the error dialog and cancel the setup.

- Navigate to the root directory on the CD-ROM / downloaded distribution
- Double click on the program wtssetup.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 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
TEC Cabinet Library
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 contains shortcuts to the Optimising Program and other utilities.

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

2.5 Running the Optimising software on a Network

The Optimising program does not run unless the Network key is plugged into a computer on the Network and the Network key software is loaded and running on the same computer (usually a Network Server). If the network is down this is often a cause of the software not running.

(1) Set the SHARE option

For use on a Network the Optimising program should be run with the SHARE option set. The best method is to add this option to the 'Target' line in the Desktop shortcut **at each Workstation,** for example:-

Target: `N:\V8x\V8x.EXE SHARE`

Where V8x is the program name. e.g. V82.exe. The option is automatically included whenever the Optimising program runs.

Remember to do this at all the Workstations running the Optimising program

(2) Directory for program control files

The Optimising program reads and writes to control files in the Program directory (where the full optimising program is installed) this can cause problems where access to the Program directory (on the Server) is restricted. In this case set up a different directory for the control files and add the directory location to the SHARE command, for example:-

Target: `N:\V8x\V8x.EXE SHARE=N:\V8shared`

Where V8x is the program name. e.g. V82.exe

Note - the path must be placed inside quotes if the path includes spaces. Make sure that the shared path is available when the program is running. If the path is not available the program uses the Program directory for control files.

Remember to do this at all the Workstations running the Optimising program

(3) Searching for the Network key first

When the Optimising program runs it usually looks for a security key on the Workstation and then looks for a Network key. The search for a key at the Workstation is very fast so this is generally

not a problem. However in some cases it is useful to force the program to look for the network key first. To do this run the program with the command line option 'NET', for example:-

Target: `N:\V8x\V8x.EXE NET`

This can be combined with other command line options such as SHARE if necessary, for example:-

Target: `N:\V8x\V8x.EXE NET SHARE=N:\V8shared`

Where V8x is the program name. e.g. V82.exe

Note - This NET option can be useful where a Workstation is normally used for limited operation of the Optimising program such as 'Parts Only' or 'CadPlan' and has a local single user security key to control this but the Workstation is also sometimes required to access to full optimising program over the Network.

Remember to do this at all the Workstations running the Optimising program

(4) Running the Optimising program on a Network

To run the program (from a Workstation):-

Click on the V8 shortcut on the Workstation desktop to run the Optimising program (or select from the Program group on the Windows Start menu).

Note - before the Network system is used extensively make sure that the Workstation shortcuts, User directories, Libraries and other paths are all set correctly and that a reasonable set of trial runs including transfer of data to the saw (where relevant) are completed.

(5) Some features of Network operation

The Optimising program operation is generally the same for a single user and Network use but there are a few features to be aware of when using the software on a network with multiple users.

Data or Directories not available - If another user is accessing a User directory it is marked as locked (red traffic light symbol) at the User Directory screen (Main screen - File - User Directories). The directory is normally unlocked when the user has finished. However, sometimes the directory is not automatically unlocked; this can happen if the user switches off the computer without leaving the program; use the Unlock option to unlock the directory.

Note - do not unlock a directory that is in use as this could cause a loss of data.

Resolving and avoiding conflicts with the data - Sometimes when editing a record in a shared library the program reports that the Record in not available. This is usually because the record is in use by another user. Wait for a few moments and try the operation again.

Do not use Stand alone copies of the Optimising Program if there is a copy installed on the Server. Make sure that users who use the Network version of the Optimising program are not accidentally using alternative copies of the program on their Workstation. This can easily happen and lead to data being mixed up or lost.

Different users on the network must have their own data directories. You may get file conflicts and errors if two users share the same data directory *at the same time*.

Note - when the SHARE option is set no user can change the System parameter: Path for data. In this mode this path cannot be changed because the user may accidentally set the path to another user's data and potentially corrupt their data.

Control of editing and deleting - In libraries if two users attempt to delete the same record only one set of deletions will take place. For the second user who tries to delete the code the program behaves as though the code has already been deleted.

It is usually best to try and control operations that remove, delete, or update items so that only one user is attempting this during a session. This helps to avoid confusing other users when items 'disappear' unexpectedly. Users need to co-operate in the maintenance of libraries and need to clearly know when and what they can edit or delete.

(6) Choosing where Optimising program data is stored on a Network

There are many different ways of using the Optimising program over a Network and it also depends on the type of Network and number of users.

Typically it is best to store the shared or common data, such as libraries, on the server as this has to be accessed by all users and needs to be up to date and easy to maintain. Each user typically then has their own set of User directories for Part lists and parameter settings etc, stored either on the local PC or on the server.

Use the system parameters to set up the layout of the data.

```
Path for Data
Path for Library data
```

```
Path for Import data
Path for Export data
Path for accounts
Path for customer data
Path for stock libraries
Path for backup
Path for Part lists
```

For each user directory check through the parameters and adjust them to match the layout required on the Network. The two most important are 'Path for Data' and 'Path for Library data'. *Make sure these point to the correct locations on the Network Server.*

Note - often the 'Path for Data' is the same as the User directory

Example of a set of paths for this Network layout (Server N: Workstations C:).

```
Network server
N:\LIBS    - libraries
N:\V8x     - program directory
N:\NETKEY  - key software
Network Security key

N:\V8x\USER1  - user directory 1
   Path for data N:\V8x\USER1
   Path for library data N:\LIBS

N:\V8x\USER2  - user directory 2
   Path for data N:\V8x\USER2
   Path for library data N:\LIBS

Workstation 1
Desktop shortcut to N:\V8x\V8x.EXE

Workstation 2
Desktop shortcut to N:\V8x\V8x.EXE
```

Where V8x is the program name. e.g. V82.exe

(7) Customised setup for Networks

Other custom options are available via the LMSETUP program - try this first before using the NETHASP.INI configuration file.

The configuration file NETHASP.INI is on the CD-ROM. This file can be used for specific customisations. The file is fully documented but it is best to refer to your supplier before attempting a custom installation.

Custom installations are usually only required in a limited number of cases with more complex network setups.

(8) Network tools

There are extra help files and utilities for simple checking of the Network key operation in the NETWORKS directory. These are on the CD as they are not copied with the basic Network Key files.

aksmon32_setup.exe - can be used to install a monitor program which shows whether the Workstations can see the Licence manager. There is an accompanying help file.

ndiag32.exe - creates a file ndiag32.txt with details of the local computer setup. This program should be copied to the computer under test and run from that computer.

Nettest.exe tests whether the Optimising software can see the Licence manager. The screen shows two panes - the upper pane shows the test results and the lower pane reports any errors. Press the START button to begin or repeat the test. If the Licence manager is not found this is reported as an error in the lower pane and the Start key is disabled.

If you cannot easily resolve network key problems by checking the procedures described in this document please contact your supplier of the Optimising program. Most suppliers have good experience of installing and running the Optimising program over a variety of different Networks.

Set Program files to read only - At the server, for safety, (after setup) set the attributes of the individual program files (EXE/DLL/HLP) in the Program directory to 'Read only'.

Uninstall - Use Add/Remove or click on the Uninstall shortcut to Uninstall the software. At the server this uninstalls the 'Program files'. At the Workstation with a 'client' install Uninstall removes the 'system files' at the workstation and does not affect the server.

IF YOU CANNOT EASILY RESOLVE NETWORK KEY PROBLEMS - PLEASE CONTACT YOUR SUPPLIER OF THE OPTIMISING PROGRAM

2.6 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 converted.

Always use this option to move data between versions (e.g. V8.03 to V8.10 or V7.18.3 to V8.10, V8.17 to V8.21)

To move data from an older version to a later one, e.g. V8.18 to V8.21, 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:\V819\Demo\User 1 and the new data needs to be in c:\v821\Demo\User 1.

At the main screen of the NEW version:-

- Select: **Tools - Copy / Convert user directory**

Use the Browse button to select the user directory to convert. The screen shows the directory chosen.

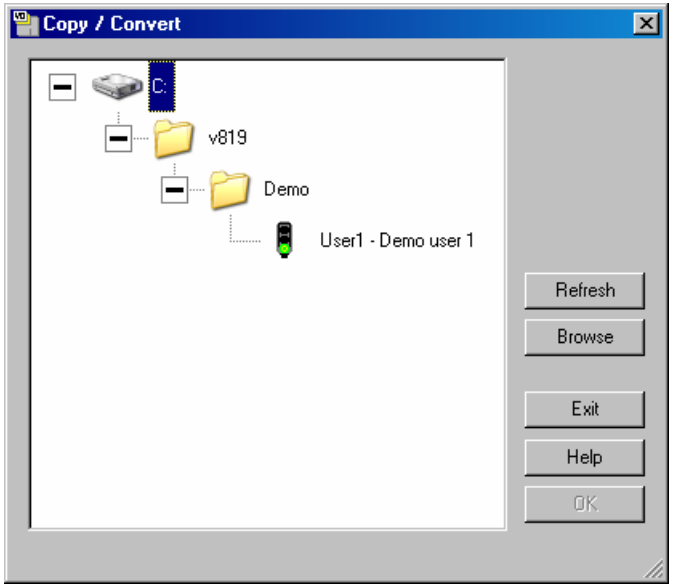


Figure 2-03 Copy / Convert dialog

Select the directory.

- Select Ok to convert

The program prompts with the sub directories to convert.

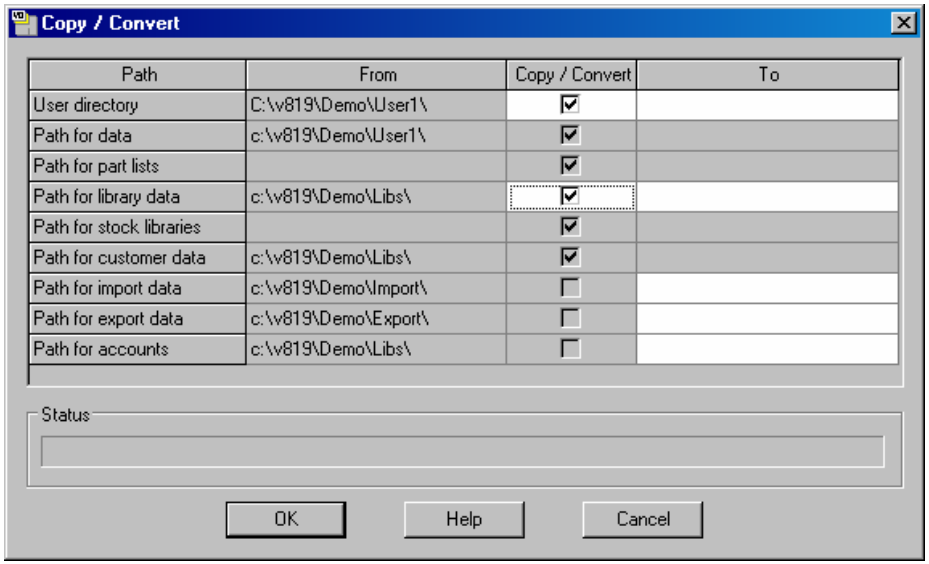


Figure 2-03a Copy / Convert sub directories

Select the directories to convert. This is typically the user directory and library data.

- Select Ok to convert

Some data such as library data is often shared between users so the library data may not need to be converted if it was converted by a previous Copy / convert.

2.7 Uninstall

Single user PC

To uninstall after Setup use the Uninstall short cut which is located in the program folder.

At the Windows Desktop select:-

```
Start
   All programs
     Modular Vx.xx
       Uninstall
```

The name of the program e.g. *Modular Vx.xx i*s the name chosen during Setup.

Follow the Uninstall instructions carefully.

Network server installation

For a Server the Setup program does not create a Windows *Program folder* so it cannot be removed by an Uninstall option. Instead do the following:-

If installed at the Server console use the Windows 'Add or Remove programs' option at the Server to uninstall (*Start - Control panel - Add or Remove programs*)

If installed at the server but via a Workstation use the 'Add or Remove programs' option at the Workstation (*Start - Control panel - Add or Remove programs*).

Follow the 'Add or Remove programs' 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*)

2.8 Program does not run

If the program does not run there are 4 main causes:-

- Security key is missing or not correctly inserted or cannot be found by the program
- System security is not correct (usually only the Board library does not run)
- Extra configuration file required for some Networks
- Language modules are missing

Security key missing

The program cannot run without the security key

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

For a Network key:--

- Make sure the Network is up

- Make sure the Licence Manager is running
- Have you run out of licences (too many users)

Other problems

The program requires that various general system components, such as 'Microsoft Data Access Components' (MDAC), are installed and up to date. This is the reason for specifying a minimum Operating system for running the Optimising program.

Installing V8 upgrades any general system components as part of the install (if necessary). In rare cases the install may ask for other Microsoft licences for system components to be accepted during Install. These must be accepted for the install to complete successfully.

Make sure when installing a client PC (on a server) that the V8 'client install' is completed for each PC that is running the program. This process is needed so that the general system components and other optimising program software items are installed and up to date on the client PC.

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

Language modules are missing

If messages in English appears 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 messsage(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.

3. Quotes, Orders, Products (PQ)

A versatile data entry screen for easy and accurate entry of estimate or order details. Flexible form design provides detailed quotations and all the order documents from order acknowledgement through to despatch note.

From the order entry the full details of the parts required are worked out automatically and the order is optimised to produce a set of cutting patterns and information for the saw and machining centre. At the main screen:-

- Select: **File - Quotes / orders**

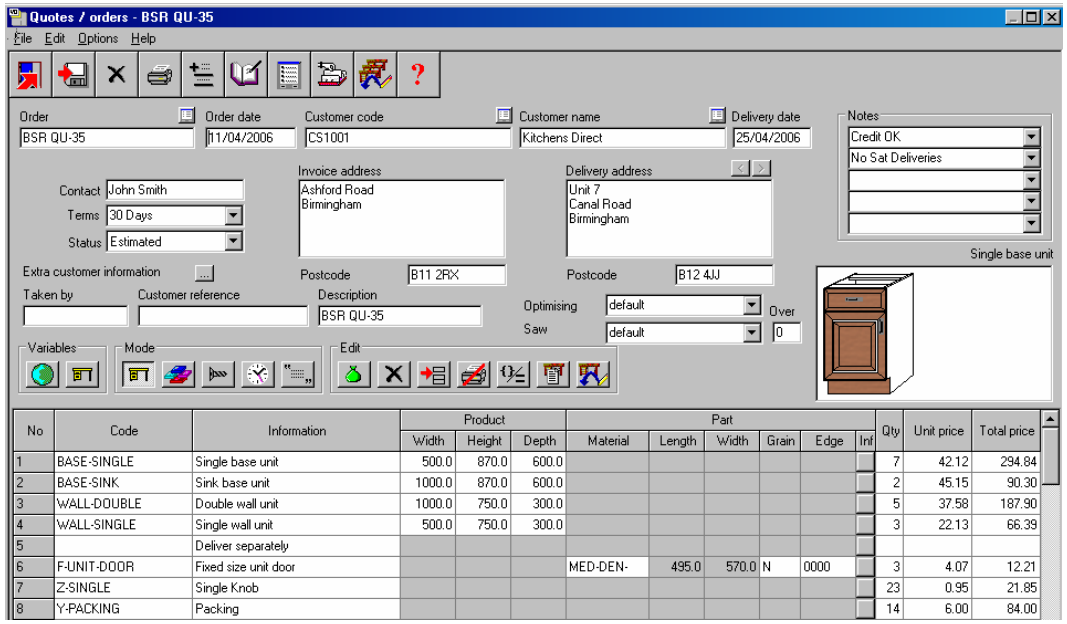


Figure 3-01 Orders screen

At the top of the screen are the customer details, such as, Company name, Delivery address, contact name etc. The lower grid shows the details of the products in the order.

To add a product to the order use the products button to select a product.

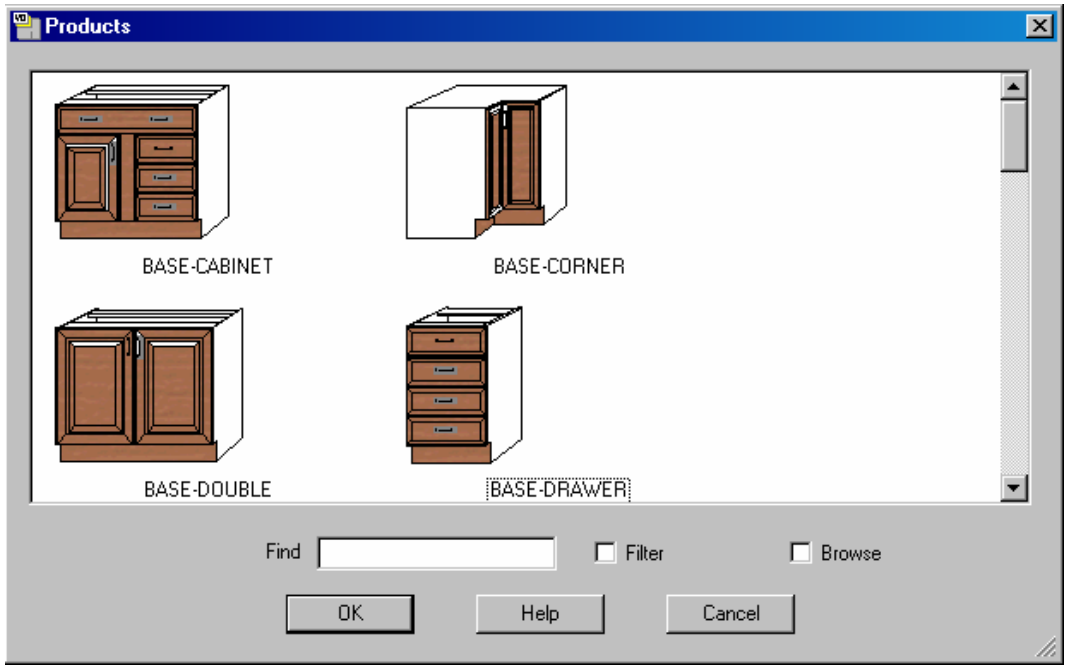


Figure 3-02 Select products dialog

Enter the quantity and any other details for the product.

Custom products - For custom products you are prompted for the customised details when you enter the product, for example, overall width, depth or height, finish, or material.

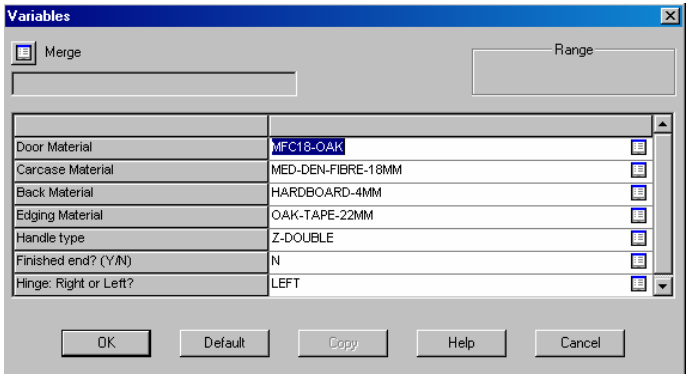


Figure 3-03 Enter variable values dialog

Merge - use sets of answers (called 'Answer tables') - this can be a very quick and accurate way of defining custom products.

Parts and other items - order can also include miscellaneous items, fittings (hardware), and parts.

Optimising (estimating)

For an accurate estimate (or to create the data ready for cutting) - optimise the order.

- First set the optimising instructions for the order.

These are the parameter lists that describe the saw settings and type of patterns required - trims, saw kerf, single head cuts, no recuts and so on. To do this enter the parameter list names in the boxes at the top of the grid showing the products.

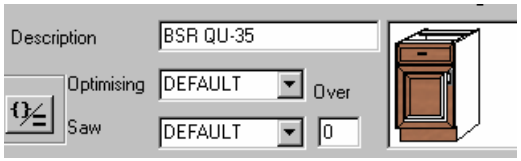


Figure 3-04 Optimising instructions at the Orders screen

To optimise the order select the ESTIMATE button at the top of the screen.

The program proceeds to optimise the data and estimate the requirements and cost. When optimising is complete select the Totals button to see the estimate totals

The totals are shown in the totals dialog.

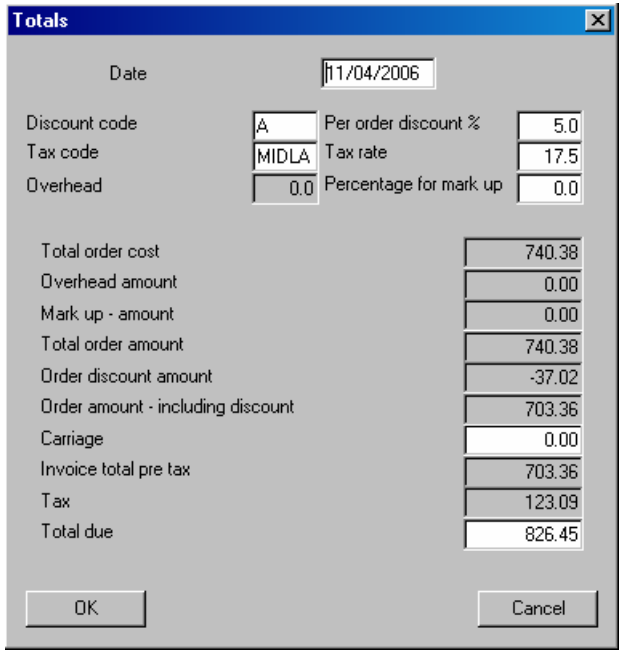
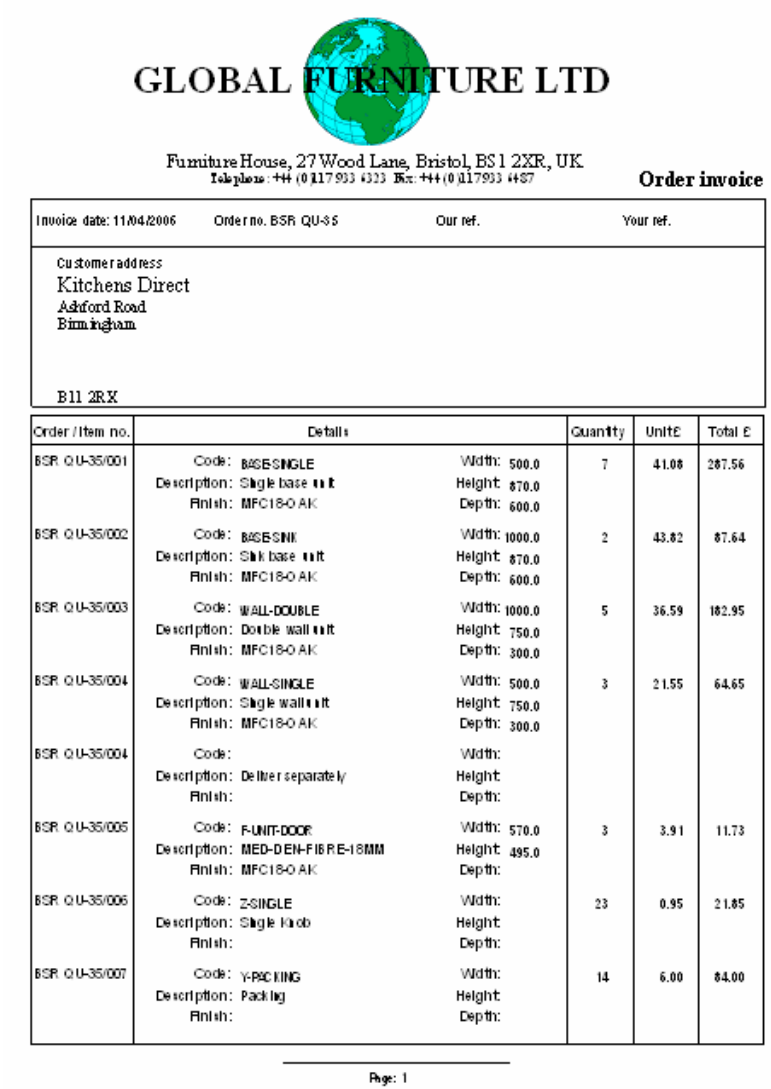


Figure 3-05 Totals at Orders screen

There are several options and parameters to customise the cost calculation; how the discount is applied; whether there is a mark up etc.

After optimising the order - details can be printed on a variety of documents such as an Invoice.



GLOBAL FURNITURE LTD

Furniture House, 27 Wood Lane, Bristol, BS1 2XR, UK
Telephone: +44 (0)117 903 4323 Fax: +44 (0)117 903 4487

Order invoice

Invoice date: 11/04/2006 Order no. BSR QU-35 Our ref. Your ref.

Customer address
Kitchens Direct
Ashford Road
Birmingham

B11 2RX

Order / Item no.	Details			Quantity	Unit£	Total £
BSR QU-35/001	Code: BASESINGLE Description: Single base unit Finish: MFC18-OAK	Width: 500.0 Height: 870.0 Depth: 600.0		7	41.08	287.56
BSR QU-35/002	Code: BASESINK Description: Sink base unit Finish: MFC18-OAK	Width: 1000.0 Height: 870.0 Depth: 600.0		2	43.82	87.64
BSR QU-35/003	Code: WALL-DOUBLE Description: Double wall unit Finish: MFC18-OAK	Width: 1000.0 Height: 750.0 Depth: 300.0		5	36.59	182.95
BSR QU-35/004	Code: WALL-SINGLE Description: Single wall unit Finish: MFC18-OAK	Width: 500.0 Height: 750.0 Depth: 300.0		3	21.55	64.65
BSR QU-35/004	Code: Description: Deliver separately Finish:	Width: Height: Depth:				
BSR QU-35/005	Code: F-UNIT-DOOR Description: MED-DEN-FIBRE-18MM Finish: MFC18-OAK	Width: 570.0 Height: 495.0 Depth:		3	3.91	11.73
BSR QU-35/006	Code: Z-SINGLE Description: Single knob Finish:	Width: Height: Depth:		23	0.95	21.85
BSR QU-35/007	Code: Y-PACKING Description: Packing Finish:	Width: Height: Depth:		14	6.00	84.00

Page: 1

Figure 3-06 Example of printed invoice

Prices - You can set up the estimating to work with different methods of pricing; Cost Plus; Catalog Price or a combination of the two. There are also options to set up discounts, tax rates, and many typical features of order processing.

Customer database

Use the Customer database to maintain details for each customer and contact.

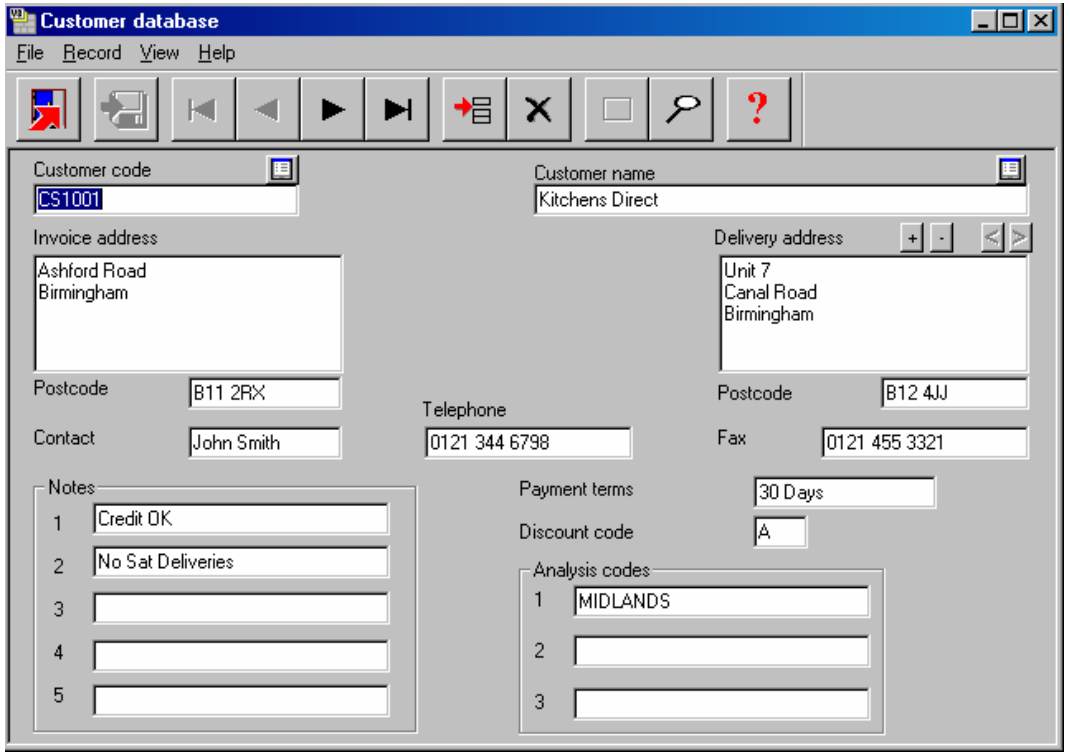


Figure 3-07 Customer database

The data includes name, address, contact details and delivery and invoice addresses. There are several fields for custom notes and analysis.

This is an Access (mdb) database so data is easily available to other software.

Products

Use the product library to define the bill of materials for standard and parametric products based on parts and fittings held in the part library; this can also include product drawings, elevations, plans and details of assembly or other operations. At the main screen:-

- Select: **Libraries - Product library**

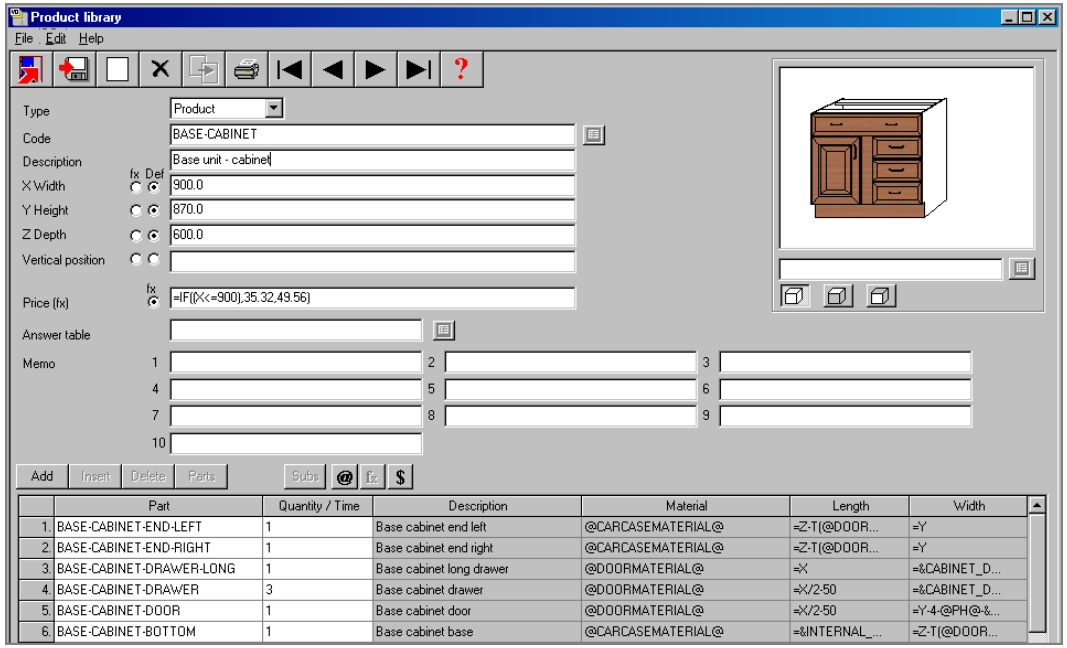


Figure 3-08 Product library

The screen shows the details of a single product. The product details (overall length, width, depth etc.) are shown at the top and the parts that make up the product are listed below.

To define a new product:-

- Select the New option on the ToolBar

or

- Select: **File - New***

 use List button as the right of the *Code* field to select an existing product.

The product details are the overall dimensions for the products, costing and prices and the list of parts (and other items) that the product contains.
.
To create or change a product drawing click on the drawing area or choose the option 'Drawing library'. See the section on *Drawing library* for details.

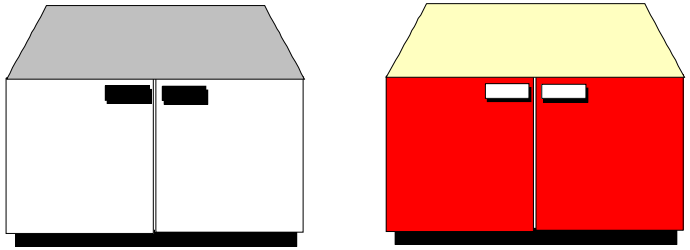
Custom products

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@.



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		

There are several examples of custom products in the demo data provided with the system.

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 it's 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, @THK@. Where THK stands for a material thickness. In a simple case the length of the door may vary if the thickness of the parts that it abuts varies.

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

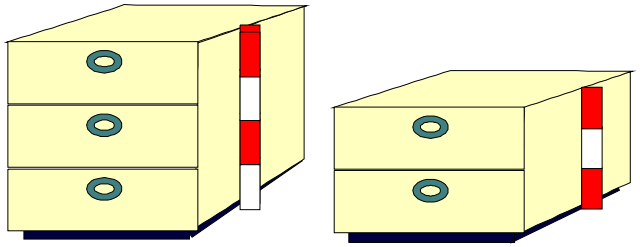
The product requirements calculation replaces the variable @THK@ by the value you enter at the optimise products screen.

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:-



```
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)

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)

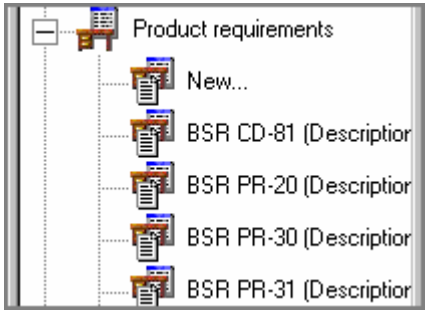
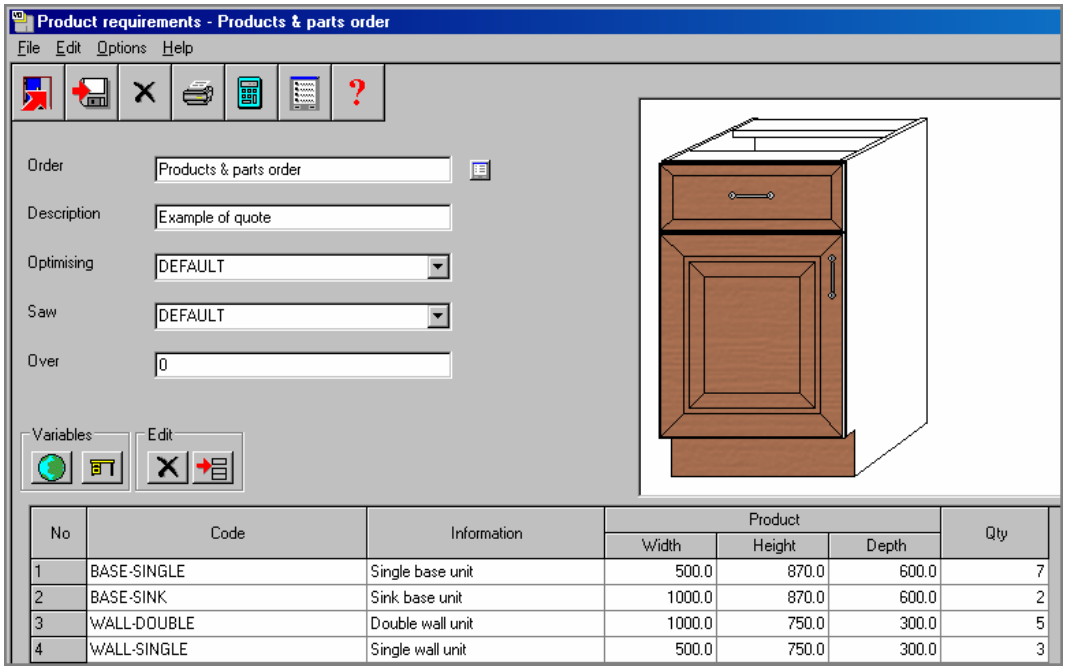


Figure 3-09 File tree at main screen showing product requirement lists

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.

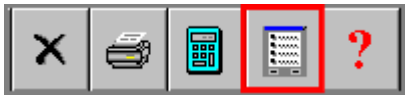


No	Code	Information	Product			Qty
			Width	Height	Depth	
1	BASE-SINGLE	Single base unit	500.0	870.0	600.0	7
2	BASE-SINK	Sink base unit	1000.0	870.0	600.0	2
3	WALL-DOUBLE	Double wall unit	1000.0	750.0	300.0	5
4	WALL-SINGLE	Single wall unit	500.0	750.0	300.0	3

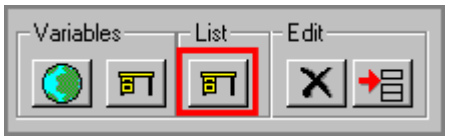
Figure 3-10 Product requirements

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.

Select the list button at the toolbar at the top of the screen to load an existing list



- Select the products button in the List section on the toolbar in the middle of the screen to add products to the requirements list.



- Enter the quantity and other details of products that are added to the requirement list.

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).

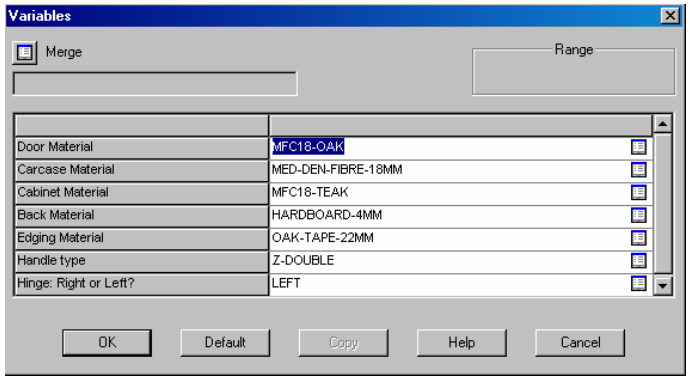


Figure 3-11 Enter variable values dialog

The 'Merge' 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. .Before Optimising make sure the Optimising instructions are set. These are the names of the lists (parameters) to use for optimising and for the saw.

Set these by entering the Optimising and Saw parameter list names in the boxes at the top of the grid.

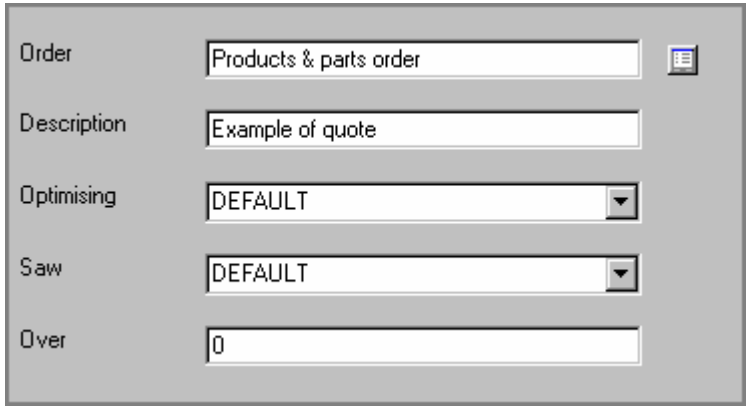
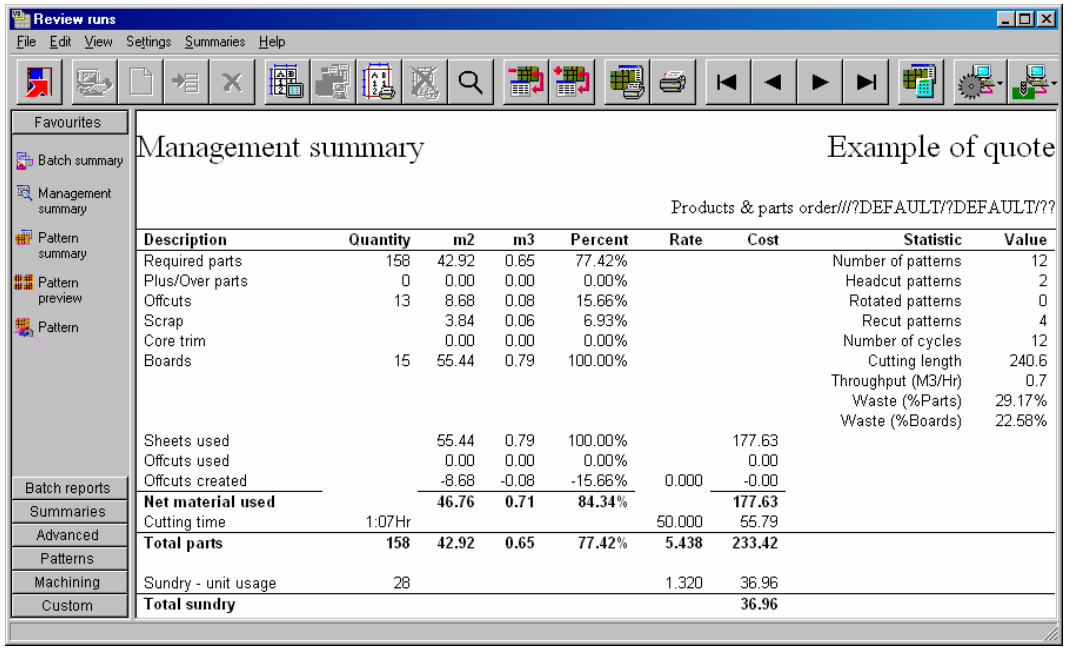


Figure 3-12 Optimising defaults at Product requirements screen

Select the Optimise button to create cutting patterns. When optimisation is complete the screen displays the *Management summary*



Description	Quantity	m2	m3	Percent	Rate	Cost	Statistic	Value
Required parts	158	42.92	0.65	77.42%			Number of patterns	12
Plus/Over parts	0	0.00	0.00	0.00%			Headcut patterns	2
Offcuts	13	8.68	0.08	15.66%			Rotated patterns	0
Scrap		3.84	0.06	6.93%			Recut patterns	4
Core trim		0.00	0.00	0.00%			Number of cycles	12
Boards	15	55.44	0.79	100.00%			Cutting length	240.6
							Throughput (M3/Hr)	0.7
							Waste (%Parts)	29.17%
							Waste (%Boards)	22.58%
Sheets used		55.44	0.79	100.00%		177.63		
Offcuts used		0.00	0.00	0.00%		0.00		
Offcuts created		-8.68	-0.08	-15.66%	0.000	-0.00		
Net material used		**46.76**	**0.71**	**84.34%**		**177.63**		
Cutting time	1:07Hr				50.000	55.79		
Total parts	**158**	**42.92**	**0.65**	**77.42%**	**5.438**	**233.42**		
Sundry - unit usage	28				1.320	36.96		
Total sundry						**36.96**		

Figure 3-13 Management summary

You can now review the patterns and summaries and send data to the saw in the usual way *(see section on Review runs).*

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.

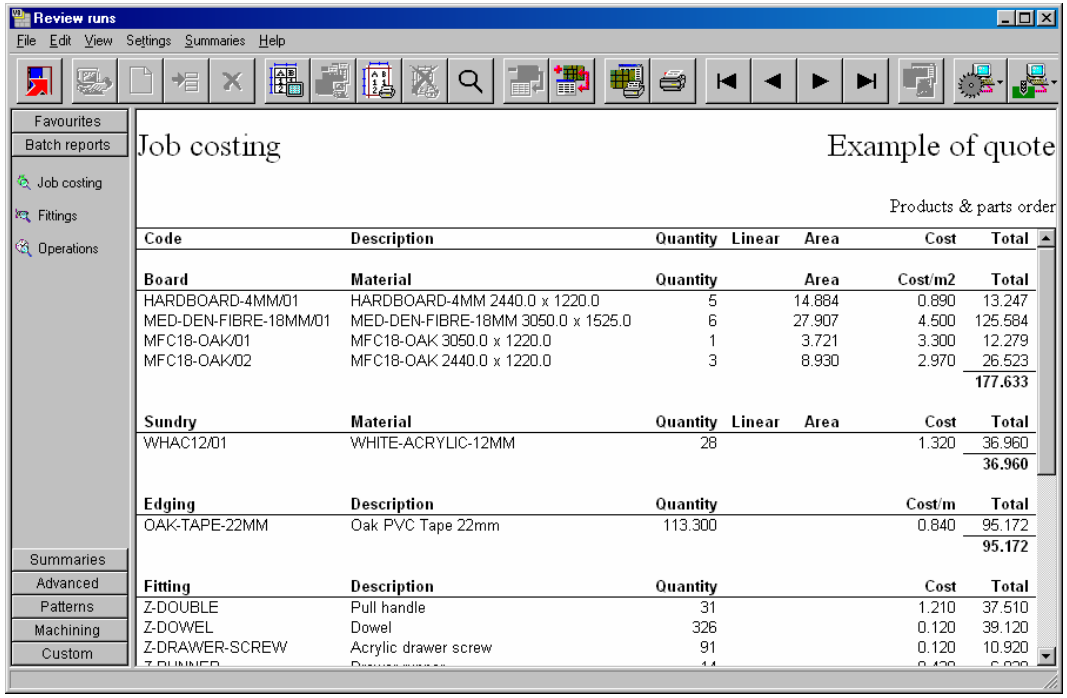


Figure 3-14 Job costing

Simple job costing - you can include as few or as many items in the job costing as you require. At its simplest the job costing can just show the cost in terms of material.

Job costing set up

For an accurate job costing report make sure that all your costs (such as material costs, machine times, and costs) are set up with the 'Machine rate parameters'.

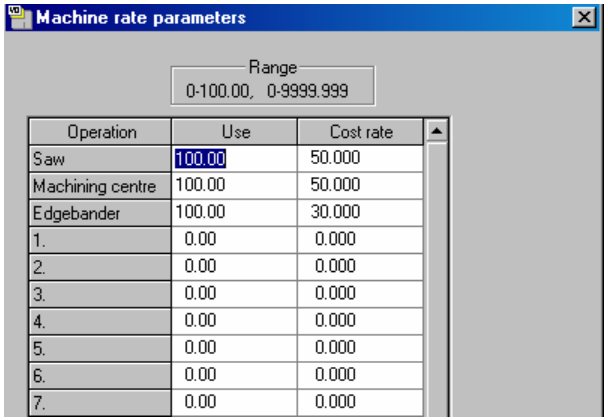


Figure 3-15 Machine rate parameters

You also need to make sure that saw and machining parameters are correctly set, that any fittings and operations for products are included in each product definition, and the edging library details are set.

4. Part library (PL)

The Part library lets you maintain a collection of regularly used parts and part drawings. These parts can be included in part lists and (with Label and Form design) provides printing of labels for parts including bar codes and pictures. At the main screen:-

- Select: **Libraries - Part library**

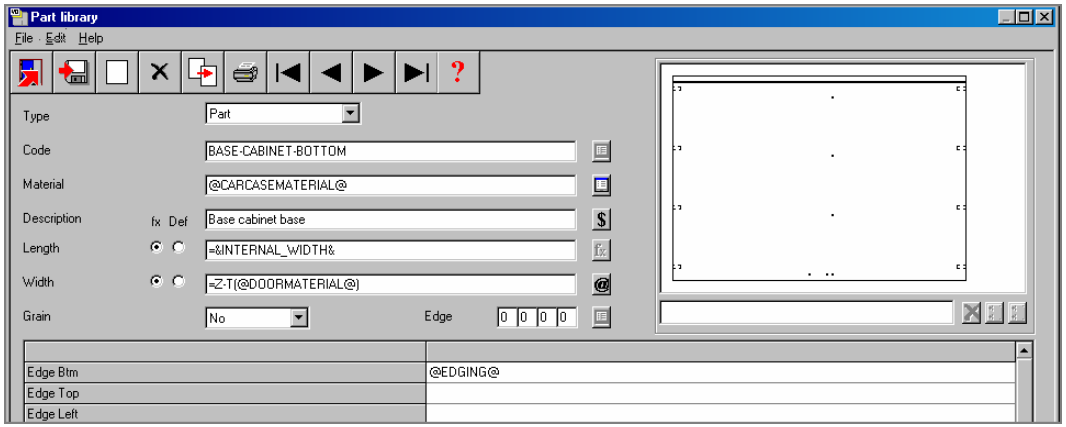


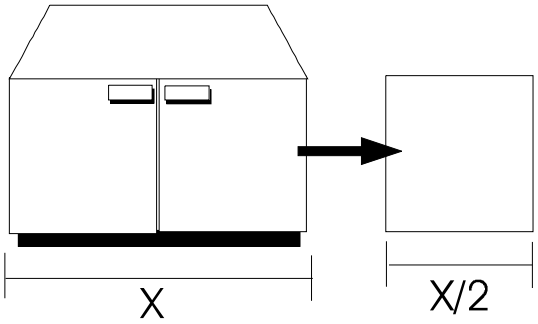
Figure 4-01 Part library

Note - the part library is an essential element when using the product library as each product is defined in terms of the parts that are used to make the product

At the part library screen you can create new part or view and edit existing parts. To create a part drawing (with machining instructions) click on the drawing area or select the option 'Machining library' - see later section for details.

Custom parts

When working with custom products some of the parts in the library do not have fixed sizes but have a length or width which depend on the overall dimensions of the product. For example the width of a cabinet door may depend on the overall width of the cabinet.



In this case instead of entering a fixed value for the part width e.g. 750mm (20-1/2in) you enter a formula, such as: =X/2. (In practice the formula may be more complicated to allow for extra trimming or offsets etc). The entry in the part library is as follows.

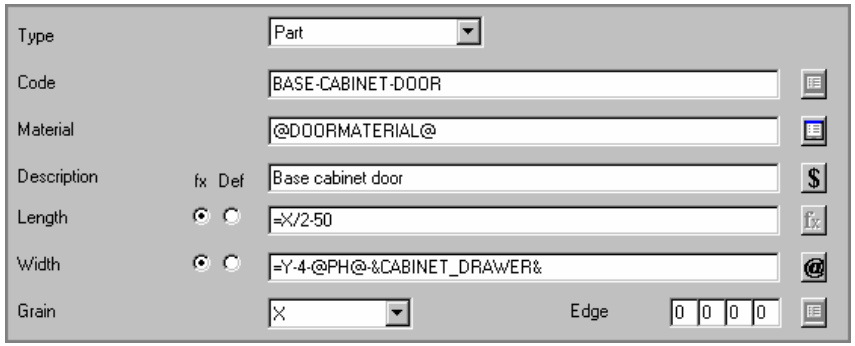


Figure 4-02 Part library - part details

Note how the radio button next to the Width box is checked to indicate that field represents a formula. Do this whenever you enter a formula.

Fittings

You can also use the part library for fittings (hardware).

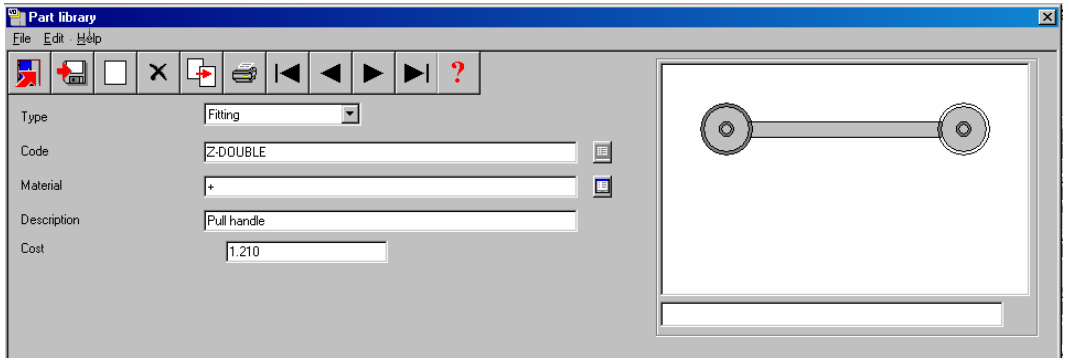


Figure 4-03 Fittings - Part library

The fittings are stored in the Part library along with parts but with a different TYPE setting of Fitting. Each fitting has a unique code.

Less information is required for fittings, for example, the length and width dimensions are not required.

A picture can be included to help identify the fitting.

Labels for parts

Produce labels for parts with a variety for formats and determine the sequence in which labels are printed.

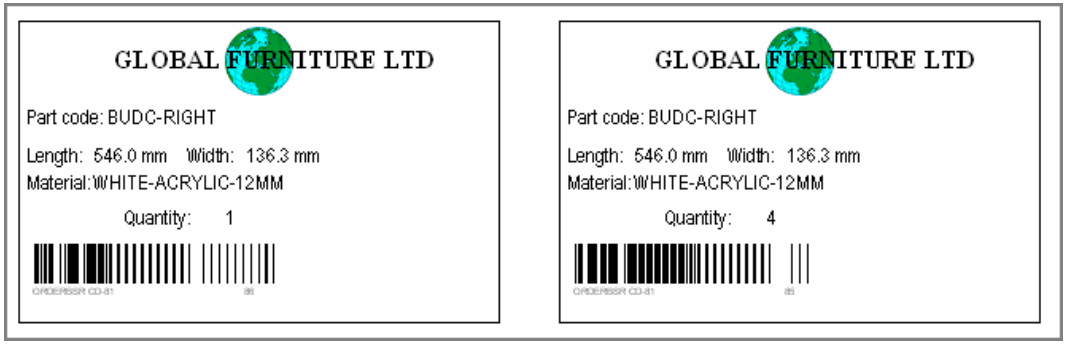


Figure 4-04 Example of printed labels for parts

To print labels for parts at the main screen:-

- Select: **Print - Label**
- From the sub-menu select the type of label

(Type is either for parts, cutting patterns, requirements, orders, etc.)

The option *Cutting patterns,* for example, prints labels for each part in cutting sequence and the *Part list* option prints labels for a part list in part list order.

Use the Form and Label design options to create the layouts and style of label. The demonstration data includes several different layouts.

Stock control of over produced parts

The Part library can also be used to control the stock of over produced parts.

The quantity of the over produced parts can be stored in the part library after each optimisation and any over production can be carried forward to the next job where those parts are required.

5. Edging and laminating (EL)

This module calculates the sizes of edge pieces, laminates, cutting sizes, finished sizes, length of edging tape and other processing features of CUT TO SIZE and LAMINATE work.

Part list and Cutting list

Whether the part list is calculated from an Order, Product requirements, or entered manually the list usually contains the *Finished* sizes. For edging and laminating the cutting sizes in the cutting list are often different to the finished sizes to take account of the edge and laminate pieces and any final trimming of the core.

For laminates the size of the laminate usually includes an overlap and depends on whether the laminate is applied before or after edging.

When optimising from an Order, Product requirements list, or a Part list the program always automatically creates a **Cutting list** and it is this list that is optimised. The Cutting list can also be created manually from the option at the Part list screen.

Edging parameters

To get the correct calculations for the cutting list set up the Edging parameters to describe the basic details of edging and edging methods.

At the main screen:-

- Select: **Parameters - Edging**

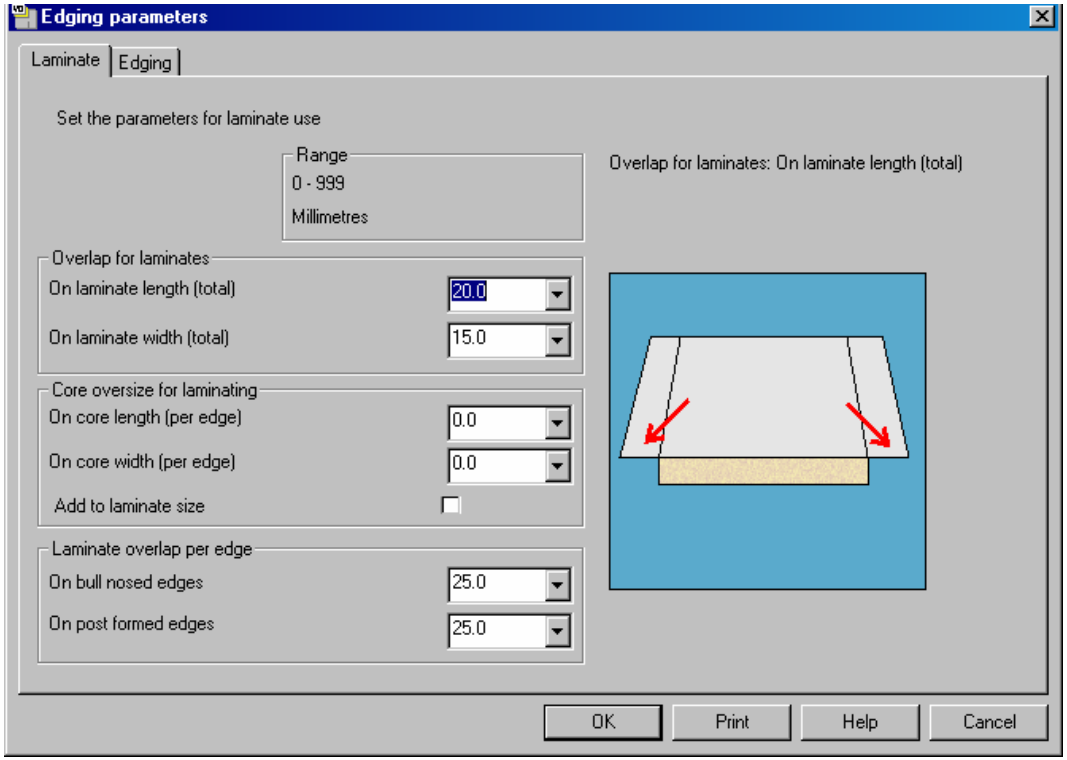


Figure 5-01 Edging parameters

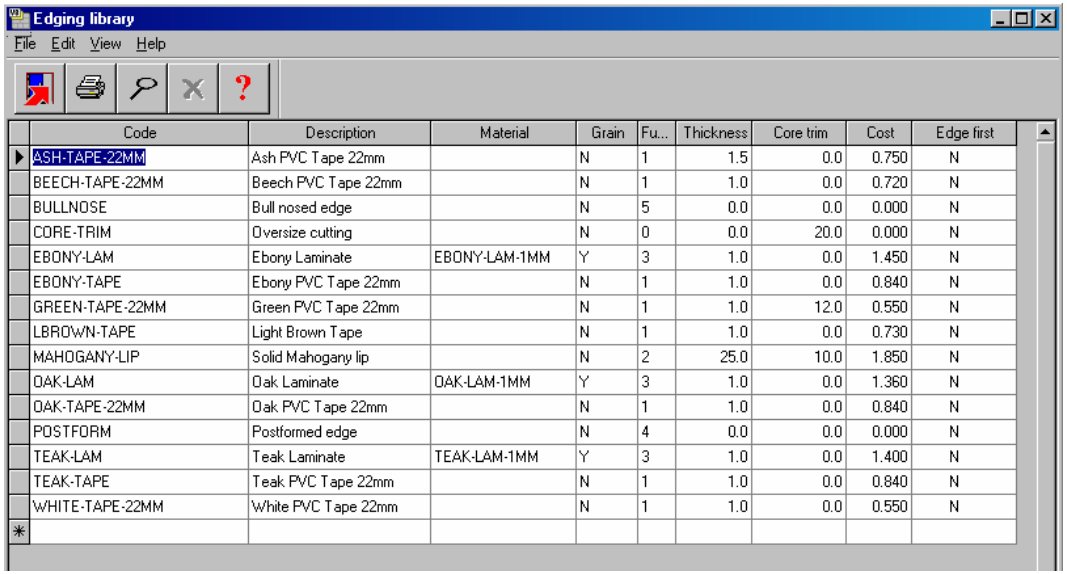
The parameters cover common requirements such as, Overlap for laminates on length and width, overlap allowed for bullnose edging, etc.

The parameters are shown in a typical 'Windows' property sheet with laminate settings on the first tab and edging on the second. The diagram at the right illustrates the current parameter.

Edging library

The edging materials, tape, laminate strips, solid lipping etc. are set up and stored in the Edging library. At the main screen:-

- Select: **Libraries - Edging**



Code	Description	Material	Grain	Fu...	Thickness	Core trim	Cost	Edge first
ASH-TAPE-22MM	Ash PVC Tape 22mm		N	1	1.5	0.0	0.750	N
BEECH-TAPE-22MM	Beech PVC Tape 22mm		N	1	1.0	0.0	0.720	N
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
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

Figure 5-02 Edging library

The library deals with:-

- Tape
- Laminate strips
- Solid lipping
- Postform edges
- Bullnose edges

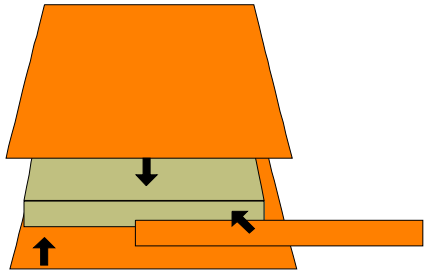
For example:-

Code	Description	Material	Grain	Fn	Thk	Core trim	Cost	Edge First
TEAK-LAM	Teak laminate	TEAK-LAM-1MM	Y	1	1.0	0.0	1.400	N

The item TEAK-LAM is the code for 1mm teak laminate, the Material code is TEAK-LAM-1MM, Grain is set to 'Yes', the function code is set to '1' to indicate that these are cut laminate strips, there is no trim to the core before the laminate is applied, cost is to 3 decimal places and the 'Edg 1st' column is set to 'N' to indicate that the edging strips are applied after any face laminates.

Edging example

This example shows a typical process for dealing with parts that are laminated front and back and have an edging strip on the Length edge - top.



The finished sizes are entered in the Part list (or created automatically from the order or product requirements).

Part list

11.	HU06MB-BASE	MEL-CHIP-18MM	574.0	585.0	25
12.	HU06MP-PLINTH	MEL-CHIP-18MM	600.0	150.0	25
13.	HU06MR-RAIL	MEL-CHIP-18MM	574.0	75.0	50
14.	PANEL/03	MEL-CHIP-18MM	1020.0	610.5	120
15.					

Figure 5-03 Part list

The basic information (material, length, width, quantity etc.) is entered in the part list (as above) and any other information, for example, for the face and back laminate material is entered as extra information for the part in the *Information boxes*

Information boxes - are boxes that can be customised to hold almost any sort of extra information about a part. In the example below there are boxes set for the Face and Back laminate materials.

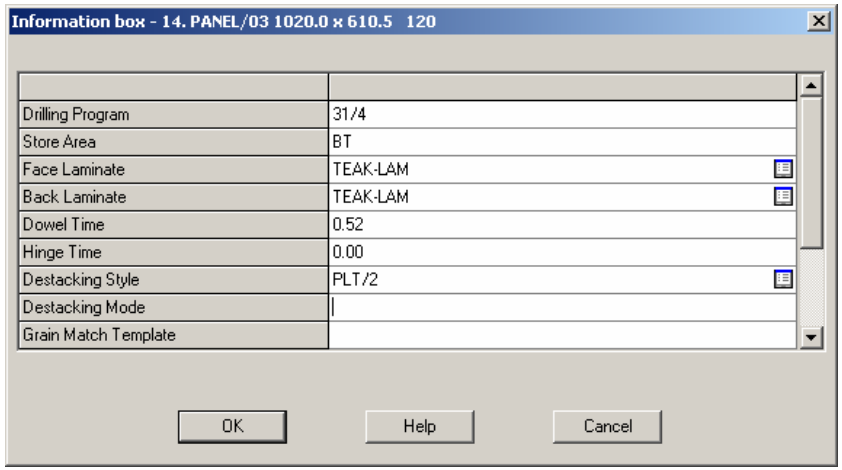


Figure 5-04 Part list information boxes

With this information the program can automatically calculate the laminate sizes and add the laminate requirements to the cutting list ready for optimisation. The laminate information is also available for printing on labels or worksheets for each part.

When working with products or parts from the part library the laminate codes are already set up (or are entered as a customer requirement when the order is raised) and the information boxes are filled in automatically.

Customised information boxes are also used to hold the edging material for each edge. In this case only the Length edge - top is required.

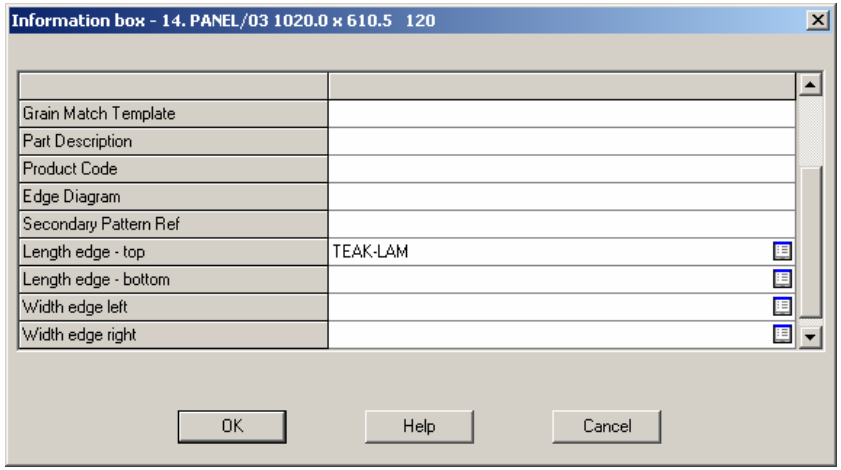


Figure 5-05 Part list information boxes

The laminate and edging details are stored in the Edging library (there is also an option to include the laminate material in the material library). Optimising automatically calculates the Cutting list taking account of the edging and laminating requirements.

14.	PANEL/03	MEL-CHIP-18MM	1020.0	610.5	120
15.	L0014	TEAK-LAM-1MM	1040.0	625.5	120
16.	L0014	TEAK-LAM-1MM	1040.0	625.5	120
17.	L0014	TEAK-LAM-1MM	1040.0	23.0	120
18.					

Figure 5-06 Cutting list

Note - cut sizes for the laminates (and the core) are different to the finished sizes to allow for trimming.

6. Optimising (LO, SO, PO)

6.1 Optimising

Optimising is the heart of the system. Whether you are working from orders, product requirements or from part lists the result is the same - the program creates a CUTTING LIST and OPTIMISES the cutting list to produce a set of cutting patterns. The patterns produced depend on a variety of factors:-

- Cutting list sizes
- Type of saw
- Constraints on cutting (trims, saw kerf, pallets for destacking etc)
- Board sizes available
- Material costs

The process of optimising weighs all these factors and produces a set of cutting patterns. The following diagram shows most of the features of a cutting pattern including, single recut, multiple equal recuts, multiple unequal recuts and a head cut.

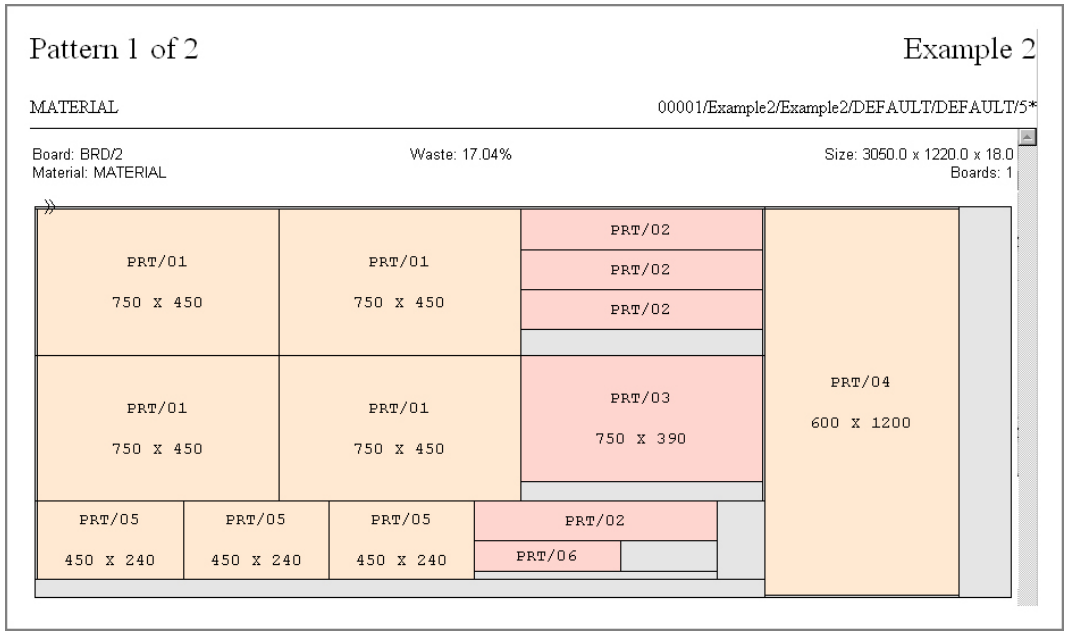


Figure 6-01 Pattern - recuts and head cuts

Before optimising set up the Board library and some basic Optimising and Saw parameters - see later sections for details.

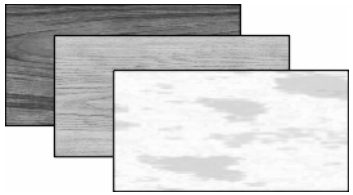
Part lists / Cutting lists

The optimisers always work from the cutting sizes in the Cutting list. These sizes are usually calculated automatically and can vary from the finished sizes in the Part list depending on any edging, laminating or re-trimming of the cut pieces.

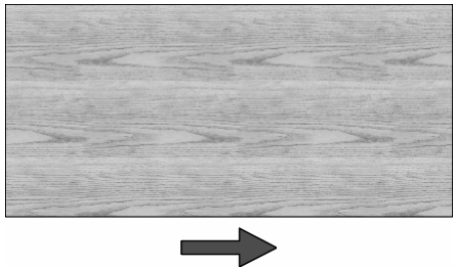
The basic information required for optimising is as follows.

Description or part code - this might be a description like TOP or DOOR/RIGHT or part code such as BU05E/1

Material code - this is the material code for the part material. This must be a code from the Board library.



Length and width - The length is the dimension in the column labelled 'length' it does not have to be the longest side but usually is.



Quantity - the quantity of parts required

Over and under production - For volume production it is sometimes useful to specify over or under production for a part, for example, to allow for damaged parts. Specify this as a percentage of the quantity required by setting the value in the header field or as an actual quantity for each part by entering a value against each part.

Grain - There are three choices

Y - Grain runs along length
X - Grain runs along width
N - No grain

If the grain is set the program places the part on a board so that the grain obeys the setting. For example, if the setting is 'Grain runs along length' the part is cut so that the part length runs along the board length.

Information boxes - these store extra (custom) information about each part, such as, face laminate materials, finished sizes, edging, data to track parts, costing etc, data for printing on labels etc. Set up the information boxes to suit the production methods. There are many pre-defined choices of information which the program can calculate and provide on request, for example, finished sizes, edging material, tracking numbers. It is also possible to create fully customised information types.

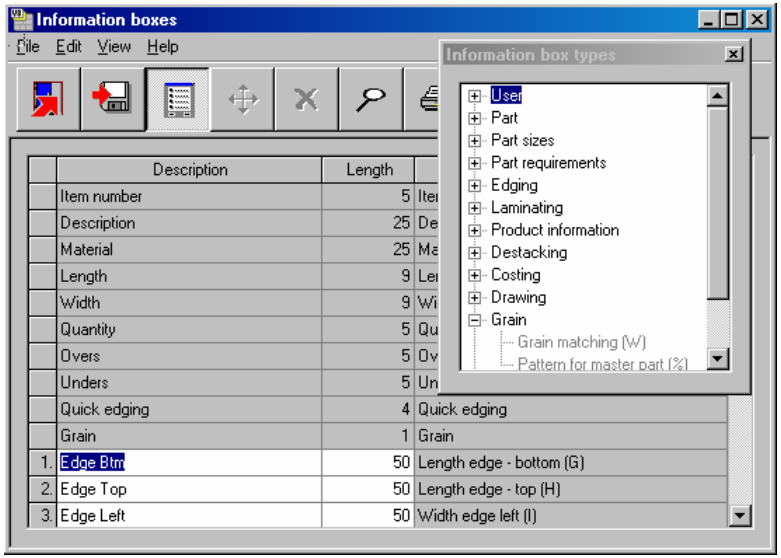


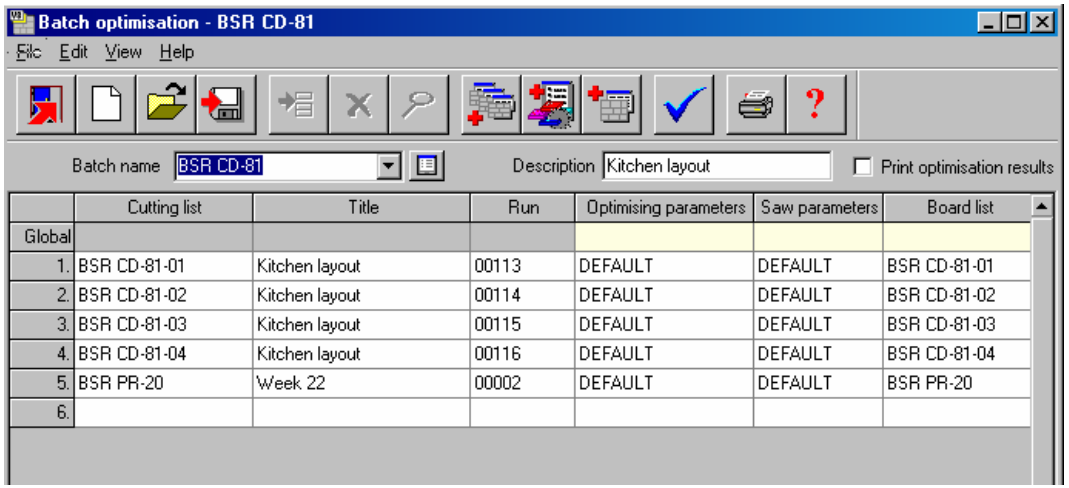
Figure 6-02 Information boxes - set up

The example above shows the Information box parameter screen for setting the information boxes. *Once set the information boxes apply to every part list.*

Optimise

To generate cutting patterns select the OPTIMISE option at the Product Requirements or Part list screens (ESTIMATE at the Quote / Orders screen). The program optimises the part list to produce a set of cutting patterns.

During optimising the program displays the Batch screen showing the list of jobs being optimised.



	Cutting list	Title	Run	Optimising parameters	Saw parameters	Board list
Global						
1.	BSR CD-81-01	Kitchen layout	00113	DEFAULT	DEFAULT	BSR CD-81-01
2.	BSR CD-81-02	Kitchen layout	00114	DEFAULT	DEFAULT	BSR CD-81-02
3.	BSR CD-81-03	Kitchen layout	00115	DEFAULT	DEFAULT	BSR CD-81-03
4.	BSR CD-81-04	Kitchen layout	00116	DEFAULT	DEFAULT	BSR CD-81-04
5.	BSR PR-20	Week 22	00002	DEFAULT	DEFAULT	BSR PR-20
6.						

Figure 6-03 Optimising batch screen

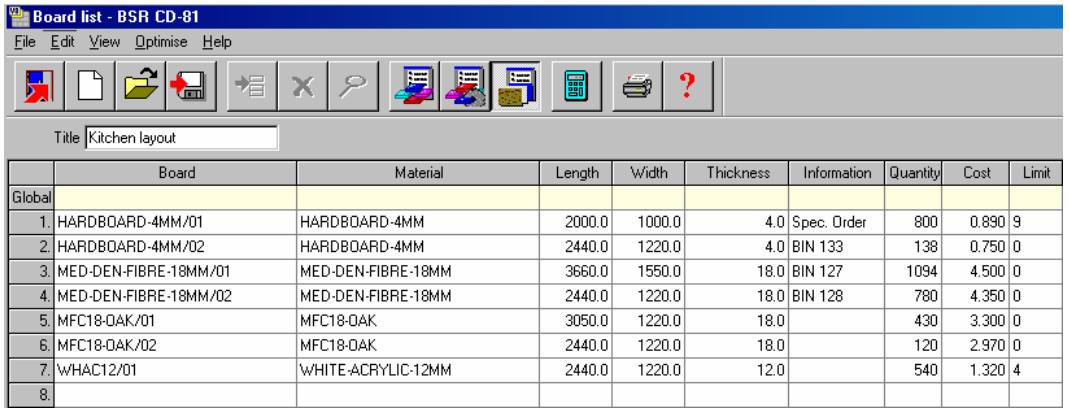
When optimising a single part list the batch shows a run for that part list.

Boards - the program automatically selects boards from the board library and creates a Board list to optimise with the current part list. The board selection is based on the material codes for each part.

It is also possible to adjust the board list manually to take account of a temporary **stock** shortage or delivery failure.

At the Part list screen:-

- Select the Boards button.



	Board	Material	Length	Width	Thickness	Information	Quantity	Cost	Limit
Global									
1.	HARDBOARD-4MM/01	HARDBOARD-4MM	2000.0	1000.0	4.0	Spec. Order	800	0.890	9
2.	HARDBOARD-4MM/02	HARDBOARD-4MM	2440.0	1220.0	4.0	BIN 133	138	0.750	0
3.	MED-DEN-FIBRE-18MM/01	MED-DEN-FIBRE-18MM	3660.0	1550.0	18.0	BIN 127	1094	4.500	0
4.	MED-DEN-FIBRE-18MM/02	MED-DEN-FIBRE-18MM	2440.0	1220.0	18.0	BIN 128	780	4.350	0
5.	MFC18-OAK/01	MFC18-OAK	3050.0	1220.0	18.0		430	3.300	0
6.	MFC18-OAK/02	MFC18-OAK	2440.0	1220.0	18.0		120	2.970	0
7.	WHAC12/01	WHITE-ACRYLIC-12MM	2440.0	1220.0	12.0		540	1.320	4
8.									

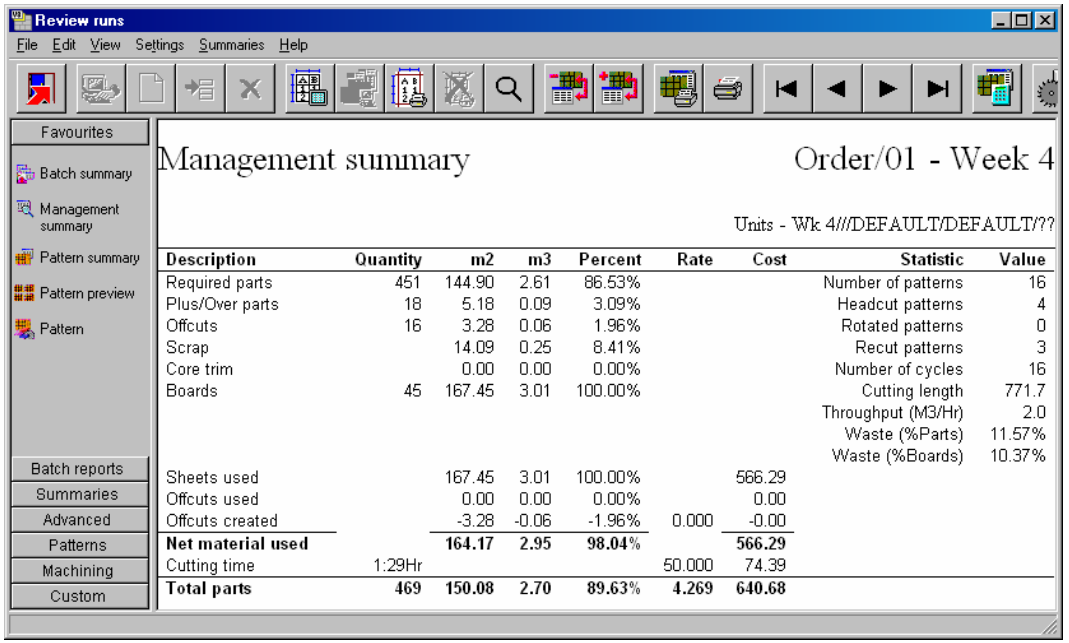
Figure 6-04 Board list

The board list can be edited, quantities changed, other sizes added or deleted etc.

The changes do NOT affect the boards stored in the board library. The board list acts as snapshot of the library for the materials required for the current part list.

Summaries and patterns

When optimising is finished the program displays the MANAGEMENT SUMMARY



Description	Quantity	m2	m3	Percent	Rate	Cost	Statistic	Value
Required parts	451	144.90	2.61	86.53%			Number of patterns	16
Plus/Over parts	18	5.18	0.09	3.09%			Headcut patterns	4
Offcuts	16	3.28	0.06	1.96%			Rotated patterns	0
Scrap		14.09	0.25	8.41%			Recut patterns	3
Core trim		0.00	0.00	0.00%			Number of cycles	16
Boards	45	167.45	3.01	100.00%			Cutting length	771.7
							Throughput (M3/Hr)	2.0
							Waste (%Parts)	11.57%
							Waste (%Boards)	10.37%
Sheets used		167.45	3.01	100.00%		566.29		
Offcuts used		0.00	0.00	0.00%		0.00		
Offcuts created		-3.28	-0.06	-1.96%	0.000	-0.00		
Net material used		**164.17**	**2.95**	**98.04%**		**566.29**		
Cutting time	1:29Hr				50.000	74.39		
Total parts	**469**	**150.08**	**2.70**	**89.63%**	**4.269**	**640.68**		

Figure 6-05 Management summary

This shows a summary of the run including the number of parts produced, volume of boards used, the overall waste percentage and the total cost.

The first summary is usually the Management summary but if optimising more than one run in a batch the program displays a one line summary of each run in the batch first and the Management summary is then the first summary shown for each run.

Waste - The percent waste boards is the area of parts produced divided by the area of boards used as a percent.

Cost - The total cost is the net material cost plus the cost of the machine time.

Use the stacked ToolBar, navigation buttons or menu options to browse other reports and patterns.

Custom reports - A wide variety of reports are provided as standard and each of these can be customised to show different fields and the layout and order of fields can be changed.

It is also possible to create fully Customised reports with the Form and Label design. These reports appear on the Custom button in the Stacked Toolbar and can be viewed and printed along with the standard reports.

Some of the Standard reports are shown in the following section.

Pattern summary

This shows the patterns in a run, waste, number and type of cuts and the saw cycle time. The patterns are sorted by material code. The order of the patterns is the order of cutting.

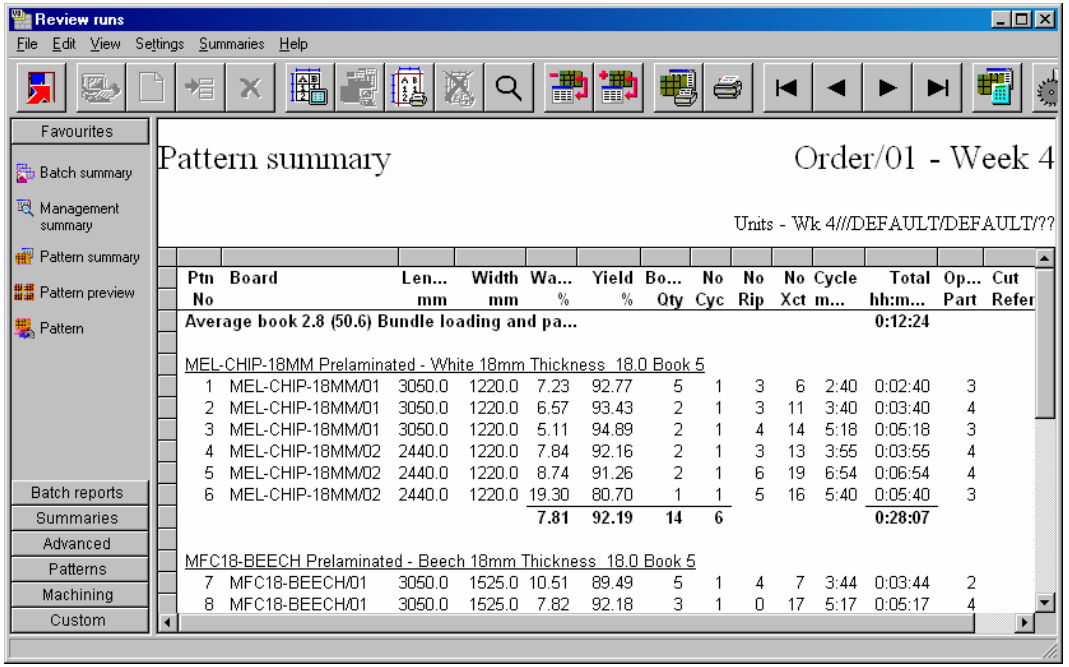
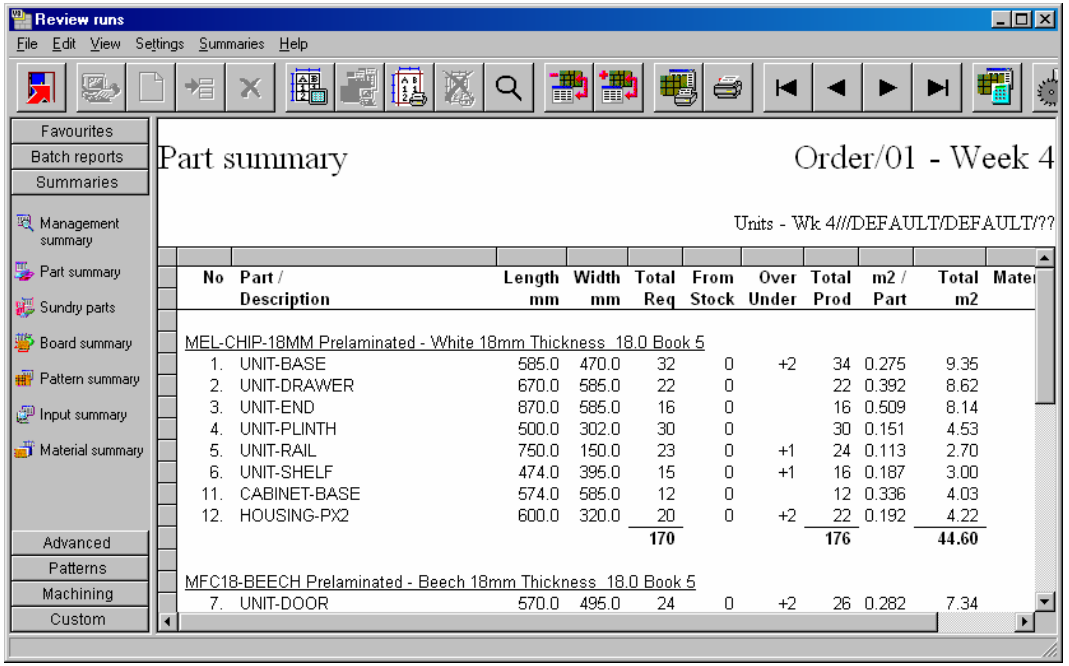


Figure 6-06 Pattern summary

Part summary

List of part produced - shows under and over production of parts (if any) and includes cost per part and the total cost.



No	Part / Description	Length mm	Width mm	Total Req	From Stock	Over Under	Total Prod	m2 / Part	Total m2	Mate
MEL-CHIP-18MM Prelaminated - White 18mm Thickness 18.0 Book 5										
1.	UNIT-BASE	585.0	470.0	32	0	+2	34	0.275	9.35	
2.	UNIT-DRAWER	670.0	585.0	22	0		22	0.392	8.62	
3.	UNIT-END	870.0	585.0	16	0		16	0.509	8.14	
4.	UNIT-PLINTH	500.0	302.0	30	0		30	0.151	4.53	
5.	UNIT-RAIL	750.0	150.0	23	0	+1	24	0.113	2.70	
6.	UNIT-SHELF	474.0	395.0	15	0	+1	16	0.187	3.00	
11.	CABINET-BASE	574.0	585.0	12	0		12	0.336	4.03	
12.	HOUSING-PX2	600.0	320.0	20	0	+2	22	0.192	4.22	
				170			**176**		**44.60**	
MFC18-BEECH Prelaminated - Beech 18mm Thickness 18.0 Book 5										
7.	UNIT-DOOR	570.0	495.0	24	0	+2	26	0.282	7.34	

Figure 6-07 Part summary

Offcut summary

This shows the offcuts produced in the run (if any) sorted by material. You can add these offcuts back into the board library for later use.

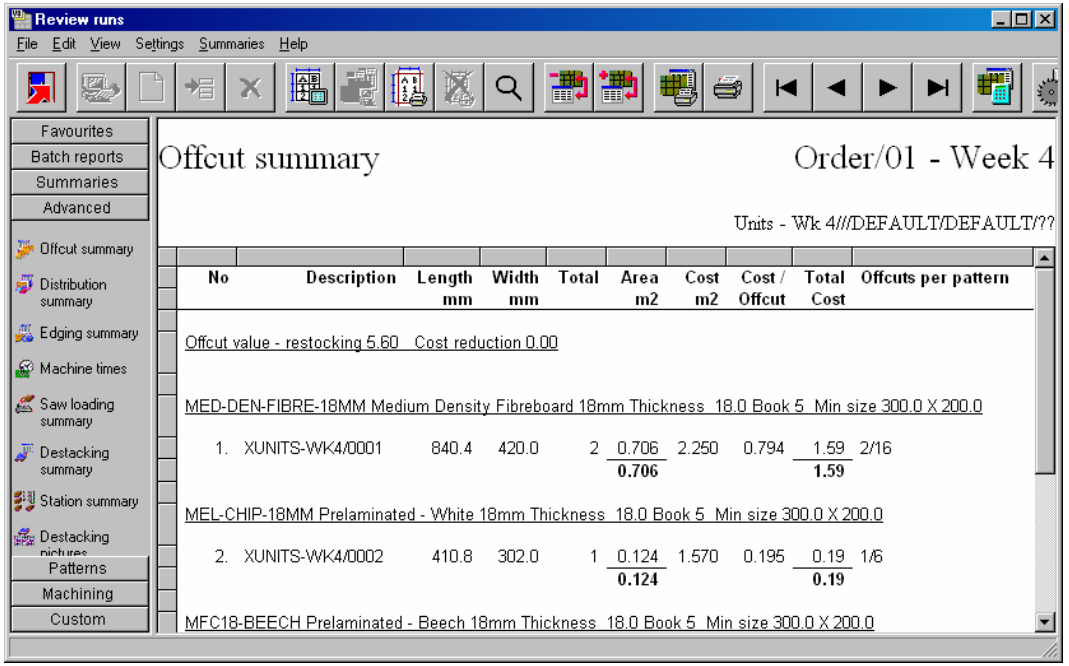


Figure 6-08 Offcut summary

The size of a useful offcut is set by the Optimising parameters and there are also parameters to control the use of offcuts from stock when optimising because in some situations there are extra handling and storage costs involved in using offcut pieces.

Board summary

This shows the boards used (including offcuts).

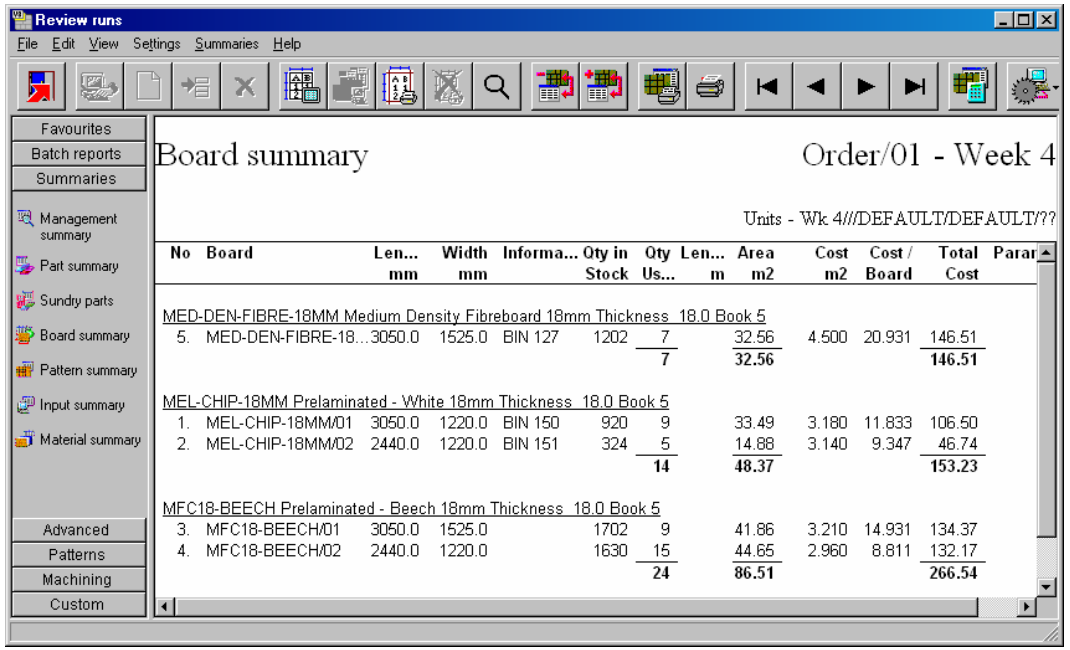


Figure 6-09 Board summary

These are just a few of the summaries of management information available

Pattern preview

The optimising results (Review runs) also include the cutting patterns. The preview gives an overview of all the patterns in the run. For each pattern you can see the material, run quantity, board size and waste.

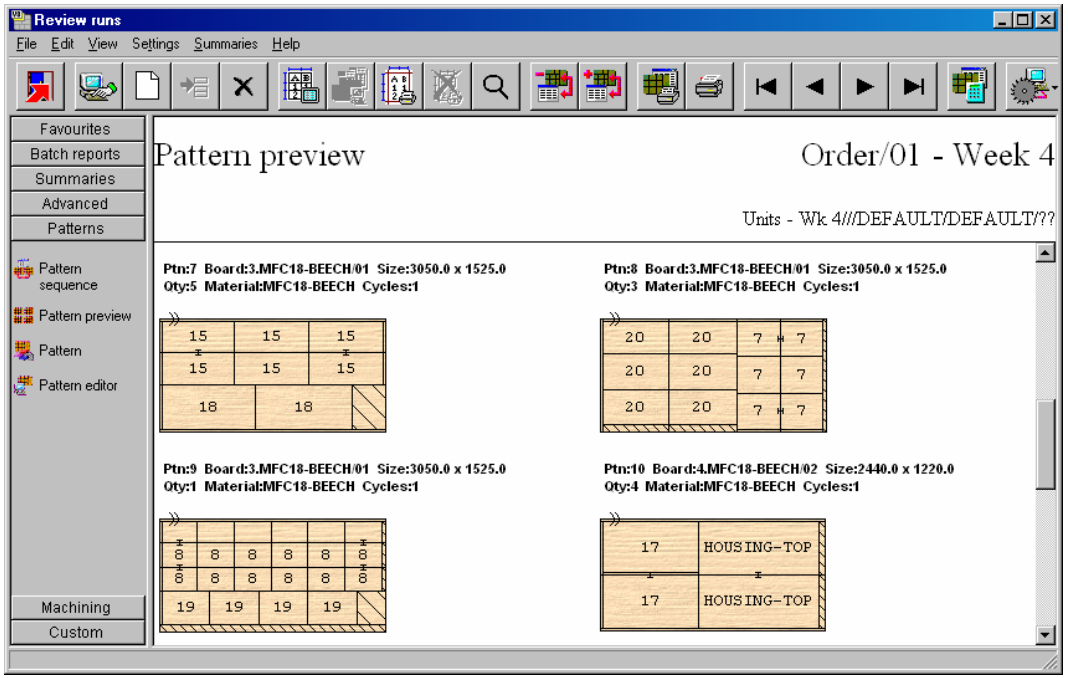


Figure 6-10 Pattern preview

The Board information and material is shown at the top of each pattern.

Select a pattern to see a full screen view of the pattern.

Patterns

This is a full screen view of the pattern.

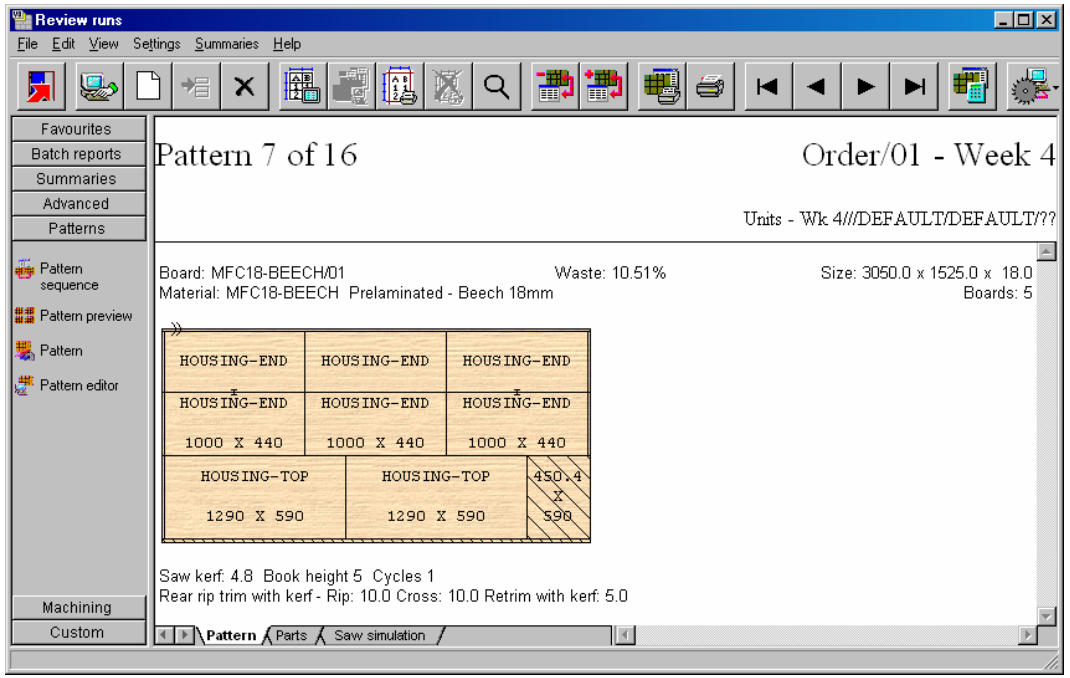


Figure 6-11 Pattern

The view also includes a list of the parts on the pattern and the cutting instructions where these are needed- these are on the tabs at the foot of the screen. (For many saw controllers you do not need a print of the saw instructions as these are dealt with automatically)

There are several different view styles for patterns:- Monochrome, Colour coding. Board library picture.

For colour coding (above) the various sections of the pattern, for example, parts, offcuts, waste etc. can be coloured or shaded to help identify the different sections. Use the System parameters to change the colour or shading for waste, offcuts, plus parts etc.

For 'Board library picture' the pattern is shown in the same style as the board in the board library. Wide shading are offcuts and narrow shading is waste.

Pattern with head cut.

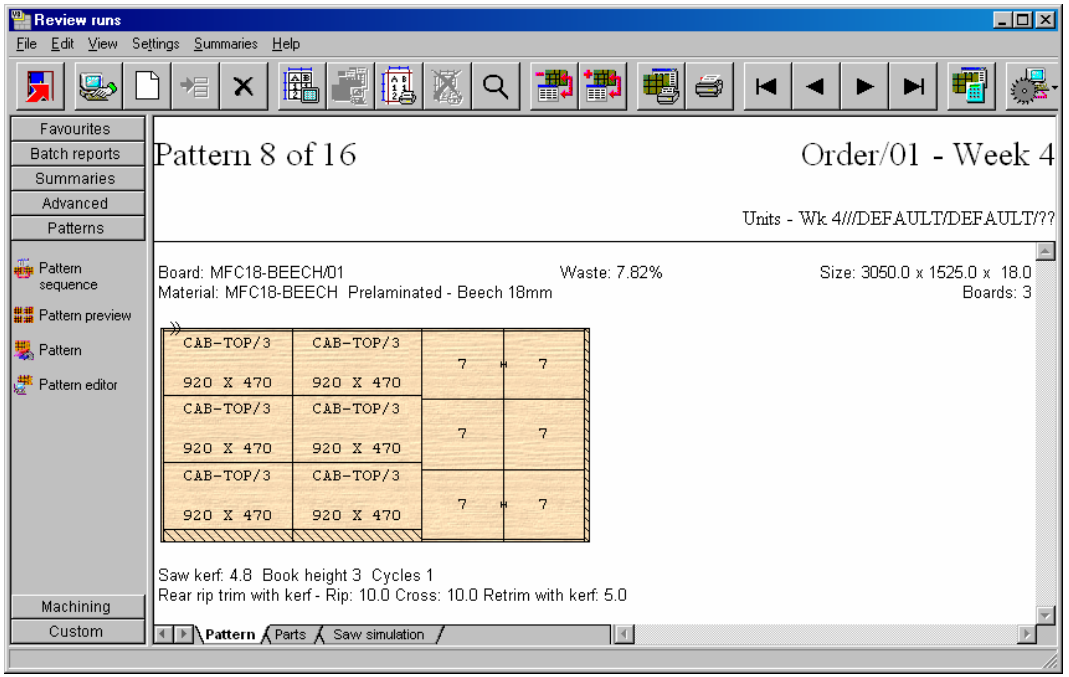


Figure 6-11a Pattern

Optimising and Saw parameters

Optimising and Saw parameters are very important for Optimising. Use these to set up the program to match your methods, saw and other systems.

The parameters cover a wide range of items, such as saw kerf, trims, minimum sizes for offcuts, cutting times, costs and any restrictions on the cutting such as no headcuts or no recuts. Setting the parameters is a one off task - the supplier usually provides some example sets which can be used as a starting point.

At the main screen:-

- Select: **Parameters - Optimising parameters**

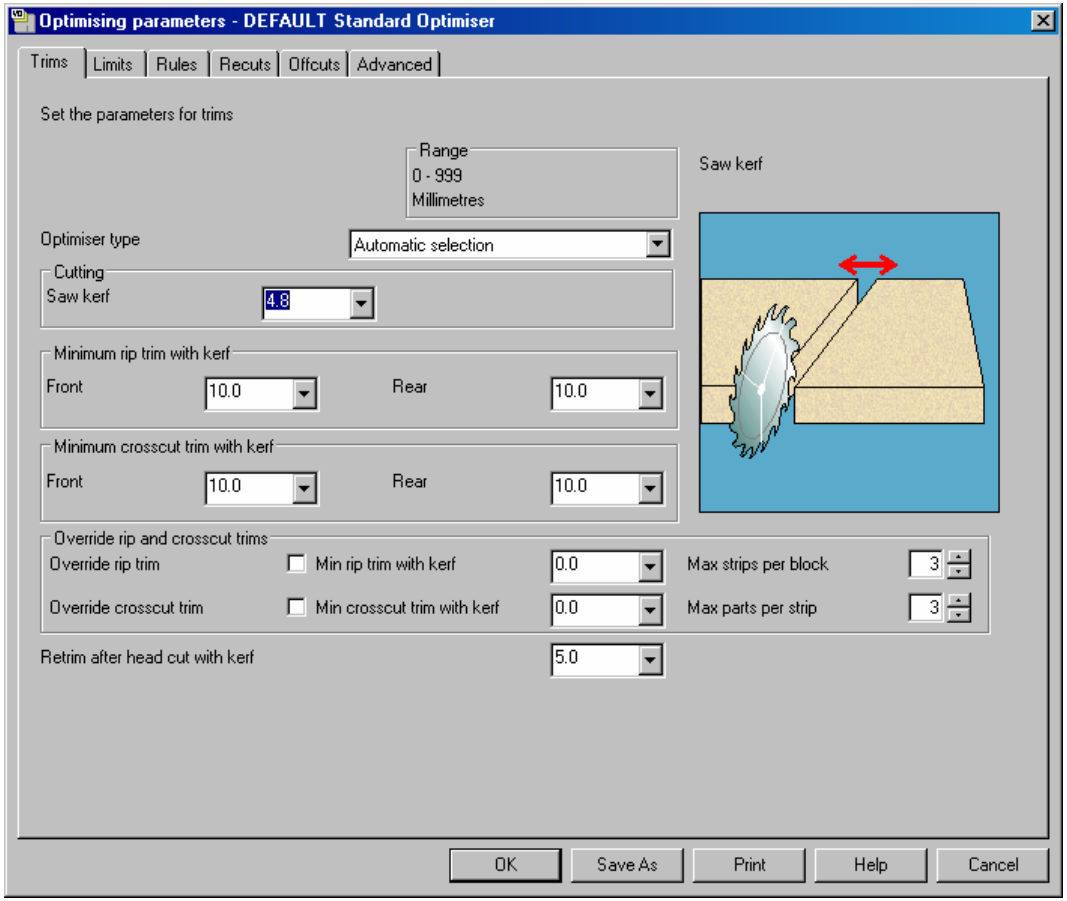


Figure 6-12 Optimising parameters

The example above shows the first page of the Optimising parameters; the saw kerf is set to 4.8mm and the trims are all set to 10mm.

Most of the parameter screens are similar and operate like any other Windows Property page. A useful feature is the diagram at the right which illustrates the current parameter.

The main optimisers are for sheet optimising and there are different types to select depending on the type of part list or the program can be set to automatically select a suitable optimiser type. There are also more specialist optimisers available.

Crosscut only (timber)
Rip only (strips)
Strip production

Saw parameters describe the saw and saw settings, such as, saw model, minimum and maximum cutting height, positions of clamps, method for taking recuts etc. At the main screen:-

- Select: **Parameters - Saw parameters**

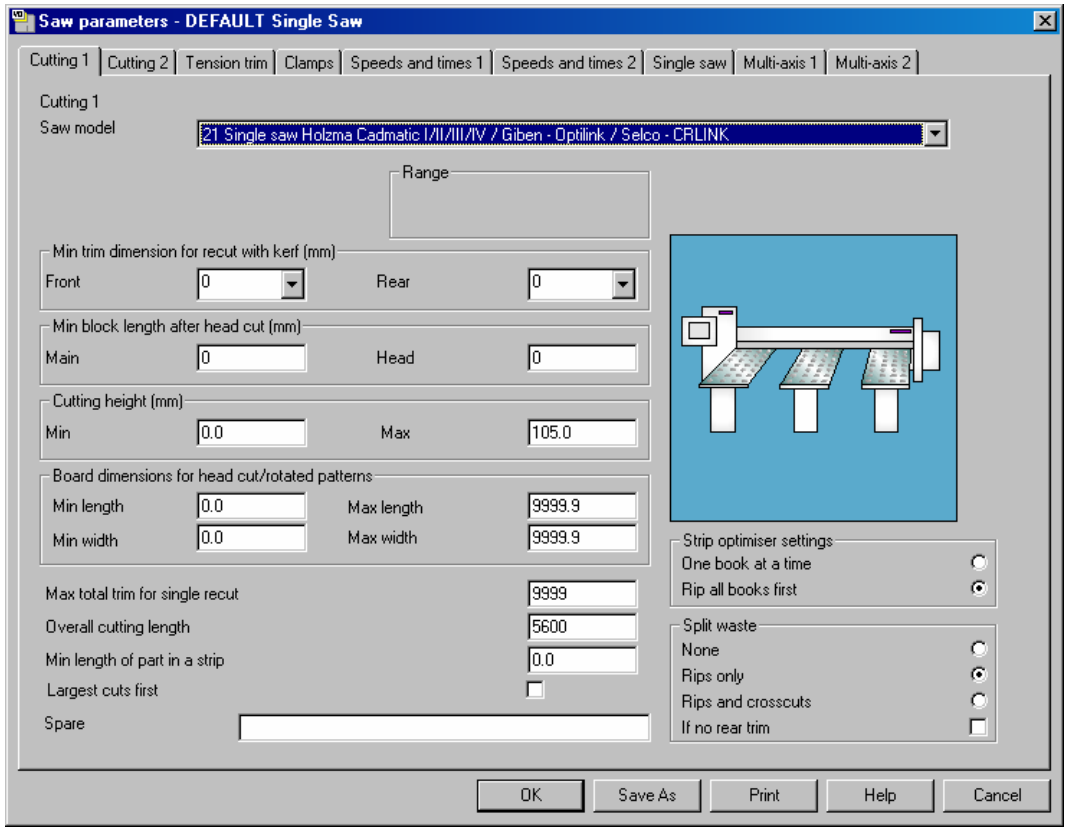


Figure 6-13 Saw parameters

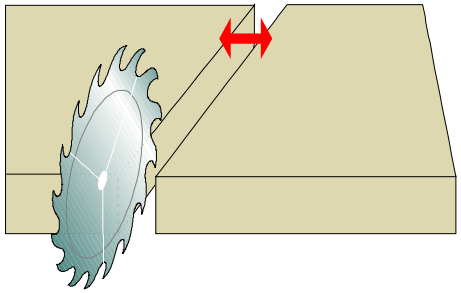
Once the saw parameters are set they are not often changed but you may have several different sets of optimising parameters because items such as saw kerf, trims and saw speeds do sometimes vary for different jobs and different materials.

Material parameters - these describe features which can vary with each material, for example, stack height, saw speed, etc. Not everyone needs this much flexibility but you can set up values for each material in the board library if necessary. If you set up parameters for a material these override the settings of the optimising and saw parameters.

Examples of Optimising and Saw parameters

There is a wide range of optimising and saw parameters but many may not apply in your case and most are familiar features like the saw kerf or trims. The following examples from the Online help give you a brief introduction to a few of the parameters so that you can see what they are like.

Saw Kerf

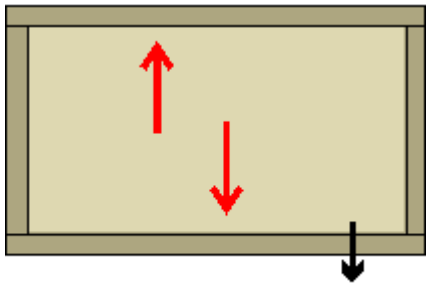


This is the material lost due to the saw blade when cutting. Use the value recommended by your saw manufacturer. Typical values for woodworking are: 4.8mm, 3/16in etc. For tight cutting or for materials such as glass or metal the saw kerf is not significant and you can set it to zero if necessary.

On diagrams the saw kerf is usually shown as a single line (and is not to scale). To show the saw kerf to scale use the System parameter: *Patterns - labelling style, show saw kerf to scale* (for example where you are using a very large saw kerf).

Full and detailed help like this is available for each parameter. The following example shows the help topic describing how to set the value for the rip trims.

Min rip trim with kerf



Use this parameter to set a minimum rip trim on the front (leading edge) and rear of each board. Allow for the saw kerf when setting this value.

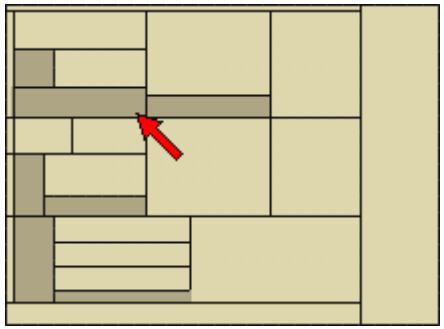
A setting of 10mm removes a FULL 10mm of material from the board. If the saw kerf is set at 4.8mm the falling piece is (10 - 4.8), that is, 5.2mm. If the trim is set to less than the setting for the saw kerf, for instance 3mm when the saw kerf is set at 4.8mm this produces a GRAZING cut. The material removed in this case is 3mm and is all lost as saw dust.

In inches a trim of 3/8in. with a kerf of 3/16in. creates a falling piece of 3/16in.

The trims are often necessary for squaring a board prior to accurate cutting but in some cases a trim is not required. You can set either trim or both to zero if necessary.

The following optimising parameter describes the various levels of recut and how to set which levels are allowed in patterns.

Recut settings



Use this to set the level of recuts allowed for patterns

- none
- single
- multiple equal
- multiple unequal
- multiple no restrictions

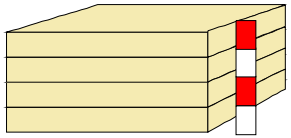
Multiple no restrictions - allows the optimiser to produce complex and nested patterns where these are cost effective. This type of pattern is often useful for low volume cutting of expensive material or where, for example, a single pattern is divided and machined on a machining centre.

Recut only strips - the setting of 'multiple no restrictions' allows the optimisers to produce (where these are necessary) 'Recut only' strips. These are strips where the width of the strip is not defined by any of parts (all the parts in the strip are recut).

You can only allow the recut level supported by the saw

The following saw parameter describes the minimum book height for a saw and how to set the value.

Min book height



For this parameter enter the minimum book height (cutting height) in millimetres or inches (depending on your measurement mode setting). You can use the minimum value to force cutting to a fixed minimum number of boards, for example, for always cutting 5 high with 15mm (3/4in) chipboard enter 75mm (3-3/4in) as the minimum value

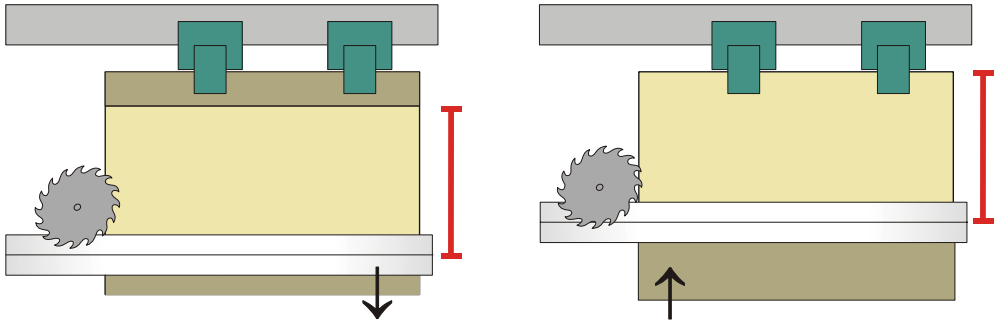
If you set the minimum book height to a value which allows more than 1 board high this setting overrides the setting for over production in the part list. You can avoid excessive over production with this setting by also allowing a reasonable level of under production.

Warning! - setting a minimum book height or more than 1 board can lead to poor use of material.

A value of 0 is taken as a minimum book height of 1 board.

The saw parameters also deal with more complex setups such as the method for taking recuts.

Recuts against program fence



Choose the recut method you require.

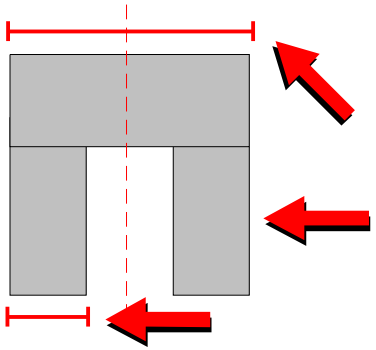
N - standard recuts (example left)
Y - recuts against program fence (example right)

Standard recuts - In this method each part to be recut is placed at the front of the saw and drawn back a distance of X+ rear trim. The first cut removes the waste at the front. The part is then moved forward a distance of X and a rear trim cut is taken. Each recut takes 2 cuts at the saw but it is the most accurate method for taking recuts

Recuts against program fence - With this method the part to be recut is positioned against the program fence and a single cut is taken. This requires that the fence can be positioned accurately at an absolute distance from the cutting line. This is sometimes not as accurate as the standard method but only one cut is required at the saw.

The following Saw parameter describes the clamps.

Clamp: No. fingers, finger width, overall width-



Use these parameters to describe your clamps.

Number of fingers on clamp - Enter the number of fingers on your style of clamp. Some saws have one or two fingers; clamps on angular saws often have four fingers.

Finger width - Enter the width of the clamp fingers. This is measured from one edge of the finger to the other.

Overall width - Enter the width of the clamp. This is measured from the outer edges of the outermost fingers on a clamp.

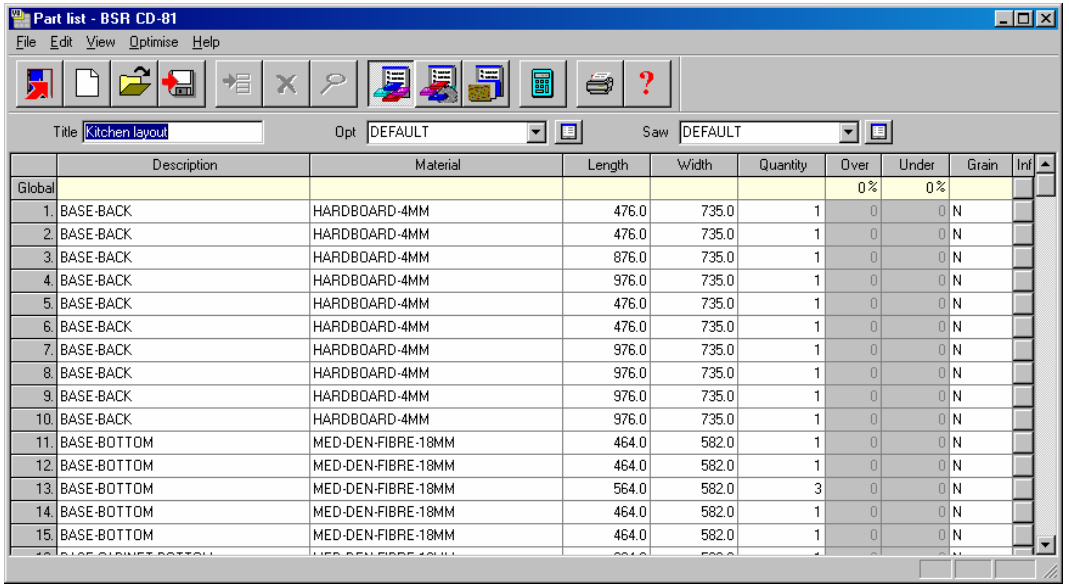
Notes on Clamp size - When there are more than 2 fingers the program assumes that the fingers are evenly spaced over the clamp. For the saw parameter: 'Minimum size for clamping' the value for 2 fingers does not apply to clamps with only 1 finger. If the values for any of these parameters are set to zero the program uses the following default values:-

Saw parameter	Parameter setting	Program default
No. fingers	0	2
Finger width	0.0	16.0mm / 0.62in
Clamp width	0.0	66.0mm / 2.62in

The clamp width cannot be less than the sum of the finger widths.

Part lists

If not using Order processing or Product requirements use the Part list to enter finished part sizes for optimising. Either enter the sizes at the keyboard or import part sizes from another system. The basic data required for each part is length, width, material, quantity etc as described in the *Part list/Cutting list* section above.



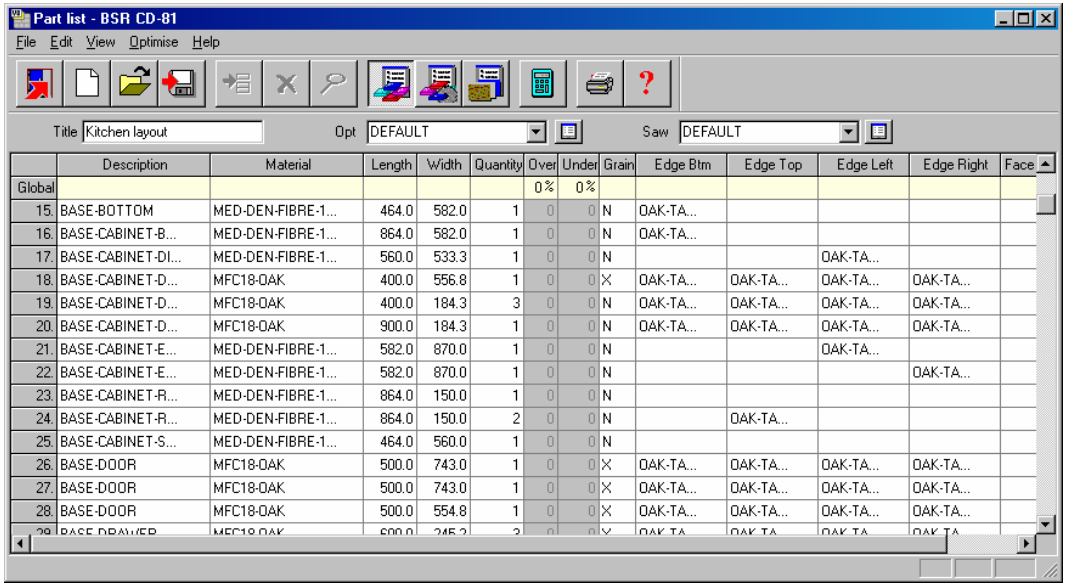
	Description	Material	Length	Width	Quantity	Over	Under	Grain	Inf
Global						0%	0%		
1.	BASE-BACK	HARDBOARD-4MM	476.0	735.0	1	0	0	N	
2.	BASE-BACK	HARDBOARD-4MM	476.0	735.0	1	0	0	N	
3.	BASE-BACK	HARDBOARD-4MM	876.0	735.0	1	0	0	N	
4.	BASE-BACK	HARDBOARD-4MM	976.0	735.0	1	0	0	N	
5.	BASE-BACK	HARDBOARD-4MM	476.0	735.0	1	0	0	N	
6.	BASE-BACK	HARDBOARD-4MM	476.0	735.0	1	0	0	N	
7.	BASE-BACK	HARDBOARD-4MM	976.0	735.0	1	0	0	N	
8.	BASE-BACK	HARDBOARD-4MM	976.0	735.0	1	0	0	N	
9.	BASE-BACK	HARDBOARD-4MM	976.0	735.0	1	0	0	N	
10.	BASE-BACK	HARDBOARD-4MM	976.0	735.0	1	0	0	N	
11.	BASE-BOTTOM	MED-DEN-FIBRE-18MM	464.0	582.0	1	0	0	N	
12.	BASE-BOTTOM	MED-DEN-FIBRE-18MM	464.0	582.0	1	0	0	N	
13.	BASE-BOTTOM	MED-DEN-FIBRE-18MM	564.0	582.0	3	0	0	N	
14.	BASE-BOTTOM	MED-DEN-FIBRE-18MM	464.0	582.0	1	0	0	N	
15.	BASE-BOTTOM	MED-DEN-FIBRE-18MM	464.0	582.0	1	0	0	N	

Figure 6-14 Part list

Top line - the information on the top line shows the File name and a description for the list. The other boxes on the top line labelled OPT and SAW are for specifying the Optimising parameter and Saw parameters lists. These lists determine features like the trims, saw kerf and saw speeds to use when cutting a part list and it is important to set them.

Global line - a setting that applies to every part in the list - this can make manual data entry much quicker and more accurate. In the example above the fields in the header line for Over% and Under% are set to 0 so that no over production or under production is allowed for any part in the list.

Information boxes - these are extra boxes (or fields) that can be added to the part list. They allow you to enter custom data for each part.



	Description	Material	Length	Width	Quantity	Over	Under	Grain	Edge Btm	Edge Top	Edge Left	Edge Right	Face
Global						0%	0%						
15.	BASE-BOTTOM	MED-DEN-FIBRE-1...	464.0	582.0	1	0	0	N	OAK-TA...				
16.	BASE-CABINET-B...	MED-DEN-FIBRE-1...	864.0	582.0	1	0	0	N	OAK-TA...				
17.	BASE-CABINET-DI...	MED-DEN-FIBRE-1...	560.0	533.3	1	0	0	N			OAK-TA...		
18.	BASE-CABINET-D...	MFC18-OAK	400.0	556.8	1	0	0	X	OAK-TA...	OAK-TA...	OAK-TA...	OAK-TA...	
19.	BASE-CABINET-D...	MFC18-OAK	400.0	184.3	3	0	0	N	OAK-TA...	OAK-TA...	OAK-TA...	OAK-TA...	
20.	BASE-CABINET-D...	MFC18-OAK	900.0	184.3	1	0	0	N	OAK-TA...	OAK-TA...	OAK-TA...	OAK-TA...	
21.	BASE-CABINET-E...	MED-DEN-FIBRE-1...	582.0	870.0	1	0	0	N			OAK-TA...		
22.	BASE-CABINET-E...	MED-DEN-FIBRE-1...	582.0	870.0	1	0	0	N				OAK-TA...	
23.	BASE-CABINET-R...	MED-DEN-FIBRE-1...	864.0	150.0	1	0	0	N					
24.	BASE-CABINET-R...	MED-DEN-FIBRE-1...	864.0	150.0	2	0	0	N		OAK-TA...			
25.	BASE-CABINET-S...	MED-DEN-FIBRE-1...	464.0	560.0	1	0	0	N					
26.	BASE-DOOR	MFC18-OAK	500.0	743.0	1	0	0	X	OAK-TA...	OAK-TA...	OAK-TA...	OAK-TA...	
27.	BASE-DOOR	MFC18-OAK	500.0	743.0	1	0	0	X	OAK-TA...	OAK-TA...	OAK-TA...	OAK-TA...	
28.	BASE-DOOR	MFC18-OAK	500.0	554.8	1	0	0	X	OAK-TA...	OAK-TA...	OAK-TA...	OAK-TA...	

Figure 6-15 Part list information boxes

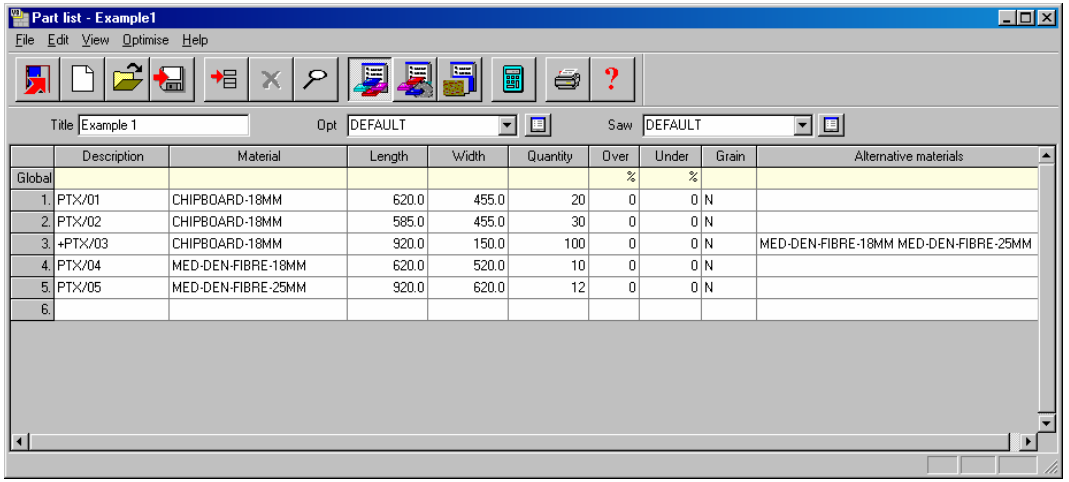
In the above example the Information boxes are show extending the grid to the right. The standard boxes stops at GRAIN. Use the View menu at the Part list to alter select the style of Information box display.

When the part list is complete select 'Optimise' to create a set of cutting patterns.

Alternative Materials

In some cases it is useful to cut hidden parts (dividers, backs etc.) from different materials as this results in a better use of material.

This is set up at the Part list using a pre-defined Information Box: *Alternative material(s)*.



	Description	Material	Length	Width	Quantity	Over	Under	Grain	Alternative materials
Global						%	%		
1.	PTX/01	CHIPBOARD-18MM	620.0	455.0	20	0	0	N	
2.	PTX/02	CHIPBOARD-18MM	585.0	455.0	30	0	0	N	
3.	+PTX/03	CHIPBOARD-18MM	920.0	150.0	100	0	0	N	MED-DEN-FIBRE-18MM MED-DEN-FIBRE-25MM
4.	PTX/04	MED-DEN-FIBRE-18MM	620.0	520.0	10	0	0	N	
5.	PTX/05	MED-DEN-FIBRE-25MM	920.0	620.0	12	0	0	N	
6.									

Figure 6-16 Part list Alternative materials

On optimising the program can place part PTX/03 (where alternative materials associated with the part) on any of the sheets of those materials. After optimisation parts with alternative materials can be spread across sheets of different material making better use of the sheets.

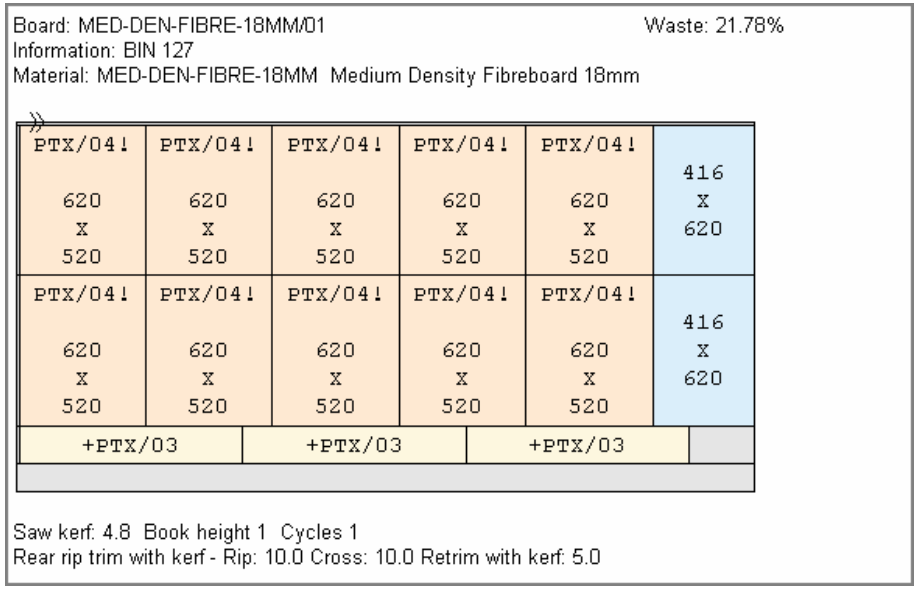


Figure 6-17 Pattern - Alternative materials

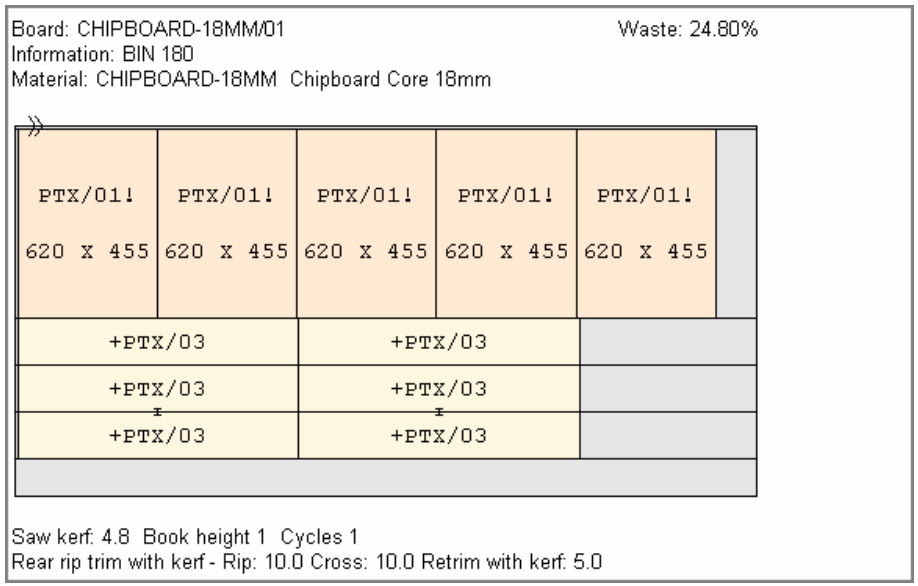


Figure 6-18 Pattern - Alternative materials

Lite optimiser (LO)

The Lite optimiser is an alternative optimiser designed for the smaller workshop cutting a high variety of sizes and materials but short run lengths. Typically suitable for sliding table saw or vertical panel saw applications.

The basic operation of Optimising is the same as described above in this section but there are many less parameters (especially saw parameters) to set and some of the more complex reports are not used.

Links to the Cadmatic 4 saw controller.

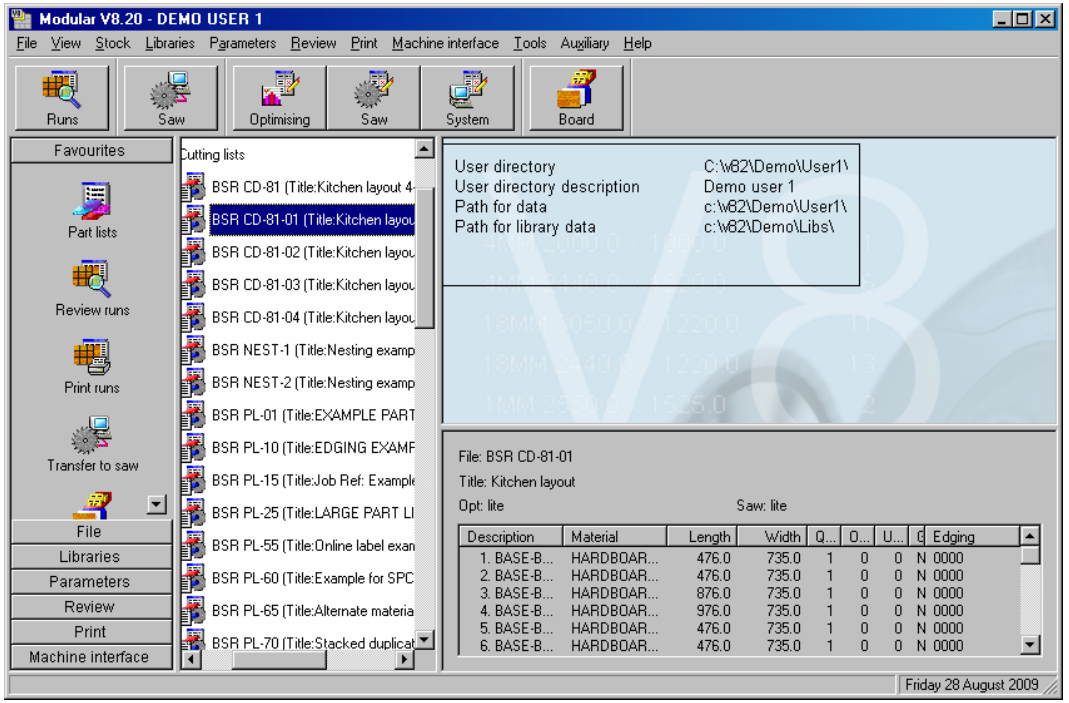


Figure 6-18a Lite - Main screen

The Lite Optimiser can be used with other modules, such as, Edging so it can be built into a full solution for the smaller workshop.

6.2 Pattern amendment and Pattern library

Edit patterns and create new patterns manually (without optimising)

Pattern amendment can be useful for including last minute production changes and for using up offcuts.

To edit a pattern at the Pattern screen in Review runs:-

- Double click on a pattern

or

- Select: **Edit - Pattern editor**

The program displays the pattern editor (pattern amendment).

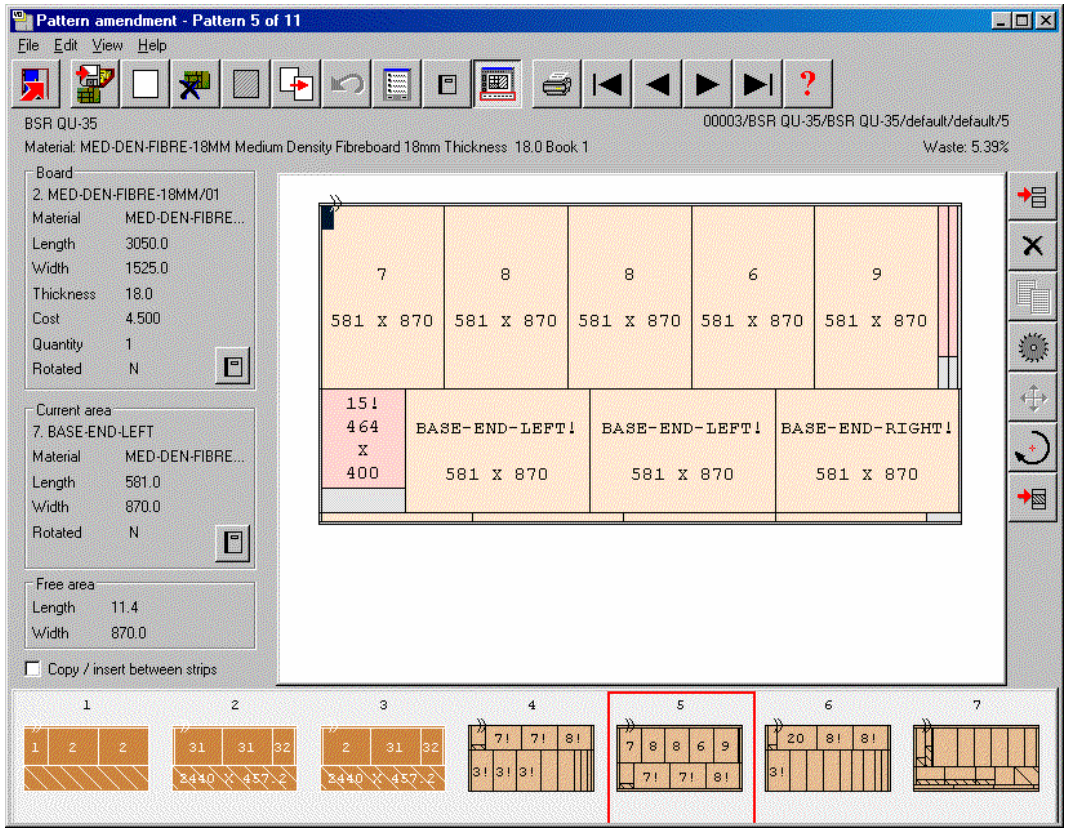


Figure 6-18b Pattern amendment

The pattern is shown at the right and information about the pattern is shown to the left. The bottom pane (Preview bar) shows a thumbnail view of the patterns in the run.

From this point you can add, copy or delete parts, copy or delete strips, insert or delete head cuts, fill in offcuts and make any change to an existing pattern that you need. You can also change the board quantity and the board rotation and the size of the board or place the existing set of parts on a different board.

Parts can be moved or copied from the pattern shown to patterns in the preview bar - making it easy to alter or adjust patterns.

The program checks all the actions you take and will prevent you moving or copying items to areas that are too small or creating a pattern that violates the basic parameters such as trims.

Board information - At the top left of the screen is information about the current board (Item no, board code, material code, length, width, thickness, cost and quantity). Note that the board item number is the item number of the board in the working board list.

To edit the current board (change the run quantity, rotate the board) select the 'Properties' button in the Board information section of the screen. The Boards dialog is displayed and you can use this to change the current board.

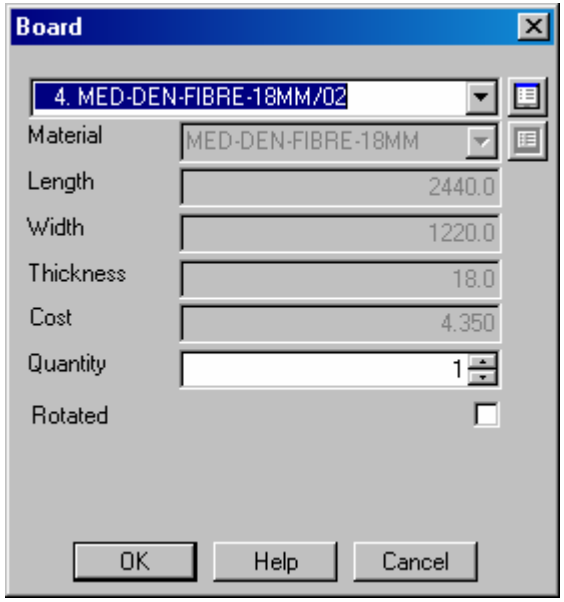


Figure 6-18c Pattern amendment - board information

Current Area information - As the cursor moves around the pattern information about the area under the cursor is shown in the Current Area information at the left of the screen.

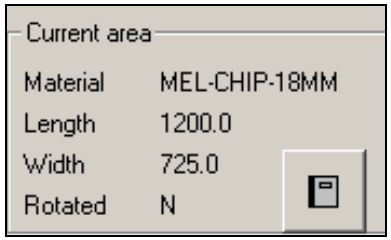


Figure 6-19 Pattern amendment current area

If the cursor is positioned on a part, the following information is shown: Item Number, Description, Material, Length, Width, Rotated (y/n). This is the main part information from the part list.

If the cursor is positioned on an area of waste (offcut or scrap) the window shows a description of offcut or scrap also the length and width of the area. When you add a part the program works out how many of each part fill the space you are adding to and automatically inserts the correct number of items. You can also create new parts (that are not in the part list or part library - enter a part code and the dimensions and any other information.

Free Area information - At the bottom of the information at the left of the screen is the Free Area information - this shows the size of the waste at the end of the strip that the cursor is on.

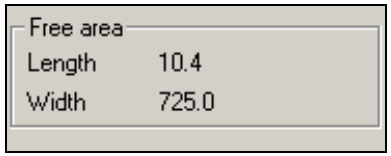


Figure 6-20 Pattern amendment - free area

When the cursor position is within a recut the free area refers to the waste below the recut (not the waste at the end of the strip).

Manual patterns - You can also create patterns manually with the MANUAL PATTERNS option on the OPTIMISE menu at the Part list screen.

Pattern amendment - example

In this example we are deleting a large part from an optimised run and adding in its place some plinths which are urgently required to replace 80 damaged plinths from a previous order.

We first locate the pattern with the part to delete and select the part by placing the cursor on it or by using the space bar.

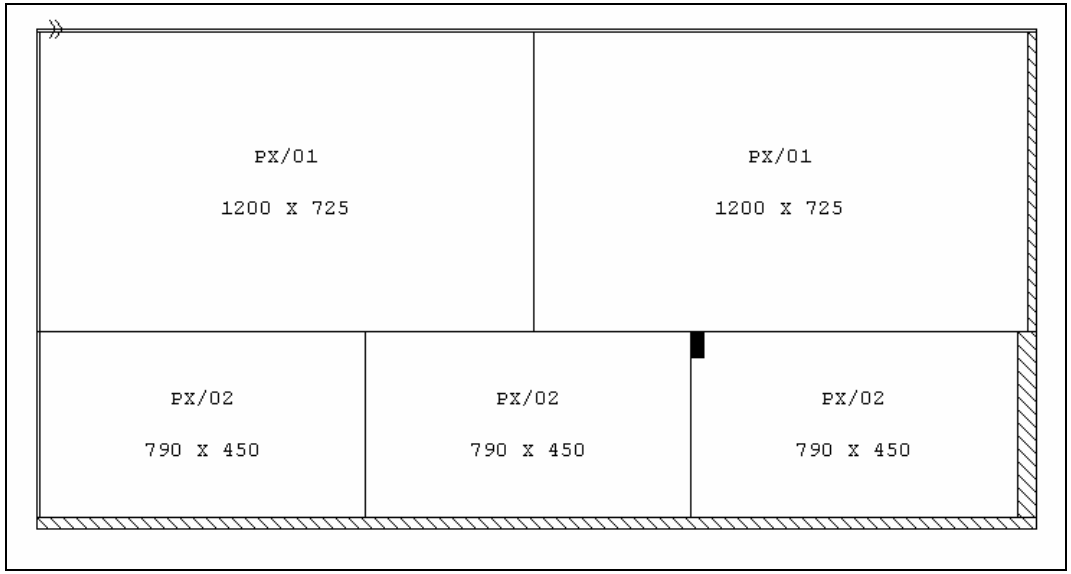


Figure 6-21 Pattern amendment - edit

Part PX/02 will be deleted and the area reused with some other parts that have become more urgent.

Take care when manually adjusting patterns because if too many changes are made then this may produce very inefficient cutting - in this case it is better to change the part list and re-optimise.

Select DELETE or the DEL button to remove the part.

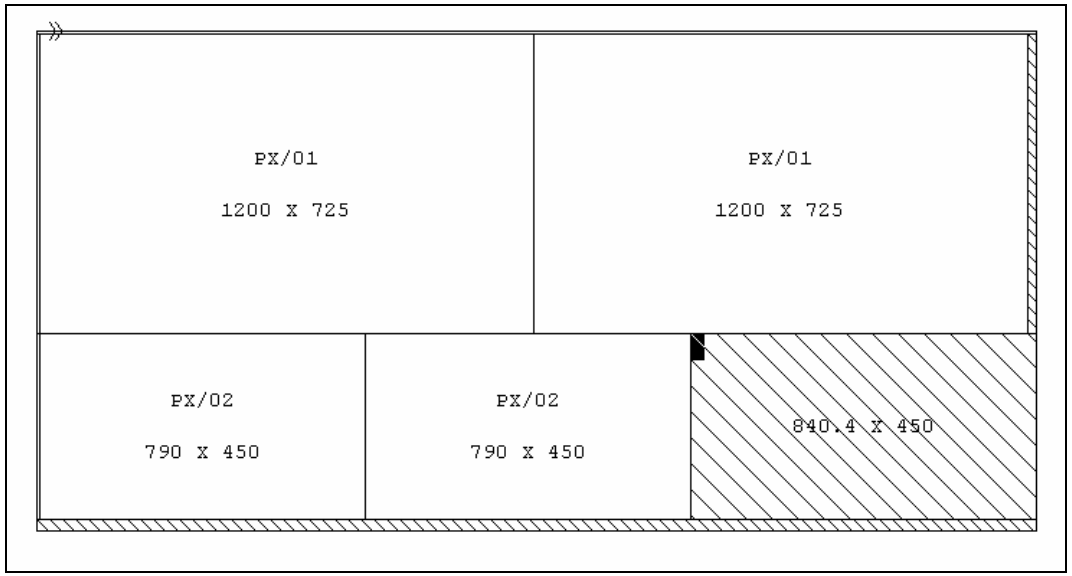


Figure 6-22 Pattern amendment - edit

The Area is shown as an offcut (or waste) as a shaded or coloured area.

The size of the waste area is shown. Note that not all of the area may be available because trims still need to be taken into account.

We now use the ADD option to add the parts required.

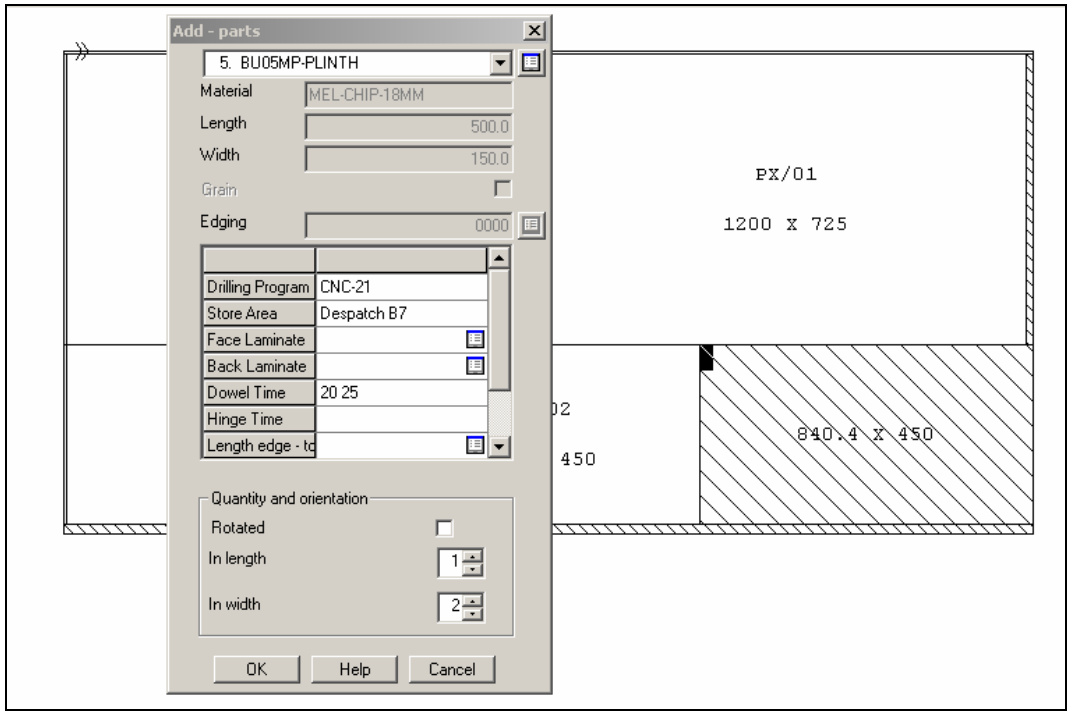


Figure 6-23 Pattern amendment - add part dialog

The ADD dialog automatically shows the number that fit in the length and width.

In this case the part was added from the part library as it was not in the original part list.

It is also possible to use parts from existing lists or enter a part sizes manually.

After checking the part select Ok to add

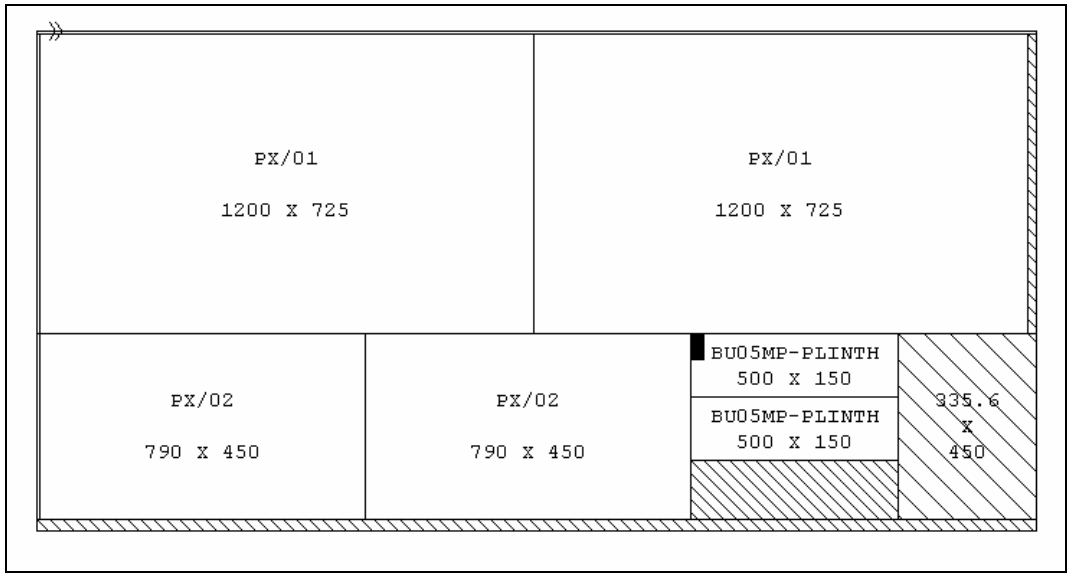


Figure 6-24 Pattern amendment - edit

Note - deleting a part from a pattern with run quantity of '5' deletes 5 of that part from the run.

Material - *the material of any added parts must match the board material.*

Pattern Library

Any pattern can be also be stored in the *Pattern library* which is a separate store of patterns and templates for patterns. The templates are used for *Grain matching*

At the main screen:-

- Select: **Libraries - Pattern library**

The screen moves to the Pattern editor (see above).

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

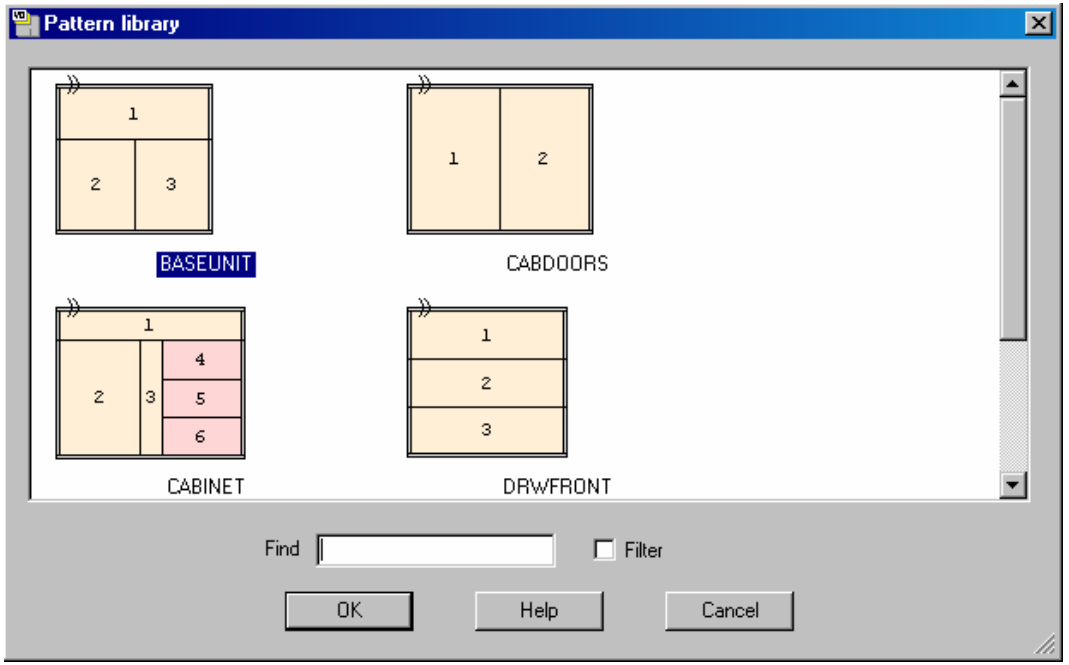


Figure 6-25 Pattern library - select pattern

Select a pattern or create a new one.

Pattern library - grain matching

Grain matching makes sure that during optimisation selected parts are kept together and in the correct alignment; 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 that 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.

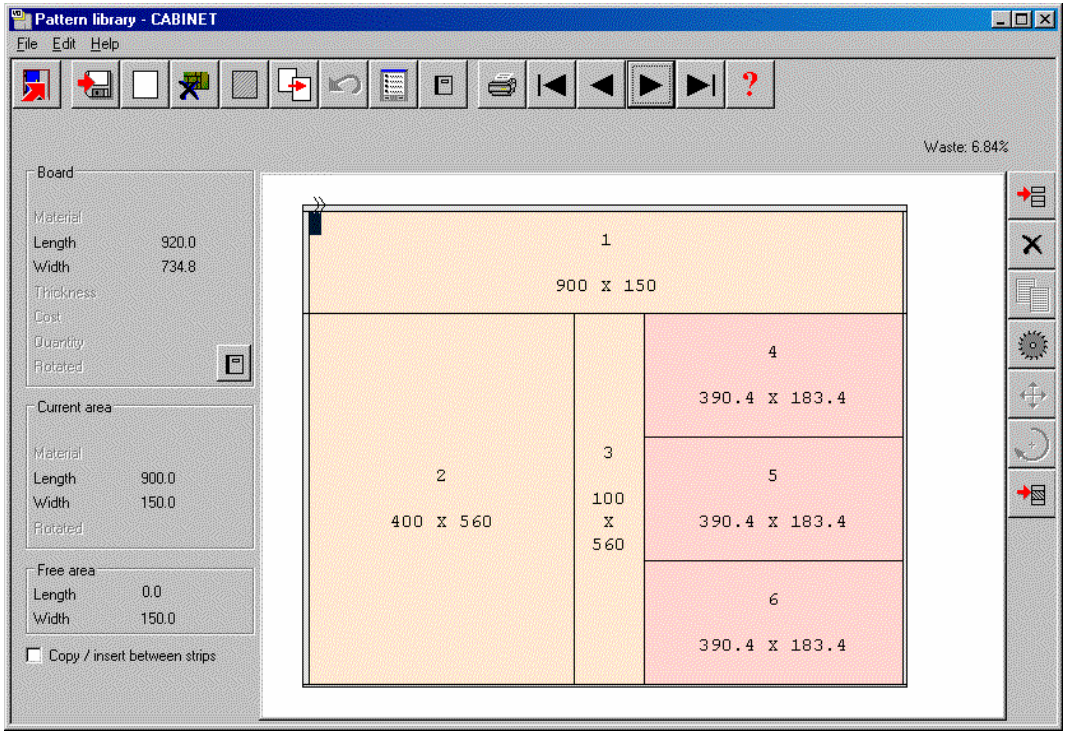


Figure 6-26 Pattern library - edit pattern

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.

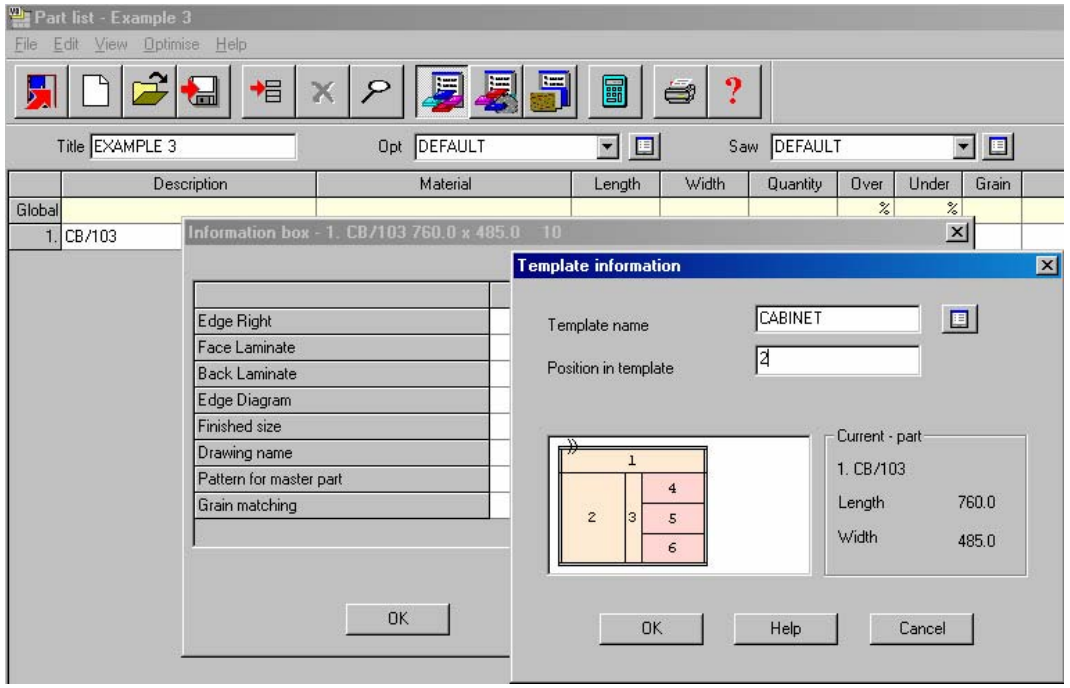


Figure 6-27 - Part list assign part to template

The 'Template information' dialogue shows the template and provides help with positioning the part against the template.

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 template.

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

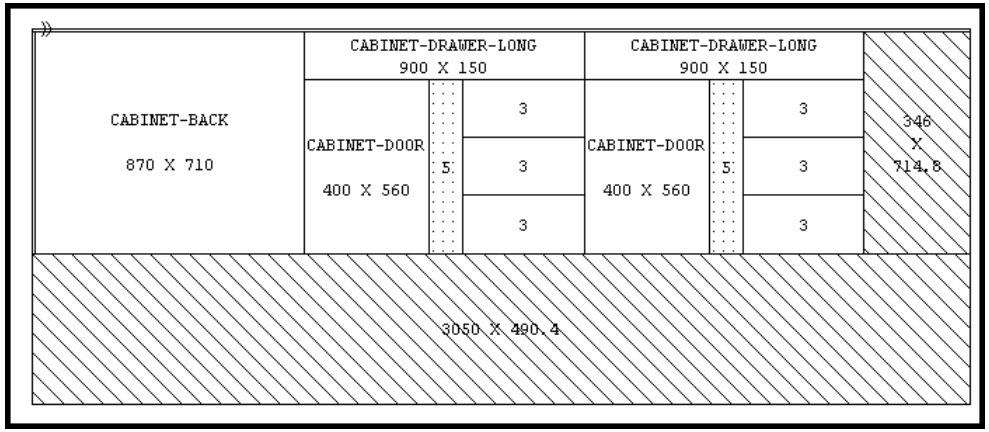


Figure 6-28 Grain match pattern

In this case the patterns are cut at the saw as part of the main pattern but you can also create a master part which can be divided later, for example, at a machining centre.

6.3 Saw Interface

Transfer to Saw

Transfer patterns (cutting instructions) and label printing data to a saw.

The program automatically calculates the correct instructions for the saw controller. The saw controller is specified in the Saw parameter list by setting: *Saw model*. The saw parameters (cutting height, speeds, waste drop etc.) need to be set for each saw using the Saw parameters. The program supports many different saw controllers and different types of link to the saw:-

- Cadmatic
- Compumatic, Topmatic
- Homag controllers
- Canon 2020
- Online PC
- Table saws
- Printed reports for manual saws
- Other saw controllers - check with your supplier

Online PC - (see separate section below) - this option transfers data and prints labels for saws (such as a sliding table saw) that do not have electronic saw controllers.

After optimisation is complete. At the main screen:-

- Select: **Machine Interface**

- Select the saw (e.g. Cadmatic IV, Table Saw etc.)

- Select: Transfer to Saw

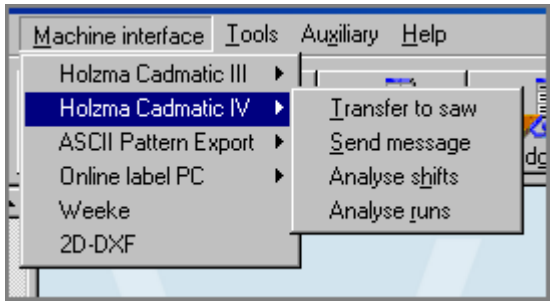


Figure 6-29 Saw transfer menu choices

Several different types of link and saw can be set up (see Saw transfer parameters) - these appear as options on the Machine interface menu. On transfer the program shows the batch screen for the current run.

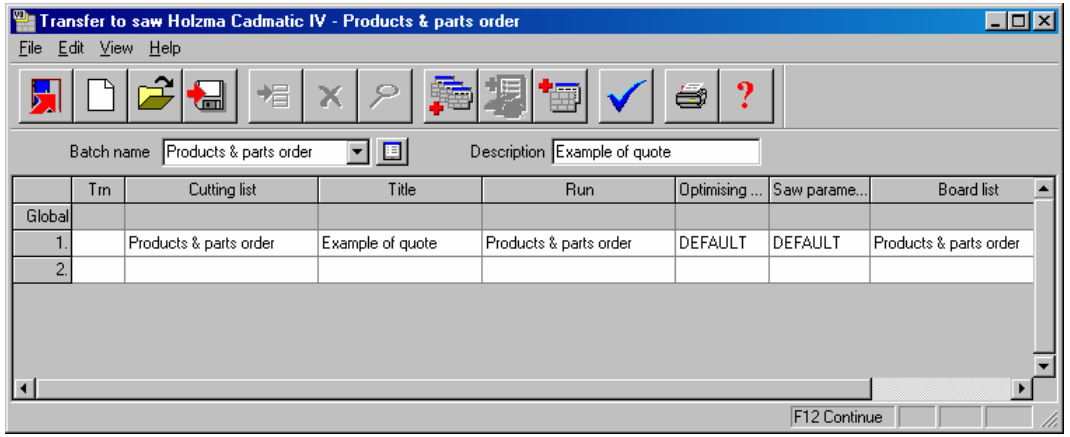


Figure 6-30 Saw transfer batch screen

Several runs can be transferred at a time. Use the Batch screen to change or adjust the selection. Before transfer a screen confirms the transfer and shows a list of the materials and patterns transferred.

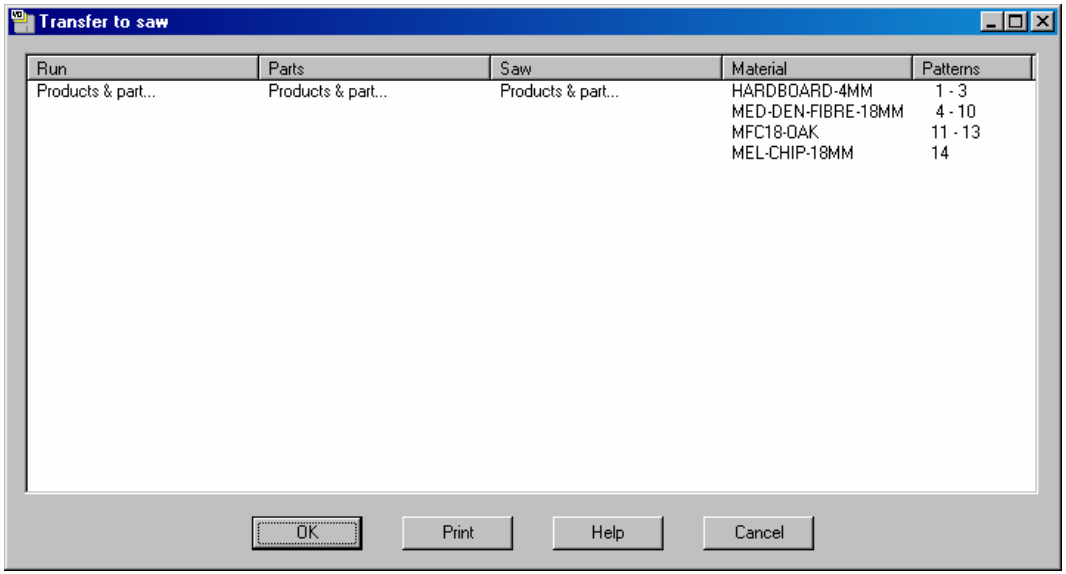


Figure 6-31 Saw transfer details

The data is now ready for use at the Saw

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 IV, Table Saw etc)
- 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.

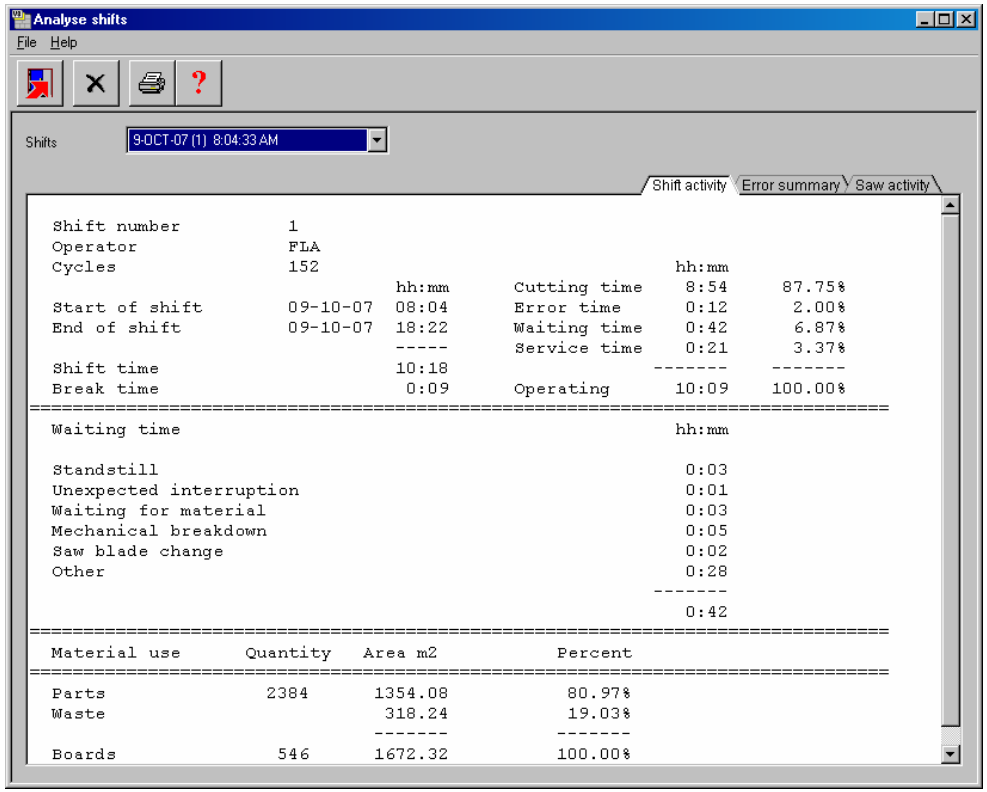


Figure 6-32 Analyse shifts summary

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

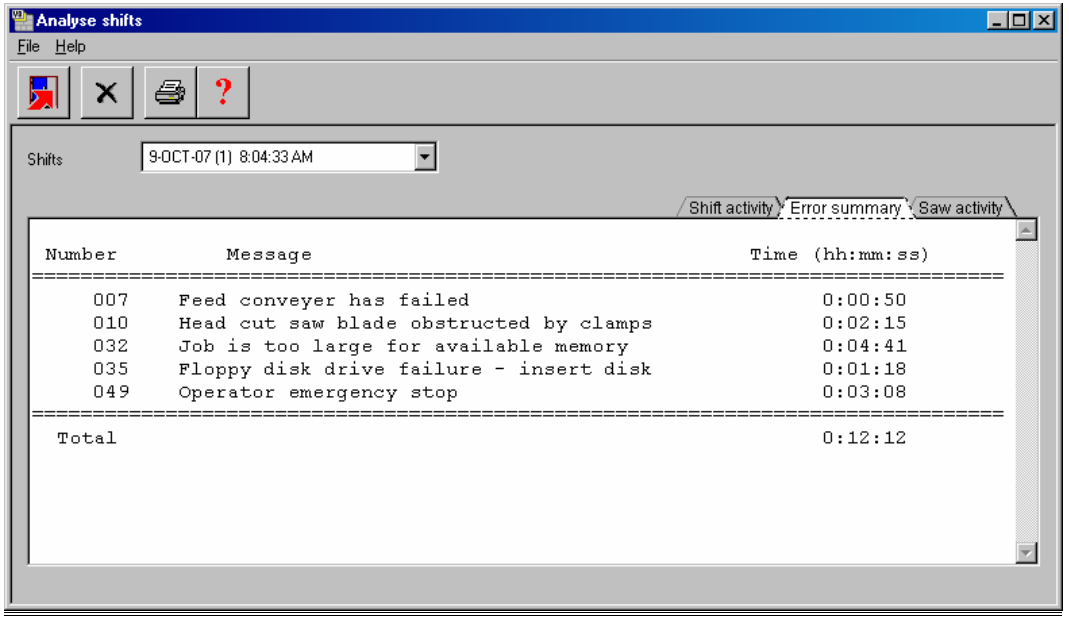


Figure 6-33 Analyse shifts summary of errors

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 IV, Table Saw etc.)
- 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.

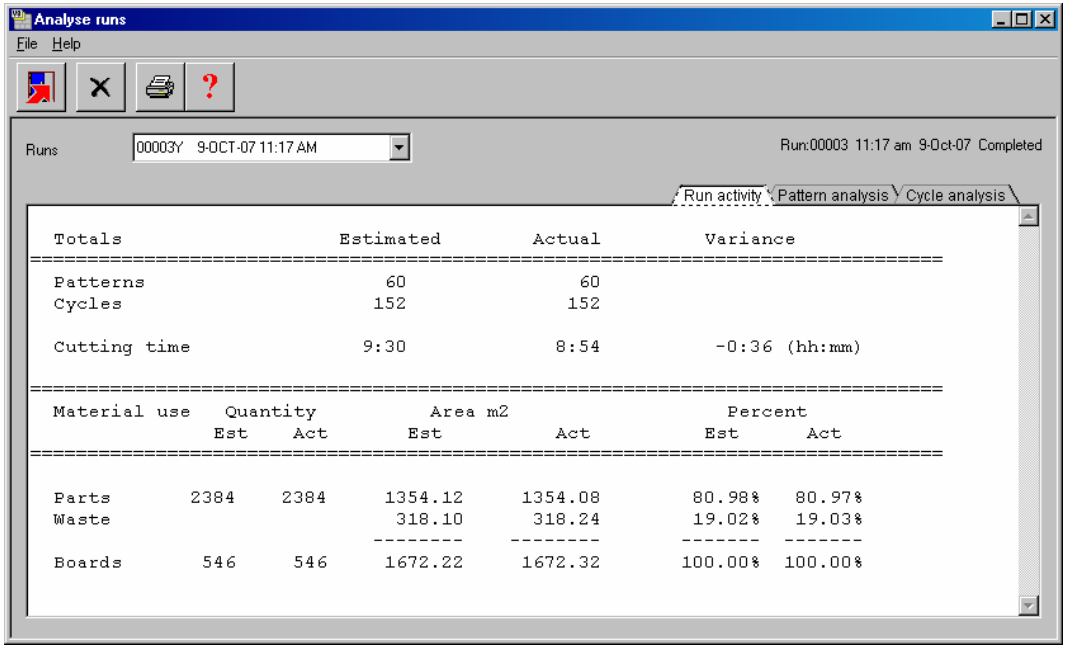


Figure 6-34 Analyse shifts summary of errors

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.

Saw transfer parameters

Set up for Saws

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. Holzma Cadmatic III/IV.

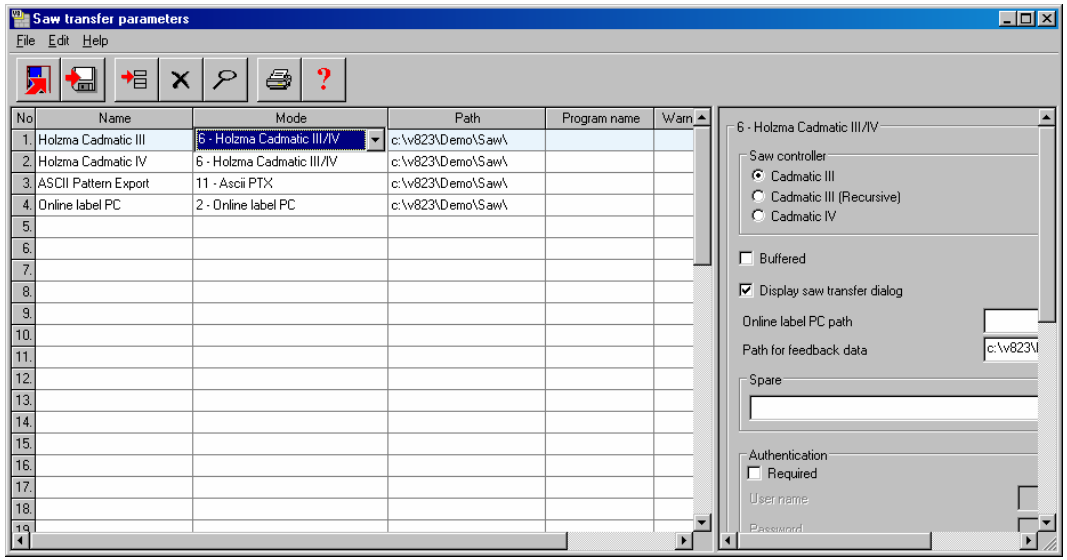


Figure 6-35 Saw transfer parameters

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 Holzma Saw, Homag edgebander, and Bargstedt destacking machine, using the 'Group transfer' option.

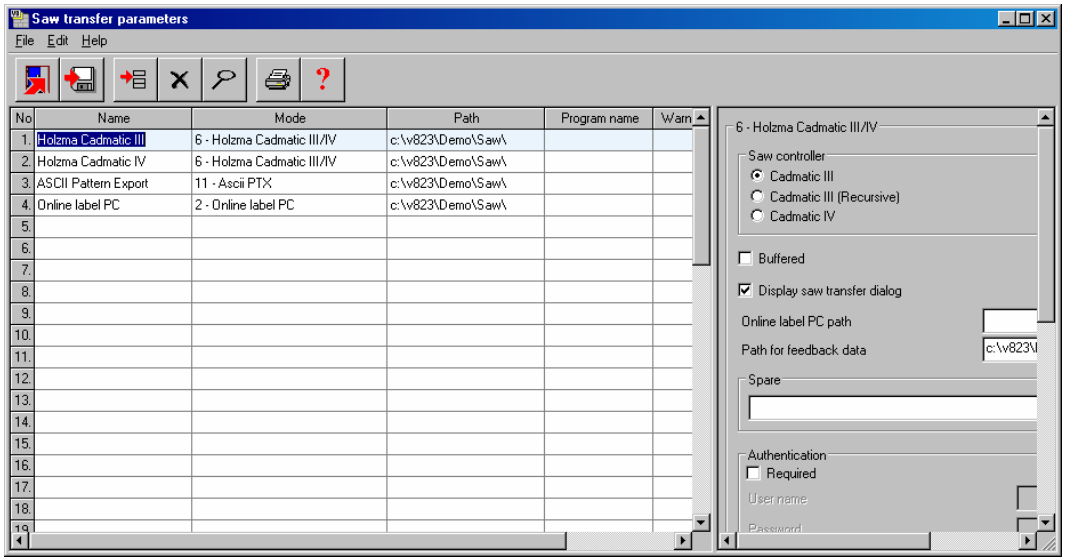


Figure 6-36 Saw transfer parameters - transfer to Group

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, Bargstedt etc.

7. Nesting optimising (NE)

Nesting module only

Nesting - Introduction

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.

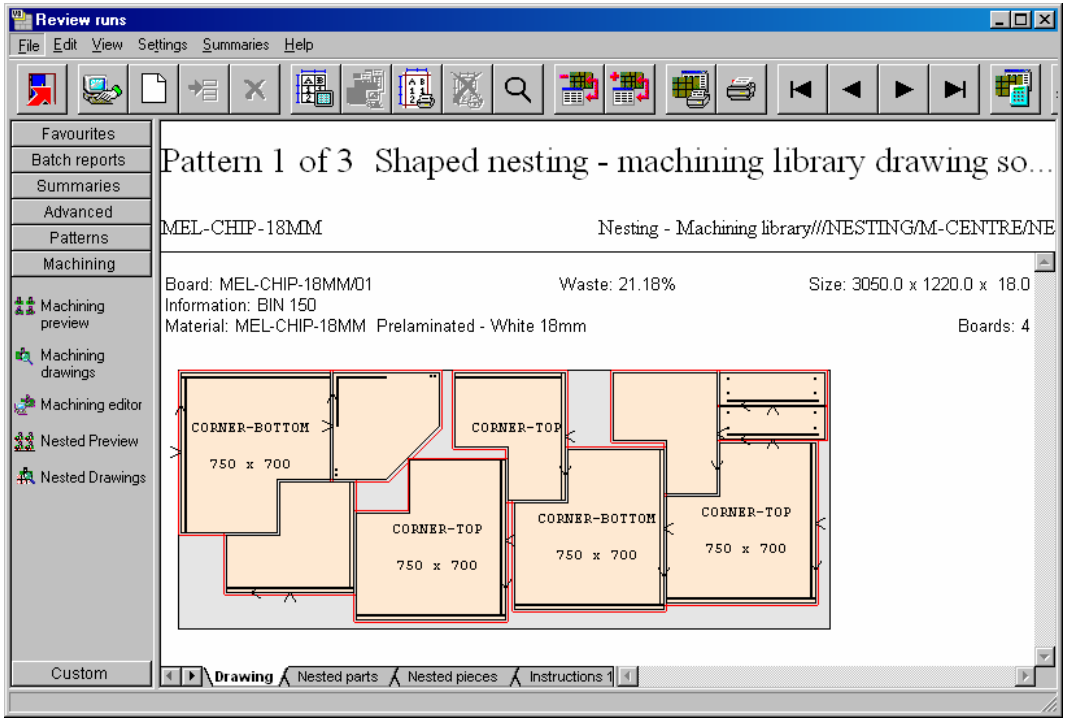


Figure 7-01 Nesting optimising - pattern

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. Where the Nesting module is used on its own the operation of the program is made simpler by excluding all the program options that are not relevant to this way of working.

Note - if only using Nesting Optimising the sections in this guide on *Optimising*, *Pattern amendment* and *Transfer to Saw* do not apply but Nesting can be used with other modules such as *Quotes / Orders*, *Product requirements* etc.

Nesting Optimising - Walkthrough

Part list

The start of the process is a list of parts to be cut. This is either generated from the Quotes / Orders module, Product requirements module, manual entry of cutting sizes and/or the selection of parts from the Part library, MPR files, Machining library or some other drawing source. Part lists can also be imported from other systems.

By default parts can be selected from the Part Library

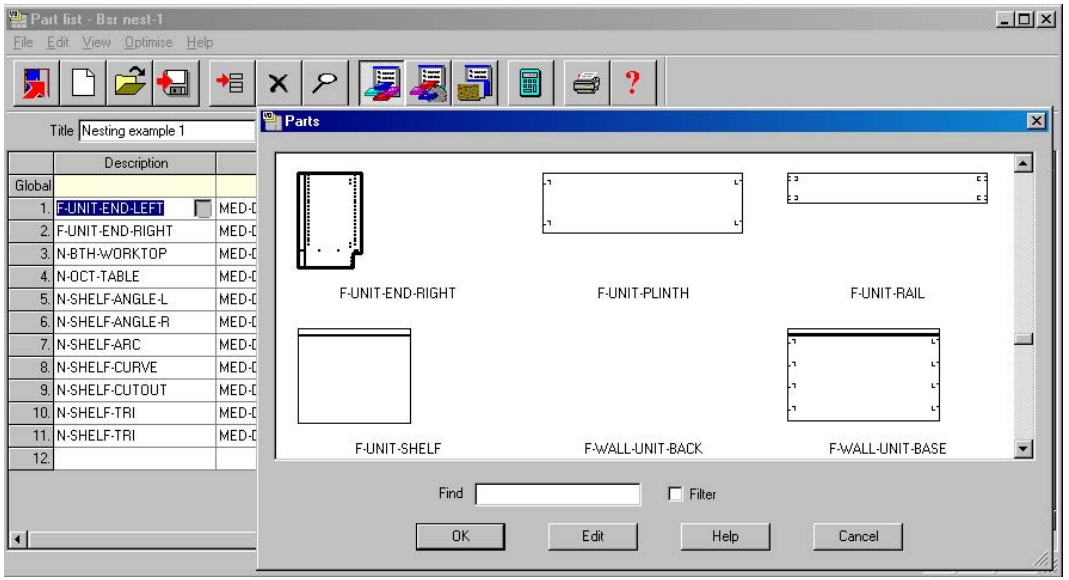


Figure 7-02 Nesting optimising - part list select parts

The choice of where to select parts from is set by the Part list parameter: *Drawing source.* This parameter typically applies to all part lists in a User directory.

Parts can be selected from other sources, for example, from a directory of MPR files.

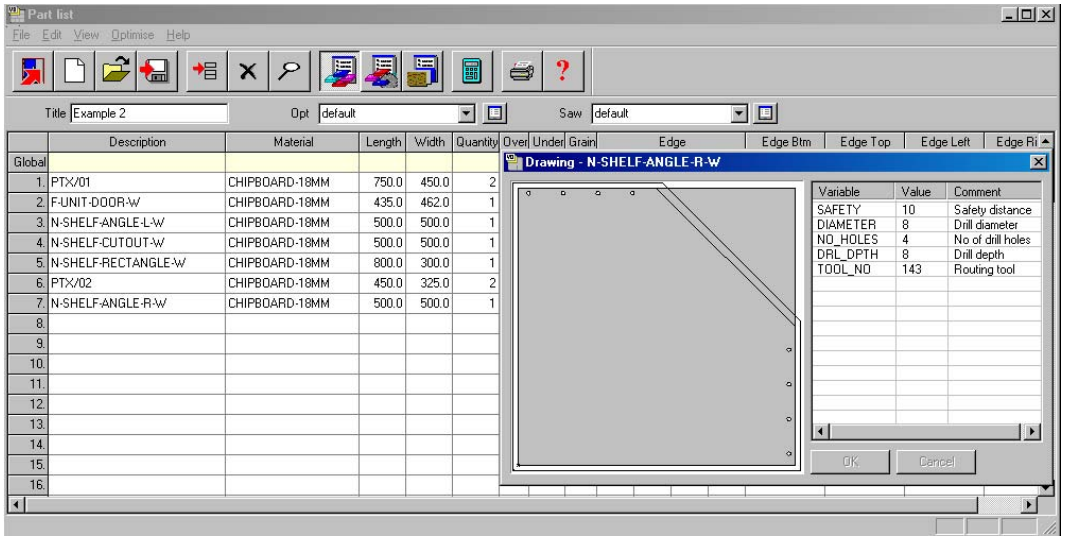


Figure 7-03 Nesting optimising - part list MPR based part

For each part a dialog showing the part drawing is available (*View* - *Part drawing*) which pops up when the part is selected. For MPR files the MPR variables are shown at the right of the drawing and can be edited as necessary.

Parts can also be selected from the Machining library.

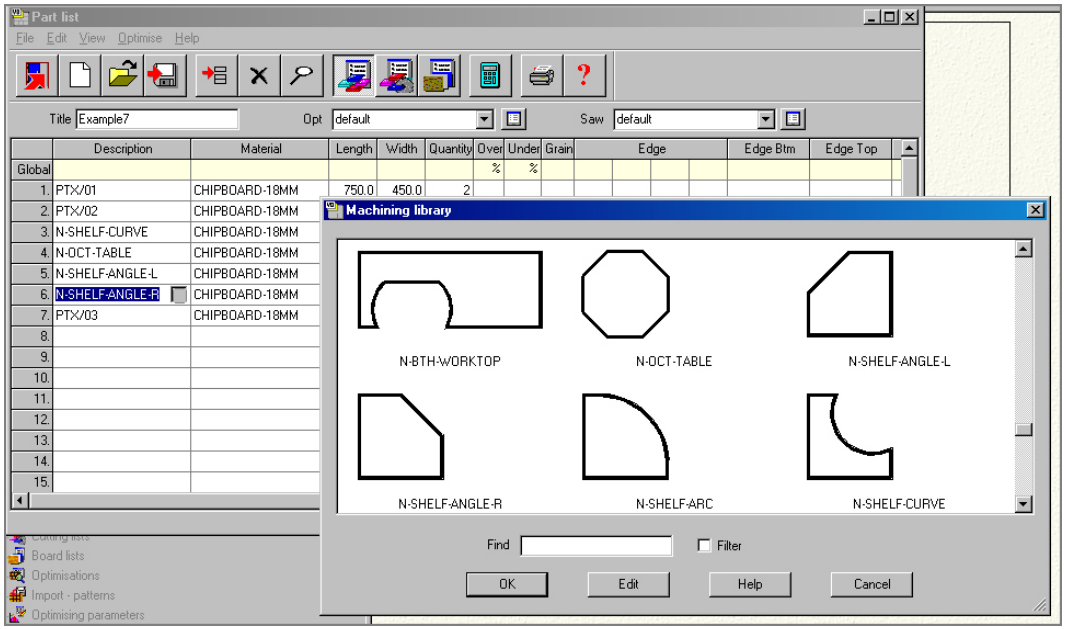


Figure 7-04 Nesting optimising - select parts from Machining library

Other drawing sources are: DXF files, Drawing library.

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 the MPR file using Weeke WoodWop.

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

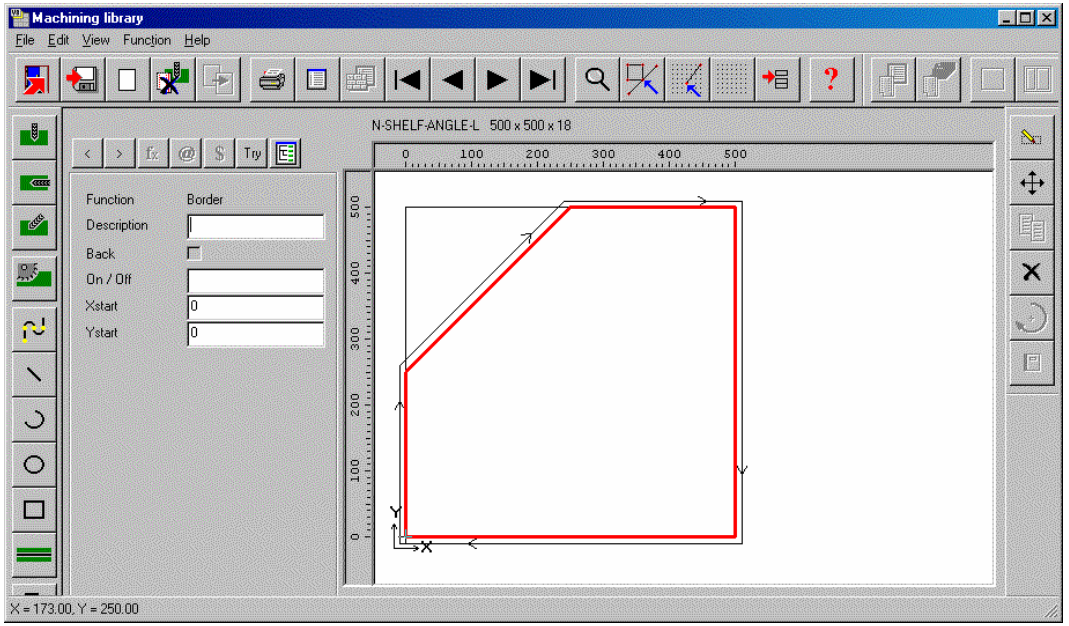


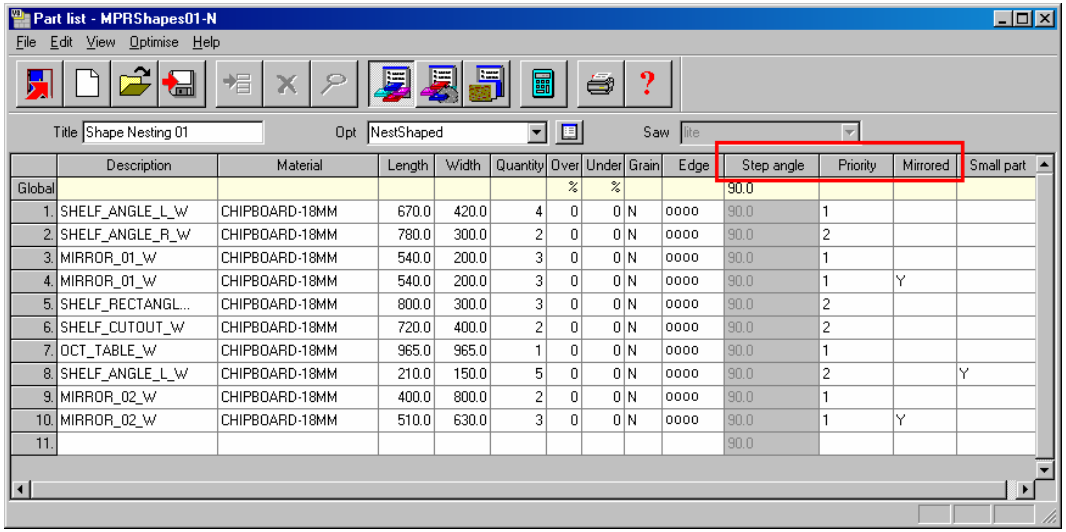
Figure 7-05 Nesting optimising - define shaped parts

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 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.

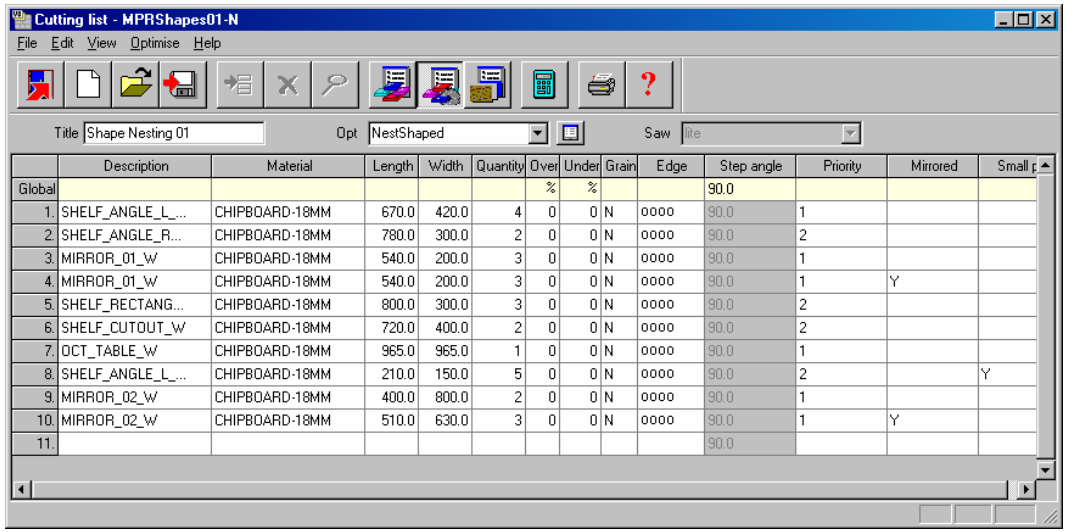


	Description	Material	Length	Width	Quantity	Over	Under	Grain	Edge	Step angle	Priority	Mirrored	Small part
Global						%	%			90.0			
1.	SHELF_ANGLE_L_W	CHIPBOARD-18MM	670.0	420.0	4	0	0	N	0000	90.0	1		
2.	SHELF_ANGLE_R_W	CHIPBOARD-18MM	780.0	300.0	2	0	0	N	0000	90.0	2		
3.	MIRROR_01_W	CHIPBOARD-18MM	540.0	200.0	3	0	0	N	0000	90.0	1		
4.	MIRROR_01_W	CHIPBOARD-18MM	540.0	200.0	3	0	0	N	0000	90.0	1	Y	
5.	SHELF_RECTANGL...	CHIPBOARD-18MM	800.0	300.0	3	0	0	N	0000	90.0	2		
6.	SHELF_CUTOUT_W	CHIPBOARD-18MM	720.0	400.0	2	0	0	N	0000	90.0	2		
7.	OCT_TABLE_W	CHIPBOARD-18MM	965.0	965.0	1	0	0	N	0000	90.0	1		
8.	SHELF_ANGLE_L_W	CHIPBOARD-18MM	210.0	150.0	5	0	0	N	0000	90.0	2		Y
9.	MIRROR_02_W	CHIPBOARD-18MM	400.0	800.0	2	0	0	N	0000	90.0	1		
10.	MIRROR_02_W	CHIPBOARD-18MM	510.0	630.0	3	0	0	N	0000	90.0	1	Y	
11.										90.0			

Figure 7-06 Nesting optimising - part list

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

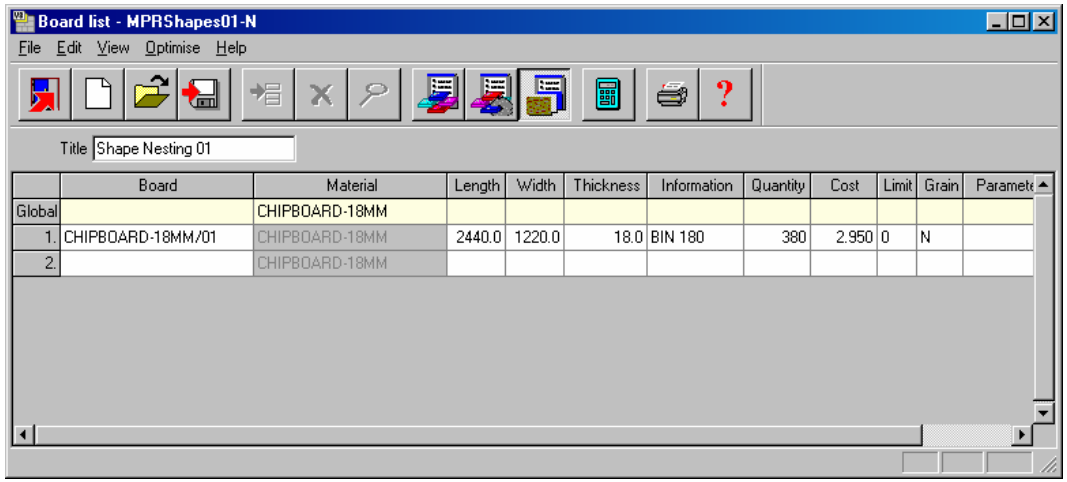
Once the Part list is set up the program creates a list of cut sizes (cutting list).



	Description	Material	Length	Width	Quantity	Over	Under	Grain	Edge	Step angle	Priority	Mirrored	Small p
Global						%	%			90.0			
1.	SHELF_ANGLE_L_...	CHIPBOARD-18MM	670.0	420.0	4	0	0	N	0000	90.0	1		
2.	SHELF_ANGLE_R...	CHIPBOARD-18MM	780.0	300.0	2	0	0	N	0000	90.0	2		
3.	MIRROR_01_W	CHIPBOARD-18MM	540.0	200.0	3	0	0	N	0000	90.0	1		
4.	MIRROR_01_W	CHIPBOARD-18MM	540.0	200.0	3	0	0	N	0000	90.0	1	Y	
5.	SHELF_RECTANG...	CHIPBOARD-18MM	800.0	300.0	3	0	0	N	0000	90.0	2		
6.	SHELF_CUTOUT_W	CHIPBOARD-18MM	720.0	400.0	2	0	0	N	0000	90.0	2		
7.	OCT_TABLE_W	CHIPBOARD-18MM	965.0	965.0	1	0	0	N	0000	90.0	1		
8.	SHELF_ANGLE_L_...	CHIPBOARD-18MM	210.0	150.0	5	0	0	N	0000	90.0	2		Y
9.	MIRROR_02_W	CHIPBOARD-18MM	400.0	800.0	2	0	0	N	0000	90.0	1		
10.	MIRROR_02_W	CHIPBOARD-18MM	510.0	630.0	3	0	0	N	0000	90.0	1	Y	
11.										90.0			

Figure 7-07 Nesting optimising - cutting list

Board list - The program automatically extracts materials from the board library based on the material codes for each part in the cutting list - creating a Board list.



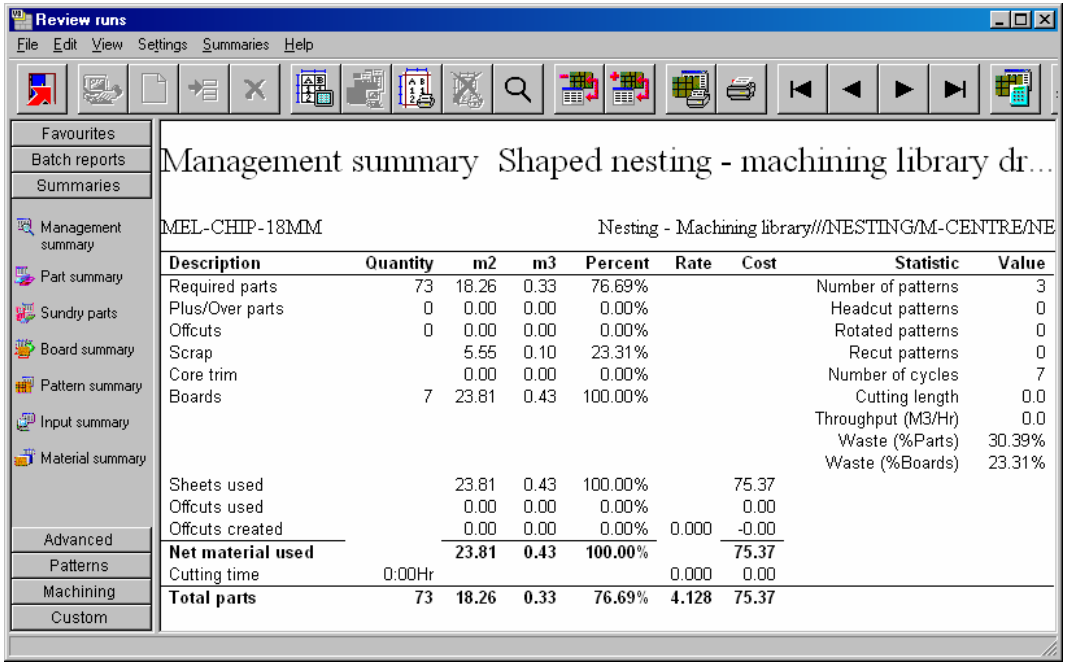
	Board	Material	Length	Width	Thickness	Information	Quantity	Cost	Limit	Grain	Paramet
Global		CHIPBOARD-18MM									
1.	CHIPBOARD-18MM/01	CHIPBOARD-18MM	2440.0	1220.0	18.0	BIN 180	380	2.950	0	N	
2.		CHIPBOARD-18MM									

Figure 7-08 Nesting optimising - cutting list

The optimiser used and type of nesting depends on the setting for Optimiser type in the Optimising parameters used for the run. For Nesting Optimising - most of the other Optimising and Saw parameters concerned with cutting at a saw do not apply and can be ignored - these are replaced by the Nesting parameters.

Review runs

Optimising produces a set of Nested patterns. The first screen shown is usually the Management summary for the run.



Description	Quantity	m2	m3	Percent	Rate	Cost	Statistic	Value
Required parts	73	18.26	0.33	76.69%			Number of patterns	3
Plus/Over parts	0	0.00	0.00	0.00%			Headcut patterns	0
Offcuts	0	0.00	0.00	0.00%			Rotated patterns	0
Scrap		5.55	0.10	23.31%			Recut patterns	0
Core trim		0.00	0.00	0.00%			Number of cycles	7
Boards	7	23.81	0.43	100.00%			Cutting length	0.0
							Throughput (M3/Hr)	0.0
							Waste (%Parts)	30.39%
							Waste (%Boards)	23.31%
Sheets used		23.81	0.43	100.00%		75.37		
Offcuts used		0.00	0.00	0.00%		0.00		
Offcuts created		0.00	0.00	0.00%	0.000	-0.00		
Net material used		**23.81**	**0.43**	**100.00%**		**75.37**		
Cutting time	0:00Hr				0.000	0.00		
Total parts	**73**	**18.26**	**0.33**	**76.69%**	**4.128**	**75.37**		

Figure 7-10 Nesting optimising - Management summary

A variety of summaries are available, Parts, Materials, Board sizes etc. Use Form design to create custom reports.

The pattern preview shows a thumbnail view of the patterns produced.

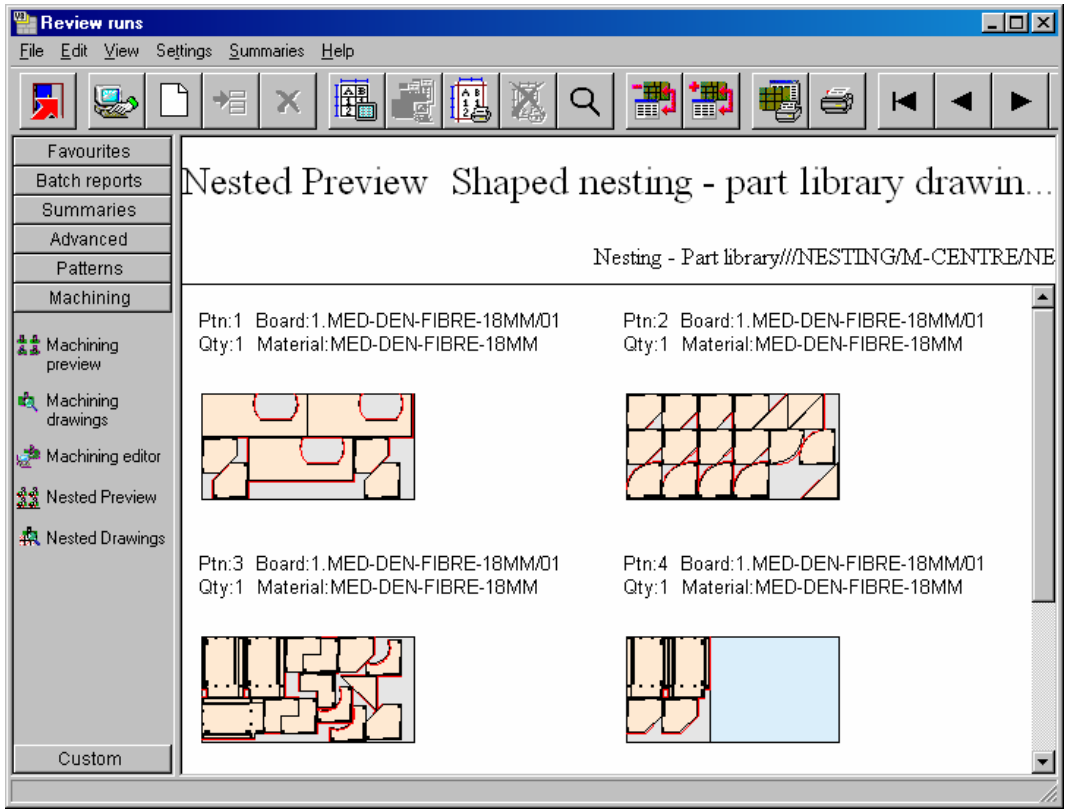


Figure 7-11 Nesting optimising - pattern preview

The various summaries are available from the Stacked toolbar at the left. The nested preview and machining summary options are on the Machining tab.

Click on a thumbnail picture to see the full details for a pattern.

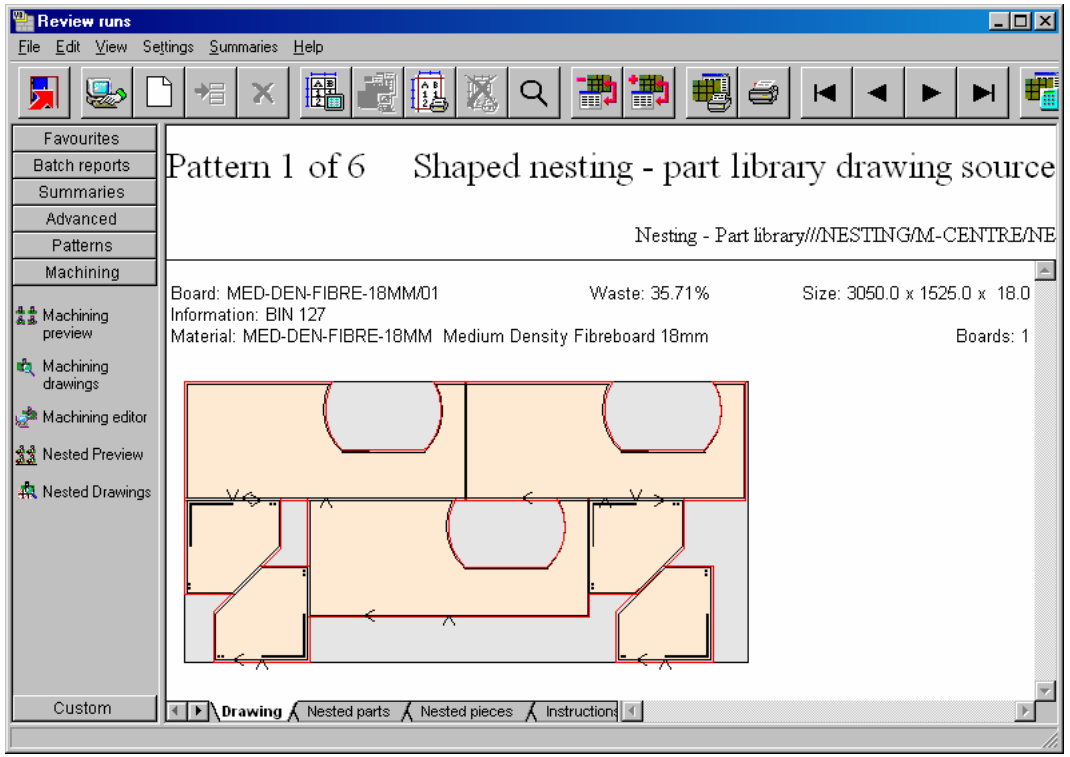


Figure 7-12 Nesting optimising - pattern

Use the tabs at the foot of the pattern screen to see full details of each pattern - this includes the full set of machining instructions.

The parts can include the item number or description.

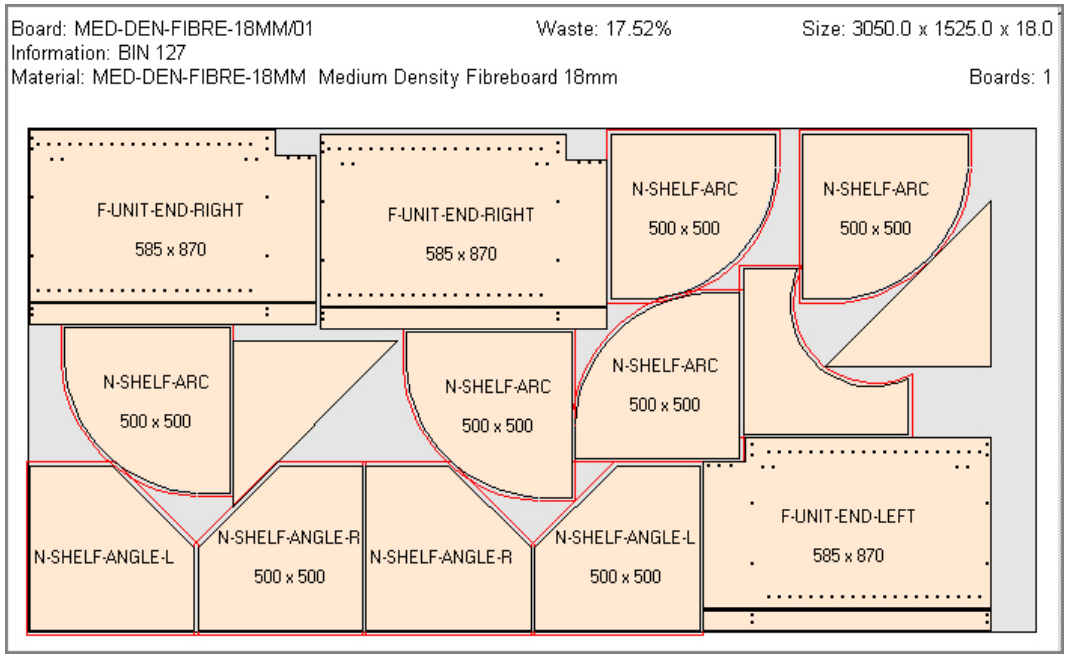


Figure 7-13 Nesting optimising - pattern labels

The information shown depends of the relative size of each part. If necessary the labelling can be restricted to the item number in the part list.

The details of each pattern can be viewed via the tabs at the foot of the pattern display screen. For example a full list of part sizes and quantities.

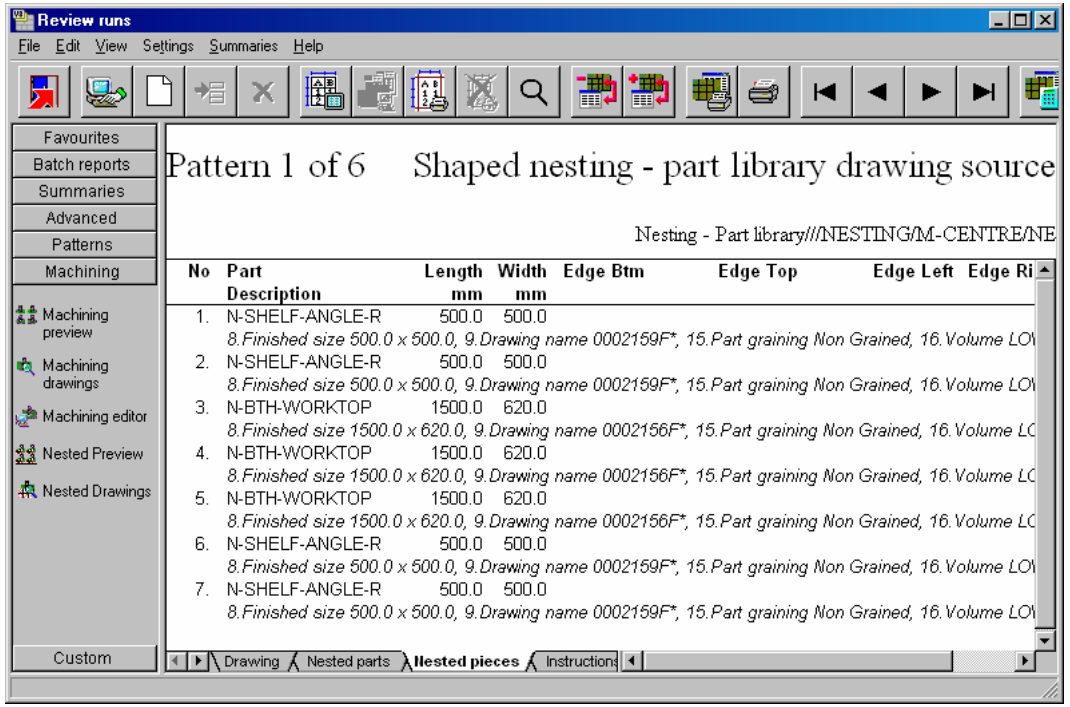


Figure 7-14 Nesting optimising - part sizes

The display format and information shown can be adjusted by: *Review runs - Parameters*.

Nested patterns - offcuts

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

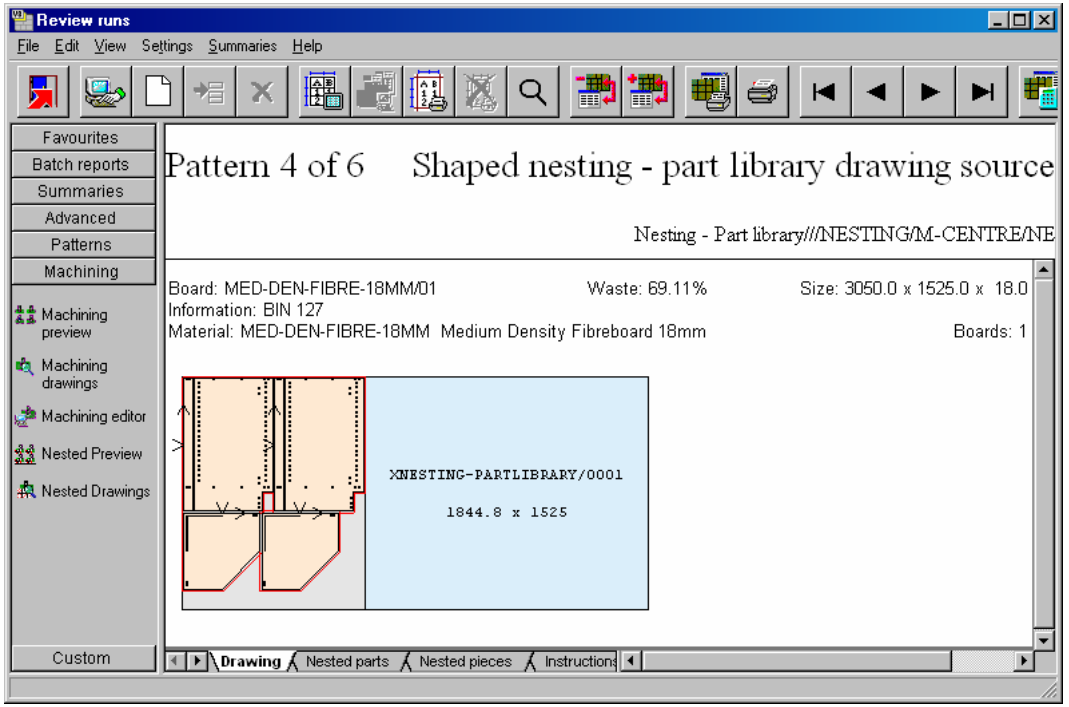


Figure 7-15 Nesting optimising - offcuts

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.

Editing Nested patterns and parts

Where necessary pattern arrangements and part machining instructions can be edited by the Nesting editor and via the Machining drawing editor.

At the Nested Preview or at a Nested pattern - click on a pattern to move to the Nesting editor (or select the Machining editor option at the stacked toolbar on the left).

The screen shows the Machining editor for the pattern.

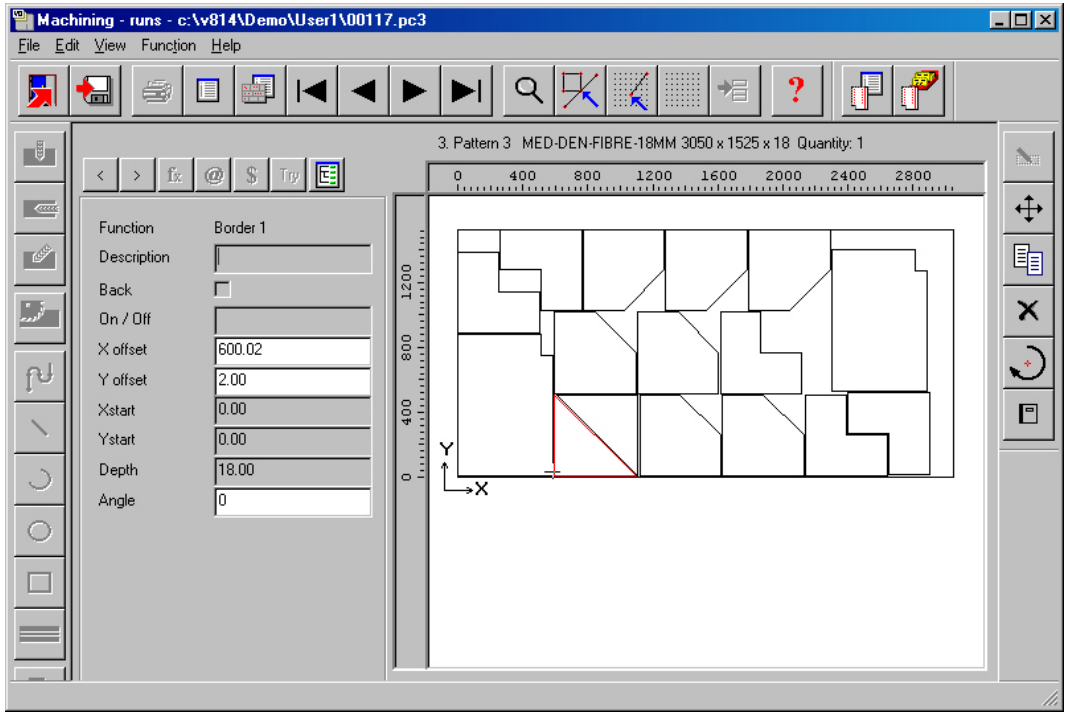


Figure 7-16 Nesting optimising - edit

Select a part using the mouse. The part details are shown in the function dialog at the left.

Parts can be rotated, moved, copied, deleted etc. using the toolbar at the right.

Note - when working with the pattern the function options (rout, groove, arc etc) are not available.

In the example below some parts have been deleted and a new part added and moved into position.

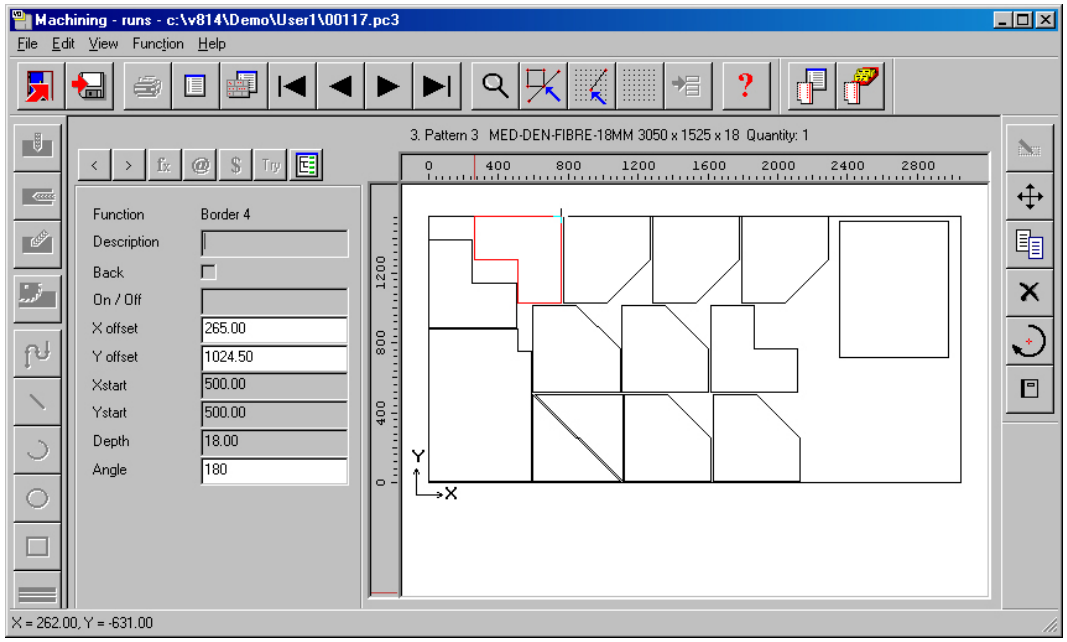


Figure 7-17 Nesting optimising - edit

Select a part and use the toolbar at the right of the screen to delete, move and rotate etc. parts.

The 'Add parts' toolbar at the top of the screen can be used to add in parts from the current run or to add a new part from the Part library.

When the changed pattern is saved the program checks the layout of parts and errors are reported if a part violates the safety distance in relation to other parts or to the edge of the board. Offcuts are automatically recalculated.

To edit the Machining instructions on an individual part select the Machining drawing preview option at the Pattern display screen.

This shows the machining drawings for each part in the run.

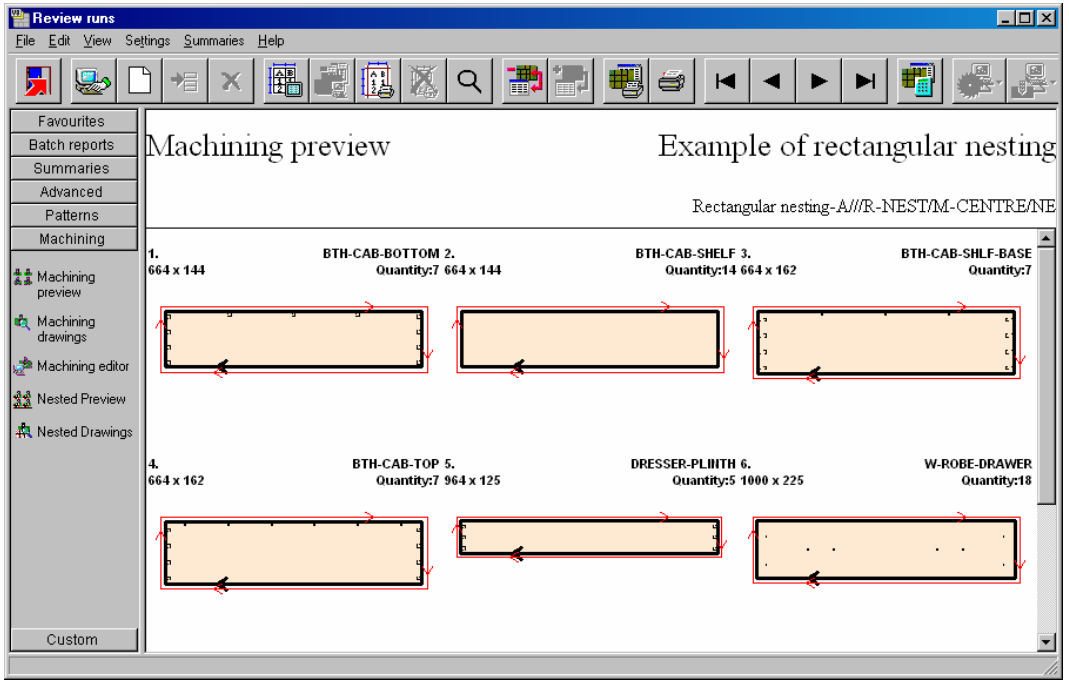


Figure 7-18 Nesting optimising - machining

You can also move directly to individual Part drawings by selecting the Machining drawings option. The first drawing is shown.

At the Machining preview - click on a part to move Machining drawing display.

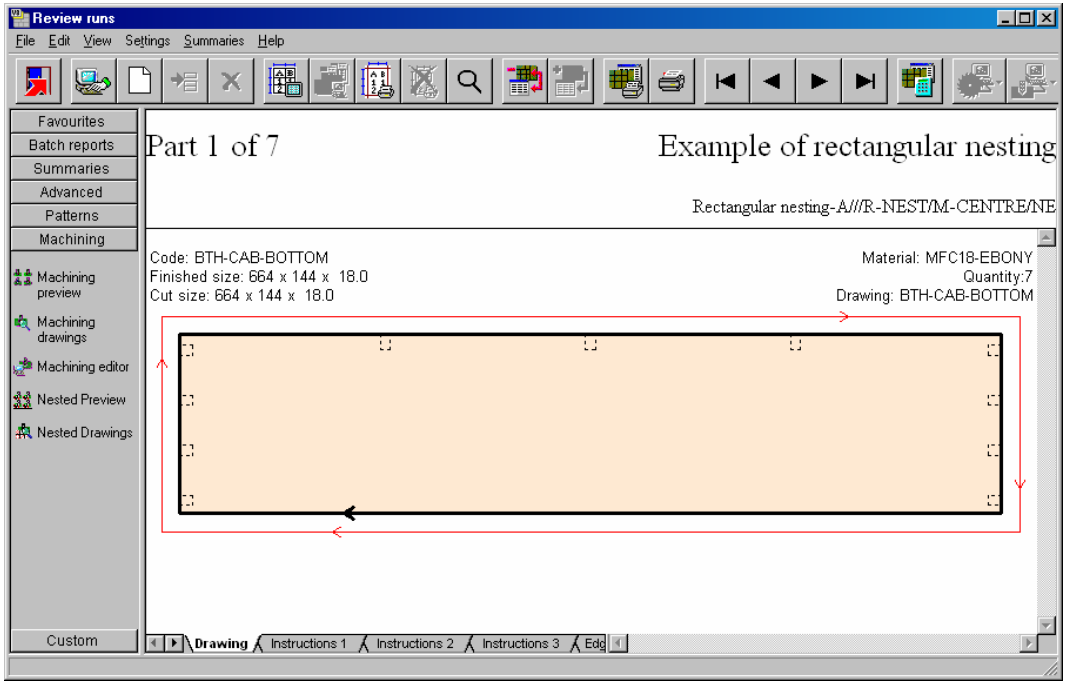


Figure 7-19 Nesting optimising - machining for part

Use the Navigation bar to move between part drawings.

Click on a part drawing to move to the Machining drawing editor.

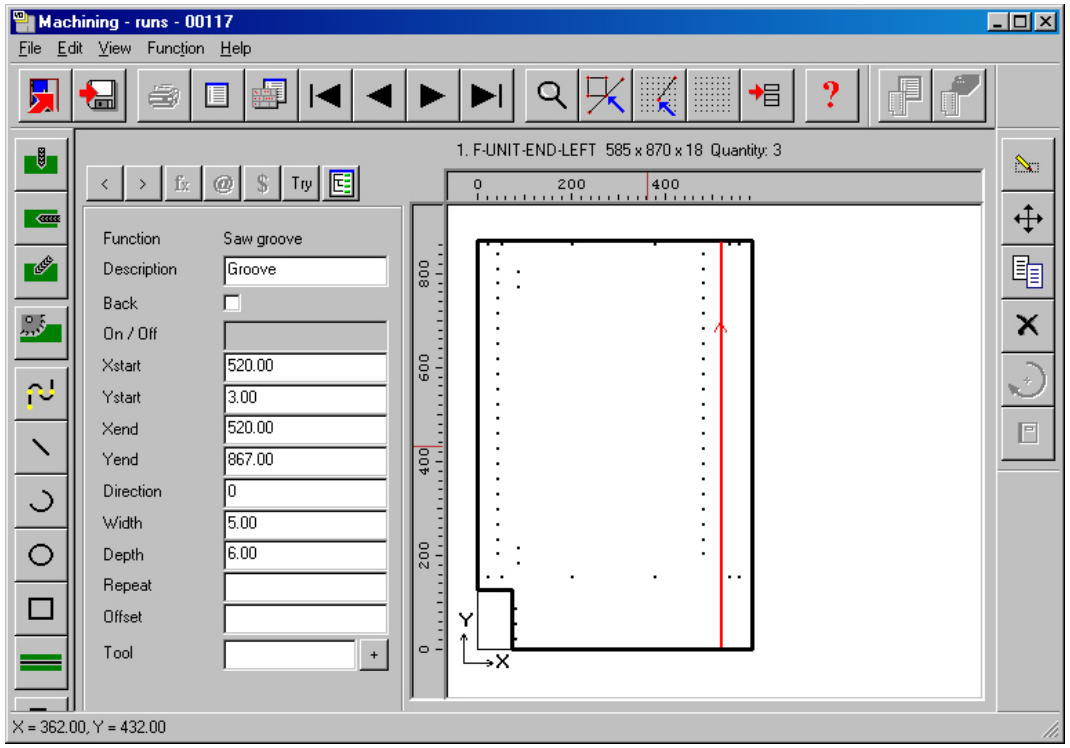


Figure 7-20 Nesting optimising - edit machining drawing

This gives access to the machining instructions.

This operates in a very similar way to the Machining library but note that for an optimised run all the instructions have been converted to absolute measurements.

Transfer to Machining centre

When the nested patterns are ready they can be transferred to a Machining centre. At the main screen select:-

- Machining interface
- Select the Machine centre name to transfer to (for example, Weeke)

Note - the options for transfer are set via the option at the main screen: *Machining centre parameters - Transfer*

The program shows the batch to transfer

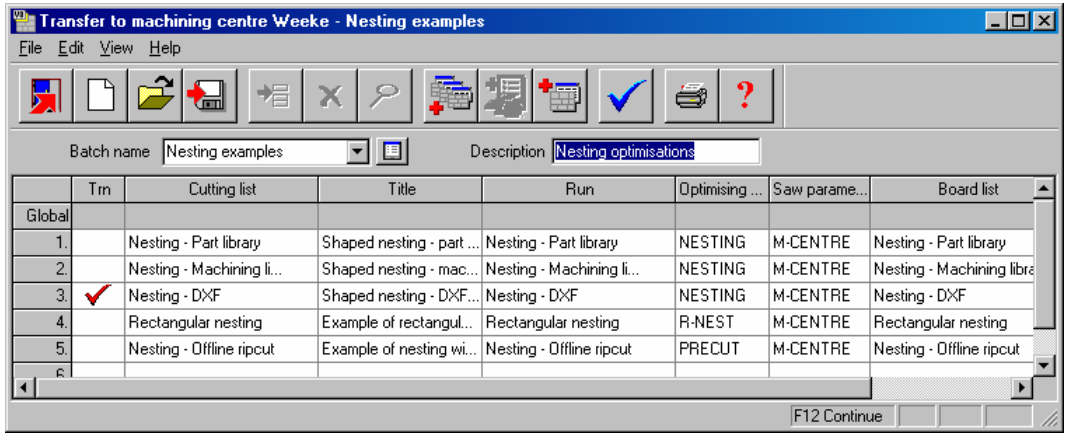


Figure 7-21 Nesting optimising - transfer to machining centre

 Select the tick to continue

After transfer the program returns to the main menu.

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
DXF

Machining library
Drawing library

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

MPR and DXF options allow the use of parts to be based on separate MPR 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 files then the editing of part instructions is done via Weeke WoodWop. The Weeke WoodWop program is called automatically when an MPR 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.

Nesting parameters

Use these to set up the system for Nesting. There are two sets of parameters.

- System parameters (Routing/Nesting, Nesting)
- Nesting parameters

The system parameters apply to the overall system set up and the Nesting parameters can be set for different runs.

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**

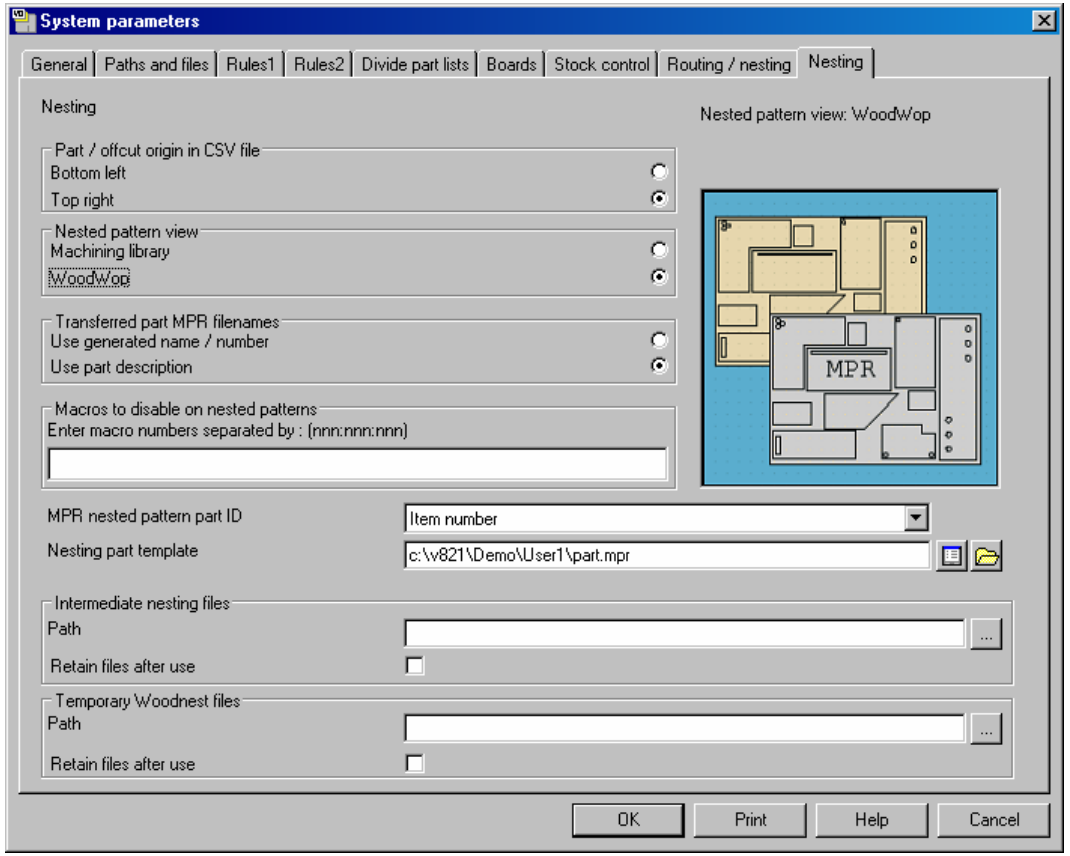


Figure 7-21a System parameters (Nesting)

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.

Nesting parameters

These can be set for each part list. At the main screen:-

- Select: **Parameters - Nesting parameters**

Select an existing file or create a new file.

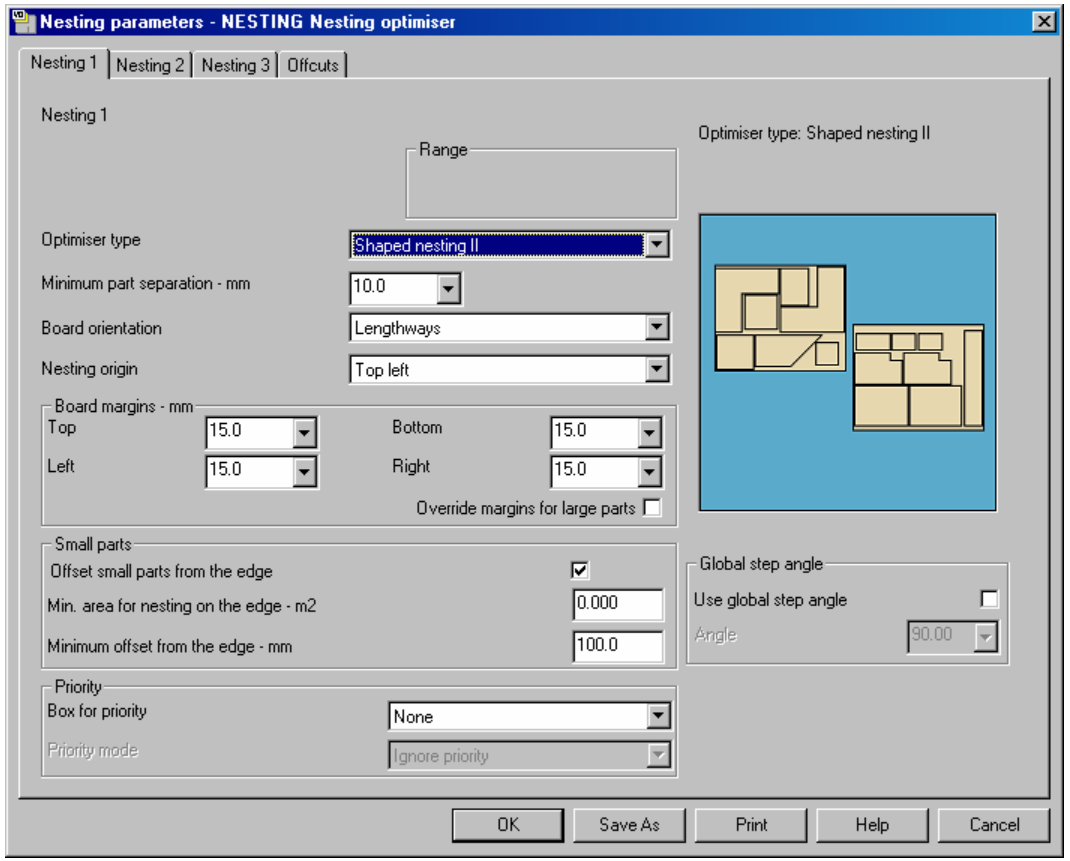


Figure 7-22 Nesting parameters

Use these to set, for example, 'Optimiser type' (Rectangular nesting or Shaped nesting), Minimum part separation, board margins etc.

- Select each tab to view and edit the values.

The nesting parameters to use for each part list are set at the part list screen or the batch screen when optimising.

Material parameters - many of the Nesting parameters can also be set as material parameters which means the value is overriden for a specific material. This avoids having to set up a large number of Nesting parameters files where there are occasional changes (for example, to part separation or margins).

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.

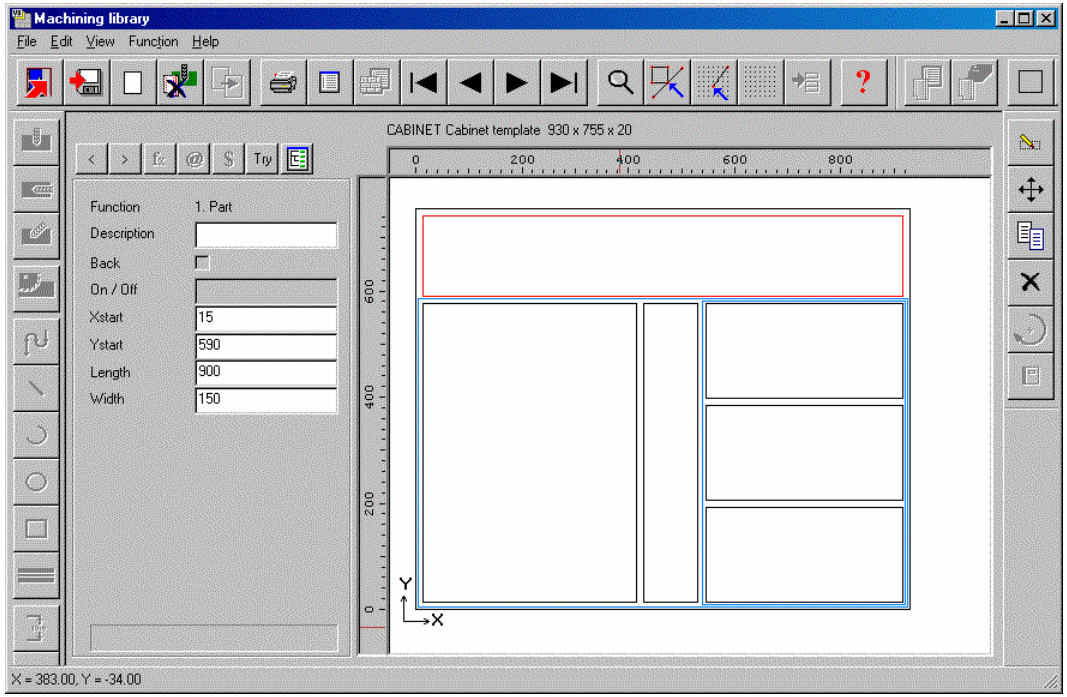


Figure 7-24 Nesting optimising - templates

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.

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.

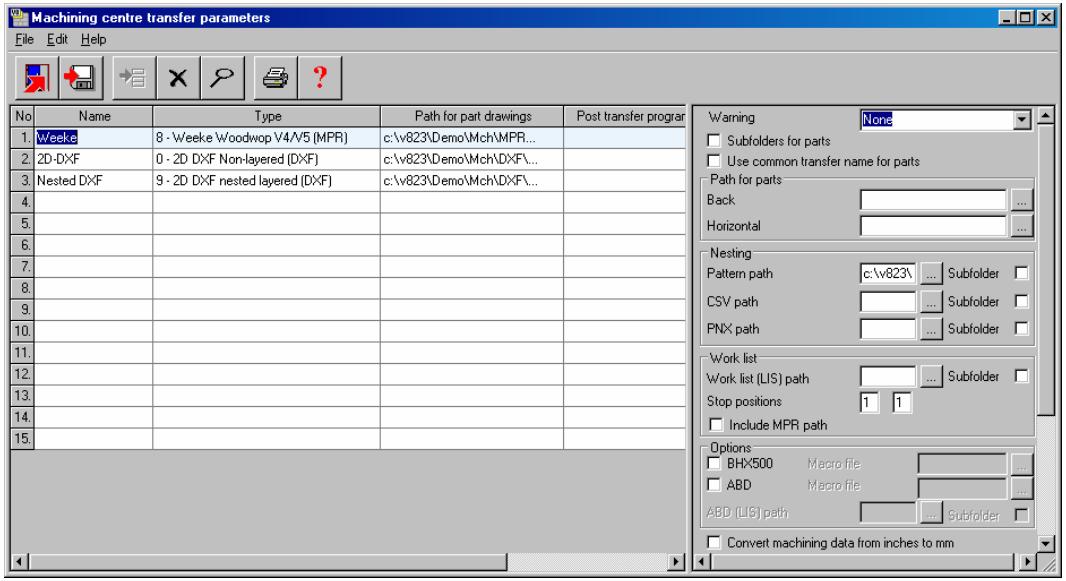


Figure 7-25 Machining centre transfer parameters

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

```
0  - 2D DXF Non-layered (DXF)
8  - Weeke WoodWop V4/V5 (MPR)
9  - 2D DXF nested layered (DXF)
11 - ASCII PTX
```

12 - MDB PTX

The right hand pane is for any extra parameters - these vary as they depend on the type of machining centre.

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.

Machining centre parameters (Nesting)

Nesting can be used with the Nesting module (NE) only or with the Machining library module (NE+MI). With the MI module part drawings can created and used from the Machining library rather than MPR files and the Machining centre parameters (Nested patterns) can be used to set values for Offcuts and tooling.

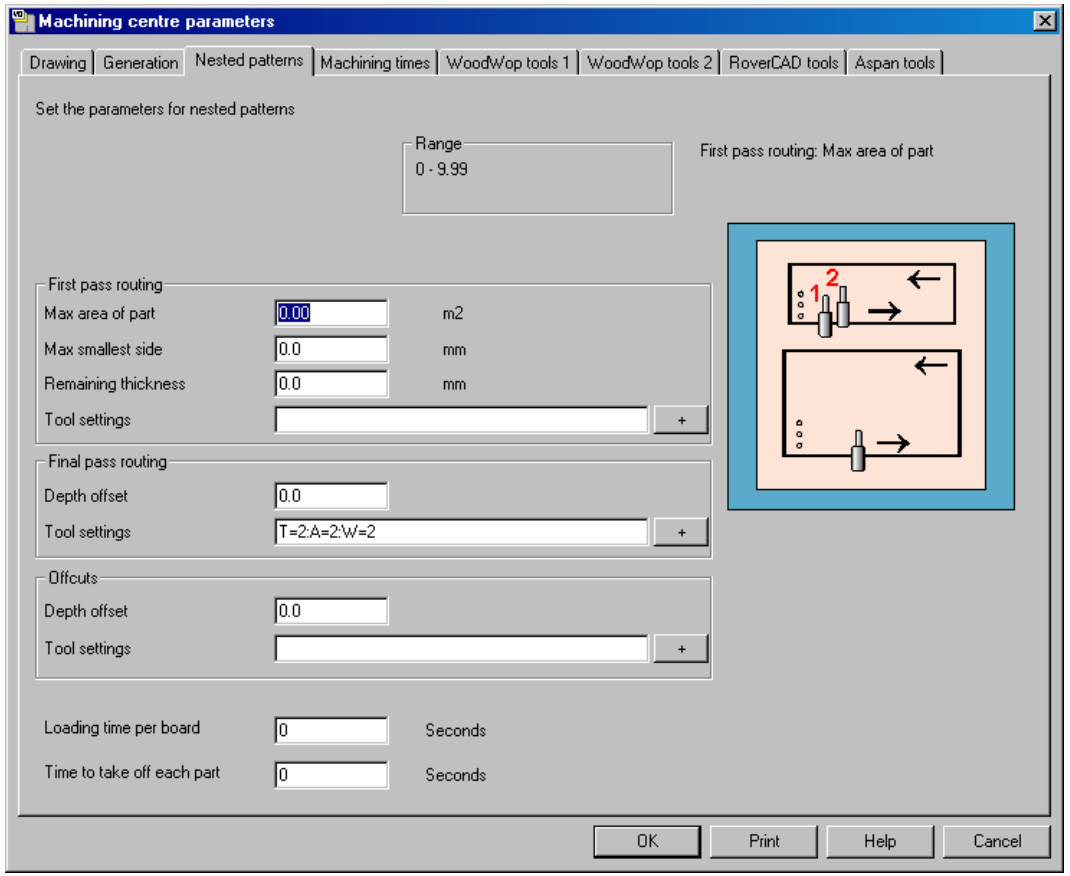


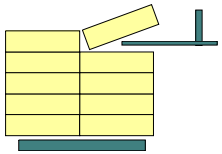
Figure 7-26 Machining centre parameters (Nesting)

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.

Note - MPR based parts and patterns use the 'Project Manager' option for tool optimisaton and do not use the Tool sequence parameters.

8. Destacking and Palletisation (DS)



This covers manual destacking from the saw and destacking with mechanised off-stacking machinery.

The program automatically calculates all the destacking information and provides several destacking reports.

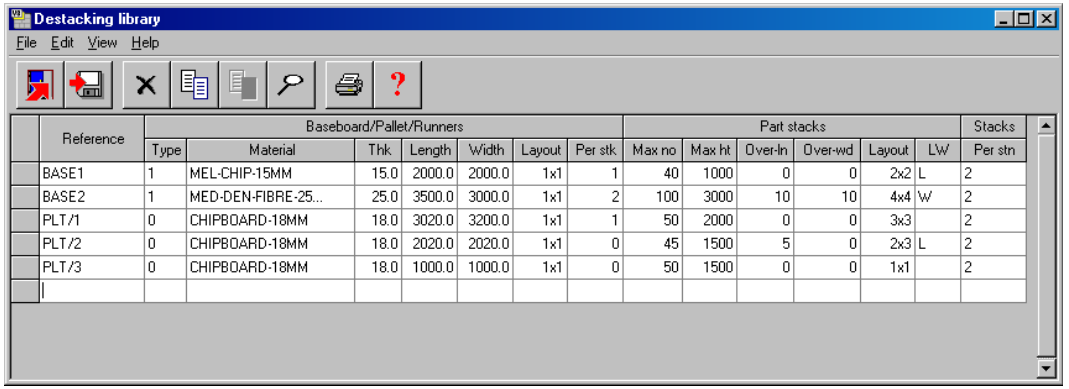
There is an optional link to mechanised destacking machinery.

There are two methods for Destacking:-

Destacking without station sizes. Assumes there are no restrictions on the stations sizes. It can often be used when destacking to pallets or baseboards on the floor. The standard optimisers are used and the number of pallets is controlled by the Optimising parameter. Max open parts. The station sizes (set in Destacking parameters) are not used.

Destacking with station sizes. With more complex destacking machinery set the station sizes in the Destacking parameters and use the special Destacking optimisers.

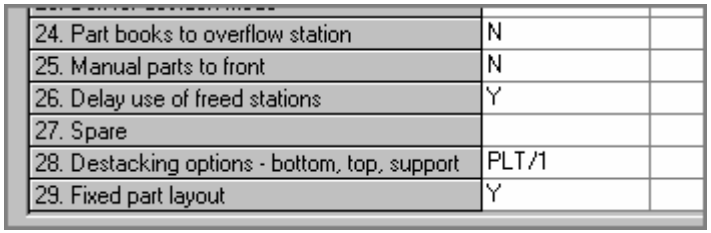
Destacking information is set as named 'styles' in the Destacking library and the destacking styles are assigned to each part in the part list via an information box parameter



Reference	Baseboard/Pallet/Runners							Part stacks						Stacks
	Type	Material	Thk	Length	Width	Layout	Per stk	Max no	Max ht	Over-ln	Over-wd	Layout	LW	Per stn
BASE1	1	MEL-CHIP-15MM	15.0	2000.0	2000.0	1x1	1	40	1000	0	0	2x2	L	2
BASE2	1	MED-DEN-FIBRE-25...	25.0	3500.0	3000.0	1x1	2	100	3000	10	10	4x4	W	2
PLT/1	0	CHIPBOARD-18MM	18.0	3020.0	3200.0	1x1	1	50	2000	0	0	3x3		2
PLT/2	0	CHIPBOARD-18MM	18.0	2020.0	2020.0	1x1	0	45	1500	5	0	2x3	L	2
PLT/3	0	CHIPBOARD-18MM	18.0	1000.0	1000.0	1x1	0	50	1500	0	0	1x1		2

Figure 8-01 Destacking library

In this example the destacking parameter: Destacking options points contains the code for destacking - so all parts are destacked in the same way.



24. Part books to overflow station	N	
25. Manual parts to front	N	
26. Delay use of freed stations	Y	
27. Spare		
28. Destacking options - bottom, top, support	PLT/1	
29. Fixed part layout	Y	

An alternative is to use an information box to point to the destacking - this can then vary for each part.

26. Delay use of freed stations	Y	
27. Spare		
28. Destacking options - bottom, top, support	#17	
29. Fixed part layout	N	

Figure 8-02 Destacking parameters

The information box can be set for each part in a part list individually or for all parts. In the example below a user defined information box 'Destack' is set to contain the destacking style name for a part.

Part graining	
Volume	
Destack	PLT/1

Figure 8-03 Information box for destacking in part list

Note - Destacking information can also be entered directly via the information boxes as an alternative to the Destacking library.

With this data the program calculates the destacking information including a destacking picture (or layout) for each part.

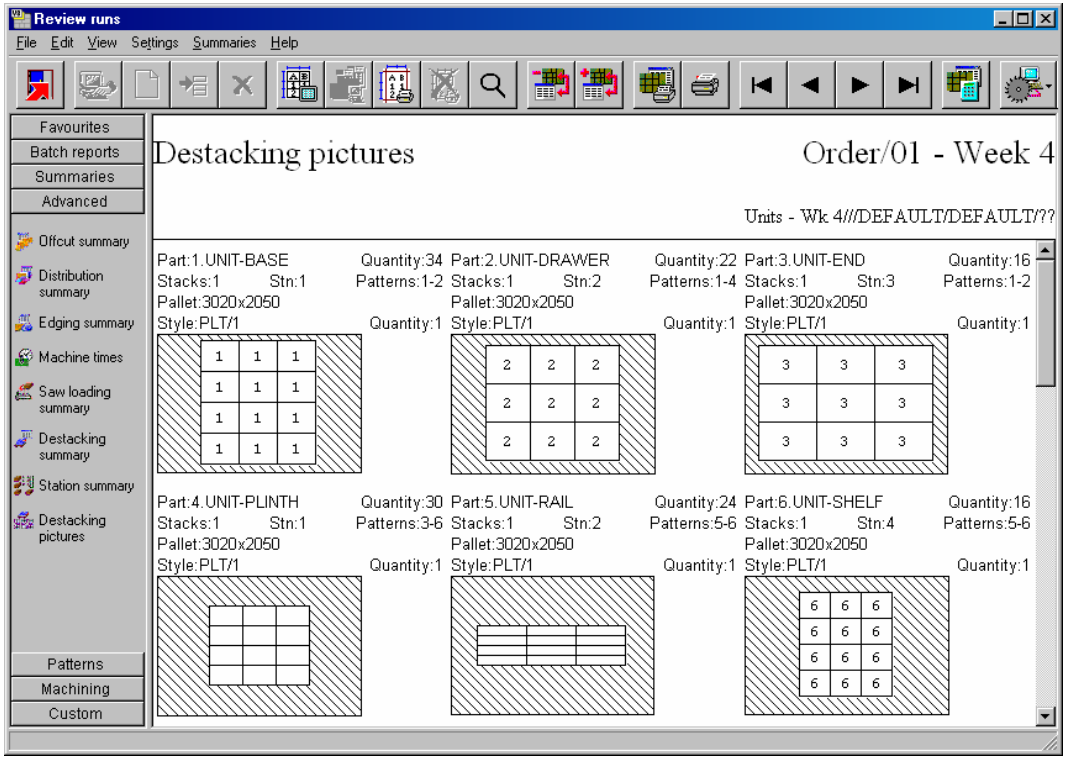


Figure 8-04 Destacking pictures

The destacking pictures show the part layout and quantity of parts on the pallet. The above example shows parts destacked on to baseboards in a 2 x 2 layout.

Where the baseboard or pallet is larger than the part layout or is other than a 1 x 1 layout the baseboard is also shown on the destacking picture

There are also several summaries, for example, the Station summary showing how stations are loaded.

Station summary — Destacking example

00005/EXAMPLE-DSK/EXAMPLE-DSK/?DESTACK/?DEFAULT/8

Bsb No	Bsb Length	Bsb Width	Bsb Qty	Part No	Part Code	Part Qty	Part Ln	Part Wd	Part Orientation	Part Ht
Station number 1										
	2100.0	1520.0	1	4.	D-WALL-TOP	60	2	2		40
	2100.0	1520.0	1	1.	D-WALL-BASE	60	2	2		40
	2100.0	1520.0	1	8.	WALL-BASE	60	3	2		40
	2100.0	1520.0	1	17.	WALL-DOOR	60	3	2		40
	2100.0	1520.0	1	3.	D-WALL-DOOR/R	60	3	2		40
	2100.0	1520.0	1	2.	D-WALL-DOOR/L	60	3	2		40
	2100.0	1520.0	1	14.	WALL-CORNER-DOOR-R	60	3	2		40
	2100.0	1520.0	1	5.	WALL-BACK	60	3	2		40
Station number 2										
	2100.0	1520.0	1	9.	WALL-BASE	60	3	2		40
	2100.0	1520.0	1	18.	WALL-DOOR	60	3	2		40
	2100.0	1520.0	1	13.	WALL-CORNER-DOOR-L	60	3	2		40
	2100.0	1520.0	1	6.	WALL-BACK	60	2	2		40
	2100.0	1520.0	1	7.	WALL-BACK	60	3	2		40
Station number 3										
	2100.0	1520.0	1	12.	WALL-CORNER-BOTTOM	60	3	2		40
	2100.0	1520.0	1	15.	WALL-CORNER-SHELF	60	3	2		40
	2100.0	1520.0	1	11.	WALL-CORNER-BACK-R	60	3	2		40
	2100.0	1520.0	1	10.	WALL-CORNER-BACK-L	60	3	2		40

Figure 8-06 Destacking - station summary

Destacking parameters

These describe the size of each station and the number of stations in use.

At the main screen:-

- Select: **Parameters - Destacking parameters**

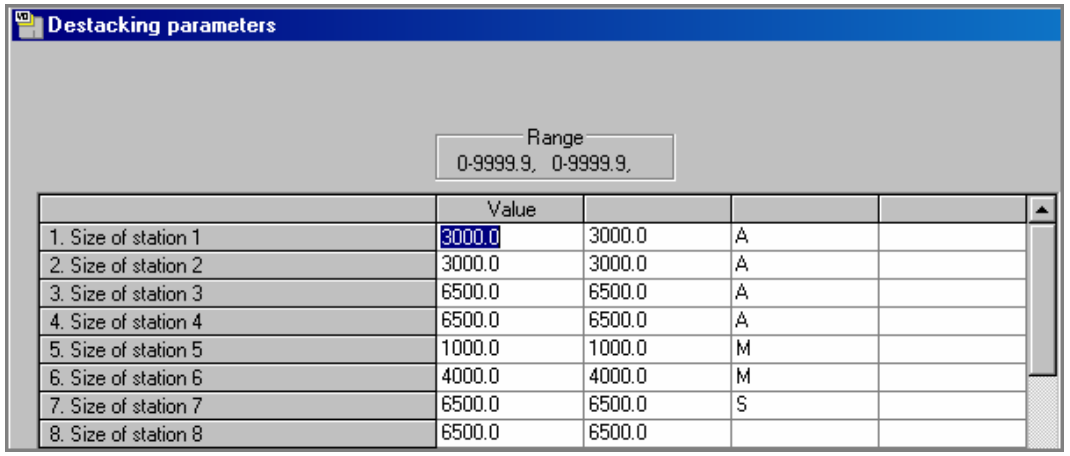


Figure 8-07 Destacking parameters

The type of station, automatic, semi-automatic, manual can also be set. It is quite common with destacking machinery to have a mix of different types of station.

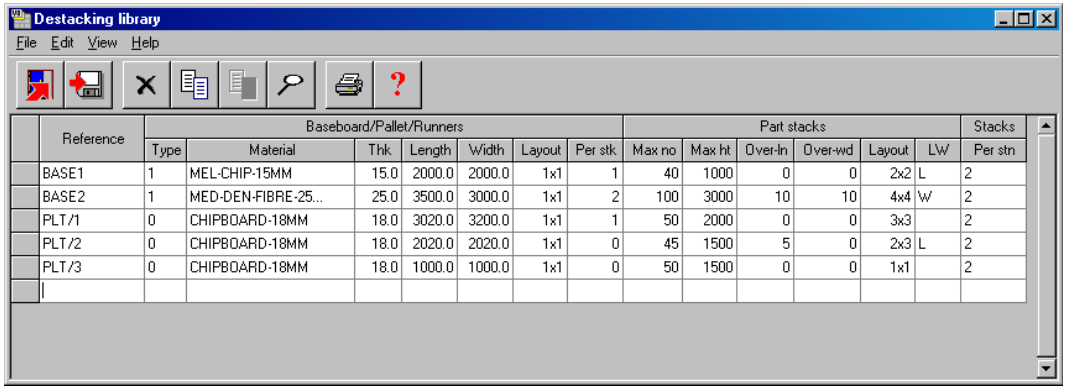
The parameters also allow the specification of the constraints of the machinery such as, minimum width of strip for auto destacking, manual parts to the front etc.

Destacking library

Use this to store different 'destacking styles'. Each style describes a way of destacking a part. For example destacking with layout 1 x 1 on to a fixed sized pallet, or destacking 2 x 1 on to a cut baseboard.

At the main screen:-

- Select: **Libraries - Destacking library**



	Reference	Baseboard/Pallet/Runners						Part stacks						Stacks
		Type	Material	Thk	Length	Width	Layout	Per stk	Max no	Max ht	Over-ln	Over-wd	Layout	LW	Per stn
	BASE1	1	MEL-CHIP-15MM	15.0	2000.0	2000.0	1x1	1	40	1000	0	0	2x2	L	2
	BASE2	1	MED-DEN-FIBRE-25...	25.0	3500.0	3000.0	1x1	2	100	3000	10	10	4x4	W	2
	PLT/1	0	CHIPBOARD-18MM	18.0	3020.0	3200.0	1x1	1	50	2000	0	0	3x3		2
	PLT/2	0	CHIPBOARD-18MM	18.0	2020.0	2020.0	1x1	0	45	1500	5	0	2x3	L	2
	PLT/3	0	CHIPBOARD-18MM	18.0	1000.0	1000.0	1x1	0	50	1500	0	0	1x1		2

Figure 8-08 Destacking library

The destacking library is a convenient way of storing the destacking information and can be more convenient than setting up the Part list information boxes directly when more complex styles are used.

9. Stock control (SC)

A system for physical stock control of sheet materials, fittings (hardware) and edgebanding.

There are also options to allocate (reserve) stock before cutting for specific jobs - avoiding the risk of optimising the same sheet or offcut on different jobs.

At the main screen:-

- Select: **Stock**

The easiest way to control stock is to maintain the physical stock records:-

- Optimise a run
- Issue stock from runs - to update physical stock when run is cut
- Use Adjustments - to record stock movements in the Board library

Stock Orders, Receipts, Allocations

There are extra options for a more detailed control of stock.

- Orders
- Receipts
- Allocations

Use these options to record stock orders and receipts from suppliers and use the Allocations options to reserve stock for future use.

Allocations

The following example shows boards estimated for a run.

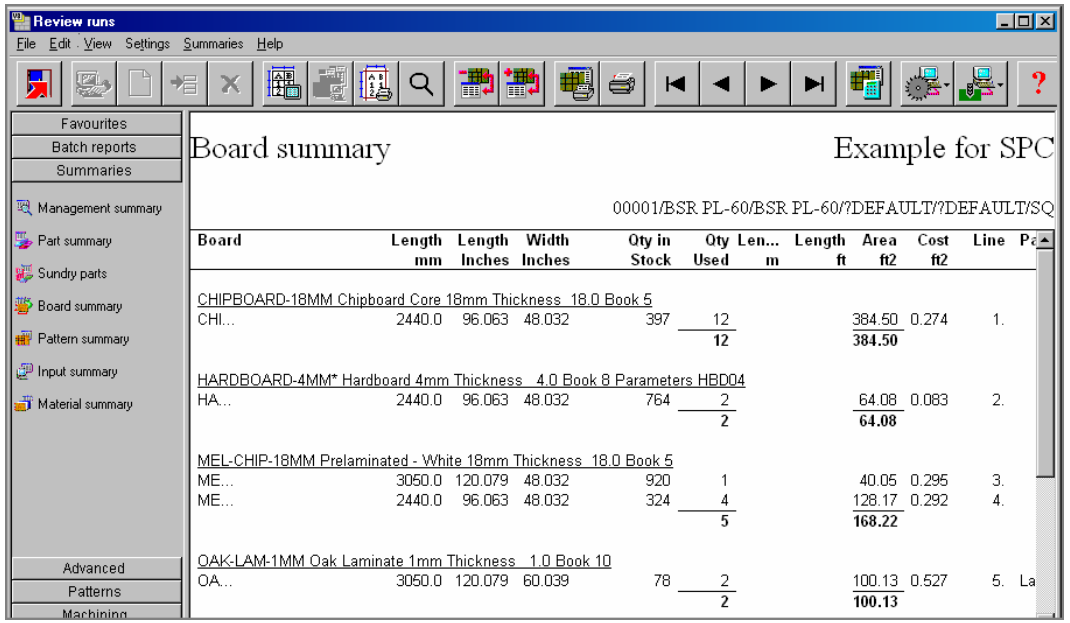


Figure 9-01 Stock control board summary

Use the option: *Stock - Allocate stock* to reserve the stock for that job.

To view the allocation select at the main screen:-

Select: **Stock - Allocations**

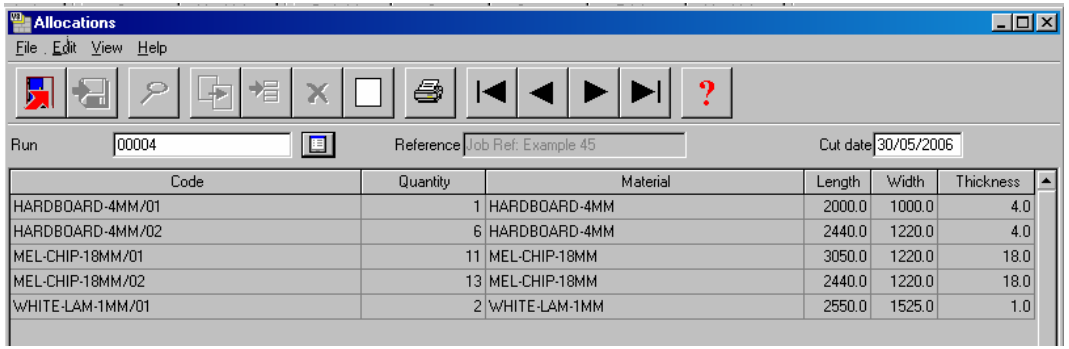


Figure 9-02 Stock control allocations

Any future optimisations using the same material will NOT use the allocated stock. The Allocations are shown in the Board library at the 'Alloc' column.

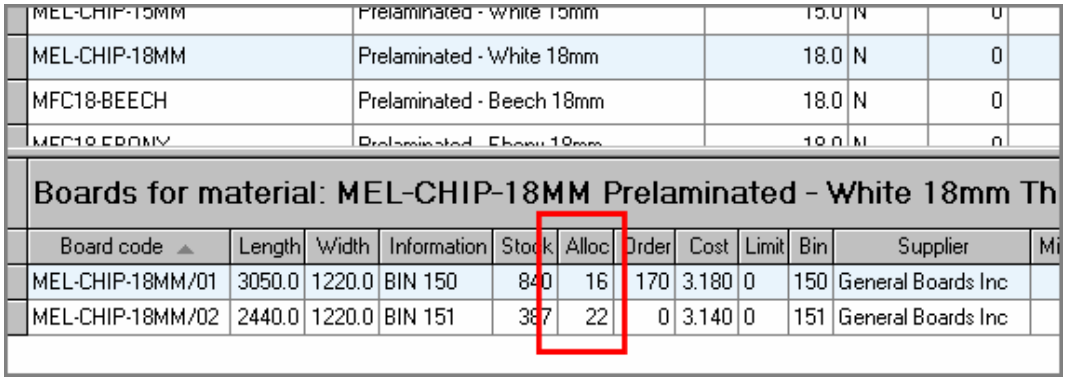
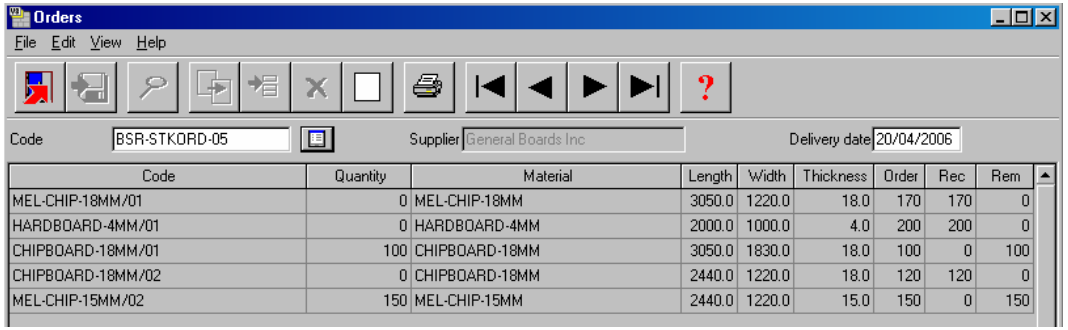


Figure 9-03 Stock control - use of Board library

This can be especially important for items such as offcuts where there is often only a limited (and non repeatable) supply of items.

Orders and Receipts

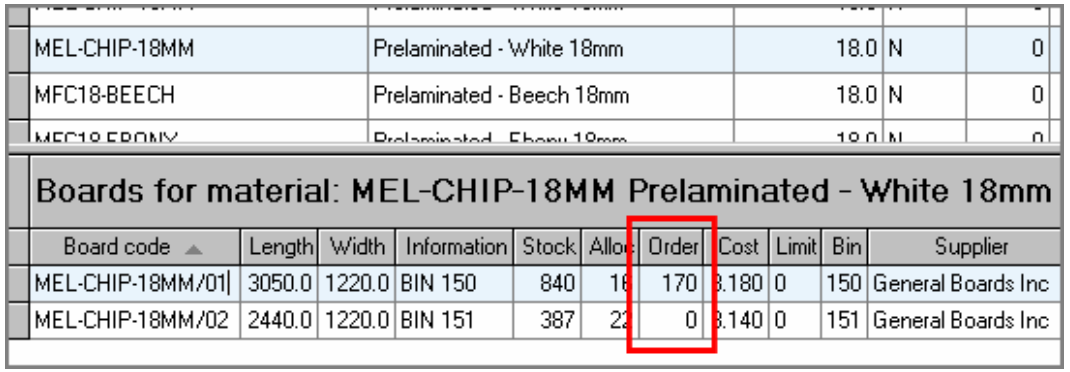
The order and receipt of stocks from suppliers (or other sources) can be controlled by using the Orders and Receipts options. An order is an order for stock.



Code	Quantity	Material	Length	Width	Thickness	Order	Rec	Rem
MEL-CHIP-18MM/01	0	MEL-CHIP-18MM	3050.0	1220.0	18.0	170	170	0
HARDBOARD-4MM/01	0	HARDBOARD-4MM	2000.0	1000.0	4.0	200	200	0
CHIPBOARD-18MM/01	100	CHIPBOARD-18MM	3050.0	1830.0	18.0	100	0	100
CHIPBOARD-18MM/02	0	CHIPBOARD-18MM	2440.0	1220.0	18.0	120	120	0
MEL-CHIP-15MM/02	150	MEL-CHIP-15MM	2440.0	1220.0	15.0	150	0	150

Figure 9-04 Stock control orders and receipts

The order is recorded in the 'Order' column in the Board library (there are no other boards on order in this example)



MEL-CHIP-18MM	Prelaminated - White 18mm	18.0	N	0
MFC18-BEECH	Prelaminated - Beech 18mm	18.0	N	0

Boards for material: MEL-CHIP-18MM Prelaminated - White 18mm

Board code	Length	Width	Information	Stock	Allo	Order	Cost	Limit	Bin	Supplier
MEL-CHIP-18MM/01	3050.0	1220.0	BIN 150	840	1	170	3.180	0	150	General Boards Inc
MEL-CHIP-18MM/02	2440.0	1220.0	BIN 151	387	2	0	3.140	0	151	General Boards Inc

Figure 9-05 Stock control - Board library

When the boards are received they are recorded with the Receipts option.

Tracking numbers - there is an option on the Stock menu to issue a unique tracking number for each part for a run so that the part can be traced through the system. This information can be printed on a report or a label or transferred to other systems.

Import / Export of board information - where there is an external stock control system there are options to import and export the board information needed for and produced by optimising.

Stock reports

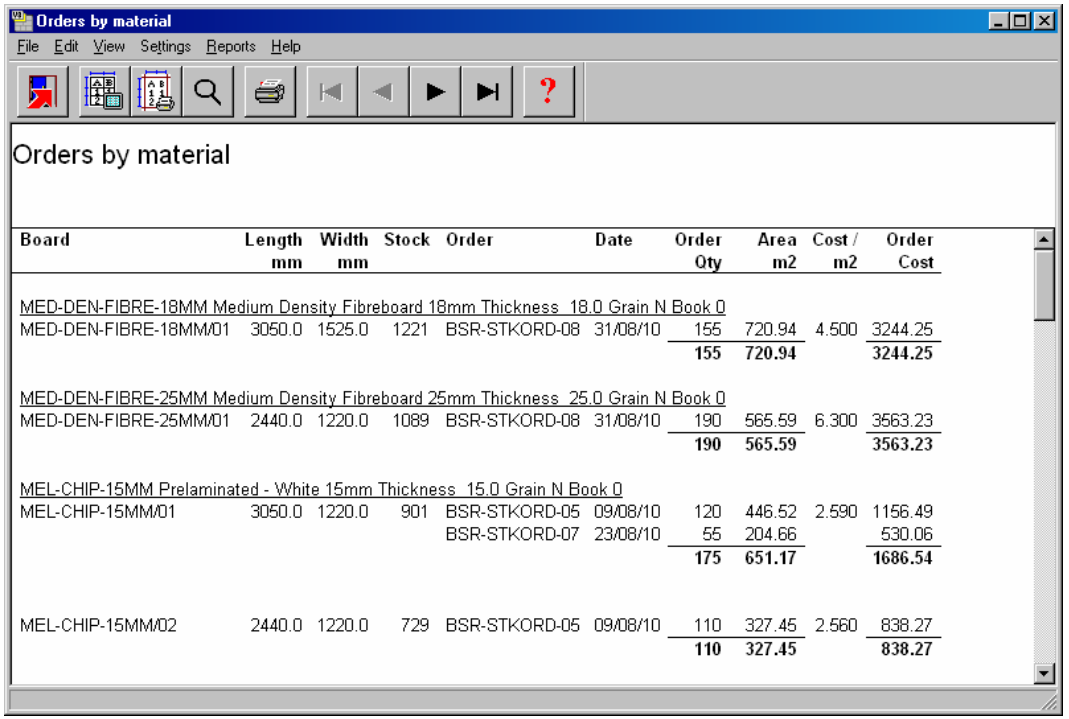
Several stock reports are available to manage stock levels and keep track of the stock movements. At the main screen:-

Select: **Print**

The stock reports are in the lower section of the menu.

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

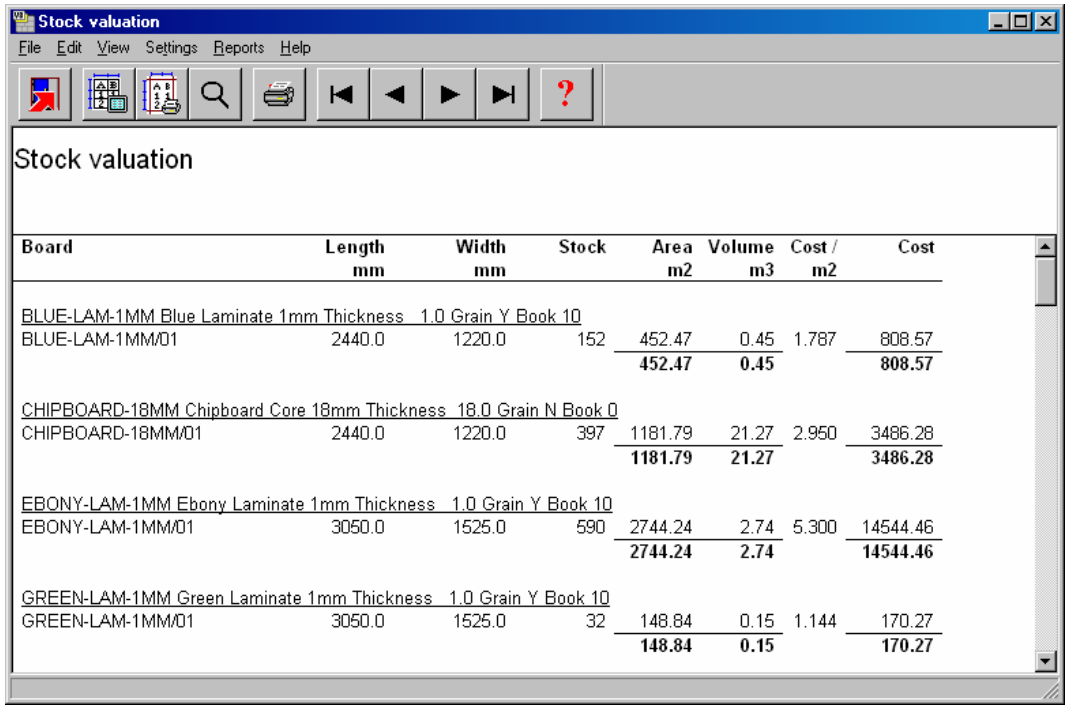
The reports are shown in a 'report viewer' before printing.



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

Figure 9-06 Stock control - orders by material

There are options to change the content and layout of each report (Settings - Report settings). Printed and on-screen versions can be different (Print layout).
The data in each report can also be exported (Settings - Export settings).



Board	Length mm	Width mm	Stock	Area m2	Volume m3	Cost / m2	Cost
BLUE-LAM-1MM Blue Laminate 1mm Thickness 1.0 Grain Y Book 10							
BLUE-LAM-1MM/01	2440.0	1220.0	152	452.47	0.45	1.787	808.57
				452.47	**0.45**		**808.57**
CHIPBOARD-18MM Chipboard Core 18mm Thickness 18.0 Grain N Book 0							
CHIPBOARD-18MM/01	2440.0	1220.0	397	1181.79	21.27	2.950	3486.28
				1181.79	**21.27**		**3486.28**
EBONY-LAM-1MM Ebony Laminate 1mm Thickness 1.0 Grain Y Book 10							
EBONY-LAM-1MM/01	3050.0	1525.0	590	2744.24	2.74	5.300	14544.46
				2744.24	**2.74**		**14544.46**
GREEN-LAM-1MM Green Laminate 1mm Thickness 1.0 Grain Y Book 10							
GREEN-LAM-1MM/01	3050.0	1525.0	32	148.84	0.15	1.144	170.27
				148.84	**0.15**		**170.27**

Figure 9-07 Stock control valuation

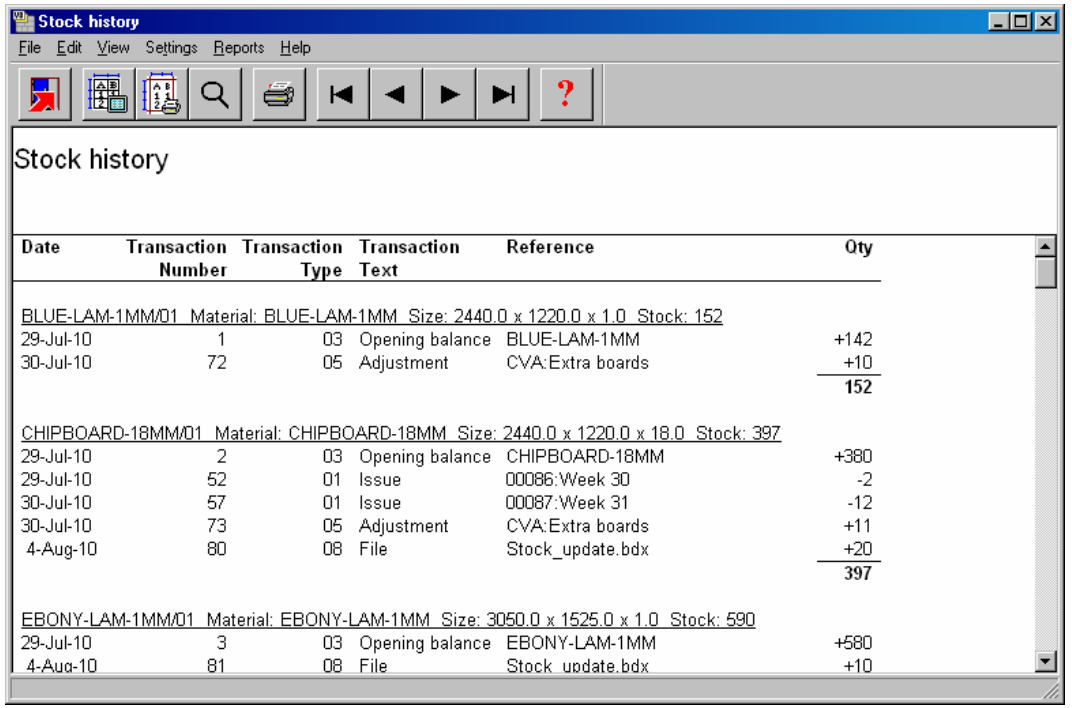


Figure 9-08 Stock control history

There are options to consolidate the stock at the end of each period (e.g. each month or each year).

10. Machining Centre Interface (MI)

This module provides support for machining centres.

The core of this is the Machining library which allows you to create and store machining drawings (instructions) for each part. Once these are set up for the relevant parts the program can calculate for any run (using those parts) the machining instructions to machine (drill, rout, groove etc.) each part.

These instructions can be transferred to a Machining centre via the option: 'Transfer to Machining centre'.

Several different types of machining centre are supported, including Weeke WoodWop V4/5.

The machining library holds full details of machining operations for parts, including, vertical and horizontal drilling, routing of grooves, circles, arcs, cut-outs and contours, together with tooling information ready for seamless download to CNC equipment.

For the Machining library at the main screen:-

- Select: **Libraries - Machining library**

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

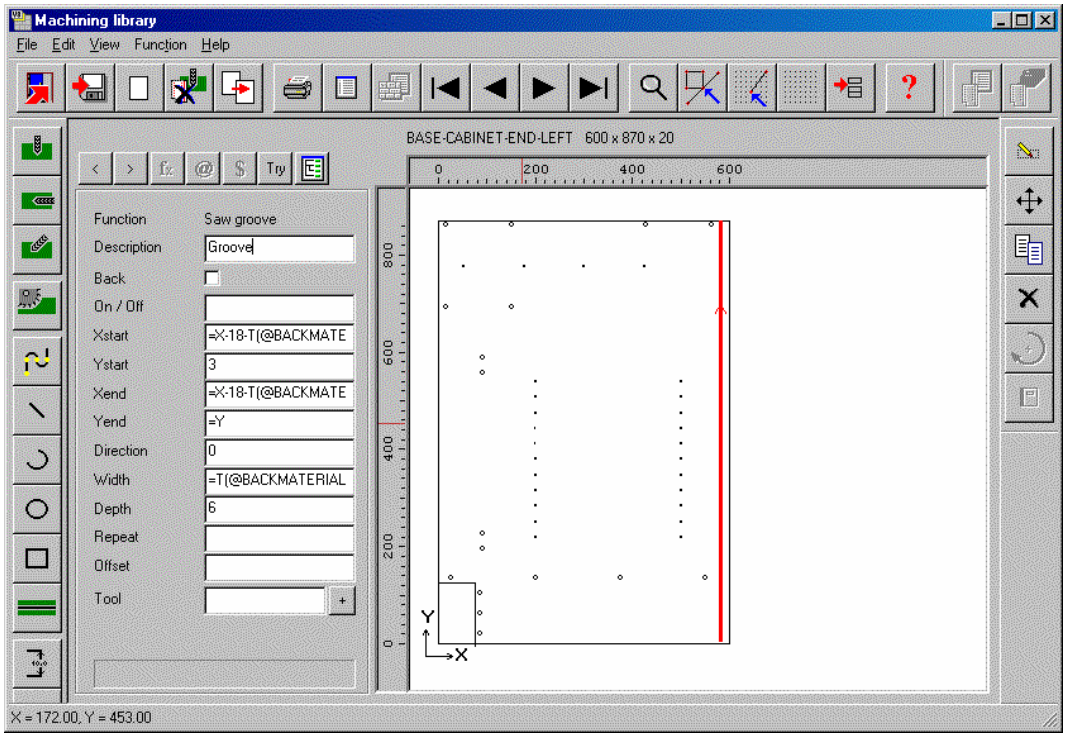


Figure 10-01 Machining library

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.

Detailed help with examples is available for each instruction. Some of the Functions available are:-

- Contour
- Cut-out
- End groove
- Horizontal drill
- Vertical drill
- Arc router
- Circle router
- Groove router
- Saw groove
- Vacuum pods
- Pockets

Formula - machining instructions can be set up as formulae so that they cover a wider range of sizes and situations. For example, as drill hole can be located at X+100 and Y/2, that is, 100mm from the long edge of a part and halfway from the short edge. (X stands for the part width and Y for the part length)

Tool box - extend instructions by entering extra rules which are unique to each type of machining centre

Drawing Origin - The origin of the drawing is shown by two lines at right angles indicating the ***x*** and ***y*** directions and the origin. The same origin applies to all drawings.

Co-ordinates - The co-ordinate system follows the common convention of using 'y' for the vertical component and 'x' for the horizontal component.

The symbols X Y and Z are used for the variables associated with a part.

```
X - part length
Y - part width
Z - part thickness
```

Note - X indicating the part length is different from x indicating the x co-ordinate.

Optimise **-** When the part is included in an order (or part list) and optimised the machining is automatically calculated for each part that has machining instructions.

The machining can be checked at the Review runs screen:-

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

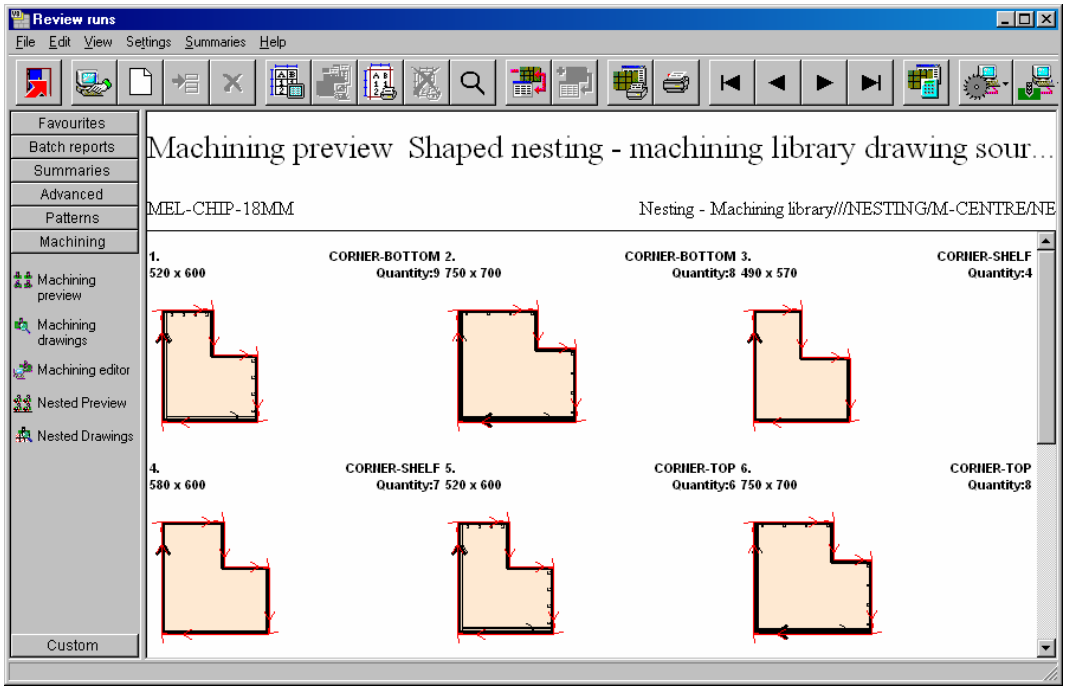


Figure 10-02 Machining preview

Click on a drawing to see the full details

It is also possible to make last minute changes to instructions if necessary e.g. to exclude an instruction or change an offset.

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.

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, Weeke.

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.

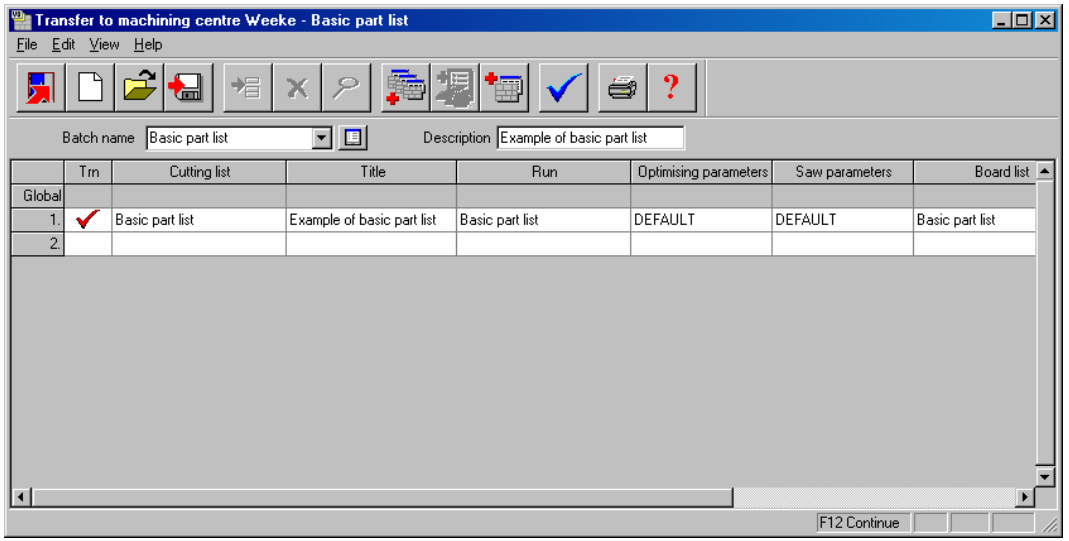


Figure 10-03 Transfer to machining centre batch screen

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.

Dividing patterns at a Machining centre

In some situations it is convenient to divide a board at the machining centre rather than the saw. These are called Nested patterns and this is achieved by using the Nested optimising module, especially where there are shaped parts to consider - see section 7.

Machining centre parameters

Use these to set up the program for a specific machining centre and/or method of working. At the main screen:-

- Select: **Parameters - Machining centre parameters**

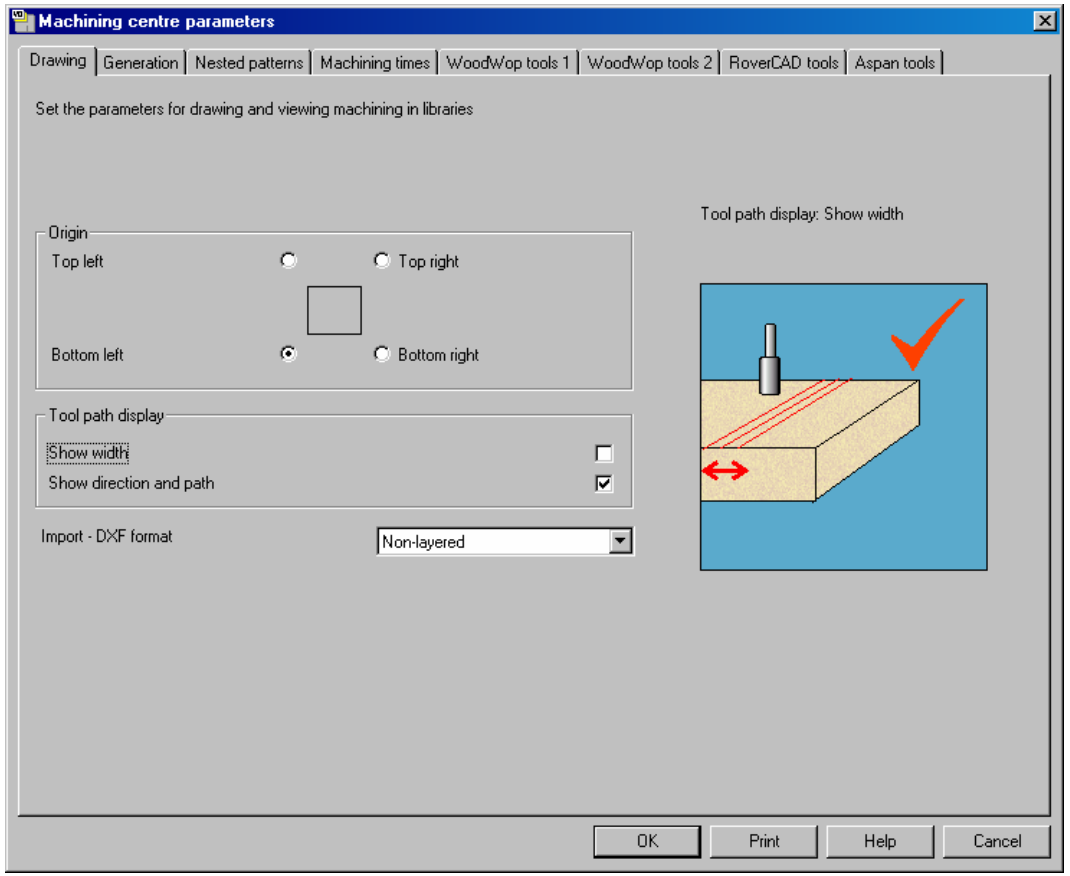


Figure 10-04 Machining centre parameters

The first parameter 'Machining library type' sets the type of machining centre.

Many different machining centres are supported including Weeke WoodWop V4/5.

The parameters include machining times and speeds, depth and offset settings.

Tool settings - Most instructions include the Tool Box for tooling information and any other instructions or values that are specific to the machining centre. The tool box options provide a great deal of extra flexibility to cope with the specific requirements of each machining centre.

Plugs, sockets, anchors - These functions can be added to each part to define how the parts fit together. A plug is placed on one part and a corresponding socket on the adjoining part. This information is used when working with a 3D representation of a product.

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.

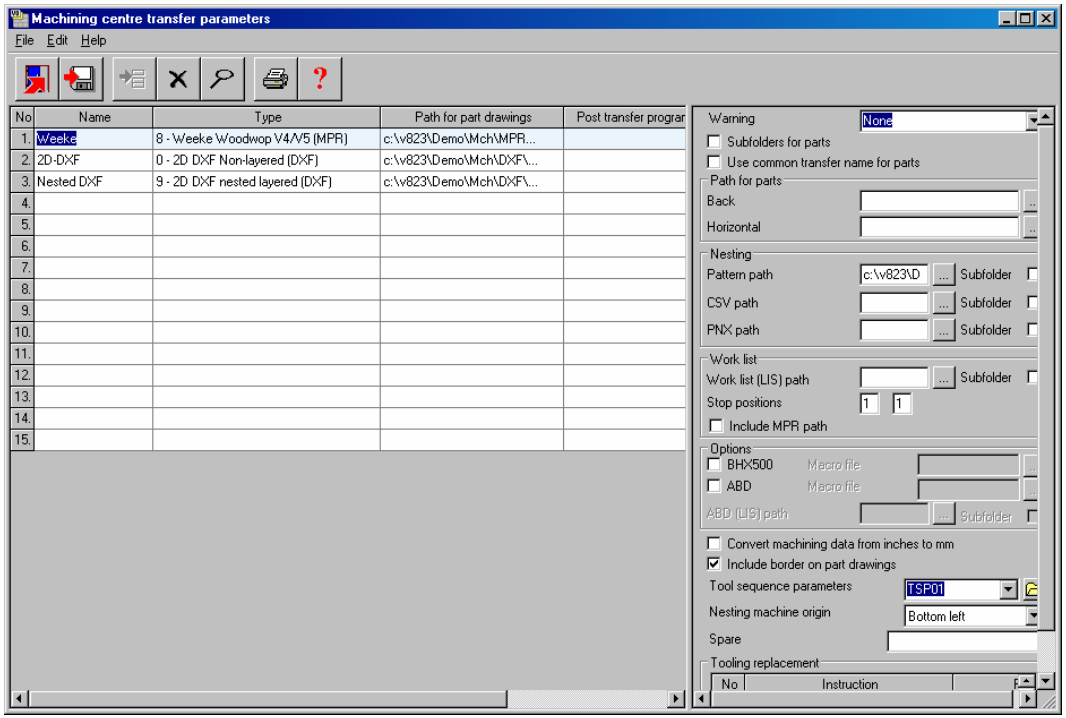


Figure 10-05 Machining centre transfer parameters

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

```
0  - 2D DXF Non-layered (DXF)
8  - Weeke WoodWop V4/V5 (MPR)
```

```
9  - 2D DXF nested layered (DXF)
11 - ASCII PTX
12 - MDB PTX
```

The right hand pane is for any extra parameters - these vary as they depend on the type of machining centre.

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.

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.

11. Cad drawings (CA)

Create room layouts and place products in a room. The program automatically calculates the production requirements and produces a Quote/orders or Product requirements list which can be optimised to create cutting plans and costs in the usual way. At the main screen:-

- Select: **File - CAD drawings**

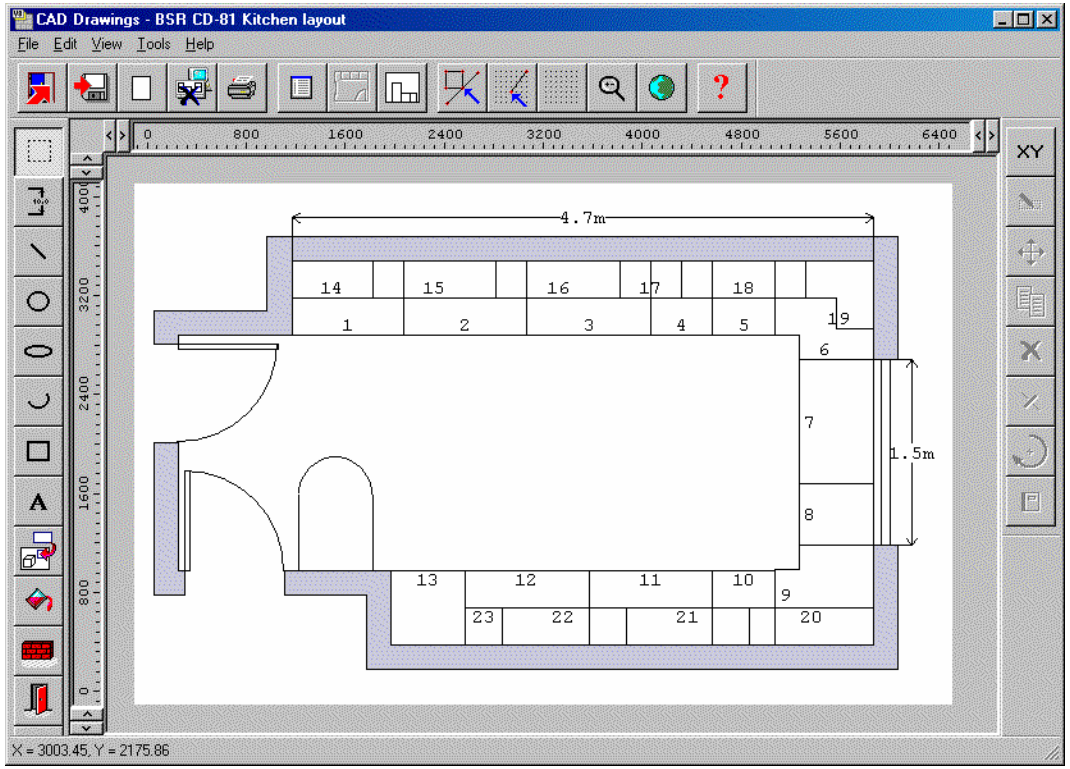


Figure 11-01 Cad drawings

The drawing can be printed with a template showing the design and production details. To design a room and create a Quote/Order or Product requirements file:-.

- Select CAD Drawings
- Create a new blank drawing
- WALL tool to set up the outline of the walls

- DOOR tool to locate and draw the door(s)
- WINDOW tool to locate and draw the windows
- PRODUCT tool to select and position products in the room
- Select the optimising and saw parameter files in the DRAWING PROPERTIES
- Select PRODUCT REQUIREMENTS on the File menu (or QUOTES/ORDERS)

Note - for Products with variable items answer the product variables (door material, top colours etc) when each product is placed in the room.

Print layouts - It is often useful to produce a printed plan with additional project information. To do this select 'Print layout' and add the drawing to the print layout.

Note - drawings may be at very different scales.

You must have the product and part libraries set with some products before you can use CAD Drawings effectively

Tools

Most of the usual drawing tools are available such as , rectangle, circle, line, text etc - but there are also special tools to help with drawing a room:-

- Wall tool
- Door tool
- Window tool
- Product tool

These are briefly described below.

Wall tool

Click the mouse at the start point of the wall and drag the mouse to draw the wall. Click again to mark the end point of the wall and start a new wall. (Set the snap option to 'snap to object' to get straight lines for the wall).

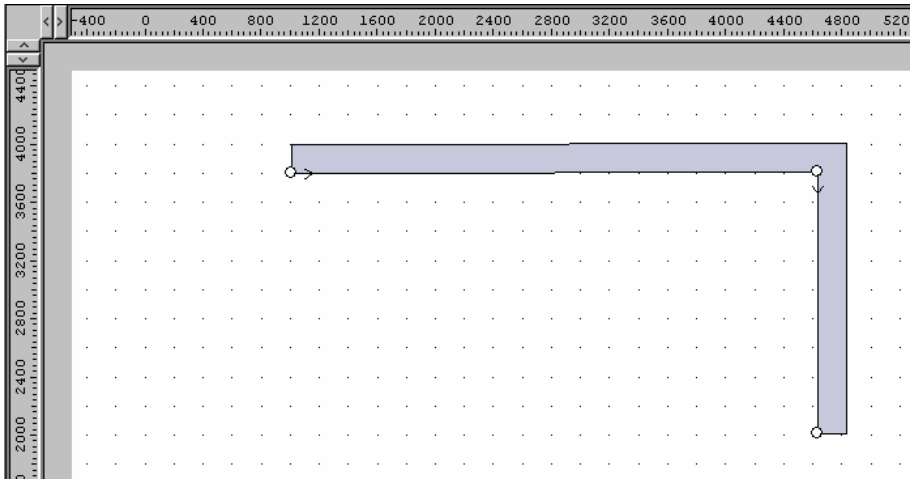


Figure 11-02 Cad drawings wall tool

Select RIGHT CLICK to end the sequence for drawing walls.

The above example shows walls placed in the diagram. This is usually the first stage of any room layout drawing.

Door tool

The next stage is to add doors to the room

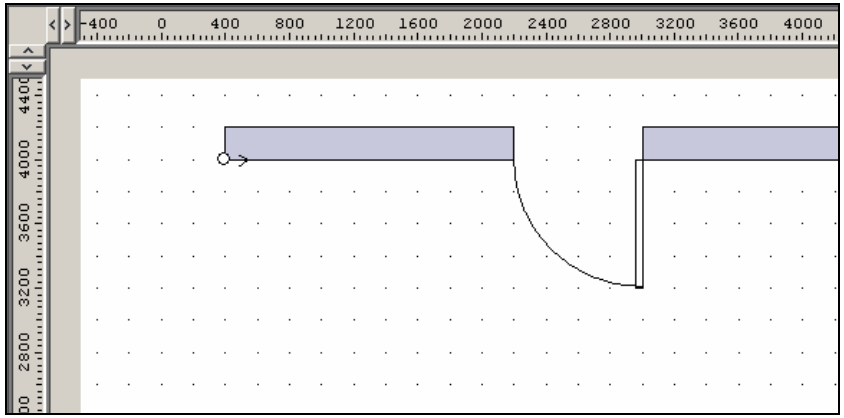


Figure 11-03 Cad drawings door tool

Here an inward opening door is added to the far wall. This is achieved with just 2 mouse clicks - the program automatically draws the door outline and opening.

Window tool

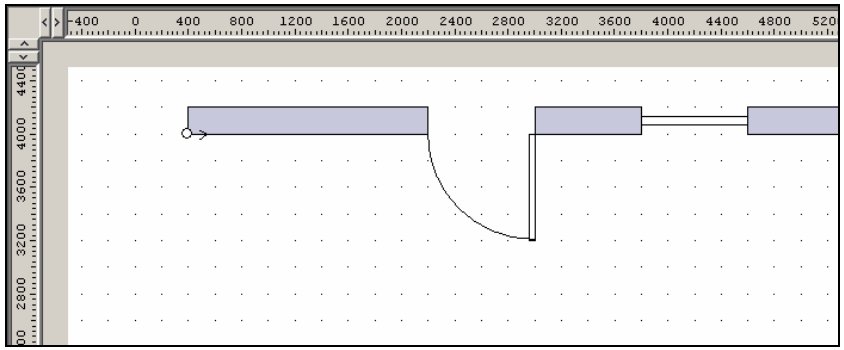


Figure 11-04 Cad drawings window tool

In the example above a Window is located on the wall - with just 2 mouse clicks. Use the Properties tab for exact measurements.

Product tool

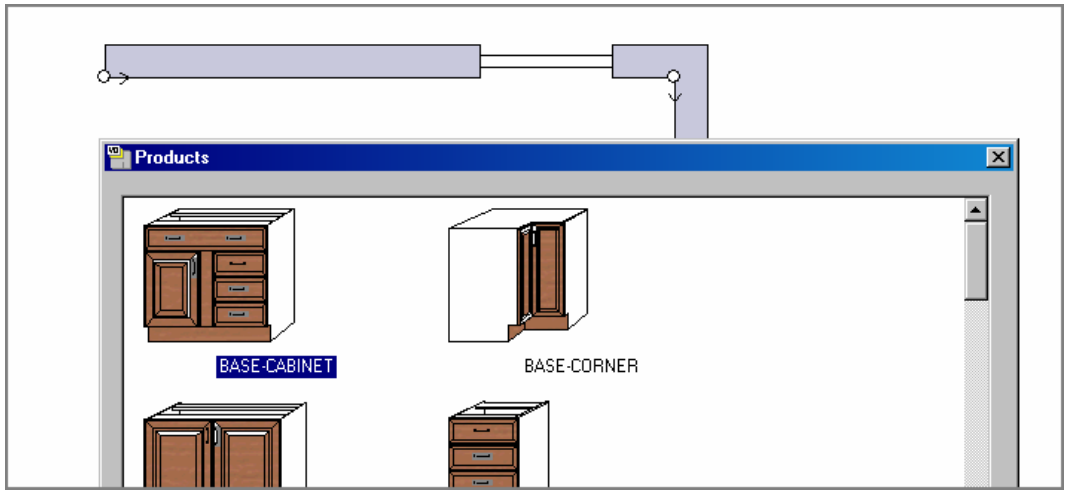


Figure 11-05 Cad drawings product tool

Use this to place products in the drawing.

Selecting the Product tool pops up the index of products in the Product library.

Select a product and place it in the drawing.

Use the properties tab to get the placement exact.

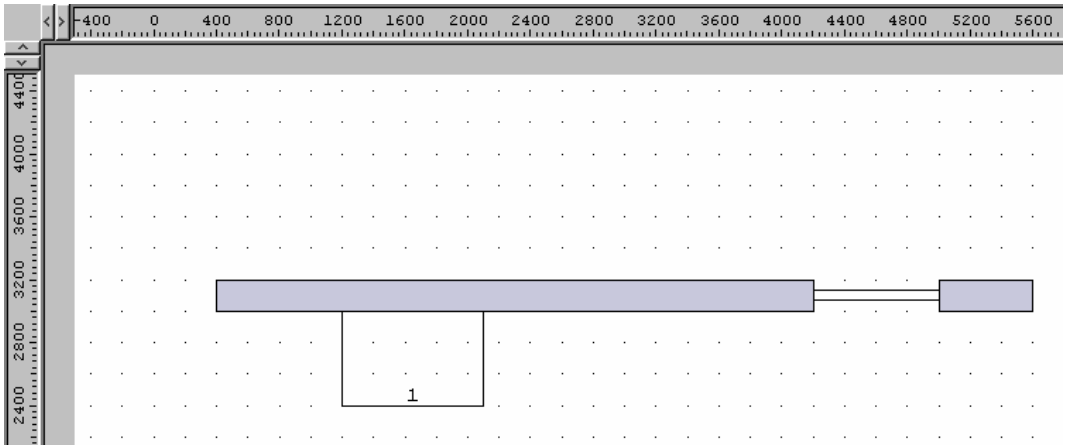


Figure 11-06 Cad drawings add products

In this example a unit is placed at the left of the door.. The diagram shows the product outline to scale and it is automatically numbered as 'Product 1' in the drawing.

Custom products - where products have variable sizes or materials etc. the program prompts you to provide the values for these items when the product is placed on the drawing. You can also use the variables button in the drawing object properties dialog to enter or edit the variables after the product is placed. Properties tab - to accurately set a wide range of product features:-

```
Product                - product code
Description            - product description
Number                 - number of product on drawings
Xstart, Ystart         - coordinate of reference point for product
Width                  - width of product
Height                 - height of product
Depth                  - height of product
Angle                  - angle to vertical or horizontal
Vertical position      - from bottom of floor
Automatic dimensioning - on or off
Variables              - product variables
Line colour            - colour of wall lines
Line weight            - line thickness
Fill                   - fill colour, pattern. picture
```

Print layout

Use this option to place a room on a drawing template for printing.

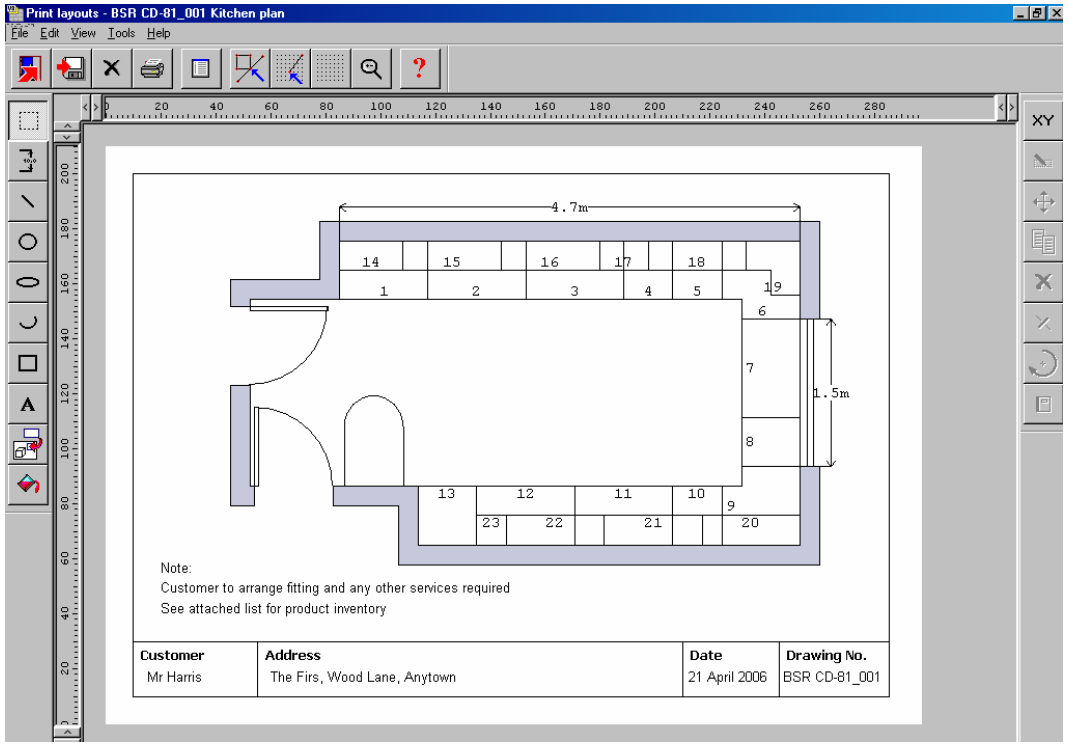


Figure 11-07 Cad drawings print layout

Print layout offers a choice of drawing templates; select the drawing template required and drag the room layout on to the drawing. Fill in the admin and project details as necessary.

Define as many drawing templates as necessary (using the drawing library).

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. 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.

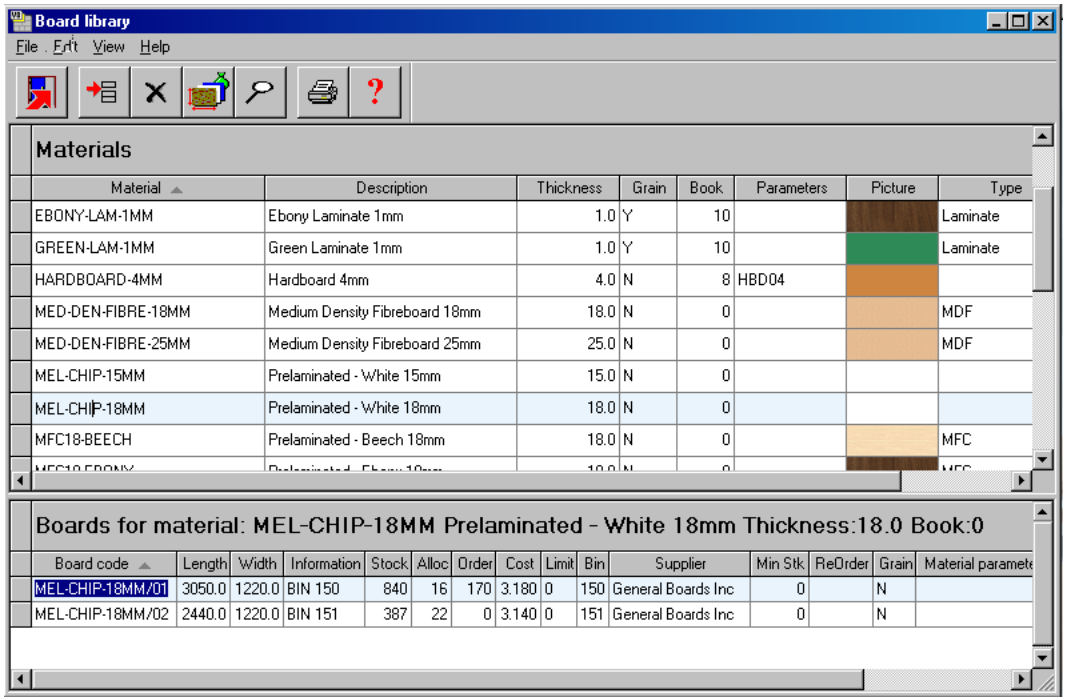


Figure 12-01 Board library

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.

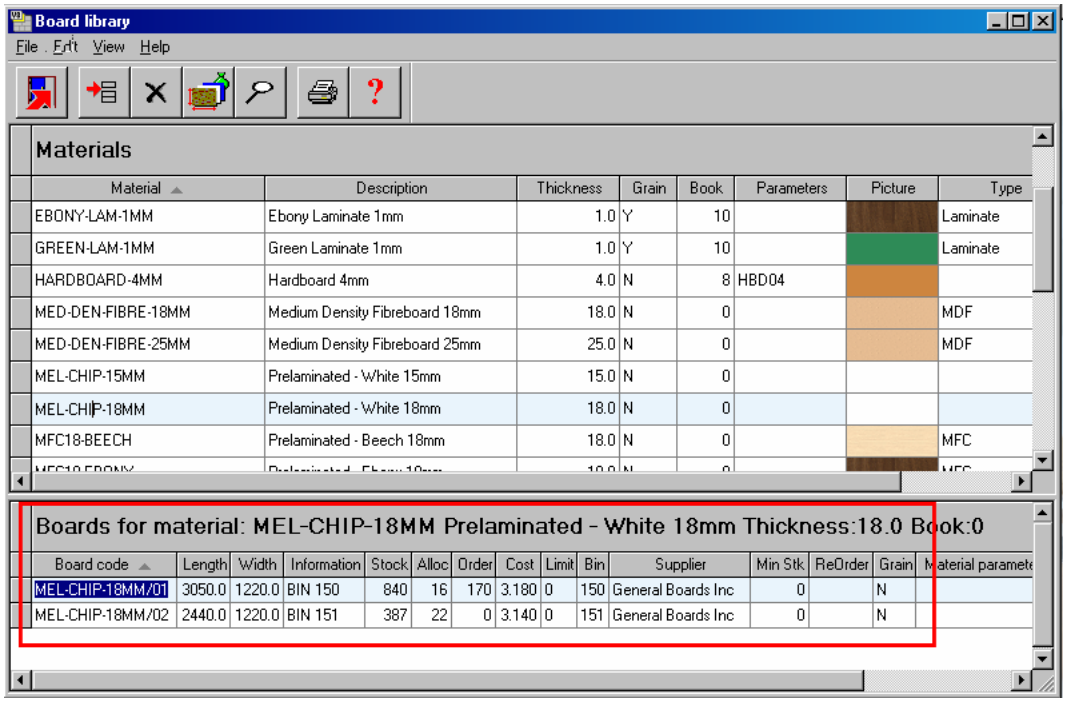


Figure 12-02 Board library materials and boards

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 3 columns for quantities - enter the boards available in stock under PHYSICAL. 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 the library also includes the transactions on each board.

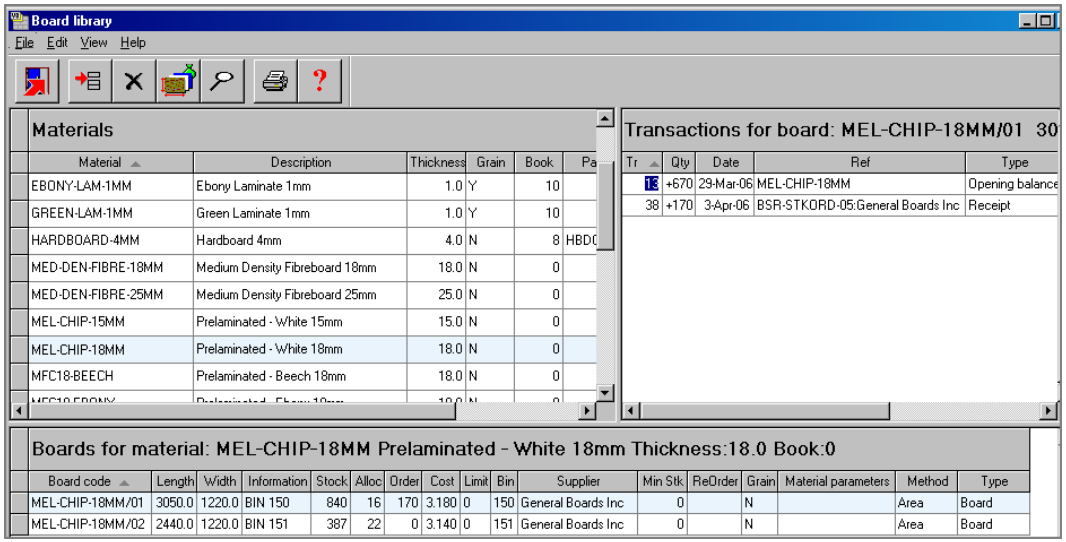
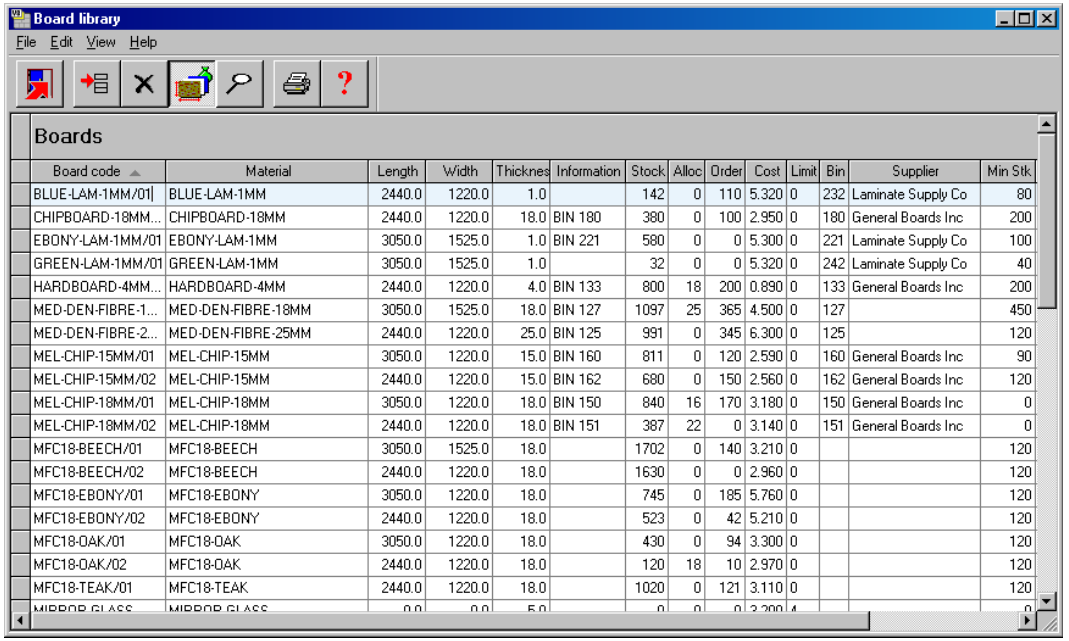


Figure 12-03 Board library stock transactions

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

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	Material	Length	Width	Thickness	Information	Stock	Alloc	Order	Cost	Limit	Bin	Supplier	Min Stk
BLUE-LAM-1MM/01	BLUE-LAM-1MM	2440.0	1220.0	1.0		142	0	110	5.320	0	232	Laminate Supply Co	80
CHIPBOARD-18MM...	CHIPBOARD-18MM	2440.0	1220.0	18.0	BIN 180	380	0	100	2.950	0	180	General Boards Inc	200
EBONY-LAM-1MM/01	EBONY-LAM-1MM	3050.0	1525.0	1.0	BIN 221	580	0	0	5.300	0	221	Laminate Supply Co	100
GREEN-LAM-1MM/01	GREEN-LAM-1MM	3050.0	1525.0	1.0		32	0	0	5.320	0	242	Laminate Supply Co	40
HARDBOARD-4MM...	HARDBOARD-4MM	2440.0	1220.0	4.0	BIN 133	800	18	200	0.890	0	133	General Boards Inc	200
MED-DEN-FIBRE-1...	MED-DEN-FIBRE-18MM	3050.0	1525.0	18.0	BIN 127	1097	25	365	4.500	0	127		450
MED-DEN-FIBRE-2...	MED-DEN-FIBRE-25MM	2440.0	1220.0	25.0	BIN 125	991	0	345	6.300	0	125		120
MEL-CHIP-15MM/01	MEL-CHIP-15MM	3050.0	1220.0	15.0	BIN 160	811	0	120	2.590	0	160	General Boards Inc	90
MEL-CHIP-15MM/02	MEL-CHIP-15MM	2440.0	1220.0	15.0	BIN 162	680	0	150	2.560	0	162	General Boards Inc	120
MEL-CHIP-18MM/01	MEL-CHIP-18MM	3050.0	1220.0	18.0	BIN 150	840	16	170	3.180	0	150	General Boards Inc	0
MEL-CHIP-18MM/02	MEL-CHIP-18MM	2440.0	1220.0	18.0	BIN 151	387	22	0	3.140	0	151	General Boards Inc	0
MFC18-BEECH/01	MFC18-BEECH	3050.0	1525.0	18.0		1702	0	140	3.210	0			120
MFC18-BEECH/02	MFC18-BEECH	2440.0	1220.0	18.0		1630	0	0	2.960	0			120
MFC18-EBONY/01	MFC18-EBONY	3050.0	1220.0	18.0		745	0	185	5.760	0			120
MFC18-EBONY/02	MFC18-EBONY	2440.0	1220.0	18.0		523	0	42	5.210	0			120
MFC18-OAK/01	MFC18-OAK	3050.0	1220.0	18.0		430	0	94	3.300	0			120
MFC18-OAK/02	MFC18-OAK	2440.0	1220.0	18.0		120	18	10	2.970	0			120
MFC18-TEAK/01	MFC18-TEAK	2440.0	1220.0	18.0		1020	0	121	3.110	0			120
MIRROR GLASS	MIRROR GLASS	0.0	0.0	5.0		0	0	0	3.200	4			0

Figure 12-05 Board library- Boards only view

Offcuts

Offcuts can also be stored in the board library.

Boards for material: MED-DEN-FIBRE-18MM Medium Dens

Board code	Length	Width	Information	Stock	Alloc	Order	Cost	Limit	Bin
MED-DEN-FIBRE-18MM/01	3050.0	1525.0	BIN 127	1086	25	365	4.500	0	127
X00001/0002	1779.4	1525.0		1	0	0	2.250	0	
X00001/0003	919.6	546.2		1	0	0	2.250	0	
X00001/0004	581.0	248.6		1	0	0	2.250	0	
X00001/0005	417.4	281.0		1	0	0	2.250	0	
X00001/0006	532.0	204.2		1	0	0	2.250	0	
X00001/0007	464.0	217.2		1	0	0	2.250	0	
X00001/0008	400.0	214.8		1	0	0	2.250	0	

Figure 12-06 Board library offcuts

With the Stock control module offcuts from optimisation can be added back to the library.

Printing / Export

There are a range of options to print the Board data

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Board library

Board code	Length	Width	Information	Stock	Alloc	Ord...	Cost	Li...	Bin	Suppl...	Min Stk	ReOr...	Grain	Material parameters	Method	Type
BLUE-LAM-1MM Blue Laminate 1mm Thickness:1.0 Book:10																
BLUE-LAM-1MM/01	2440.0	1220.0		142	0	110	5.320	0	232	Lami...	80		N		Sheet	Board
CHIPBOARD-18MM Chipboard Core 18mm Thickness:18.0 Book:0																
CHIPBOARD-18MM/01	2440.0	1220.0	BIN 180	380	0	100	2.950	0	180	Gene...	200		N		Area	Board
EBONY-LAM-1MM Ebony Laminate 1mm Thickness:1.0 Book:10																
EBONY-LAM-1MM/01	3050.0	1525.0	BIN 221	580	0	0	5.300	0	221	Lami...	100		Y	Lam 3050x1525	Area	Board
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	Lami...	40		Y	Lam 3050x1525	Sheet	Board
HARDBOARD-4MM Hardboard 4mm Thickness:4.0 Book:8																
HARDBOARD-4MM/01	2440.0	1220.0	BIN 133	793	18	200	0.890	0	133	Gene...	200		N		Area	Board
X00001/0001	2440.0	629.2		1	0	0	0.445	0			0		N		Area	Offcut
MED-DEN-FIBRE-18MM Medium Density Fibreboard 18mm Thickness:18.0 Book:0																
MED-DEN-FIBRE-18MM/01	3050.0	1525.0	BIN 127	1086	25	365	4.500	0	127		450		N		Area	Board
X00001/0002	1779.4	1525.0		1	0	0	2.250	0			0		N		Area	Offcut
X00001/0003	919.6	546.2		1	0	0	2.250	0			0		N		Area	Offcut
X00001/0004	581.0	248.6		1	0	0	2.250	0			0		N		Area	Offcut
X00001/0005	417.4	281.0		1	0	0	2.250	0			0		N		Area	Offcut
X00001/0006	532.0	204.2		1	0	0	2.250	0			0		N		Area	Offcut
X00001/0007	464.0	217.2		1	0	0	2.250	0			0		N		Area	Offcut
X00001/0008	400.0	214.8		1	0	0	2.250	0			0		N		Area	Offcut

Figure 12-07 Board library print

Board data can also be exported to an external file.

13. Parameters

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 you can set up several different lists each stored in a separate file. In this case the program offers a choice of list when you select parameters:-

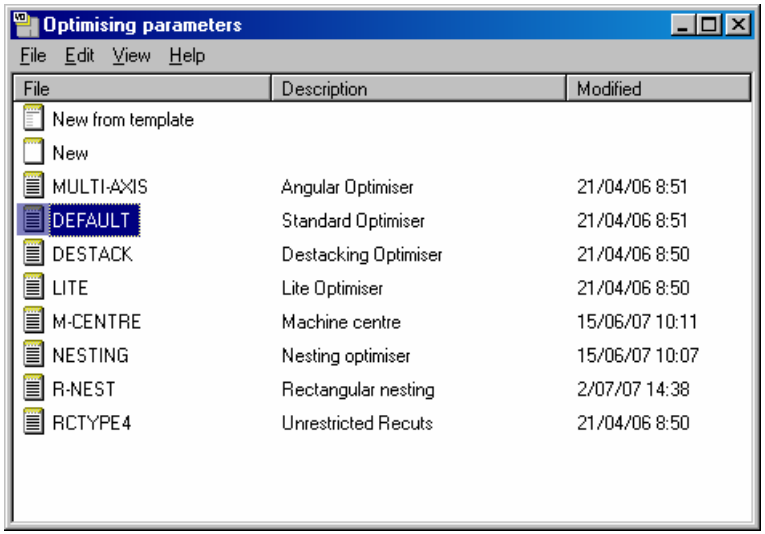


Figure 13-01 Parameter lists - select

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

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.

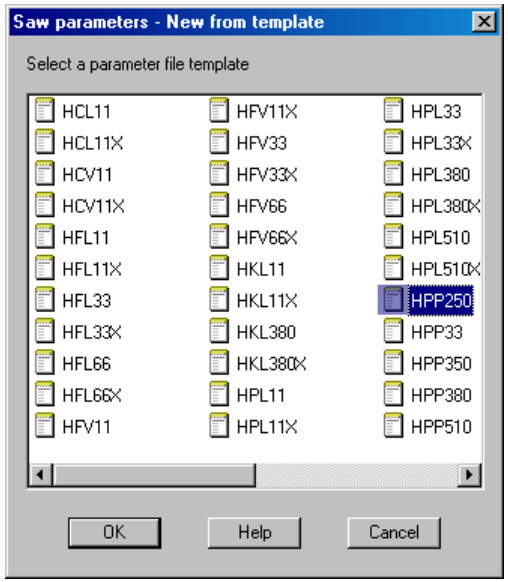


Figure 13-02 Parameter templates

- 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, Saw parameters).

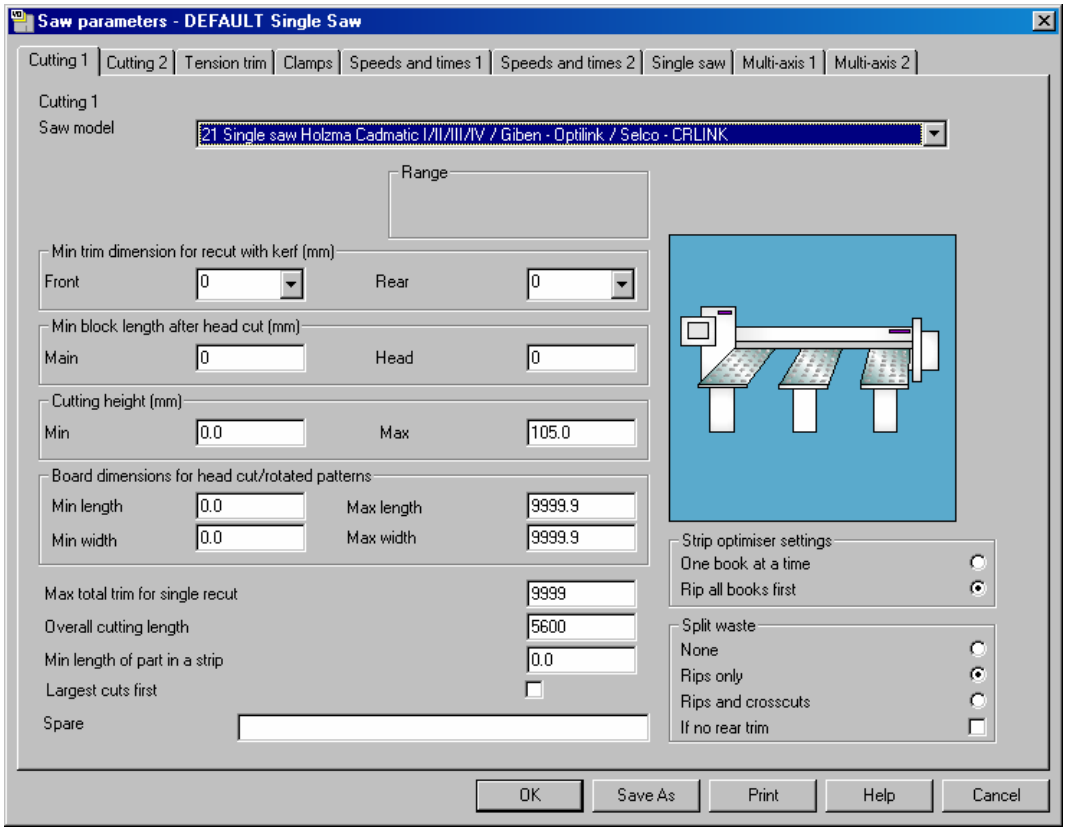


Figure 13-03 Saw parameters

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.

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).

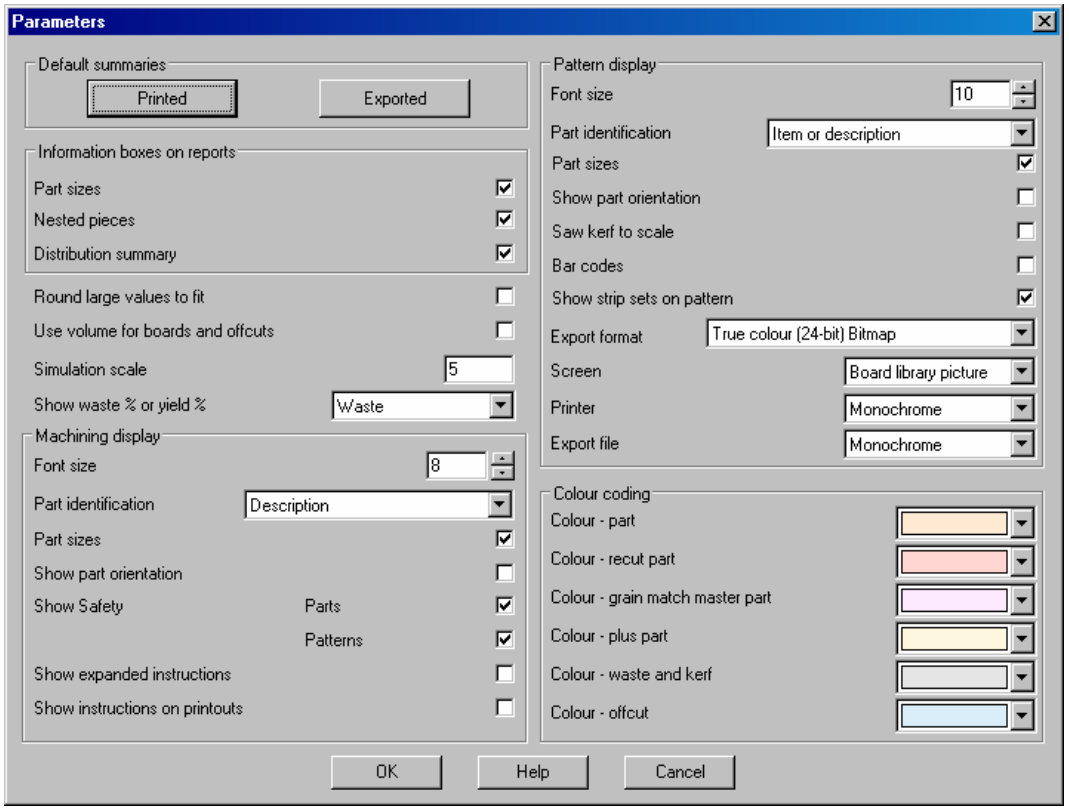


Figure 13-05 Review runs parameters

Select the options required. Some buttons lead to a further dialog with more settings.

Review runs (which deals with many of the reports) includes options to format each report on-screen and a range of settings to determine exactly what data is shown on each report.

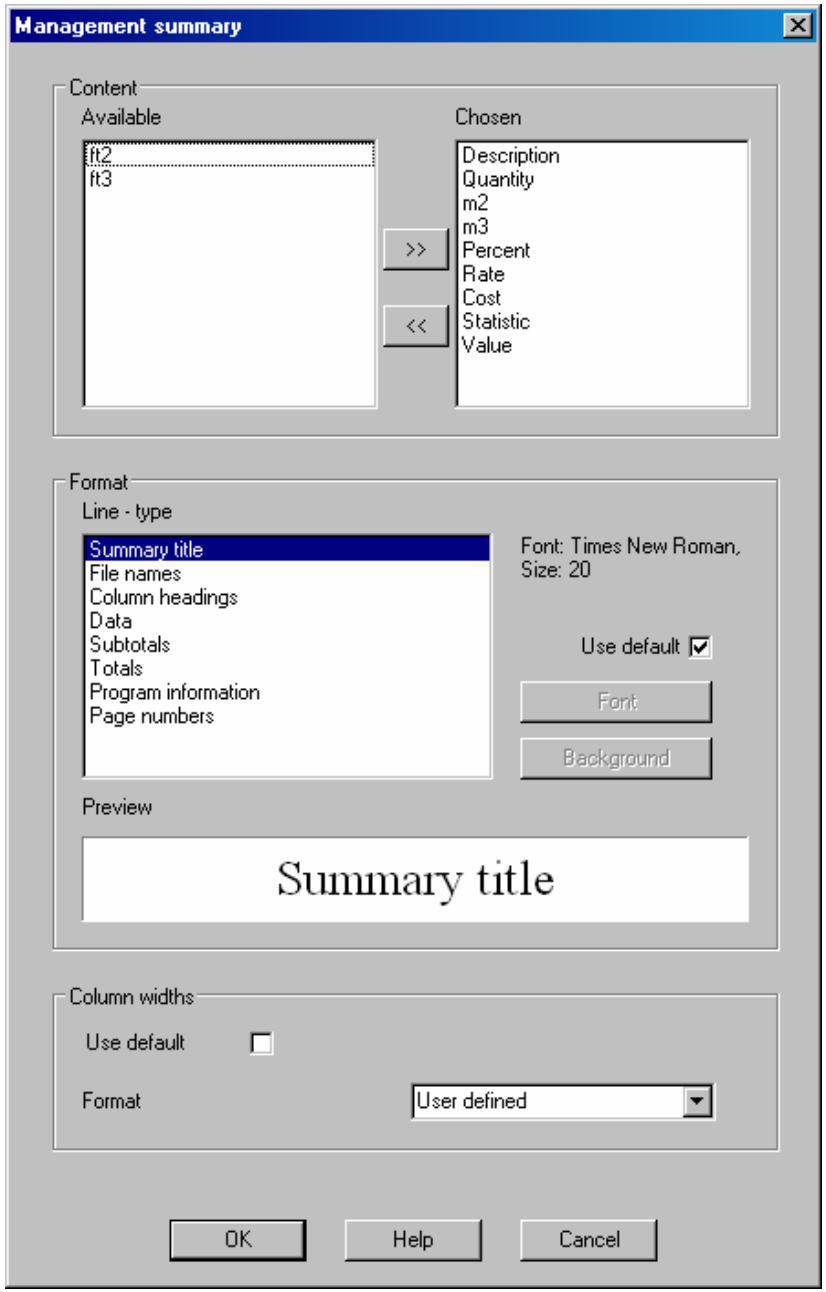

Management summary
Content
Available
ft2
ft3
>>
<<
Chosen
Description
Quantity
m2
m3
Percent
Rate
Cost
Statistic
Value
Format
Line - type
Summary title
File names
Column headings
Data
Subtotals
Totals
Program information
Page numbers
Font: Times New Roman, Size: 20
Use default
Font
Background
Preview
Summary title
Column widths
Use default
Format
User defined
OK
Help
Cancel

Figure 13-06 Review runs - set up data

This type of dialog is quite often used (in Review runs, 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.

In Review Runs each report can be customised separately.

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. On most data screens, for example, the Part list, Review runs summaries, Board list, Board library the size of the screen and the size of the columns can be changed using the mouse.

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

System parameters

Use these parameters to describe how the system operates. For example, whether to use inches or millimetre measurements, which language to use etc.

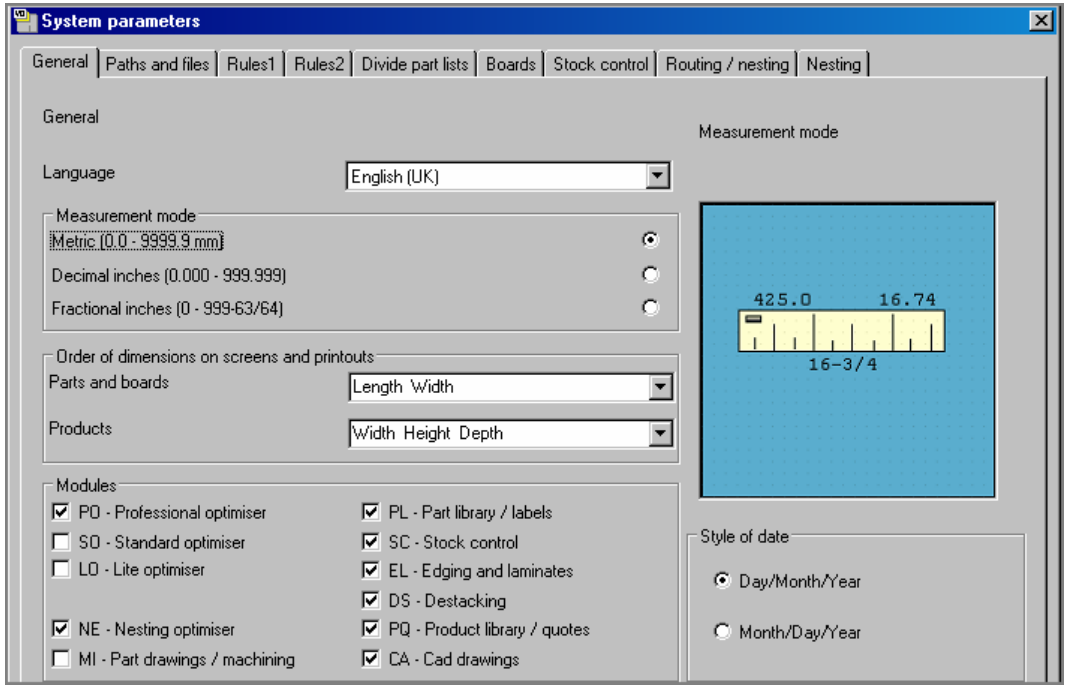


Figure 13-09 System parameters

There are several pages of parameters each for different aspects of the program. Click on a tab to move to that section and check and adjust the parameters.

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. Drawing library

Use this to store drawings for parts, products, fittings, layouts etc.

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**

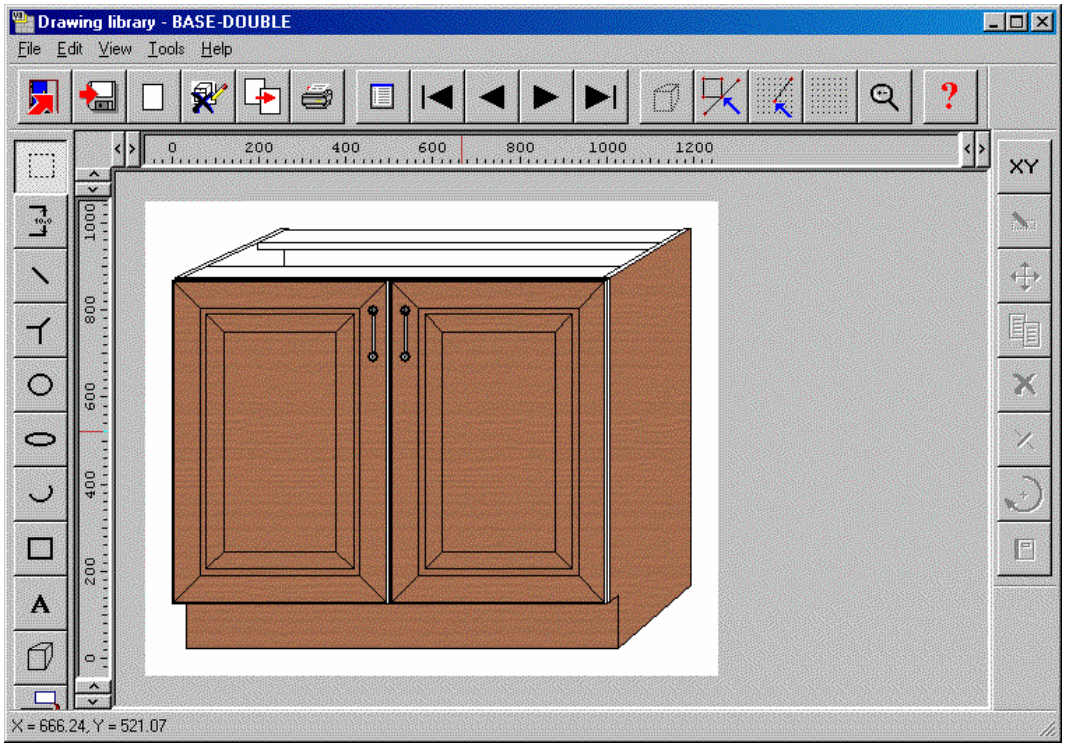


Figure 14-01 Drawing library

The drawing library contains a set of general drawing tools to help draw the items and there area also specialist tools to quickly draw cabinets and other items in perspective.

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.

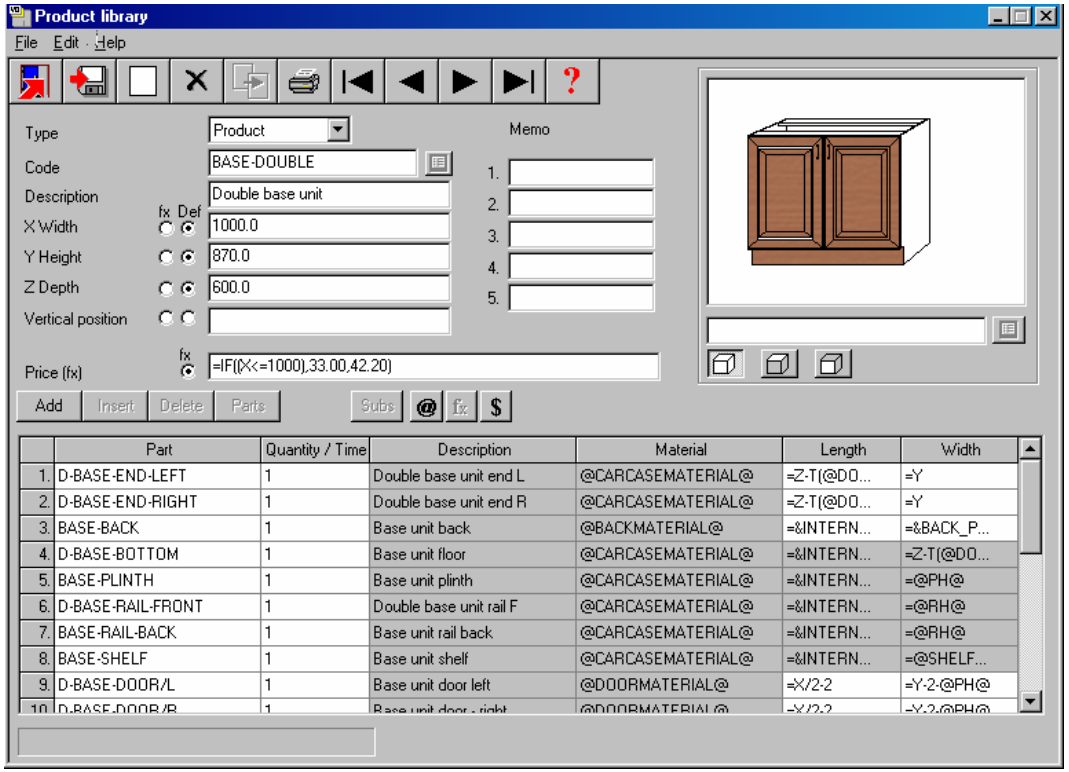


Figure 14-02 Drawing at Product library

The buttons under the drawing give alternative views of the product such as a plan view or an elevation.

Use the drawing library to add the extra drawings where required.

Selecting the button at the far right shows the elevation view of a product.

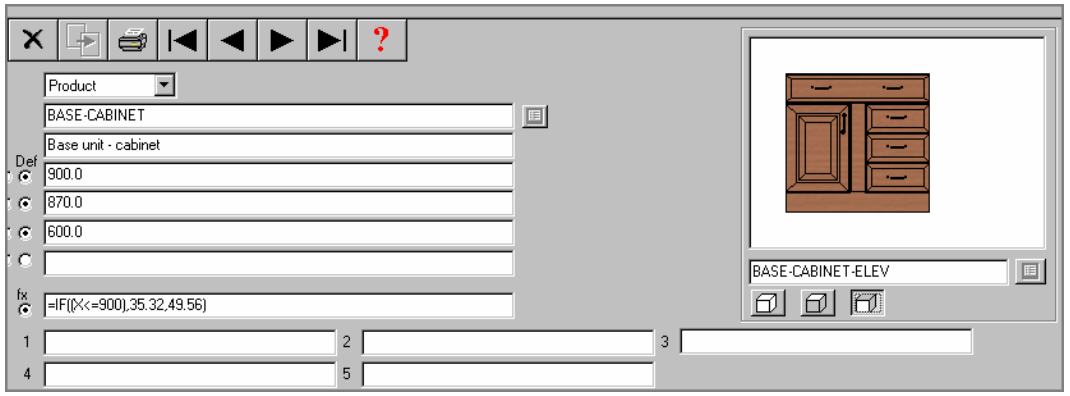


Figure 14-03 Drawing elevation at Product library

Note - the same drawing can be used for more than one product, for example, where there are a range of products with a similar style.

Drawing library - examples

The following screens show a few examples of different drawings. Drawings can be used for products, elevations, fittings, layouts, and machining.

This shows a perspective view of the machining for a part.

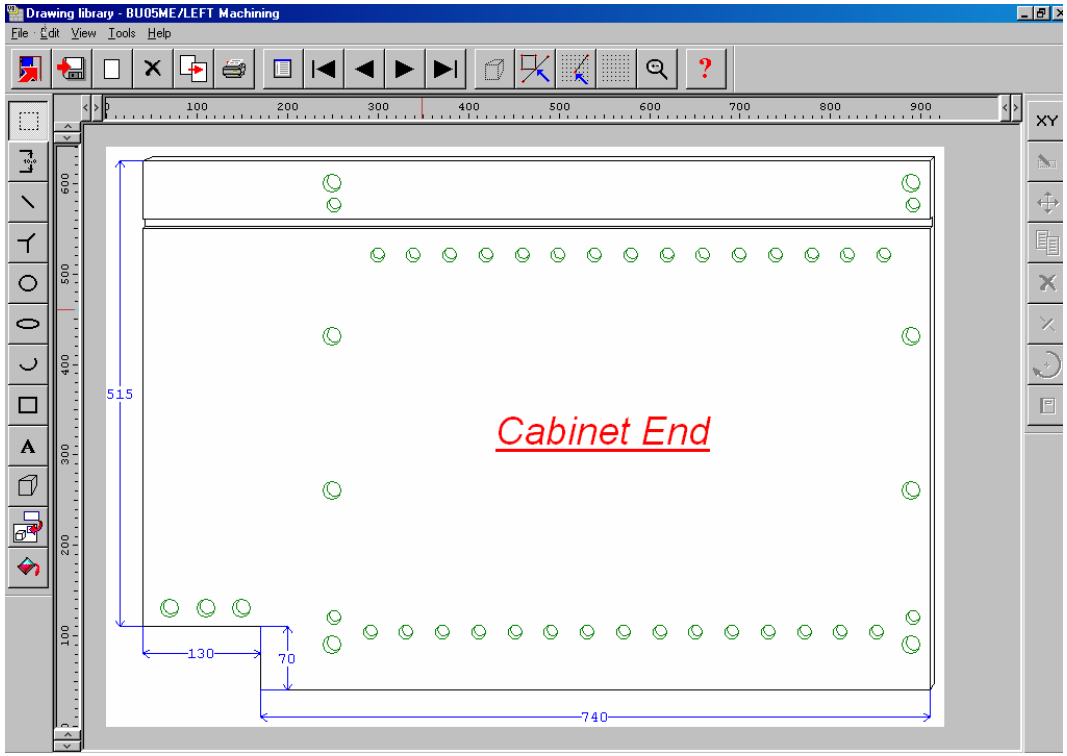


Figure 14-04 Drawing library example

This is an example of a complex part drawing stored in the drawing library.

This drawing shows an elevation view of a cabinet.

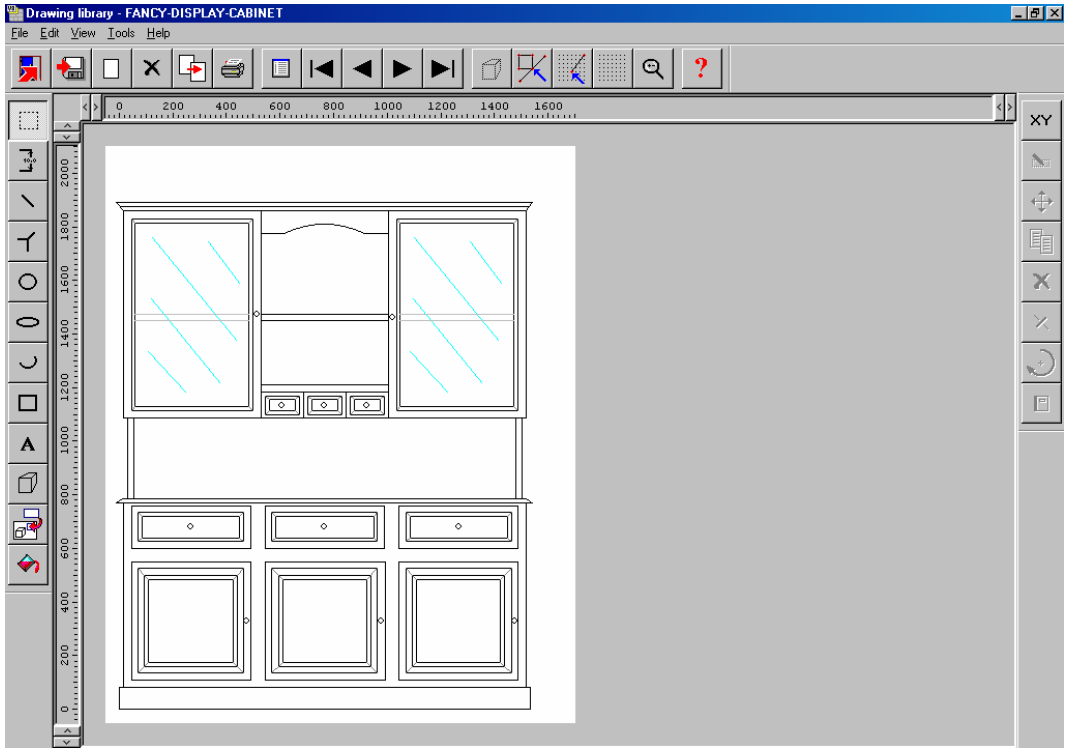


Figure 14-05 Drawing library example

It can be used at the Product library to show the elevation view and used on reports and labels.

The drawing library can include fittings.

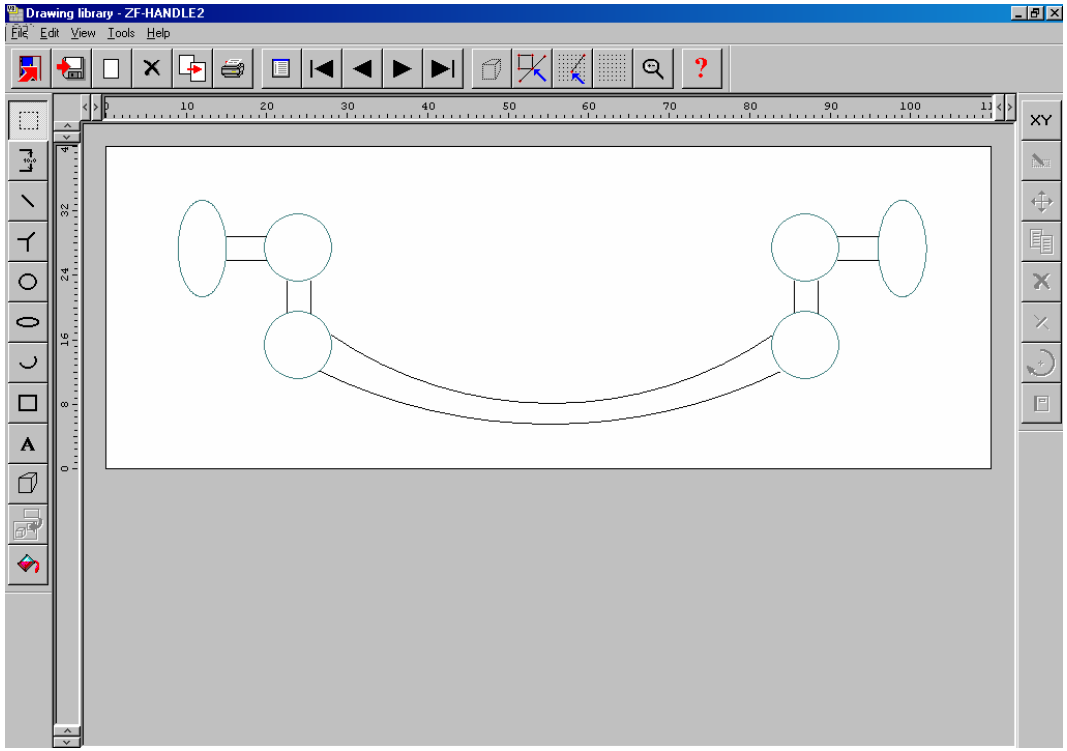


Figure 14-06 Drawing library example

Fittings are stored in the Part library.

Parametric drawings

For custom products and parts parametric drawings can be used. This means that the drawing shown for each custom item is an exact representation of that item - including a perspective view

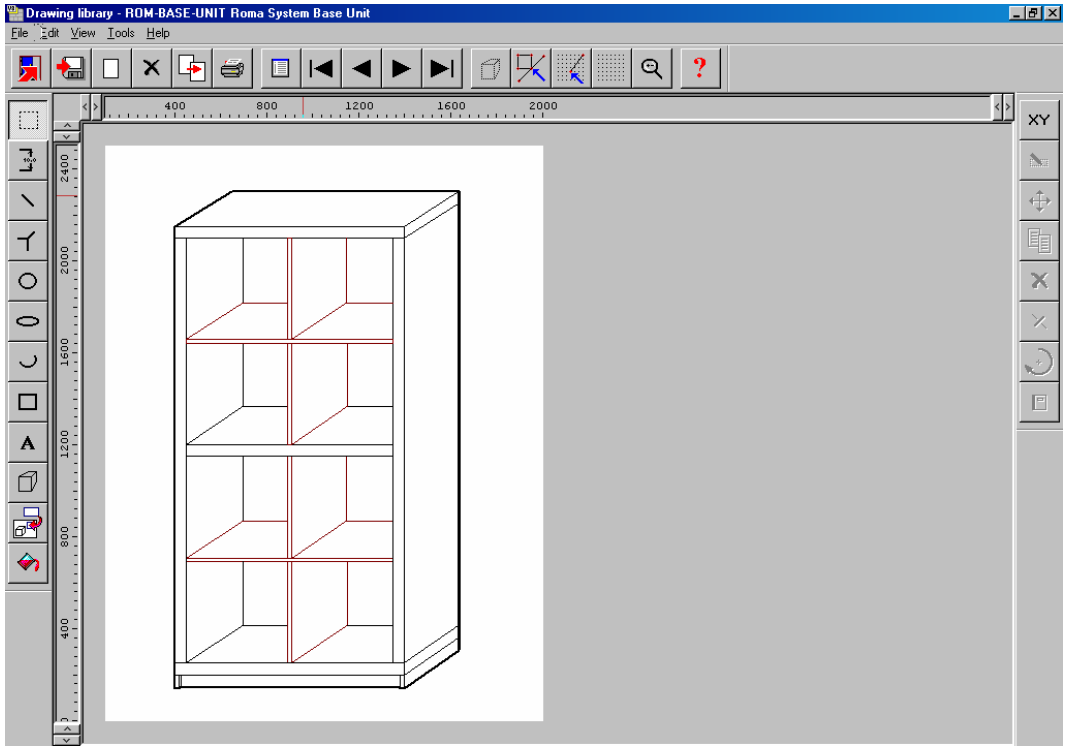


Figure 14-07 Drawing library example

Use the drawing properties and perspective functions for this.

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. .

15. Design Labels and Forms

Use the Design options to create templates for labels and forms.

Forms - typical forms are invoices, worksheets, despatch notes, run summaries, part lists, product requirement lists etc.

Labels - labels can be designed both for use in the office and for printing labels at the saw and are typically labels that identify an individual part or product.

At the main screen:-

- Select: **Tools - Form design**

or

- Select: **Tools - Label design**

- Select the type of form or label required:-

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

The options shown depend on the modules available, for example, if not using the Quotes/Orders module this option is greyed out on the menu.*

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

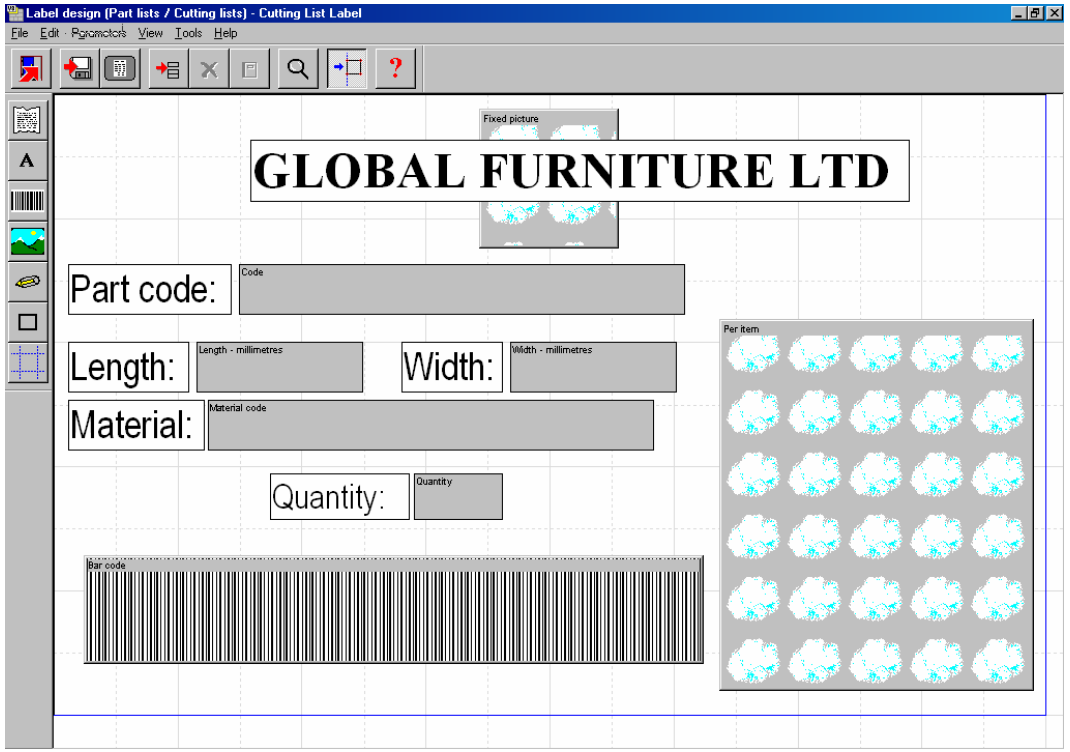


Figure 15-01 Label design

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.

Preview - use this to see what the label will look like.

The Preview can be approximate using 'xxx' for data or use actual data. Here is a data preview of the above label
design.

Figure 15-02 Preview of printed labels

The data preview is more accurate especially in designing forms where the data may run over more than one page.

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.

Save the design to a file of your choice.

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

- Select Print at the main menu
- Select 'Labels' or 'Forms'
- Select the type of data to print (e.g. Quotes, Product requirements, Part lists, Cutting patterns)

The program prompts with the available templates.

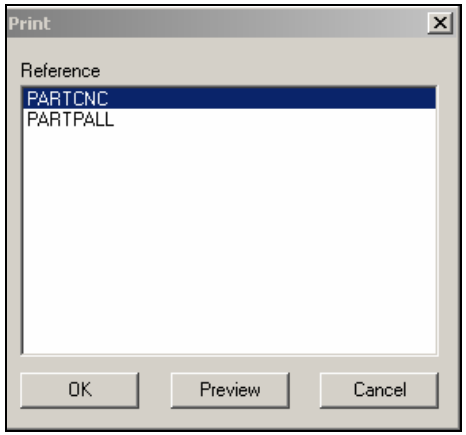


Figure 15-03 Select label template

- Select the required template

Click on Preview to check the layout

Select Ok to print

The program prompts for the data to print (in this case cutting patterns)

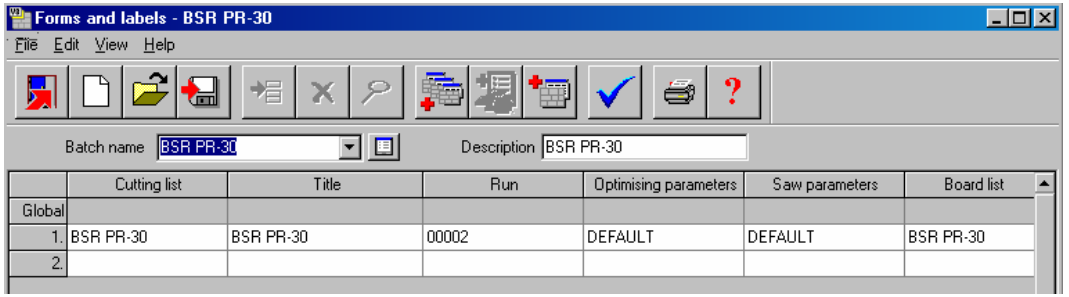


Figure 15-04 Print labels batch screen

- Check the data and select OK to print 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 I
- Cadmatic II
- Cadmatic III
- 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.

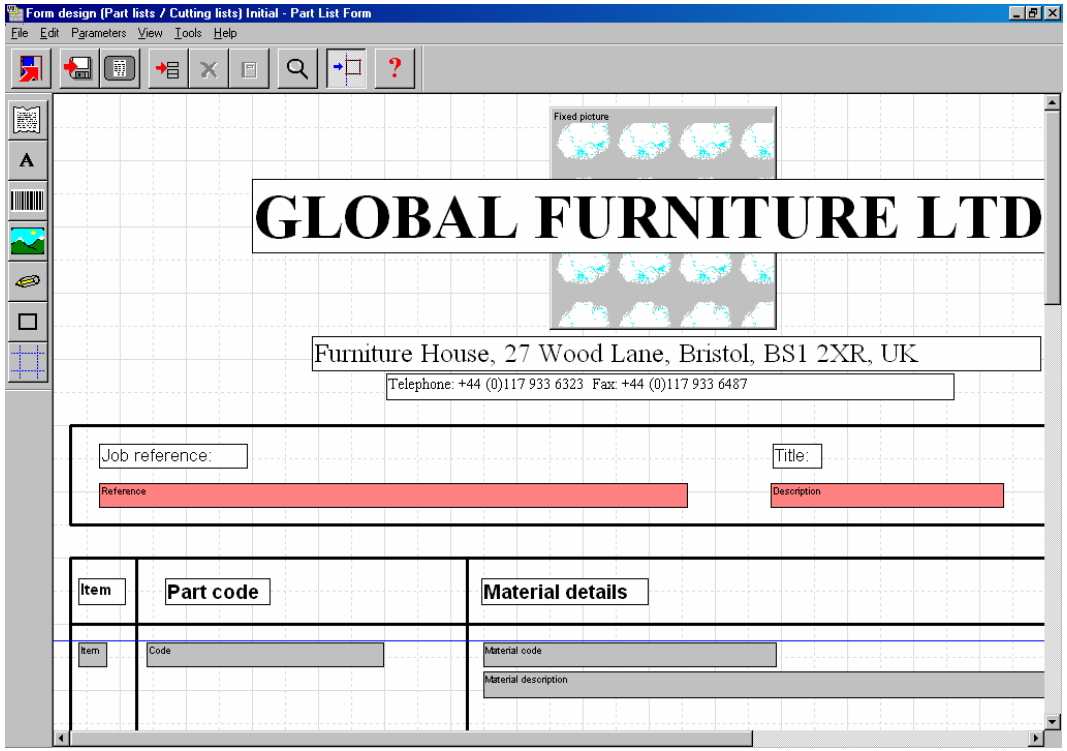


Figure 15-05 Form design

Use the object tool bar for the common items.

Print a form

- Select (at the main screen) **Print**
- Select **Form**

Choose the type of form to print (Quotes, Product requirements, Part lists, Cutting patterns, Runs).

The program prompts for the template to use:-

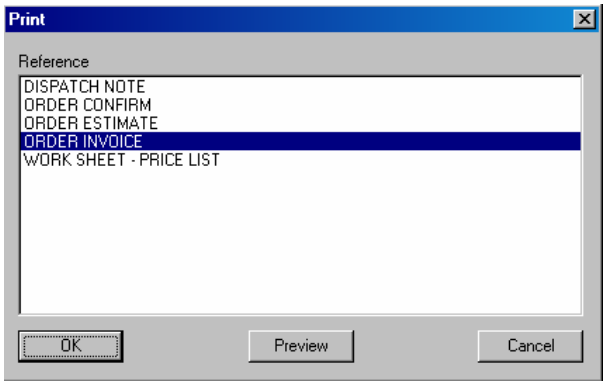


Figure 15-06 Select form template

- Select a template
- Select Preview to check the layout.

The program then prompts for the data to print, this varies with the type of data, for example, for a Quotation or order file:-

For a run or cutting patterns the program prompts with the current batch screen, select Ok to continue.

The preview is then displayed.

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:11/04/2006	Order no. BSR QU-35	Our ref.	Your ref.

Customer address
Kitchens Direct
Ashford Road
Birmingham

B11 2RX

Order /item no.	Details			Quantity	Unit £	Total £
BSR QU-35/001	Code: BASE-SINGLE	Width: 500.0		7	41.08	287.56
	Description: Single base unit	Height: 870.0				
	Finish: MFC18-OAK	Depth: 600.0				
BSR QU-35/002	Code: BASE-SINK	Width: 1000.0		2	43.82	87.64
	Description: Sink base unit	Height: 870.0				
	Finish: MFC18-OAK	Depth: 600.0				
BSR QU-35/003	Code: WALL-DOUBLE	Width: 1000.0		5	36.59	182.95
	Description: Double wall unit	Height: 750.0				
	Finish: MFC18-OAK	Depth: 300.0				
BSR QU-35/004	Code: WALL-SINGLE	Width: 500.0		3	21.55	64.65
	Description: Single wall unit	Height: 750.0				
	Finish: MFC18-OAK	Depth: 300.0				

Figure 15-07 Preview of Printed form

The preview is a good guide to the final printed or on-screen version of the report.

Select PRINT to print the data from the preview.

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 Optimising.

Here is part of a design for a custom report for a Board summary.

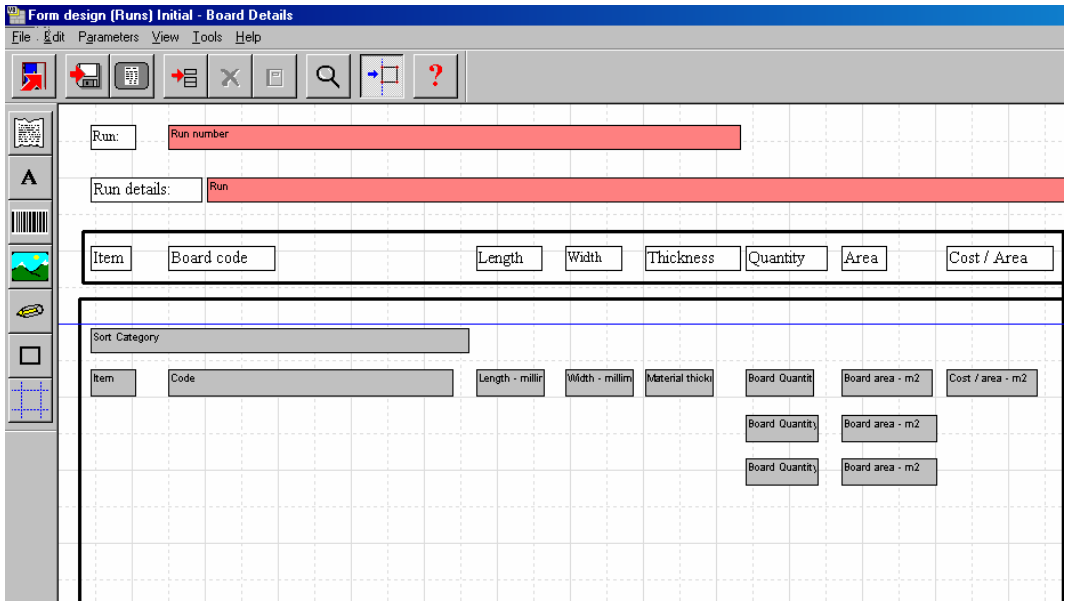
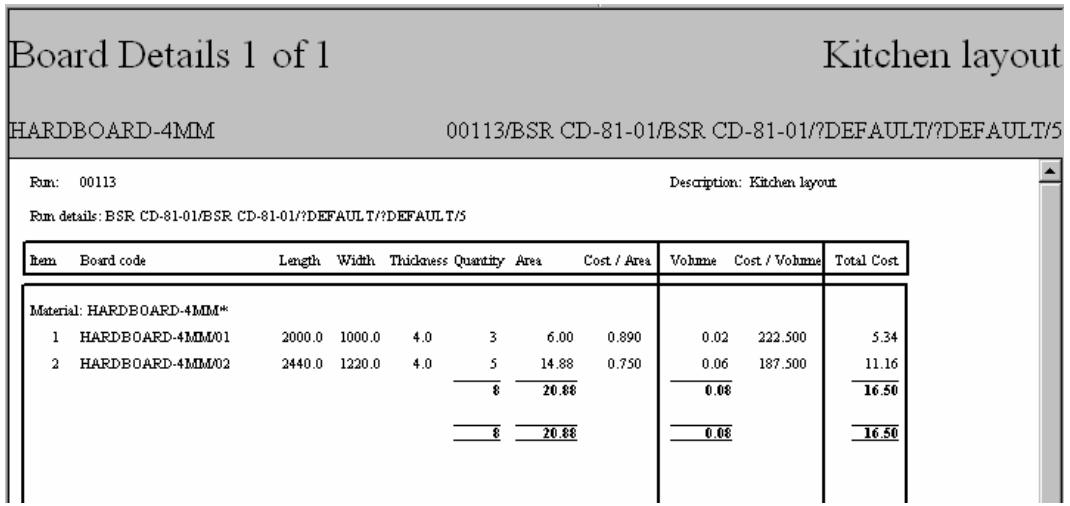


Figure 15-08 Custom form design

The layout and information on the report can be fully customised.

The above design produces the following style of report or summary.



Board Details 1 of 1 — Kitchen layout

HARDBOARD-4MM — 00113/BSR CD-81-01/BSR CD-81-01/?DEFAULT/?DEFAULT/5

Run: 00113 — Description: Kitchen layout

Run details: BSR CD-81-01/BSR CD-81-01/?DEFAULT/?DEFAULT/5

Item	Board code	Length	Width	Thickness	Quantity	Area	Cost / Area	Volume	Cost / Volume	Total Cost
Material: HARDBOARD-4MM*										
1	HARDBOARD-4MM/01	2000.0	1000.0	4.0	3	6.00	0.890	0.02	222.500	5.34
2	HARDBOARD-4MM/02	2440.0	1220.0	4.0	5	14.88	0.750	0.06	187.500	11.16
					8	**20.88**		**0.08**		**16.50**
					8	**20.88**		**0.08**		**16.50**

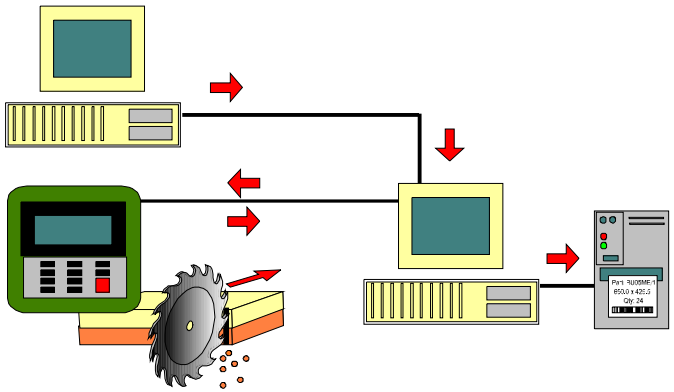
Figure 15-09 Custom form

Custom reports once created are available in the same way a standard reports in Review Runs.

16. Online PC

View run data and print synchronised labels at the saw.

The Online PC option runs on a PC located next to the saw.



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)

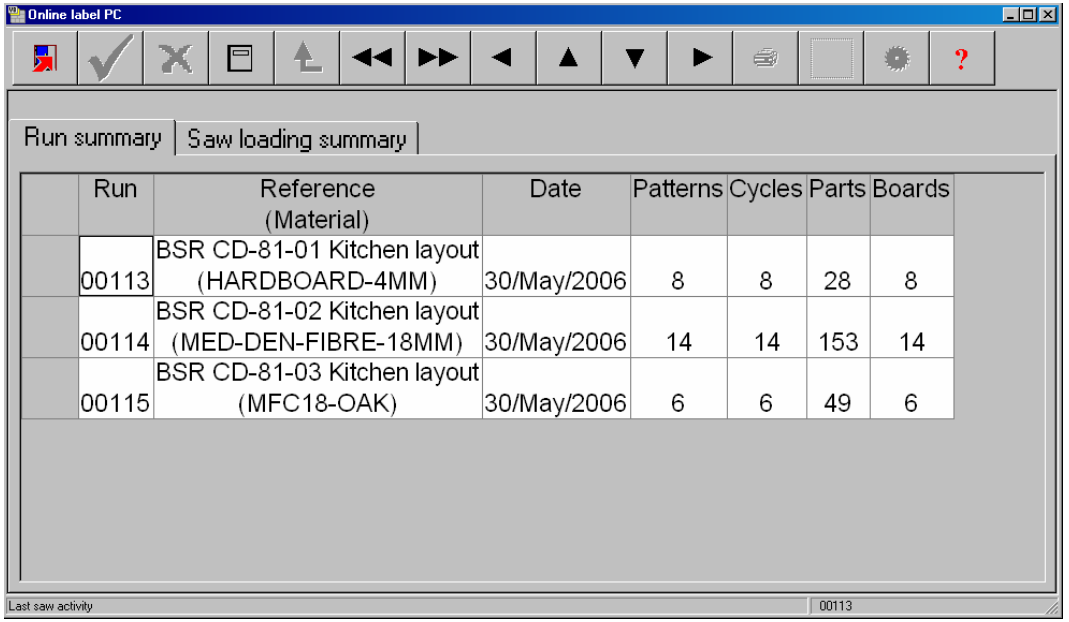
To transfer runs to the saw select: **Transfer to saw**

This operates in the usual way (see above) and presents the current batch. Use the options to select the batch to transfer.

To review runs at the saw select**: Online PC - operations**

Online PC - Operation

With the Online PC program at the saw or at the office ('Online PC - operations') the screen shows the runs at the saw:-



Run	Reference (Material)	Date	Patterns	Cycles	Parts	Boards
00113	BSR CD-81-01 Kitchen layout (HARDBOARD-4MM)	30/May/2006	8	8	28	8
00114	BSR CD-81-02 Kitchen layout (MED-DEN-FIBRE-18MM)	30/May/2006	14	14	153	14
00115	BSR CD-81-03 Kitchen layout (MFC18-OAK)	30/May/2006	6	6	49	6

Figure 16-01 Online PC Run summary

There is a summary of each run.

Note - extra large fonts are used for Online PC as it sometimes operates as a touch screen at the saw.

To see a pattern select the run and move to the pattern required.

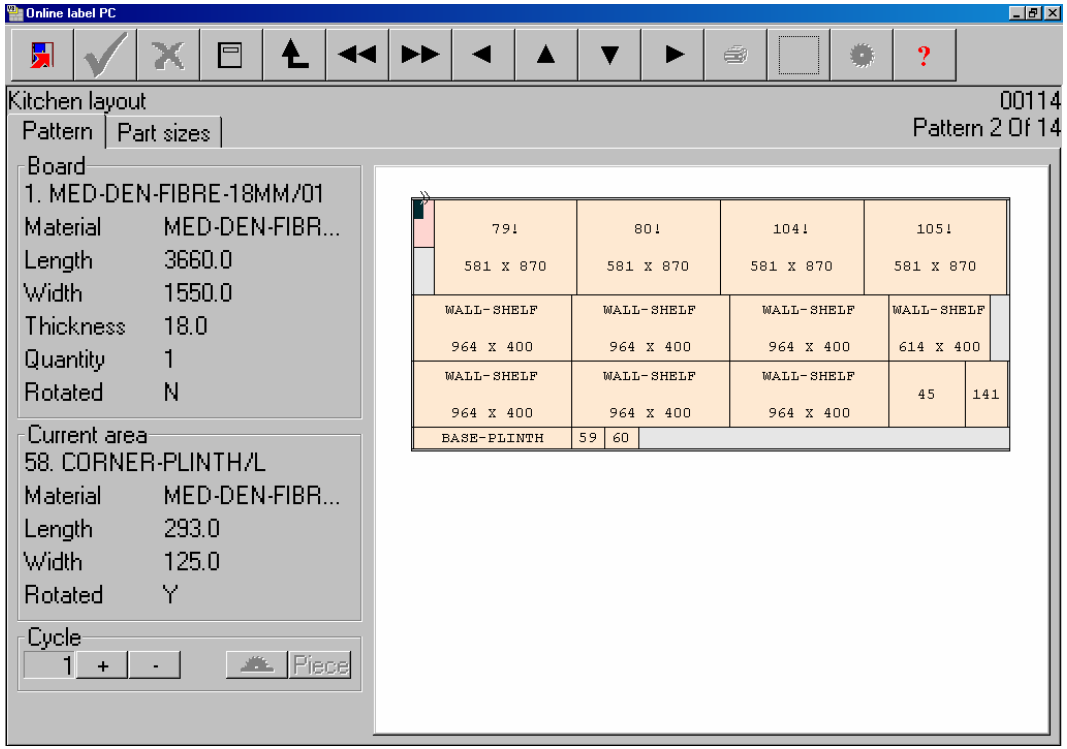


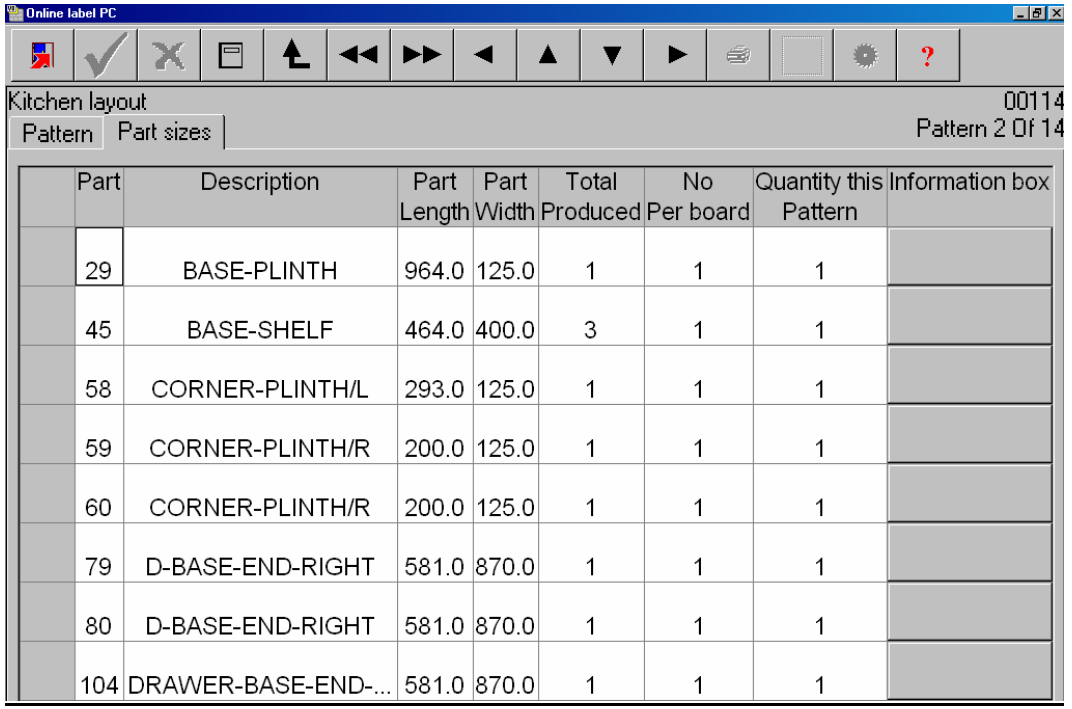
Figure 16-02 Online PC pattern

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.

Part details



Part	Description	Part Length	Part Width	Total Produced	No Per board	Quantity this Pattern	Information box
29	BASE-PLINTH	964.0	125.0	1	1	1	
45	BASE-SHELF	464.0	400.0	3	1	1	
58	CORNER-PLINTH/L	293.0	125.0	1	1	1	
59	CORNER-PLINTH/R	200.0	125.0	1	1	1	
60	CORNER-PLINTH/R	200.0	125.0	1	1	1	
79	D-BASE-END-RIGHT	581.0	870.0	1	1	1	
80	D-BASE-END-RIGHT	581.0	870.0	1	1	1	
104	DRAWER-BASE-END-...	581.0	870.0	1	1	1	

Figure 16-03 Online PC Part sizes

Note - 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

Note - *At the saw* **-** The Online PC program loads automatically and shows the Runs at the saw

17. Utilities and help

There are several utilities built into the software: -

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

1. File Management

Manage data in a comprehensive way.

At the main screen:-

- Select: **File - File management**

The screen shows all the data used by the program (not all users make use of all the data types).

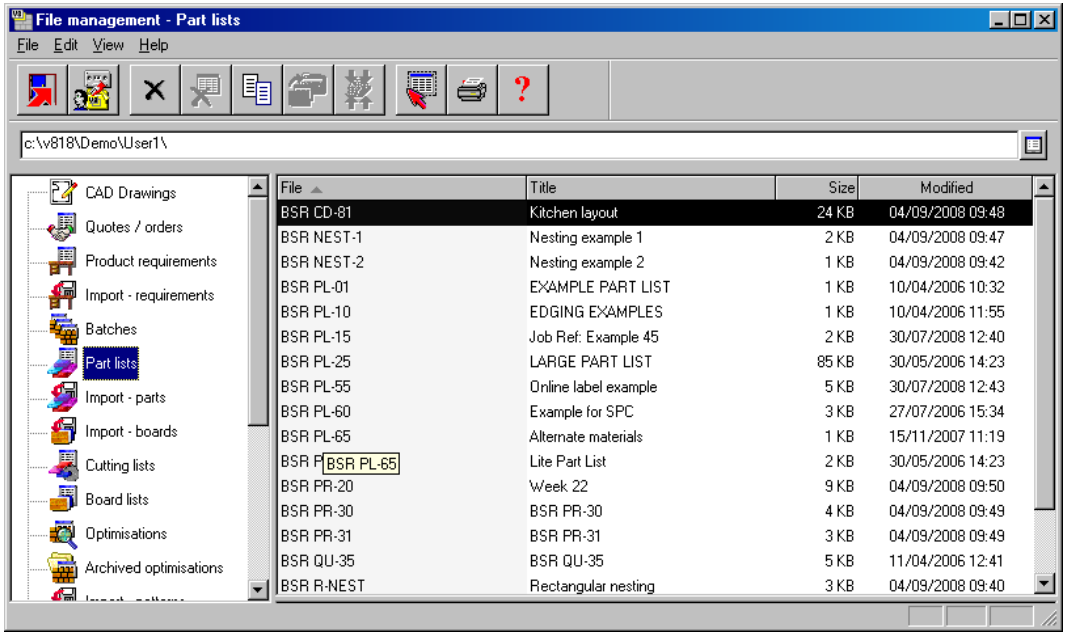


Figure 17-01 Utilities and Help - File Management screen

The above example shows a list of part lists.

- Select a category from the Tree

Use the View menu to alter the screen layout. The pane at the foot of the screen shows the contents of the currently selected file.

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

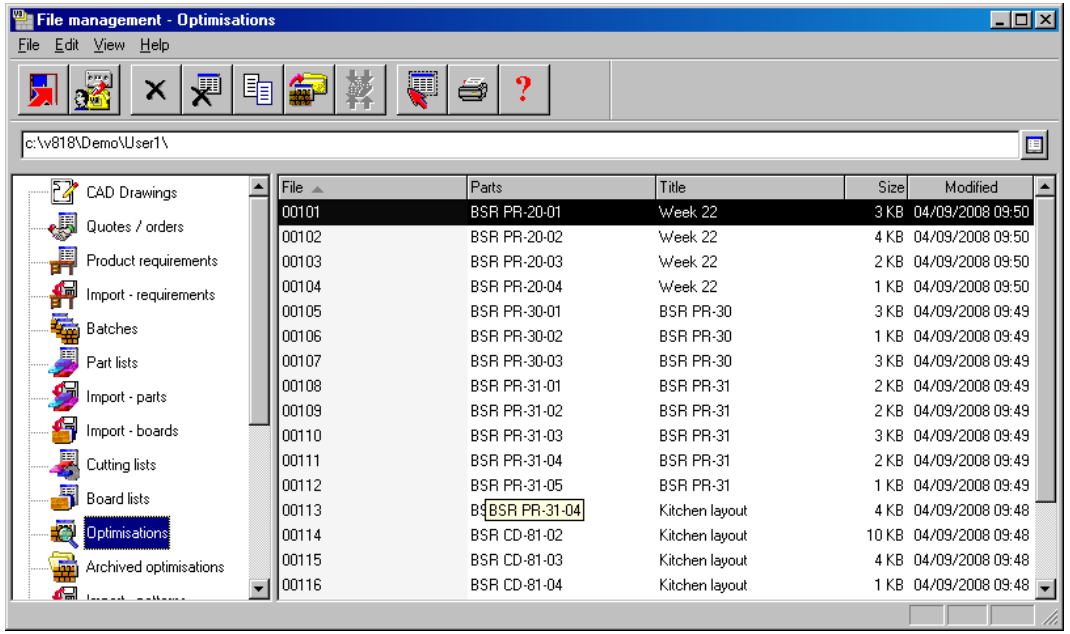


Figure 17-02 Utilities and Help - File Management screen

With an Optimisation, for example, BSR-CD-81-02 the run file is NOT the only file with that name and there are typically several other 'hidden' files associated with the run which store various sets of data for the run. When a run is deleted or archived the program automatically deals with the related 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).

2. User Directory Backup

This is an option on the File menu at the main screen. Use this to take a backup of the current user directory.

This Backup should NOT replace any standard backup software in use (programs which regularly back up the Network, Server and workstations).

It is an extra facility to take a snapshot of a user directory as a temporary or permanent archive of important data. For example, to use the data offsite, or as a precaution before trying out new procedures.

At the main screen:-

Select: **File - Backup**

All the files in the current user directory are backed up to a ZIP directory, labelled .BKP

Note - system parameter 'Path for backup' must be set before you can use this option.

On a Network refer to the Network administrator to ensure that all the data is covered by a backup procedure.

The backup copies a single USER DIRECTORY. This is the folder (and sub folders) containing all the orders, product requirements, part lists and run data and all the parameter settings and form and label templates. The system parameters for each User directory describe all the sub folders (such as path for Import and Export etc.

This is all backed up by the Backup command.

If you have more than one user directory each should be backed up separately.

The backup will include all the libraries and other data used by the user directory. These are identified from the Paths set in the system parameters for that user directory, for example, path for library data.

3. Online Help

Full support is available from the Online Help.

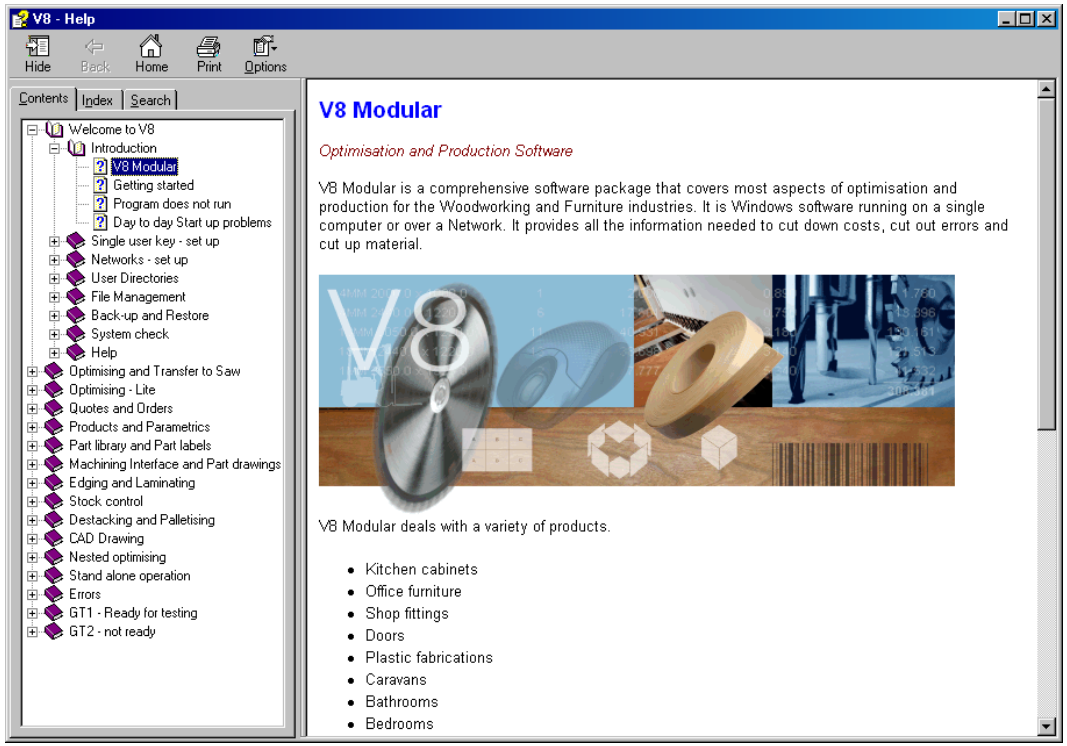


Figure 17-03 Utilities and Help - Main help contents

At most screens and boxes select HELP - this provides help on the current item.

Also use the HELP menu items. **F1** - select the F1 function key at any point for help. The help text is comprehensive and there are many examples and diagrams.

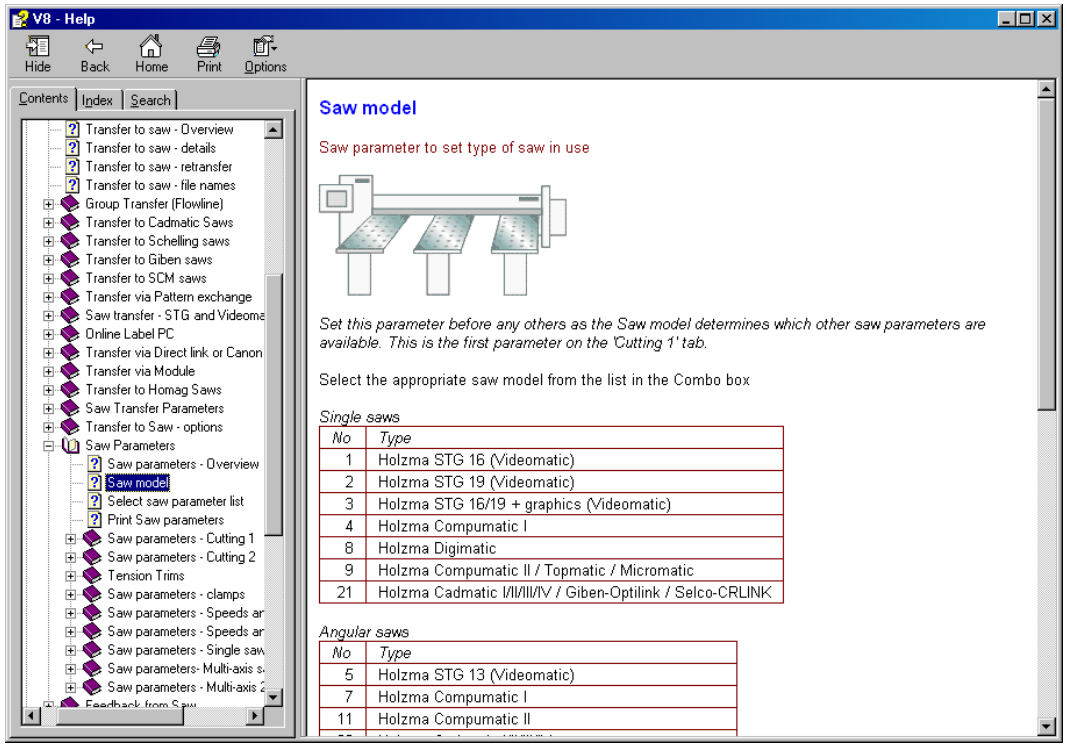


Figure 17-04 Utilities and Help - Help topic

At most points context help is available by clicking on the Help button, menu or using F1. For example, at a parameter help is available for that parameter:-

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

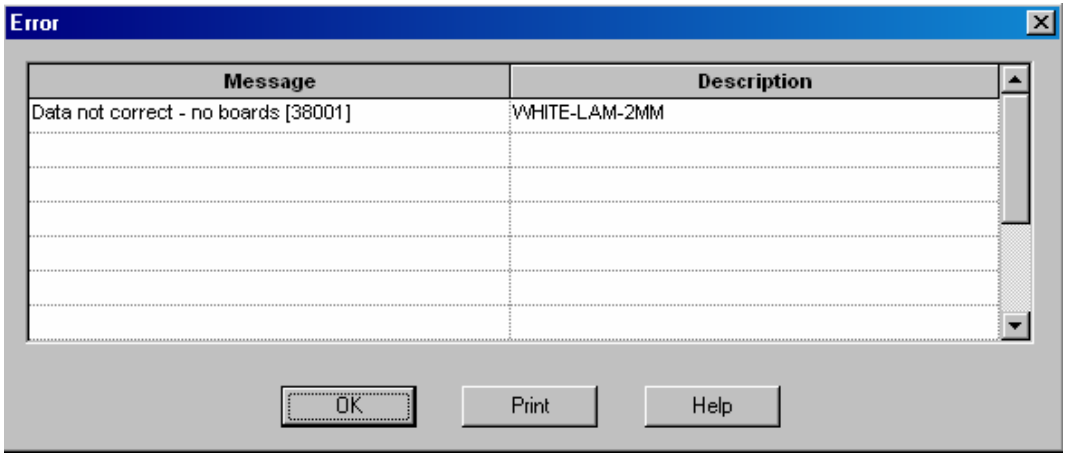


Figure 17-05 Utilities and Help - Error message and dialog

Click on the help button for more details:-

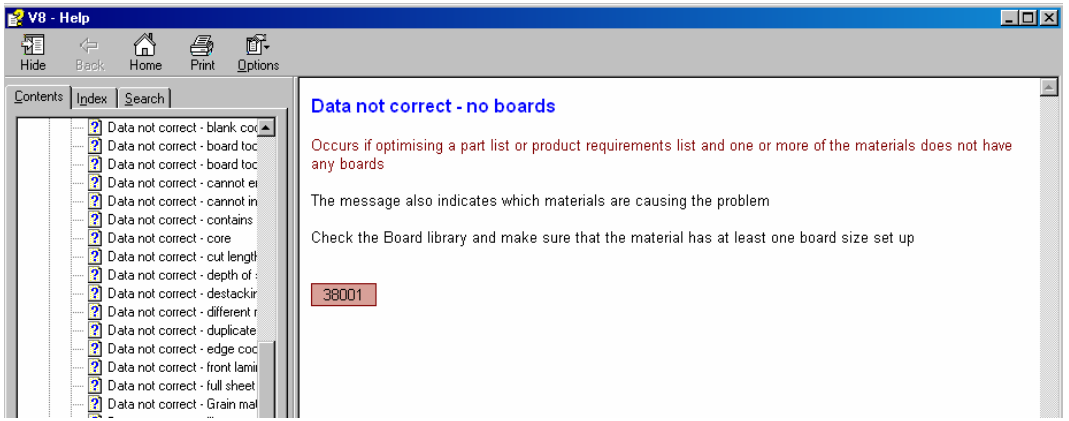


Figure 17-06 Utilities and Help - help topic for an error

The number shown is the error number - this can be useful in identifying the problem where similar errors occur.

4. Import and export

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 parts, boards, product requirements

In some situations parts or product requirements are produced by other systems. Use the import options at the File tree to import the data ready for optimisation.

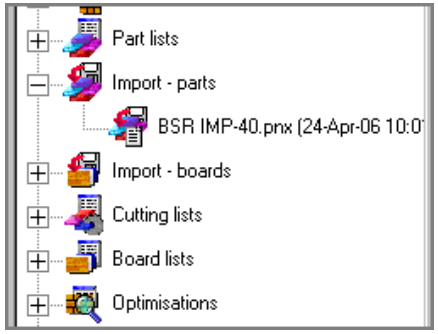


Figure 17-07 Utilities and Help - Import options on File tree

Several of the import options are shown above. The import formats for parts, boards and requirements are simple ASCII files and straightforward for other systems to use.

Export - data (e.g. runs, picking lists, summaries) can be easily exported to other systems.

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

Stand alone operation - Sections of the program can run in a special 'stand alone' or silent mode. Use this to automate common import and export operations without operator intervention. The 'User Interface Guide' gives full details of all the import, export, pattern exchange and stand alone options.